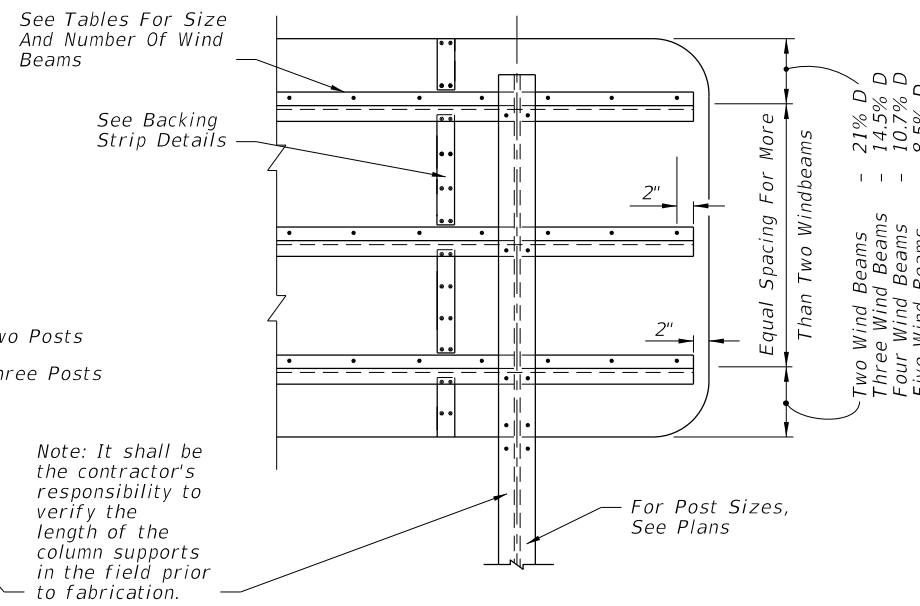
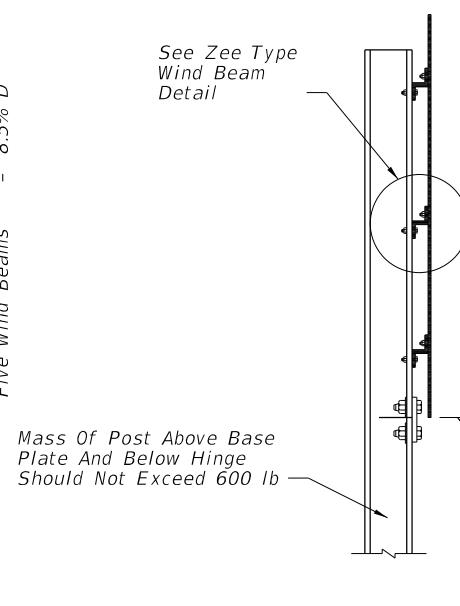


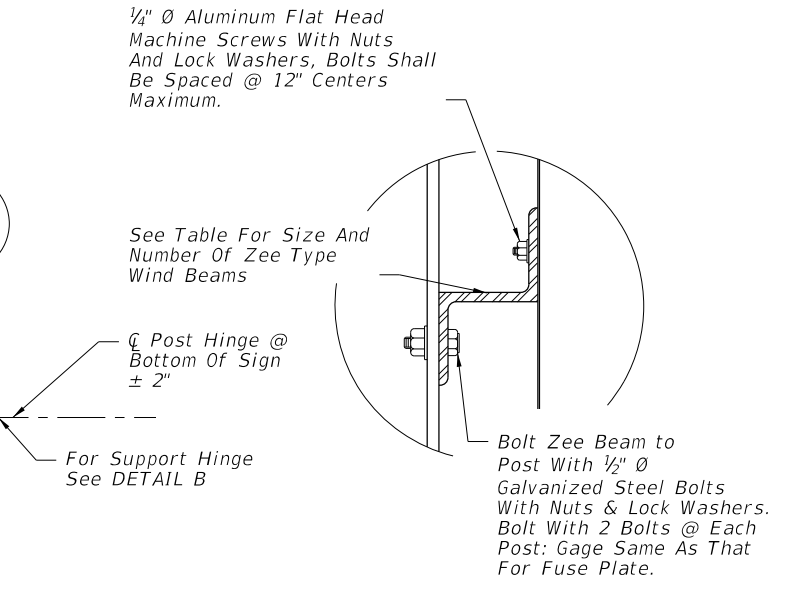
TYPICAL ELEVATION



PARTIAL REAR ELEVATION



SIDE VIEW



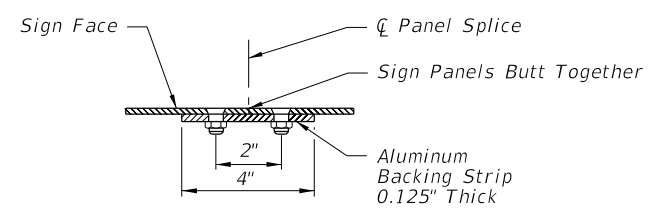
ZEE TYPE WIND BEAM

(See Plans For Additional Notes And Dimensions)

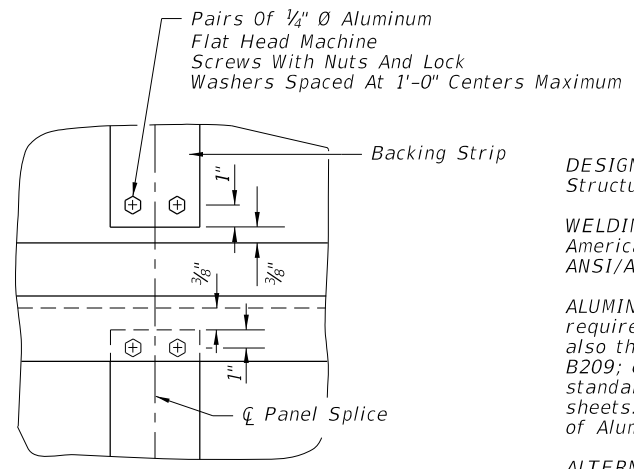
See Base Connection detail on No. 2.

Note: It shall be the contractor's responsibility to verify the length of the column supports in the field prior to fabrication.

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.



BACKING STRIP DETAILS



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: Perform 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 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 L₂ in the base connection shall be tightened only to the torque shown in the table on sheet 2 and 3. 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".

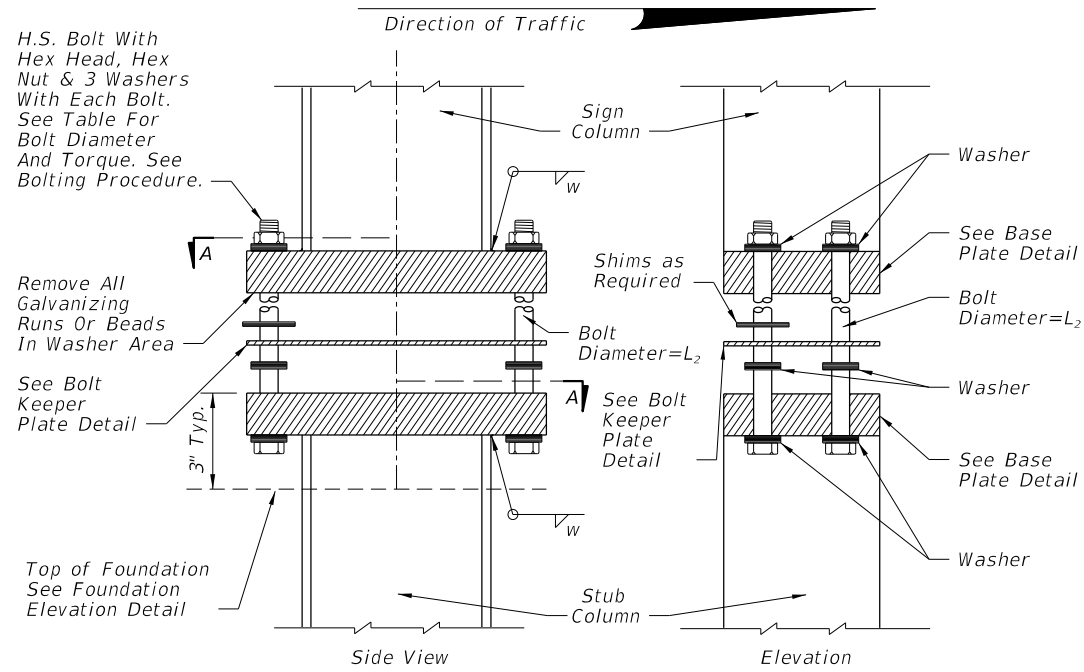
FABRICATOR NOTE: All bolts, except L₂ bolts and Zee Beam to post bolts, shall be tightened in accordance with Section 700 of the Specifications.

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"			

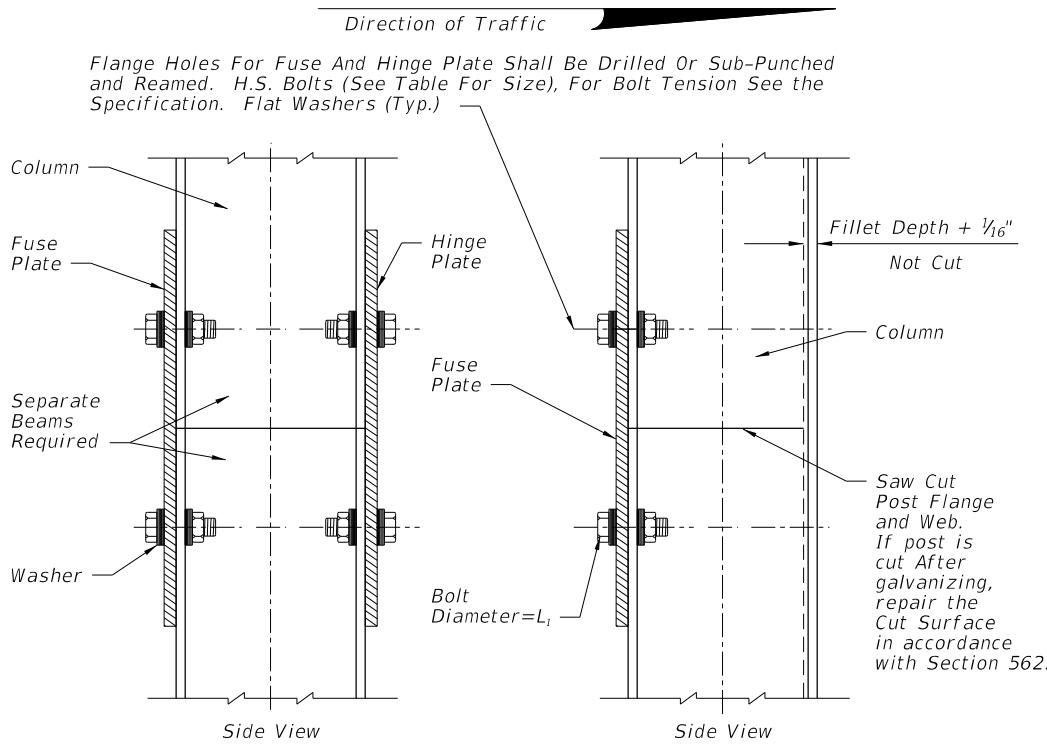
SIZE OF WIND BEAMS		
Size Of Zee*	Length Of Sign (Feet)	
	2 Posts	3 Posts
Zee 1.75 x 1.75 x 1.08	0 to 11'-0"	0 to 17'-4"
Zee 3 x 2.69 x 2.33	11'-1" to 19'-0"	17'-5" to 29'-6"
Zee 3 x 2.69 x 3.38	19'-1" to 20'-8"	29'-7" to 31'-6"

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

6/23/2015 10:05:40 AM



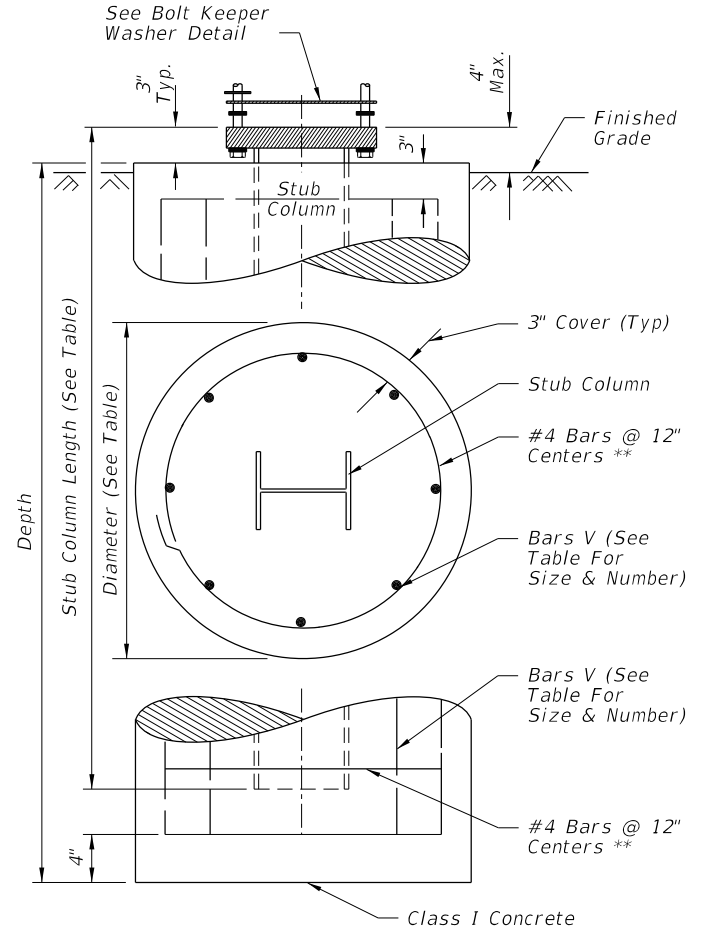
SIGN COLUMN & STUB COLUMN VIEWS
BASE CONNECTION



OPTIONAL HINGE TYPICAL HINGE

DETAIL B

(See Fabricator Note on Sheet 1)



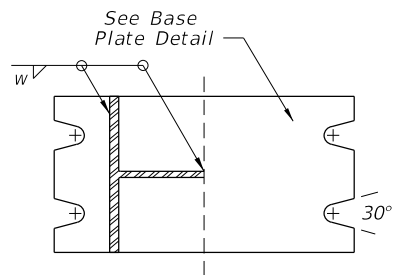
FOUNDATION ELEVATION

NOTE: All Reinforcing To Be Grade 60.

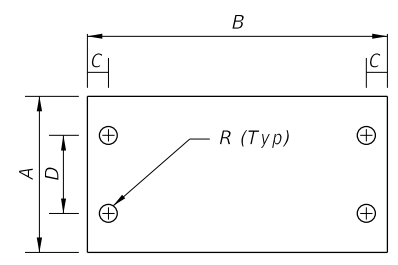
** At the Option of the Contractor, D10 Spiral Wire @ 6" Pitch, Three Flat Turns Top and One Flat Turn Bottom may be Utilized in Lieu of Specified.

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.

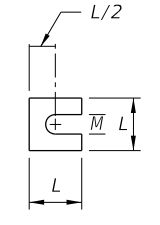


SECTION A-A

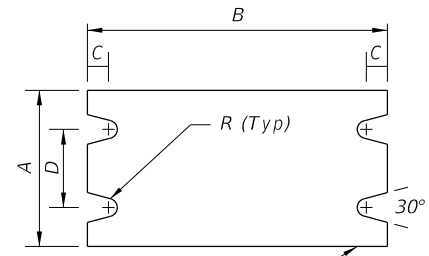


BOLT KEEPER PLATE

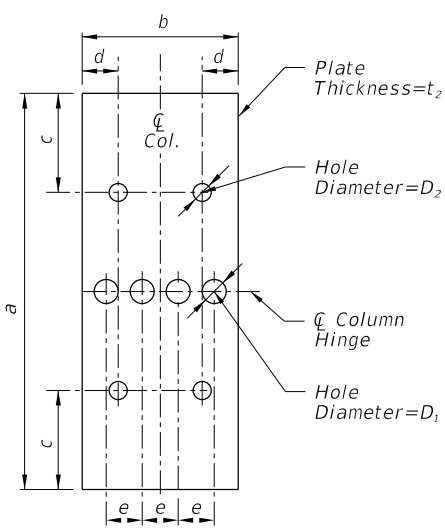
Provide 2- 0.0149" Thick (28 gauge) and 2- 0.0329" Thick (21 gauge) Brass Shims Per Post.



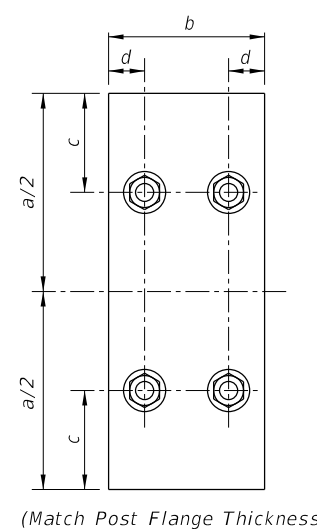
SHIM DETAIL



BASE PLATE



FUSE PLATE



HINGE PLATE

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 L₂ 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.


Section*	BASE CONNECTION DATA									FUSE (HINGE) PLATE DATA								SHIM		FOUNDATION DATA				
	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	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"	12-1/2"	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"	1-3/4"	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"	2-3/8"	1-1/16"	2'-8"	11'-3"	5'-0"	10-#8

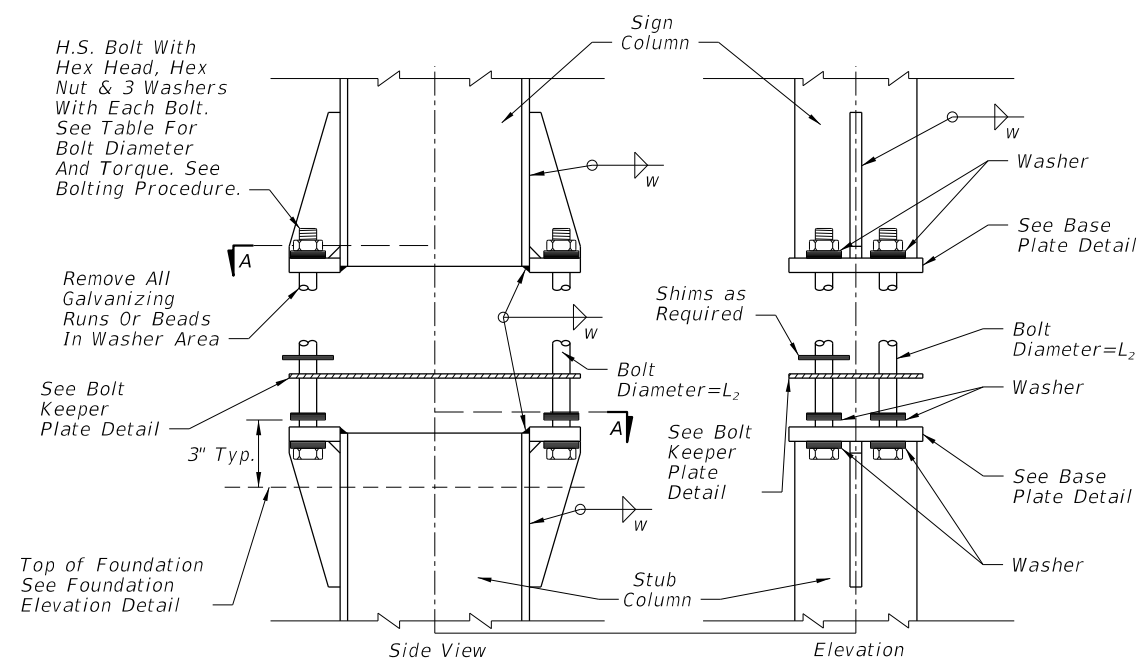
* Designations: Normal Depth in inches and weight in pounds per linear foot.

STEEL POST, BASE, FOUNDATION & FUSE PLATE DETAILS

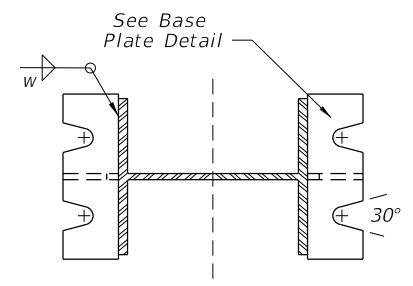
6/23/2015 10:05:41 AM

LAST REVISION 07/01/15	REVISION	DESCRIPTION:	2016 FDOT DESIGN STANDARDS	MULTI-COLUMN GROUND SIGN	INDEX NO. 11200	SHEET NO. 2 of 3
---------------------------	----------	--------------	-------------------------------	--------------------------	--------------------	---------------------

Direction of Traffic 



SIGN COLUMN & STUB COLUMN VIEWS
BASE CONNECTION



SECTION A-A

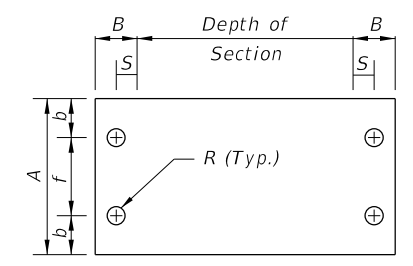
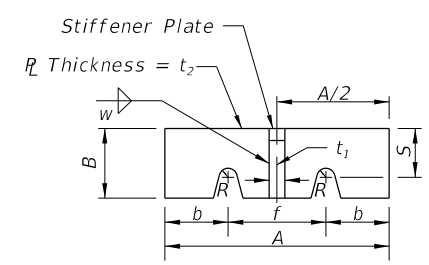
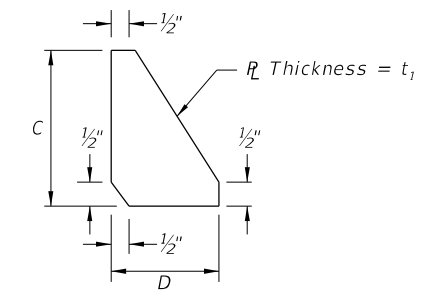


Plate Thickness=0.0149" (28 GAUGE)

BOLT KEEPER PLATE



BASE PLATE



STIFFENER PLATE

BASE CONNECTION DATA													
Section*	A	B	C	D	L ₂	Torque (lbf-in)	R	b	f	S	t ₁	t ₂	w
W 6x12	4-3/4"	2"	5-1/8"	2"	5/8"	270 ± 45	3/8"	1-1/8"	2-1/2"	1-3/16"	1/2"	1/2"	1/4"
W 8x18	5-3/4"	2-3/16"	6-1/4"	2-3/16"	3/4"	445 ± 75	7/16"	1-1/2"	2-3/4"	1-3/8"	1/2"	5/8"	1/4"
W 8x24	7"	2-3/8"	8"	2-3/8"	3/4"	445 ± 75	7/16"	1-3/4"	3-1/2"	1-3/8"	1/2"	3/4"	5/16"
W 10x33	8"	2-3/4"	8"	2-3/4"	1"	580 ± 90	9/16"	2"	4"	1-9/16"	1/2"	3/4"	5/16"
W 12x45	8"	3"	8"	3"	1"	580 ± 90	9/16"	2"	4"	1-9/16"	1/2"	3/4"	5/16"

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

6/23/2015 10:05:41 AM

STEEL POST & ALTERNATIVE BASE DETAILS

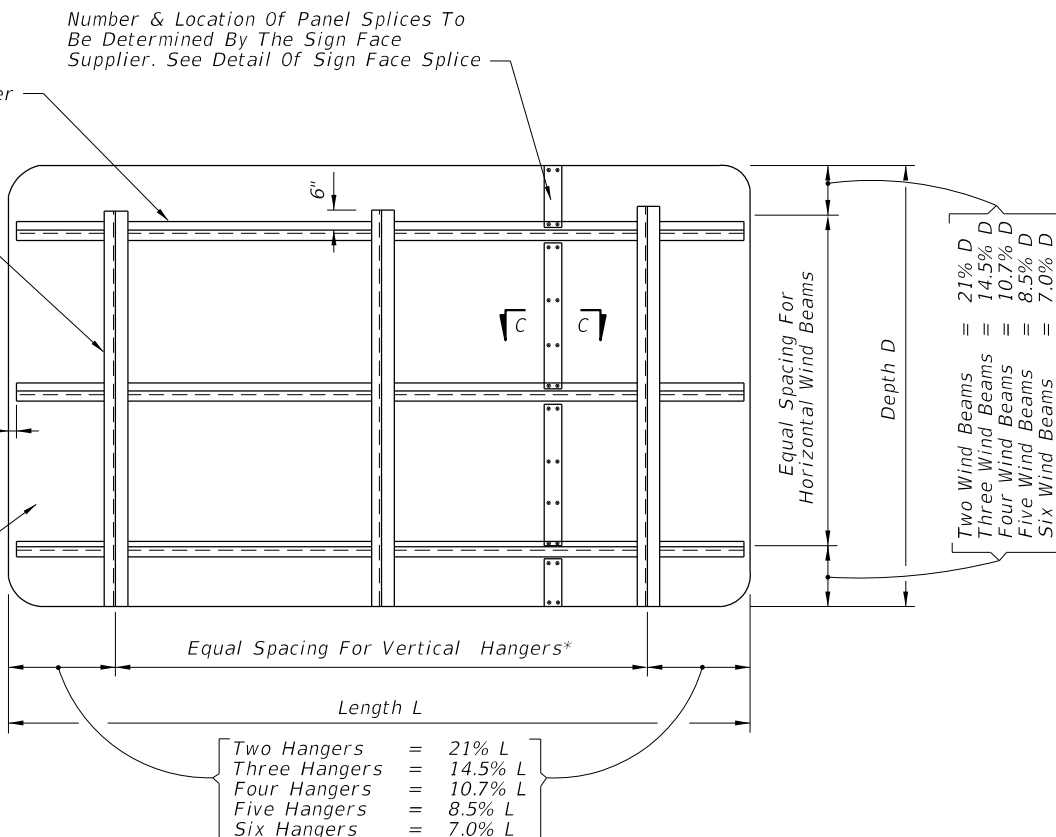
LAST REVISION 12/15/14	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	MULTI-COLUMN GROUND SIGN	INDEX NO. 11200	SHEET NO. 3 of 3
---------------------------	----------	--------------	--	--------------------------	--------------------	---------------------

Zee 3x2.69x2.33 Alum. Wind Beams See Table For Number
 Number & Location Of Panel Splices To Be Determined By The Sign Face Supplier. See Detail Of Sign Face Splice

16x4.69 or Zee 5x3.25x4.01 Aluminum Hangers See Table For Number

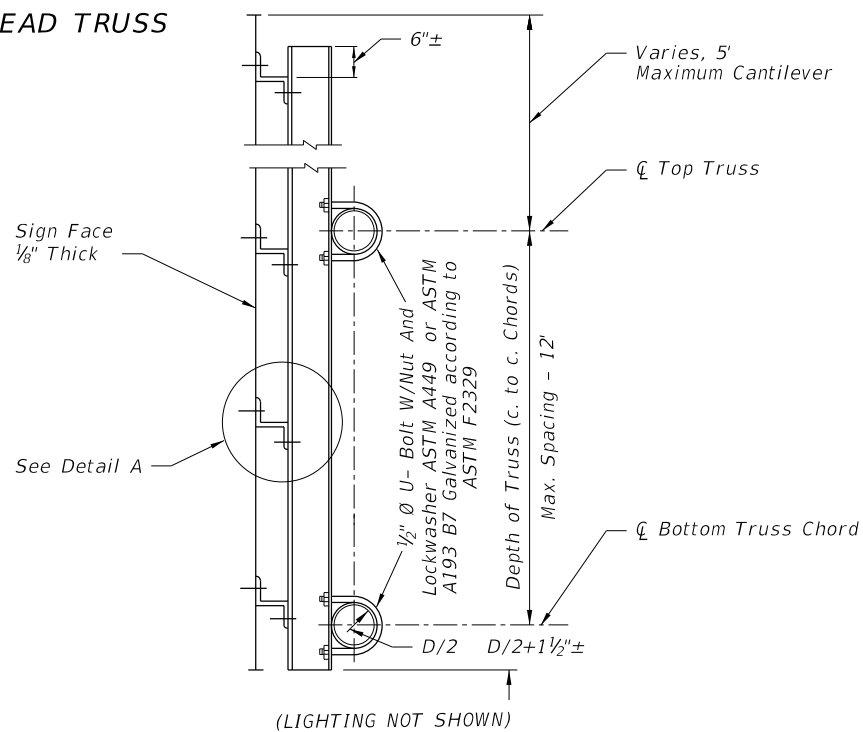
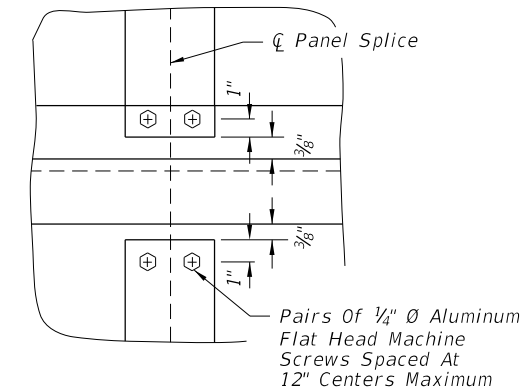
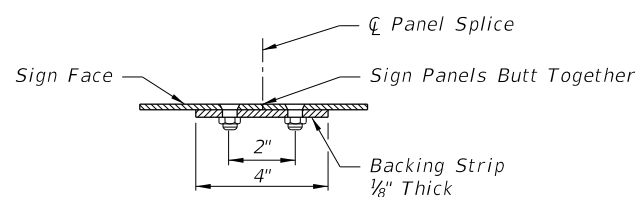
2" (Typ.)

Sign Face 1/8" Thick

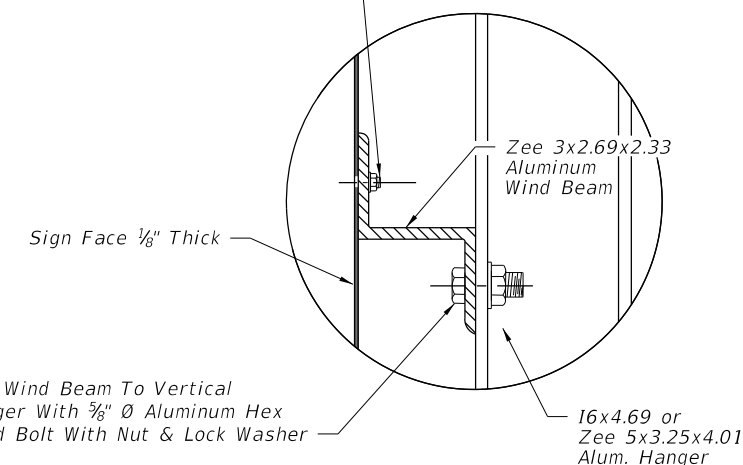


*Note: Spacing of vertical hangers may be varied slightly or as necessary to clear the truss struts and diagonals at panel points.

TYPICAL SIGN FACE ELEVATION FOR OVERHEAD TRUSS



1/4" Ø Alum. Flat Head Machine Screws With Nuts And Lock Washers. Screws Shall Be Spaced at 12" Centers Maximum



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

Number Of Zee 3x2.69x2.33 Horiz. Wind Beams For Sign Depth And Wind			Number Of 16x4.69 or Zee 5x3.25x4.01 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

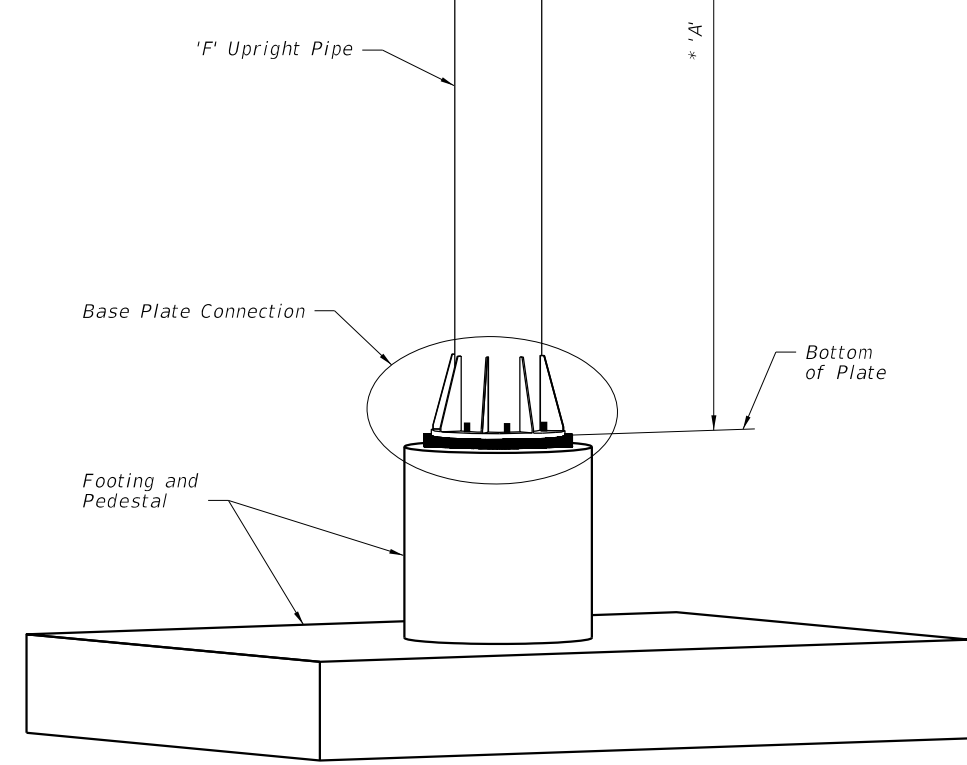
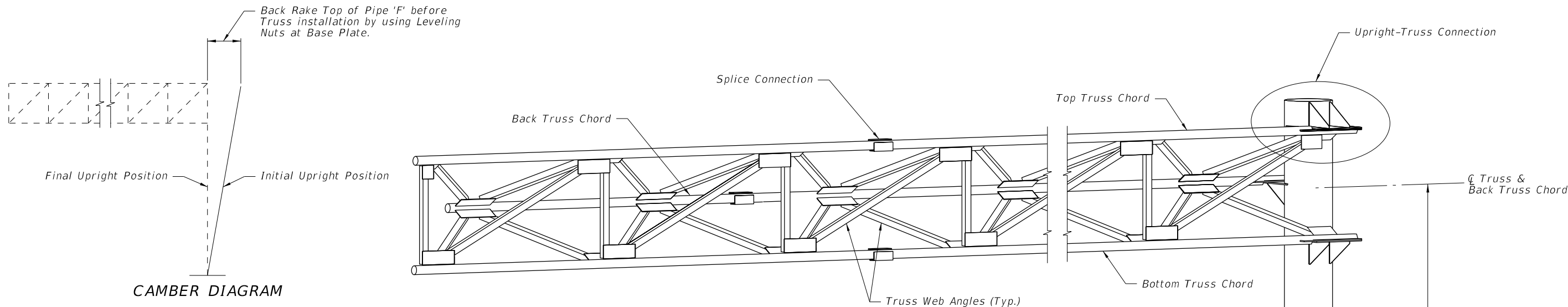
GENERAL NOTES

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

DETAILS OF SIGN FACE & TRUSS CONNECTION

6/9/2015 4:33:55 PM

LAST REVISION 07/01/13	DESCRIPTION:	<p>2016 DESIGN STANDARDS</p>	<p>STEEL OVERHEAD SIGN STRUCTURES</p>	INDEX NO. 11300	SHEET NO. 1 of 1




ISOMETRIC VIEW

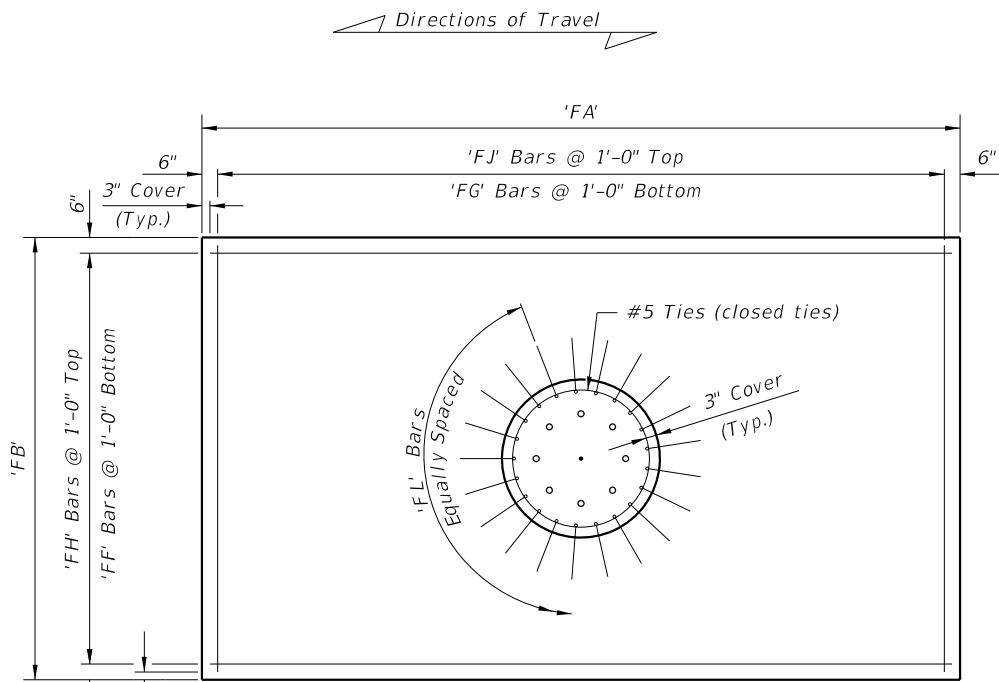
* NOTE: Verify these Dimensions prior to fabrication of Upright.

CANTILEVER SIGN STRUCTURE NOTES

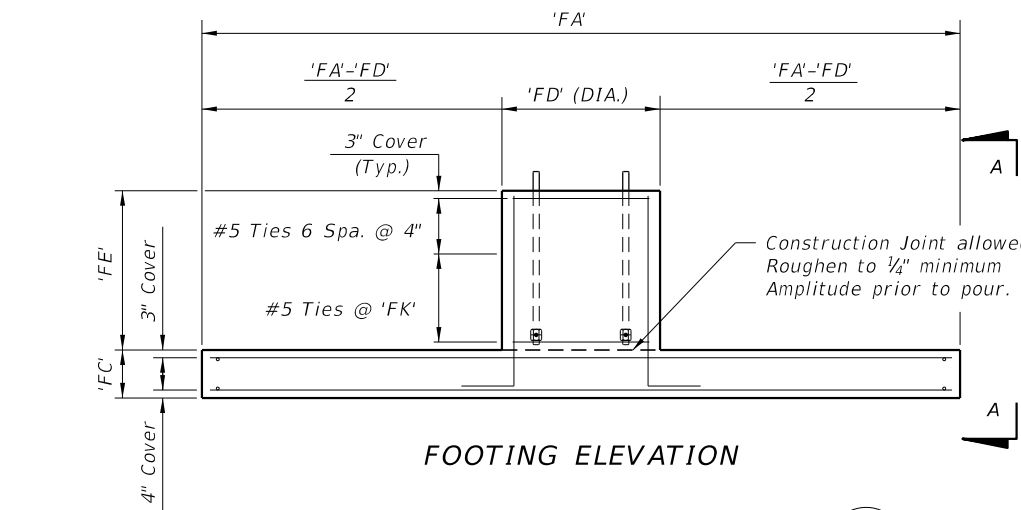
1. Work this Index in conjunction with CANTILEVER SIGN STRUCTURE DATA TABLES in the Plans and Index 11300.
2. Handholes are required at pole base for DMS Structures. Refer to Index 18300 for Handhole Details.
3. Shop Drawings are required. Obtain Shop Drawing approval prior to fabrication. Include the following:
 - A. Field verification of all upright heights.
 - B. Foundation elevations: Ensure minimum vertical clearances of the sign panel over the roadway.
 - C. Height of the foundation above adjacent ground.
 - D. Anchor bolt orientation with respect to centerline of truss and the direction of traffic.
 - E. Chord Splices
 - F. Handholes at pole base (when required).
4. Materials:
 - A. Sign Structure:
 - a. Upright and Chords (Steel Pipe): API-5L-X42, 42 ksi yield or ASTM A500, Grade B (Min.)
 - b. Steel Angles and Structural Plates and Bars: ASTM A709 Grade 36
 - c. Weld Material: E70XX
 - B. Bolts, Nuts and Washers:
 - a. High Strength Bolts: ASTM A325 Type 1
 - b. Nuts: ASTM A563 Grade DH Heavy-Hex
 - c. Washers: ASTM F436 Type 1, one under turned element
 - C. Anchor Bolts, Nuts and Washers
 - a. Anchor Bolts: ASTM F1554 Grade 55
 - b. Nuts: ASTM A563 Grade A Heavy-Hex (5 per bolt)
 - c. Plate Washers: ASTM A36 (2 per bolt)
 - D. Concrete:
 - a. Spread Footing Concrete: Class IV
 - b. Drilled Shaft concrete: Class IV (Drilled Shaft)
 - E. Reinforcing Steel: Specification Section 415
5. Fabrication:
 - A. Welding: Specification Section 460-6.4
 - B. Chord Splices: "SD" Panel from upright is the closest panel in which a chord splice may be used. See Plans for CANTILEVER SIGN STRUCTURE DATA TABLE. Minimum splice spacing is two truss panel lengths apart.
 - C. Upright splices: Not allowed
 - D. Structural bolt hole diameters: Bolt diameter plus 1/16"
 - E. Anchor bolt hole diameters: Bolt diameter plus 1/2"
 - F. Hot Dip Galvanize after fabrication.
 - G. Shop assemble the entire structure after galvanizing to validate/document alignment and clearance for bolted connections as well as contact between connecting plates. Take remedial action, if necessary, prior to shipment.
 - H. Disassemble, as necessary, and secure components for shipment.
6. Coatings:
 - A. Bolts, Nuts and Washers: ASTM F2329
 - B. All other steel, including Plate Washers, hot dip galvanize: ASTM A123
7. Construction:
 - A. Construct foundation in accordance with Specification Section 455, except payment is included in the cost of the structure.
 - B. Prior to erection, record the as-built anchor locations and submit to the Engineer.
 - C. Place backfill above spread footings prior to installation of the sign panels. Do not remove or reduce backfill without prior approval of the Engineer.
 - D. Tighten nuts and bolts in accordance with Specification Section 700. Split-Lock Washers are not permitted.
 - E. Install Aluminum Sign Panels as shown on the Elevation drawing.
 - F. Place structural grout pad with drain between top of foundation and bottom of baseplate in accordance with Specification Section 649-7.

6/26/2015 9:55:04 AM

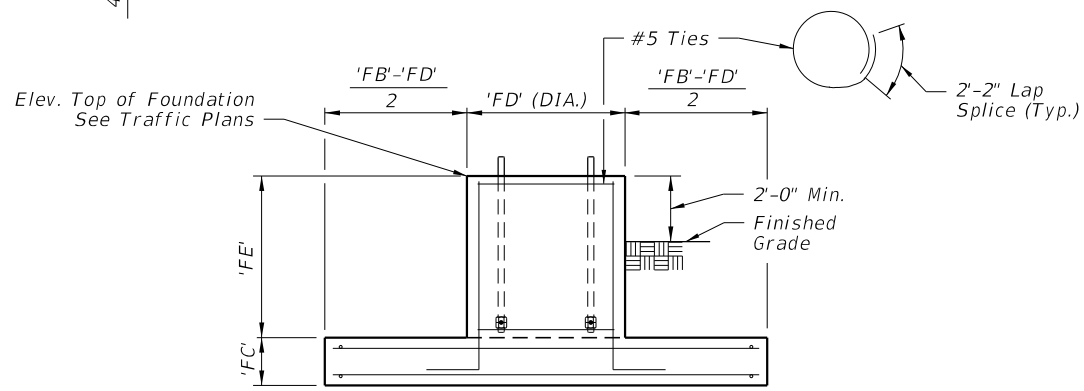
LAST REVISION 07/01/15	DESCRIPTION:	 2016 DESIGN STANDARDS	CANTILEVER SIGN STRUCTURE	INDEX NO. 11310	SHEET NO. 1 of 5
---------------------------	--------------	---	----------------------------------	---------------------------	----------------------------



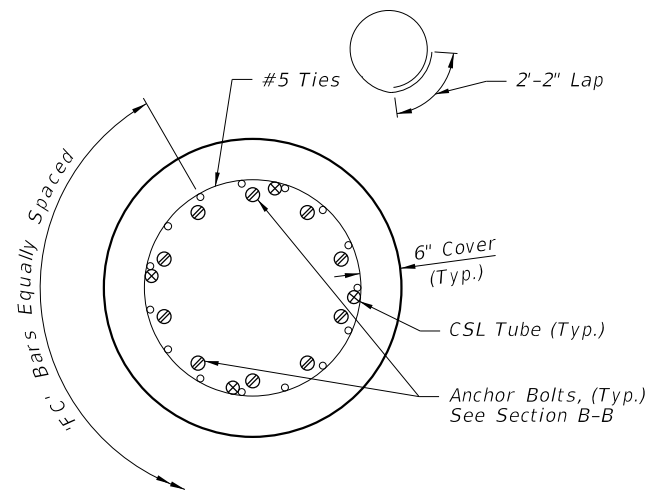
FOOTING PLAN



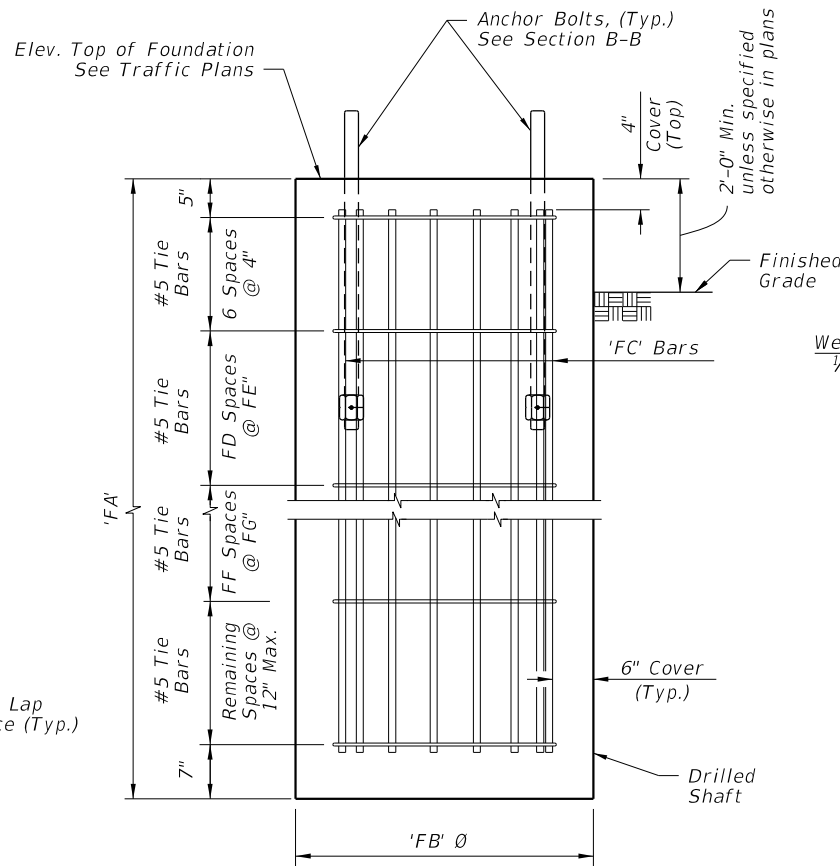
FOOTING ELEVATION



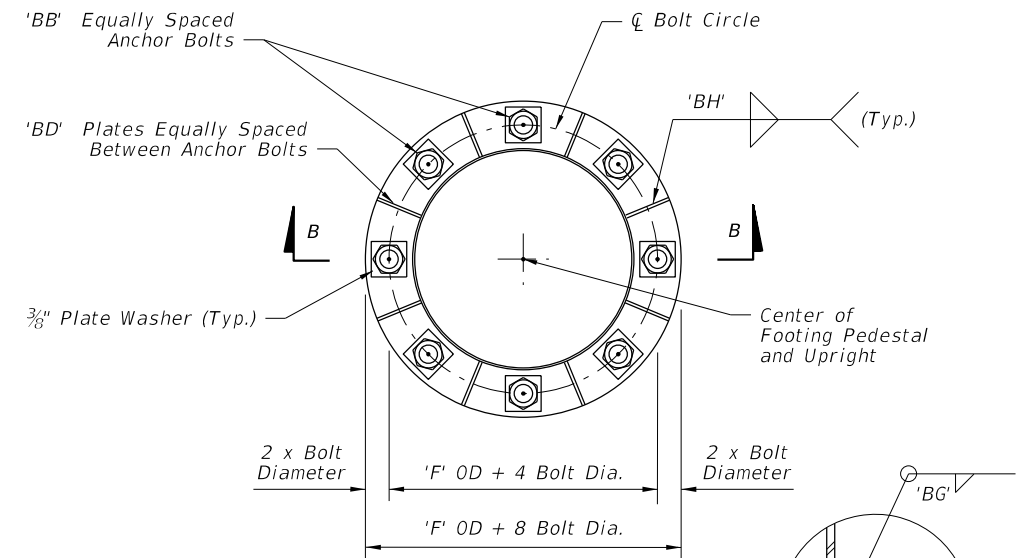
VIEW A-A



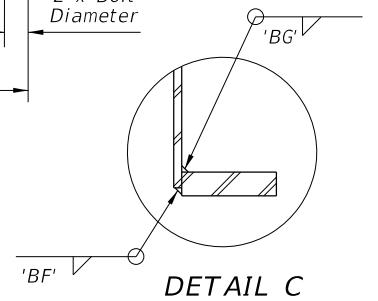
PLAN VIEW DRILLED SHAFT



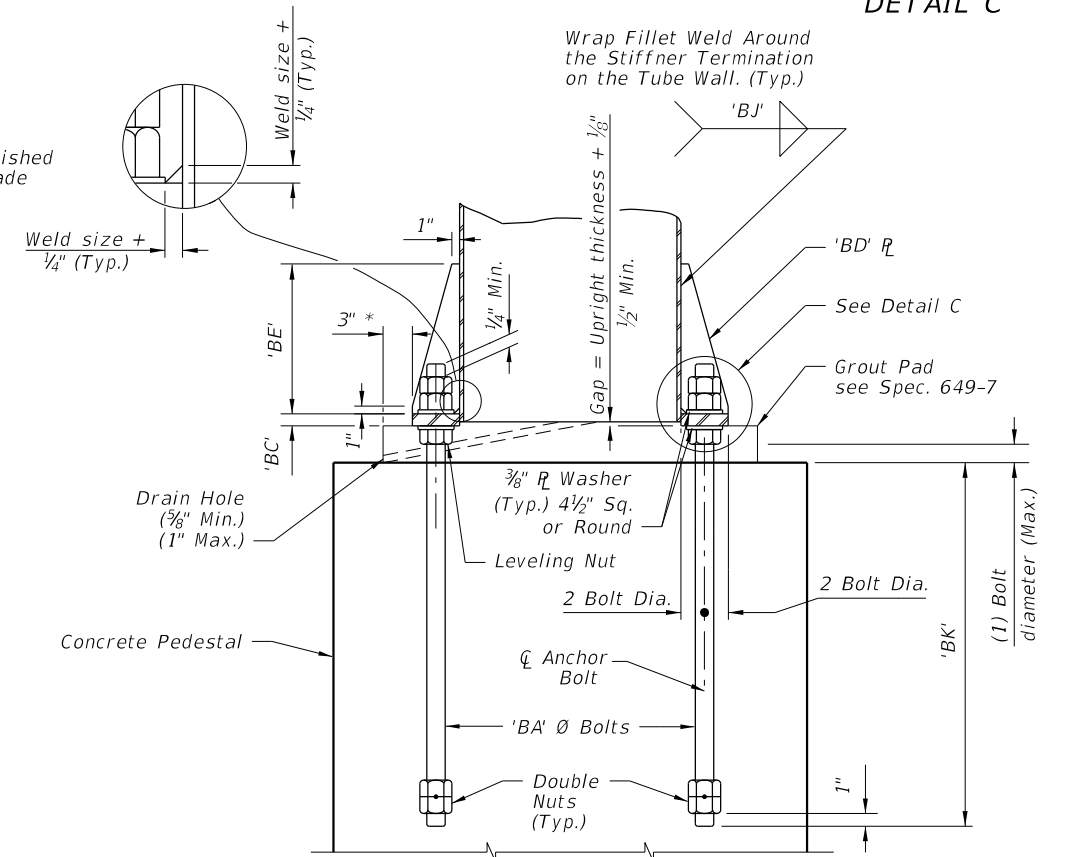
ELEVATION DRILLED SHAFT (Alternate Foundation)



PLAN VIEW (Base Plate)



DETAIL C

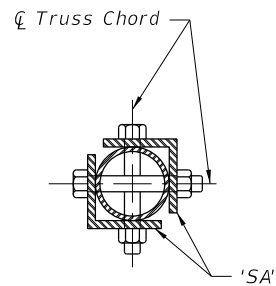


SECTION B-B

* This dimension may be modified to be less than 3" where the footprint of the grout pad does not provide adequate clearance for accessibility considerations.

6/18/2015 9:04:08 AM

LAST REVISION	DESCRIPTION:
07/01/15	



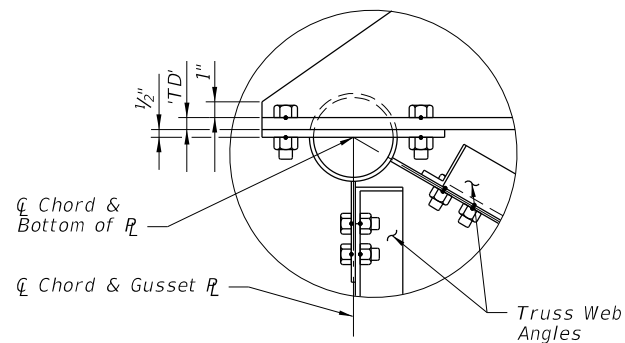
SECTION D-D

'SC' Ø Bolts 'SB' Required
(One Half Each Side of Splice)

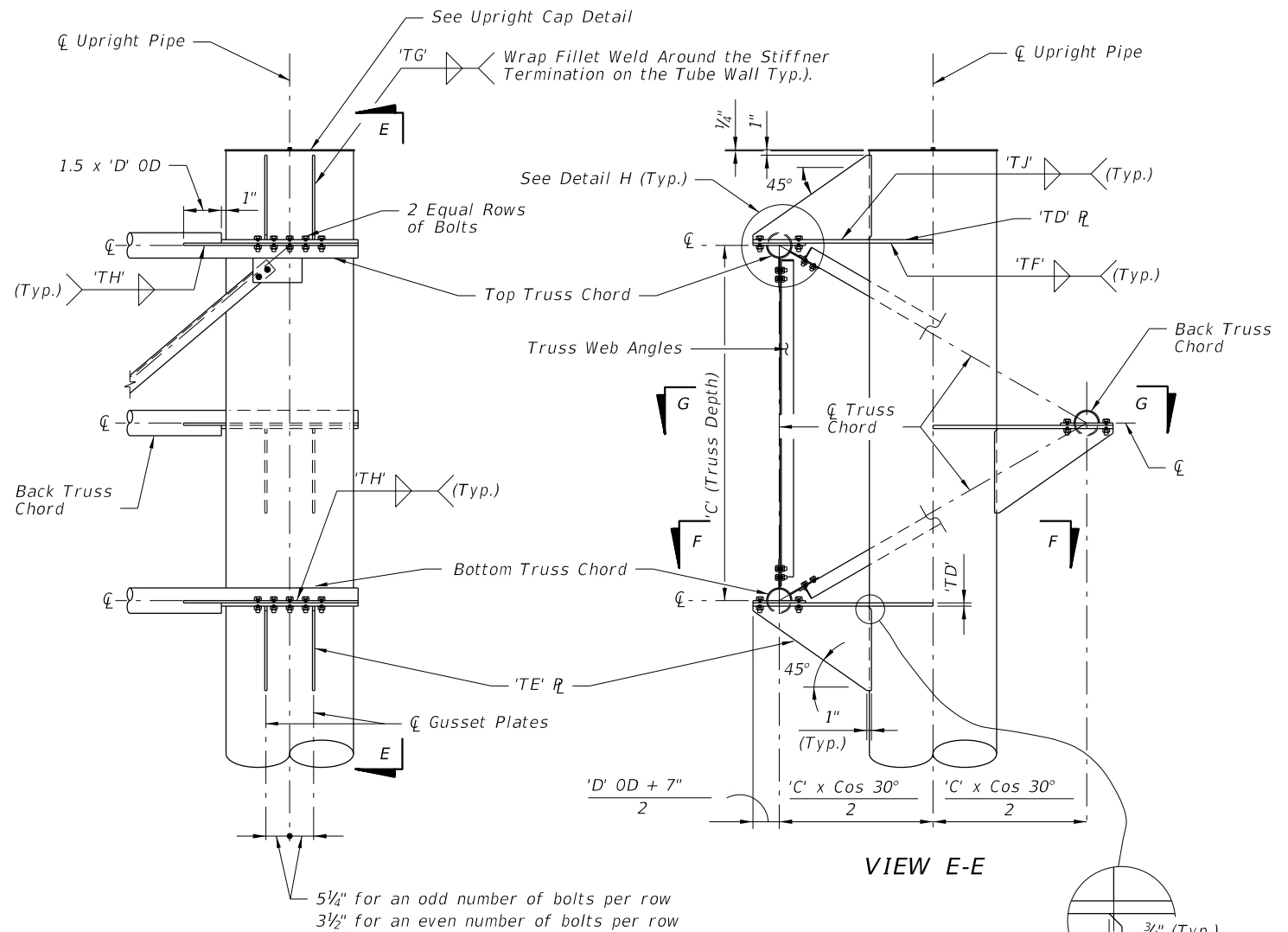
3 1/2" for 1" Ø Bolts
3" for 7/8" Ø Bolts
2 1/2" for 3/4" Ø Bolts

1 3/4" for 1" Ø Bolts
1 1/2" for 7/8" Ø Bolts
1 1/4" for 3/4" Ø Bolts

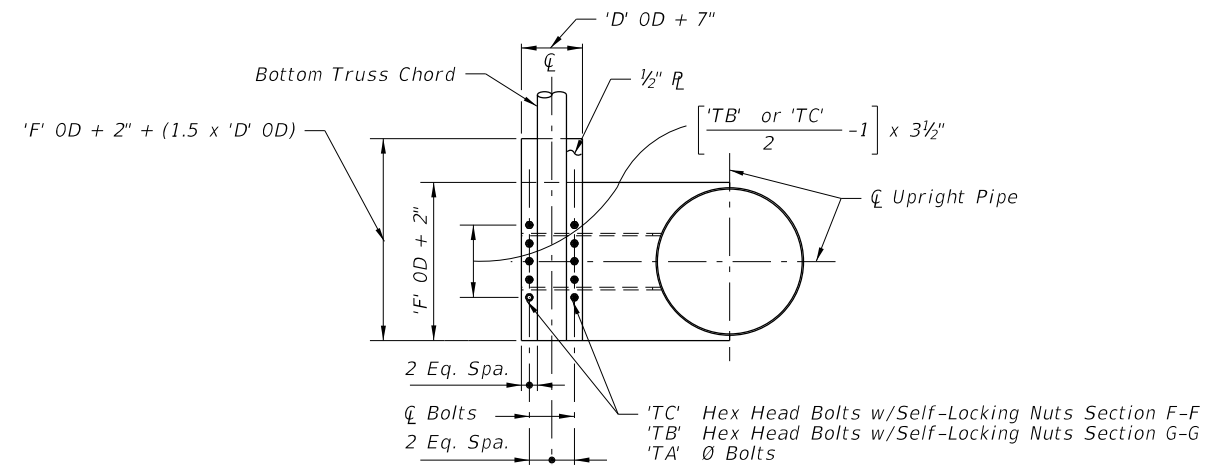
SPLICE CONNECTION DETAIL
(Splice not allowed for trusses ≤ 40'
Splice optional for trusses > 40')



DETAIL H



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

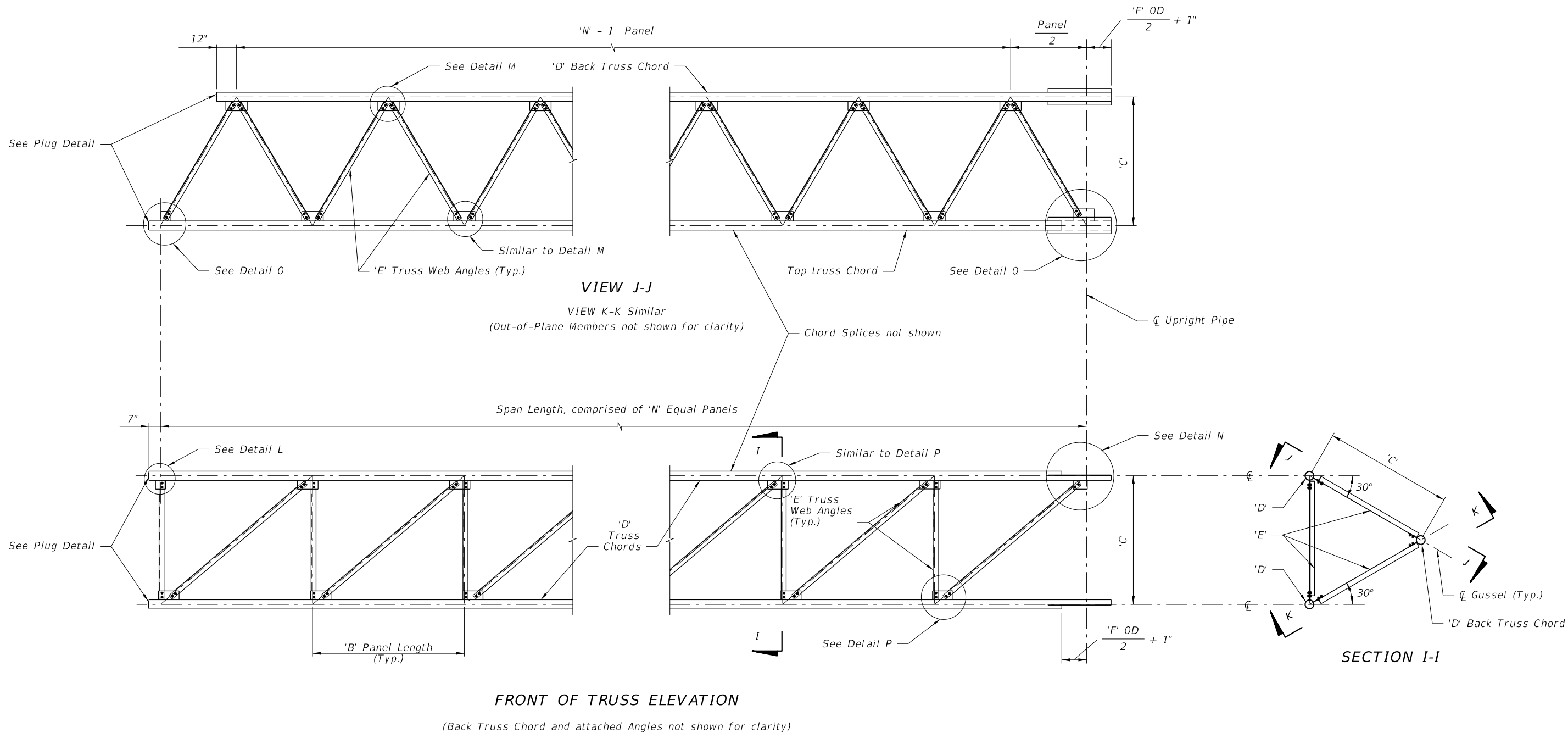


SECTION F-F, SECTION G-G SIMILAR
(With Gusset Plate & Angles omitted for clarity)

NOTE:
Abbreviation
OD ~ Outside Diameter

6/18/2015 9:04:09 AM

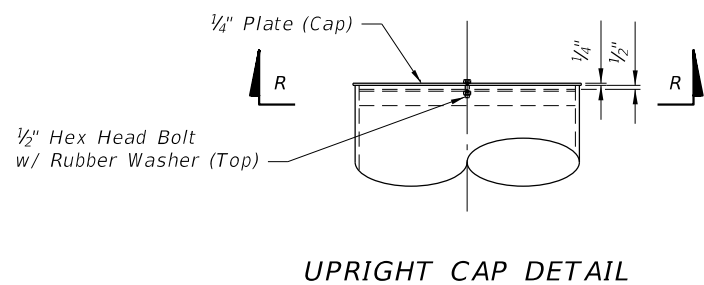
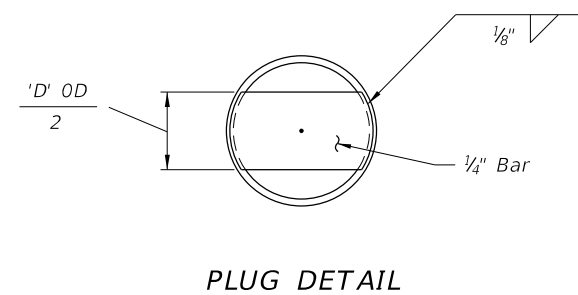
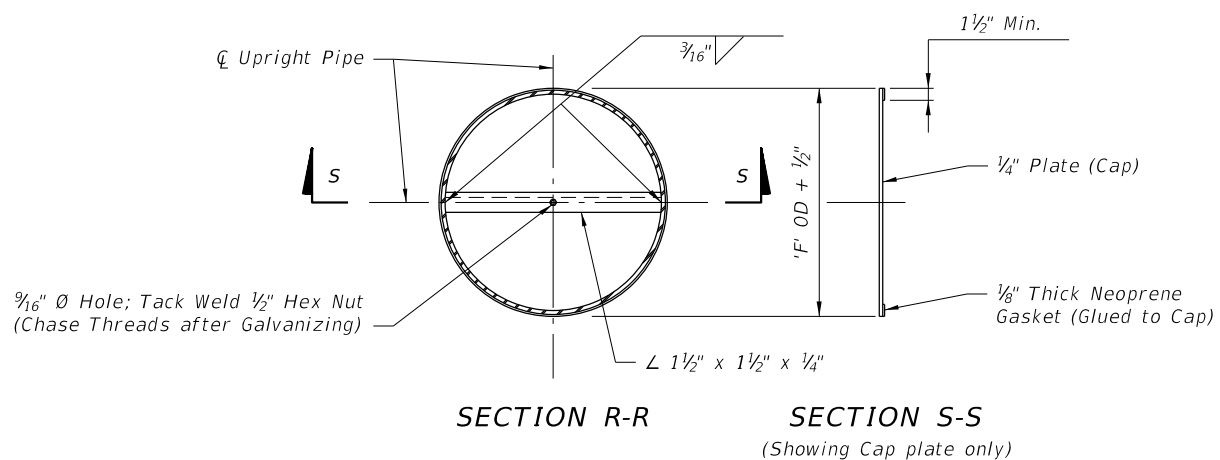
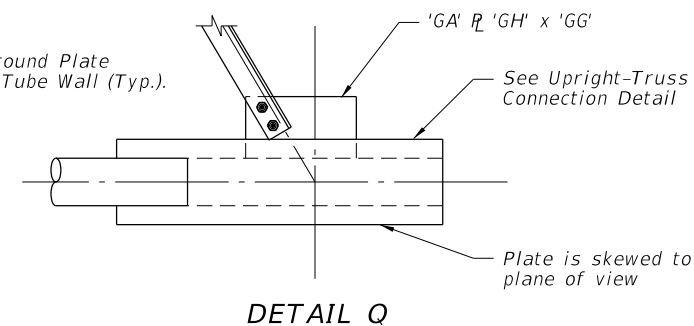
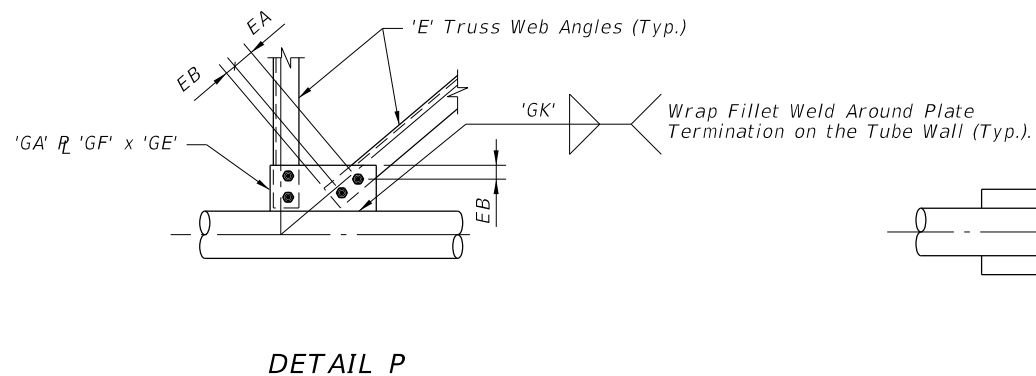
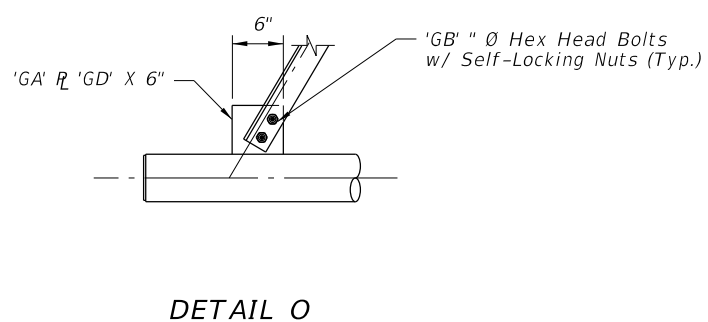
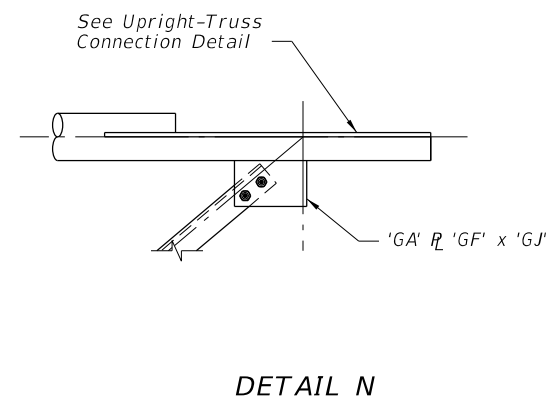
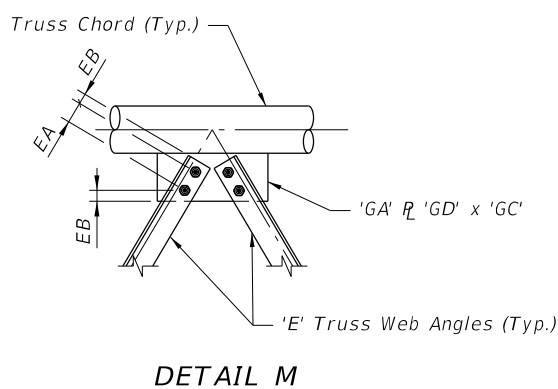
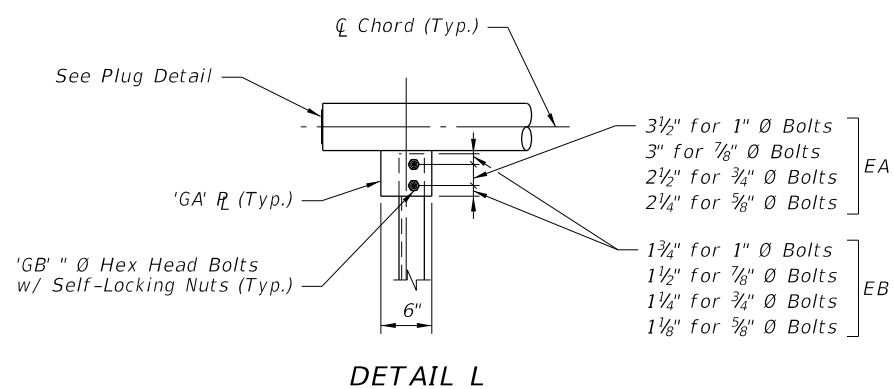
LAST REVISION	DESCRIPTION:
07/01/14	



NOTE:
Abbreviation
OD ~ Outside Diameter

6/18/2015 9:04:09 AM

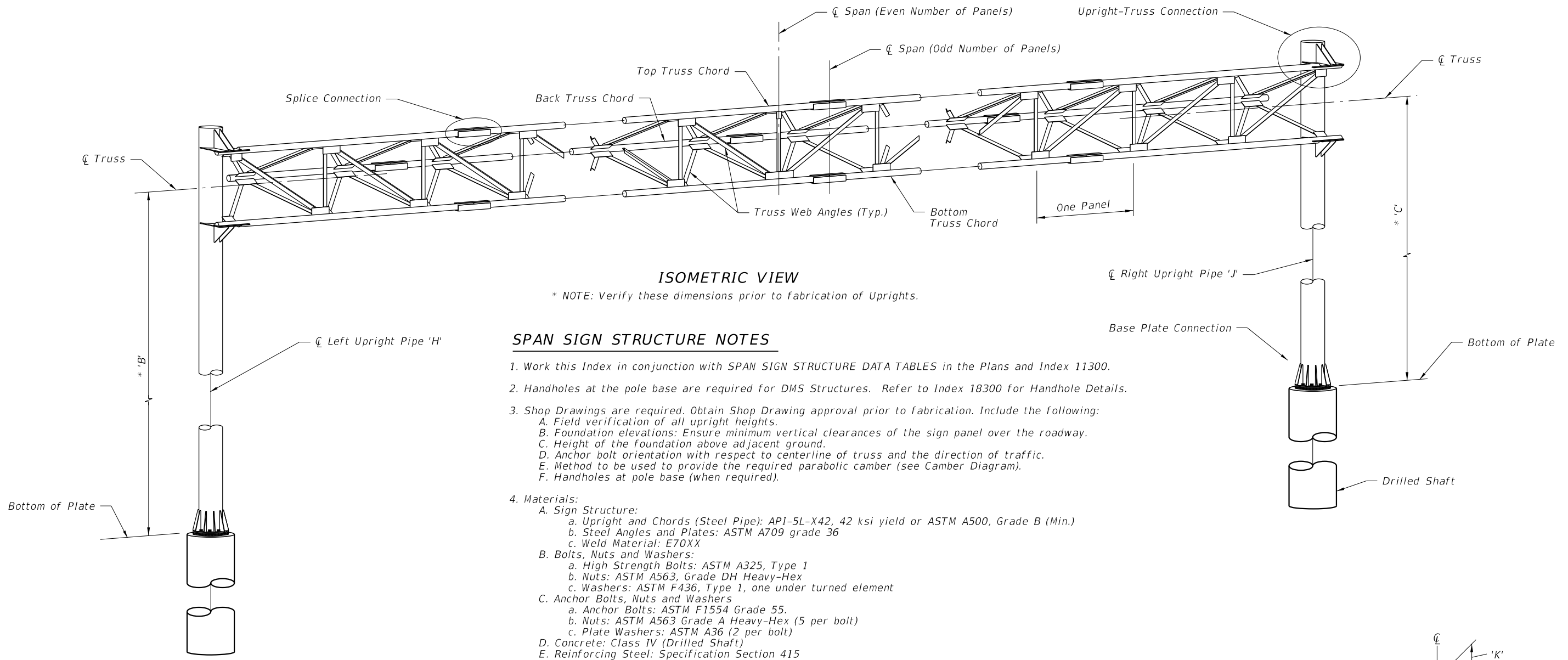
LAST REVISION 07/01/05	DESCRIPTION:
---------------------------	--------------



NOTE:
Abbreviation
OD ~ Outside Diameter

6/18/2015 9:04:10 AM

LAST REVISION	DESCRIPTION:
07/01/14	

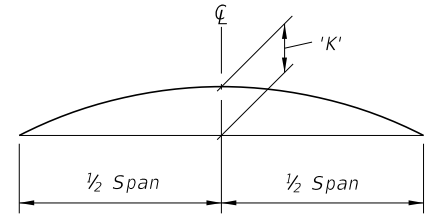


ISOMETRIC VIEW

* NOTE: Verify these dimensions prior to fabrication of Uprights.

SPAN SIGN STRUCTURE NOTES

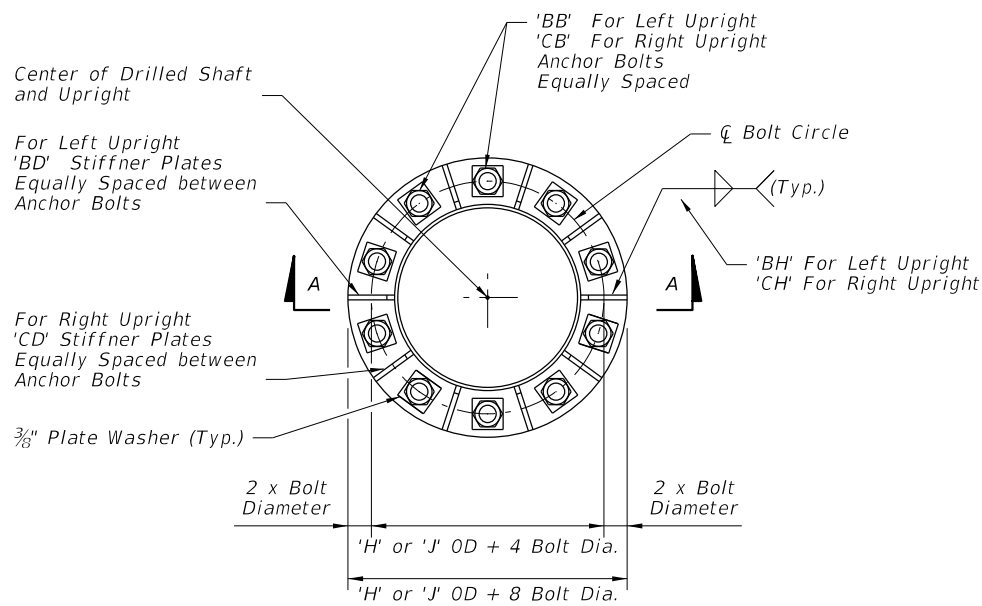
1. Work this Index in conjunction with SPAN SIGN STRUCTURE DATA TABLES in the Plans and Index 11300.
2. Handholes at the pole base are required for DMS Structures. Refer to Index 18300 for Handhole Details.
3. Shop Drawings are required. Obtain Shop Drawing approval prior to fabrication. Include the following:
 - A. Field verification of all upright heights.
 - B. Foundation elevations: Ensure minimum vertical clearances of the sign panel over the roadway.
 - C. Height of the foundation above adjacent ground.
 - D. Anchor bolt orientation with respect to centerline of truss and the direction of traffic.
 - E. Method to be used to provide the required parabolic camber (see Camber Diagram).
 - F. Handholes at pole base (when required).
4. Materials:
 - A. Sign Structure:
 - a. Upright and Chords (Steel Pipe): API-5L-X42, 42 ksi yield or ASTM A500, Grade B (Min.)
 - b. Steel Angles and Plates: ASTM A709 grade 36
 - c. Weld Material: E70XX
 - B. Bolts, Nuts and Washers:
 - a. High Strength Bolts: ASTM A325, Type 1
 - b. Nuts: ASTM A563, Grade DH Heavy-Hex
 - c. Washers: ASTM F436, Type 1, one under turned element
 - C. Anchor Bolts, Nuts and Washers
 - a. Anchor Bolts: ASTM F1554 Grade 55.
 - b. Nuts: ASTM A563 Grade A Heavy-Hex (5 per bolt)
 - c. Plate Washers: ASTM A36 (2 per bolt)
 - D. Concrete: Class IV (Drilled Shaft)
 - E. Reinforcing Steel: Specification Section 415
5. Fabrication:
 - A. Welding: Specification Section 460-6.4
 - B. Chord Splices: Minimum splice spacing is three truss panel lengths apart and three truss panel lengths from the uprights. Chord Splices may be either the Standard Splice or the Alternate Splice but not both on the same structure.
 - C. Upright splice: Not allowed
 - D. Structural bolt hole diameters: Bolt diameter plus 1/16".
 - E. Anchor bolt hole diameters: Bolt diameter plus 1/2".
 - F. Hot Dip Galvanize after fabrication.
 - G. Shop assemble the entire structure after galvanizing to validate/document alignment and clearance for bolted connections as well as contact between connecting plates. Take remedial action, if necessary, prior to shipment.
 - H. Disassemble as necessary and secure components for shipment.
6. Coatings:
 - A. Bolts, Nuts and Washers: ASTM F2329
 - B. All other steel, including Plate Washers, hot dip galvanize: ASTM A123
7. Construction:
 - A. Construct foundation in accordance with Specification Section 455 Drilled Shaft, except payment is included in the cost of the structure.
 - B. Prior to erection, record the as-built anchor locations and submit to the Engineer.
 - C. Provide a parabolic camber with the maximum upward deflection as shown on the Camber Diagram.
 - D. Tighten nuts and bolts in accordance with Specification Section 700. Split-Lock Washers are not permitted.
 - E. Install Aluminum Sign Panels as shown on the Elevation drawing.
 - F. After installation, place wire screen between top of foundation and bottom of baseplate in accordance with Specification Section 649-6.



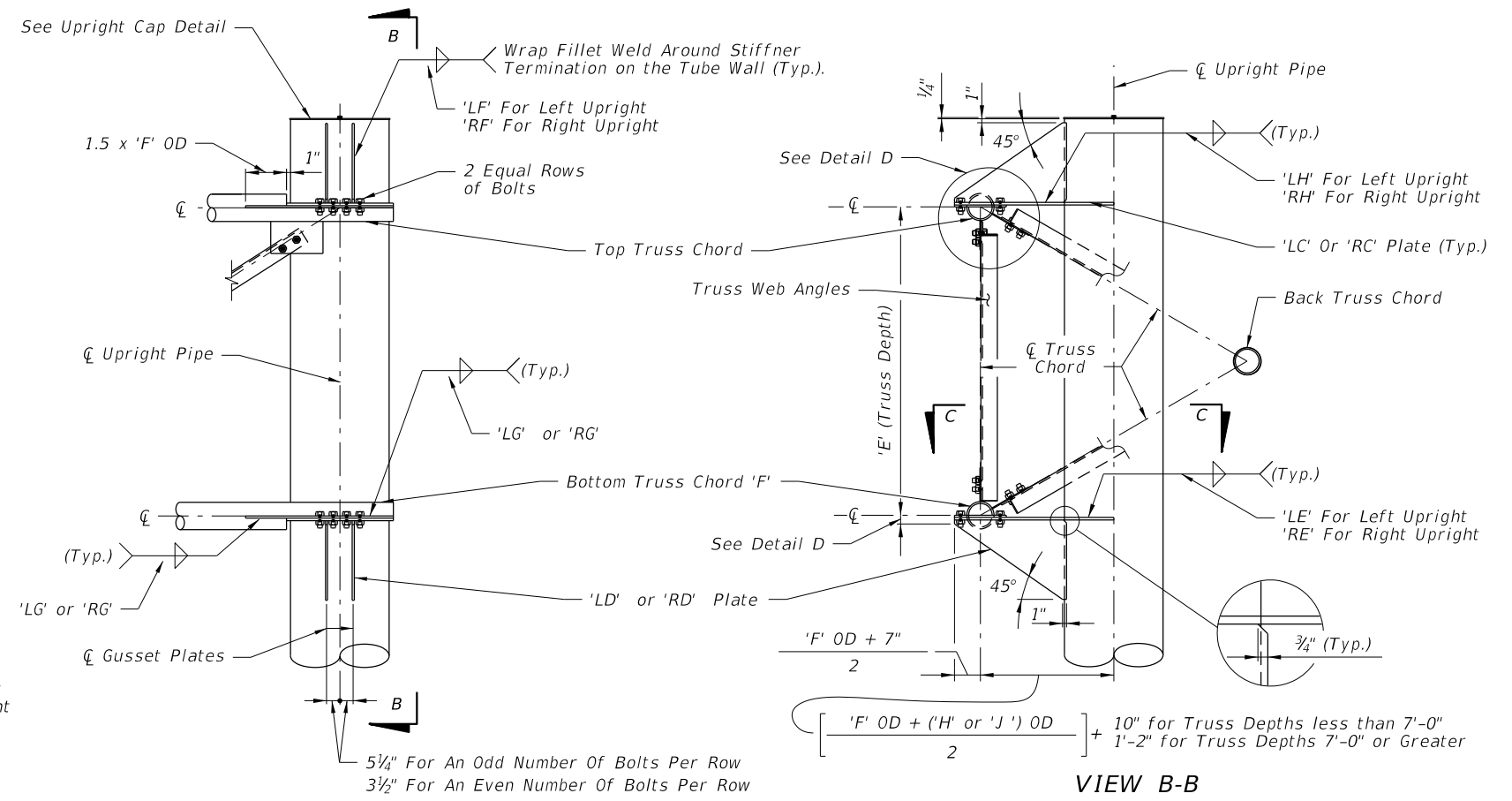
CAMBER DIAGRAM

6/22/2015 2:52:13 PM

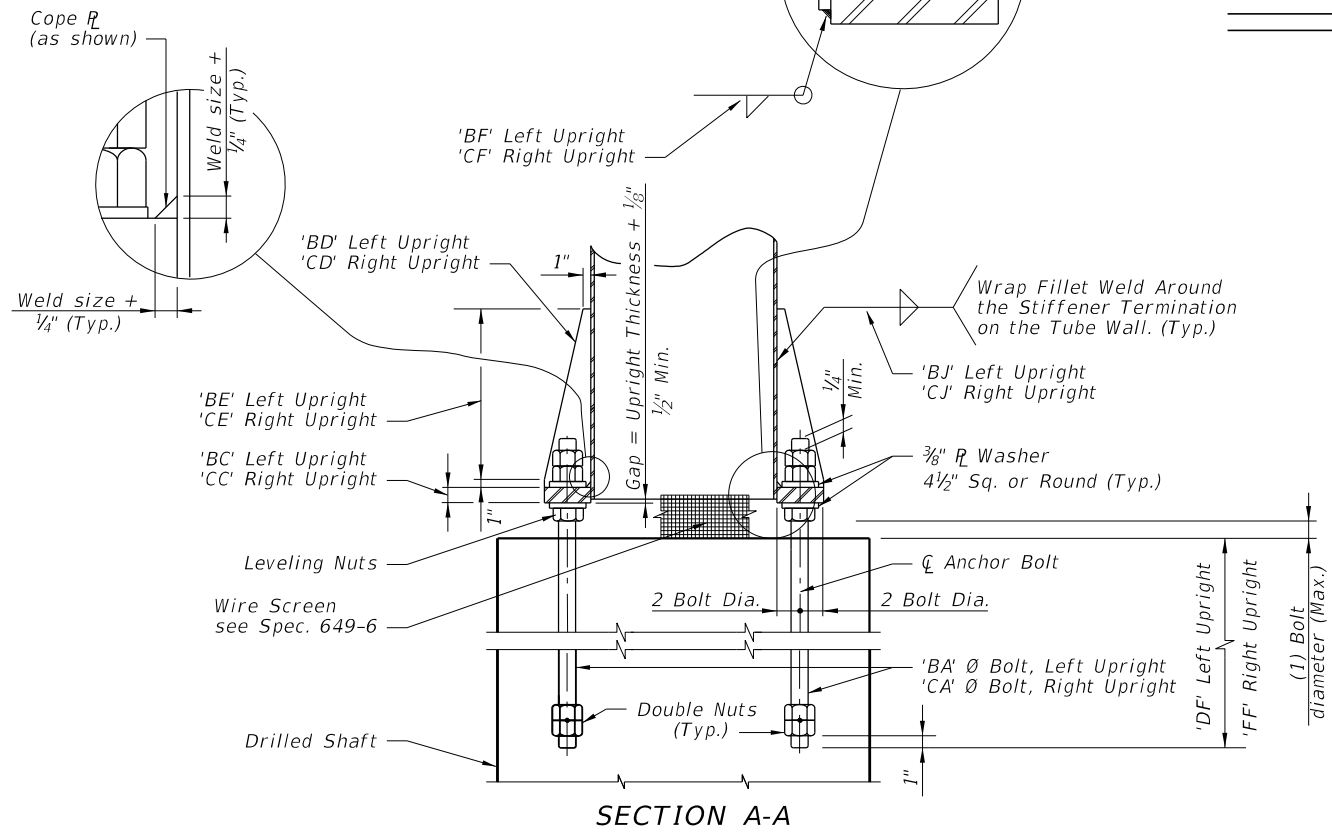
LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SPAN SIGN STRUCTURE	INDEX NO. 11320	SHEET NO. 1 of 5
---------------------------	----------	--------------	--	----------------------------	---------------------------	----------------------------



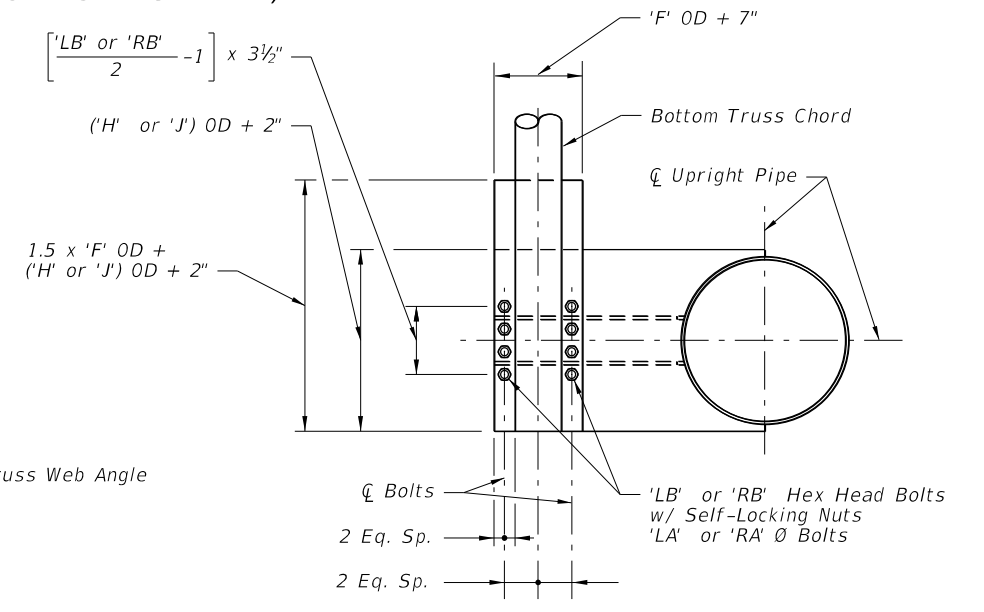
**PLAN VIEW
BASE PLATE**



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



SECTION A-A



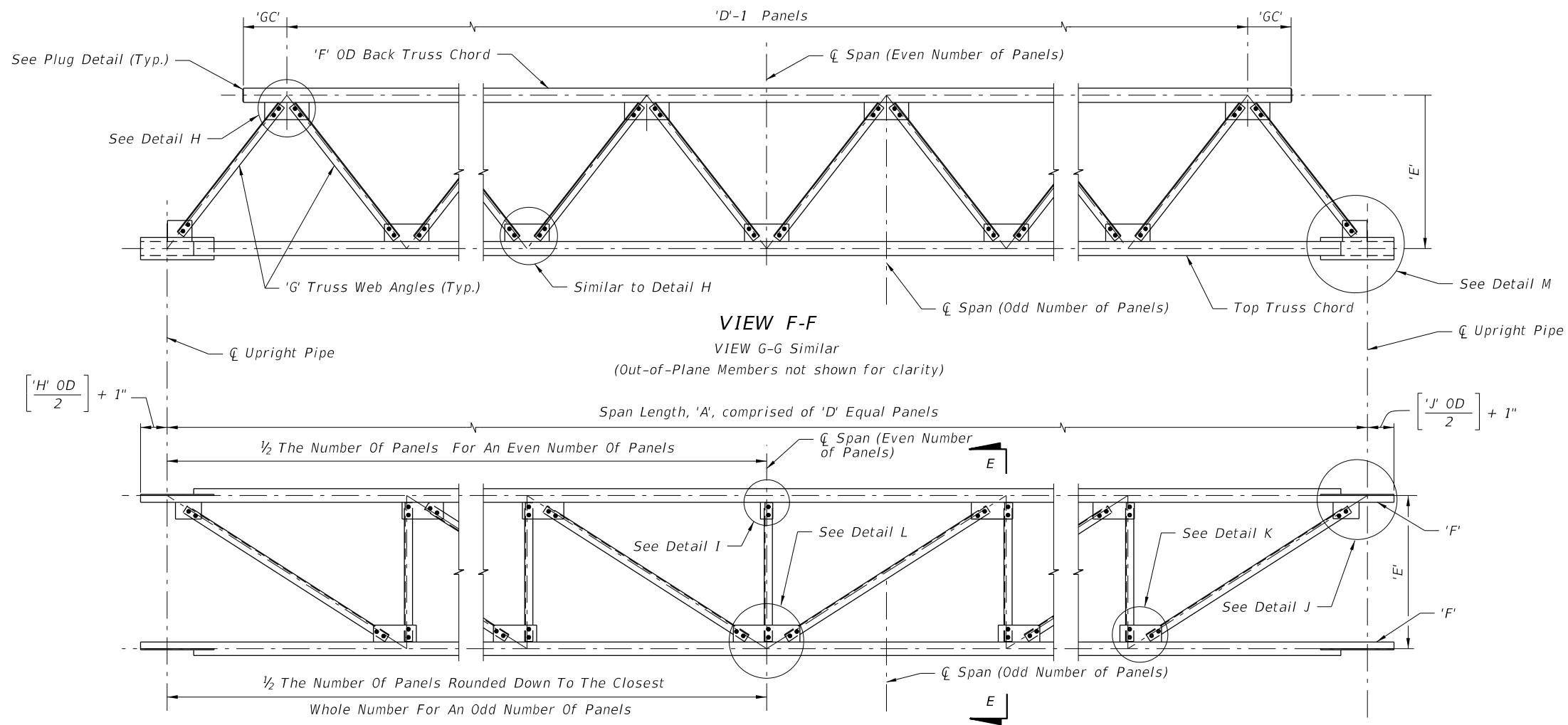
SECTION C-C

(With Gusset Plate and Angles omitted for clarity)

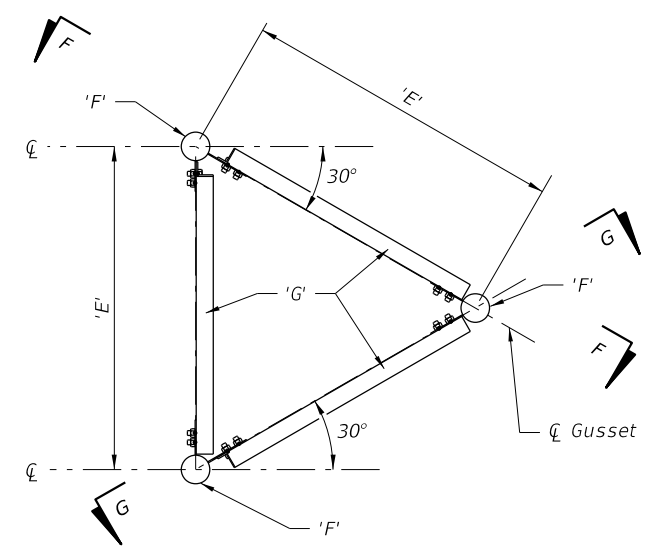
NOTE:
Abbreviation
OD ~ Outside Diameter

6/22/2015 2:52:14 PM

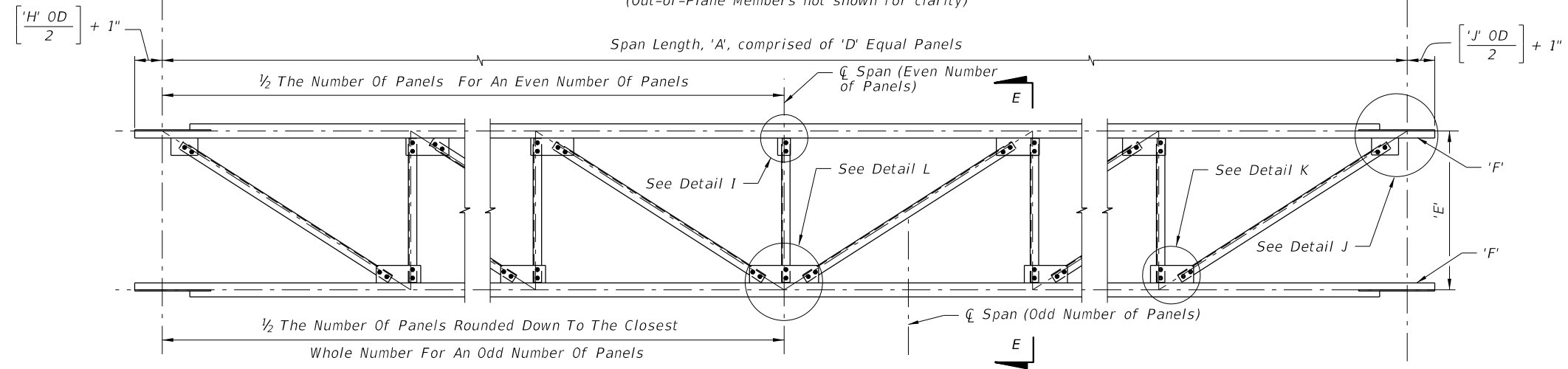
LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SPAN SIGN STRUCTURE	INDEX NO. 11320	SHEET NO. 2 of 5
---------------------------	----------	--------------	------------------------------	---------------------	--------------------	---------------------



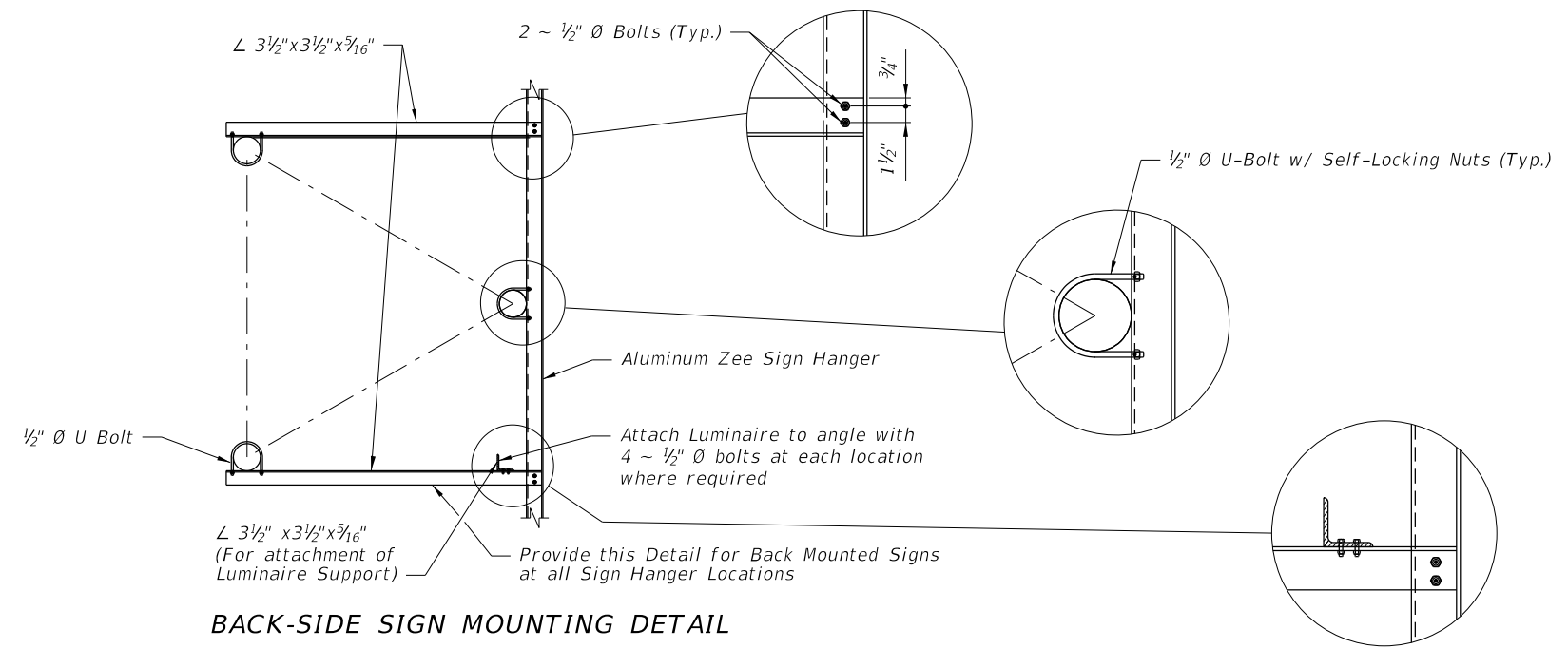
VIEW F-F
VIEW G-G Similar
(Out-of-Plane Members not shown for clarity)



SECTION E-E



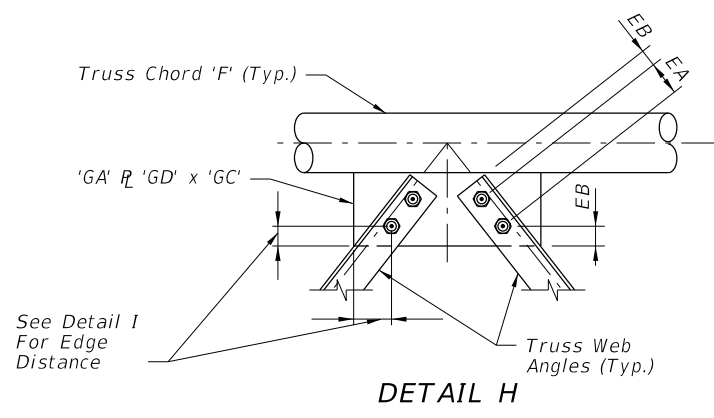
FRONT OF TRUSS ELEVATION
(Back Truss Chord and attached Angles not shown for clarity)



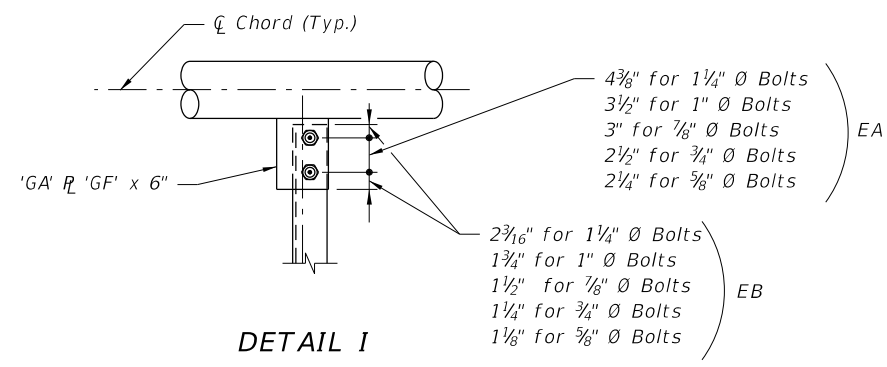
BACK-SIDE SIGN MOUNTING DETAIL

6/22/2015 2:52:15 PM

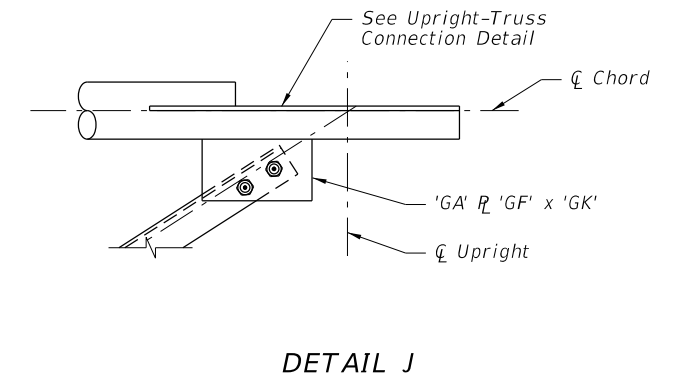
LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SPAN SIGN STRUCTURE	INDEX NO. 11320	SHEET NO. 3 of 5
---------------------------	----------	--------------	--	---------------------	--------------------	---------------------



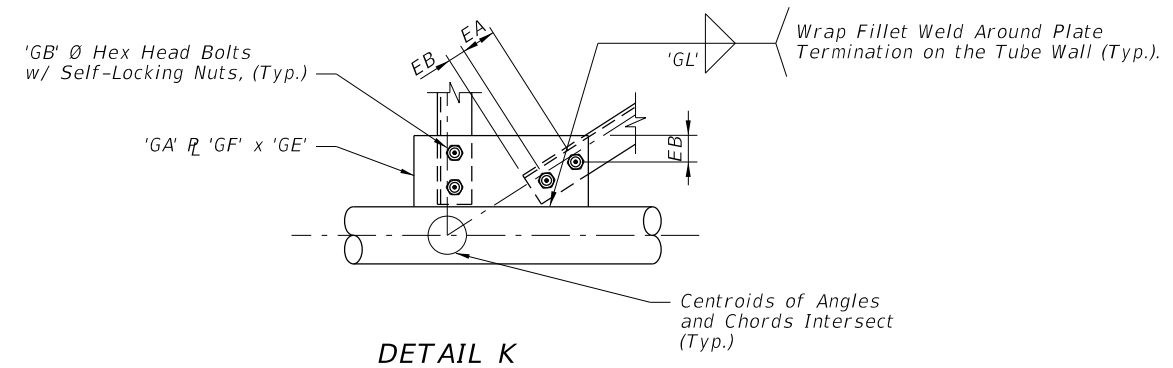
DETAIL H



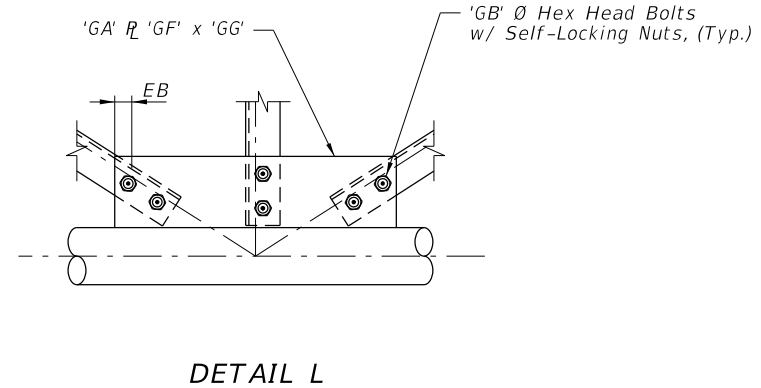
DETAIL I



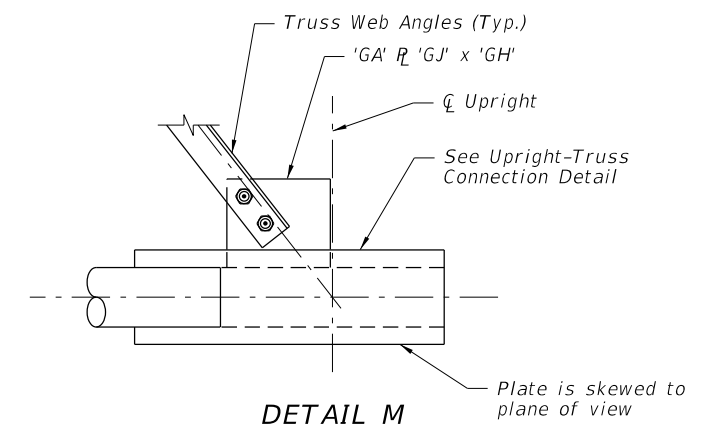
DETAIL J



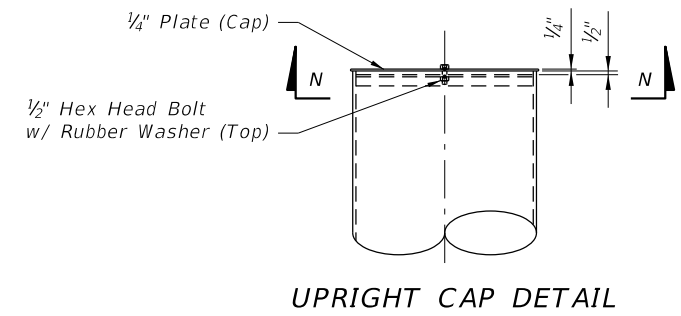
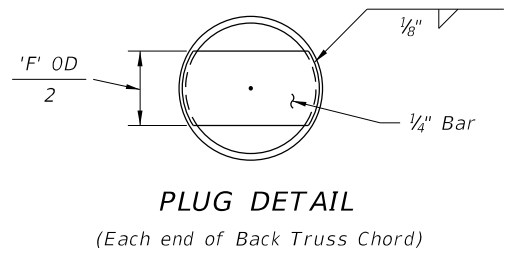
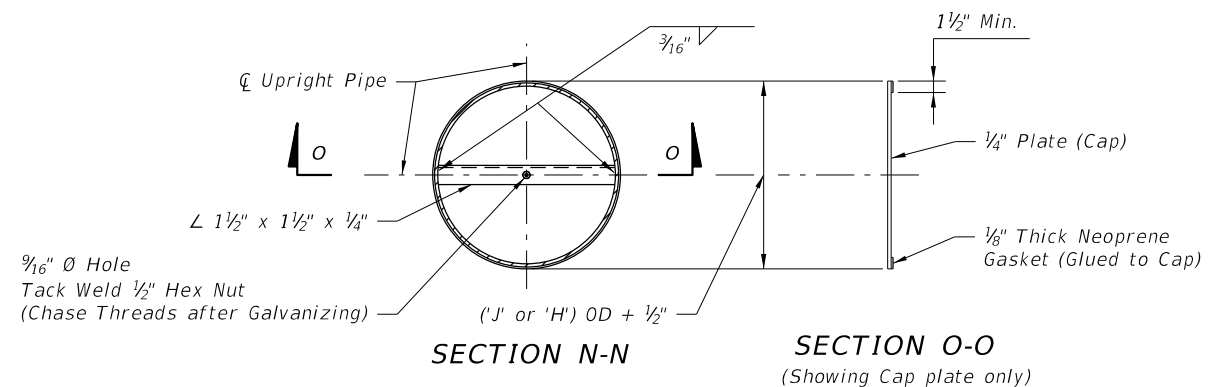
DETAIL K



DETAIL L

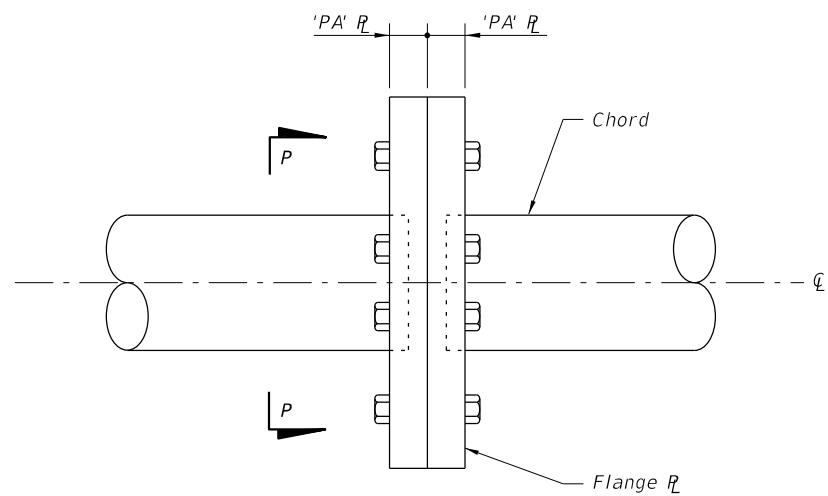


DETAIL M

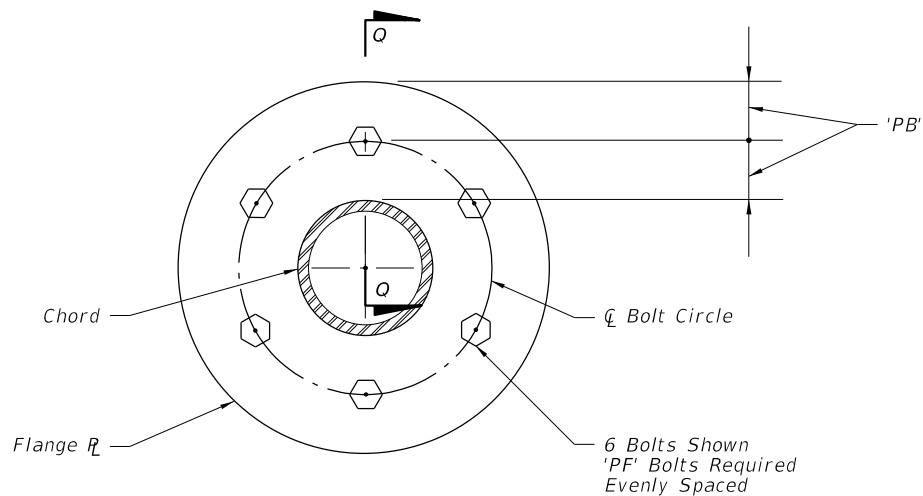


6/22/2015 2:52:15 PM

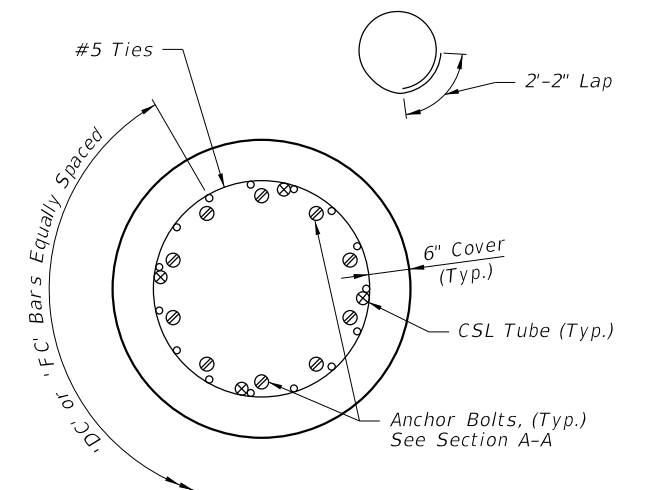
LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SPAN SIGN STRUCTURE	INDEX NO. 11320	SHEET NO. 4 of 5
---------------------------	----------	--------------	-------------------------------------	----------------------------	---------------------------	----------------------------



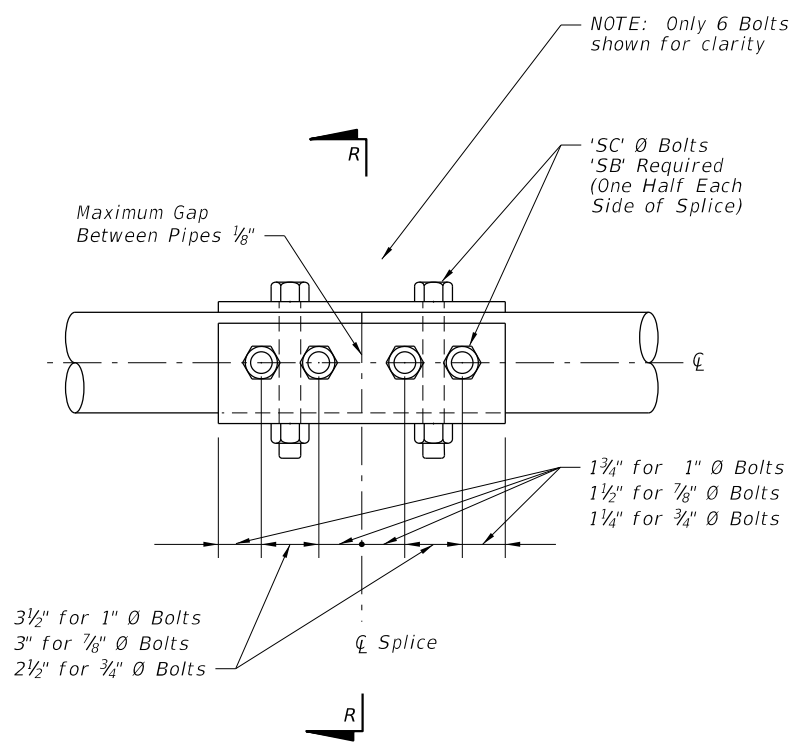
**ELEVATION
ALTERNATE SPLICE CONNECTION**



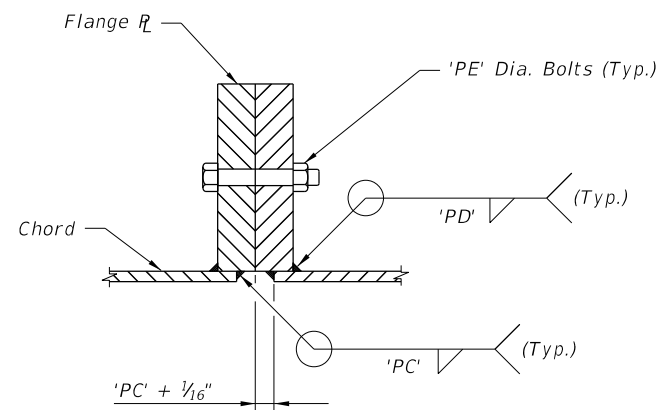
SECTION P-P



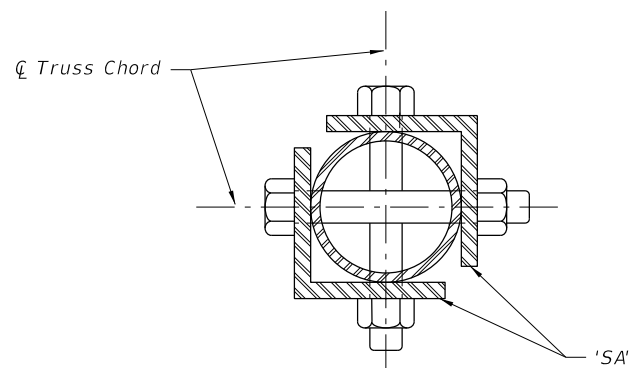
**PLAN VIEW
DRILLED SHAFT**



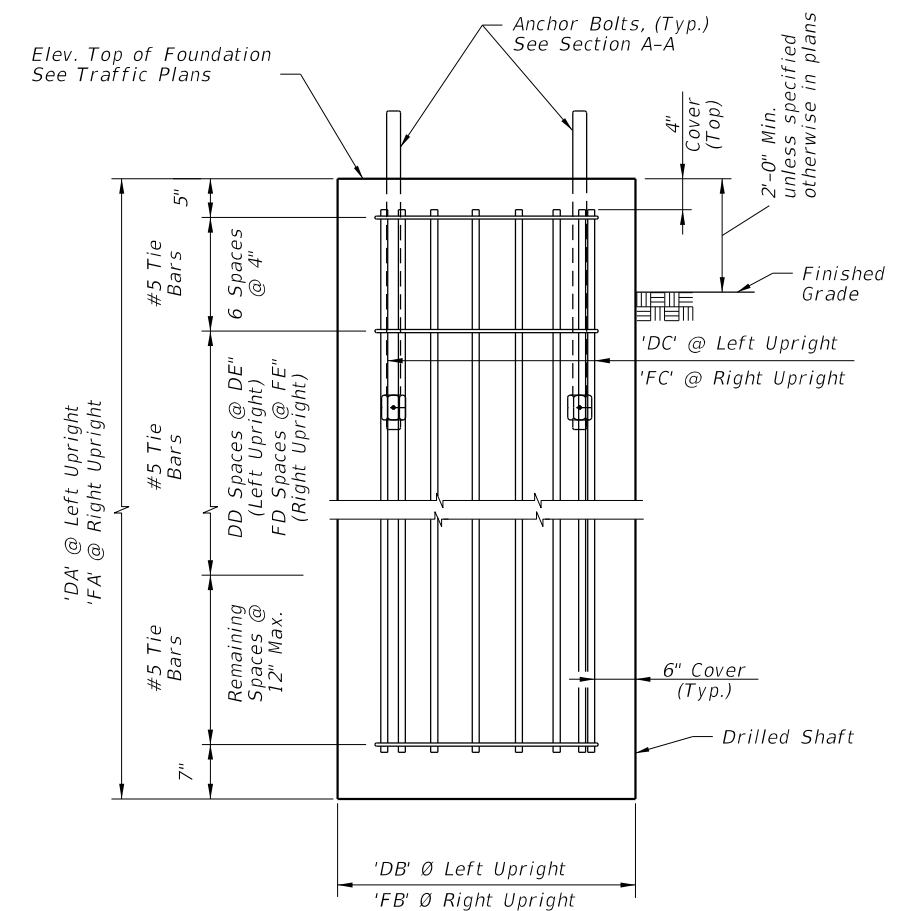
**ELEVATION
SPLICE CONNECTION**



SECTION Q-Q



SECTION R-R

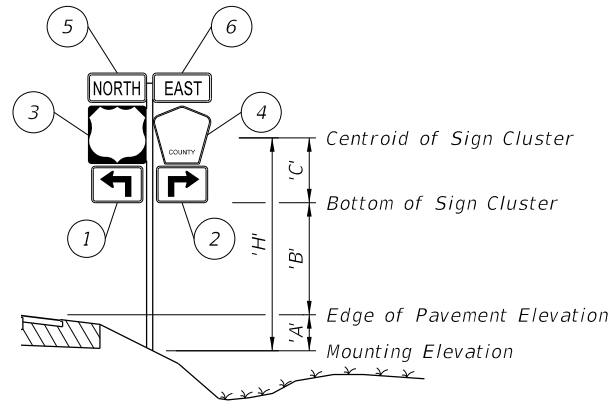


**ELEVATION
DRILLED SHAFT**

6/22/2015 2:52:16 PM

LAST REVISION 07/01/10	DESCRIPTION:		2016 DESIGN STANDARDS	SPAN SIGN STRUCTURE	INDEX NO. 11320	SHEET NO. 5 of 5
REVISION						

STEP 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 9.



Size H x V	Centroid			'A _n ' (in. ²)	'X _n ' x 'A _n ' (in. ³)	'Y _n ' x 'A _n ' (in. ³)
	Local 'Y _n '	Global 'X _n '	Global 'Y _n '			
(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
TOTALS				2,218	-1,890	60,133

$$\Sigma ('A'_n) = 2,218 \text{ in.}^2 = 15.4 \text{ ft.}^2 \quad \Sigma ('X'_n \times 'A'_n) = -1,890 \text{ in.}^3 = -1.09 \text{ ft.}^3 \quad \Sigma ('Y'_n \times 'A'_n) = 60,133 \text{ in.}^3 = 34.8 \text{ ft.}^3$$

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

STEP 2: Determine the height 'H' from groundline for the individual sign or the cluster.

Assume: Bay County, Wind Speed = 130 mph, 'A' = 1 ft., 'B' = 7 ft.

Calculated: X_c = -0.1 ft., Y_c = 'C' 2.26 ft.

Since X_c = -0.1 < 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.** Σ ('A_n') = 15.4 ft.² ==> **USE 16 ft.²**

STEP 3: Select the appropriate Aluminum Column (Post) Selection Tables by Wind Speed and find the intersection point. See Sheet 3.

TOTAL PANEL AREA (SF)	'H' (ft.)												
	8	9	10	11	12	13	14	15	16	17	18	19	20
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													

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

- Refer to the 130 mph Aluminum 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 Column (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 Column (Post) size than that indicated.

STEP 4: Design the Column (Post) and the foundation according to the dark-bold lines or shaded area (if cantilever sign) in the Aluminum Column (Post) Selection Tables and Column (Post) and Foundation Table. For sign assemblies with signs oriented in two directions, only the sign with the largest area should be analyzed to determine the Column (Post) requirements.

SHEET NO.	CONTENTS
1	General Notes and Example
2	Centroid and Height
3	Column and Foundation Tables
4	Slip Base and Foundation Details
5	Driven Post and Soil Plate Details
6	Connection and Wind Beam
7, 8 & 9	Frequently Used Sign Clusters

GENERAL NOTES:

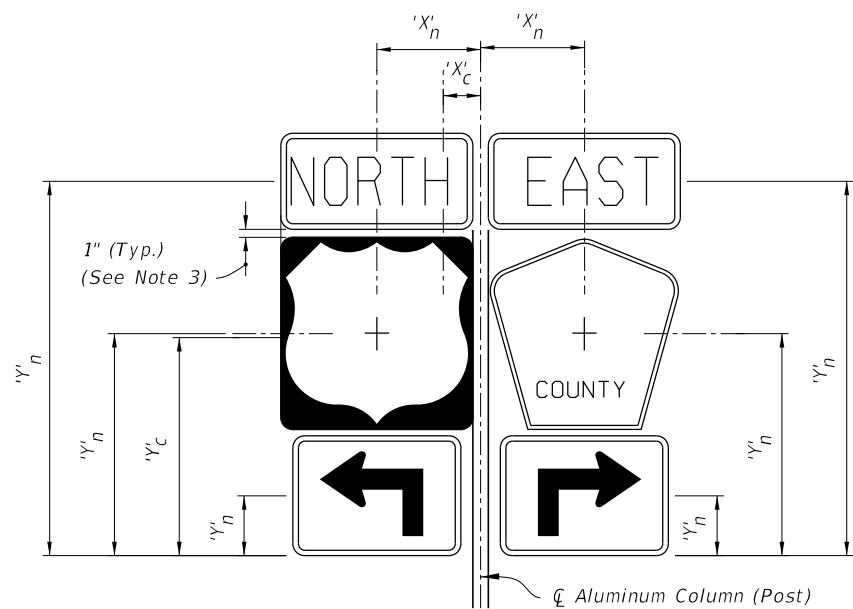
- Design Wind Speed is determined by County (see WIND SPEEDS BY COUNTY)
- Maximum sign area (single or cluster) is 30 sf.
- Maximum sign width (X) single or cluster (including rotated sign panels) is 60 inches.
- Shop drawings: Not required.
- Aluminum Sign, Wind Beams and Column (Post) Materials:
 - Aluminum Plates: ASTM B209, Alloy 6061-T6
 - Aluminum Bars and Extruded Shapes: ASTM B221, Alloy 6061-T6
 - Aluminum Structural Shapes: ASTM B308 Alloy 6061-T6
 - Cast Aluminum: Alloy 356-T6
 - Aluminum Weld Material: ER 5556
- Sign Mounting Bolts (Screws), Nuts and Washers:
 - Aluminum Button Head and Flat Head Bolts (Screws): ASTM F 468 Alloy 2024-T4
 - Aluminum Hex Nuts: ASTM F467 Alloy 6061-T6 or 6262-T9
 - Aluminum Washers: ASTM B221, Alloy 7075-T6
 - Galvanized Steel U-Bolts: ASTM A 307 Grade A
 - Galvanized Hex Nuts: ASTM A 563
- Stainless Steel Bolts, Nuts and Washers may be used in lieu of the Aluminum button head and flat head Bolts (Screws) as follows:
 - Stainless Steel Bolts (Screws): ASTM F 593 Alloy Group 2, Condition A, CW1 or SH1
 - Stainless Steel Nuts: ASTM F594
- Sign Column (Post) Bolts, Nuts and Washers:
 - Galvanized Bolts (Sleeve): ASTM A307 with Galvanized Hex Nuts and Washers
 - Aluminum Bolts (Sleeve): ASTM B221, Alloy 6061-T6 or 2024-T4 with Hex Nuts and Washers.
 - Galvanized High Strength Hex Head Bolts (BaseBolts): ASTM A325 Type 1
 - Galvanized Hex Nuts: ASTM A563 Grade DH
 - Galvanized Washers: ASTM F436
- Coatings:
 - Aluminum Fasteners: Anodic coating (0.0002 inches min.) and chromate sealed
 - High Strength Steel Bolts Nuts and Washers: ASTM F2329
 - All other steel items (excluding stainless steel): Hot-dip Galvanize - ASTM A123
 - Repair damaged galvanizing in accordance with Specification Section 562

GUIDE TO USE THIS STANDARD

NOTES AND EXAMPLE

6/17/2015 1:22:03 PM

LAST REVISION 07/01/15	DESCRIPTION:	<p>2016 DESIGN STANDARDS</p>	<p>SINGLE COLUMN GROUND SIGNS</p>	INDEX NO. 11860	SHEET NO. 1 of 9
REVISION					



SIGN CLUSTER

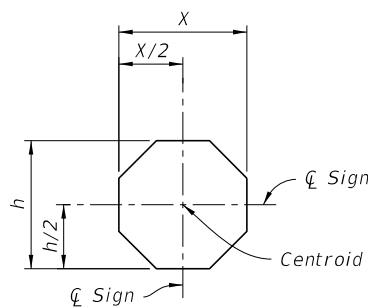
$$'X'_c = \frac{\sum ('X'_n \times 'A'_n)}{\sum 'A'_n} \quad 'C' = 'Y'_c = \frac{\sum ('Y'_n \times 'A'_n)}{\sum 'A'_n}$$

- 'A' = Height of the mounting elevation to the edge of pavement elevation
- 'A'_n = Area of individual sign
- 'B' = Height of the edge of pavement elevation and the bottom of the sign or cluster
- 'C' = Height from the bottom of the sign or cluster to the centroid of the sign or cluster
- h = Individual sign height
- h/2 = \bar{c} Individual sign center
- 'H' = Height of sign or cluster centroid from groundline
- X = Individual sign width
- 'X'_c = Centroid horizontal location of sign or cluster from \bar{c} Aluminum Column (Post)
- 'Y'_c = Centroid height of sign or cluster from bottom of sign cluster
- 'X'_n = Individual sign centroid horizontal location from \bar{c} Aluminum Column (Post)
- 'Y'_n = Individual Sign centroid height from bottom of sign cluster

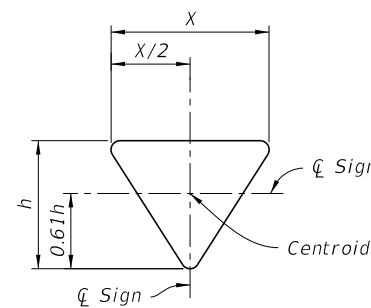
NOTES:

1. For 'A' & 'B' see Index No. 17302 and Roadway Plans.
2. Do not exceed an area of 30 SF or a width of 60 inches for a sign or a sign cluster.
3. Vertical sign spacing (1" shown on Sign Cluster detail) also applies to rotated signs.

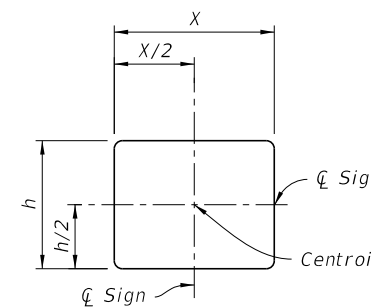
CALCULATION OF SIGN CLUSTER CENTROID



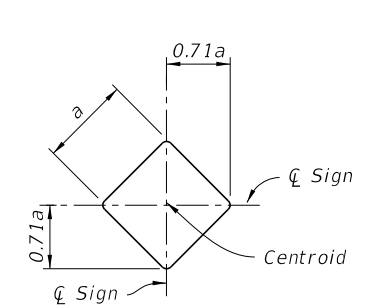
STOP



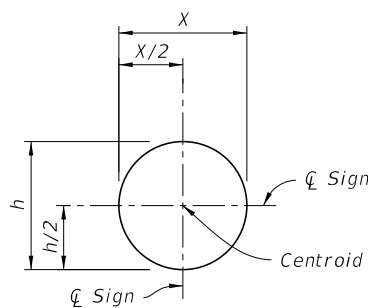
YIELD



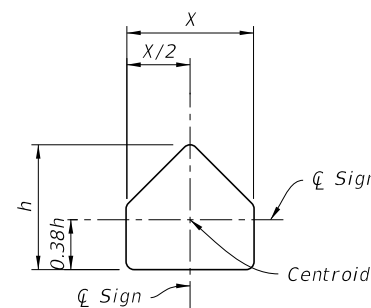
RECTANGLE



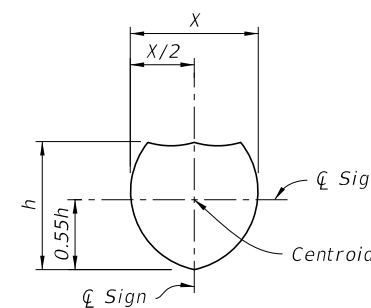
DIAMOND



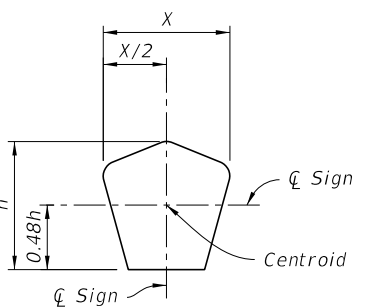
RAILROAD



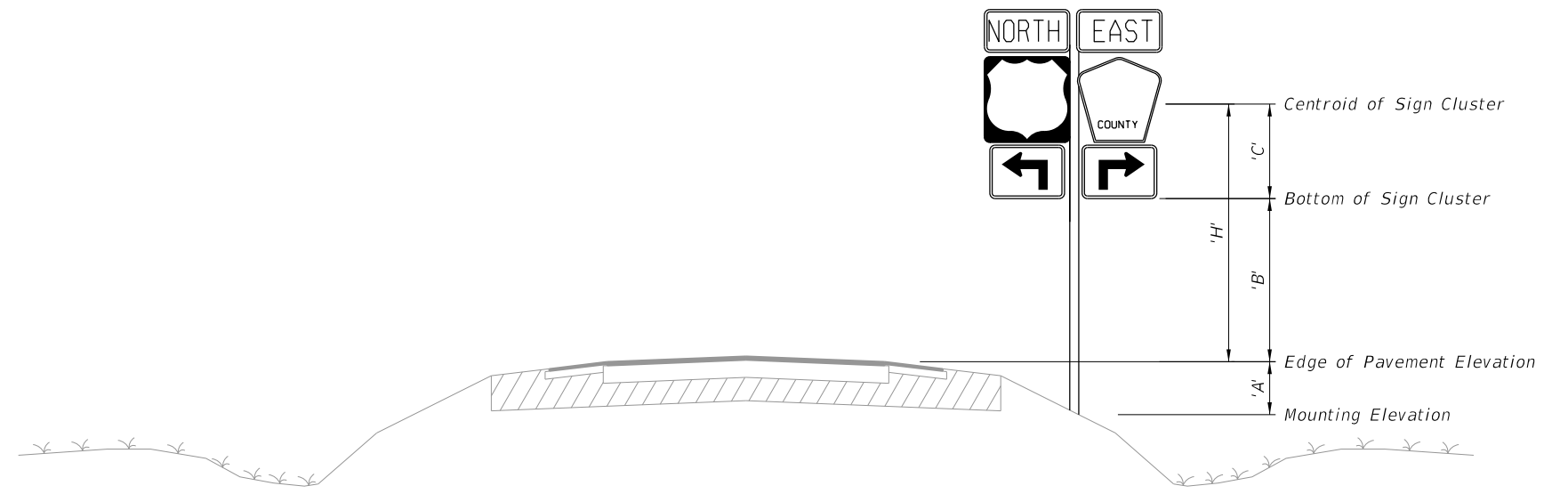
SCHOOL



SHIELD



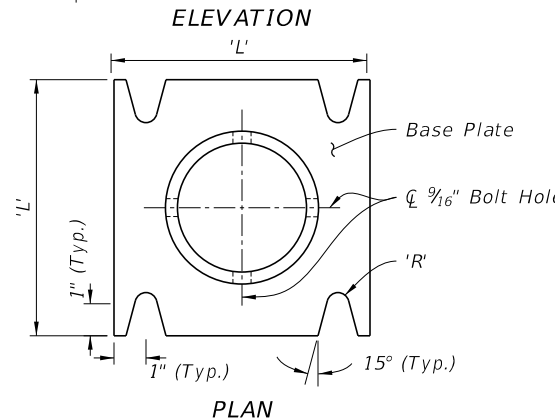
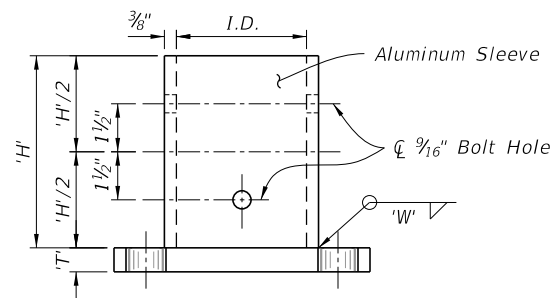
COUNTY



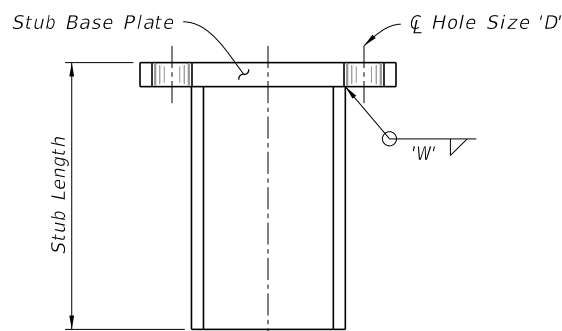
TYPICAL SECTION

6/17/2015 1:22:04 PM

LAST REVISION 07/01/15	DESCRIPTION:
---------------------------	--------------

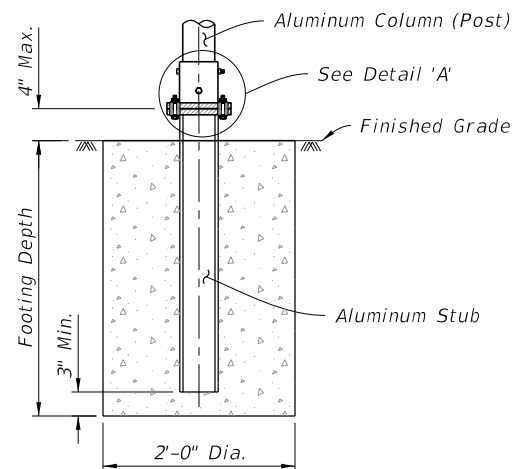


SLEEVE & BASE PLATE DETAILS



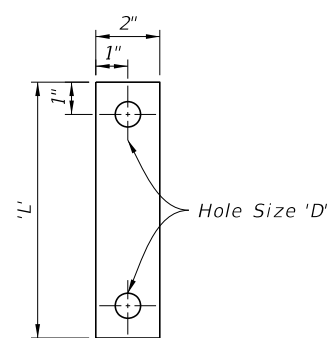
Stub Size Equals Min. Sleeve Size Or Larger

STUB DETAIL



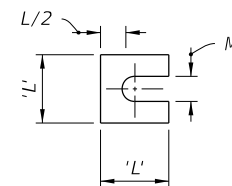
SLIP BASE AND FOOTING DETAIL (Non-Frangible Column)

Direction of Traffic



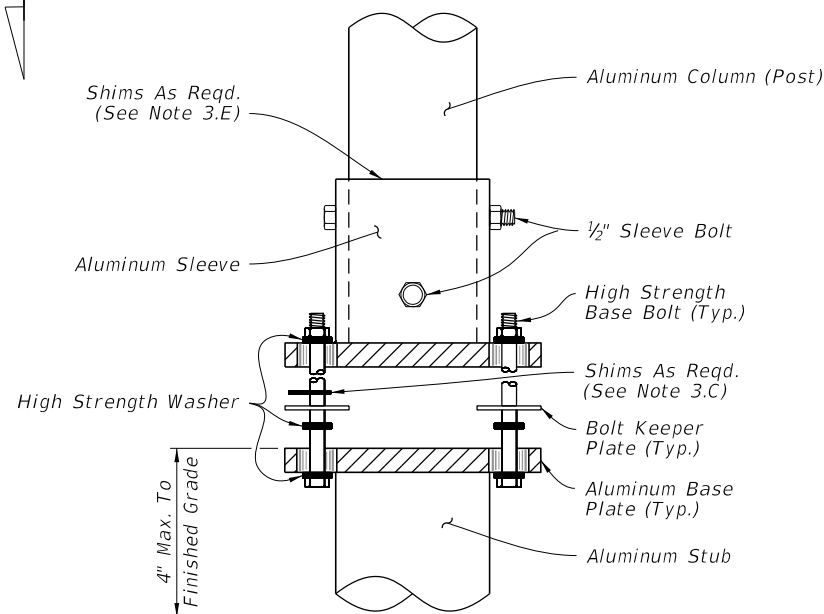
28 Ga. Thick Aluminum Strip
2 Reqd. Per Base

BOLT KEEPER PLATE DETAIL

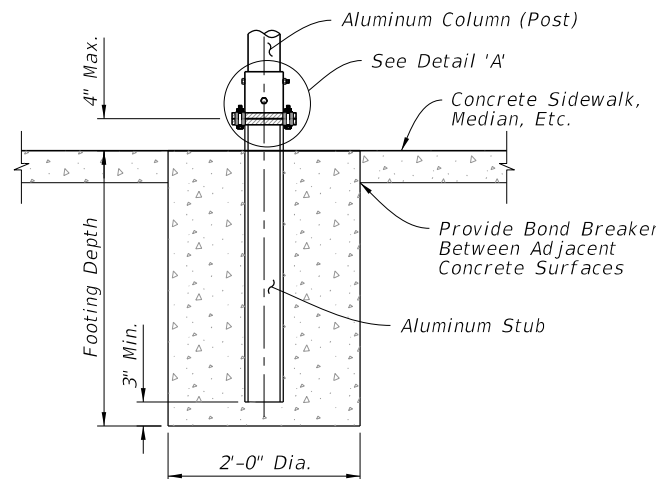


Provide 2- 0.0149" Thick (28 gauge)
and 2- 0.0329" Thick (21 gauge)
Brass Shims Per Post

SHIM DETAIL



DETAIL 'A'



SLIP BASE AND FOOTING DETAIL IN CONCRETE (Non-Frangible Column In Crossovers, Medians & Sidewalks)

NOTES:

1. Foundation Notes for Frangible Slip Base:

- A. Place Stub into concrete to diameter and depth shown in POST AND FOUNDATION TABLE using Class I Concrete.
- B. Install precast concrete/stub section by placing into a preformed hole and backfilling with flowable fill or bagged concrete.

2. Slip Base Fabrication Notes:

- A. The difference between the O.D. of the post and I.D. of the Sleeve must be 1/16" or less.
- B. Base Plate to Sleeve and Base Plate to Stub may be welded or cast.
- C. For cast base plates bolted to foundation stubs, use a foundation stub the same size as the sign column (Post).

3. Slip-Base Assembly Instructions:

- A. Assemble Slip Base connections in the following manner:
 - 1. Insert Post into Sleeve and connect using 2 ~ 1/2" diameter Sleeve Bolts.
 - 2. Assemble top base plate to bottom Base Plate using Base Bolts (High strength) with 3 washers per bolt. (See Detail 'A'):
 - a. Place one washer on each Base Bolt between the bottom Base Plate and the Base Bolt head.
 - b. Place the next washer between the Bottom Base Plate and the Bolt Keeper Plate.
 - c. Add the top base plate section.
 - d. Place the third washer between the Top Base Plate and the Nut.
- B. Orient the Bolt Keeper Plates in the Direction of Traffic.
- C. Use brass shims to plumb the post.
- D. Tighten Base Bolts as follows:
 - a. Tighten Base Bolts to the maximum possible with a 12" to 15" wrench (this will bed the washers and shims and clear the bolt threads).
 - b. Loosen each Base Bolt one turn.
 - c. Under the supervision of the Engineer, use a calibrated wrench to tighten bolts to the torque prescribed in the SLIP BASE DETAILS Table. Over tightened Base Bolts are not permitted.
 - d. Distort bolt threads at the junction with nuts to prevent loosening. Repair damaged galvanizing.
- E. Place galvanized steel shims between the Sleeve and Post to obtain a tight fit between the Post and Sleeve.

Column (Post) Size		SLIP BASE DETAILS												
Dia. (NPS) (in)	Wall Thk. (in)	Sleeve I.D. (Max.)	Sleeve Height 'H'	Weld 'W'	Base Plate		Radius 'R'	Base Bolt		Base Plate Torque		Hole Size 'D'	SHIM	
					'L'	'T'		Size	Length	ft-lbs	in.-lbs		L	M
4	1/4	4 1/16	6	5/8	8	3/4	1 1/32	5/8	3	29	345	1 1/16	1 3/8	1 1/16
4 1/2	1/4	4 9/16	6	5/8	8	7/8	1 1/32	5/8	3 1/4	29	345	1 1/16	1 3/8	1 1/16
5	1/4	5 1/16	7	5/8	8	7/8	1 1/32	5/8	3 1/4	29	345	1 1/16	1 3/8	1 1/16
6	1/4	6 1/16	8	1 1/16	9	1	1 3/32	3/4	3 1/2	46	554	1 3/16	1 3/4	1 3/16
8	5/16	8 1/16	10	3/4	11	1	1 5/32	7/8	3 3/4	53	640	1 5/16	2 3/8	1 1/16

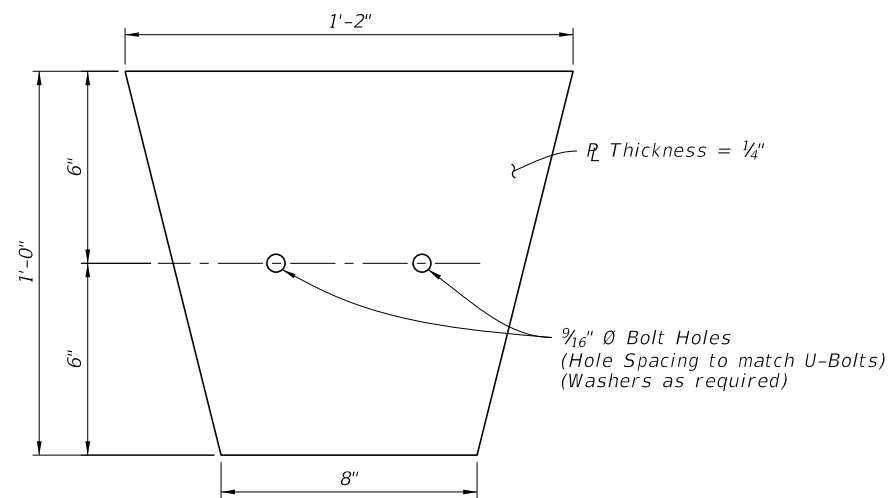
SLIP BASE AND FOUNDATION DETAILS

6/17/2015 1:22:05 PM

LAST REVISION 07/01/15	DESCRIPTION:
---------------------------	--------------

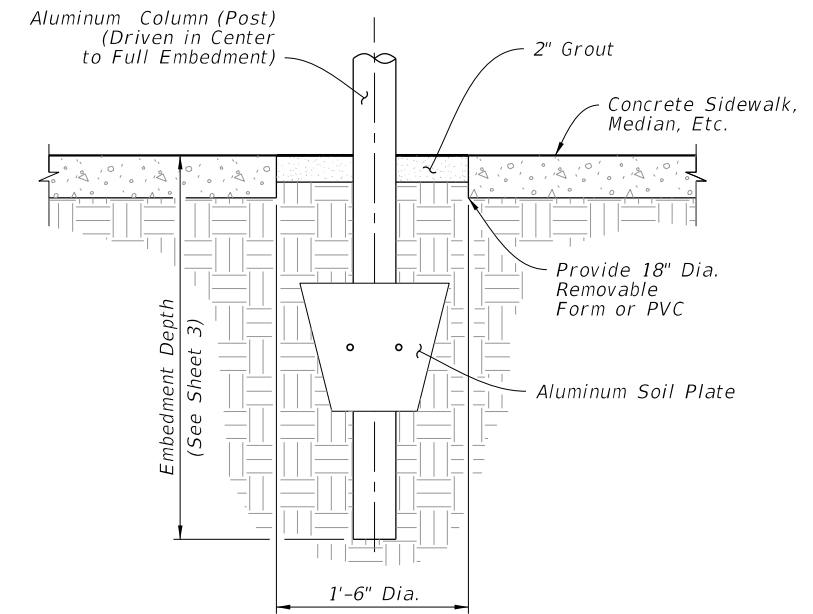
NOTES:

1. Align Soil Plate bottom at $\frac{2}{3}$ of embedment depth.
2. Slot up to 1" long is allowed to accommodate various Column (Post) sizes.
3. Rectangular soil plate of size 1'-2" x 1'-0" may be used as an alternative.

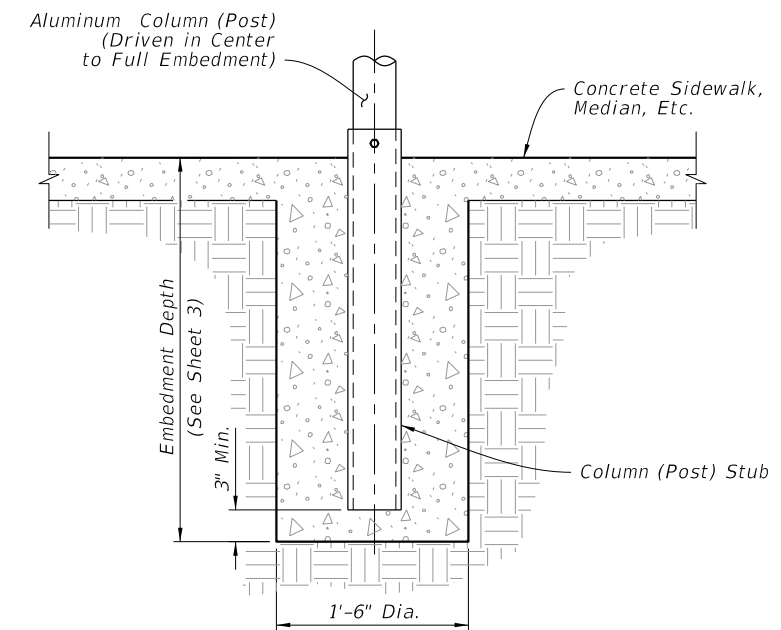


ALUMINUM SOIL PLATE DETAIL

Direction of Traffic



DRIVEN POST DETAIL
(Frangible Post In Crossovers, Medians & Sidewalks)



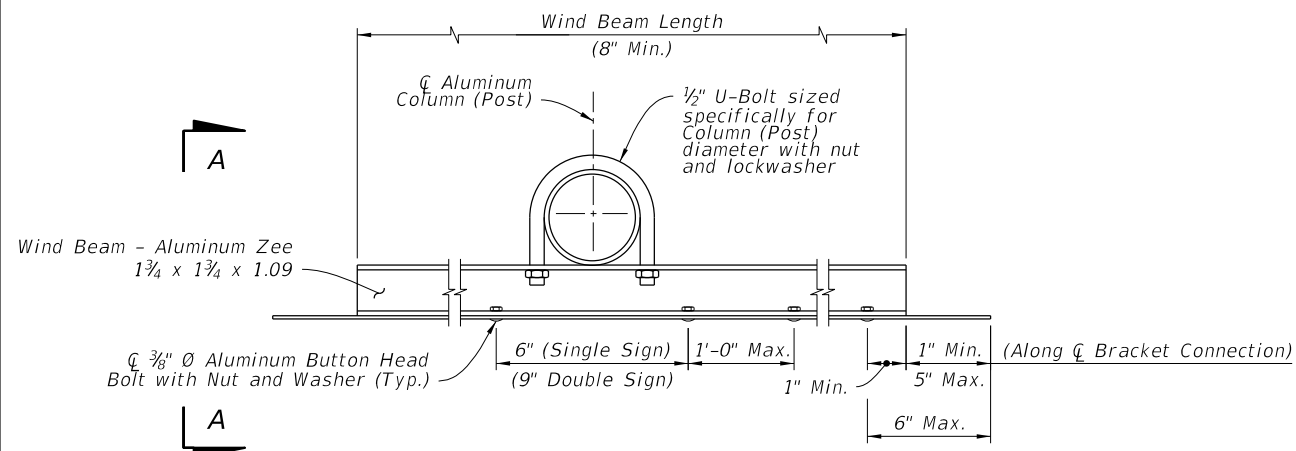
CONCRETE/STUB DETAIL
(Frangible Post In Crossovers, Medians & Sidewalks)

Note: Concrete foundation may be Class Non Structural if poured monolithically with sidewalk or separator.

DRIVEN POST AND SOIL PLATE DETAIL

6/17/2015 1:22:06 PM

LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	INDEX NO. 11860	SHEET NO. 5 of 9
---------------------------	----------	--------------	--	-----------------------------------	---------------------------	----------------------------



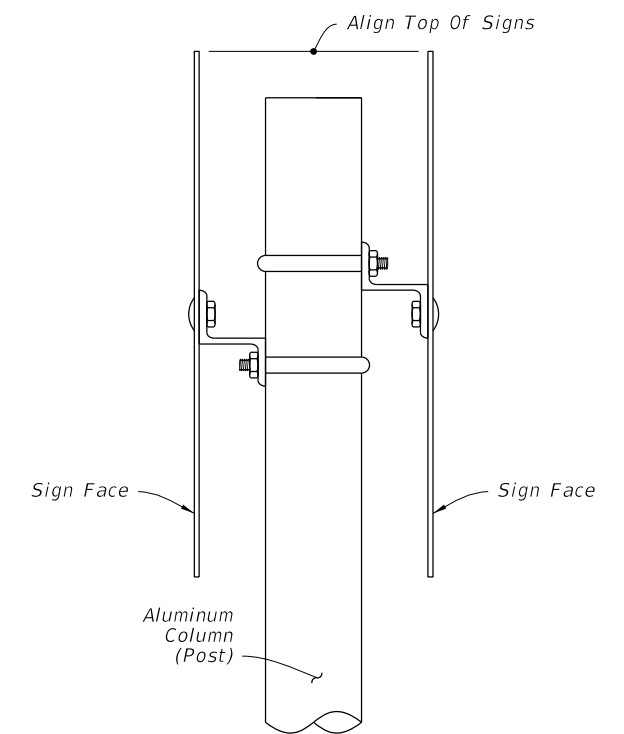
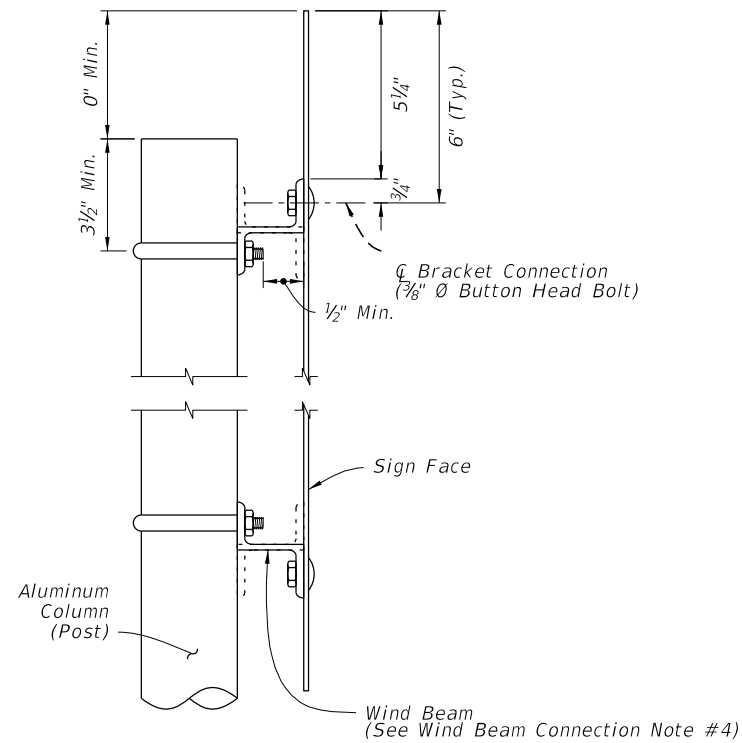
WIND BEAM CONNECTION NOTES:

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. Use Nylon washers (provided by the sheeting supplier) under the button bolt heads to protect sign sheeting.
3. Slots up to 1" long are allowed in wind beams to accommodate U-Bolts for varying Column (Post) diameters.
4. Wind beams may be oriented in either direction.

BRACKET DETAIL

WIND BEAM CONNECTIONS DETAILS

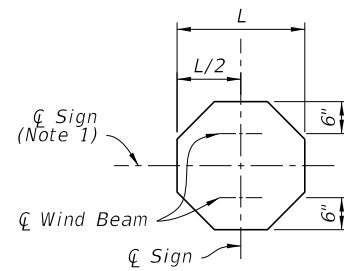
SECTION A-A



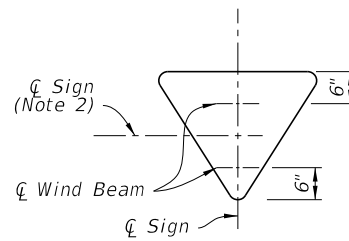
BACK-TO-BACK SIGN NOTE:

Use the area and the centroid location of the largest sign to determine aluminum column (post) size.

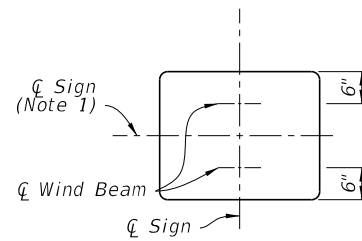
BACK-TO-BACK SIGN DETAIL



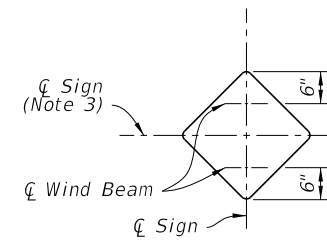
STOP



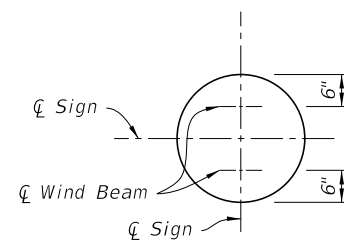
YIELD



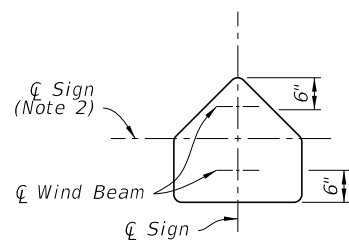
RECTANGLE



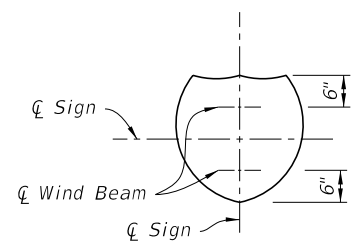
DIAMOND



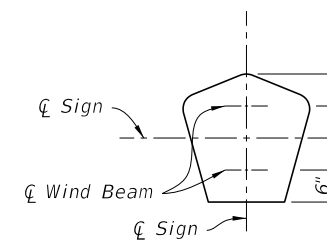
RAILROAD



SCHOOL



SHIELD



COUNTY

WIND BEAM PLACEMENT DETAILS

WIND BEAM PLACEMENT NOTES:















1. Install an additional third wind beam along the centerline for signs with heights greater than 30" and less than 72". For rectangular signs greater than 72" maintain a maximum wind beam spacing of 2'-6", with the additional wind beams spaced evenly between the top and bottom wind beams. For rectangular signs up to 12" in height, use only one wind beam at centerline.
2. Install an additional third wind beam along the centerline for Yield and School signs greater than 36".
3. Install an additional third wind beam along the centerline for Diamond signs 30" or greater.























CONNECTION AND WIND BEAMS
























6/17/2015 1:22:07 PM

LAST REVISION	DESCRIPTION:
07/01/15	

6/17/2015 1:22:08 PM

	Size	Area	Total Area	Centroid
 	36x12	3.00 SF	6.31 SF	1.75 Ft.
	24x24	3.31 SF		
 	36x12	3.00 SF	8.18 SF	1.92 Ft.
	30x30	5.18 SF		
 	36x12	3.00 SF	10.46 SF	2.10 Ft.
	36x36	7.46 SF		
 	36x12	3.00 SF	16.25 SF	2.48 Ft.
	48x48	13.25 SF		
 	24x24	3.31 SF	6.31 SF	1.71 Ft.
	24x18	3.00 SF		
 	30x30	5.18 SF	10.18 SF	2.19 Ft.
	30x24	5.00 SF		
 	36x36	7.46 SF	12.46 SF	2.55 Ft.
	30x24	5.00 SF		



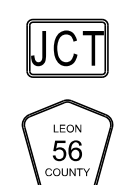
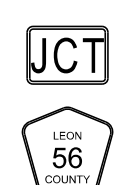
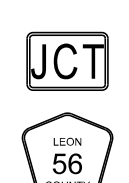
	Size	Area	Total Area	Centroid
  	36x12	3.00 SF	13.18 SF	2.87 Ft.
	30x30	5.18 SF		
  	30x24	5.00 SF	15.46 SF	3.15 Ft.
	36x36	7.46 SF		
  	36x12	3.00 SF	6.19 SF	1.60 Ft.
	36x36	7.46 SF		
 	21x15	2.19 SF	7.19 SF	1.52 Ft.
	24x24	4.00 SF		
 	21x15	2.19 SF	6.00 SF	1.53 Ft.
	30x24	5.00 SF		
  	24x12	2.00 SF	7.00 SF	1.45 Ft.
	24x24	4.00 SF		
  	24x12	2.00 SF	8.13 SF	1.66 Ft.
	30x24	5.00 SF		
  	30x15	3.13 SF	8.13 SF	1.66 Ft.
	30x24	5.00 SF		



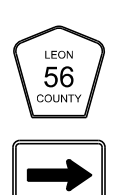


	Size	Area	Total Area	Centroid
 	24x24	4.00 SF	6.19 SF	1.73 Ft.
	21x15	2.19 SF		
 	30x24	5.00 SF	7.19 SF	1.81 Ft.
	21x15	2.19 SF		
    	24x12	2.00 SF	8.19 SF	2.26 Ft.
	24x24	4.00 SF		
    	24x12	2.00 SF	9.19 SF	2.27 Ft.
	30x24	5.00 SF		
    	30x15	3.13 SF	10.32 SF	2.49 Ft.
	30x24	5.00 SF		
   	24x12	2.00 SF	10.19 SF	2.80 Ft.
	24x12	2.00 SF		
	24x24	4.00 SF		
	21x15	2.19 SF		




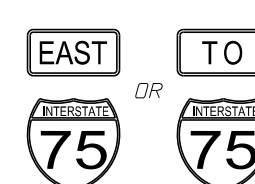
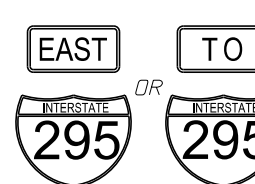
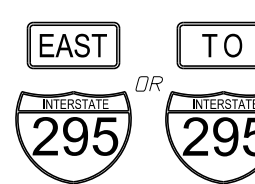
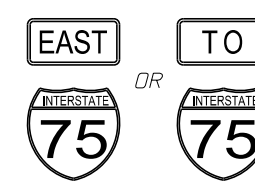
LAST REVISION
07/01/15

REVISION
DESCRIPTION:

6/17/2015 1:22:08 PM

	Size	Area	Total Area	Centroid
	24x12	2.00 SF	11.19 SF	2.76 Ft.
	24x12	2.00 SF		
	30x24	5.00 SF		
	21x15	2.19 SF		
Size	Area	Total Area	Centroid	
	30x15	3.13 SF	13.45 SF	3.16 Ft.
	30x15	3.13 SF		
	30x24	5.00 SF		
	21x15	2.19 SF		
Size	Area	Total Area	Centroid	
	21x15	2.19 SF	3.90 SF	1.57 Ft.
	18x18	1.71 SF		
	Size	Area		
	21x15	2.19 SF	5.22 SF	1.72 Ft.
	24x24	3.03 SF		
	Size	Area		
	21x15	2.19 SF	6.95 SF	1.87 Ft.
	30x30	4.76 SF		

	Size	Area	Total Area	Centroid
	18x18	1.71 SF	3.90 SF	1.26 Ft.
	21x15	2.19 SF		
	Size	Area		
	24x24	3.03 SF	5.22 SF	1.62 Ft.
	21x15	2.19 SF		
	Size	Area		
	30x30	4.76 SF	6.95 SF	1.97 Ft.
	21x15	2.19 SF		
	Size	Area		
	24x12	2.00 SF	9.39 SF	2.87 Ft.
	24x12	2.00 SF		
	24x24	3.20 SF		
	21x15	2.19 SF		
	Size	Area		
	24x12	2.00 SF	10.18 SF	2.84 Ft.
	24x12	2.00 SF		
	30x24	3.99 SF		
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
	30x15	3.13 SF	12.44 SF	3.26 Ft.
	30x15	3.13 SF		
	30x24	3.99 SF		
	21x15	2.19 SF		
Size	Area	Total Area	Centroid	
	21x15	2.19 SF	5.39 SF	1.75 Ft.
	24x24	3.20 SF		
	Size	Area		
	21x15	2.19 SF	6.18 SF	1.67 Ft.
	30x24	3.99 SF		
	Size	Area		
	24x12	2.00 SF	5.20 SF	1.67 Ft.
	24x24	3.20 SF		
	Size	Area		
	24x12	2.00 SF	5.99 SF	1.60 Ft.
	30x24	3.99 SF		
	Size	Area		
	30x15	3.13 SF	7.12 SF	1.81 Ft.
	30x24	3.99 SF		
	Size	Area		
	30x15	3.13 SF	10.33 SF	2.27 Ft.
	36x36	7.20 SF		

LAST REVISION 07/01/15

DESCRIPTION:

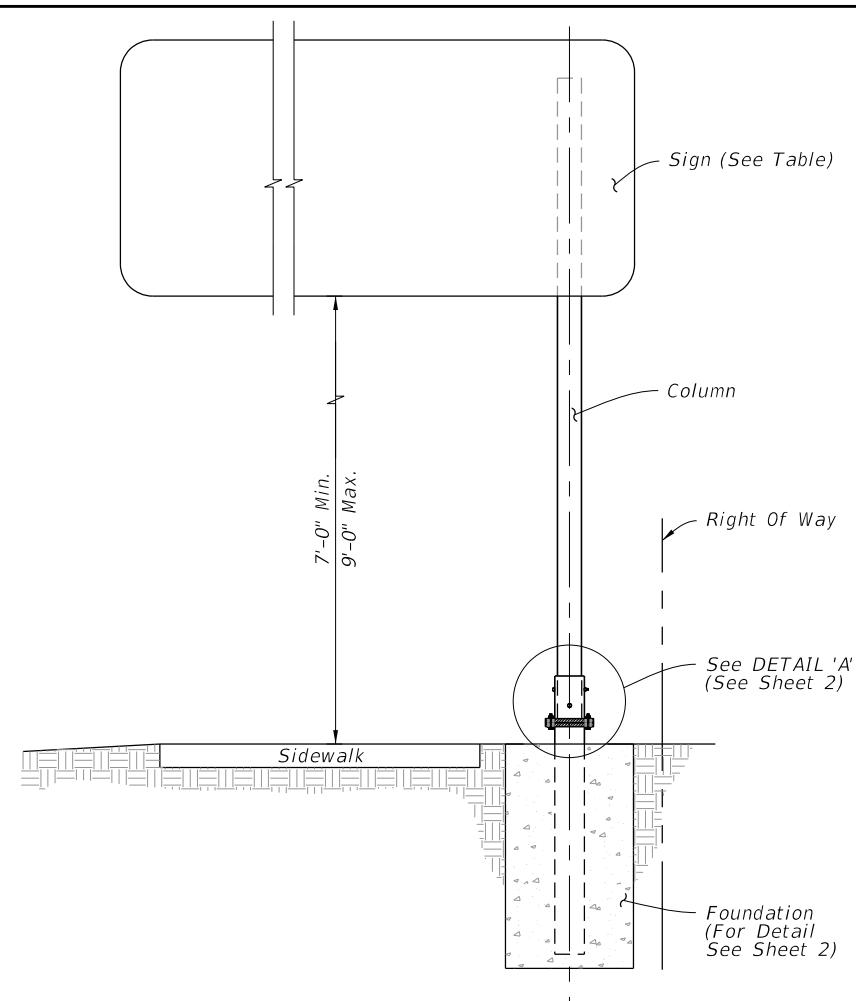
6/17/2015 1:22:09 PM

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	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		

LAST REVISION 07/01/15	DESCRIPTION:
---------------------------	--------------

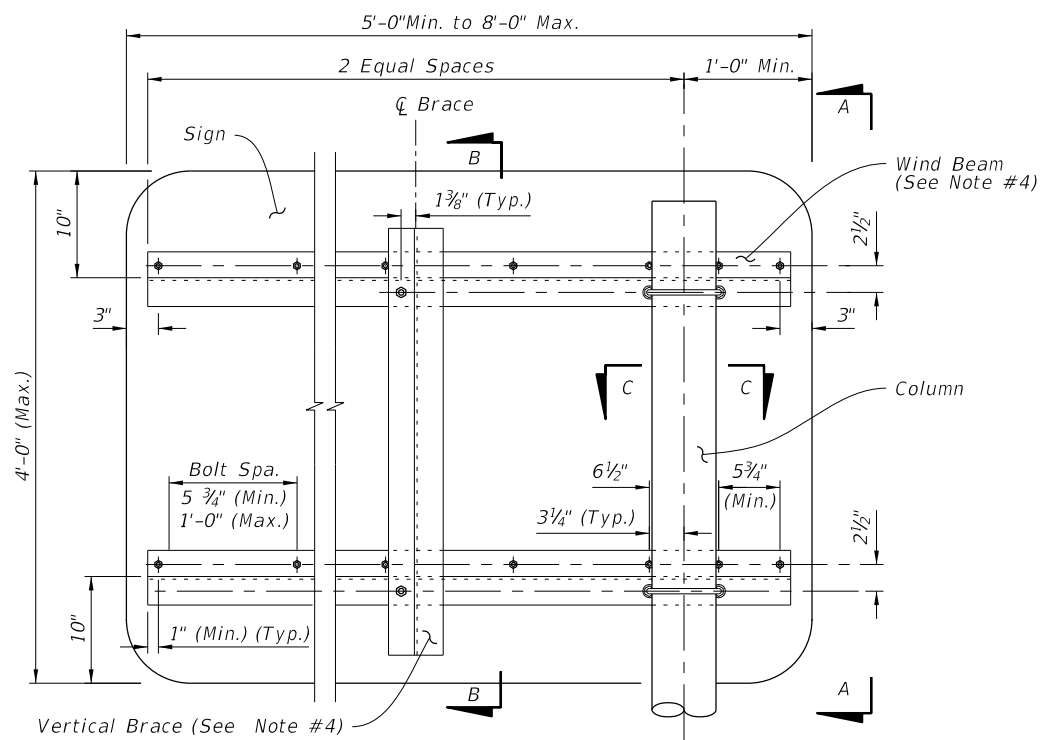


TYPICAL SECTION

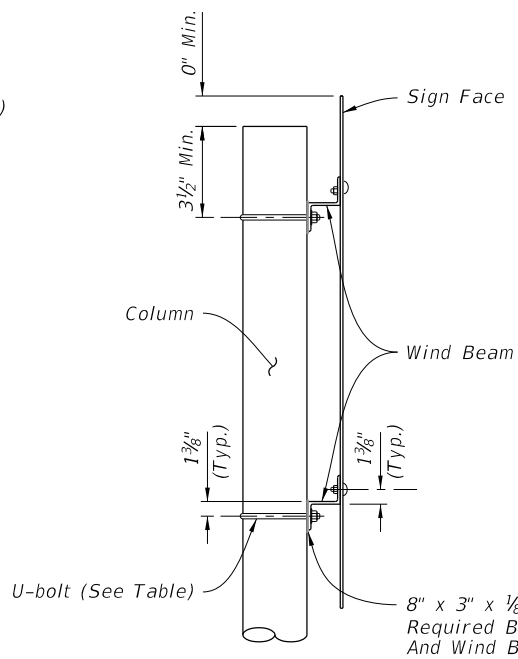
GENERAL NOTES:

1. Refer to FDOT Design Standards Index No. 11860 for additional notes, assembly of base connection and material specifications not given in this Index.
2. Sleeve Bolts: ASTM A-307, 1/2" Ø galvanized steel bolt (with lock nuts) or ASTM B-211 Alloy 2024-T4 or 6061-T6.
3. Place galvanized steel shims between the Sleeve and Post to obtain a tight fit between the Post and Sleeve.
4. Wind Beam and Vertical Brace: Aluminum Z 3" x 2 1/16" x 3.38. Install Vertical Brace on 7'-0" to 8'-0" signs only.
5. Provide 2- 0.0149" Thick (28 gauge) and 2- 0.0329" Thick (21 gauge) Brass Shims Per Post. Used brass shims to plumb the post.

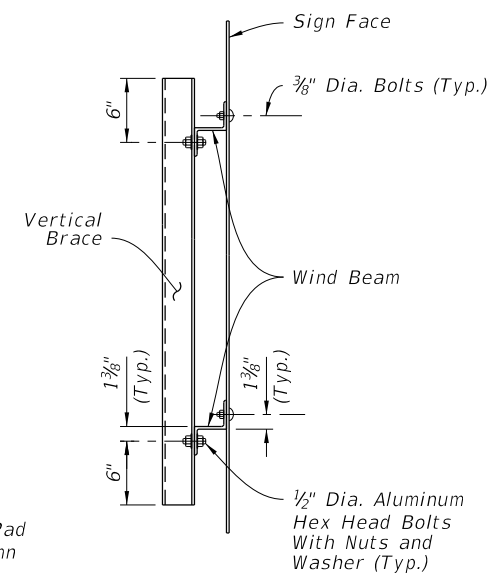
COLUMN SELECTION AND FOOTING SIZE TABLE							
Sign Size Height x Length	Column Size Diameter x Thickness	Sleeve Size Diameter x Thickness	U-bolt Diameter	Base Bolt Diameter x Length	Torque lbs./in	Base Plate Thickness	Footing Depth
4'-0" x 5'-0"	4.5" x 0.337" (Schedule 80)	5.563" x 0.5" (Schedule 120)	1/2"	5/8" x 3 1/2"	270 +/- 45	1"	6'-0"
4'-0" x 6'-0"							6'-6"
4'-0" x 7'-0"	5.563" x 0.375" (Schedule 80)	6.625" x 0.432" (Schedule 80)	5/8"	3/4" x 4"	445 +/- 75	1 1/8"	6'-6"
4'-0" x 8'-0"							7'-0"



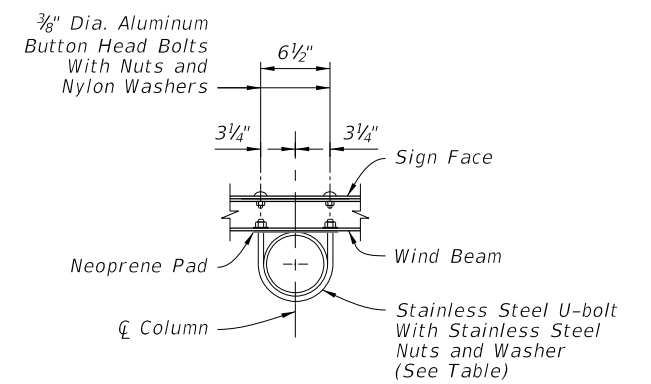
SIGN DETAIL



SECTION A-A



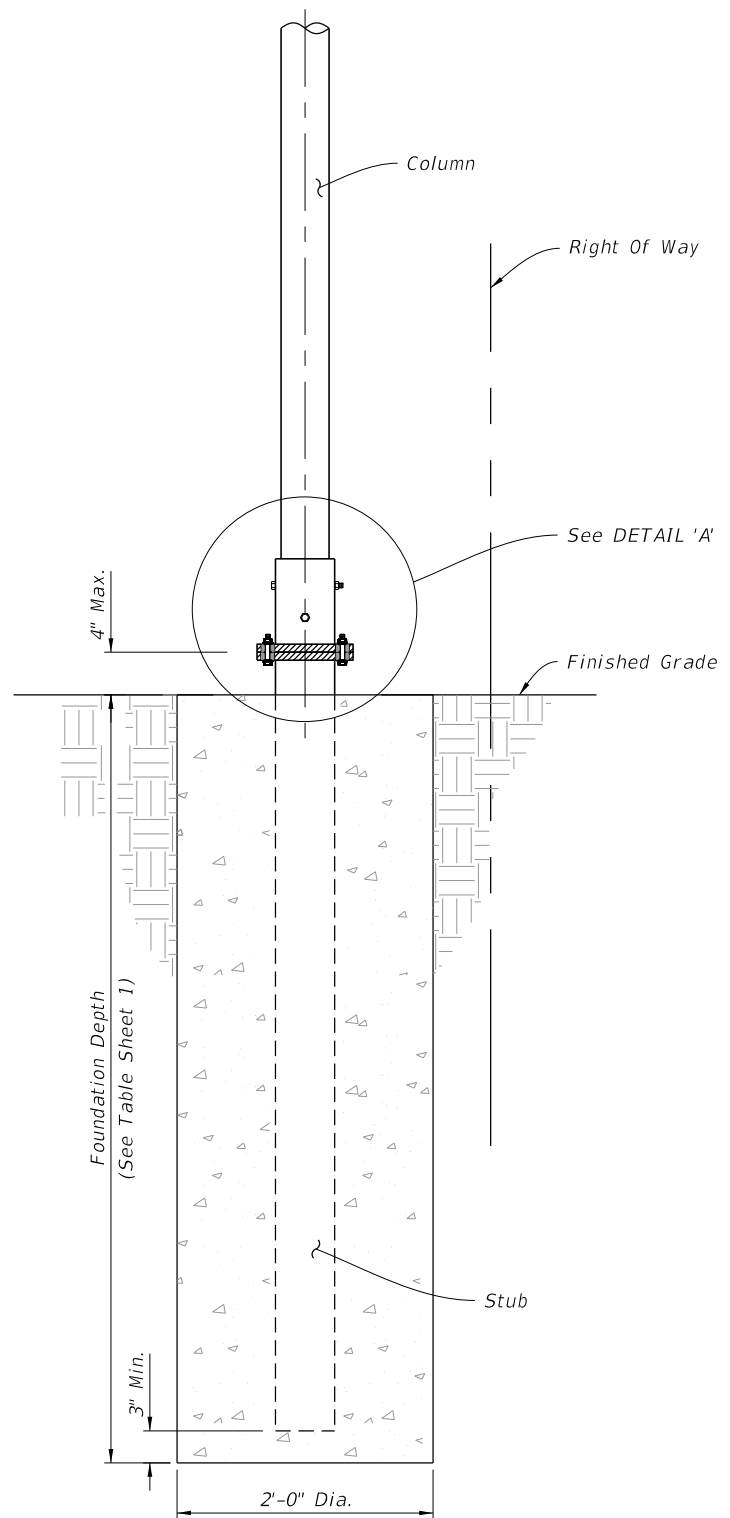
SECTION B-B



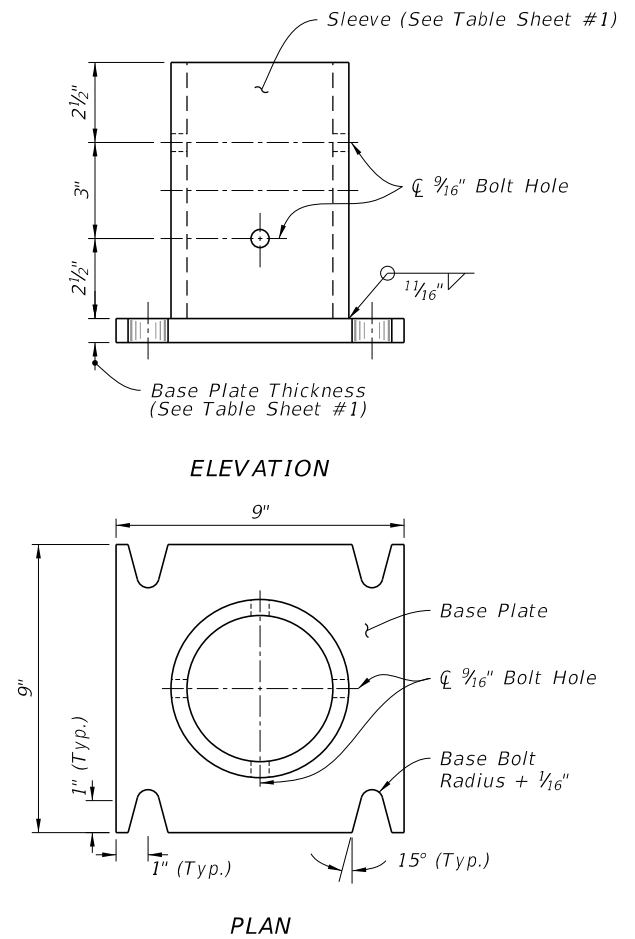
SECTION C-C

6/17/2015 1:15:54 PM

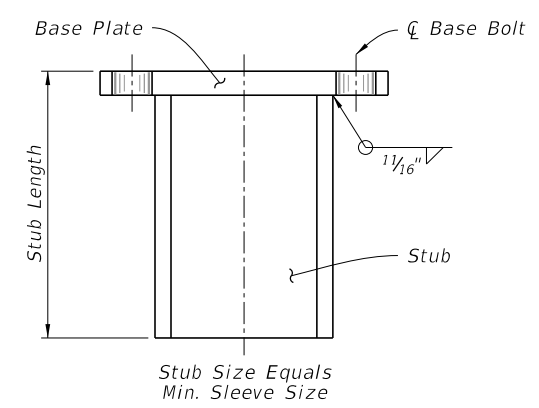
LAST REVISION	DESCRIPTION:
07/01/15	



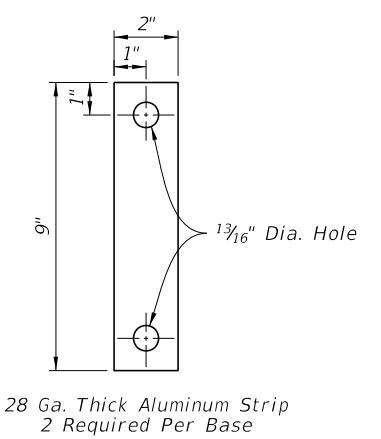
BASE AND FOUNDATION DETAIL



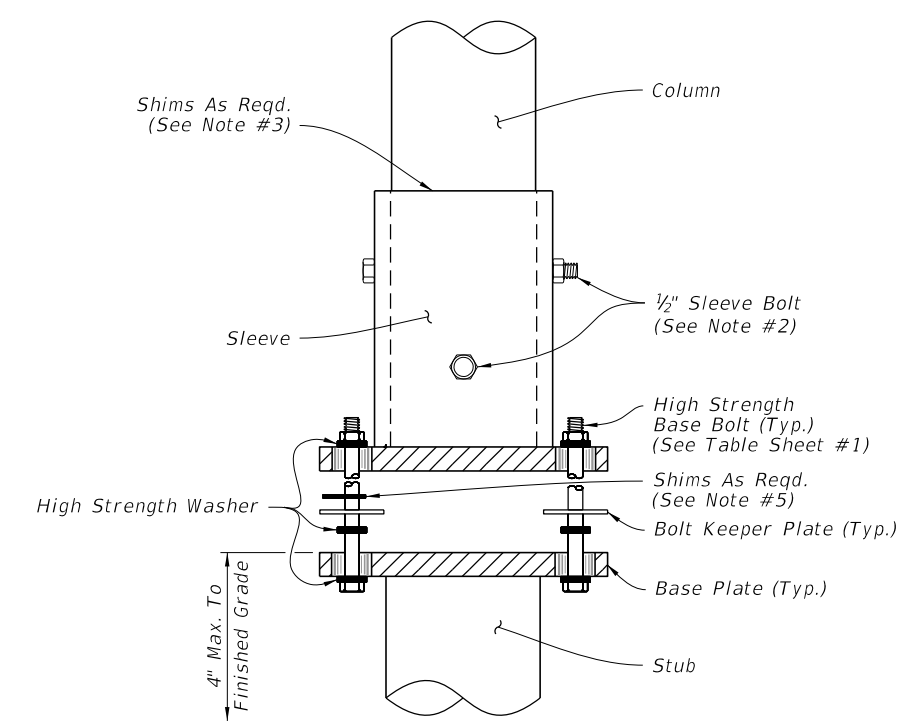
SLEEVE & BASE PLATE DETAILS



STUB DETAIL



BOLT KEEPER PLATE DETAIL



DETAIL 'A'

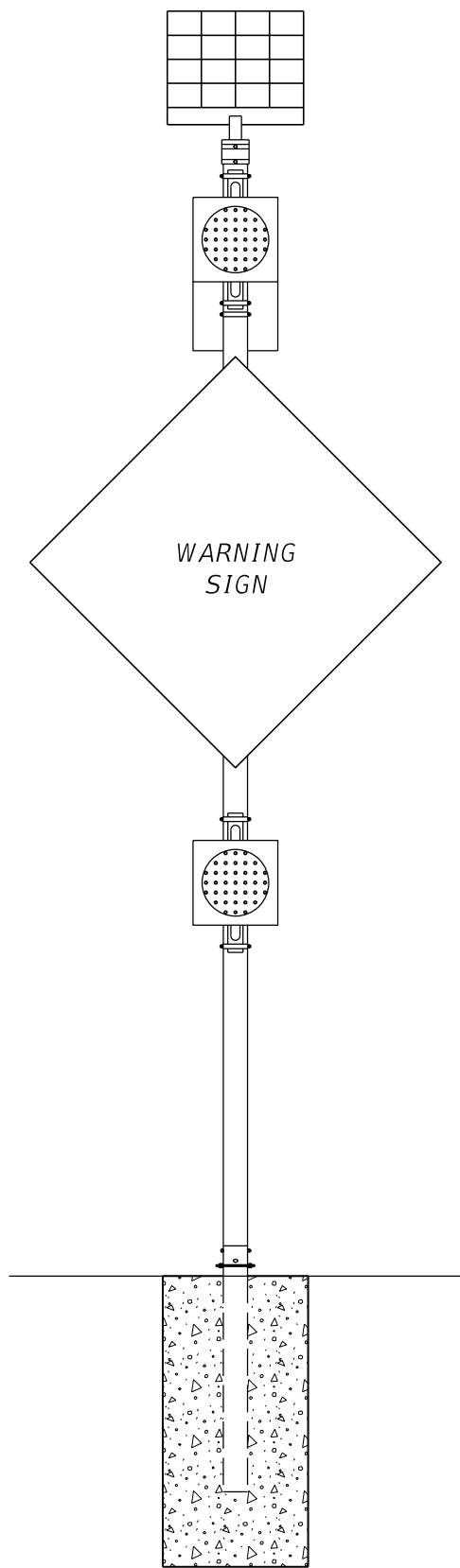
6/17/2015 1:15:55 PM

LAST REVISION	DESCRIPTION:
07/01/15	

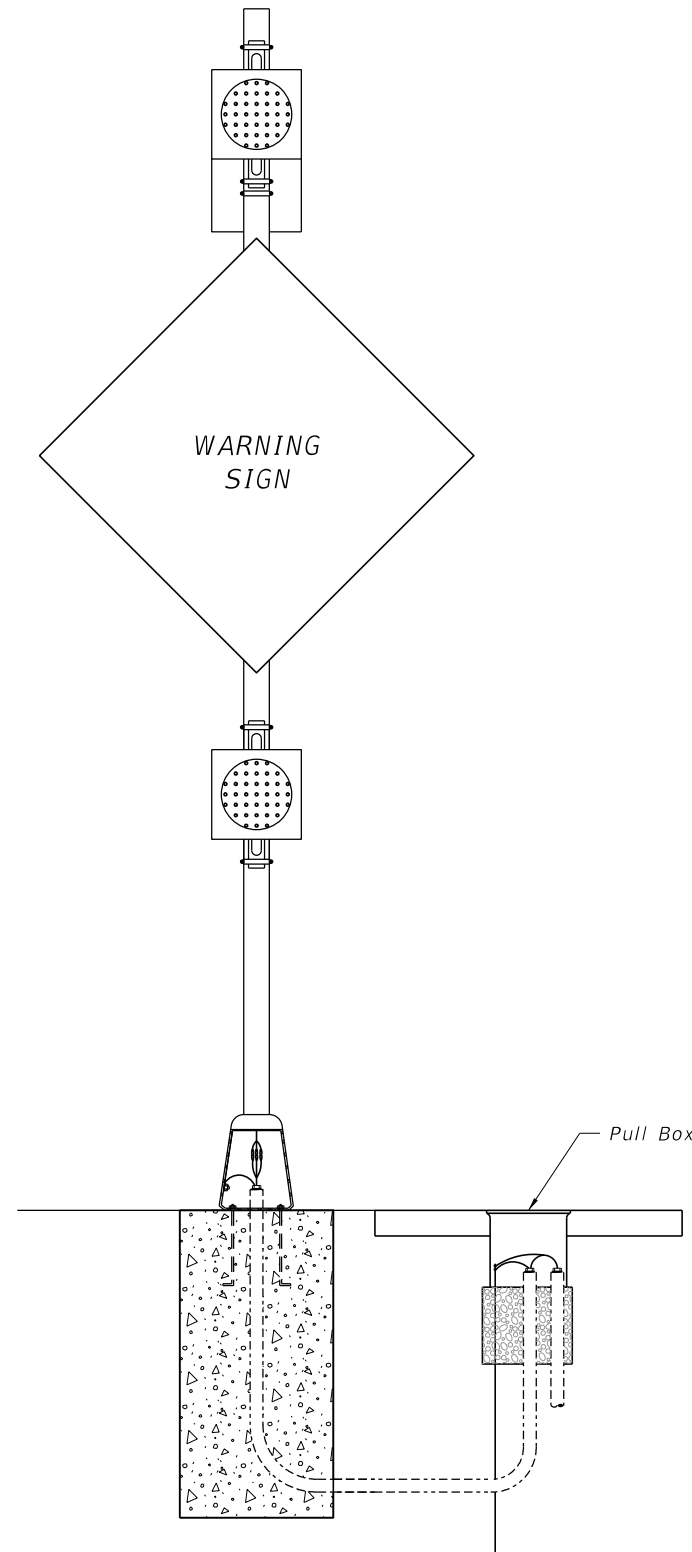


SINGLE COLUMN CANTILEVER
GROUND MOUNTED SIGN

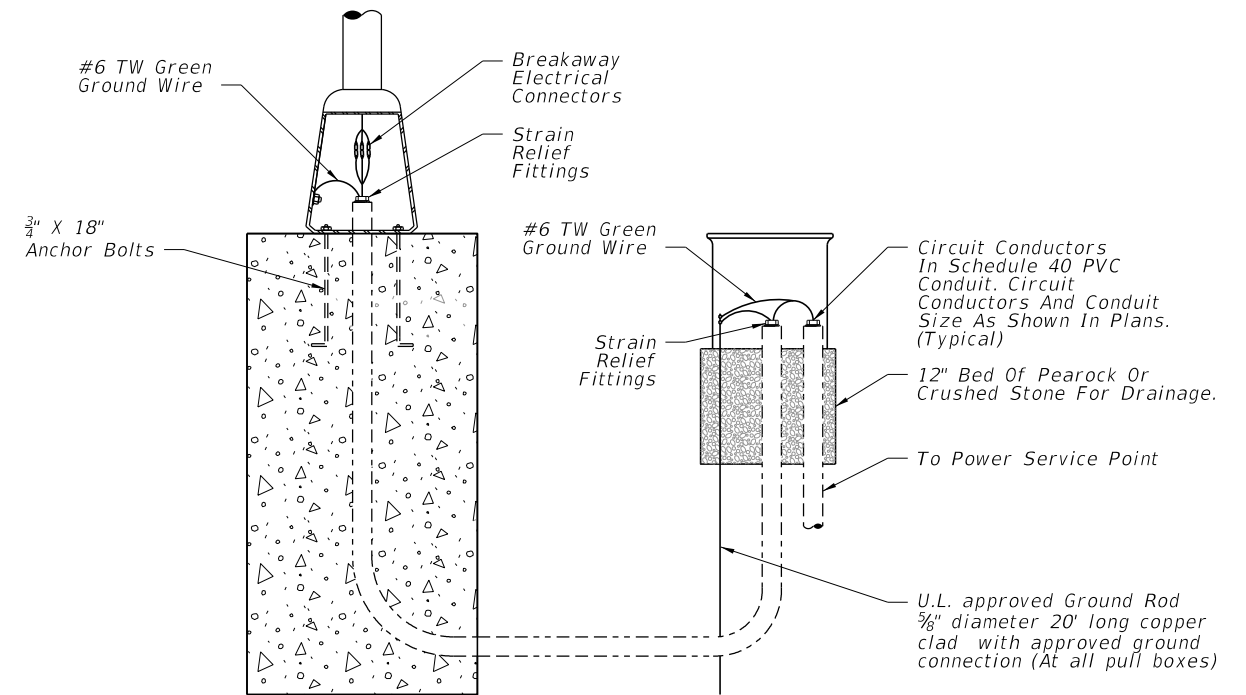
INDEX NO.	SHEET NO.
11861	2 of 2



SOLAR POWERED BEACON



CONVENTIONAL POWERED BEACON



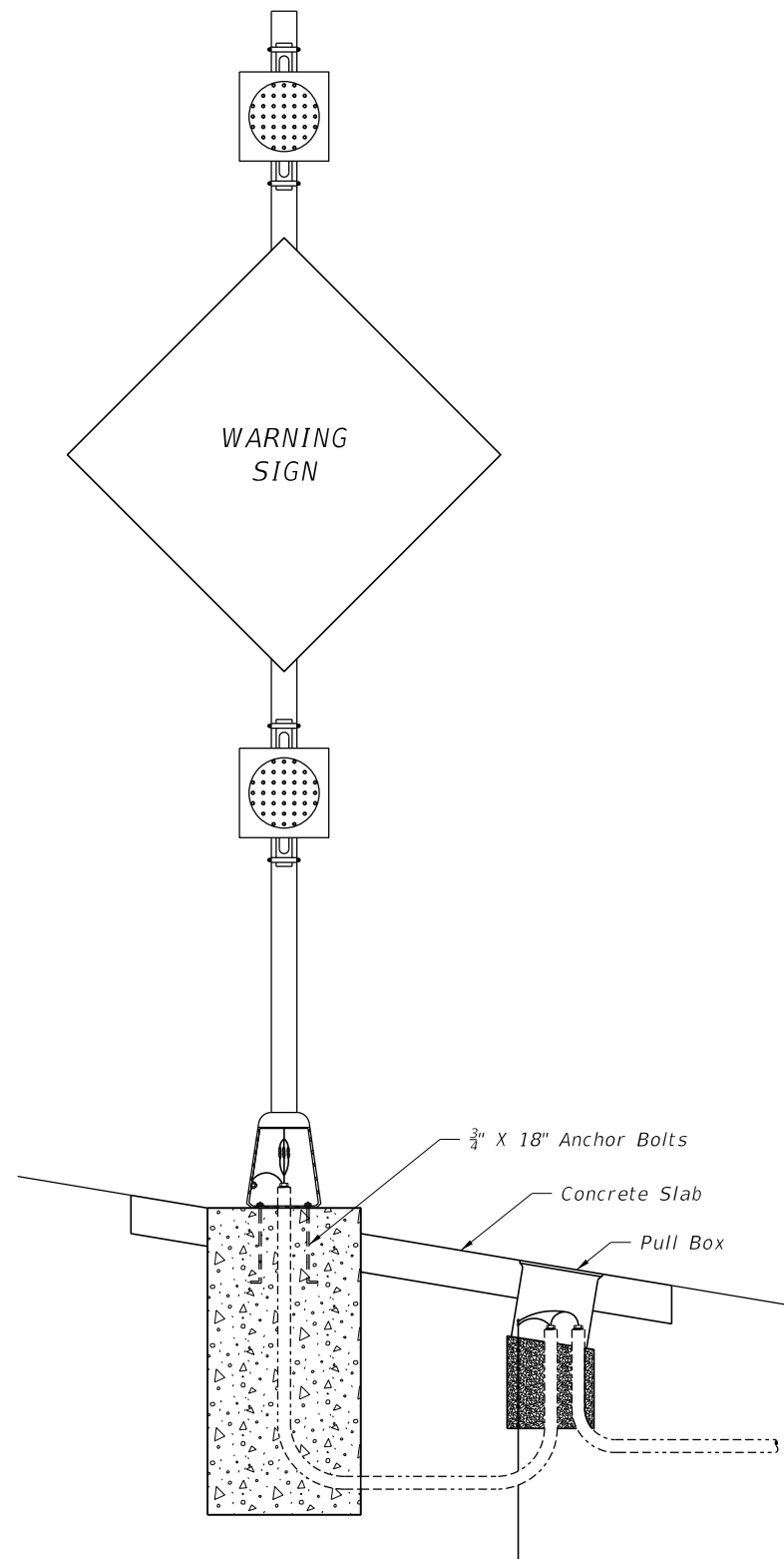
POLE WIRING DETAIL
CONVENTIONAL POWERED BEACON

GENERAL NOTES

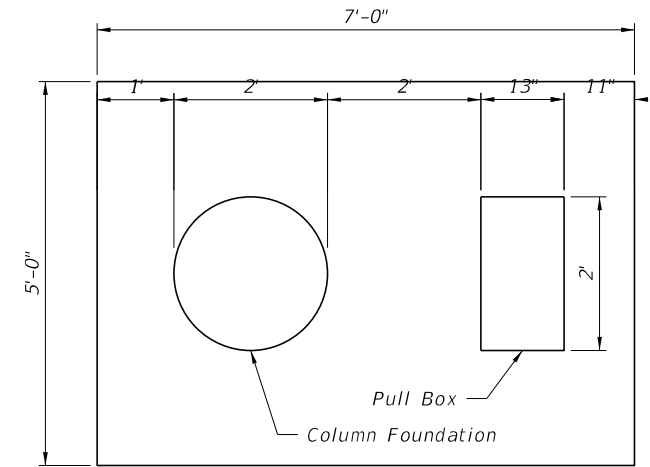
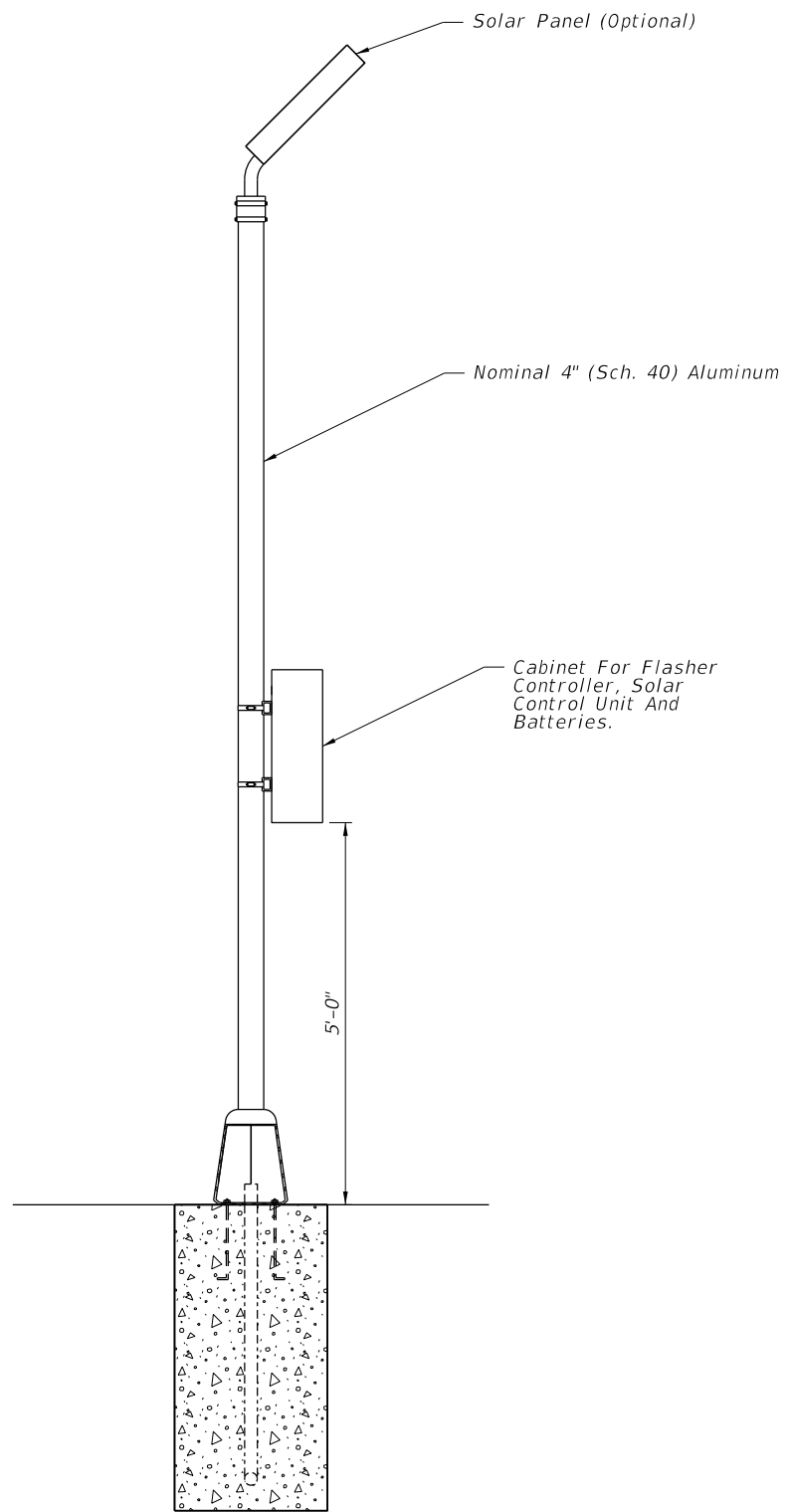
1. ALUMINUM: Aluminum materials shall meet the requirements of Aluminum Association Alloy 6061-T6 (ASTM B209, B221, B308 or B429), except as noted.
2. Sign panel, wind beam and columns shall be installed in accordance with Index 11860 and Section 700 of the Specifications.
3. Height and offset to sign column shall be in accordance with Index 17302.
4. When aluminum column (posts) are installed with a frangible pedestal pole bases, engage all threads on the pedestal pole base and pipe unless the pipe is fully seated into base.
5. Aluminum poles and transformer bases shall meet the requirements of Section 646 of the Specifications.
6. A concrete slab shall be installed around all flashing beacon assemblies installed on slopes 6:1 or greater. Minimum dimension of slab shall be 4'-0" by 5'-0".
7. A concrete slab shall be installed around all pull boxes. Minimum dimension of slab shall be 4'-0" by 4'-0". In urban areas where space is limited slab dimensions may be adjusted as shown in the plans.
8. For beacon assemblies connected to conventional power, provide single pole non-fused watertight breakaway electrical connectors in the frangible pedestal pole base.
9. Connection of controller cabinet and solar panel to the column shall be in accordance with manufacturer's recommendations.
10. Holes drilled in sign column for wire entry shall use a bushing or rubber grommet to protect conductors.
11. Orient solar panel to face South for optimal exposure to sunlight.

6/30/2015 9:25:41 AM

LAST REVISION 12/15/14	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	ROADSIDE FLASHING BEACON ASSEMBLY	INDEX NO. 11862	SHEET NO. 1 of 7
---------------------------	----------	--------------	--	--	---------------------------	----------------------------



SOLAR POWERED BEACON WITH AUXILLIARY POLE FOR SOLAR PANEL, CONTROLLER AND BATTERIES




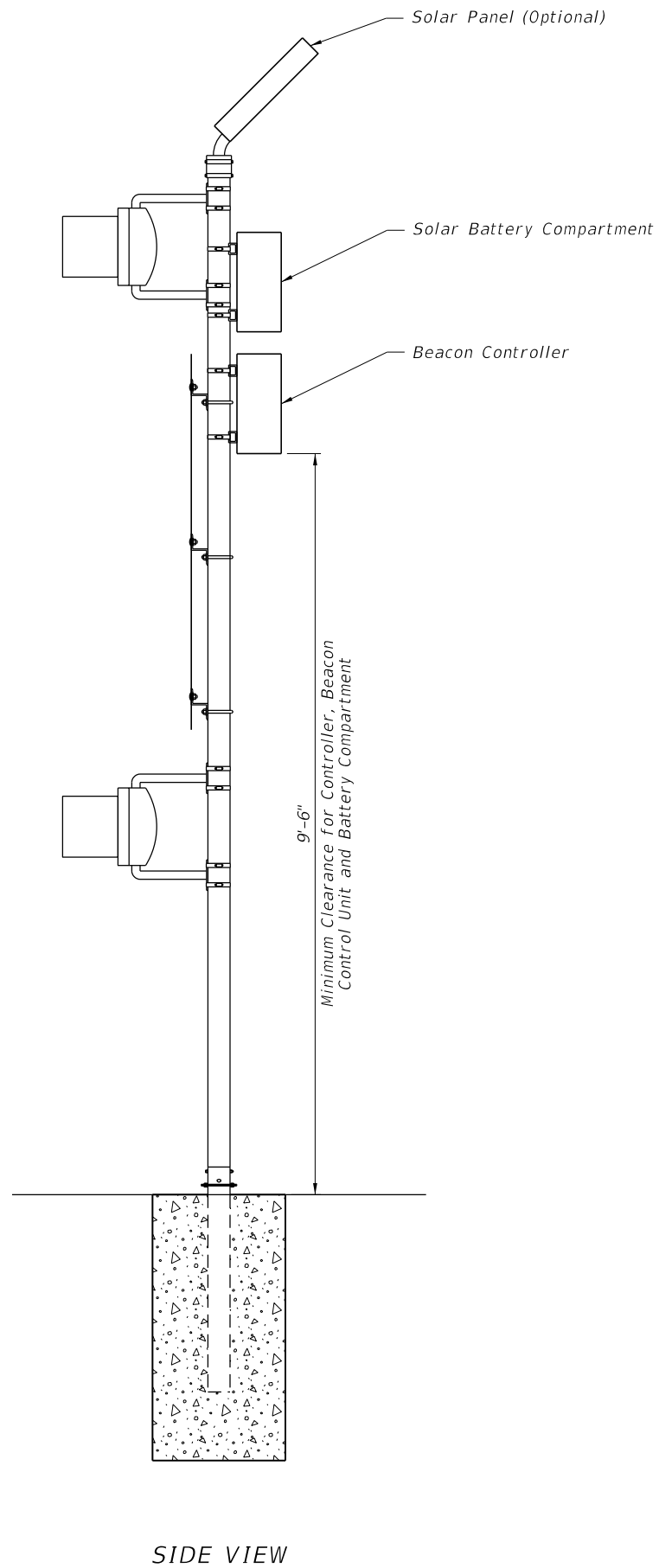
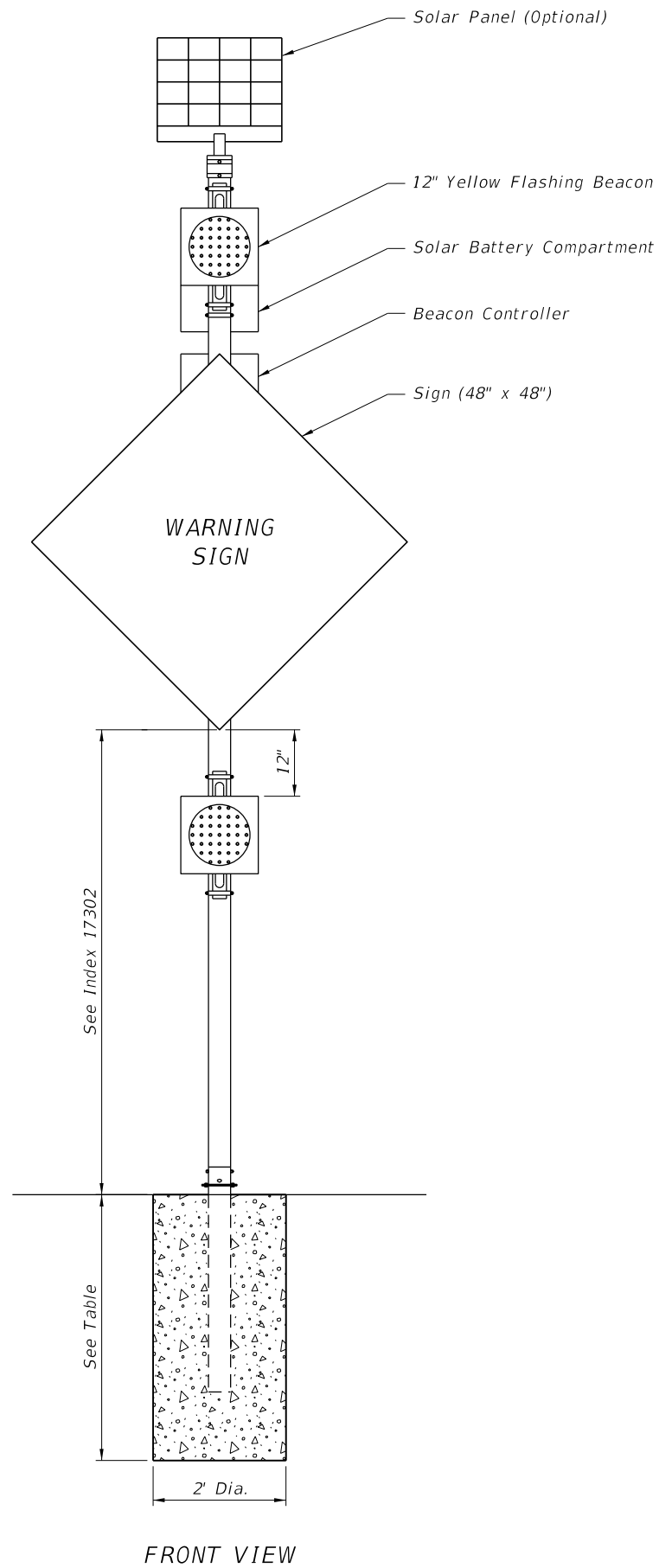
CONCRETE SLAB DETAIL

NOTES

1. All flashing beacon assemblies with solar panels, controllers and batteries weighing more than 170 lbs. shall utilize a separate pole for mounting the solar panel, controller and batteries.
2. The auxillary pole shall be installed outside the recoverable terrain distance and as near the right of way as possible. The recoverable terrain distance shall comply with Design Standard Index 700.
3. Auxilliary pole shall be the same length as the column for the beacon assembly.
3. Payment for the separate pole, foundation, conduit and wiring shall be included in the cost of the electronic warning sign with flashing beacon.

6/30/2015 9:25:41 AM

LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	ROADSIDE FLASHING BEACON ASSEMBLY	INDEX NO. 11862	SHEET NO. 2 of 7
---------------------------	----------	--------------	---	-----------------------------------	---------------------------	----------------------------



STANDARD WARNING SIGN COLUMN SIZE			
Wind Speed	Sign Height	Column Size	Footing Depth
110	7'	4"	4'
130	7'	4.5"	4'
150	7'	5"	4.5'
110	8.5'	4.5"	4'
130	8.5'	5"	4.5'
150	8.5'	6"	5'

NOTES

1. Details show a typical warning sign with two flashing beacon heads. When only one beacon is required, install upper beacon.
2. Sign column slip base shall be in accordance with Design Standard Index 11860.
3. Beacon and beacon controllers shall be listed on Approved Products List (APL).

SOLAR POWERED WARNING SIGN DETAILS

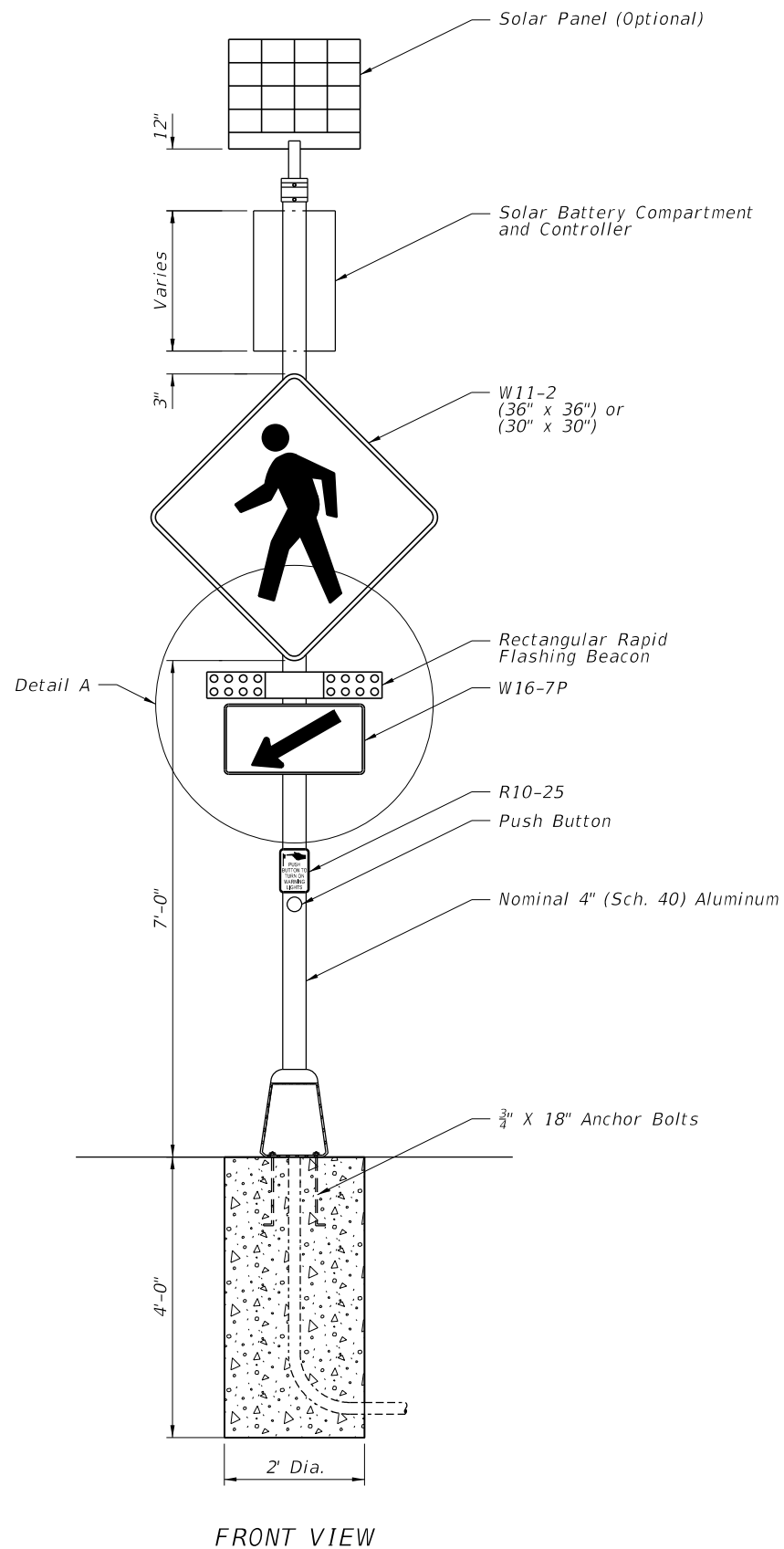
6/30/2015 9:25:42 AM

LAST REVISION 12/15/14	REVISION	DESCRIPTION:
---------------------------	----------	--------------

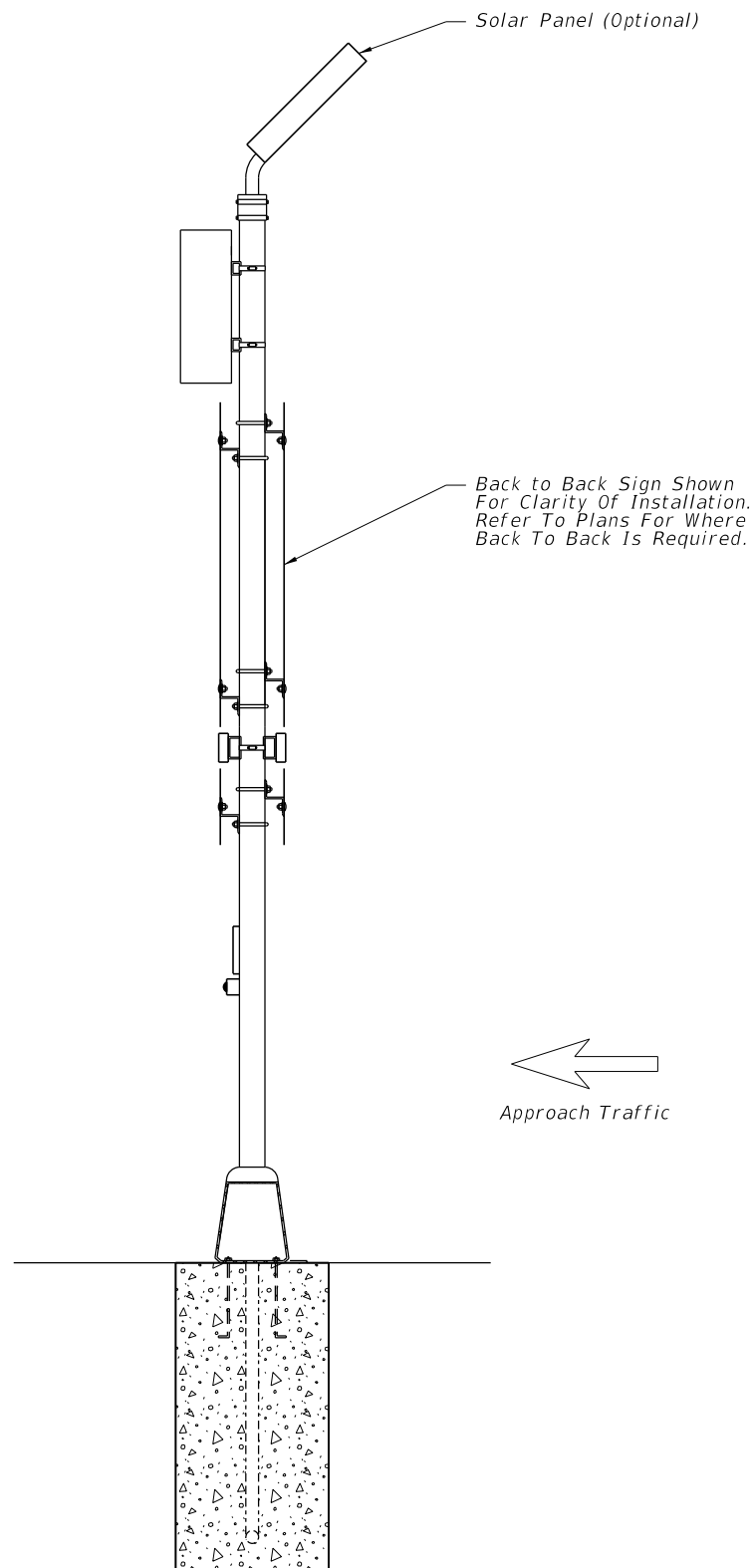


ROADSIDE FLASHING BEACON ASSEMBLY

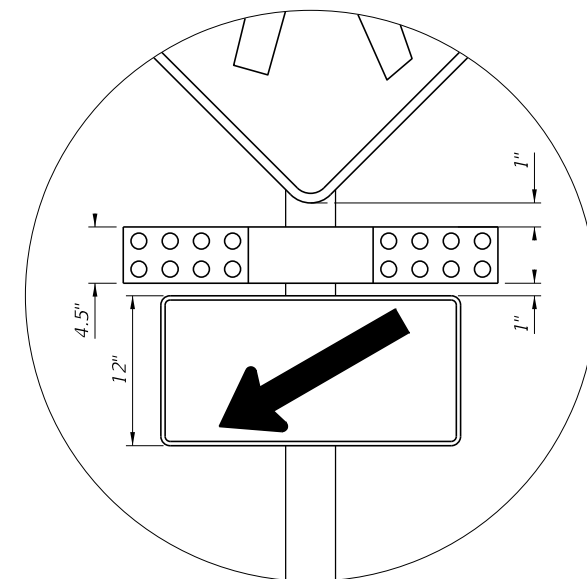
INDEX NO. 11862	SHEET NO. 3 of 7
--------------------	---------------------



FRONT VIEW

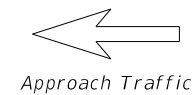


SIDE VIEW



DETAIL A

Back to Back Sign Shown For Clarity Of Installation. Refer To Plans For Where Back To Back Is Required.



NOTES

1. Rectangular Rapid Flashing Beacon (RRFB) shall always be installed in pairs, one on either side of approach traffic.
2. Controller shall be installed on the backside of post from approach traffic.
3. All RRFB equipment and hardware shall be listed on the Approved Products List (APL).
4. The W11-2 sign shall be 30" X 30" for single lane facilities and a 36" X 36" sign for multi-lane facilities.

RECTANGULAR RAPID FLASHING BEACON DETAILS

6/30/2015 2:05:30 PM

LAST REVISION	DESCRIPTION:
07/01/15	

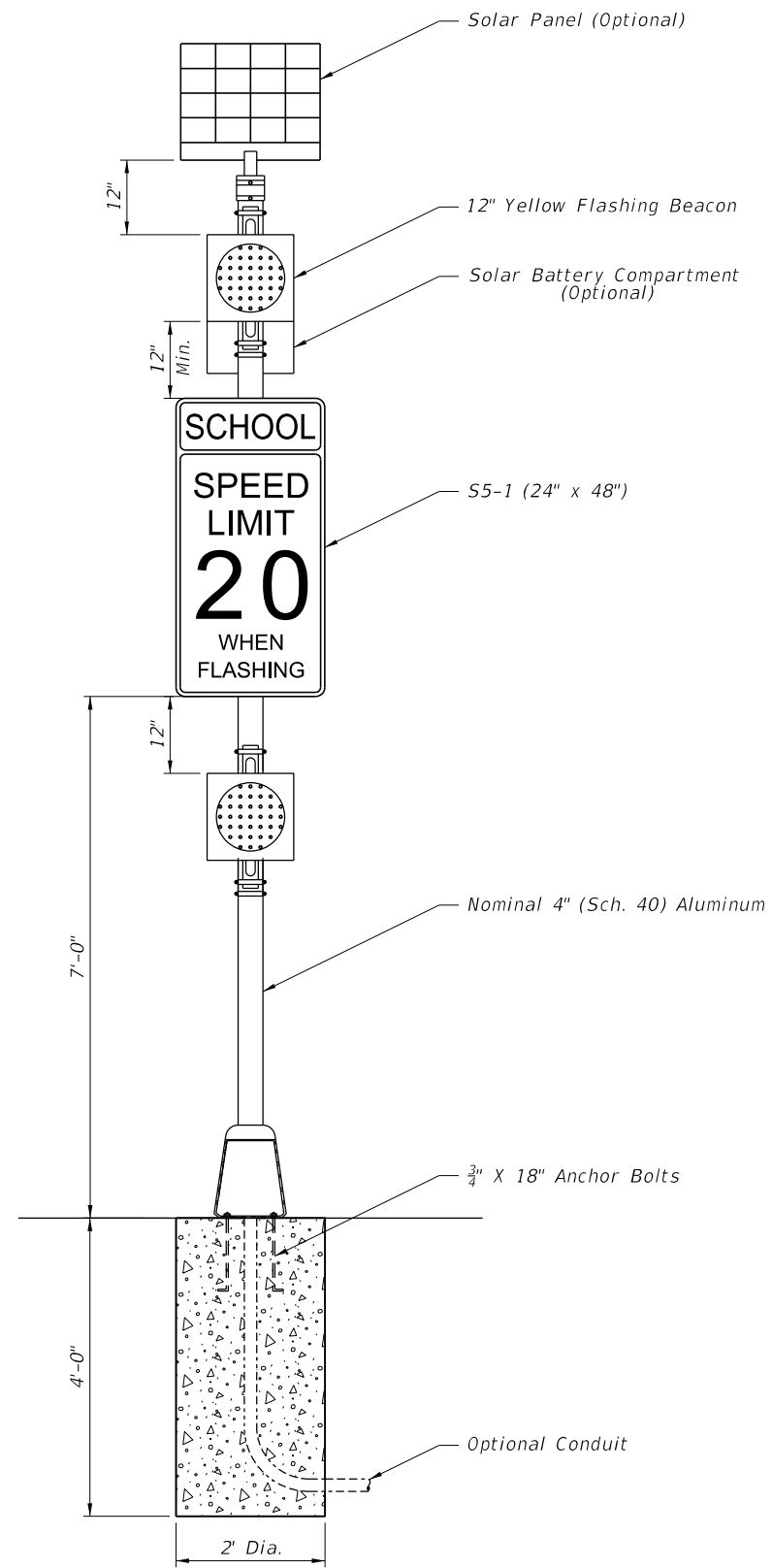


ROADSIDE FLASHING BEACON ASSEMBLY

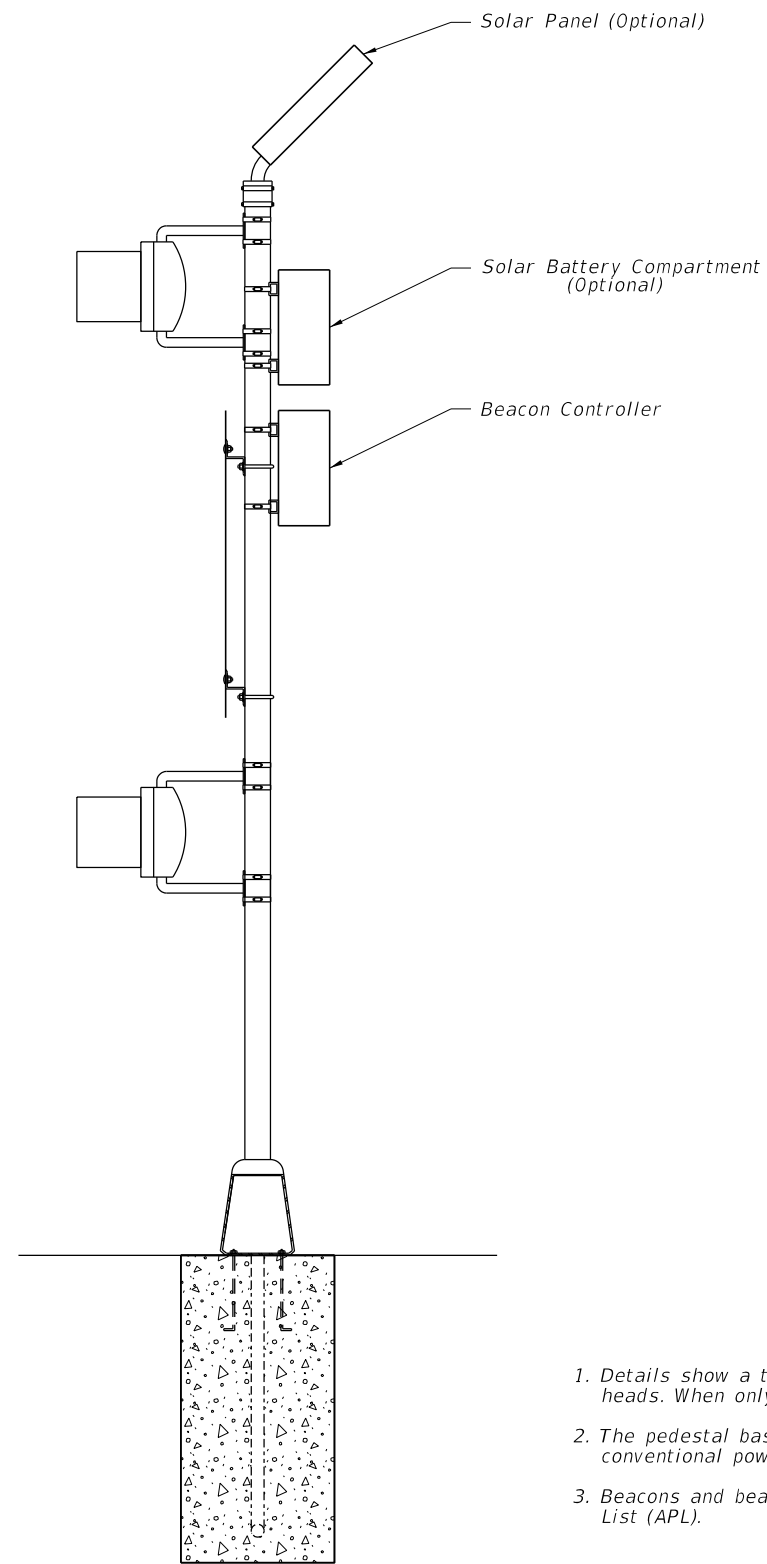
INDEX NO.
11862

SHEET NO.
4 of 7

6/30/2015 9:25:43 AM



FRONT VIEW



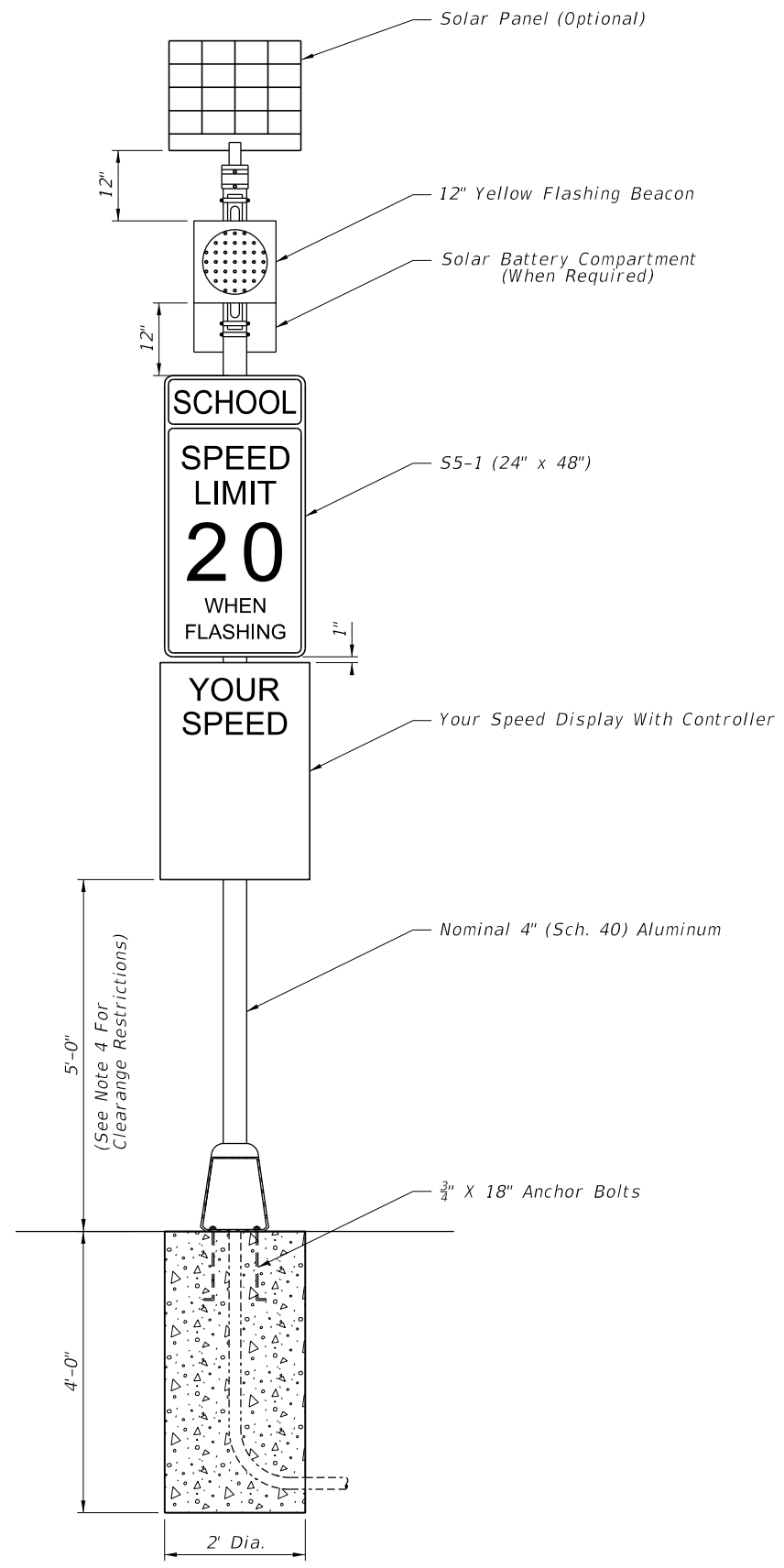
SIDE VIEW

NOTES

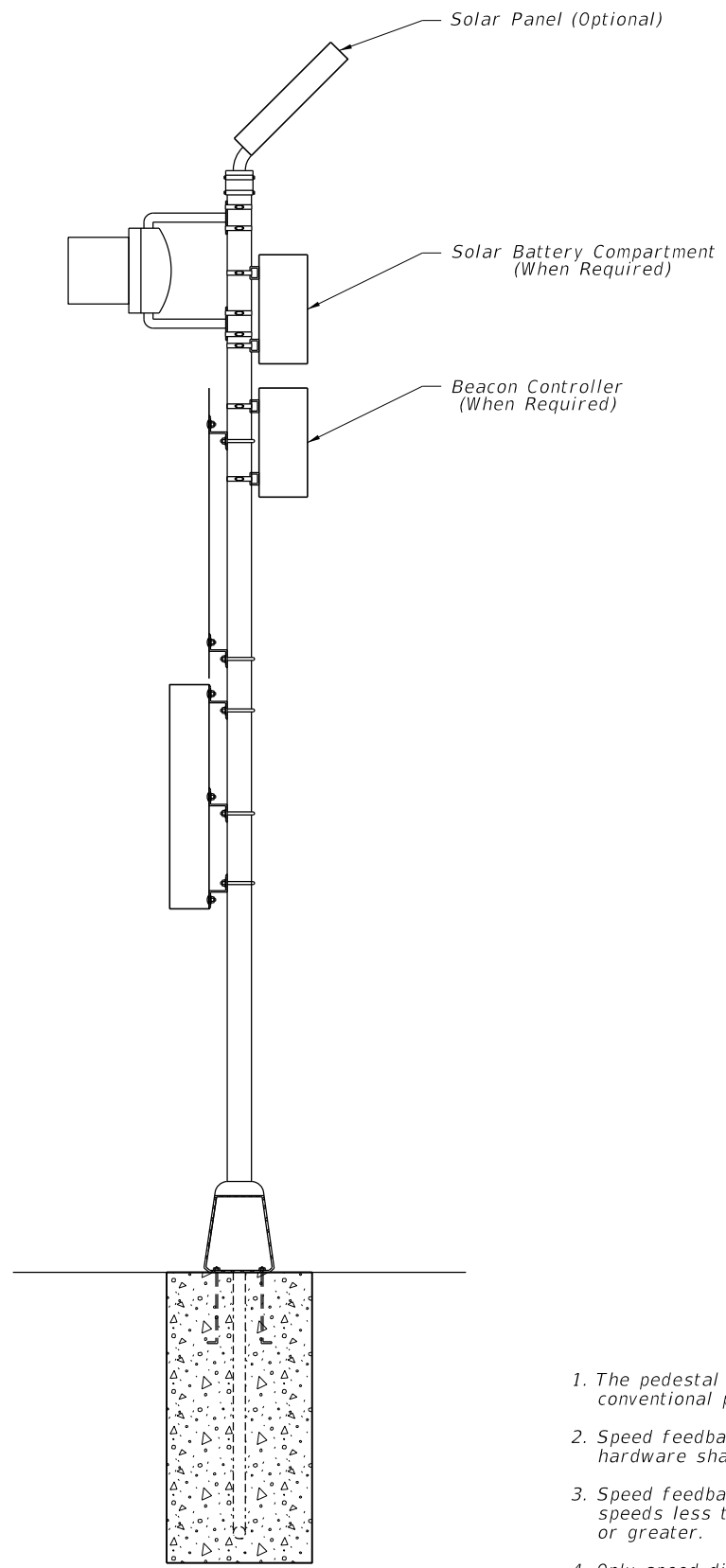
1. Details show a typical school zone sign with two flashing beacon heads. When only one beacon is required, install upper beacon.
2. The pedestal base shall be required for both solar powered and conventional powered applications.
3. Beacons and beacon controllers shall be on the Approved Products List (APL).

SCHOOL REGULATORY SIGN DETAILS

LAST REVISION 07/01/15	REVISION	DESCRIPTION:
------------------------------	----------	--------------



FRONT VIEW




SIDE VIEW

NOTES

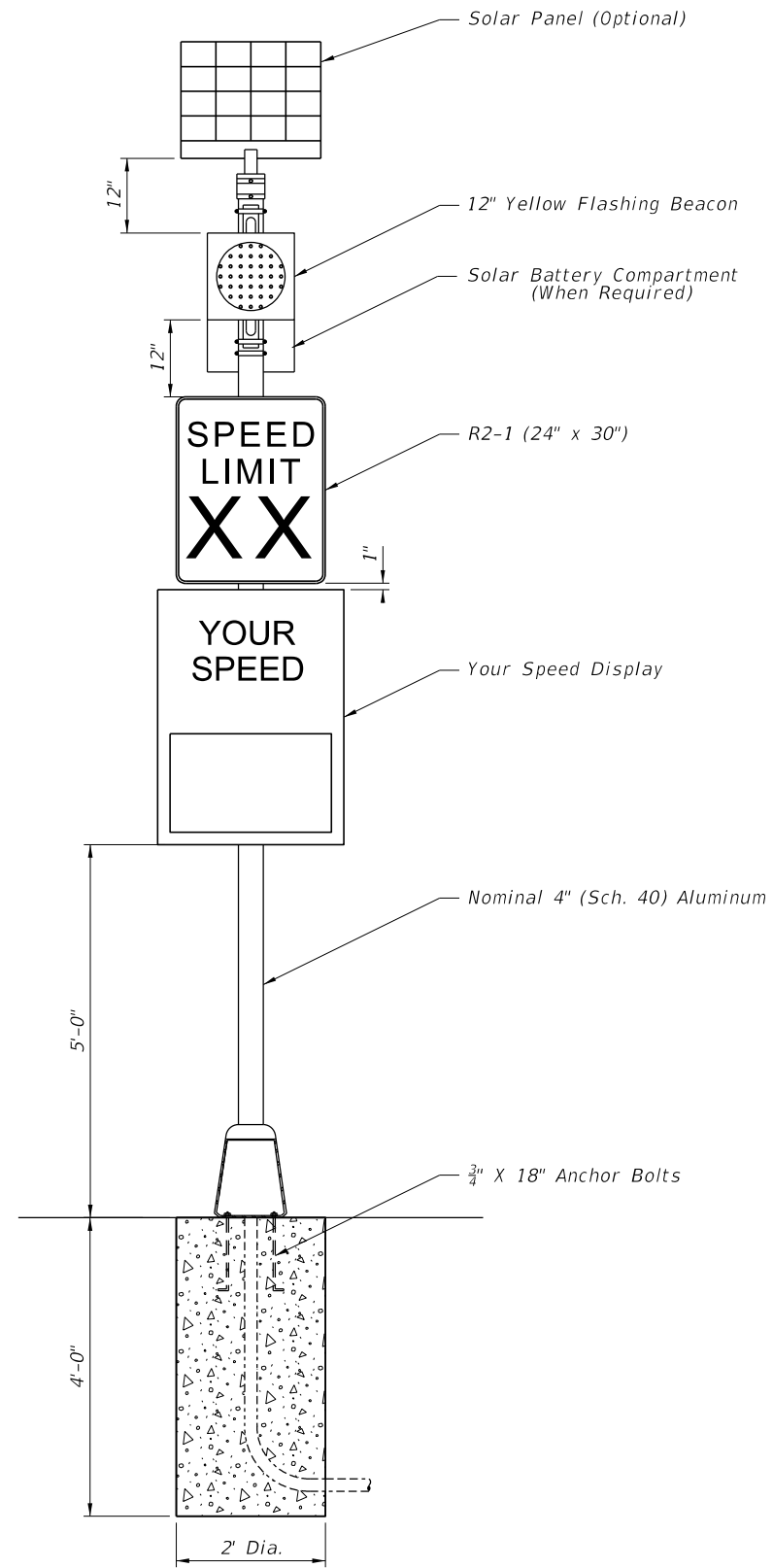
1. The pedestal base shall be required for both solar powered and conventional powered applications.
2. Speed feedback display, beacons, beacon controllers and installation hardware shall be on the Approved Products List (APL).
3. Speed feedback display shall indicate 15" numeral heights for posted speeds less than 45 mph and 18" heights for posted speeds 45 mph or greater.
4. Only speed display units weighing 62 lbs. or less may be mounted with a 5'-0" clearance. Speed display units weighing more than 62 lbs. shall be mounted with a 7'-0" clearance.

SCHOOL REGULATORY WITH SPEED FEEDBACK DETAILS

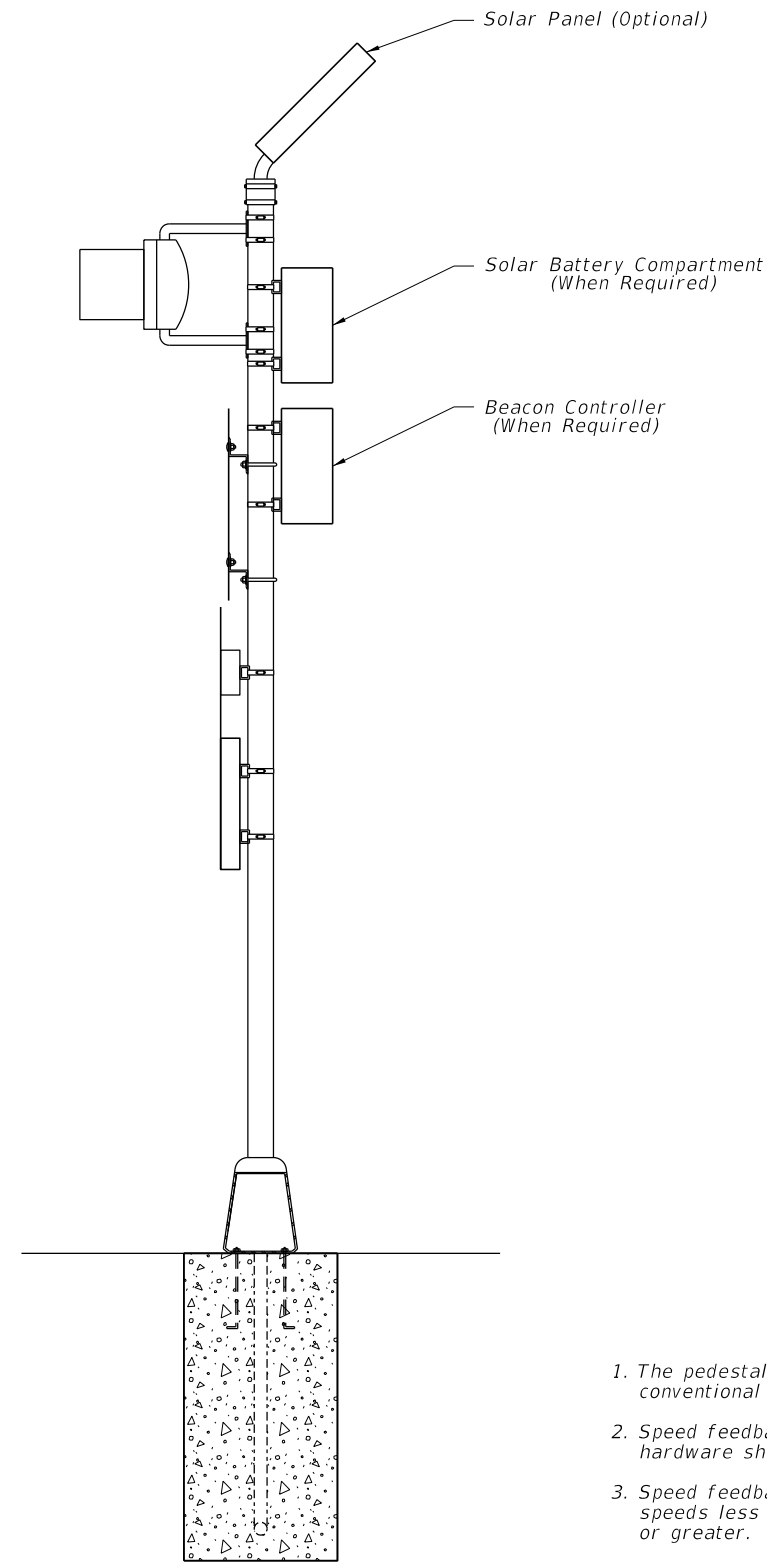
6/30/2015 9:25:43 AM

LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	ROADSIDE FLASHING BEACON ASSEMBLY	INDEX NO. 11862	SHEET NO. 6 of 7
---------------------------	----------	--------------	--	--	---------------------------	----------------------------

6/30/2015 9:25:44 AM



FRONT VIEW



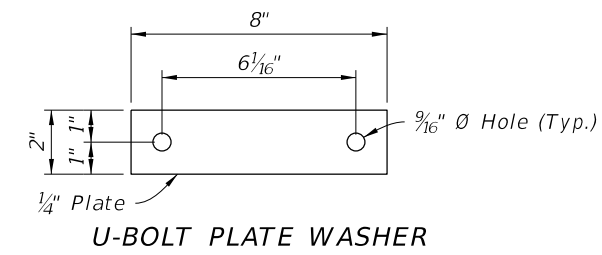
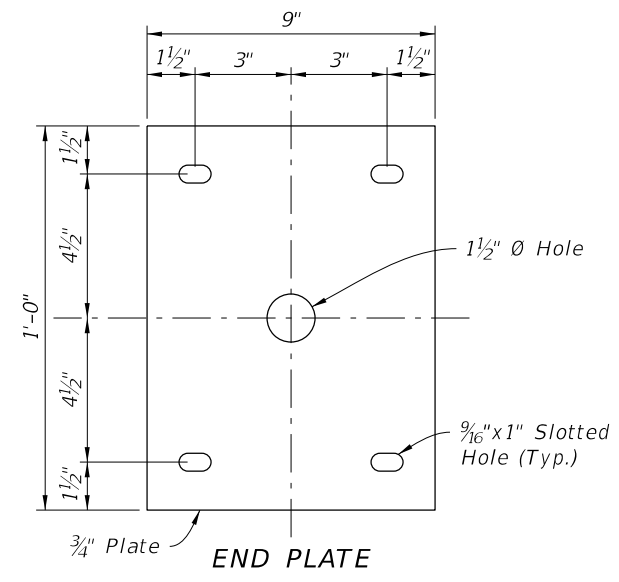
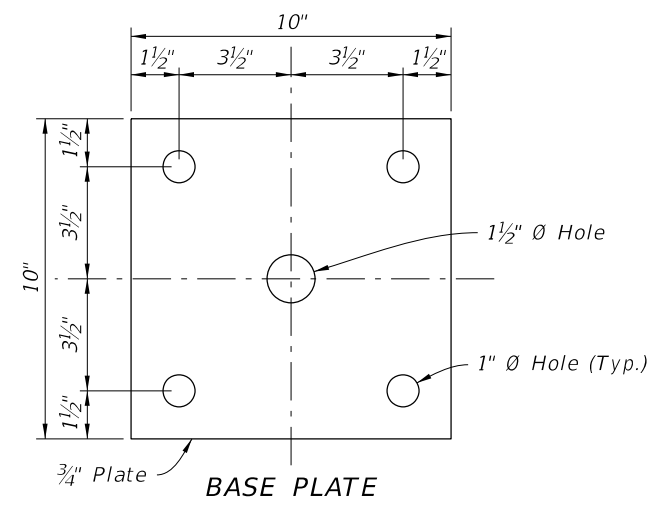
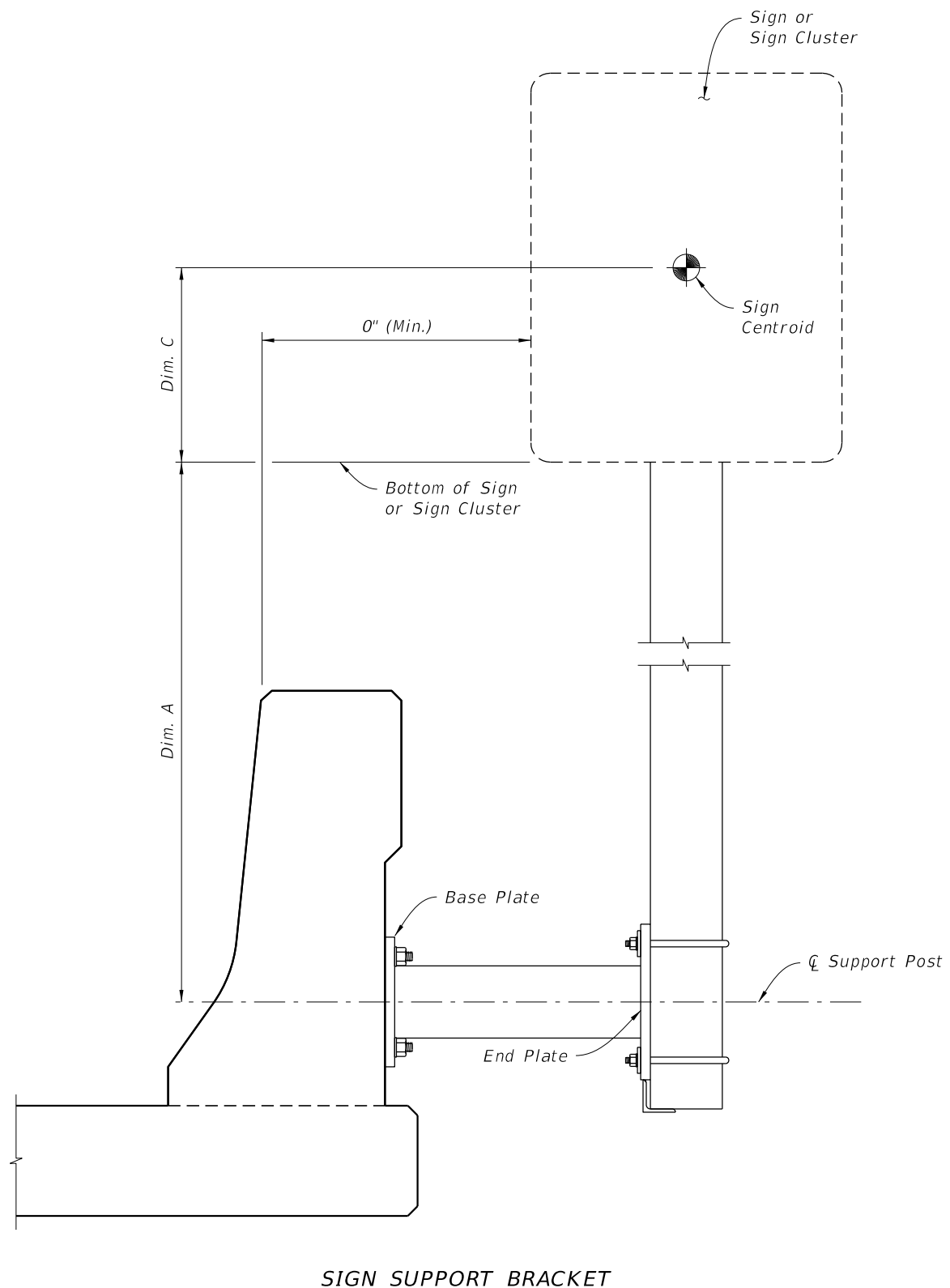
SIDE VIEW

NOTES

1. The pedestal base shall be required for both solar powered and conventional powered applications.
2. Speed feedback display, beacons, beacon controllers and installation hardware shall be on the Approved Products List (APL).
3. Speed feedback display shall indicate 15" numeral heights for posted speeds less than 45 mph and 18" heights for posted speeds 45 mph or greater.
4. Only speed display units weighing 62 lbs. or less may be mounted with a 5'-0" clearance. Speed display units weighing more than 62 lbs. shall be mounted with a 7'-0" clearance.

REGULATORY SIGN WITH SPEED FEEDBACK DETAILS

<p>LAST REVISION 07/01/15</p>	<p>REVISION DESCRIPTION:</p>	<p>2016 FDOT DESIGN STANDARDS</p>	<p>ROADSIDE FLASHING BEACON ASSEMBLY</p>	<p>INDEX NO. 11862</p>	<p>SHEET NO. 7 of 7</p>
-----------------------------------	------------------------------	---------------------------------------	--	----------------------------	-----------------------------



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 lowest 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: Galvanize all steel and fasteners in accordance with Specification Section 962. Hot dip galvanize Sign Support Weldment after fabrication.

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.

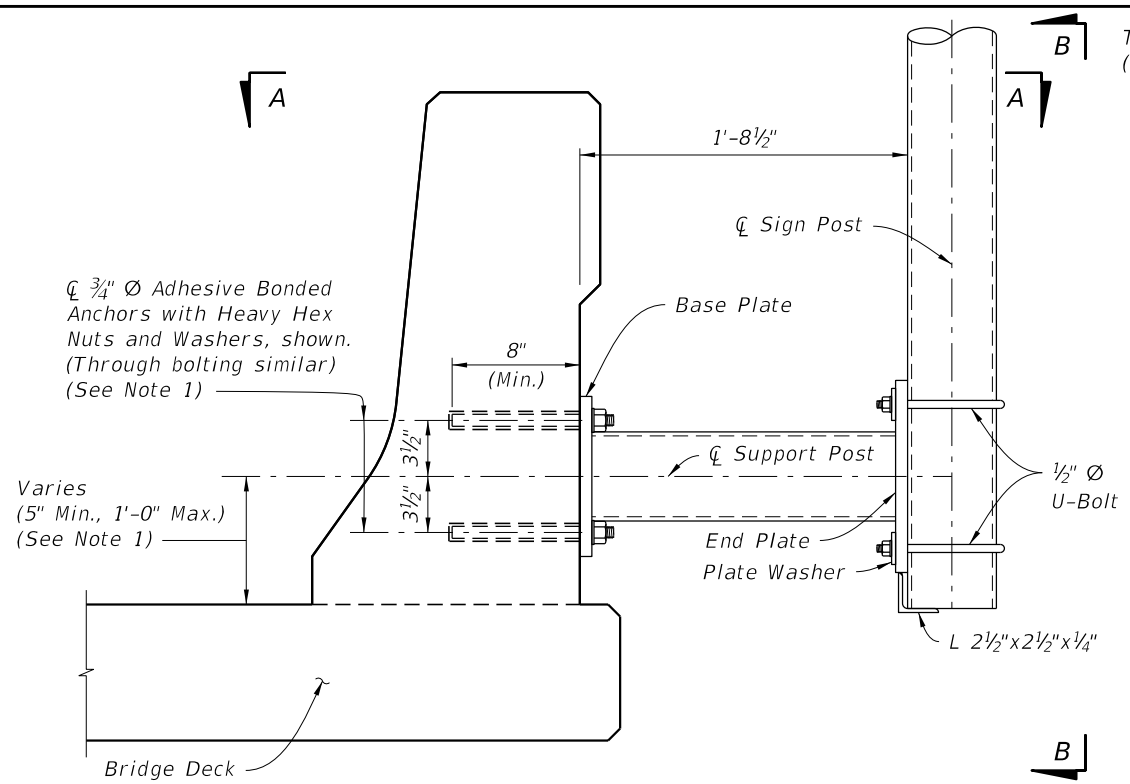
Welding: Weld in accordance with American Welding Society Structural Welding Code (Steel), ANSI/AWS D1.1 (current edition). Required weld material is E70XX. Nondestructive testing is not required.

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"

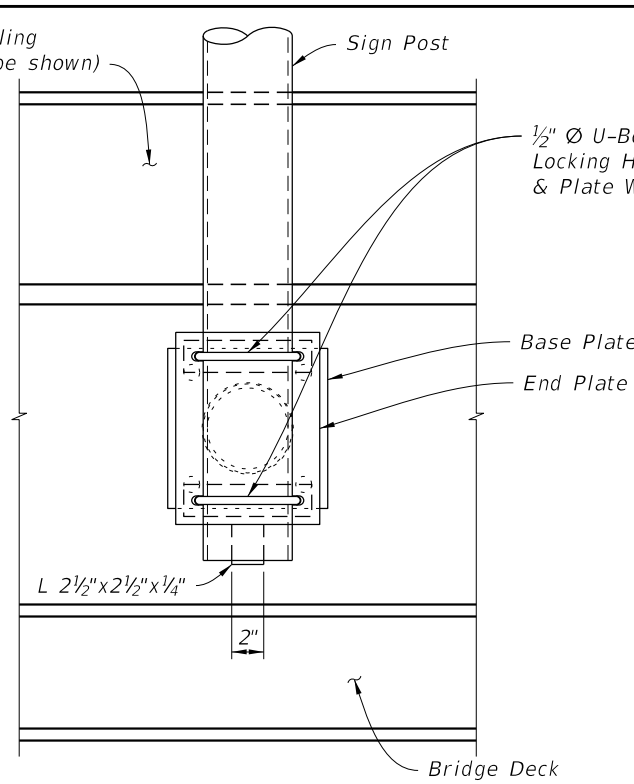
Dim. A = Distance from centerline of the Support Post to the bottom of the sign or sign cluster.

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

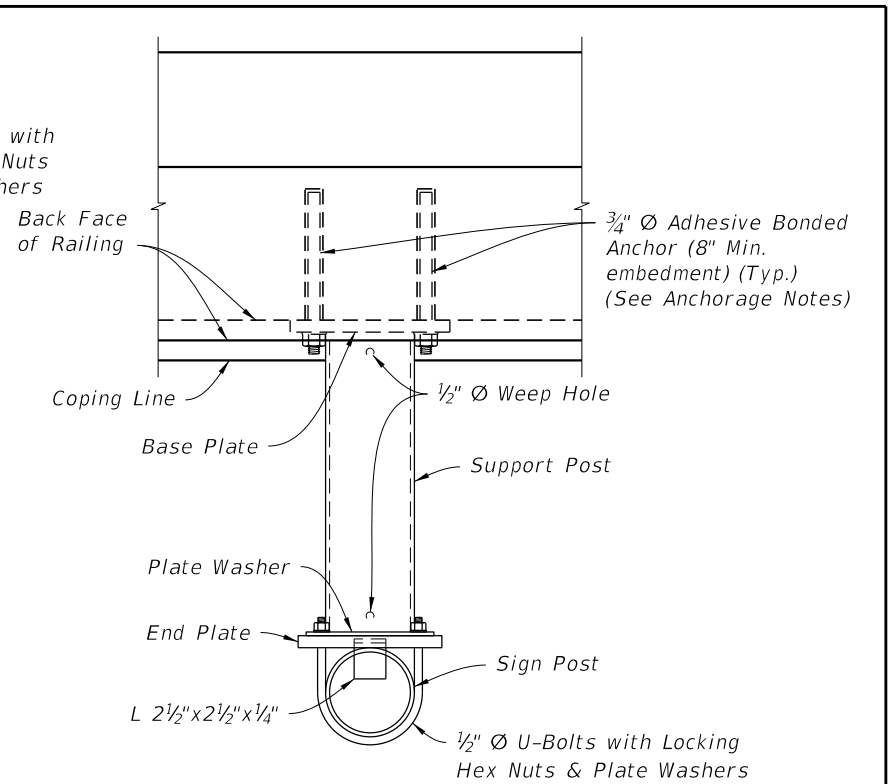
6/25/2015 1:49:53 PM



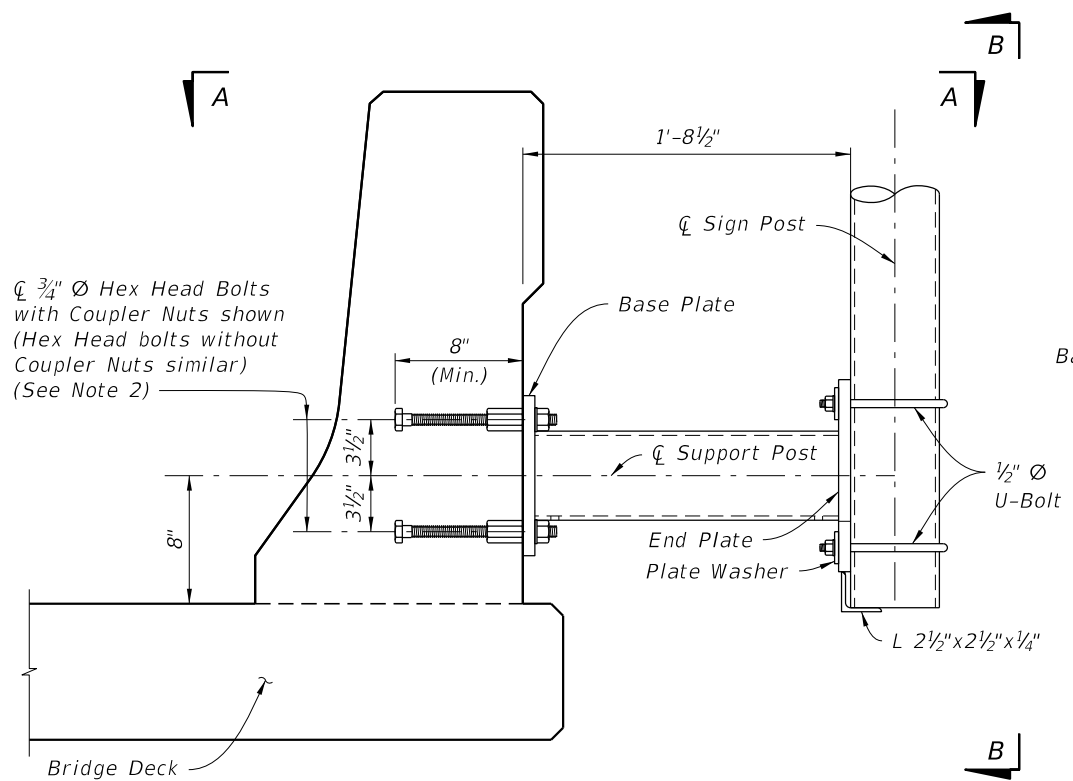
TYPICAL SECTION THRU EXISTING TRAFFIC RAILING AT SIGN SUPPORT BRACKET
 (32" F-Shape Traffic Railing shown, other Traffic Railings & Parapet similar)
 (Bridge Deck shown, Approach Slab and Retaining Wall Similar)



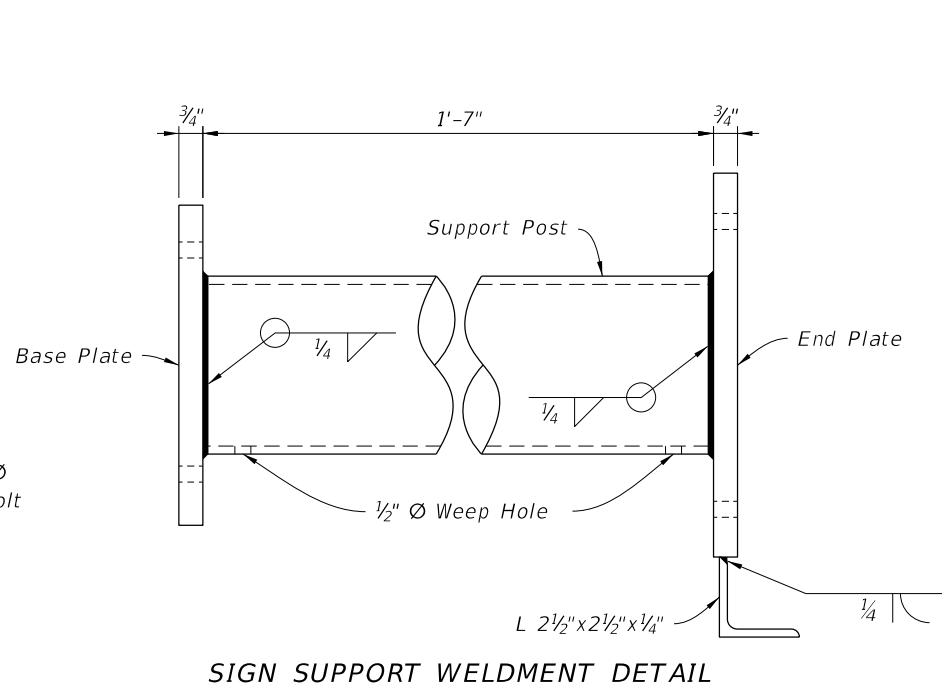
VIEW B-B
 SIGN SUPPORT BRACKET



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 Railings & 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 3/4" diameter Heavy Hex Head Bolts with Nuts and Washers in lieu of Adhesive Bonded Anchors. Bolt heads shall not protrude more than 1 1/2" beyond traffic face of railing.

2. New Traffic Railings:

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

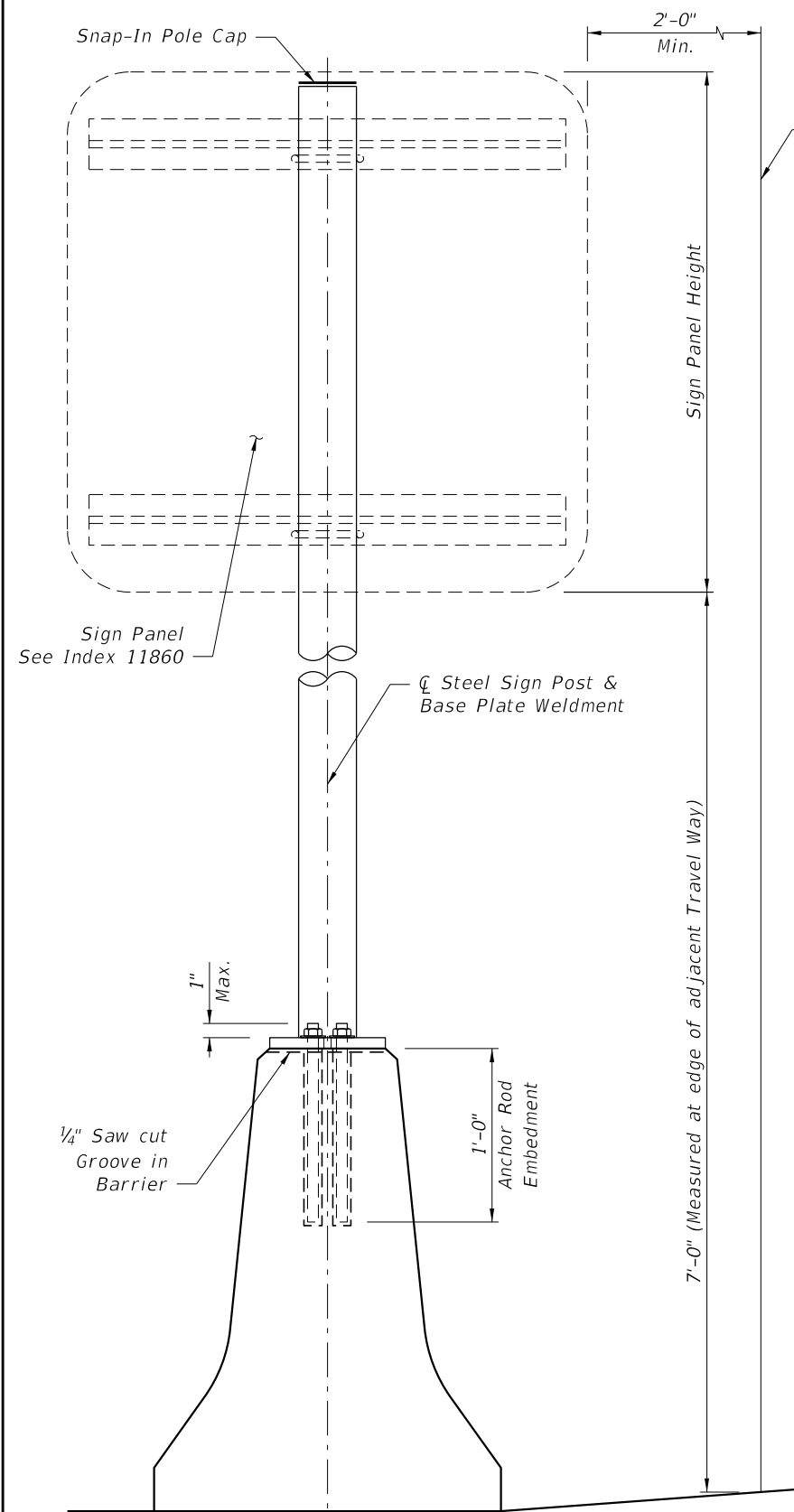
Optional Couplers are shown for slipforming; keep Anchor Bolt coupler threads free of concrete.

CROSS REFERENCES:

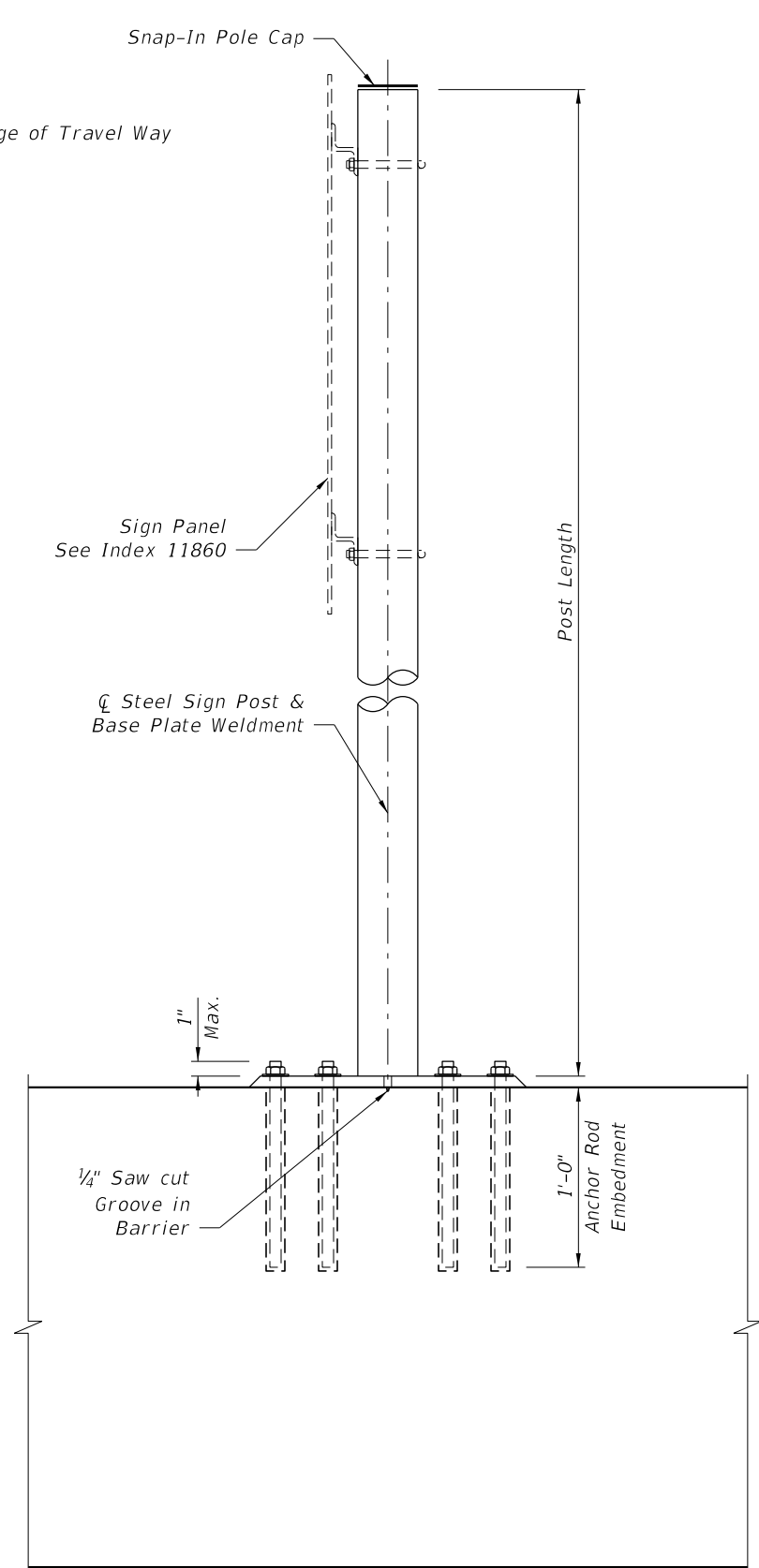
For Base Plate, End Plate & U-Bolt Plate Washer Details see Sheet 1.

6/24/2015 7:06:23 AM

LAST REVISION	DESCRIPTION:
07/01/12	



LOOKING PARALLEL TO DIRECTION OF TRAFFIC
ELEVATION
(Index 410 Standard "Full Wall" Median Barrier shown; others similar)



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.

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 1/4" deep groove transversely across the top of railing at the centerline of base plate vent hole location.

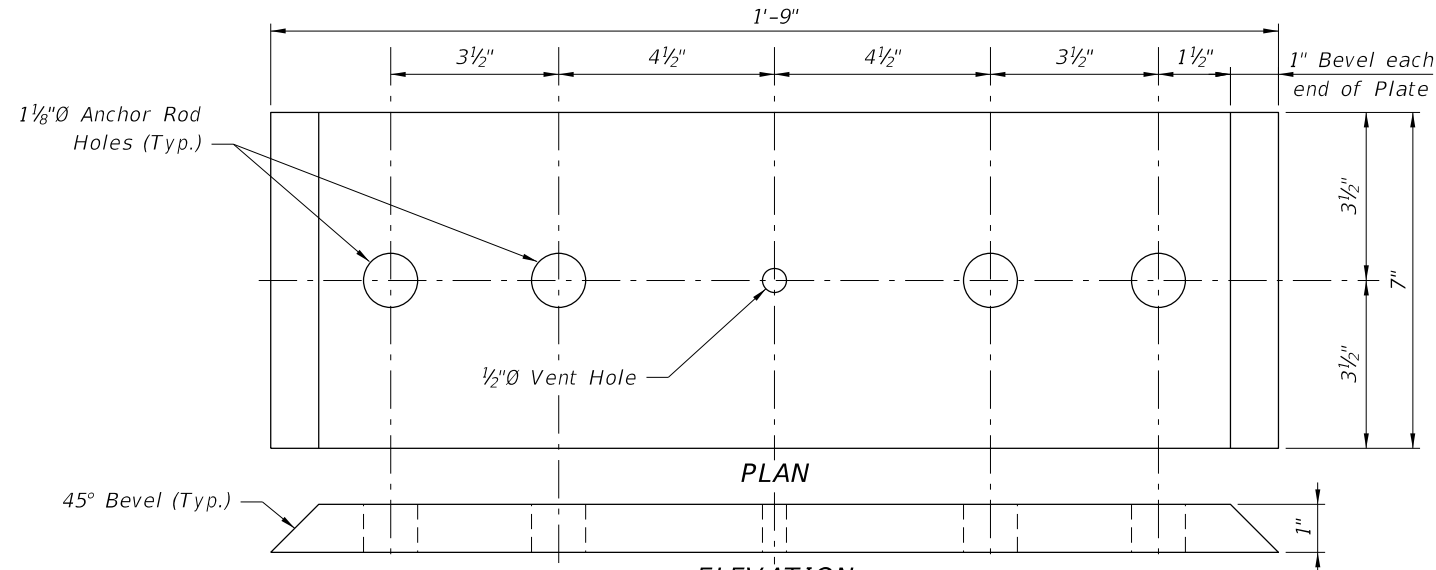
Anchor Rods: Use ASTM F1554 Grade 36, fully threaded rods with A563 or A194 single self-locking hex nuts and F436 washers. Size anchor rods per Table 2.

Adhesive Bonding Material: Install anchor rods using Type HSHV Adhesive Bonding Material System in accordance with Specification Sections 416 & 937. For temporary sign support installations, the use of a metal detector specifically designed for locating steel in concrete is not required to locate existing reinforcement as stated within Specification Section 416-4. For temporary sign support installations, Specification Section 416-6 is not required. For permanent sign support installations, Specification Section 416-6 applies with the exception of the following: Perform field test on only one anchor per sign support location.

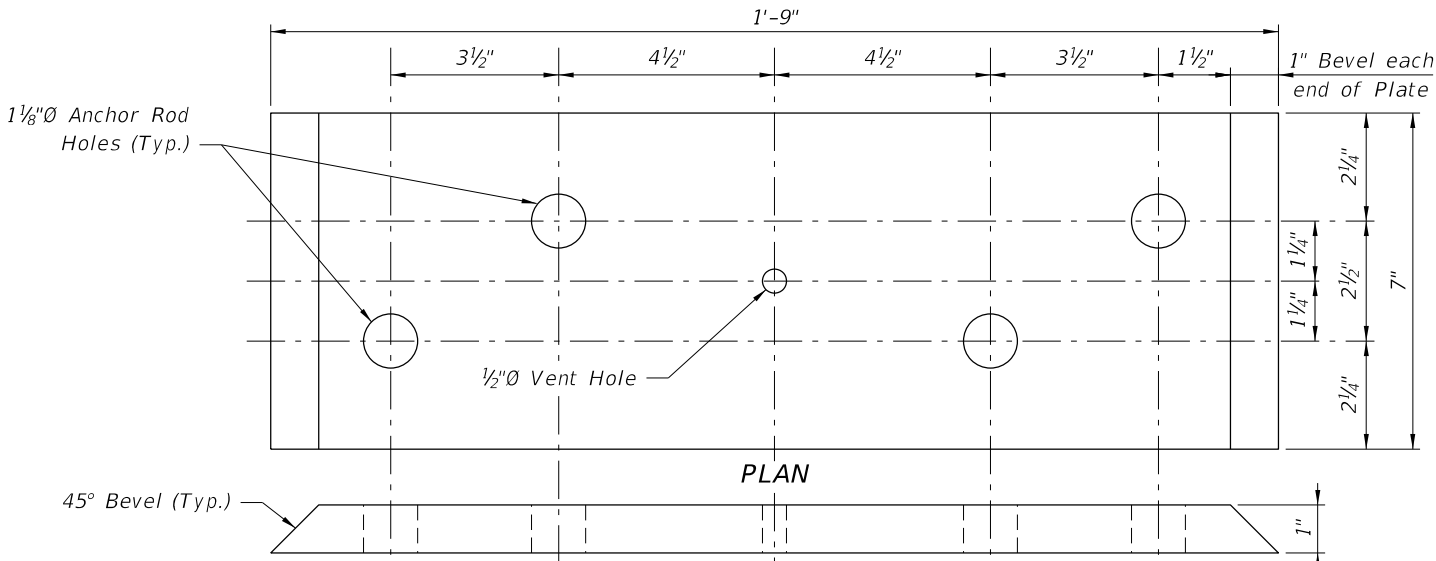
Removal of Signs: Cut anchor rods flush with top of railing and coat surface with Type F-1 epoxy. Minimum thickness of epoxy is 1/16" extending 2" beyond the location of steel.

TABLE 1 - SIGN PANEL AND POST SIZING		
Wind Speed (MPH)	Max. Sign Area (SF)	Post Ø (NPS)
70 - All Temporary Signs	≤ 24	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"

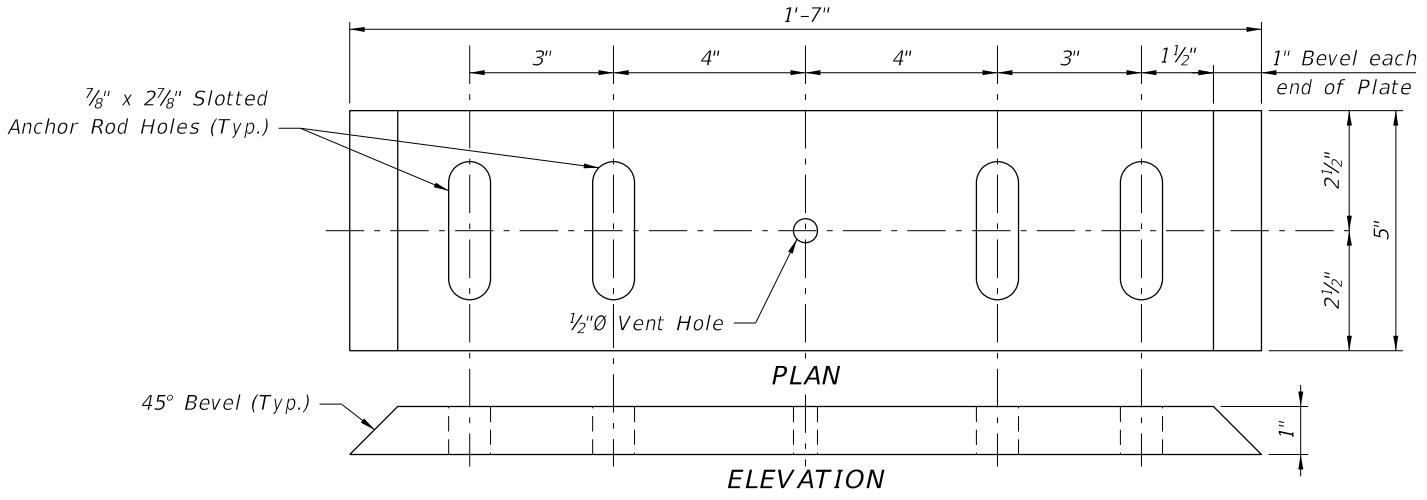
6/9/2015 4:39:32 PM



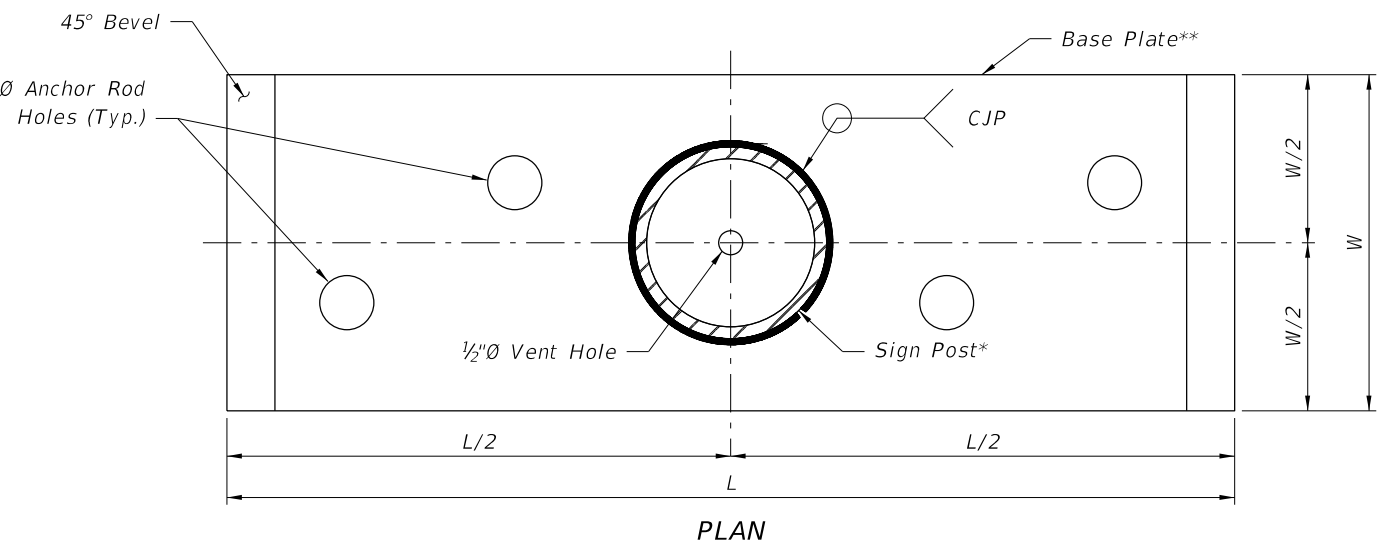
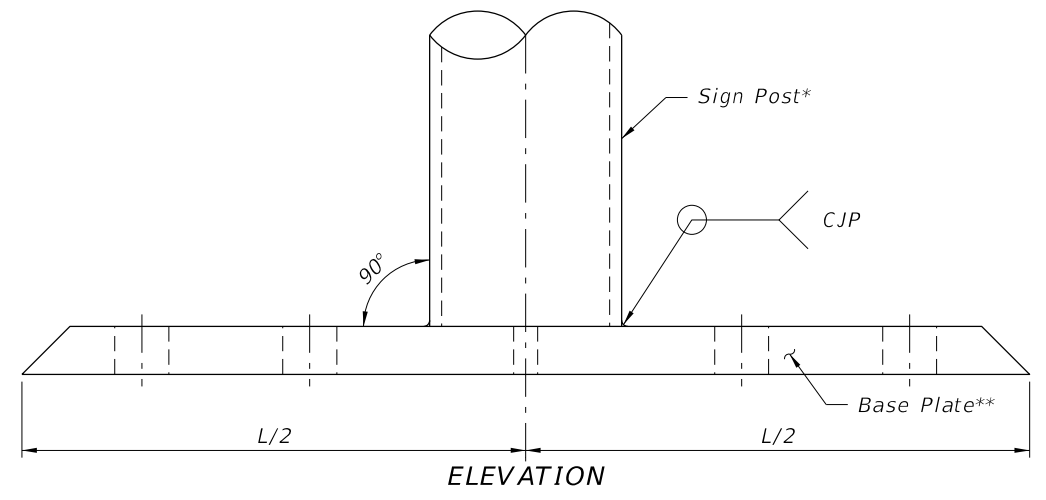
BASE PLATE TYPE A
(Linear Anchor Rod Pattern)



BASE PLATE TYPE B
(Staggered Anchor Rod Pattern)



BASE PLATE TYPE C ***



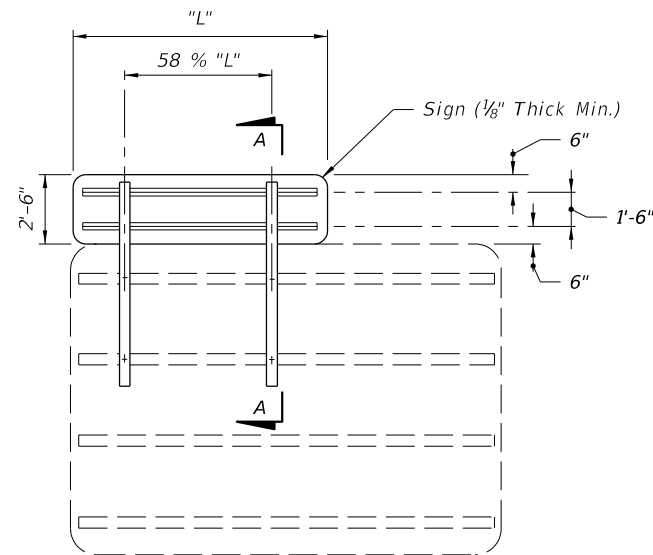
SIGN SUPPORT WELDMENT DETAIL
(Staggered Anchor Rod Pattern shown; Linear Anchor Rod Pattern similar)

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

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 ***	3/4" ***

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

6/9/2015 4:39:33 PM

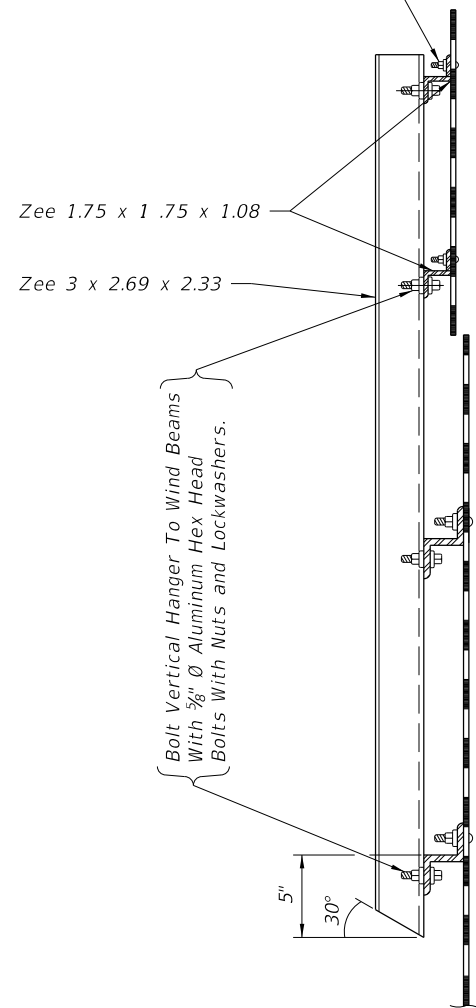


NOTE: Exit numbering panel shall be located to the right side for right exit and to the left for left exit.

Mounting of Exit Numbering Panels To Highway Signs

ELEVATION

Bolt Sign to Zee Using 1/4" Ø Aluminum Flat Head Bolts, Nuts and Lock Washers (Typ.) 12" Max Spacing



SECTION AA

GENERAL NOTES

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.

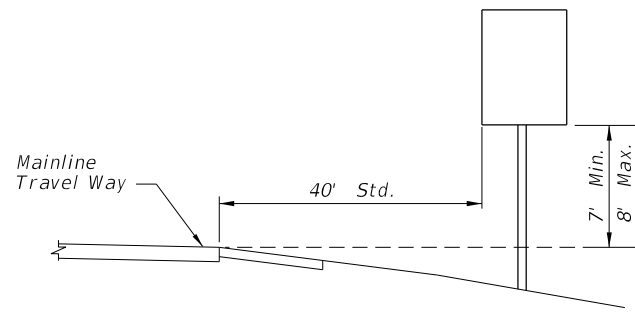
SIGN FACE:

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.

6/9/2015 4:40:06 PM

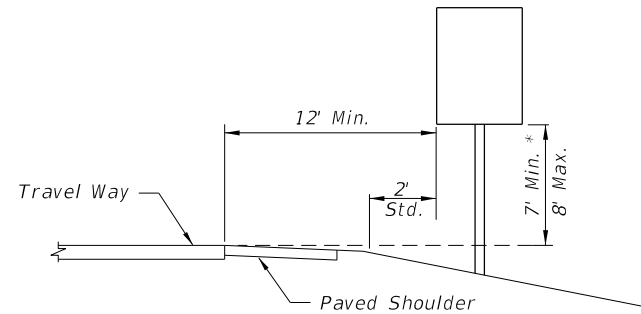
LAST REVISION 10/09/14	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	MOUNTING EXIT NUMBER PANELS TO HIGHWAY SIGNS	INDEX NO. 13417	SHEET NO. 1 of 1
---------------------------	----------	--------------	---	---	---------------------------	----------------------------

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.

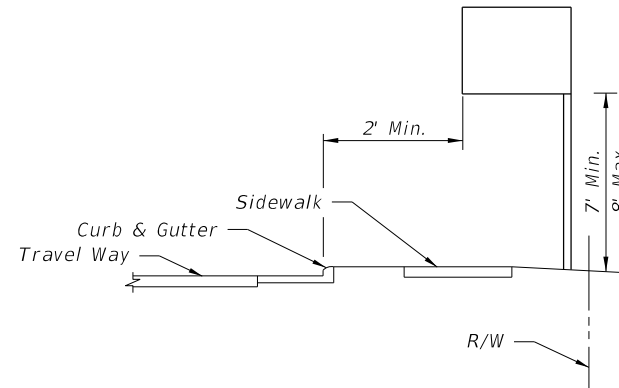
CASE II
For Use In All Rural Roads And On Freeway And Expressway Ramps.



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

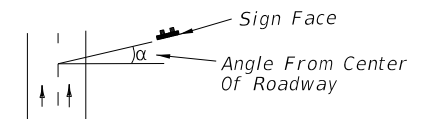
* 4' For Wrong Way Signs On Interstate Exit Ramps

CASE III
For Use On All Roads With Signs Mounted Behind Sidewalk.

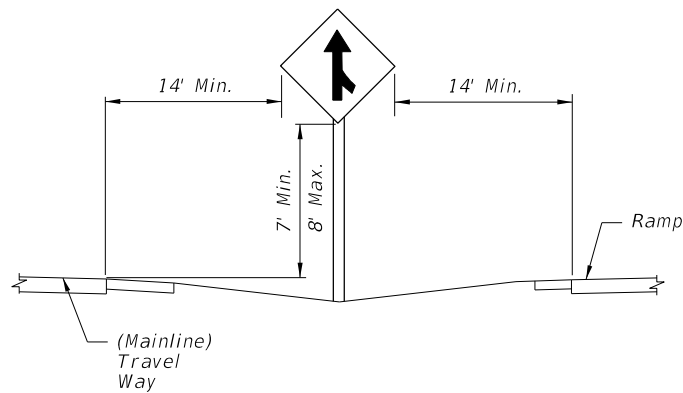


GENERAL NOTES:

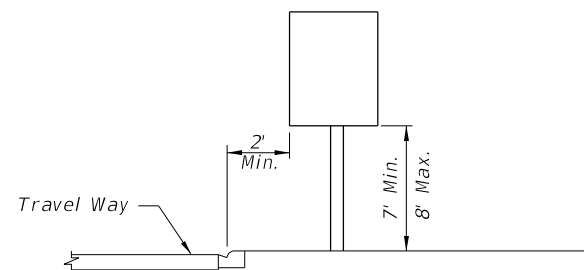
- The typical sections shown hereon serve as a guide for locating the traffic signs required under various roadside conditions. For size and details of sign construction and footing, refer to the appropriate standard index drawing for roadside sign.
- It shall be the CONTRACTORS responsibility to verify the length of sign supports in the field prior to fabrication.
- 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.



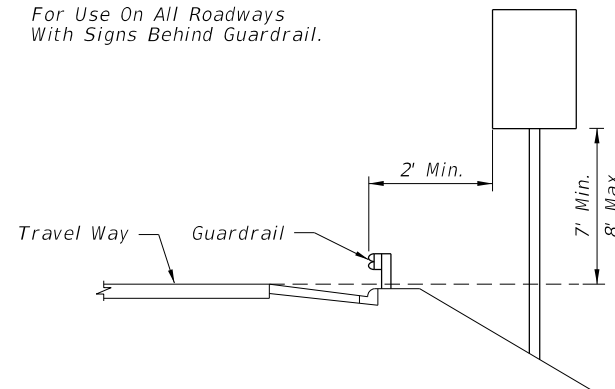
CASE IV (MERGE SIGN)
For Use On All Rural, Freeway And Expressway Systems.



CASE V
For Use In Business Or Residential Areas Only.



CASE VI
For Use On All Roadways With Signs Behind Guardrail.



- 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.

- 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:

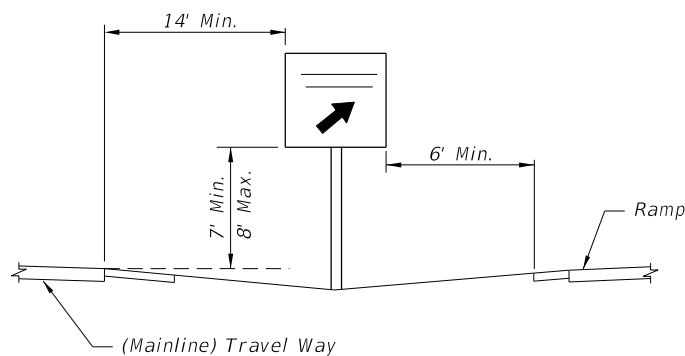
Expressway & Freeway Systems	7'
Other Roadway Systems	
Rural	5'
Urban (including residential with parking and /or pedestrian activity)	7'

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.

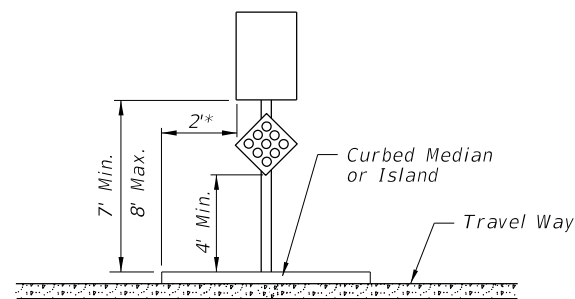
- Sign supports should never be placed in the bottom of ditches where erosion might affect the proper operation of the breakaway feature.

- 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



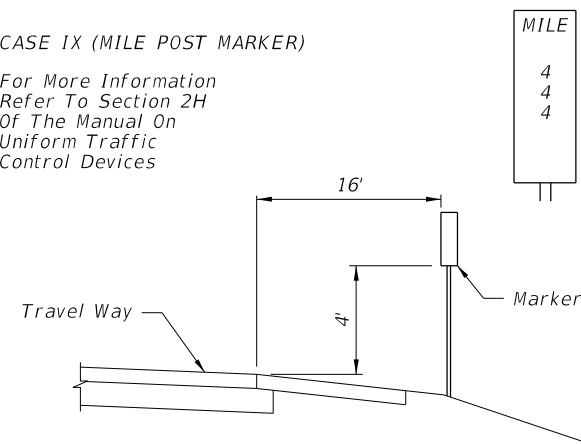
CASE VIII
Sign On Island or Curbed Median



* For Separators < 6', Center The Sign Within The Separator.

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

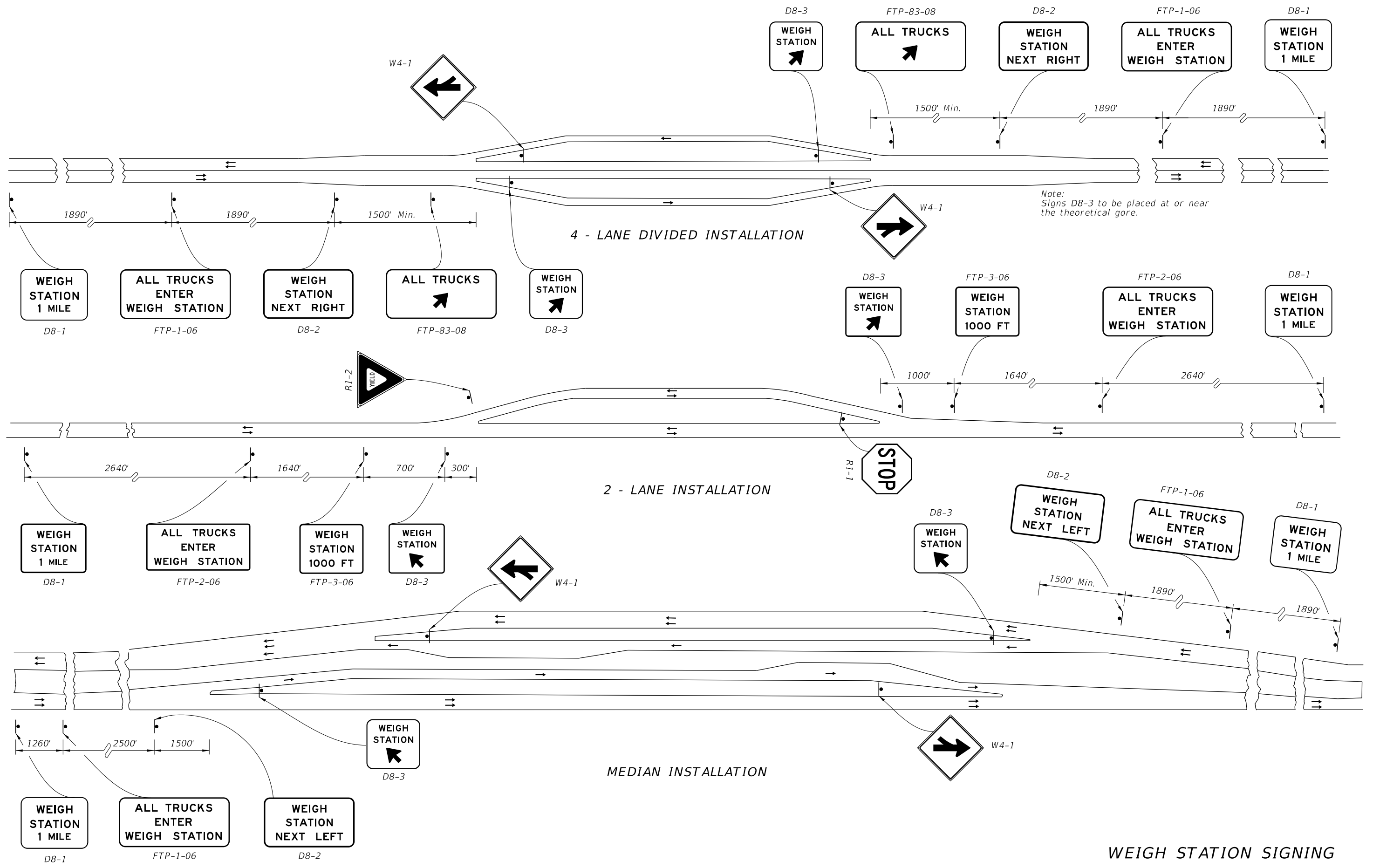


6/11/2015 10:10:27 AM

LAST REVISION
07/01/15

REVISION

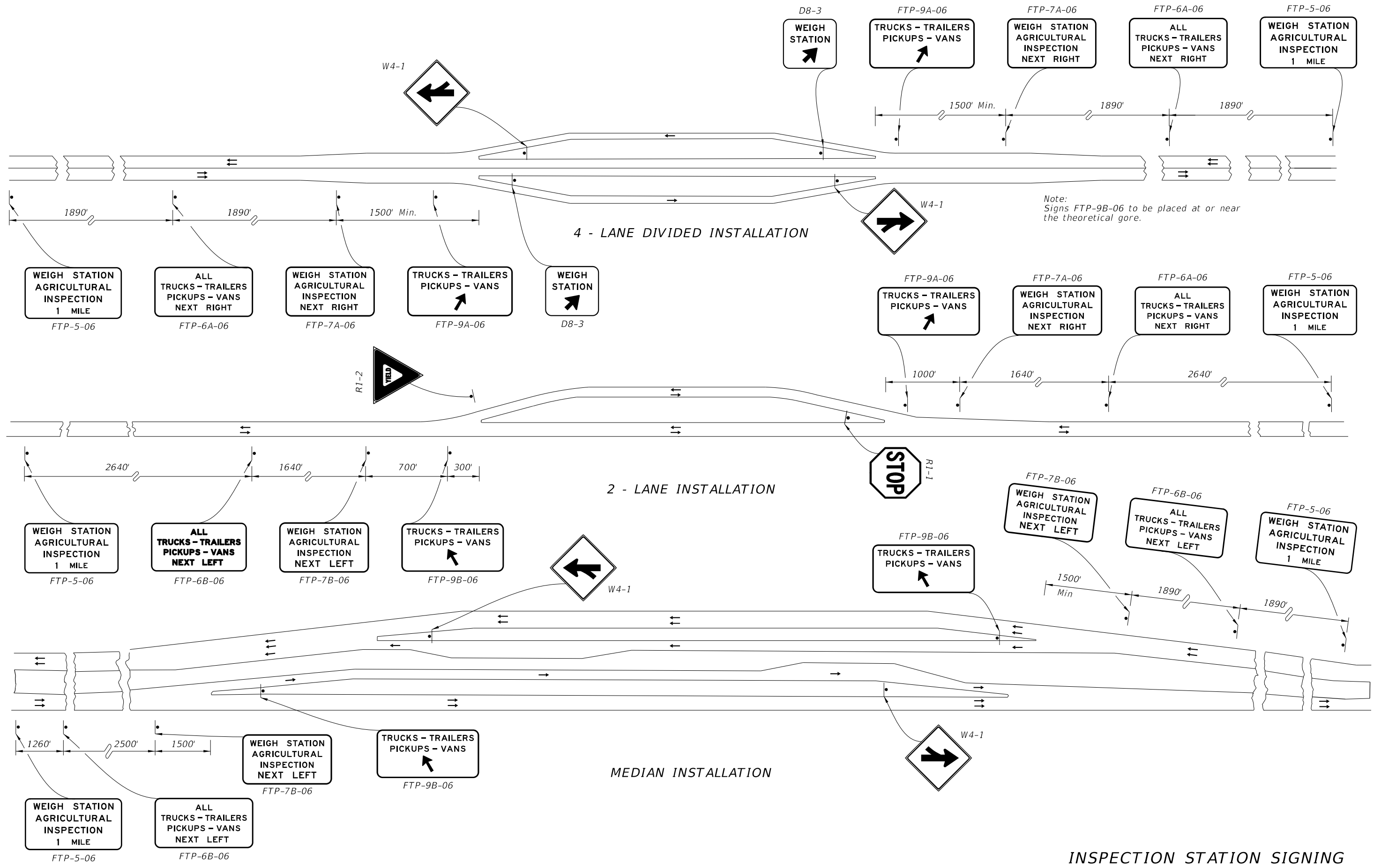
DESCRIPTION:



6/9/2015 4:43:03 PM

WEIGH STATION SIGNING

LAST REVISION 07/01/09	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	TYPICAL SIGNING FOR TRUCK WEIGH & INSPECTION STATIONS	INDEX NO. 17328	SHEET NO. 1 of 2
---------------------------	----------	--------------	------------------------------	--	--------------------	---------------------

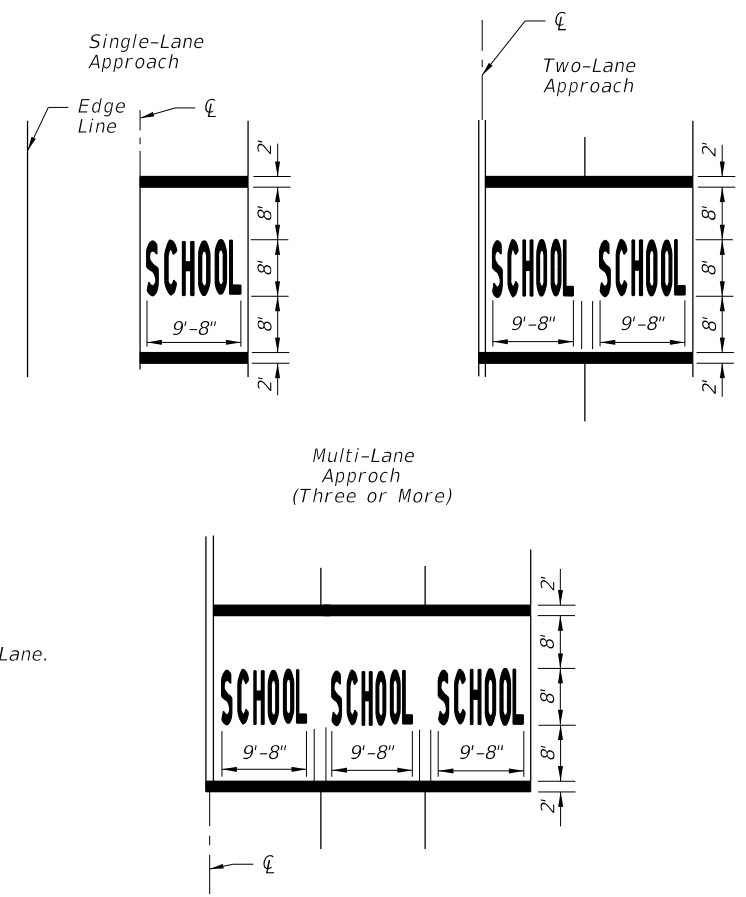
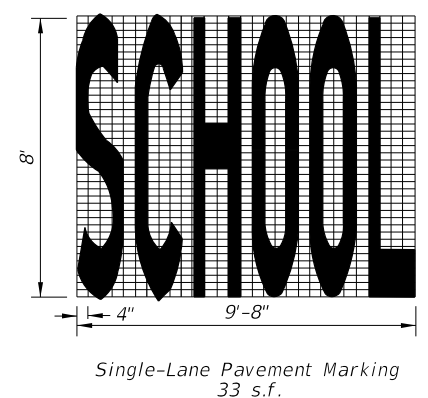
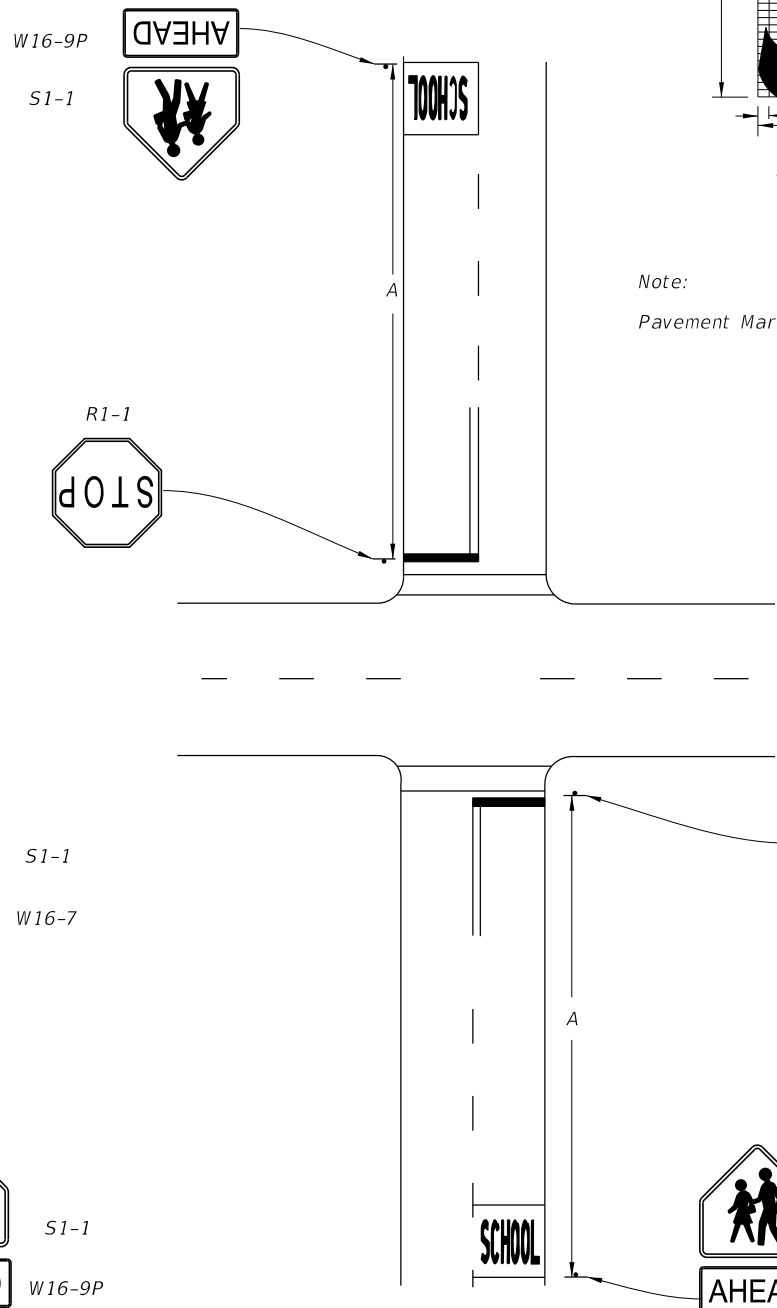
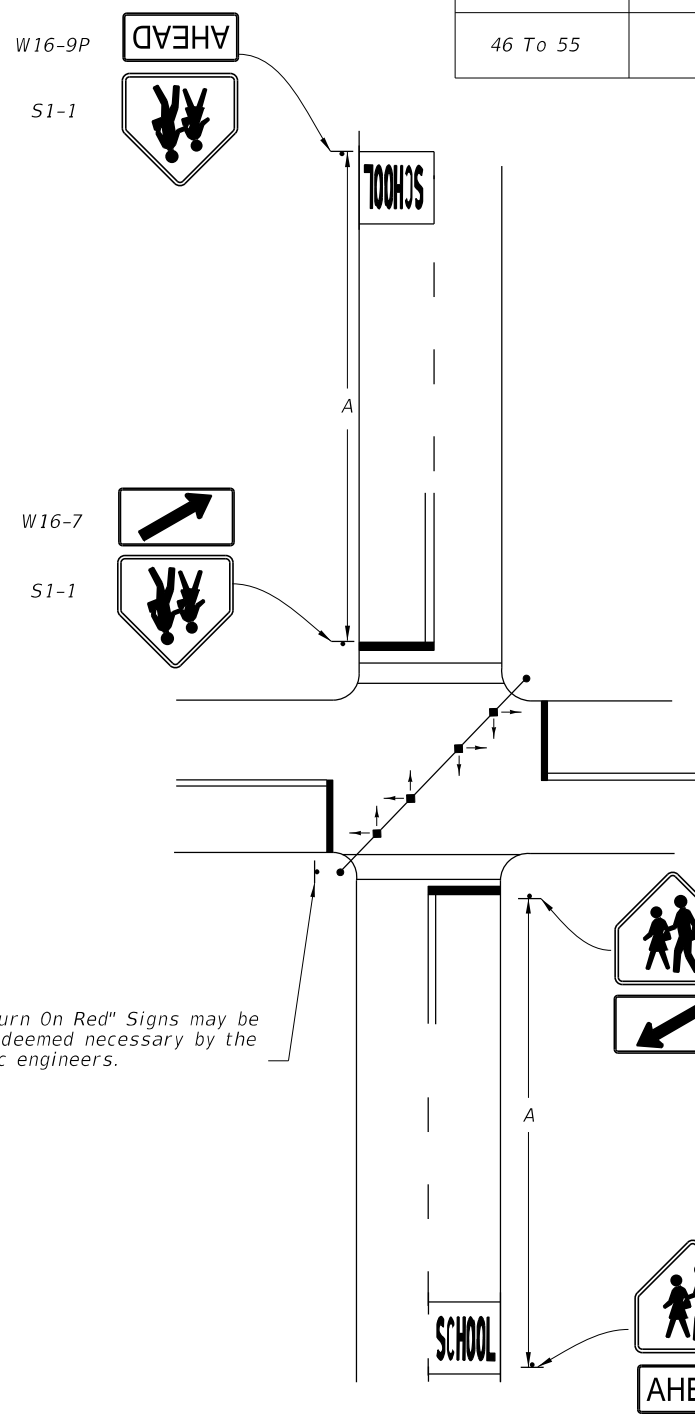


6/9/2015 4:43:03 PM

INSPECTION STATION SIGNING

LAST REVISION	REVISION	DESCRIPTION:	2016 DESIGN STANDARDS	TYPICAL SIGNING FOR TRUCK WEIGH & INSPECTION STATIONS	INDEX NO.	SHEET NO.
07/01/09					17328	2 of 2

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



PAVEMENT MARKINGS

Note:
Pavement Marking Should Not Extend Into Opposing Lane.

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.

"No Right Turn On Red" Signs may be erected as deemed necessary by the local traffic engineers.

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

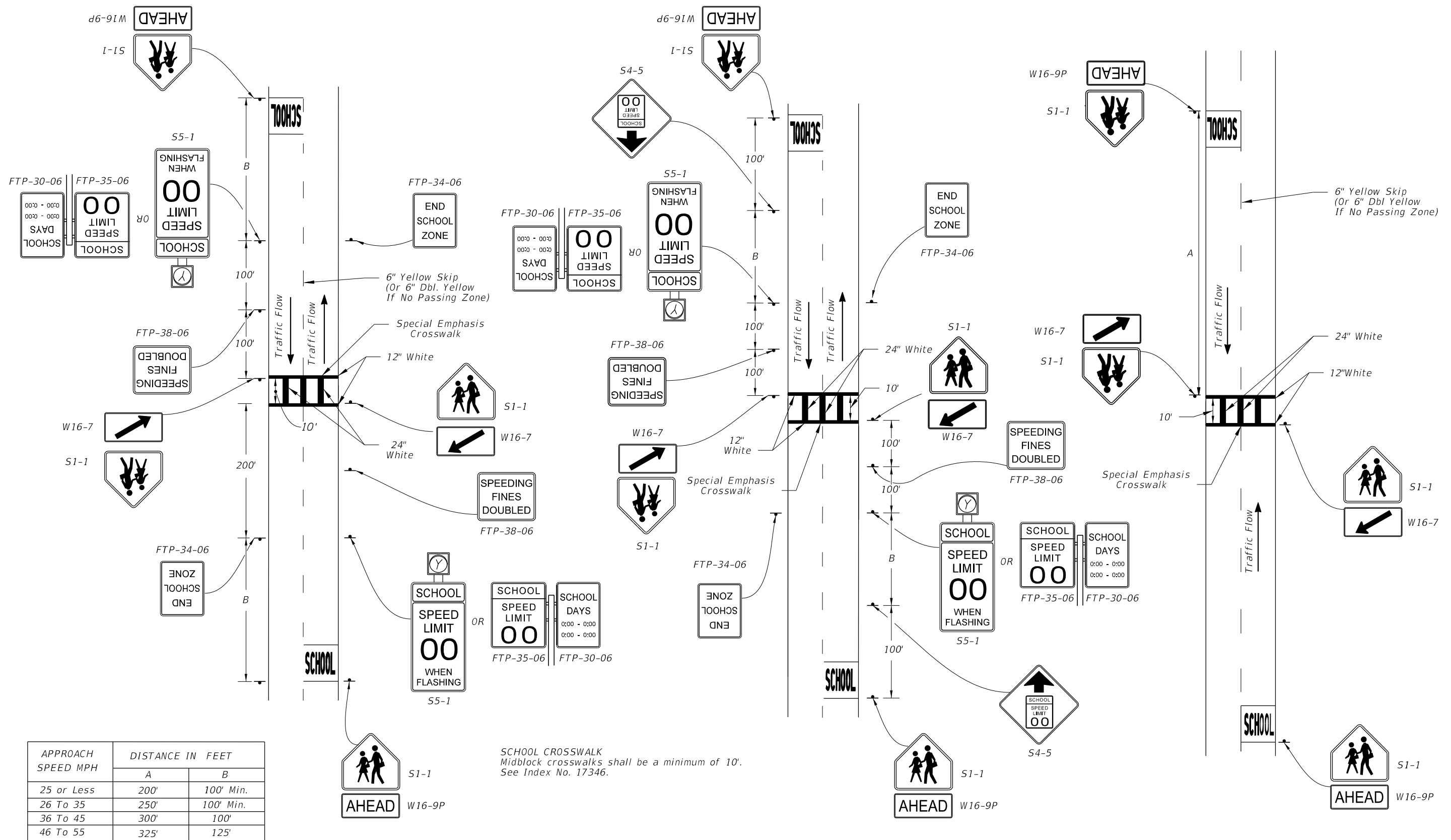
Note:
Special speed restrictions are not normally applicable to these two cases.

6/10/2015 1:45:22 PM

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)

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)



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'

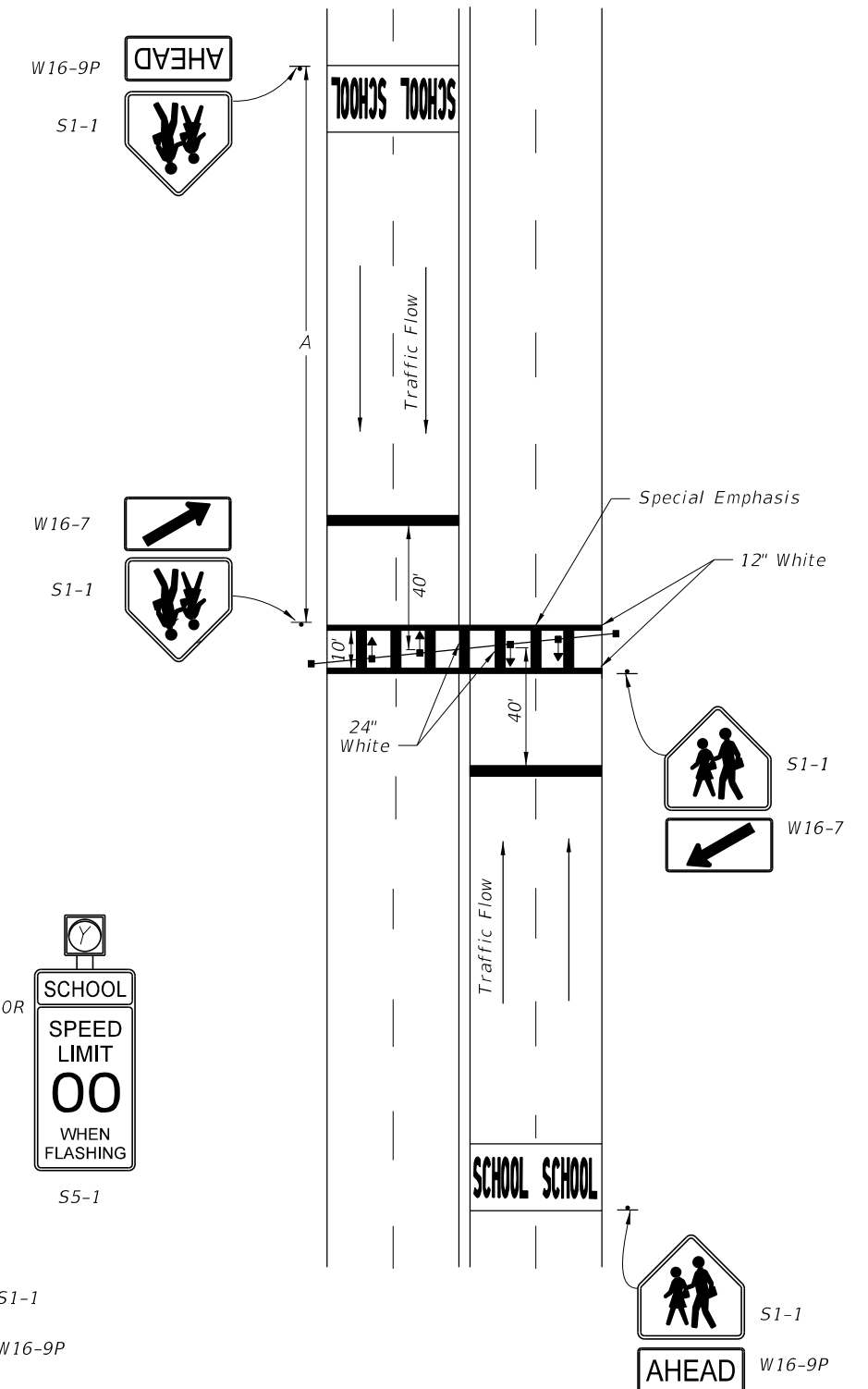
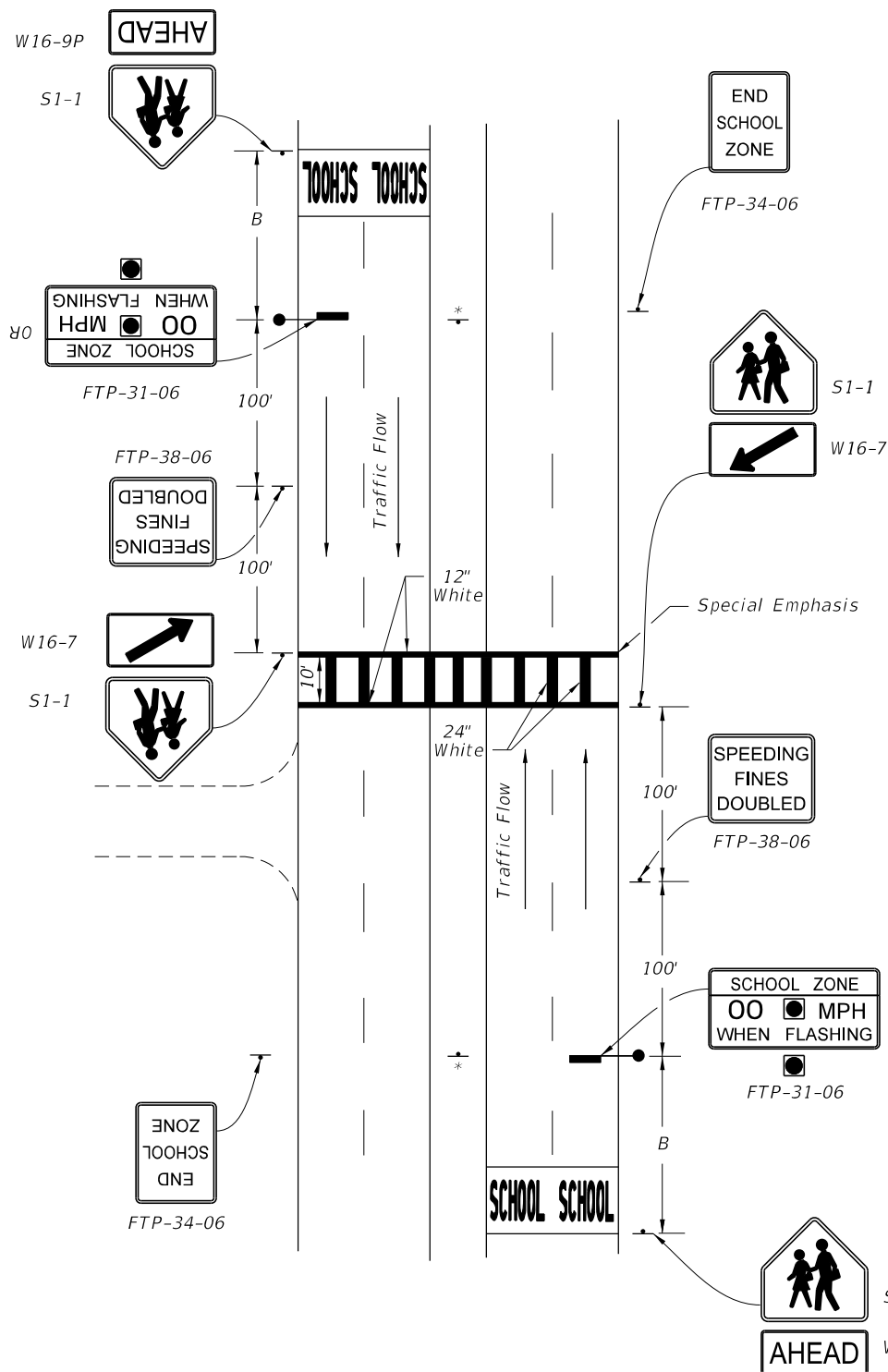
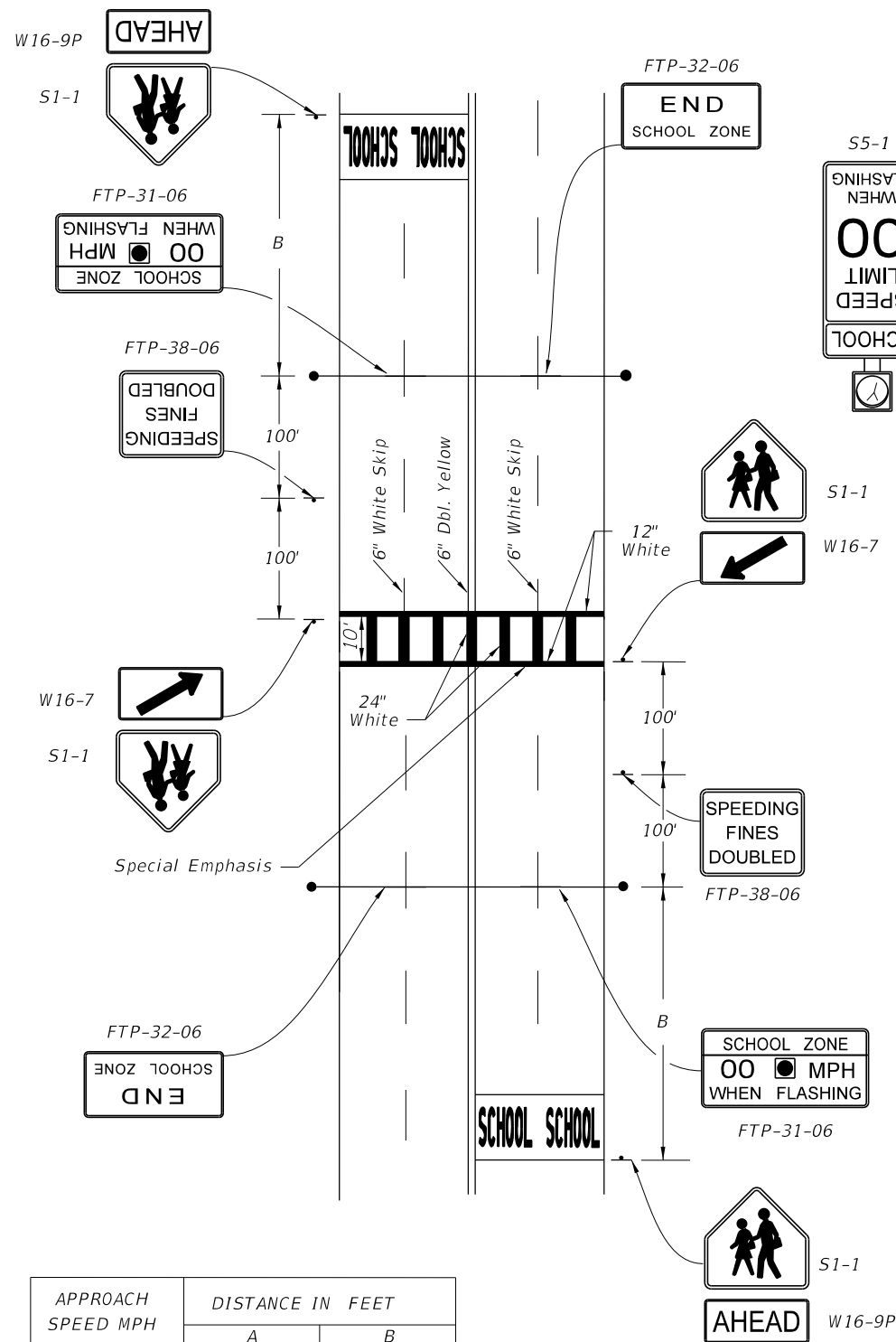
SCHOOL CROSSWALK
Midblock crosswalks shall be a minimum of 10'.
See Index No. 17346.

6/10/2015 1:45:23 PM

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)

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)

8. TRAFFIC CONTROL DEVICES FOR SIGNALIZED MIDBLOCK SCHOOL CROSSWALK



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.

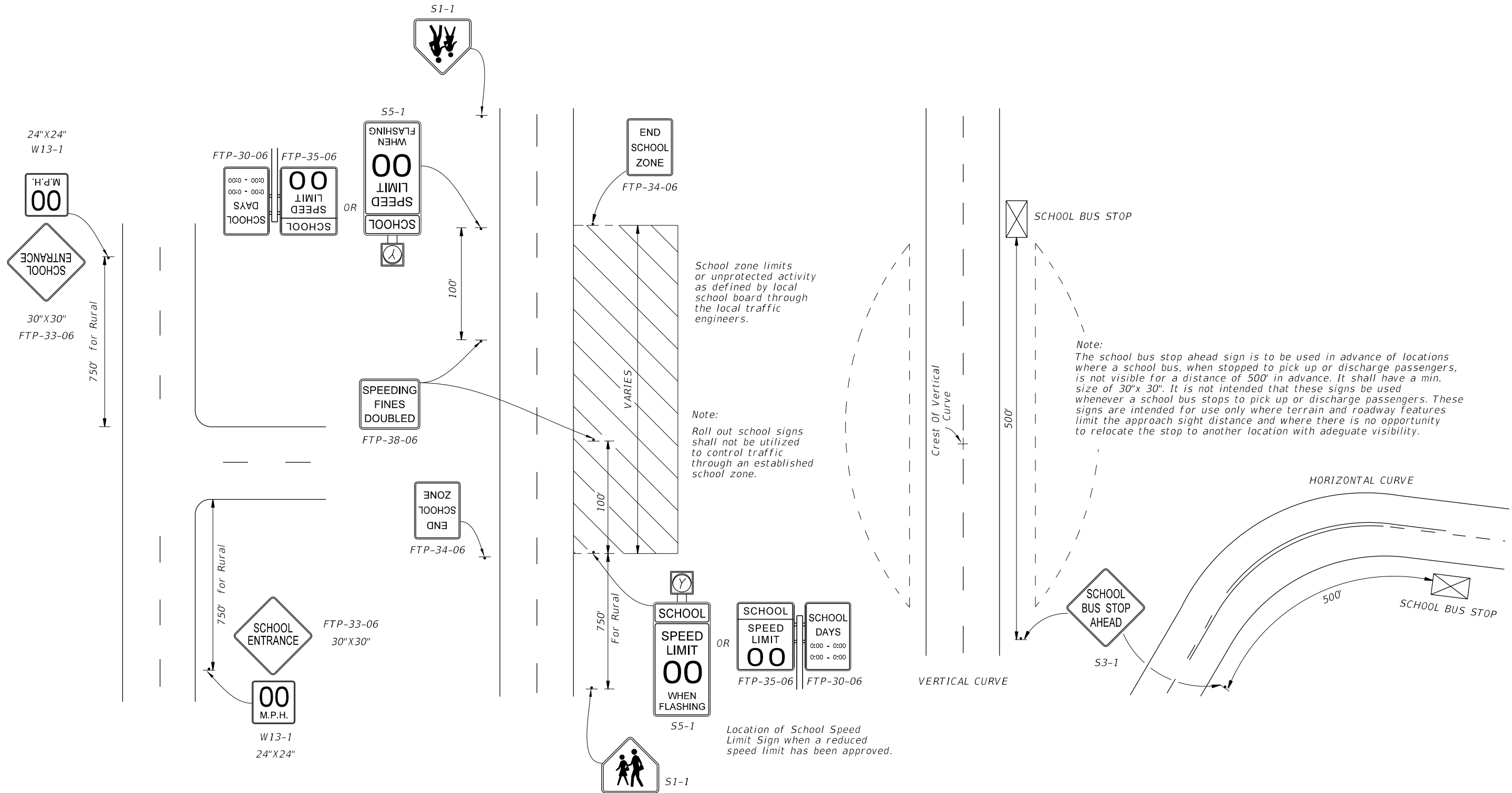
* NOTE- CONDITION 7:
Where engineering judgement determines the overhead structure is not suitable or cannot be installed due to site restrictions, S5-1 with flashing beacons on each side of the road may be substituted for the overhead structure.

6/10/2015 1:45:24 PM

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

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

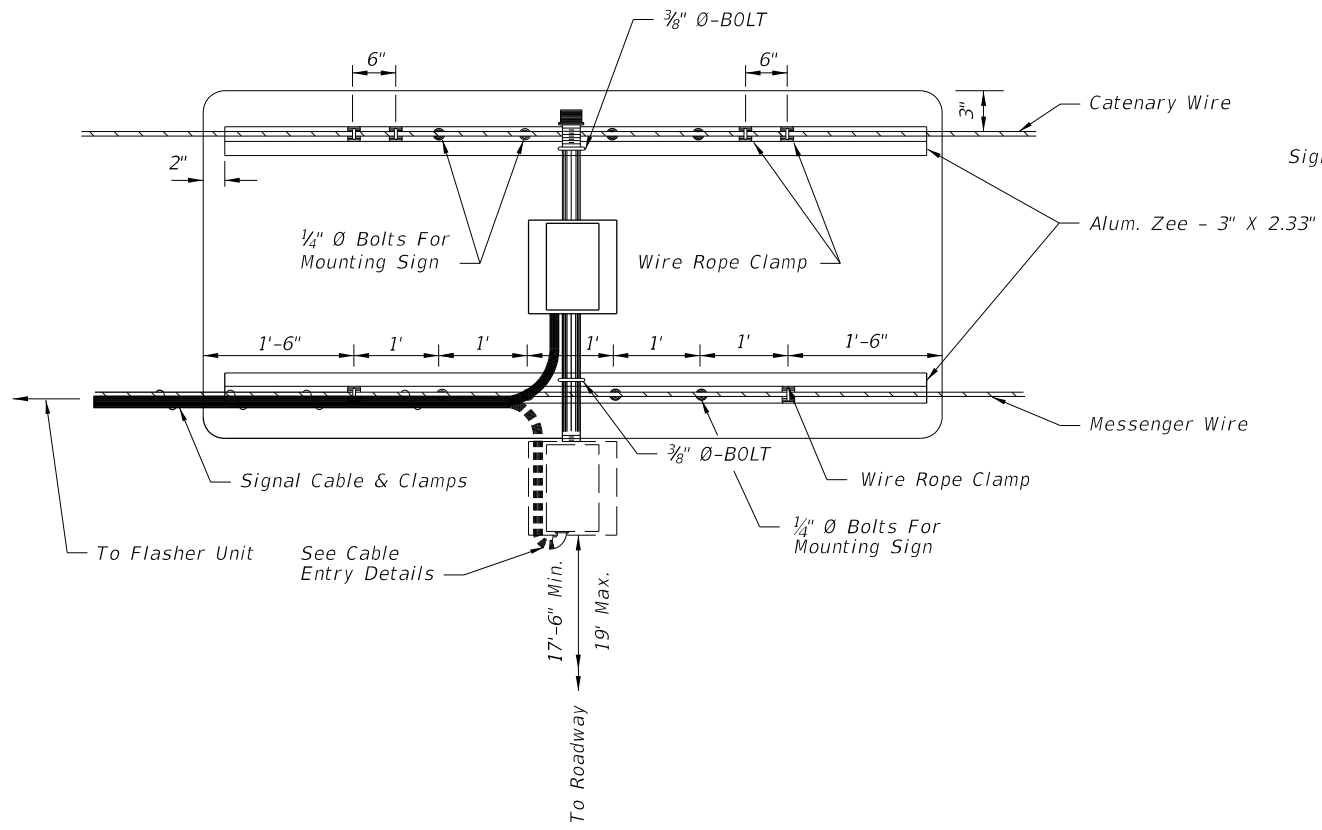
11. SCHOOL BUS STOP



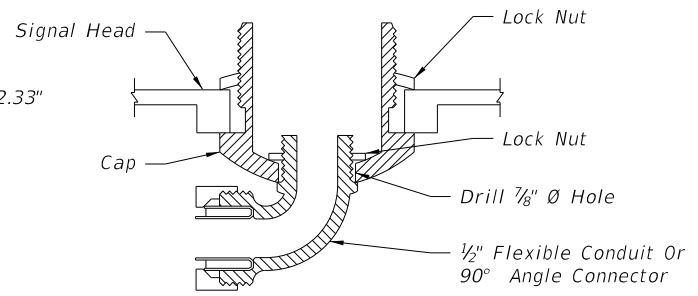
These signs are intended for use only at those few locations where the school entrance is not evident to the motorist, and must be approved in advance by the responsible traffic engineering authority.

6/10/2015 1:45:24 PM

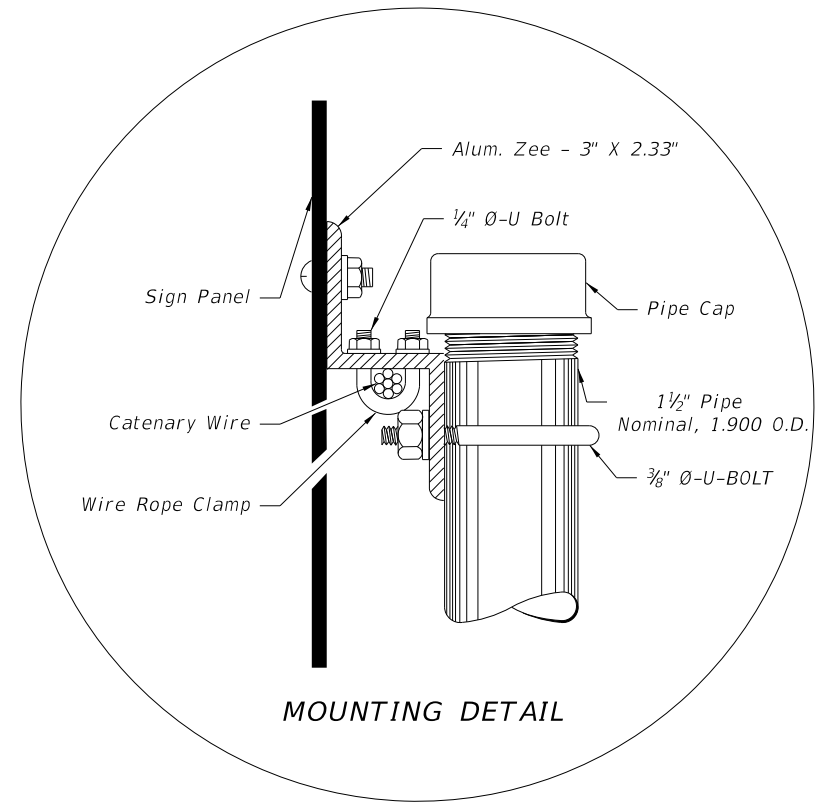
LAST REVISION 07/01/09	DESCRIPTION:		2016 DESIGN STANDARDS	SCHOOL SIGNS & MARKINGS	INDEX NO. 17344	SHEET NO. 4 of 6
REVISION						



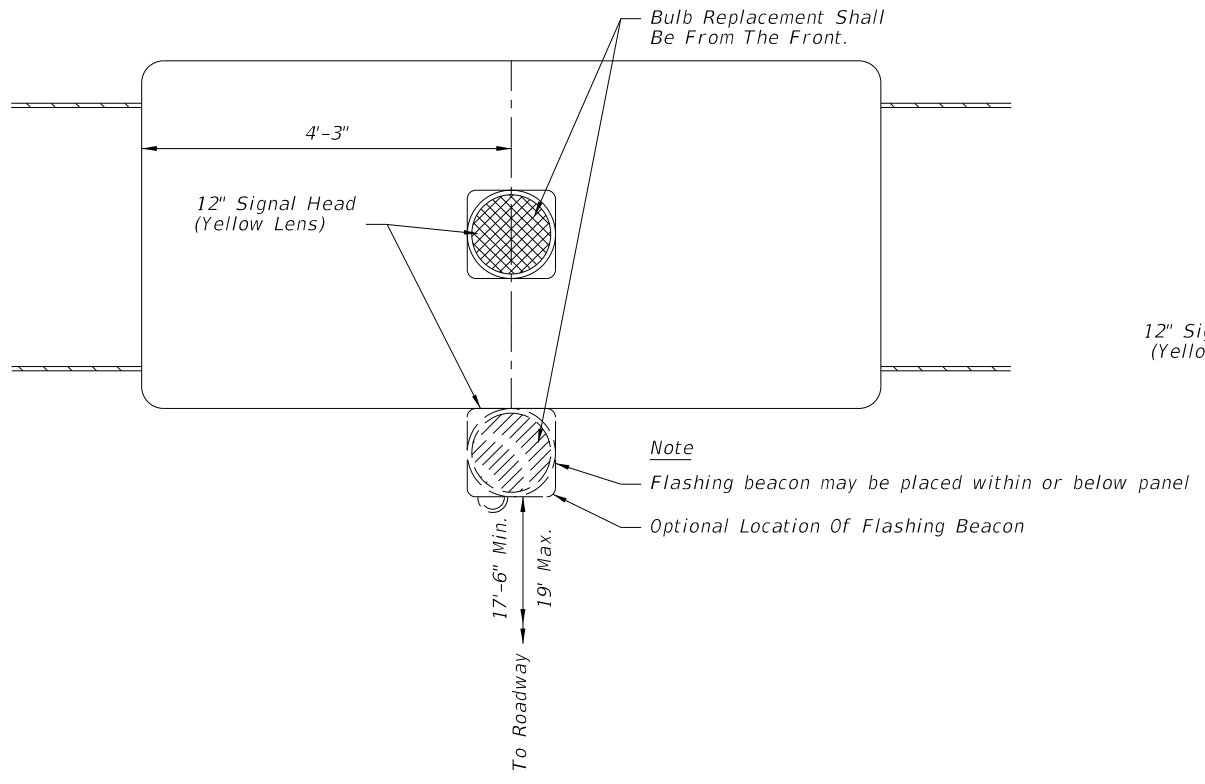
REAR VIEW



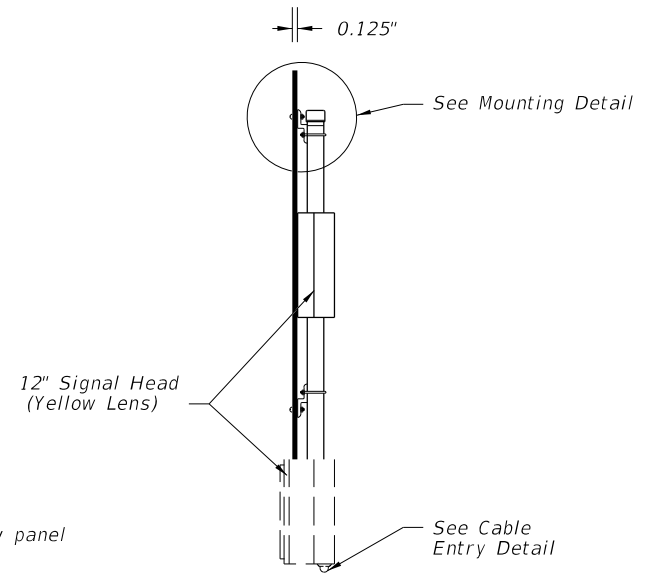
CABLE ENTRY DETAIL



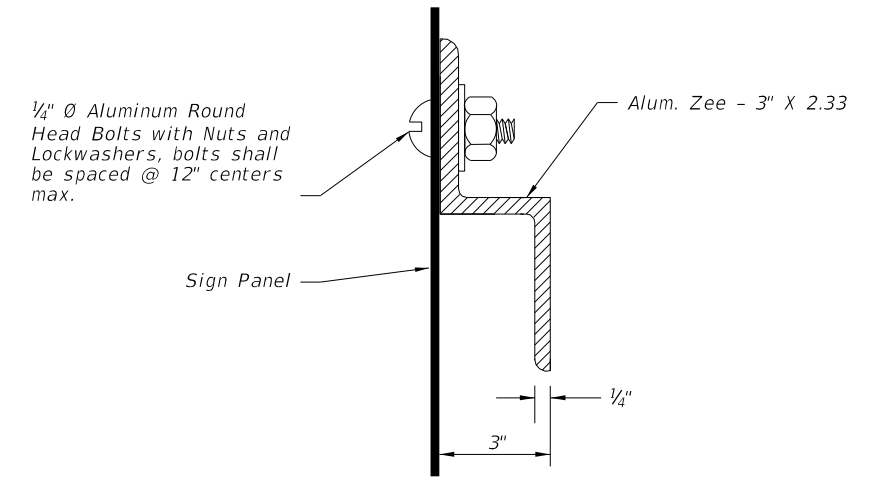
MOUNTING DETAIL



FRONT VIEW




SIDE VIEW

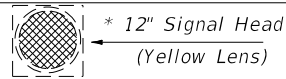
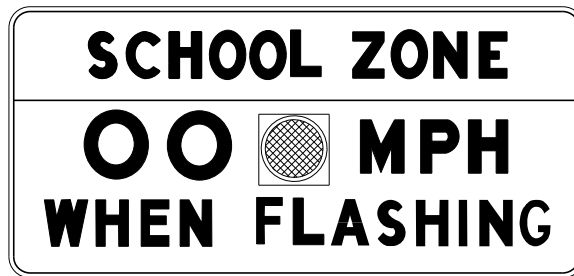


ZEE SECTION DETAIL

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.

6/10/2015 1:45:25 PM

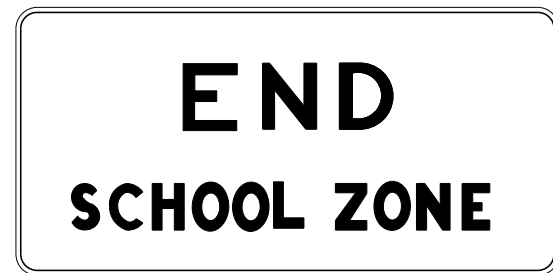
LAST REVISION 07/01/14	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SCHOOL SIGNS & MARKINGS	INDEX NO. 17344	SHEET NO. 5 of 6
---------------------------	----------	--------------	--	-------------------------	--------------------	---------------------



FTP-31-06

OVERHEAD STANDARD

* Flashing Beacon May Be Placed Within Or Below Panel



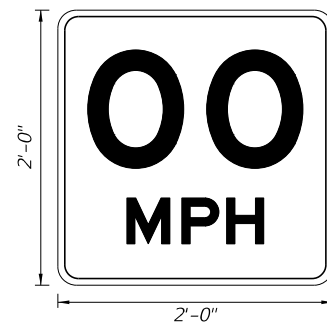
FTP-32-06



FTP-38-06

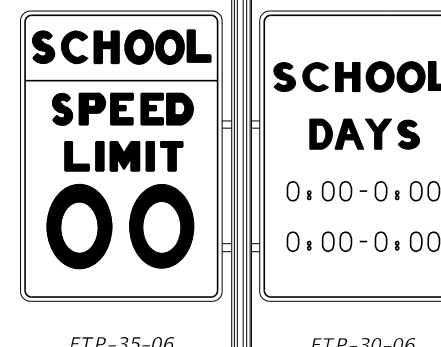


FTP-33-06



W13-1

SPEED LIMIT ASSEMBLY

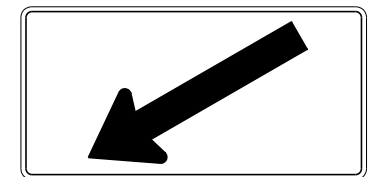


FTP-35-06

FTP-30-06



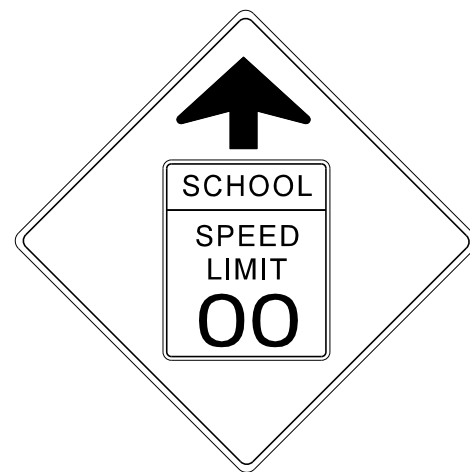
S1-1



W16-7



W16-9P

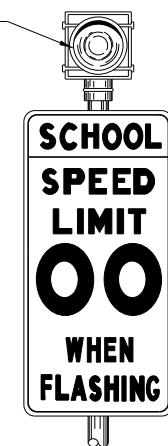


S4-5



S3-1

12" Signal Head (Yellow Lens)



S5-1

Ground Mount Standard

Notes:

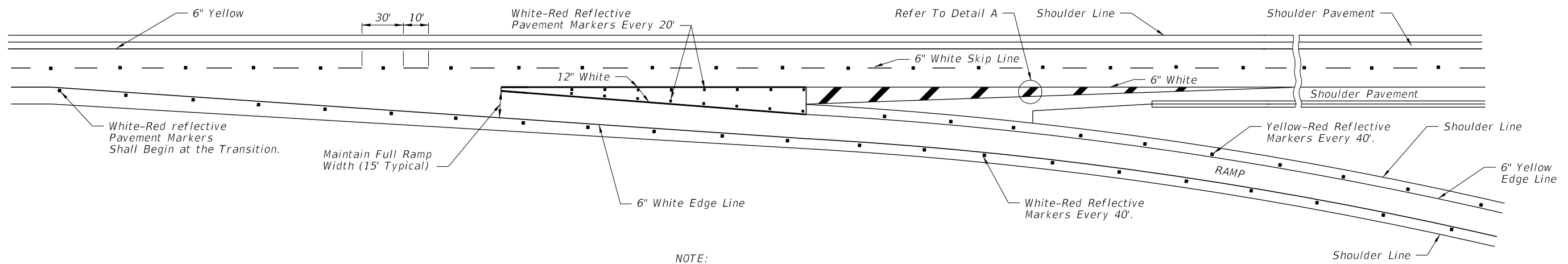
- Standard size signs should be used whenever possible. Minimum sizes may be used only on low volume, low speed (less than 35 mph) streets. Special sizes should be used on expressway facilities where special emphasis is needed.
- The value of the actual school zone speed limit shall be determined by 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.
- See Index No. 17355 for sign details.
- 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.

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.

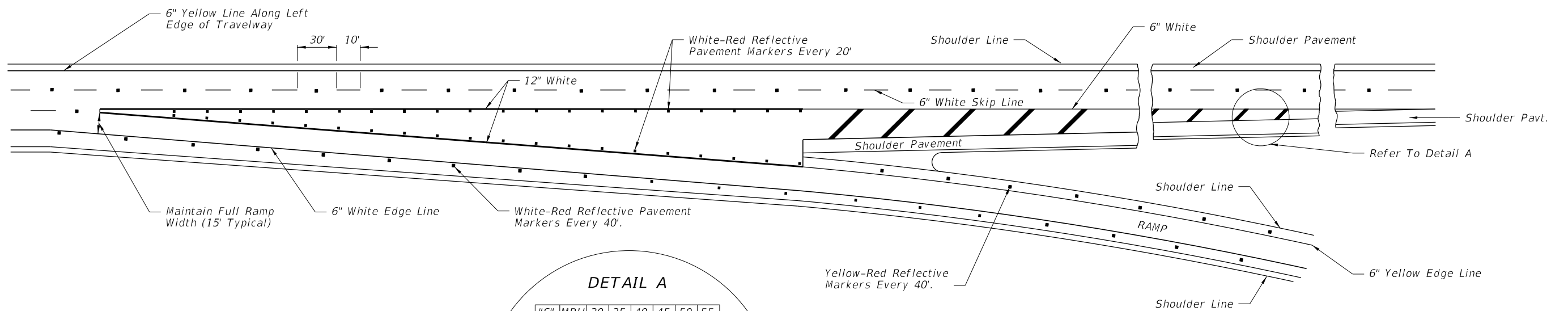
6/10/2015 1:45:25 PM

LAST REVISION 07/01/09	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SCHOOL SIGNS & MARKINGS	INDEX NO. 17344	SHEET NO. 6 of 6
---------------------------	----------	--------------	------------------------------	-------------------------	--------------------	---------------------



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

NORMAL TAPERED EXIT
(TWO THRU LANES)



DETAIL A

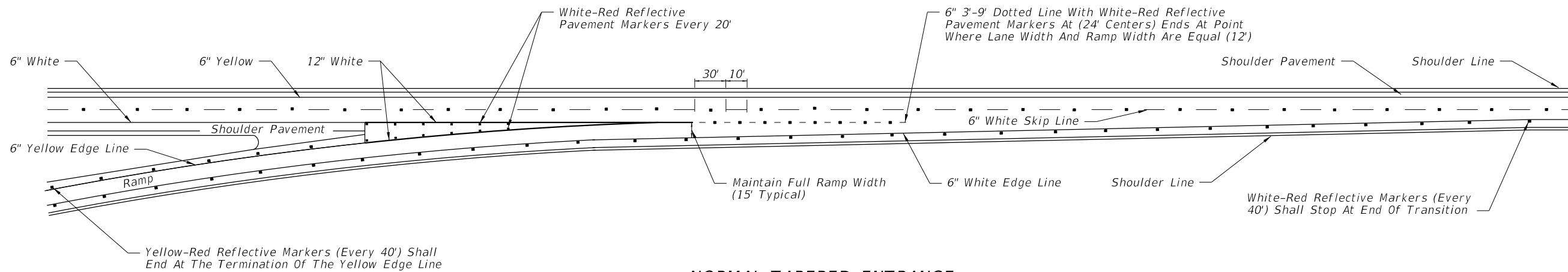
"S"	MPH	30	35	40	45	50	55
"X"	Ft.	20	20	40	40	60	60

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

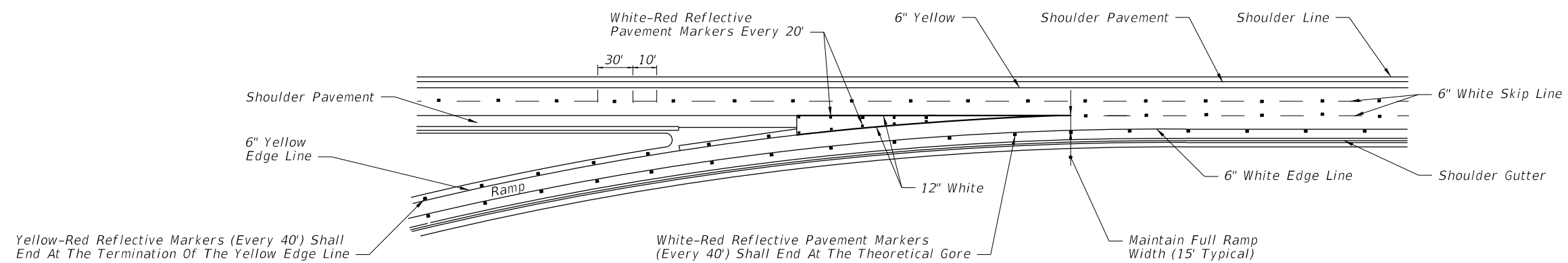
6" White
"X"
18" White
45°
Edge Of Pavt.

NORMAL TAPERED EXIT ONLY
(TWO THRU LANES - THREE APPROACH LANES)

6/9/2015 4:43:55 PM



NORMAL TAPERED ENTRANCE



NORMAL TAPERED ENTRANCE WITH ADDED LANE

6/9/2015 4:43:56 PM

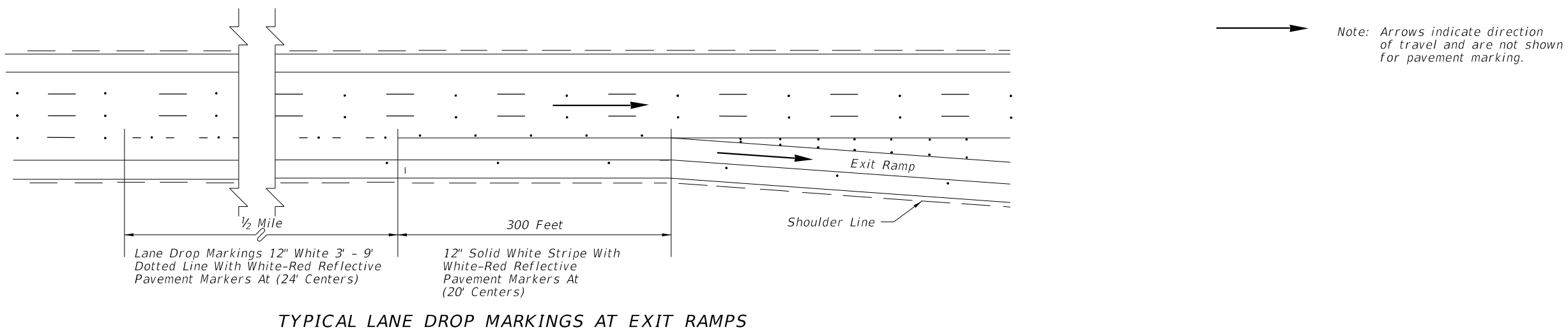
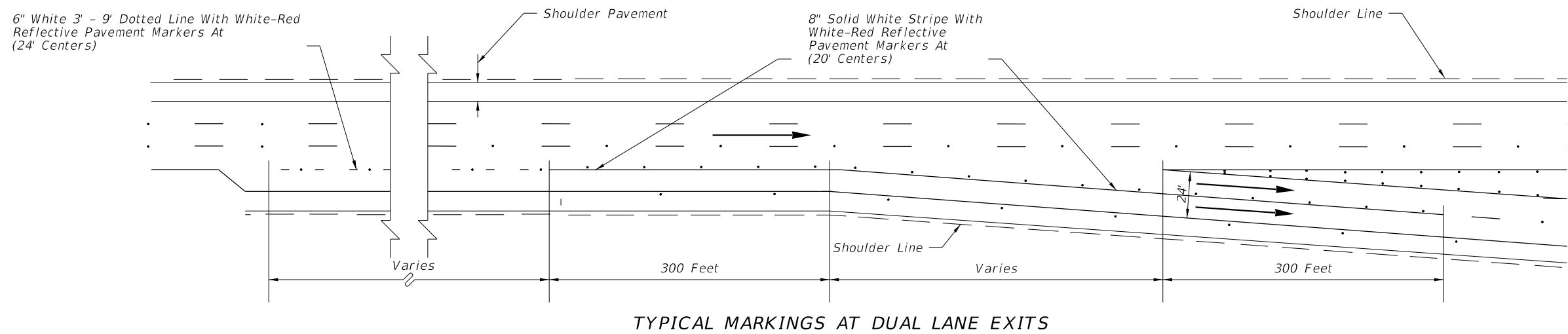
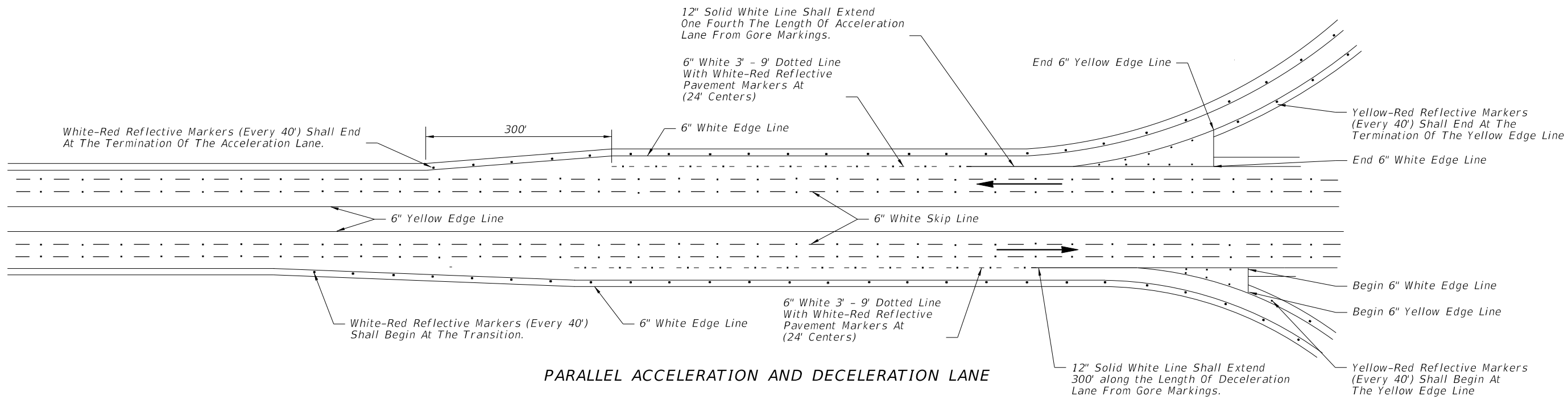
LAST REVISION 07/01/14	REVISION	DESCRIPTION:
---------------------------	----------	--------------



INTERCHANGE MARKINGS

INDEX NO.
17345

SHEET NO.
2 of 4

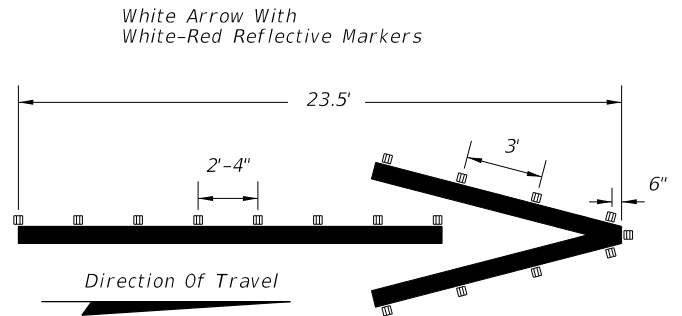
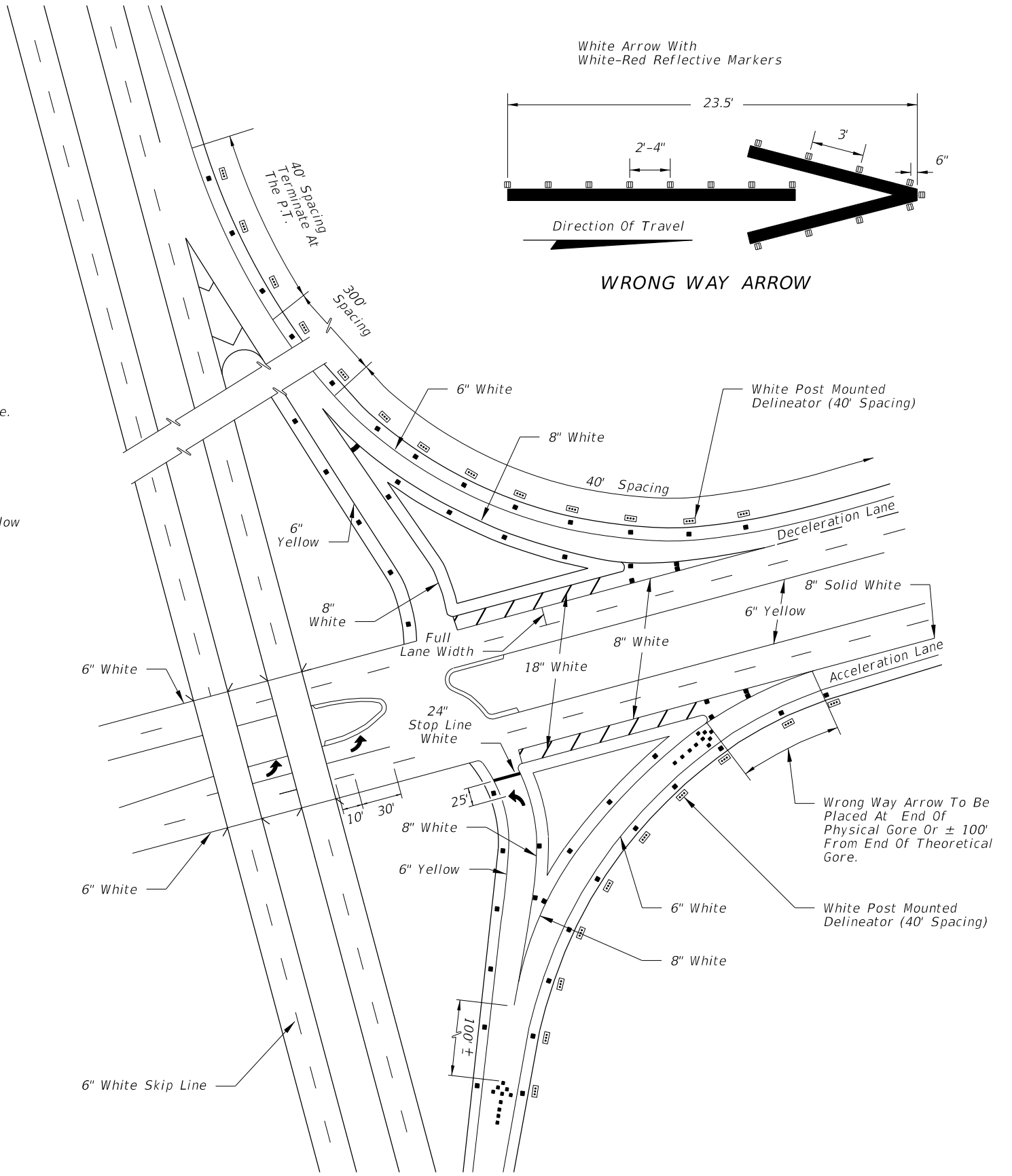
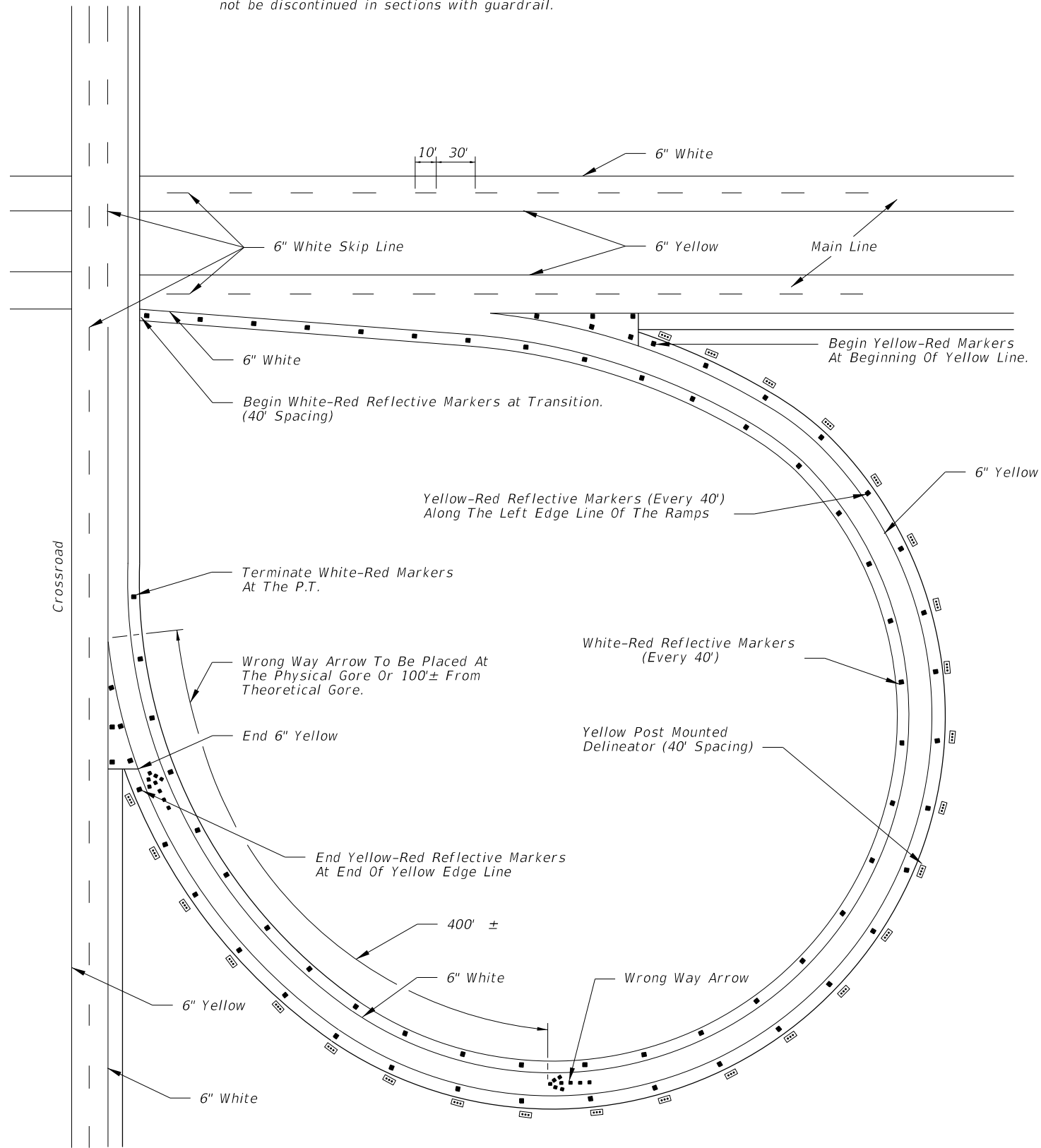


6/9/2015 4:43:56 PM

LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	INTERCHANGE MARKINGS	INDEX NO. 17345	SHEET NO. 3 of 4
---------------------------	----------	--------------	--	-----------------------------	---------------------------	----------------------------

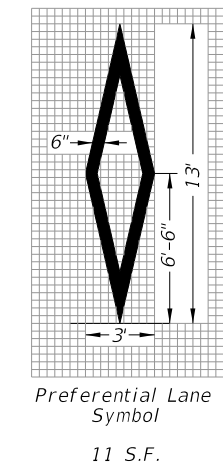
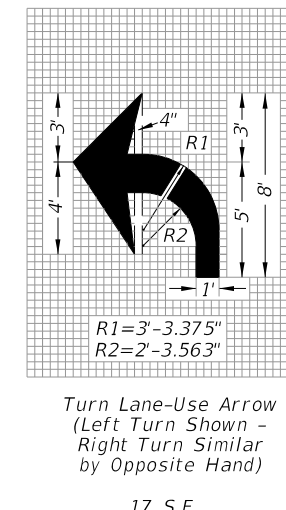
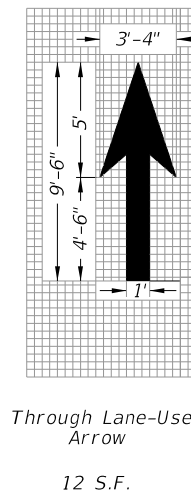
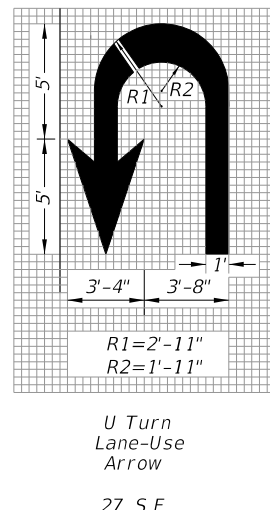
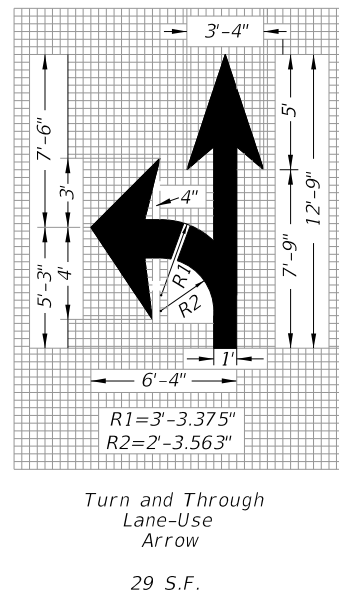
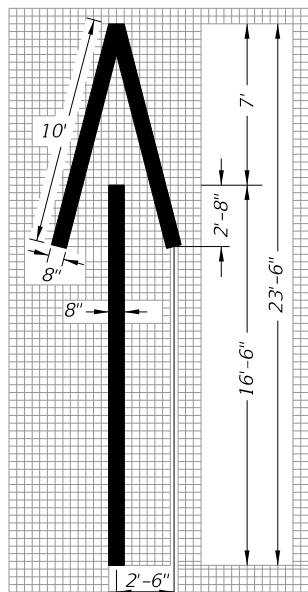
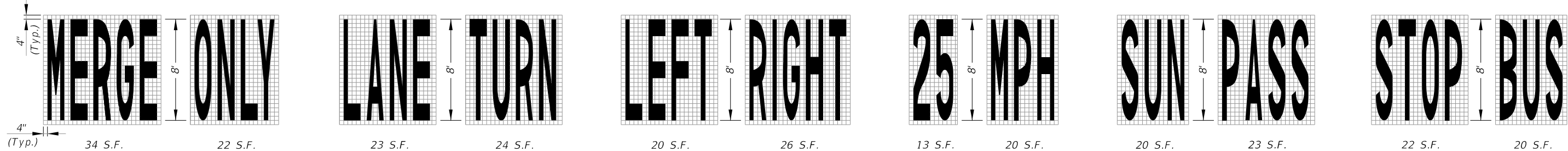
Notes:

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.



6/9/2015 4:43:56 PM

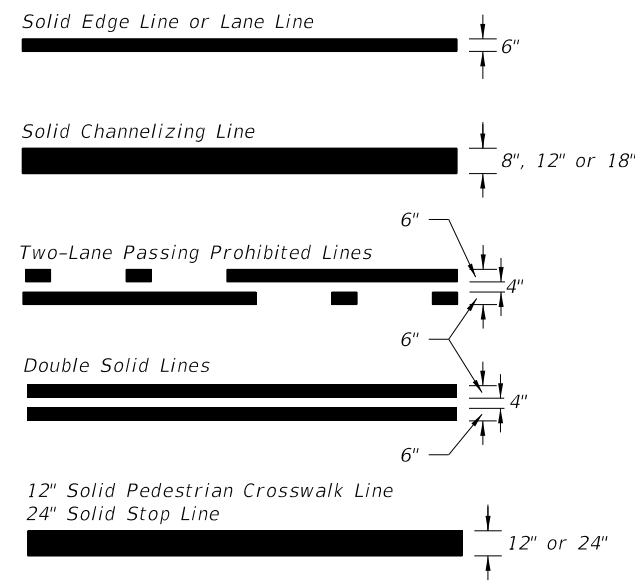
LAST REVISION	07/01/15	DESCRIPTION:	 2016 DESIGN STANDARDS	INTERCHANGE MARKINGS	INDEX NO. 17345	SHEET NO. 4 of 4
---------------	----------	--------------	--	-----------------------------	---------------------------	----------------------------



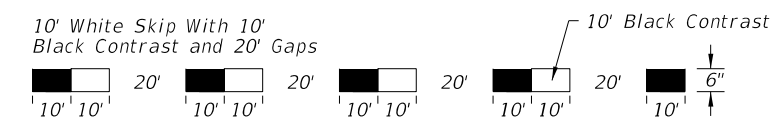
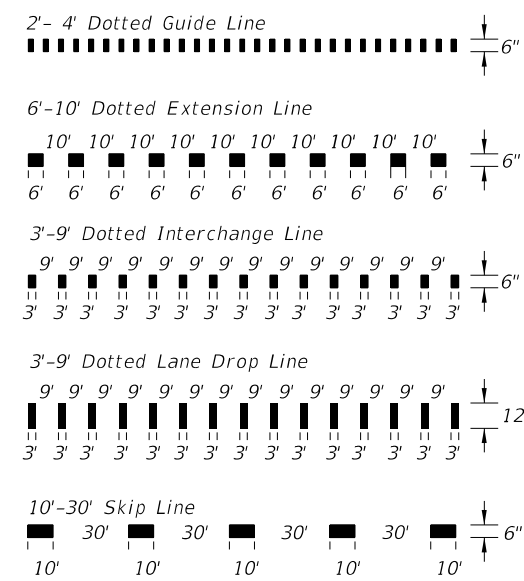
PAVEMENT ARROW AND MESSAGE DETAILS NOTE: When arrow and pavement message are used together, the arrow shall be located down stream of the pavement message and shall be separated from the pavement message by a distance of 25' (Base of the arrow to the base of the message). Stop message shall be placed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

DIMENSIONS ARE WITHIN 1" ±

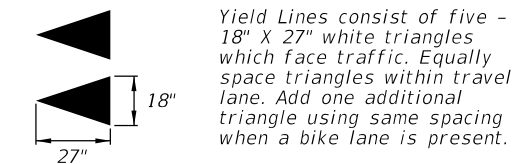
PAVEMENT ARROW AND MESSAGE DETAILS



TYPES OF PAVEMENT MARKING LINES



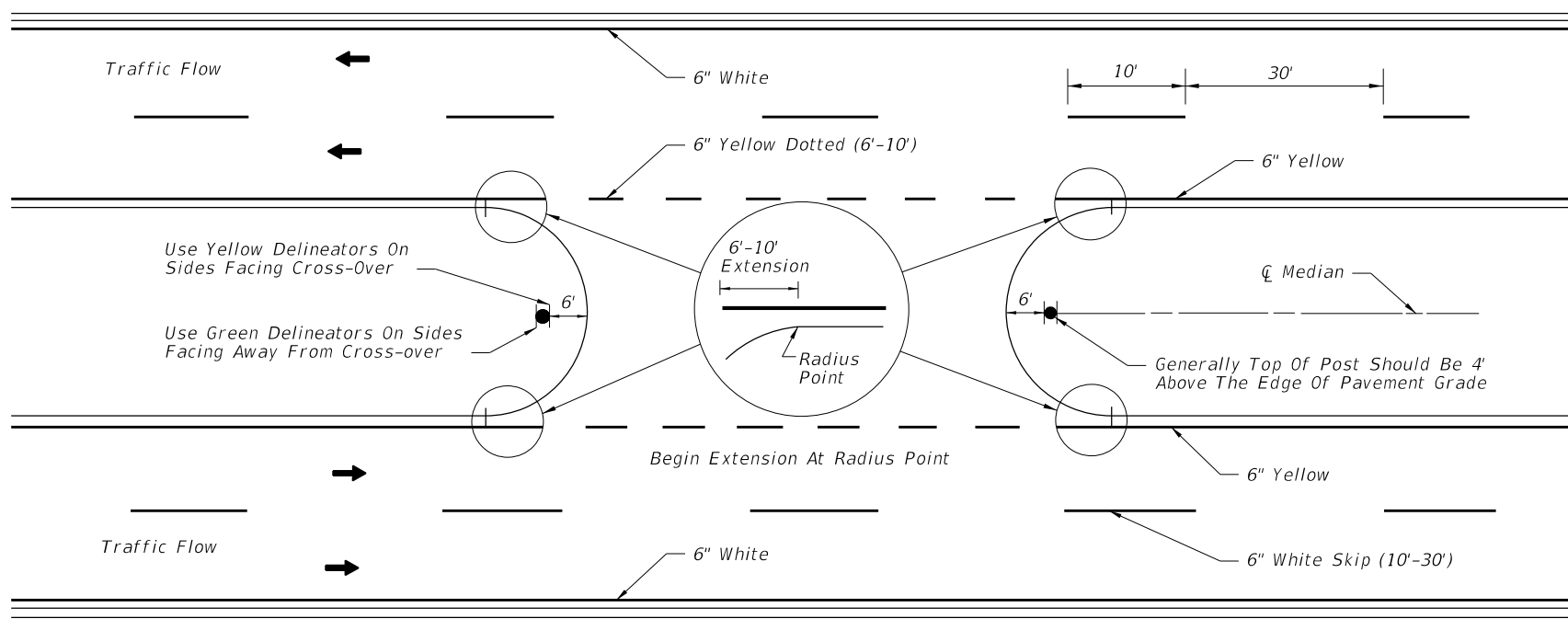
CONTRAST MARKINGS



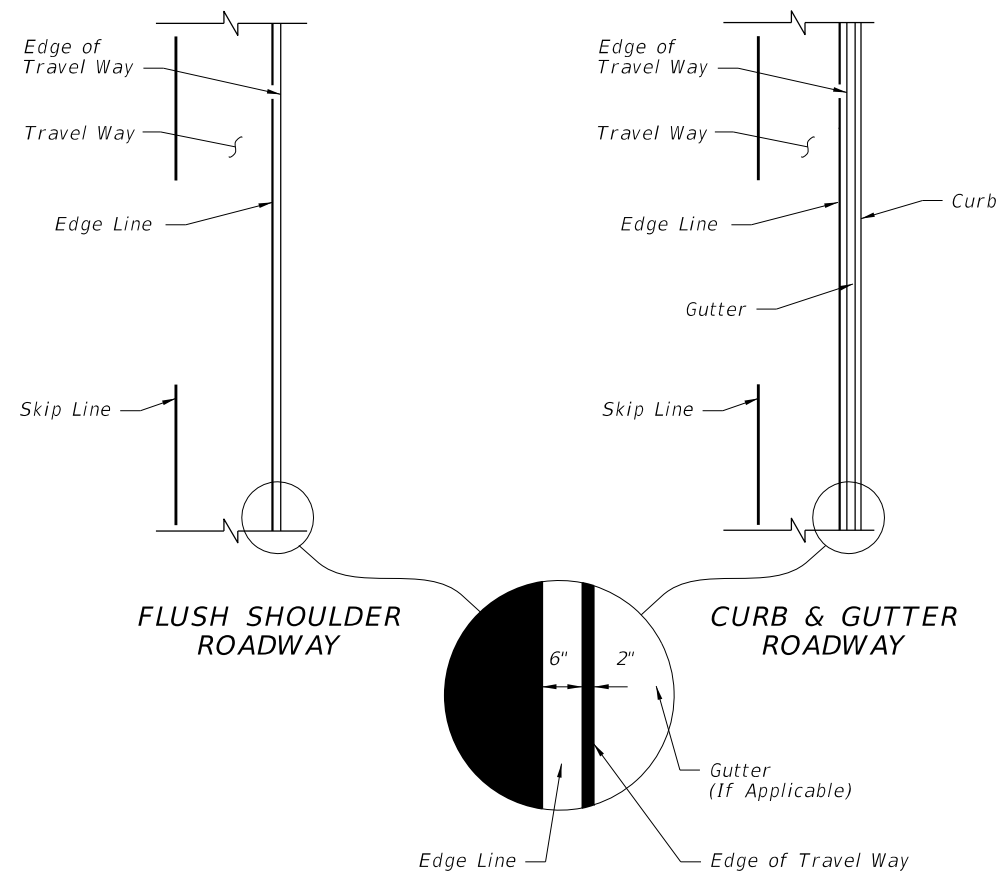
YIELD LINES

6/25/2015 2:04:32 PM

LAST REVISION 01/21/15	DESCRIPTION:	 2016 DESIGN STANDARDS	SPECIAL MARKING AREAS	INDEX NO. 17346	SHEET NO. 1 of 14
REVISION					

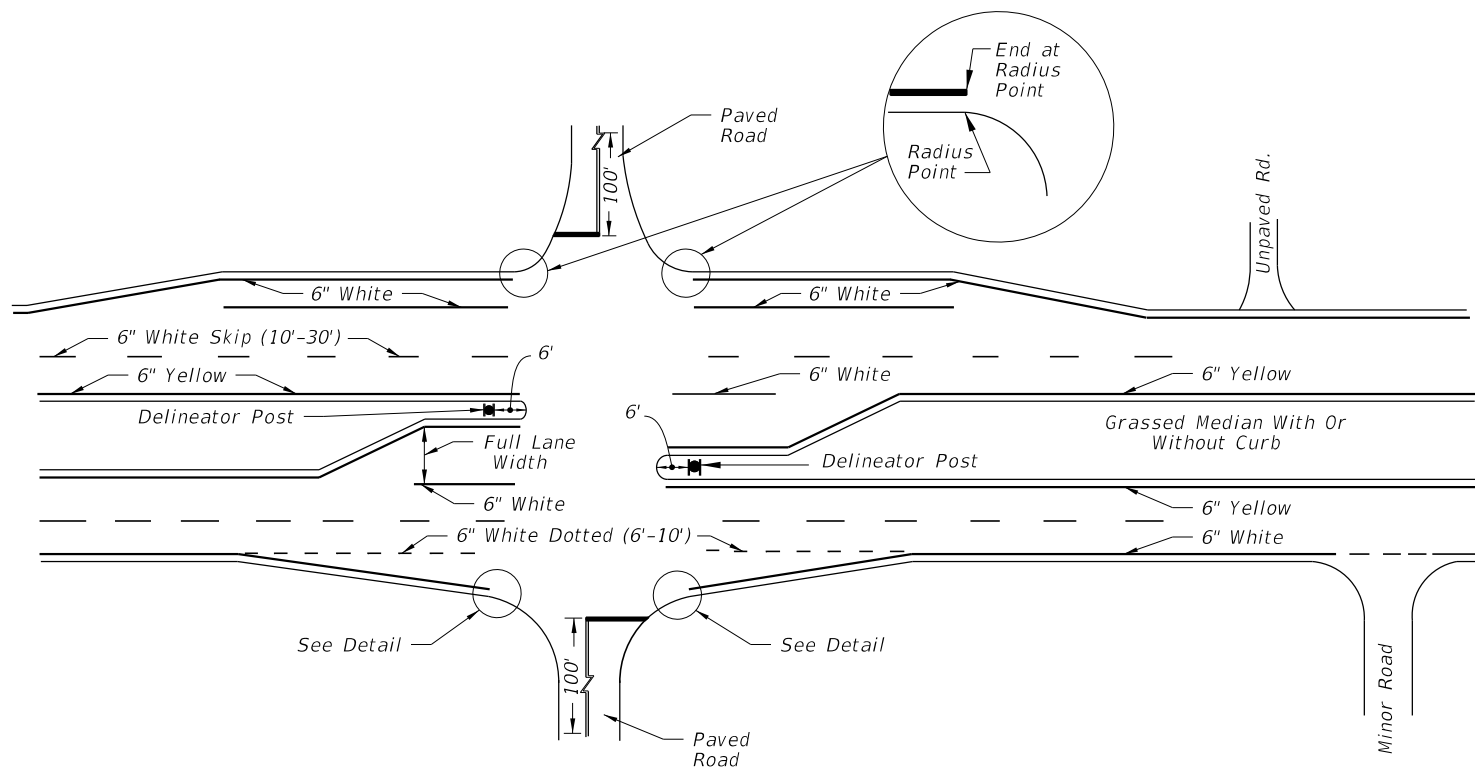


PAVEMENT MARKINGS AND DELINEATORS FOR MEDIAN CROSS-OVER

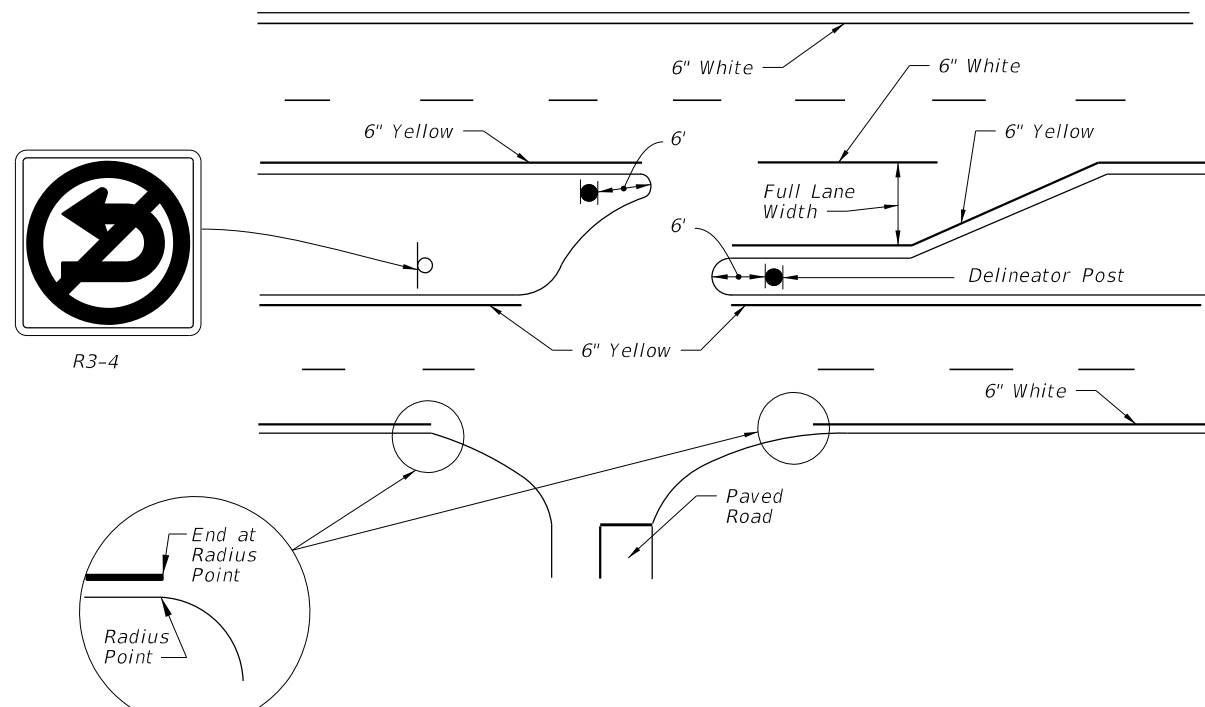


PLACEMENT OF EDGE LINES


NOTE:
Markings applied to median noses shall be yellow in color.

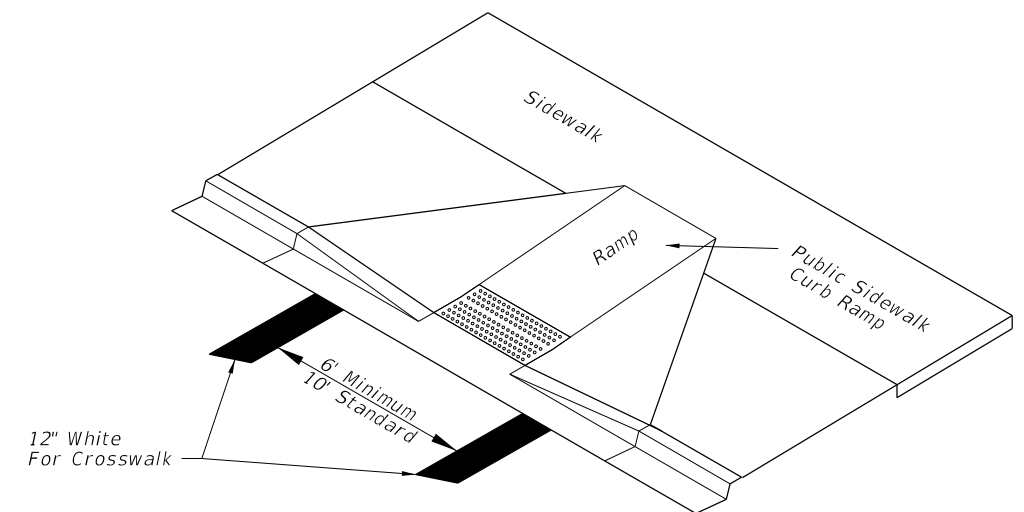
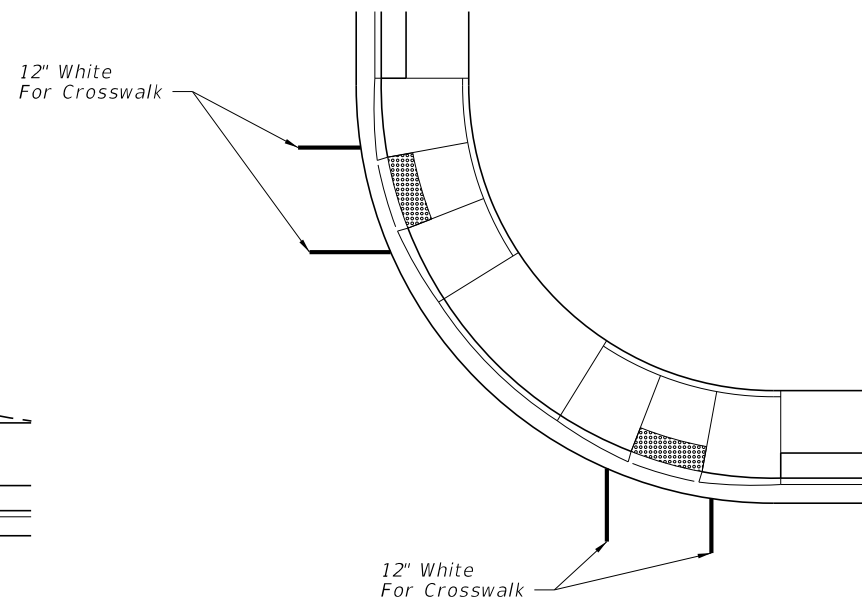
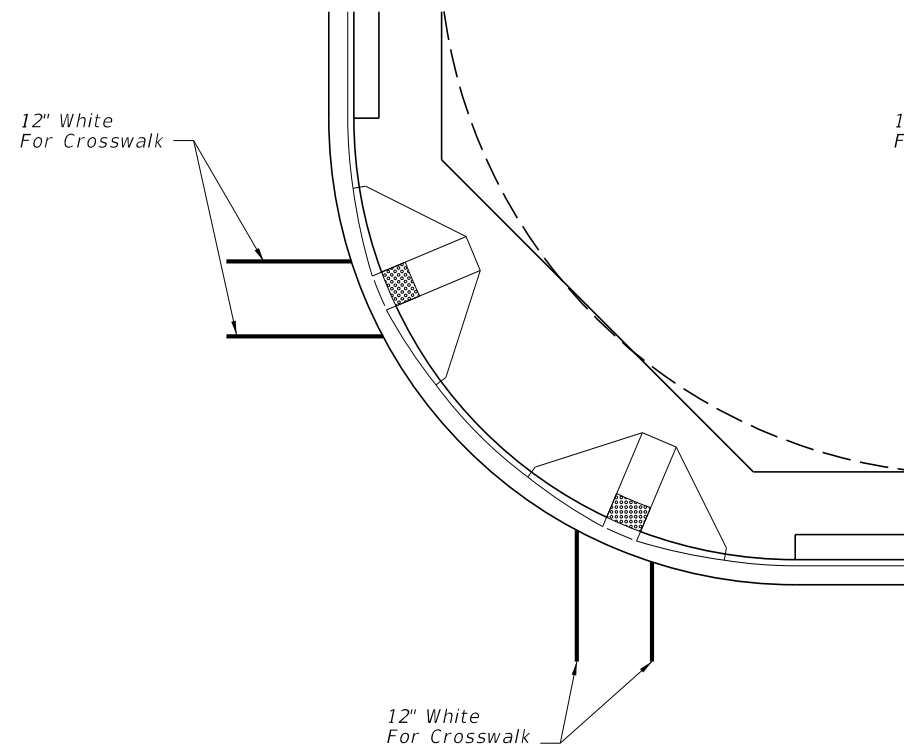
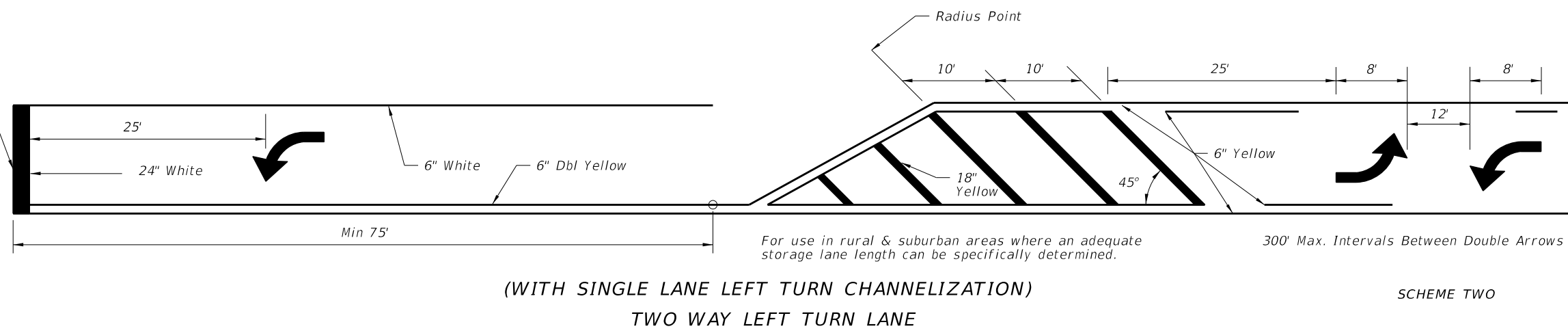
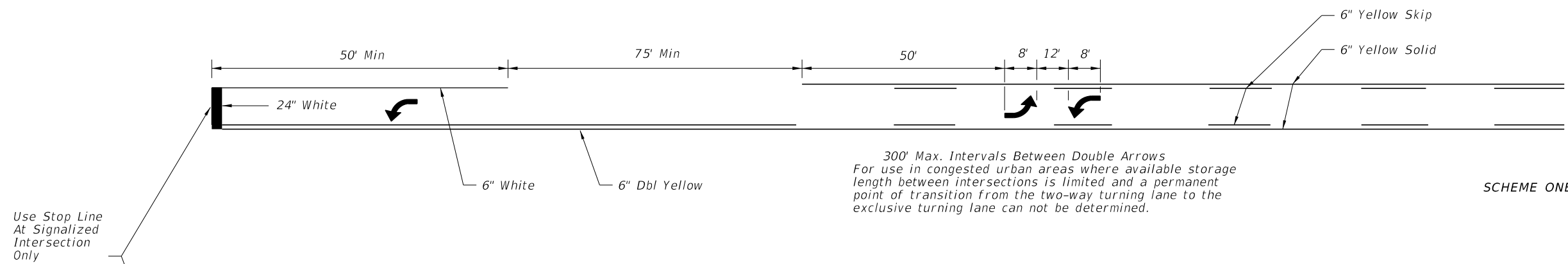


PAVEMENT MARKINGS FOR INTERSECTIONS WITH MAJOR AND MINOR ROADS



6/25/2015 2:04:33 PM

LAST REVISION 01/21/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SPECIAL MARKING AREAS	INDEX NO. 17346	SHEET NO. 2 of 14
---------------------------	----------	--------------	---	------------------------------	---------------------------	-----------------------------



TYPICAL CROSSWALK MARKINGS FOR CURB RAMPS

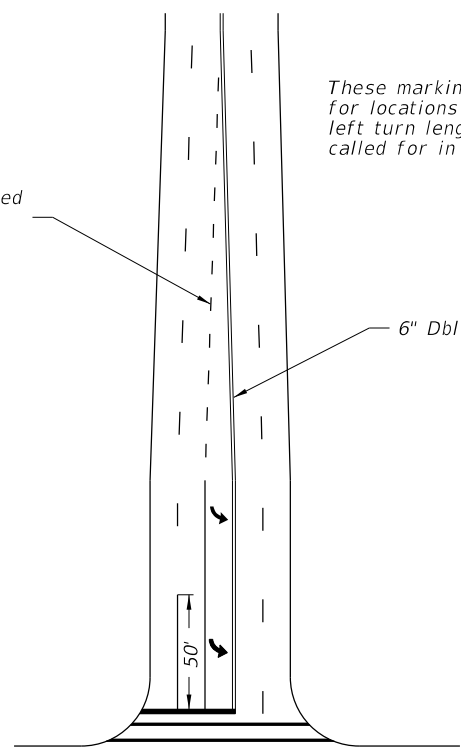
6/25/2015 2:04:33 PM

LAST REVISION 07/01/15	REVISION	DESCRIPTION:
---------------------------	----------	--------------

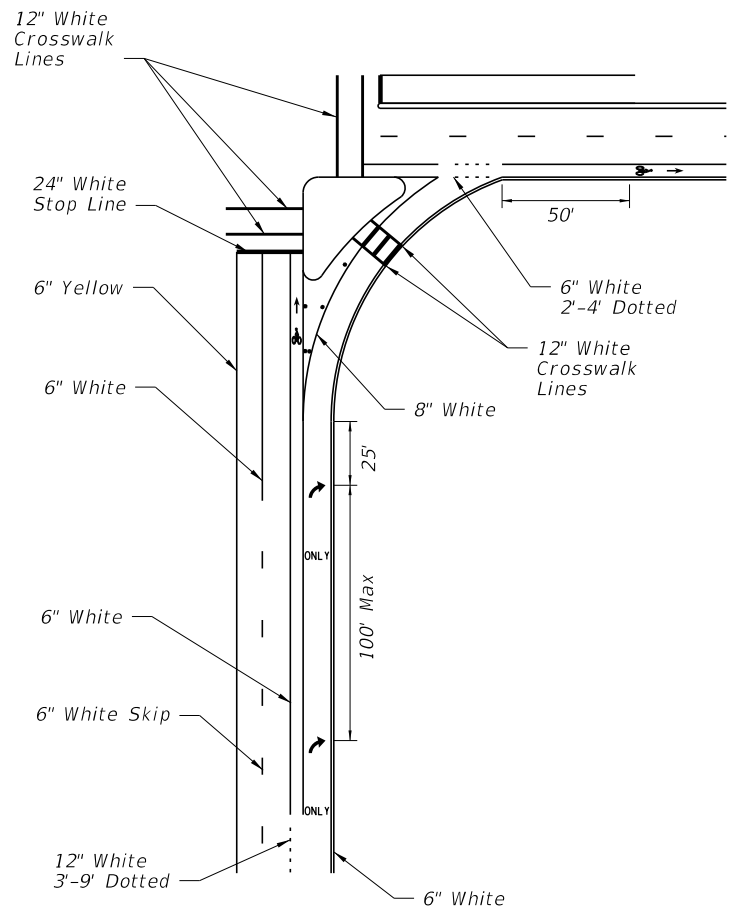
6'-10' Dotted
6" White

These markings may be used for locations with restricted left turn lengths, only when called for in plans.

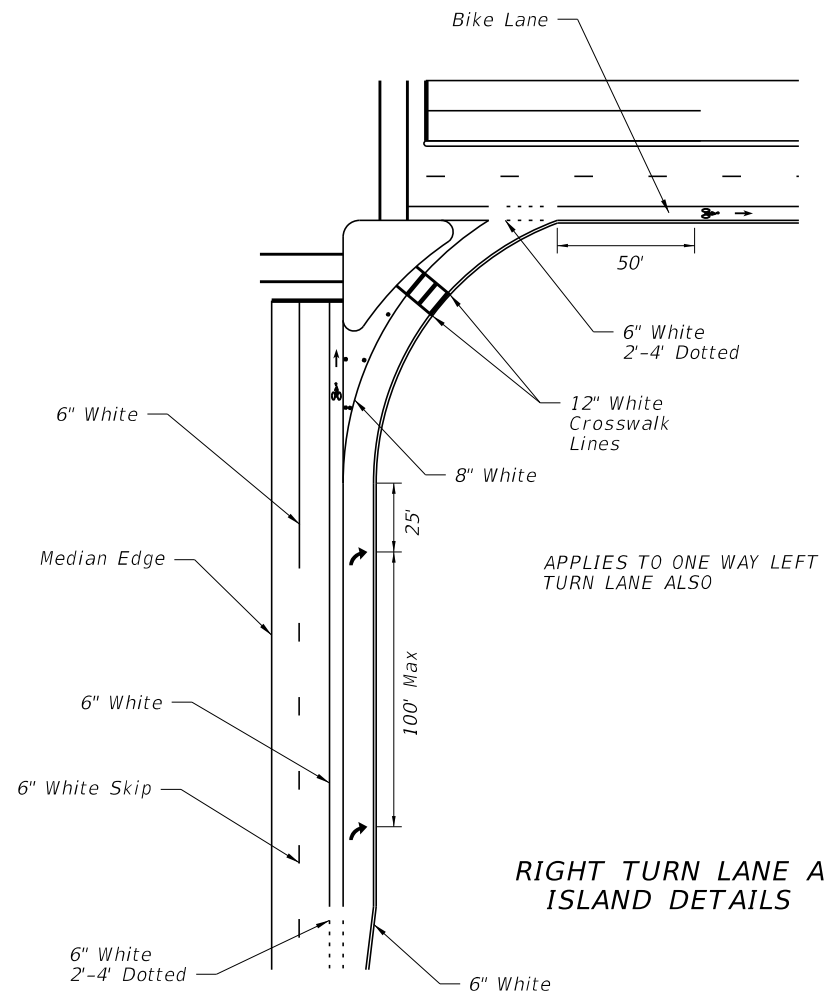
6" Dbl Yellow



RESTRICTED LEFT TURN MARKING



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



APPLIES TO ONE WAY LEFT TURN LANE ALSO

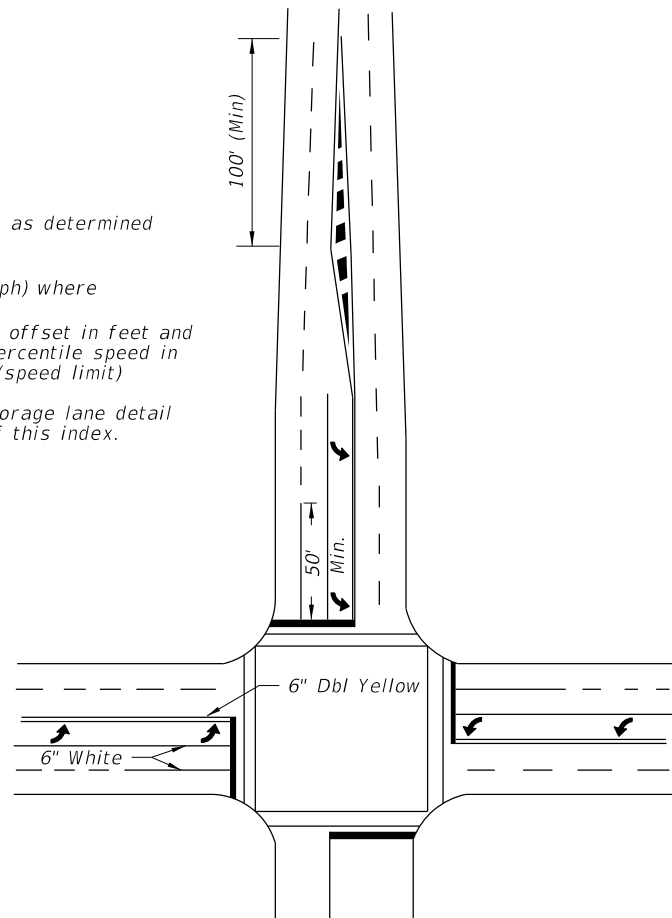
RIGHT TURN LANE AND ISLAND DETAILS

100' Minimum or as determined by L=WS

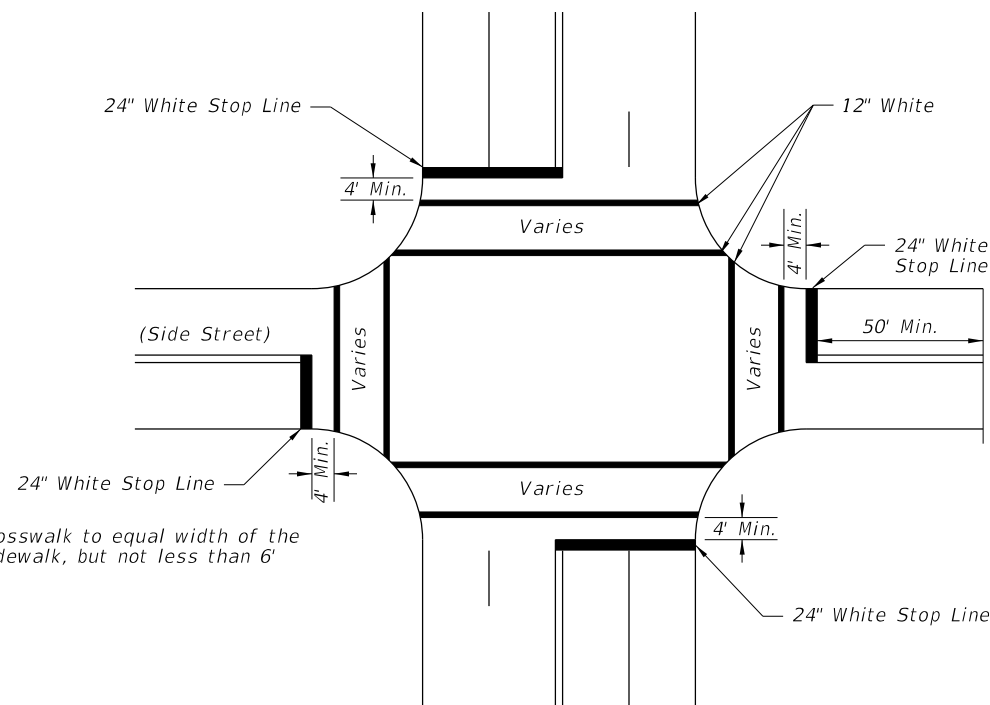
($L = \frac{WS^2}{60} < 45 \text{ mph}$) where

W is the lateral offset in feet and S is the 85th percentile speed in miles per hour (speed limit)

For left turn storage lane detail see Sheet 11 of this index.



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



Width of crosswalk to equal width of the adjacent sidewalk, but not less than 6'

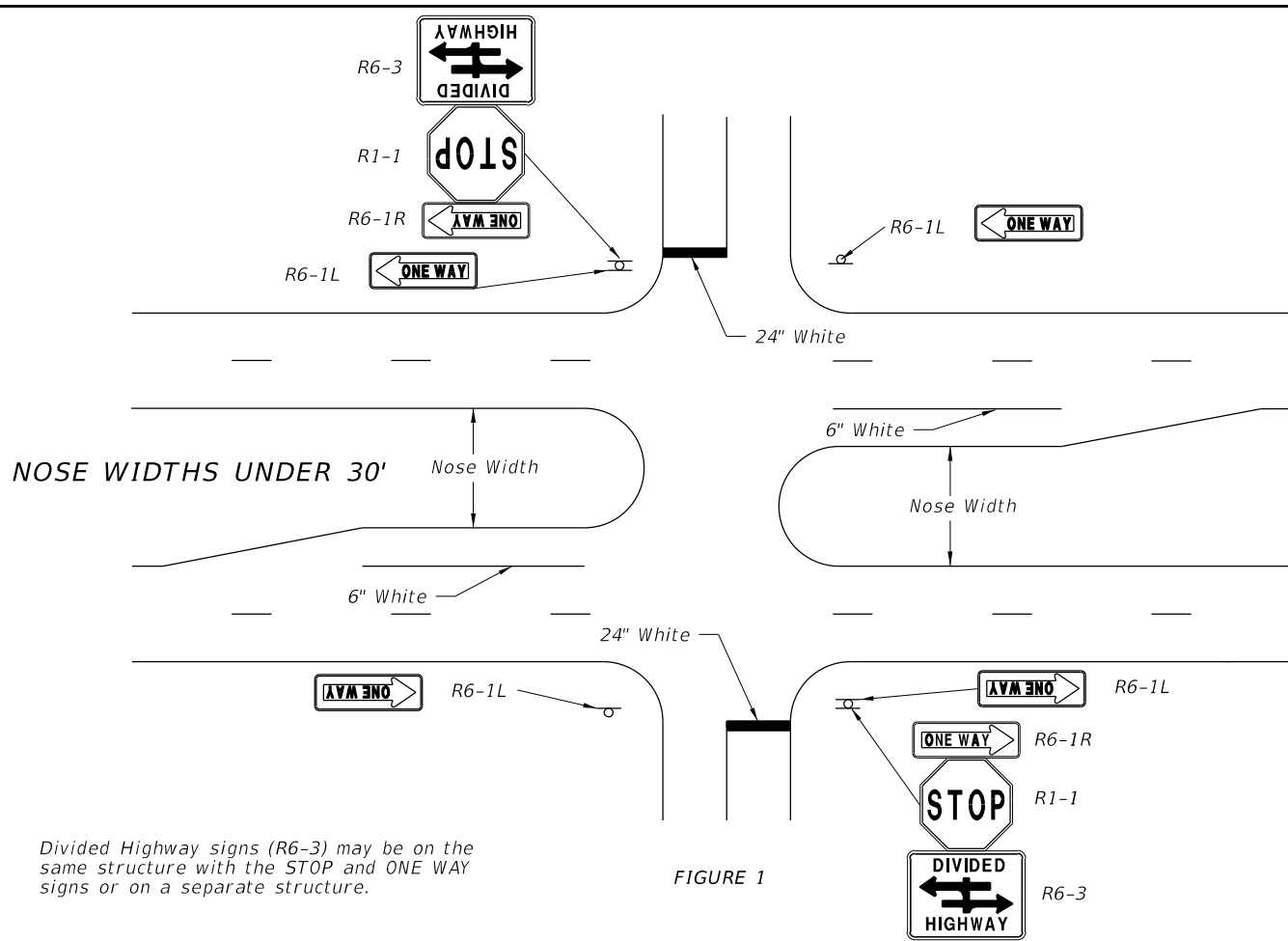
STOP BARS, CROSSWALKS AND DOUBLE CENTER LINE DETAILS

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.

6/25/2015 2:04:34 PM

LAST REVISION 07/01/15	DESCRIPTION:
---------------------------	--------------



Divided Highway signs (R6-3) may be on the same structure with the STOP and ONE WAY signs or on a separate structure.

FIGURE 1

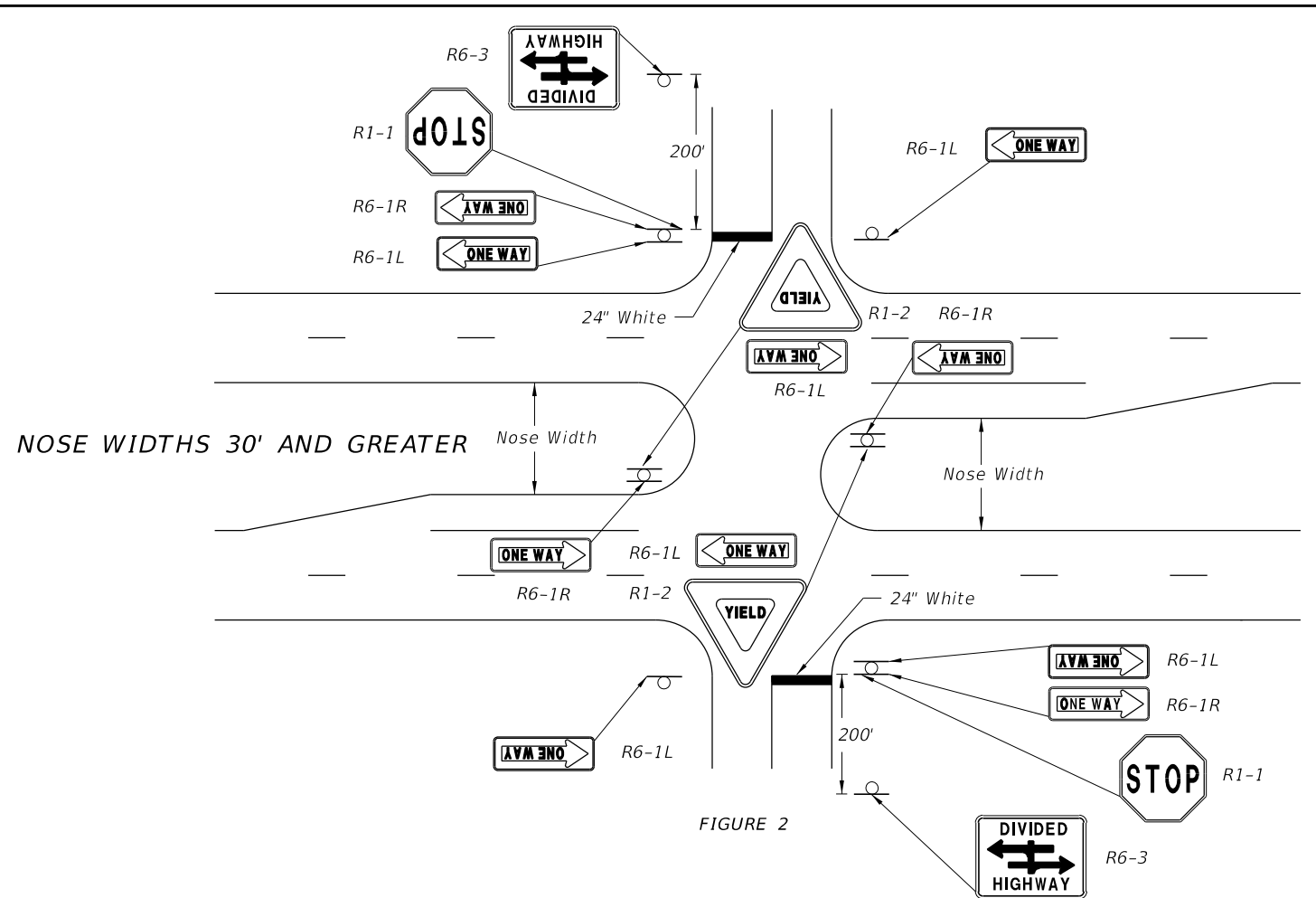
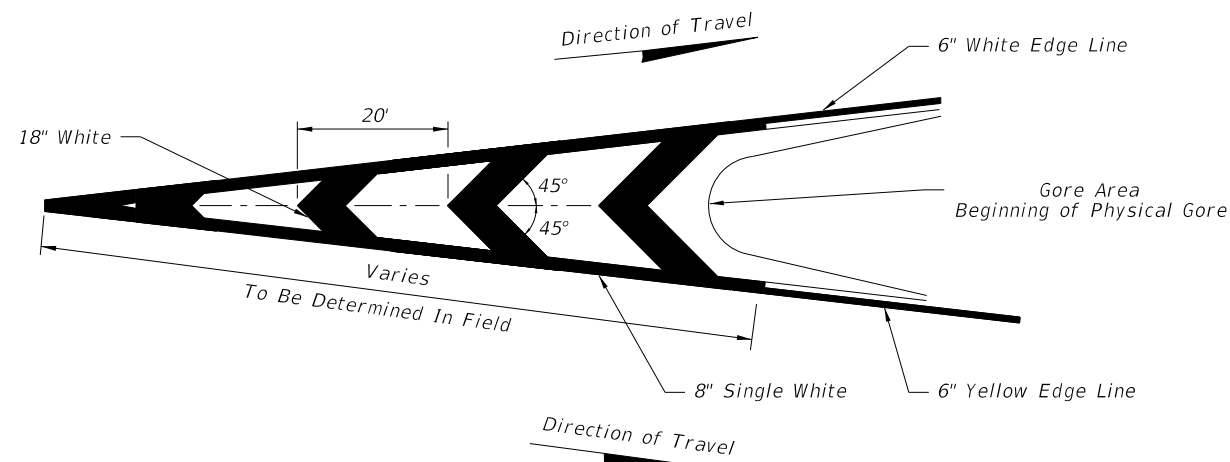
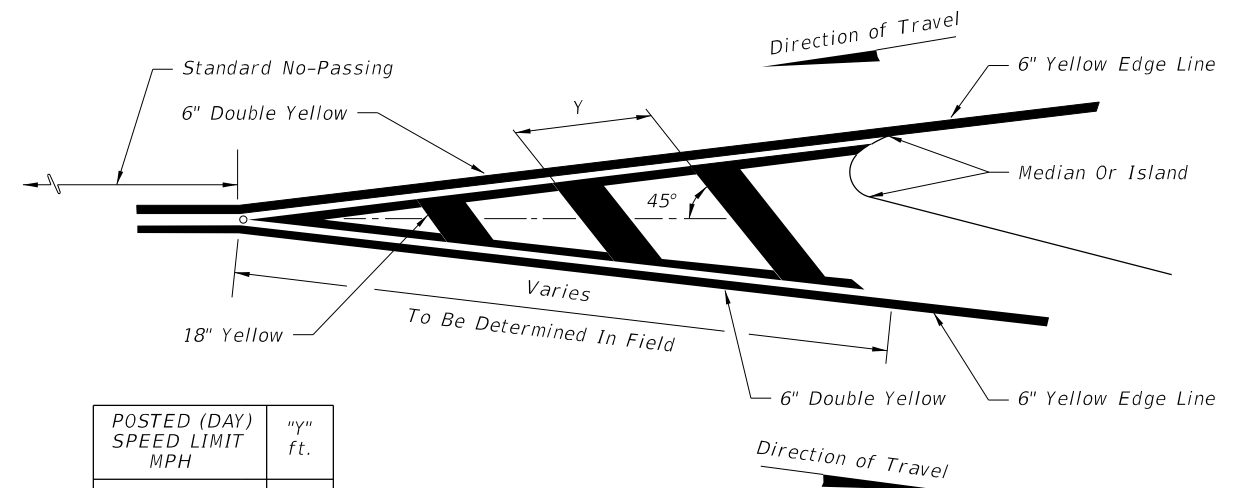


FIGURE 2

ONE-WAY SIGNS ON DIVIDED HIGHWAY INTERSECTIONS



PAVEMENT MARKINGS FOR TRAFFIC CHANNELIZATION AT GORE
(TRAFFIC FLOWS IN SAME DIRECTION)



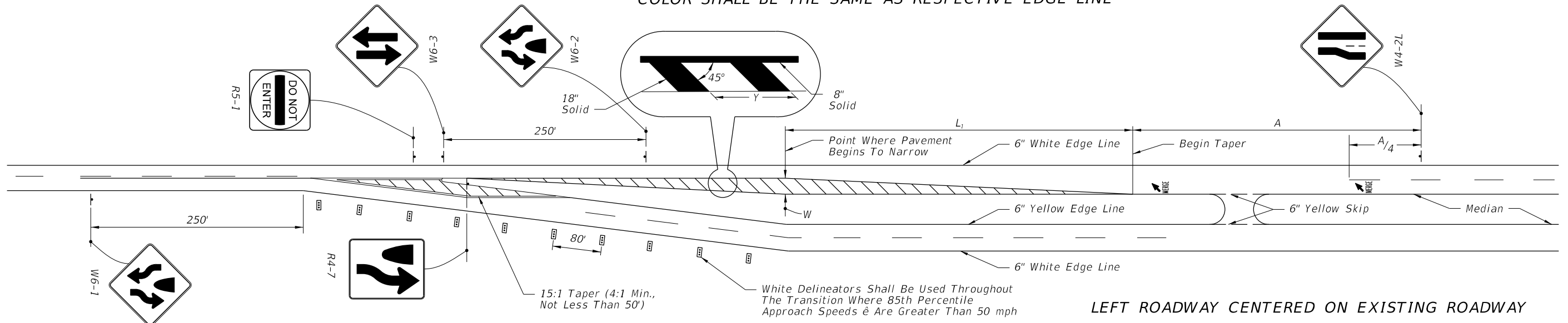
POSTED (DAY) SPEED LIMIT MPH	"Y" ft.
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40

PAVEMENT MARKING FOR TRAFFIC SEPARATION
(TRAFFIC FLOWS IN OPPOSING DIRECTIONS)

6/25/2015 2:04:34 PM

LAST REVISION	DESCRIPTION:
07/01/13	

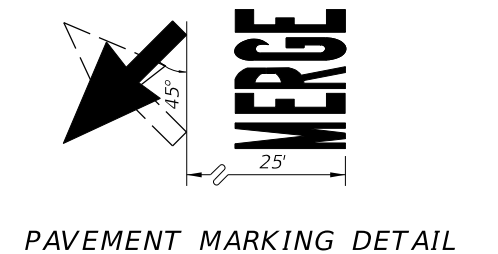
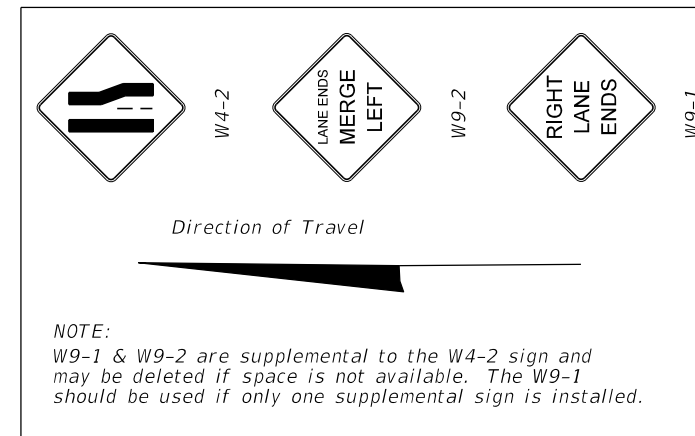
TYPICAL TRANSITION MARKING
 COLOR SHALL BE THE SAME AS RESPECTIVE EDGE LINE



**W	TRANSITION DISTANCE L ₁ (FEET)						
*S	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

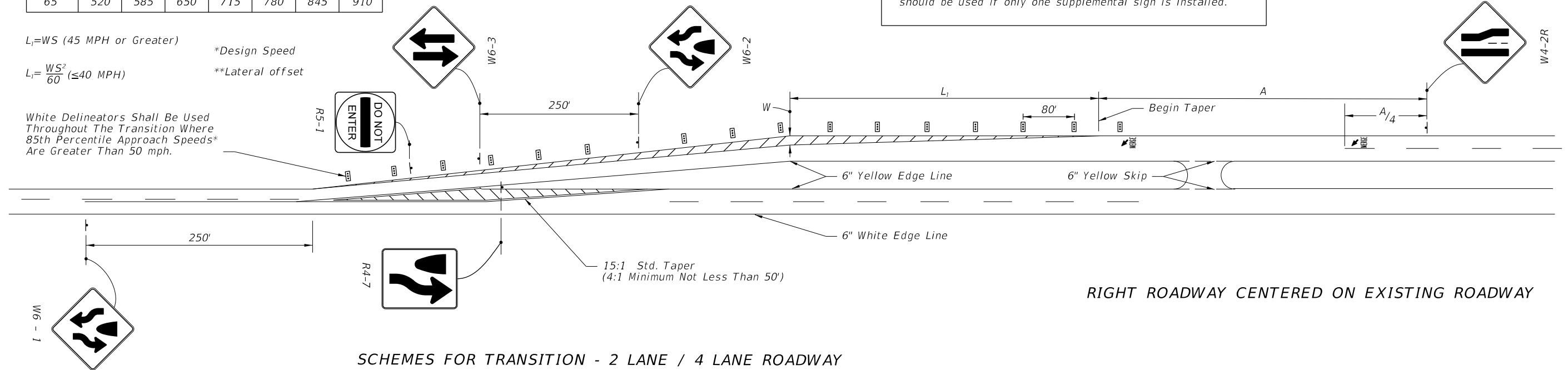
SPEED* MPH	"A" (FT.)
55	950
50	850
45	750
40	650
30	450

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



$L_1 = WS$ (45 MPH or Greater) *Design Speed
 $L_1 = \frac{WS^2}{60}$ (≤ 40 MPH) **Lateral offset

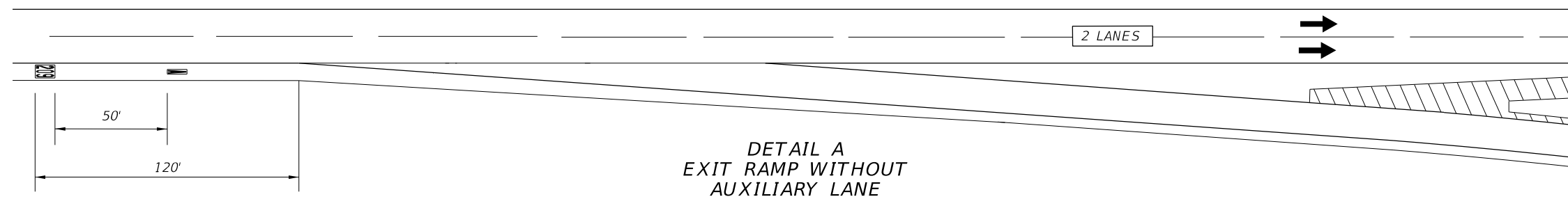
White Delineators Shall Be Used Throughout The Transition Where 85th Percentile Approach Speeds* Are Greater Than 50 mph.



SCHEMES FOR TRANSITION - 2 LANE / 4 LANE ROADWAY

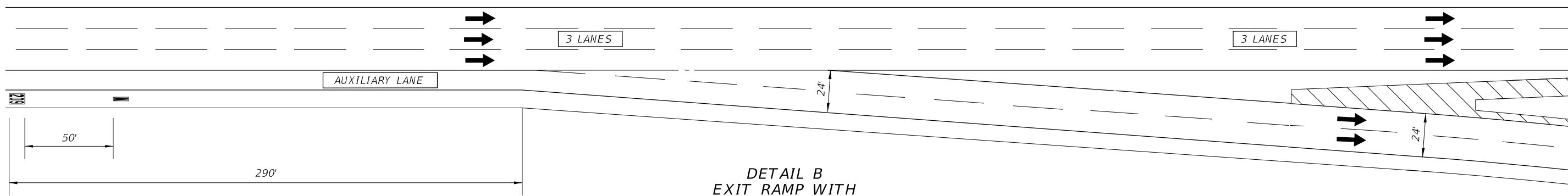
6/25/2015 2:04:35 PM

LAST REVISION	DESCRIPTION:
07/01/09	

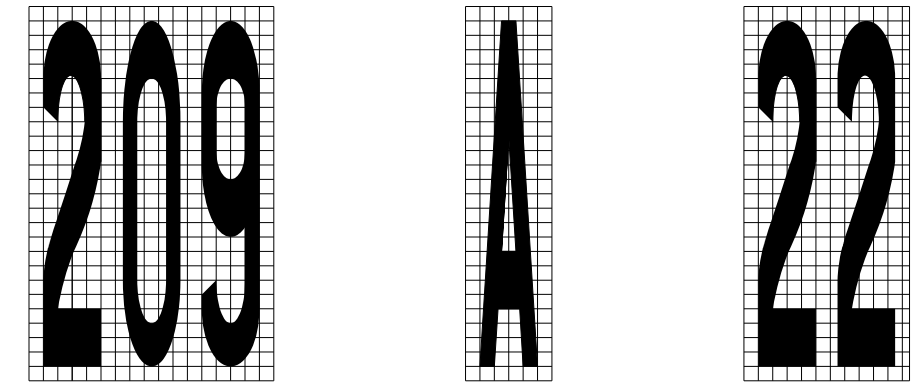


DETAIL A
EXIT RAMP WITHOUT
AUXILIARY LANE

LAYOUT FOR 1, 2 AND 3 DIGIT NUMBERS AND LETTERS



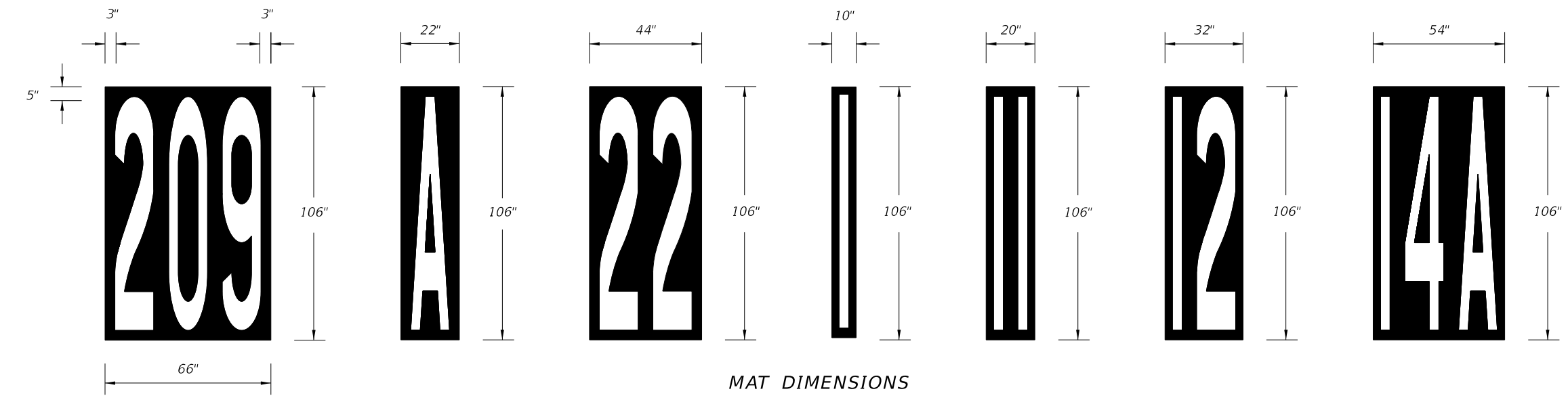
DETAIL B
EXIT RAMP WITH
AUXILIARY LANE



MESSAGE SIZE AND SPACING
4" X 4" squares

NOTES:

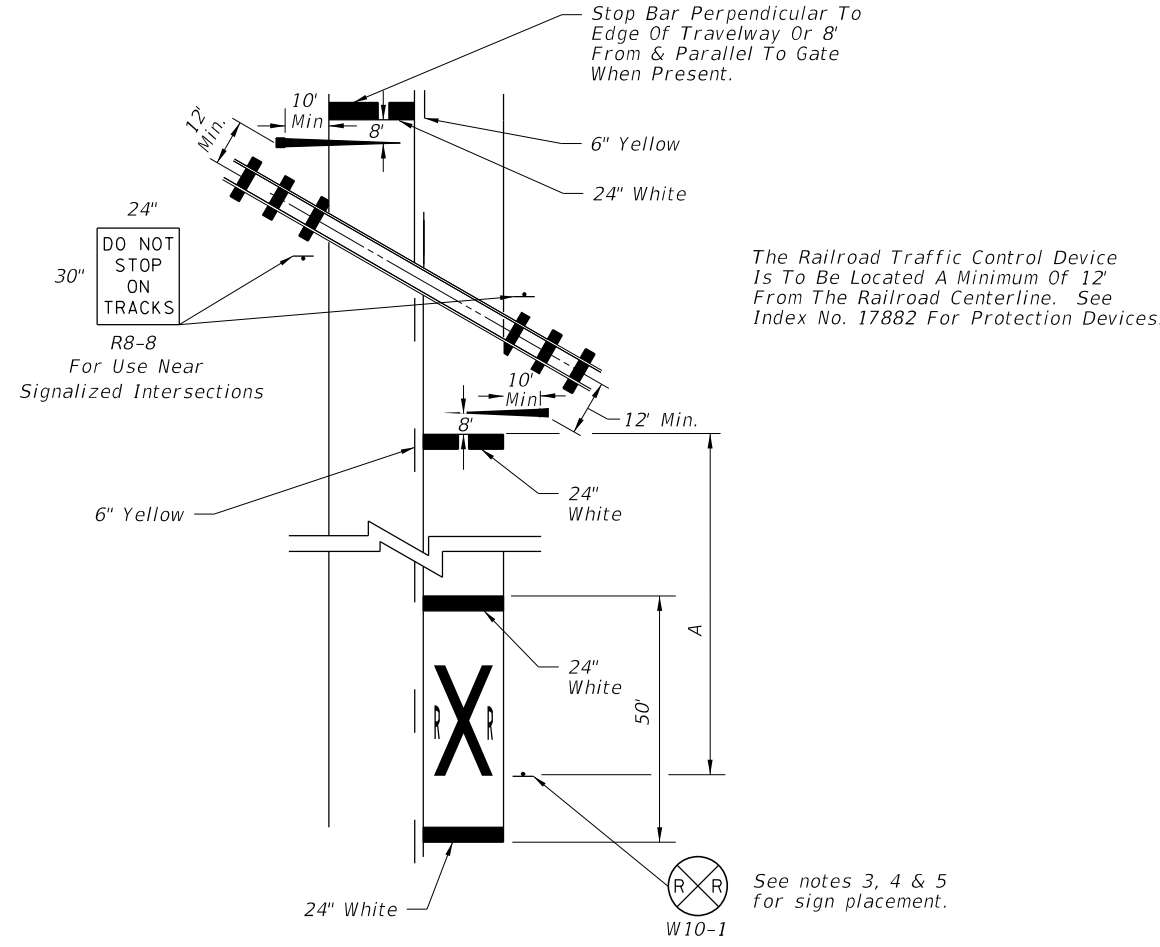
1. Messages shall meet requirements of Specification Section 971-6 and Section 711.
2. The thickness of the preformed message shall be 125 mils.
3. The message shall consist of white letters and numbers with black contrasting material. The black material shall meet the mat dimensions shown and have a 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.



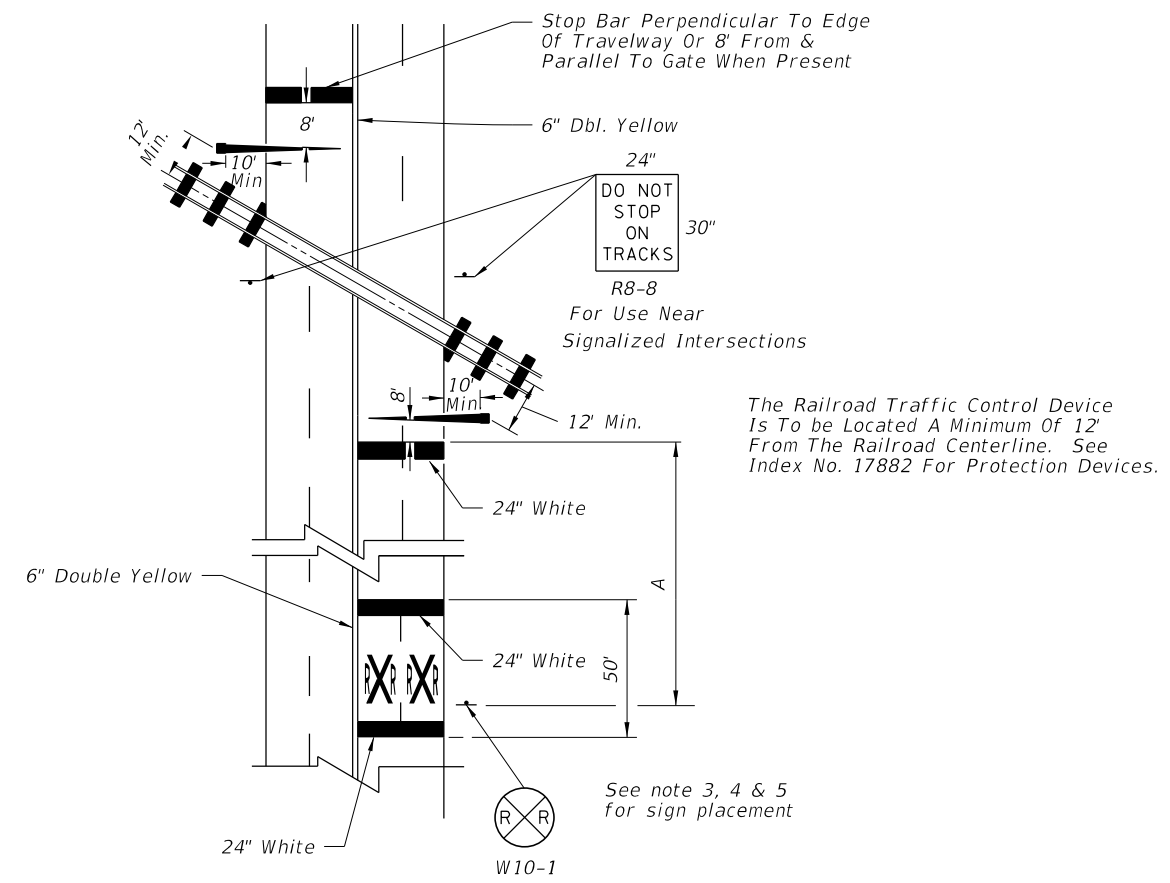
MAT DIMENSIONS

6/25/2015 2:04:35 PM

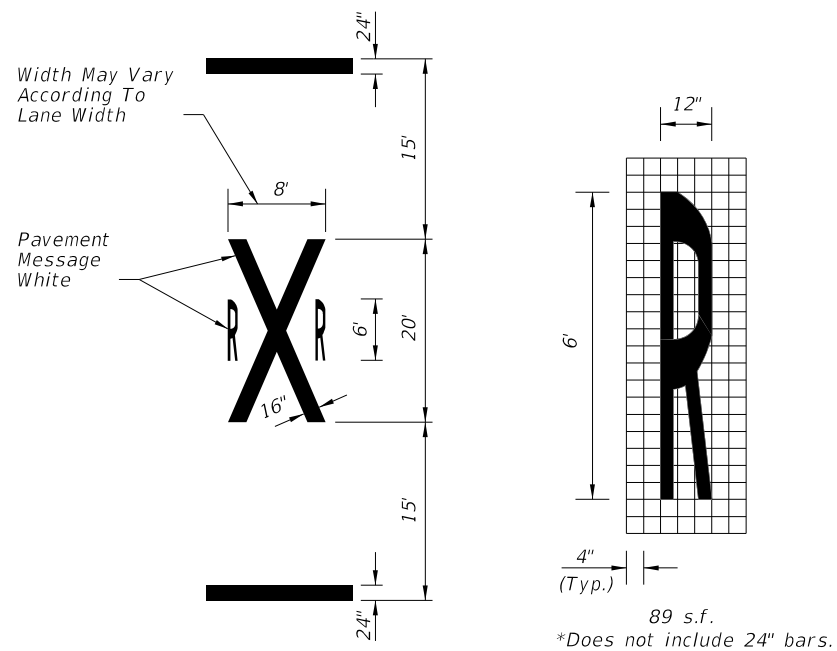
LAST REVISION 07/01/10	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SPECIAL MARKING AREAS	INDEX NO. 17346	SHEET NO. 7 of 14
---------------------------	----------	--------------	--	-----------------------	--------------------	----------------------



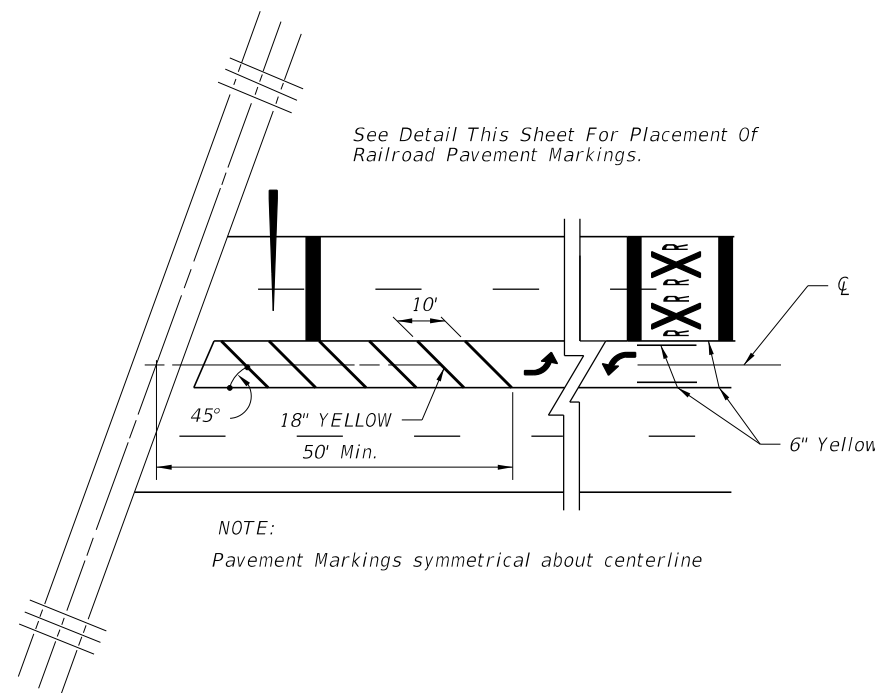
RAILROAD CROSSING AT 2-LANE ROADWAY



RAILROAD CROSSING AT 4-LANE ROADWAY



TYPICAL PAVEMENT MARKINGS FOR R/R CROSSING



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

NOTES:

- When computing pavement messages, quantities do not include transverse lines.
- 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.
- 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.
- Recommended location for FTP-61-06 or FTP-62-06 sign, 100' urban & 300' rural in advance of the crossing.
- 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.

6/25/2015 2:04:36 PM

LAST REVISION
10/09/14

REVISION DESCRIPTION:

2016 DESIGN STANDARDS

SPECIAL MARKING AREAS

INDEX NO.
17346

SHEET NO.
8 of 14

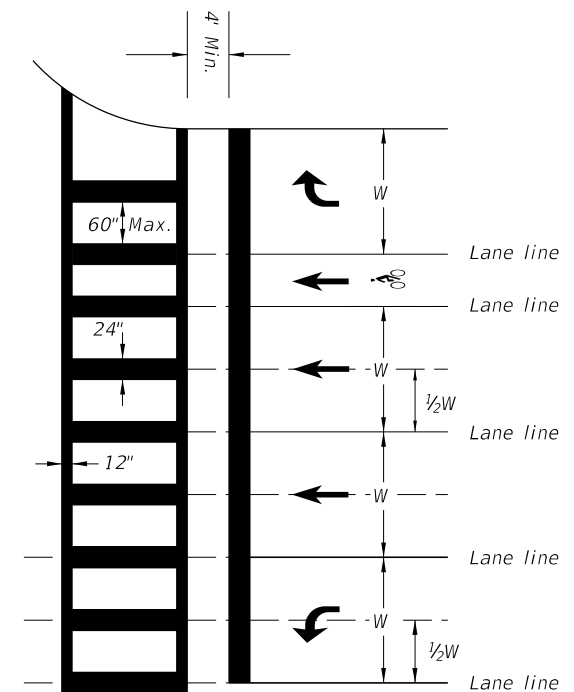
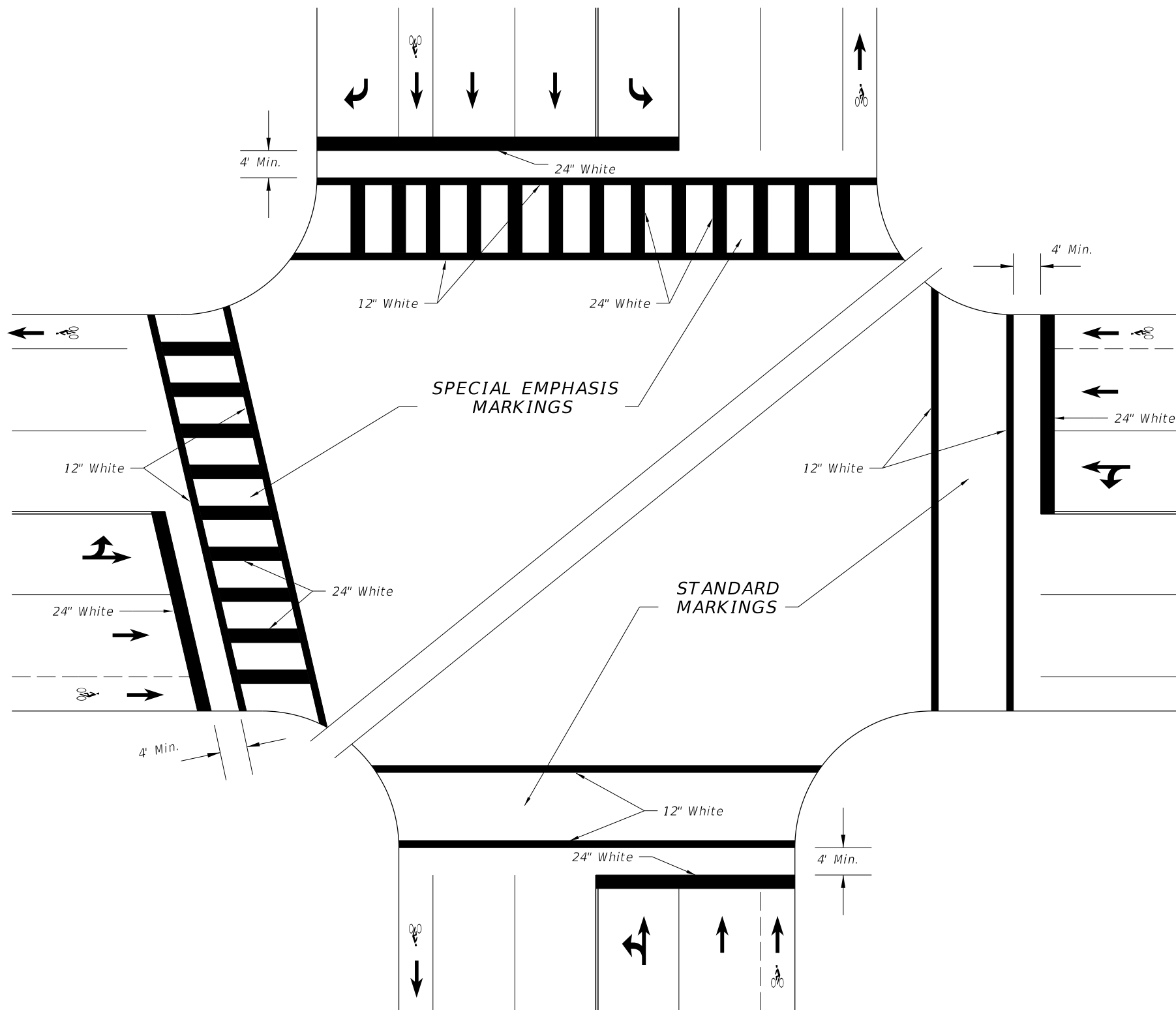
GENERAL NOTES

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 must be white.
6. Longitudinal markings in Special Emphasis Crosswalk must be 24" wide and spaced to avoid the wheel path of vehicles (see detail). Center the longitudinal markings at each lane line. Place additional longitudinal markings at the center of each lane (1/2W). The maximum spacing allowed between longitudinal markings is 60".

When the Crosswalk is skewed to the lane lines, the longitudinal markings should be parallel to the lane lines.

24" Longitudinal Bars in Special Emphasis Crosswalk must be preformed thermoplastic.

12" Transverse lines in the Special Emphasis Crosswalk may be standard thermoplastic or preformed thermoplastic.

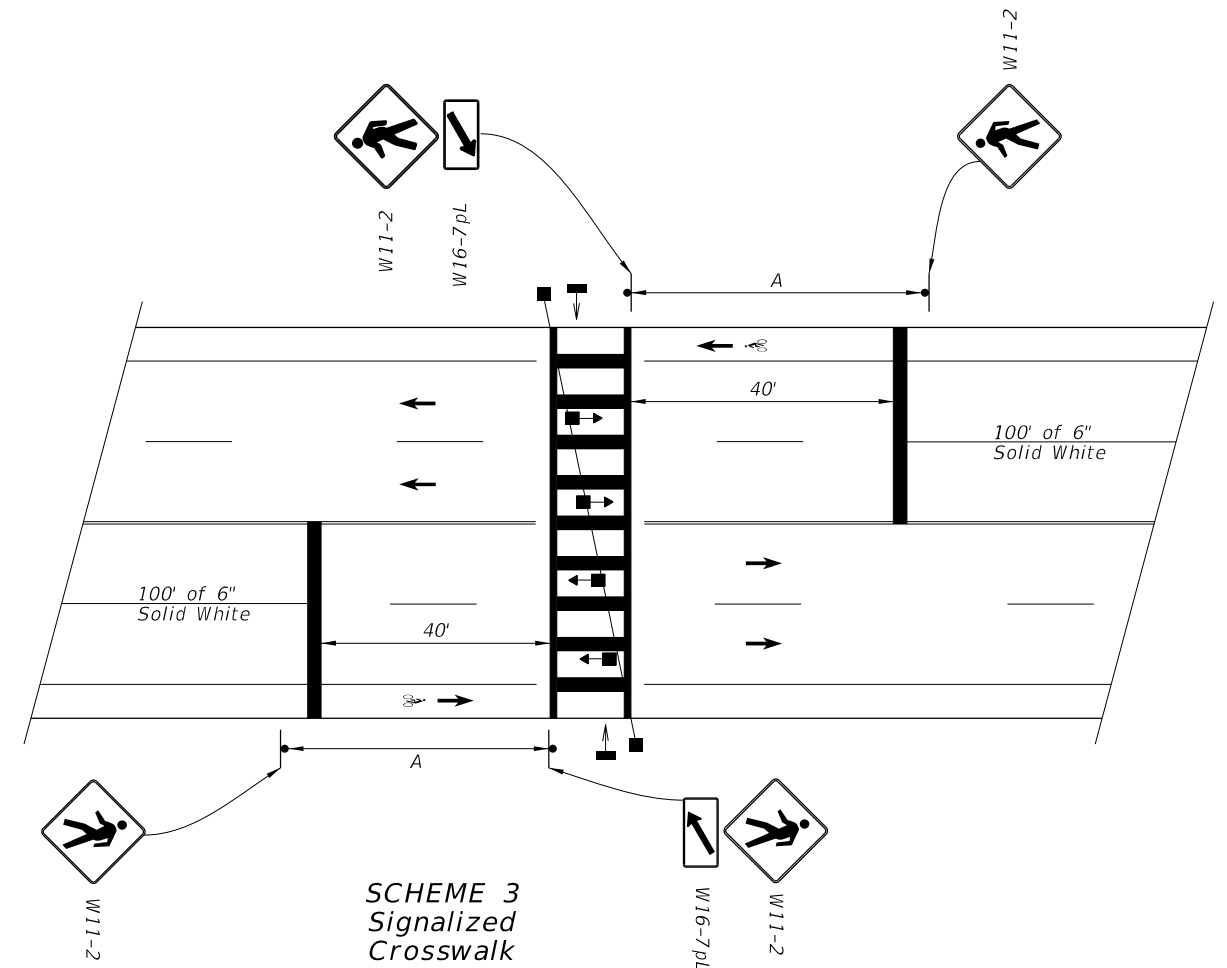
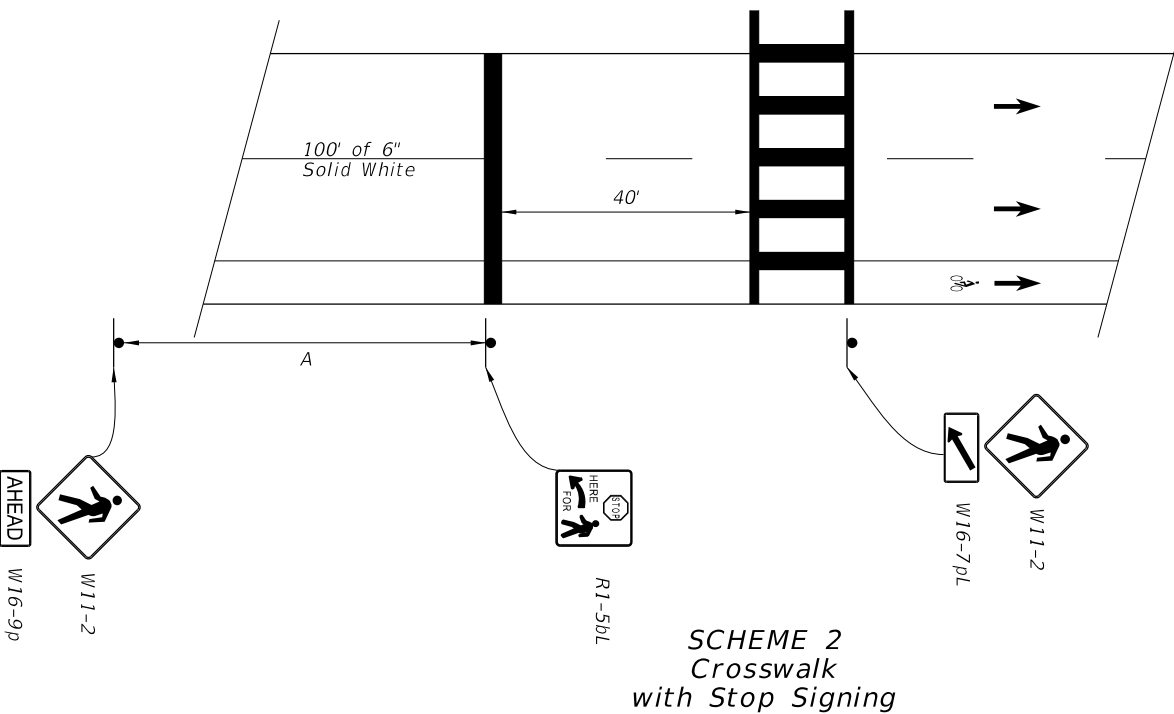
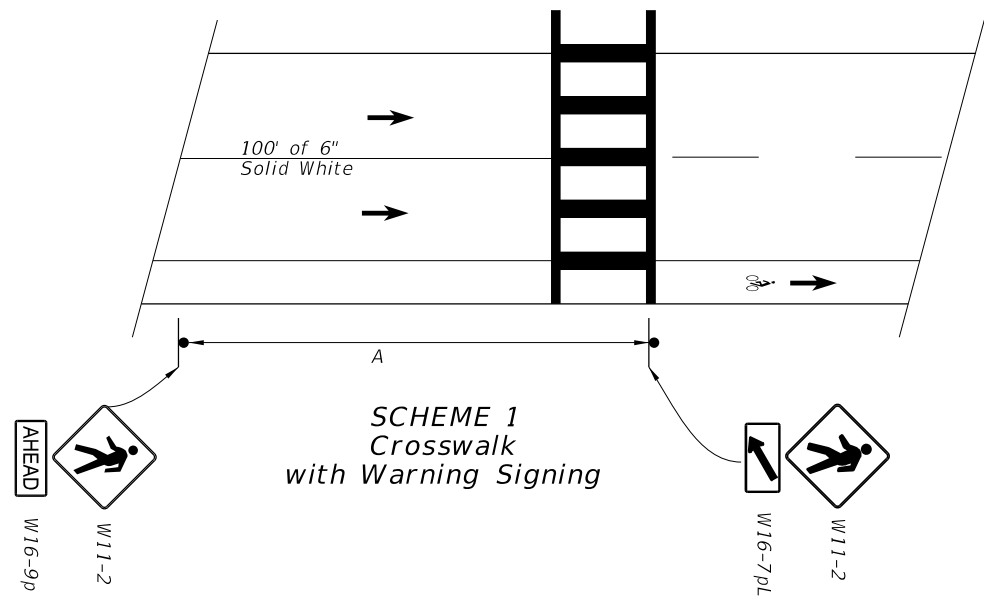


**SPECIAL EMPHASIS
CROSSWALK MARKING
DETAIL**

**SPECIAL EMPHASIS AND STANDARD CROSSWALKS
SIGNALIZED OR STOP SIGN CONTROLLED INTERSECTION**

6/25/2015 2:04:36 PM

<p>LAST REVISION 07/01/15</p>	<p>DESCRIPTION:</p>	<p>2016 FDOT DESIGN STANDARDS</p>	<p>SPECIAL MARKING AREAS</p>	<p>INDEX NO. 17346</p>	<p>SHEET NO. 9 of 14</p>
-----------------------------------	---------------------	---------------------------------------	------------------------------	----------------------------	------------------------------

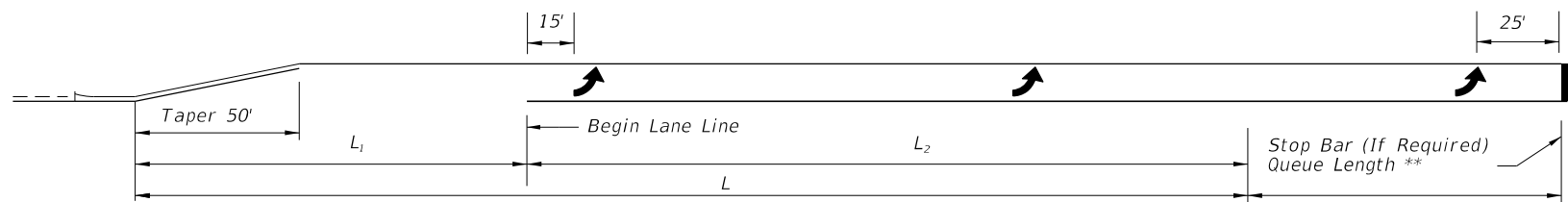


APPROACH SPEED MPH	A-SUGGESTED DISTANCE (Ft.)
25 Or Less	200
26 To 35	250
36 To 45	300

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 shall be performed marking materials.

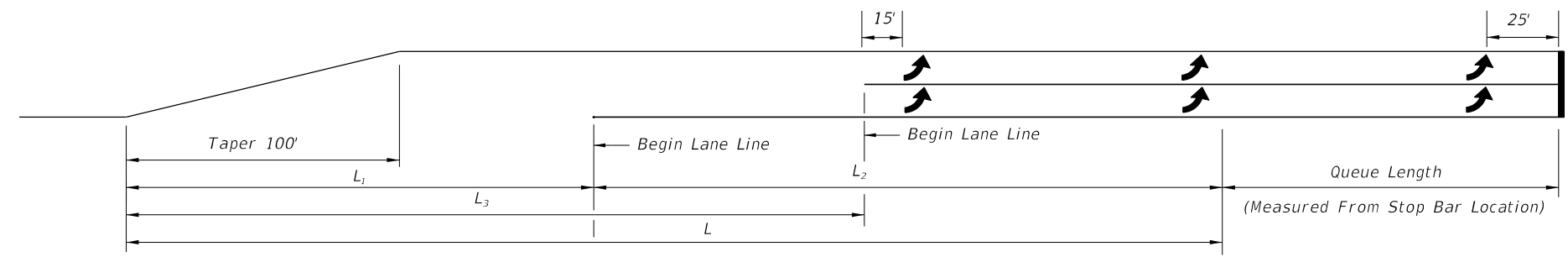
6/25/2015 2:04:37 PM

LAST REVISION	DESCRIPTION:
07/01/14	

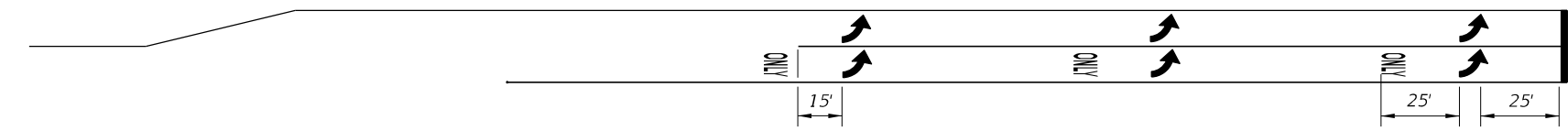


SINGLE LEFT TURNS

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

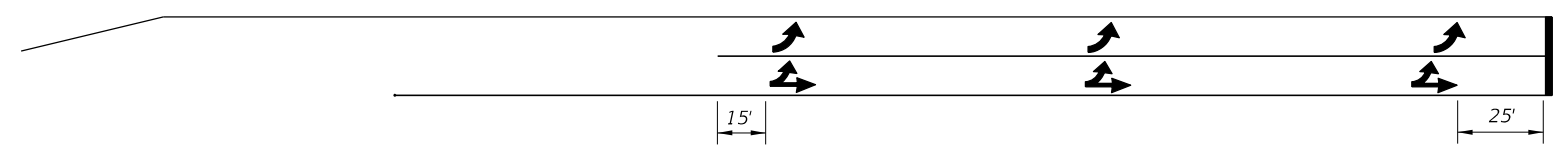


DOUBLE LEFT TURNS



Through Lane Becomes Exclusive Left Turn

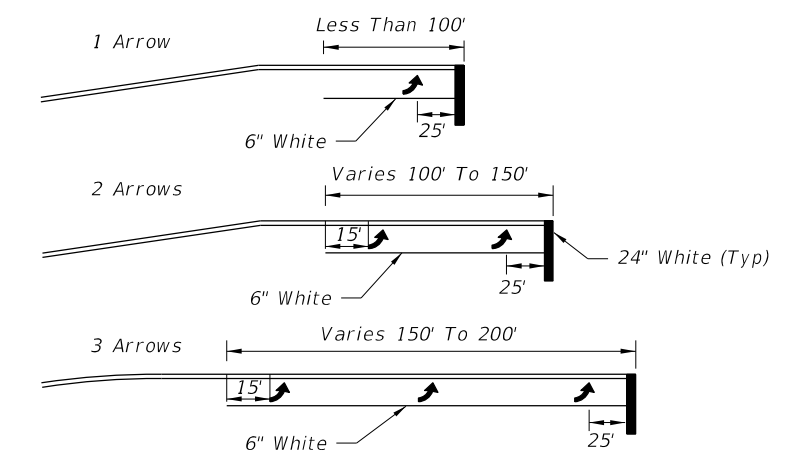
The ONLY pavement message is required for turn lanes, where the thru lane becomes turn lane.



Through Lane Becomes Optional Left Turn

DOUBLE LEFT TURN MARKINGS

TURN LANES - CURBED AND UNCURBED MEDIANS							
Design Speed (mph)	Clearance Distance	URBAN CONDITIONS			RURAL CONDITIONS		
		Brake To Stop Distance	Total Decel. Distance	Clearance Distance	Brake To Stop Distance	Total Decel. Distance	Clearance Distance
	L ₁	L ₂	L	L ₃	L ₂	L	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'



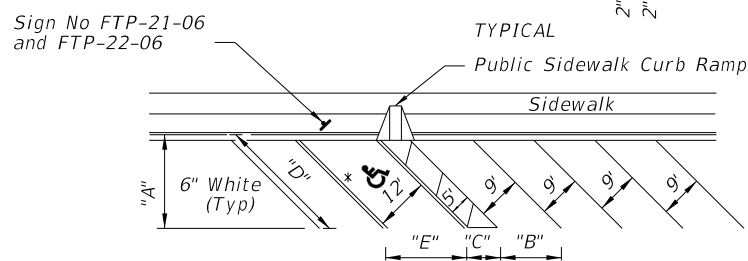
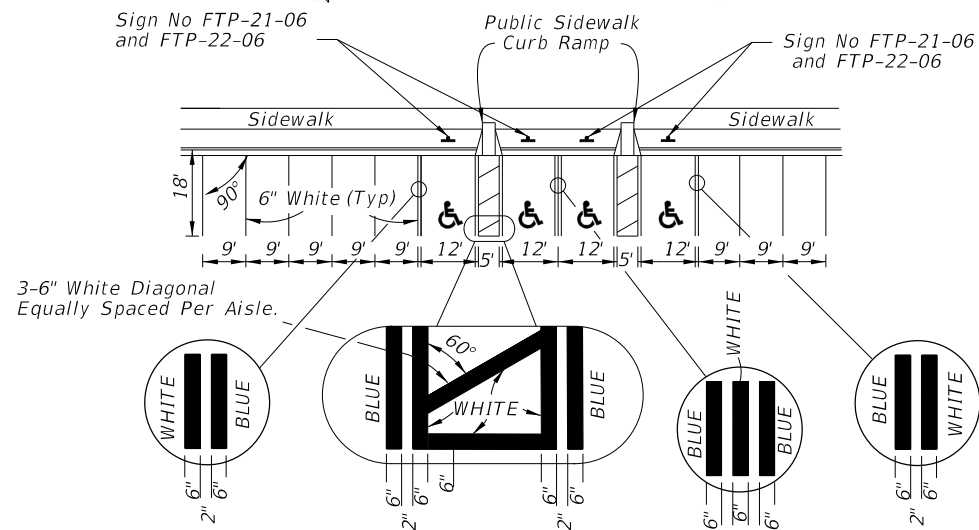
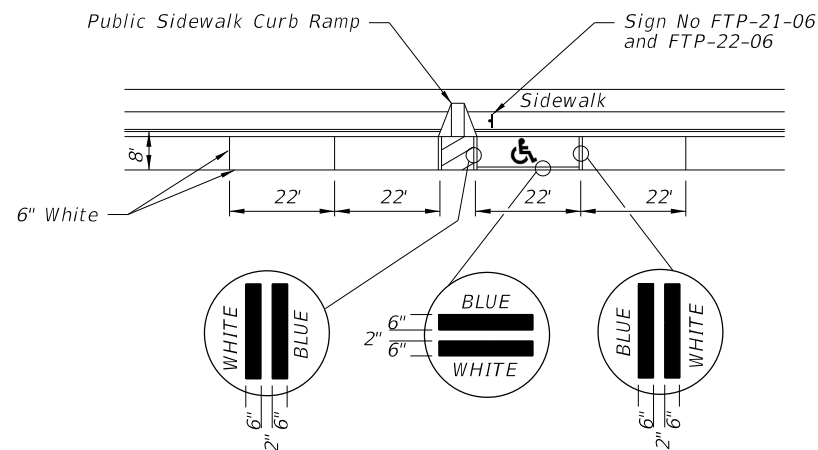
Arrow should be evenly spaced between first and last arrow. Turn lanes longer than 200' add one arrow for each 100' additional length.

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.

6/25/2015 2:04:37 PM

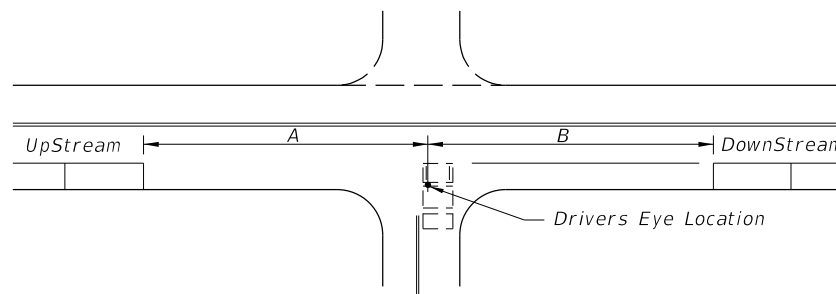


* FOR ACCESSIBLE MARKINGS - SEE ABOVE

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

PAVEMENT MARKING FOR PUBLIC SIDEWALK CURB RAMPS IN REST AREAS

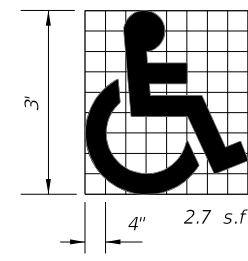
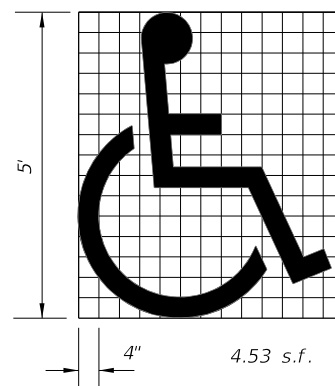


SPEED MPH	UP STREAM (A)	DOWN STREAM (B)	
		2 LANE	4 LANE
0-30	85'	60'	45'
35	100'	70'	50'

NOTES

- Distances measured longitudinally along the street from driver location of entering vehicle to end of parking restriction.
- Distances applicable to intersecting street, major driveways and other driveways to the extent practical.
- 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

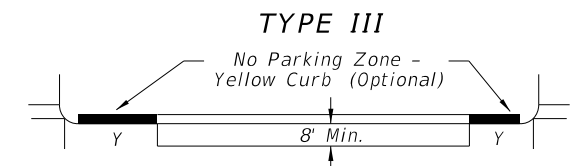
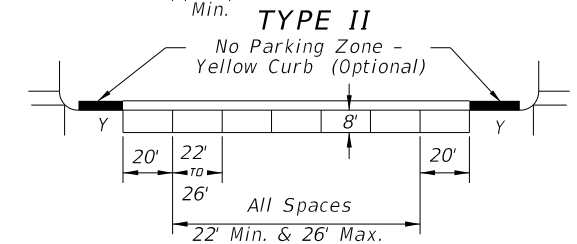
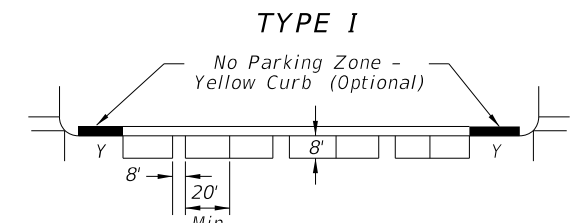


Use of pavement symbol in accessible parking spaces is optional, when used the symbol shall be 3' or 5' high and white in color.

UNIVERSAL SYMBOL OF ACCESSIBILITY

GENERAL NOTES (Signalized & Nonsignalized)

- For entrances to a one-way street, the downstream restriction may be reduced to 20'.
- Parking shall not be allowed within 20' of a crosswalk.
- All parking lane markings shall be 6" white.
- Parking lane lines shall be broken at driveways.
- Refer to Chapter 316, Fla. Statutes, for laws governing parking spaces.
- 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.



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

DISTANCE FROM CURB RADIUS (Y)

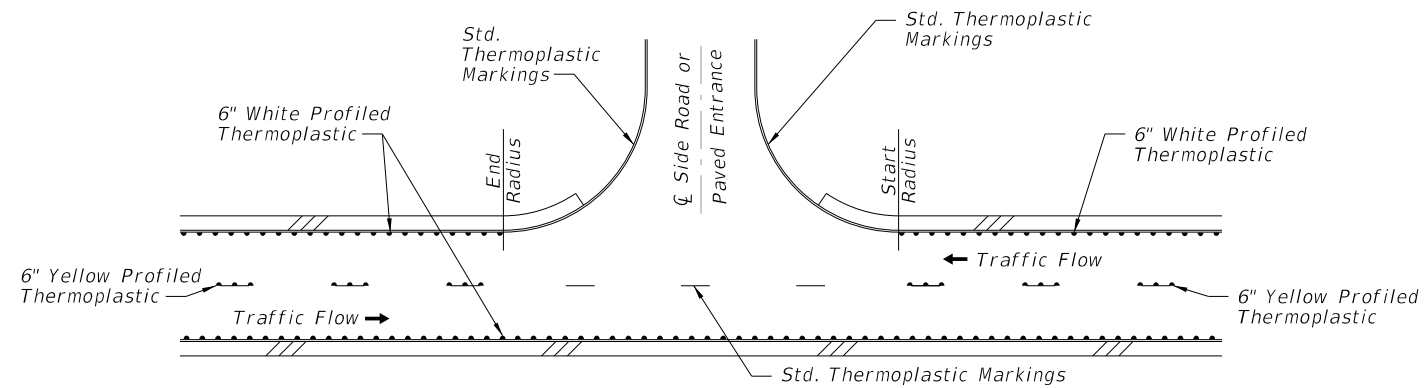
PARKING RESTRICTION (FT.) FOR SIGNALIZED INTERSECTION

NOTES:

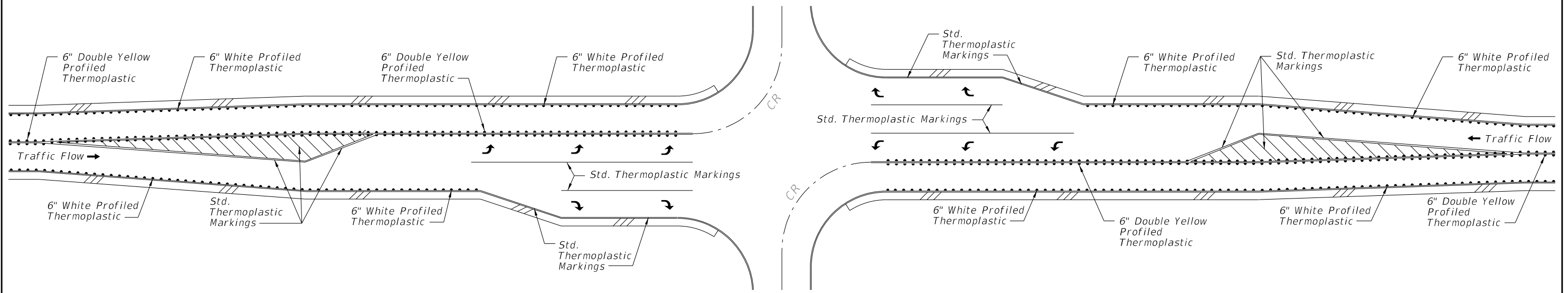
- Parking restrictions measured from curb radius point.
- Restrictions for accessible parking are the same as those applied to nonsignalized intersections.

MINIMUM PARKING RESTRICTION FOR SIGNALIZED INTERSECTION

6/25/2015 2:04:38 PM



TYPICAL RURAL INTERSECTION WITHOUT TURN LANES




TYPICAL RURAL INTERSECTION WITH TURN LANES

GENERAL NOTES:

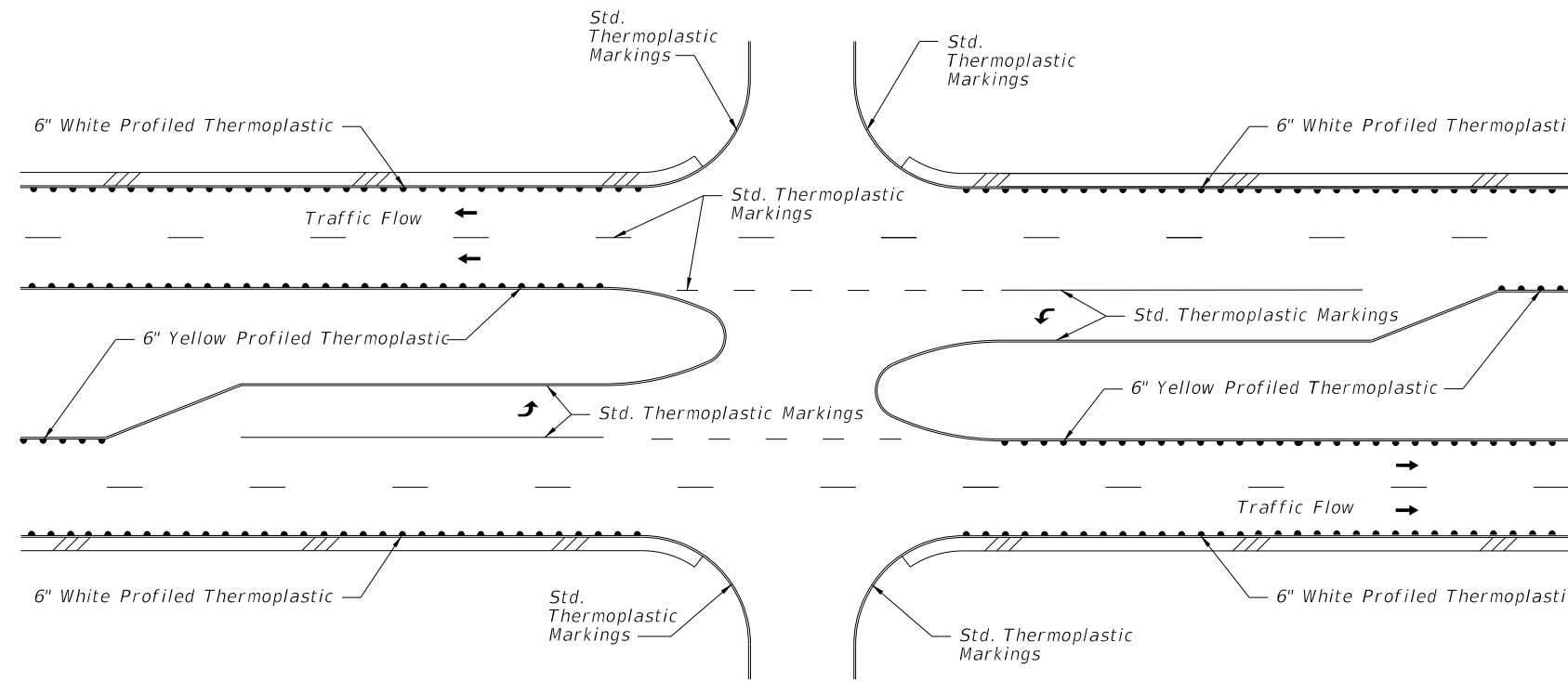
1. Remove raised retroreflective pavement markers when in conflict with the installation of the centerline profiled thermoplastic pavement markings. The cost of removal is included in the cost of the profiled thermoplastic pavement marking.
2. Replacement of retroreflective pavement markers removed during the installation of the centerline profiled thermoplastic pavement markings will be paid for under Pay Item 706.

6/25/2015 2:04:38 PM

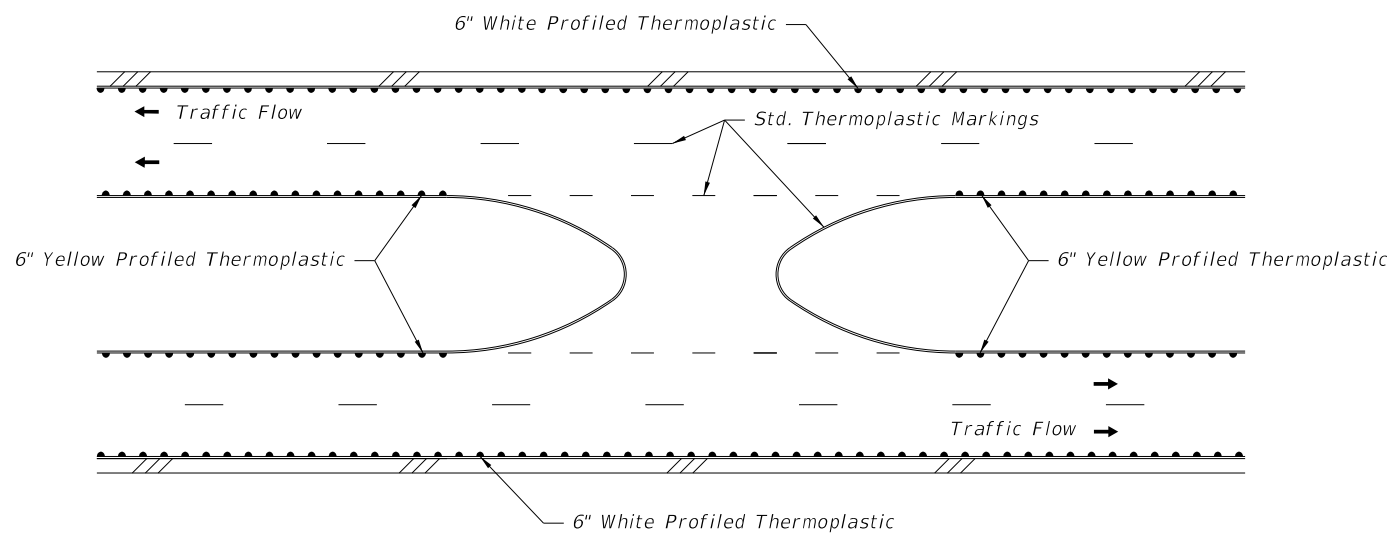
PROFILED THERMOPLASTIC MARKINGS
2 LANE CONCRETE ROADWAYS

LAST REVISION 01/21/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SPECIAL MARKING AREAS	INDEX NO. 17346	SHEET NO. 13 of 14
---------------------------	----------	--------------	---	-----------------------	--------------------	-----------------------

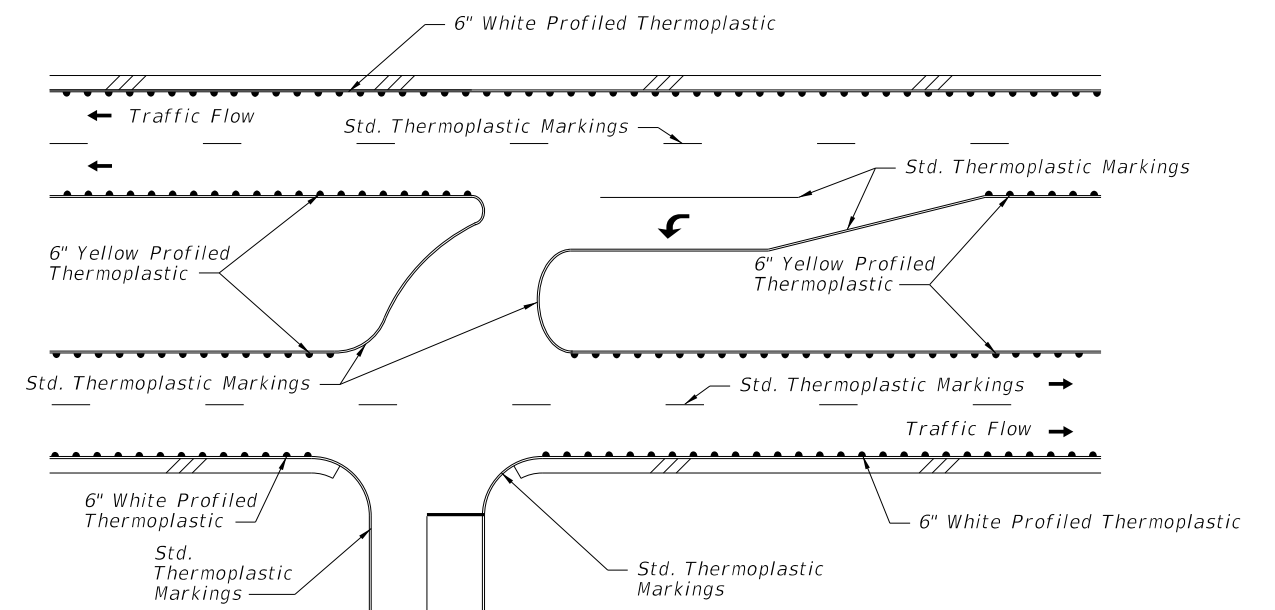
REFERENCE:
See Profiled Thermoplastic Markings General Notes on Sheet 13.



TYPICAL RURAL INTERSECTION




TYPICAL RURAL MEDIAN OPENING

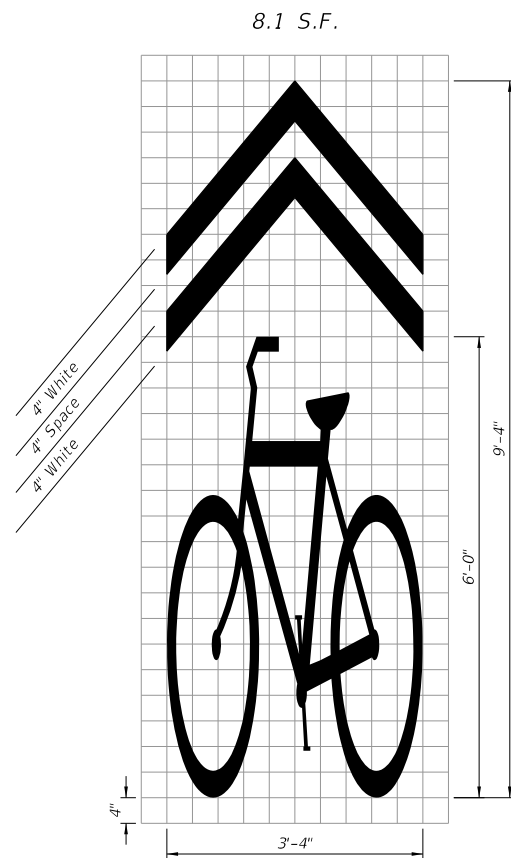


TYPICAL RURAL DIRECTIONAL INTERSECTION

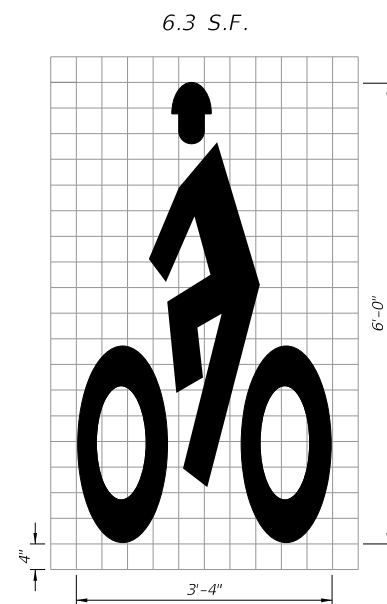
PROFILED THERMOPLASTIC MARKINGS
MULTI-LANE CONCRETE ROADWAYS

6/25/2015 2:04:39 PM

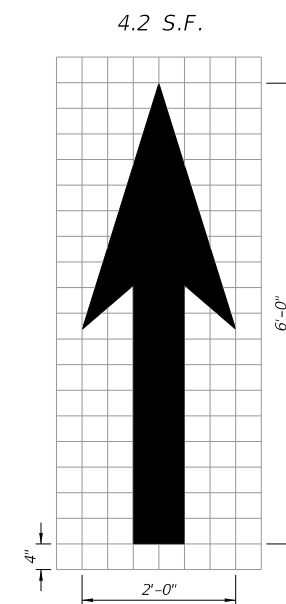
LAST REVISION 01/21/15	DESCRIPTION:	 2016 DESIGN STANDARDS	SPECIAL MARKING AREAS	INDEX NO. 17346	SHEET NO. 14 of 14
---------------------------	--------------	--	-----------------------	--------------------	-----------------------



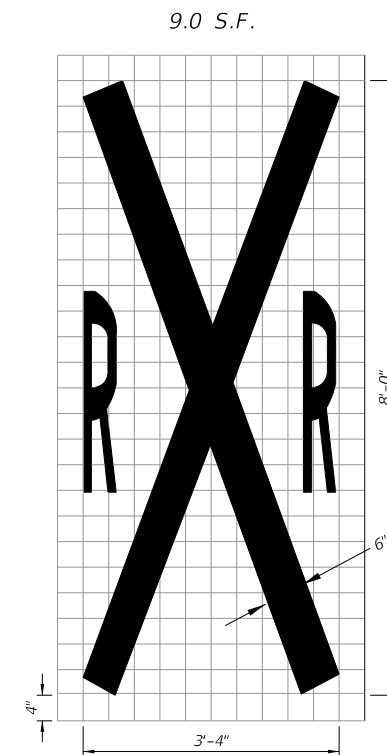
Shared Lane Marking (SLM)



Helmeted Bicyclist Symbol



Bike Lane Arrow




Railroad Crossing
(For Shared Use Path Only)

NOTES:

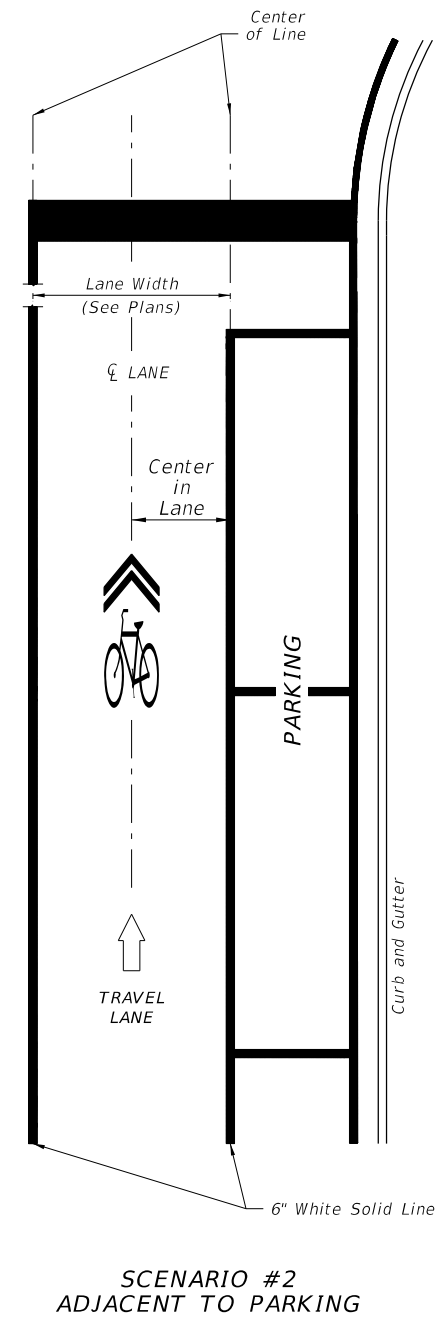
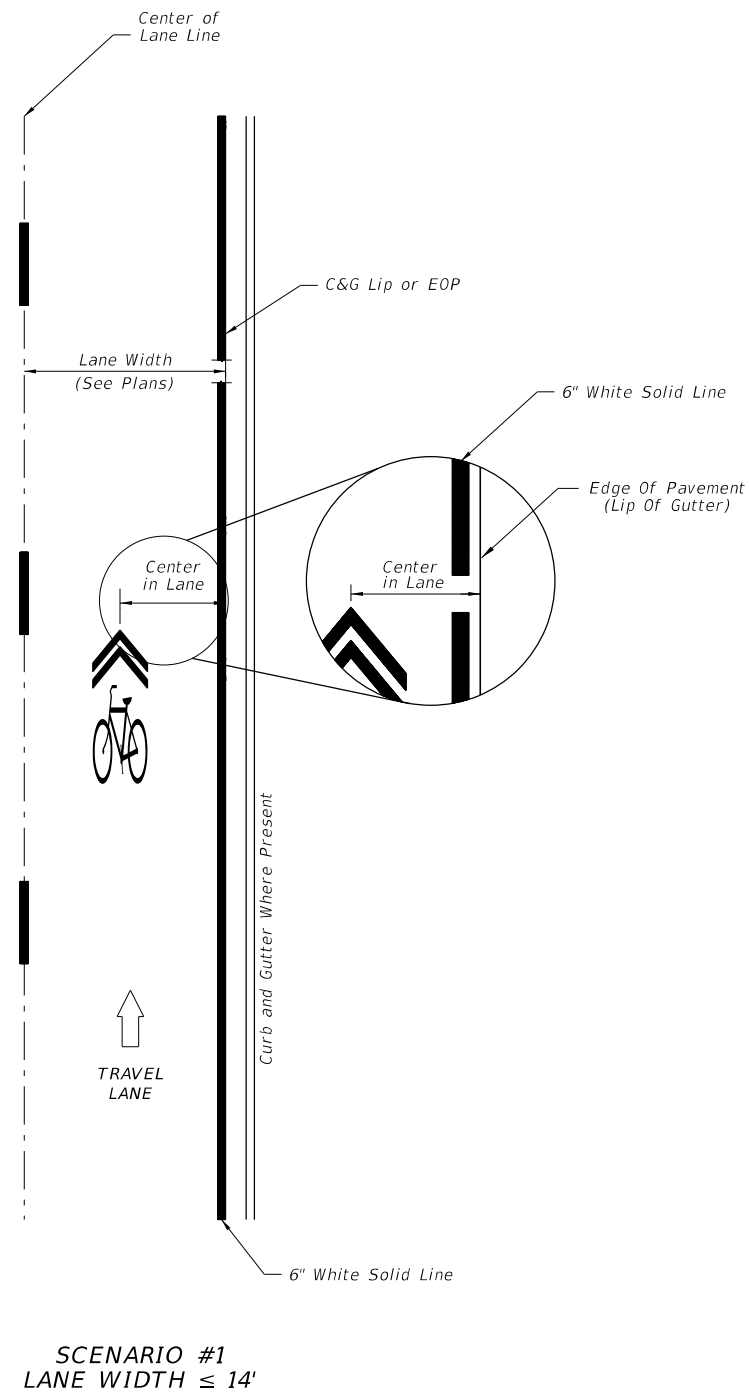
1. All bicycle markings and pavement messages shall be White.
2. All bicycle markings shall be preformed thermoplastic.
3. Recommended placement of bicycle lane markings:
 - a) At the beginning of a bicycle lane, on the far side of major intersections, and prior to and within the bicycle lane keyhole.
 - b) Along the roadway as needed to provide a maximum spacing of 1,320 feet for posted speeds less than or equal to 45 mph, 2,640 feet for a posted speed of 50 mph or greater.
4. Recommended spacing for shared lane marking (SLM): Immediately after intersections and at a maximum spacing of 500 feet.

6/9/2015 4:46:35 PM

STANDARD PAVEMENT MARKING
MESSAGE LAYOUTS

LAST REVISION 11/18/14	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	BICYCLE MARKINGS	INDEX NO. 17347	SHEET NO. 1 of 5
---------------------------	----------	--------------	---	------------------	--------------------	---------------------

6/9/2015 4:46:36 PM



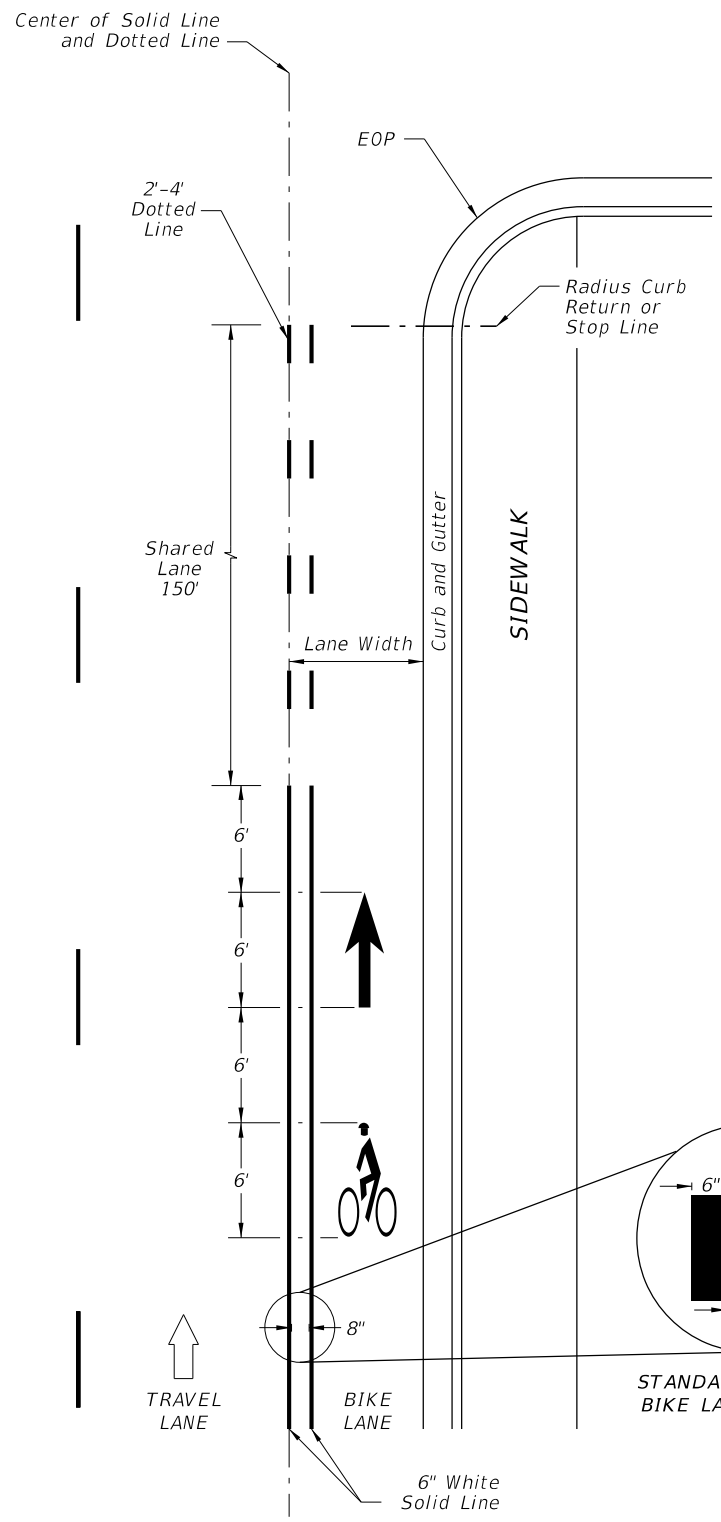
SHARED LANE MARKINGS

LAST REVISION 11/18/14	DESCRIPTION:
---------------------------	--------------

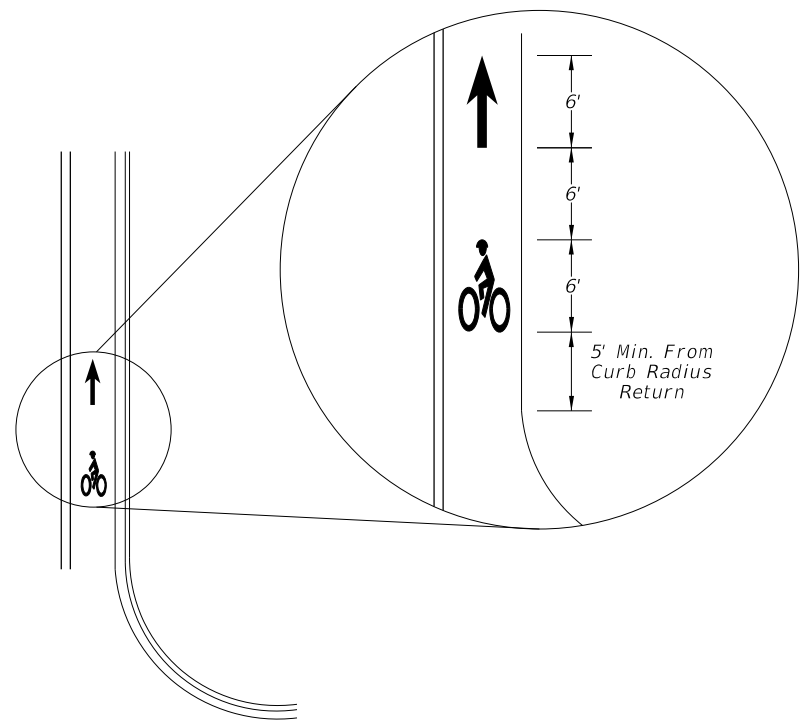


BICYCLE MARKINGS

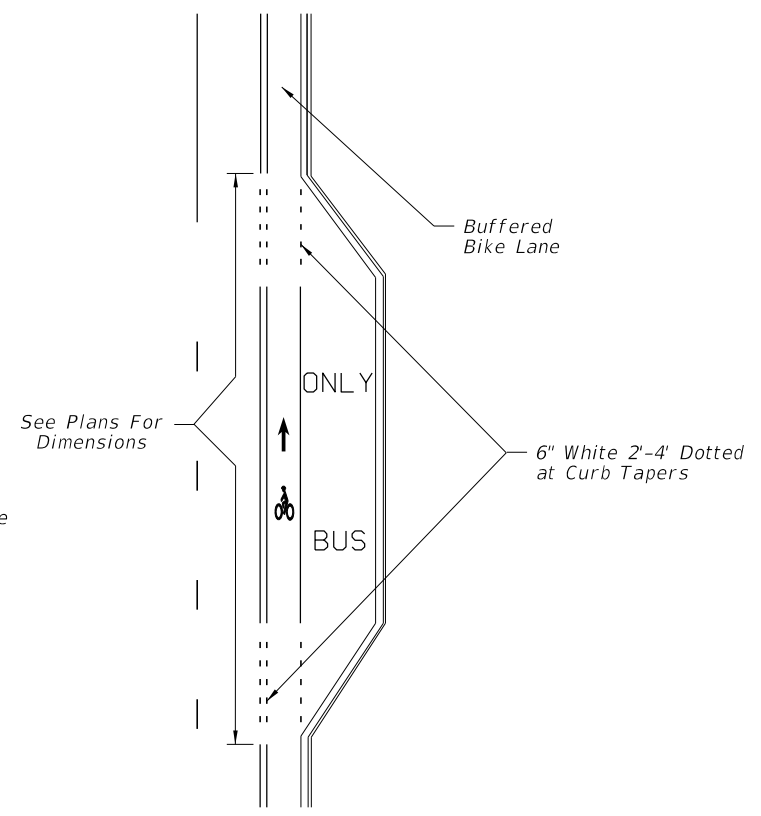
INDEX NO. 17347	SHEET NO. 2 of 5
--------------------	---------------------



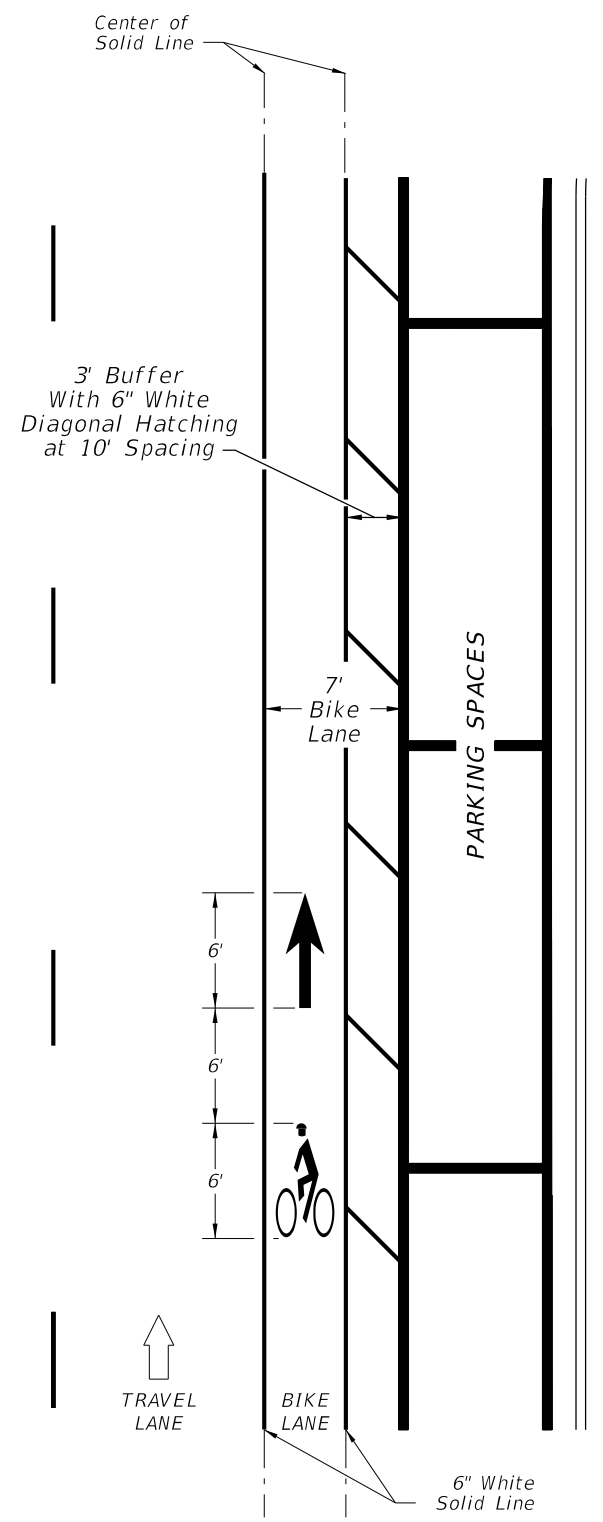
APPROACH TO INTERSECTIONS DETAILS



FAR SIDE OF INTERSECTION DETAIL



BUS BAY DETAIL CURB AND GUTTER TYPICAL SECTION

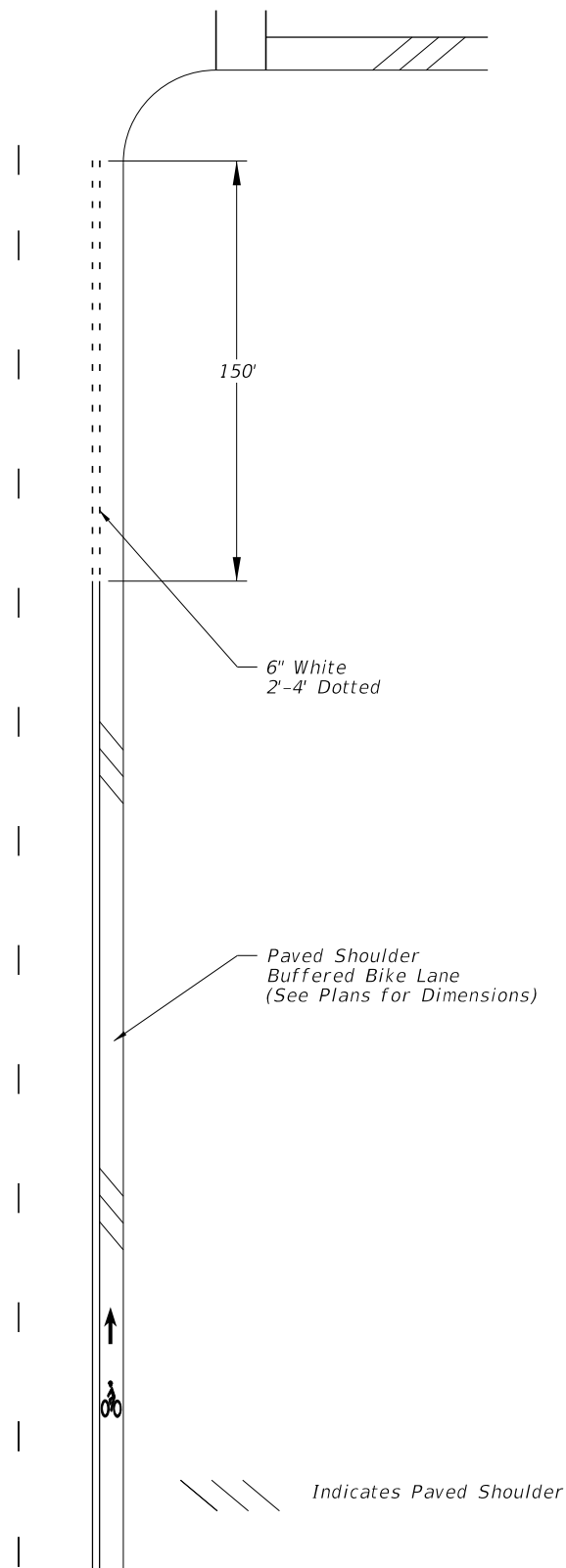


ADJACENT TO PARKING

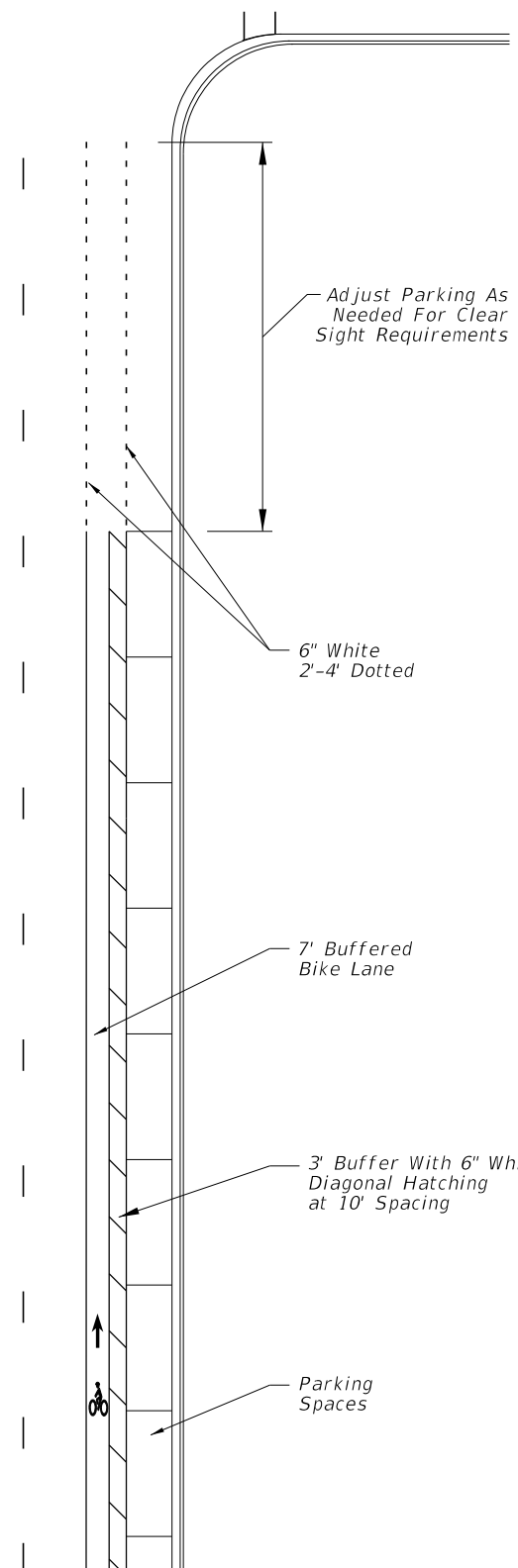
BUFFERED BIKE LANES

6/9/2015 4:46:40 PM

LAST REVISION 11/18/14	DESCRIPTION:	<p>2016 DESIGN STANDARDS</p>	<p>BICYCLE MARKINGS</p>	INDEX NO. 17347	SHEET NO. 3 of 5
REVISION					




INTERSECTION WITH NO RIGHT TURN LANE,
FLUSH SHOULDER WITH BUFFERED
BIKE LANE TYPICAL SECTION



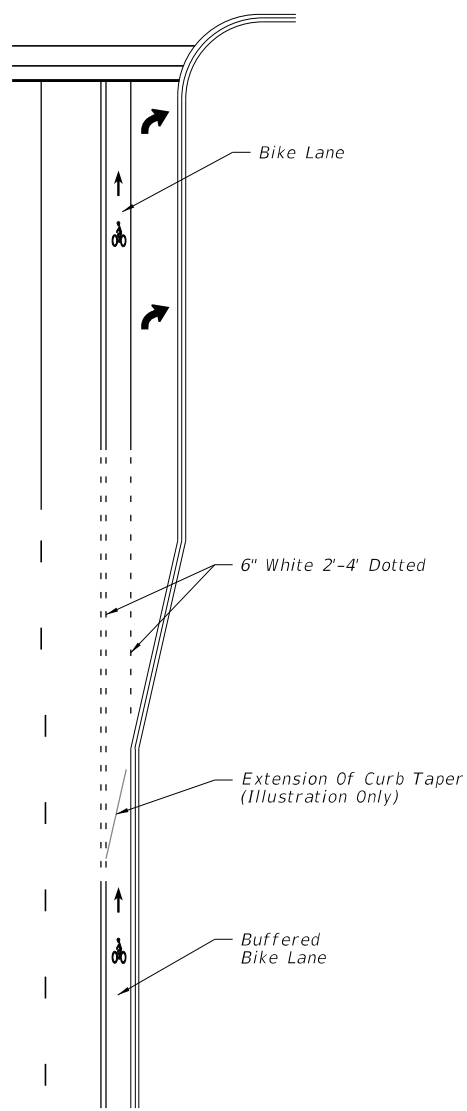
BIKE LANE ADJACENT TO ON STREET PARKING
NO RIGHT TURN LANE,
CURB AND GUTTER TYPICAL SECTION

BIKE LANE MARKINGS

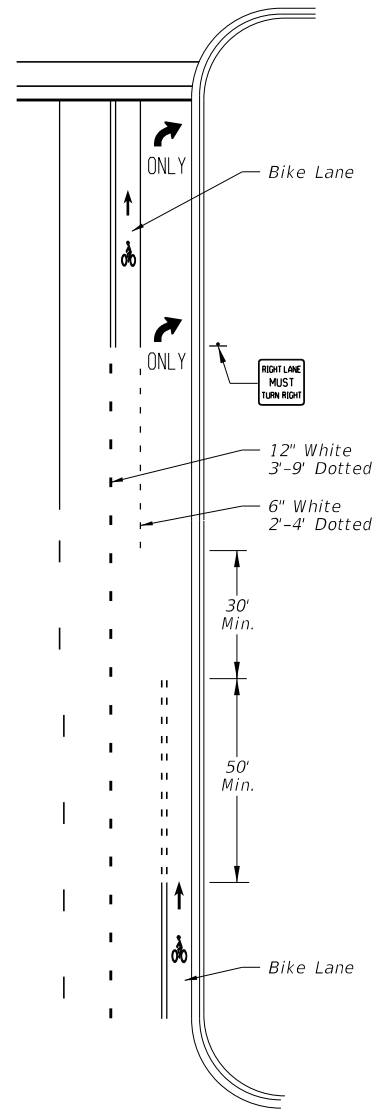
6/9/2015 4:46:41 PM

LAST REVISION 11/18/14	DESCRIPTION:	 2016 DESIGN STANDARDS	BICYCLE MARKINGS	INDEX NO. 17347	SHEET NO. 4 of 5
---------------------------	--------------	--	------------------	--------------------	---------------------

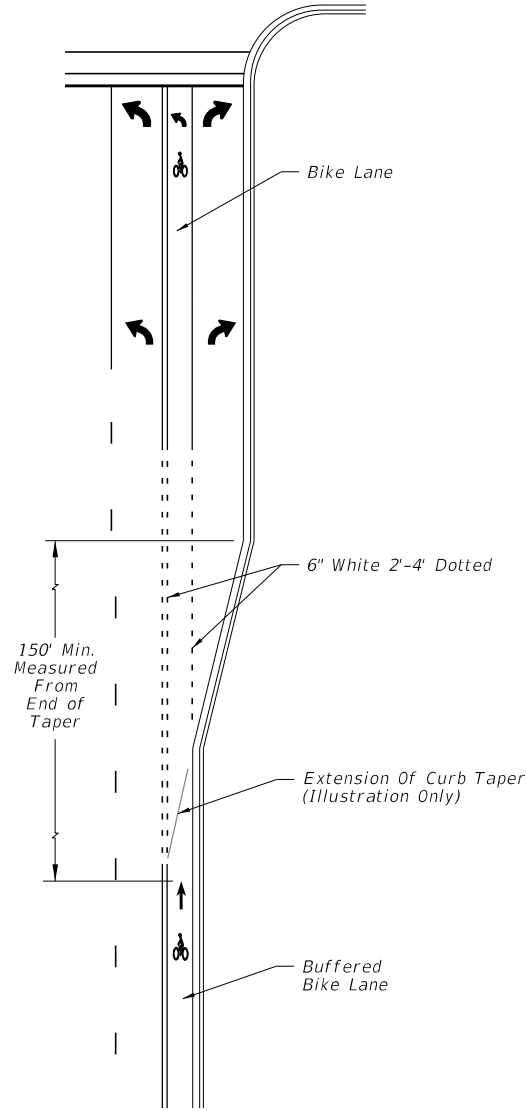
6/11/2015 10:15:11 AM



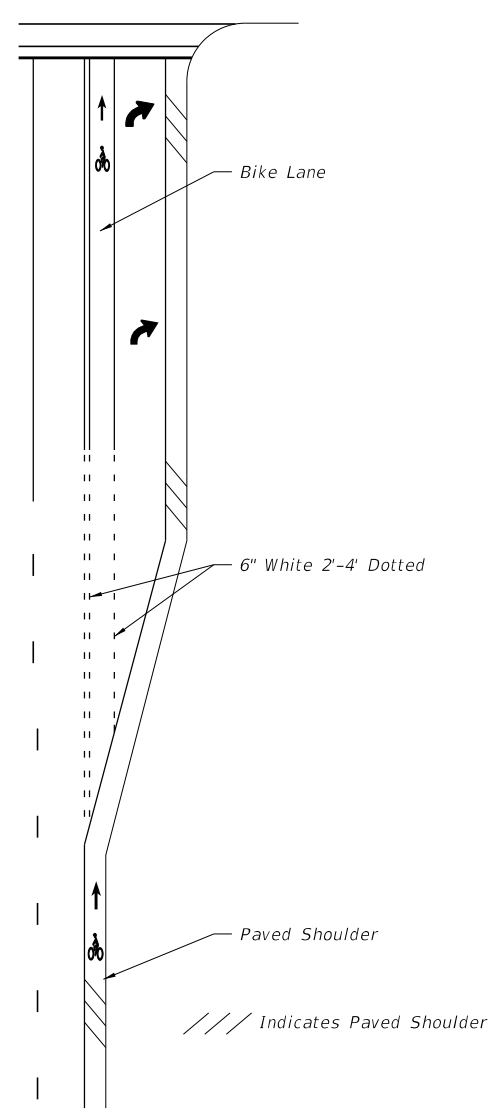
KH-1
INTERSECTION WITH
SEPARATE RIGHT TURN LANE,
CURB AND GUTTER TYPICAL SECTION



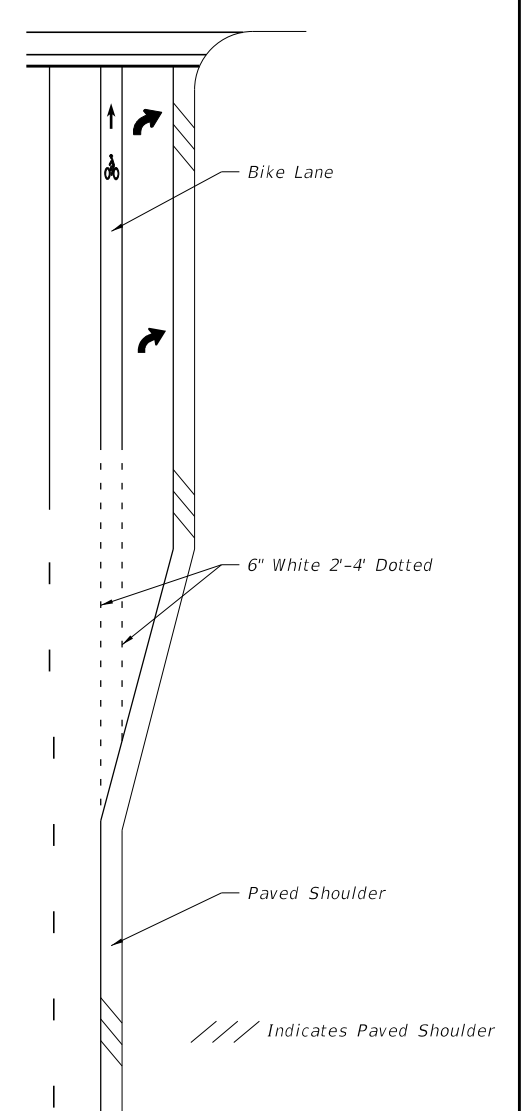
KH-2
INTERSECTION WITH
RIGHT TURN DROP LANE,
CURB AND GUTTER TYPICAL SECTION



KH-3
"TEE" INTERSECTION WITH
SEPARATE RIGHT TURN LANE,
CURB & GUTTER TYPICAL SECTION



KH-4
INTERSECTION WITH
SEPARATE RIGHT TURN LANE,
IN OR WITHIN ONE MILE OF AN URBAN AREA
FLUSH SHOULDER TYPICAL SECTION



KH-5
INTERSECTION WITH
SEPARATE RIGHT TURN LANE, IN RURAL AREA
FLUSH SHOULDER TYPICAL SECTION

KEYHOLE MARKINGS

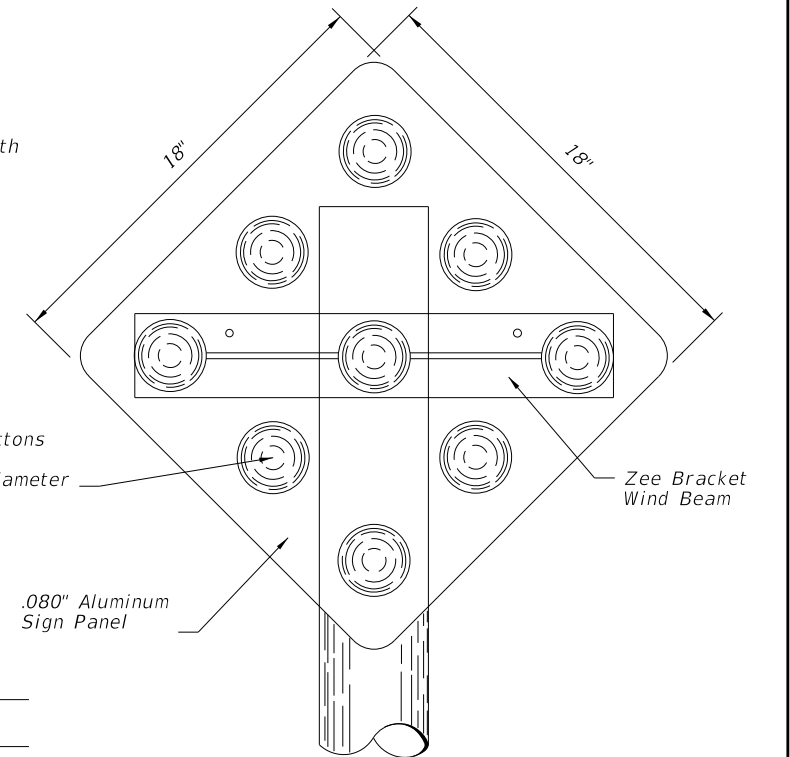
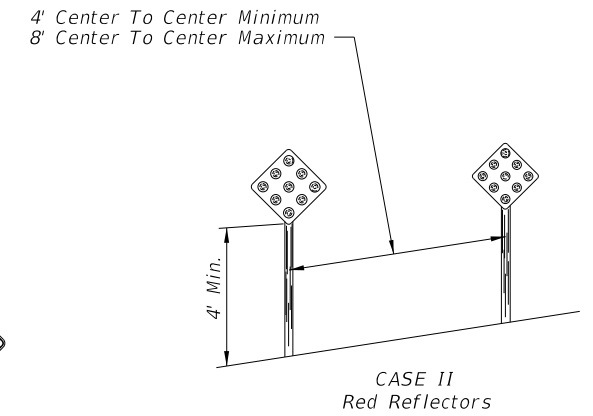
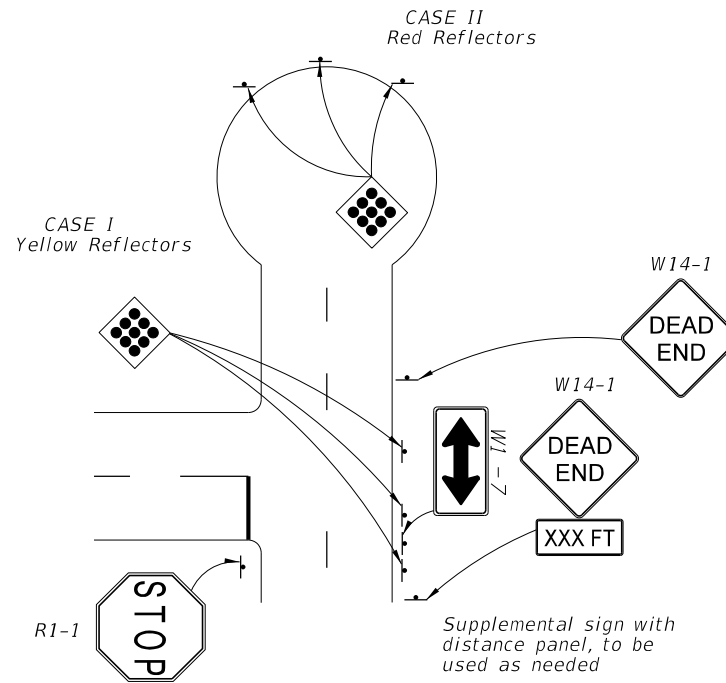
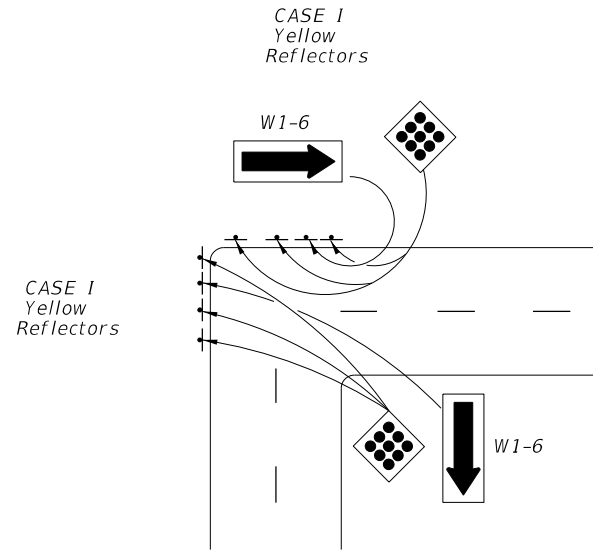
LAST REVISION 07/01/15	REVISION	DESCRIPTION:
---------------------------	----------	--------------

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.

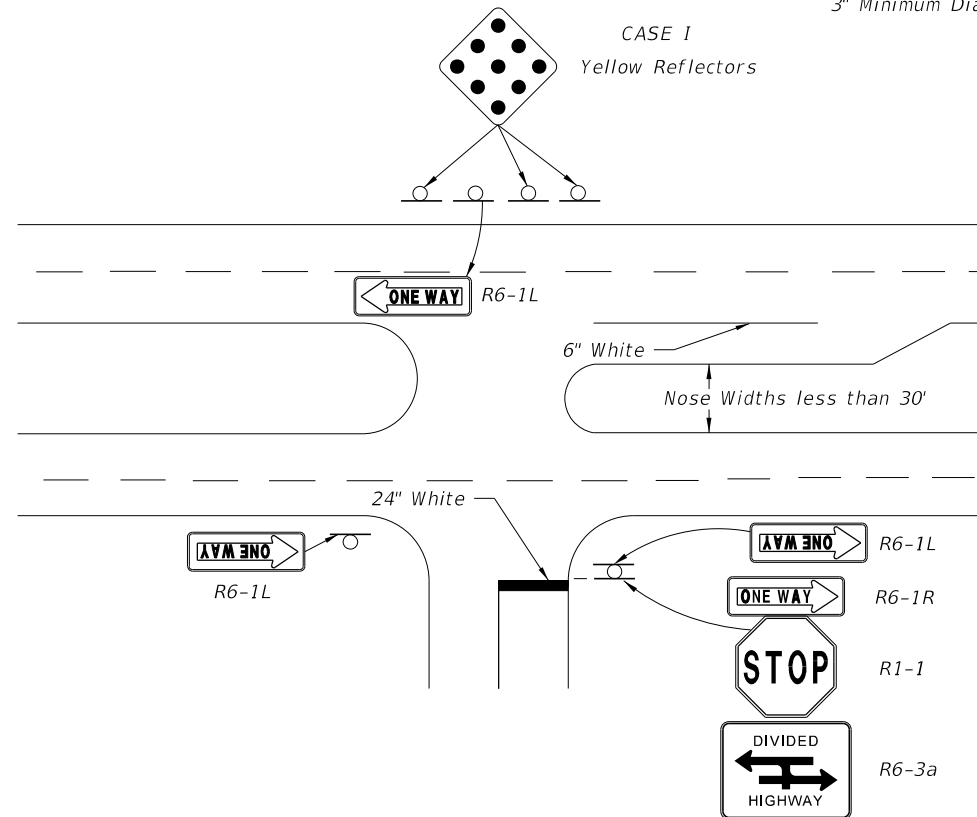
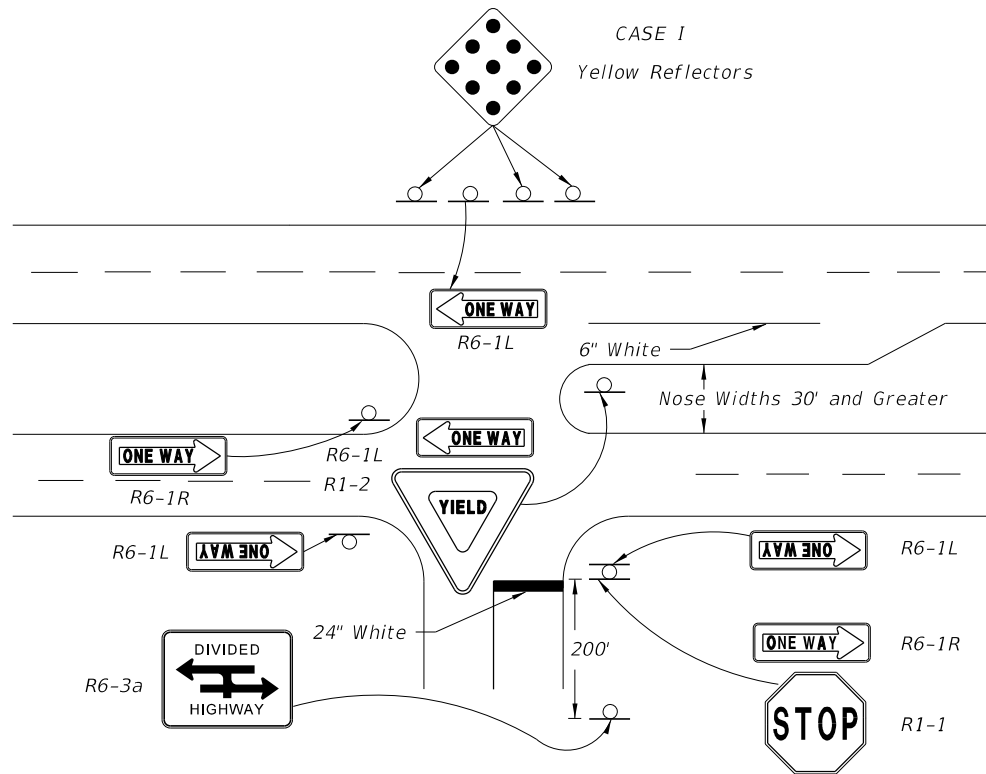
CASE II End of Road Markers shall consist of nine red reflectors mounted on a red reflective background or consist of a retroreflective panel of the same size.

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.



Object markers shall be installed on 2" Ø x 1/8" Aluminum Round Post.
 3/8" Ø Aluminum Button Head Bolt with Nut and Lockwasher or 1/2" 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.



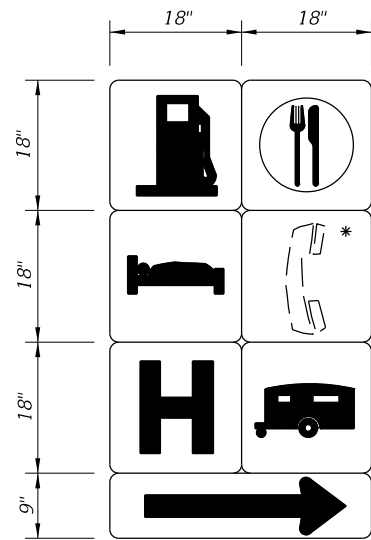
6/9/2015 4:47:42 PM

LAST REVISION 07/01/13	DESCRIPTION:
---------------------------	--------------

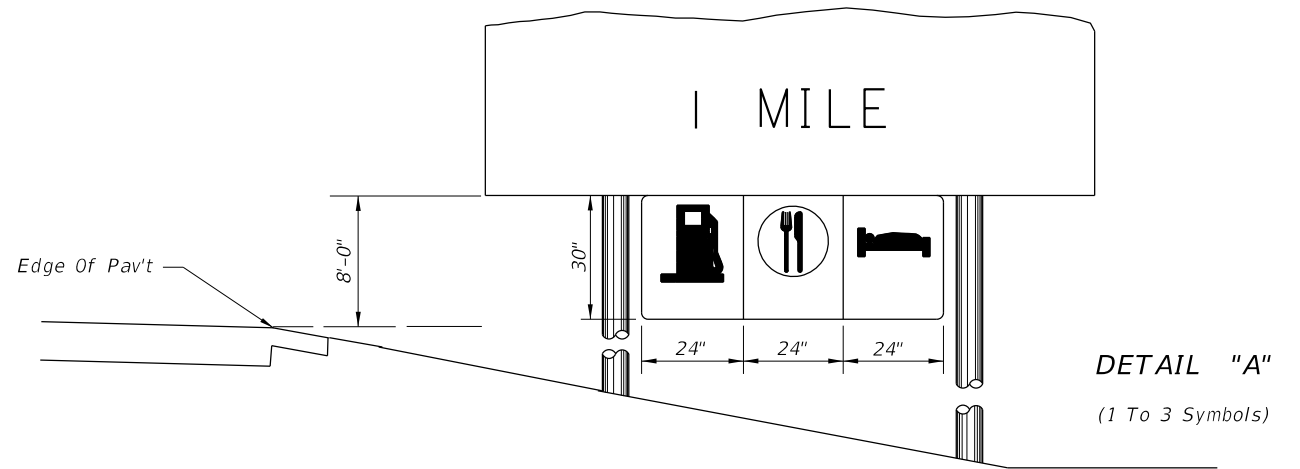
**** Note:**

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

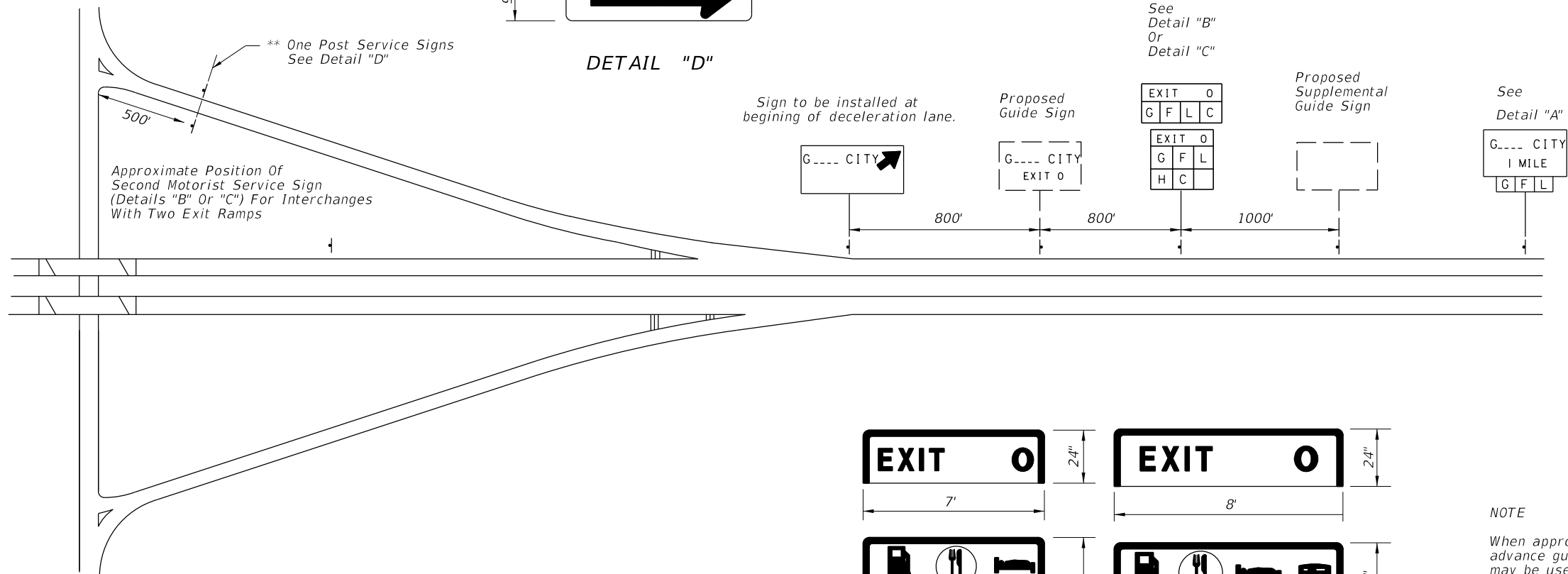
Ramp mounted signs shall be installed to avoid conflict with existing signs and in no case should they be placed within 100' of another sign.



DETAIL "D"

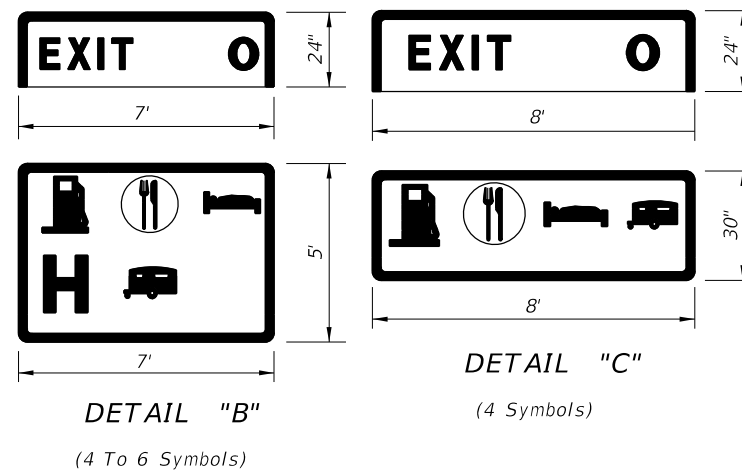


DETAIL "A"
(1 To 3 Symbols)



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.

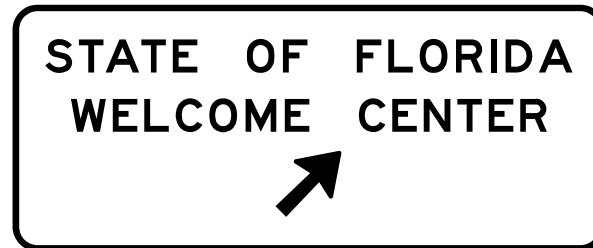
The mounting height of the advance guide sign shall be increased, where necessary, to provide 8' between the level of the pavement edge and the bottom of the guide sign, prior to mounting the supplementary panel.

6/9/2015 4:47:58 PM

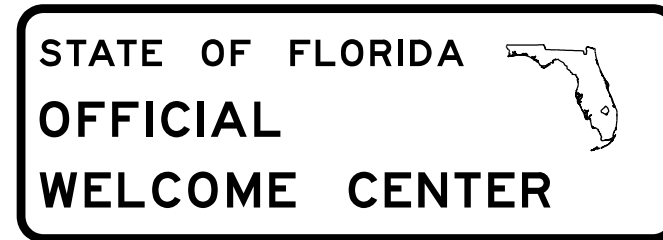
LAST REVISION 07/01/09	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SIGNING FOR MOTORIST SERVICES	INDEX NO. 17350	SHEET NO. 1 of 1
---------------------------	----------	--------------	------------------------------	-------------------------------	--------------------	---------------------



Sign No. FTP-10-06



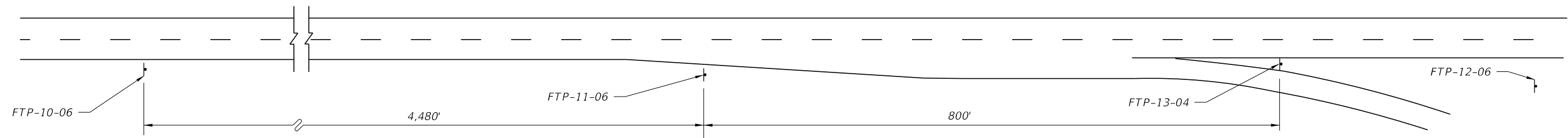
Sign No. FTP-11-06



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.

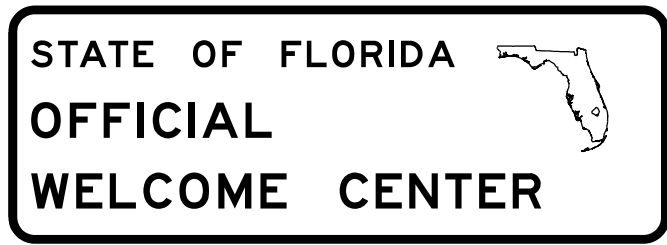
6/9/2015 4:48:16 PM

FOR LIMITED ACCESS HIGHWAYS

LAST REVISION 07/01/07	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	WELCOME CENTER SIGNING	INDEX NO. 17351	SHEET NO. 1 of 2
---------------------------	----------	--------------	------------------------------	------------------------	--------------------	---------------------



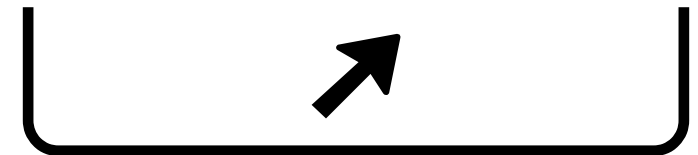
SIGN NO. FTP-15A-06



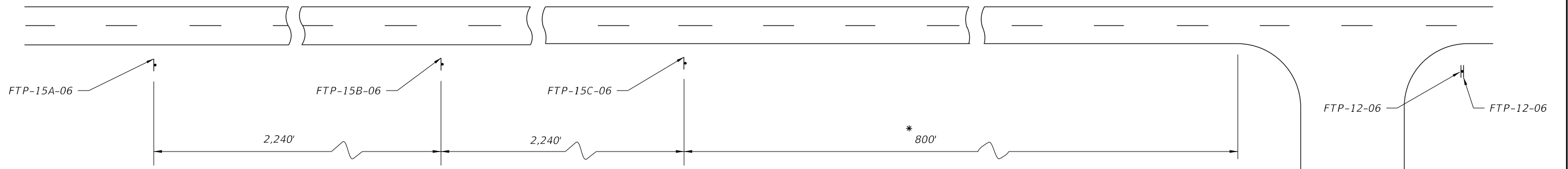
SIGN NO. FTP-12-06



SIGN NO. FTP-15B-06



SIGN NO. FTP-15C-06



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

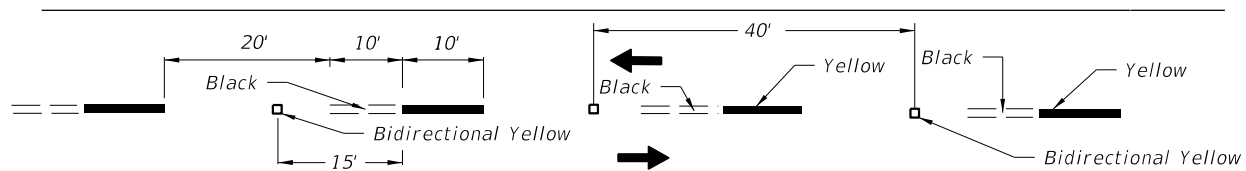
Notes:

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.

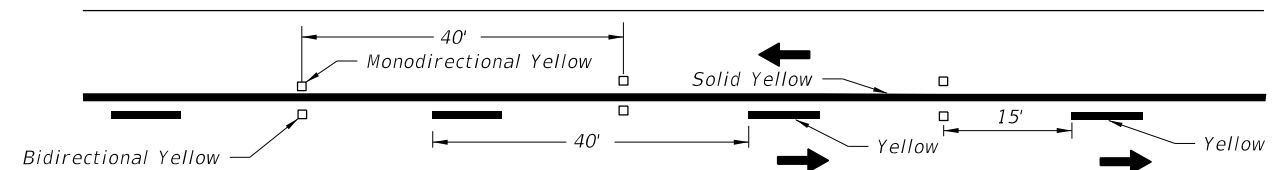
FOR PRIMARY HIGHWAYS

6/9/2015 4:48:17 PM

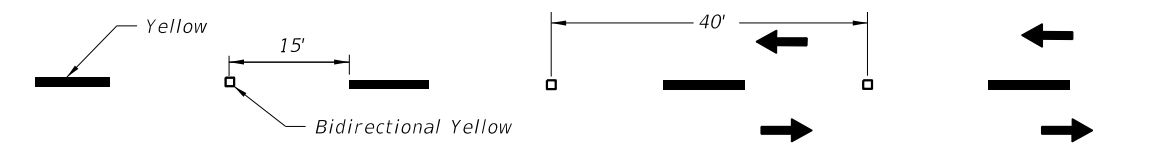
LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	WELCOME CENTER SIGNING	INDEX NO. 17351	SHEET NO. 2 of 2
---------------------------	----------	--------------	------------------------------	------------------------	--------------------	---------------------



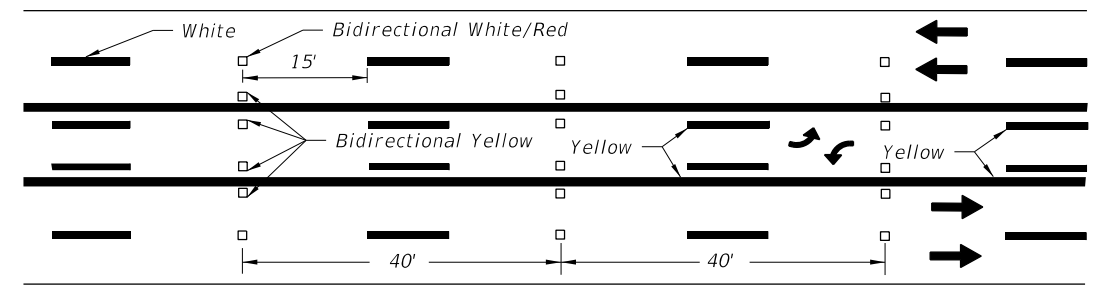
ALTERNATING SKIP LINE



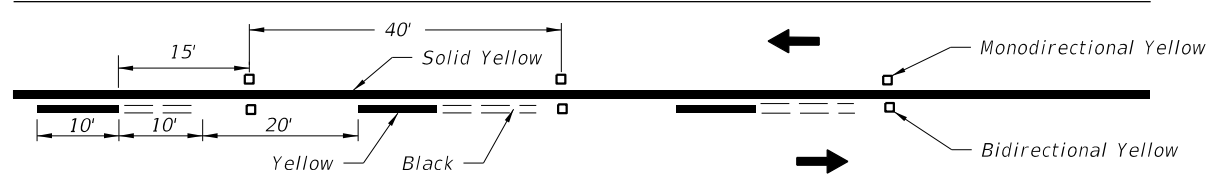
SOLID LINE WITH SKIP



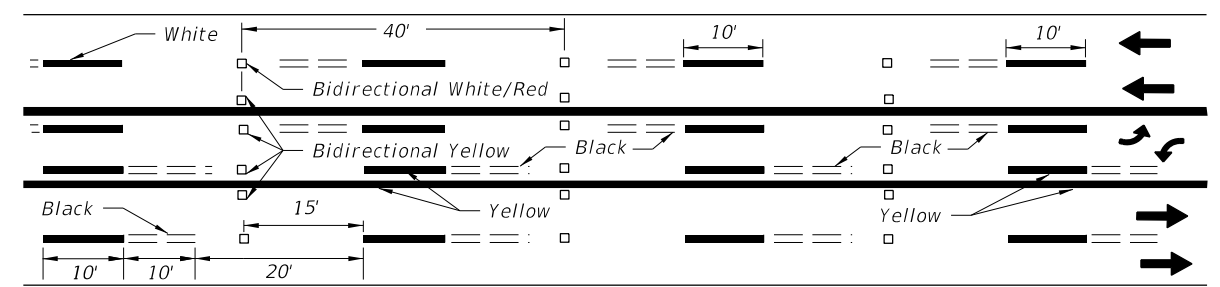
SKIP LINE



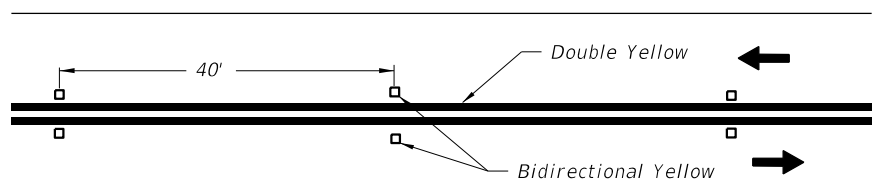
SKIP LINE WITH TWO-WAY LEFT TURN LANE



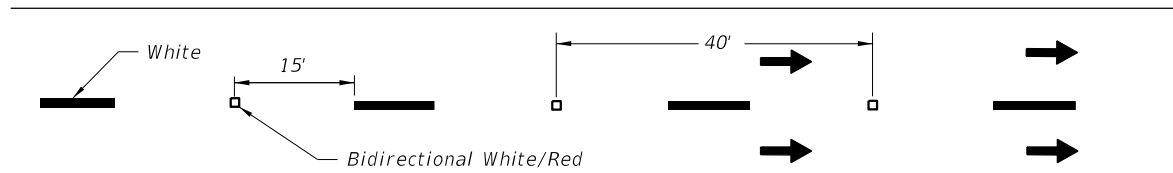
SOLID LINE WITH ALTERNATING SKIP



ALTERNATING SKIP LINE WITH TWO-WAY LEFT TURN LANE




DOUBLE SOLID LINE



MULTILANE

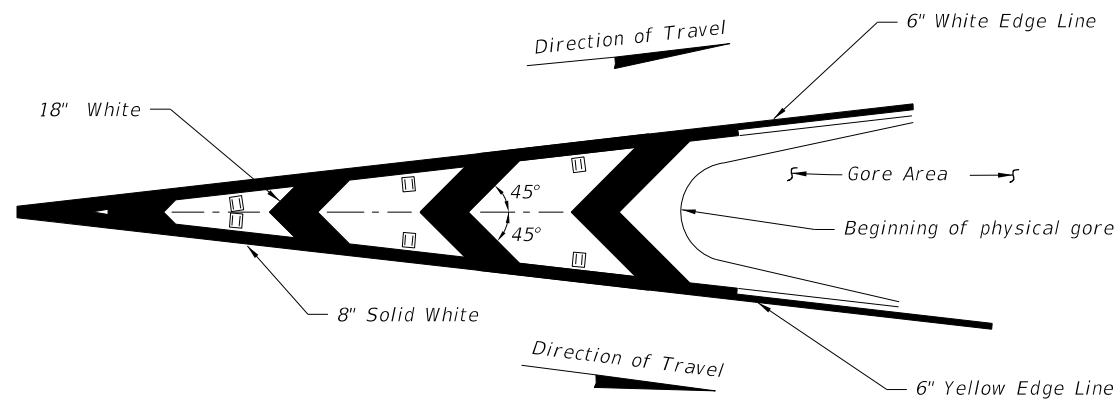
1. Reflective Pavement Markers shall be spaced at 40' on all skip lane lines and skip center lines. This spacing may be reduced to 20' if specifically called for in the plans.
2. The spacing on solid lines and solid/skip combination lines shall be 40'.
3. All RPM's shall be offset 1" from solid longitudinal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

6/9/2015 4:48:38 PM

LAST REVISION 01/01/10	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	TYPICAL PLACEMENT OF REFLECTIVE PAVEMENT MARKERS	INDEX NO. 17352	SHEET NO. 1 of 2
---------------------------	----------	--------------	---	---	--------------------	---------------------

NOTES

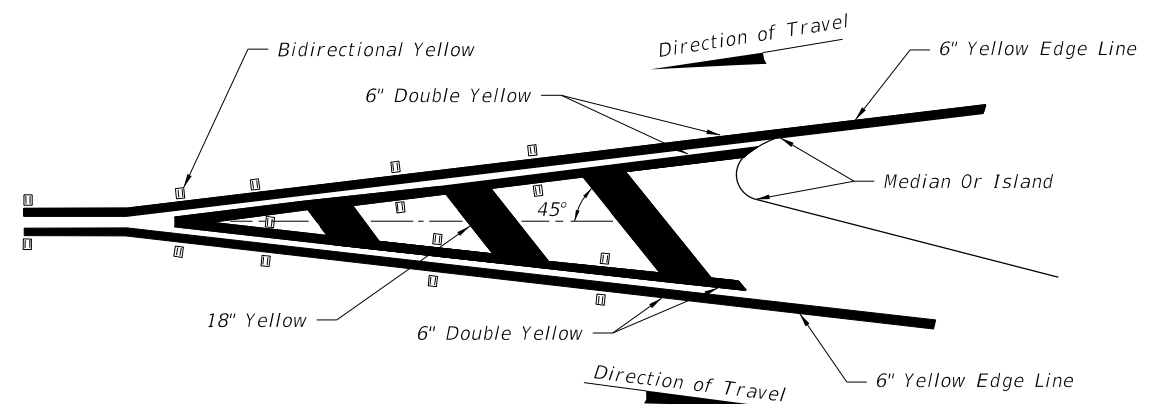
1. Set Raised Pavement Markers 1" from line.
2. Center the Raised Pavement Markers between chevrons.



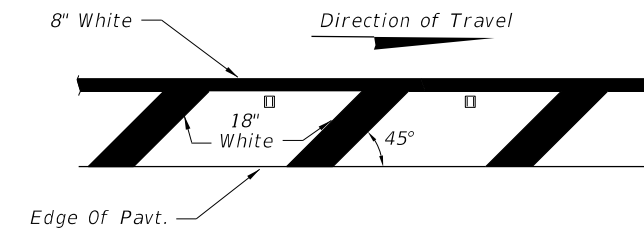
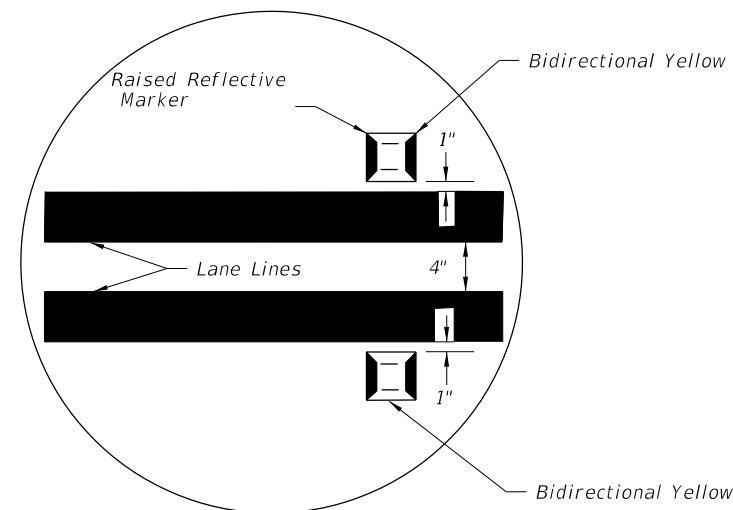
RPM PLACEMENT FOR TRAFFIC CHANNELIZATION AT GORE
(TRAFFIC FLOWS IN SAME DIRECTION)

NOTE

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



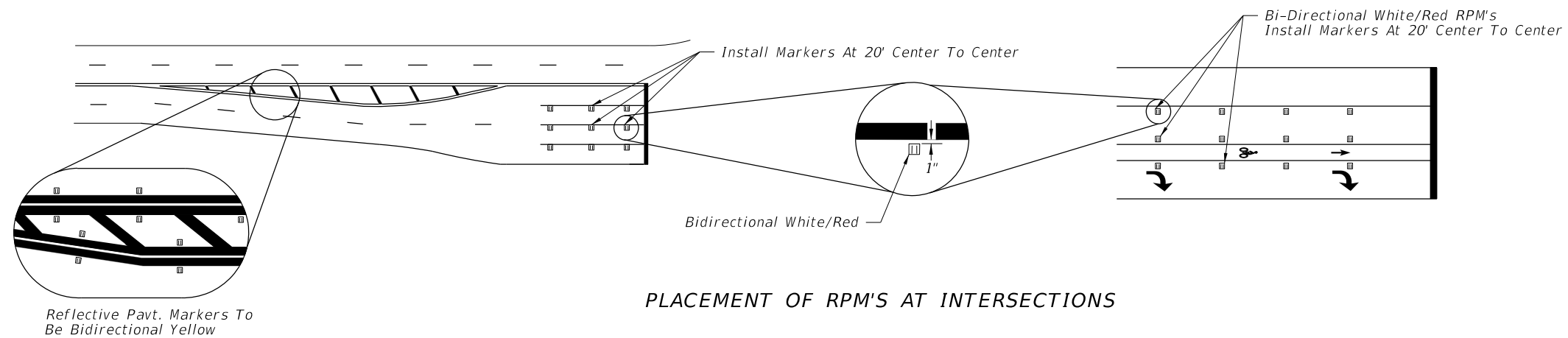
RPM PLACEMENT FOR TRAFFIC SEPARATION
(TRAFFIC FLOWS IN OPPOSITE DIRECTION)



PLACEMENT OF RPM'S ON SHOULDER MARKINGS


Right side of the roadway shown. For the left side of roadway, the pavement marking is yellow and oriented opposite hand.

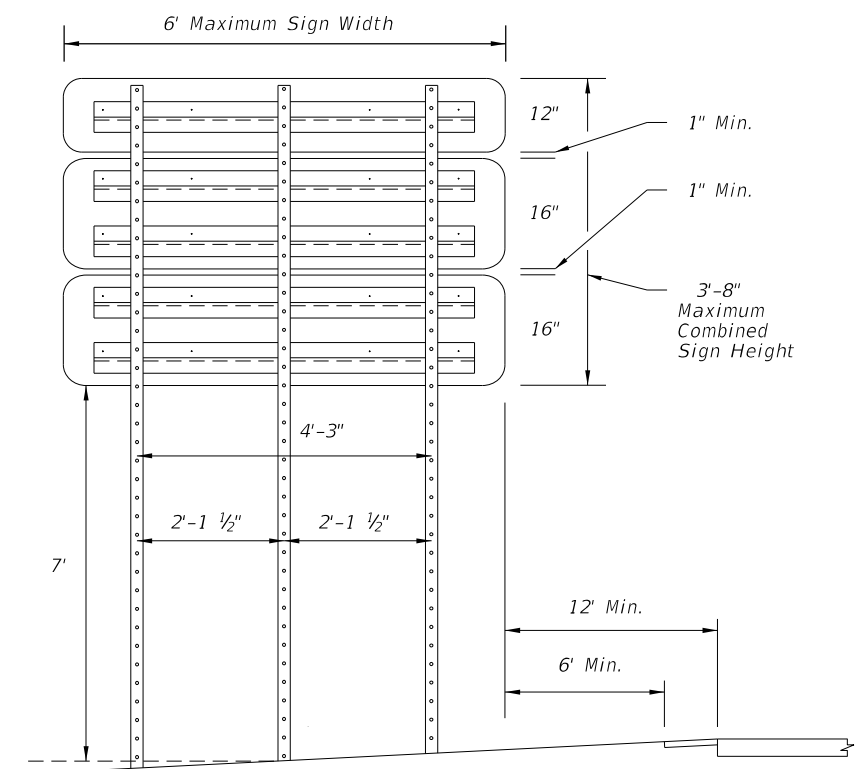
For Placement Of RPM's On Ramps See Index 17345.



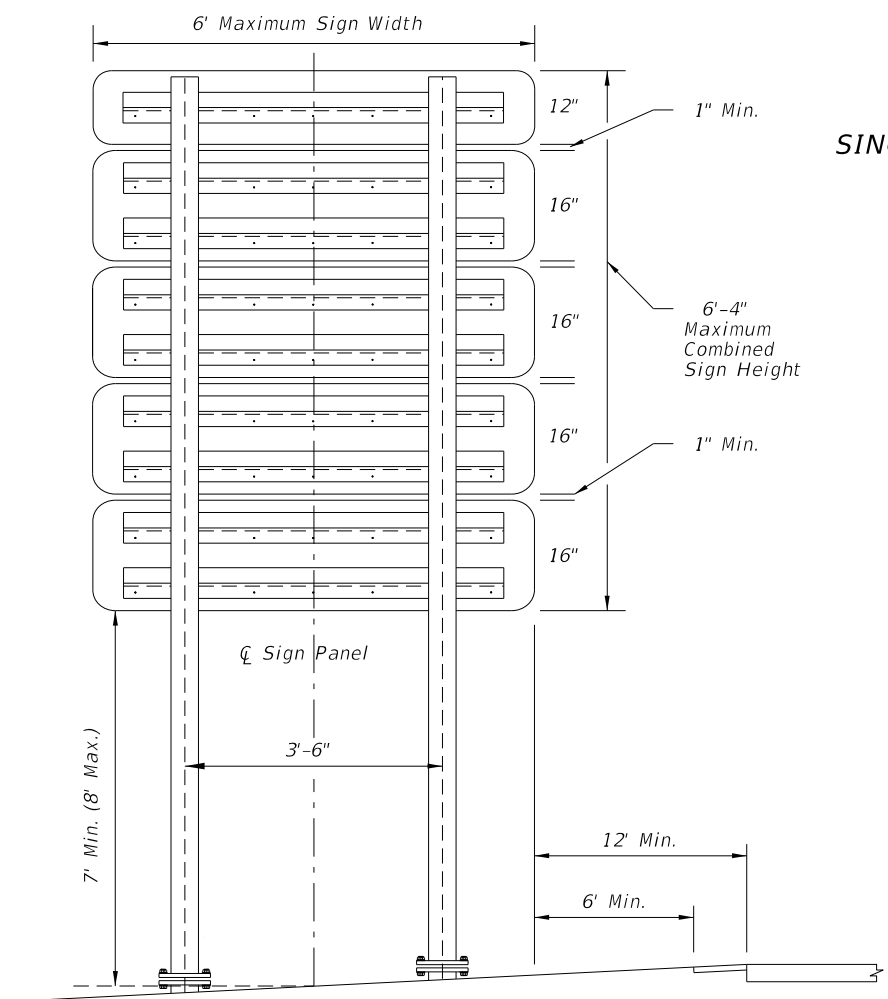
PLACEMENT OF RPM'S AT INTERSECTIONS

6/9/2015 4:48:39 PM

LAST REVISION 07/01/15	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	TYPICAL PLACEMENT OF REFLECTIVE PAVEMENT MARKERS	INDEX NO. 17352	SHEET NO. 2 of 2
---------------------------	----------	--------------	---	---	--------------------	---------------------

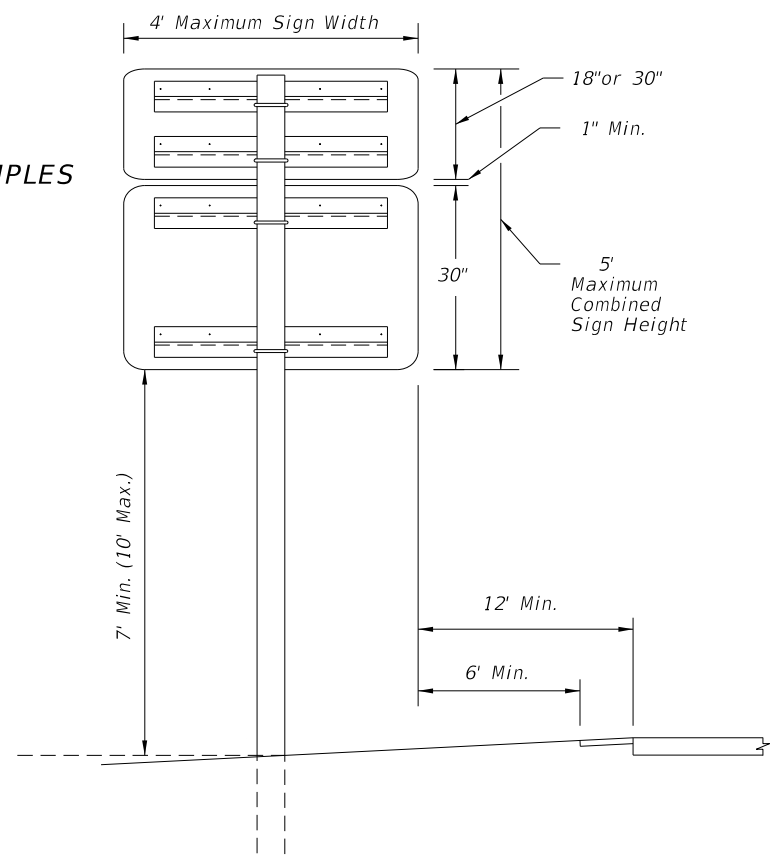
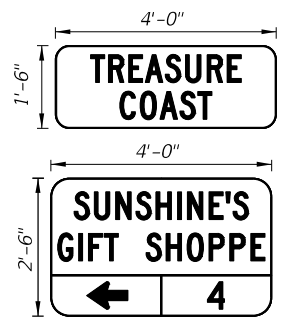


STEEL U-CHANNEL TRIPLE POST DIRECT BURIAL



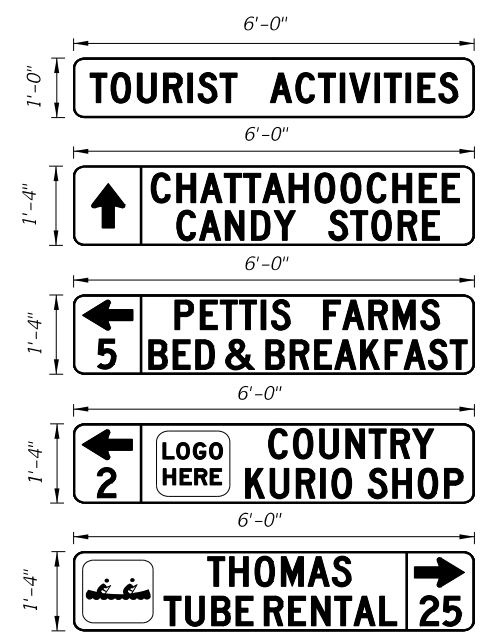
TWO POST STEEL I BEAM WITH SLIP BASE

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 Work Zone Sign Supports in Index 600. Galvanize Steel U-Channel in accordance with ASTM 123.

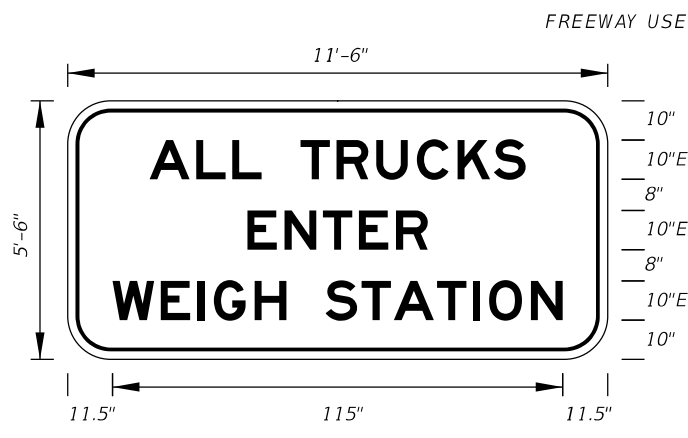
DESIGN FOR TOURIST ORIENTED DIRECTIONAL SIGNS
(Options for Aluminum Round Tube, Steel I Beam and Steel U-Channel.)

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.

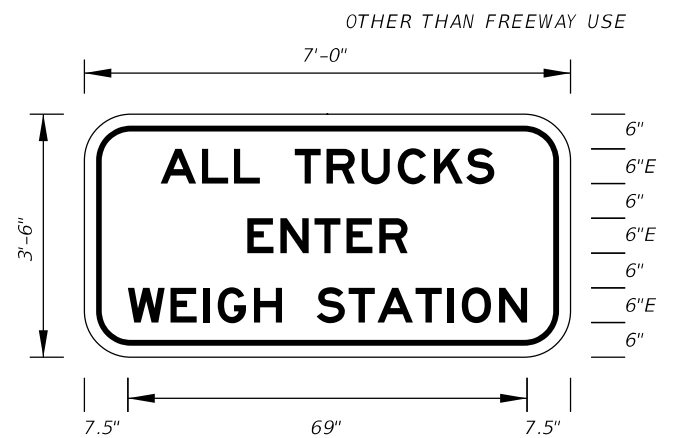
NA

6/9/2015 4:48:55 PM



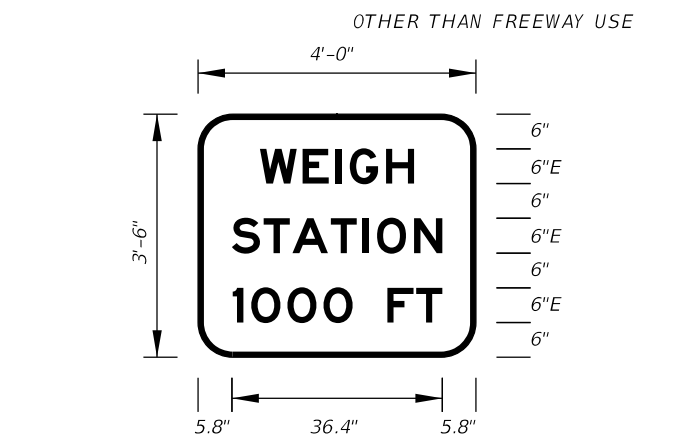
FTP-1-06
11'-6" X 5'-6"
9" Radii 2" Border

10" Series E Legend
White Background
Black Legend and Border



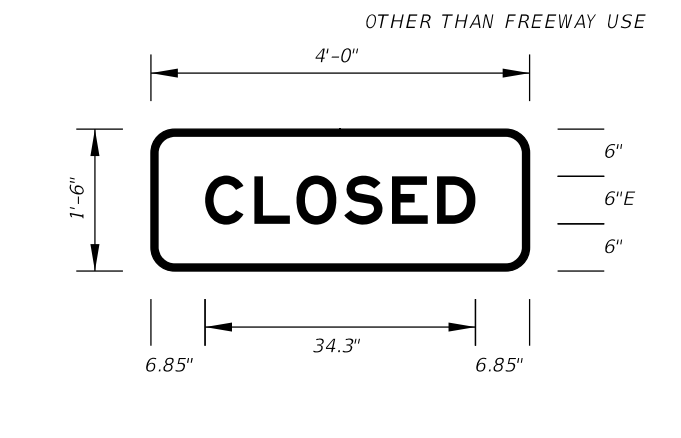
FTP-2-06
7' X 3'-6"
6" Radii 2" Border

6" Series E Legend
White Background
Black Legend and Border



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

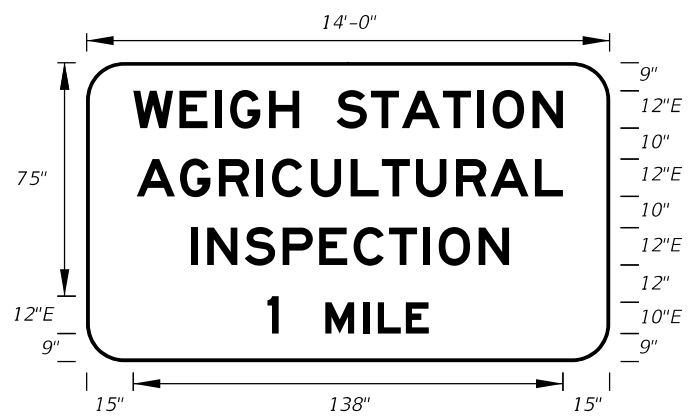
6" Series E Legend
Green Background
White Legend and Border



FTP-4-06
4' X 1'-6"
3" Radii 2" Border

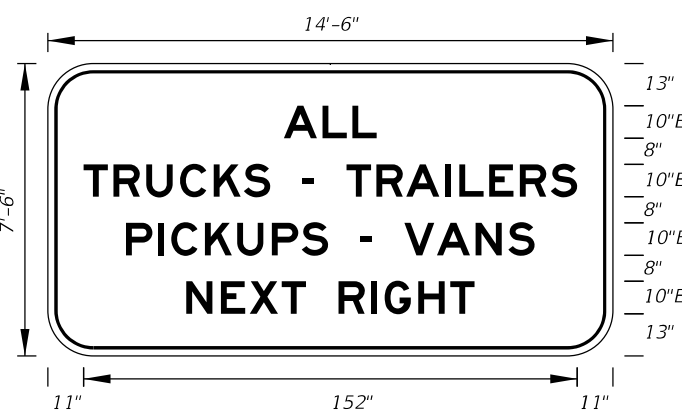
6" Series E Legend
Green Background
White Legend and Border

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



FTP-5-06
14' X 8'
12" Radii 2" Border

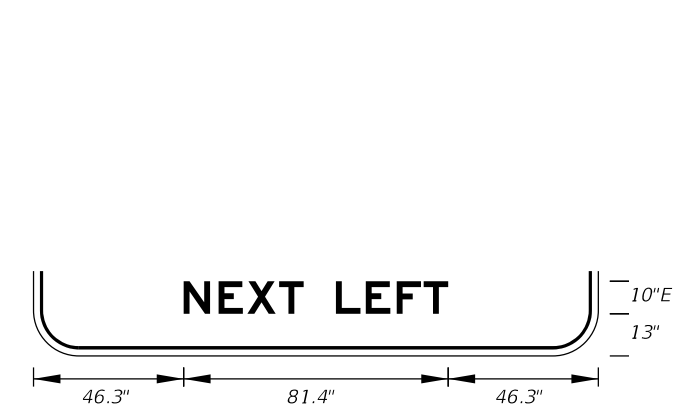
12" and 10" Series E Legend
Green Background
White Legend and Border



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

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

10" Series E Legend
White Background
Black Legend and Border



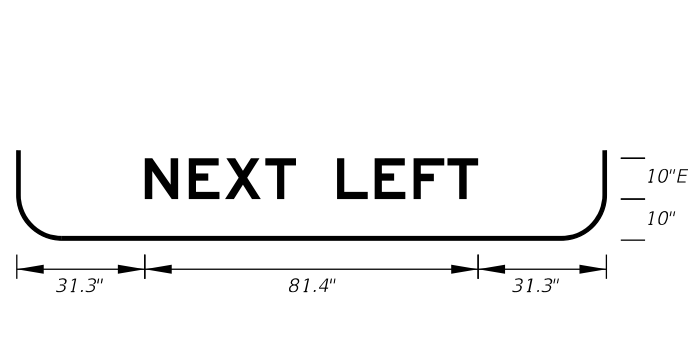
FTP-6B-06
14'-6" X 7'-6"
12" Radii 2" Border

10" Series E Legend
White Background
Black Legend and Border



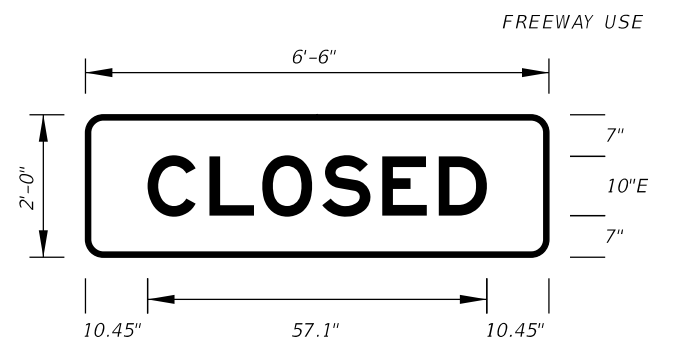
FTP-7A-06
12' X 7'
11" Radii 2" Border

10" Series E Legend
Green Background
White Legend and Border



FTP-7B-06
12' X 7'
11" Radii 2" Border

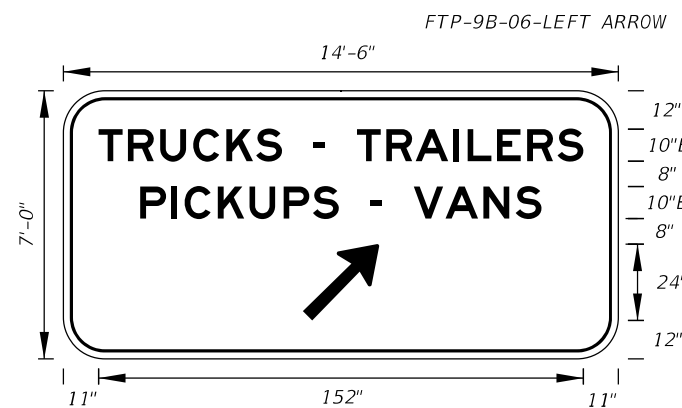
10" Series E Legend
Green Background
White Legend and Border



FTP-8-06
6'-6" X 2'
3" Radii 2" Border

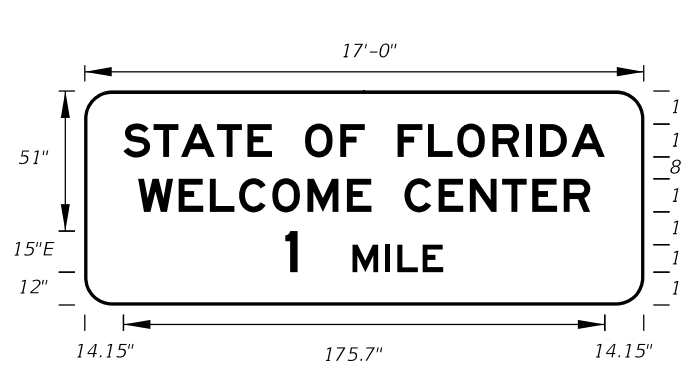
10" Series E Legend
Green Background
White Legend and Border

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



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

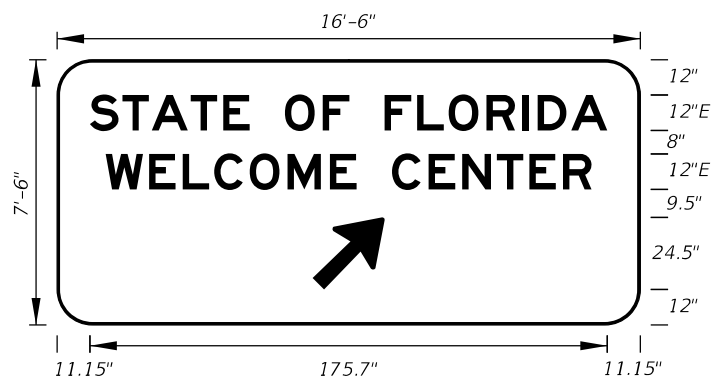
10" Series E Legend
Green Background
White Legend and Border



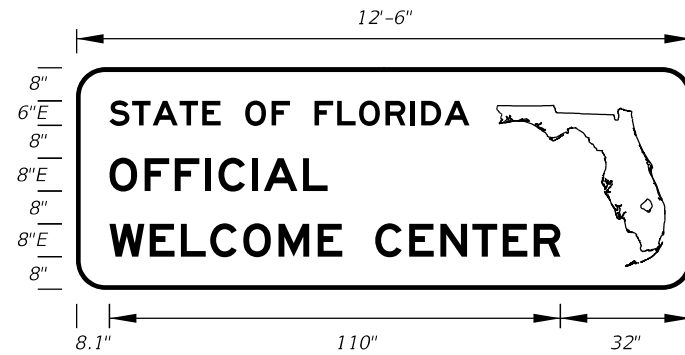
FTP-10-06
17' X 6'-6"
10" Radii 2" Border

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

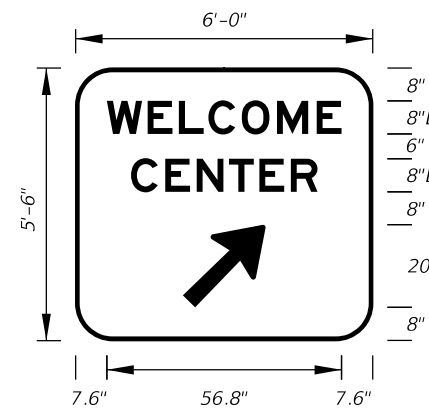
6/9/2015 4:49:17 PM



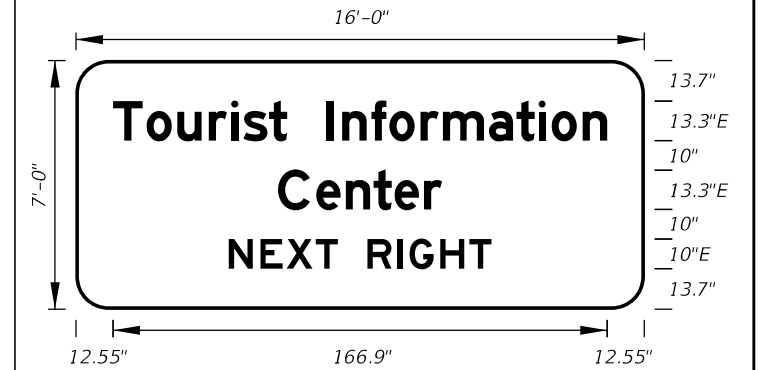
FTP-11-06
16'-6" X 7'-6"
12" Radii 2" Border
12" Series E Legend
Blue Background
White Legend and Border



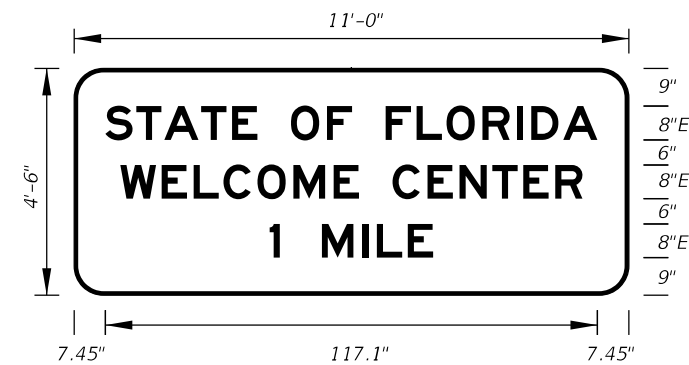
FTP-12-06
12'-6" X 4'-6"
7" Radii 2" Border
6" and 8" Series E Legend
Blue Background
White Legend and Border



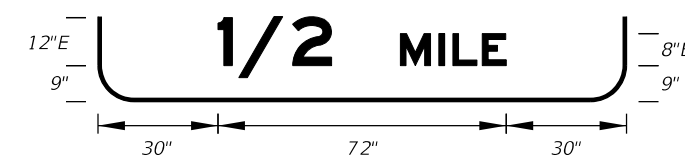
FTP-13-06
6' 0" X 5'-6"
9" Radii 2" Border
8" Series E Legend
Blue Background
White Legend and Border



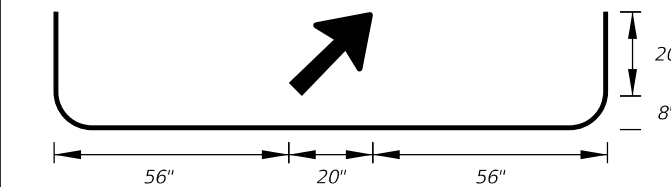
FTP-14-06
16'-0" X 7'-0"
11" Radii 2" Border
13.3 and 10" Series E Legend
Blue Background
White Legend and Border



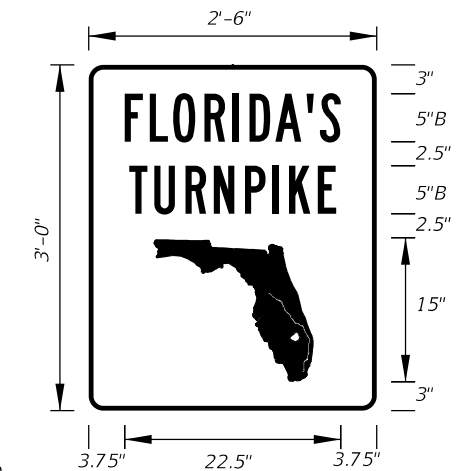
FTP-15A-06
11'-0" X 4'-6"
7" Radii 2" Border
8" Series E Legend
Blue Background
White Legend and Border



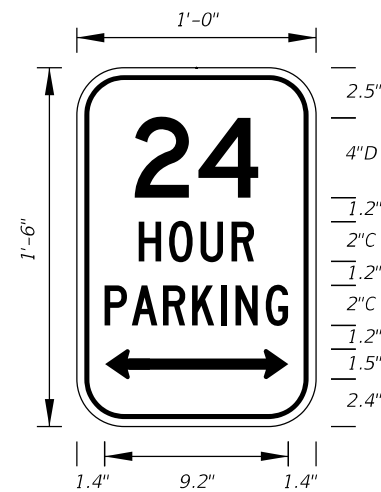
FTP-15B-06
11'-0" X 5'-0"
8" Radii 2" Border
8" and 12" Series E Legend
Blue Background
White Legend and Border



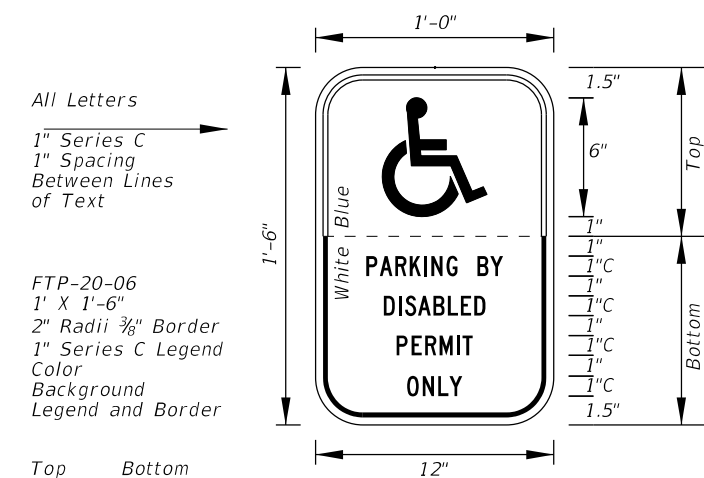
FTP-15C-06
11'-0" X 5'-6"
9" Radii 2" Border
8" Series E Legend
Blue Background
White Legend and Border



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

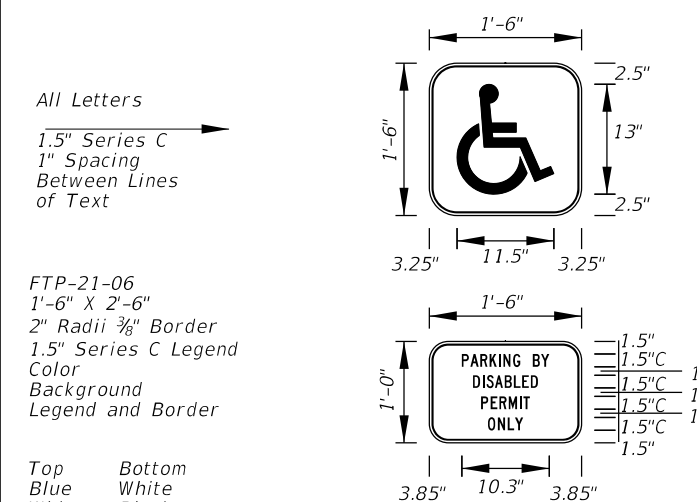


FTP-19-06
1' X 1'-6"
4" Radii 3/8" Border
Top 4" Series D
Bottom 2" Series C
White Background
Green Legend and Border



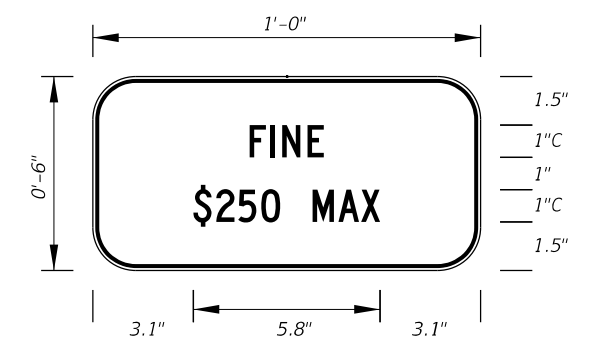
FTP-20-06
1' X 1'-6"
2" Radii 3/8" Border
1" Series C Legend
Color
Background
Legend and Border

Top Bottom
Blue White
White Black



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

6/9/2015 4:49:17 PM

LAST REVISION
07/01/14

REVISION

DESCRIPTION:

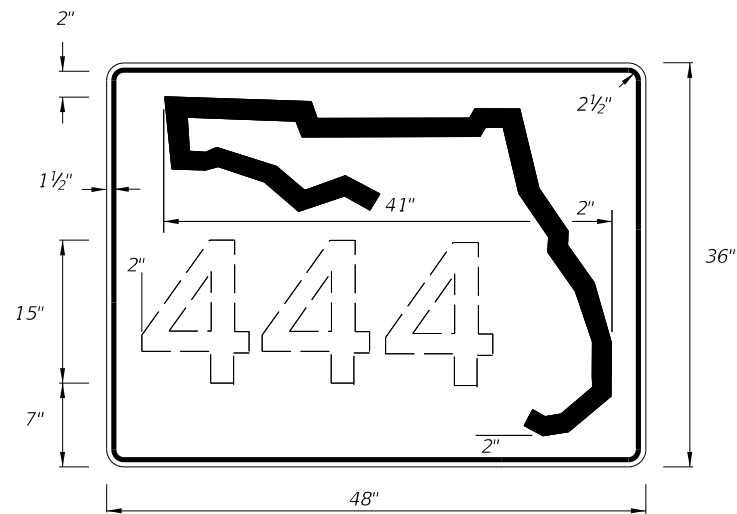


2016
DESIGN STANDARDS

SPECIAL SIGN DETAILS

INDEX NO.
17355

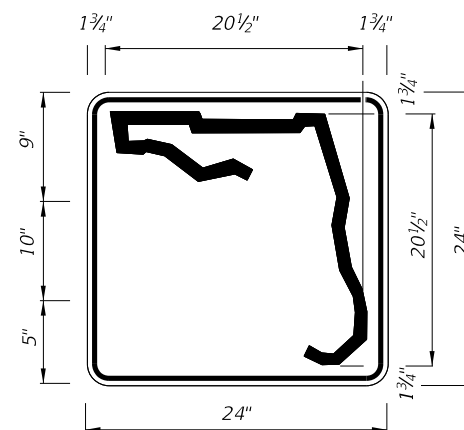
SHEET NO.
2 of 11



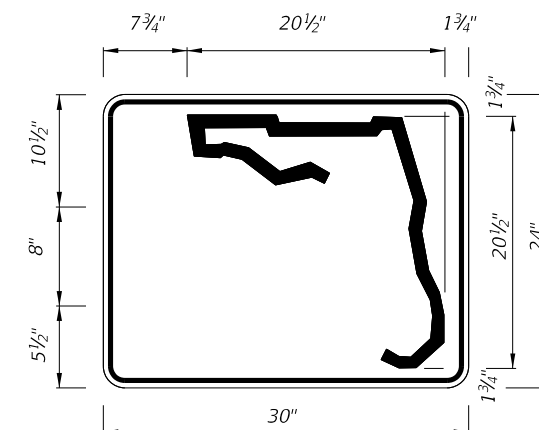
INDEPENDENT USE FOR FREEWAY

DIGITS	NUMERAL SIZE	SERIES	PANEL SIZE
1-2	10"	D	24" x 24"
3	8"	D	24" x 24"
3	8"	D	30" x 24"
4	8"	C	30" x 24"
1-3	15"	C	48" x 36"
4	12"	C	48" x 36"

- Note:
- The 24" X 24" panel shall only be used for a 3 digit route when the panel is to be used on a sign cluster with other 24" X 24" panels.
 - Florida Route Marker shall have Black Legend with White Background.
 - Stroke width of State Outline shall be 1".
 - 2" Radii, 5/8" Border.

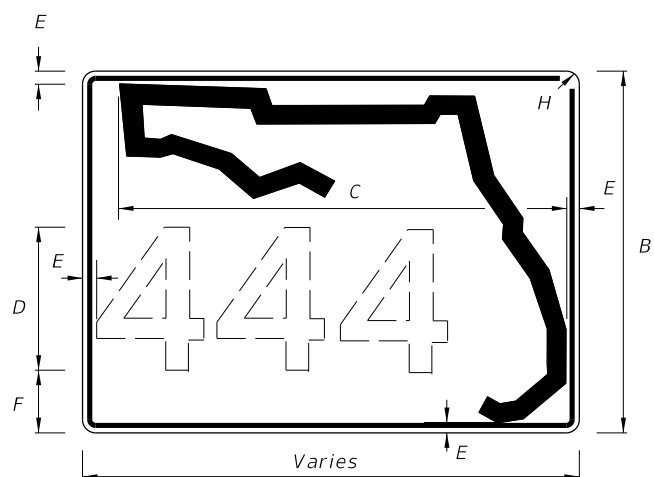


1 or 2 DIGITS

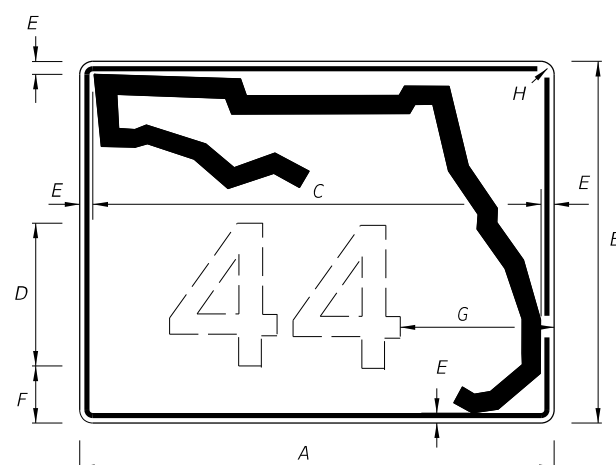


3 or 4 DIGITS

INDEPENDENT USE OTHER THAN FREEWAY



3 OR MORE DIGITS



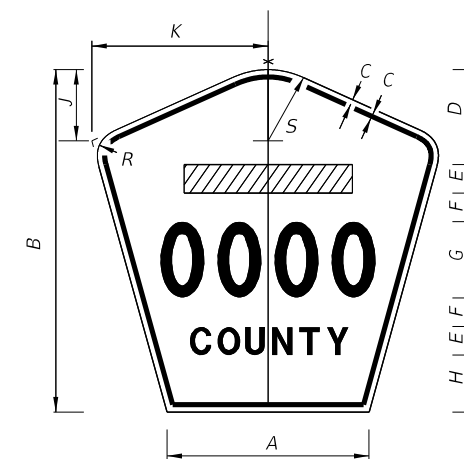
1 OR 2 DIGITS

A	B	C	D	E	F	G	H
30"	24"	26"	12"	1 1/4"	2 3/4"	8 1/4"	1 1/4"
36"	30"	32"	15"	1 1/4"	3 1/4"	8 3/4"	1 1/4"
42"	36"	38"	15"	1 1/4"	6 1/4"	11"	1 1/4"

GUIDE SIGN USE

- Notes:
- Florida marker shall have Black Legend with White Background.
 - Stroke width of State outline to be 1 1/4" for Guide Sign.
 - Numbers are series D.

FLORIDA ROUTE MARKER
FTP-17-06

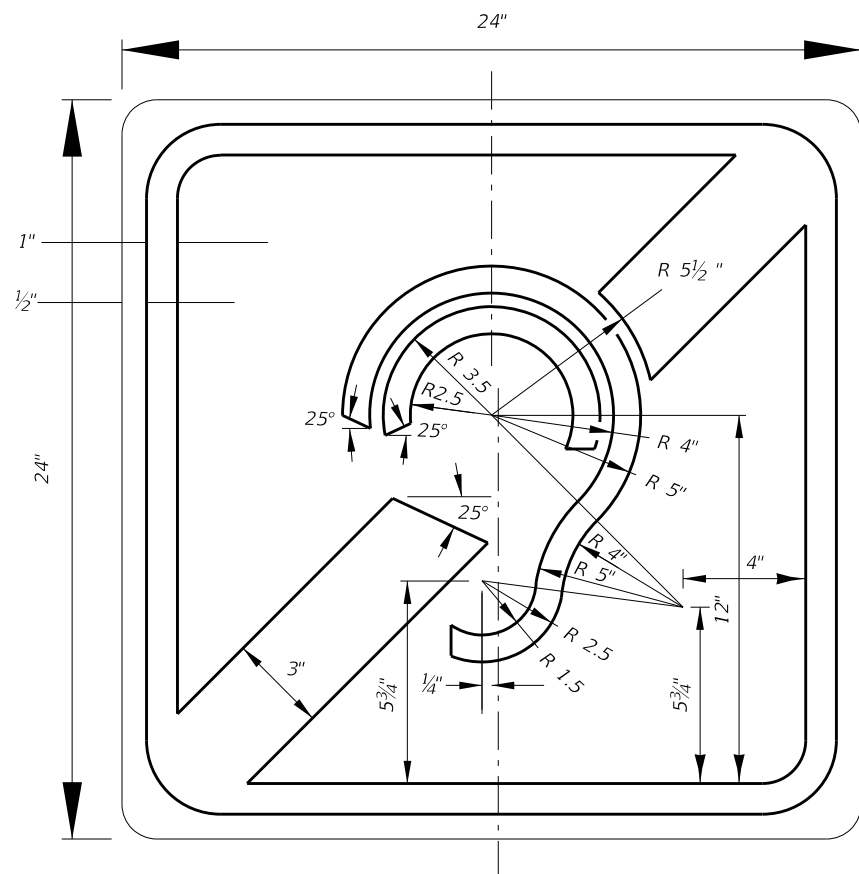


- Notes:
- All Legend Series "D".
 - Color: Yellow Legend and Border on Blue Background.
 - When used on a guide sign, marker must be overlaid on a rectangular Yellow Background as shown in chart.

SIGN	DIMENSIONS											**	
	A	B	C	D	E	F	G	H	J	K	R		S
4 DIGIT POST MOUNTED	25 1/8"	42"	3 1/4"	10"	4"	4"	8"	8"	8 3/8"	22"	5"	8 3/4"	
2 DIGIT OVERHEAD	21 1/2"	36"	1 1/2"	7 1/2"	3"	3"	12"	4 1/2"	7 1/8"	18 1/8"	4 1/4"	7 1/2"	42" x 42"
3 DIGIT OVERHEAD	25 1/8"	42"	3 1/4"	8"	4"	4"	12"	6"	8 3/8"	22"	5"	8 3/4"	48" x 48"
4 DIGIT OVERHEAD	29 7/8"	48"	3 1/4"	8"	5"	5"	12"	8"	9 3/4"	25 5/8"	5 3/4"	10 1/4"	52" x 52"

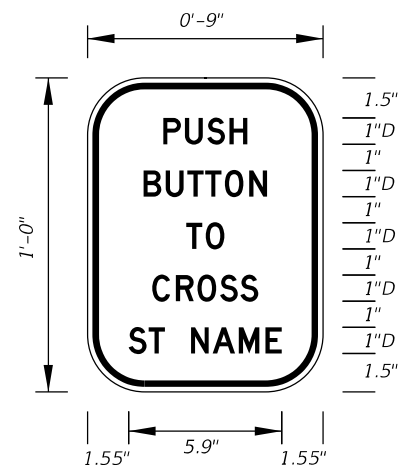
M1-6 COUNTY ROUTE MARKER DETAIL
FTP-18-06

6/9/2015 4:49:18 PM

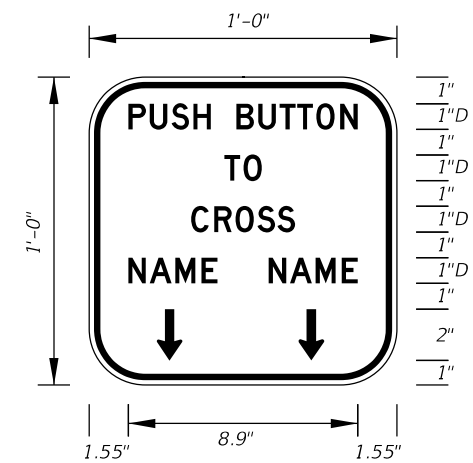


FTP-23-06
2' X 2'
1.5" Radii $\frac{5}{8}$ " Border
Blue Background
White Legend and Border

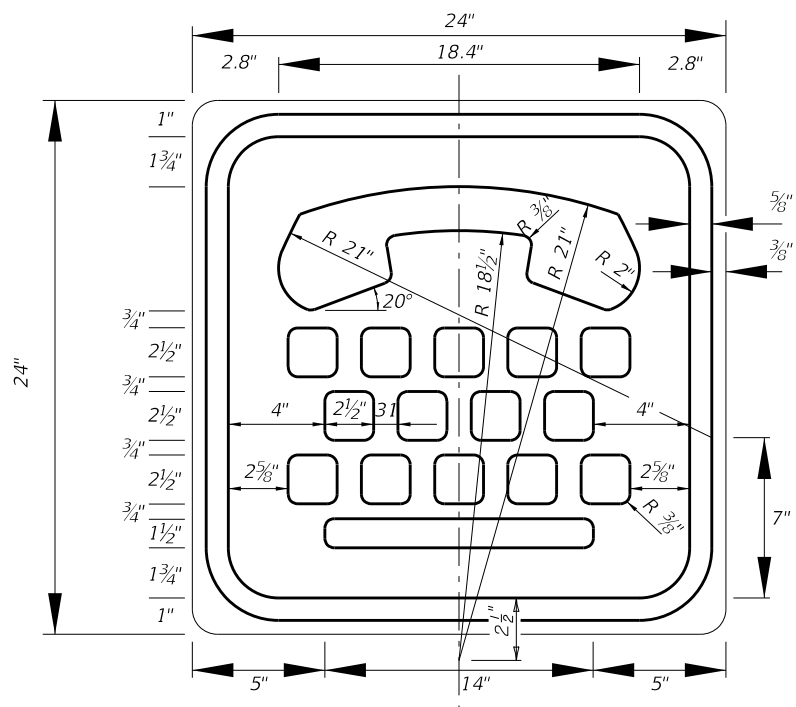
INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS



FTP-25-06
9" X 1'-0"
2" Radii $\frac{3}{8}$ " Border
1" Series D Legend
White Background
Black Legend and Border

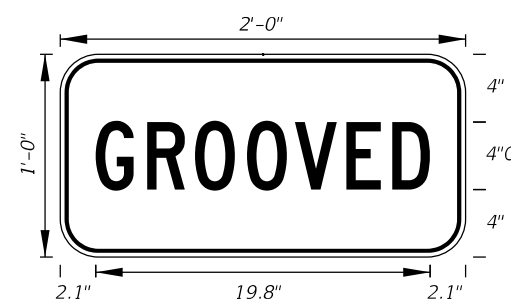


FTP-26-06
1' X 1'
2" Radii $\frac{3}{8}$ " Border
1" Series D Legend
White Background
Black Legend and Border

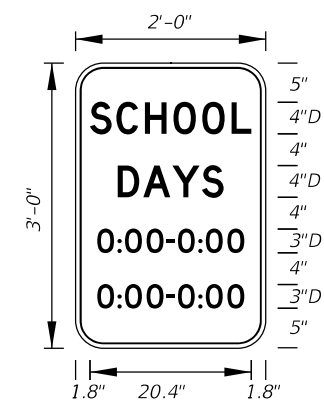


FTP-24-06
2' X 2'
1.5" Radii $\frac{5}{8}$ " Border
Blue Background
White Legend and Border

INTERNATIONAL TDD SYMBOL



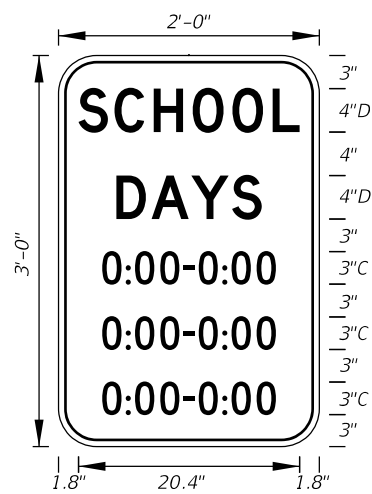
FTP-29-06
2'-0" X 1'-0"
2" Radii $\frac{5}{8}$ " Border
4" Series C Legend
Yellow Background
Black Legend and Border



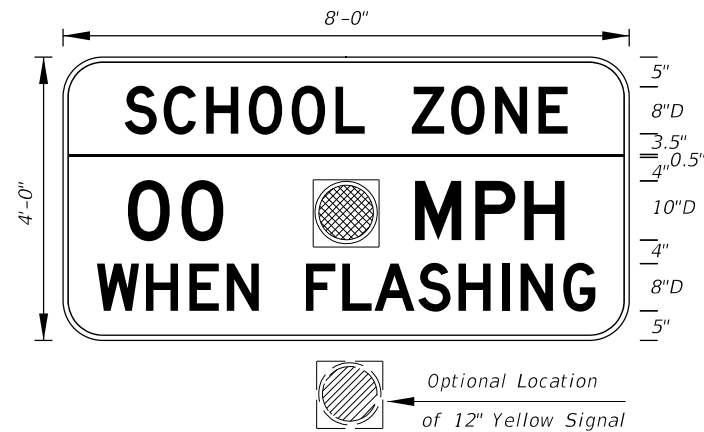
FTP-30-06
2'-0" X 3'-0"
3" Radii $\frac{5}{8}$ " Border
White Background
Black Legend and Border

6/9/2015 4:49:18 PM

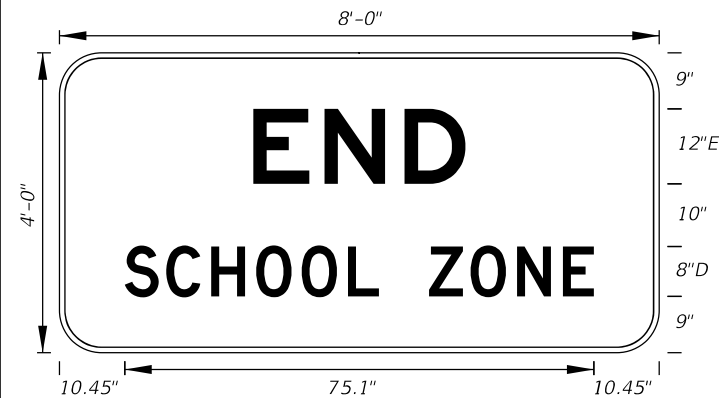
LAST REVISION	DESCRIPTION:
07/01/14	



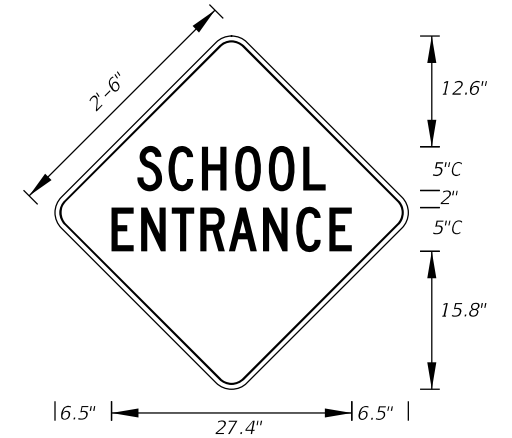
FTP-30A-06
2' X 3'
3" Radii 3/8" Border
Top 4" Series D Legend
Bottom 3" Series C Legend
White Background
Black Legend and Border



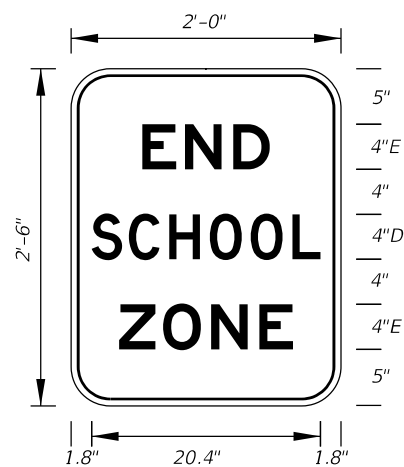
FTP-31-06
8' X 4'
6" Radii 3/4" Border
Series D Legend
Yellow Background Top
White Background Bottom
Black Legend and Border



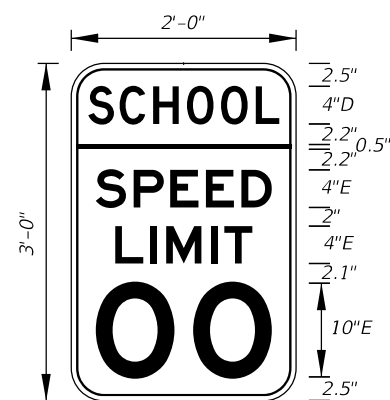
FTP-32-06
8' X 4'
6" Radii 3/4" Border
12" Series E and 8" Series D Legend
White Background
Black Legend and Border



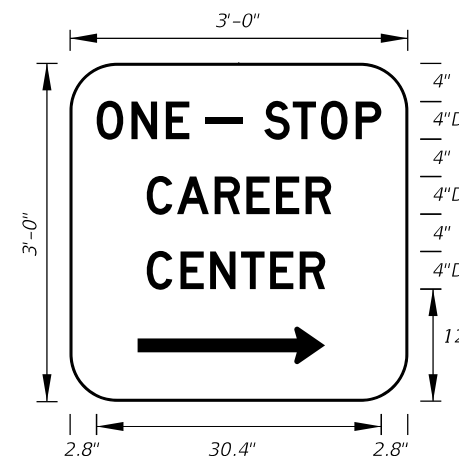
FTP-33-06
2'-6" X 2'-6"
2" Radii 3/4" Border
5" Series C Legend
Yellow Background
Black Legend and Border



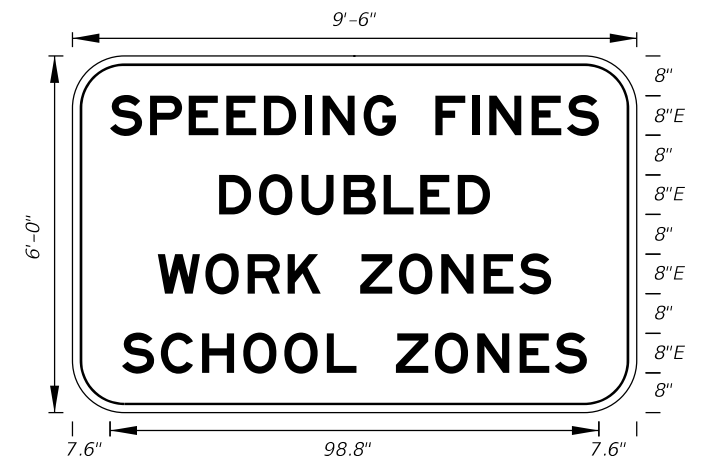
FTP-34-06
2' X 2'-6"
3" Radii 3/8" Border
4" Series D and E Legend
White Background
Black Legend and Border



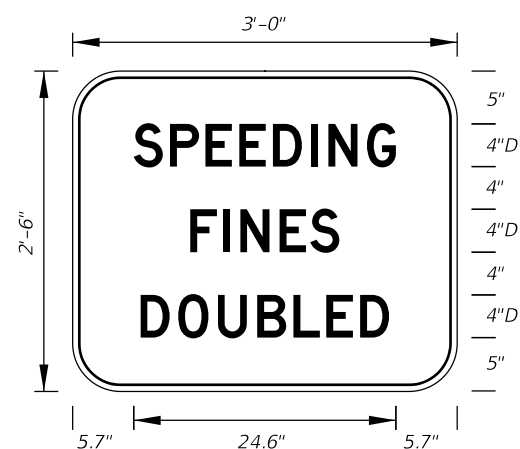
FTP-35-06
2' X 3'
3" Radii 5/8" Border
Top 4" Series D Legend
Bottom 4" and 10" Series E Legend
Yellow Background Top
White Background Bottom
Black Legend and Border



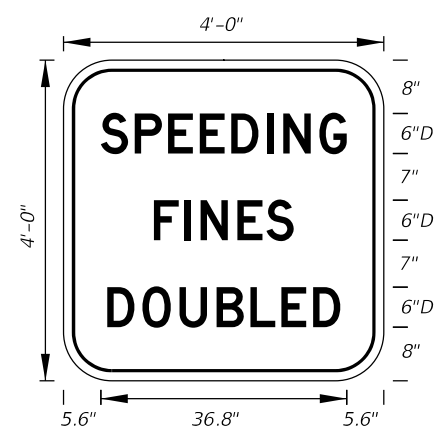
FTP-36-06
3' X 3'
5" Radii
4" Series D Legend
Green Background
White Legend and Border



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



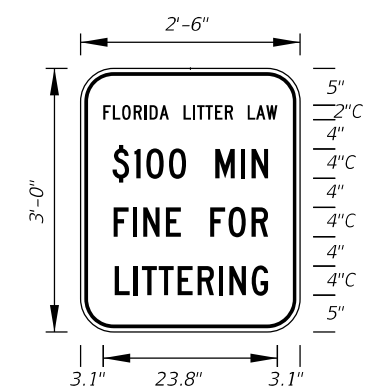
FTP-38-06
3' X 2'-6"
4" Radii 3/4" Border
4" Series D Legend
White Background
Black Legend and Border



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



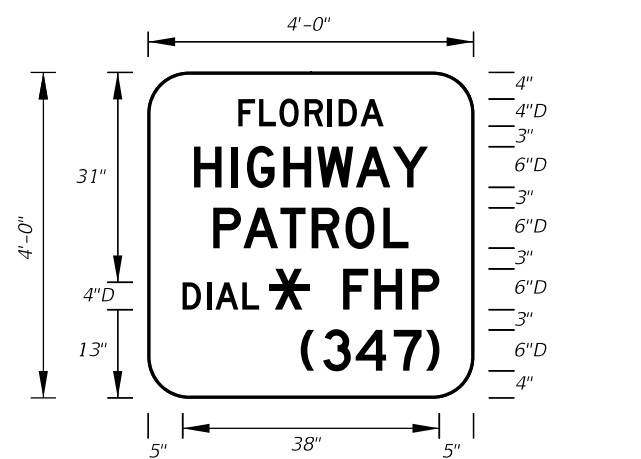
FTP-41-06
2'-6" X 3'
4" Radii 3/4" Border
2" and 4" Series C Legend
White Background
Black Legend and Border

6/9/2015 4:49:19 PM

LAST REVISION 07/01/14	REVISION	DESCRIPTION:
---------------------------	----------	--------------



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



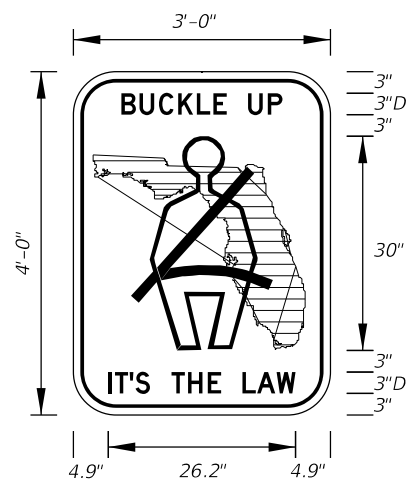
FTP-43-06
4' X 4'
6" Radii 1" Border
Top 4" Series D Legend
Bottom 6" Series D Legend
Blue Background
White Legend and Border



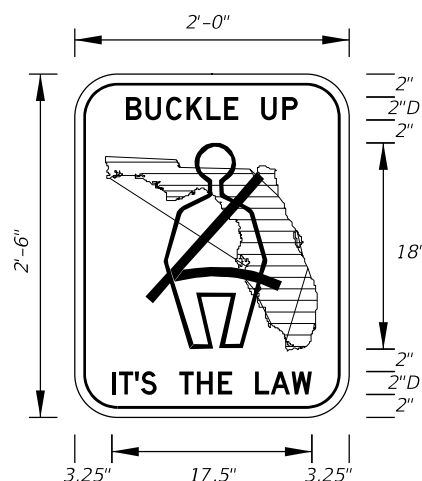
FTP-44-06
9' X 6'
9" Radii 3/4" Border
8" Series D Legend
White Background
Black Legend and Border



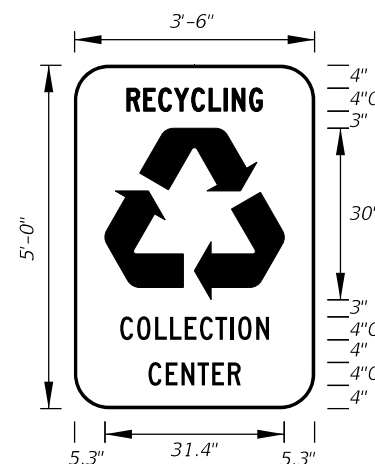
FTP-45-06
4' X 3'
5" Radii 3/4" Border
4" Series C Legend
White Background
Black Legend and Border



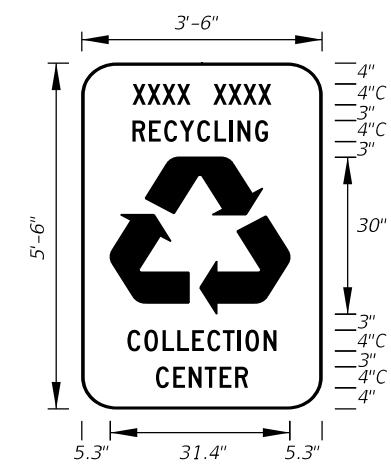
FTP-46-06
3' X 4'
5" Radii 3/4" Border
3" Series D Legend
White Background
Black Legend, Border and Man Belt Symbol
Florida Shield Green



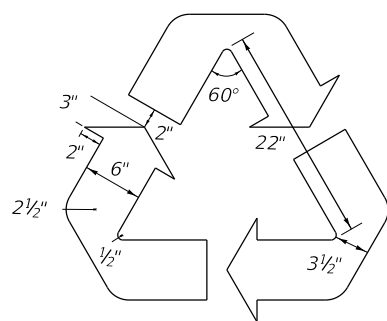
FTP-47-06
2' X 2'-6"
3" Radii 5/8" Border
2" Series D Legend
White Background
Black Legend, Border and Man Belt Symbol
Florida Shield Green



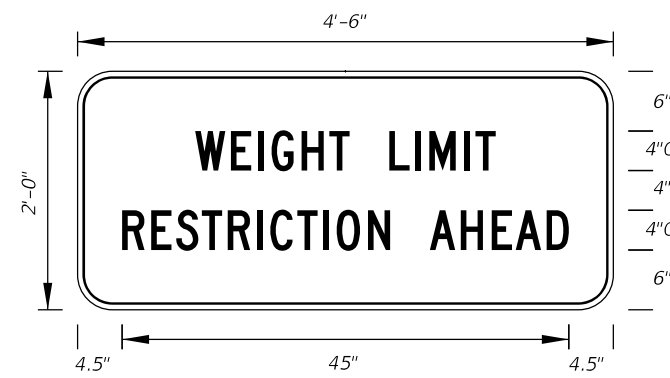
FTP-48-06
3'-6" X 5'
6" Radii
4" Series C Legend
Green Background
White Legend, Border and Symbol



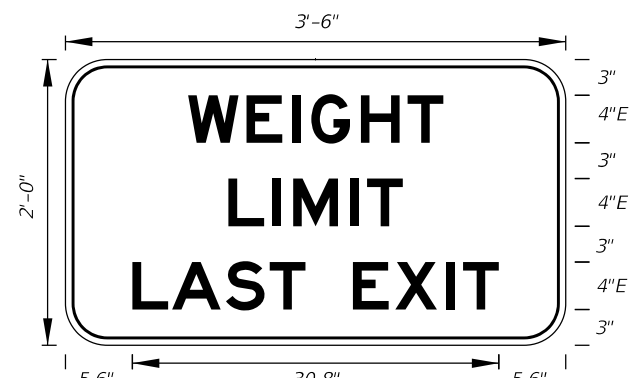
FTP-49-06
3'-6" X 5'-6"
6" Radii
4" Series C Legend
Green Background
White Legend, Border and Symbol
Municipality Name Optional



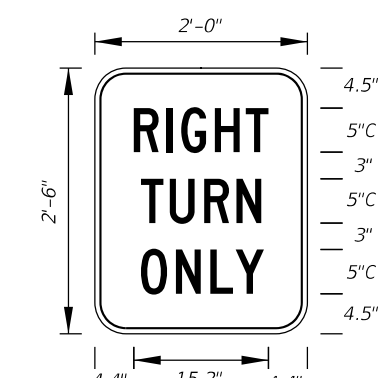
Detail for FTP-48-06 and FTP-49-06



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



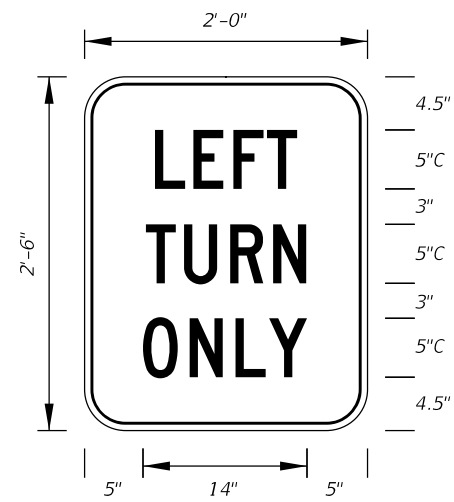
FTP-51-06
3' X 2'
3" Radii 3/4" Border
4" Series E Legend
White Background
Black Legend and Border



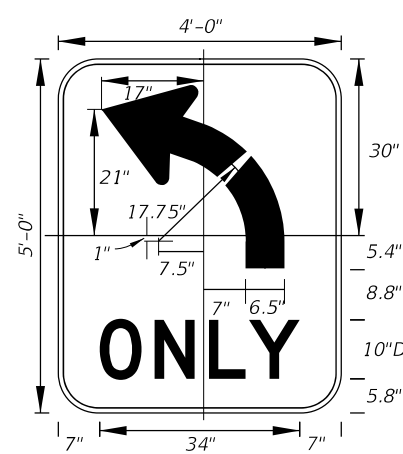
FTP-52-06
3' X 2'-6"
3" Radii 5/8" Border
5" Series C Legend
White Background
Black Legend and Border

6/9/2015 4:49:20 PM

LAST REVISION	DESCRIPTION:
07/01/14	

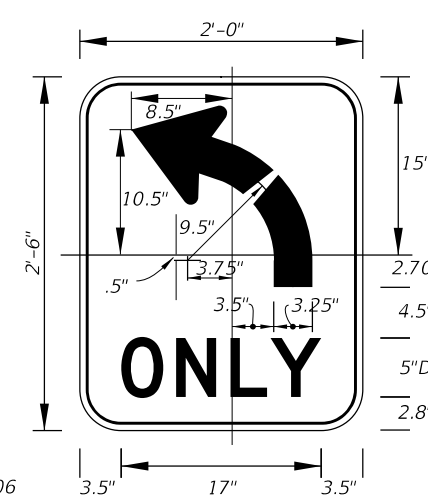


FTP-53-06
2' X 2'-6"
3" Radii 5/8" Border
5" Series C Legend
White Background
Black Legend and Border



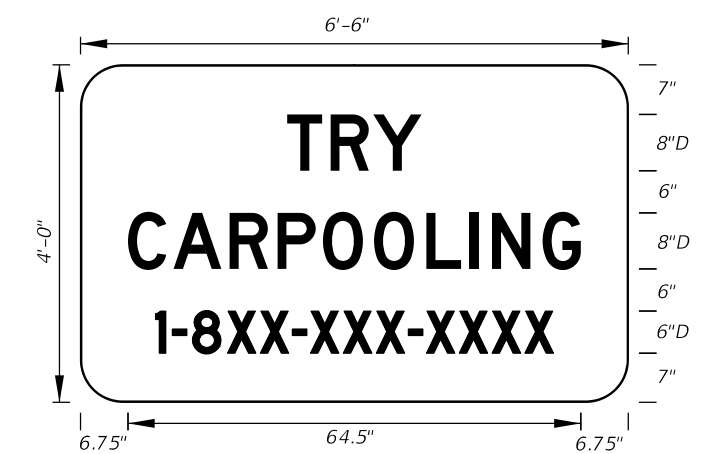
FTP-54L-06
4' X 5'
6" Radii 3/4" Border
10" Series D Legend
White Background
Black Legend and Border

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



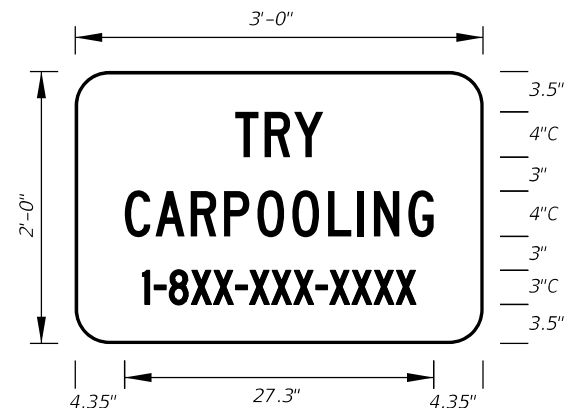
FTP-55L-06
2' X 2'-6"
3" Radii 3/8" Border
5" Series D Legend
White Background
Black Legend and Border

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.



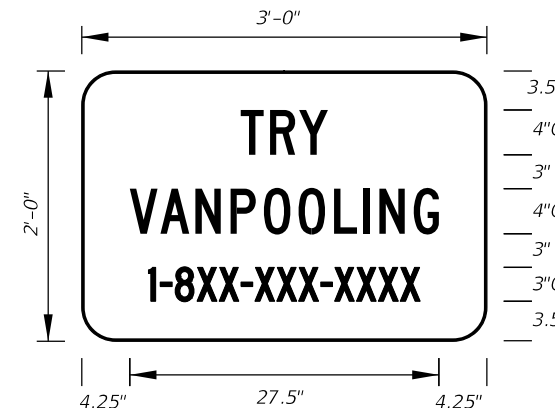
FTP-56A-06
3' X 2'
3" Radii
4" and 3" Series C Legend
Blue Background
White Legend and Border

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



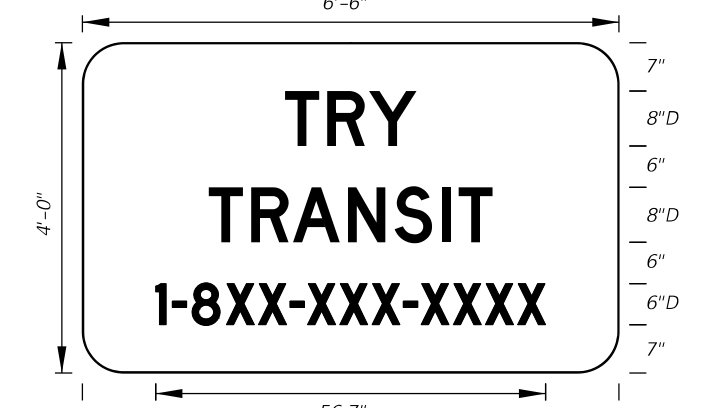
FTP-57-06
6'-6" X 4'
6" Radii
8" and 6" Series D Legend
Blue Background
White Legend and Border

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



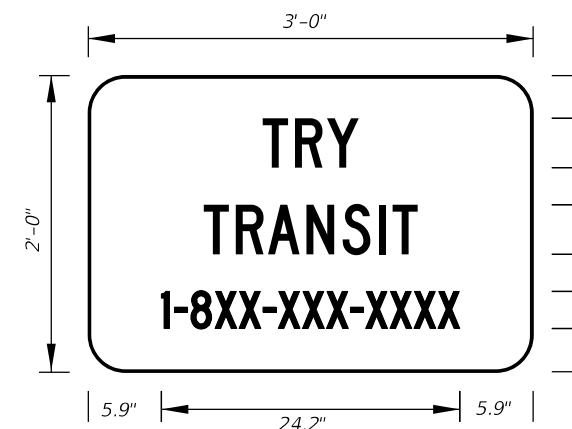
FTP-58-06
3' X 2'
3" Radii
4" and 3" Series C Legend
Blue Background
White Legend and Border

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

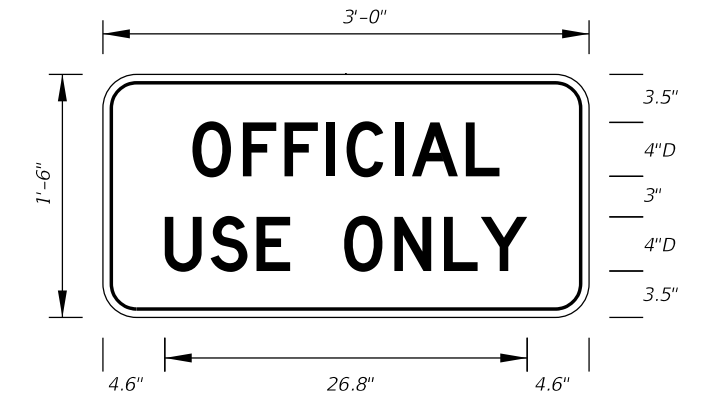
Design Project Manager
or Transit Administrator
will supply correct 1-8XX
number.



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




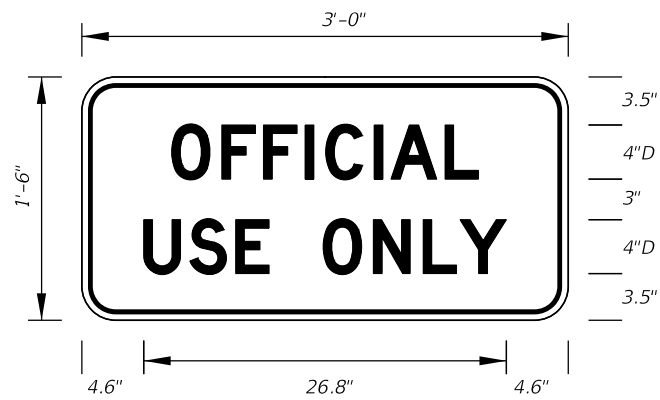
FTP-62-06
3' X 3'
2" Radii 3/4" Border 4" and 5" Series C Legend
Yellow Background Black Legend and Border



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

6/9/2015 4:49:20 PM

LAST REVISION 07/01/14	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SPECIAL SIGN DETAILS	INDEX NO. 17355	SHEET NO. 7 of 11
---------------------------	----------	--------------	--	----------------------	--------------------	----------------------



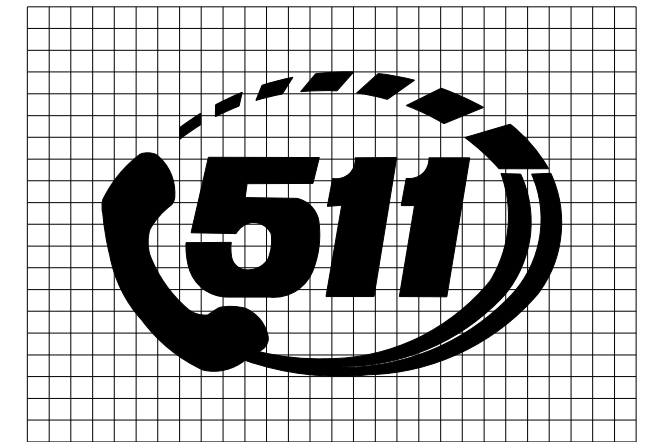
FTP-65-06
3' X 1'-6"
2" Radii 3/4" Border
4" Series D Legend
White Background
Black Legend and Border



FTP-66-06
4' X 5'
2" Radii 3/4" Border
7" Series D Legend
Blue Background
White Legend and Border

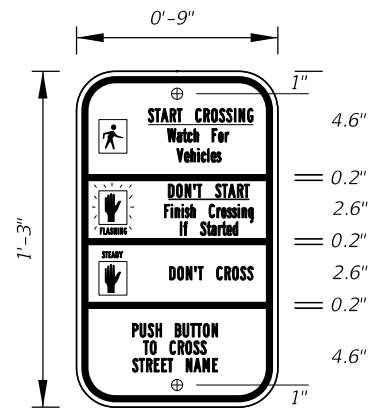


FTP-67-06
3' X 4'
2" Radii 3/4" Border
5" Series D Legend
Blue Background
White Legend and Border



DETAIL for FTP-66 AND FTP-67

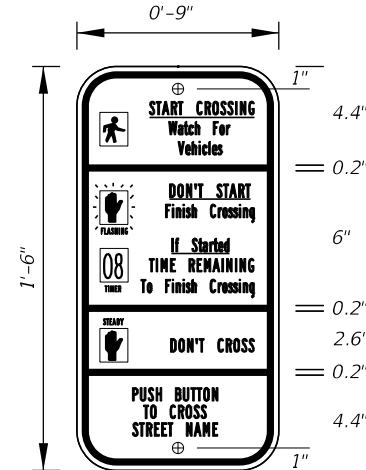
Sign Mounting Holes Can Be Punched Or Field Drilled With No Obstruction To Text Or Symbols From Holes Or Bolts.



FTP-68A-06
9" X 1'-3"
1.5" Radii 3/4" Border
Series B Legend
White Background
Black Legend and Border

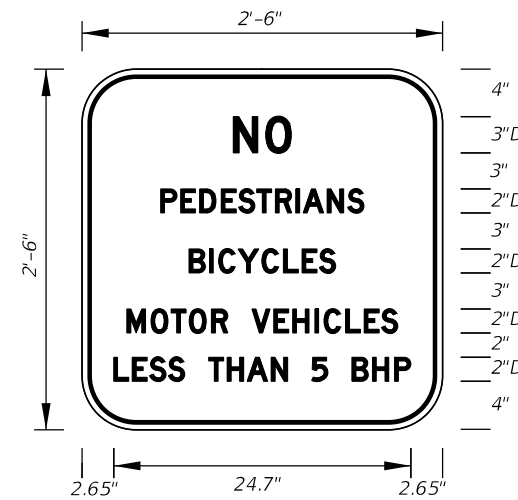
See Standard Highway Signs Manual, Sign R10-3b For Letter Size Spacing And Symbol Sizes.

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



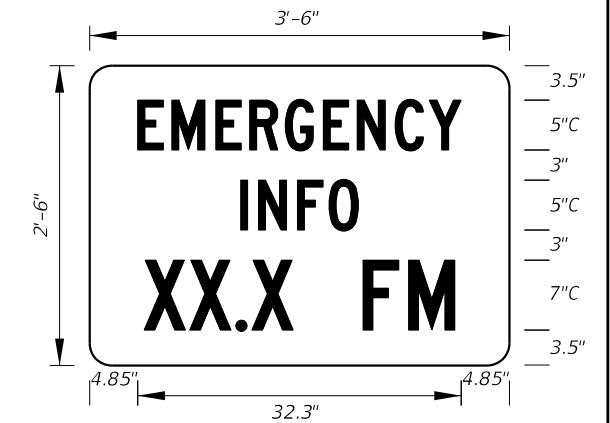
FTP-68B-06
9" X 1'-6"
1.5" Radii 3/4" Border
Series B Legend
White Background
Black Legend and Border

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

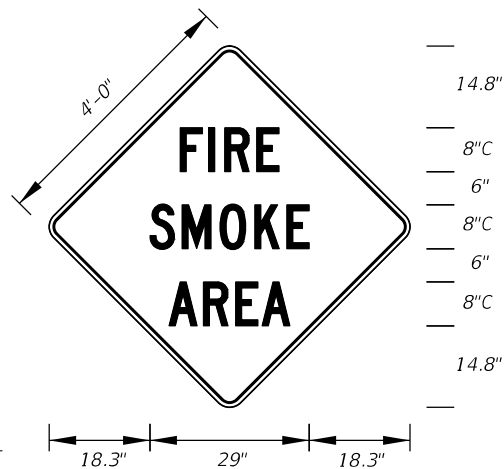


FTP-69-06
2'-6" X 2'-6"
4" Radii 3/4" Border

2" and 3" Series D Legend
White Background
Black Legend and Border



FTP-70-06
3'-6" X 2'-6"
2.25" Radii 3/4" Border
5" Series C and 7" Series C Legend
Blue Background
White Legend and Border

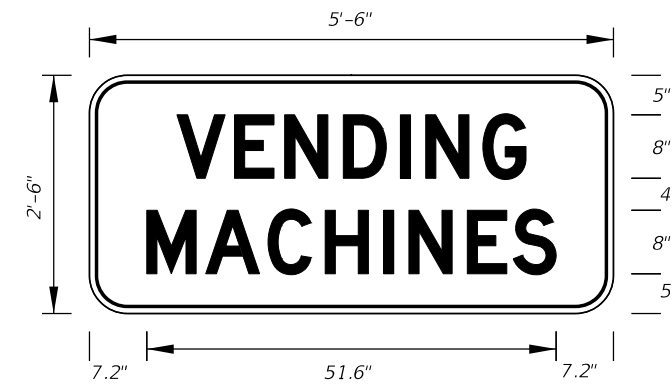


FTP-71-06
4' X 4'
2" Radii 3/4" Border
8" Series C Legend
Yellow Background
Black Legend and Border



FTP-72-06
3' X 3'
2" Radii 3/4" Border

6" Series C Legend
Yellow Background
Black Legend and Border



FTP-73-06
5'-6" X 2'-6"
4" Radii 3/4" Border

8" Series D Legend
Blue Background
White Legend and Border



FTP-74-06
5'-6" X 2'-6"
4" Radii 3/4" Border
6" Series D Legend
Blue Background
White Legend and Border

6/9/2015 4:49:21 PM

LAST REVISION
07/01/14

REVISION

DESCRIPTION:

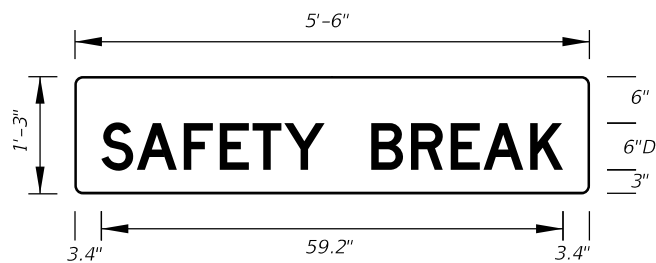


2016
DESIGN STANDARDS

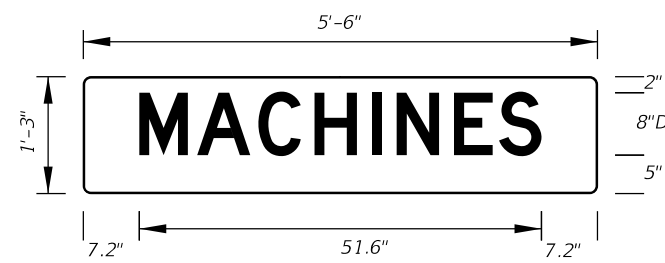
SPECIAL SIGN DETAILS

INDEX NO.
17355

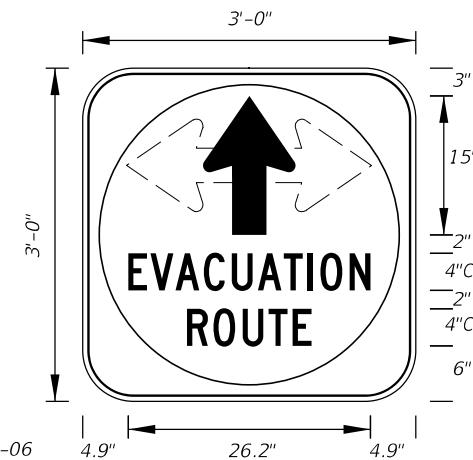
SHEET NO.
8 of 11



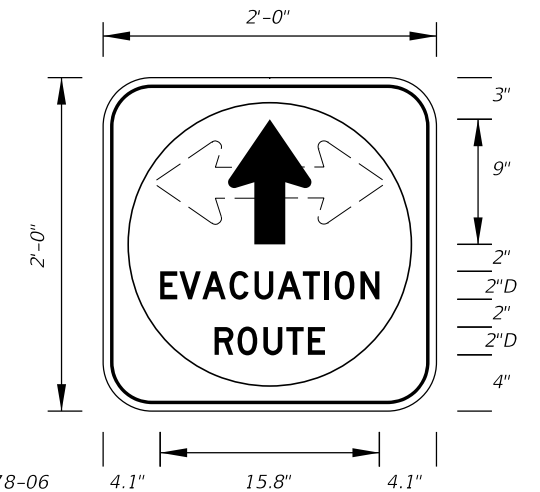
FTP-75-06
5'-6" X 1'-3"
1" Radii
6" Series D Legend
Blue Background
White Legend



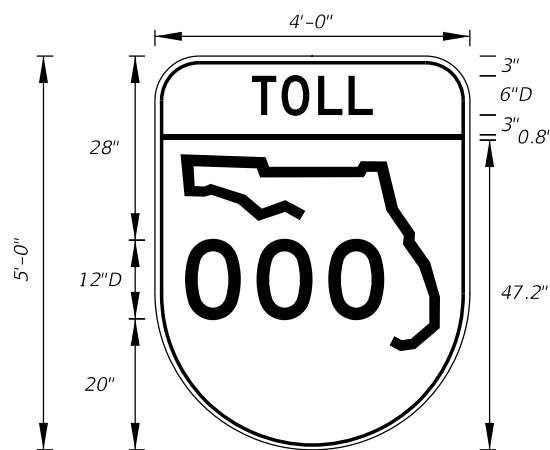
FTP-76-06
5'-6" X 1'-3"
1" Radii
8" Series D Legend
Blue Background
White Legend



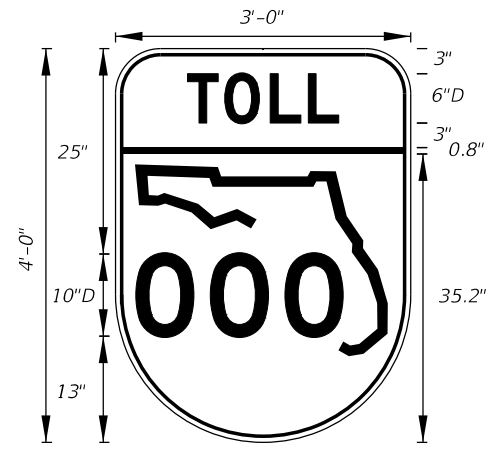
FTP-77-06
3' X 3'
5" Radii 3/4" Border
4" Series C Legend
White Background with Blue Circle Background
White Legend and Black Border



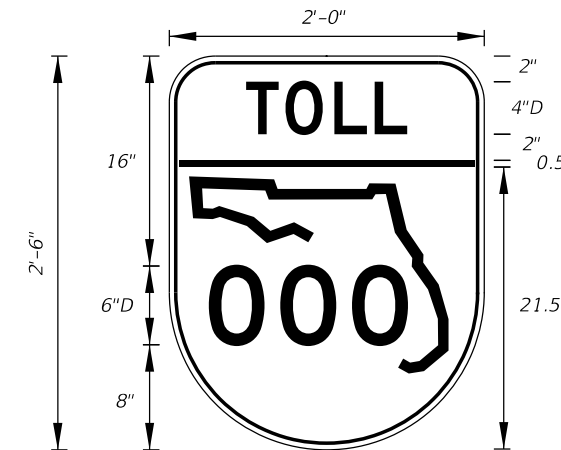
FTP-78-06
2' X 2'
3" Radii 3/4" Border
2" Series D Legend
White Background with Blue Circle Background
White Legend and Black Border



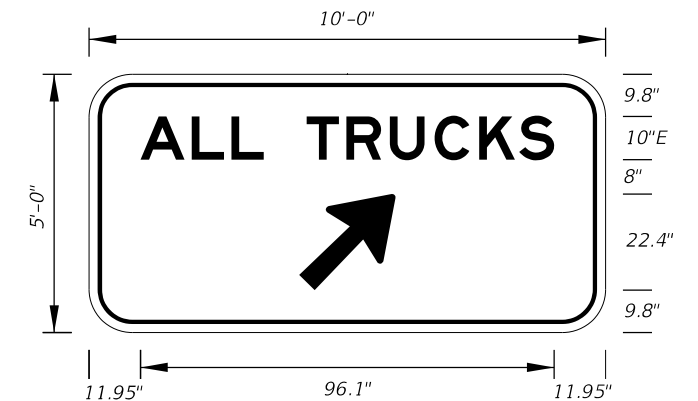
FTP-79-06
4' X 5'
6" Radii 3/4" Border
6" and 12" Series D Legend
Top Yellow Background with Black Legend and Black Border
Bottom White Background with Black Legend and Border



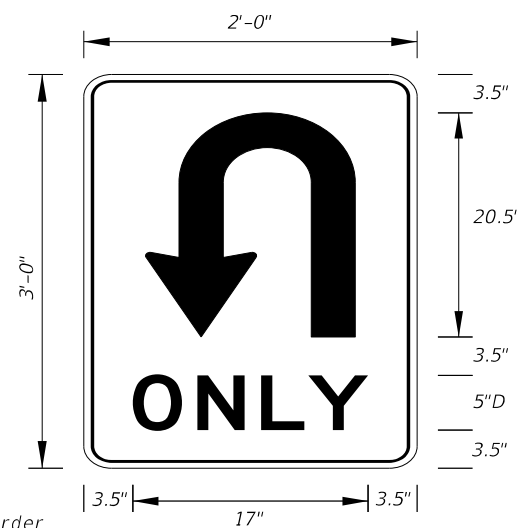
FTP-80-06
3' X 4'
5" Radii 3/4" Border
6" and 10" Series D Legend
Top Yellow Background with Black Legend and Black Border
Bottom White Background with Black Legend and Border



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



FTP-83-08
10'-0" X 5'-0"
8" Radii
10" Series E Legend
Green Background
White Legend



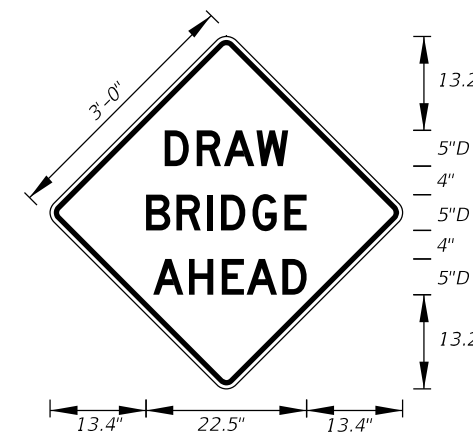
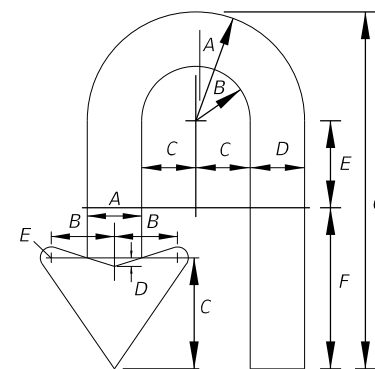
FTP-82-08
2' X 3'
1.5" Radii
5" Series D Legend
White Background
Black Legend and Border

ARROW HEAD

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

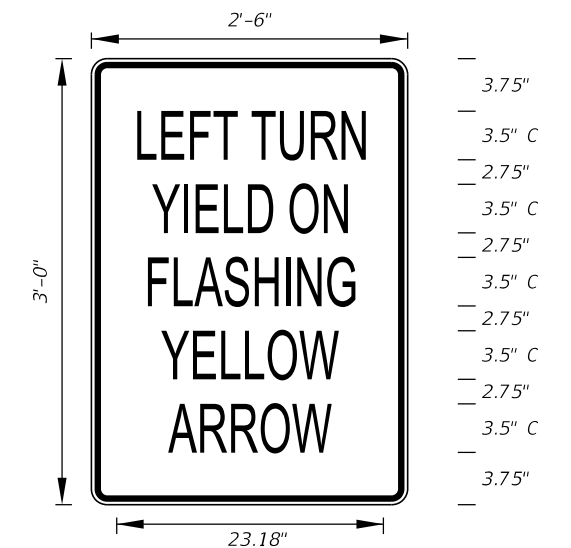
ARROW BODY

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



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

5" Series D Legend
Yellow Background
Black Legend



FTP-85-13
3' X 2'-6"
1.875" Radii 3/4" Border

3.5" Series C Legend
White Background
Black Legend and Border

6/9/2015 4:49:22 PM

LAST REVISION
07/01/14

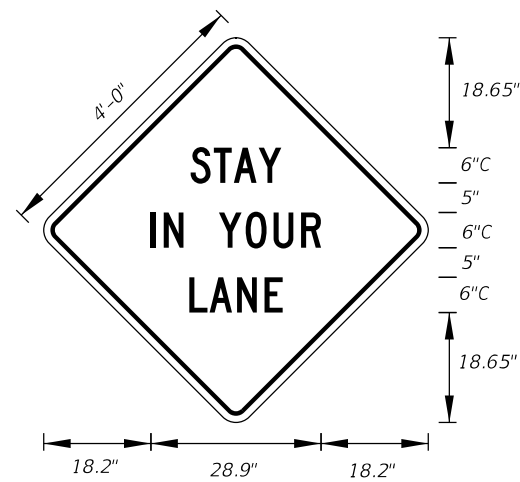
REVISION
DESCRIPTION:

2016
FDOT DESIGN STANDARDS

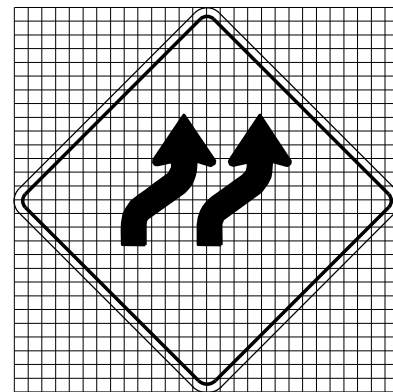
SPECIAL SIGN DETAILS

INDEX NO.
17355

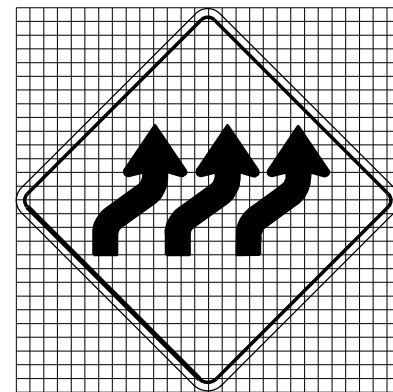
SHEET NO.
9 of 11



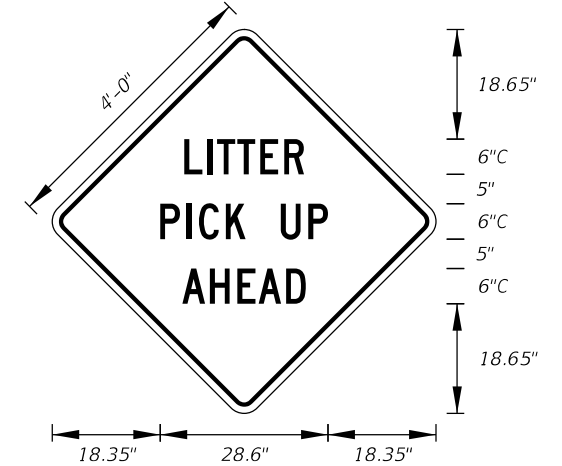
MOT-1-06
4' X 4'
2" Radii 3/4" Border
6" Series C Legend
Orange Background
Black Legend and Border



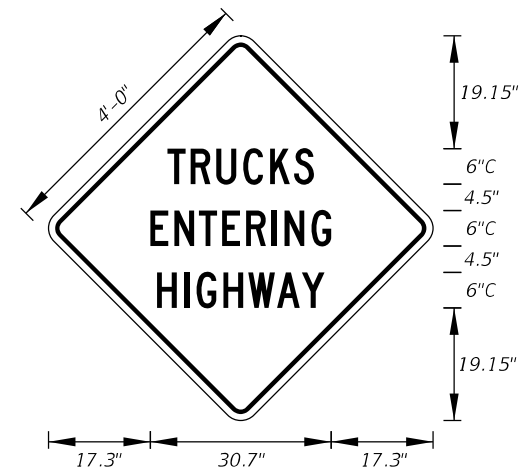
MOT-2-06
4' X 4'
2" Radii 3/4" Border
Orange Background
Black Arrows and Border



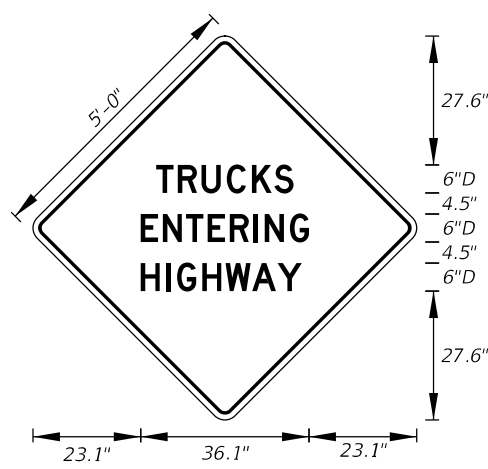
MOT-3-06
4' X 4'
2" Radii 3/4" Border
Orange Background
Black Arrows and Border



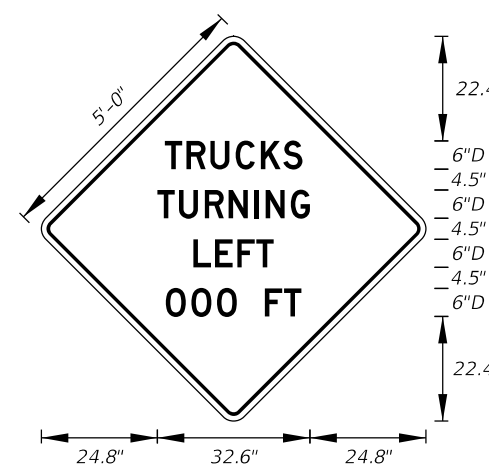
MOT-4-06
4' X 4'
2" Radii 3/4" Border
6" Series C Legend
Orange Background
Black Legend and Border



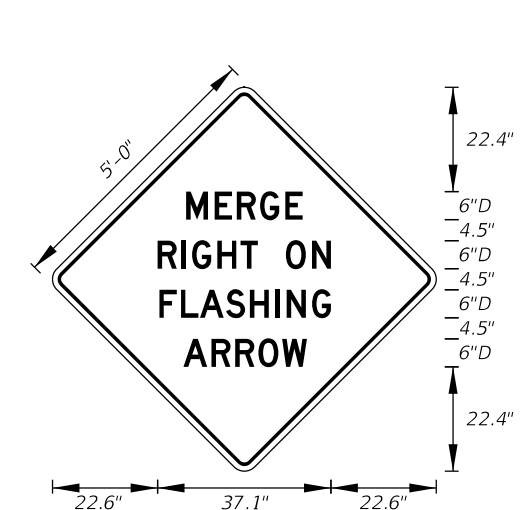
MOT-5-06
4' X 4'
2" Radii 3/4" Border
6" Series C Legend
Orange Background
Black Legend and Border



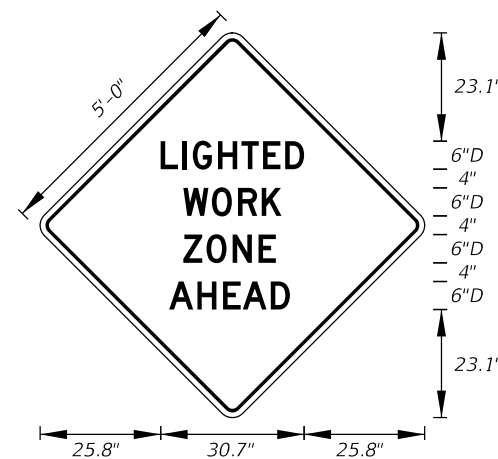
MOT-6-06
5' X 5'
2" Radii 3/4" Border
6" Series D Legend
Orange Background
Black Legend and Border



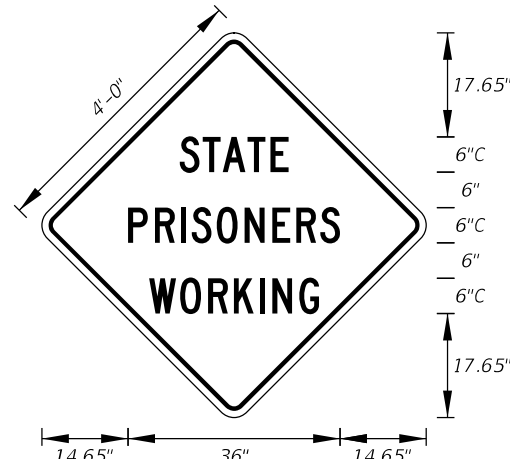
MOT-7-06
5' X 5'
2" Radii 3/4" Border
6" Series D Legend
Orange Background
Black Legend and Border



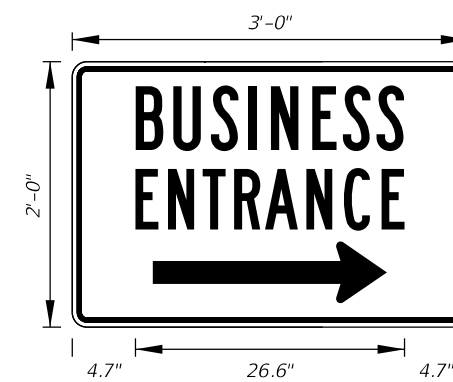
MOT-8-06
5' X 5'
2" Radii 3/4" Border
6" Series D Legend
Orange Background
Black Legend and Border



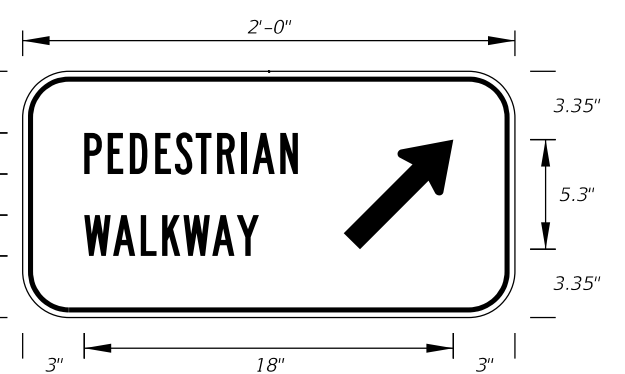
MOT-9-06
5' X 5'
2" Radii 3/4" Border
6" Series D Legend
Orange Background
Black Legend and Border



MOT-10-06
4' X 4'
2" Radii 3/4" Border
6" Series C Legend
Orange Background
Black Legend and Border

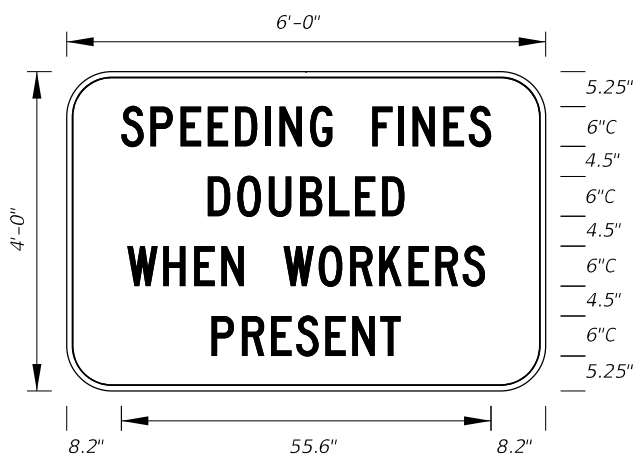


MOT-11-06
3' X 2'
2" Radii 3/4" Border
6" Series B Legend
Blue Background
White Legend and Border



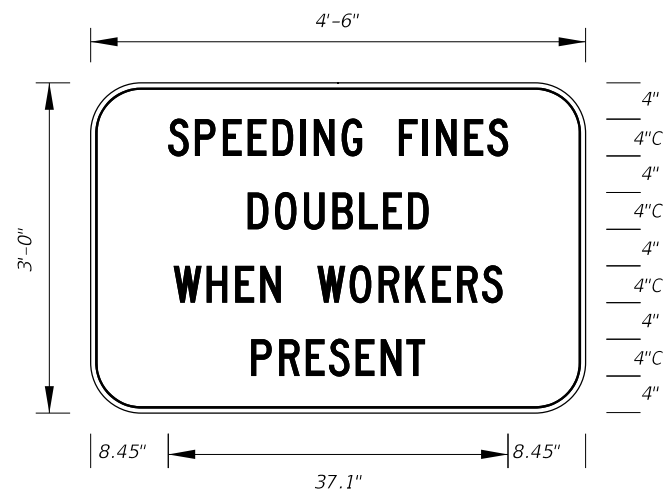
MOT-12-06
2' X 1'
2" Radii 3/4" Border
2" Series B Legend
White Background
Black Legend and Border

6/9/2015 4:49:22 PM



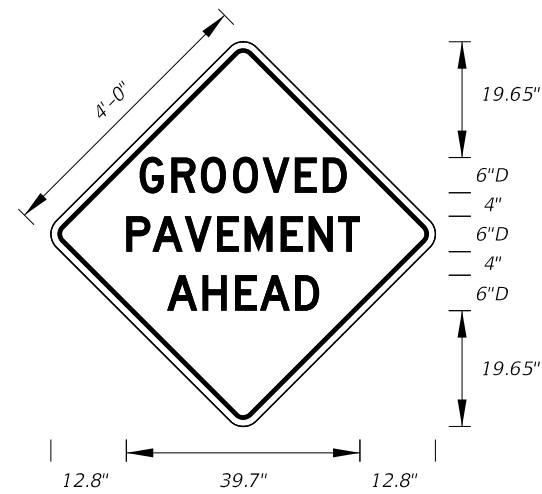
MOT-13-06 Freeway Sign
6' X 4'
6" Radii 3/4" Border

6" Series C Legend
White Background
Black Legend and Border



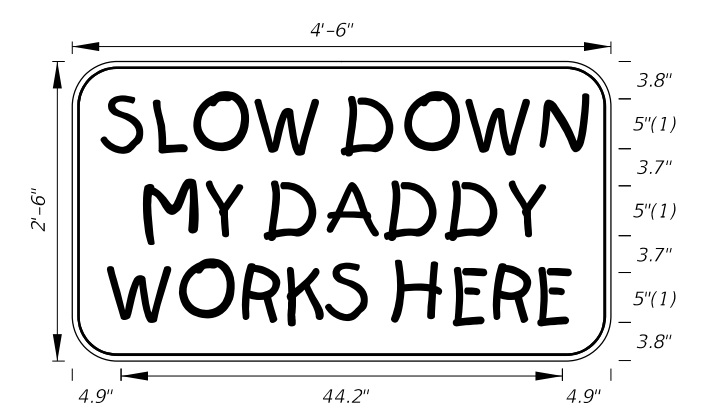
MOT-14-06 Arterial Sign
4'-6" X 3'
5" Radii 3/4" Border

4" Series C Legend
White Background
Black Legend and Border



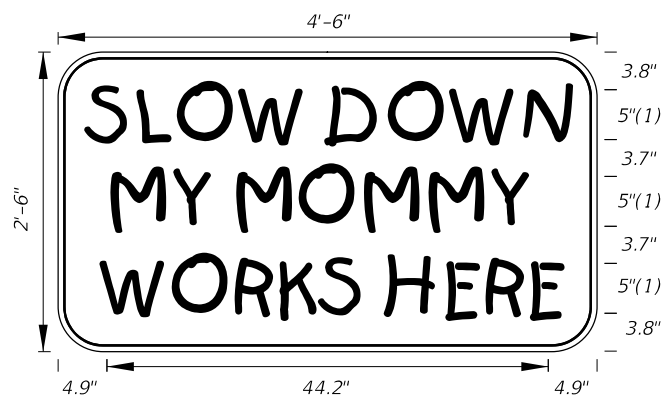
MOT-15-06
4' X 4'
2" Radii 3/4" Border

6" Series D Legend
Orange Background
Black Legend and Border



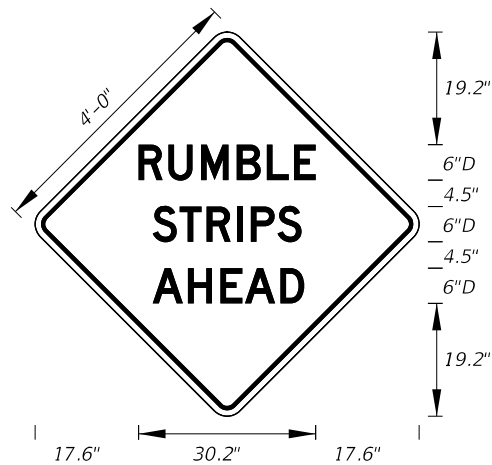
MOT-16-06
4'-6" X 2'-6"
4" Radii 3/4" Border

5" Kids Series Legend
Orange Background
Black Legend and Border



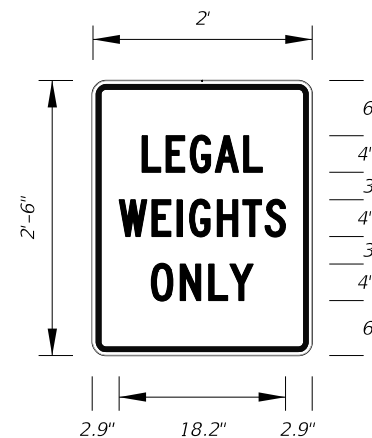
MOT-17-06
4'-6" X 2'-6"
4" Radii 3/4" Border

5" Kids Series Legend
Orange Background
Black Legend and Border



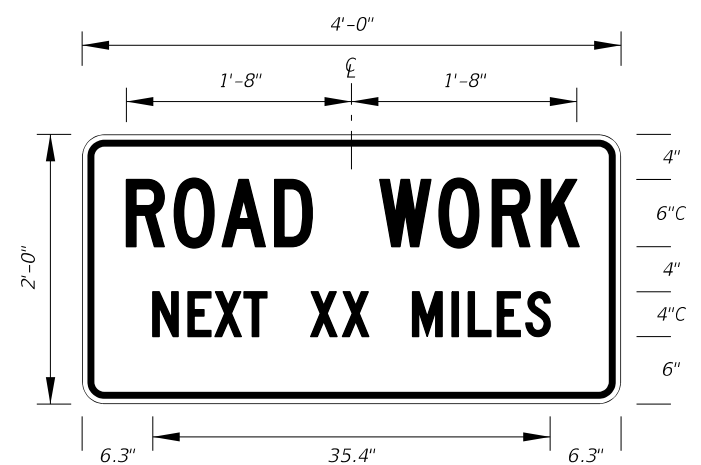
MOT-18-10
4' X 4'
2" Radii 3/4" Border

6" Series D Legend
Orange Background
Black Legend and Border



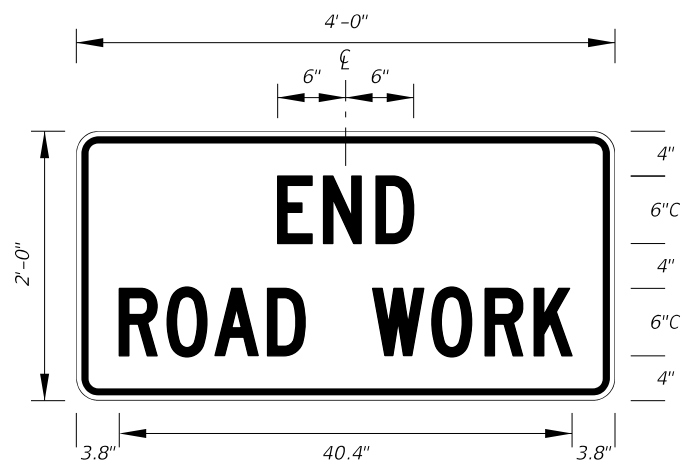
MOT-19-11
2' X 2'-6"
1.13" Radii 3/4" Border

4" Series C Legend
White Background
Red Legend and Border



G20-1
2' X 4'
1.5" Radii 3/4" Border

Orange Background
Black Legend and Border

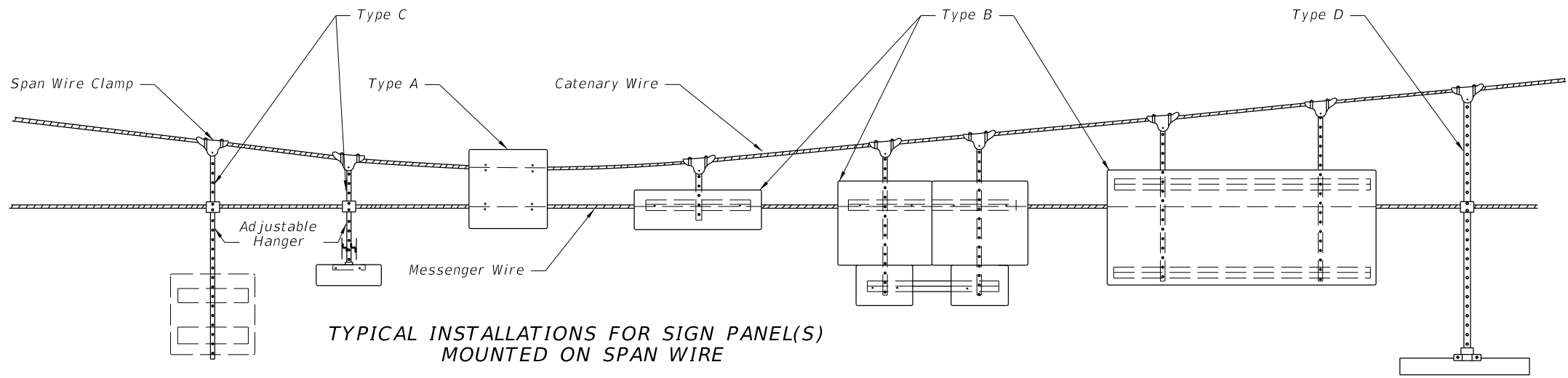


G20-2
2' X 4'
1.5" Radii 3/4" Border

Orange Background
Black Legend and Border

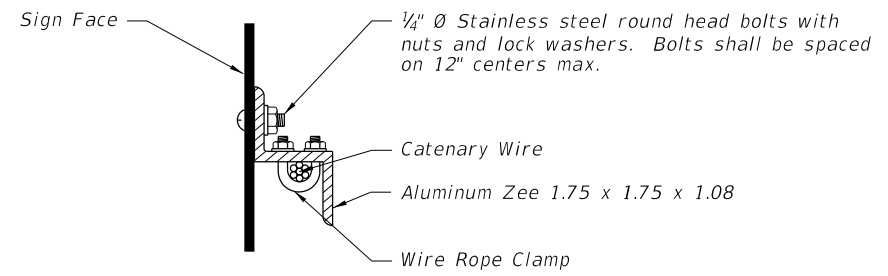
6/9/2015 4:49:23 PM

LAST REVISION	DESCRIPTION:
07/01/14	

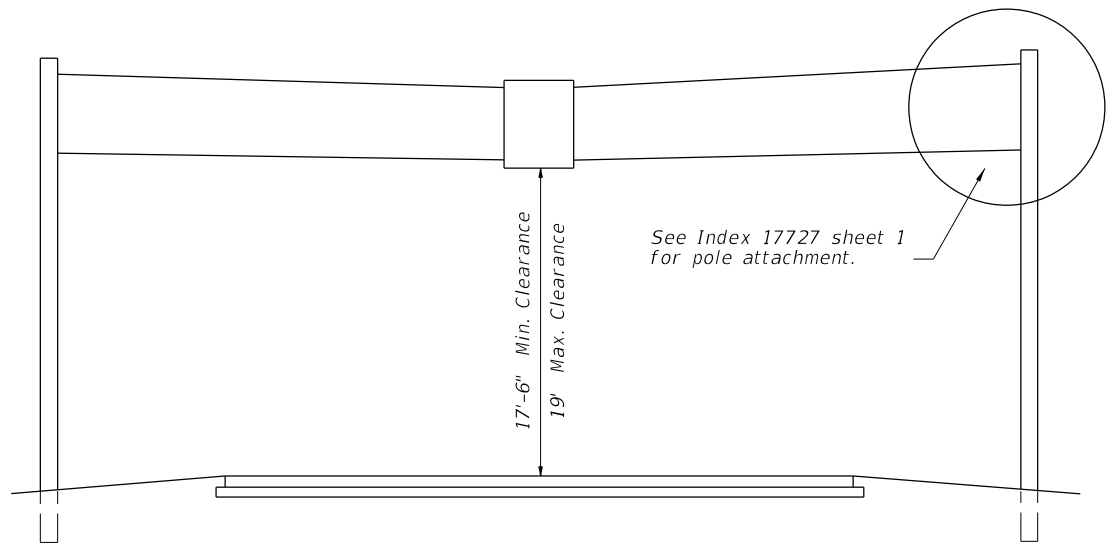


TYPICAL INSTALLATIONS FOR SIGN PANEL(S) MOUNTED ON SPAN WIRE

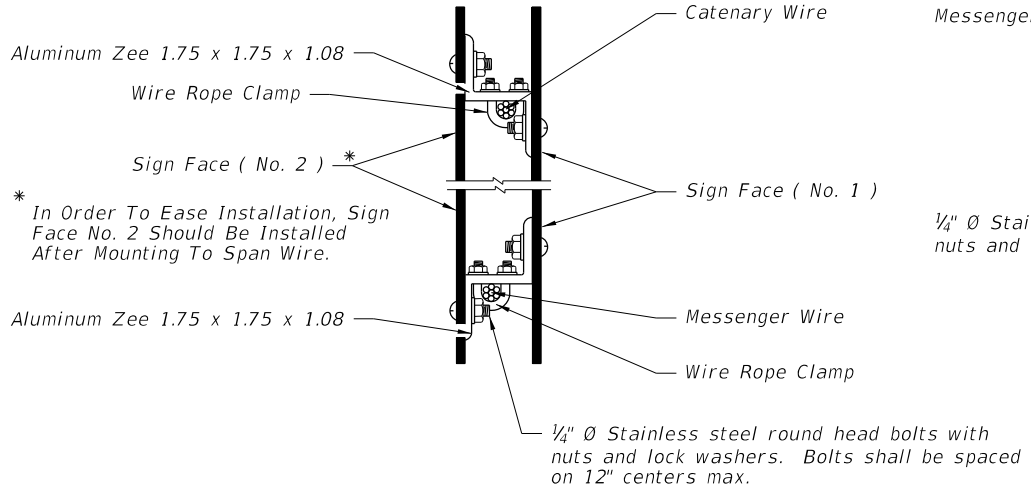
- Notes:
1. Bottom edge of signs shall be approximately at the same elevation.
 2. Type B & C attachments with one hanger shall have wind beams for signs wider than 3½'. The beams shall extend to within 6" of the sign edge.
 3. Type B & C attachments for signs 4' and wider shall have 2 hangers. Signs 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

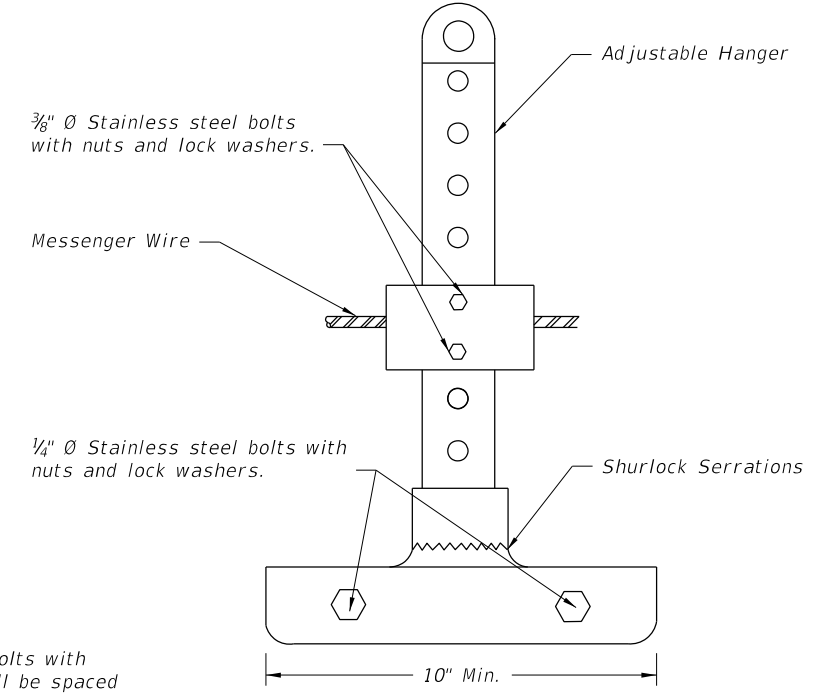


TYPICAL SPAN WIRE INSTALLATION



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

DETAIL OF OPPOSING SIGNS SPAN WIRE MOUNTED

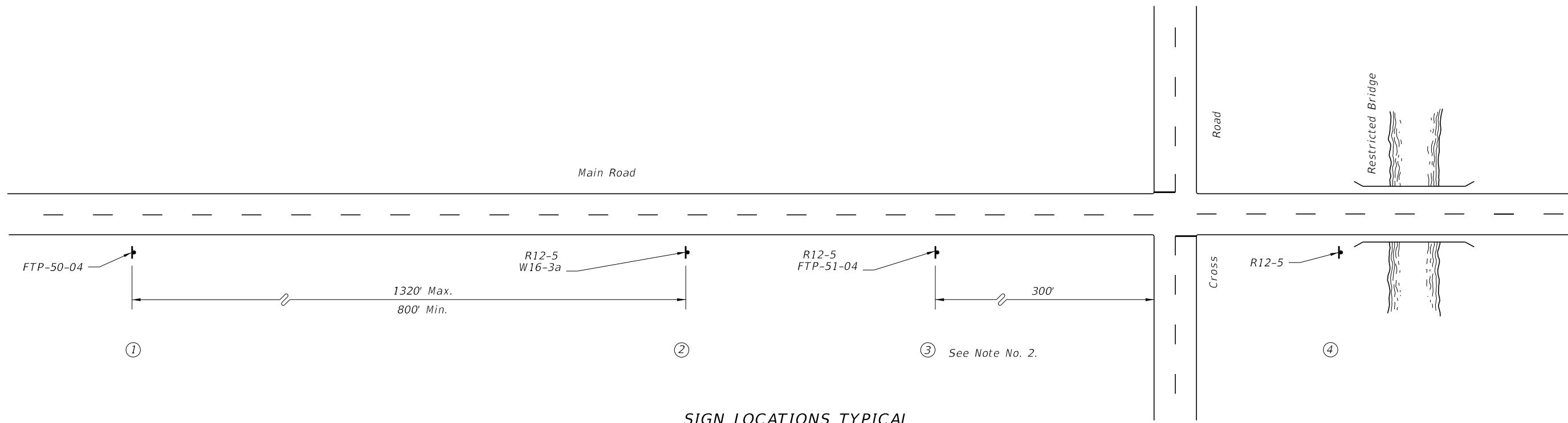


ADJUSTABLE HANGER FOR SIGN MOUNTING

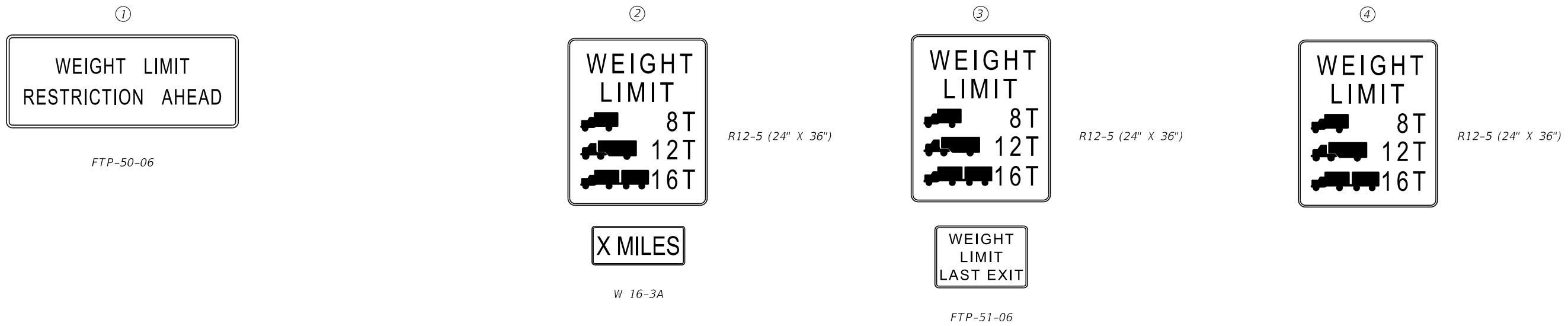
TWO POINT ATTACHMENT

6/9/2015 4:49:41 PM

LAST REVISION 07/01/09	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	SPAN WIRE MOUNTED SIGN DETAILS	INDEX NO. 17356	SHEET NO. 1 of 1
---------------------------	----------	--------------	------------------------------	--------------------------------	--------------------	---------------------



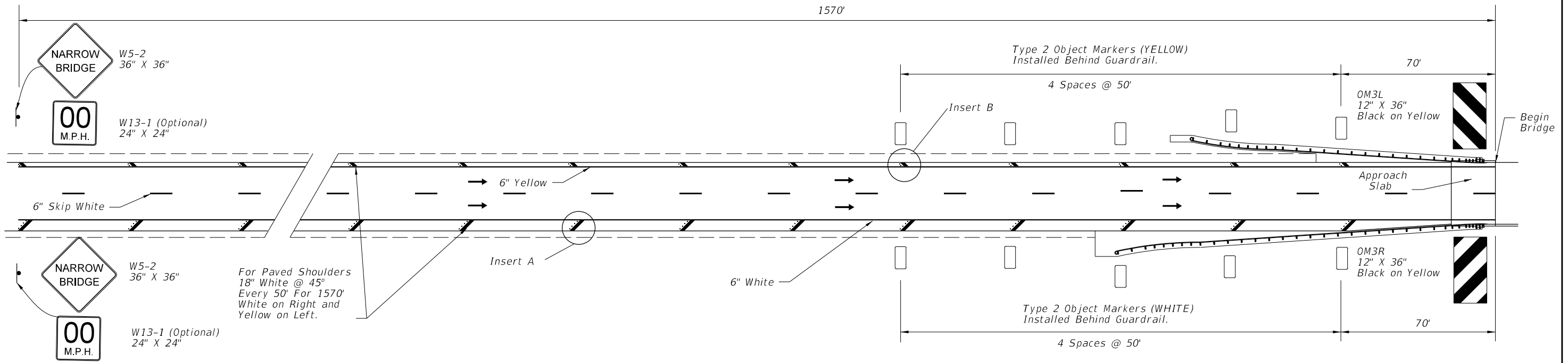
SIGN LOCATIONS TYPICAL



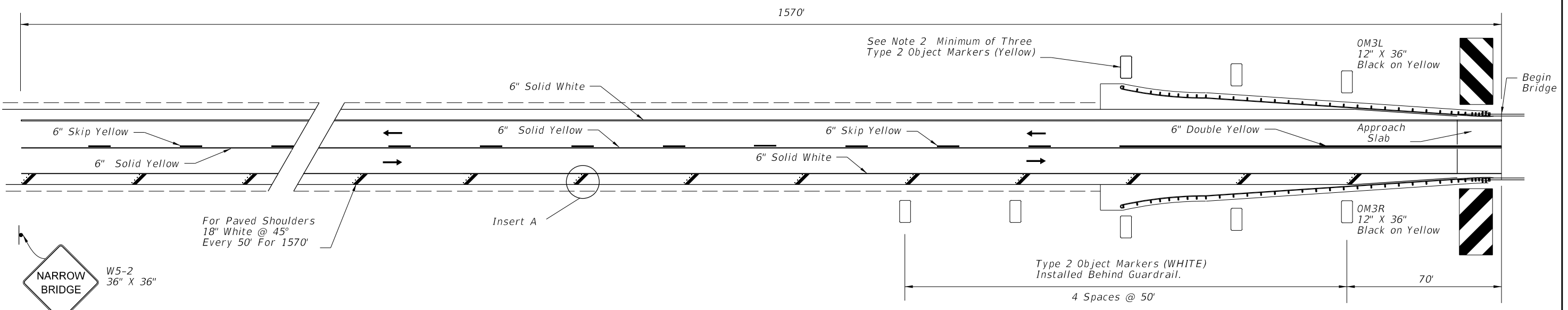
1. See Standard Highway Signs for sign R12-5 and W16-3 details.
2. Location of Sign No. 3 may require some field adjustment.
3. The Cross Road is the last detour to route around the restricted bridge.
4. Location of Sign No. 2 should be established from the Cross Road the following approximate distances;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

6/9/2015 4:49:55 PM

LAST REVISION 01/01/12	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	BRIDGE WEIGHT RESTRICTIONS	INDEX NO. 17357	SHEET NO. 1 of 1
---------------------------	----------	--------------	---	-----------------------------------	---------------------------	----------------------------



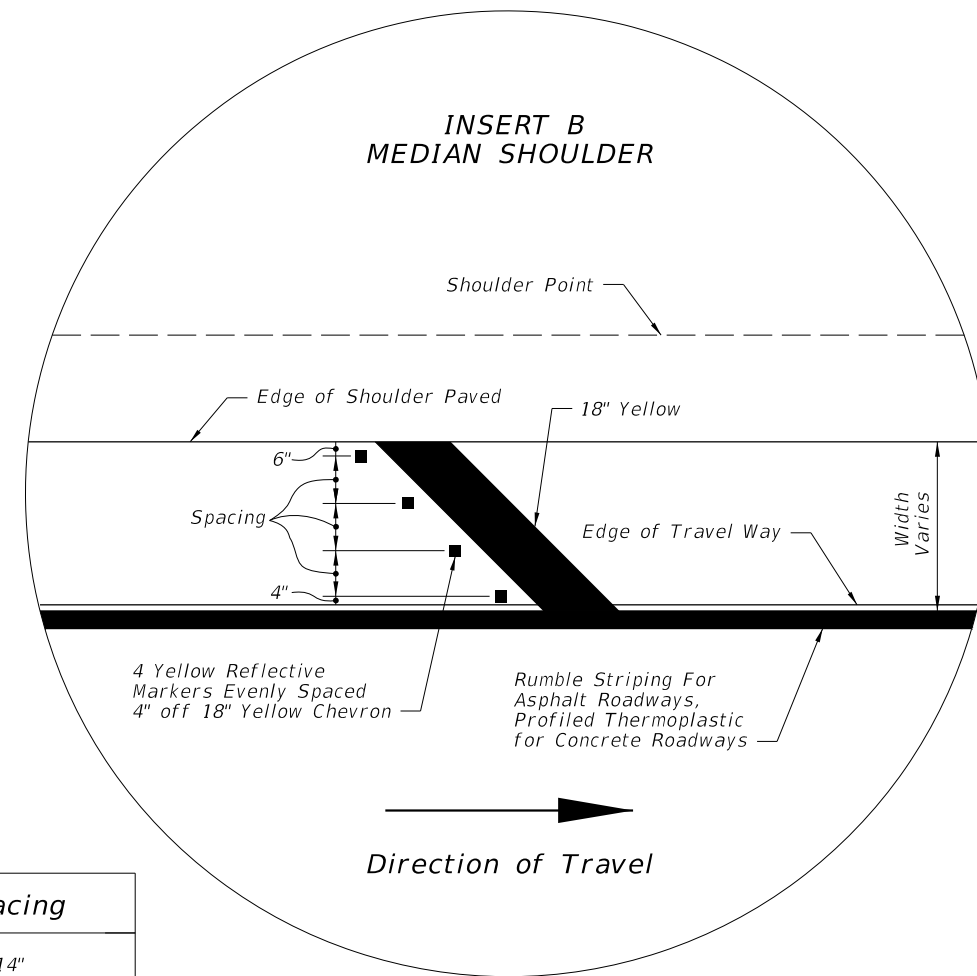
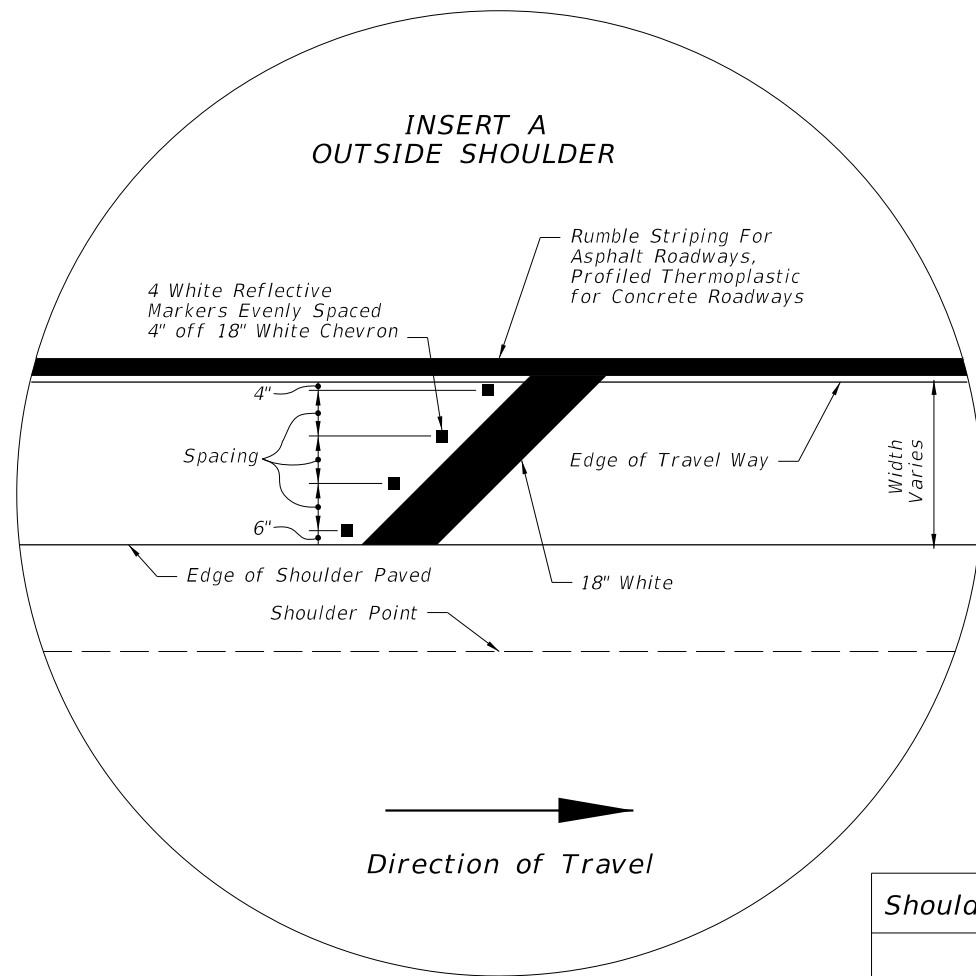
One-Way Traffic



2-Way Traffic

6/23/2015 10:57:23 AM

LAST REVISION 07/01/13	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	RURAL NARROW BRIDGE TREATMENT	INDEX NO. 17359	SHEET NO. 1 of 2
---------------------------	----------	--------------	---	--------------------------------------	---------------------------	----------------------------



Shoulder Width	No. of RPM's	Spacing
2'	2	14"
3'	3	13"
4'	3	19"
5'	4	16.67"

NOTES:

1. Roadways with Two-Way Traffic:
No passing zone should be extended 1570' in advance of narrow bridge.
2. 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.
3. Object markers and delineators on both sides of roadway shall face traffic approaching bridge
4. The OM-3R & OM-3L object markers shall be installed 4' above the roadway edge. The panels may be post mounted at the bridges.

6/23/2015 10:57:23 AM