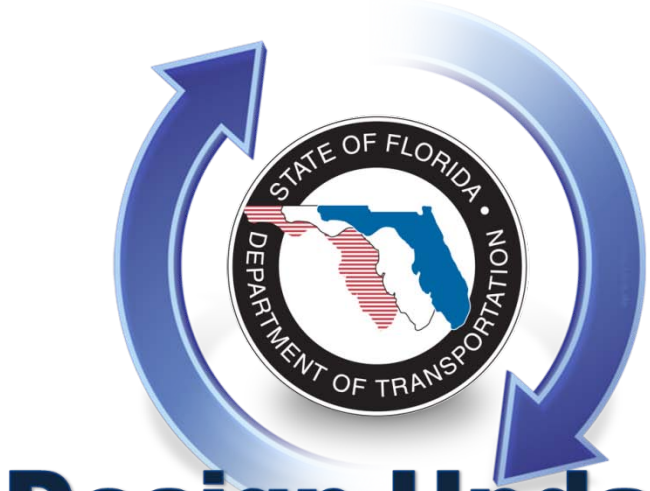
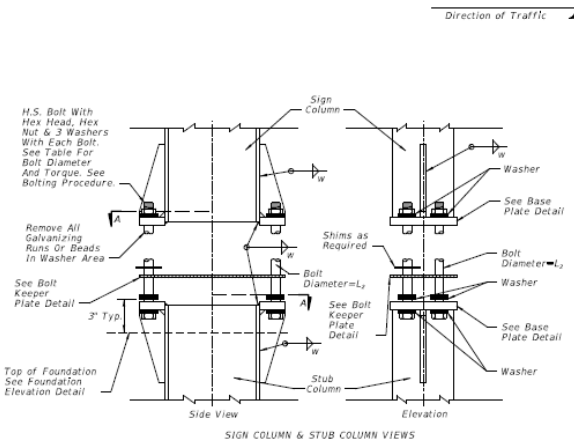
Traffic Standards

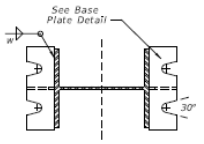


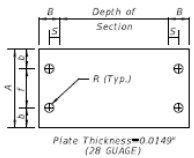
Design Update Training

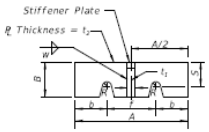
Chester A. Henson, P.E.
State Traffic Standards Engineer
chester.henson@dot.state.fl.us
(850) 414-4117

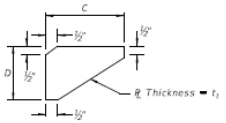
Design Index 11200











BASE CONNECTION DATA														SHIM
Section*	A	B	C	D	L_2	Torque (lbf-in)	R	b	f	S	t_1	t_2	w	L
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"	1-3/8"
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"	1-3/4"
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"	2-1/8"
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"	2-3/8"
W 12x45	8"	3"	8"	3"	1"	580 ± 90	9/16"	2"	4"	1-9/16"	1/2"	3/4"	5/16"	2-3/4"

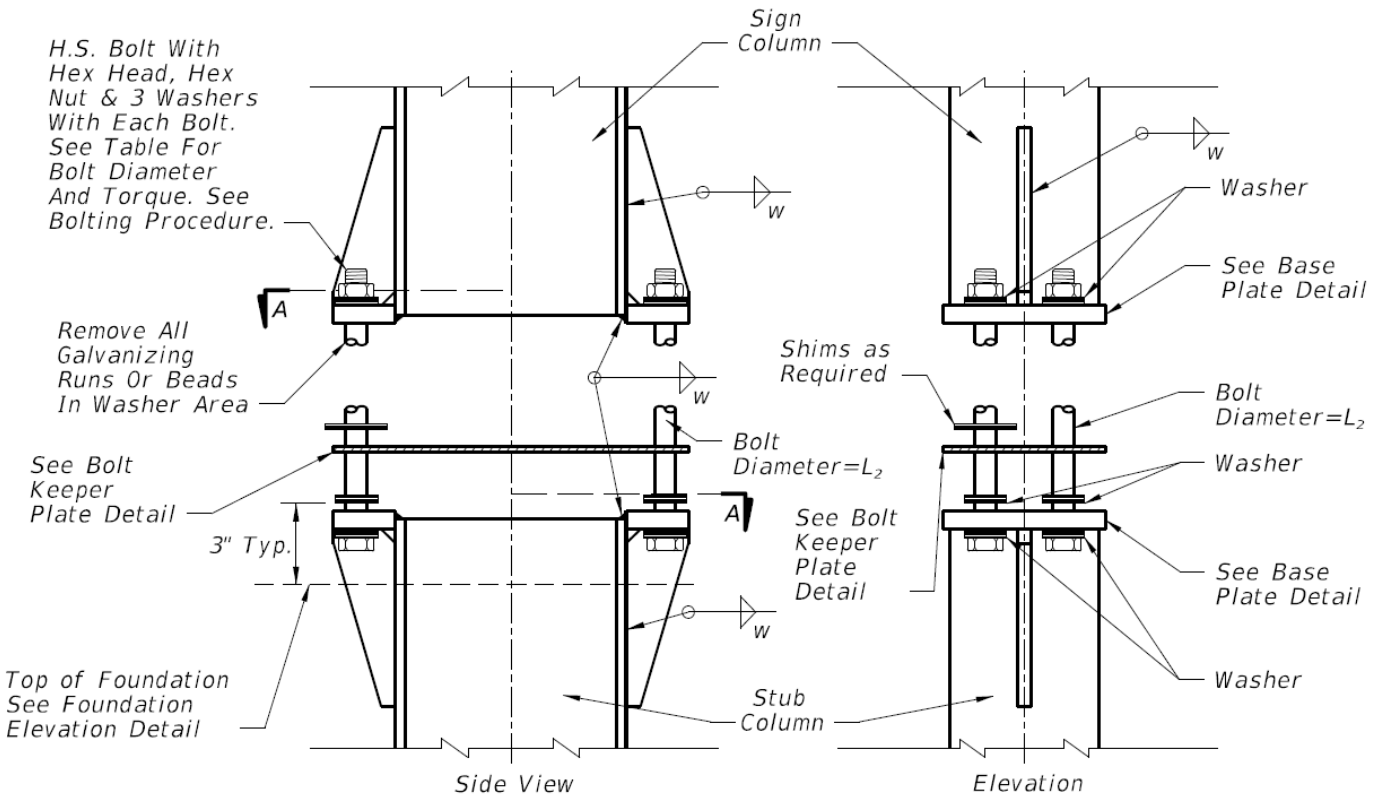
* Designations: Normal Depth in inches and weight in pounds per linear foot.

STEEL POST & ALTERNATIVE BASE DETAILS

LAST REVISION 07/01/13	REVISION	DESCRIPTION:	FDOT 2014 DESIGN STANDARDS	MULTI-COLUMN GROUND SIGN	INDEX NO. 11200	SHEET NO. 3 of 3

Design Update Training

Design Index 11200

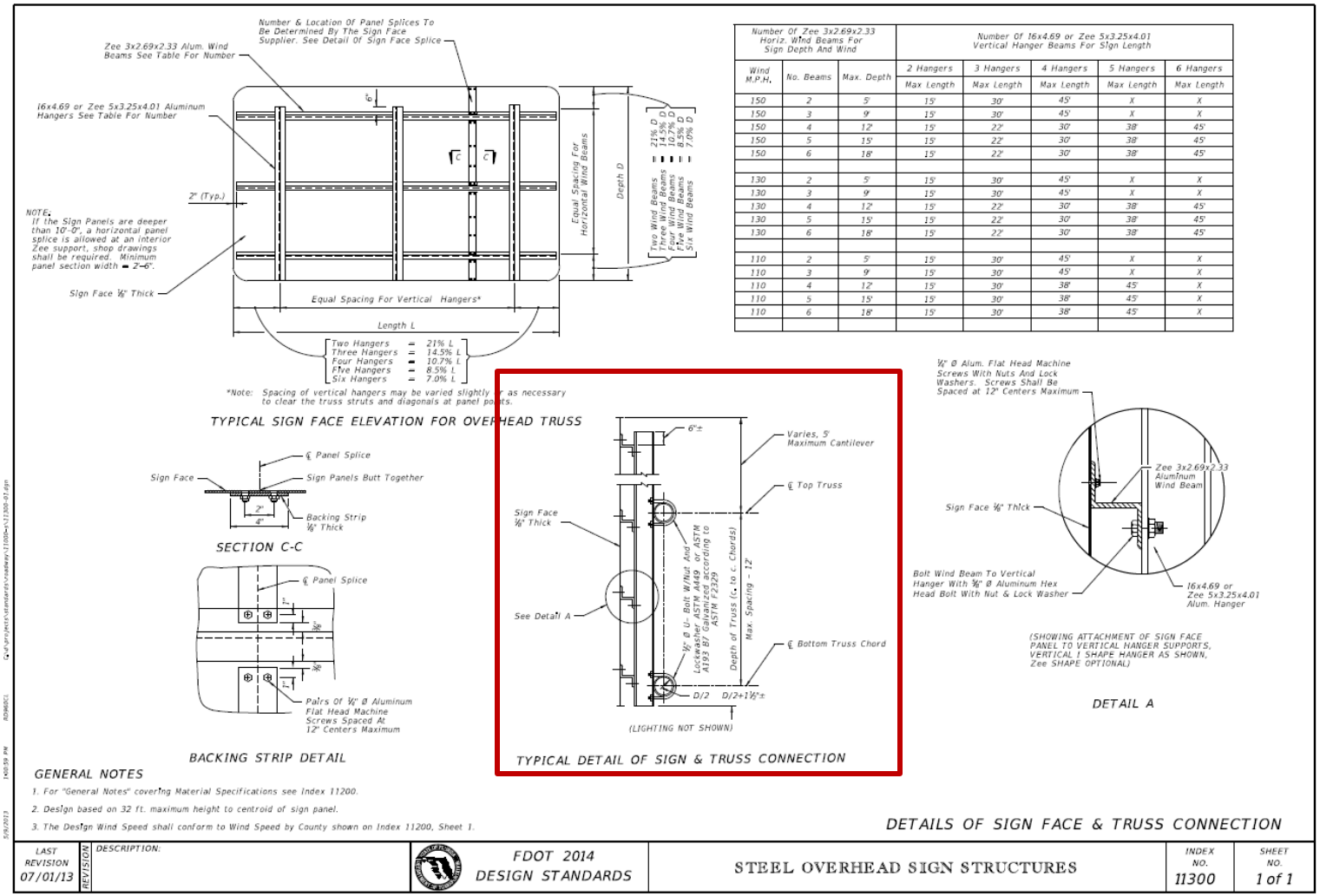


SIGN COLUMN & STUB COLUMN VIEWS

BASE CONNECTION

Design Update Training

Design Index 11300



Number Of Zee 3x2.69x2.33 Horiz. Wind Beams For Sign Depth And Wind			Number Of I6x4.69 or Zee 5x3.25x4.01 Vertical Hanger Beams For Sign Length				
Wind M.P.H.	No. Beams	Max. Depth	2 Hangers Max Length	3 Hangers Max Length	4 Hangers Max Length	5 Hangers Max Length	6 Hangers 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

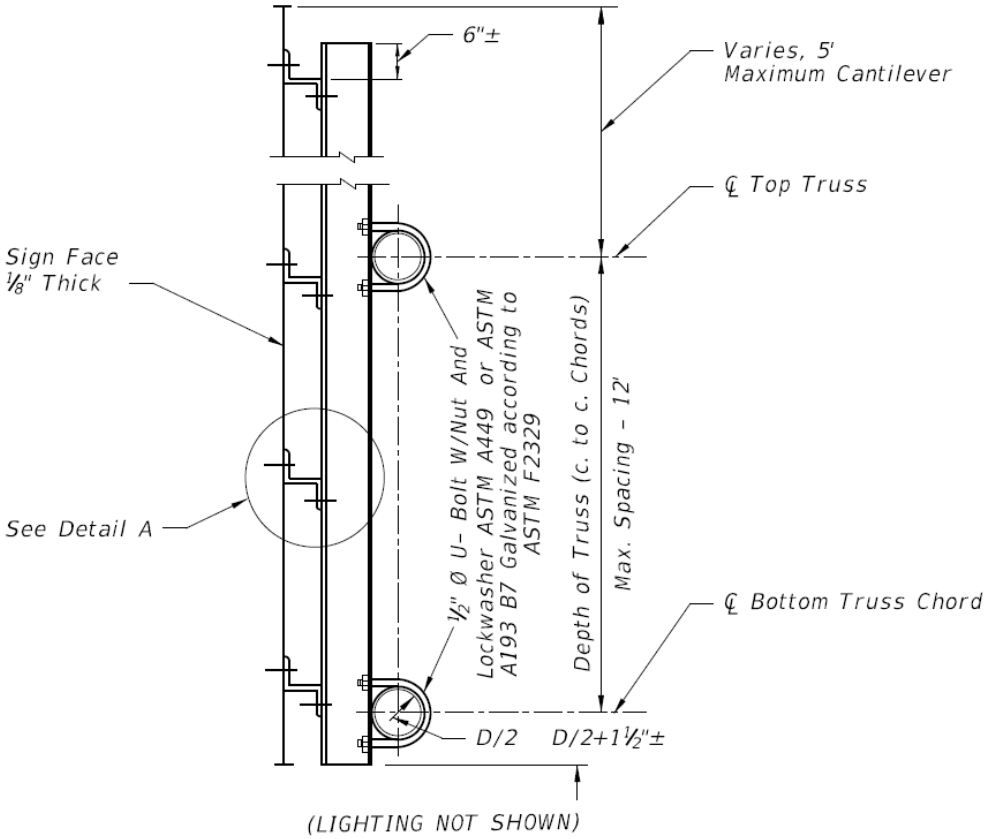
1. For "General Notes" covering Material Specifications see Index 11200.
2. Design based on 32 ft. maximum height to centroid of sign panel.
3. The Design Wind Speed shall conform to Wind Speed by County shown on Index 11200, Sheet 1.

DETAILS OF SIGN FACE & TRUSS CONNECTION

LAST REVISION	REVISION	DESCRIPTION:				
07/01/13			FDOT 2014 DESIGN STANDARDS	STEEL OVERHEAD SIGN STRUCTURES	INDEX NO. 11300	SHEET NO. 1 of 1

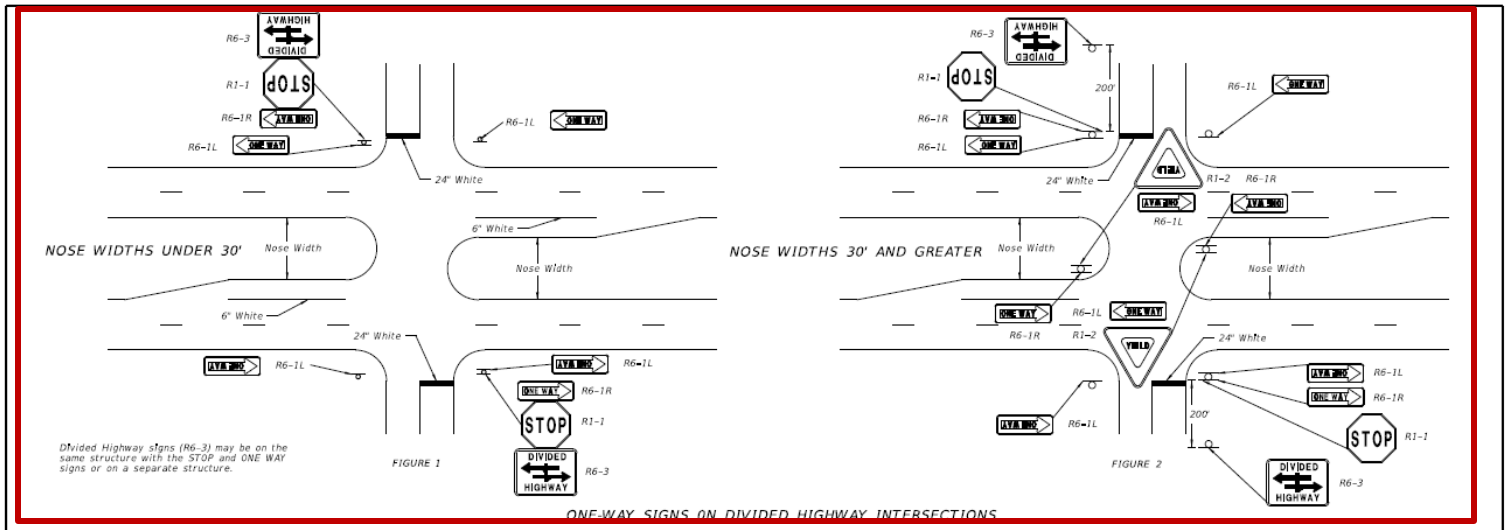
Design Update Training

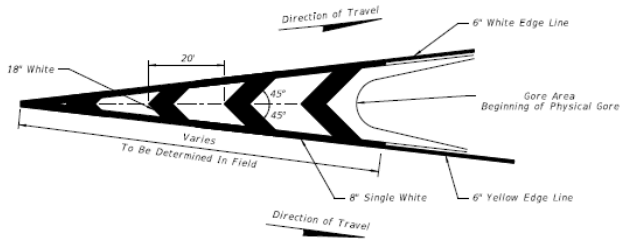
Design Index 11300



TYPICAL DETAIL OF SIGN & TRUSS CONNECTION

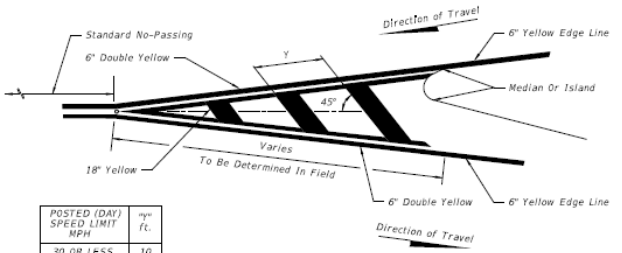
Design Index 17346





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)

LAST REVISION 07/01/13	REVISION	DESCRIPTION:	FDOT 2014 DESIGN STANDARDS	SPECIAL MARKING AREAS	INDEX NO. 17346	SHEET NO. 5 of 14

Design Update Training

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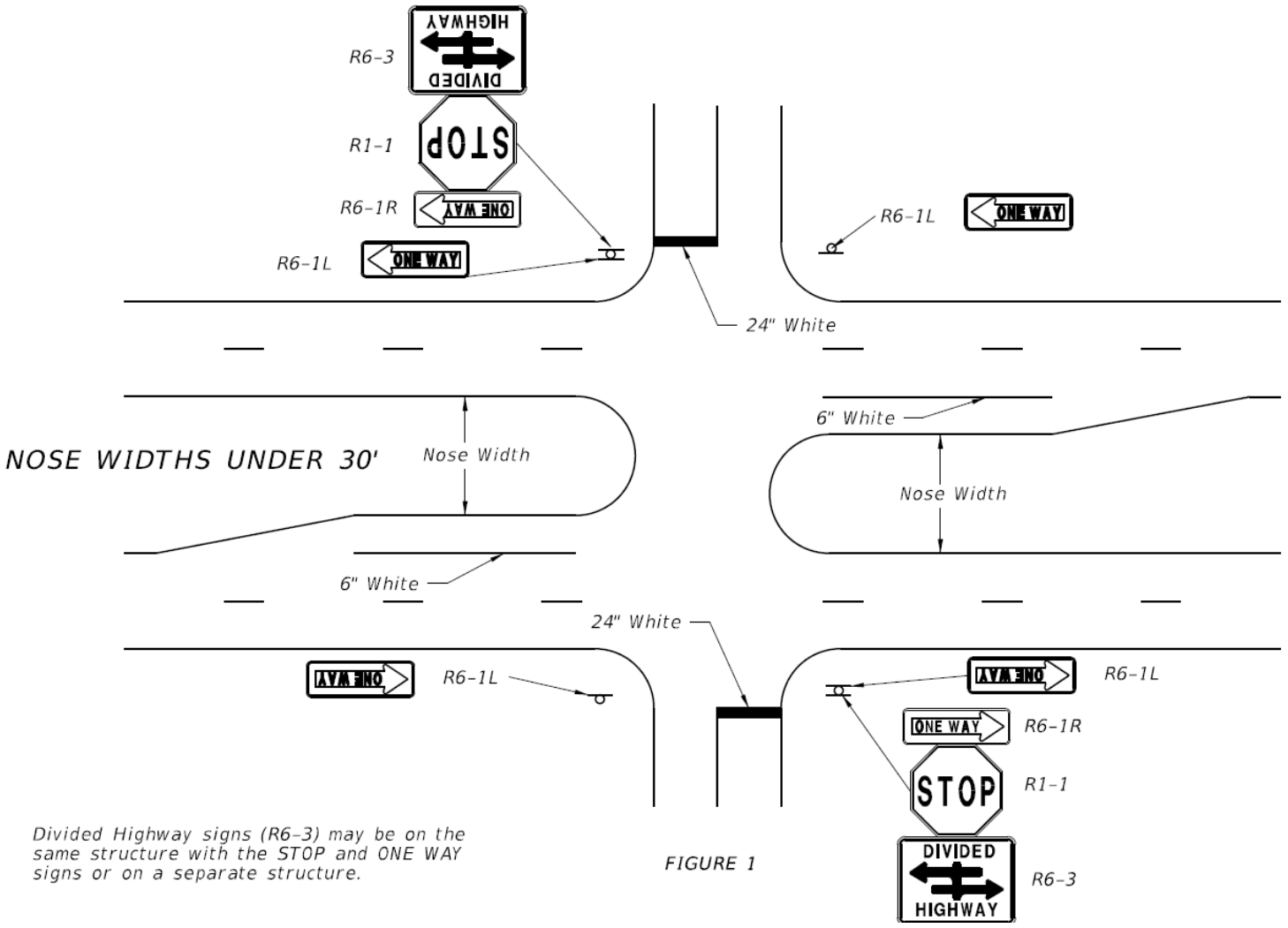


Divided Highway signs (R6-3) may be on the same structure with the STOP and ONE WAY signs or on a separate structure.

FIGURE 1

Design Index 17346

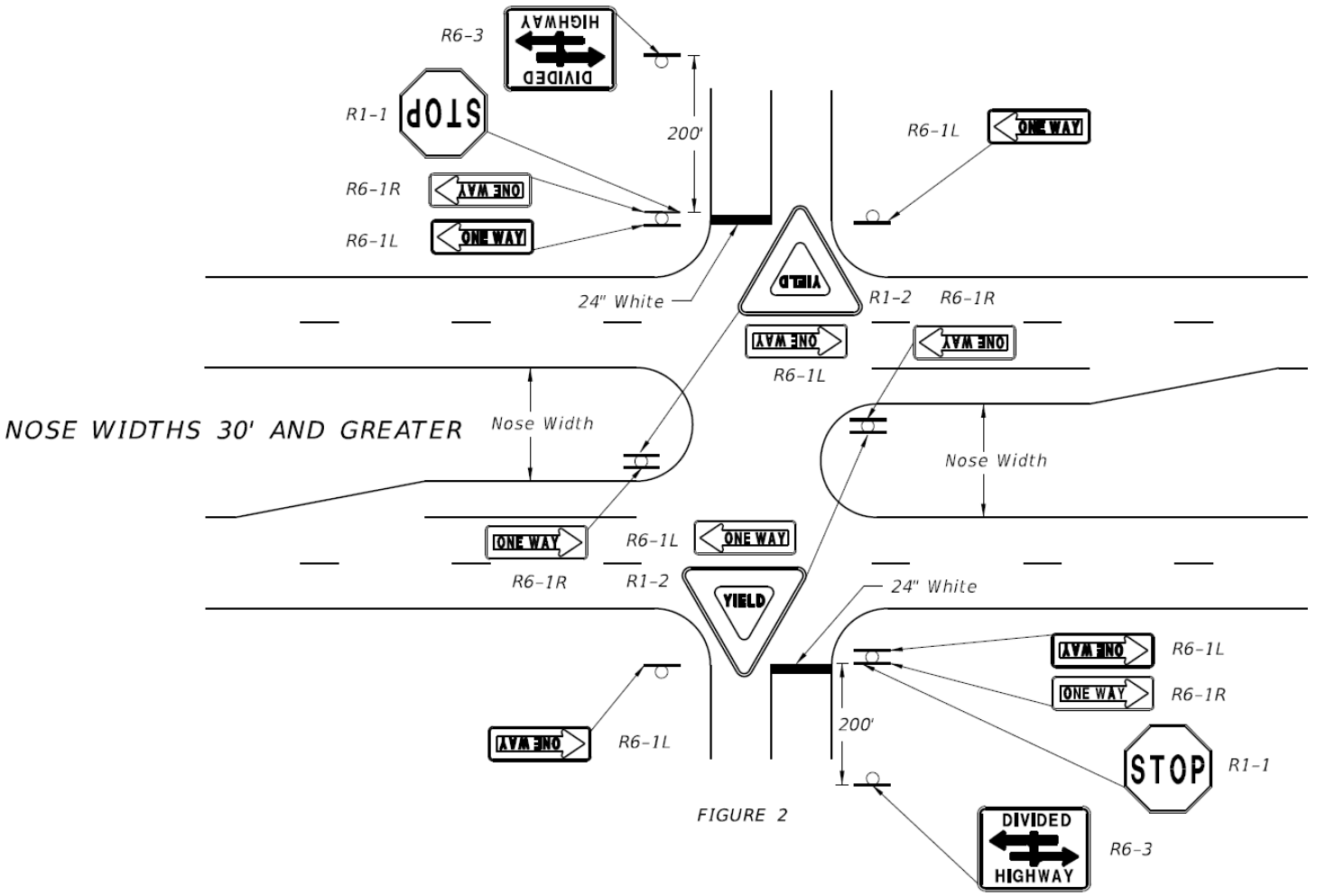
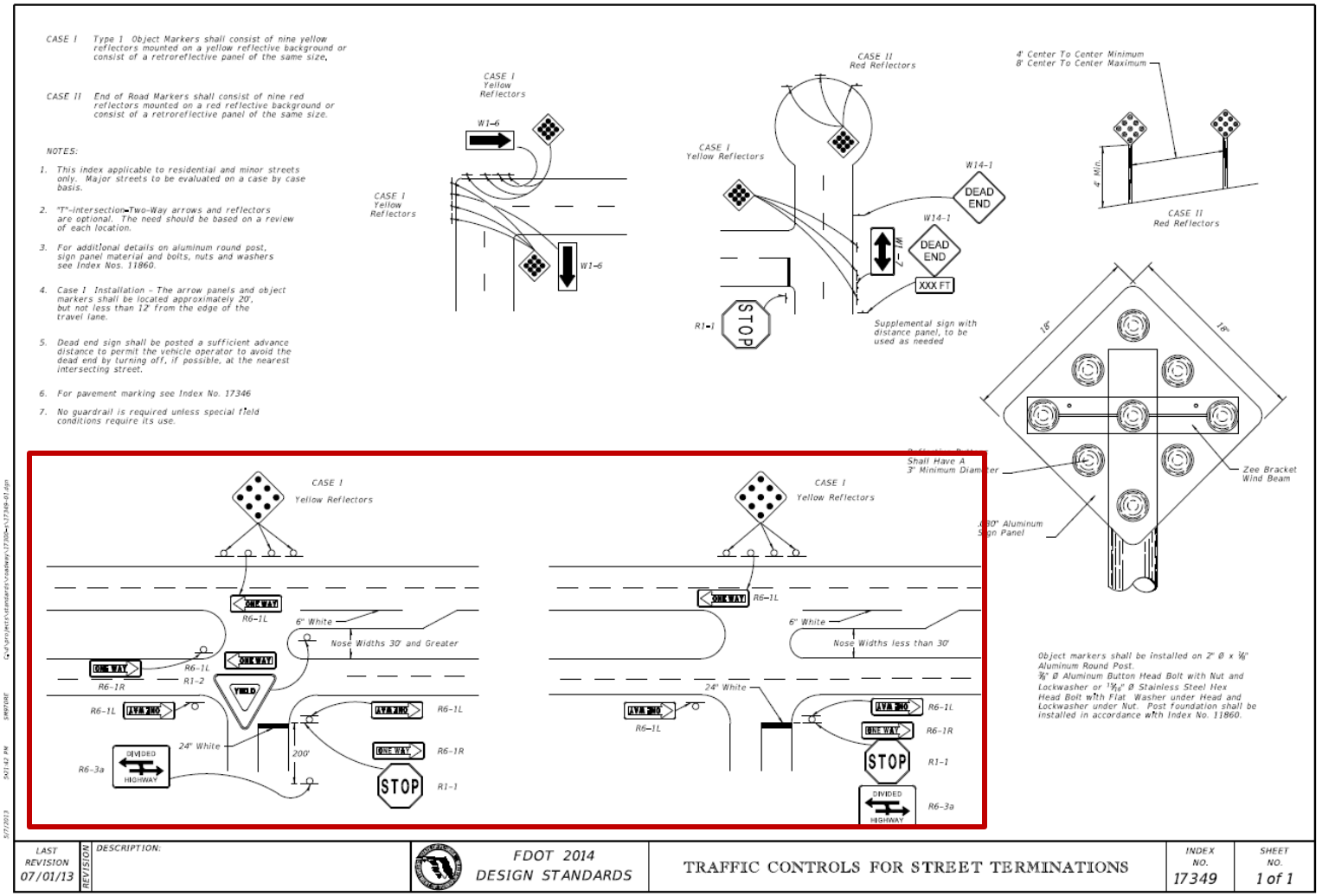


FIGURE 2

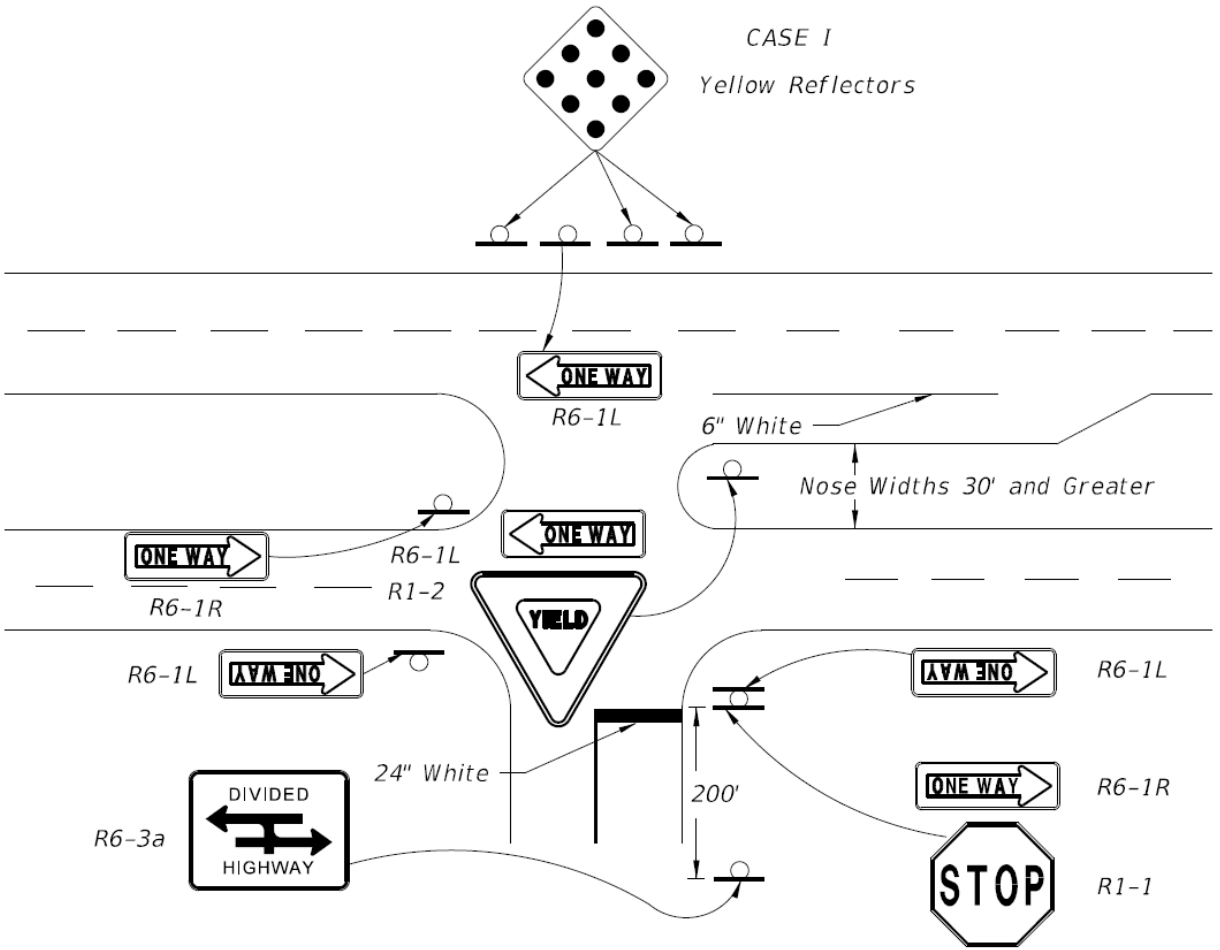
Design Update Training

Design Index 17349



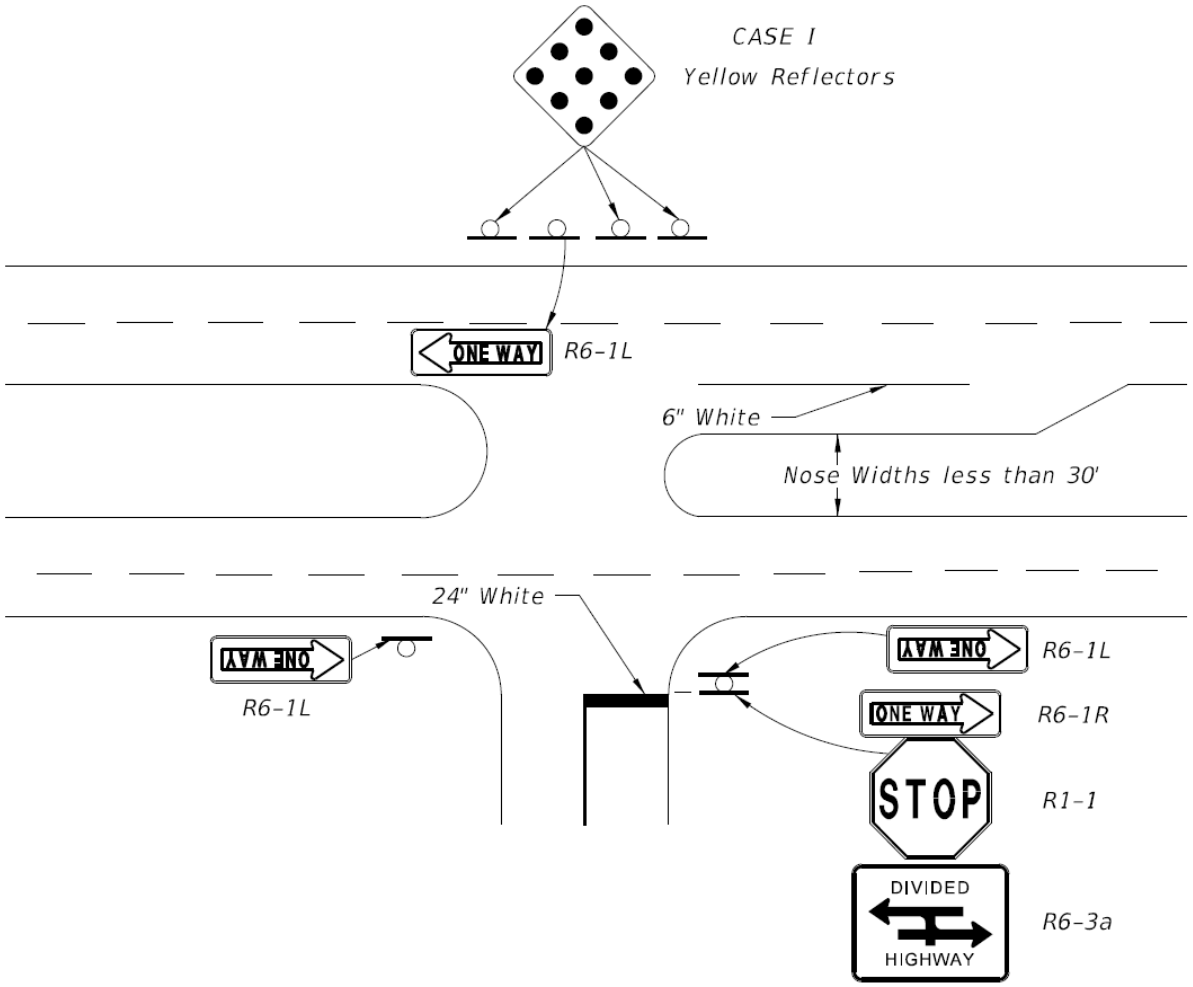
Design Update Training

Design Index 17349



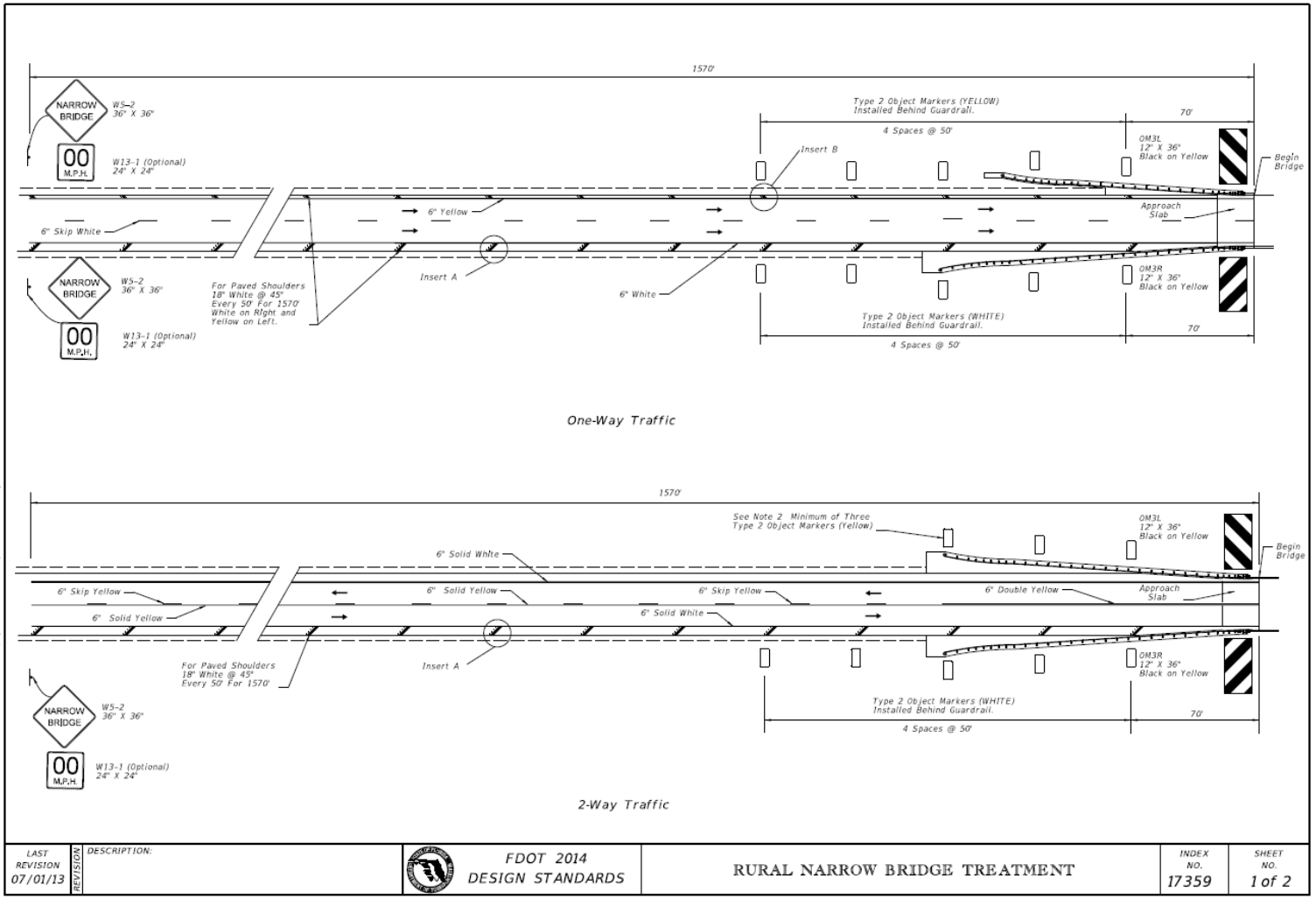
Design Update Training

Design Index 17349



Design Update Training

Design Index 17359



Design Update Training

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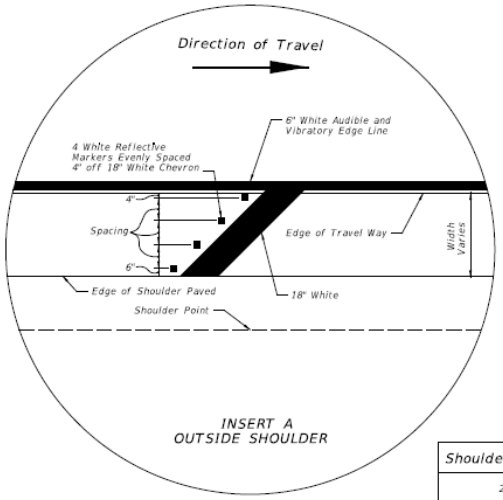

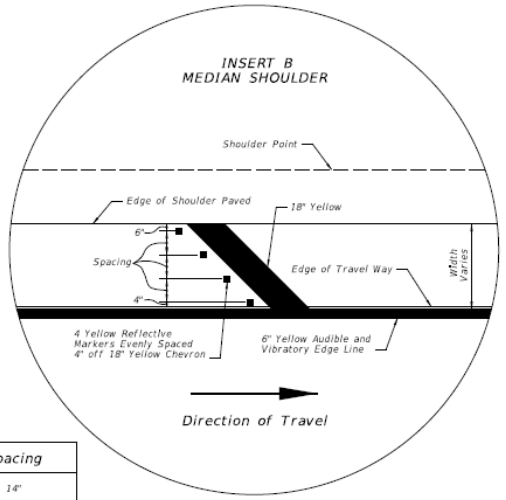

Shoulder Width	No. of RPM's	Spacing
2'	2	14"
3'	3	13"
4'	3	19"
5'	4	16.67"

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.

LAST REVISION 07/01/13	REVISION	DESCRIPTION:	FDOT 2014 DESIGN STANDARDS	RURAL NARROW BRIDGE TREATMENT	INDEX NO. 17359	SHEET NO. 2 of 2

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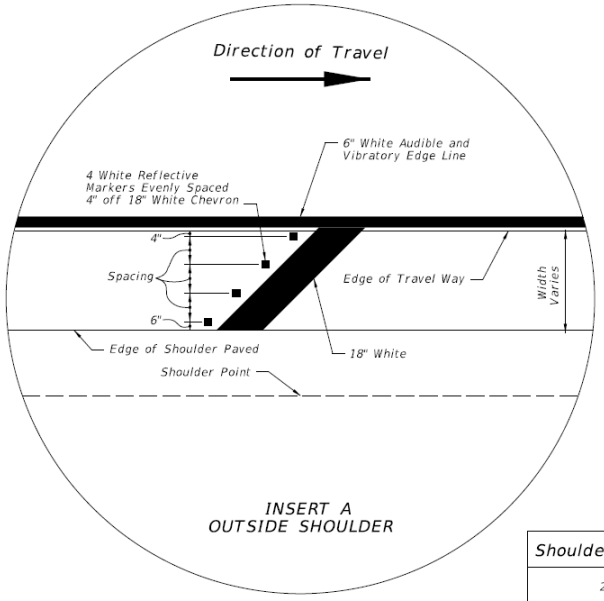
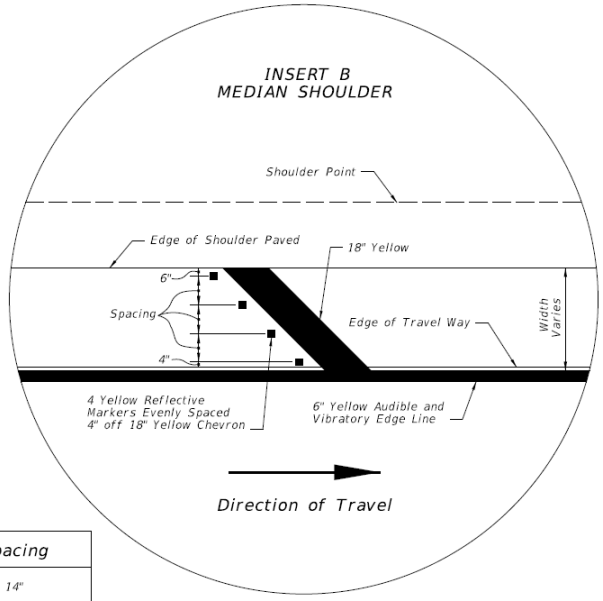
Design Index 17359

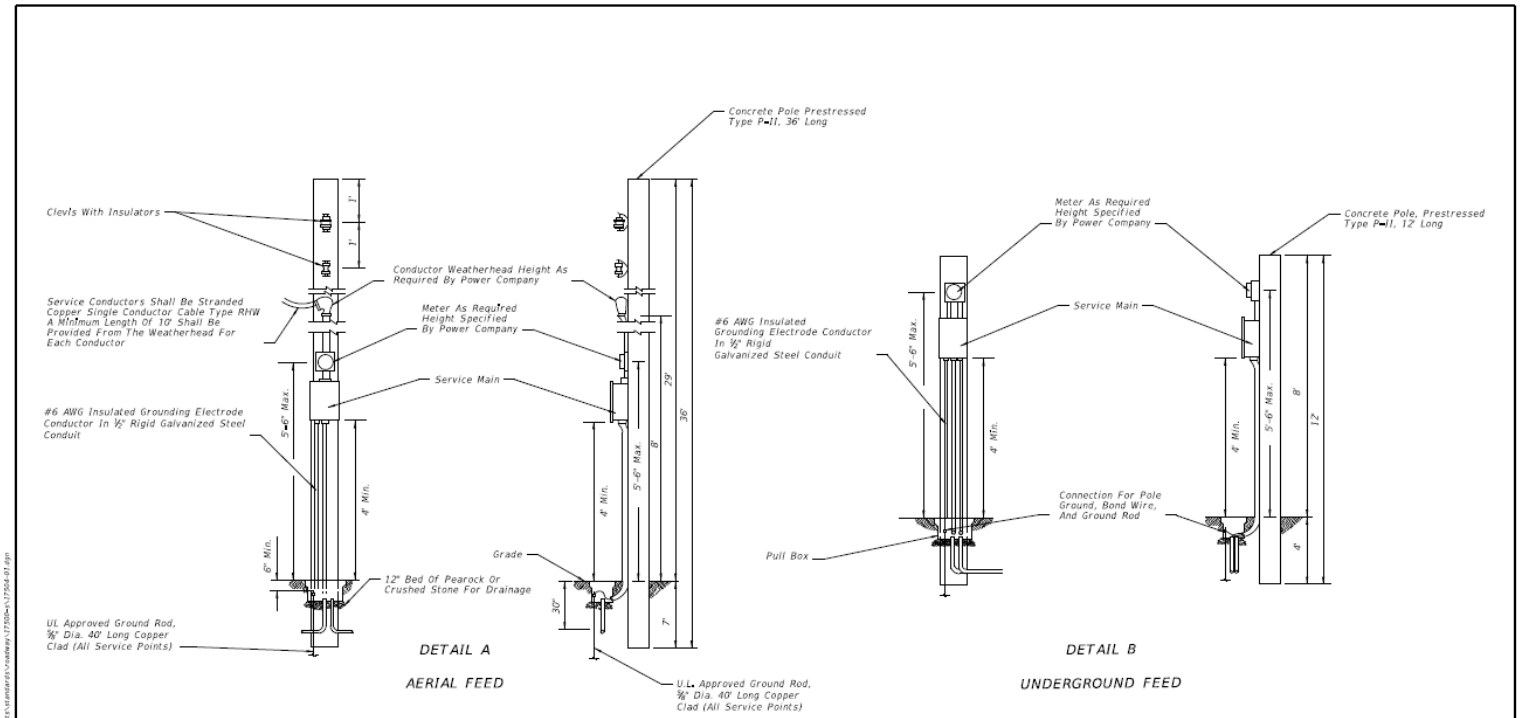




Shoulder Width	No. of RPM's	Spacing
2'	2	14"
3'	3	13"
4'	3	19"
5'	4	16.67"

Design Update Training

Design Index 17504



GENERAL NOTES:

1. It shall be the contractors responsibility to provide a complete service assembly as per the plans and service specifications.
2. The service installation shall meet the requirements of the national electric code and applicable local codes.
3. Shop drawings are not required for service equipment, unless noted in the plans.
4. A Pull Box is required at each service point.

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/13			FDOT 2014 DESIGN STANDARDS	SERVICE POINT DETAILS	17504	1 of 2

Design Update Training

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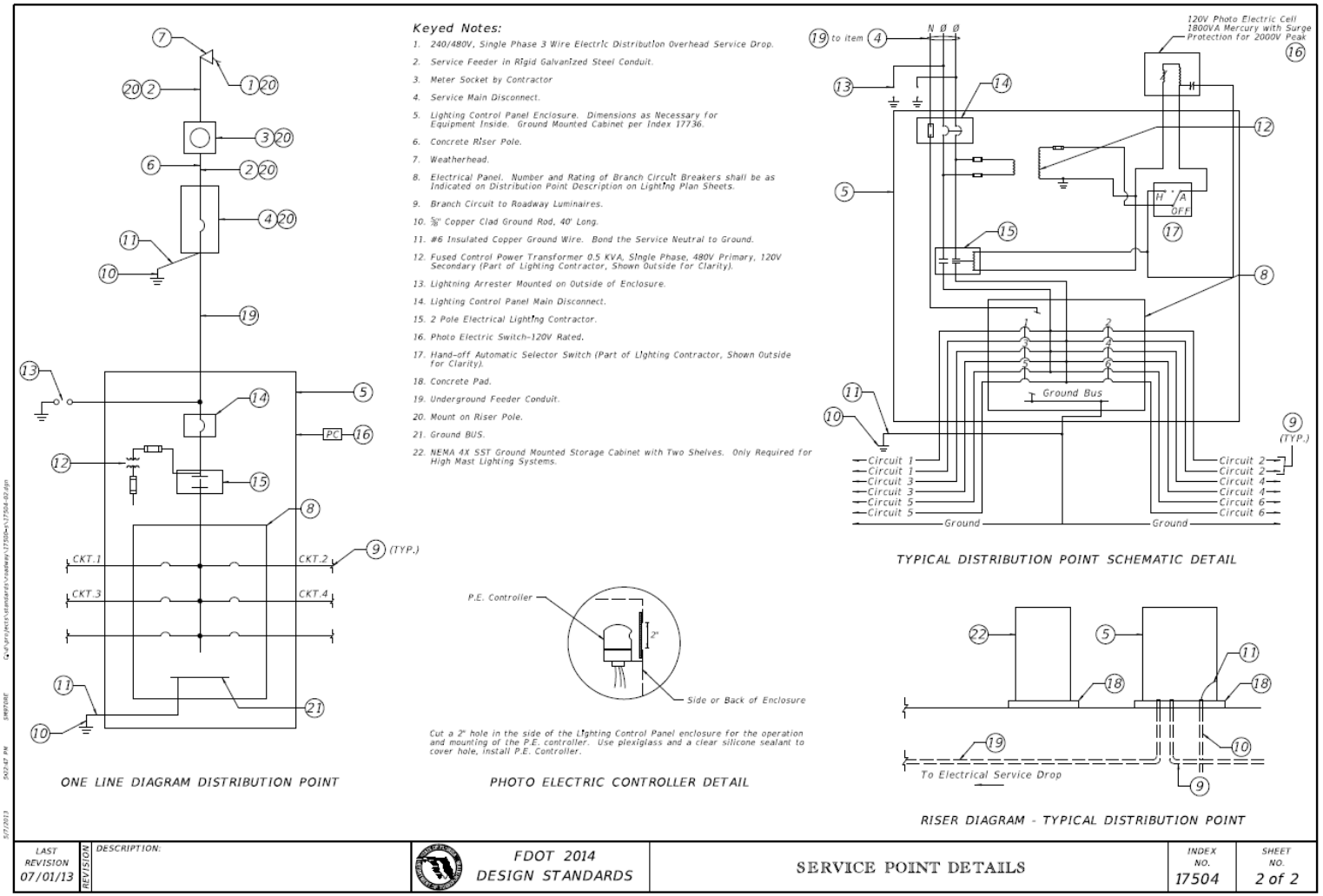
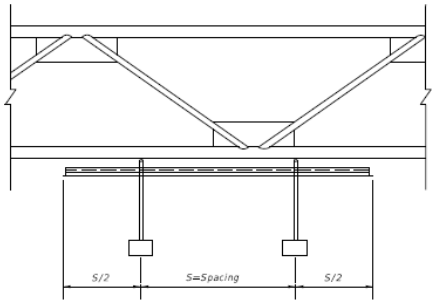


Design Update Training

Design Index 17505



PLACEMENT OF SIGN LIGHTS

1. Luminaires that recommend their fixture be tilted shall be mounted on a bracket which provides the recommended tilt.
2. Luminaire spacing and arm length is shown on guide sign worksheet.
3. Guide sign worksheet indicates sign luminaire used for basis of design. The contractor may propose a different luminaire by submitting photometric calculations for each lighted sign for review.

SIGN LIGHTING INSTALLATION

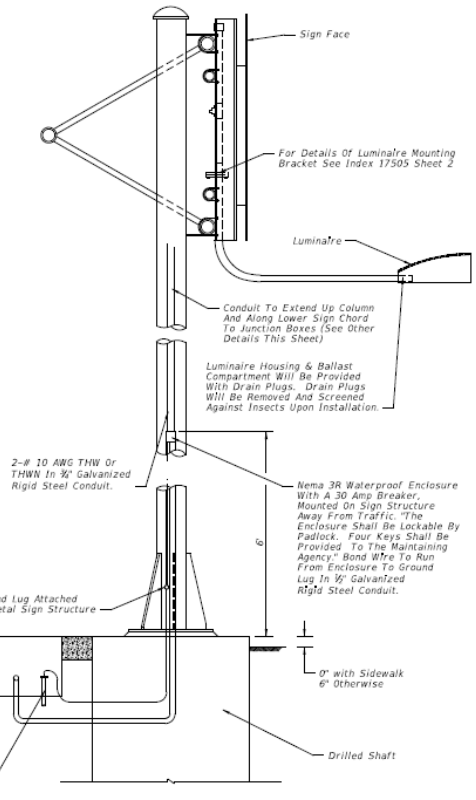
Roadway Lighting included in contract:

The power for the sign lighting shall be provided from the roadway lighting circuit. The lighting plans shall indicate the sign location and a pull box location for connection to the sign lights. The lighting contractor shall install pull box and loop 2' of lighting circuit conductors in the pull box for connection by the signing contractor

The signing contractor shall furnish and install luminaires, Nema 3R enclosure, 30 amp breaker, conduit, conductors and all other electrical equipment necessary for connection to the lighting circuit.

Roadway Lighting not included in contract:

The signing plans shall include pay item numbers to furnish and install conduit, conductors, ground rods, pull boxes and service point equipment. The signing plans shall indicate the location of the service point equipment and circuit runs. The signing contractor shall provide all electrical equipment necessary for connection of the sign lights.



5/7/2013 5:07:48 PM SMEYDIR C:\pwworkdir\standards\roadway\17500+\17505-01.dgn

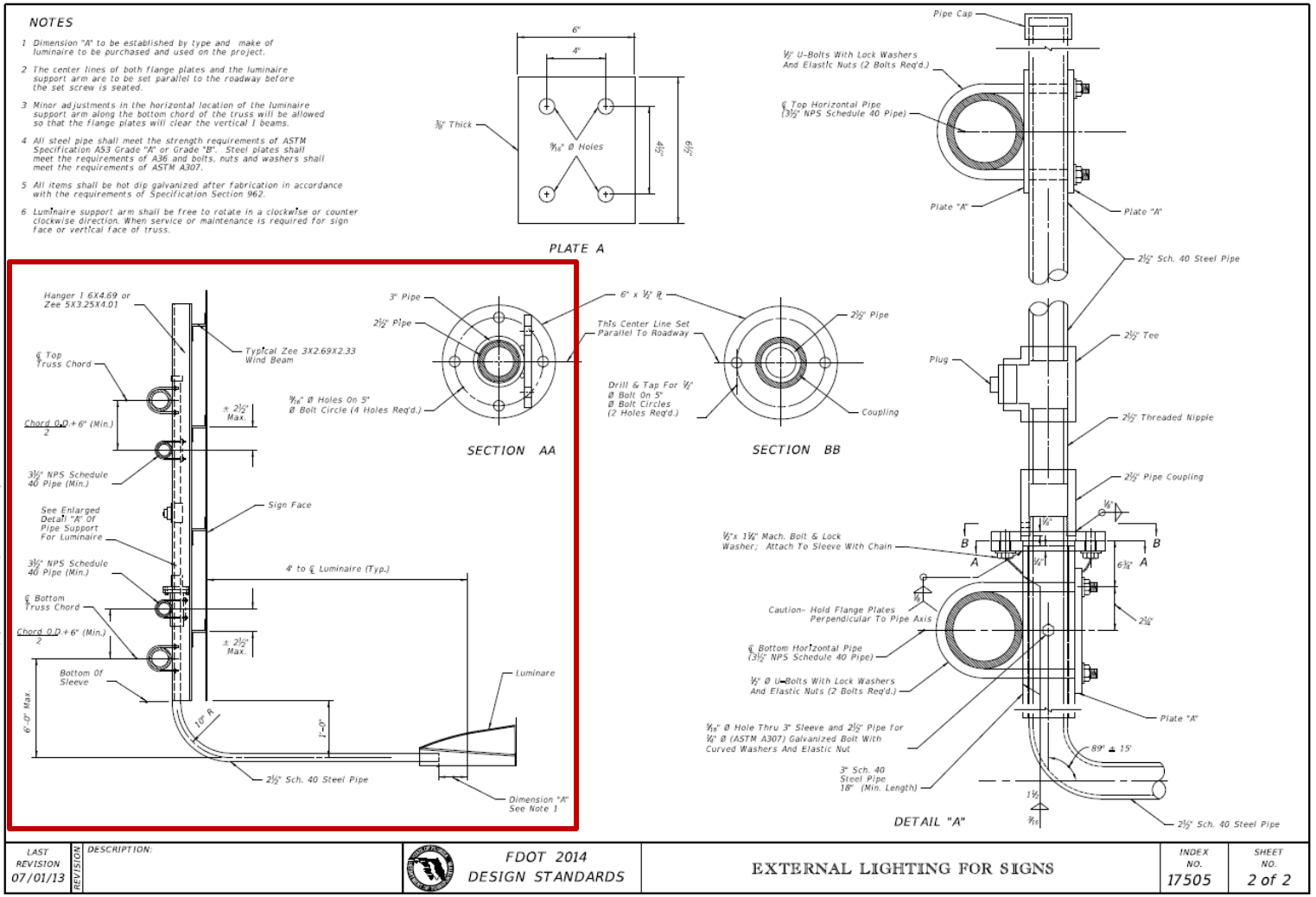
LAST REVISION 07/01/13	REVISION	DESCRIPTION:	FDOT 2014 DESIGN STANDARDS	EXTERNAL LIGHTING FOR SIGNS	INDEX NO. 17505	SHEET NO. 1 of 2

Design Update Training

Design Index 17505

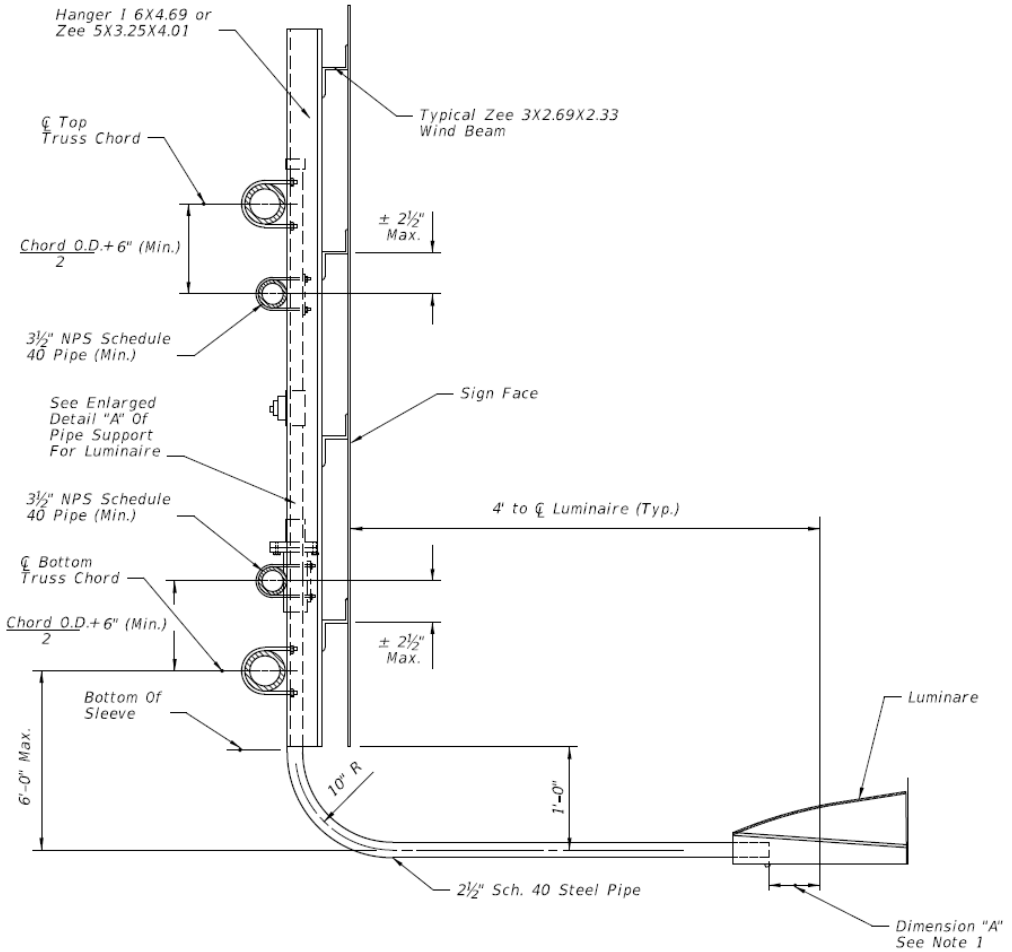
Design Index 17505

Design Index 17505



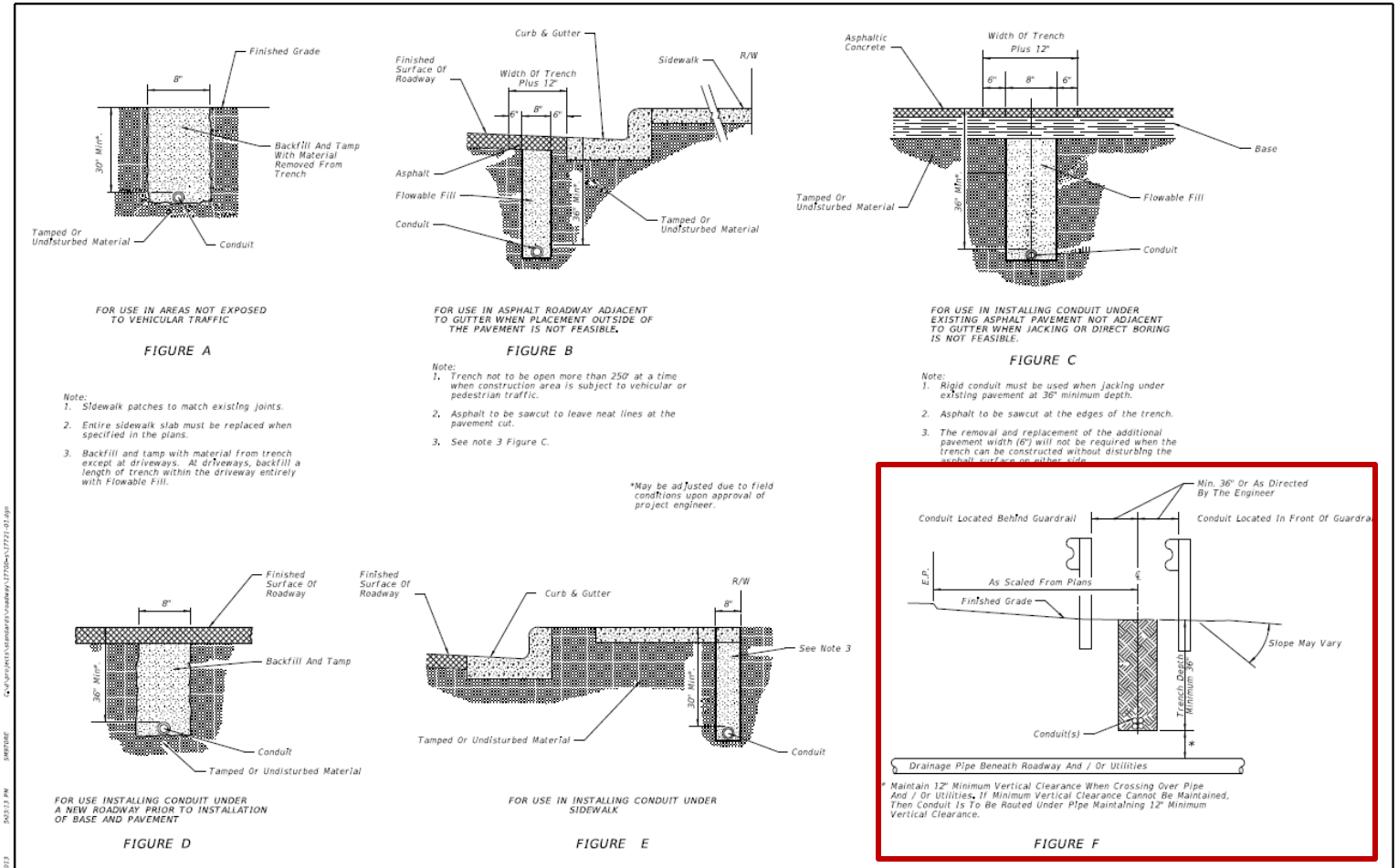
Design Update Training

Design Index 17505



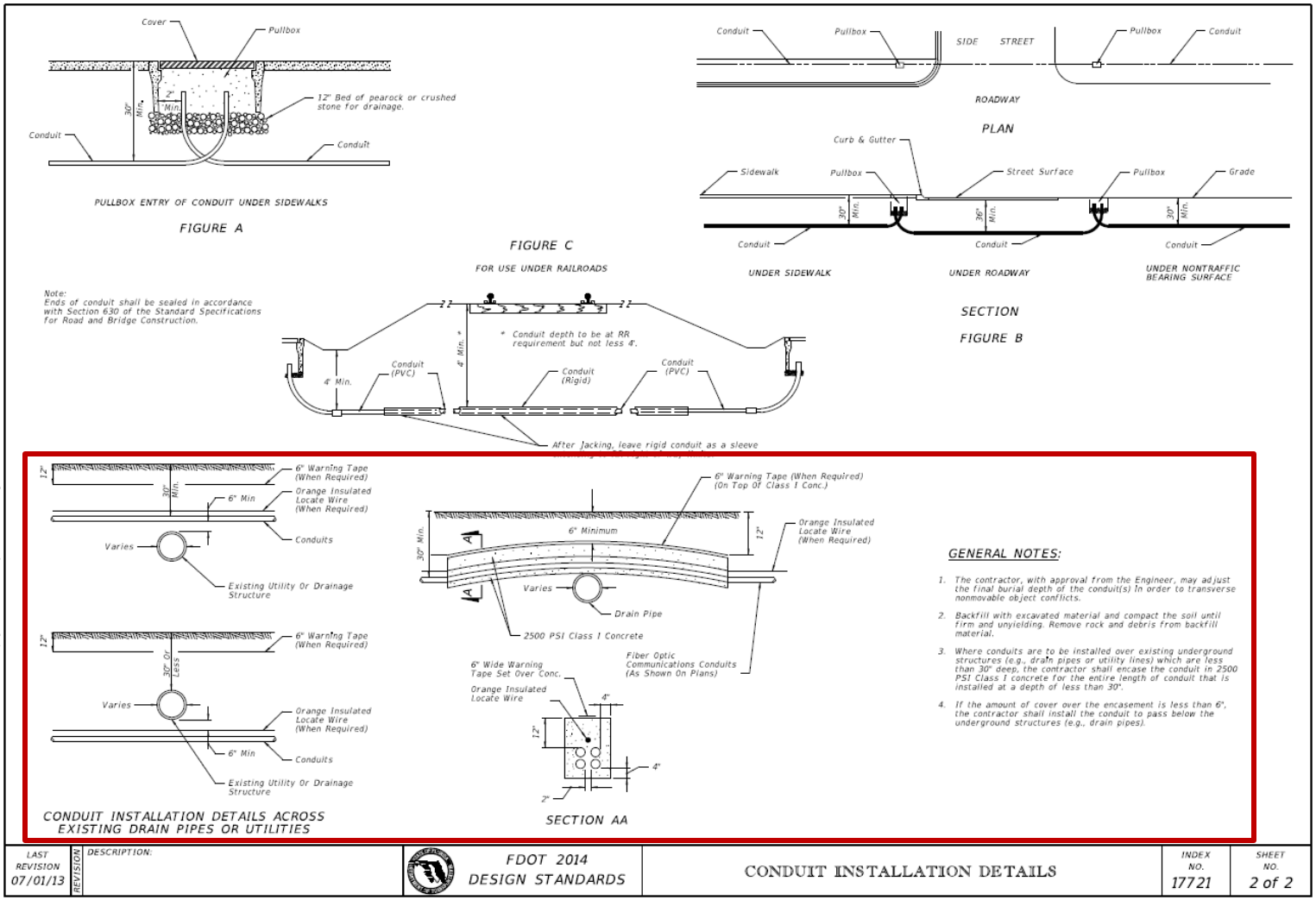
Design Update Training

Design Index 17721



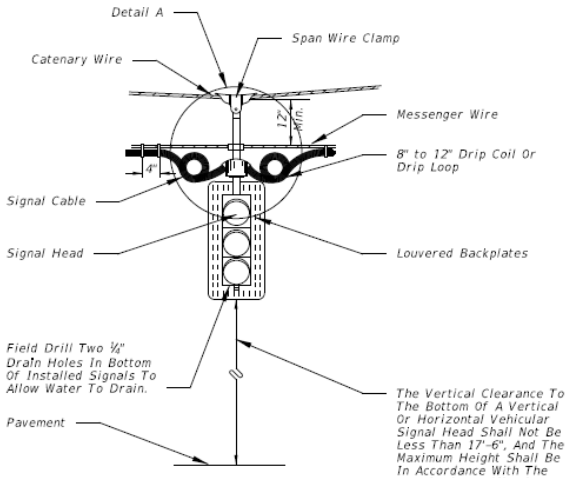
Design Update Training

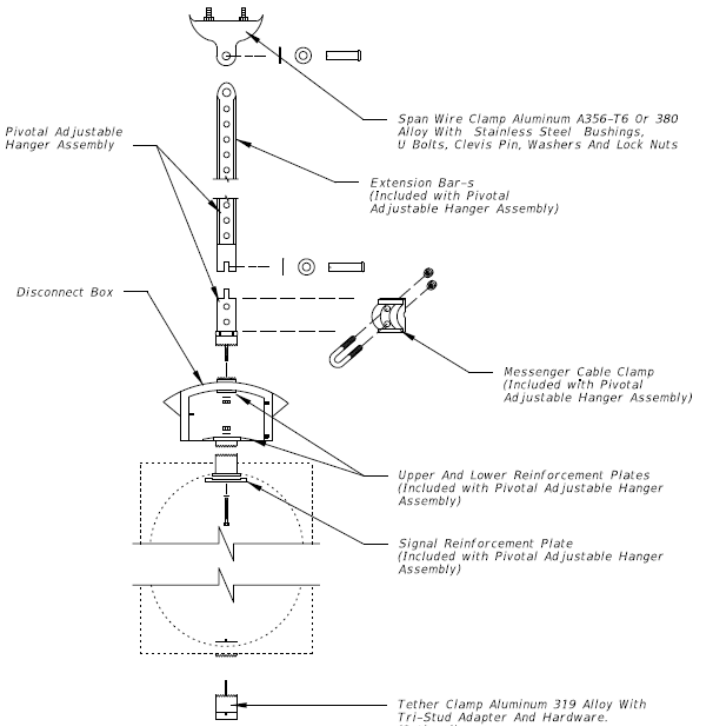
Design Index 17721



Design Update Training

Design Index 17727





Detail A

Notes:

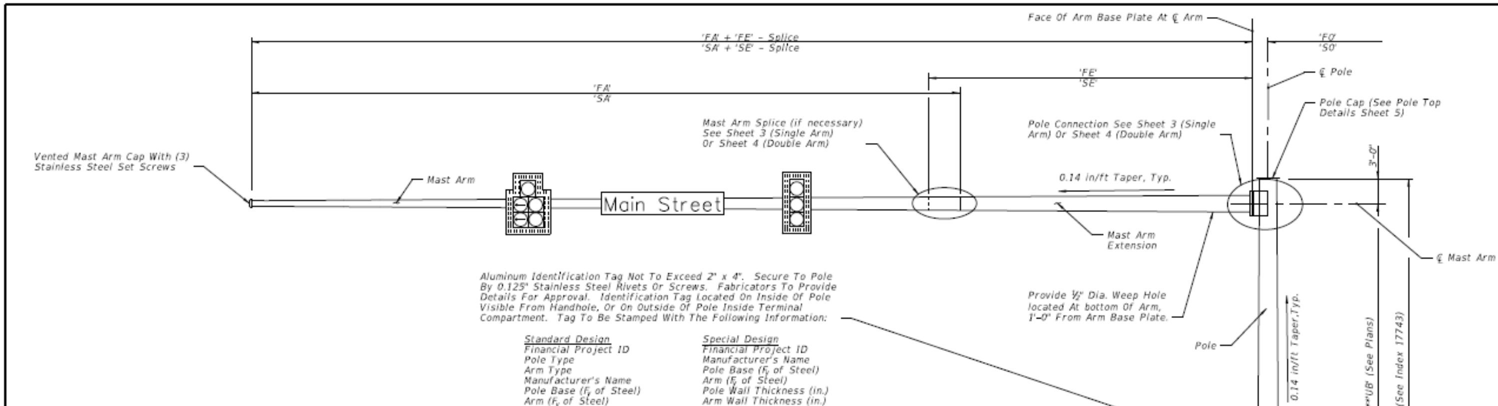
1. This drawing is representative of a Proprietary Pivotal Adjustable Hanger Assembly listed on the Department's Approved Products List (APL). For specific details and requirements see the vendor drawings on the APL at www3.dot.state.fl.us/trafficcontrolproducts/. The proprietary pivotal adjustable hanger assembly shall be assembled in accordance with the manufacturer's detailed drawings, procedures and specifications.
2. With the approval of the resident engineer, the service head hole for joint use poles may be drilled by the utility company at an angle of 90° but not less than 45° to the face of the pole.
3. Lashing wire should normally be used for distances of 12' or greater.
4. The overlapped connection of adjustable hangers shall use a minimum of 2 bolts with a minimum spacing of 2" between bolts.
5. Meet all grounding requirements of Section 620 of the Standard Specifications.

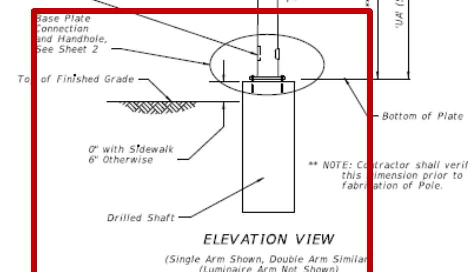
TWO POINT ATTACHMENT

LAST REVISION	REVISION	DESCRIPTION:				
07/01/13			FDOT 2014 DESIGN STANDARDS	SIGNAL CABLE & SPAN WIRE INSTALLATION DETAILS	INDEX NO. 17727	SHEET NO. 2 of 2

Design Update Training

Design Index 17745





ELEVATION VIEW

(Single Arm Shown, Double Arm Similar) (Luminaire Arm Not Shown)

MAST ARM ASSEMBLIES GENERAL NOTES

1) Signal Structure Materials shall be as follows:

Poles & Mast Arms & Backing Rings	->	ASTM A1011 Grade 50, 55, 60 or 65 (less than ¼") or ASTM A572 Grade 50, 55, 60 or 65 (¼" and over) or ASTM A595 Grade A (55 ksi yield) or Grade B (60 ksi yield)
Steel Plates	->	ASTM A36
Weld Metal	->	E70XX
Bolts (except Anchor Bolts)	->	ASTM A325 Type 1
Anchor Bolts	->	ASTM F1554 Grade 55 ksi
Nuts for Anchor Bolts	->	ASTM A563 Grade A Heavy Hex
Handhole Frame	->	ASTM A709 Grade 36 ksi or ASTM A36
Handhole Cover	->	ASTM A1011 Grade 50, 55, 60 or 65 ksi
Caps	->	ASTM A1011 Grade 50, 55, 60 or 65 ksi or ASTM B209
Nut Covers	->	ASTM B26 (319-F)
Stainless Steel Screws	->	AISI Type 316
Threaded Bars/Studs	->	ASTM A36 or ASTM A307

2) Reinforcing Steel shall be ASTM A615 Grade 60 ksi.

3) Concrete shall be Class IV (Drilled Shaft) with a minimum 28-day compressive strength of 4,000 psi for all environmental classifications.

4) Perform all welding in accordance with the American Welding Society Structural Welding Code (Steel) ANSI/AWS D1.1 (current edition). For additional welding requirements see AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Section 5.15, Welded Connections.

5) All steel items shall be galvanized as follows:
All Nuts, Bolts, Washers and Threaded Bars/Studs -> F2329
All other steel items (including Pole & Mast Arm) -> ASTM A123

6) Locate handhole 180° from arm on single arm poles or 180° from first arm of double arm poles or see special instructions on Mast Arm Tabulation Sheet.

7) Except for Anchor Bolts, all bolt hole diameters shall be equal to the bolt diameter plus ¹⁄₁₆", prior to galvanizing. Hole diameters for Anchor Bolts shall not exceed the bolt diameter plus ½".

8) Sign Panels and Signals attached to the Mast Arm shall be centered in elevation on the arm. Wire access holes shall not exceed 1 ½" in diameter.

9) Mast Arms and Poles shall be tapered with the diameter changing at a rate of 0.14 inch per foot.

10) The Pole shall be installed vertically. Camber shall be accounted for in the Mast Arm connection as detailed.

11) If a Mast Arm damping device is required by the Engineer, it shall be installed within eight feet of the Mast Arm tip.

12) Design according to FDOT Structures Manual. Alternate Designs for Special Mast Arm Assemblies are not allowed.

13) Provide "J", or "C"-Hook at top of pole for signal cable support.

14) First and Second Arm Camber Angle = 2°.

15) Details for Signal and Sign Locations, Signal Head attachment, Sign Attachment, Pedestrian Head Attachment, and Foundation Conduit are not shown for clarity.

16) Use of split lock washer is not permitted.

17) This Design Standard is considered fully detailed and no shop drawings are necessary. Submit shop drawings for minor modifications not detailed in the plans.

18) Verify CSL access tubes will not interfere with anchor bolt installation before excavating the shaft. When CSL access tube locations conflict with anchor bolt locations, move the CSL access tube location +/- two inches along the inner circumference of the reinforcing cage. Notify the Engineer before excavating the shaft if the CSL access tube locations cannot be moved out of conflict with anchor bolt locations.

TYPICAL ELEVATION AND NOTES

LAST REVISION	REVISION	DESCRIPTION:	FDOT 2014 DESIGN STANDARDS	MAST ARM ASSEMBLIES	INDEX NO.	SHEET NO.
07/01/13					17745	1 of 5

Design Update Training

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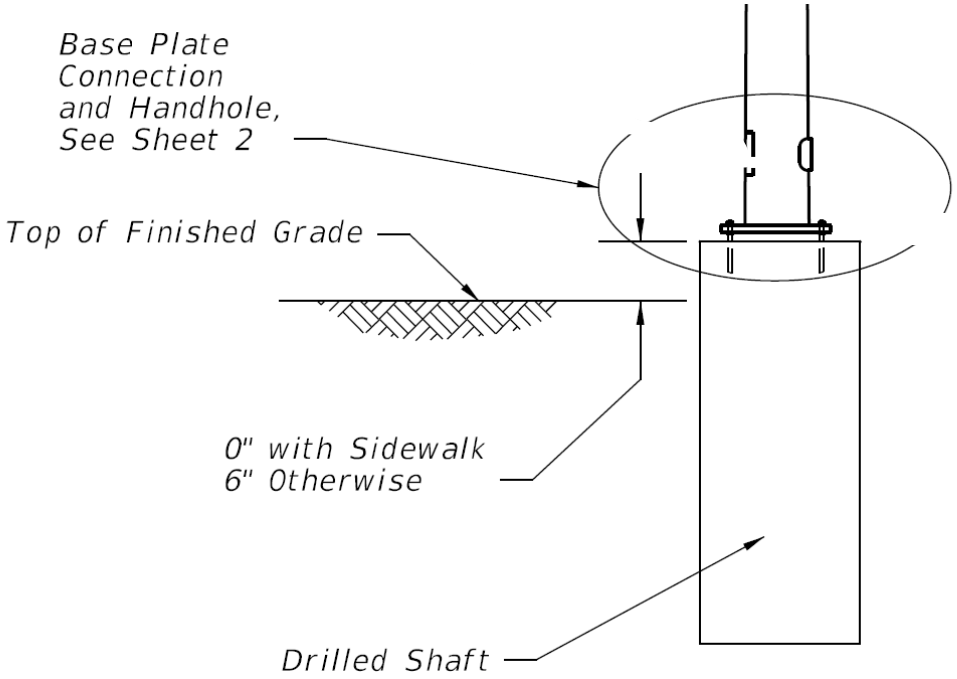

ELEVATION VIEW

(Single Arm Shown, Double Arm Similar)
(Luminaire Arm Not Shown)

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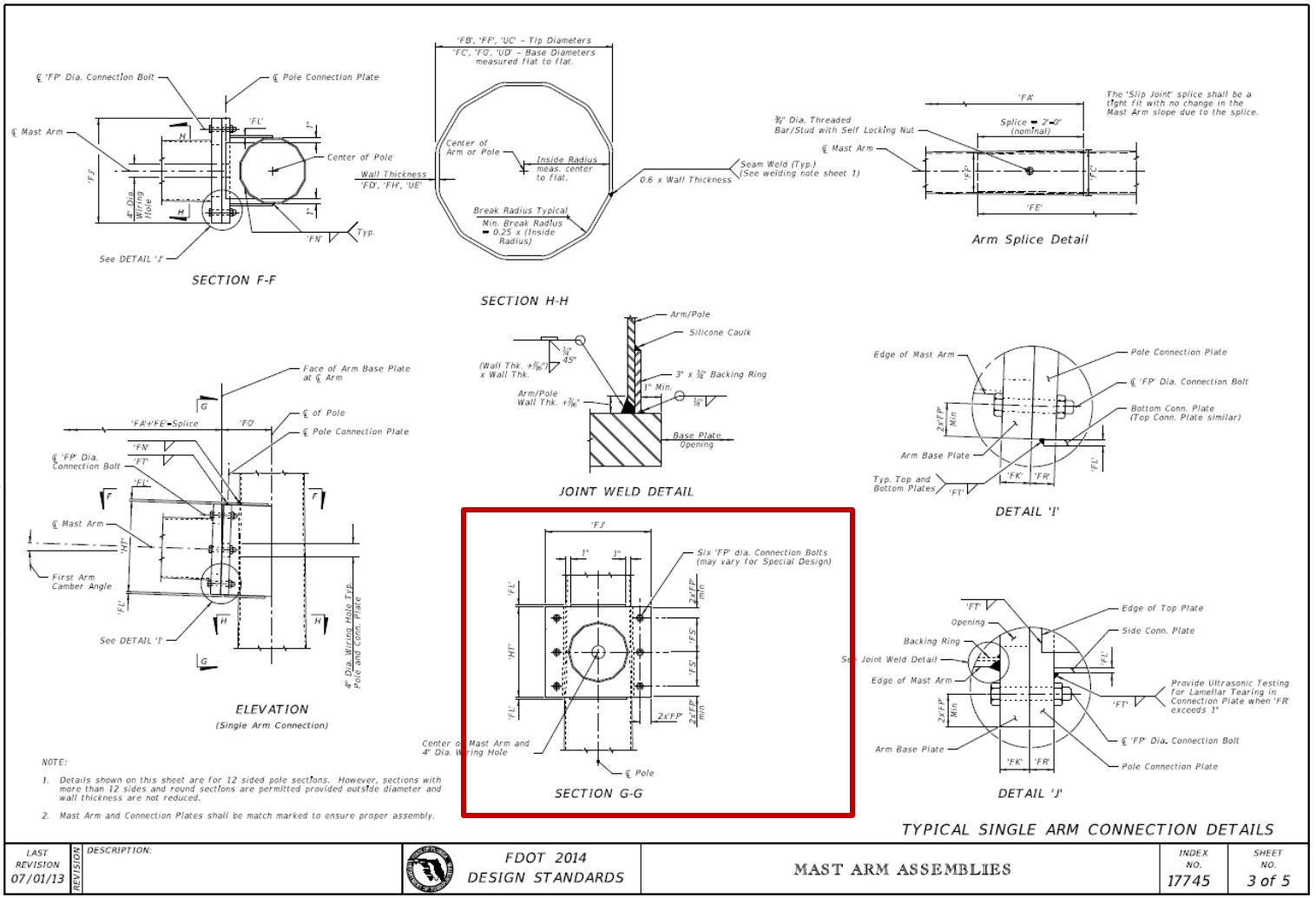

Design Update Training

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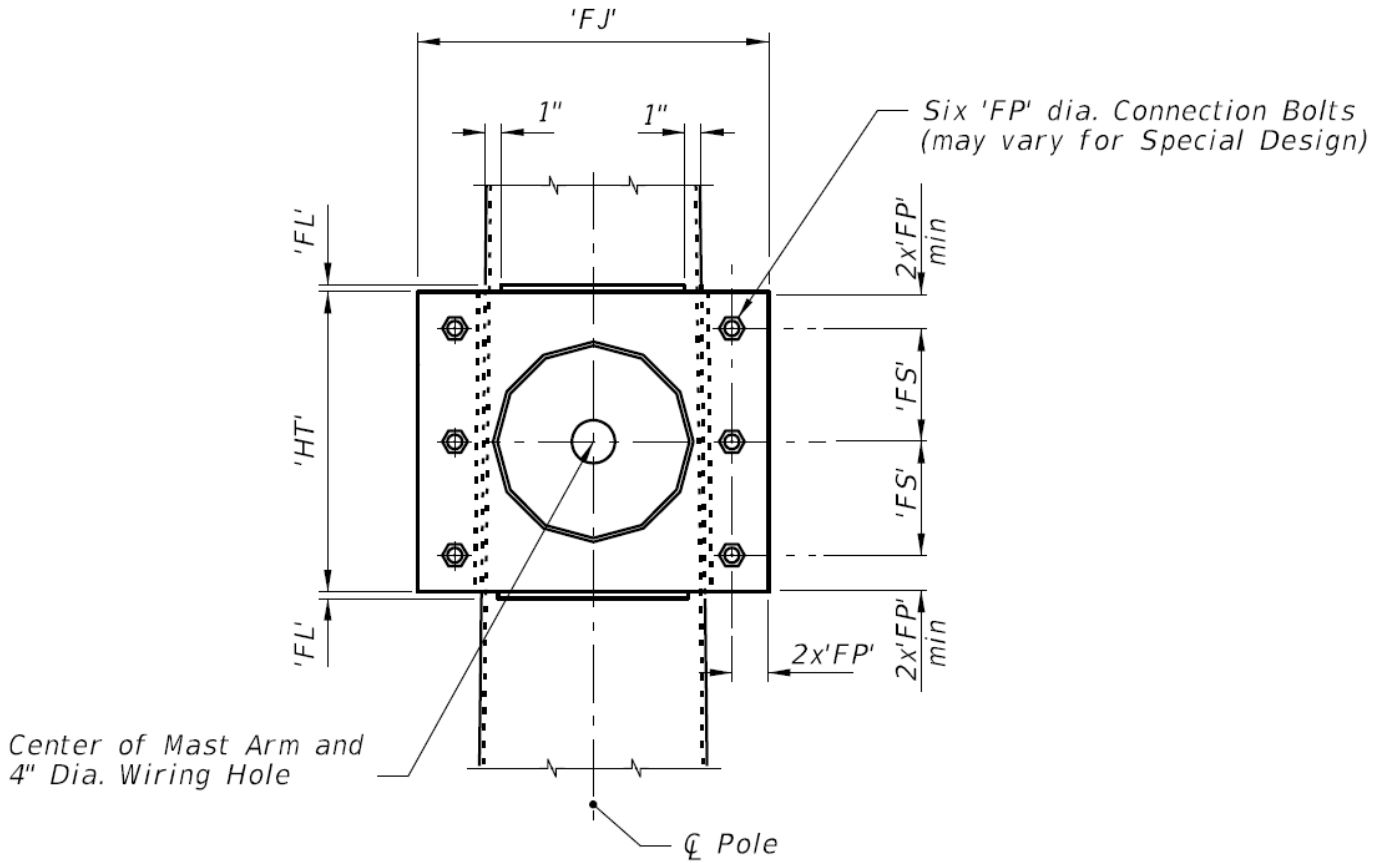

SECTION G-G

Design Update Training

Design Index 17502, 17515, 17723, 17725, 17745

- General Note on all Indexes

  “This design standard is considered fully detailed and no shop drawings are necessary. Submit shop drawings for minor modifications not detailed in the plans.”

Questions