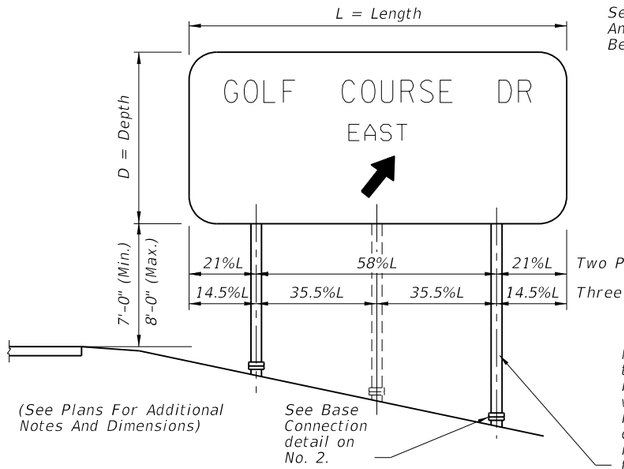
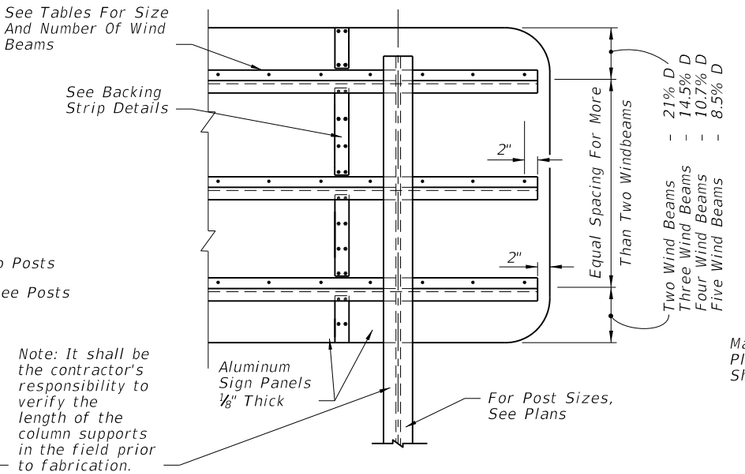
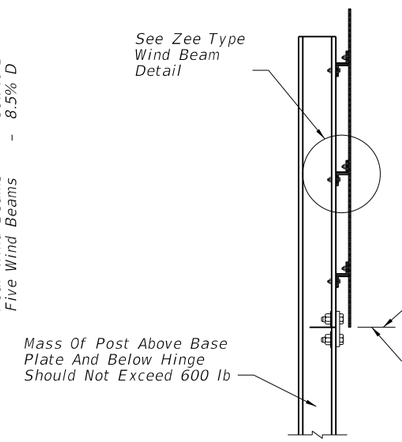


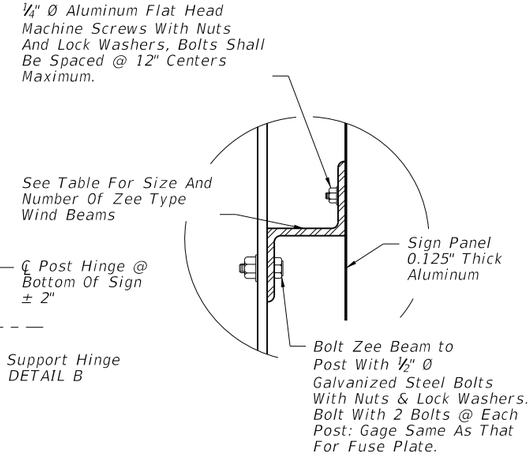
TYPICAL ELEVATION



PARTIAL REAR ELEVATION

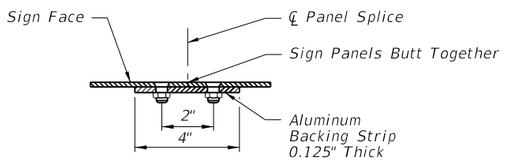


SIDE VIEW

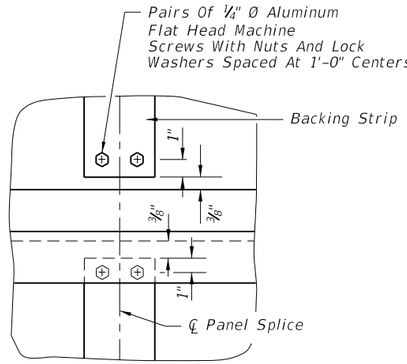


ZEE TYPE WIND BEAM

Note: If the sign panels are deeper than 10', a Horizontal Panel Splice is allowed at an interior Zee Beam, shop drawings shall be required. Minimum panel section width =2'-6".



BACKING STRIP DETAILS



NUMBER OF WIND BEAMS FOR GIVEN DEPTH & WIND

Wind	No. Beams	Max. Depth	Wind	No. Beams	Max. Depth
110	2	7'-0"	150	2	6'-0"
110	3	12'-0"	150	3	10'-4"
110	4	16'-4"	150	4	14'-0"
110	5	20'-8"	150	5	17'-8"
130	2	6'-8"			
130	3	11'-4"			
130	4	15'-4"			
130	5	19'-0"			

SIZE OF WIND BEAMS

Size Of Zee*	Length Of Sign (Feet)	
	2 Posts	3 Posts
Zee 1.75 x 1.75 x 1.08	0 - 11'-0"	0 - 17'-4"
Zee 3 x 2.69 x 2.33	11'-1"-19'-0"	17'-5"-29'-6"
Zee 3 x 2.69 x 3.38	19'-1"- 20'-8"	29'-7"-31'-6"

*Note: Zee Beams Are Aluminum - No Steel Equivalent Available Designation Gives (Member Depth) x (Flange=Width) x (lb/ft)

DESIGN WIND SPEEDS BY COUNTY

110 mph Alachua, Baker, Bradford, Clay, Columbia, Gadsden, Gilchrist, Hamilton, Hardee, Jackson, Jefferson, Lafayette, Lake, Leon, Madison, Marion, Polk, Putnam, Sumter, Suwannee, and Union Counties.

130 mph Bay, Brevard, Calhoun, Charlotte, Citrus, DeSoto, Dixie, Duval, Flagler, Franklin, Glades, Gulf, Hendry, Hernando, Highlands, Hillsborough, Holmes, Lee, Levy, Liberty, Manatee, Nassau, Okaloosa, Okeechobee, Orange, Osceola, Pasco, Pinellas, Sarasota, Seminole, St. Johns, Taylor, Volusia, Wakulla, Walton, and Washington Counties.

150 mph Broward, Collier, Escambia, Indian River, Martin, Miami-Dade, Monroe, Palm Beach, Santa Rosa, and St.Lucie Counties.

GENERAL NOTES

DESIGN SPECIFICATIONS: Design according to FDOT Structures Manual (current edition).

WELDING: Preform all welding in accordance with the American Welding Society Structural welding code (Steel), ANSI/AWS D1-1 current edition.

ALUMINUM MATERIALS: All aluminum materials shall meet the requirements of the Aluminum Association's Alloy 6061-T6 and also the following ASTM specifications: Sheets and plates, B209; extruded tube, bars, rods & shapes, B221; and standard structural shapes, B308. No stenciling permitted on sheets. Aluminum welding rods shall meet the requirements of Aluminum Association Alloy No. 5556 filler wire.

ALTERNATE MATERIAL: Material meeting the requirements of ASTM B209 or Aluminum Association Alloys5154-H38 or 5052-H38 may be used for sheet and plate. Material meeting the requirements of Aluminum Association Alloy 6351-T5 and ASTM B221 may be used for extruded bars, rods, shapes and tubes.

SIGN FACE: All sign face corners shall be rounded.

STRUCTURAL STEEL: All structural steel shall meet the requirements of ASTM A36 and shall be galvanized in accordance with ASTM A123.

ALUMINUM BOLTS, NUTS, & LOCK WASHERS: Aluminum bolts shall meet the requirements of Aluminum Association Alloy 2024-T4 (ASTM F468). The bolts shall have an anodic coating at least 0.0002" thick and be Chromate sealed. Lock washers shall meet the requirements of Aluminum Association Alloy 7075-T6 (ASTM B221). Nuts shall meet the requirements of Aluminum Association Alloy 6061-T6 or 6262-T9 (ASTM F467).

STEEL BOLTS, NUTS, & WASHERS: All steel bolts, nuts and washers shall meet the requirements of ASTM A325 and shall be galvanized in accordance with ASTM F2329.

BASE CONNECTION: High strength bolts L_2 in the base connection shall be tightened only to the torque shown in the table on sheet 2. Overtightened base connections will not be permitted.

FUSE PLATE: All holes in fuse plates shall be drilled. All plate cuts shall, preferably, be saw cuts; however, flame cutting will be permitted provided all edges are round. Metal projecting beyond the plane of the plate face will not be permitted.

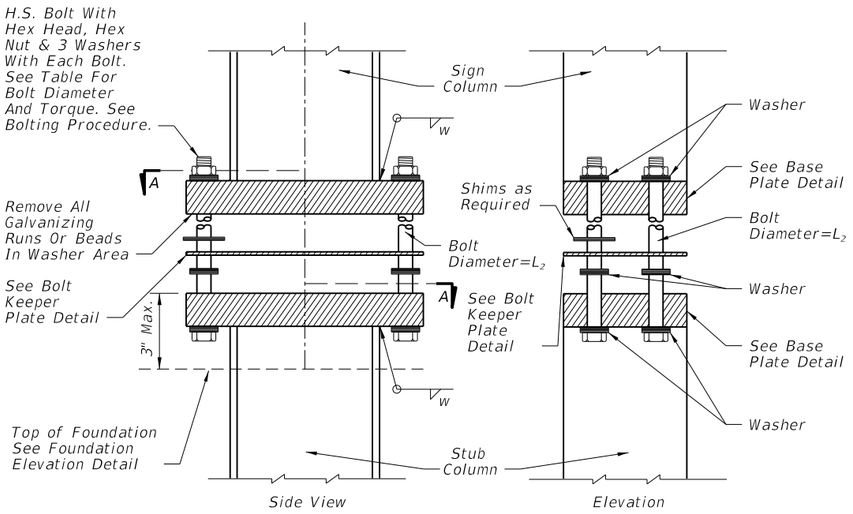
BRASS SHIM: Provide shim plate per ASTM B36.

SHOP DRAWINGS: When ground sign supports are fabricated in accordance with these plans no shop drawings are required. Shop drawings will be required for approval when the column length exceeds the length shown in the plans by more than 2'-0".

FABRICATOR NOTE: All bolts, except L_2 bolts and Zee Beam to post bolts, shall be tightened in accordance with Section 700 of the Specifications.

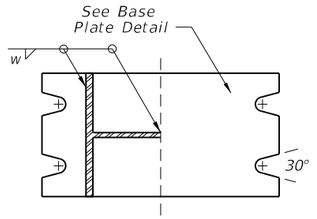
FOUNDATION: Contractor may use precast foundations in pre-drilled holes a minimum of 12" larger than the foundation indicated on the plans in either wet or dry conditions. The holes shall be clean and without loose material. Temporary casing shall be required if the soil is unstable. Fill the void around the precast foundation with flowable fill meeting the requirements of Section 121 or clean sand placed using hydraulic methods. The cost of flowable fill, installing and removal of casing shall be included in the unit price of Sign Multi-Post.

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	MULTI-COLUMN GROUND SIGN	11200	1



SIGN COLUMN & STUB COLUMN VIEWS

BASE CONNECTION



SECTION A-A

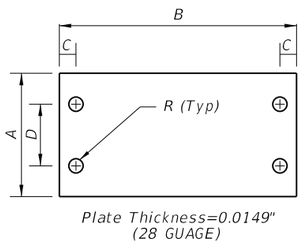
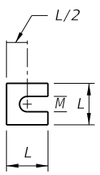


Plate Thickness=0.0149" (28 GUAGE)

BOLT KEEPER PLATE

Provide 2– 0.0149" Thick (28 guage) and 2– 0.0329" Thick (21 guage) Brass Shims Per Post.



SHIM DETAIL

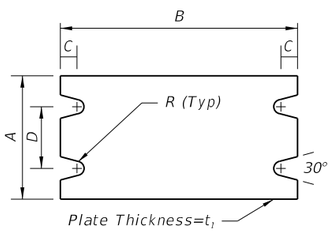
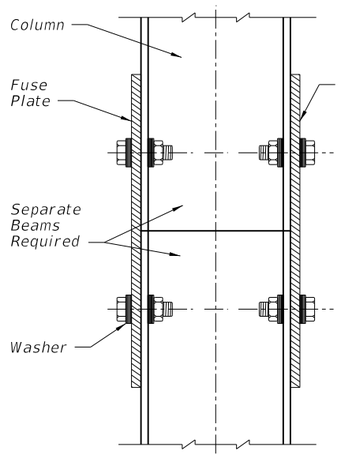


Plate Thickness=t_1

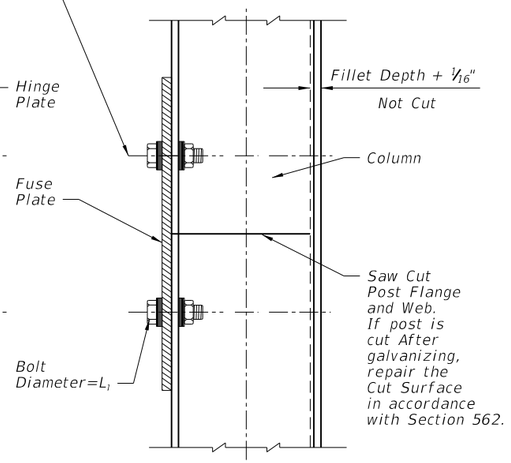
BASE PLATE

Direction of Traffic

Flange Holes For Fuse And Hinge Plate Shall Be Drilled Or Sub-Punched and Reamed. H.S. Bolts (See Table For Size), For Bolt Tension See the Specification. Flat Washers (Typ.)



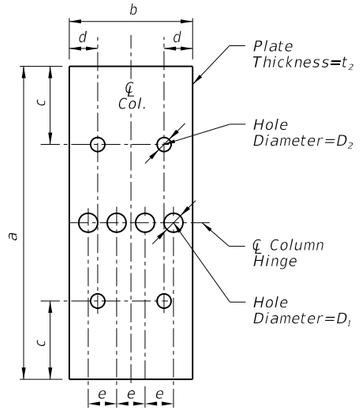
OPTIONAL HINGE



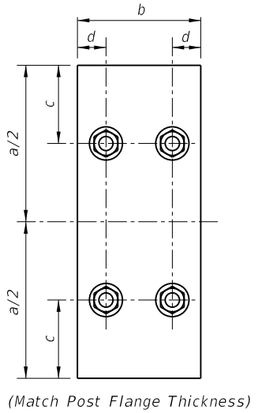
TYPICAL HINGE

DETAIL B

(See Fabricator Note on Sheet 1)

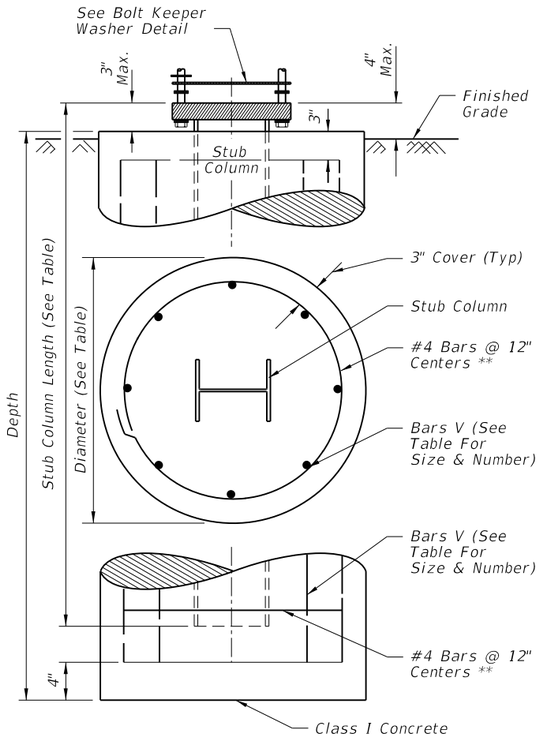


FUSE PLATE



(Match Post Flange Thickness)

HINGE PLATE



FOUNDATION ELEVATION

NOTE: All Reinforcing To Be Grade 60.

** At the Option of the Contractor, D10 Spiral Wire @ 6" Pitch,Three Flat Turns Top and One Flat Turn Bottom may be Utilized in Lieu of Specified.

Shop-weld assemblies of foundation stirrup reinforcing bars are permitted in reinforced concrete foundation provided that:

1. The reinforcing bars conform to ASTM Specification A706/706M.
2. The holding wires conform to ASTM Specification A1064.
3. The Shop welding is performed by machines under a continuous, controlled process, approved by the Engineer.
4. Quality control test are performed on shop welded specimens and the test results are available, upon request, to the Engineer.

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION

1. Assemble post to stub with bolts and flat washers as shown.
2. Shim as required to plumb post (see shim detail).
3. Tighten all L_2 bolts the maximum possible with 1'-0" to 1'-3" wrench to bed washers and shims and to clean bolt threads.
4. Burr threads at junction with nut using a center punch to prevent nut loosening.

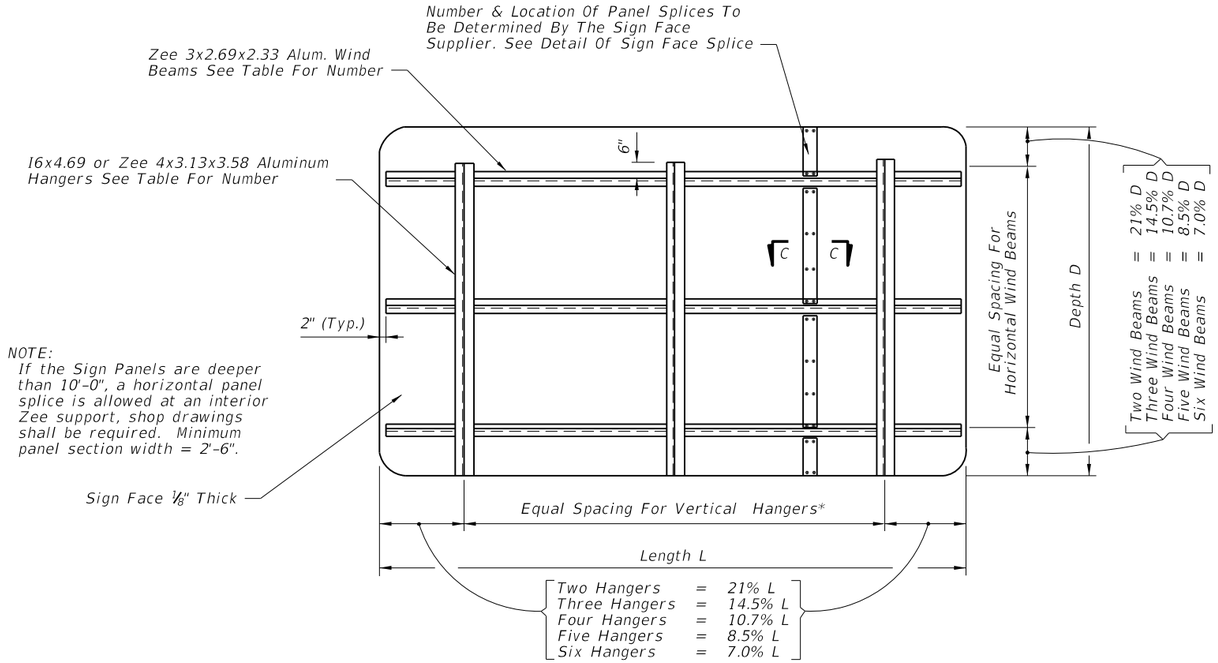
BASE CONNECTION DATA										FUSE (HINGE) PLATE DATA									SHIM		FOUNDATION DATA			
Section*	A	B	C	D	R	t_1	L_2	w	Torque (lbf*in)	a	b	c	d	e	t_2	D_1	D_2	L_1	L	M	Dia.	Depth	Stub Length	Reinf. Bars V
S 3x5.7	4"	7"	3/4"	2"	5/16"	1"	1/2"	1/4"	90 ± 20	7-1/4"	2-3/8"	1-1/4"	1/2"	9/16"	3/8"	7/16"	9/16"	1/2"	1-1/4"	9/16"	2'-0"	4'-0"	3'-0"	10-#6
W 6x12	4"	10"	3/4"	2"	3/8"	1-5/8"	5/8"	1/4"	270 ± 45	7-1/4"	4"	1-1/4"	7/8"	15/16"	3/8"	13/16"	11/16"	5/8"	1-3/8"	11/16"	2'-0"	6'-0"	3'-0"	10-#6
W 8x18	5-1/4"	11-1/4"	7/8"	2-3/4"	7/16"	1-3/4"	3/4"	3/8"	445 ± 75	8-1/4"	5-1/4"	1-3/8"	1-1/8"	1-1/4"	3/8"	1"	13/16"	3/4"	1-3/4"	13/16"	2'-4"	7'-6"	4'-0"	8-#8
W 8x24	6-1/2"	12-1/2"	7/8"	3-1/4"	7/16"	1-3/4"	3/4"	3/8"	445 ± 75	8-1/4"	6-1/2"	1-3/8"	1-1/2"	1-1/2"	1/2"	1"	13/16"	3/4"	2-1/8"	13/16"	2'-4"	8'-6"	4'-0"	8-#8
W 10x33	8"	16"	1-1/4"	4-3/4"	9/16"	2"	1"	1/2"	580 ± 90	9-1/4"	8"	2"	1-3/4"	1-3/4"	5/8"	1-1/8"	1-1/16"	1"	2-3/8"	1-1/16"	2'-4"	10'-3"	4'-0"	8-#8
W 12x45	10"	18"	1-1/4"	6"	9/16"	2"	1"	1/2"	580 ± 90	11"	8"	2"	1-3/4"	1-3/4"	3/4"	1-5/16"	1-1/16"	1"	2-3/4"	1-1/16"	2'-8"	11'-3"	5'-0"	10-#8

* Designations: Normal Depth in inches and weight in pounds per linear foot.

STEEL POST, BASE, FOUNDATION & FUSE PLATE DETAILS

LAST REVISION	REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS 2013	MULTI-COLUMN GROUND SIGN	INDEX NO.	SHEET NO.
07/01/12					11200	2

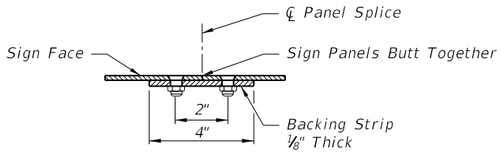
C:\d\projects\standards\roadway\11000-s\11200-02.dgn rd960rh 3:04:17 PM 6/28/2012



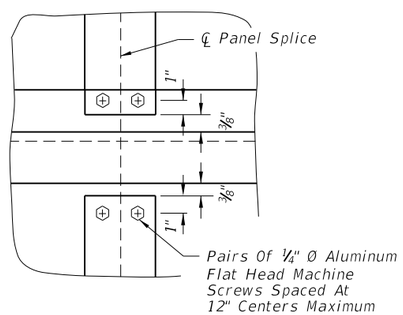
*Note: Spacing of vertical hangers may be varied slightly or as necessary to clear the truss struts and diagonals at panel points.

TYPICAL SIGN FACE ELEVATION FOR OVERHEAD TRUSS

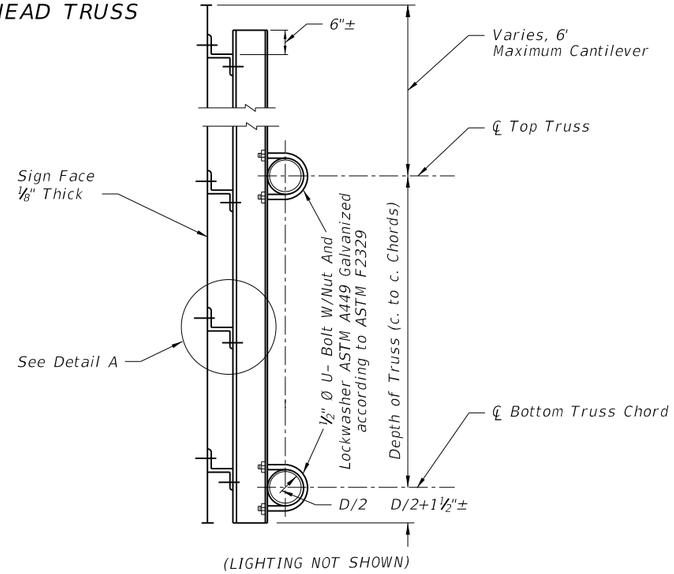
Number Of Zee 3x2.69x2.33 Horiz. Wind Beams For Sign Depth And Wind			Number Of I6x4.69 or Zee 4x3.13x3.58 Vertical Hanger Beams For Sign Length				
Wind M.P.H.	No. Beams	Max. Depth	2 Hangers	3 Hangers	4 Hangers	5 Hangers	6 Hangers
			Max Length	Max Length	Max Length	Max Length	Max Length
150	2	5'	15'	30'	45'	X	X
150	3	9'	15'	30'	45'	X	X
150	4	12'	15'	22'	30'	38'	45'
150	5	15'	15'	22'	30'	38'	45'
150	6	18'	15'	22'	30'	38'	45'
130	2	5'	15'	30'	45'	X	X
130	3	9'	15'	30'	45'	X	X
130	4	12'	15'	22'	30'	38'	45'
130	5	15'	15'	22'	30'	38'	45'
130	6	18'	15'	22'	30'	38'	45'
110	2	5'	15'	30'	45'	X	X
110	3	9'	15'	30'	45'	X	X
110	4	12'	15'	30'	38'	45'	X
110	5	15'	15'	30'	38'	45'	X
110	6	18'	15'	30'	38'	45'	X



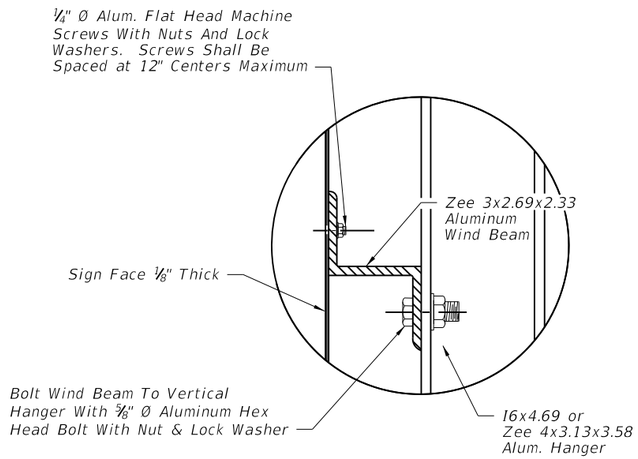
SECTION C-C



BACKING STRIP DETAIL



TYPICAL DETAIL OF SIGN & TRUSS CONNECTION



(SHOWING ATTACHMENT OF SIGN FACE PANEL TO VERTICAL HANGER SUPPORTS, VERTICAL I SHAPE HANGER AS SHOWN, Zee SHAPE OPTIONAL)

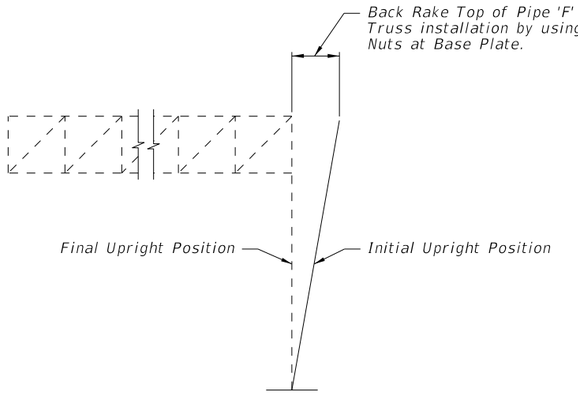
DETAIL A

GENERAL NOTES

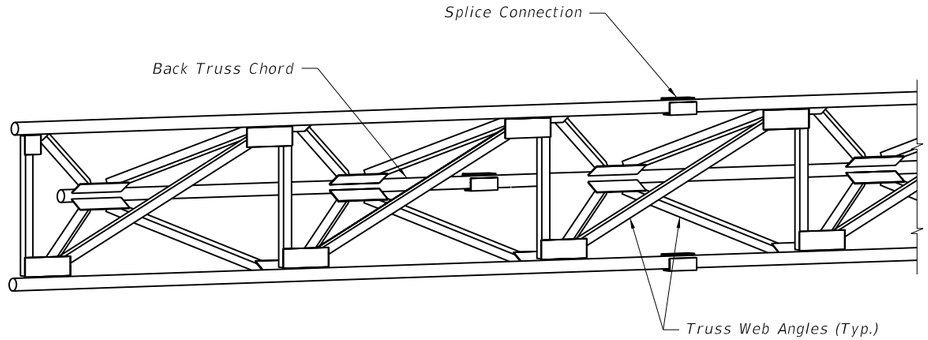
1. For "General Notes" covering Material Specifications see Index 11200.
2. Design based on 32 ft. maximum height to centroid of sign panel.
3. The Design Wind Speed shall conform to Wind Speed by County shown on Index 11200, Sheet 1.

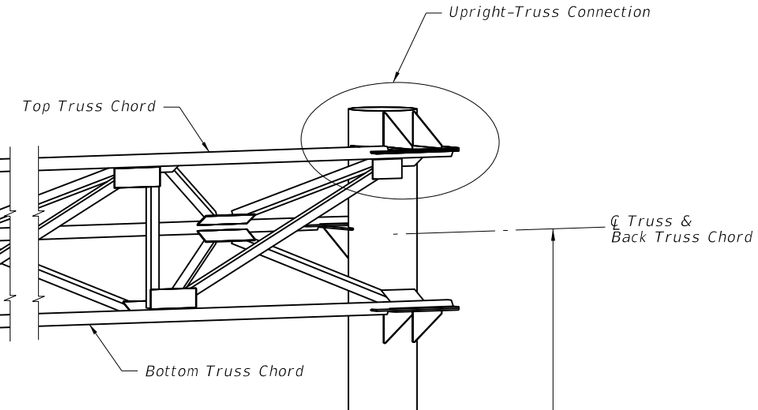
DETAILS OF SIGN FACE & TRUSS CONNECTION

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	STEEL OVERHEAD SIGN STRUCTURES	INDEX NO.	SHEET NO.
01/01/10						11300	1



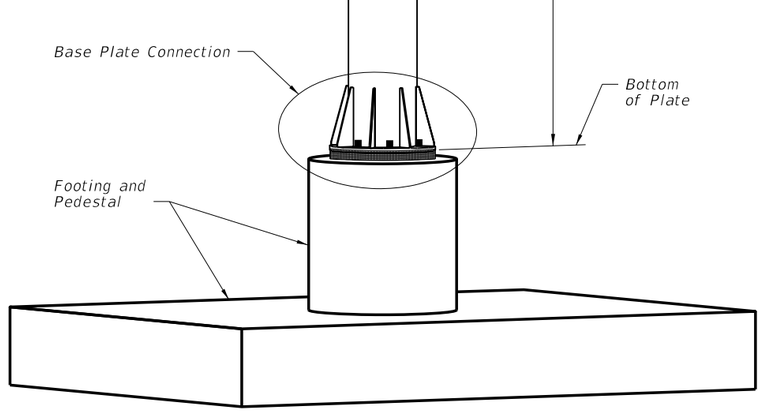
CAMBER DIAGRAM





CANTILEVER SIGN STRUCTURE NOTES

1. Design according to FDOT Structures Manual. Alternate Designs are not allowed.
2. Submit shop drawings for all work. Include:
   a. Field verification of all upright heights.
   b. Foundation elevations necessary to insure minimum vertical clearances as per traffic plans.
   c. Anchor bolt orientation with respect to centerline of truss and the direction of traffic.
   d. Show chord splices a minimum distance of 2 truss panel lengths apart. "SD" Panel from upright is the closest panel in which a chord splice may be used. See plans for Cantilever Sign Structure Data Table. Upright splices are not allowed.
3. Shop Fabrication, Assembly, Handling and Shipping:
   a. Do not begin fabrication before receiving shop drawing approval.
   b. Welding: Conform to American Welding Society Structural Welding Code (Steel) ANSI/AWS D1. 1 (current edition).
   c. Shop assemble the entire structure after galvanizing and prior to shipment.
   d. If necessary, disassemble and secure components for shipment.
4. Sign Structure Materials:
   a. Upright and Chords (Steel Pipe): API -5L-X42 (42 ksi yield) or ASTM A500, Grade B.
   b. Steel Angles: ASTM A 709, Grade 36.
   c. Steel Plates: ASTM A 709, Grade 36.
   d. Weld Metal: E70XX.
   e. Bolts: ASTM A325 Type 1, (install per Specification Section 700) with single, self-locking nuts.
   f. Anchor Bolts: ASTM F1554, Grade 55 with ASTM A563 Grade A heavy-hex double nuts.
   g. Install all nuts per manufacturer's instructions.
   h. Bolt hole diameters: equal to the bolt diameter plus $\frac{1}{16}$".
   i. Anchor bolt hole diameters: equal to the bolt diameter plus $\frac{1}{2}$".
   j. Use of split lock washers is not permitted.
5. Galvanization; Nuts, bolts and washers: ASTM F2329. Other steel items: ASTM A123
6. Sign Panels: Aluminum. See Elevation drawing for sizes and locations.
7. Foundation Materials:
   a. Reinforcing Steel: ASTM A615, Grade 60.
   b. Concrete: Class IV, minimum 5.5 ksi compressive strength at 28-days for all environmental classifications for Spread Footing.
      Class IV (Drilled Shaft), minimum 4.0 ksi compressive strength at 28-days for all environmental classifications for Drilled Shaft.
8. Construct the Sign Structure foundation in accordance with FDOT Specification Section 455.
9. Prior to erection, record the as-built anchor locations and provide to the Engineer.
10. After placement of the upright and prior to installation of the truss, adjust the leveling nuts beneath the base plate to achieve the back rake shown on the Camber Diagram.
11. Place backfill above the footing prior to installation of the sign panels. Do not remove or reduce in height without prior approval of the Engineer.
12. Install sign panels as shown on the Elevation drawing.
13. Verify CSL access tubes will not interfere with anchor bolt installation before excavating the shaft. When CSL access tube locations conflict with anchor bolt locations, move the CSL access tube location ± two inches along the inner circumference of the reinforcing cage. Notify the Engineer before excavating the shaft if the CSL access tube locations cannot be moved out of conflict with anchor bolt locations.
14. Handhole at pole base is required for DMS Structures. See Index 18300 for details.



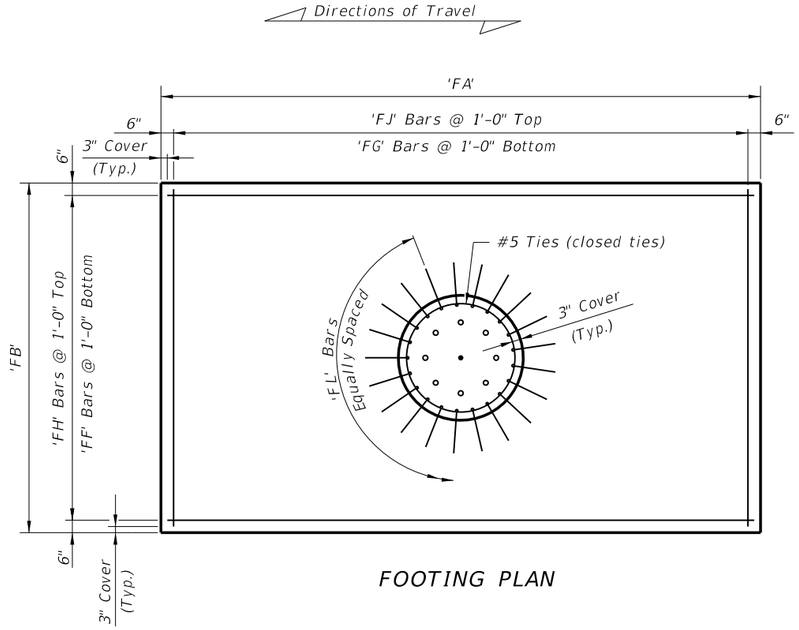
ISOMETRIC VIEW

* NOTE: Contractor shall verify these Dimensions prior to Fabrication of Upright.

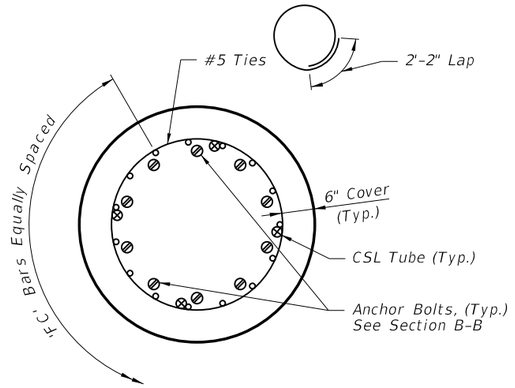
NOTE: See Plans for Cantilever Sign Structure Data Table.

C:\d\projects\standards\roadway\11000-s\11310-01.dgn
rd960rh
3:04:22 PM
6/28/2012

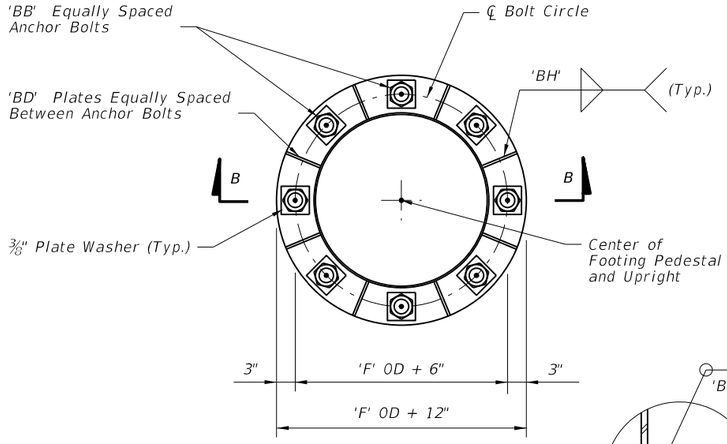
LAST REVISION	REVISION	DESCRIPTION:				
07/01/10			FDOT DESIGN STANDARDS 2013	CANTILEVER SIGN STRUCTURE	INDEX NO. 11310	SHEET NO. 1



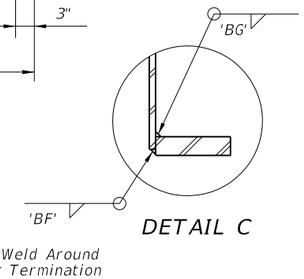
FOOTING PLAN



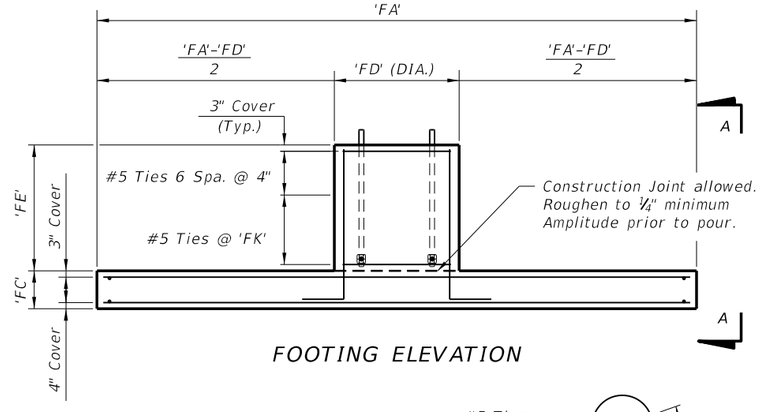
PLAN VIEW
DRILLED SHAFT



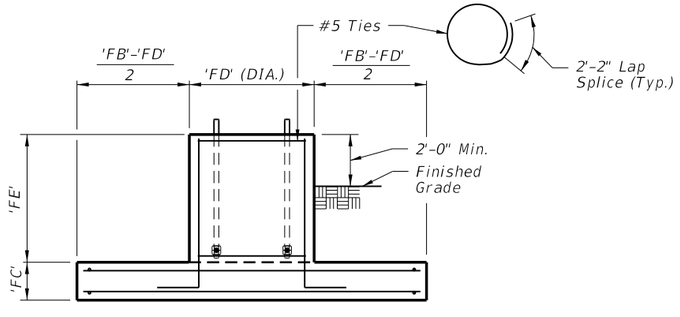
PLAN VIEW
(Base Plate)



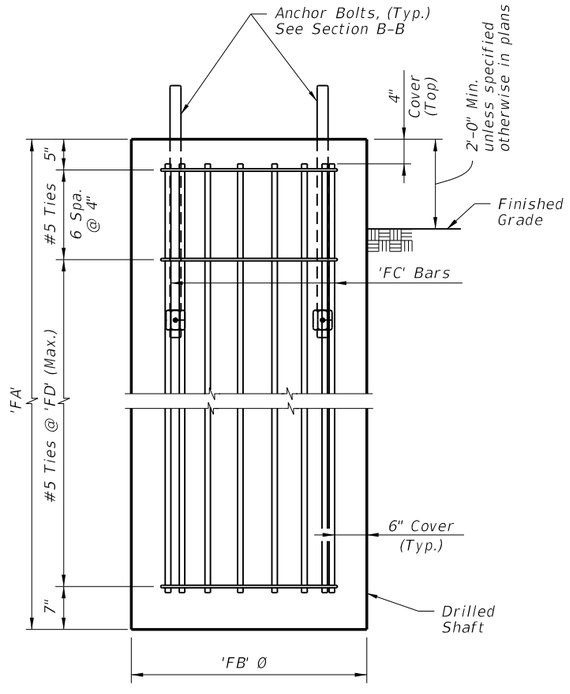
DETAIL C



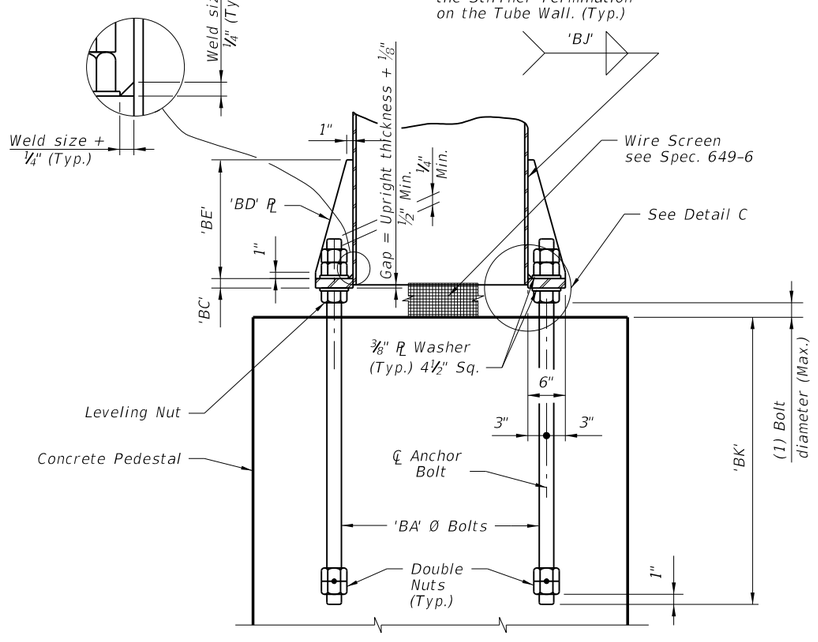
FOOTING ELEVATION



VIEW A-A

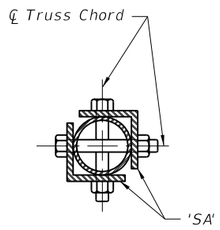


ELEVATION
DRILLED SHAFT
(Alternate Foundation)

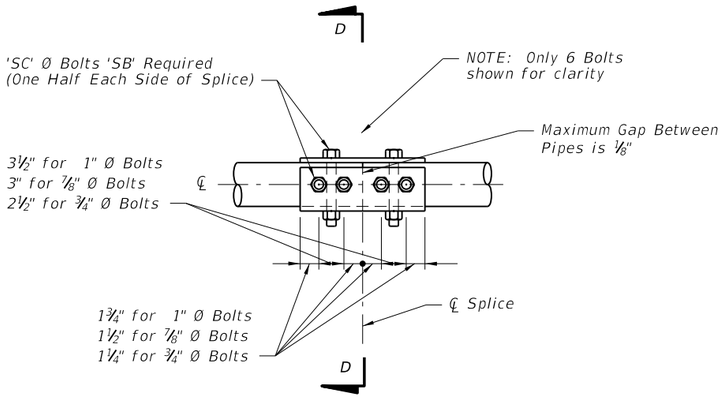


SECTION B-B

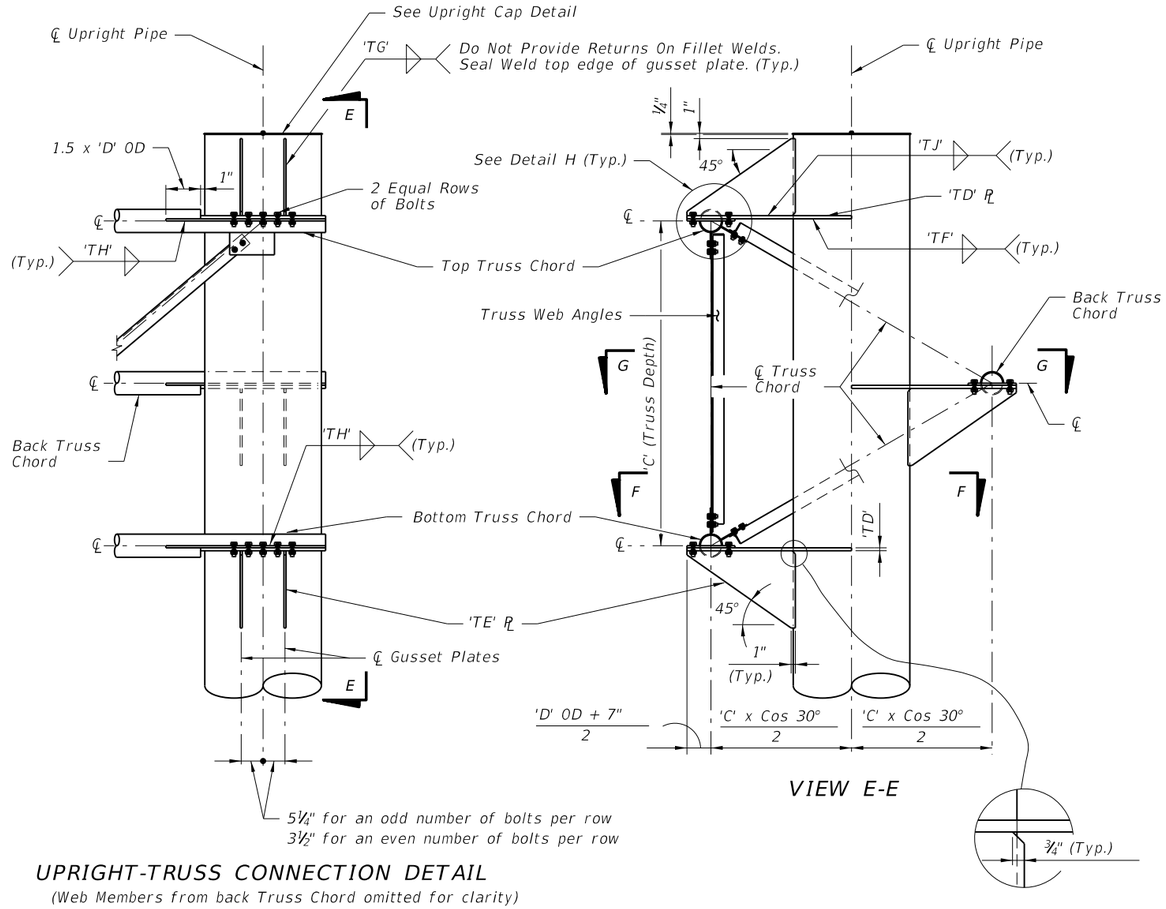
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/12			FDOT DESIGN STANDARDS 2013	CANTILEVER SIGN STRUCTURE	11310	2



SECTION D-D

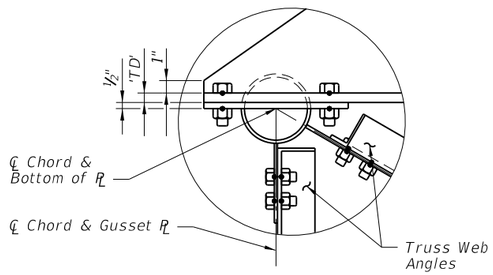


SPLICE CONNECTION DETAIL
(For trusses longer than 36')

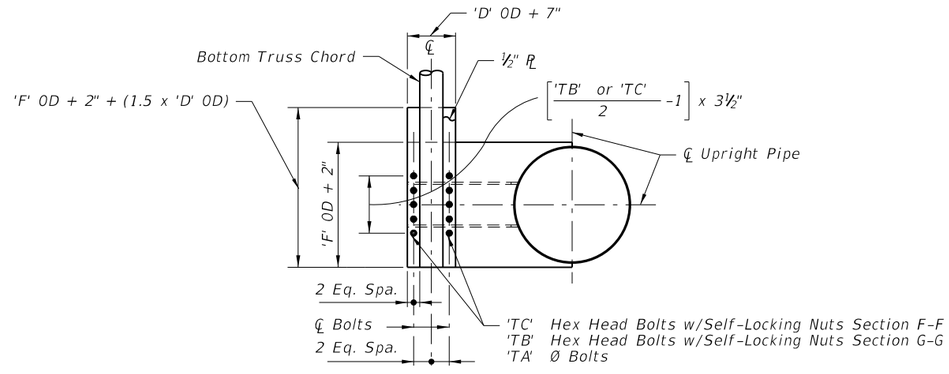


UPRIGHT-TRUSS CONNECTION DETAIL
(Web Members from back Truss Chord omitted for clarity)

VIEW E-E



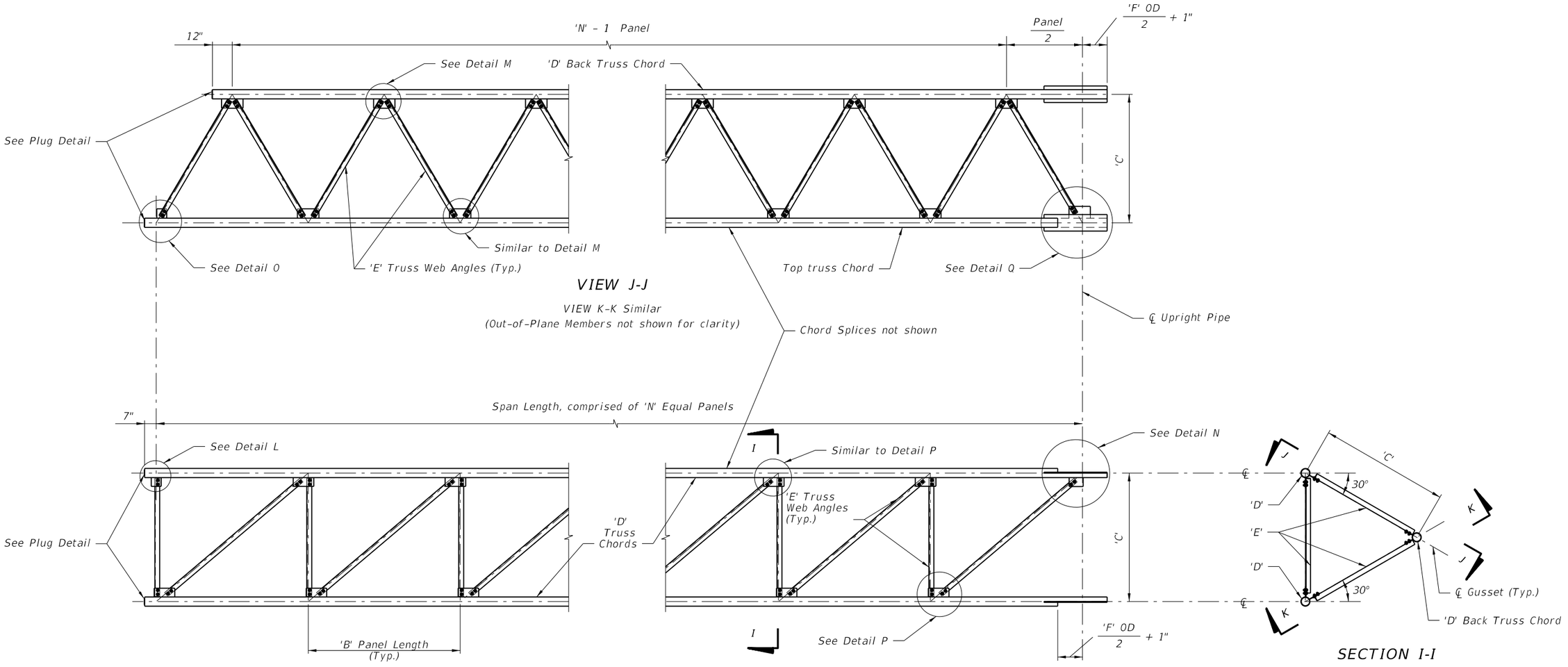
DETAIL H



SECTION F-F, SECTION G-G SIMILAR
(With Gusset Plate & Angles omitted for clarity)

NOTE:
Abbreviation
OD ~ Outside Diameter

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	CANTILEVER SIGN STRUCTURE	INDEX NO.	SHEET NO.
07/01/10						11310	3

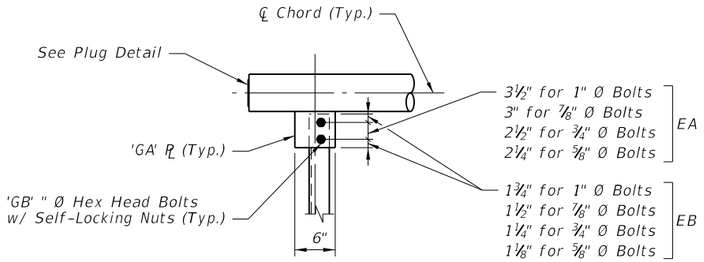


FRONT OF TRUSS ELEVATION

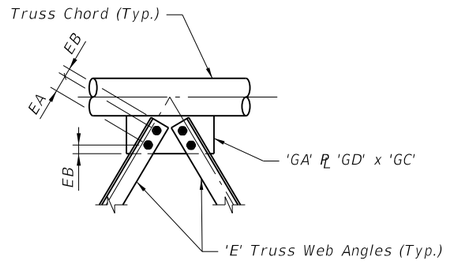
(Back Truss Chord and attached Angles not shown for clarity)

NOTE:
Abbreviation
OD ~ Outside Diameter

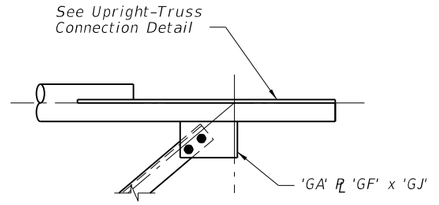
LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	CANTILEVER SIGN STRUCTURE	INDEX NO.	SHEET NO.
07/01/05						11310	4



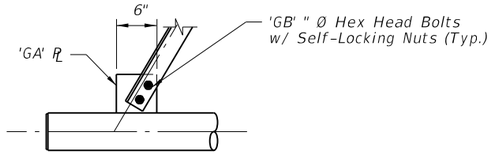
DETAIL L



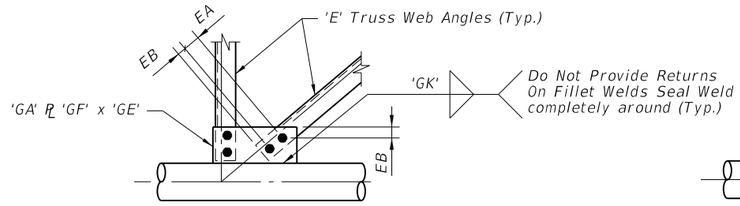
DETAIL M



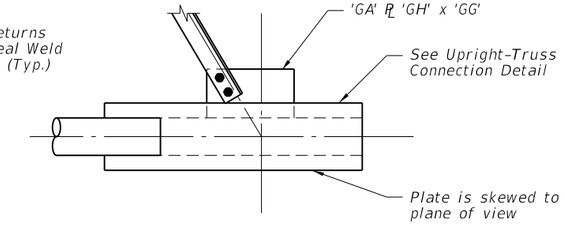
DETAIL N



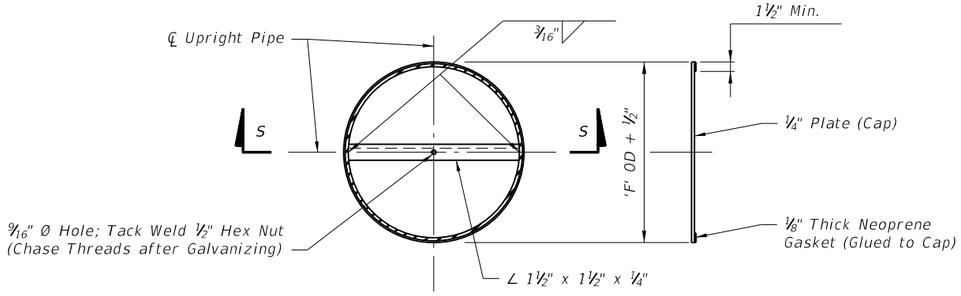
DETAIL O



DETAIL P

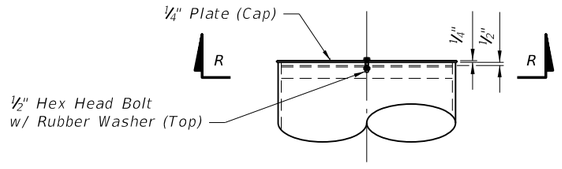


DETAIL Q

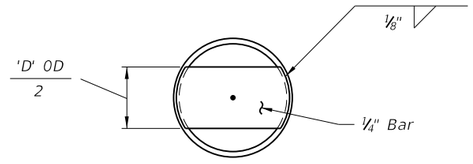


SECTION R-R

SECTION S-S
(Showing Cap plate only)



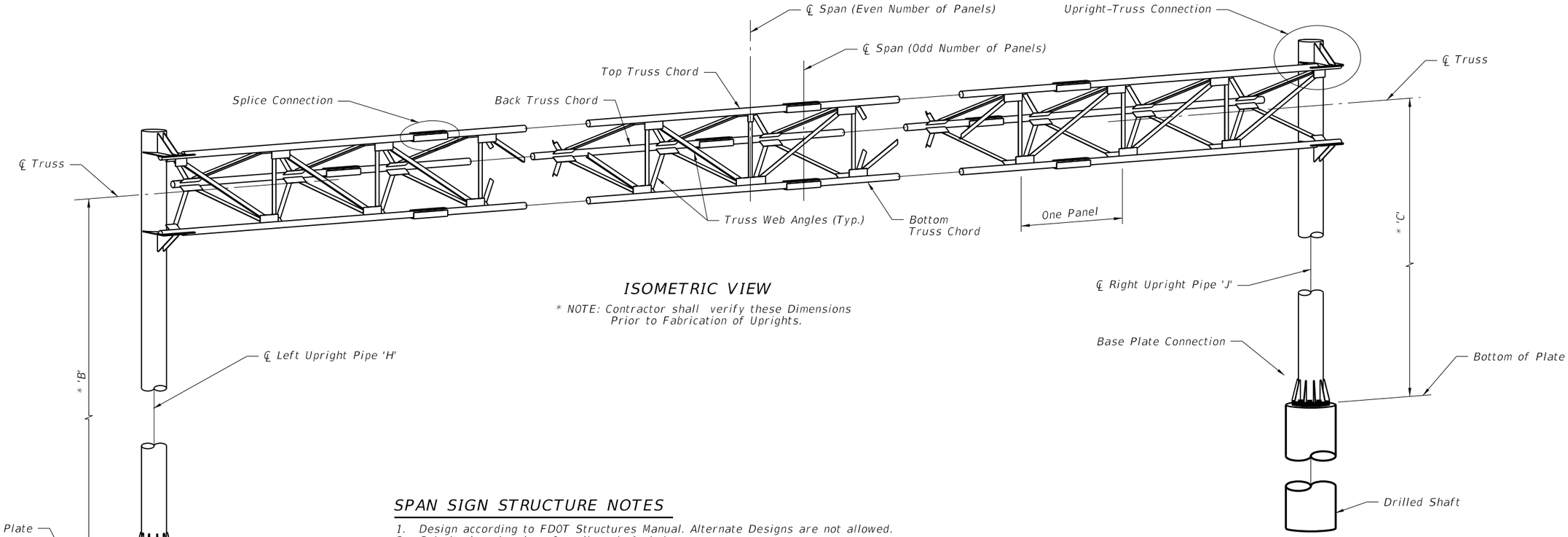
UPRIGHT CAP DETAIL



PLUG DETAIL

NOTE:
Abbreviation
OD ~ Outside Diameter

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	CANTILEVER SIGN STRUCTURE	INDEX NO.	SHEET NO.
01/01/09						11310	5



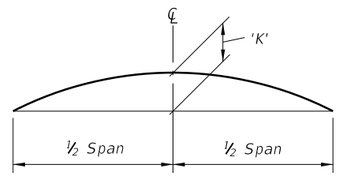
ISOMETRIC VIEW

* NOTE: Contractor shall verify these Dimensions Prior to Fabrication of Uprights.

NOTE: See Plans for Span Sign Structure Data Table.

SPAN SIGN STRUCTURE NOTES

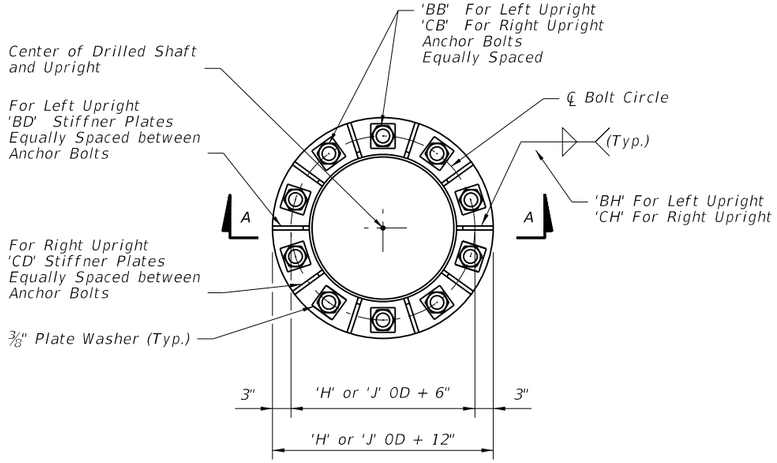
1. Design according to FDOT Structures Manual. Alternate Designs are not allowed.
2. Submit shop drawings for all work. Include:
   a. Field verification of all upright heights.
   b. Foundation elevations necessary to insure minimum vertical clearances as per traffic plans.
   c. Anchor bolt orientation with respect to centerline of truss and the direction of traffic.
   d. The method to be used to provide the required parabolic camber. (See Camber Diagram)
3. Shop Fabrication, Assembly, Handling and Shipping:
   a. Do not begin fabrication before receiving shop drawing approval.
   b. Welding: Conform to American Welding Society Structural Welding Code (Steel) ANSI/AWS D1. 1 (current edition).
   c. Shop assemble the entire structure after galvanizing and prior to shipment.
   d. If necessary, disassemble and secure components for shipment.
4. Sign Structure Materials:
   a. Upright and Chords (Steel Pipe): API -5L-X42 (42 ksi yield) or ASTM A500, Grade B.
   b. Steel Angles: ASTM A 709, Grade 36.
   c. Steel Plates: ASTM A 709, Grade 36.
   d. Weld Metal: E70XX.
   e. Bolts: ASTM A325 Type 1, (install per Specification Section 700) with single, self-locking nuts.
   f. Anchor Bolts: ASTM F1554, Grade 55 with ASTM A563 Grade A heavy-hex double nuts.
   g. Install all nuts per manufacturer's instructions.
   h. Bolt hole diameters: equal to the bolt diameter plus 1/16".
   i. Anchor bolt hole diameters: equal to the bolt diameter plus 1/2".
   j. Use of split lock washers is not permitted.
5. Galvanization; Nuts, bolts and washers: ASTM F2329. Other steel items: ASTM A123
6. Sign Panels: Aluminum. See Elevation drawing for sizes and locations.
7. Foundation Materials:
   a. Reinforcing Steel: ASTM A615, Grade 60.
   b. Concrete: Class IV (Drilled Shaft), minimum 4.0 ksi compressive strength at 28-days for all environmental classifications.
8. Construct the Sign Structure foundation in accordance with FDOT Specification Section 455.
9. Prior to erection, record the as-built anchor locations and provide to the Engineer.
10. Provide a parabolic camber with the maximum upward deflection as shown on the Camber Diagram.
11. Locate Chord splices a minimum of 3 truss panel lengths apart. Chord splices may be either the Standard splice or the Alternate splice
    but not both on this structure. Upright splices are not allowed.
12. Install sign panels as shown on the Elevation drawing.
13. Verify CSL access tubes will not interfere with anchor bolt installation before excavating the shaft. When CSL access tube locations conflict
    with anchor bolt locations, move the CSL access tube location ± two inches along the inner circumference of the reinforcing cage. Notify the
    Engineer before excavating the shaft if the CSL access tube locations cannot be moved out of conflict with anchor bolt locations.
14. Handhole at pole base is required for DMS structures. See Index 18300 for details.



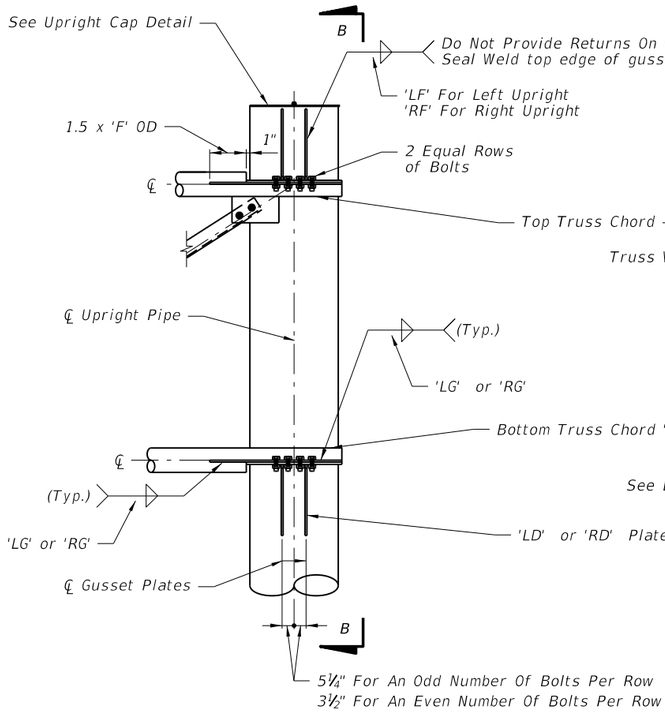
CAMBER DIAGRAM

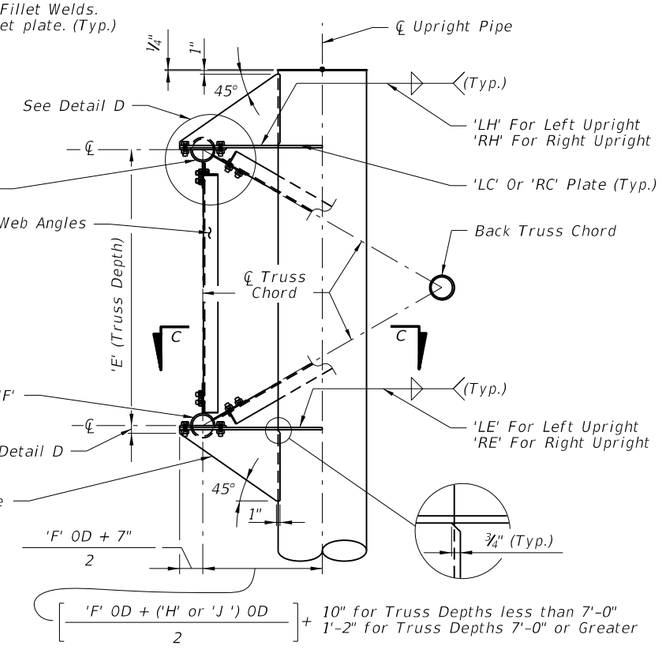
C:\d\projects\standards\roadway\11000-s\11320-01.dgn rd960rh 3:04:33 PM 6/28/2012

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SPAN SIGN STRUCTURE	INDEX NO.	SHEET NO.
07/01/10						11320	1



PLAN VIEW
BASE PLATE

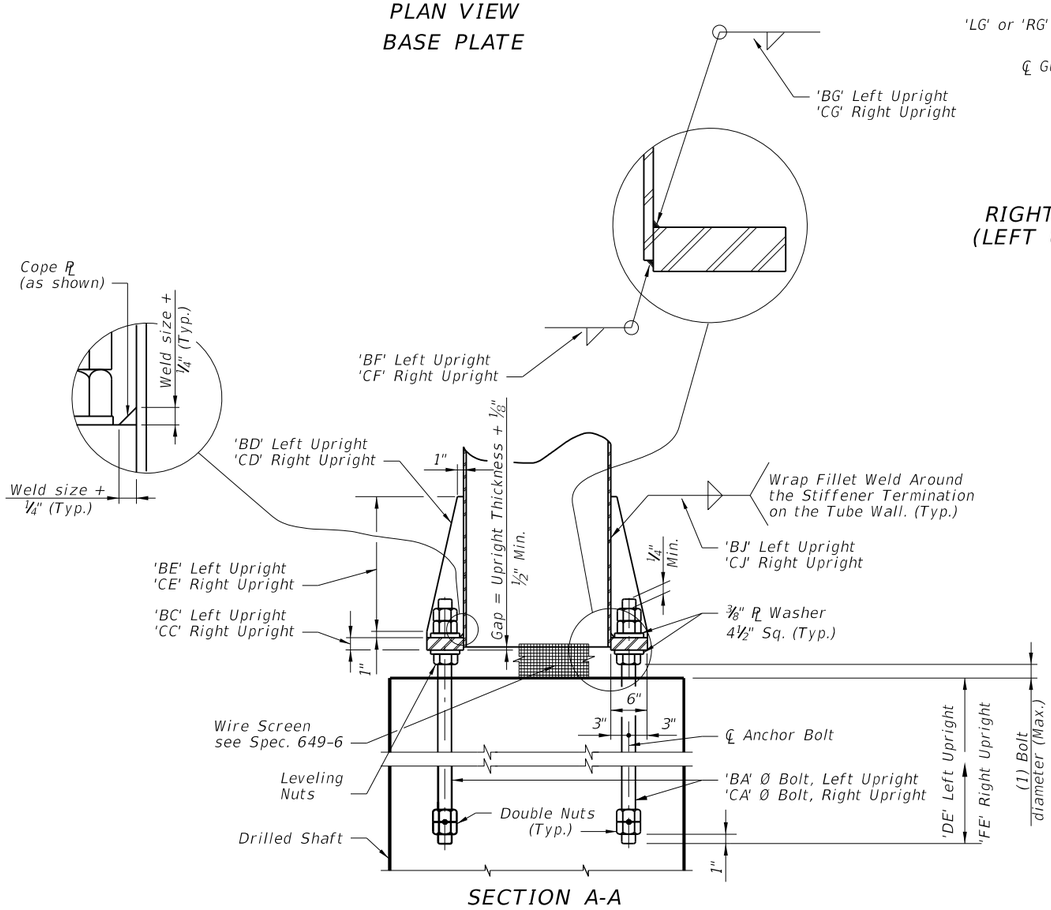




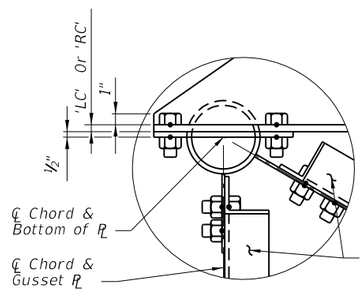
VIEW B-B

RIGHT UPRIGHT-TRUSS CONNECTION DETAIL
(LEFT UPRIGHT -TRUSS CONNECTION SIMILAR)

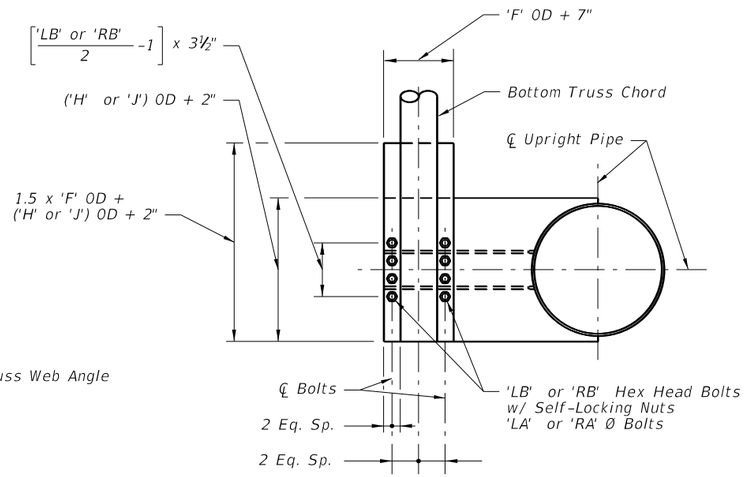
Web Members From Back Truss
Chord Omitted For Clarity



SECTION A-A



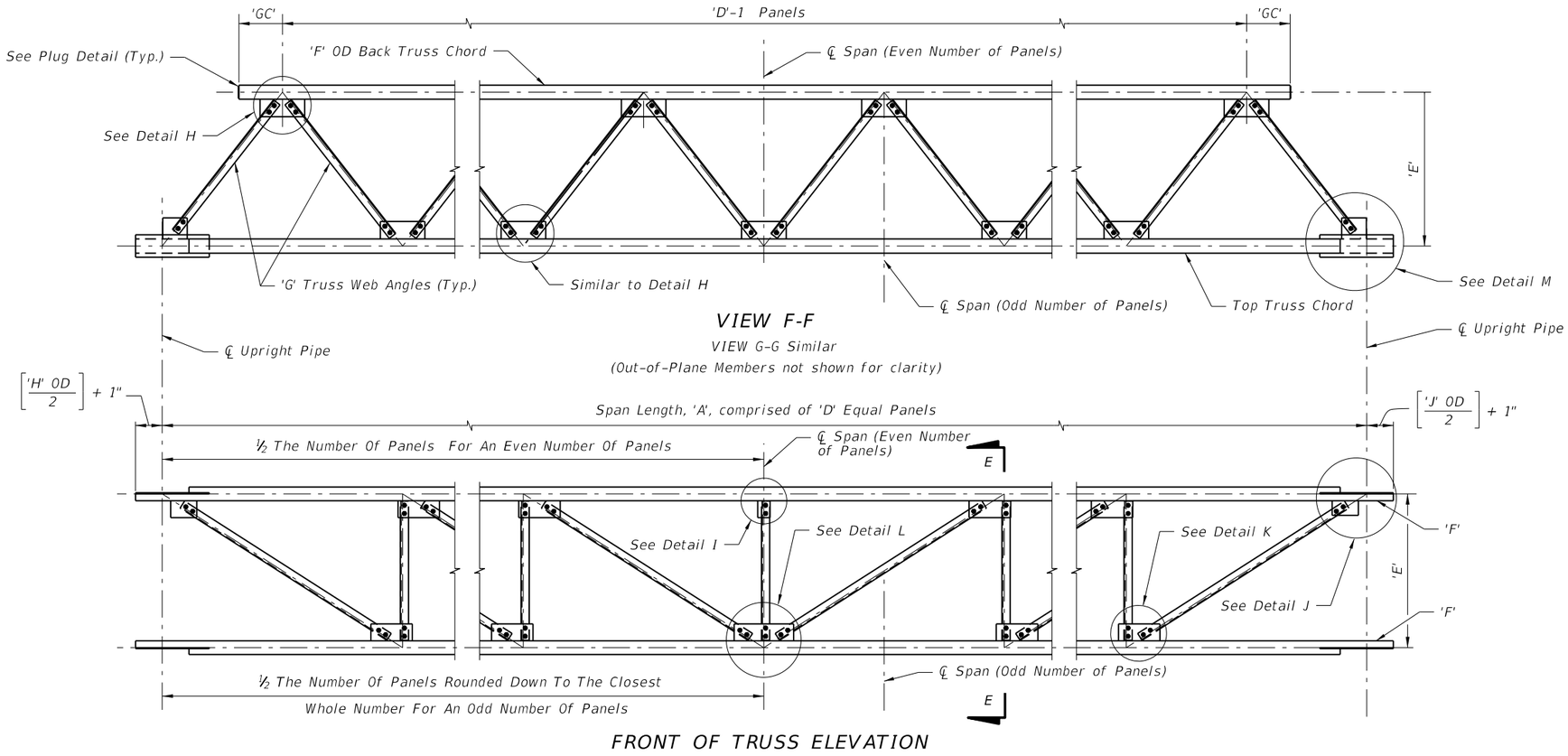
DETAIL D

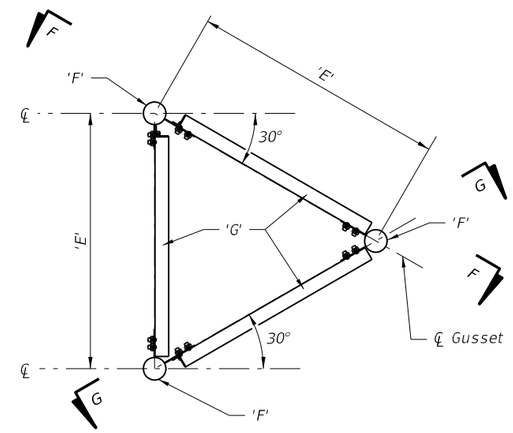


SECTION C-C
(With Gusset Plate and
Angles omitted for clarity)

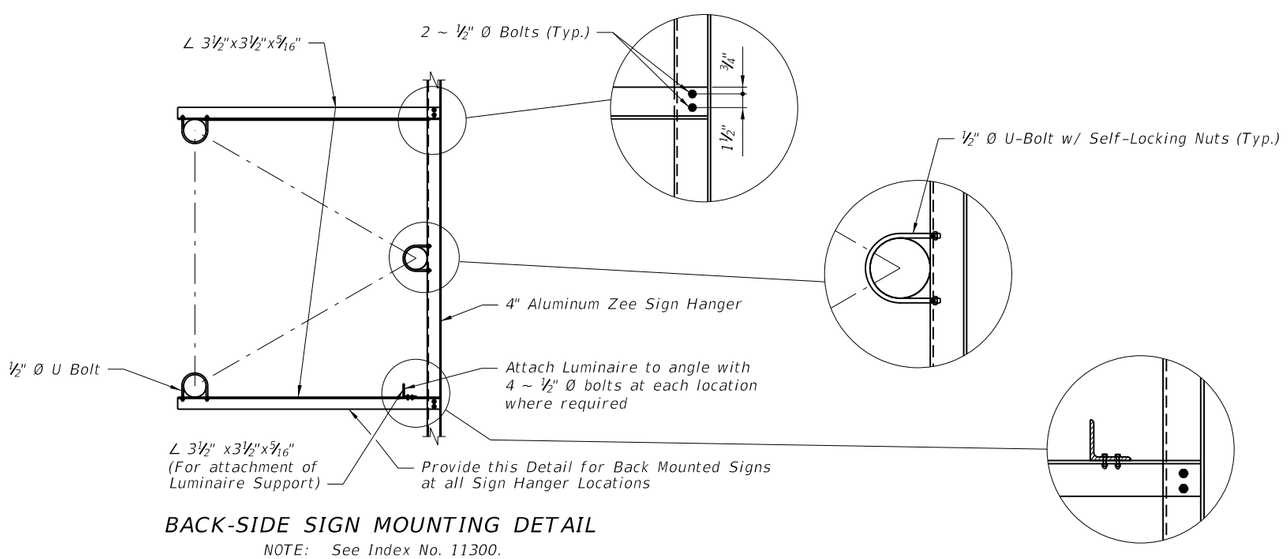
NOTE:
Abbreviation
OD ~ Outside Diameter

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/12			FDOT DESIGN STANDARDS 2013	SPAN SIGN STRUCTURE	11320	2





SECTION E-E



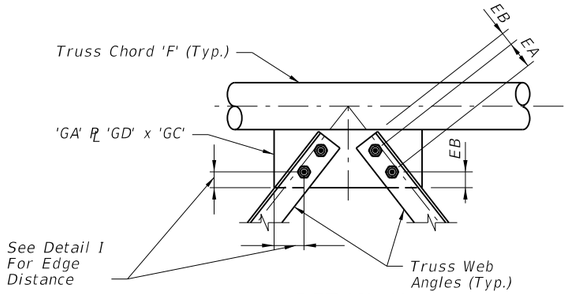
BACK-SIDE SIGN MOUNTING DETAIL

NOTE: See Index No. 11300.

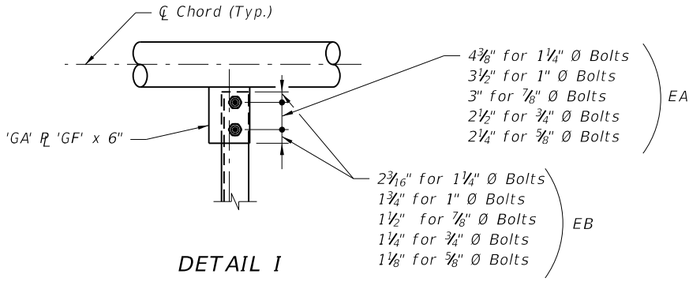
NOTE:
Abbreviation
OD ~ Outside Diameter

C:\d\projects\standards\roadway\11000-s\11320-03.dgn
rd960rh
3:04:38 PM
6/28/2012

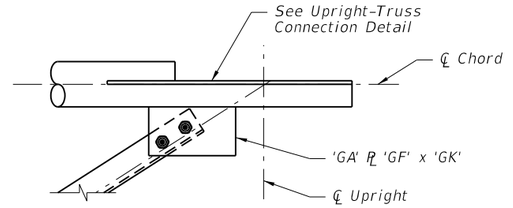
LAST REVISION	REVISION	DESCRIPTION:				
07/01/05			FDOT DESIGN STANDARDS 2013	SPAN SIGN STRUCTURE	INDEX NO. 11320	SHEET NO. 3



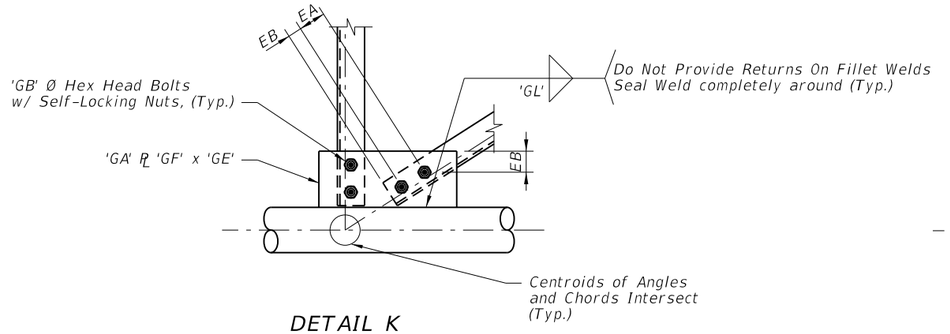
DETAIL H



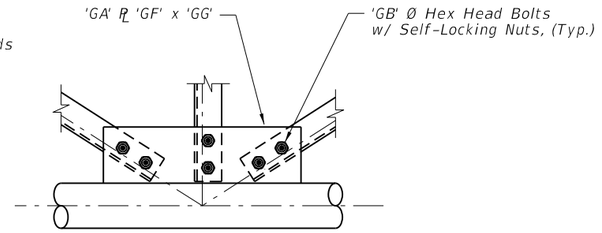
DETAIL I



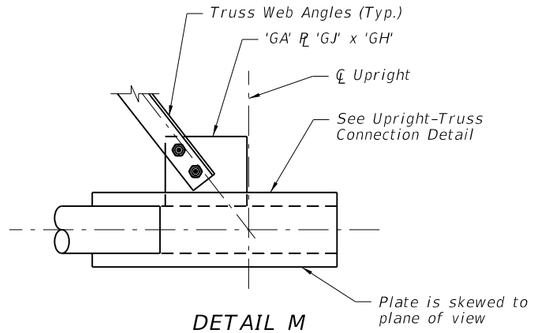
DETAIL J



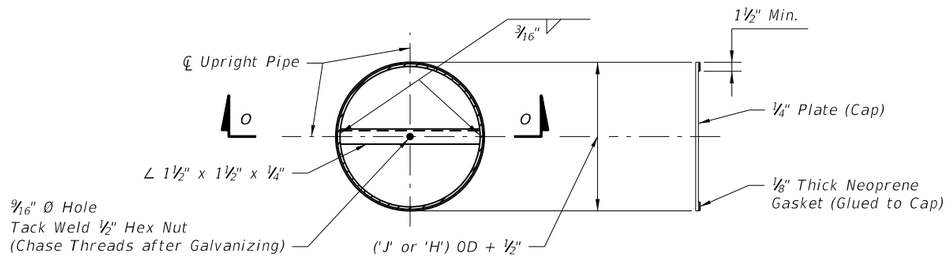
DETAIL K



DETAIL L

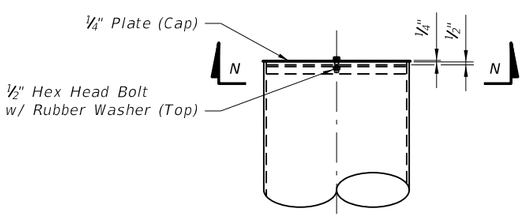


DETAIL M

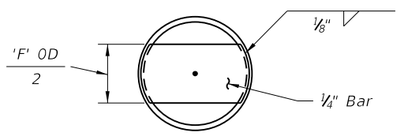


SECTION N-N

SECTION O-O
(Showing Cap plate only)



UPRIGHT CAP DETAIL

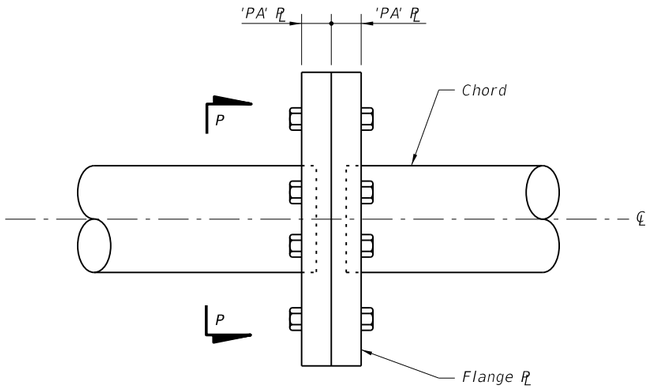


PLUG DETAIL
(Each end of Back Truss Chord)

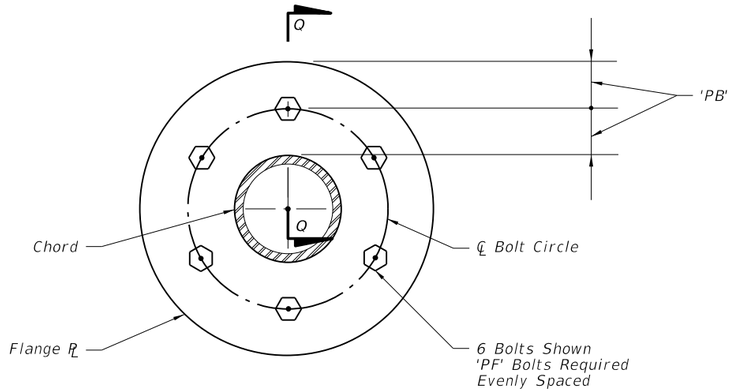
NOTE:
Abbreviation
OD ~ Outside Diameter

6/28/2012 3:04:40 PM rd960rh C:\d\projects\standards\roadway\11000-s\11320-04.dgn

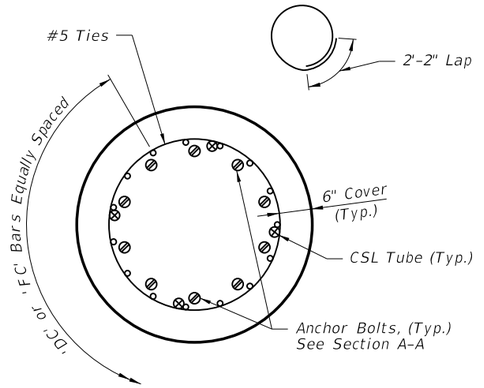
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/09			FDOT DESIGN STANDARDS 2013	SPAN SIGN STRUCTURE	11320	4



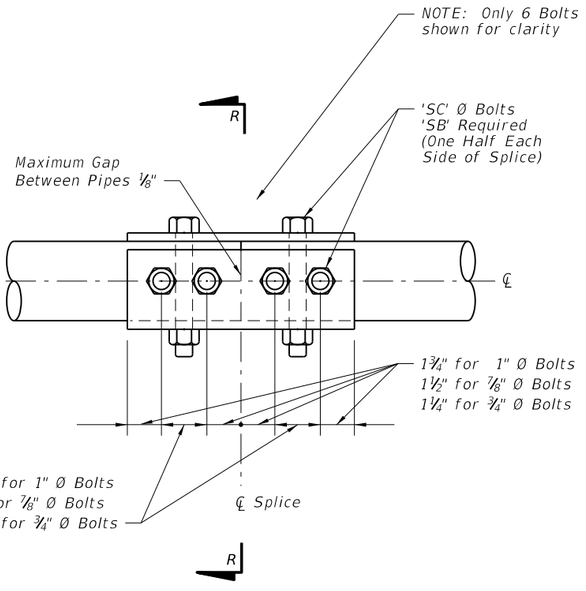
ELEVATION
ALTERNATE SPLICE CONNECTION



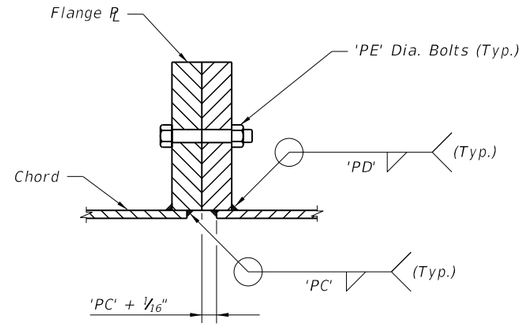
SECTION P-P



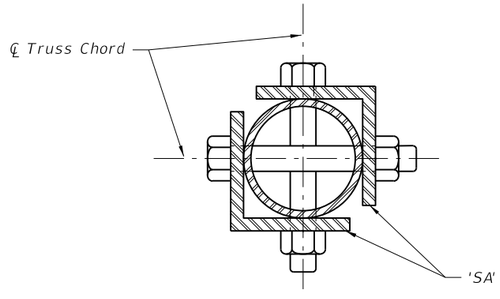
PLAN VIEW
DRILLED SHAFT



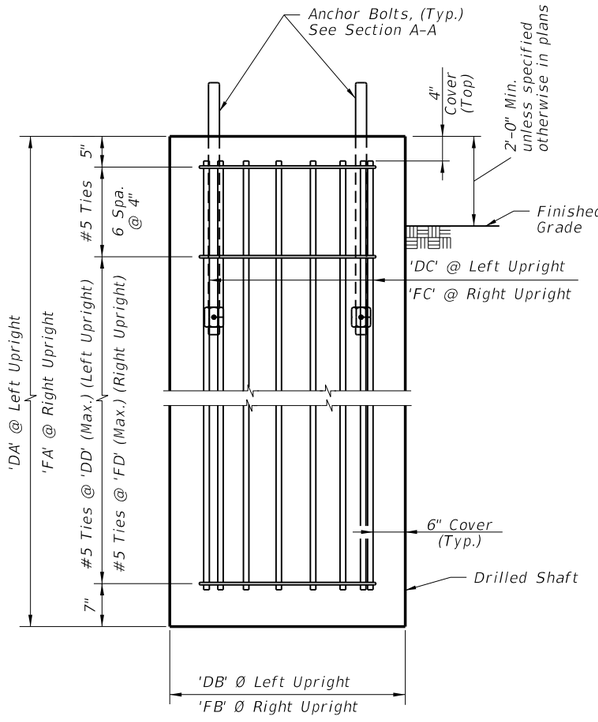
ELEVATION
SPLICE CONNECTION



SECTION Q-Q



SECTION R-R



ELEVATION
DRILLED SHAFT

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/10			FDOT DESIGN STANDARDS 2013	SPAN SIGN STRUCTURE	11320	5

SINGLE COLUMN GROUND SIGN NOTES:

1. DESIGN WIND SPEED: See Wind Speeds by County.
2. GENERAL SPECIFICATIONS: Current FDOT Standard Specifications for Road and Bridge Construction and supplements thereto.
3. DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, as modified by the FDOT Structures Manual.
4. ALUMINUM: Aluminum Materials shall meet the requirements of Aluminum Association Alloy 6061-T6 (ASTM B209, B221, or B308), except as noted below.
5. CONCRETE: Class I.
6. SIGN PANELS: 0.08 inches min. thick Aluminum Plate with all corners rounded.
7. ALUMINUM BOLTS, NUTS, AND LOCK WASHERS:
   a. Aluminum bolts: ASTM F468, Alloy 2042-T4 with at least 0.0002 inches thick anodic coating and chromate sealed.
   b. Nuts: ASTM F467, Alloy 6061-T6 or 6262-T9.
   c. Lockwashers: ASTM B221, Alloy 7075-T6.
8. STAINLESS STEEL BOLTS, NUTS, AND LOCKWASHERS: Stainless Steel Bolts, Nuts, and Lockwashers: ASTM F593 and ASTM F594, Alloy Group 2. Condition A, CW2, or SH4 may be provided in lieu of Aluminum Bolts, Nuts, and Washers.
9. U-BOLTS, NUTS, AND LOCKWASHERS: U-bolts, Nuts, and Lockwashers: ASTM A307, Grade A, galvanized in accordance with ASTM F2329.
10. BREAKAWAY SUPPORTS REQUIREMENTS: Install non-frangible aluminum column (post) (larger than 3½") with breakaway supports as shown on Sheet 5. Signs shielded by barrier wall or guardrail do not require breakaway support.

WIND SPEEDS BY COUNTY:

110 MPH
Alachua, Baker, Bradford, Clay, Columbia, Gadsden, Gilchrist, Hamilton, Hardee, Jackson, Jefferson, Lafayette, Lake, Leon, Madison, Marion, Polk, Putnam, Sumter, Suwannee and Union counties.

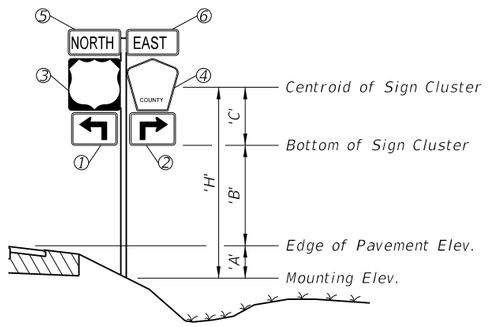
130 MPH
Bay, Brevard, Calhoun, Charlotte, Citrus, De Soto, Dixie, Duval, Flagler, Franklin, Glades, Gulf, Hendry, Hernando, Highlands, Hillsborough, Holmes, Lee, Levy, Liberty, Manatee, Nassau, Okaloosa, Okeechobee, Orange, Osceola, Pasco, Pinellas, Sarasota, Seminole, St Johns, Taylor, Volusia, Wakulla, Walton and Washington counties.

150 MPH
Broward, Collier, Dade, Escambia, Indian River, Martin, Monroe, Palm Beach, Santa Rosa and St. Lucie counties.

GUIDE TO USE THIS STANDARD:

1. Calculate the area and the centroid for an individual sign or a sign cluster. Note that the centroid and areas have been calculated for frequently used sign clusters. These are shown on Sheet No. 6, 7 & 8 of 8.
2. Determine the height 'H' from groundline for the individual sign or the cluster.
3. Select the appropriate Column (Post) Selection Tables by Wind Speed and find the intersection point.
4. Design the post and the foundation according to the dark-bold lines or shaded area (if cantilever sign) in the Column (Post) Selection Tables and Post and Foundation Table. For sign posts with signs oriented in two directions, only the sign with the largest area should be analyzed to determine the post requirements.

EXAMPLE:



	Size H x V	Centroid local $'Y_n'$	Centroid global $'X_n'$	Centroid global $'Y_n'$	$'A_n'$	$'X_n'$ x $'A_n'$	$'Y_n'$ x $'A_n'$	
	(in. x in.)	(in.)	(in.)	(in.)	($in.^2$)	($in.^3$)	($in.^3$)	
①	21 x 15	7.5	-10.5-1.5-1.5 = -13.5	7.5	315	-4,252.5	2,362.5	
②	21 x 15	7.5	10.5+1.5+1.5 = 13.5	7.5	315	+4,252.5	2,362.5	
③	24 x 24	12	-12-1.5 = -13.5	15+1+12= 28	576	-7,776	16,128	
④	24 x 24	12	12+1.5 = 13.5	15+1+12= 28	436	5,886	12,208	
⑤	24 x 12	6	-12-1.5 = -13.5	15+1+24+ 1+6=47	288	-3,888	13,536	
⑥	24 x 12	6	12+1.5 = 13.5	15+1+24+ 1+6=47	288	3,888	13,536	
					2,218	-1,890	60,133	TOTALS

$\Sigma('A_n') = 2{,}218\ in.^2 = 15.4\ ft.^2$ $\quad \Sigma('X_n' \times 'A_n') = -1{,}890\ in.^3 = -1.09\ ft.^3$ $\quad \Sigma('Y_n' \times 'A_n') = 60{,}133\ in.^3 = 34.8\ ft.^3$

$'X'_c = \dfrac{\Sigma('X'_n \times 'A'_n)}{\Sigma 'A'_n} = -0.1\ ft.$ $\quad 'Y'_c = \dfrac{\Sigma('Y'_n \times 'A'_n)}{\Sigma 'A'_n} = 2.26\ ft.$

Assume: Bay County, 'A' = 1 ft., 'B' = 7 ft.

Calculated: $'X'_c = -0.1$ ft. 'C' = $'Y'_c = 2.26$ ft.

Since $'X'_c < 6"$, it is not a cantilever sign, only dark-bold lines in the table will be referenced to.

'H' = 'A' +'B' +'C' = 10.26 ft. ==> USE 11 ft. $\Sigma('A_n') = 15.4\ ft.^2$ ==> USE 16 $ft.^2$

ALUMINUM COLUMN (POST) SELECTION TABLE (WIND SPEED = 130 MPH)

TOTAL PANEL AREA (SF)	'H' (ft.) 8 [0]	9	10	11 [1]	12	13	14 [2]	15	16	17	18	19	20	
3	▨													3
4						▨								
5														
6			▨											
7		▨												
8	▨													4
9						▨						▨		
10					▨						▨			
11														5
12														
13														
14														6
15							▨			▨				
16	▨	–	–	–	–	–	X							
17														
18					▨			▨						
19														
20				▨										
21														
22			▨											
23								▨						
24					▨								▨	7
25		▨					▨							
26				▨								▨		
27														
28	▨										▨			
29	▨		▨											
30					▨									8

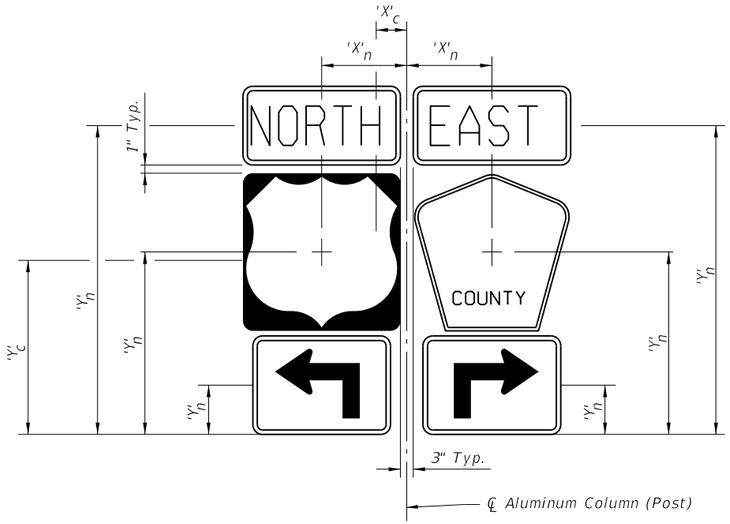
For WIND SPEED = 130 MPH,
'H' = 11 ft., Area = 16 $ft.^2$

- Refer to the 130 mph Column (Post) Selection Table, as copied from Sheet 3 and shown here.
- Using the 16 $ft.^2$ area on the left hand side of the table, go across to the 11 ft. height and find the cell marked with X.
- find the symbol [4] which the dark-bold line under the X cell leads to.
- In the Post and Foundation Table, the symbol [4] concludes that the design requires a 4.0" diameter and 0.25" thick Aluminum Column (Post) and a 2.0' diameter and 4.0' deep Concrete Foundation.

▨ = If CANTILEVER SIGN configuration (see Cantilever Sign Details) falls in this region, use next larger post size than that indicated.

NOTES AND EXAMPLE

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	SINGLE COLUMN GROUND SIGNS	11860	1



SIGN CLUSTER

CALCULATION OF SIGN CLUSTER CENTROID:

$$'X'_c = \frac{\Sigma\,('X'_n \times 'A'_n)}{\Sigma\,'A'_n}$$

$$'C' = 'Y'_c = \frac{\Sigma\,('Y'_n \times 'A'_n)}{\Sigma\,'A'_n}$$

$'X'_c$ = Centroid horizontal location of sign or cluster from ℄ Column (post)

$'Y'_c$ = Centroid height of sign or cluster from bottommost edge

$'H'$ = Height of sign or cluster centroid from groundline

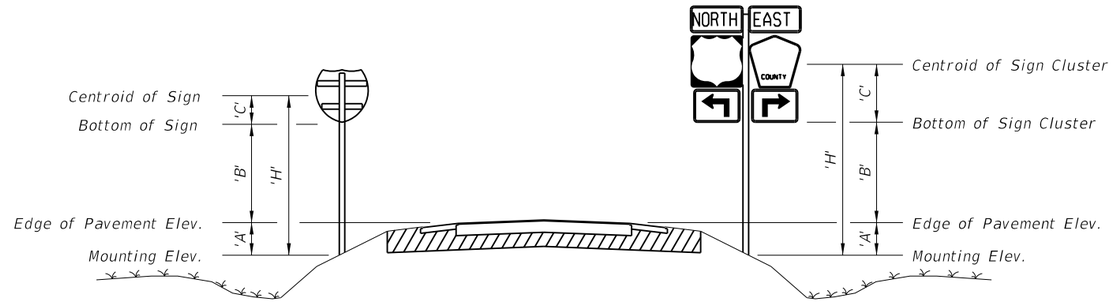
$'X'_n$ = Individual sign centroid horizontal location from ℄ Column (post)

$'Y'_n$ = Individual sign centroid height from bottommost edge

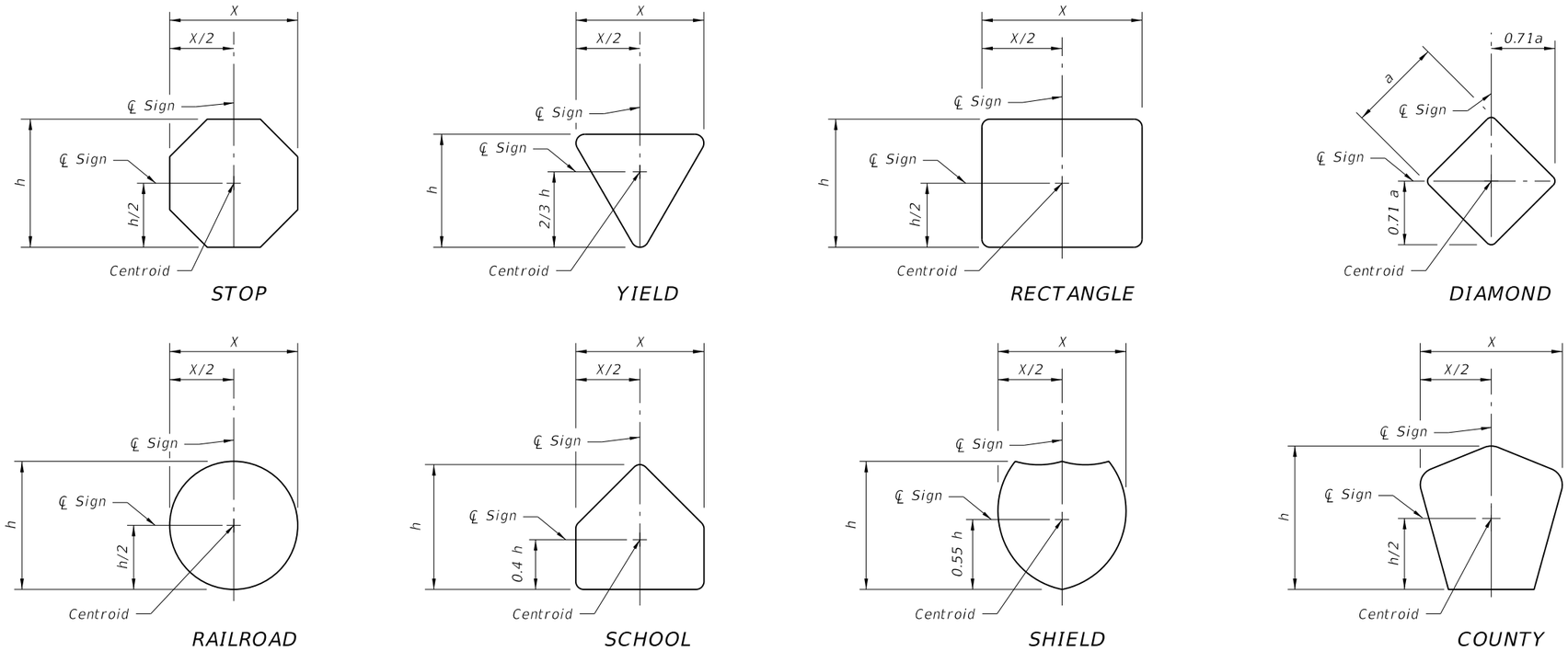
$'A'_n$ = Area of individual sign

For 'A' & 'B' see Index No. 17302 and Roadway Plans.

NOTE:
No sign or sign cluster area shall exceed 30 SF nor shall any sign or sign cluster have a total width exceeding 60 inches.



TYPICAL SECTION

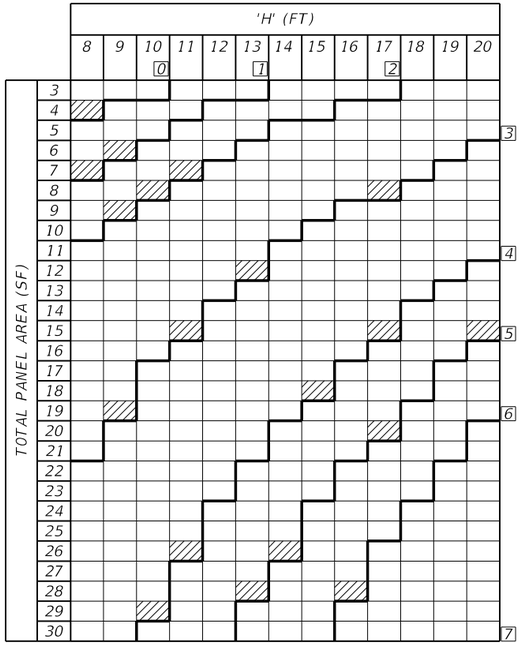


CENTROID AND HEIGHT

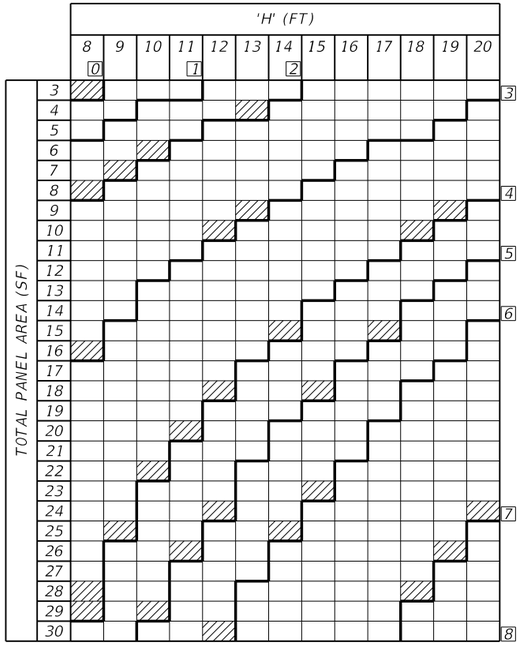
6/28/2012 3:04:46 PM rd960rh C:\d\projects\standards\roadway\11000-s\11860-02.dgn

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/09			FDOT DESIGN STANDARDS 2013	SINGLE COLUMN GROUND SIGNS	11860	2

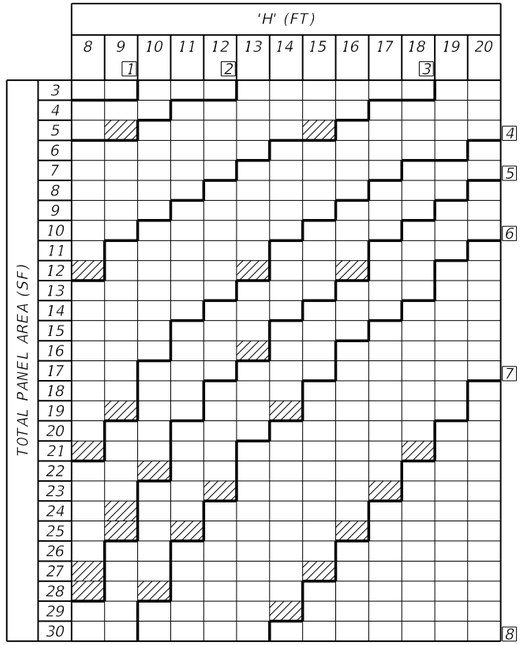
ALUMINUM COLUMN (POST) SELECTION TABLE (WIND SPEED = 110 MPH)



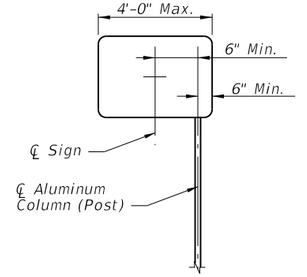
ALUMINUM COLUMN (POST) SELECTION TABLE (WIND SPEED = 130 MPH)



ALUMINUM COLUMN (POST) SELECTION TABLE (WIND SPEED = 150 MPH)



▨ = If CANTILEVER SIGN configuration (see Cantilever Sign Details) falls in this region, use next larger post size than that indicated.



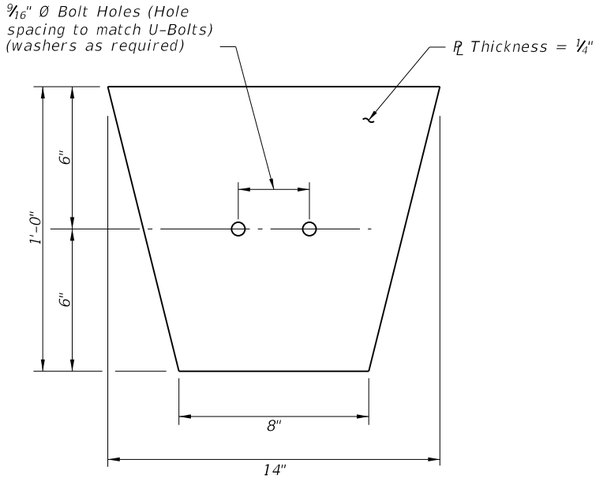
CANTILEVER SIGN

NOTE:
All cantilever sign installations shall comply with Standard Index 17302.

POST AND FOUNDATION TABLE

	Foundation Alternatives						
	Post Size		Driven Post *		Concrete (Class I)		
	Diameter (IN)	Wall (IN)	Depth (FT) without Soil Plate	Depth (FT) with Soil Plate	Diameter (FT)	Depth (FT)	Stub Length (FT)
0	2.0	1/8	4.5	2.5	2.0	2.0	2.0
1	2.5	1/8	5.0	3.0	2.0	2.0	2.0
2	3.0	1/8	5.0	3.5	2.0	2.5	2.5
3	3.5	3/16	6.0	4.5	2.0	3.0	3.0
4	4.0	1/4	---	---	2.0	4.0	3.0
5	4.5	1/4	---	---	2.0	4.0	3.0
6	5.0	1/4	---	---	2.0	4.5	3.0
7	6.0	1/4	---	---	2.0	5.0	3.0
8	8.0	5/16	---	---	2.0	5.5	3.0

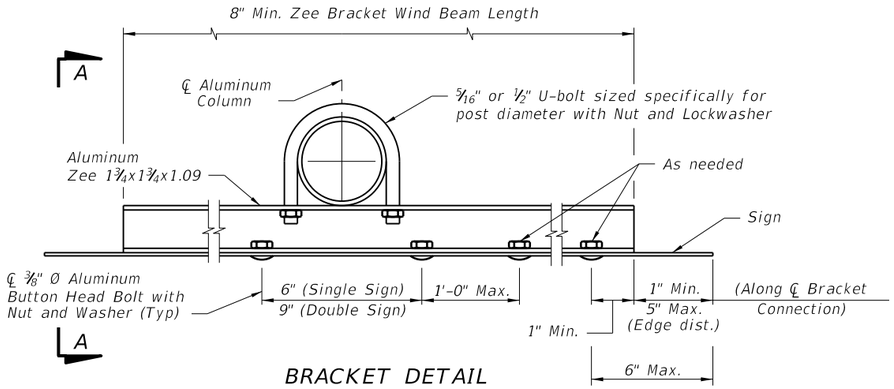
* INSTALLING FRANGIBLE COLUMN SUPPORTS:
Columns (posts) may be installed by driving the columns in accordance with this Index, or as an alternate method, the columns (posts) may be set to the depth indicated in preformed holes backfilled with suitable material tamped in layers not thicker than 6" to provide adequate compaction or filled with flowable fill or bagged concrete.



ALUMINUM SOIL PLATE DETAILS

NOTES:
1. Align Soil Plate bottom at 2/3 of foundation depth.
2. Slot up to 1" long is allowed to accommodate various post sizes.
3. Rectangular soil plate of size 1'-2" x 1'-0" may be used as an alternative.

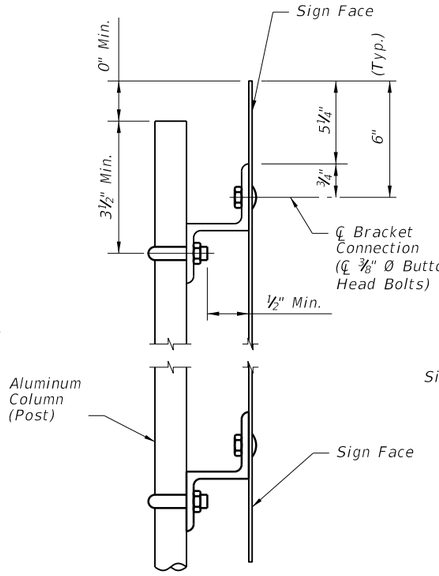
POST AND FOUNDATION TABLES



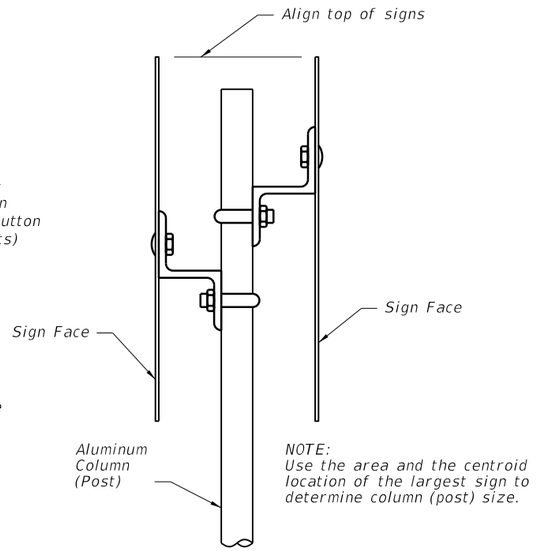
BRACKET DETAIL

NOTES:
1. 5/16" Ø Stainless Steel Hex Head Bolts with Flat Washer under Head and Lockwasher under Nut may be used in lieu of 3/8" Ø Aluminum Button Head Bolts.
2. 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.
3. Vertical spacing of brackets shall not exceed 2'-6". Use additional brackets, spaced evenly, to maintain maximum spacing.

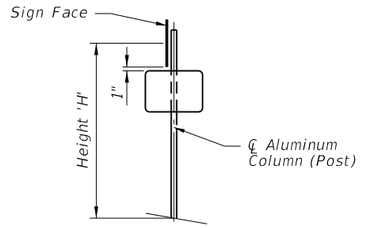
* For signs with either dimension of sign size greater than 30" a third zee bracket wind beam shall be installed along the ℄.



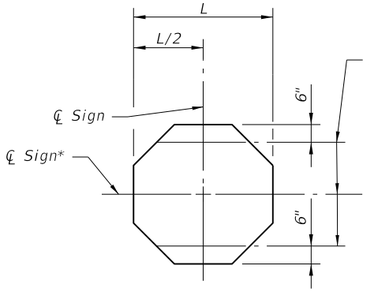
VIEW A-A



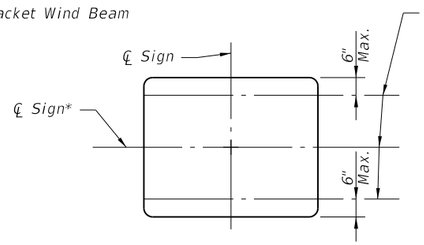
SIGNS BACK-TO-BACK



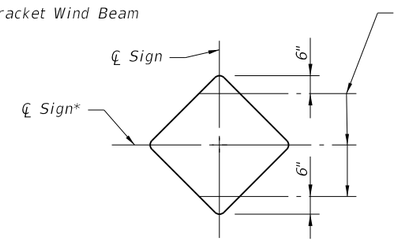
SIGNS AT 90°



STOP

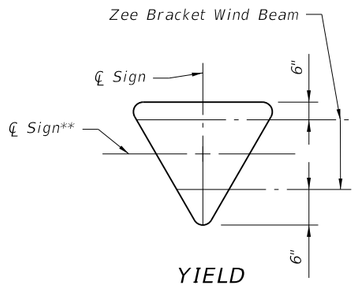


RECTANGLE
(Use only one Wind Beam at ℄ Sign for sign height up to 12")

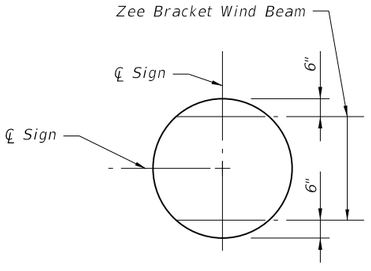


DIAMOND

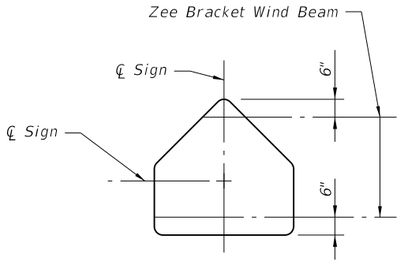
** For Yield signs greater than 36" a third zee bracket wind beam shall be installed along the ℄.



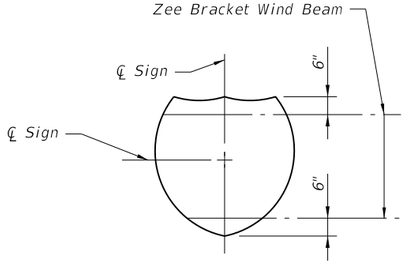
YIELD



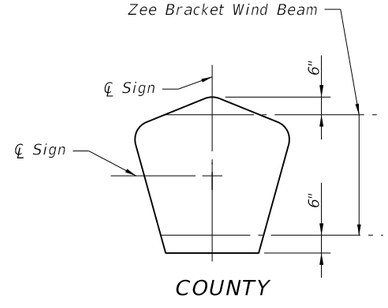
RAILROAD



SCHOOL

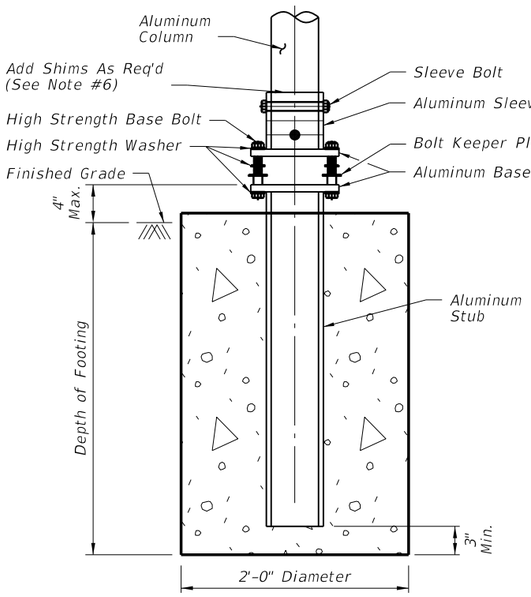


SHIELD

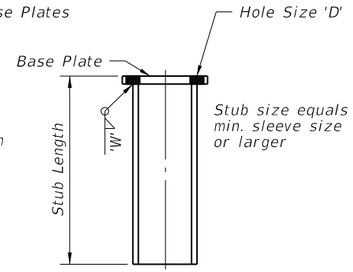


COUNTY

CONNECTION AND WIND BEAM



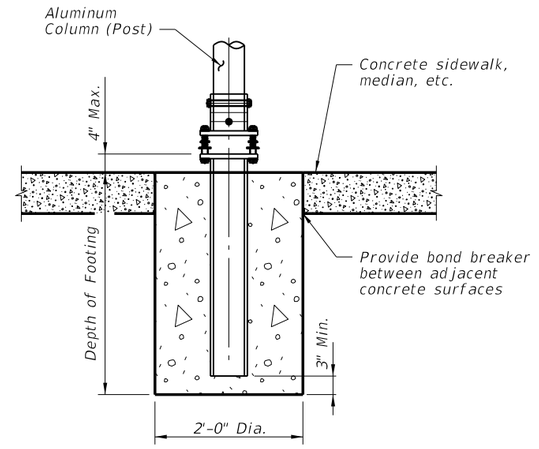
SLIP BASE AND FOOTING DETAIL
(non-frangible post)



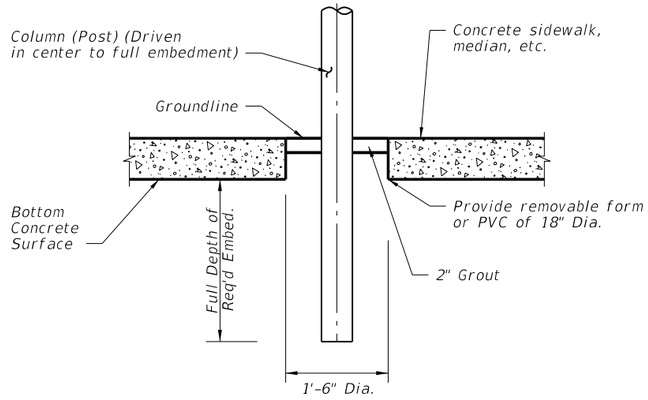
STUB DETAIL

SLIP BASE NOTES:

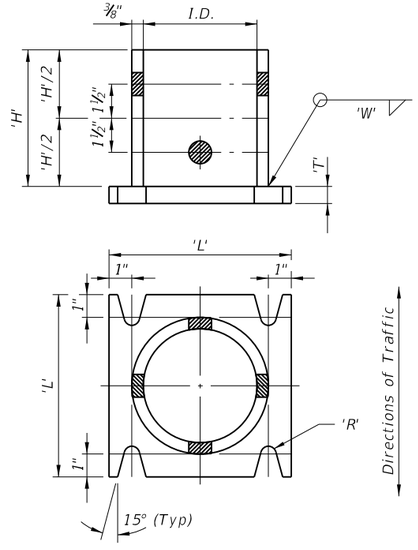
1. Use sleeves with an inside diameter (I.D.) no more than 1/16" larger than the outside diameter (O.D.) of the column.
2. Sleeve Bolts: ASTM A-307, 1/2" Ø galvanized steel bolt (with lock nuts) or Alloy 2024-T4 or 6061-T6 (ASTM B-211).
3. Base bolts, Nuts, and Washers: high strength ASTM A-325 galvanized per ASTM F2329.
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 1/2" Ø 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 1/2" Ø 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.



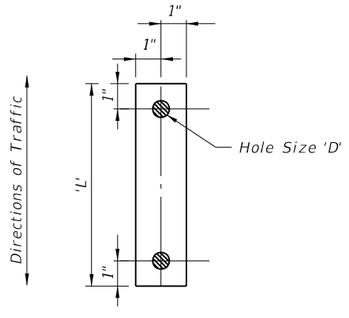
SLIP BASE AND FOOTING DETAIL IN CONCRETE
(non-frangible post in crossovers, medians, & sidewalks)



DRIVEN POST DETAIL IN CONCRETE
(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

SLIP BASE DETAILS

Column Size	Sleeve I.D. (Max)	Sleeve Height 'H'	Weld 'W'	Base Plate		Radius 'R'	Base Bolt		Base Plate Torque		Hole Size 'D'
				'L'	'T'		Size	Length	ft-lbs	in.-lbs	
4 x 1/4	4 1/16	6	5/8	8	3/4	11/32	5/8	3	29	345	11/16
4 1/2 x 1/4	4 9/16	6	5/8	8	7/8	11/32	5/8	3 1/4	29	345	11/16
5 x 1/4	5 1/16	7	5/8	8	7/8	11/32	5/8	3 1/4	29	345	11/16
6 x 1/4	6 1/16	8	11/16	9	1	13/32	3/4	3 1/2	46	554	13/16
8 x 5/16	8 1/16	10	3/4	11	1	15/32	7/8	3 3/4	53	640	15/16

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

BASE AND FOUNDATION DETAILS

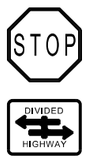
Size	Area	Total Area	Centroid
36x12	3.00 SF	6.31 SF	1.75 Ft.
24x24	3.31 SF		

Size	Area	Total Area	Centroid
36x12	3.00 SF	8.18 SF	1.92 Ft.
30x30	5.18 SF		

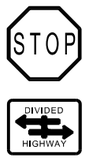
Size	Area	Total Area	Centroid
36x12	3.00 SF	10.46 SF	2.10 Ft.
36x36	7.46 SF		

Size	Area	Total Area	Centroid
36x12	3.00 SF	16.25 SF	2.48 Ft.
48x48	13.25 SF		

Size	Area	Total Area	Centroid
24x24	3.31 SF	6.31 SF	1.71 Ft.
24x18	3.00 SF		



Size	Area	Total Area	Centroid
30x30	5.18 SF	10.18 SF	2.19 Ft.
30x24	5.00 SF		



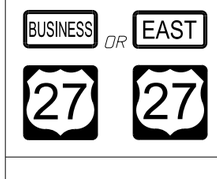
Size	Area	Total Area	Centroid
36x36	7.46 SF	12.46 SF	2.55 Ft.
30x24	5.00 SF		

Size	Area	Total Area	Centroid
36x12	3.00 SF	13.18 SF	2.87 Ft.
30x30	5.18 SF		
30x24	5.00 SF		

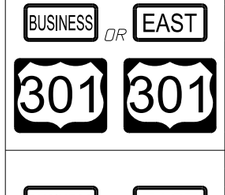
Size	Area	Total Area	Centroid
36x12	3.00 SF	15.46 SF	3.15 Ft.
36x36	7.46 SF		
30x24	5.00 SF		

Size	Area	Total Area	Centroid
21x15	2.19 SF	6.19 SF	1.60 Ft.
24x24	4.00 SF		

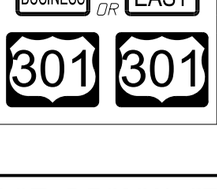
Size	Area	Total Area	Centroid
21x15	2.19 SF	7.19 SF	1.52 Ft.
30x24	5.00 SF		



Size	Area	Total Area	Centroid
24x12	2.00 SF	6.00 SF	1.53 Ft.
24x24	4.00 SF		



Size	Area	Total Area	Centroid
24x12	2.00 SF	7.00 SF	1.45 Ft.
30x24	5.00 SF		

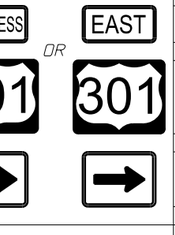


Size	Area	Total Area	Centroid
30x15	3.13 SF	8.13 SF	1.66 Ft.
30x24	5.00 SF		

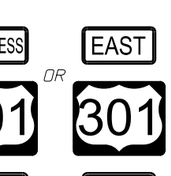
Size	Area	Total Area	Centroid
24x24	4.00 SF	6.19 SF	1.73 Ft.
21x15	2.19 SF		

Size	Area	Total Area	Centroid
30x24	5.00 SF	7.19 SF	1.81 Ft.
21x15	2.19 SF		

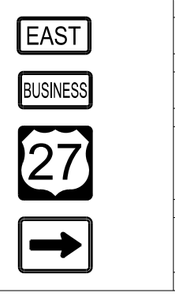
Size	Area	Total Area	Centroid
24x12	2.00 SF	8.19 SF	2.26 Ft.
24x24	4.00 SF		
21x15	2.19 SF		



Size	Area	Total Area	Centroid
24x12	2.00 SF	9.19 SF	2.27 Ft.
30x24	5.00 SF		
21x15	2.19 SF		



Size	Area	Total Area	Centroid
30x15	3.13 SF	10.32 SF	2.49 Ft.
30x24	5.00 SF		
21x15	2.19 SF		



Size	Area	Total Area	Centroid
24x12	2.00 SF	10.19 SF	2.80 Ft.
24x12	2.00 SF		
24x24	4.00 SF		
21x15	2.19 SF		

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/07			FDOT DESIGN STANDARDS 2013	SINGLE COLUMN GROUND SIGNS	11860	6

	Size	Area	Total Area	Centroid
EAST	24x12	2.00 SF	11.19 SF	2.76 Ft.
BUSINESS	24x12	2.00 SF		
301	30x24	5.00 SF		
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
EAST	30x15	3.13 SF	13.45 SF	3.16 Ft.
BUSINESS	30x15	3.13 SF		
301	30x24	5.00 SF		
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
JCT	21x15	2.19 SF	3.90 SF	1.57 Ft.
LEON 56 COUNTY	18x18	1.71 SF		

	Size	Area	Total Area	Centroid
JCT	21x15	2.19 SF	5.22 SF	1.72 Ft.
LEON 56 COUNTY	24x24	3.03 SF		

	Size	Area	Total Area	Centroid
JCT	21x15	2.19 SF	6.95 SF	1.87 Ft.
LEON 56 COUNTY	30x30	4.76 SF		

	Size	Area	Total Area	Centroid
LEON 56 COUNTY	18x18	1.71 SF	3.90 SF	1.26 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
LEON 56 COUNTY	24x24	3.03 SF	5.22 SF	1.62 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
LEON 56 COUNTY	30x30	4.76 SF	6.95 SF	1.97 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
TO	24x12	2.00 SF	9.39 SF	2.87 Ft.
EAST	24x12	2.00 SF		
INTERSTATE 75	24x24	3.20 SF		
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
TO	24x12	2.00 SF	10.18 SF	2.84 Ft.
EAST	24x12	2.00 SF		
INTERSTATE 295	30x24	3.99 SF		
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
TO	30x15	3.13 SF	12.44 SF	3.26 Ft.
EAST	30x15	3.13 SF		
INTERSTATE 295	30x24	3.99 SF		
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
JCT	21x15	2.19 SF	5.39 SF	1.75 Ft.
INTERSTATE 75	24x24	3.20 SF		

	Size	Area	Total Area	Centroid
JCT	21x15	2.19 SF	6.18 SF	1.67 Ft.
INTERSTATE 295	30x24	3.99 SF		

	Size	Area	Total Area	Centroid
EAST INTERSTATE 75 OR TO INTERSTATE 75	24x12	2.00 SF	5.20 SF	1.67 Ft.
	24x24	3.20 SF		

	Size	Area	Total Area	Centroid
EAST INTERSTATE 295 OR TO INTERSTATE 295	24x12	2.00 SF	5.99 SF	1.60 Ft.
	30x24	3.99 SF		

	Size	Area	Total Area	Centroid
EAST INTERSTATE 295 OR TO INTERSTATE 295	30x15	3.13 SF	7.12 SF	1.81 Ft.
	30x24	3.99 SF		

	Size	Area	Total Area	Centroid
EAST INTERSTATE 75 OR TO INTERSTATE 75	30x15	3.13 SF	10.33 SF	2.27 Ft.
	36x36	7.20 SF		

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SINGLE COLUMN GROUND SIGNS	INDEX NO.	SHEET NO.
07/01/07						11860	7

Size	Area	Total Area	Centroid
30x15	3.13 SF	12.12 SF	2.18 Ft.
45x36	8.99 SF		

Size	Area	Total Area	Centroid
24x12	2.00 SF	7.39 SF	2.30 Ft.
24x24	3.20 SF		
21x15	2.19 SF		

Size	Area	Total Area	Centroid
24x12	2.00 SF	8.18 SF	2.31 Ft.
30x24	3.99 SF		
21x15	2.19 SF		

Size	Area	Total Area	Centroid
30x15	3.13 SF	9.31 SF	2.55 Ft.
30x24	3.99 SF		
21x15	2.19 SF		

Size	Area	Total Area	Centroid
30x30	4.69 SF	6.69 SF	1.61 Ft.
24x12	2.00 SF		

Size	Area	Total Area	Centroid
30x30	4.69 SF	8.44 SF	1.77 Ft.
30x18	3.75 SF		

Size	Area	Total Area	Centroid
36x36	6.75 SF	10.50 SF	2.06 Ft.
30x18	3.75 SF		

Size	Area	Total Area	Centroid
30x30	6.25 SF	8.25 SF	2.28 Ft.
24x12	2.00 SF		

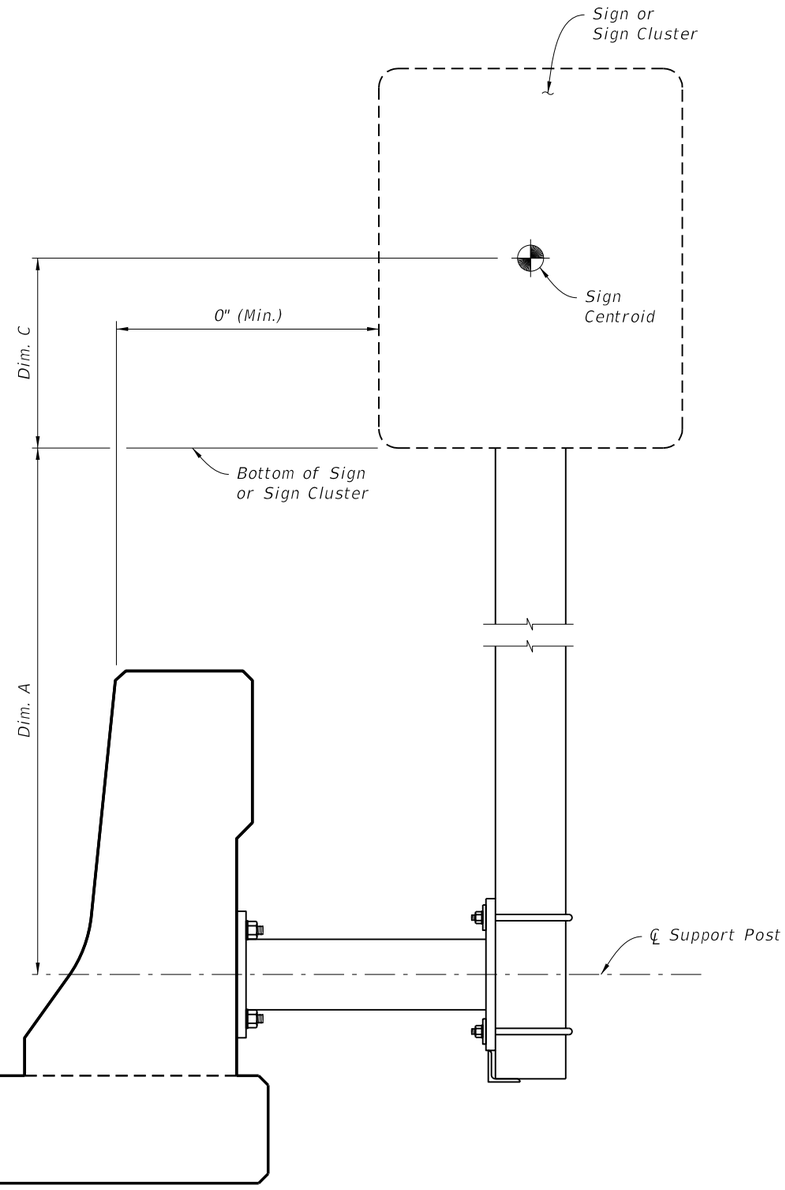
Size	Area	Total Area	Centroid
36x36	9.00 SF	12.75 SF	2.84 Ft.
30x18	3.75 SF		

Size	Area	Total Area	Centroid
30x30	6.25 SF	10.25 SF	2.74 Ft.
24x24	4.00 SF		

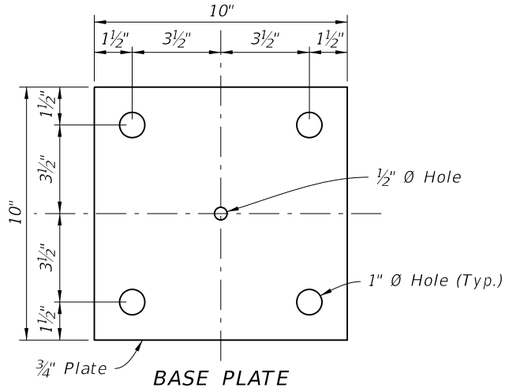
Size	Area	Total Area	Centroid
36x36	9.00 SF	15.25 SF	3.29 Ft.
30x30	6.25 SF		

Size	Area	Total Area	Centroid
30x30	6.25 SF	9.25 SF	2.51 Ft.
24x18	3.00 SF		

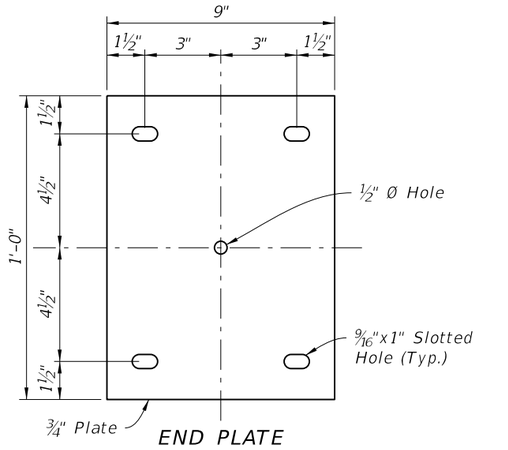
Size	Area	Total Area	Centroid
36x36	9.00 SF	14.00 SF	3.06 Ft.
30x24	5.00 SF		



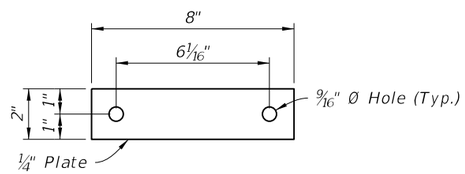
SIGN SUPPORT BRACKET



BASE PLATE



END PLATE



U-BOLT PLATE WASHER

NOTES:

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals as modified by the FDOT Structures Manual.

WIND SPEEDS: See Index 11860, "Wind Speeds by County" note.

GEOMETRY: Install signs with bottom edge of the lower sign panel at 7' above the gutter line. Edge of sign panels must not extend beyond the inside face of the top of the traffic railing. Install sign posts plumb.

APPLICABILITY: Mount only to concrete traffic barriers in locations where ground mounting is not possible. Work this Index in conjunction with Index No. 11860.

SHOP DRAWINGS: Shop drawings are not required.

PAYMENT: Include payment for sign support bracket in the cost of the single post sign.

MATERIALS:

Coatings: Hot dip galvanize all steel and fasteners in accordance with Specification Section 962. Galvanize Sign Support Weldment after fabrication. Paint sign support brackets and posts when shown in the plans in accordance with Specification Section 649-4.

Support Post: ASTM A501 5" NPS Schedule 40 Steel Pipe.

Sign Post: Aluminum Association Alloy 6061-T6 (ASTM B209, B221 or B308) 5" NPS Schedule 40 Aluminum Pipe.

Steel Plates: ASTM A36 or A709 Grade 36.

Anchor Rods & Bolts: ASTM F1554 Grade 55 with a single self-locking hex nut and washers. Install anchor rods or bolts perpendicular to the base plates on back of traffic railing. See Anchorage Notes, Sheet 2 of 2.

Adhesive Bonded Anchors: Fully threaded Anchor Rods with Type HV Adhesive Bonding Material System in accordance with Specification Section 416 & 937. In lieu of the number of anchors specified to be tested in Specification Section 416-6, field test all adhesive bonded anchors installed per this Design Standard.

U-Bolts: ASTM A449 sized for sign post, with flat washers and locking hex nuts.

Welding: Weld in accordance with American Welding Society Structural Welding Code (Steel), ANSI/AWS D1.1 (current edition). Required weld material is E70XX. Nondestructive testing is not required.

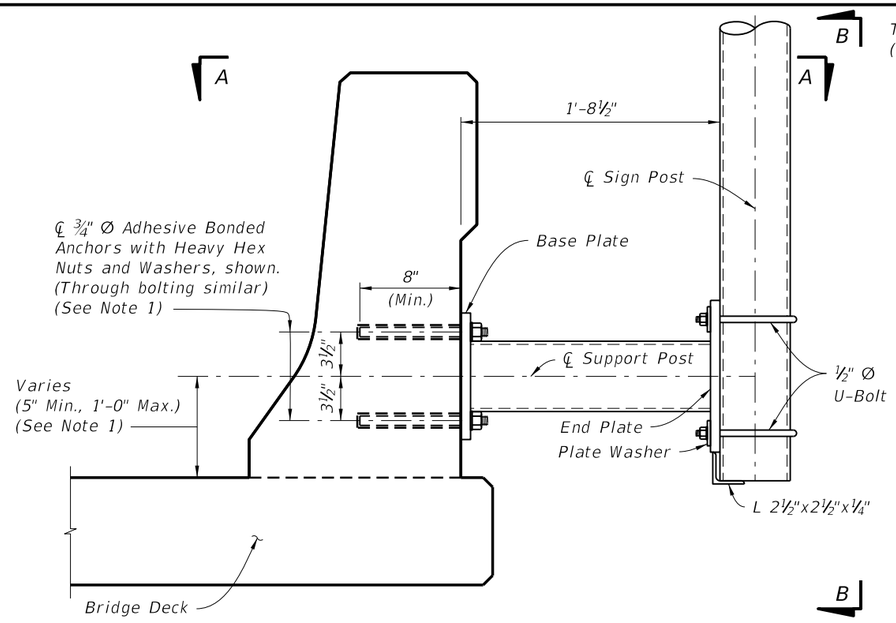
SIGN LIMITATIONS TABLE		
MAX. WIND SPEED (MPH)	MAX. SIGN AREA (SF)	MAX. SIGN CENTROID HEIGHT (DIM. A + DIM. C)
110	30	9'-10"
130	25	9'-7"
150	20	9'-7"

Dim. A = Distance from centerline of the Support Post to the bottom of the sign or sign cluster.

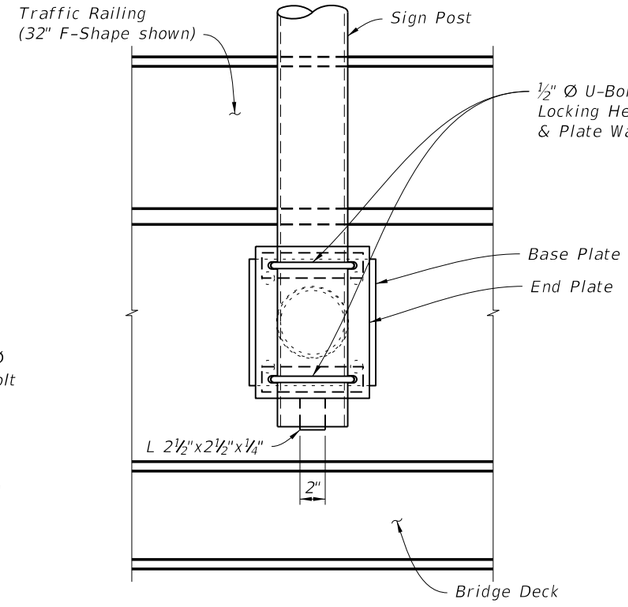
Dim. C = Vertical distance from the bottom of the sign or sign cluster to the Centroid of the sign or sign cluster.

C:\d\projects\standards\structures\2013book\11870-1of2.dgn
rd960rh
3:05:01 PM
6/28/2012

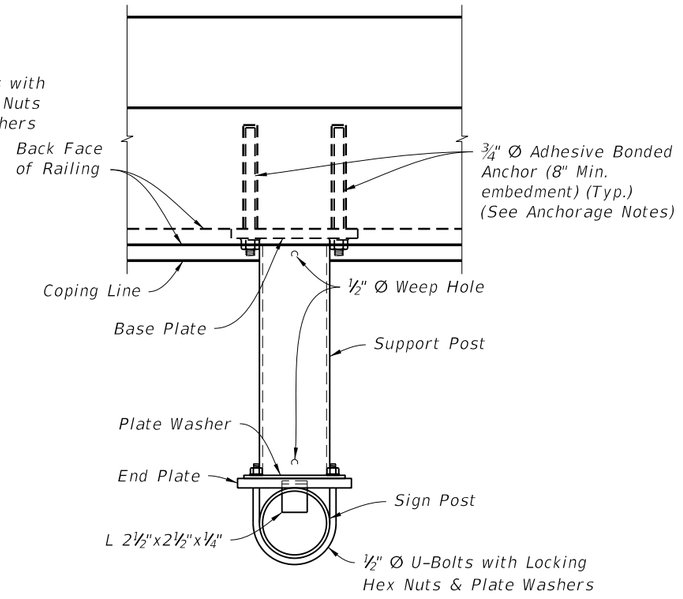
LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SINGLE POST BRIDGE MOUNTED SIGN SUPPORT	INDEX NO.	SHEET NO.
07/01/12						11870	1



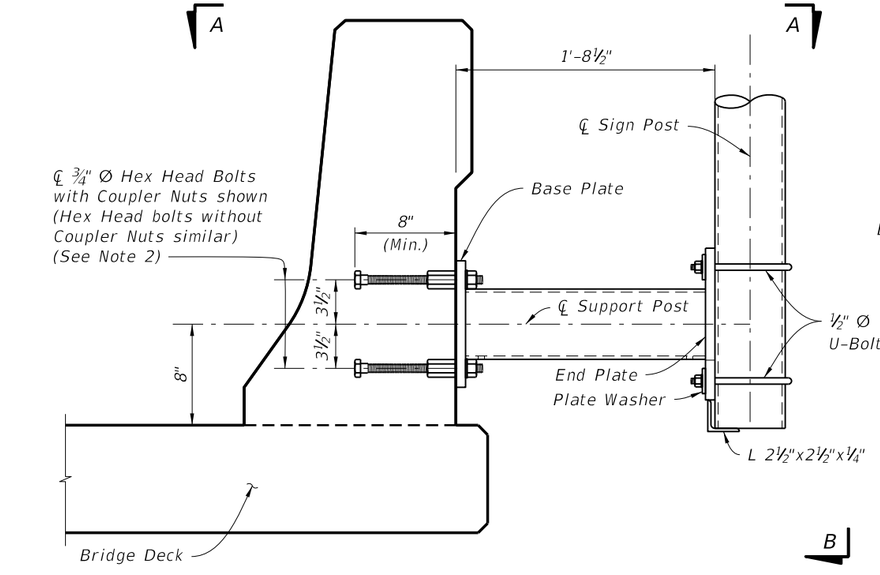
TYPICAL SECTION THRU EXISTING TRAFFIC RAILING AT SIGN SUPPORT BRACKET
(32" F-Shape Traffic Railing shown, other Traffic Ralings & Parapet similar)
(Bridge Deck shown, Approach Slab and Retaining Wall Similar)



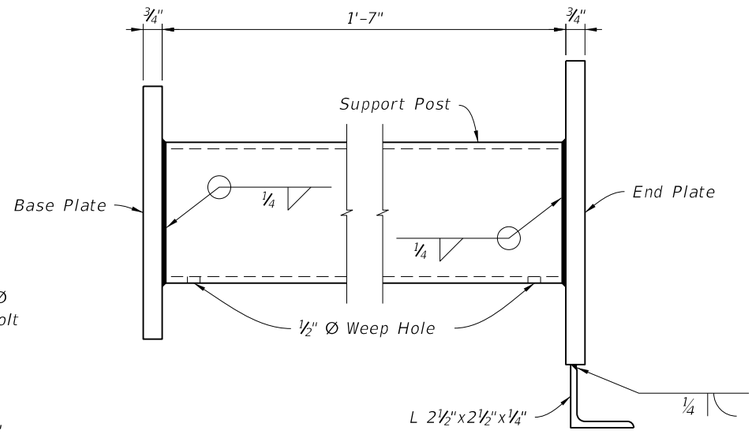
VIEW B-B
SIGN SUPPORT BRACKET



PLAN VIEW A-A
SIGN SUPPORT BRACKET



TYPICAL SECTION THRU TRAFFIC RAILING AT SIGN SUPPORT BRACKET (NEW CONSTRUCTION)
(32" F-Shape Traffic Railing shown, other Traffic Ralings & Parapet similar)
(Bridge Deck shown, Approach Slab and Retaining Wall Similar)



SIGN SUPPORT WELDMENT DETAIL

ANCHORAGE NOTES:

1. *Existing Traffic Railings:*

   Locate existing conduit prior to drilling. Adjust placement as necessary to avoid existing conduit. Base plate must be flush with back of traffic railing. Maintain a minimum cover 2" from face of traffic railing to tip of Adhesive Anchor.

   For concrete parapets less than 10" thick, through bolt ¾" Ø Heavy Hex Head Bolts with Nuts and Washers in lieu of Adhesive Bonded Anchors. Bolt heads shall not protrude more than 1½" beyond traffic face of railing.

2. *New Traffic Railings:*

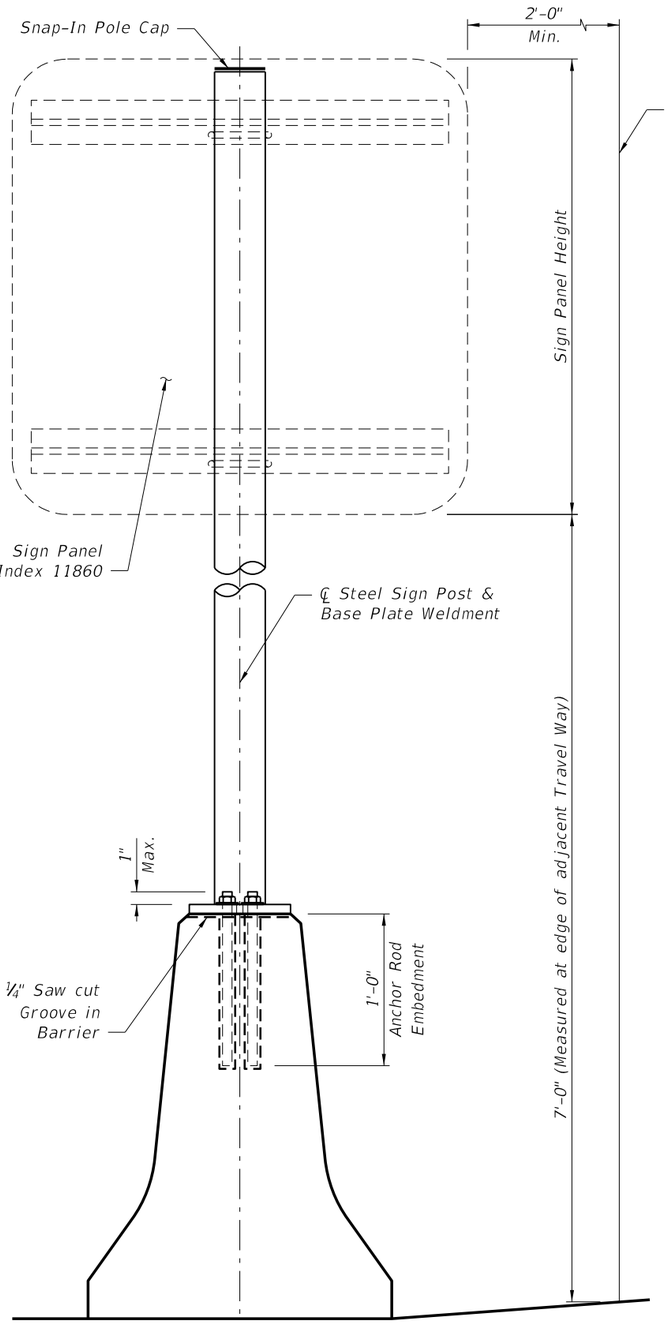
   Tie Anchor Bolts securely and use templates as necessary to maintain bolt spacing.

   Optional Couplers are shown for slipforming; keep Anchor Bolt coupler threads free of concrete.

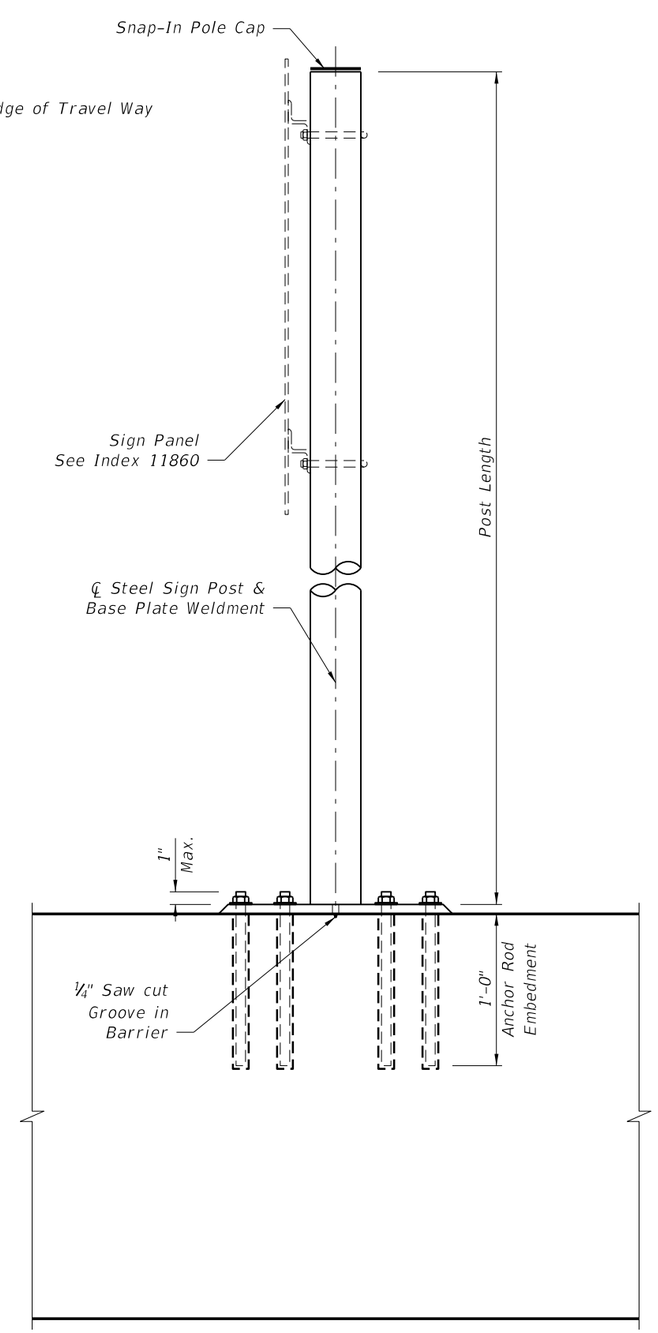
CROSS REFERENCES:
For Base Plate, End Plate & U-Bolt Plate Washer Details see Sheet 1.

C:\d\projects\standards\structures\2013book\11870-2of2.dgn
rd960rh
3:05:04 PM
6/28/2012

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SINGLE POST BRIDGE MOUNTED SIGN SUPPORT	INDEX NO.	SHEET NO.
07/01/12						11870	2



LOOKING PARALLEL TO DIRECTION OF TRAFFIC



LOOKING PERPENDICULAR TO DIRECTION OF TRAFFIC

ELEVATION

(Index 410 Standard "Full Wall" Median Barrier shown; others similar)

NOTES:

DESIGN SPECIFICATIONS:
AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals as modified by the FDOT Structures Manual.

WIND SPEEDS:
See Index 11860, "Wind speeds by County" note.

GEOMETRY:
Maximum Sign Panel Height is 6'-0".
Edges of Sign Panels must be a minimum of 2'-0" clear from edge of adjacent Travel Way.

APPLICABILITY:
Work this Index in conjunction with Index No 11860.

SHOP DRAWINGS:
Shop drawings are not required.

PAYMENT:
Include payment for sign support in the cost of the single post sign assembly.

MATERIALS:
Sign Post: ASTM A53 Grade B, NPS Schedule 40 Steel Pipe, sized per Table 1. Maximum post length is 10'-0".

Snap-In Pole Cap: Provide UV and weather-resistant glass-filled polyester cap.

Steel Plates: ASTM A572 Grade 50 or A709 Grade 50.

Welding: Weld in accordance with American Welding Society Structural Welding Code (Steel), ANSI/DWS D1.1 (current edition). Required weld material is E70XX. Nondestructive testing is not required.

Coatings: Hot dip galvanize all steel, including fasteners, in accordance with Section 962. Galvanize Weldment after fabrication.

INSTALLATION:
Placement: For installations on permanent Median Barriers, locate Sign Support a minimum of 5'-0" away from open joints or transitions. For installations on Temporary Barriers, locate Sign Support at the midpoint along the length of a single segment. In all cases, shift locations as needed to avoid conflicts with reinforcement.

Bearing Surface: Surface of the railing must be structurally sound and free of cracks and spalls. Base plate must be flush with the concrete surface; grind any high spots to obtain a flat, smooth surface.

Saw Cut: For permanent installations only, saw cut a ¼" deep groove transversely across the top of railing at the centerline of base plate vent hole location.

Anchor Rods: Use ASTM F1554 Grade 36, fully threaded rods with A563 or A194 single self-locking hex nuts and F436 washers. Size anchor rods per Table 2.

Adhesive Bonding Material: Install anchor rods using Type HSHV Adhesive Bonding Material System in accordance with Sections 416 & 937.

Removal of Signs: Cut anchor rods flush with top of railing and coat surface with Type F-1 epoxy. Minimum thickness of epoxy is 1/16" extending 2" beyond the location of steel.

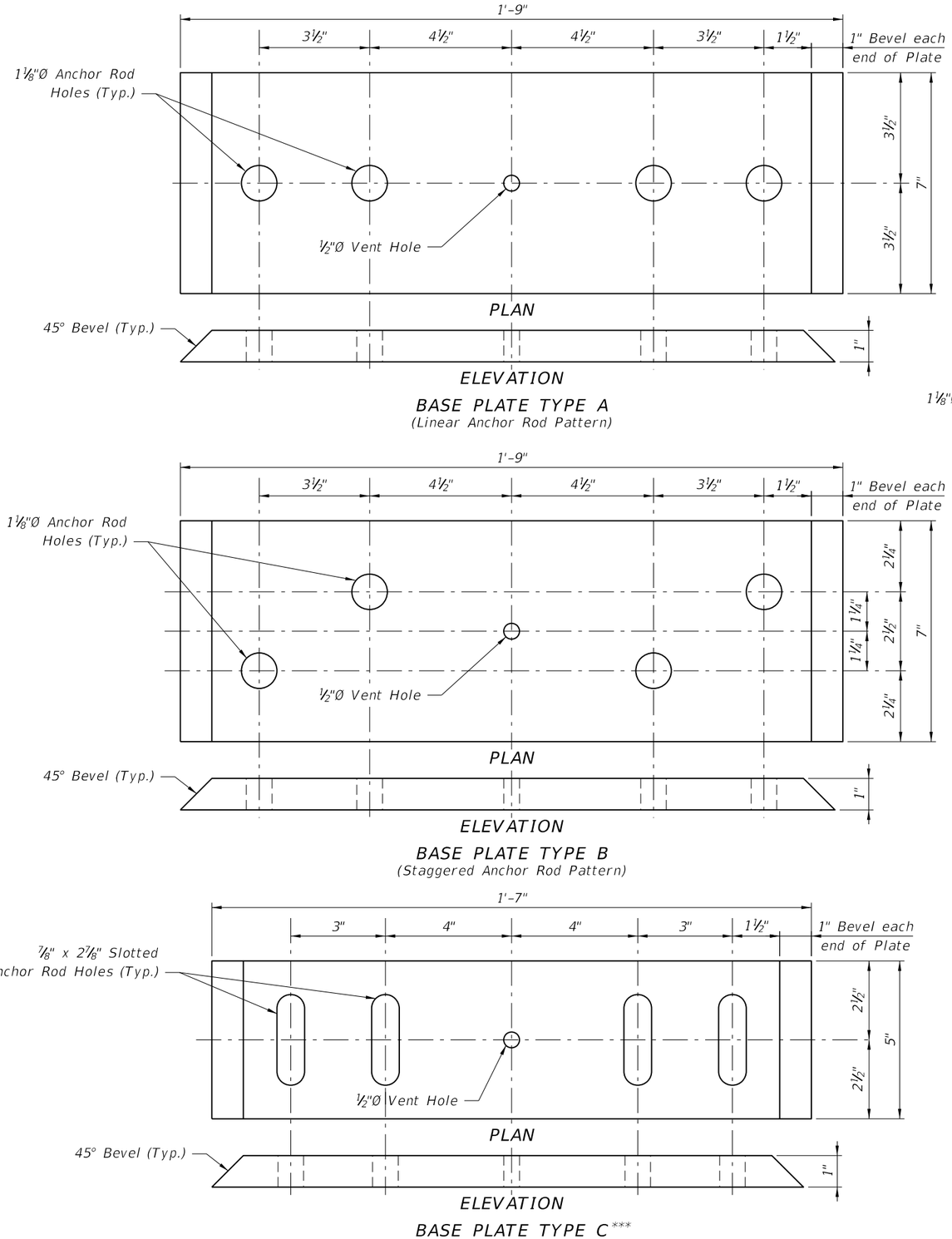
TABLE 1 - SIGN PANEL AND POST SIZING

Wind Speed (MPH)	Max. Sign Area (SF)	Post Ø (NPS)
70 - All Temporary Signs	< 20	3.0"
110 & 130	< 13.5	3.0"
	13.5 < Sign < 20	3.5"
150	< 13.5	3.5"
	13.5 < Sign < 20	4.0"

LAST REVISION	REVISION	DESCRIPTION:		INDEX NO.	SHEET NO.
07/01/12			FDOT DESIGN STANDARDS 2013	11871	1

SINGLE POST MEDIAN BARRIER MOUNTED SIGN SUPPORT

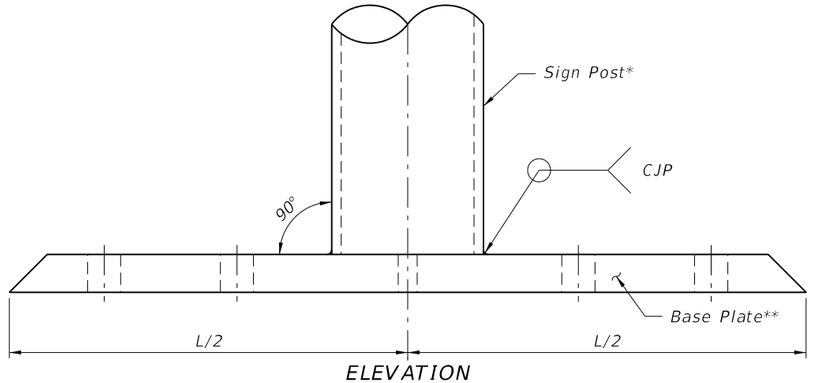
6/28/2012 3:05:06 PM rd960rh C:\d\projects\standards\roadway\11000-s\11871-1of2.dgn

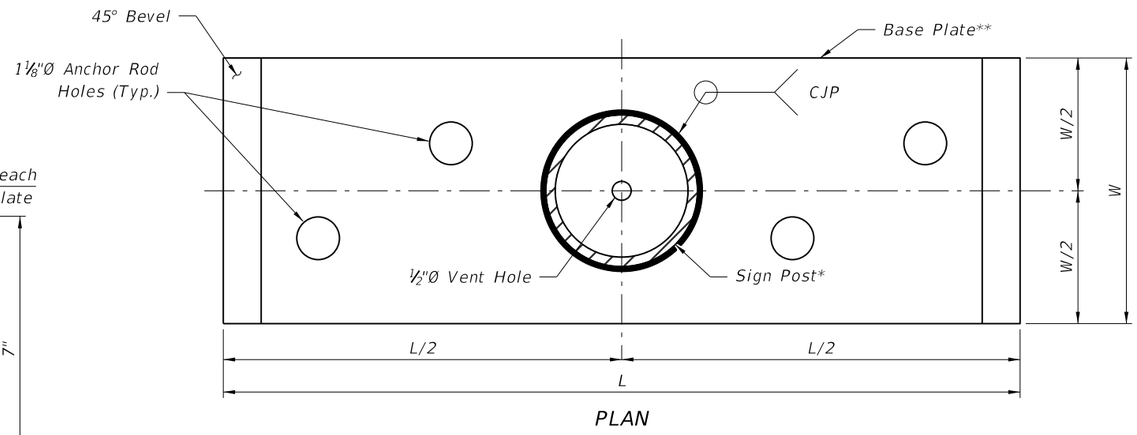


BASE PLATE TYPE A
(Linear Anchor Rod Pattern)

BASE PLATE TYPE B
(Staggered Anchor Rod Pattern)

BASE PLATE TYPE C***





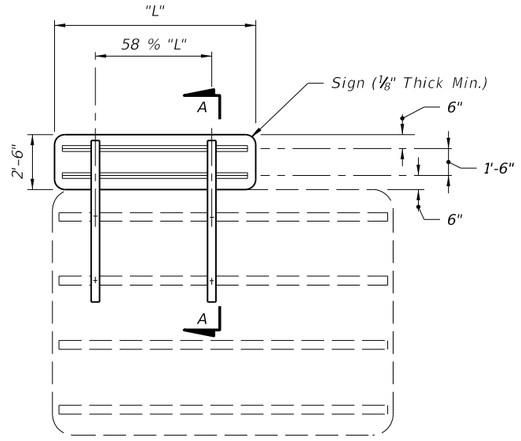
SIGN SUPPORT WELDMENT DETAIL
(Staggered Anchor Rod Pattern shown; Linear Anchor Rod Pattern similar)

* See Table 1, Sheet 1.
** See Table 2, this Sheet.

TABLE 2 - BASE PLATE TYPE AND ANCHOR ROD SIZING

Index No.	Type/Application	Base Plate Type	Anchor Rod Ø
410	Full Wall	B	1"
410	Cantilever or L-Wall	A	
420 & 425	When Clear Space between Dual Bridge Traffic Railing is ≤ 4'-0"	A	
421	All Applications	A	
All listed above Plus 414 & 415	Temporary Signs	C ***	¾" ***

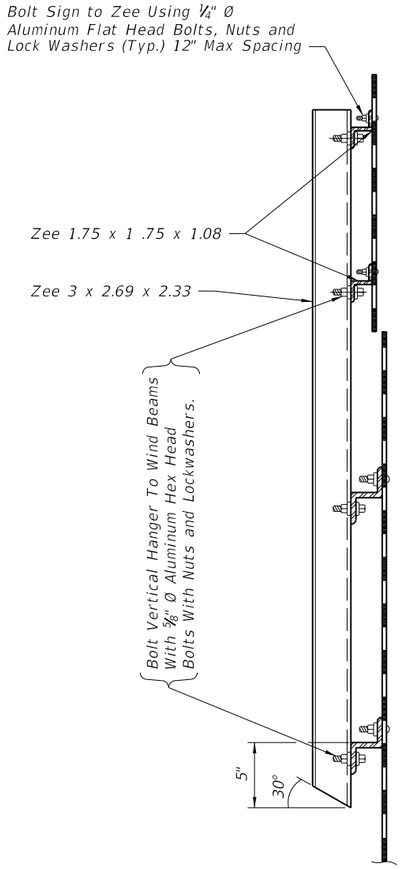
*** Place anchor rods in a staggered or linear pattern as necessary to avoid reinforcing. Use a staggered pattern for all temporary barriers.



NOTE: Exit numbering panel shall be located to the right side for right exit and to the left for left exit.

Mounting of Exit Numbering Panels To Highway Signs

ELEVATION



SECTION AA

GENERAL NOTES

DESIGN SPECIFICATION:
Design according to FDOT Structures Manual (current edition) Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, AASHTO 2001.

SHEETS AND PLATES:
Material used shall meet the requirements of Aluminum Association Alloy 6061-T6 and ASTM B209.

MATERIALS:
All aluminum materials shall meet the requirements of the Aluminum Association Alloy 6061-T6 and also the following ASTM specifications for the following: Sheets and plates B209; extruded shapes B221 and standard structural shapes B308.

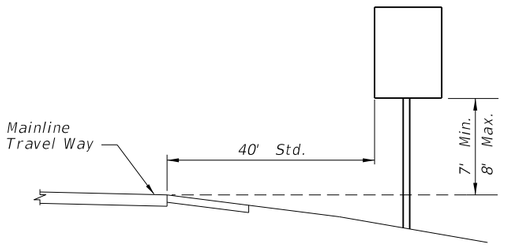
ALUMINUM BOLTS, NUTS & LOCK WASHERS:
Aluminum bolts shall meet the requirements of the Aluminum Association Alloy 2024-T4 (ASTM F468). The bolts shall have an anodic coating of at least .0002" thick and be chromate sealed. Lockwashers shall meet the requirement of Aluminum Association Alloy 7075-T6 (ASTM B221). Nuts shall meet the requirement of Aluminum Association Alloy 6262-T9 (ASTM F467) or 6061-T6.

SIGN FACE:
All sign face corners shall be rounded. See sign layout sheet for dimension "L" and sign face details. For mounting details refer to Index No. 11300.

LAST REVISION	REVISION	DESCRIPTION:				
01/01/10			FDOT DESIGN STANDARDS 2013	MOUNTING EXIT NUMBER PANELS TO HIGHWAY SIGNS	INDEX NO. 13417	SHEET NO. 1

CASE I

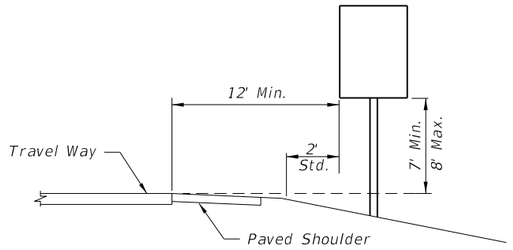
For Use On Freeway And
Expressway Systems For Signs On Mainline.



For Median Installation:
If Median Width Does Not Allow Std. Offset
From Both Roadways, Center Sign In Median.

CASE II

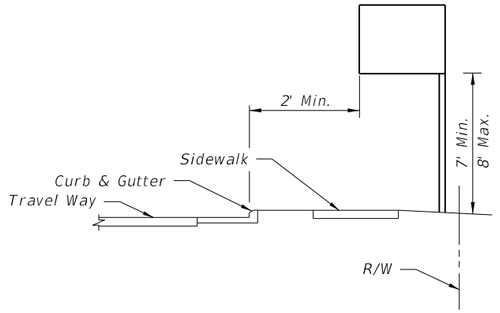
For Use In All Rural Roads And
On Freeway And Expressway Ramps.



14' Horizontal Clearance Standard On All Freeway And
Expressway Ramps.

CASE III

For Use On All Roads With
Signs Mounted Behind Sidewalk.

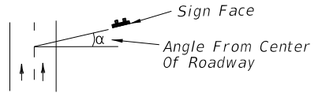


GENERAL NOTES:

1. The typical sections shown hereon serve as a guide for locating the traffic signs required under various roadside conditions. For size and details of sign construction and footing, refer to the appropriate standard index drawing for roadside sign.

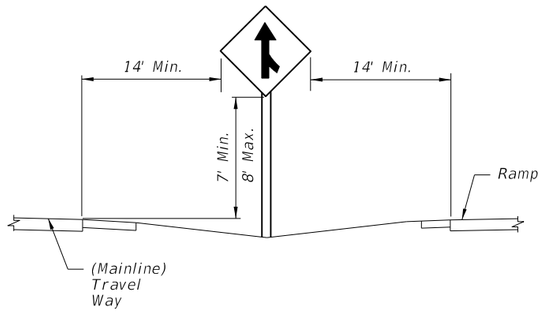
2. It shall be the CONTRACTORS responsibility to verify the length of sign supports in the field prior to fabrication.

3. Ground signs shall be installed at an angle of 1 to 4 degrees away from the traffic flow (see illustration). Shoulder mounted signs shall be rotated counterclockwise and median mounted signs rotated clockwise. Signs on curves shall be mounted as noted above from the perpendicular to the motorist line of sight.



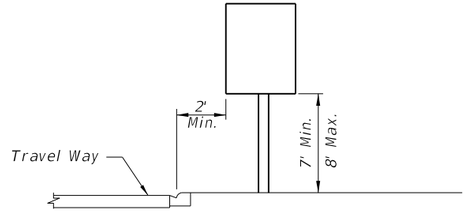
CASE IV (MERGE SIGN)

For Use On All Rural, Freeway And Expressway Systems.



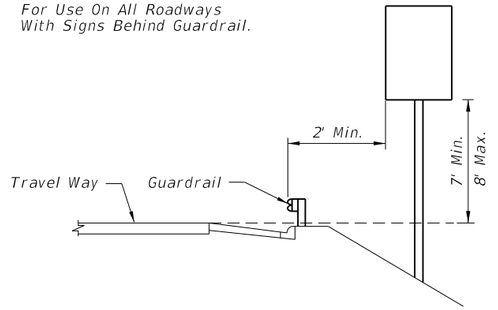
CASE V

For Use In Business Or Residential Areas Only.



CASE VI

For Use On All Roadways
With Signs Behind Guardrail.



4. The setback for stop and yield signs may be reduced to 3' minimum from the driving lane if required for visibility in business or residential sections with no curb and speeds of 30 MPH or less.

5. The mounting heights are measured from the bottom of the sign panel to a horizontal line extended from the edge of the driving lane. If the standard heights cannot be met, the minimum heights are as follows:

Expressway & Freeway Systems	7'
Other Roadway Systems	
Rural	5'
Urban (including residential with parking and /or pedestrian activity)	7'

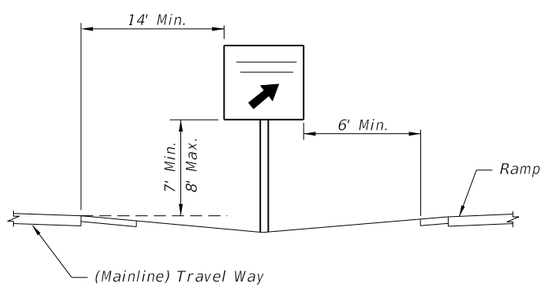
If a secondary sign is mounted below the major sign, the major sign shall be at least 8' and the secondary sign at least 5' for expressway & freeway systems and for other systems the height to the secondary sign shall be at least 5' for rural and 7' for urban sections.

6. Sign supports should never be placed in the bottom of ditches where erosion might affect the proper operation of the breakaway feature.

7. Sign supports shall not reduce the accessible route /continuous passage to less than 4' min. clear width as required by the Americans with Disabilities Act (ADA) Accessibility Guidelines.

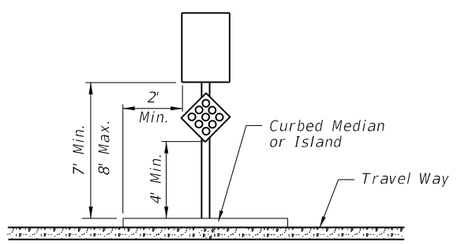
CASE VII (REST AREA & EXIT GORE SIGNS)

For Use On All Freeway And Expressway Systems



CASE VIII

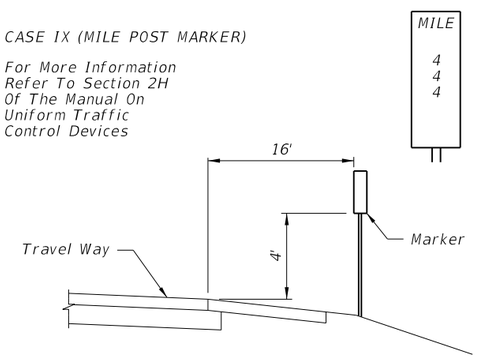
Sign On Island or Curbed Median



Center Sign Column On Island

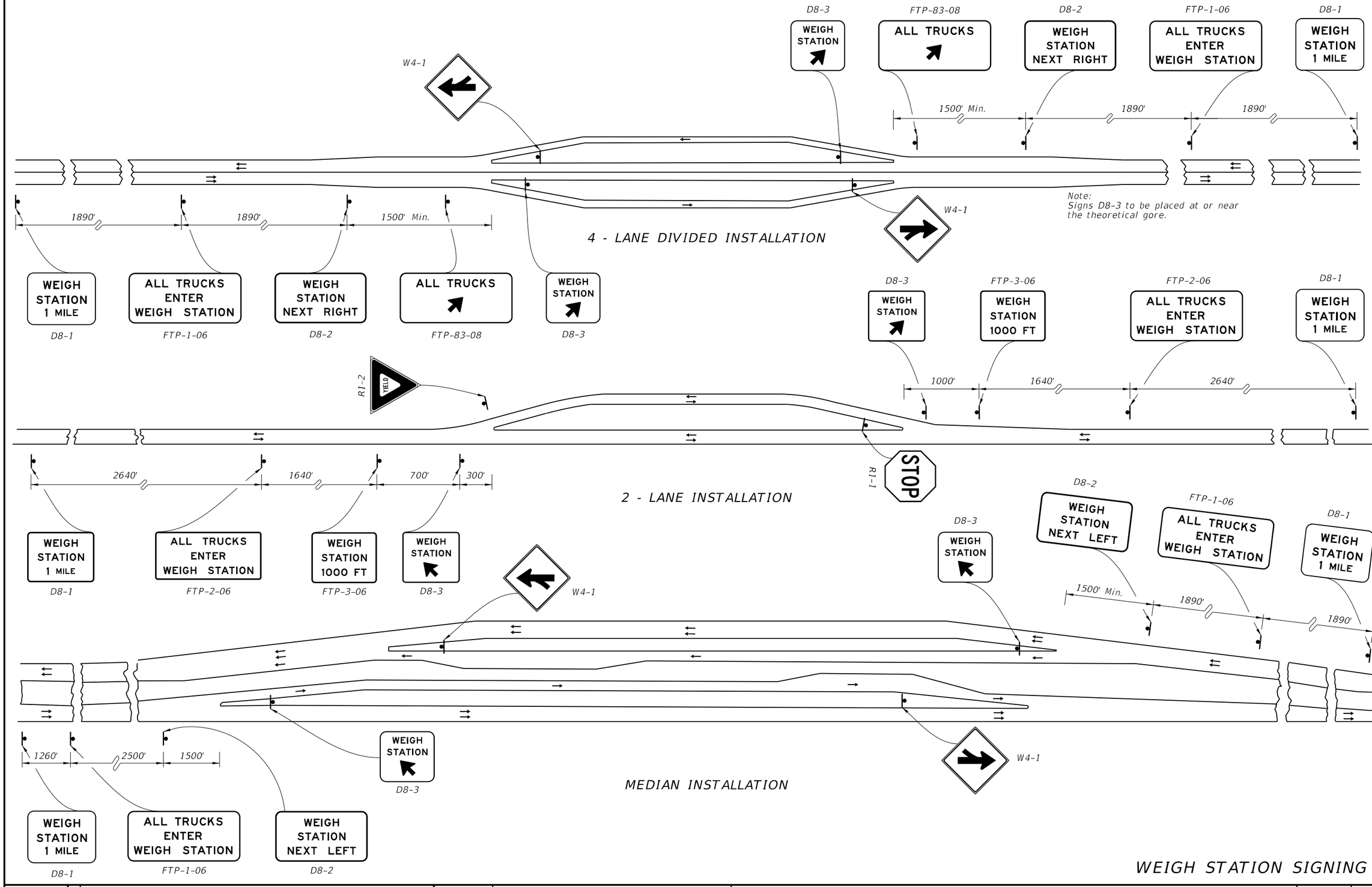
CASE IX (MILE POST MARKER)

For More Information
Refer To Section 2H
Of The Manual On
Uniform Traffic
Control Devices



C:\d\projects\standards\roadway\17300-s\17302-01.dgn
rd960rh
3:05:13 PM
6/28/2012

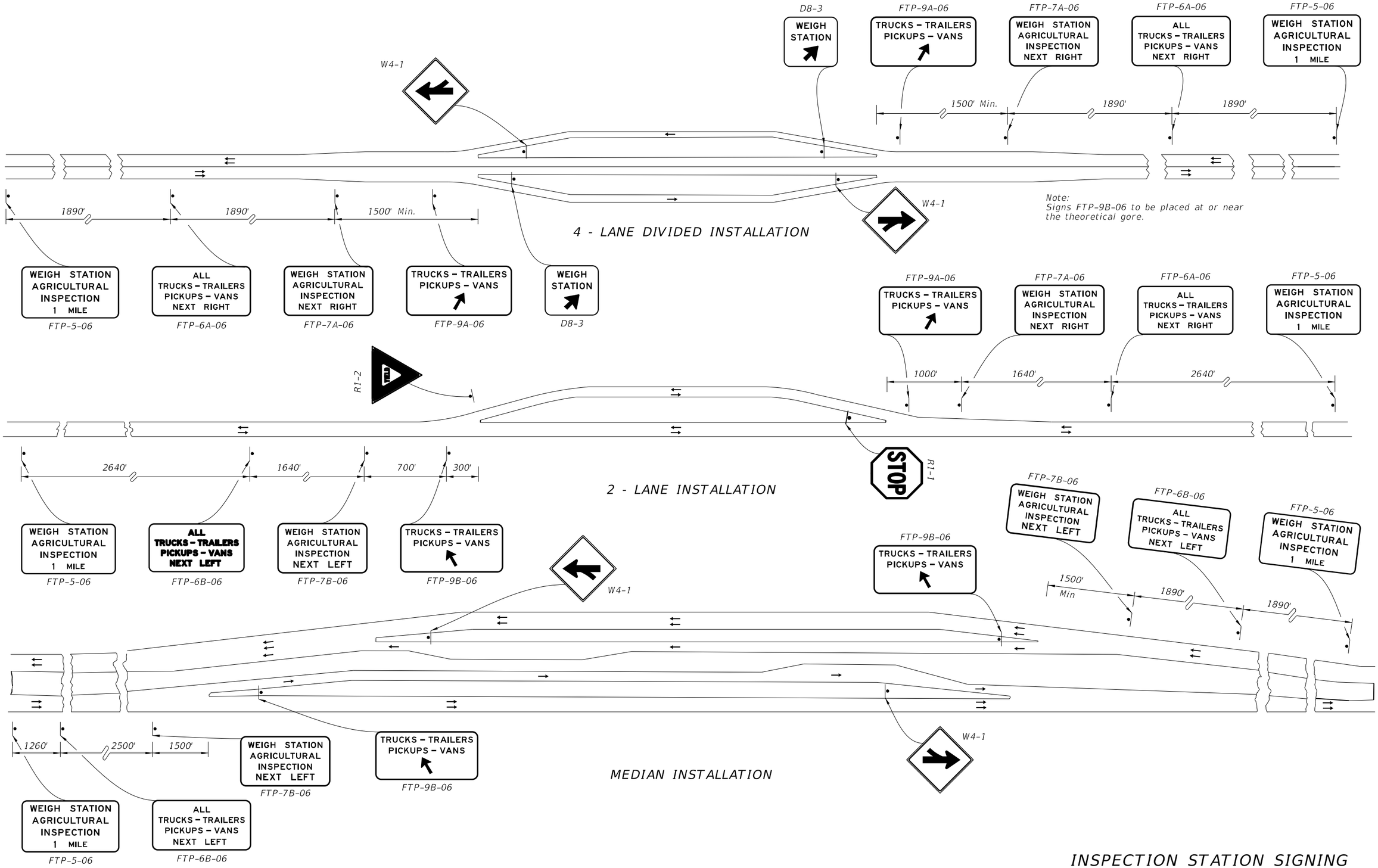
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	TYPICAL SECTIONS FOR PLACEMENT OF SINGLE & MULTI-COLUMN SIGNS	17302	1



WEIGH STATION SIGNING

C:\d\projects\standards\roadway\17300-s\17328-01.dgn
rd960rh
3:05:15 PM
6/28/2012

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	TYPICAL SIGNING FOR TRUCK WEIGH & INSPECTION STATIONS	INDEX NO.	SHEET NO.
07/01/09						17328	1

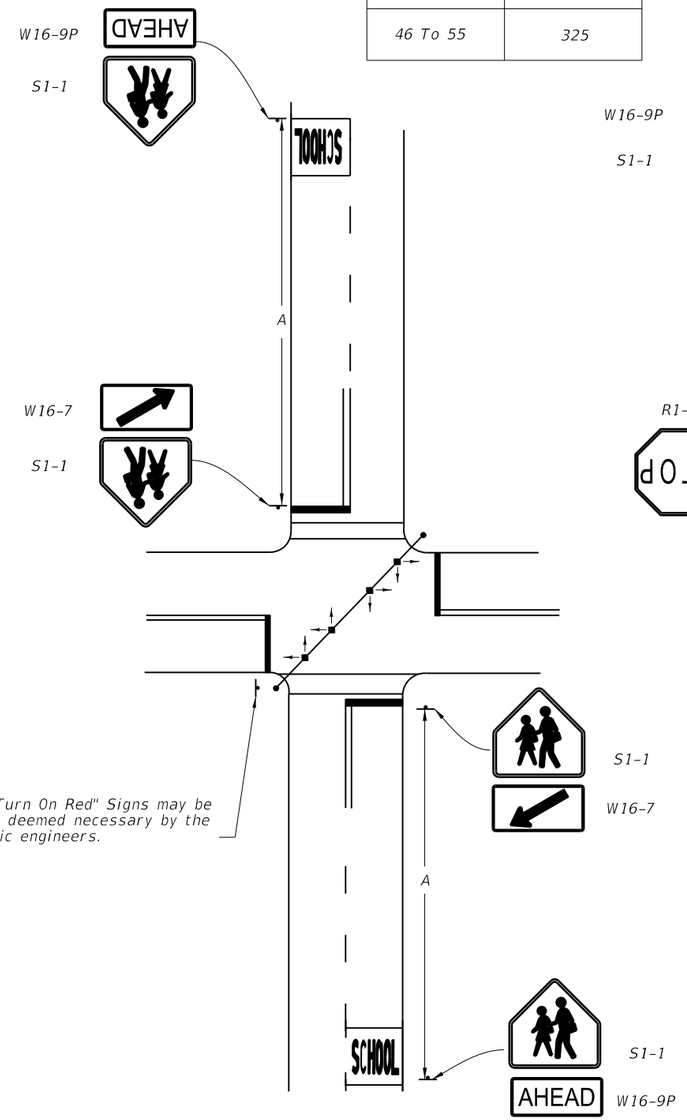


INSPECTION STATION SIGNING

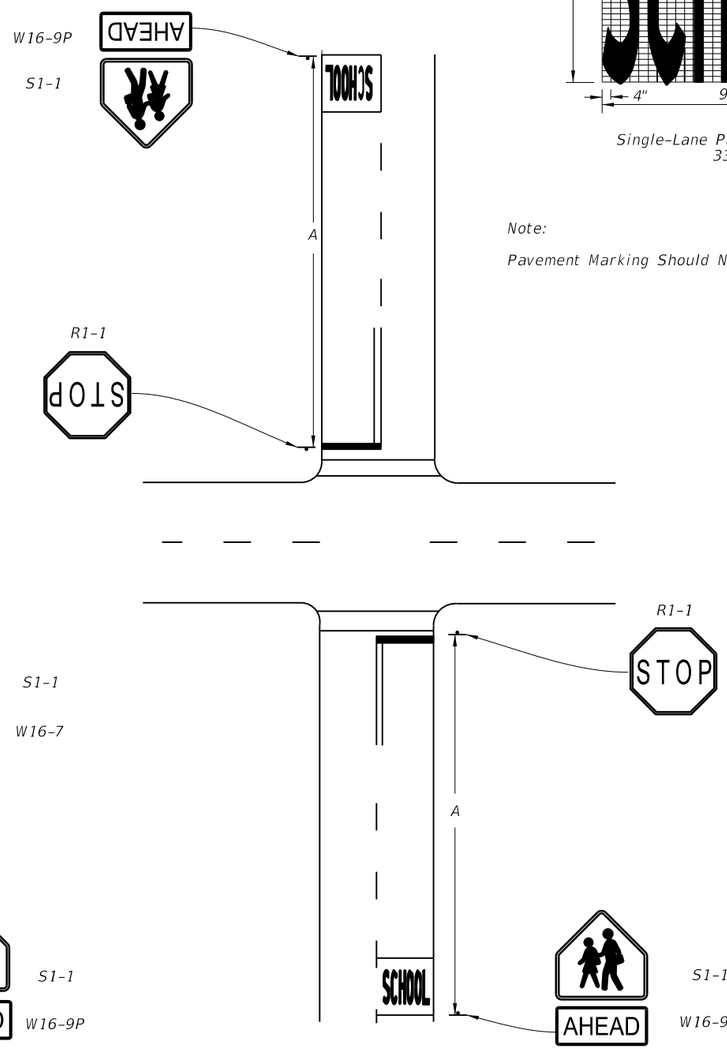
C:\d\projects\standards\roadway\17300-s\17328-02.dgn
rd960rh
3:05:26 PM
6/28/2012

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/09			FDOT DESIGN STANDARDS 2013	TYPICAL SIGNING FOR TRUCK WEIGH & INSPECTION STATIONS	17328	2

Approach Speed (MPH)	Distance A (FT.)
25 or Less	200
26 To 35	250
36 To 45	300
46 To 55	325

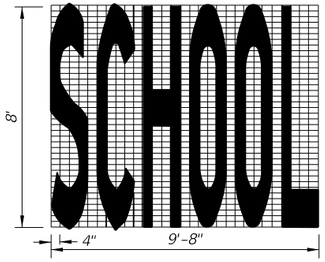


1. TRAFFIC CONTROL DEVICES FOR A SCHOOL CROSSWALK AT A SIGNALIZED INTERSECTION



2. TRAFFIC CONTROL DEVICES FOR A SCHOOL CROSSWALK AT A STOP CONTROLLED INTERSECTION

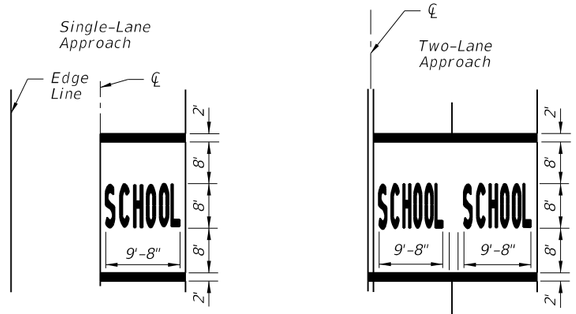
Note:
Special speed restrictions are not normally applicable to these two cases.



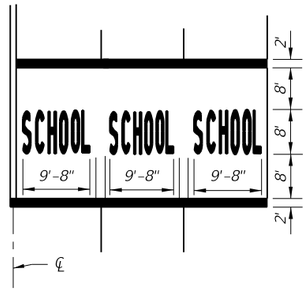
Single-Lane Pavement Marking
33 s.f.

Note:

Pavement Marking Should Not Extend Into Opposing Lane.



Multi-Lane Approch (Three or More)



PAVEMENT MARKINGS

Notes:

Signs shall be erected in accordance with index No. 17302.

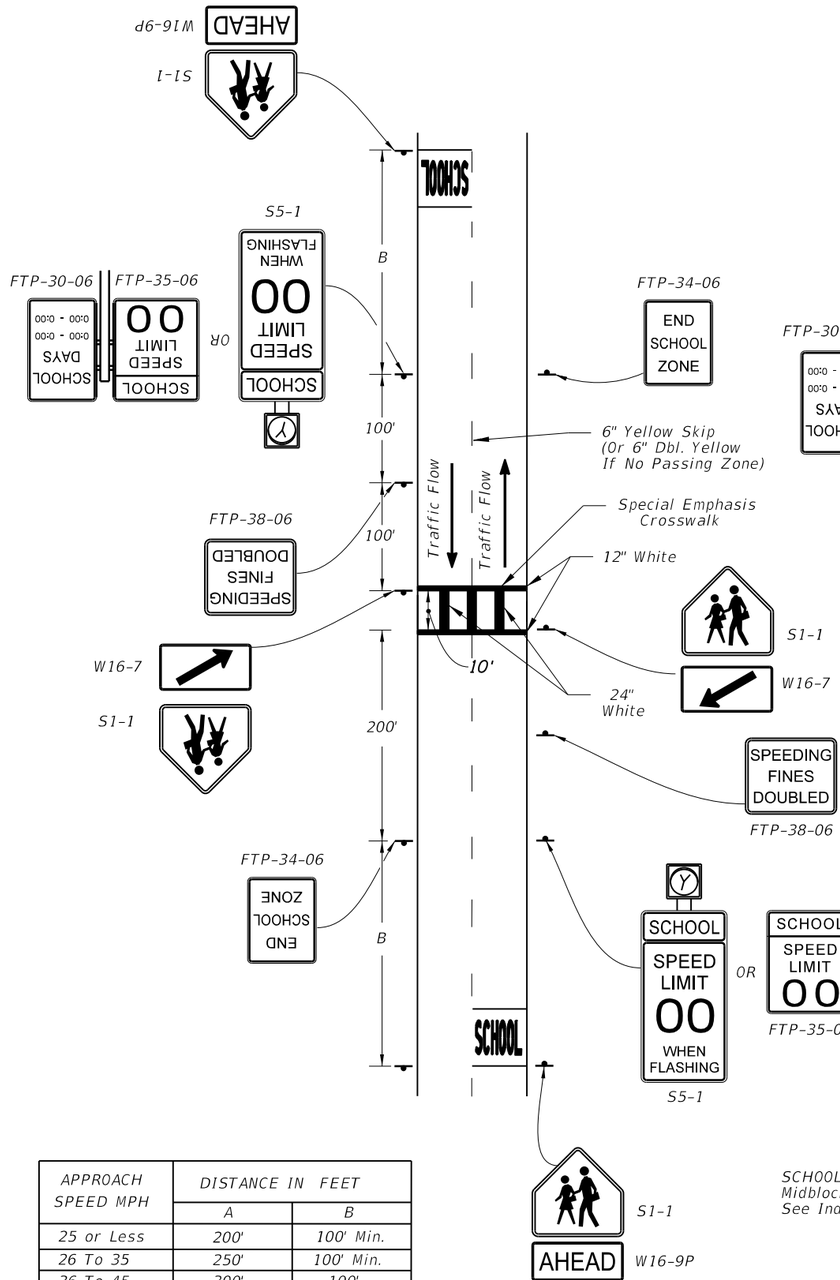
When computing pavement messages quantities do not include transverse lines.

School crosswalk widths at intersections shall be 6' minimum 10' standard without public sidewalk curb ramps 10' minimum with public sidewalk curb ramps. The width is measured from inside of line to inside of line,

For additional marking information, see Index 17346, Sheet 2.

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	SCHOOL SIGNS & MARKINGS	17344	1

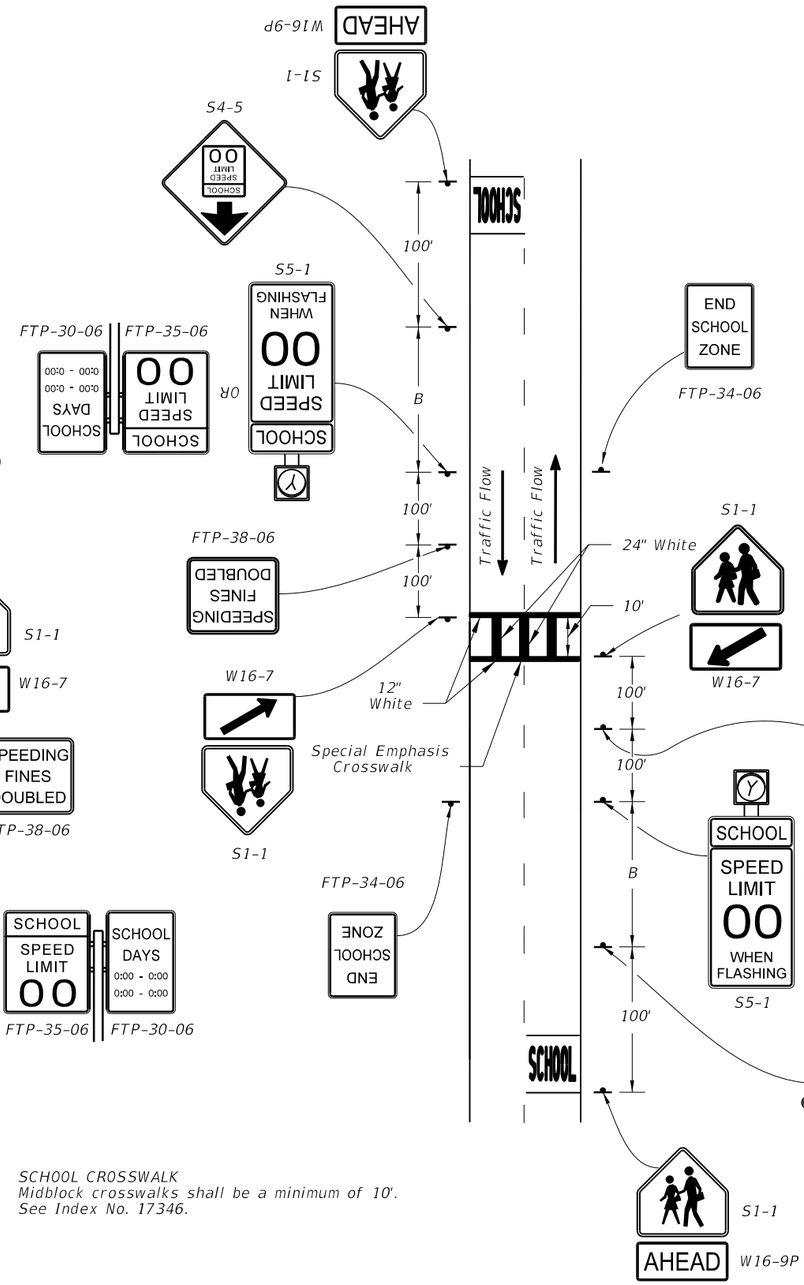
3. TRAFFIC CONTROL DEVICES FOR REDUCED SPEED ZONE AT A SCHOOL CROSSWALK 2 LANES-2 WAY TRAFFIC (40 MPH OR LESS) (MIDBLOCK OR ON THRU STREET AT AN INTERSECTION)



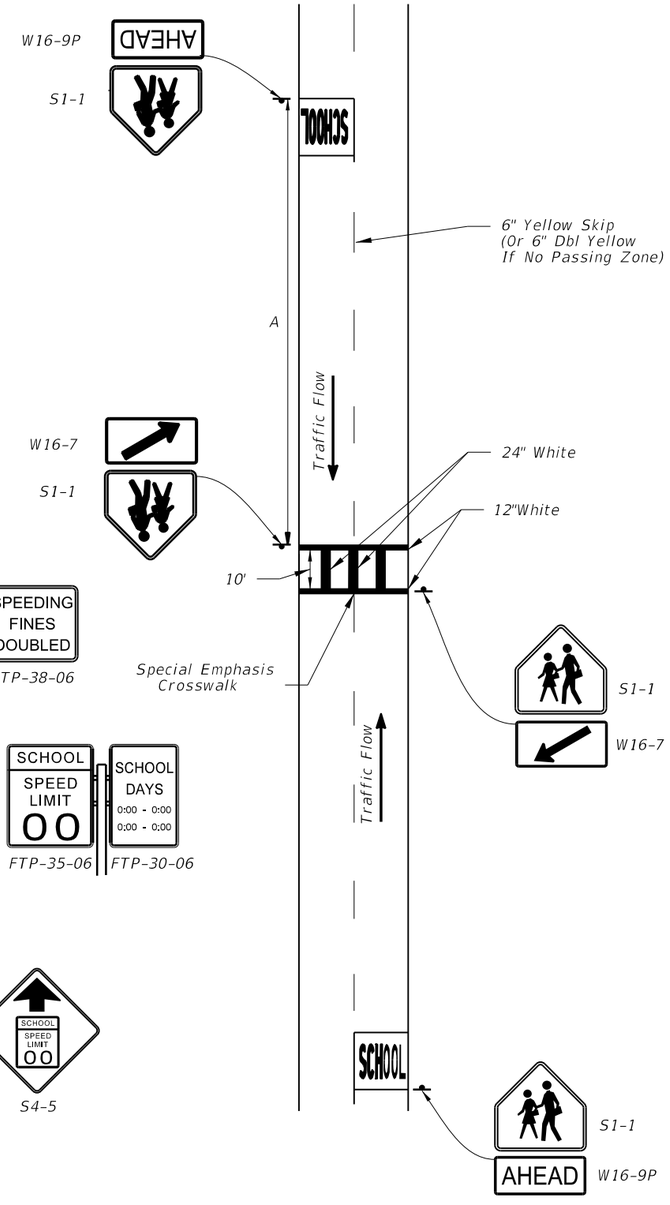
APPROACH SPEED MPH	DISTANCE IN FEET	
	A	B
25 or Less	200'	100' Min.
26 To 35	250'	100' Min.
36 To 45	300'	100'
46 To 55	325'	125'

SCHOOL CROSSWALK
Midblock crosswalks shall be a minimum of 10'.
See Index No. 17346.

4. TRAFFIC CONTROL DEVICES FOR REDUCED SPEED ZONE AT A SCHOOL CROSSWALK 2 LANES-2 WAY TRAFFIC (45 MPH OR GREATER) (MIDBLOCK OR ON THRU STREET AT AN INTERSECTION)

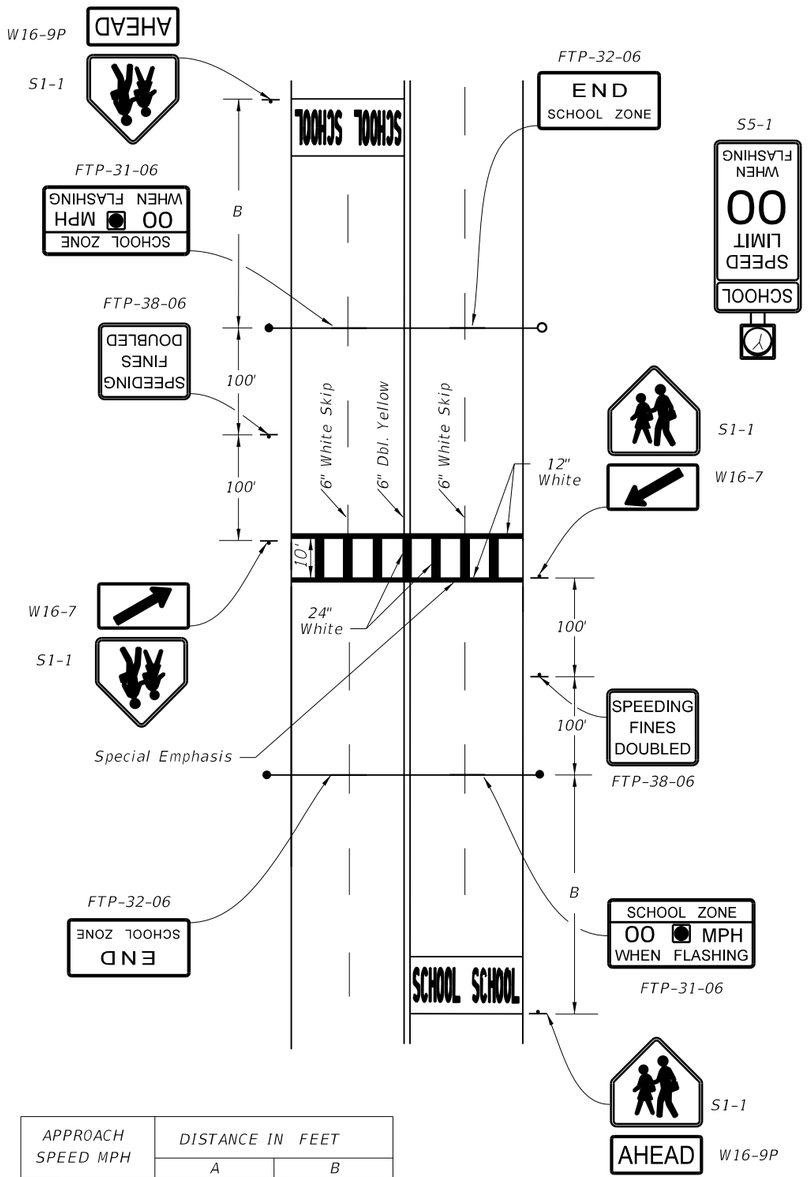


5. TRAFFIC CONTROL DEVICES FOR A SCHOOL CROSSWALK WITHOUT A SPEED REDUCTION (2 LANE-2 WAY TRAFFIC)



LAST REVISION	REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS 2013	SCHOOL SIGNS & MARKINGS	INDEX NO.	SHEET NO.
01/01/12					17344	2

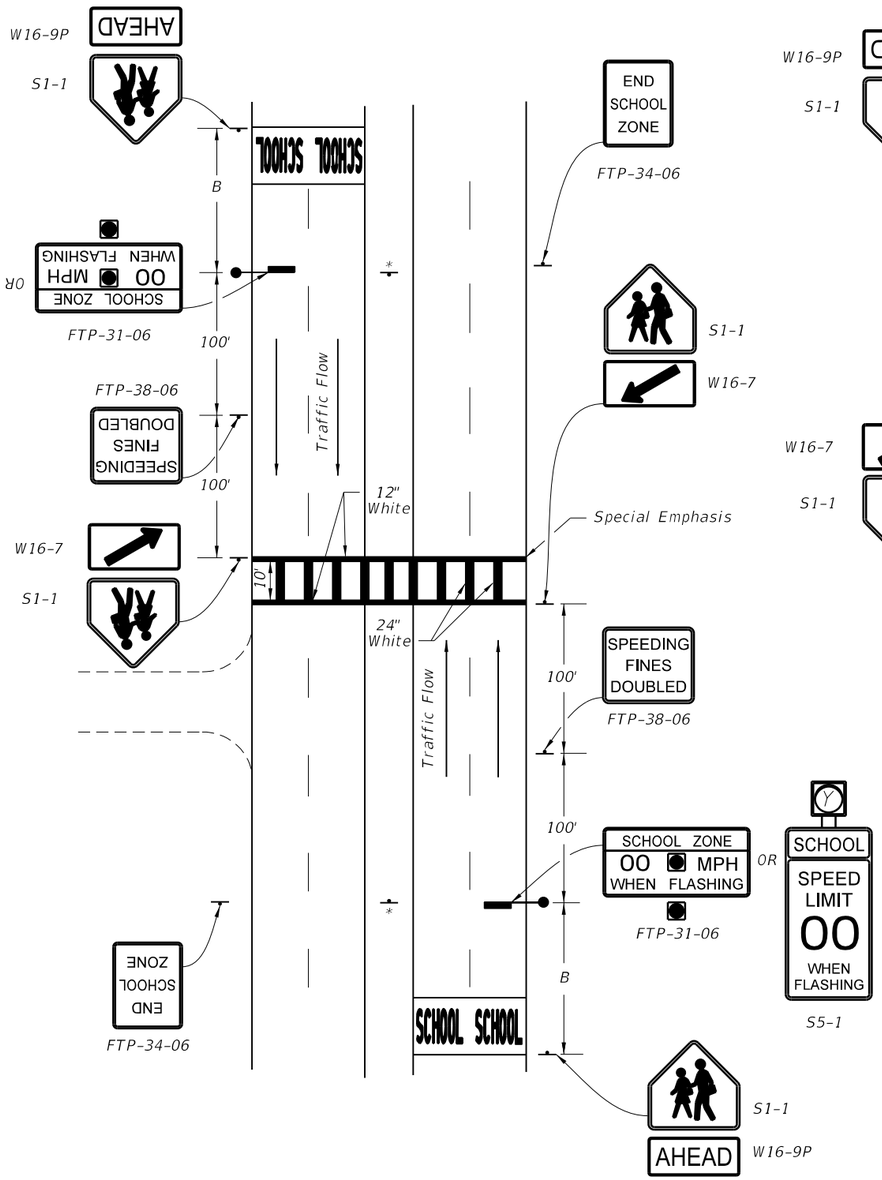
6. TRAFFIC CONTROL DEVICES FOR A REDUCED SPEED ZONE AT A SCHOOL CROSSWALK WITH OVERHEAD FLASHING BEACON SPEED LIMIT SIGNS (4 LANES UNDIVIDED-2 WAY TRAFFIC) (MIDBLOCK OR ON THRU STREET AT AN INTERSECTION)



APPROACH SPEED MPH	DISTANCE IN FEET	
	A	B
25 or Less	200'	100' Min.
26 To 35	250'	100' Min.
36 To 45	300'	100'
46 To 55	325'	125'

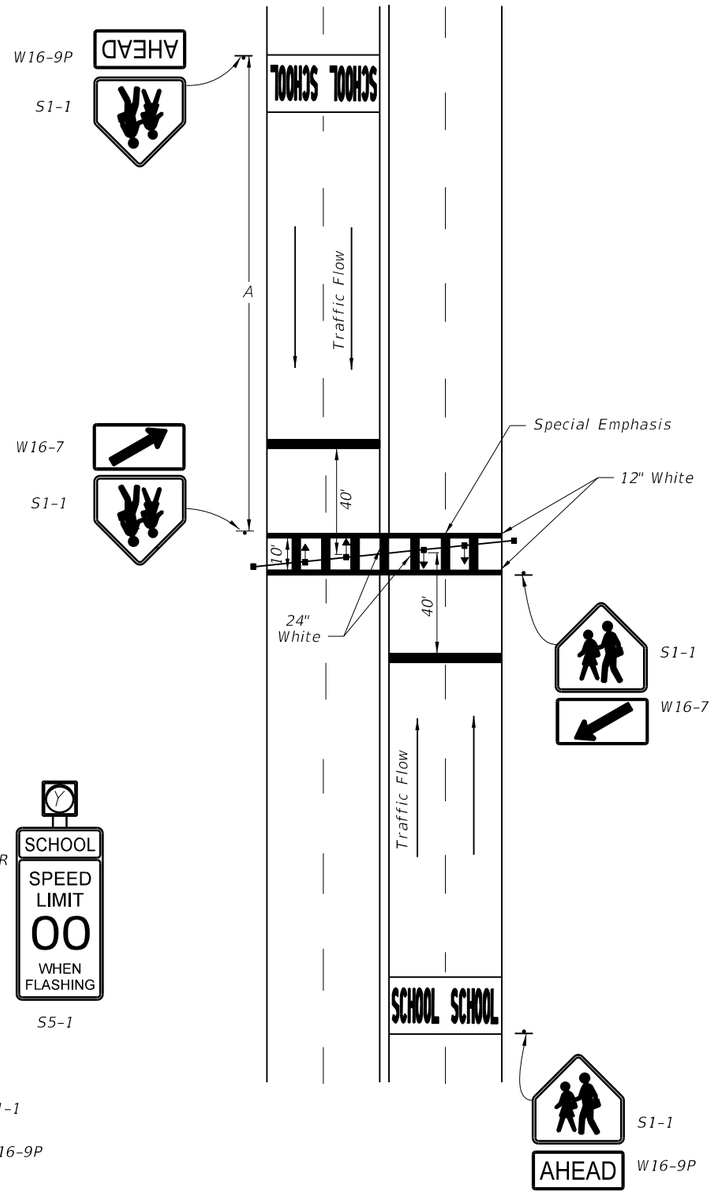
SCHOOL CROSSWALK
Midblock crosswalk shall be a minimum of 10'.
See Index No. 17346.

7. TRAFFIC CONTROL DEVICES FOR A REDUCED SPEED ZONE AT A SCHOOL CROSSWALK WITH OVERHEAD OR GROUND MOUNTED FLASHING BEACON SPEED LIMIT SIGNS (4 LANES DIVIDED-2 WAY TRAFFIC)



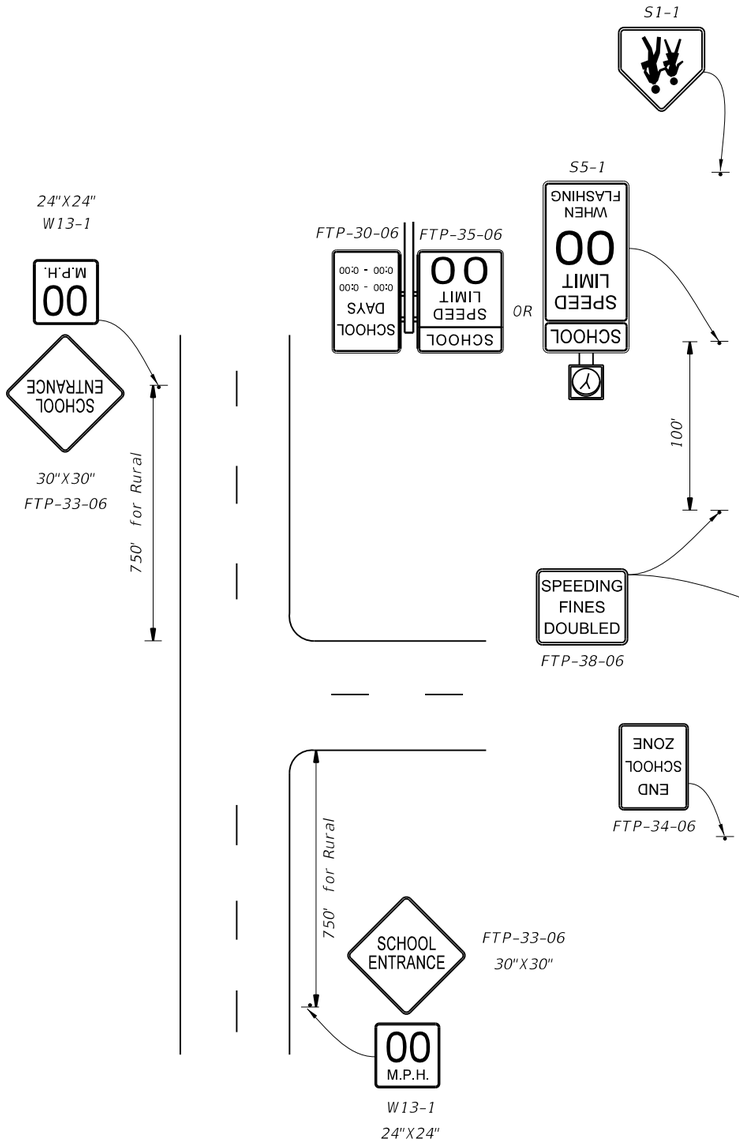
* NOTE- CONDITION 7:
Where engineering judgement determines the overhead structure is not suitable or cannot be installed due to site restrictions, S5-1 with flashing beacons on each side of the road may be substituted for the overhead structure.

8. TRAFFIC CONTROL DEVICES FOR SIGNALIZED MIDBLOCK SCHOOL CROSSWALK



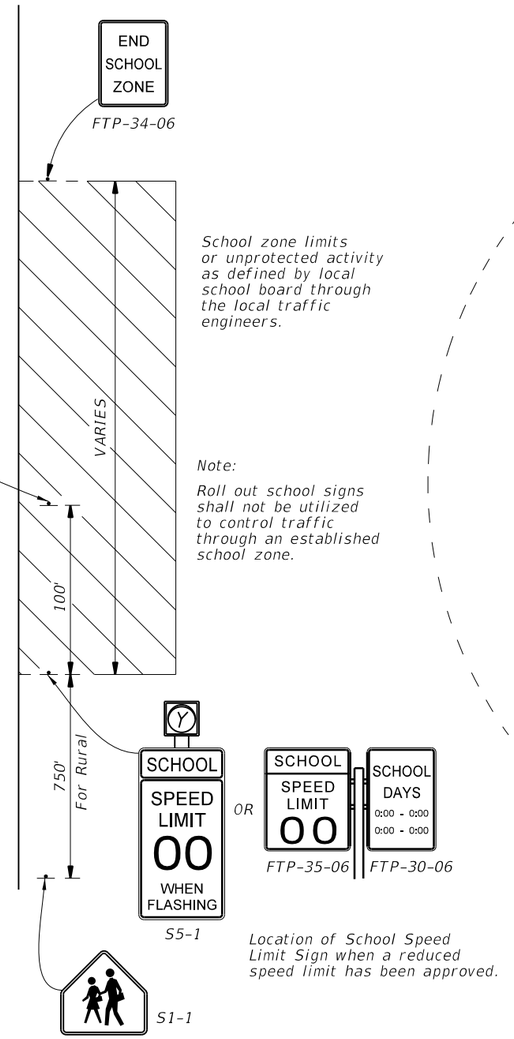
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	SCHOOL SIGNS & MARKINGS	17344	3

9. TRAFFIC CONTROL DEVICES AT SCHOOL ENTRANCES WITH LOW VOLUMES OF WALKING STUDENTS



These signs are intended for use only at those few locations where the school entrance is not evident to the motorist, and must be approved in advance by the responsible traffic engineering authority.

10. TRAFFIC CONTROL DEVICES FOR A TYPICAL SCHOOL ZONE FRONTING THE SCHOOL PROPERTY

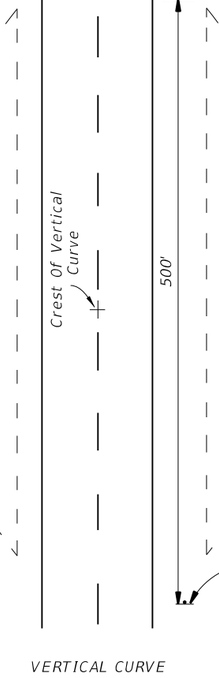


School zone limits or unprotected activity as defined by local school board through the local traffic engineers.

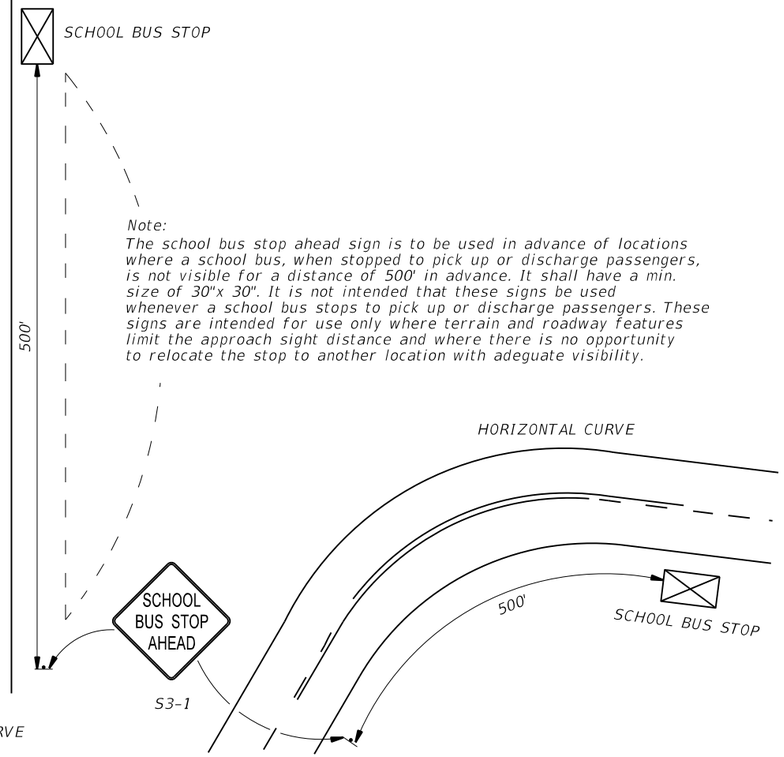
Note:

Roll out school signs shall not be utilized to control traffic through an established school zone.

Location of School Speed Limit Sign when a reduced speed limit has been approved.



11. SCHOOL BUS STOP

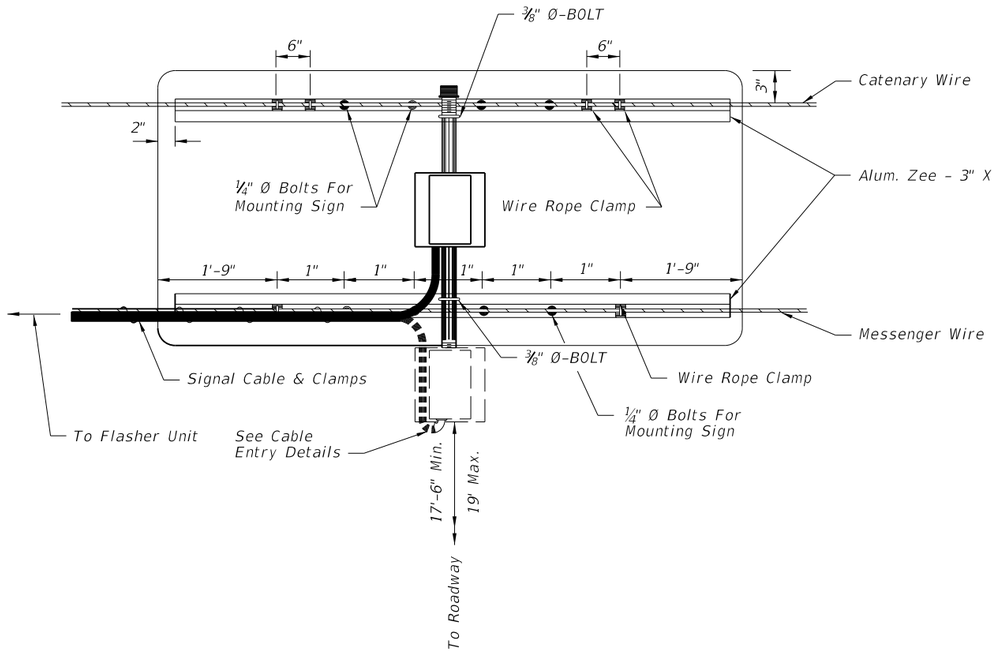


Note:

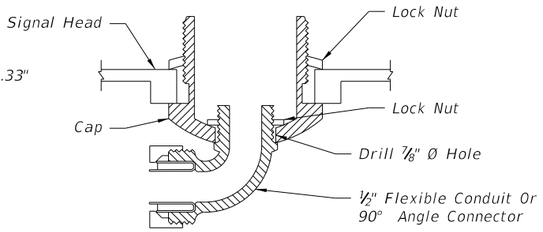
The school bus stop ahead sign is to be used in advance of locations where a school bus, when stopped to pick up or discharge passengers, is not visible for a distance of 500' in advance. It shall have a min. size of 30"x 30". It is not intended that these signs be used whenever a school bus stops to pick up or discharge passengers. These signs are intended for use only where terrain and roadway features limit the approach sight distance and where there is no opportunity to relocate the stop to another location with adequate visibility.

C:\d\projects\standards\roadway\17300-s\17344-04.dgn
rd960rh
3:05:35 PM
6/28/2012

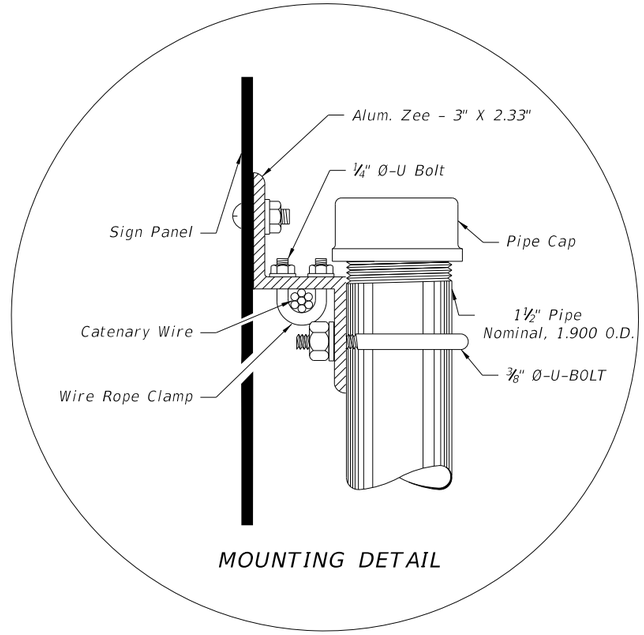
LAST REVISION	REVISION	DESCRIPTION:				
07/01/09			FDOT DESIGN STANDARDS 2013	SCHOOL SIGNS & MARKINGS	INDEX NO. 17344	SHEET NO. 4



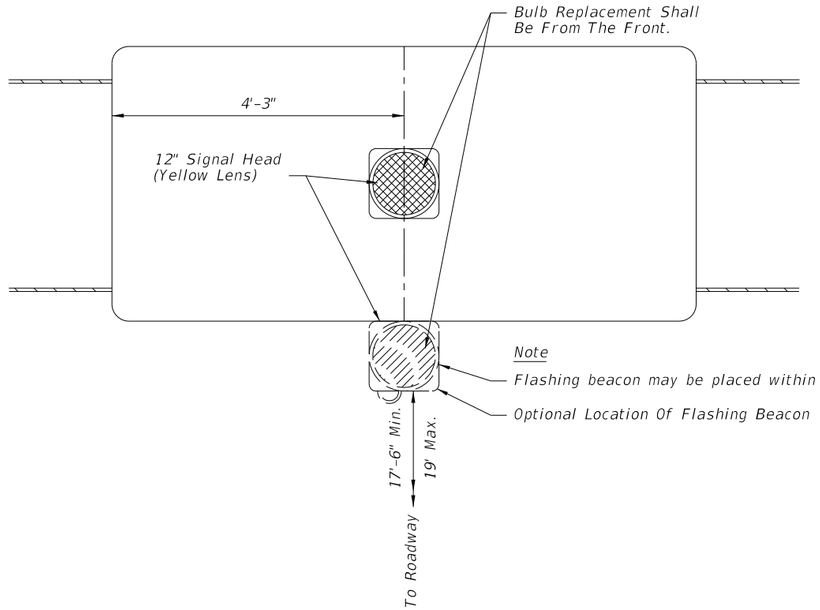
REAR VIEW



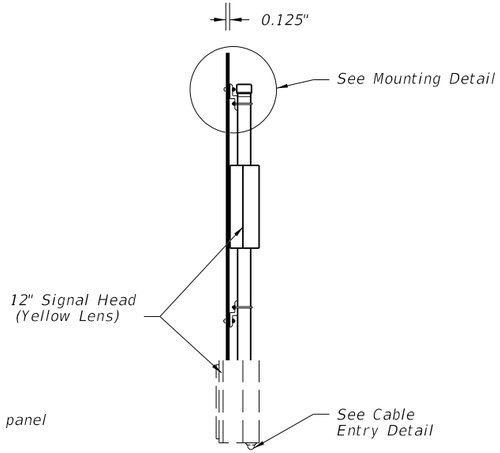
CABLE ENTRY DETAIL



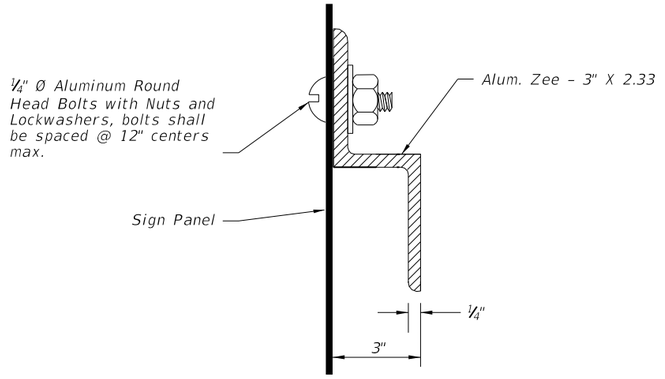
MOUNTING DETAIL



FRONT VIEW



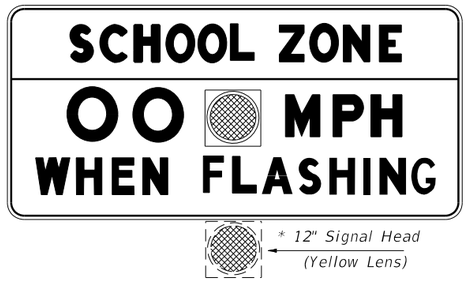
SIDE VIEW



ZEE SECTION DETAIL

Flasher unit and cabinet to be placed on the strain pole supporting overhead sign assembly or on service pole. The flasher unit not to overhang private property or sidewalk.

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	SCHOOL SIGNS & MARKINGS	17344	5



FTP-31-06

OVERHEAD STANDARD

* Flashing Beacon May Be Placed Within Or Below Panel

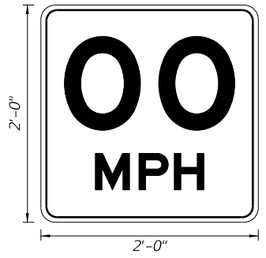
FTP-32-06

FTP-38-06

Notes:

1. Standard size signs should be used whenever possible. Minimum sizes may be used only on low volume, low speed (less than 35 mph) streets. Special sizes should be used on expressway facilities where special emphasis is needed.
2. The value of the actual school zone speed limit shall be determined by the District Traffic Operations Engineer in cooperation with local school superintendents. In no case shall it be less than the 15 mph min. as set by law.
3. See Index No. 17355 for sign details.
4. When fluorescent yellow-green background color is used, a systematic approach featuring one background color within a zone or area should be used. The mixing of standard yellow and fluorescent yellow green background within a zone should be avoided.

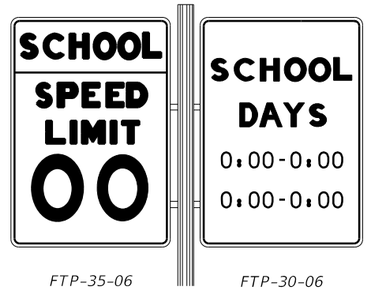
FTP-33-06



W13-1

SPEED LIMIT ASSEMBLY

S4-5

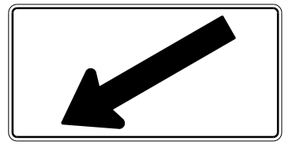


FTP-35-06 FTP-30-06

S1-1

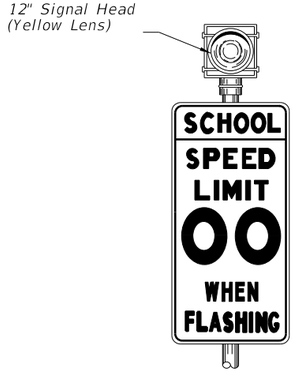
S3-1

FTP-34-06



W16-7

W16-9P

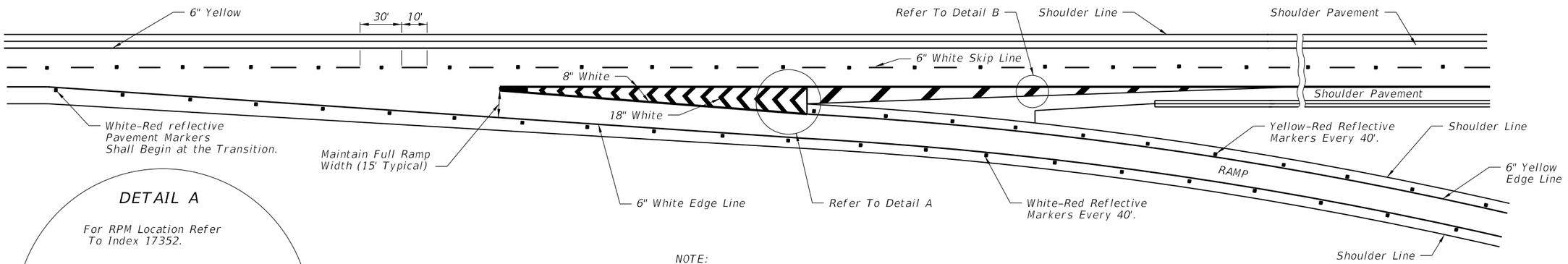


S5-1

Ground Mount Standard

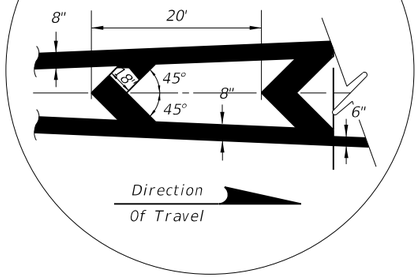
Note:
Existing ground mount school speed limit signs utilizing a single 8" min. size beacon or two 6" min. size beacons inside the sign border are considered meeting the standard. However, replacement or upgrading of these school speed limit signs shall conform to the above standard. Numerical speed limit displayed shall be established by appropriate regulatory authorities.

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/09			FDOT DESIGN STANDARDS 2013	SCHOOL SIGNS & MARKINGS	17344	6



DETAIL A

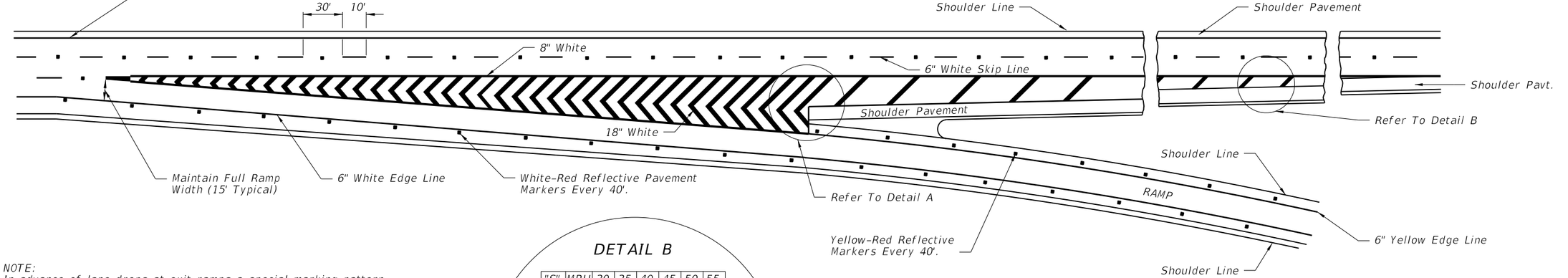
For RPM Location Refer
To Index 17352.



NOTE:
Reflective pavement markers
are installed adjacent to the
edge line.

NORMAL TAPERED EXIT

(TWO THRU LANES)

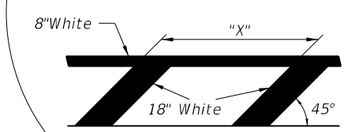


NOTE:
In advance of lane drops at exit ramps a special marking pattern may be used to distinguish the lane drop situation from a normal exiting ramp or auxiliary lane.
A typical special marking for lane drops consist of 8" wide by 3' long white stripes separated by 9' gaps. If used, this special marking should begin ½ mile in advance of the theoretical gore point. Where lane changes may cause conflicts, an 8" wide solid white channelizing line may be extended 300' upstream from the theoretical gore. (MUTCD Section 3B.05).

DETAIL B

"S"	MPH	30	35	40	45	50	55
"X"	Ft.	20	20	40	40	60	60

Passenger Car, Daytime, Posted Speeds
Or 85th Percentile (Use Higher Value)

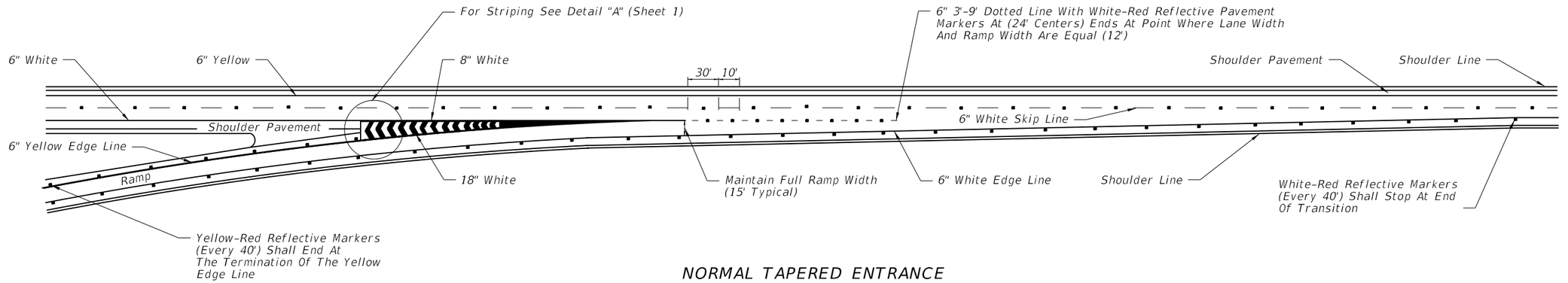


NORMAL TAPERED EXIT ONLY

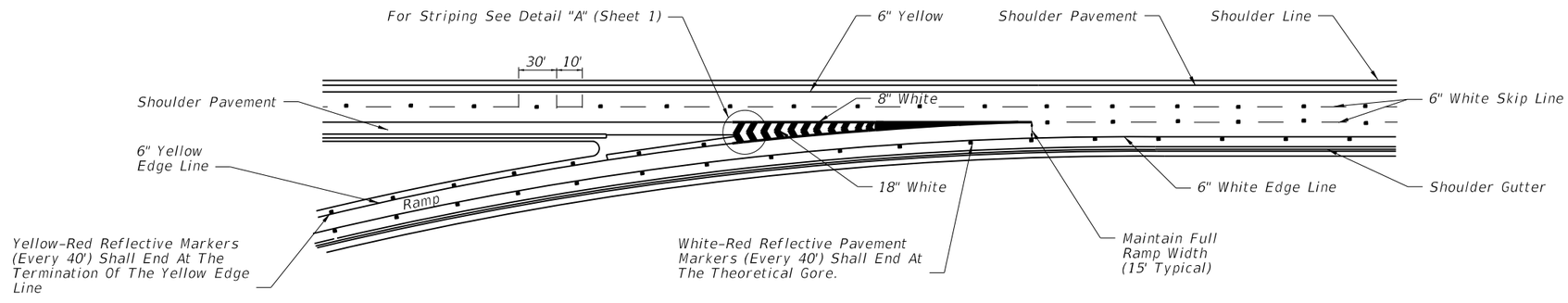
(TWO THRU LANES – THREE APPROACH LANES)

C:\d\projects\standards\roadway\17300-s\17345-01.dgn
rd960rh
3:05:41 PM
6/28/2012

LAST REVISION	REVISION	DESCRIPTION:				
07/01/05			FDOT DESIGN STANDARDS 2013	INTERCHANGE MARKINGS	INDEX NO. 17345	SHEET NO. 1

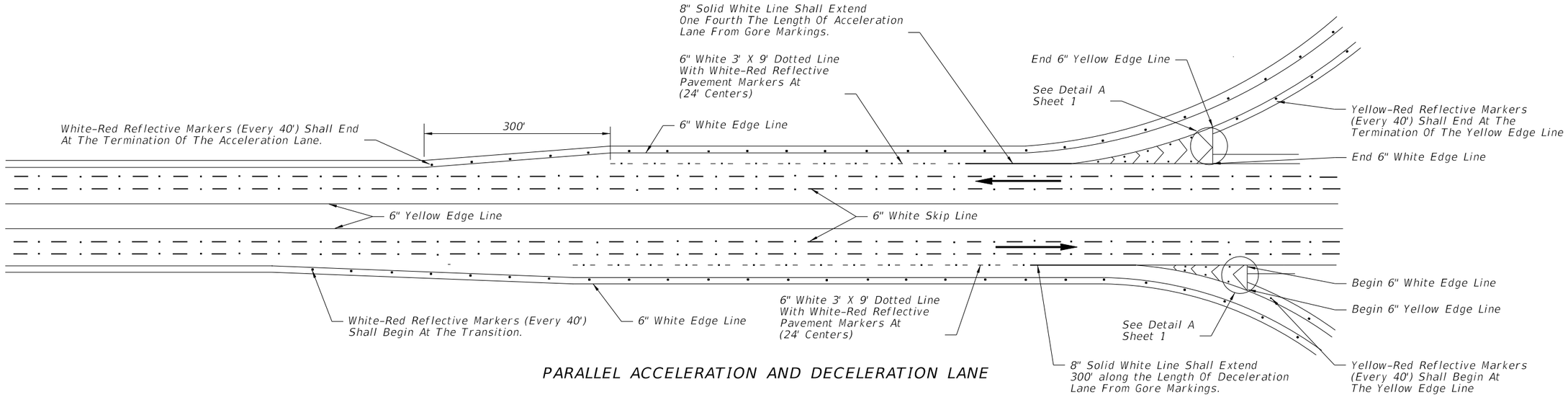


NORMAL TAPERED ENTRANCE

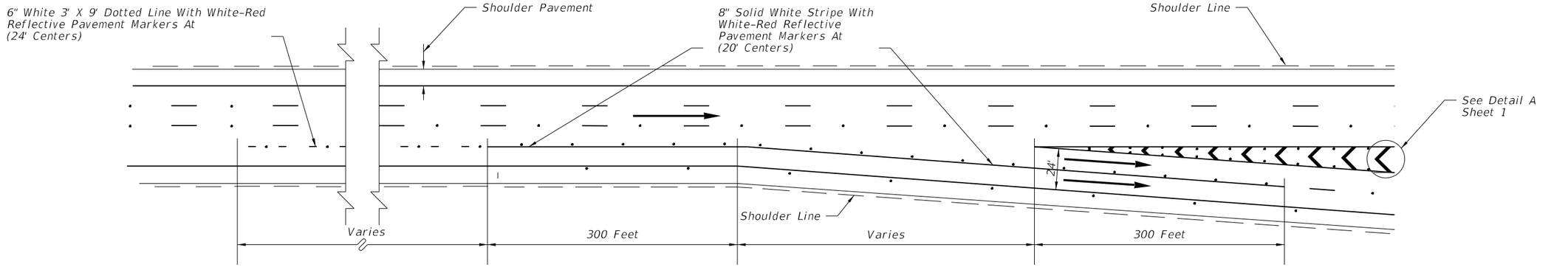


NORMAL TAPERED ENTRANCE
WITH ADDED LANE

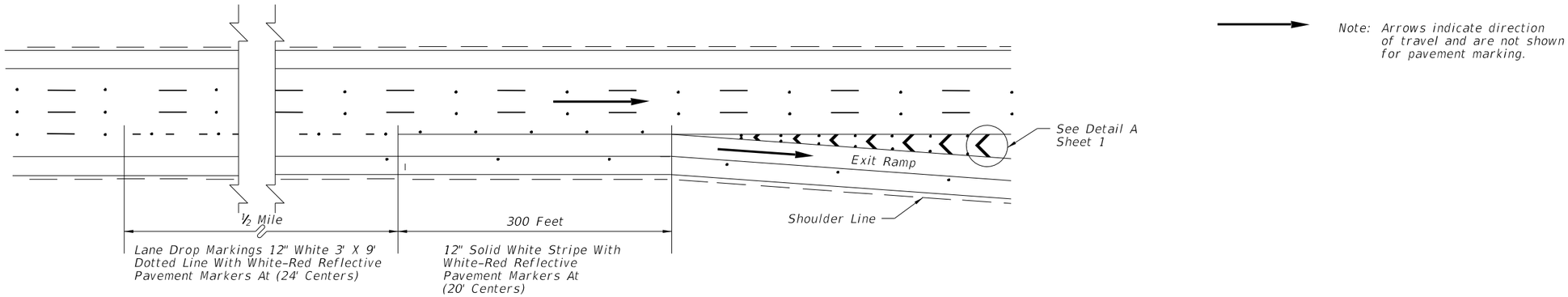
LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	INTERCHANGE MARKINGS	INDEX NO.	SHEET NO.
07/01/10						17345	2



PARALLEL ACCELERATION AND DECELERATION LANE



TYPICAL MARKINGS AT DUAL LANE EXITS



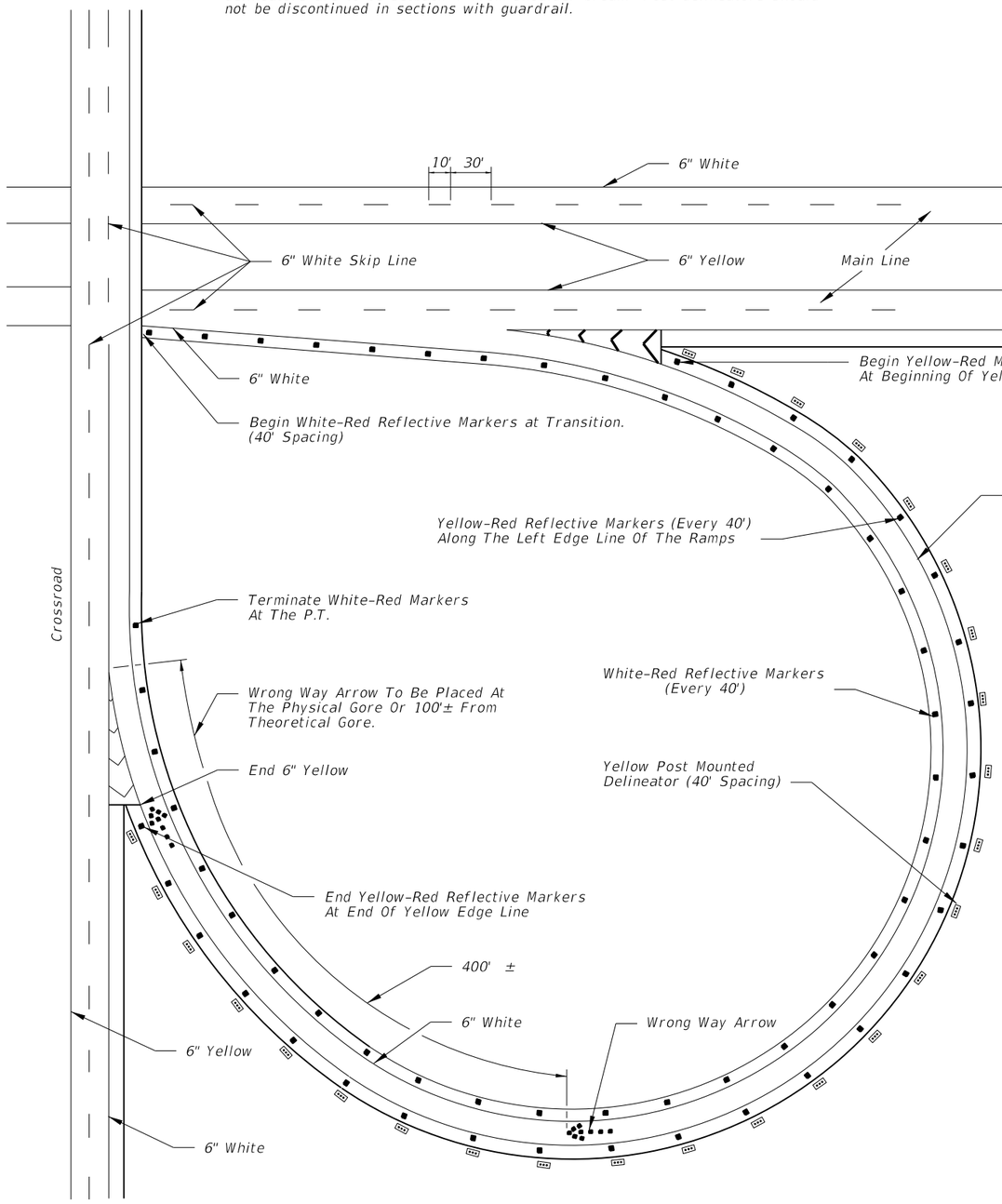
TYPICAL LANE DROP MARKINGS AT EXIT RAMPS

C:\d\projects\standards\roadway\17300-s\17345-03.dgn
rd960rh
3:05:45 PM
6/28/2012

LAST REVISION	REVISION	DESCRIPTION:				
07/01/10			FDOT DESIGN STANDARDS 2013	INTERCHANGE MARKINGS	INDEX NO. 17345	SHEET NO. 3

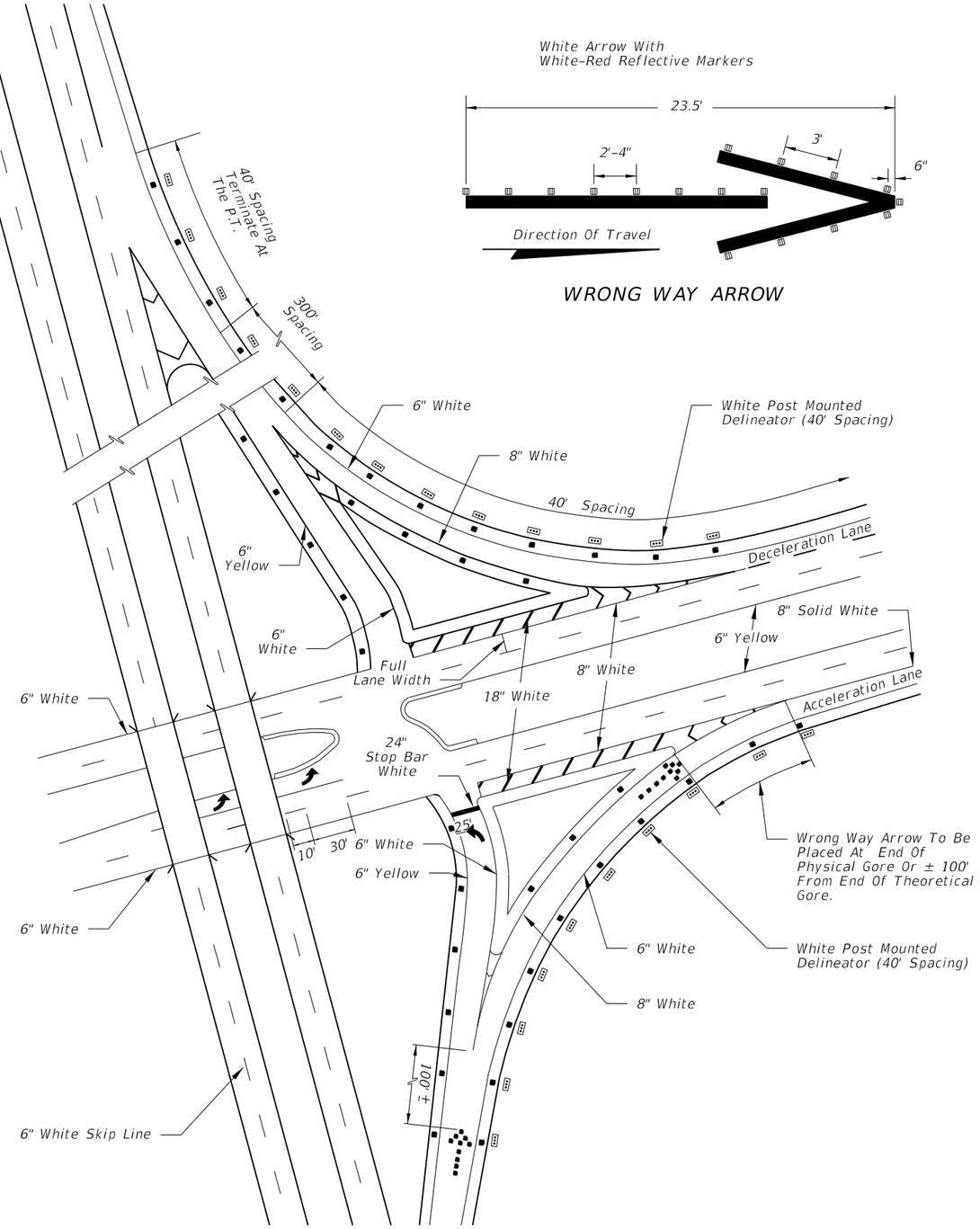
Notes:

1. Post delineators spaced at 40' on curves of the entrance and exit of ramps. The spacing on the tangent portion of the ramp section shall be 300'. All delineators are to be setback 4' from shoulder break. Post delineators should not be discontinued in sections with guardrail.



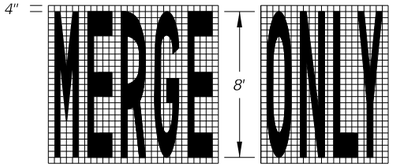
White Arrow With
White-Red Reflective Markers

WRONG WAY ARROW

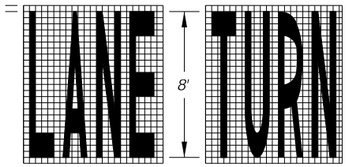


C:\d\projects\standards\roadway\17300-s\17345-04.dgn
rd960rh
3:05:47 PM
6/28/2012

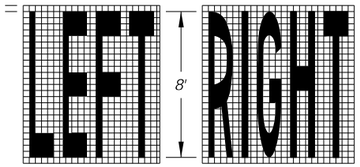
LAST REVISION	REVISION	DESCRIPTION:				
01/01/12			FDOT DESIGN STANDARDS 2013	INTERCHANGE MARKINGS	INDEX NO. 17345	SHEET NO. 4



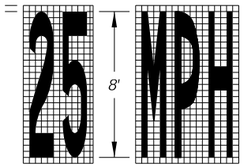
4" = 4" 34 s.f. 22 s.f.



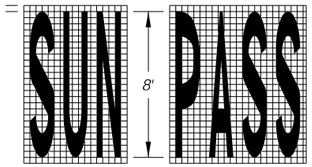
23 s.f. 24 s.f.



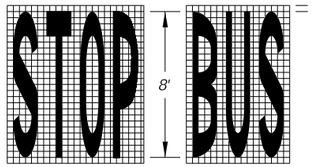
20 s.f. 26 s.f.



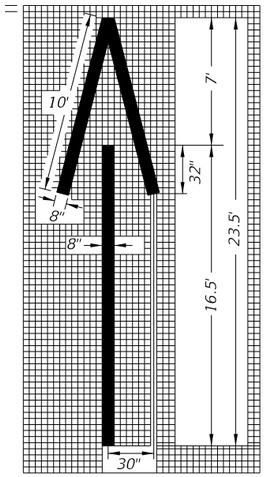
13 s.f. 20 s.f.



20 s.f. 23 s.f.

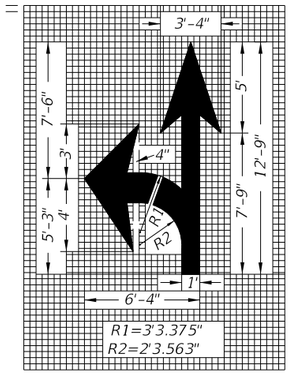


22 s.f. 20 s.f. 4" =



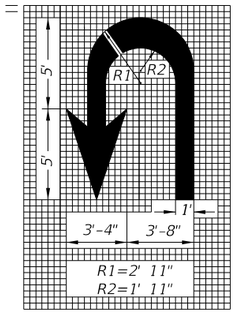
Wrong-Way Arrow

24 s.f.



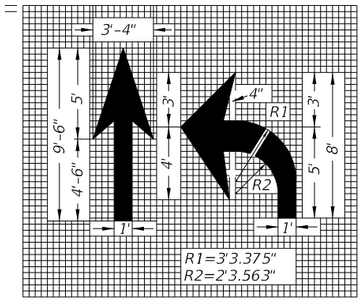
Turn and Through Lane-Use Arrow

29 s.f.



U Turn Lane-Use Arrow

27 s.f.



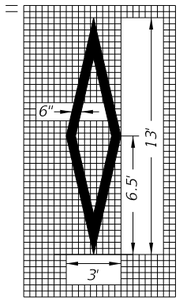
Through Lane-Use Arrow

12 s.f.

Turn Lane-Use Arrow

17 s.f.

Right Turn Arrow To Be Reversed.



Preferential Lane Symbol

11 s.f.

DIMENSIONS ARE WITHIN 1" ±

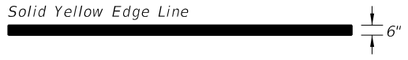
PAVEMENT ARROW AND MESSAGE DETAILS

NOTE: When arrow and pavement message are used together, the arrow shall be located down stream of the pavement message and shall be separated from the pavement message by a distance of 25' (Base of the arrow to the base of the message). Stop message shall be placed 25' from back of stop line.

TYPES OF PERMANENT LONGITUDINAL LINES

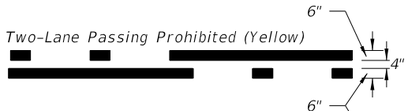
BASIC COLOR RULE:

White lines separate traffic in the same direction. Yellow lines separate traffic in opposing directions. Yellow dotted lines may be used in special cases. Black may be used in combination with white for skip lines where a light-colored pavement does not provide sufficient contrast with the markings.



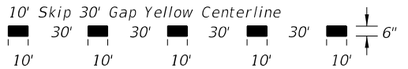
Solid Yellow Edge Line

2' Skip 4' Gap Dotted Line (Turning Guide Line)

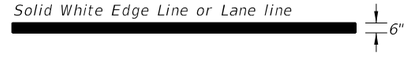


Two-Lane Passing Prohibited (Yellow)

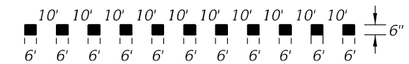
Double Solid Yellow (Or White)



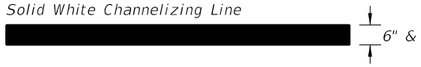
10' Skip 30' Gap Yellow Centerline



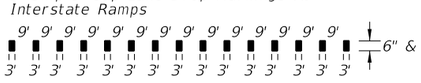
Solid White Edge Line or Lane line



6' Skip 10' Gap Extension Of Edge Line Through Cross-Over Area

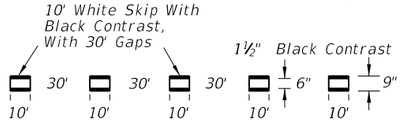


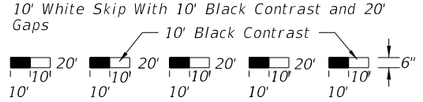
Solid White Channelizing Line

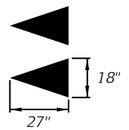


3' Skip 9' Gap Lane Drop Markings At Interstate Ramps

CONTRAST MARKINGS

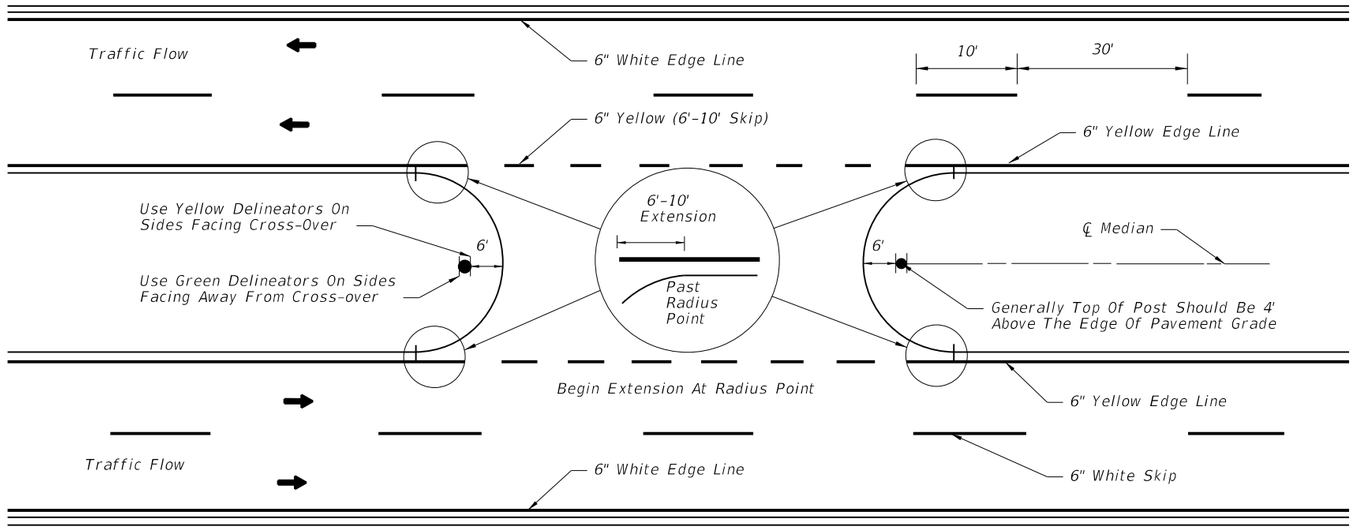




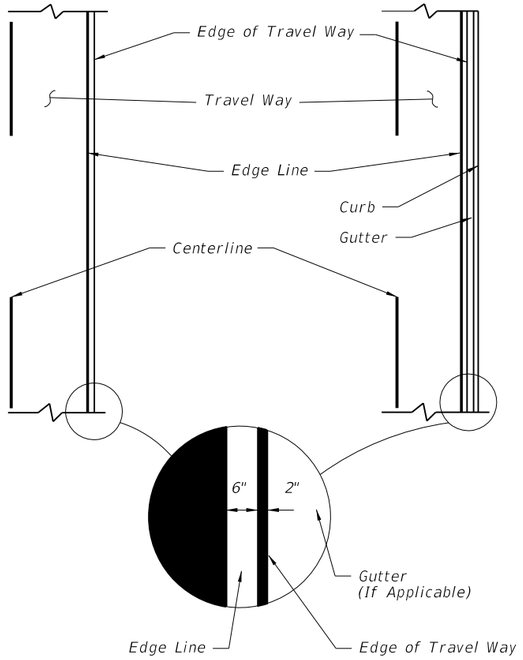


Yield Lines 5-18" X 27" White triangles facing traffic equally spaced within travel lane with 1 additional triangle using same spacing when a bike lane is present.

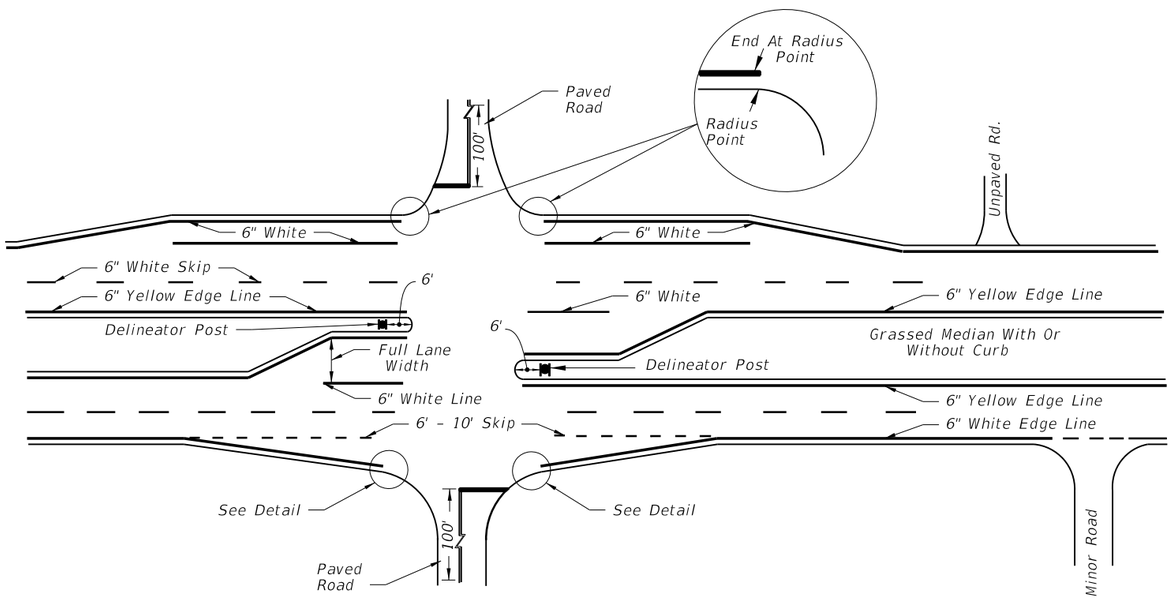
LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
01/01/12						17346	1



PAVEMENT MARKINGS AND DELINEATORS FOR MEDIAN CROSS-OVER



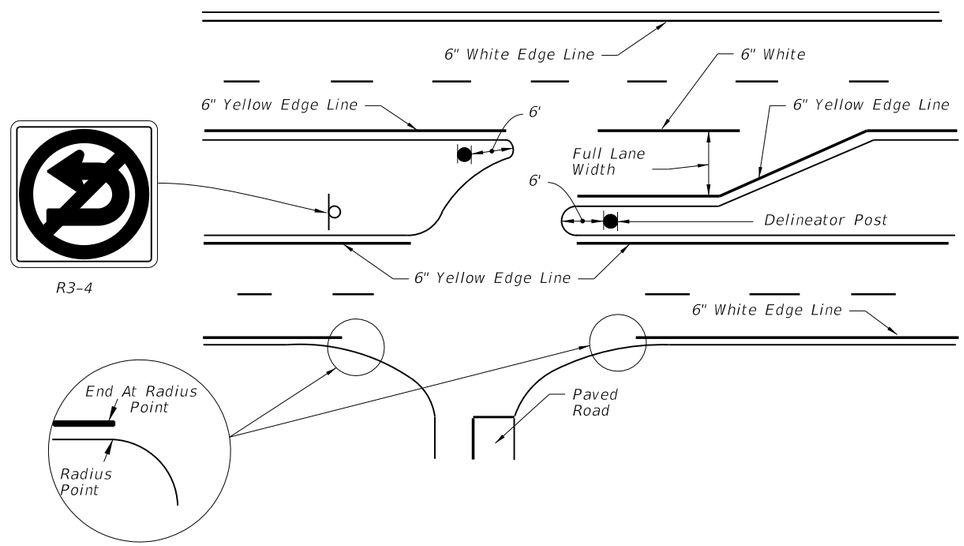
PLACEMENT OF EDGE LINES



PAVEMENT MARKINGS FOR INTERSECTIONS WITH MAJOR AND MINOR ROADS

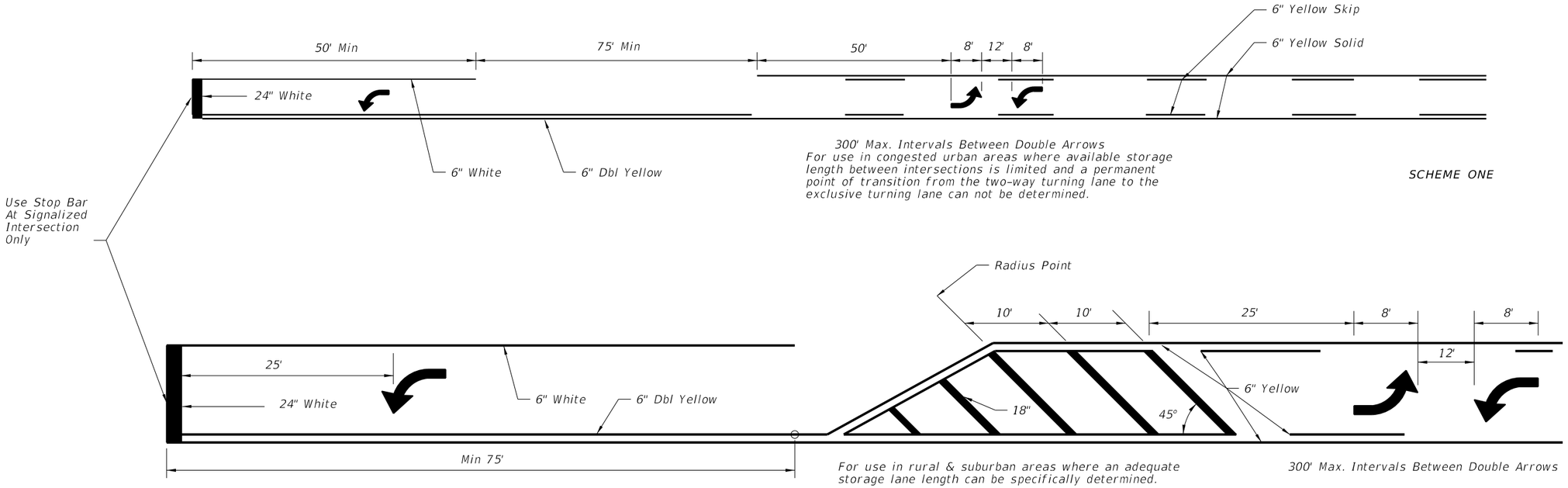
NOTE:

Markings applied to median noses shall be yellow in color.

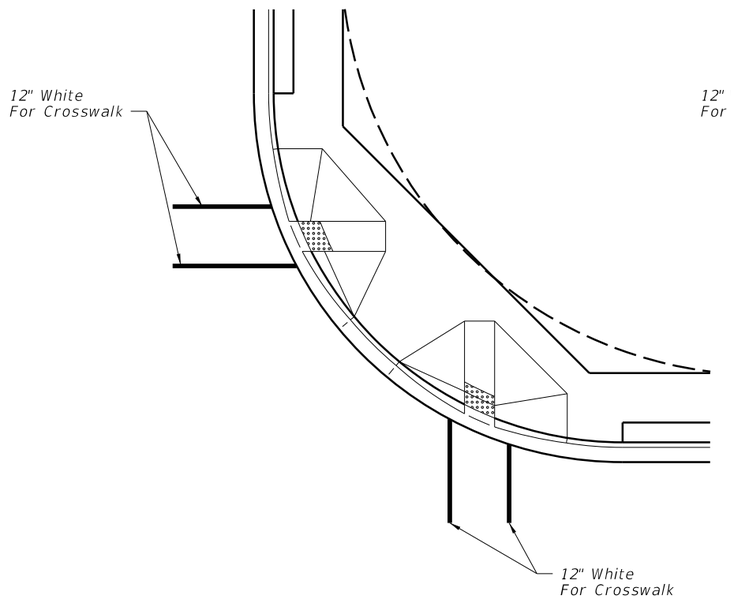


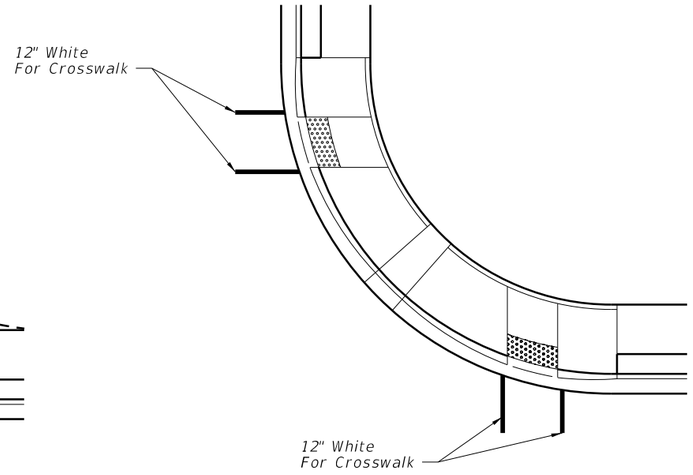
6/28/2012 3:05:51 PM rd960rh C:\d\projects\standards\roadway\17300-s\17346-02.dgn

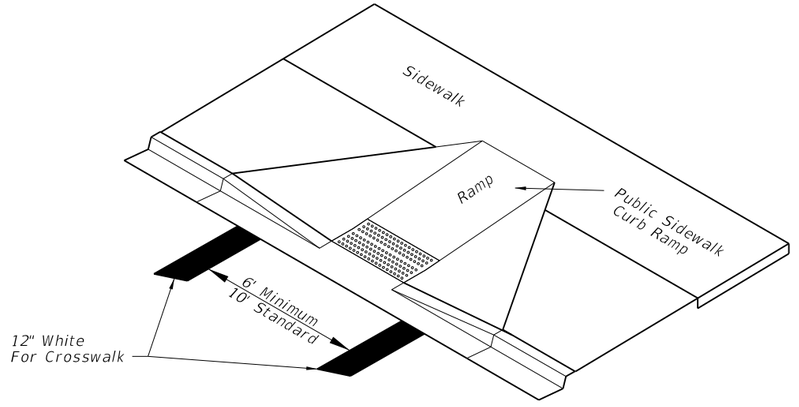
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/10			FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	17346	2



(WITH SINGLE LANE LEFT TURN CHANNELIZATION)
TWO WAY LEFT TURN LANE



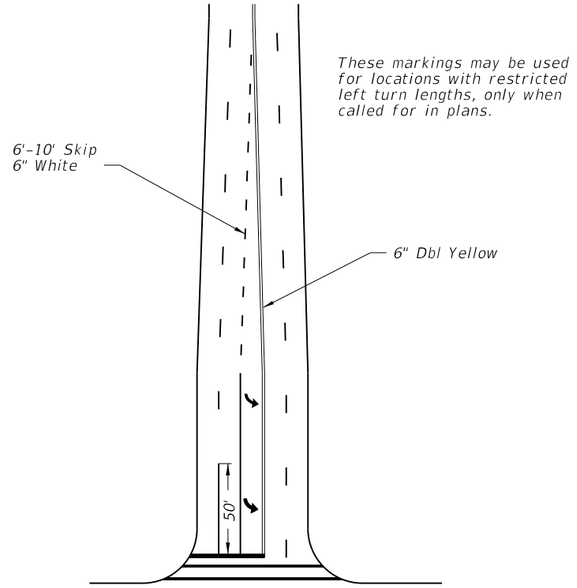




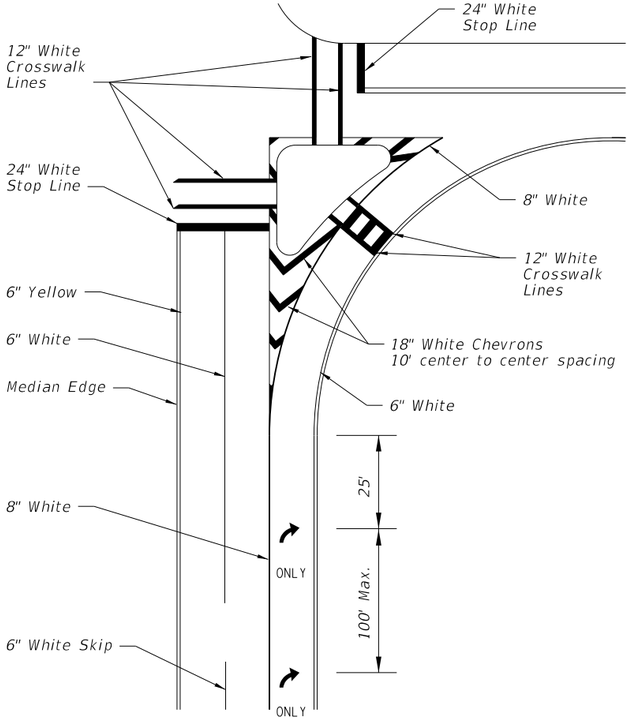
TYPICAL CROSSWALK MARKINGS FOR CURB RAMPS

6/28/2012 3:05:53 PM rd960rh C:\d\projects\standards\roadway\17300-s\17346-03.dgn

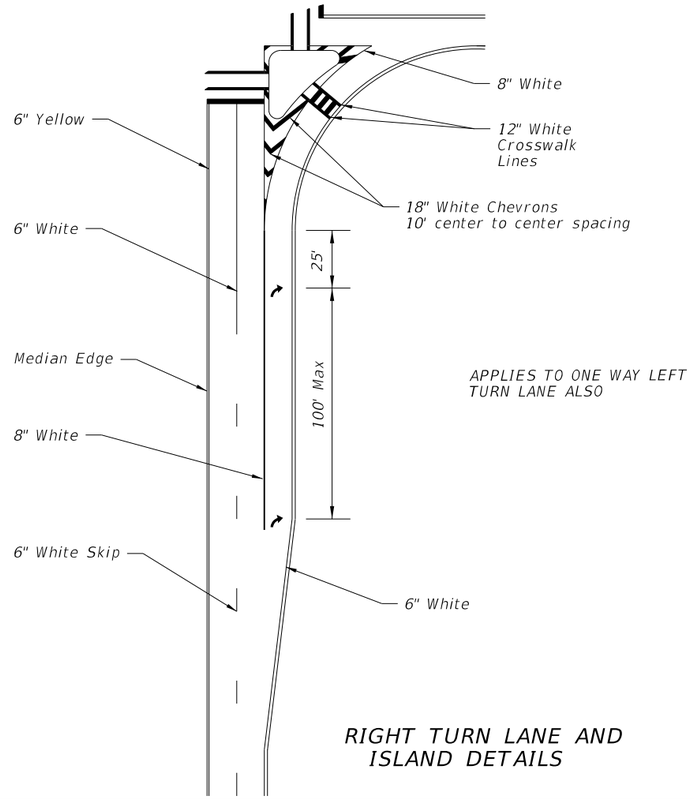
LAST REVISION	REVISION	DESCRIPTION:				
07/01/09			FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	INDEX NO. 17346	SHEET NO. 3



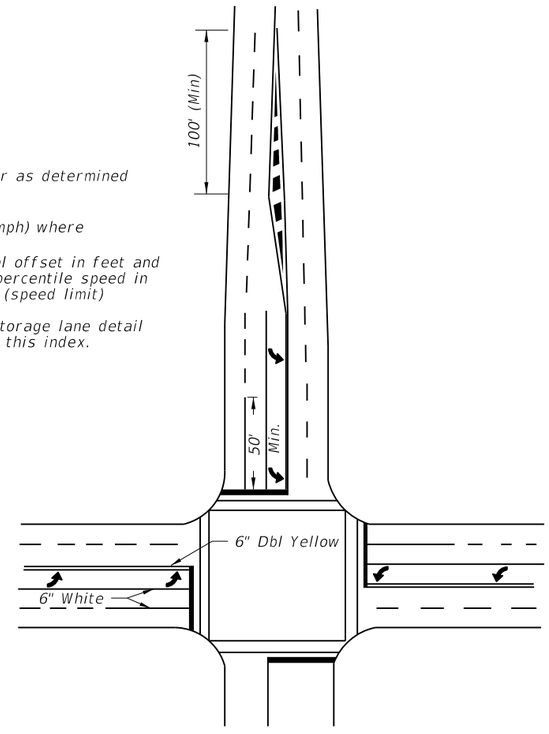
RESTRICTED LEFT TURN MARKING



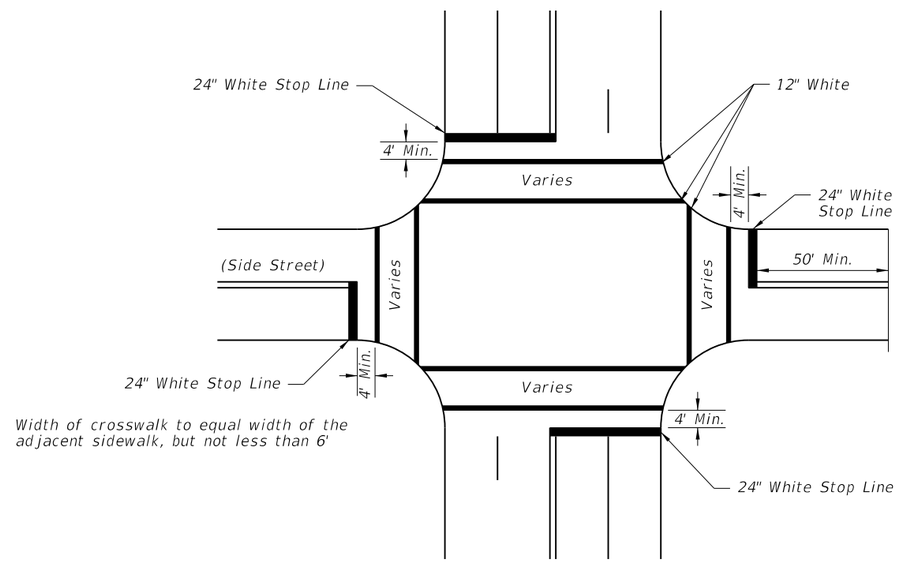
RIGHT TURN LANE DROP AND ISLAND DETAILS
LEFT TURN LANE DROP IS MIRROR IMAGE



RIGHT TURN LANE AND ISLAND DETAILS



TYPICAL INTERSECTION 2 THRU LANES
PLUS LEFT TURN LANE, WITH CROSSWALK

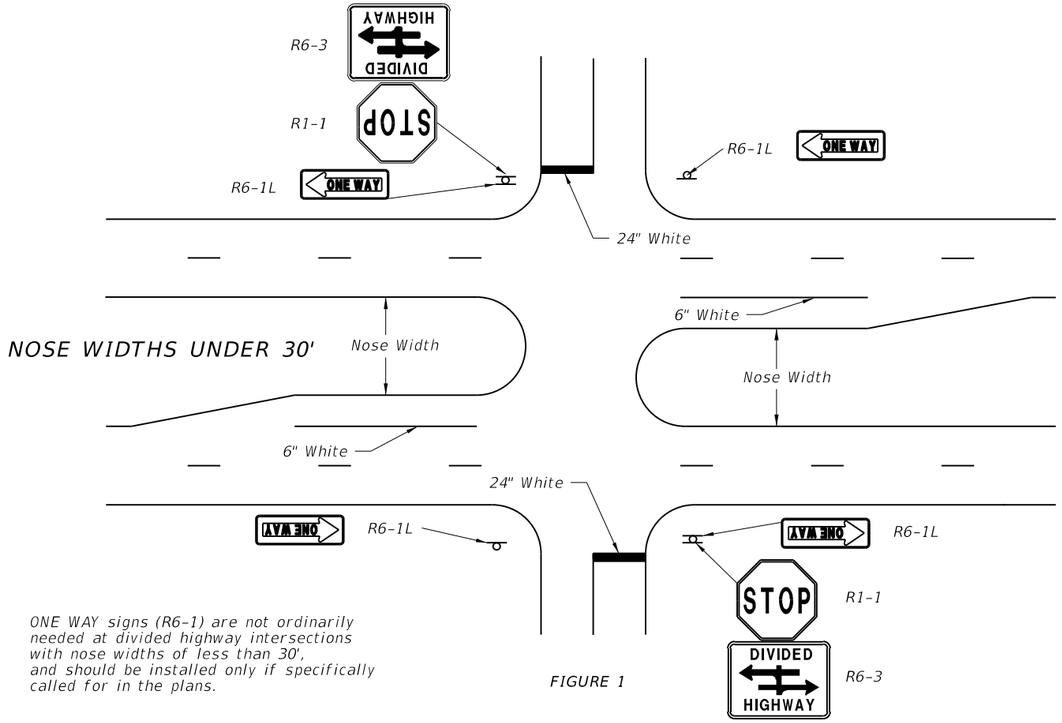


NOTES:

1. When public sidewalk curb ramps are present, refer Index No. 17344 and Index No. 304 for crosswalk widths.
2. Double yellow longitudinal center lines on all roadway approaches shall be extended back 100' for projects involving intersection improvements only.
3. When specified, "stop" message shall be placed 25' back of stop lines.

STOP BARS, CROSSWALKS AND DOUBLE CENTER LINE DETAILS

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
07/01/09						17346	4



ONE WAY signs (R6-1) are not ordinarily needed at divided highway intersections with nose widths of less than 30', and should be installed only if specifically called for in the plans.

FIGURE 1

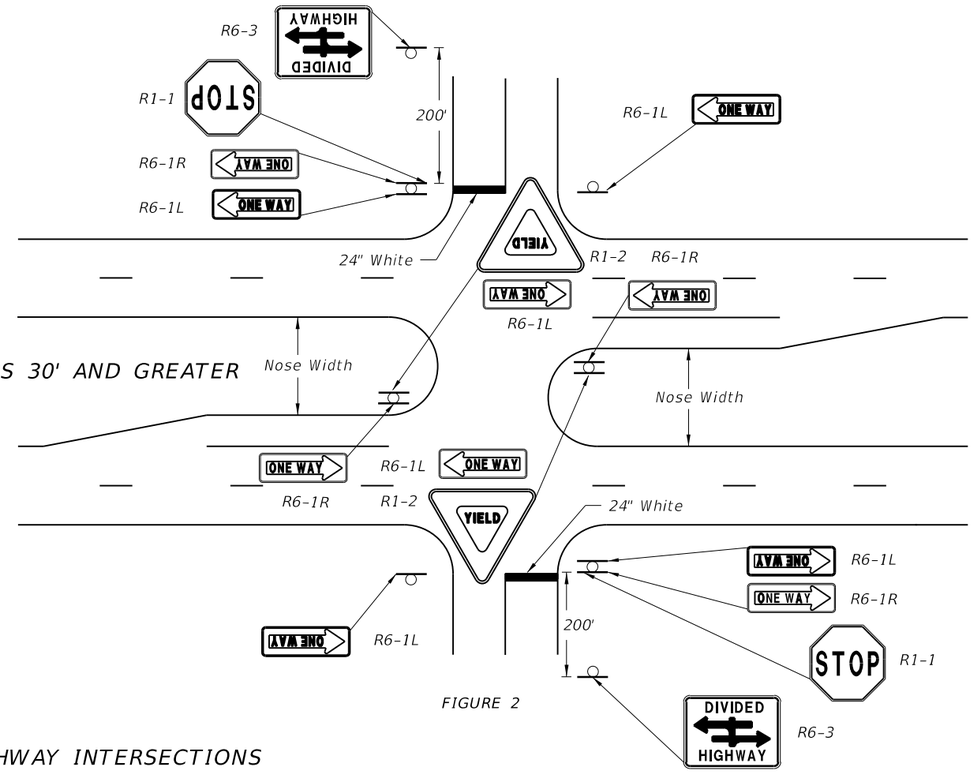
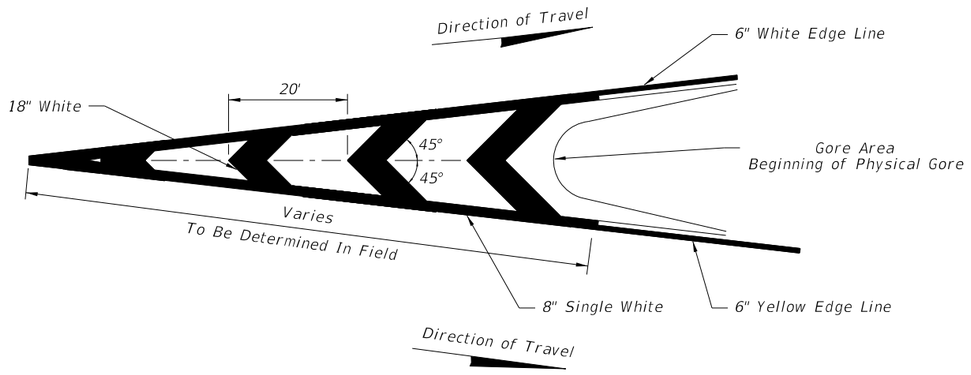


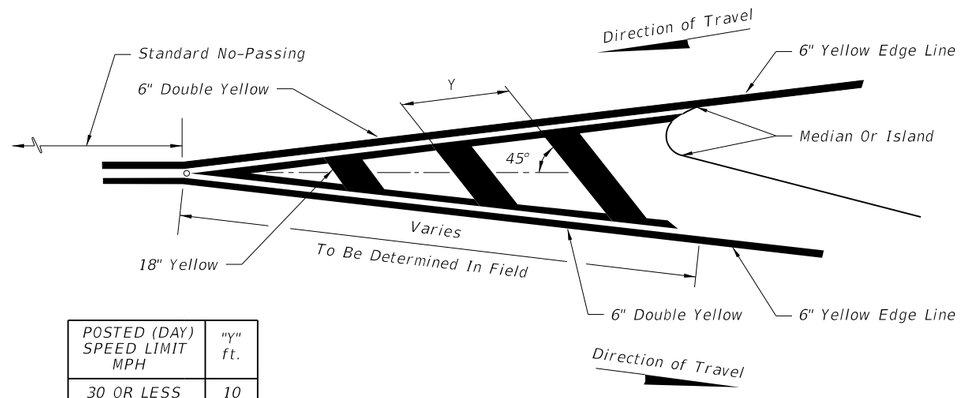
FIGURE 2

ONE-WAY SIGNS 0N DIVIDED HIGHWAY INTERSECTIONS



PAVEMENT MARKINGS FOR TRAFFIC CHANNELIZATION AT GORE

(TRAFFIC FLOWS IN SAME DIRECTION)

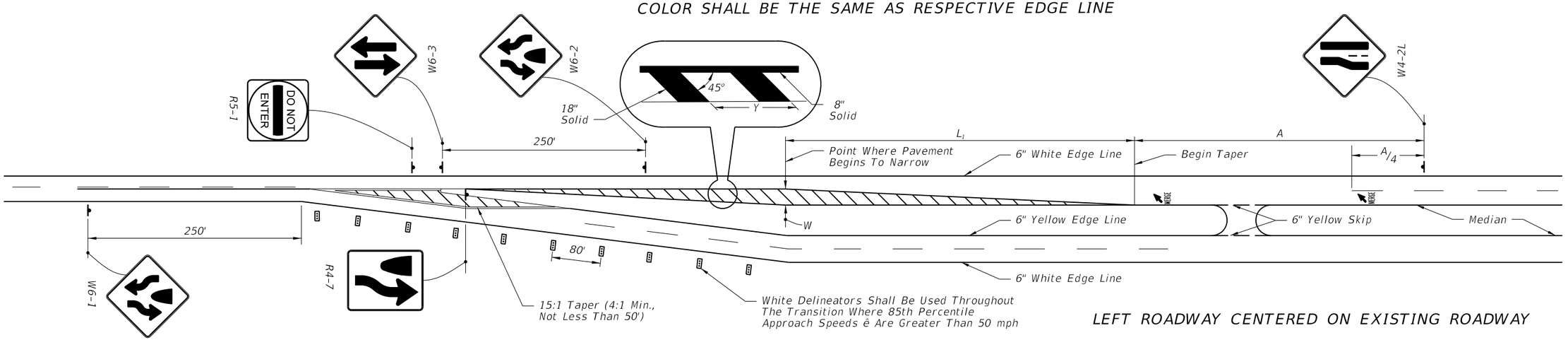


POSTED (DAY) SPEED LIMIT MPH	"Y" ft.
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40

PAVEMENT MARKING FOR TRAFFIC SEPARATION

(TRAFFIC FLOWS IN OPPOSING DIRECTIONS)

TYPICAL TRANSITION MARKING
COLOR SHALL BE THE SAME AS RESPECTIVE EDGE LINE

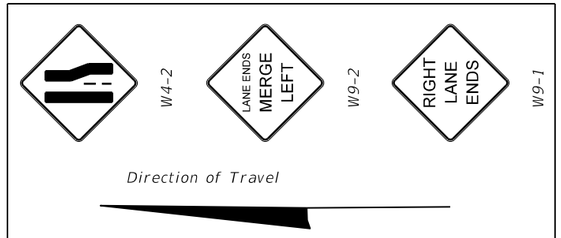


LEFT ROADWAY CENTERED ON EXISTING ROADWAY

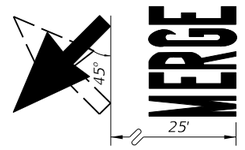
*S \ **W	TRANSITION DISTANCE L_1 (FEET)						
MPH	8	9	10	11	12	13	14
30	120	135	150	165	180	195	210
35	165	185	205	225	245	265	285
40	215	240	270	295	320	350	375
45	360	405	450	495	540	585	630
50	400	450	500	550	600	650	700
55	440	495	550	605	660	715	770
60	480	540	600	660	720	780	840
65	520	585	650	715	780	845	910

SPEED* MPH	"A" (FT.)
55	950
50	850
45	750
40	650
30	450

POSTED (DAY) SPEED LIMIT MPH	"Y" (FT.)
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40



NOTE:
W9-1 & W9-2 are supplemental to the W4-2 sign and may be deleted if space is not available. The W9-1 should be used if only one supplemental sign is installed.



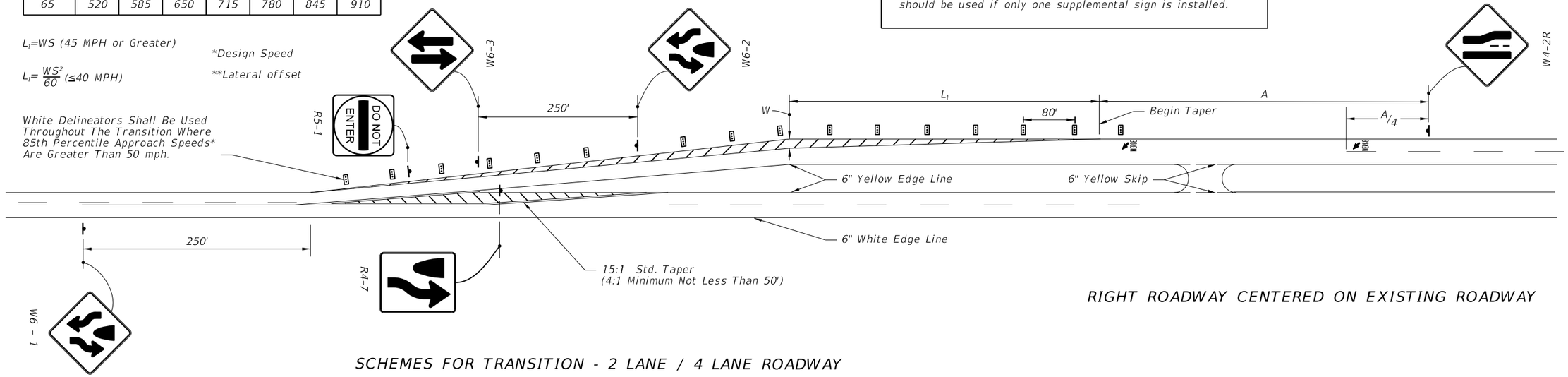
PAVEMENT MARKING DETAIL

L_1=WS (45 MPH or Greater)

$L_1 = \frac{WS^2}{60}$ (≤40 MPH)

*Design Speed

**Lateral offset

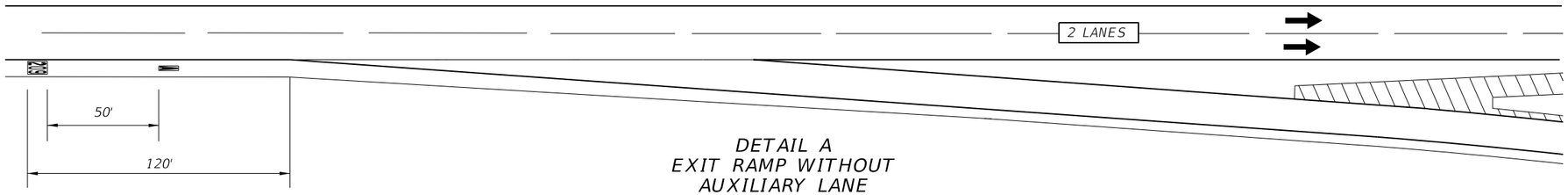


RIGHT ROADWAY CENTERED ON EXISTING ROADWAY

SCHEMES FOR TRANSITION - 2 LANE / 4 LANE ROADWAY

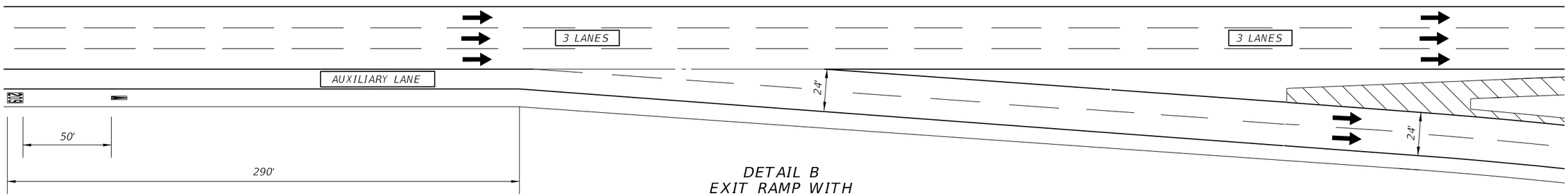
C:\d\projects\standards\roadway\17300-s\17346-06.dgn rd960rh 3:05:59 PM 6/28/2012

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
07/01/09						17346	6

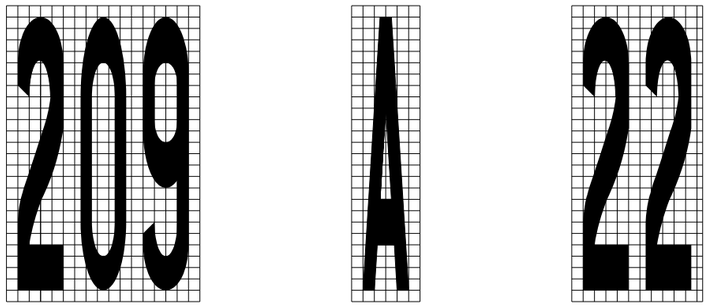


DETAIL A
EXIT RAMP WITHOUT
AUXILIARY LANE

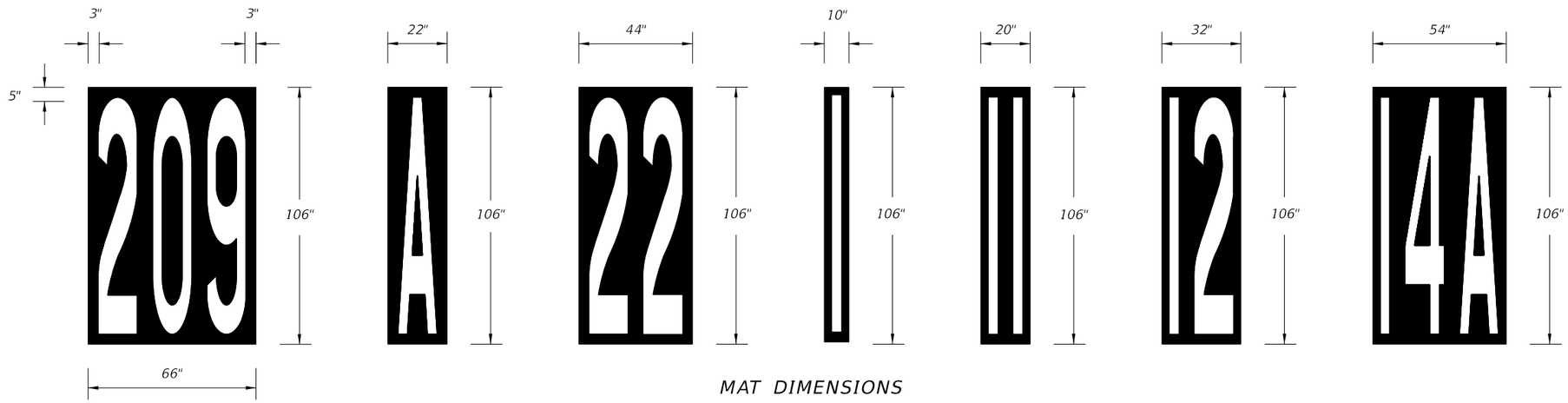
LAYOUT FOR 1, 2 AND 3 DIGIT NUMBERS AND LETTERS



DETAIL B
EXIT RAMP WITH
AUXILIARY LANE



MESSAGE SIZE AND SPACING
4" X 4" squares



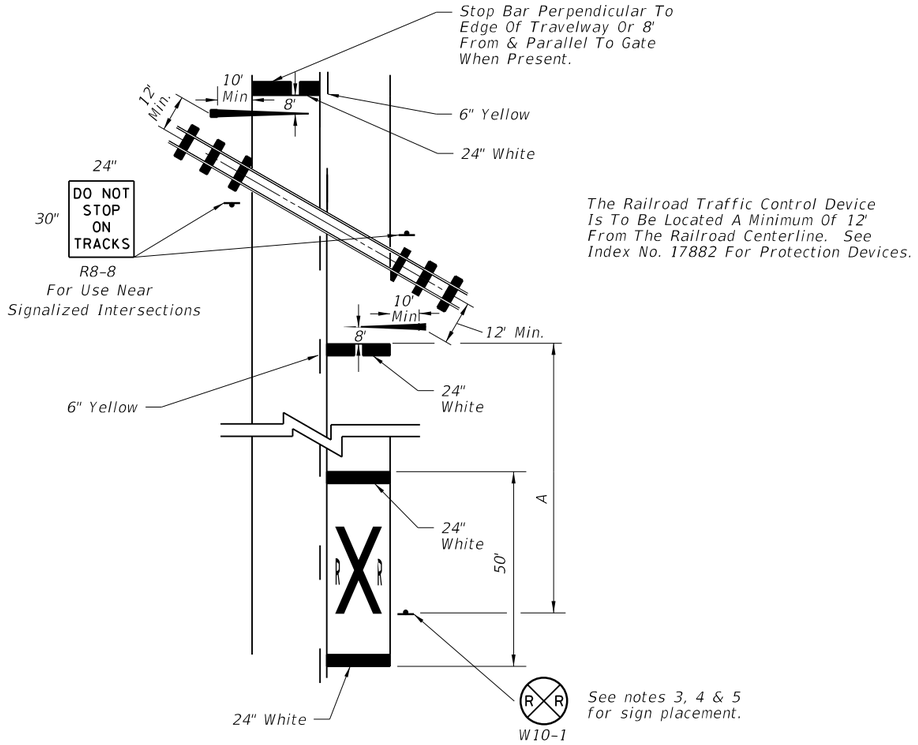
MAT DIMENSIONS

NOTES:

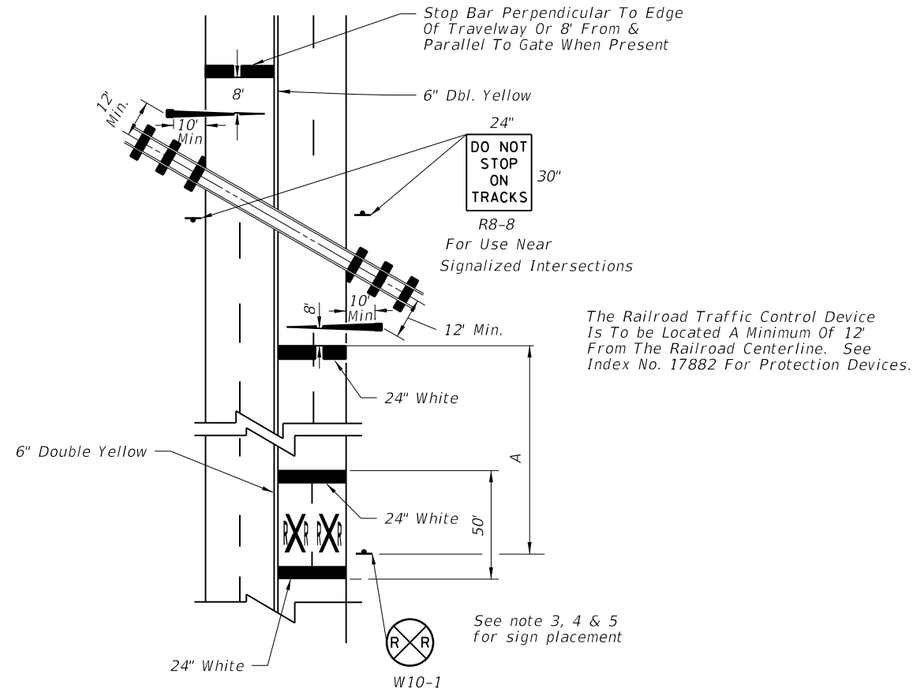
1. Messages shall meet requirements of Specification Section 971-6 and Section 711.
2. The thickness of the preformed message shall be 125 mils.
3. The message shall consist of white letters and numbers with black contrasting material. The black material shall meet the mat dimensions shown and have a minimum skid resistance value of 55 BPN.
4. The "EXIT NUMBER" position remains the same distance from the beginning of taper regardless of the number of lines of information.

6/28/2012 3:06:01 PM rd960rh C:\d\projects\standards\roadway\17300-s\17346-07.dgn

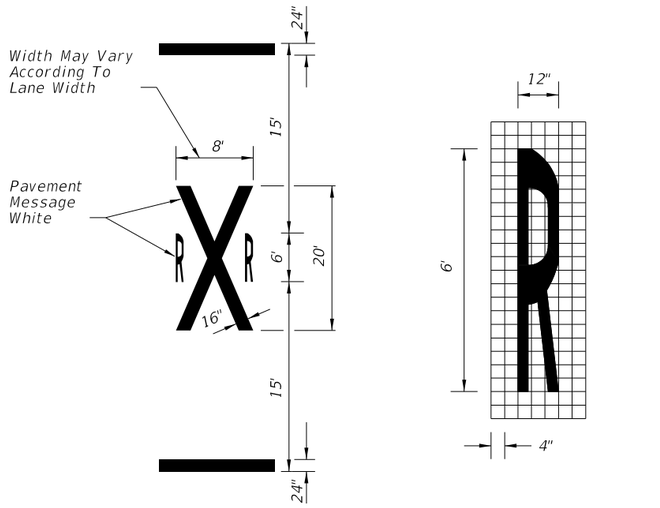
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/10			FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	17346	7



RAILROAD CROSSING AT 2-LANE ROADWAY

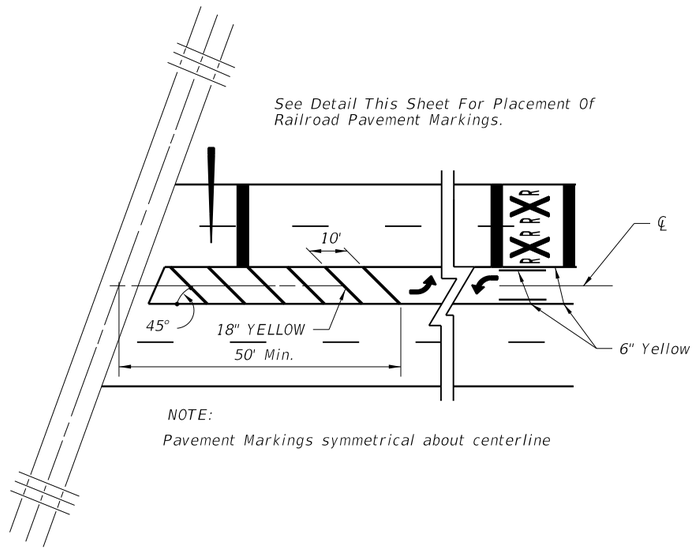


RAILROAD CROSSING AT 4-LANE ROADWAY



89 s.f. *Does not include 24" bars.

TYPICAL PAVEMENT MARKINGS FOR R/R CROSSING



NOTE:
Pavement Markings symmetrical about centerline

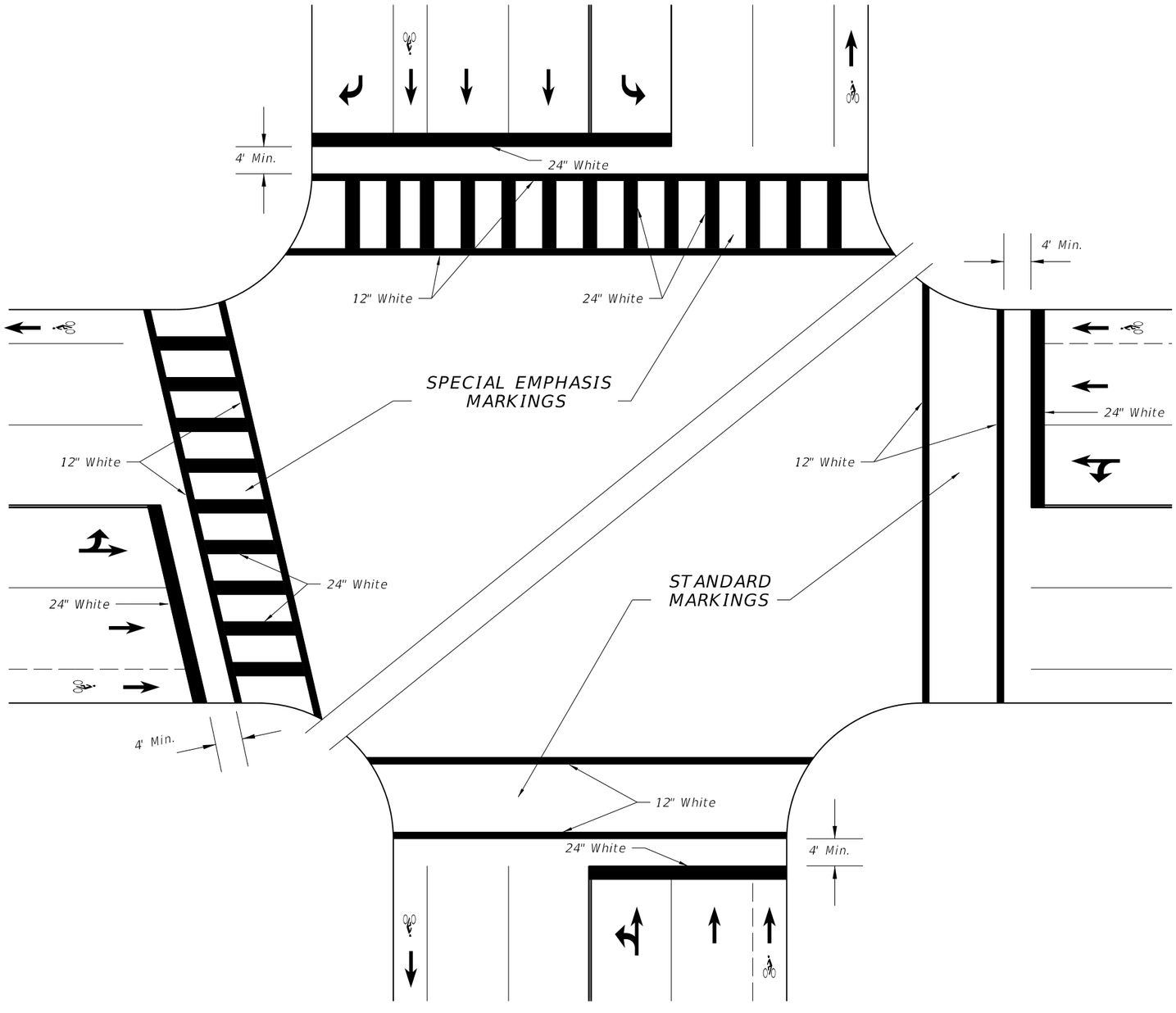
PAVEMENT MARKINGS FOR TERMINATION OF TWO WAY LEFT TURN AT R/R CROSSINGS

NOTES:

1. When computing pavement messages, quantities do not include transverse lines.
2. When dynamic devices are not present or are to be installed, the crossbuck shall be located at the future location of the RR gate or signal and gate in accordance with Index No. 17882.
3. Placement of sign W10-1 in a residential or business district, where low speeds are prevalent. The W10-1 sign may be placed a minimum distance of 100' from the crossing. Where street intersections occur between the RR pavement message and the tracks an additional W10-1 sign & additional Pavement message should be used.
4. Recommended location for FTP-61-06 or FTP-62-06 sign, 100' urban & 300' rural in advance of the crossing.
5. A portion of the pavement marking symbol should be directly opposite the W10-1 sign.

SPEED MPH	" A " IN FT.
60	400
55	325
50	250
45	175
40	125
35	100
URBAN	85 MIN.

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
01/01/12						17346	8

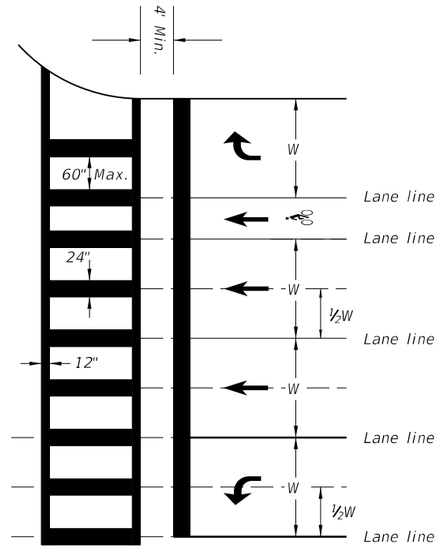


SPECIAL EMPHASIS AND STANDARD CROSSWALKS
SIGNALIZED OR STOP SIGN CONTROLLED INTERSECTION

GENERAL NOTES

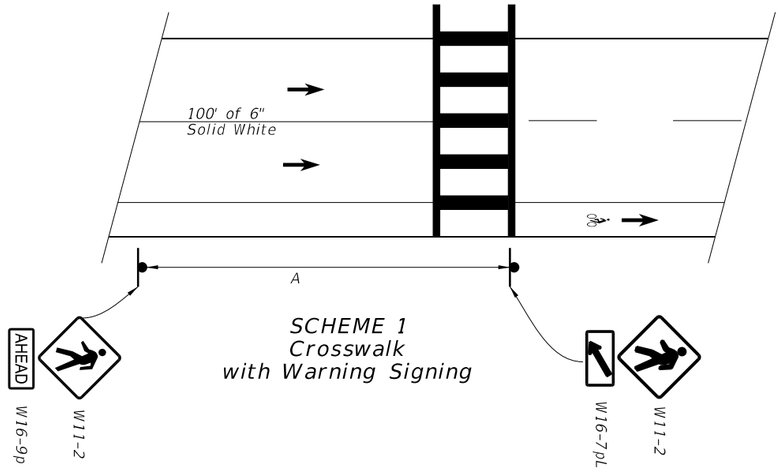
1. For traffic and pedestrian signal installation, refer to Index No. 17721 through 17890.
2. For public sidewalk curb ramps, refer to Index No. 304.
3. For pavement marking and sign installation, refer to Indexes 11200 through 17356.
4. Crosswalk minimum widths: Intersection Crosswalk 6'. Midblock Crosswalk 10'.
5. All crosswalk marking shall be white.
6. Longitudinal lines in Special Emphasis Crosswalk shall be 24" wide and spaced to avoid the wheel path of vehicles as shown in detail. The maximum space between markings shall not exceed 60". A longitudinal marking shall be centered at each lane line. Additional longitudinal markings shall be placed at the center of each lane (1/2W).

   Where the Crosswalk is skewed to the lane lane lines, the Special Emphasis longitudal lines should be parallel to the lane line.

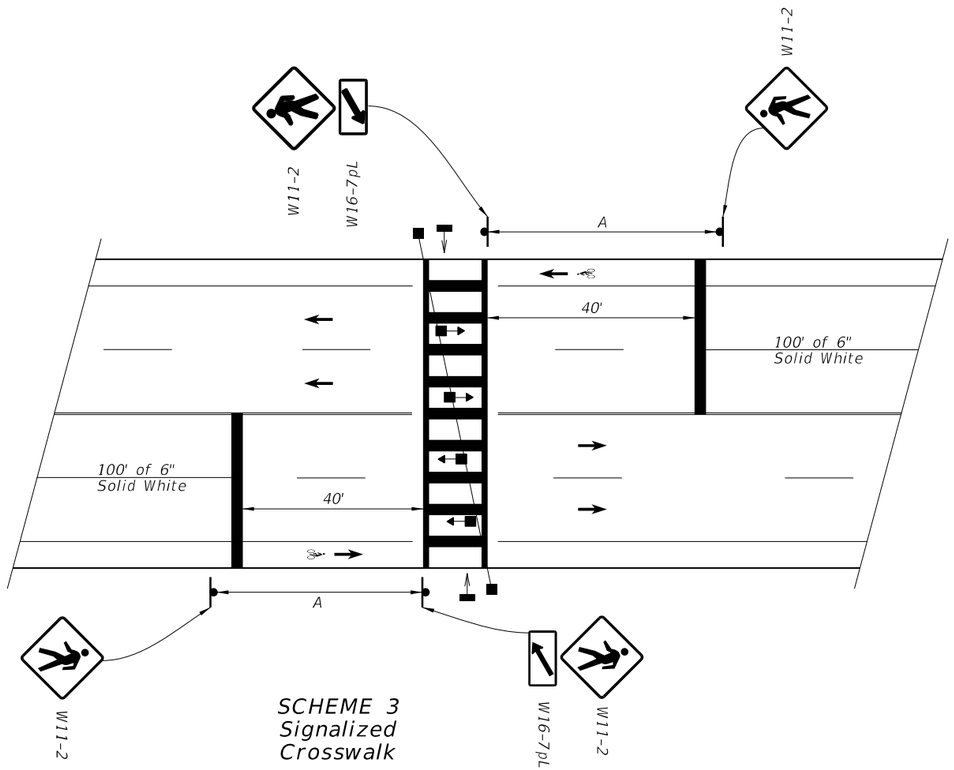


SPECIAL EMPHASIS CROSSWALK MARKING DETAIL

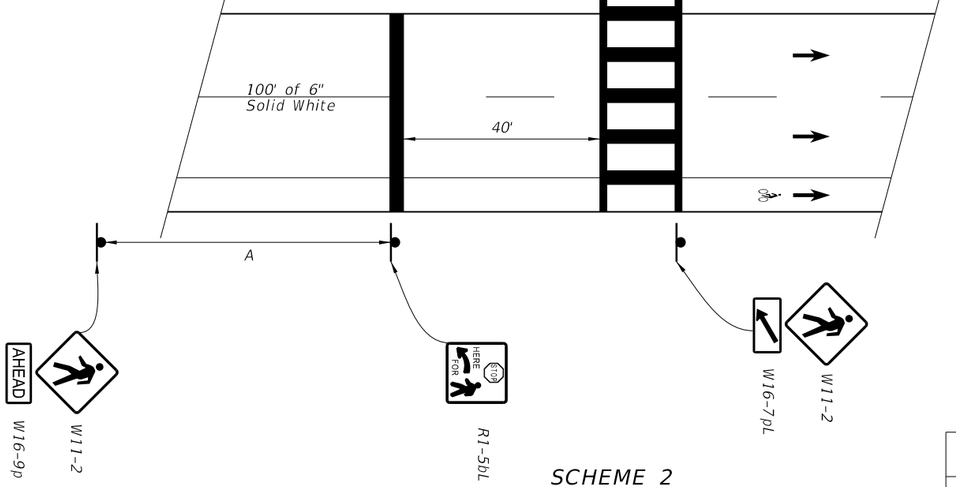
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/09			FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	17346	9



SCHEME 1
Crosswalk
with Warning Signing



SCHEME 3
Signalized
Crosswalk



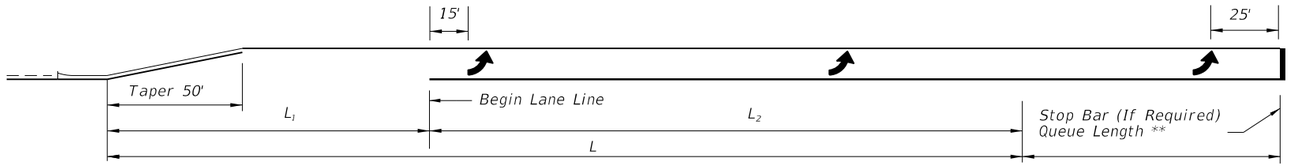
SCHEME 2
Crosswalk
with Stop Signing

APPROACH SPEED MPH	A-SUGGESTED DISTANCE (Ft.)
25 Or Less	200
26 To 35	250
36 To 45	300

1. Plans shall indicate which crosswalk scheme is to be used.
2. The details shown do not depict the signing and markings for multi-lane roadways with divided medians. For these applications, additional signs shall be installed on the median side. Minimum width of Mid-Block Crosswalks is 10'.
3. All mid-block crosswalks shall use special emphasis crosswalk markings.
4. Crosswalk marking should utilize preformed marking materials.

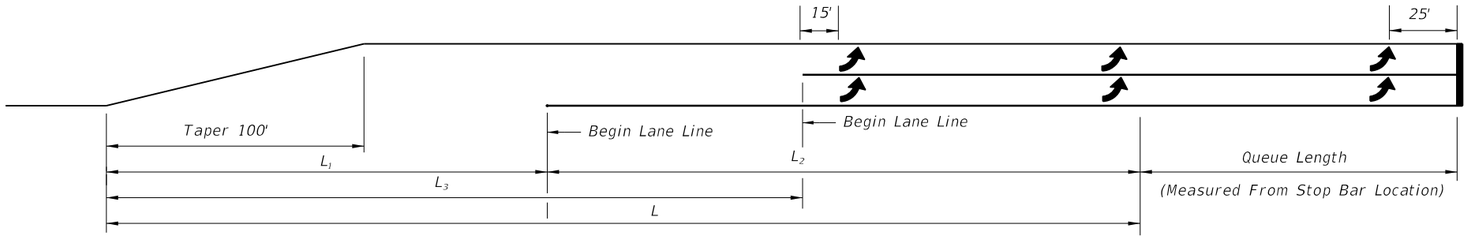
C:\d\projects\standards\roadway\17300-s\17346-10.dgn
rd960rh
3:06:07 PM
6/28/2012

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	17346	10

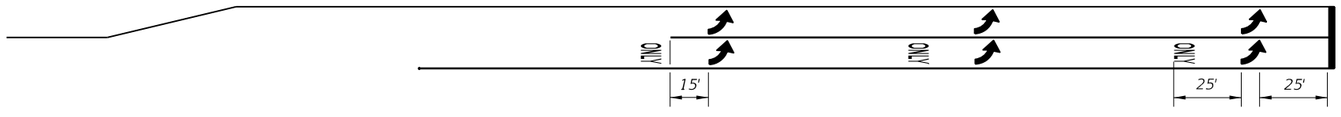


SINGLE LEFT TURNS

** Queue Length Is Measured From The Median Nose Radial Point Or, When A Stop Bar Is Required, From The Stop Bar.

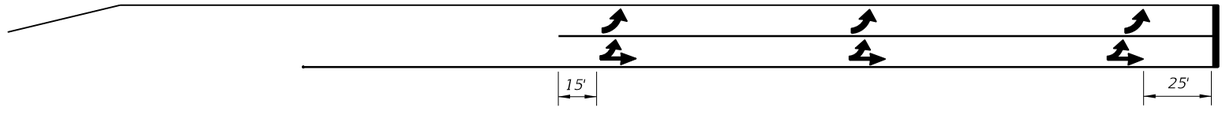


DOUBLE LEFT TURNS



The ONLY pavement message is required for turn lanes, where the thru lane becomes turn lane.

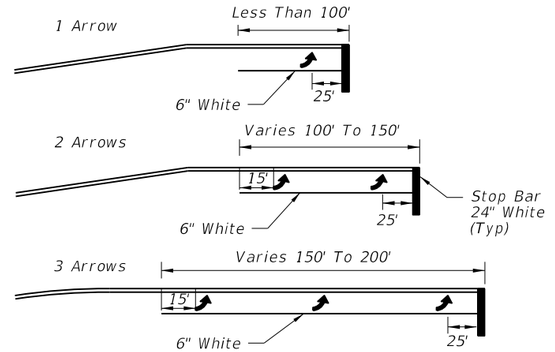
Through Lane Becomes Exclusive Left Turn



Through Lane Becomes Optional Left Turn

DOUBLE LEFT TURN MARKINGS

	TURN LANES ◦ CURBED AND UNCURBED MEDIANS						
		URBAN CONDITIONS			RURAL CONDITIONS		
Design Speed (mph)	Clearance Distance L_1	Brake To Stop Distance L_2	Total Decel. Distance L	Clearance Distance L_3	Brake To Stop Distance L_2	Total Decel. Distance L	Clearance Distance L_3
35	70'	75'	145'	110'	— —	— —	— —
40	80'	75'	155'	120'	— —	— —	— —
45	85'	100'	185'	135'	— —	— —	— —
50	105'	135'	240'	160'	185'	290'	160'
55	125'	— —	— —	— —	225'	350'	195'
60	145'	— —	— —	— —	260'	405'	230'
65	170'	— —	— —	— —	290'	460'	270'



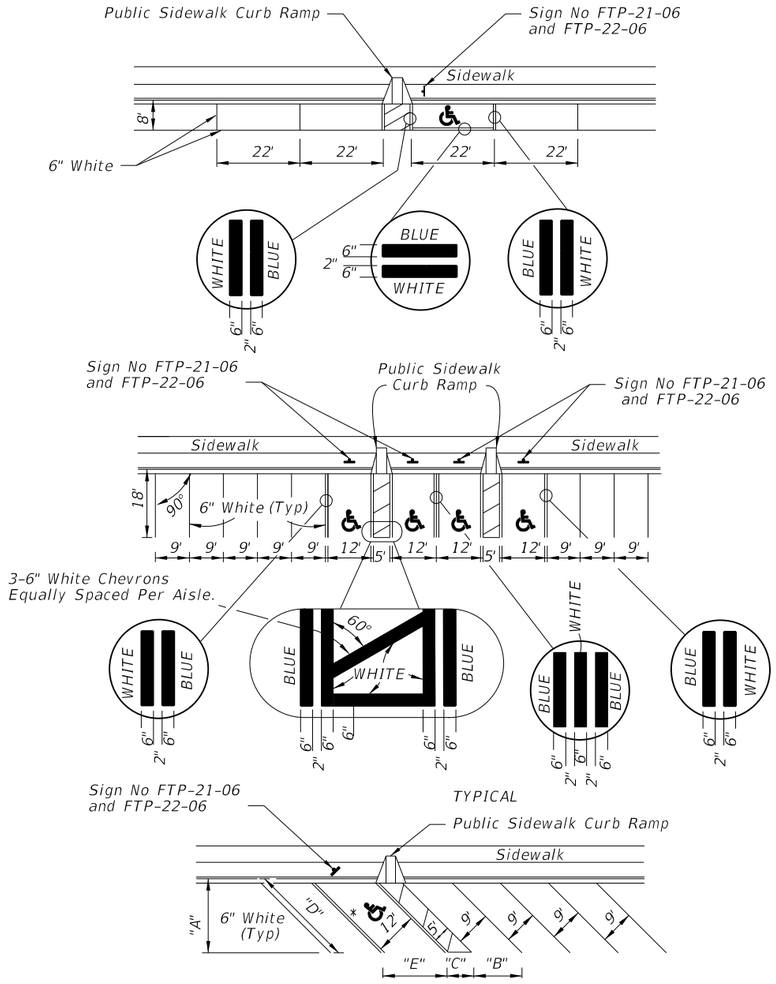
Arrow should be evenly spaced between first and last arrow. Turn lanes longer than 200' add one arrow for each 100' additional length.

ARROW SPACING

NOTES:

1. The "Begin Lane Line" locations are based on the standard lengths shown in Design Standard 301. These locations must be adjusted on a case by case basis for turn lanes not meeting the standard lengths.
2. Yellow left turn edge marking may be used adjacent to raised curb or grass medians if lane use is not readily apparent to drivers approaching a left turn storage lane.
3. Refer to Design Standard Index 301 for Roadway Details.
4. This Index also applies to right turn lanes.

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
07/01/09						17346	11



TYPICAL

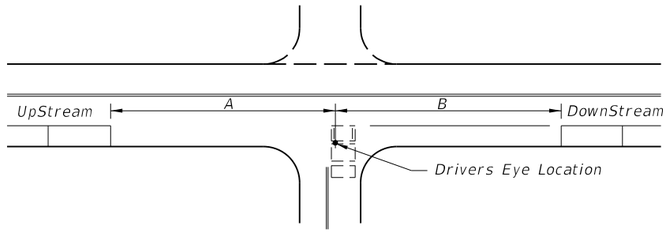
* FOR ACCESSIBLE MARKINGS - SEE ABOVE

∠ θ	"DIMENSIONS"				
	"A"	"B"	"C"	"D"	"E"
45°	19'-1"	12'-9"	7'-0"	27'-0"	17'-0"
60°	20'-1"	10'-5"	5'-9"	23'-2"	13'-10"

NOTES:

1. Dimensions are to the centerline of markings.
2. An Access Aisle is required for each accessible space when angle parking is used.
3. Criteria for pavement markings only, not public sidewalk curb ramp locations. For ramp locations refer to plans.
4. Blue pavement markings shall be tinted to match shade 15180 of Federal Standards 595a.
5. The FTP-22-06 panal shall be mounted below the FTP-21-06 sign.

PAVEMENT MARKING FOR PUBLIC SIDEWALK CURB RAMPS IN REST AREAS

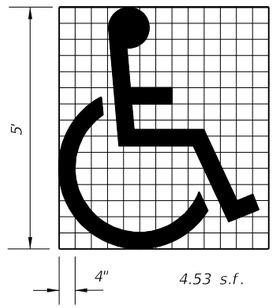


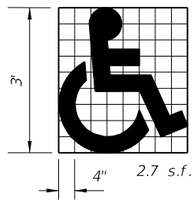
SPEED MPH	UP STREAM (A)	DOWN STREAM (B)	
		2 LANE	4 LANE
0-30	85'	60'	45'
35	100'	70'	50'

NOTES

1. Distances measured longitudinally along the street from driver location of entering vehicle to end of parking restriction.
2. Distances applicable to intersecting street, major driveways and other driveways to the extent practical.
3. For nonsignalized intersections, the values above shall be compared with the values for signalized intersections and the maximum restrictions implemented. These restrictions apply to both accessible and nonaccessible parking.

MINIMUM PARKING RESTRICTION FOR NONSIGNALIZED INTERSECTIONS





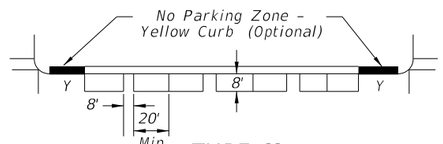
Use of pavement symbol in accessible parking spaces is optional, when used the symbol shall be 3' or 5' high and white in color.

UNIVERSAL SYMBOL OF ACCESSIBILITY

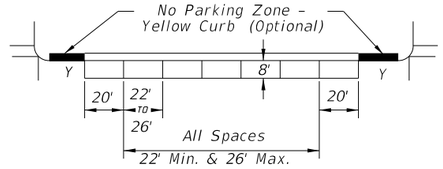
GENERAL NOTES (Signalized & Nonsignalized)

1. For entrances to a one-way street, the downstream restriction may be reduced to 20'.
2. Parking shall not be allowed within 20' of a crosswalk.
3. All parking lane markings shall be 6" white.
4. Parking lane lines shall be broken at driveways.
5. Refer to Chapter 316, Fla. Statutes, for laws governing parking spaces.
6. Where curb and gutter is used, the gutter pan width may be included as part of the minimum width of parking lane, but desirably the lane width should be in addition to that of the gutter pan.

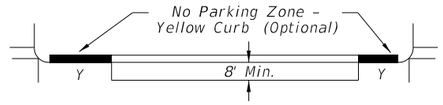
TYPE I



TYPE II



TYPE III



SPEED LIMIT MPH	SIGNALIZED INTERSECTIONS
0-30	30'
35	50'

DISTANCE FROM CURB RADIUS (Y)

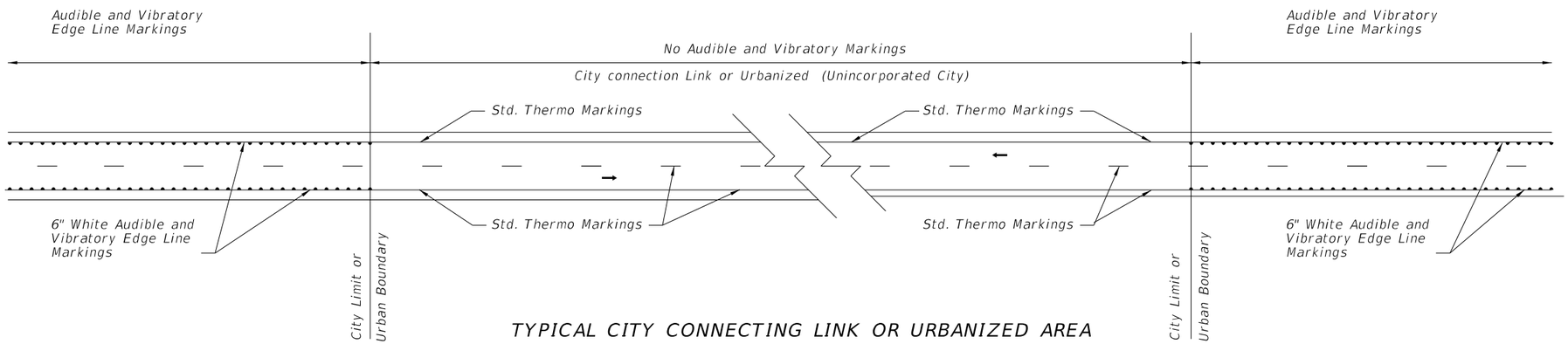
PARKING RESTRICTION (FT.) FOR SIGNALIZED INTERSECTION

NOTES:

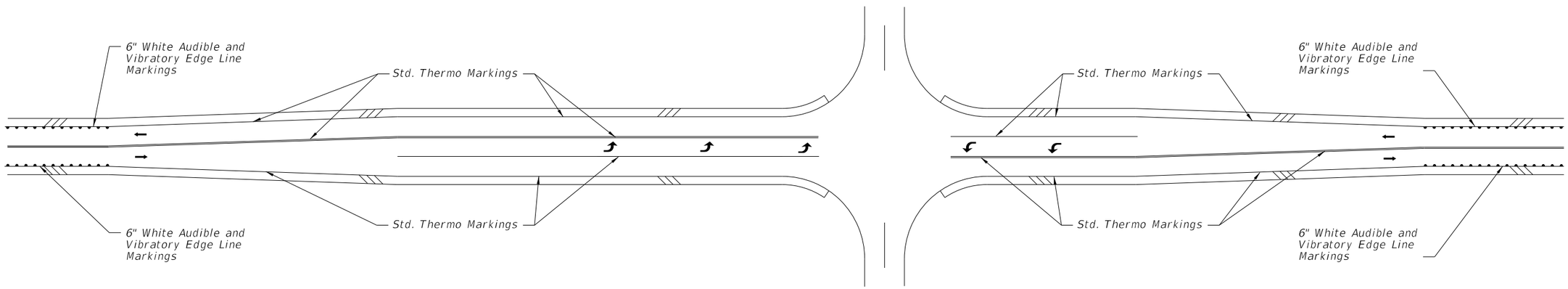
1. Parking restrictions measured from curb radius point.
2. Restrictions for accessible parking are the same as those applied to nonsignalized intersections.

MINIMUM PARKING RESTRICTION FOR SIGNALIZED INTERSECTION

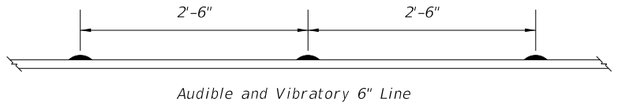
LAST REVISION	REVISION	DESCRIPTION:				
07/01/09			FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	INDEX NO. 17346	SHEET NO. 12



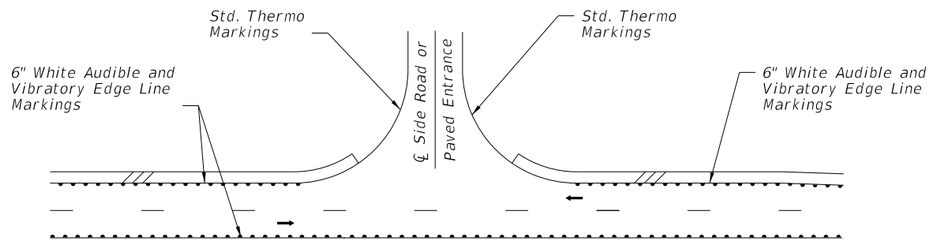
TYPICAL CITY CONNECTING LINK OR URBANIZED AREA



TYPICAL RURAL INTERSECTION WITH TURN LANES



Audible and Vibratory 6" Line

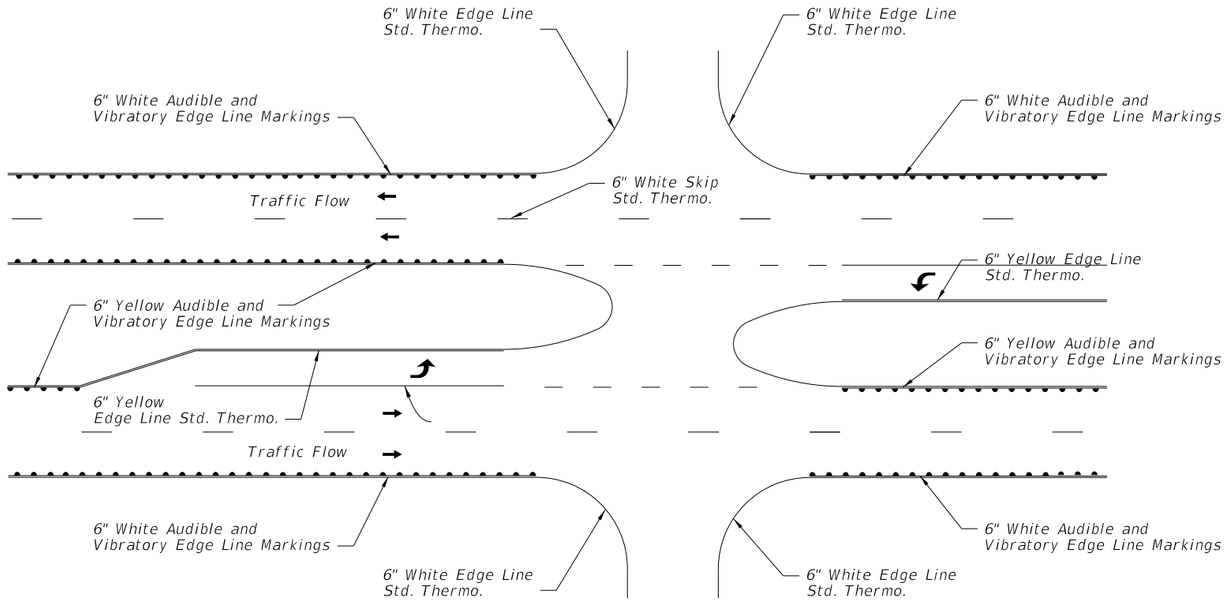


TYPICAL RURAL INTERSECTION WITHOUT TURN LANES

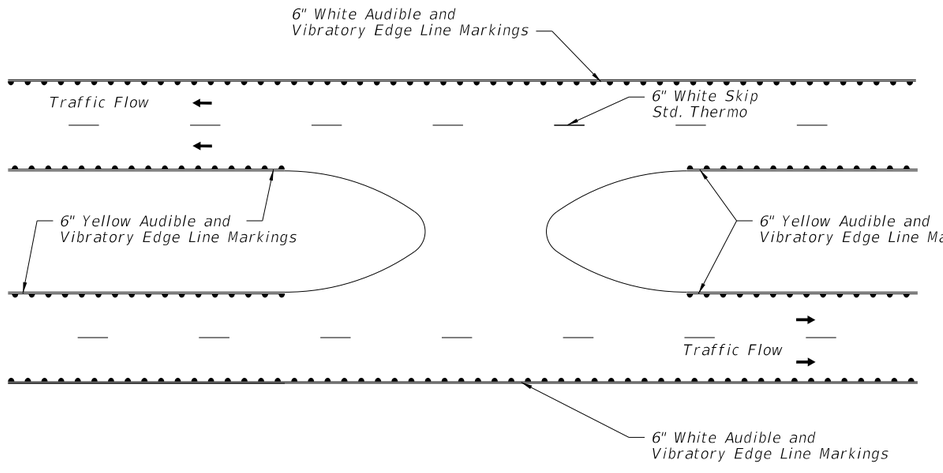
AUDIBLE AND VIBRATORY MARKINGS

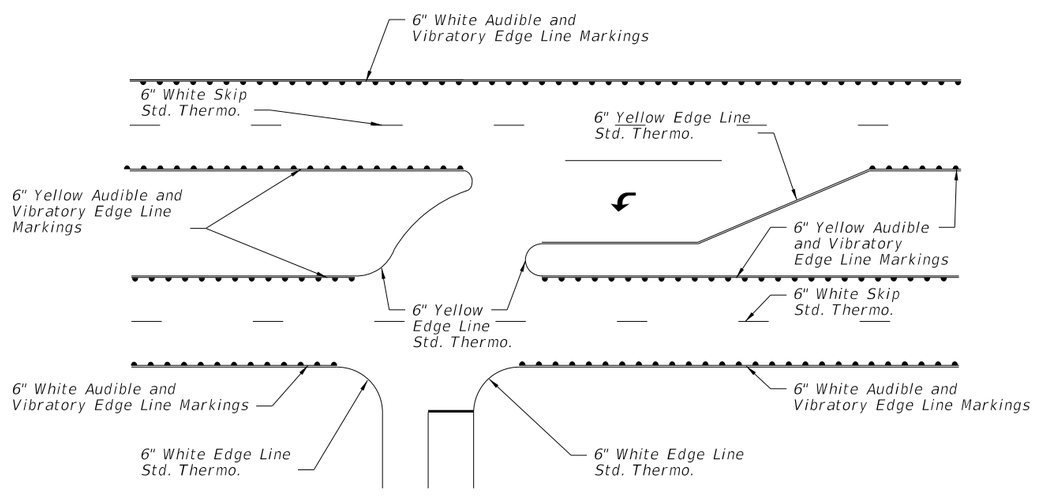
2 LANE ROADWAYS

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
07/01/09						17346	13



1. The Contractor Shall Adjust The Maintenance Of Traffic During Installation To Provide Sufficient Time For The Markings To Bear Traffic.
2. The Height Of The Transverse Bar For Markings Shall Be A Minimum Of 0.45 Inches Above The Pavement Surface At The Edge Of The Marking.
3. Transverse Bars Shall Be Evenly Space In The Marking At Intervals Of 30 Inches Center To Center.
4. The Transverse Bar May Have A Drainage Channel On Each Bar. The Width Of The Drainage Channel May Not Exceed 0.25 Inches At The Bottom Of The Channel.
5. Audible And Vibratory Markings Shall Only Be Installed On Centerline Markings Of Two Lane Roads When Shown In The Plans.
6. When Raised Pavement Markers Conflict With The Installation Of The Centerline Markings, The Contractor Shall Be Responsible For Removing And Replaceing The Raised Pavement Markings. The Additional Expenses Associated With The Raised Pavement Markings Shall Be Included In The Cost Of The Marking.
7. Grinding Is An Acceptable Method Of Removal Of The Existing Markings Where Markings Are Installed As Replacement Markings.
8. The Specifications Allow The Audible Markings To Utilize A Flat Base Line Or An Inverted Rib Profile Base Line.





AUDIBLE AND VIBRATORY MARKINGS

MULTI-LANE ROADWAYS

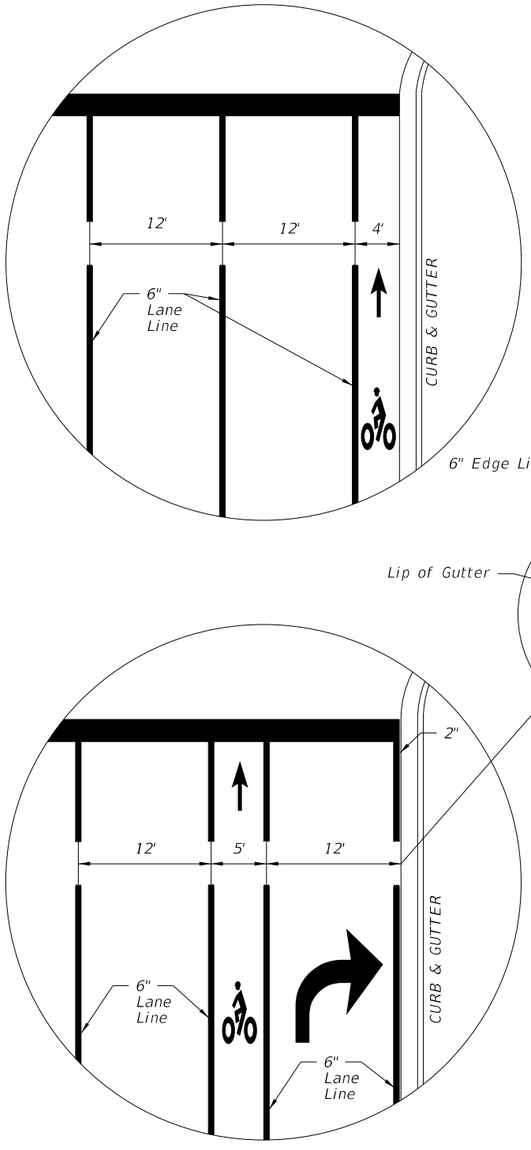
LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
07/01/10						17346	14

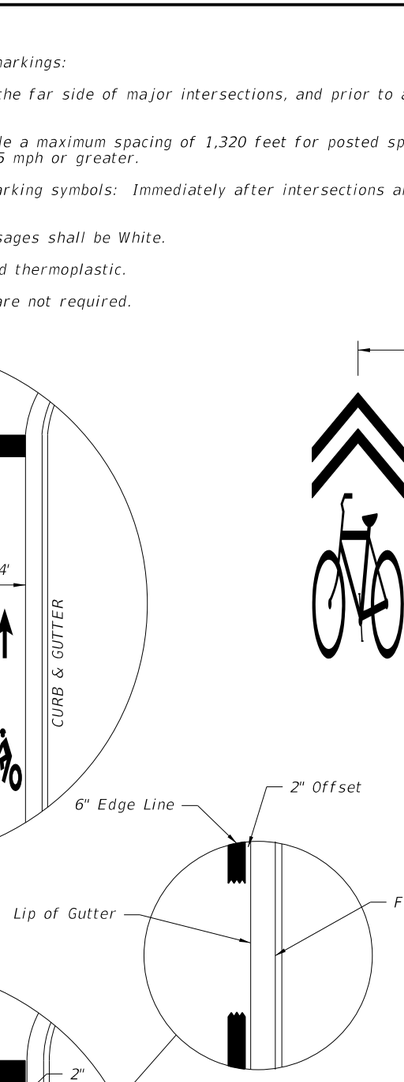
1. *Recommended placement of bicycle lane markings:*

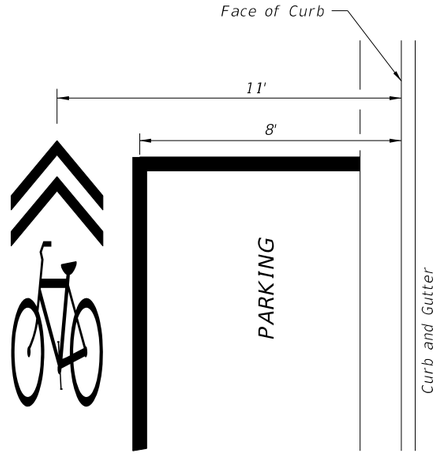
   a) At the beginning of a bicycle lane, on the far side of major intersections, and prior to and within the bicycle lane keyhole.

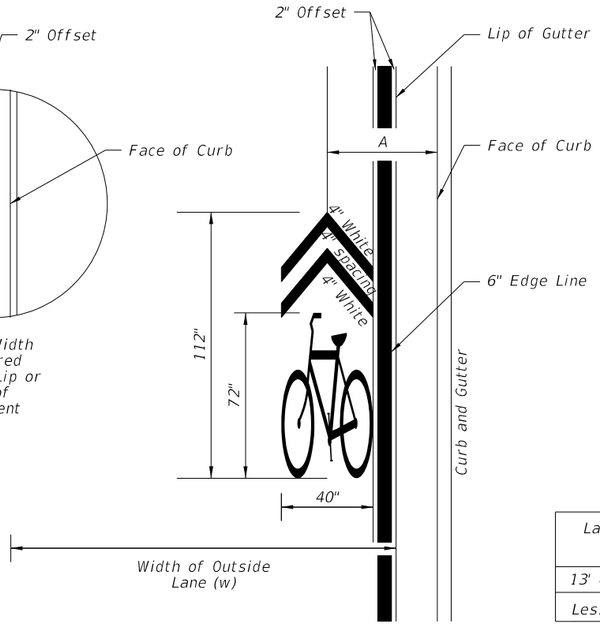
   b) Along the roadway as needed to provide a maximum spacing of 1,320 feet for posted speeds less than 45 mph, 2,640 feet for a posted speed of 45 mph or greater.

2. *Recommended spacing for shared lane marking symbols: Immediately after intersections and at a maximum spacing of 250 feet.*
3. *All pavement markings and pavement messages shall be White.*
4. *All pavement messages shall be preformed thermoplastic.*
5. *Bike lane signs (R3-17, R3-17a, R3-17b) are not required.*



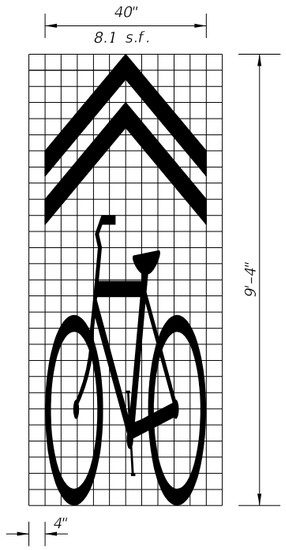


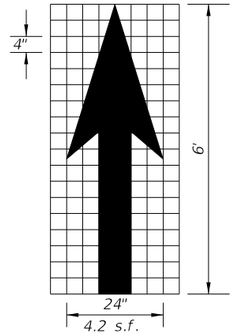


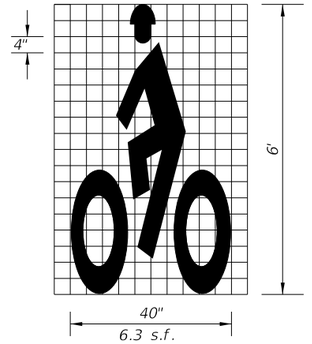


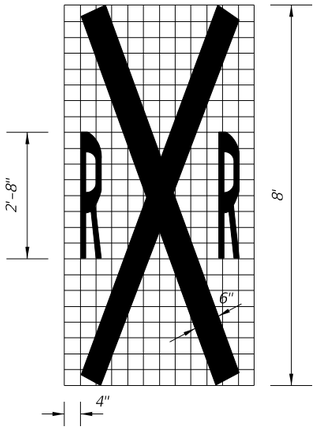
Lane Width (w)	Sharrow ℄ (A)
13' or Greater	4'
Less Than 13'	5½' **

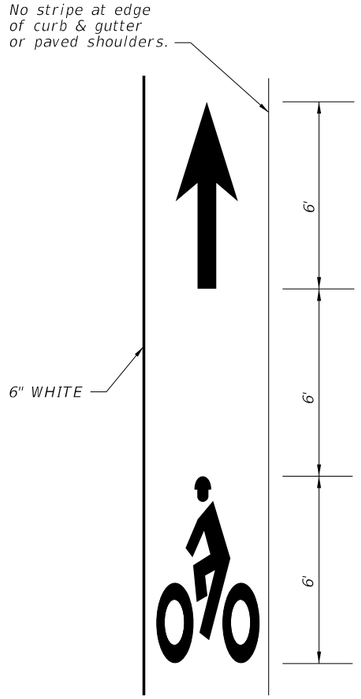
** *For lane widths less than 11' in width, the symbol shall be centered in the lane.*

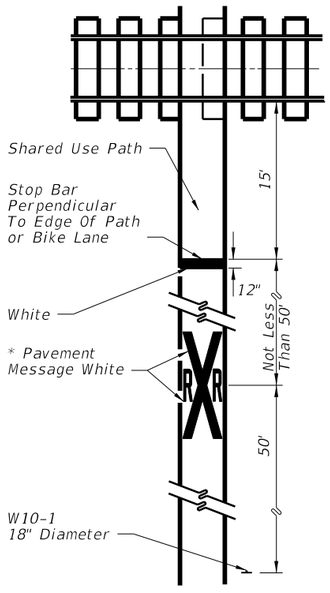






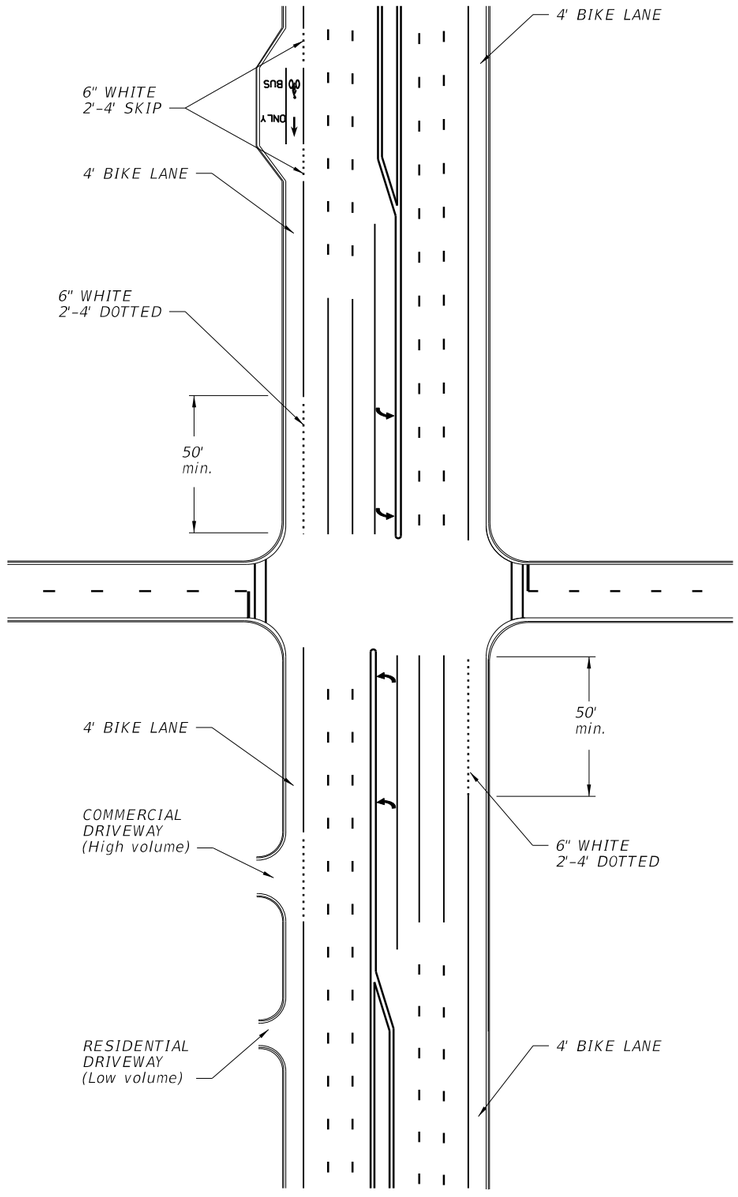




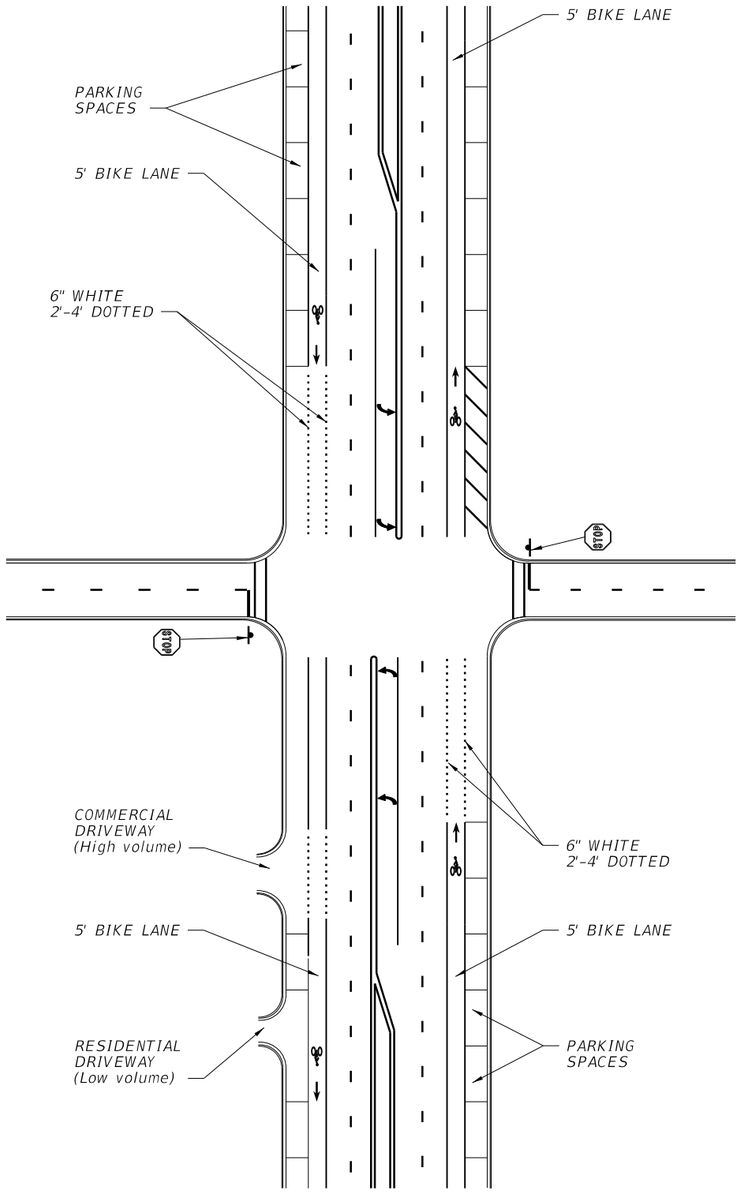


* *When used in bike lane, markings shall be placed adjacent to markings in travel lane and W10-1 sign shall be deleted.*

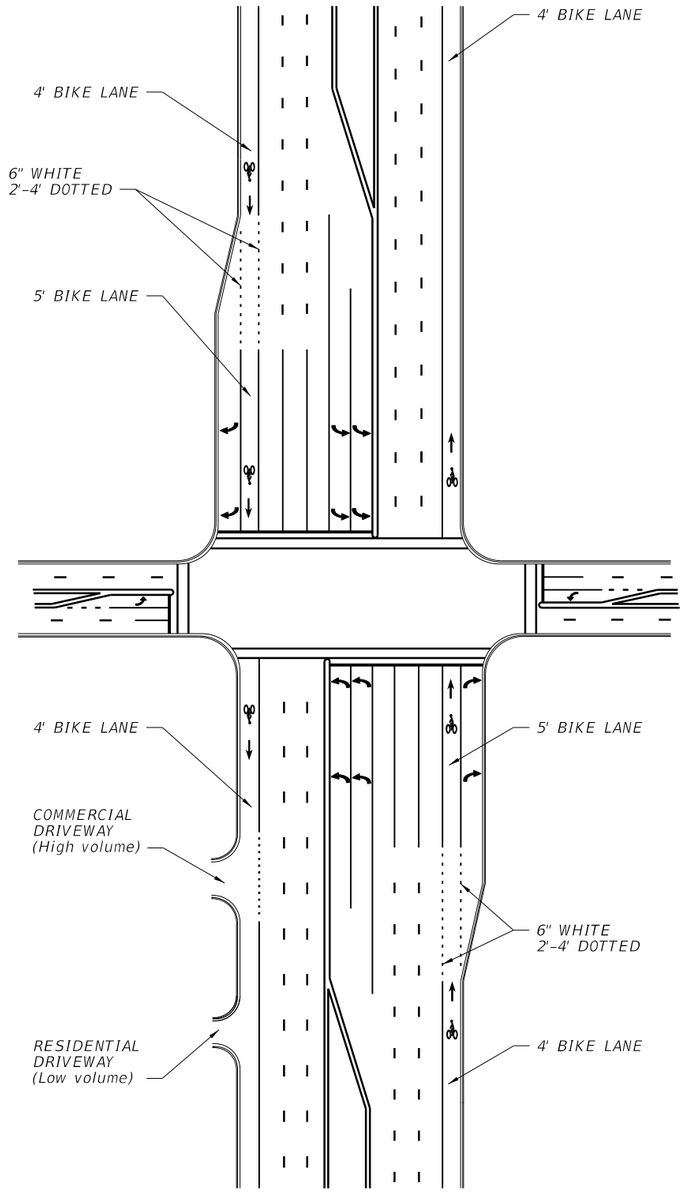
LAST REVISION	REVISION	DESCRIPTION:				
07/01/12			FDOT DESIGN STANDARDS 2013	BICYCLE MARKINGS	INDEX NO. 17347	SHEET NO. 1



INTERSECTION WITH BUS BAY, NO RIGHT TURN LANE, CURB AND GUTTER TYPICAL SECTION

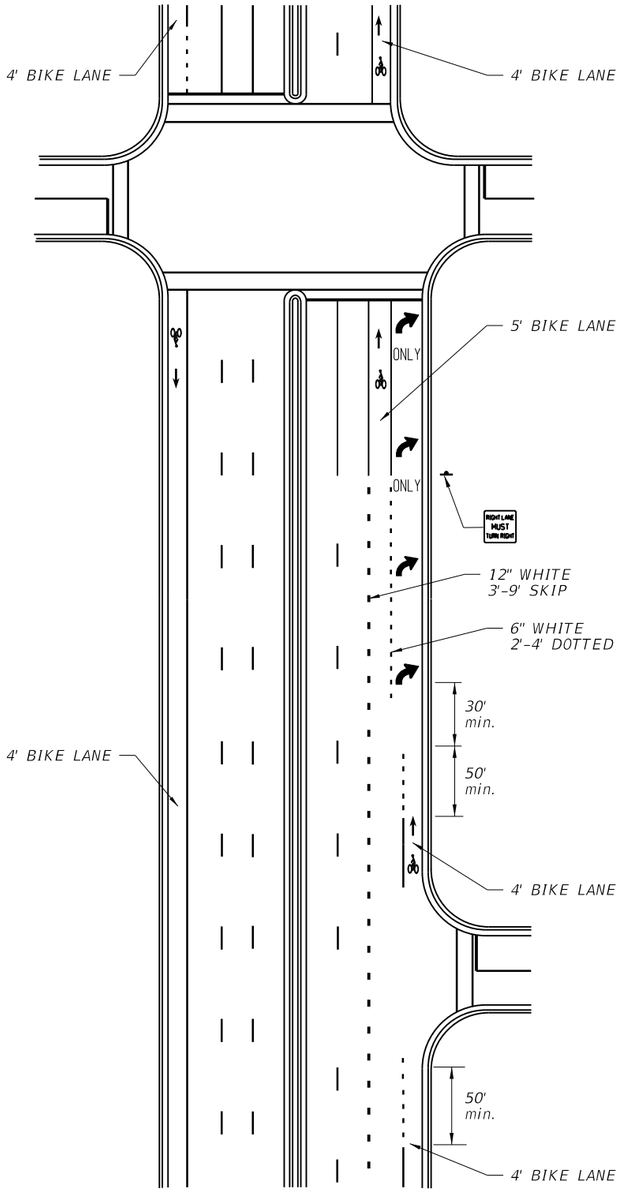


INTERSECTION WITH ON STREET PARKING, NO RIGHT TURN LANE, CURB AND GUTTER TYPICAL SECTION

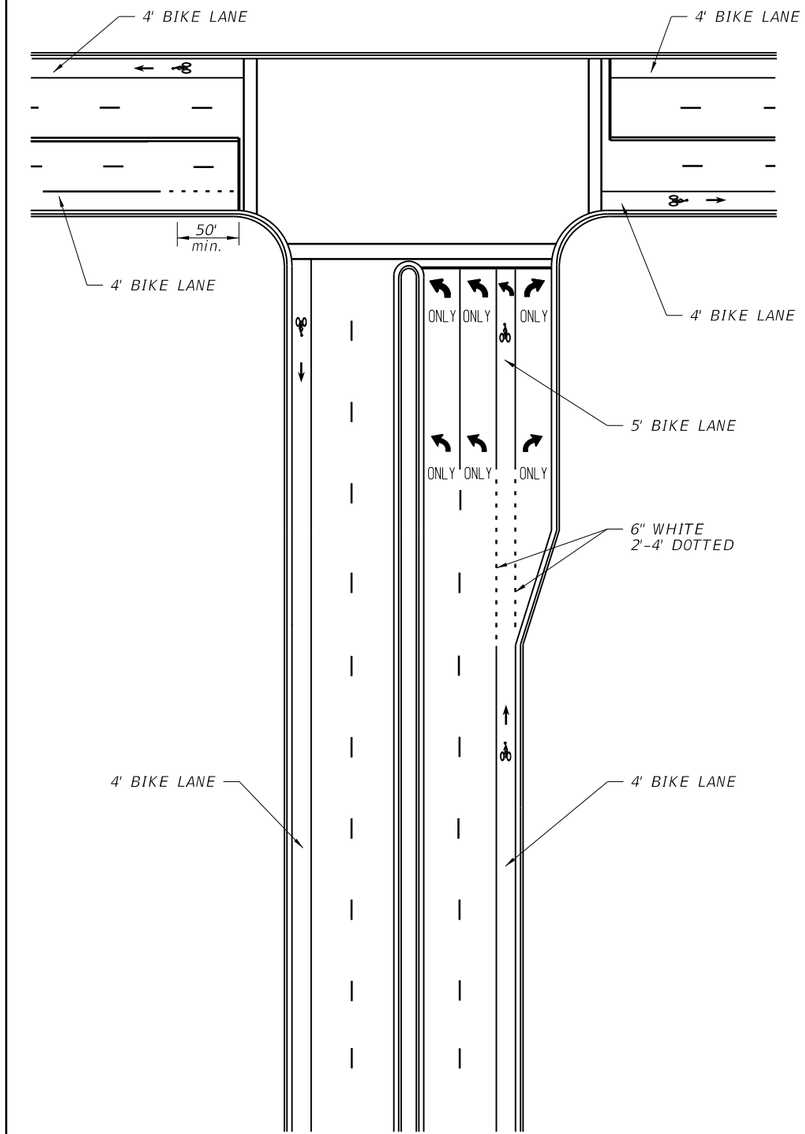


INTERSECTION WITH SEPARATE RIGHT TURN LANE, CURB AND GUTTER TYPICAL SECTION

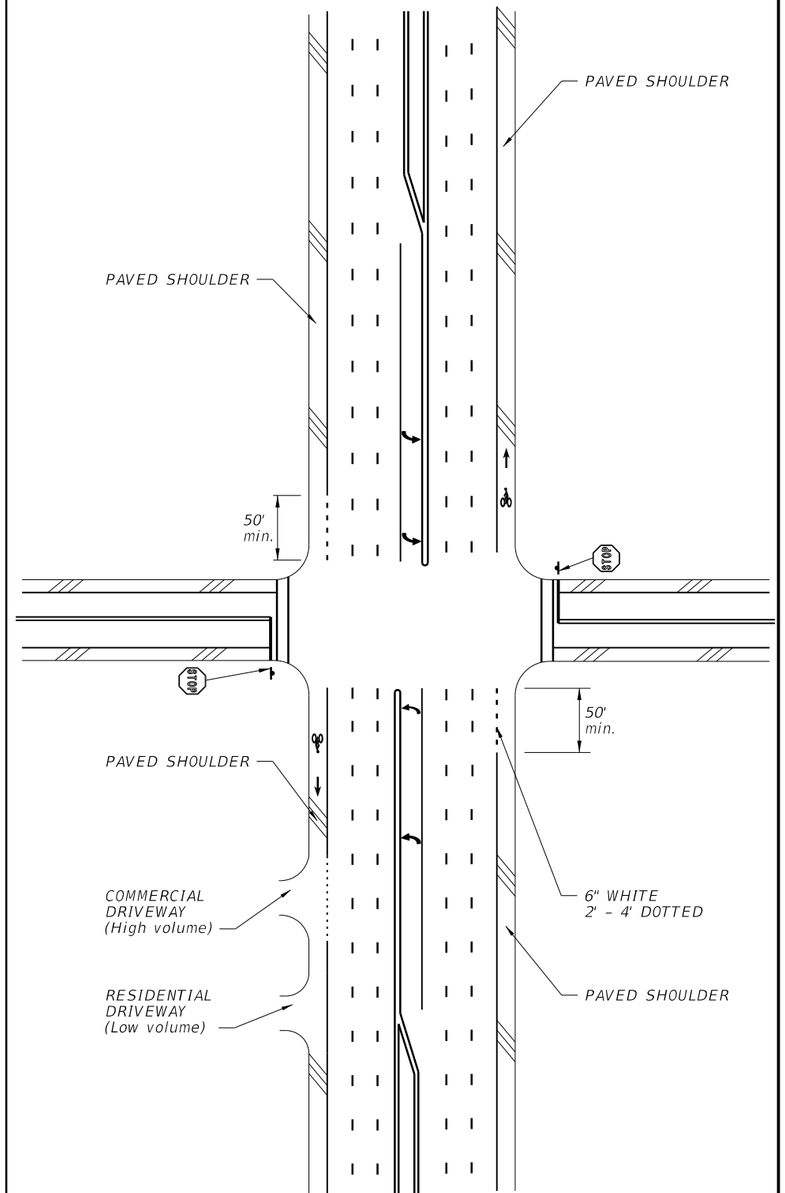
LAST REVISION	REVISION	DESCRIPTION:				
07/01/12			FDOT DESIGN STANDARDS 2013	BICYCLE MARKINGS	INDEX NO. 17347	SHEET NO. 2



INTERSECTION WITH RIGHT TURN DROP LANE, CURB AND GUTTER TYPICAL SECTION

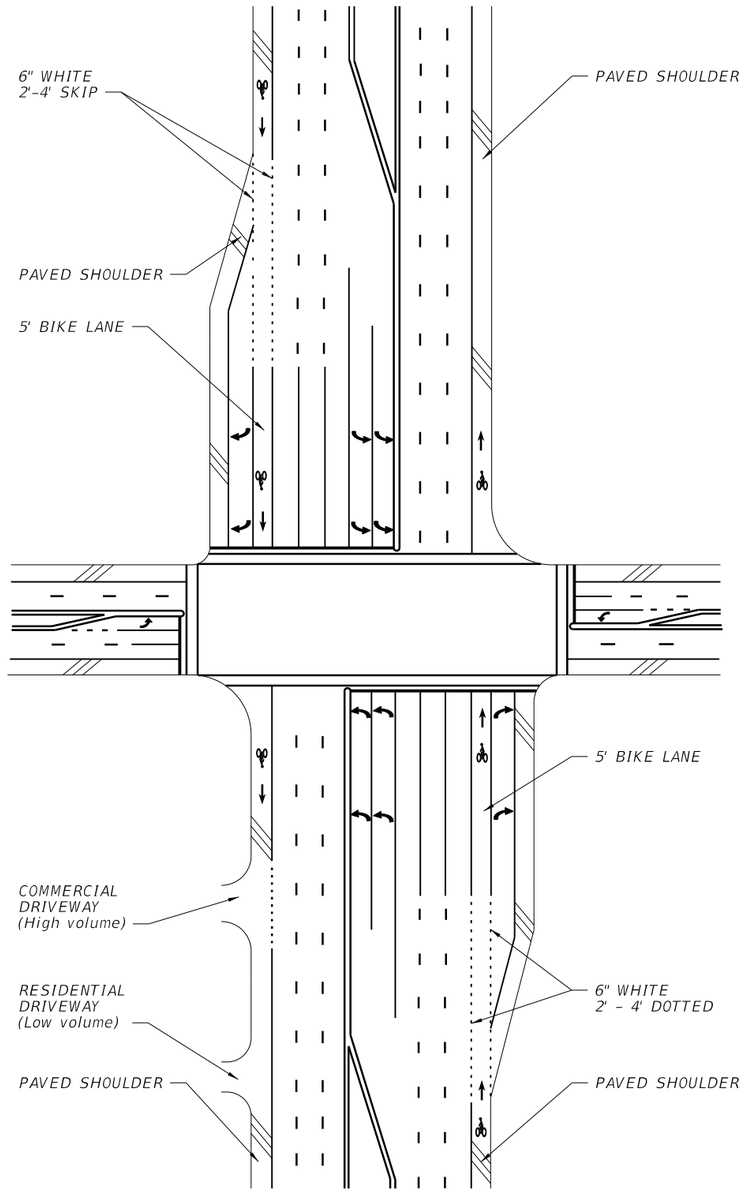


"TEE" INTERSECTION WITH SEPARATE RIGHT TURN LANE, CURB & GUTTER TYPICAL SECTION

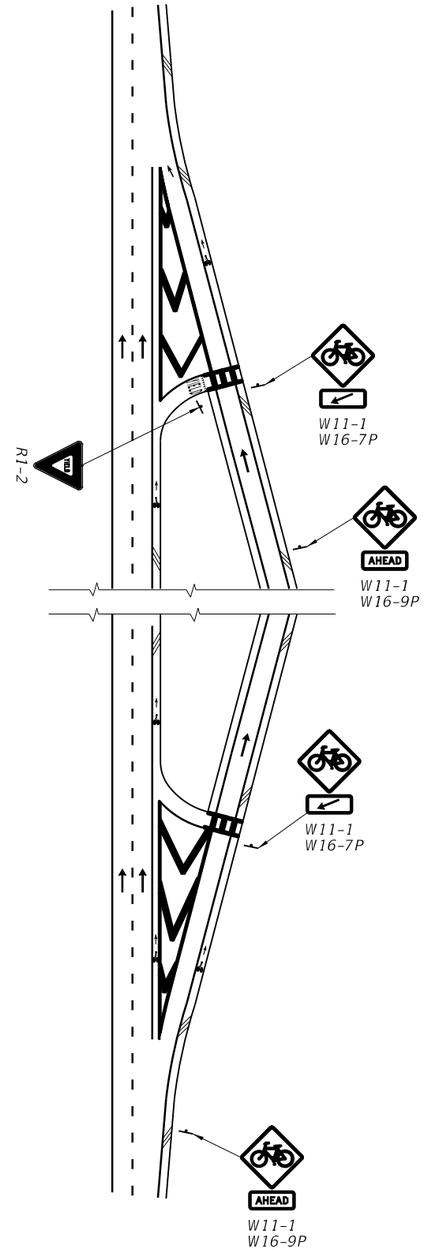


INTERSECTION, NO RIGHT TURN LANE, FLUSH SHOULDER TYPICAL SECTION

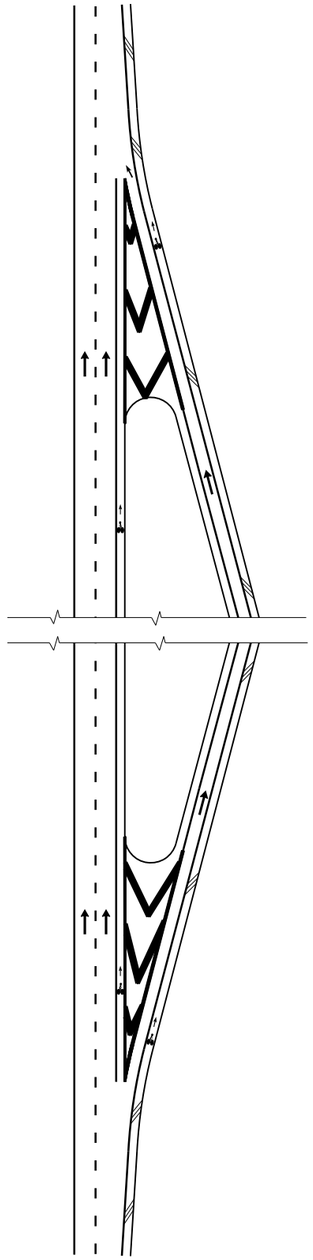
LAST REVISION	REVISION	DESCRIPTION:				
07/01/12			FDOT DESIGN STANDARDS 2013	BICYCLE MARKINGS	INDEX NO. 17347	SHEET NO. 3



INTERSECTION WITH SEPARATE RIGHT TURN LANE, FLUSH SHOULDER TYPICAL SECTION



INTERCHANGE RAMPS WITH MARKED CROSSING, FLUSH SHOULDER TYPICAL SECTION



INTERCHANGE RAMPS, FLUSH SHOULDER TYPICAL SECTION

C:\d\projects\standards\roadway\17300-s\17347-04.dgn
rd960rh
3:06:23 PM
6/28/2012

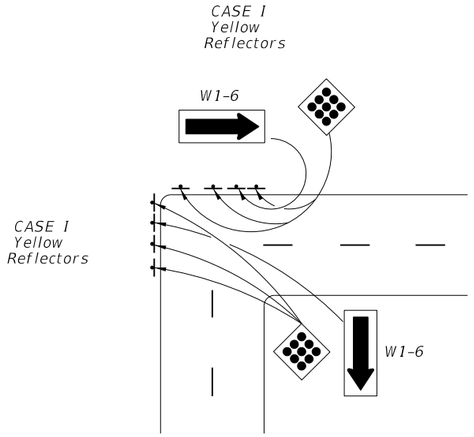
LAST REVISION	REVISION	DESCRIPTION:				
01/01/12			FDOT DESIGN STANDARDS 2013	BICYCLE MARKINGS	INDEX NO. 17347	SHEET NO. 4

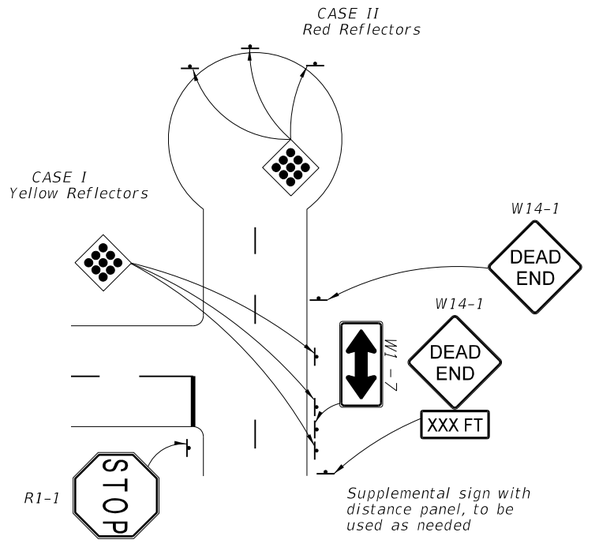
CASE I Type 1 Object Markers shall consist of nine yellow reflectors mounted on a yellow reflective background or consist of a retroreflective panel of the same size.

CASE II End of Road Markers shall consist of nine red reflectors mounted on a red reflective background or consist of a retroreflective panel of the same size.

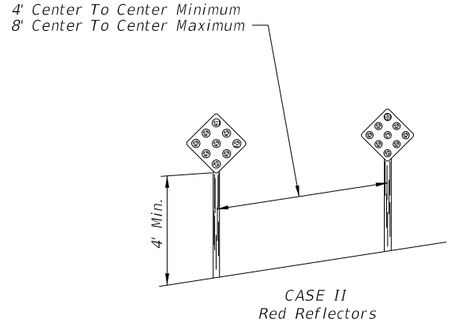
NOTES:

1. This index applicable to residential and minor streets only. Major streets to be evaluated on a case by case basis.
2. "T"-intersection-Two-Way arrows and reflectors are optional. The need should be based on a review of each location.
3. For additional details on aluminum round post, sign panel material and bolts, nuts and washers see Index Nos. 11860.
4. Case I Installation – The arrow panels and object markers shall be located approximately 20', but not less than 12' from the edge of the travel lane.
5. Dead end sign shall be posted a sufficient advance distance to permit the vehicle operator to avoid the dead end by turning off, if possible, at the nearest intersecting street.
6. For pavement marking see Index No. 17346
7. No guardrail is required unless special field conditions require its use.

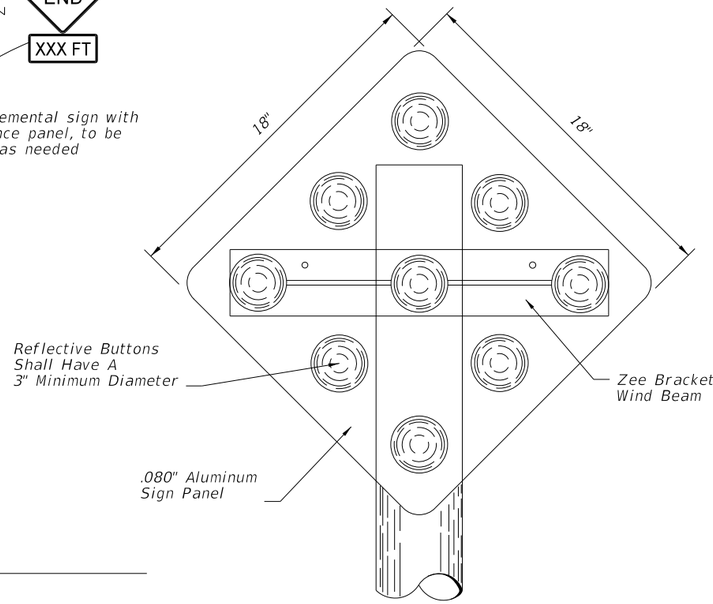




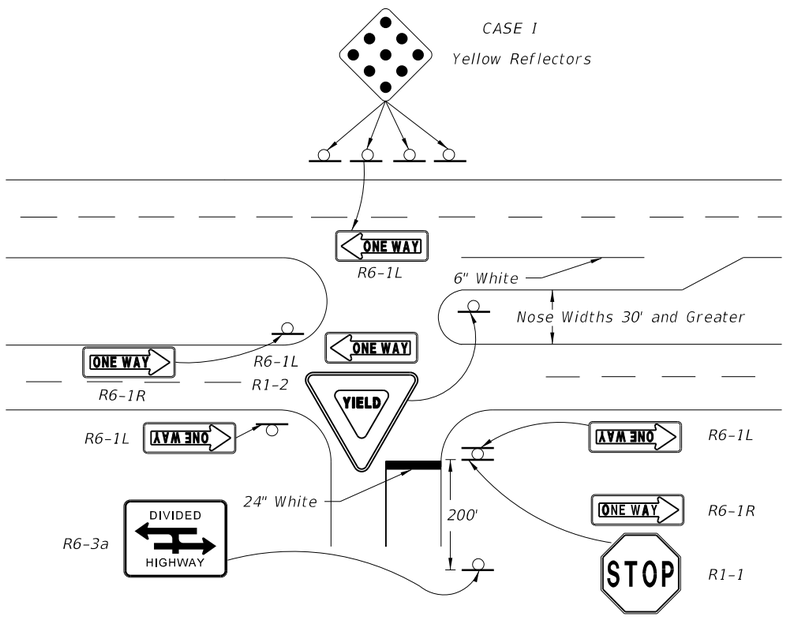
Supplemental sign with distance panel, to be used as needed

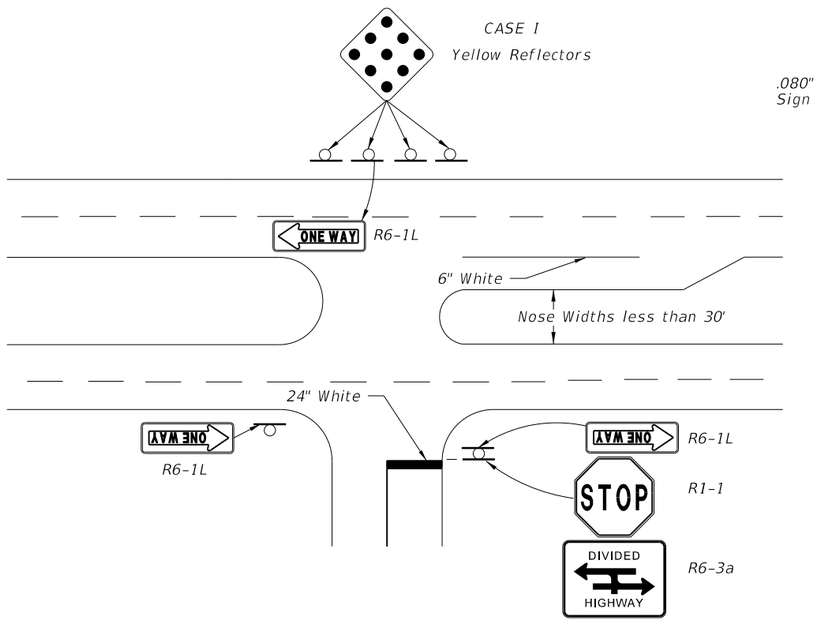


CASE II
Red Reflectors



Object markers shall be installed on 2" Ø x ⅛" Aluminum Round Post.
⅜" Ø Aluminum Button Head Bolt with Nut and Lockwasher or $^{15}/_{16}$" Ø Stainless Steel Hex Head Bolt with Flat Washer under Head and Lockwasher under Nut. Post foundation shall be installed in accordance with Index No. 11860.



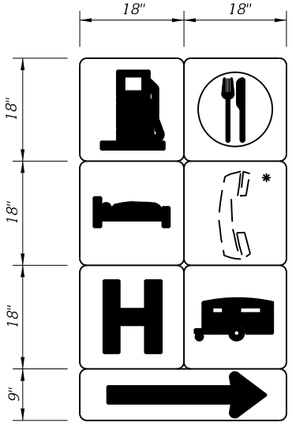


LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/12			FDOT DESIGN STANDARDS 2013	TRAFFIC CONTROLS FOR STREET TERMINATIONS	17349	1

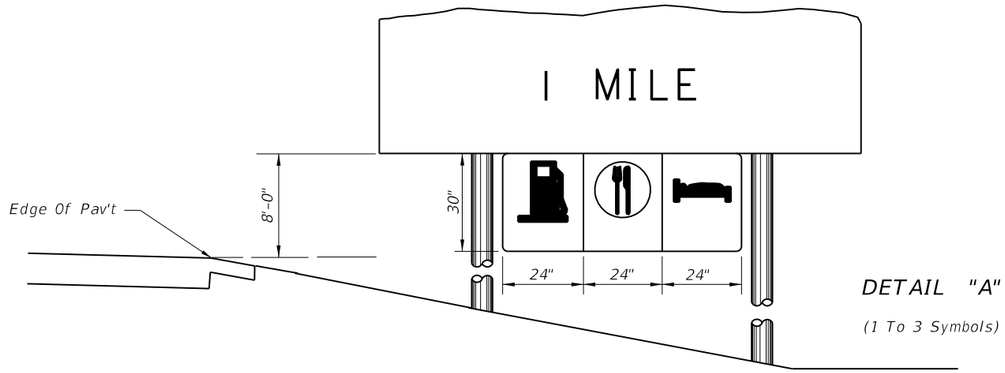
** Note:

Two assemblies are required; one for each side of the ramp, showing those services in each particular direction from the ramp terminal.

Ramp mounted signs shall be installed to avoid conflict with existing signs and in no case should they be placed within 100' of another sign.

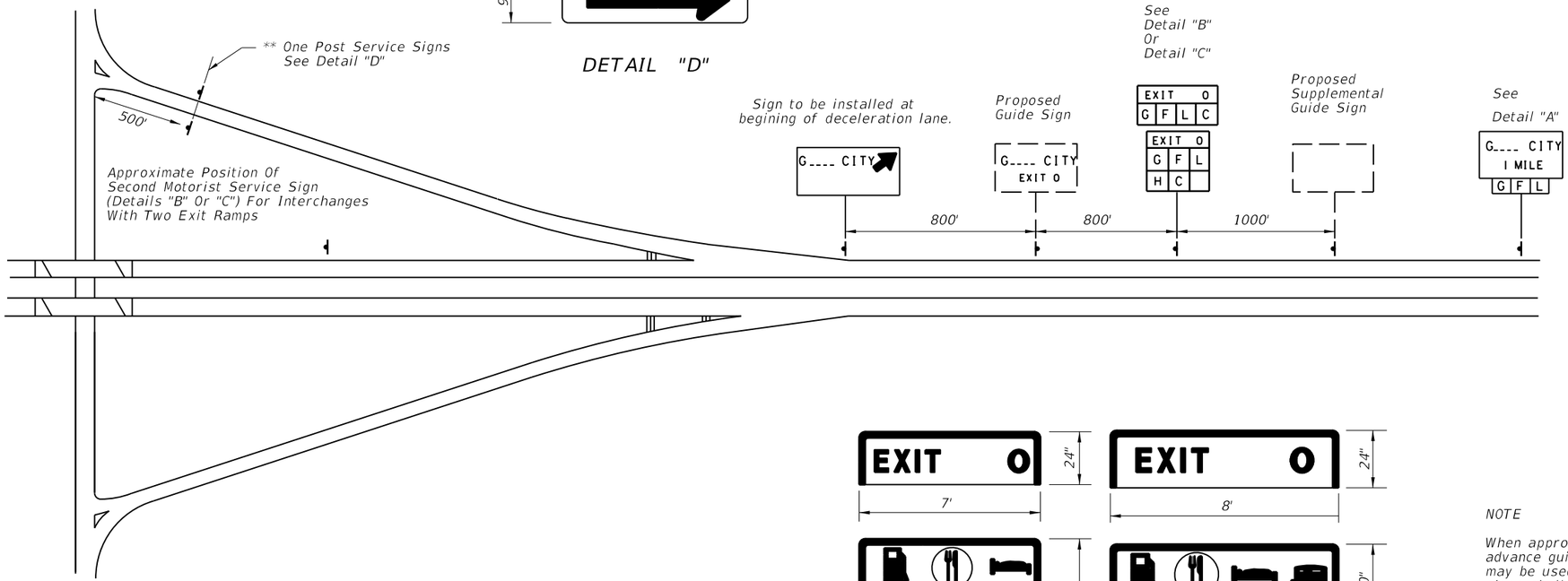


DETAIL "D"



DETAIL "A"

(1 To 3 Symbols)



GENERAL NOTES

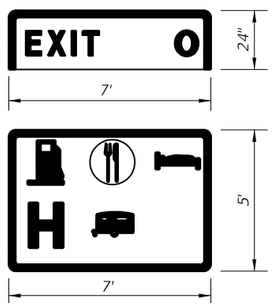
1. Only those services meeting criteria established by the Department and approved by the State Traffic Operations Engineer for each interchange shall be shown. Symbol signs for motorist services shall always appear in the following order reading from left to right and top to bottom: Gas, Food, Lodging, Phone * , Hospital, Camping.

   * The phone symbol shall not be shown whenever any Gas, Food, Lodging or Camping symbol appears.

2. Symbols shall appear consecutively on the sign with no positions left blank or reserved for intermediate symbols not currently approved for a particular interchange.

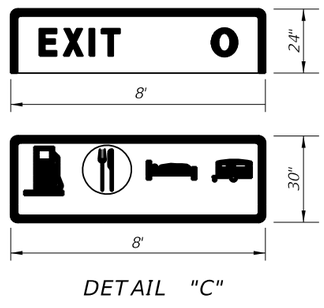
3. All motorist service signs to have White Legend and Border with Blue Background.

4. For mounting details see Index 11200 for Type "A" breakaway or Index 11860 for Type "C" Frangibility.



DETAIL "B"

(4 To 6 Symbols)



DETAIL "C"

(4 Symbols)

NOTE

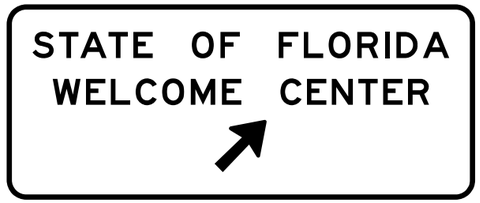
When approved for attachment to the advance guide signs, up to 3 services may be used for an exit. The symbol signs shall be suspended from the guide sign panel or existing wind beams. Symbol signs are not to be connected to existing sign posts.

The mounting height of the advance guide sign shall be increased, where necessary, to provide 8' between the level of the pavement edge and the bottom of the guide sign, prior to mounting the supplementary panel.

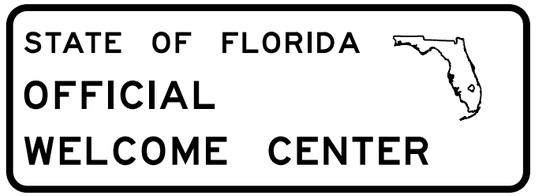
C:\d\projects\standards\roadway\17300-s\17350-01.dgn
rd960rh
3:06:28 PM
6/28/2012

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/09			FDOT DESIGN STANDARDS 2013	SIGNING FOR MOTORIST SERVICES	17350	1

Sign No. FTP-10-06

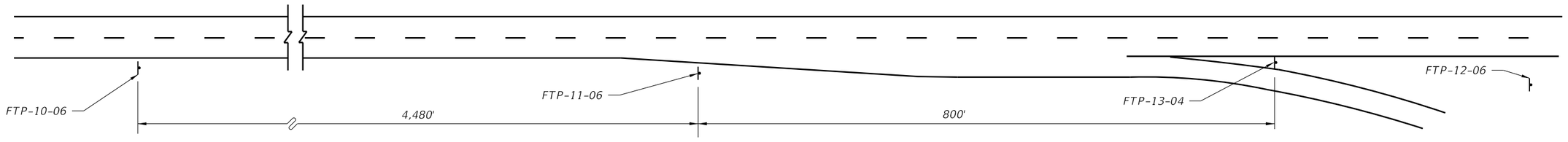


Sign No. FTP-11-06



Sign No. FTP-12-06

Sign No. FTP-13-06



Note: Roadway not drawn to scale
Distances shown are adequate for driver communication but may be altered slightly if conditions require.

Sign No. FTP-14-06

Note: Sign FTP-14-06 shall be used as a supplemental guide sign at interchanges which have a Tourist Information Center approved for such signing (locate half-way between normal guide signs)

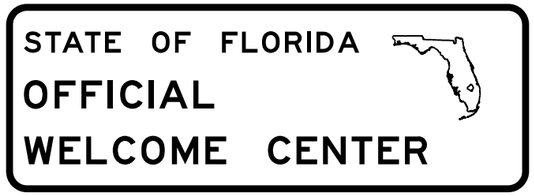
Notes:

1. Signs and sign structures shall be erected in accordance with the details shown on Index No. 11200.
2. Sign FTP-12-06 shall be located on the Welcome Center grounds in proximity to the building and as far from the main line roadway as possible (2 signs back to back).
3. Sign FTP-10-06, 11-06, 12-06 shall be located as limited access highways only.
4. All legend to be Series E.
5. See Index No. 17355 for sign details.

FOR LIMITED ACCESS HIGHWAYS

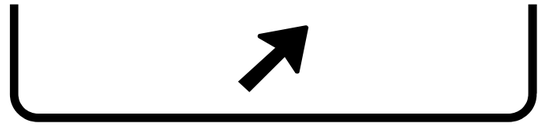
LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	WELCOME CENTER SIGNING	INDEX NO.	SHEET NO.
07/01/07						17351	1

SIGN NO. FTP-15A-04

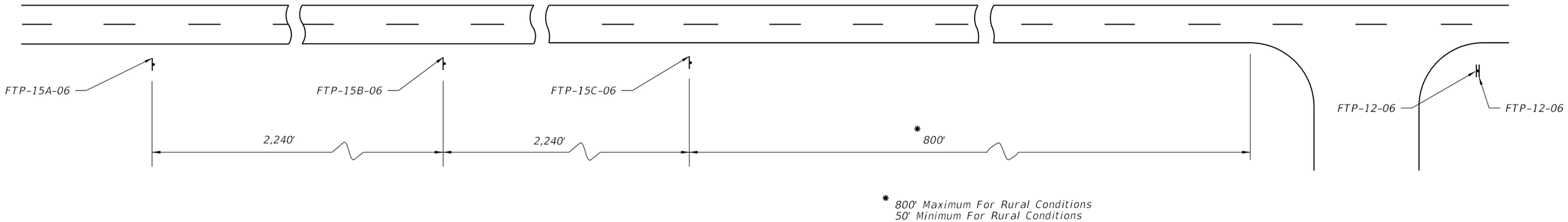


SIGN NO. FTP-12-04

SIGN NO. FTP-15B-04



SIGN NO. FTP-15C-04



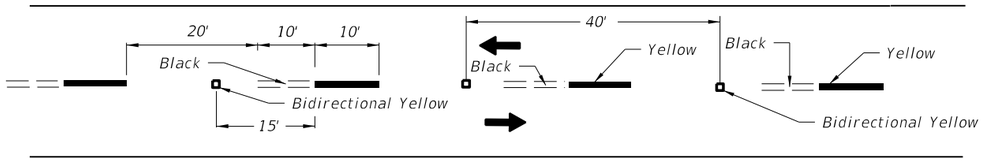
* 800' Maximum For Rural Conditions
50' Minimum For Rural Conditions

Notes:

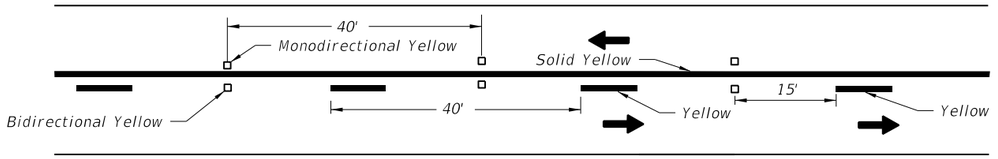
1. Signs and sign structures shall be erected in accordance with the details shown on Index 11200.
2. Sign FTP-12-06 shall be located on the Welcome Center grounds in proximity to the building and as far from the Main Line Roadway as possible (2 signs back to back).
3. All legend to be Series E.
4. One sign FTP-15A-06 or 15B-06 should be used depending on speed, roadside development & geometric conditions.

FOR PRIMARY HIGHWAYS

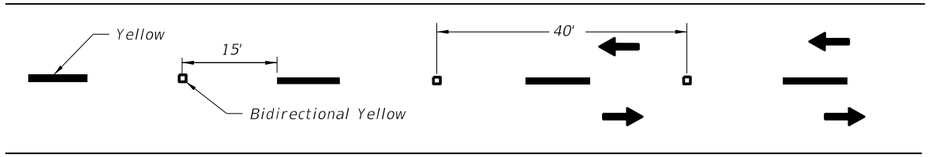
LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	WELCOME CENTER SIGNING	INDEX NO.	SHEET NO.
07/01/07						17351	2



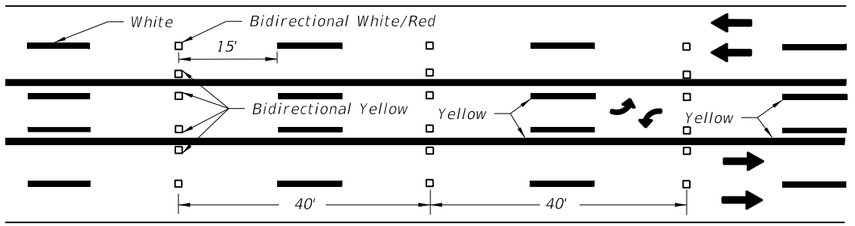
ALTERNATING SKIP LINE



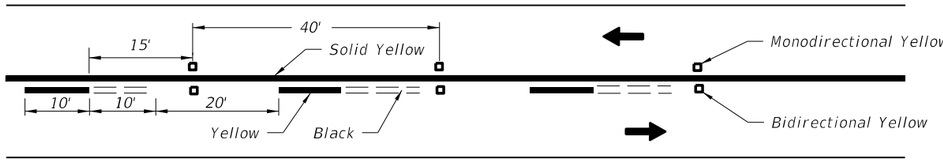
SOLID LINE WITH SKIP



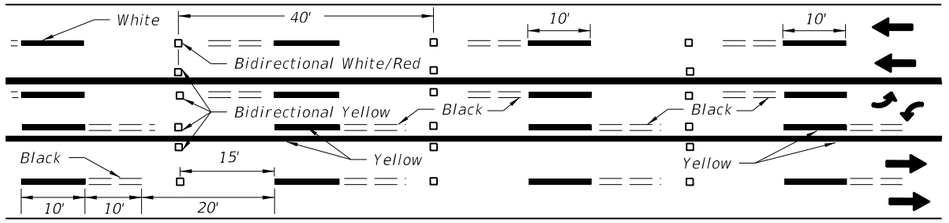
SKIP LINE



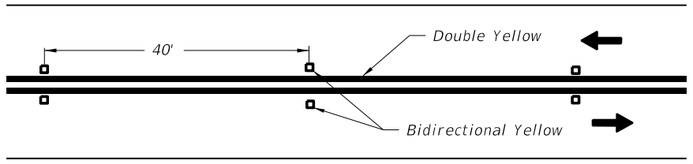
SKIP LINE WITH TWO-WAY LEFT TURN LANE



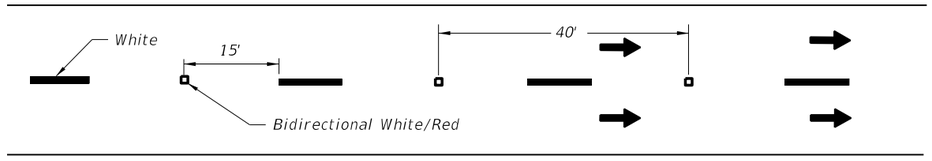
SOLID LINE WITH ALTERNATING SKIP



ALTERNATING SKIP LINE WITH TWO-WAY LEFT TURN LANE



DOUBLE SOLID LINE



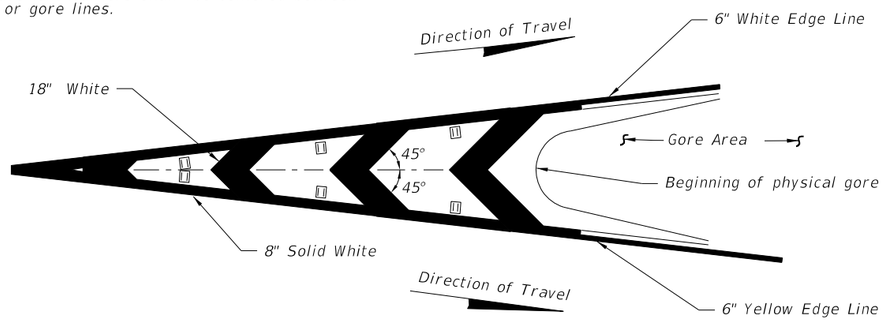
MULTILANE

1. Reflective Pavement Markers shall be spaced at 40' on all skip lane lines and skip center lines. This spacing may be reduced to 20' if specifically called for in the plans.
2. The spacing on solid lines and solid/skip combination lines shall be 40'.
3. All RPM's shall be offset 1" from solid longitudinal lines.
4. These spacings may be reduced for sharp curves if required.
5. All RPM's shall be class "B".

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	TYPICAL PLACEMENT OF REFLECTIVE PAVEMENT MARKERS	INDEX NO.	SHEET NO.
01/01/10						17352	1

NOTES

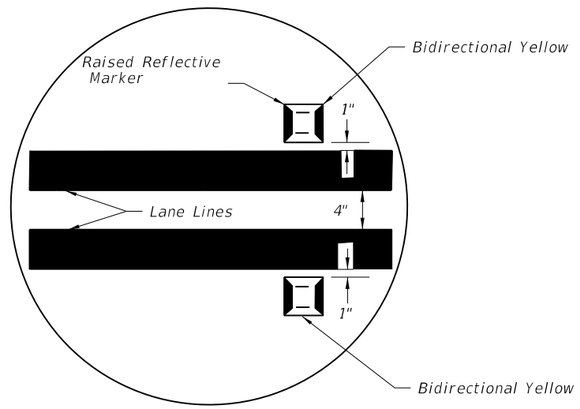
1. Raised pavement markers shall be set 1" from line.
2. Raised Pavement Markers shall be centered between chevrons or gore lines.

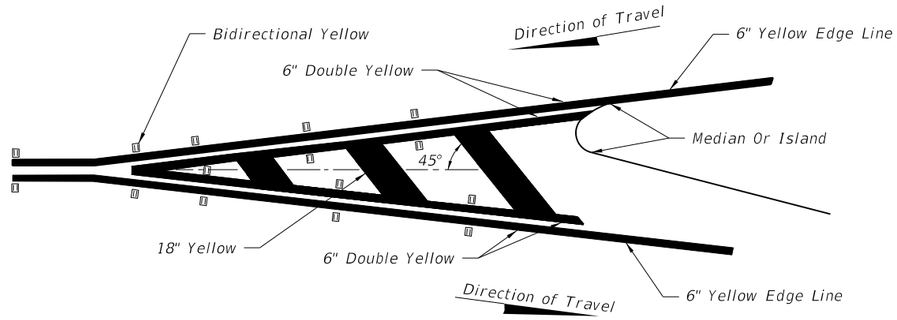


RPM PLACEMENT FOR TRAFFIC CHANNELIZATION AT GORE (TRAFFIC FLOWS IN SAME DIRECTION)

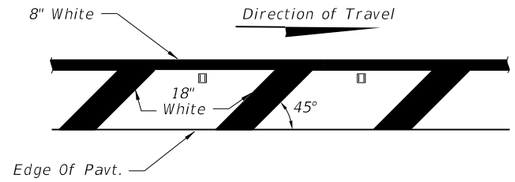
NOTE

Raised pavement markers (Bidirectional White/Red) should be used in all gores of this type





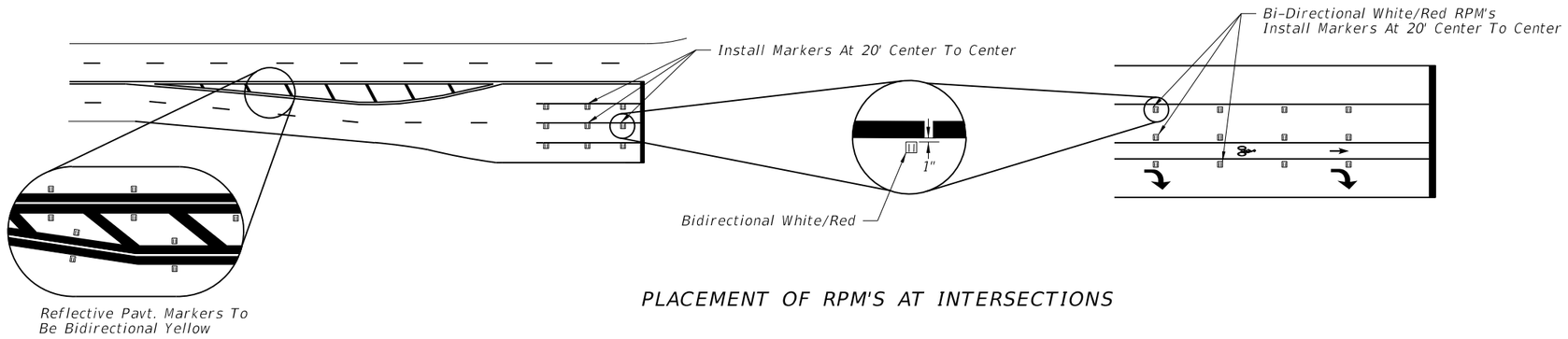
RPM PLACEMENT FOR TRAFFIC SEPARATION (TRAFFIC FLOWS IN OPPOSITE DIRECTION)



PLACEMENT OF RPM'S ON SHOULDER MARKINGS

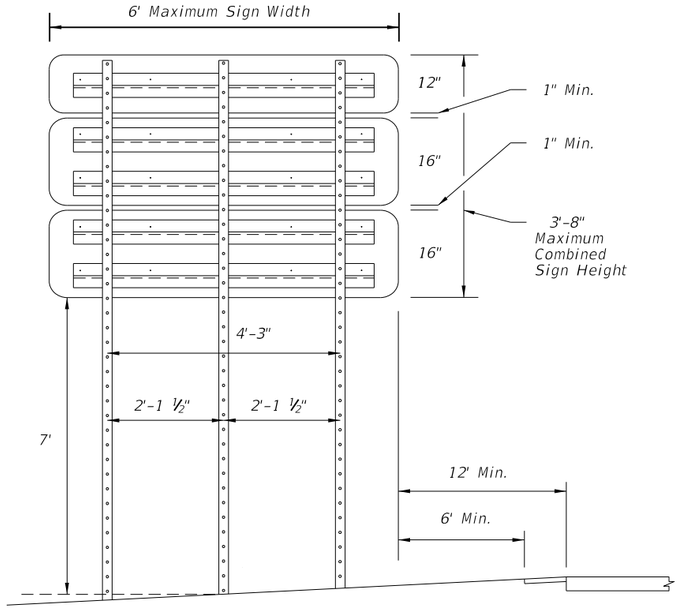
For Left Side Of Roadway The Plan Is Opposite Hand And Markings Shall Be Yellow.

For Placement Of Rpm's On Ramps See Index 17345.

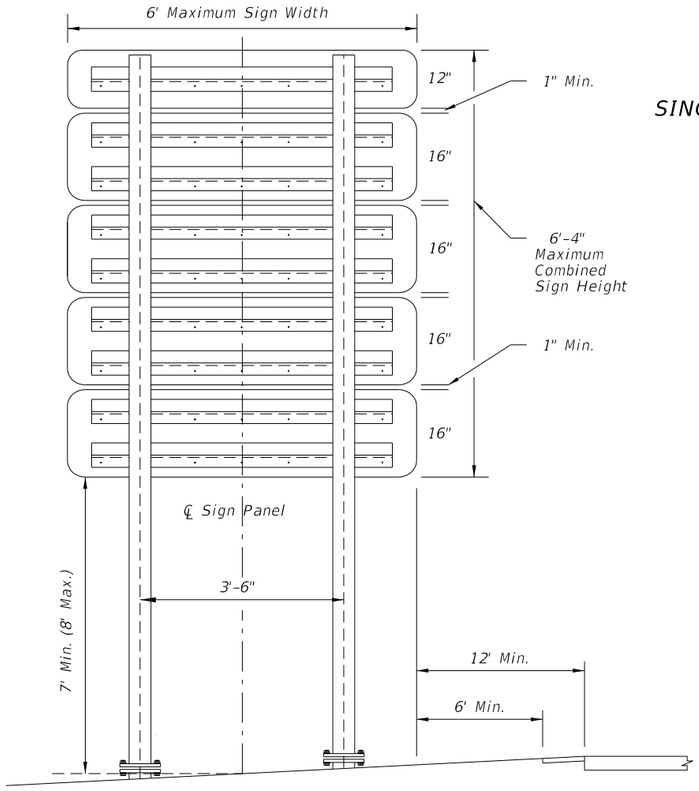


PLACEMENT OF RPM'S AT INTERSECTIONS

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/10			FDOT DESIGN STANDARDS 2013	TYPICAL PLACEMENT OF REFLECTIVE PAVEMENT MARKERS	17352	2

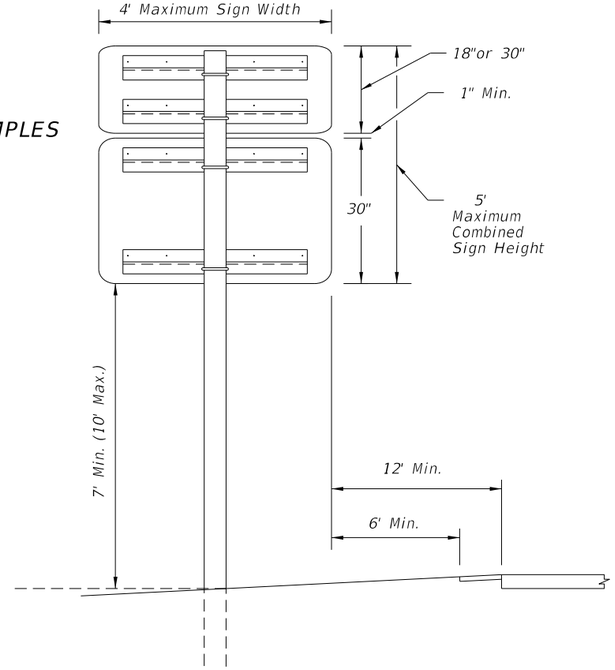


STEEL U-CHANNEL TRIPLE POST
DIRECT BURIAL



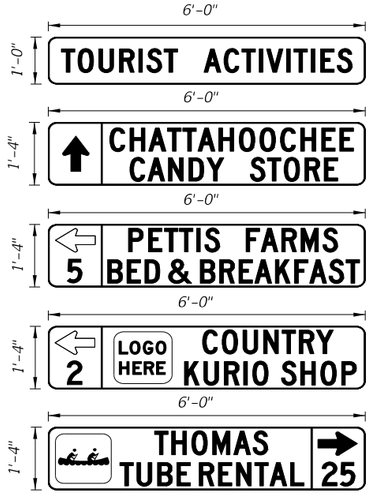
TWO POST STEEL I BEAM
WITH SLIP BASE

SINGLE POST SIGN EXAMPLES



SINGLE POST
ALUMINUM
ROUND TUBE

MULTIPOST SIGN EXAMPLES



General Notes:

1. Signs Must Comply With Rule 14-51, Florida Administrative Code.
2. Text for Signs Shall Be 6" Type C Lettering.
3. For Aluminum Round Tube Assembly and Foundation Detail, see Index 11860.
4. For Steel I Beam Assembly and Foundation Detail, see Index 11200.
5. For Steel U-Channel Assembly and Foundation Detail, See Index 600 Sheet 6 of 12. Galvanize Steel U-Channel in accordance with ASTM 123.

DESIGN FOR TOURIST ORIENTED DIRECTIONAL SIGNS
(Options for Aluminum Round Tube, Steel I Beam and Steel U-Channel.)

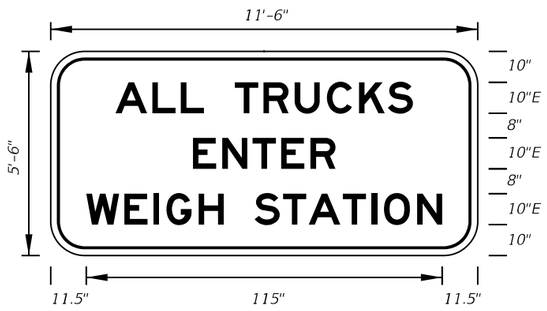
No. of Signs (Total Area)	Single Post Configuration		Two Post Configuration		Three Post Configuration	
	3-1/2" X 0.125" Aluminum Tube Direct Burial	4" X 0.125" Aluminum Tube Slip Base	S3X5.7 Steel I Beam Slip Base	W6X12 Steel I Beam Slip Base	3 lb/ft Steel U-Channel Direct Burial	4 lb/ft Steel U-Channel Lap Splice
10	OK	OK	NA	NA	NA	NA
16-20	NA	OK	NA	NA	NA	NA
14-16	NA	NA	OK	OK	OK	OK
22-24	NA	NA	OK	OK	NA	OK *
30-32	NA	NA	NA	OK	NA	NA
38	NA	NA	NA	OK	NA	NA

* Limited to 22 s.f. Total Sign Area.

LAST REVISION	REVISION	DESCRIPTION:				
07/01/09			FDOT DESIGN STANDARDS 2013	TOURIST ORIENTED DIRECTIONAL SIGNS	INDEX NO. 17354	SHEET NO. 1

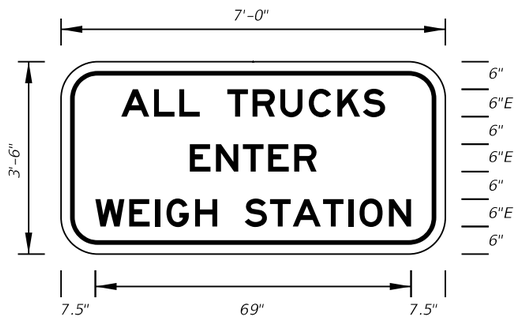
6/28/2012 3:06:38 PM rd960rh C:\d\projects\standards\roadway\17300-s\17354-01.dgn

FREEWAY USE



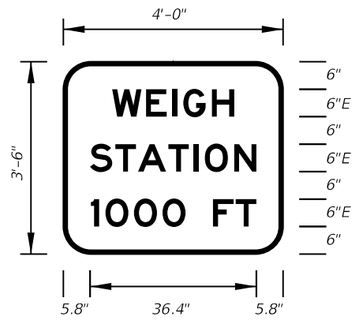
FTP-1-06
11'-6" X 5'-6"
9" Radii 2" Border
10" Series E Legend
White Background
Black Legend and Border

OTHER THAN FREEWAY USE



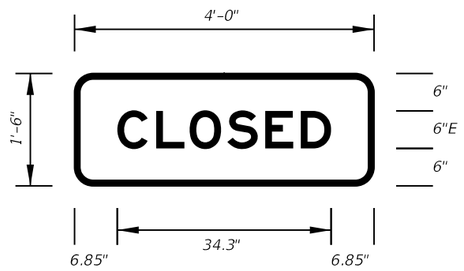
FTP-2-06
7' X 3'-6"
6" Radii 2" Border
6" Series E Legend
White Background
Black Legend and Border

OTHER THAN FREEWAY USE



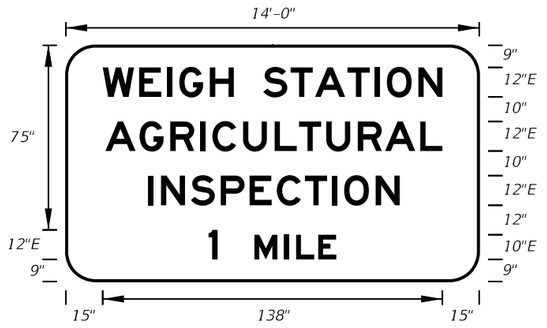
FTP-3-06
4' X 3'-6"
6" Radii 2" Border
6" Series E Legend
Green Background
White Legend and Border

OTHER THAN FREEWAY USE

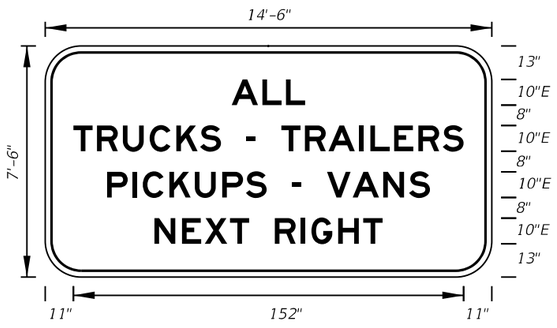


FTP-4-06
4' X 1'-6"
3" Radii 2" Border
6" Series E Legend
Green Background
White Legend and Border

Note:
FTP-4-06 to be
used with FTP-3-06

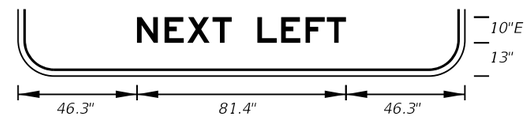


FTP-5-06
14' X 8'
12" Radii 2" Border
12" and 10" Series E Legend
Green Background
White Legend and Border

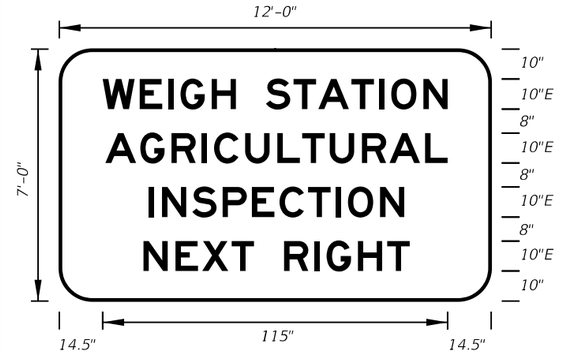


FTP-6A-06
14'-6" X 7'-6"
12" Radii 2" Border
10" Series E Legend
White Background
Black Legend and Border

On Interstate Station
Delete Pickups-Vans,
and reduce Sign height
accordingly.



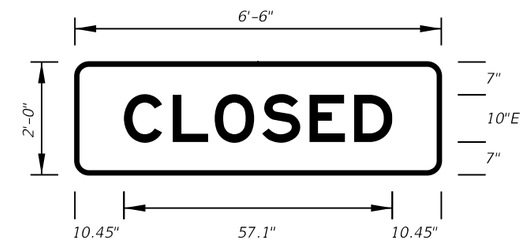
FTP-6B-06
14'-6" X 7'-6"
12" Radii 2" Border
10" Series E Legend
White Background
Black Legend and Border



FTP-7A-06
12' X 7'
11" Radii 2" Border
10" Series E Legend
Green Background
White Legend and Border

FTP-7B-06
12' X 7'
11" Radii 2" Border
10" Series E Legend
Green Background
White Legend and Border

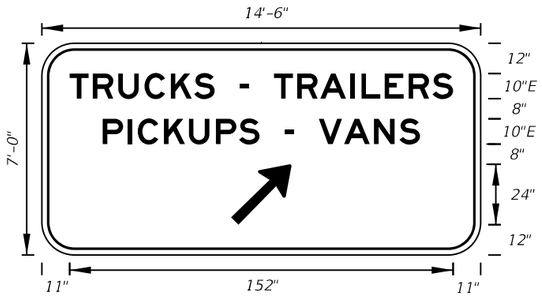
FREEWAY USE



FTP-8-06
6'-6"X 2'
3" Radii 2" Border
10" Series E Legend
Green Background
White Legend and Border

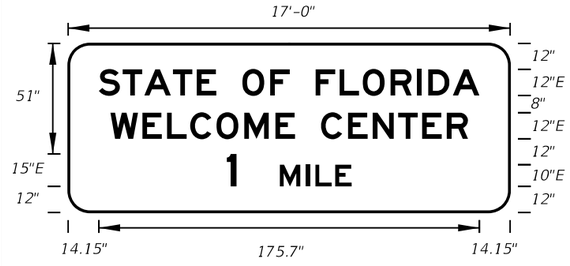
Note:
FTP-8-06 to be
used with FTP-7A-06
& FTP-7B-06.

FTP-9B-06-LEFT ARROW



FTP-9A-06
14'-6" X 7'
11" Radii 2" Border

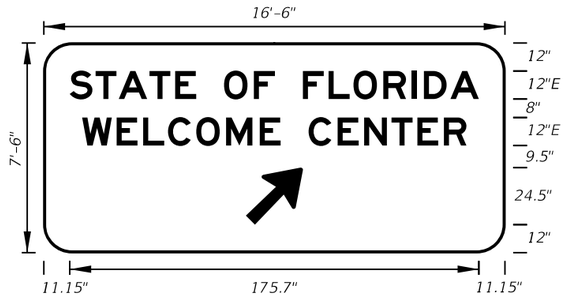
10" Series E Legend
Green Background
White Legend and Border



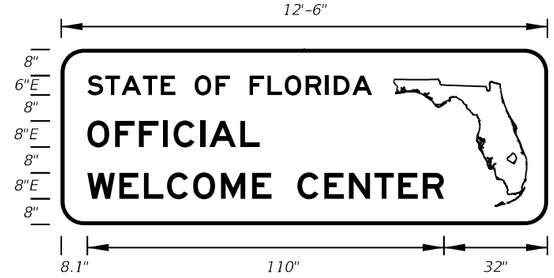
FTP-10-06
17' X 6'-6"
10" Radii 2" Border

12", 10" and 15" Series E Legend
Blue Background
White Legend and Border

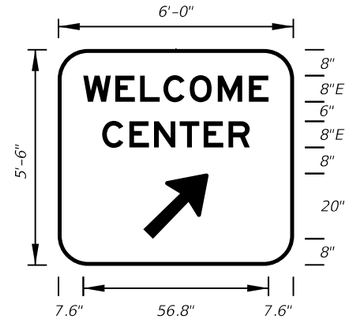
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/09			FDOT DESIGN STANDARDS 2013	SPECIAL SIGN DETAILS	17355	1



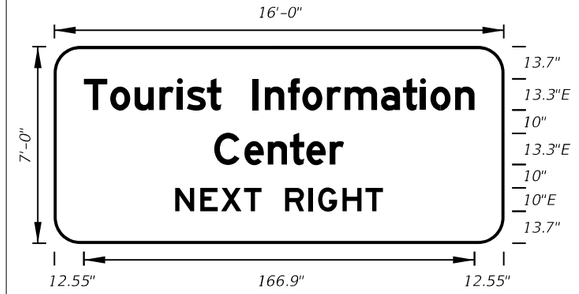
FTP-11-06
16'-6" X 7'-6"
12" Radii 2" Border
12" Series E Legend
Blue Background
White Legend and Border



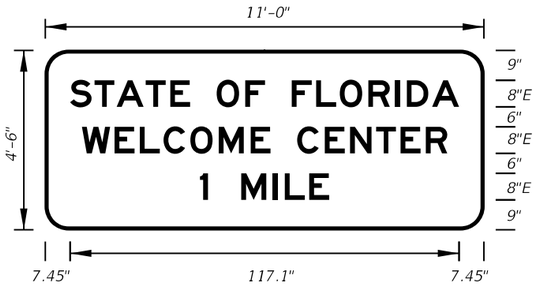
FTP-12-06
12'-6" X 4'-6"
7" Radii 2" Border
6" and 8" Series E Legend
Blue Background
White Legend and Border



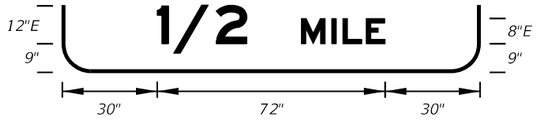
FTP-13-06
6' 0" X 5'-6"
9" Radii 2" Border
8" Series E Legend
Blue Background
White Legend and Border



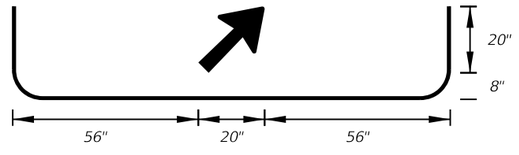
FTP-14-06
16'-0" X 7'-0"
11" Radii 2" Border
13.3 and 10" Series E Legend
Blue Background
White Legend and Border



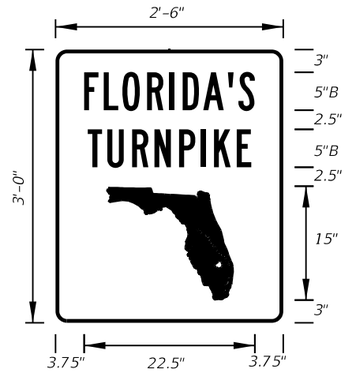
FTP-15A-06
11'-0" X 4'-6"
7" Radii 2" Border
8" Series E Legend
Blue Background
White Legend and Border



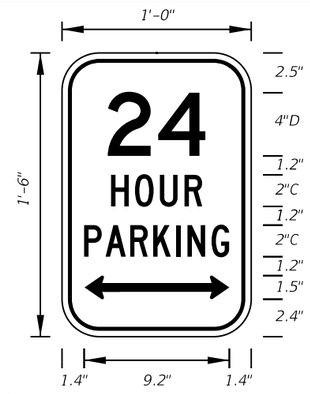
FTP-15B-06
11'-0" X 5'-0"
8" Radii 2" Border
8" and 12" Series E Legend
Blue Background
White Legend and Border



FTP-15C-06
11'-0" X 5'-6"
9" Radii 2" Border
8" Series E Legend
Blue Background
White Legend and Border



FTP-16-10
2'-6" X 3'-0"
1.5" Radii 3/4" Border
5" Series B Legend
Green Background
White Legend, Border, and Florida Symbol



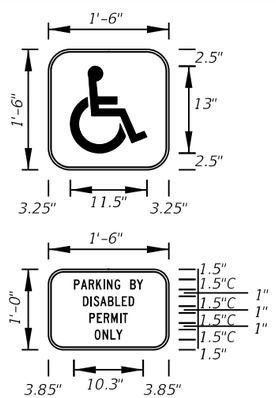
FTP-19-06
1' X 1'-6"
4" Radii 3/8" Border
Top 4" Series D
Bottom 2" Series C
White Background
Green Legend and Border

All Letters
1" Series C
1" Spacing
Between Lines
of Text

FTP-20-06
1' X 1'-6"
2" Radii 3/8" Border
1" Series C Legend
Color
Background
Legend and Border

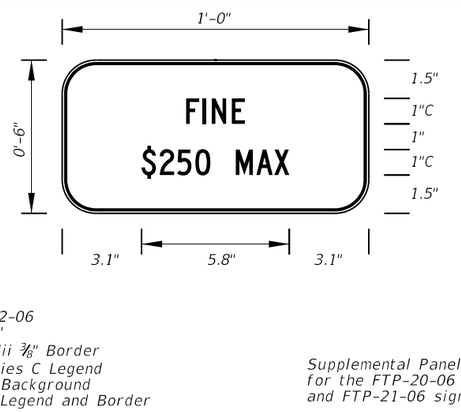
Top	Bottom
Blue	White
White	Black

All Letters
1.5" Series C
1" Spacing
Between Lines
of Text



FTP-21-06
1'-6" X 2'-6"
2" Radii 3/8" Border
1.5" Series C Legend
Color
Background
Legend and Border

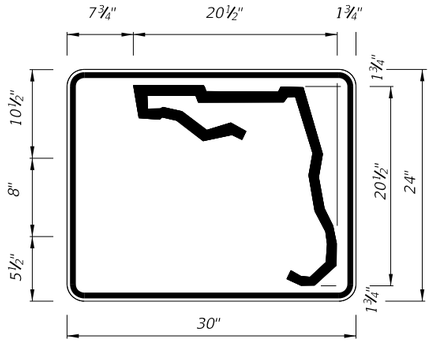
Top	Bottom
Blue	White
White	Black



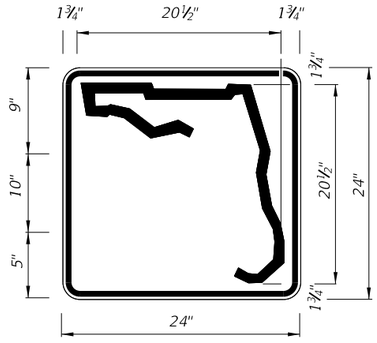
FTP-22-06
1' X 6"
1" Radii 3/8" Border
1" Series C Legend
White Background
Black Legend and Border

Supplemental Panel
for the FTP-20-06
and FTP-21-06 signs

LAST REVISION	REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS 2013	SPECIAL SIGN DETAILS	INDEX NO.	SHEET NO.
01/01/12					17355	2



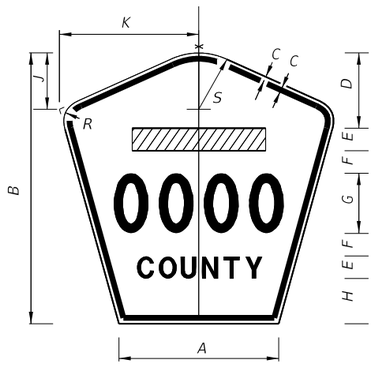
3 or 4 DIGITS



1 or 2 DIGITS

DIGITS	NUMERAL SIZE	SERIES	PANEL SIZE
1–2	10"	D	24" x 24"
3–4	8"	D	24" x 24"
3	8"	C	30" x 24"
4	8"	C	30" x 24"

Note:
The 24" X 24" panel shall only be used for a 3 or 4 digit route when the panel is to be used on a sign cluster with other 24" X 24" panels.

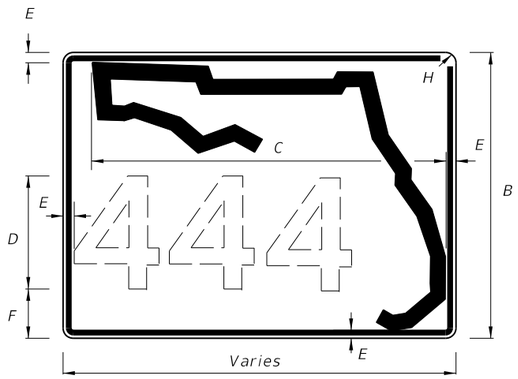


Notes :
1. All Legend Series "D".
2. Color: Yellow Legend and Border on Blue Background.
3. When used on a guide sign, marker must be overlaid on a rectangular Yellow Background as shown in chart. **

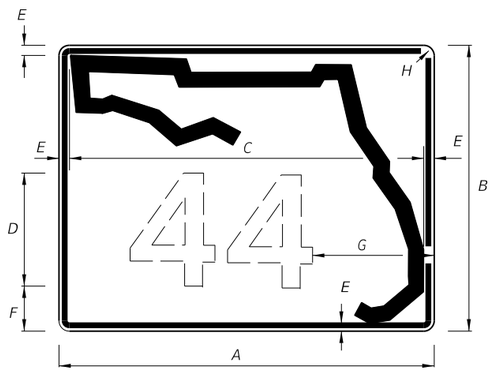
SIGN	DIMENSIONS												**
	A	B	C	D	E	F	G	H	J	K	R	S	
4 DIGIT POST MOUNTED	25⅛"	42"	¾"	10"	4"	4"	8"	8"	8⅜"	22"	5"	8¾"	
2 DIGIT OVERHEAD	21½"	36"	½"	7½"	3"	3"	12"	4½"	7⅛"	18⅞"	4¼"	7½"	42"x 42"
3 DIGIT OVERHEAD	25⅛"	42"	¾"	8"	4"	4"	12"	6"	8⅜"	22"	5"	8¾"	48"x 48"
4 DIGIT OVERHEAD	29⅞"	48"	¾"	8"	5"	5"	12"	8"	9¾"	25⅜"	5¾"	10¼"	52"x 52"

M1-6 COUNTY ROUTE MARKER DETAIL
FTP-18-06

INDEPENDENT USE OTHER THAN FREEWAY



3 OR MORE DIGITS



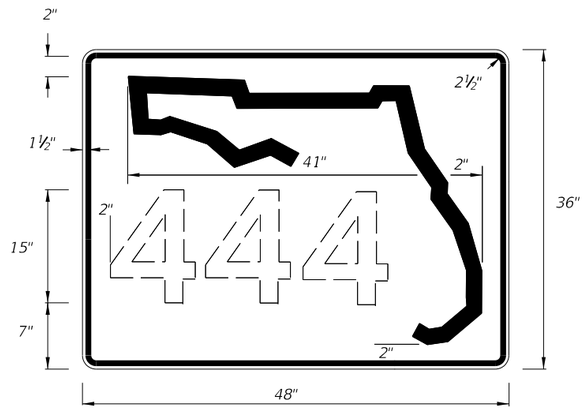
1 OR 2 DIGITS

A	B	C	D	E	F	G	H
30"	24"	26"	12"	1¼"	2¾"	8¼"	1¼"
36"	30"	32"	15"	1¼"	3¼"	8¾"	1¼"
42"	36"	38"	15"	1¼"	6¼"	11"	1¼"

GUIDE SIGN USE

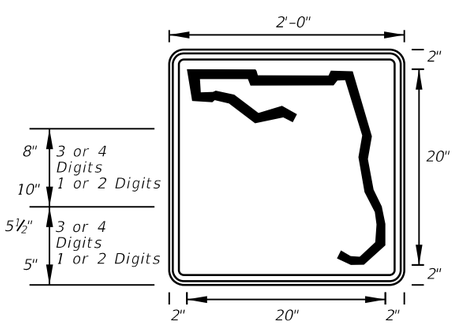
Notes:
1. Florida marker shall have Black Legend with White Background.
2. Stroke width of State outline to be 1" for independent use and 1¼" for Guide Sign.
3. Numbers are series D.

FLORIDA ROUTE MARKER
FTP-17-06

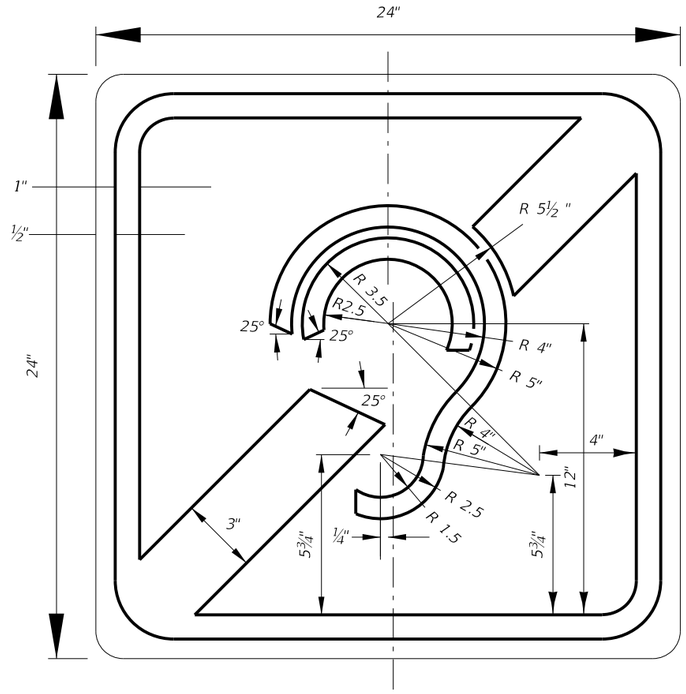


1-3 DIGITS 15" SERIES C
4 DIGITS 12" SERIES C

INDEPENDENT USE FOR FREEWAY

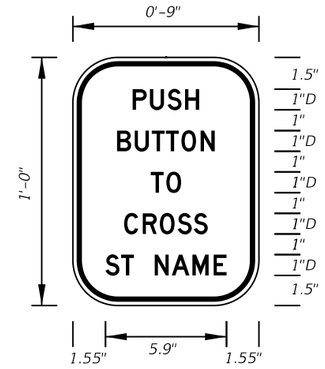


FTP-17-06
2' X 2'
1.13" Radii .0521" Border
White Background
Black Legend and Border

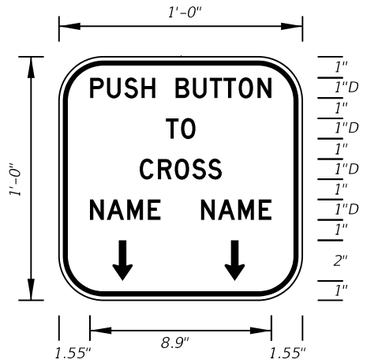


FTP-23-06
2' X 2'
1.5" Radii ⅝" Border
Blue Background
White Legend and Border

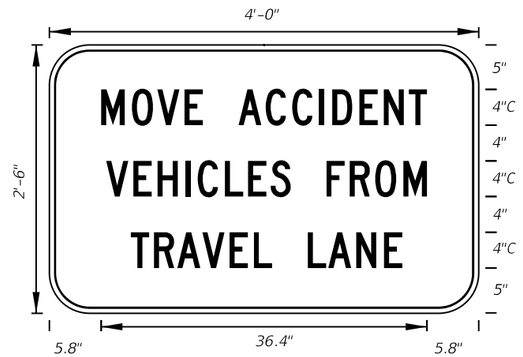
INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS



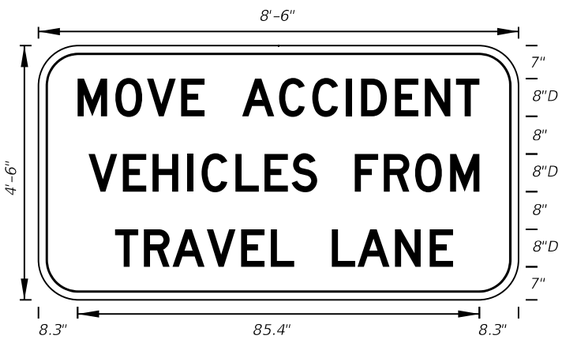
FTP-25-06
9" X 1'-0"
2" Radii ⅜" Border
1" Series D Legend
White Background
Black Legend and Border



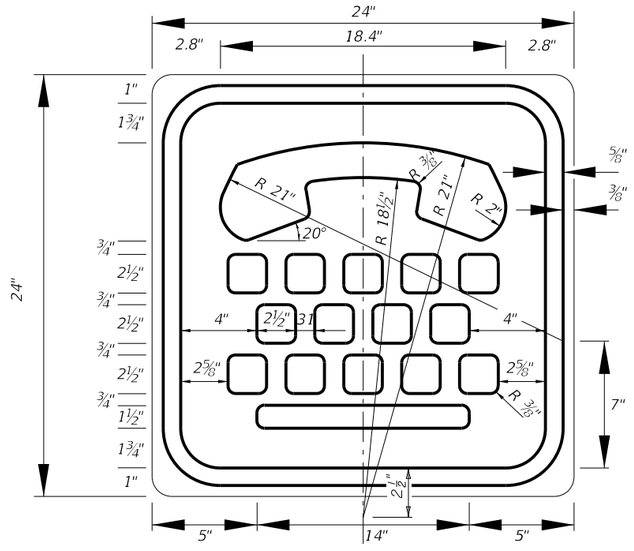
FTP-26-06
1' X 1'
2" Radii ⅜" Border
1" Series D Legend
White Background
Black Legend and Border



FTP-27-06
4' X 2'-6"
4" Radii ¾" Border
4" Series C Legend
White Background
Black Legend and Border

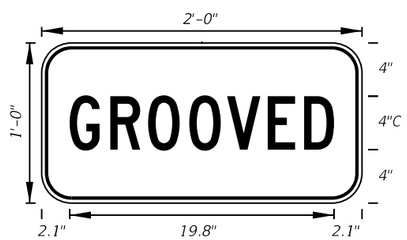


FTP-28-06
8'-6" X 4'-6"
7" Radii ¾" Border
8" Series D Legend
White Background
Black Legend and Border

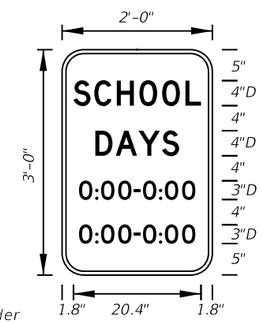


FTP-24-06
2' X 2'
1.5" Radii ⅝" Border
Blue Background
White Legend and Border

INTERNATIONAL TDD SYMBOL



FTP-29-06
2'-0" X 1'-0"
2" Radii ⅜" Border
4" Series C Legend
Yellow Background
Black Legend and Border

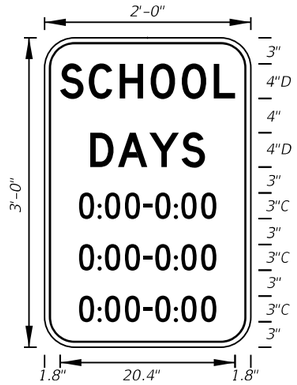


FTP-30-06
2'-0" X 3'-0"
3" Radii ⅝" Border
White Background
Black Legend and Border

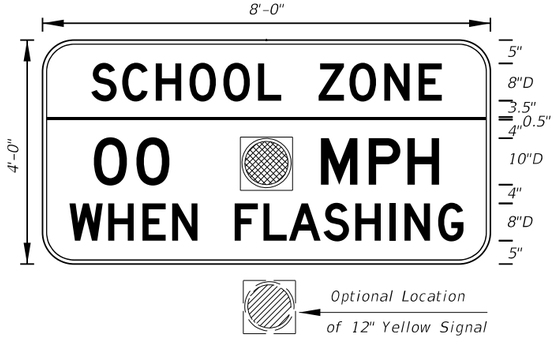
Top 4" Series D Legend
Bottom 3" Series C Legend

C:\d\projects\standards\roadway\17300-s\17355-04.dgn rd960rh 3:06:47 PM 6/28/2012

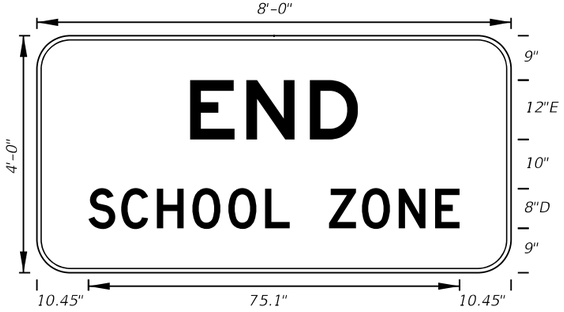
LAST REVISION	REVISION	DESCRIPTION:				
01/01/12			FDOT DESIGN STANDARDS 2013	SPECIAL SIGN DETAILS	INDEX NO. 17355	SHEET NO. 4



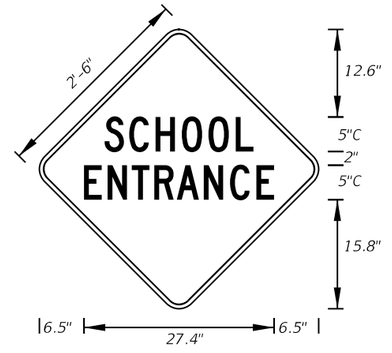
FTP-30A-06
2' X 3'
3" Radii 5/8" Border
Top 4" Series D Legend
Bottom 3" Series C Legend
White Background
Black Legend and Border



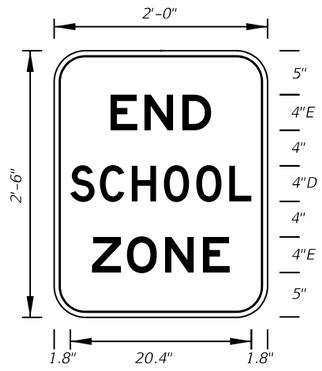
FTP-31-06
8' X 4'
6" Radii 3/4" Border
Series D Legend
Yellow Background Top
White Background Bottom
Black Legend and Border



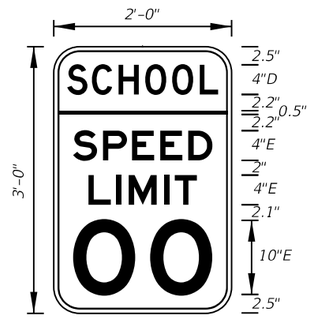
FTP-32-06
8' X 4'
6" Radii 3/4" Border
12" Series E and 8" Series D Legend
White Background
Black Legend and Border



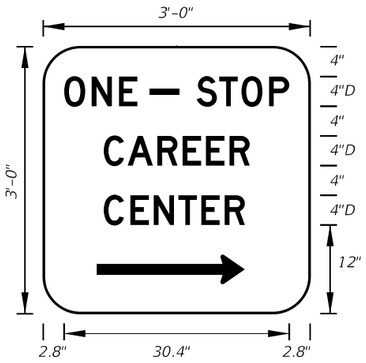
FTP-33-06
2'-6" X 2'-6"
2" Radii 3/4" Border
5" Series C Legend
Yellow Background
Black Legend and Border



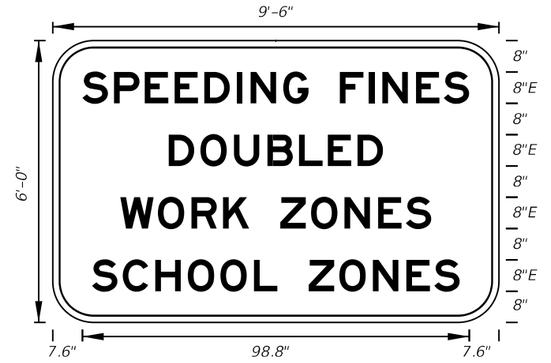
FTP-34-06
2' X 2'-6"
3" Radii 5/8" Border
4"Series D and E Legend
White Background
Black Legend and Border



FTP-35-06
2' X 3'
3" Radii 5/8" Border
Top 4" Series D Legend
Bottom 4" and 10" Series E Legend
Yellow Background Top White Background Bottom
Black Legend and Border

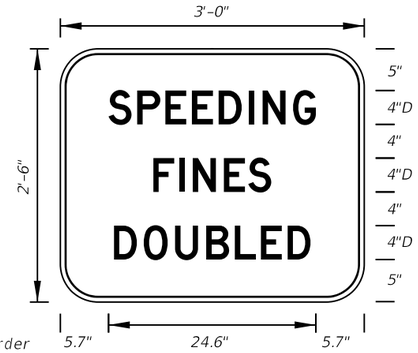


FTP-36-06
3' X 3'
5" Radii
4" Series D Legend
Green Background
White Legend and Border



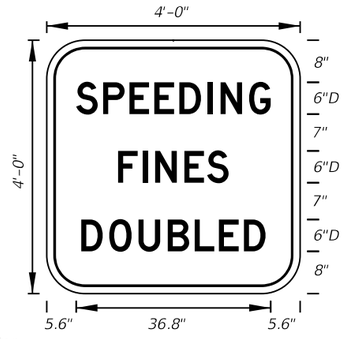
FTP-37-06
9'-6"X 6'
9" Radii 2" Border
8" Series E Legend
White Background
Black Legend and Border

State Line Sign



FTP-38-06
3' X 2'-6"
4" Radii 3/4" Border
4" Series D Legend
White Background
Black Legend and Border

Arterial Sign

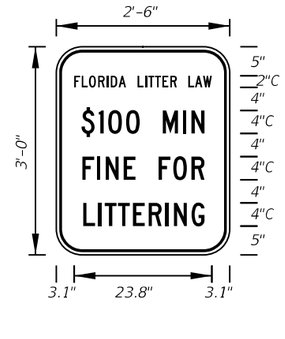


FTP-39-06
4' X 4'
6" Radii 3/4" Border
6" Series D Legend
White Background
Black Legend and Border

Freeway Sign

FTP-40-06
3'-6" X 4'
6" Radii 3/4" Border

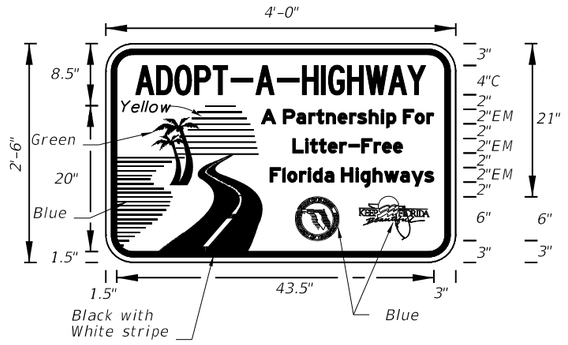
3" and 6" Series C Legend
White Background
Black Legend and Border



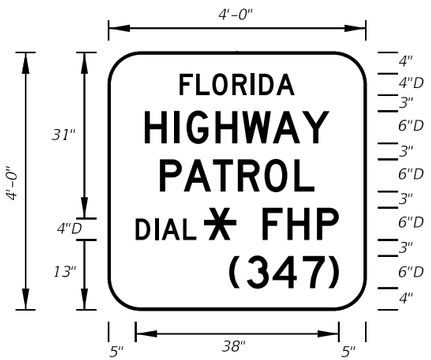
FTP-41-06
2'-6"X 3'
4" Radii 3/4" Border

2" and 4" Series C Legend
White Background
Black Legend and Border

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	SPECIAL SIGN DETAILS	17355	5

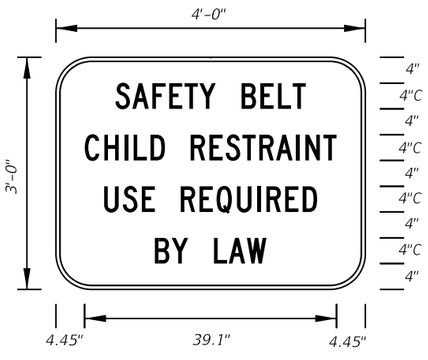


FTP-42-06
4'X 2'-6"
3" Radii
Top 4" Series C Legend
Bottom 2" Series EM Legend
White Background
Blue Legend and Border

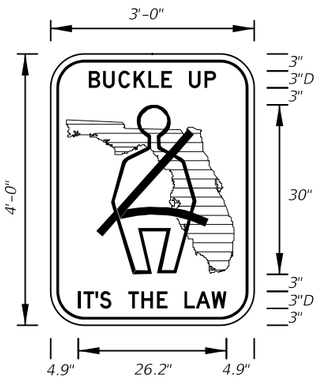


FTP-43-06
4' X 4'
6" Radii 1" Border
Top 4" Series D Legend
Bottom 6" Series D Legend
Blue Background
White Legend and Border

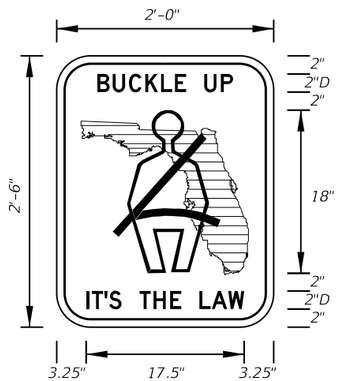
FTP-44-06
9' X 6'
9" Radii ¾" Border
8" Series D Legend
White Background
Black Legend and Border



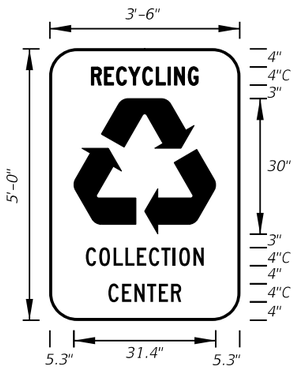
FTP-45-06
4' X 3'
5" Radii ¾" Border
4" Series C Legend
White Background
Black Legend and Border



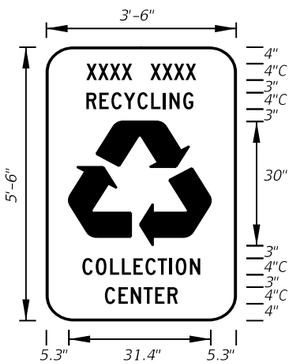
FTP-46-06
3' X 4'
5" Radii ¾" Border
3" Series D Legend
White Background Florida Sheild Green
Black Legend, Border and Man Belt Symbol



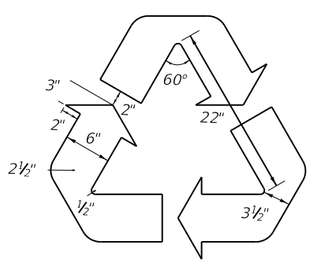
FTP-47-06
2' X 2'-6"
3" Radii ⅝" Border
2" Series D Legend
White Background Florida Shield Green
Black Legend, Border and Man Belt Symbol



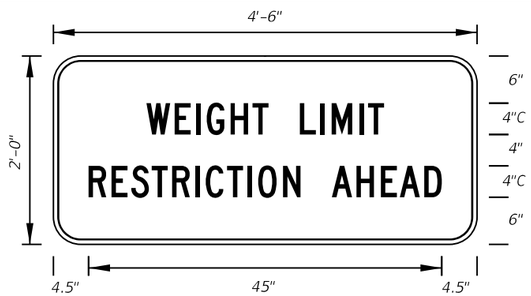
FTP-48-06
3'-6" X 5'
6" Radii
4" Series C Legend
Green Background
White Legend, Border and Symbol



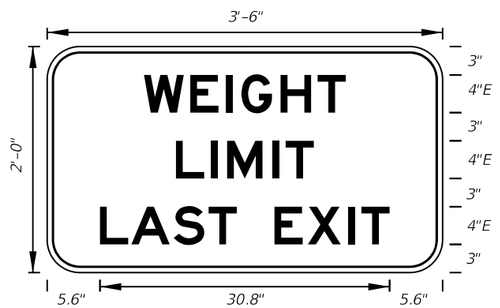
FTP-49-06
3'-6" X 5'-6"
6" Radii
4" Series C Legend
Green Background Municipality Name Optional
White Legend, Border and Symbol



Detail for FTP-48-06 and FTP-49-06

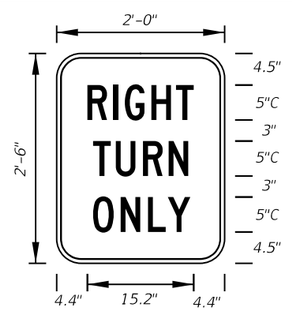


FTP-50-06
4'-6" X 2'
3" Radii ¾" Border
4" Series C Legend
Yellow Background
Black Legend and Border



FTP-51-06
3' X 2'
3" Radii ¾" Border

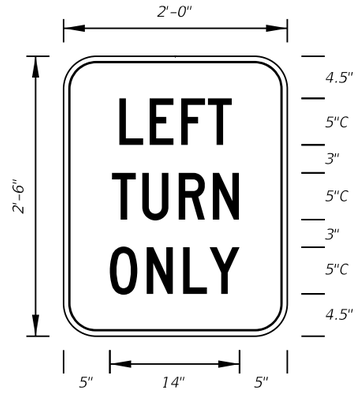
4" Series E Legend
White Background
Black Legend and Border



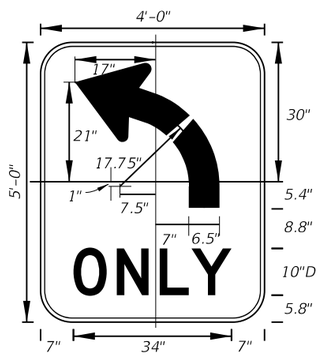
FTP-52-06
2' X 2'-6"
3" Radii ⅝" Border

5" Series C Legend
White Background
Black Legend and Border

LAST REVISION	REVISION	DESCRIPTION:				
07/01/01			FDOT DESIGN STANDARDS 2013	SPECIAL SIGN DETAILS	INDEX NO. 17355	SHEET NO. 6

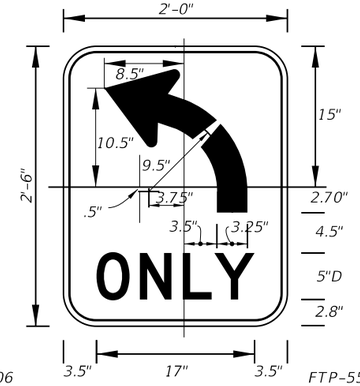


FTP-53-06
2' X 2'-6"
3" Radii 5/8" Border
5" Series C Legend
White Background
Black Legend and Border



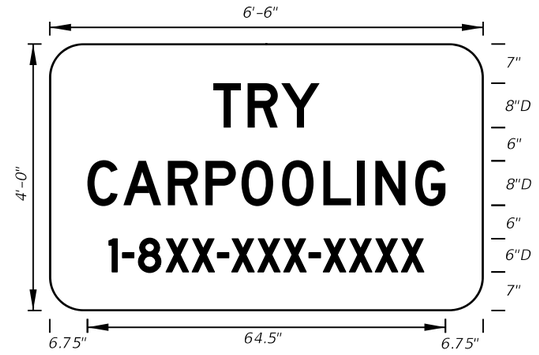
FTP-54L-06
4' X 5'
6" Radii 3/4" Border
10" Series D Legend
White Background
Black Legend and Border

FTP-54R-06 for
(Right Turn Arrow)



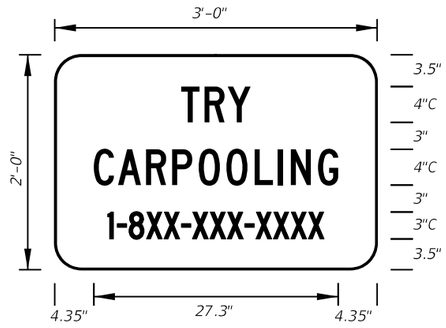
FTP-55L-06
2' X 2'-6"
3" Radii 5/8" Border
5" Series D Legend
White Background
Black Legend and Border

FTP-55R-06 for
(Right Turn Arrow)



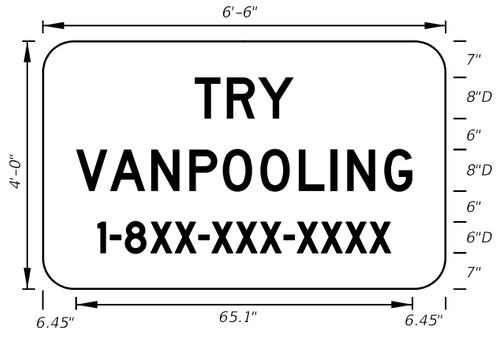
FTP-56-06
6'-6"X 4'
6" Radii 3/4" Border
8" and 6" Series D Legend
Blue Background
White Legend and Border

Design Project Manager
or Transit Administrator
will supply correct 1-8XX
number.



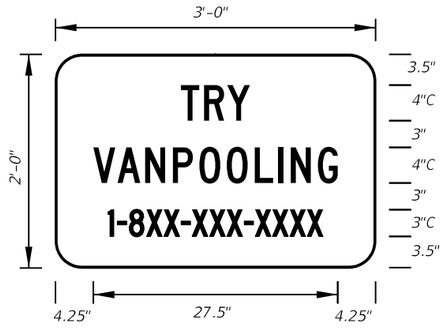
FTP-56A-06
3' X 2'
3" Radii
4" and 3" Series C Legend
Blue Background
White Legend and Border

Design Project Manager
or Transit Administrator
will supply correct 1-8XX
number.



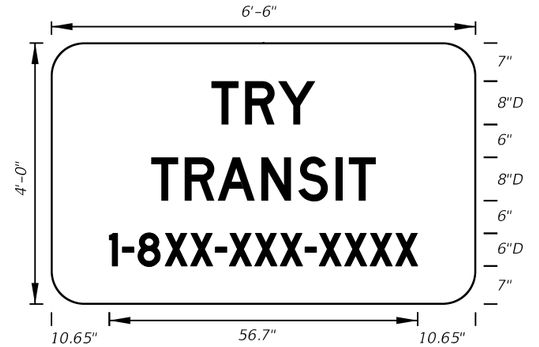
FTP-57-06
6'-6" X 4'
6" Radii
8"and 6" Series D Legend
Blue Background
White Legend and Border

Design Project Manager
or Transit Administrator
will supply correct 1-8XX
number.



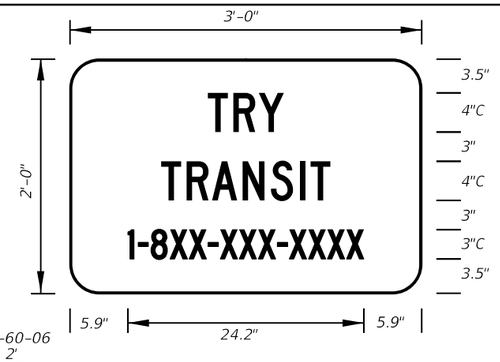
FTP-58-06
3' X 2'
3" Radii
4" and 3" Series C Legend
Blue Background
White Legend and Border

Design Project Manager
or Transit Administrator
will supply correct 1-8XX
number.



FTP-59-06
6'-6" X 4'
6" Radii
8" and 6" Series D Legend
Blue Background
White Legend and Border

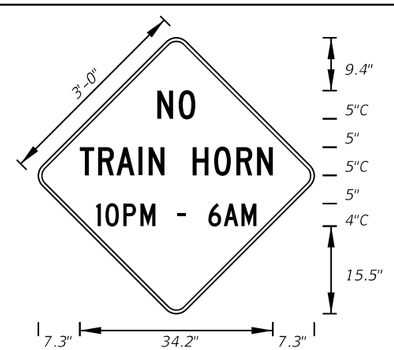
Design Project Manager
or Transit Administrator
will supply correct 1-8XX
number.



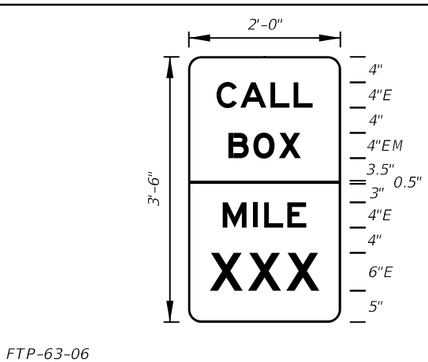
FTP-60-06
3' X 2'
3" Radii
4"and 3" Series C Legend
Blue Background
White Legend and Border

Design Project Manager
or Transit Administrator
will supply correct 1-8XX
number.

FTP-61-06
3' X 2'
3" Radii 3/4" Border
4" and 3" Series C Legend
Yellow Background
Black Legend and Border

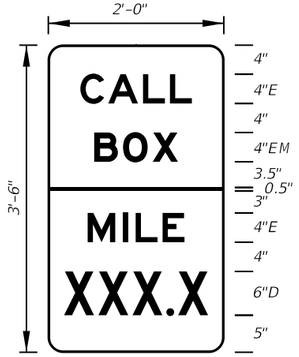


FTP-62-06
3' X 3'
2" Radii 3/4" Border 4"and 5" Series C Legend
Yellow Background Black Legend and Border

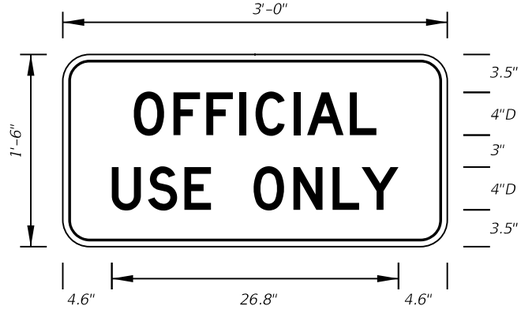


FTP-63-06
2' X 3'-6"
2" Radii 4"and 6" Series E and EM Legend
Top Blue Background White Legend and Border
Bottom Green Background White Legend and Border

LAST REVISION	REVISION	DESCRIPTION:				
07/01/09			FDOT DESIGN STANDARDS 2013	SPECIAL SIGN DETAILS	INDEX NO. 17355	SHEET NO. 7



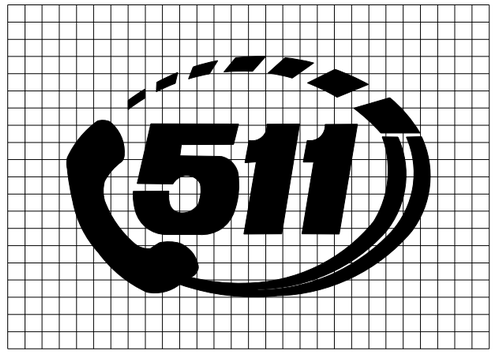
FTP-64-06
2' X 3'-6"
2" Radii
Top 4" Series E and 4" Series EM Legend
Blue Background White Legend and Border
Bottom 4" Series E and 6" Series D Legend
Green Background White Legend and Border



FTP-65-06
3' X 1'-6"
2" Radii ¾" Border
4" Series D Legend
White Background
Black Legend and Border

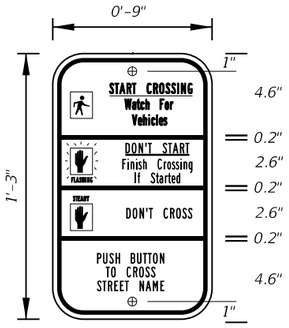
FTP-66-06
4'X 5'
2" Radii ¾" Border
7" Series D Legend
Blue Background
White Legend and Border

FTP-67-06
3' X 4'
2" Radii ¾" Border
5" Series D Legend
Blue Background
White Legend and Border



DETAIL for FTP-66 AND FTP-67

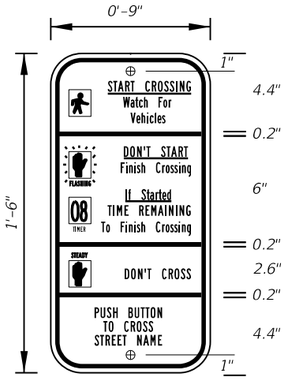
Sign Mounting Holes Can Be Punched Or Field Drilled With No Obstruction To Text Or Symbols From Holes Or Bolts.



FTP-68A-06
9" X 1'-3"
1.5" Radii ¾" Border
Series B Legend
White Background
Black Legend and Border

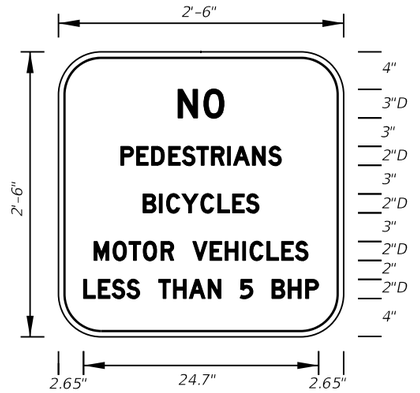
See Standard Highway Signs Manual, Sign R10-3b For Letter Size Spacing And Symbol Sizes.

Sign Mounting Holes Can Be Punched Or Field Drilled With No Obstruction To Text Or Symbols From Holes Or Bolts.



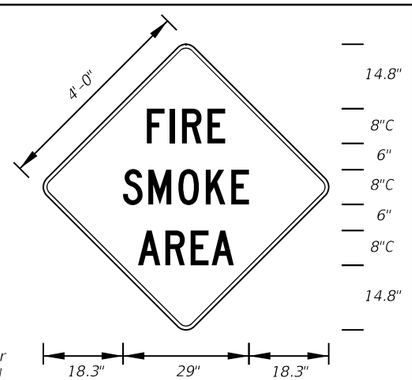
FTP-68B-06
9" X 1'-6"
1.5" Radii ¾" Border
Series B Legend
White Background
Black Legend and Border

See Standard Highway Signs Manual, Sign R10-3b For Letter Size Spacing And Symbol Sizes.



FTP-69-06
2'-6" X 2'-6"
4" Radii ¾" Border
2" and 3" Series D Legend
White Background
Black Legend and Border

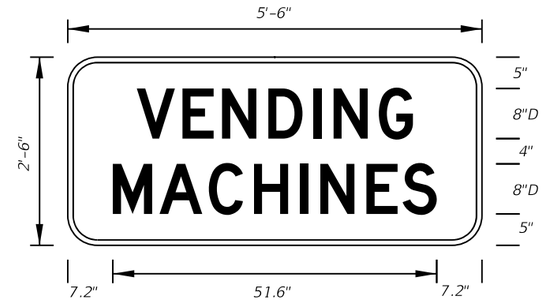
FTP-70-06
3'-6" X 2'-6"
2.25" Radii ¾" Border
5" Series C and 7" Series C Legend
Blue Background
White Legend and Border



FTP-71-06
4' X 4'
2" Radii ¾" Border
8" Series C Legend
Yellow Background
Black Legend and Border

FTP-72-06
3' X 3'
2" Radii ¾" Border

6" Series C Legend
Yellow Background
Black Legend and Border



FTP-73-06
5'-6" X 2'-6"
4" Radii ¾" Border

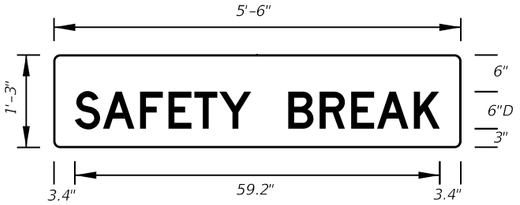
8" Series D Legend
Blue Background
White Legend and Border

6/28/2012 3:06:55 PM rd960rh C:\d\projects\standards\roadway\17300-s\17355-08.dgn

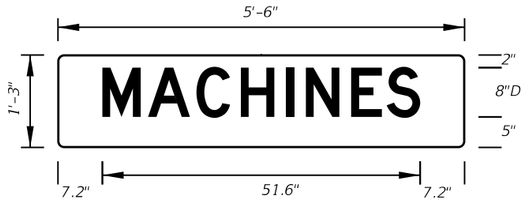
LAST REVISION	REVISION	DESCRIPTION:		INDEX NO.	SHEET NO.
01/01/10			FDOT DESIGN STANDARDS 2013	17355	8

SPECIAL SIGN DETAILS

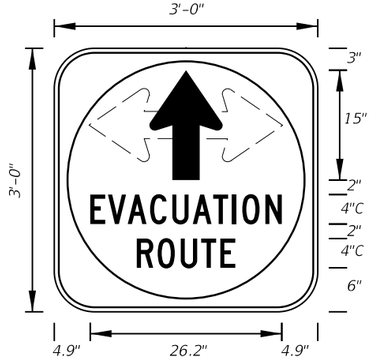
FTP-74-06
5'-6" X 2'-6"
4" Radii ¾" Border
6" Series D Legend
Blue Background
White Legend and Border



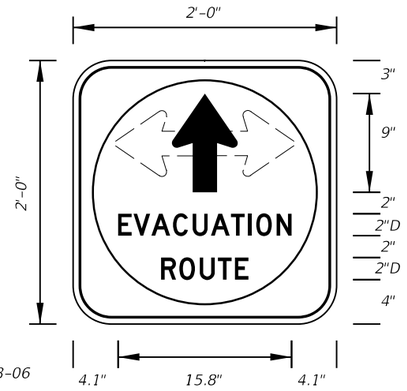
FTP-75-06
5'-6" X 1'-3"
1" Radii
6" Series D Legend
Blue Background
White Legend



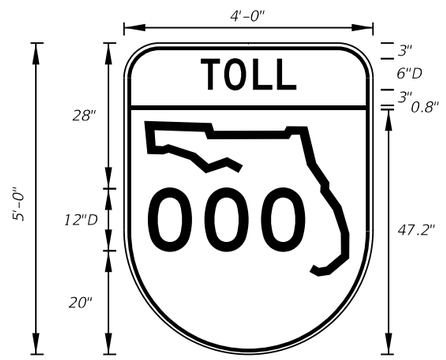
FTP-76-06
5'-6" X 1'-3"
1" Radii
8" Series D Legend
Blue Background
White Legend



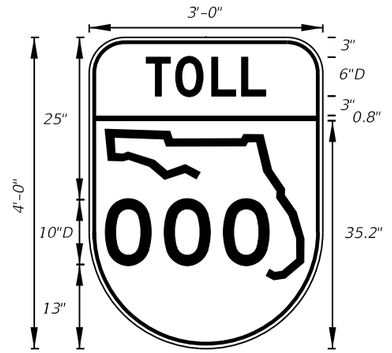
FTP-77-06
3' X 3'
5" Radii ¾" Border
4" Series C Legend
White Background with Blue Circle Background
White Legend and Black Border



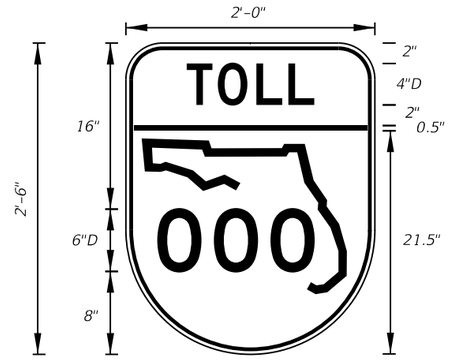
FTP-78-06
2' X 2'
3" Radii ¾" Border
2" Series D Legend
White Background with Blue Circle Background
White Legend and Black Border



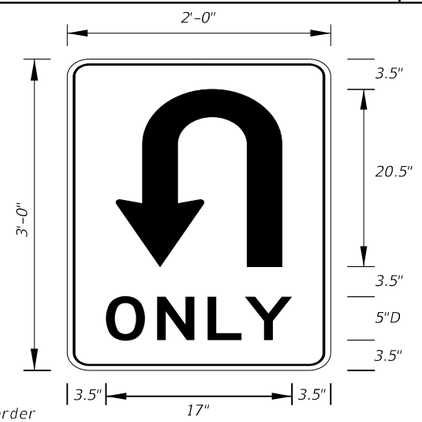
FTP-79-06
4' X 5'
6" Radii ¾" Border
6" and 12" Series D Legend
Top Yellow Background with White Legend and Black Border
Bottom White Background with Black Legend and Border



FTP-80-06
3' X 4'
5" Radii ¾" Border
6"and 10" Series D Legend
Top Yellow Background with White Legend and Black Border
Bottom White Background with Black Legend and Border



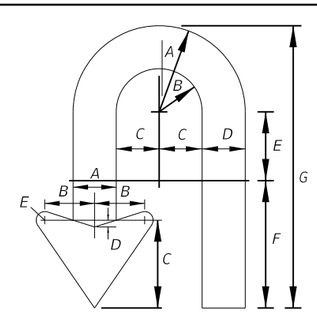
FTP-81-06
2' X 2'-6"
3" Radii ¾" Border
4" and 6" Series D Legend
Top Yellow Background with White Legend and Black Border
Bottom White Background with Black Legend and Border



FTP-82-08
2' X 3'
1.5" Radii
5" Series D Legend
White Background
Black Legend and Border

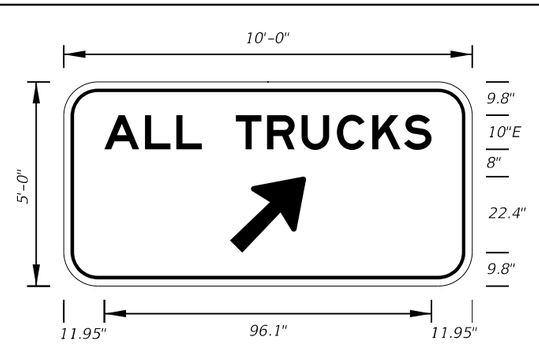
ARROW HEAD

A	3.125
B	3.625
C	6.375
D	.5
E	.625



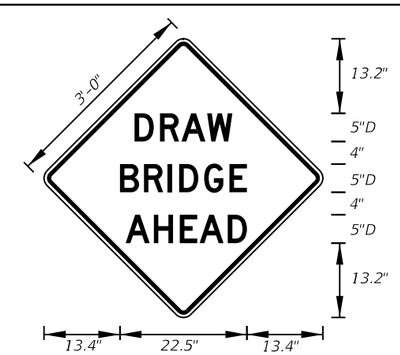
ARROW BODY

A	B	C	D	E	F	G
6.25	3.125	3.125	3.125	5	9.25	20.5



FTP-83-08
10'-0" X 5'-0"
8" Radii

10" Series E Legend
Green Background
White Legend

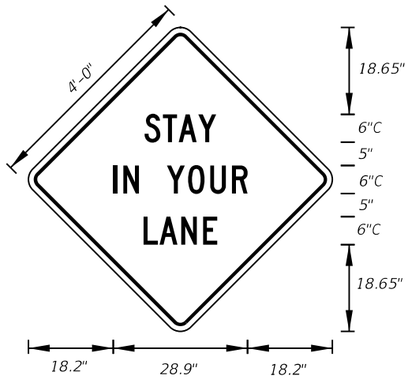


FTP-84-09
3' X 3'
1.5" Radii

5" Series D Legend
Yellow Background
Black Legend

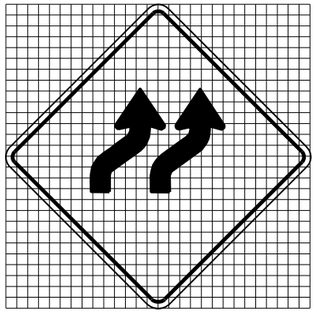
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	SPECIAL SIGN DETAILS	17355	9

6/28/2012 3:06:58 PM rd960rh C:\d\projects\standards\roadway\17300-s\17355-09.dgn



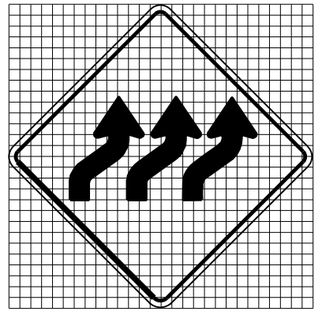
MOT-1-06
4' X 4'
2" Radii ¾" Border

6" Series C Legend
Orange Background
Black Legend and Border



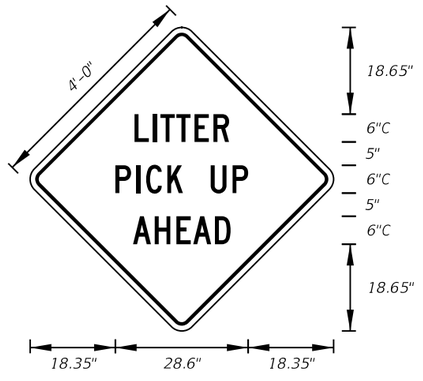
MOT-2-06
4' X 4'
2" Radii ¾" Border

Orange Background
Black Arrows and Border



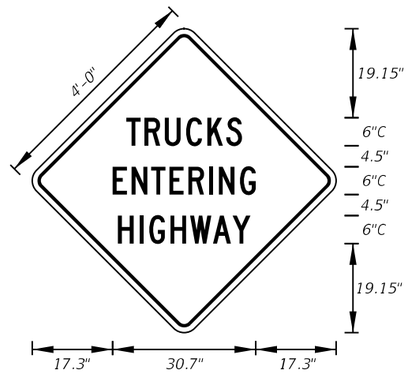
MOT-3-06
4' X 4'
2" Radii ¾" Border

Orange Background
Black Arrows and Border



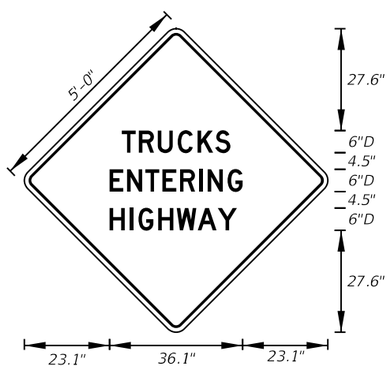
MOT-4-06
4' X 4'
2" Radii ¾" Border

6" Series C Legend
Orange Background
Black Legend and Border



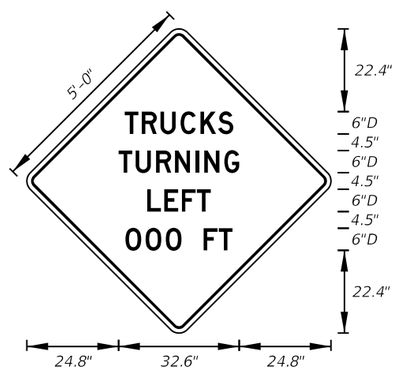
MOT-5-06
4' X 4'
2" Radii ¾" Border

6" Series C Legend
Orange Background
Black Legend and Border



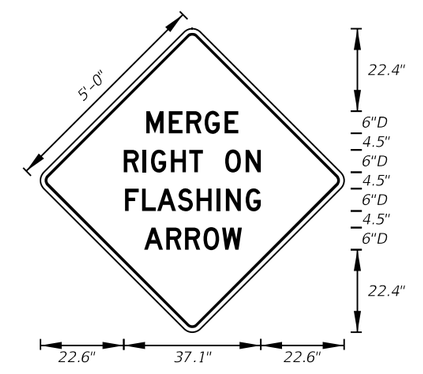
MOT-6-06
5' X 5'
2" Radii ¾" Border

6" Series D Legend
Orange Background
Black Legend and Border



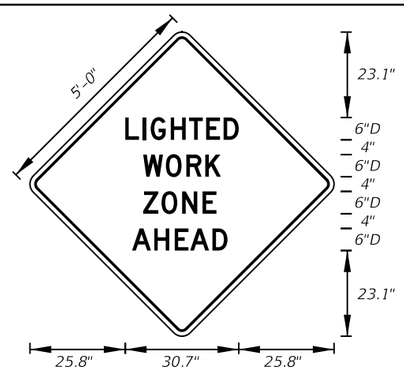
MOT-7-06
5' X 5'
2" Radii ¾" Border

6" Series D Legend
Orange Background
Black Legend and Border



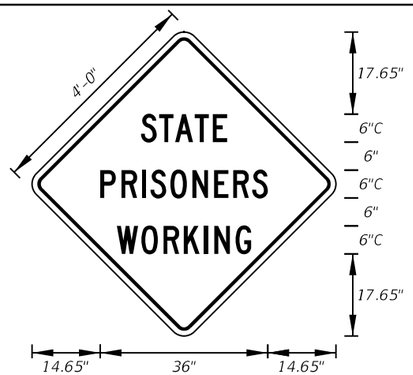
MOT-8-06
5' X 5'
2" Radii ¾" Border

6" Series D Legend
Orange Background
Black Legend and Border



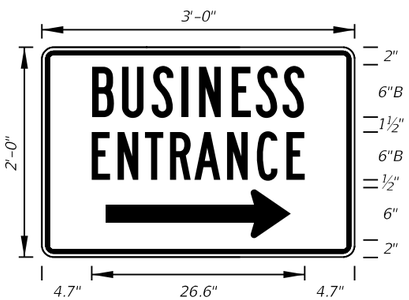
MOT-9-06
5' X 5'
2" Radii ¾" Border

6" Series D Legend
Orange Background
Black Legend and Border



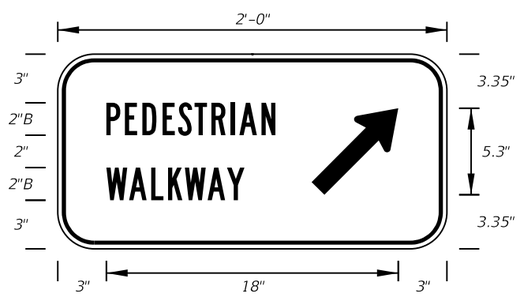
MOT-10-06
4' X 4'
2" Radii ¾" Border

6" Series C Legend
Orange Background
Black Legend and Border



MOT-11-06
3' X 2'
2" Radii ¾" Border

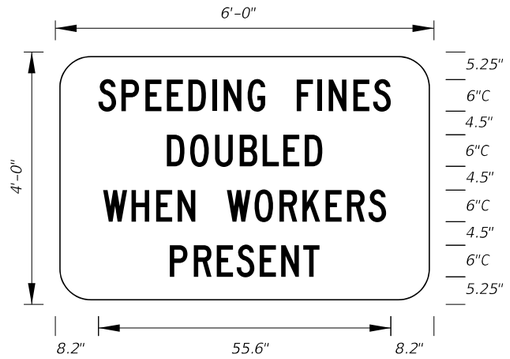
6" Series B Legend
Blue Background
White Legend and Border



MOT-12-06
2' X 1'
2" Radii ¾" Border

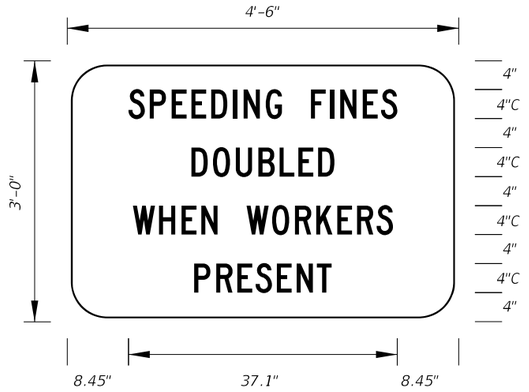
2" Series B Legend
White Background
Black Legend and Border

LAST REVISION	REVISION	DESCRIPTION:				
07/01/12			FDOT DESIGN STANDARDS 2013	SPECIAL SIGN DETAILS	INDEX NO. 17355	SHEET NO. 10



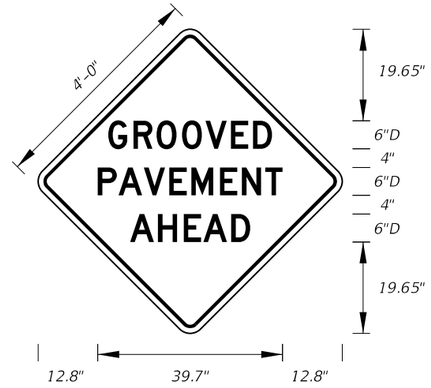
MOT-13-06 Freeway Sign
6' X 4'
6" Radii ¾" Border

6" Series C Legend
White Background
Black Legend and Border



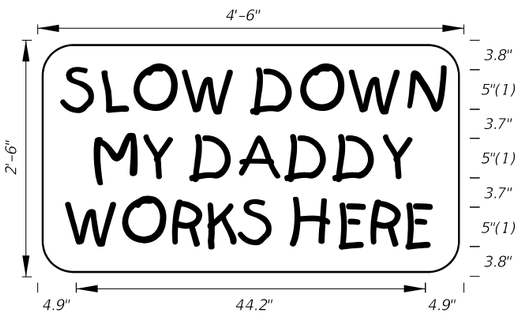
MOT-14-06 Arterial Sign
4'-6" X 3'
5" Radii ¾" Border

4" Series C Legend
White Background
Black Legend and Border



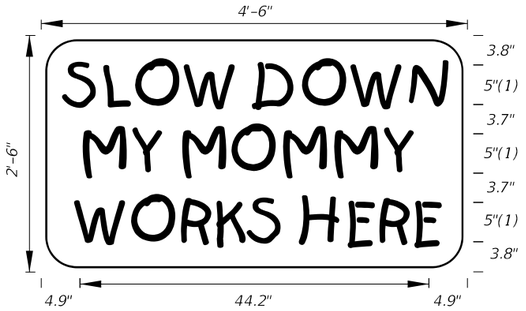
MOT-15-06
4' X 4'
2" Radii ¾" Border

6" Series D Legend
Orange Background
Black Legend and Border



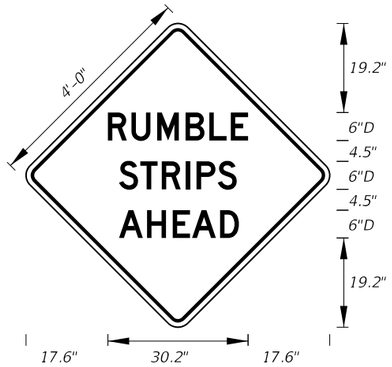
MOT-16-06
4'-6" X 2'-6"
4" Radii ¾" Border

5" Kids Series Legend
Orange Background
Black Legend and Border



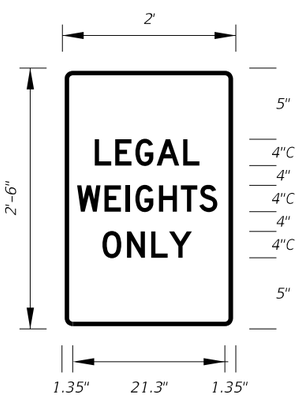
MOT-17-06
4'-6" X 2'-6"
4" Radii ¾" Border

5" Kids Series Legend
Orange Background
Black Legend and Border



MOT-18-10
4' X 4'
2" Radii ¾" Border

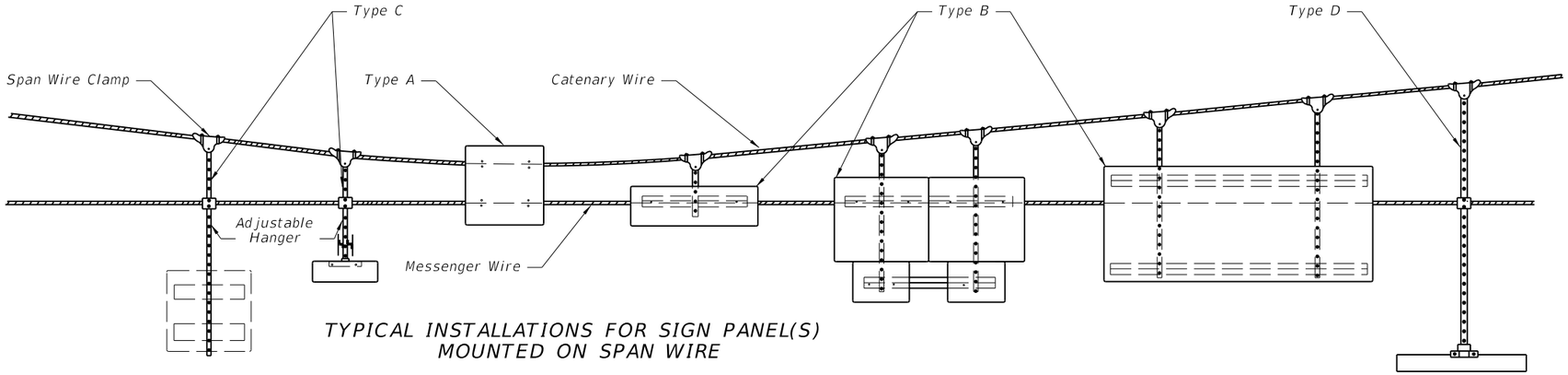
6" Series D Legend
Orange Background
Black Legend and Border



MOT-19-11
2' X 3'
1.13" Radii ¾" Border

4" Series C Legend
White Background
Red Legend and Border

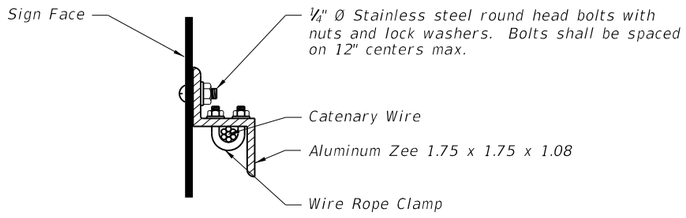
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/12			FDOT DESIGN STANDARDS 2013	SPECIAL SIGN DETAILS	17355	11



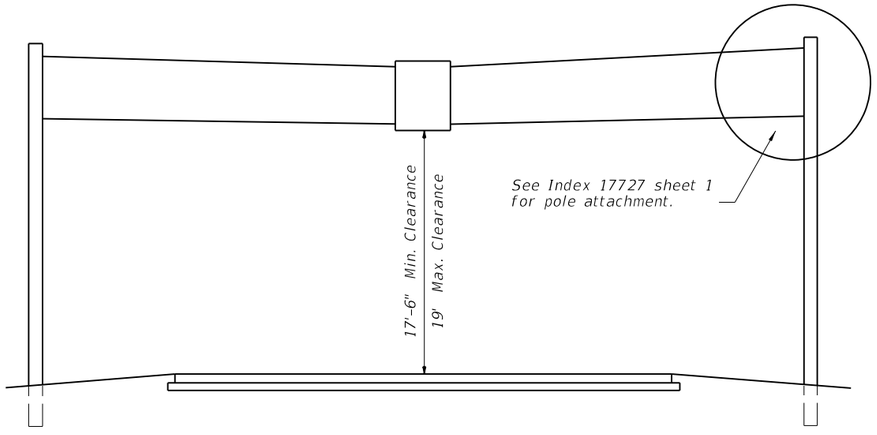
TYPICAL INSTALLATIONS FOR SIGN PANEL(S) MOUNTED ON SPAN WIRE

Notes:

1. Bottom edge of signs shall be approximately at the same elevation.
2. Type B & C attachments with one hanger shall have wind beams for signs wider than 3½'. The beams shall extend to within 6" of the sign edge.
3. Type B & C attachments for signs 4' and wider shall have 2 hangers. Signs 7' and wider shall have wind beams that extend to within 6" of the sign edge.
4. Type D attachments shall be for signs 3½' wide or less.
5. Sign panels shall meet the requirements of Index 11200.
6. Refer to section 634 of the Standard Specifications For Road And Bridge Construction.
7. All bolts, nuts, and washers shall be passivated stainless steel, AISI 300 series, commercial grade, type 316.



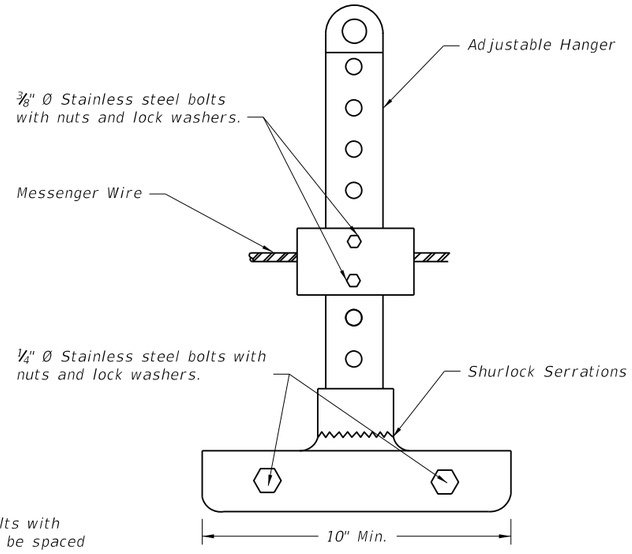
SIGN MOUNTING DETAIL



TYPICAL SPAN WIRE INSTALLATION

The overlapped connection of adjustable hangers shall use a minimum of 2 bolts with a minimum spaceing between bolts of 2".

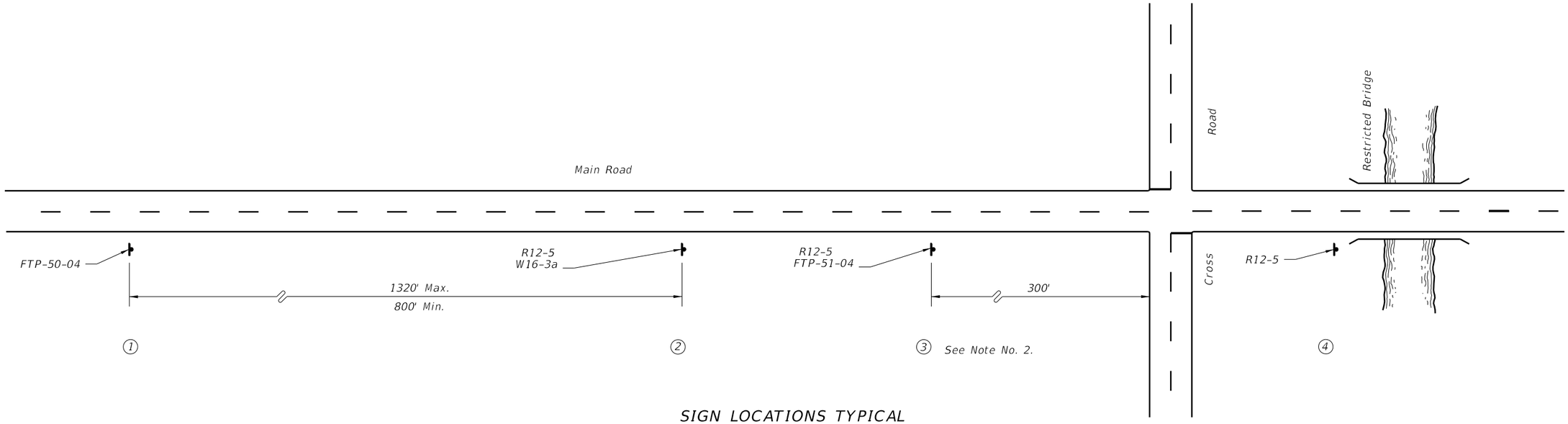
DETAIL OF OPPOSING SIGNS SPAN WIRE MOUNTED



ADJUSTABLE HANGER FOR SIGN MOUNTING

TWO POINT ATTACHMENT

LAST REVISION	REVISION	DESCRIPTION:				
07/01/09			FDOT DESIGN STANDARDS 2013	SPAN WIRE MOUNTED SIGN DETAILS	INDEX NO. 17356	SHEET NO. 1



SIGN LOCATIONS TYPICAL

① WEIGHT LIMIT RESTRICTION AHEAD

FTP-50-06

② WEIGHT LIMIT 8T 12T 16T

R12-5 (24" X 36")

X MILES

W 16-3A

③ WEIGHT LIMIT 8T 12T 16T

R12-5 (24" X 36")

WEIGHT LIMIT LAST EXIT

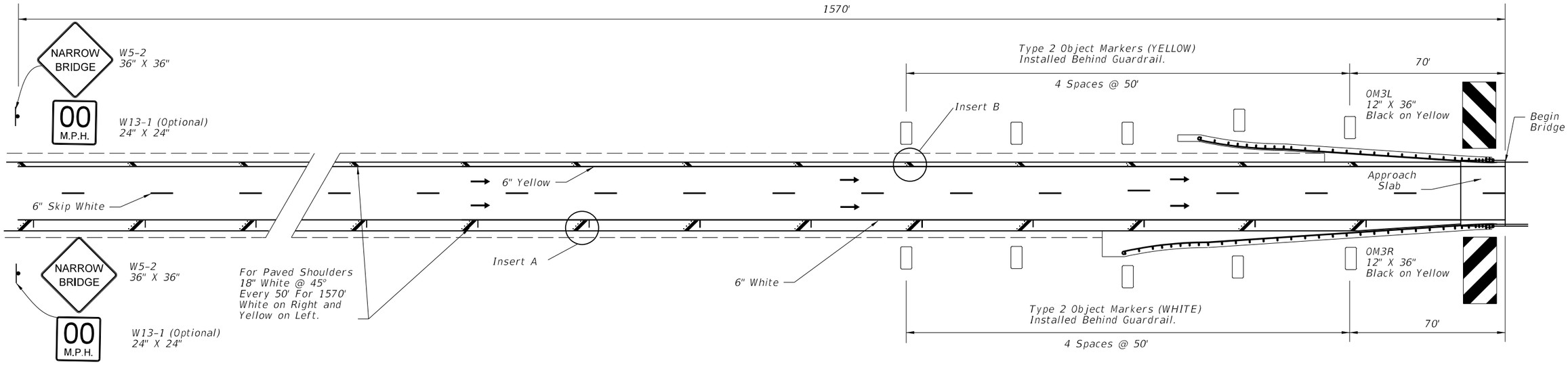
FTP-51-06

④ WEIGHT LIMIT 8T 12T 16T

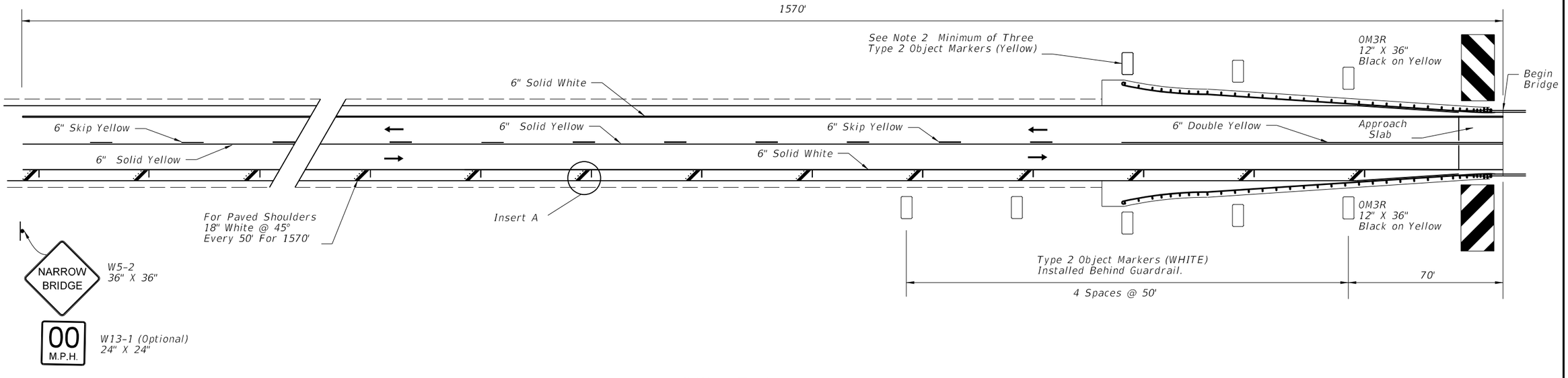
R12-5 (24" X 36")

1. See Standard Highway Signs for sign R12-5 and W16-3 details.
2. Location of Sign No. 3 may require some field adjustment.
3. The Cross Road is the last detour to route around the restricted bridge.
4. Location of Sign No. 2 should be established from the Cross Road the following approximate distances; Interstate-1 Mile Non- Interstate-1/2 Mile.
5. See Index 17355 for sign details.

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	BRIDGE WEIGHT RESTRICTIONS	INDEX NO.	SHEET NO.
01/01/12						17357	1



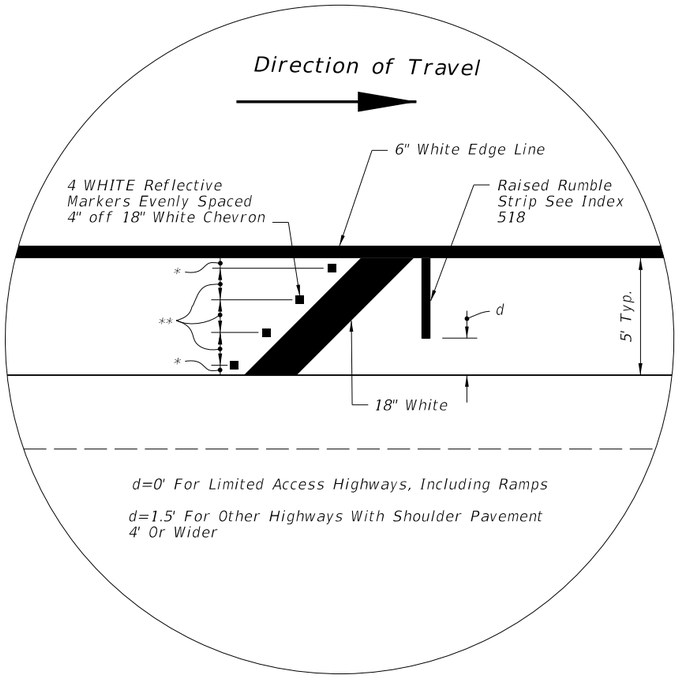
One-Way Traffic



2-Way Traffic

C:\d\projects\standards\roadway\17300-s\17359-01.dgn rd960rh 3:07:08 PM 6/28/2012

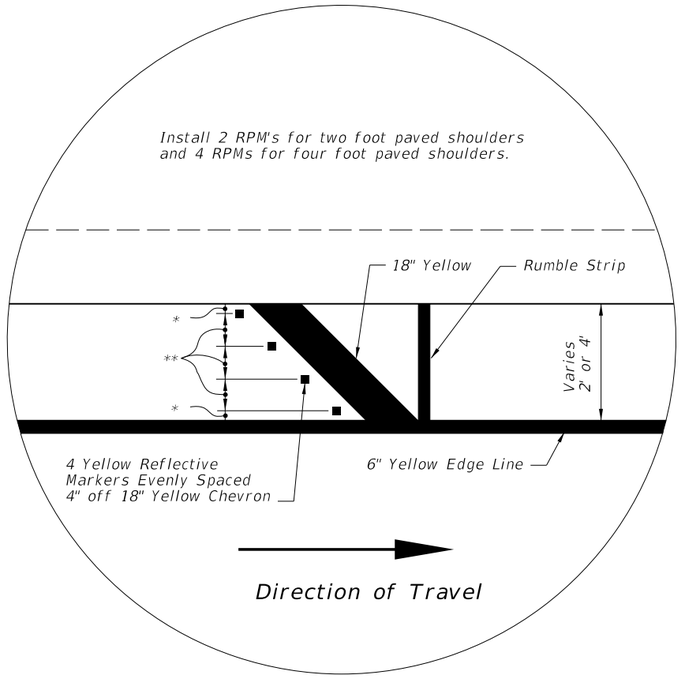
LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	RURAL NARROW BRIDGE TREATMENT	INDEX NO.	SHEET NO.
07/01/09						17359	1



* 1/8 Length (4' and 5' shoulder)
1/4 Length (2' shoulder)

** 1/4 Length (4' and 5' shoulder)
1/2 Length (2' shoulder)

INSERT A



* 1/8 Length (4' and 5' shoulder)
1/4 Length (2' shoulder)

** 1/4 Length (4' and 5' shoulder)
1/2 Length (2' shoulder)

INSERT B

NOTES:

1. Bridges should be marked as narrow bridges under the following conditions:
   (1) For approach roadways with paved shoulders when the bridge width including shoulders is less than the width of the approach roadway including paved shoulders.
   (2) For approach roadways without paved shoulders when the bridge shoulder width is less than 2'.

2. Roadways with Two-Way Traffic:
   No passing zone should be extended 1570' in advance of narrow bridge.

3. If the bridge or the approach is on a curve, delineators shall be installed for a distance of 1570' in advance of narrow bridge on the outside portion of the roadway. Spacing shall be 100' between delineators. Delineators are to be placed not less than 2' or not more than 8' outside the outer edge of pavement.

4. Object markers and delineators on both sides of roadway shall face traffic approaching bridge

5. The OM-3R & OM-3L object markers shall be installed 4' above the roadway edge. The panels may be post mounted at the bridges.

LAST REVISION	REVISION	DESCRIPTION:		FDOT DESIGN STANDARDS 2013	RURAL NARROW BRIDGE TREATMENT	INDEX NO.	SHEET NO.
07/01/09						17359	2