

FY 2019-20 Standard Plans Update Training

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Standard Plans – Primary Updates

- ➔ **1) *Temporary Traffic Control Indexes***
 - a) Index 102-600 – General Information for Traffic Control Through Work Zones*
 - b) Index 102-655 – Traffic Pacing*
- 2) *Signal, Signing & Pavement Marking Indexes***
- 3) *Lighting Indexes***



General Information for Traffic Control Through Work Zones, Index 102-600

Sheet 3 of 12

CLEAR ZONE WIDTHS FOR WORK ZONES

The term 'clear zone' describes the unobstructed relatively flat area, impacted by construction, extending outward from the edge of the traffic lane. The table below gives clear zone widths in work zones for medians and roadside conditions other than for roadside canals; where roadside canals are present, clear zone widths are to conform with the distances to canals as described in the FDOT Design Manual 215.2.

CLEAR ZONE WIDTHS FOR WORK ZONES		
WORK ZONE SPEED (MPH)	TRAVEL LANES & MULTILANE RAMPS (feet)	AUXILIARY LANES & SINGLE LANE RAMPS (feet)
60-70	30	18
55	24	14
45-50	18	10
30-40	14	10
ALL SPEEDS CURB & GUTTER	4' BEHIND FACE OF CURB	4' BEHIND FACE OF CURB

SUPERELEVATION

Horizontal curves constructed in conjunction with work zone traffic control should have the required superelevation applied to the design radii. Under conditions where normal crown controls curvature, the minimum radii that can be applied are listed in the table below.

MINIMUM RADII FOR NORMAL CROWN	
WORK ZONE POSTED SPEED	MINIMUM RADIUS
MPH	Feet
70	4090
65	3120
60	2400
55	1940
50	1390
45	1080
40	820
35	610
30	430
Superelevate When Smaller Radii is Used	

LENGTH OF LANE CLOSURES

For interstates and state highways with a posted speed of 55MPH or greater, lane closures must not exceed 3 miles (includes taper, buffer, and work zone) in any given direction and must not close two consecutive interchanges.

OVERWEIGHT/OVERSIZE VEHICLES

Restrictions to Lane Widths, Heights or Load Capacity can greatly impact the movement of over dimensioned loads. The Contractor shall notify the Engineer who in turn shall notify the State Permits Office, phone no. (850) 410-5777, at least seven calendar days in advance of implementing a maintenance of traffic plan which will impact the flow of overweight/oversize vehicles. Information provided shall include location, type of restriction (height, width or weight) and restriction time frames. When the roadway is restored to normal service the State Permits Office shall be notified immediately.

LANE WIDTHS

Lane widths of through roadways should be maintained through work zone travel ways wherever practical. The minimum widths for work zone travel lanes shall be as follows: 11' for Interstate with at least one 12' lane provided in each direction, unless formally excepted by the Federal Highway Administration; 11' for Freeways; and 10' for all other facilities.

HIGH-VISIBILITY SAFETY APPAREL

All high-visibility safety apparel shall meet the requirements of the International Safety Equipment Association (ISEA) and the American National Standards Institute (ANSI) for "High-visibility Safety Apparel", and labeled as ANSI/ISEA 107-2004 or newer. The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined by the standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of those colors, and shall be visible at a minimum distance of 1,000 feet. Class 3 apparel may be substituted for Class 2 apparel. Replace apparel that is not visible at 1,000 feet.

WORKERS: All workers within the right-of-way shall wear ANSI/ISEA Class 2 apparel. Workers operating machinery or equipment in which loose clothing could become entangled during operation shall wear fitted high-visibility safety apparel. Workers inside the bucket of a bucket truck are not required to wear high-visibility safety apparel.

UTILITIES: When other industry apparel safety standards require utility workers to wear apparel that is inconsistent with FDOT requirements such as NFPA, OSHA, ANSI, etc., the other standards for apparel may prevail.

FLAGGERS: For daytime activities, flaggers shall wear ANSI/ISEA Class 2 apparel. For nighttime activities, flaggers shall wear ANSI/ISEA Class 3 apparel.

REGULATORY SPEEDS IN WORK ZONES

Traffic Control Plans (TCPs) for all projects must include specific regulatory speeds for each phase of work. This can either be the posted speed or a reduced speed. The speed shall be noted in the TCPs; this includes indicating the existing speed if no reduction is to be made. Regulatory speeds are to be uniformly established through each phase.

In general, the regulatory speed should be established to route vehicles safely through the work zone as close as to normal highway speed as possible. The regulatory speed should not be reduced more than 10 mph below the posted speed and never below the minimum statutory speed for the class of facility. When a speed reduction greater than 10 mph is imposed, the reduction is to be done in 10 mph per 300 increments.

Temporary regulatory speed signs shall be removed as soon as the conditions requiring the reduced speed no longer exist. Once the work zone regulatory speeds are removed, the regulatory speed existing prior to construction will automatically go back into effect unless new speed limit signing is provided for in the plans.

On projects with interspaced work activities, speed reductions should be located in proximity to those activities which merit a reduced speed, and not "blanketed" for the entire project. At the departure of such activities, the normal highway speed should be posted to give the motorist notice that normal speed can be resumed.

If the existing regulatory speed is to be used, consideration should be given to supplementing the existing signs when the construction work zone is between existing regulatory speed signs. For projects where the reduced speed conditions exist for greater than 1 mile in rural areas (non-interstate) and on rural or urban interstate, additional regulatory speed signs are to be placed at no more than 1 mile intervals. Engineering judgement should be used in placement of the additional signs. Locating these signs beyond ramp entrances and beyond major intersections are examples of proper placement. For urban situations (non-interstate), additional speed signs are to be placed at a maximum of 1000' apart.

When field conditions warrant speed reductions different from those shown in the TCP the contractor may submit to the project engineer for approval by the Department, a signed and sealed study to justify the need for further reducing the posted speed, or, the engineer may request the District Traffic Operations Engineer (DTOE) to investigate the need. It will not be necessary for the DTOE to issue regulations for regulatory speeds in work zones due to the revised provisions of F.S. 316.0745(2)(b). Advisory Speed zones will be used at the option of the field engineer for temporary use while processing a request to change the regulatory speed specified in the plans when deemed necessary. Advisory speed plates cannot be used alone but must be placed below the construction warning sign for which the advisory speed is required.

For additional information, refer to the Plans Preparation Manual, Volume I, Chapter 10.

Changed the maximum lane closure length to three miles for high-speed facilities



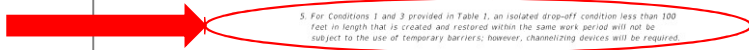
LAST REVISION 11/01/18	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-600	SHEET 3 of 12
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Old:

5. For Conditions 1 and 3 provided in Table 1, any drop-off condition that is created and restored within the same work period will not be subject to the use of temporary barriers; however, channelizing devices will be required.

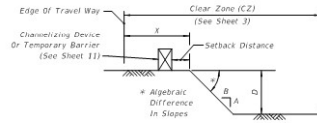
New:

5. For Conditions 1 and 3 provided in Table 1, an isolated drop-off condition less than 100 feet in length that is created and restored within the same work period will not be subject to the use of temporary barriers; however, channelizing devices will be required.



DROP-OFF CONDITION NOTES

1. These conditions and treatments can be applied only in work areas that fall within a properly signed work zone.
2. When drop-offs occur within the clear zone due to construction or maintenance activities, protection devices are required (See Table 1). A drop-off is defined as a drop in elevation, parallel to the adjacent travel lanes, greater than 3" with slope (AB) steeper than 1:4. In superelevated sections, the algebraic difference in slopes should not exceed 0.25 (See Drop-off Condition Detail).
3. Drop-offs may be mitigated by placement of slopes with optional base material per Specifications Section 285. Slopes shallower than 1:4 may be required to avoid algebraic difference in slopes greater than 0.25. Include the cost for the placement and removal of the material in Maintenance of Traffic, LSD. Use of this treatment in lieu of a temporary barrier is not eligible for CSIP consideration. Conduct daily inspections for deficiencies related to erosion, excessive slopes, rutting or other adverse conditions. Repair any deficiencies immediately.
4. For Setback Distance, refer to the Index or Approved Products List (APL) drawing of the selected barrier.
5. For Conditions 1 and 3 provided in Table 1, an isolated drop-off condition less than 100 feet in length that is created and restored within the same work period will not be subject to the use of temporary barriers; however, channelizing devices will be required.
6. When permanent curb heights are $\geq 6'$, no channelizing device will be required. For curb heights $< 6'$, see Table 1.

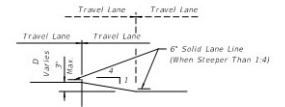


DROP-OFF CONDITION DETAIL

Condition	X (ft)	D (in.)	Device Required
1	0-12	> 3	Temporary Barrier
2	≥ 12 -CZ	> 3 to ≤ 5	Channelizing Device
3	0-CZ	> 5	Temporary Barrier
4	Removal of Bridge or Retaining Wall Barrier		Temporary Barrier
5	Removal of portions of Bridge Deck		Temporary Barrier

TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING NOTES

1. This treatment applies to resurfacing or milling operations between adjacent travel lanes.
2. Whenever there is a difference in elevation between adjacent travel lanes, the W8-11 sign with "UNEVEN LANES" is required at intervals of $\frac{1}{2}$ mile maximum.
3. If D is 10" or less, no treatment is required.
4. Treatment allowed only when D is 3" or less.
5. If the slope is steeper than 1:4 (not to be steeper than 1:1), the R4-1 and M07-1-06 signs shall be used as a supplement to the W8-11; this condition should never exceed 3 miles in length.



TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING DETAIL

PEDESTRIAN WAY DROP-OFF CONDITION NOTES

1. A pedestrian way drop-off is defined as:
 - a. a drop in elevation greater than 10" that is closer than 2' from the edge of the pedestrian way
 - b. a slope steeper than 1:2 that begins closer than 2' from the edge of the pedestrian way when the total drop-off is greater than 60"
2. Protect any drop-off adjacent to a pedestrian way with pedestrian longitudinal channelizing devices, temporary barrier wall, or approved handrail.

DROP-OFFS IN WORK ZONES

TRAFFIC PACING GUIDE

Traffic pacing is a traffic control technique to slow but not stop traffic to facilitate short duration work operations without an elaborate and difficult detour or diversion. Traffic Control Officers pace or slow the traffic to a speed that provides approximately 20-30 minutes to perform the work operation. The Department has frequently used this technique for setting bridge beams, overhead sign structures and replacing overhead sign panels.

NOTICE

This Index represents the minimum requirements for traffic pacing operations on the State Highway System.
Develop a site specific traffic control plan for each pacing operation location.

CHANGEABLE MESSAGE SIGNS (Typical Placement and Messages)

L = Length of Traffic Pacing Operation

CHANGEABLE MESSAGE SIGN MESSAGE (MAINLINE AND RAMP)

	ONE WEEK PRIOR TO PACING OPERATION	EXPECT DELAYS ON	MMN DD-DD X AM - X AM
	DURING DAY OF PACING OPERATION	ROAD WORK TONIGHT	EXPECT PERIODIC DELAYS
	DURING PACING OPERATION	SLOW TRAFFIC AHEAD	BE PREPARED TO STOP

Symbols

- Channelizing Device (See Index 102-600)
- Marked Police Vehicle with Flashing Blue Lights
- PCMS, Portable Changeable Message Sign
- ☑ To be placed the day of pacing operation
- ⇄ Lane Identification and Direction of Traffic

TRAFFIC PACING GENERAL NOTES

1. Install ROAD CLOSED (W20-3) signs approximately 1000' prior to the work area. These signs shall remain covered until the pacing operation begins and covered when the pacing operation has ended.
2. Prior to requesting that the traffic control officer supervisor initiate the pacing operation, the contractor shall ensure that the necessary equipment is properly positioned (off the roadway) for the construction activity requiring the traffic pacing operation.
3. Truck mounted attenuator(s) with changeable message sign(s) are required to protect workers and/or equipment positioned in a travel lane(s) at the work area during the pacing operation from an errant vehicle. If no workers and/or equipment are positioned in a travel lane(s) at the work area, truck mounted attenuator(s) are not required.
4. A traffic control officer supervisor shall be stationed at the work area continuously throughout the pacing operation to insure radio communications between the contractor and/or the project administrator, and all the police vehicles involved in the pacing operation.
5. When more than one pacing operation is required in one work period the contractor shall allow sufficient time between pacing operations to permit traffic to return to normal speeds and flow. Additional time may be required between pacing operations to allow traffic to resume normal speeds and flow upstream of the work area as determined by the project administrator or traffic control officer supervisor.
6. For work durations of less than five minutes, coordinate with traffic control officer to provide resources necessary for pacing traffic. Portable changeable message signs, truck-mounted attenuators, ROAD CLOSED signs, and site specific traffic control plans are not required for such operations. Use traffic pacing distance values from the five minute column of the table on Sheet 3.

TRAFFIC CONTROL PLANS OR TECHNICAL SPECIFICATION

1. The specific activities and locations, along with allowable times of day and days of the week, when pacing will be allowed should be clearly detailed in the traffic control plans or technical specification. If there are specific holiday or special event dates that, due to anticipated traffic congestion, pacing operations should not be allowed, these dates should also be spelled out in plans or specifications. When detailing the specific activities and locations of pacing activities, identify the minimum number of traffic control officers needed for each function and location of the pacing operation. If there are certain work activities that need to be completed prior to the contractor starting the work anticipated during the pacing operation, the activities should be clearly detailed in the plans or technical specification.
2. When developing a pacing plan, failsafe "stop points" should be identified for those work operations in which a construction problem could create a condition that could not be immediately cleared. A failsafe stop point is the last safe egress from the highway facility prior to traffic coming upon the work that is being completed during the operation. In the unlikely event that the work is not completed during the time estimated for the pacing, the plans or specification should direct the pacing to not proceed past the failsafe stop point until the highway is cleared. In the event of major construction problem that cannot be immediately cleared, traffic can then be diverted off the facility.
3. The traffic control plans or technical specification should require the contractor to submit a pacing plan in advance of the operation. The pacing plan should outline the contractors expected equipment and personnel, outline the operation, and include a contingency plan should any of the contractor's critical equipment break down. If the project includes a damage recovery clause, the traffic control plan or technical specification should be clear that the damage recovery applies to the pacing operation as well.
4. Changeable message signs shall be displayed one week prior to work using messages described in the traffic pacing plan. The number and location of changeable message signs shall be called out in the traffic control plans.

LAST REVISION 11/01/18	REVISION	DESCRIPTION:		FY 2019-20 STANDARD PLANS	TRAFFIC PACING	INDEX 102-655	SHEET 1 of 3
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New

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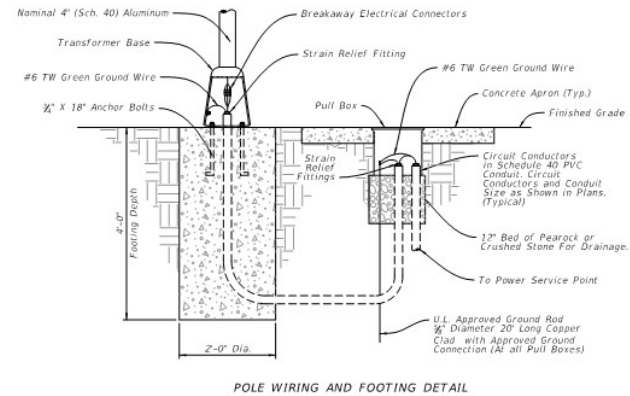
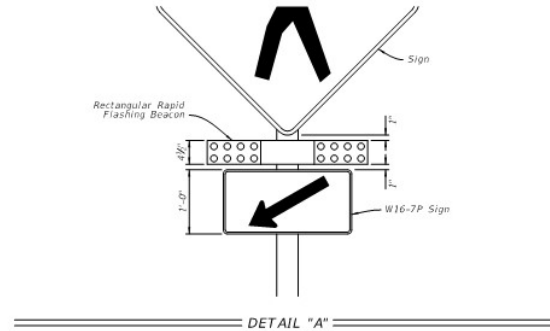
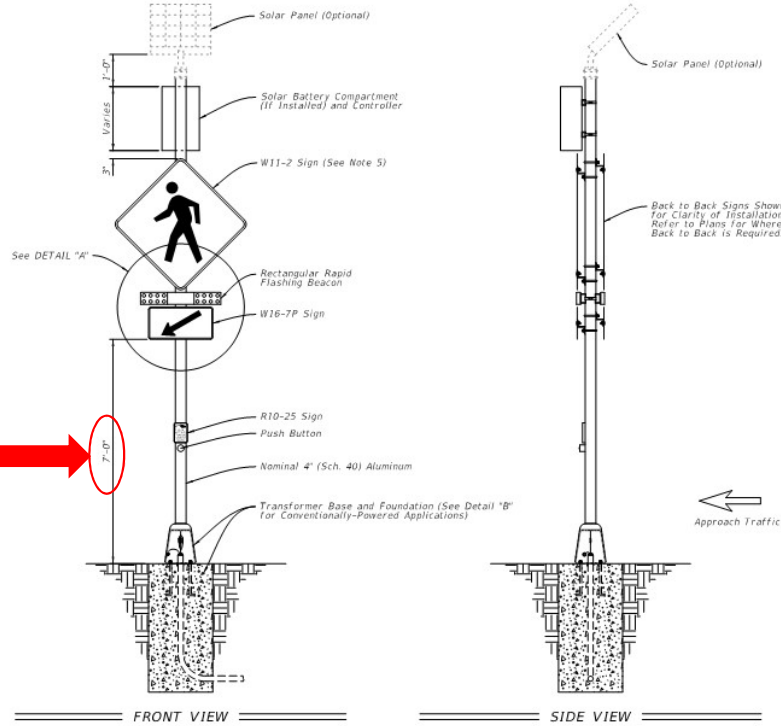
Standard Plans – Primary Updates

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1) *Temporary Traffic Control Indexes*
 - 2) *Signal, Signing & Pavement Marking Indexes***
 - a) Index 654-001 – Rectangular Rapid Flashing Beacon Assembly*
 - b) Index 700-102 – Special Sign Details*
 - c) Index 700-103 – Tourist Oriented Directional Signs*
 - d) Index 700-109 – Traffic Controls for Street Terminations*
 - e) Index 700-120 – Enhanced Highway Signing Assemblies*
 - f) Index 706-001 – Typical Placement of Raised Pavement Markers*
 - g) Index 711-001 – Pavement Markings*
 - 3) *Lighting Indexes***

New!

NOTES:

1. A transformer base is required for both conventionally-powered and solar-powered applications (conventional power shown).
2. Install the RRFB in pairs, one on either side of approach traffic.
3. Install controller on the backside of post from approach traffic.
4. Install a 30" X 30" W11-2 sign on two-lane roadways and a 36" X 36" W11-2 sign for multilane roadways.
5. Install push button and R10-25 sign in accordance with Index 665-001.
6. Engage all threads on the transformer base and post unless the aluminum post is fully seated into base.
7. Meet the requirements of Specifications 646 for aluminum poles and transformer bases.
8. Install a concrete slab around all pull boxes. The minimum slab dimension is 4'-0" by 4'-0". In urban areas where space is limited slab dimensions may be adjusted as shown in the Plans.
9. For assemblies connected to conventional power, provide single pole non-fused watertight breakaway electrical connectors in the fragibile transformer base.
10. When wire entry holes are drilled in the sign column, use a bushing or rubber grommet to protect conductors.
11. For solar-powered applications, orient solar panel to face South for optimal exposure to sunlight.



LAST REVISION 11/01/18	DESCRIPTION: REVISION	FY 2019-20 STANDARD PLANS	RECTANGULAR RAPID FLASHING BEACON ASSEMBLY	INDEX 654-001	SHEET 1 of 1
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<p>FTP-25-06 9" x 11"-0" 2" Radii 3/8" Border 1" Series D Legend White Background Black Legend and Border</p>	<p>FTP-26-06 1' x 1' 2" Radii 3/8" Border 1" Series D Legend White Background Black Legend and Border</p>	<p>FTP-29-06 2'-0" x 1'-0" 2" Radii 3/8" Border 4" Series C Legend Yellow Background Black Legend and Border</p>	<p>FTP-30-06 2'-0" x 3'-0" 3" Radii 3/8" Border White Background Black Legend and Border</p>
<p>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</p>	<p>FTP-31-06 8' x 4' 6" Radii 3/8" Border Series D Legend Fluorescent Yellow-Green Background Top White Background Bottom Black Legend and Border</p>	<p>FTP-32-06 8' x 4' 6" Radii 3/8" Border 12" Series E and 8" Series D Legend White Background Black Legend and Border</p>	<p>FTP-33-06 2'-4" x 2'-6" 2" Radii 3/8" Border 5" Series C Legend Fluorescent Yellow-Green Background Black Legend and Border</p>
<p>FTP-34-06 2' x 2'-6" 3" Radii 3/8" Border 4" Series D and E Legend White Background Black Legend and Border</p>	<p>FTP-35-06 2' x 3' 3" Radii 3/8" Border Top 4" Series D Legend Bottom 4" and 10" Series E Legend Fluorescent Yellow-Green Background Top White Background Bottom Black Legend and Border</p>	<p>FTP-36-06 2' x 2' 5" Radii 4" Series D Legend Green Background White Legend and Border</p>	<p>FTP-37-06 9'-6" x 6' 9" Radii 2" Border 8" Series E Legend White Background Black Legend and Border</p> <p>State Line Sign</p>
<p>LAST REVISION 11/01/17</p>	<p>DESCRIPTION:</p>	<p>FY 2018-19 STANDARD PLANS</p>	<p>SPECIAL SIGN DETAILS</p>
			<p>INDEX 700-102</p>
			<p>SHEET 5 of 11</p>

<p>FTP-83-08 10'-0" X 5'-0" 8" Radii</p> <p>10" Series E Legend Green Background White Legend</p>	<p>FTP-84-09 3' X 3' 1.5" Radii</p> <p>5" Series D Legend Yellow Background Black Legend</p>	<p>FTP-85-13 3' X 2'-6" 1.875" Radii 1/2" Border</p> <p>3.5" Series C Legend White Background Black Legend and Border</p>	<p>MOT-1-06 4' X 4' 2" Radii 1/2" Border</p> <p>6" Series C Legend Orange Background Black Legend and Border</p>
<p>MOT-2-06 4' X 4' 2" Radii 1/2" Border</p> <p>Orange Background Black Arrows and Border</p>	<p>MOT-3-06 4' X 4' 2" Radii 1/2" Border</p> <p>Orange Background Black Arrows and Border</p>	<p>MOT-4-06 4' X 4' 2" Radii 1/2" Border</p> <p>6" Series C Legend Orange Background Black Legend and Border</p>	<p>MOT-5-06 4' X 4' 2" Radii 1/2" Border</p> <p>6" Series C Legend Orange Background Black Legend and Border</p>
<p>MOT-6-06 5' X 5' 2" Radii 1/2" Border</p> <p>6" Series D Legend Orange Background Black Legend and Border</p>	<p>MOT-7-06 5' X 5' 2" Radii 1/2" Border</p> <p>6" Series D Legend Orange Background Black Legend and Border</p>	<p>MOT-8-06 5' X 5' 2" Radii 1/2" Border</p> <p>6" Series D Legend Orange Background Black Legend and Border</p>	<p>MOT-9-06 5' X 5' 2" Radii 1/2" Border</p> <p>6" Series D Legend Orange Background Black Legend and Border</p>
<p>LAST REVISION: 11/01/17</p> <p>DESCRIPTION:</p>	<p>FDOT</p> <p>FY 2018-19 STANDARD PLANS</p>	<p>SPECIAL SIGN DETAILS</p>	<p>INDEX: 700-102</p> <p>SHEET: 10 of 11</p>

Sheet 1 of 1

Deleted Index and moved the details into FDM 230.2.10.

SIGN EXAMPLES

TREASURE COAST
SUNSHINE'S GIFT SHOPPE

TOURIST ACTIVITIES

↑ CHATTAHOOCHEE CANDY STORE
5 ← PETTIS FARMS BED & BREAKFAST
← (LOAD HERE) COUNTRY KURBO SHOP
← THOMAS TUBE RENTAL 25 →

NOTES:

- Signs must comply with Rule 14-51, Florida Administrative Code.
- Use 6" Type C lettering.
- See index 700-010 for Single Column Ground Sign for foundation and connection details.
- See Index 700-020 for Multi-Column Ground Sign for foundation and connection details.
- See Index 102-600, Work Zone Sign Supports, for Temporary 3-Post Sign Support assembly and foundation details. 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)						
Total Area (SF)	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
6-10	OK	OK	N/A	N/A	N/A	N/A
16-20	N/A	OK	N/A	N/A	N/A	N/A
14-16	N/A	N/A	OK	OK	OK	OK
22-24	N/A	N/A	OK	OK	N/A	OK *
30-32	N/A	N/A	N/A	OK	N/A	N/A
38	N/A	N/A	N/A	OK	N/A	N/A

* Limited to 22 SF Total Sign Area.

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Sheet 1 of 1

In addition to the highlighted changes to right, revised some sign locations.

~~CASE I Type I 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 the rod 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. Two-way and one-way arrow reflectors are optional and shall be used on a review each location.~~
3. For additional details on aluminum round post, sign panel material and bolts, nuts and washers see Index 700-010.
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 711-001.
- ~~7. Wind beam details required unless otherwise noted. Wind beams require their use.~~

Revised Wind Beam Details

Reflective Buttons Shall Have A 3" Minimum Diameter

.080" Aluminum Sign Panel

Zee Bracket Wind Beam

~~Object markers shall be installed on 2" x 1/2" Aluminum Round Post, 1/2" x 1/2" Aluminum Hex Head Bolt with Nut and Lockwasher or 1/2" Stainless Steel Hex Head Bolt with Flat Washer, 1/2" Hex Head and Lockwasher under Nut. Post foundation shall be installed in accordance with Index 700-010.~~

LAST REVISION	DESCRIPTION:	FDOT	FY 2018-19	STANDARD PLANS	TRAFFIC CONTROLS FOR STREET TERMINATIONS	INDEX	SHEET
11/01/17						700-109	1 of 1

Sheet 1 of 1

There are Index-wide changes. The primary revisions are the following:

- **Changed title to “Enhanced Highway Signing Assemblies”**
- **The removal of RRFBs to separate Index 654-001**
- **An alpha-numerical system for easy identification**
- **The addition of highlighted signs**
- **The use of pedestals for all roadside signs**

POWER CONFIGURATION 'A' CONVENTIONALLY-POWERED (Type A1 Shown)

POWER CONFIGURATION 'B' SOLAR-POWERED (Type B1 Shown) WITHOUT AUXILIARY POLE

POWER CONFIGURATION 'B' SOLAR-POWERED (Type B1 Shown) WITH AUXILIARY POLE

GENERAL NOTES:

1. Install sign assemblies based on Alpha-Numerical Type designation shown in the Plans (e.g., Type A1). Assembly Type is based on Power Configuration 'Alpha' Identification shown above and Numerical Identification shown on Sheet 3 thru 8.
2. Install sign panel and wind beam in accordance with Index 700-010 and Specification 700.
3. Engage all threads on the transformer base and post unless the aluminum post is fully seated into base.
4. Meet the requirements of Specification 646 for aluminum poles and transformer bases.
5. Install a concrete slab around all flashing beacon assemblies on slopes 6:1 or greater. The minimum slab dimension is 4'-0" by 5'-0".
6. When wire entry holes are drilled in the sign column, use a bushing or rubber grammet to protect conductors.

POWER CONFIGURATION 'B' NOTES:

1. Install a separate pole for mounting the solar panel, controller and batteries for all flashing beacon assemblies with solar panels, controllers and batteries weighing more than 170 lbs.
2. Install the auxiliary pole as close to the right of way boundary as possible.
3. Install the auxiliary pole so that the height is the same as the column for the beacon assembly.
4. Orient solar panel to face South for optimal exposure to sunlight.
5. The controller and the solar batteries may be located in the same compartment.

TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Conduit, Wiring, and Foundation Details
3	Roadside Sign Assembly-1
4	Roadside Sign Assembly-2
5	Roadside Sign Assembly-3
6	Roadside Sign Assembly-4
7	Roadside Sign Assembly-5
8	Roadside Sign Assembly-6
9	Overhead Sign Assembly

LAST REVISION 11/01/18

REVISION DESCRIPTION:

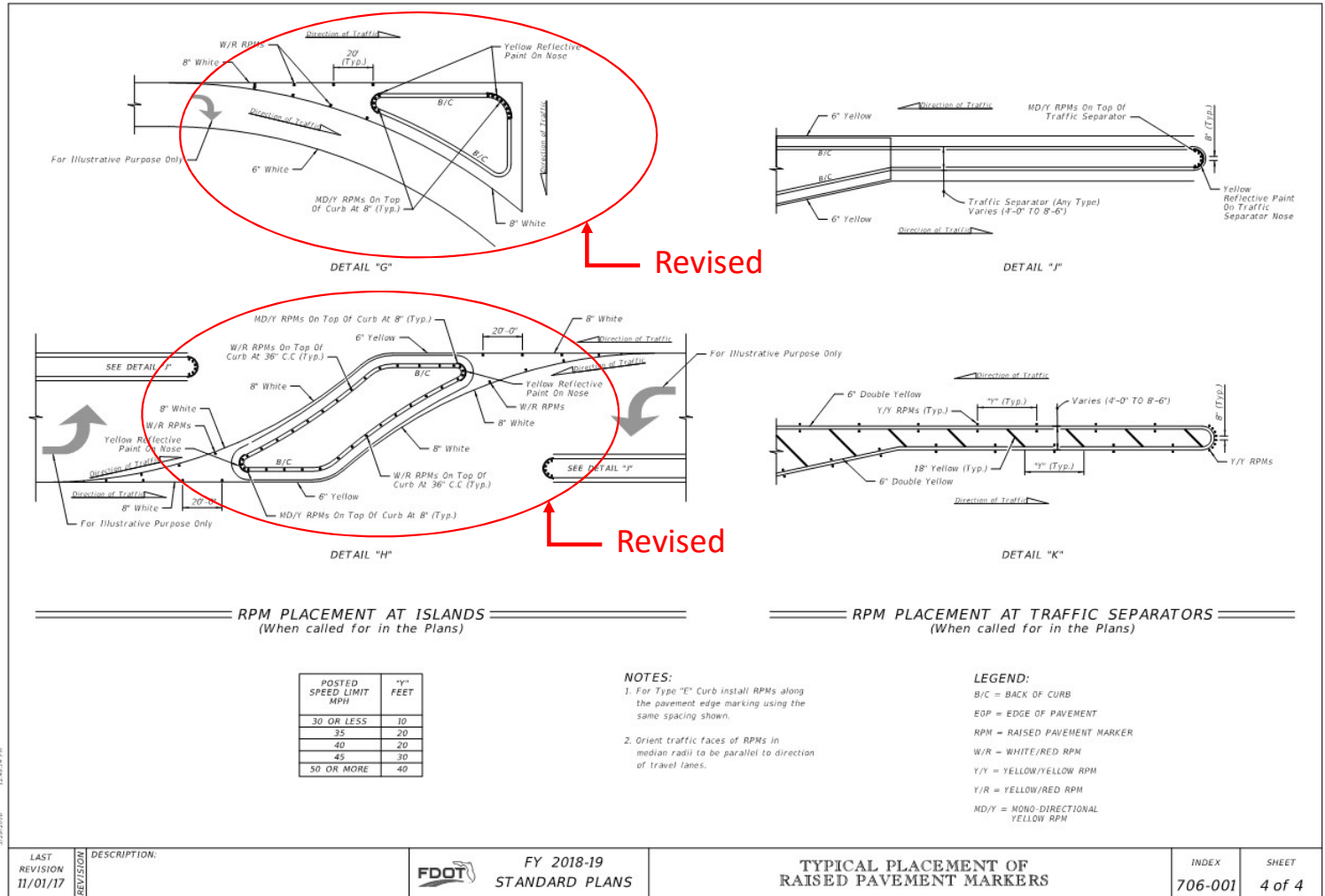
FDOT FY 2019-20 STANDARD PLANS

ENHANCED HIGHWAY SIGNING ASSEMBLIES

INDEX 700-120 SHEET 1 of 9

Sheet 4 of 6

Revised RPM and Reflective Yellow Paint placement.

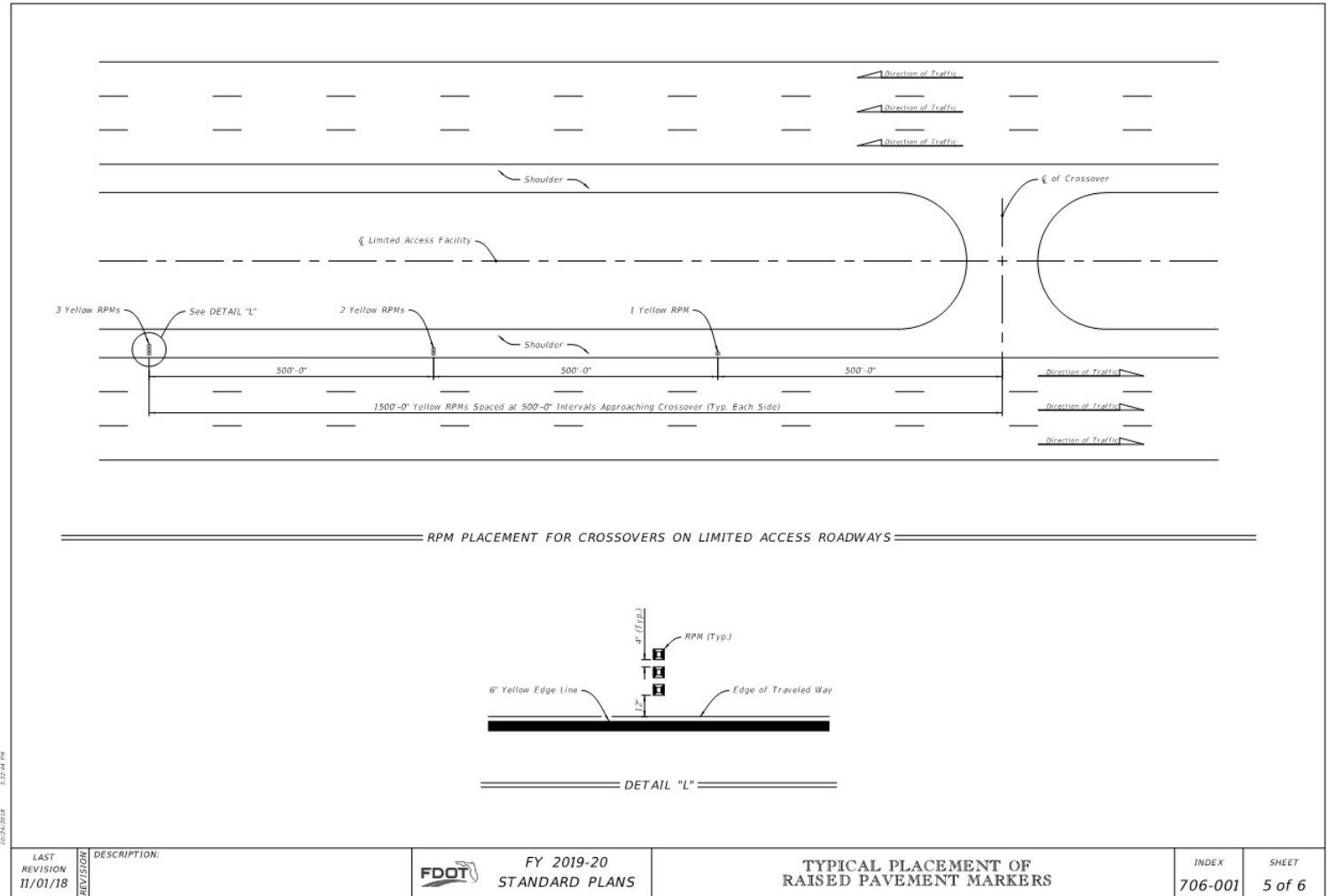


LAST REVISION	DESCRIPTION:
11/01/17	

REVISION

New!

Added sheet showing the placement of RPMs at Limited Access crossovers. This information was previously in FDM 211.3.2.



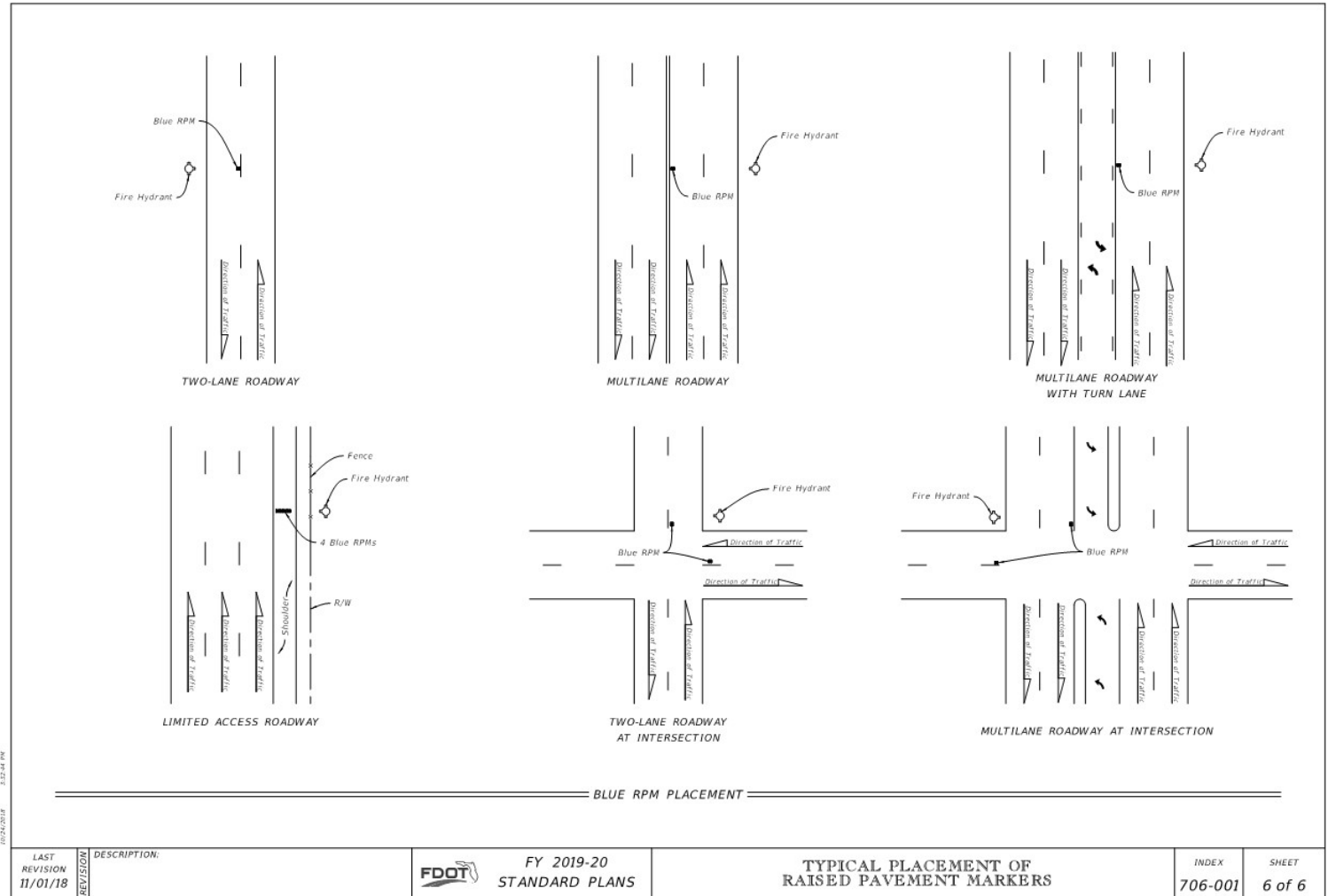
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LAST REVISION 11/01/18	REVISION	DESCRIPTION:	 FY 2019-20 STANDARD PLANS	TYPICAL PLACEMENT OF RAISED PAVEMENT MARKERS	INDEX 706-001	SHEET 5 of 6
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Sheet 6 of 6

New!

Added sheet showing the placement of blue RPMs. This information is currently in TEM Section 4.3.



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LAST REVISION 11/01/18	DESCRIPTION:		FY 2019-20 STANDARD PLANS	TYPICAL PLACEMENT OF RAISED PAVEMENT MARKERS	INDEX	SHEET
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Sheet 1 of 13

Significant changes on Sheet 1 are the following:

- Added standard details for route shields
- Added pavement message spacing table

34 S.F.

23 S.F.

20 S.F.

26 S.F.

13 S.F.

20 S.F.

22 S.F.

20 S.F.

43 S.F.

Route Shield for Limited Access Roadways (Interstate)
Route Shield Shown: U.S. and State Route Shield Similar
128 S.F.

Route Shield for Arterials and Collectors (Interstate)
Route Shield Shown: U.S. and State Route Shield Similar
72 S.F.

Wrong-Way Arrow
24 S.F.

Turn and Through Lane-Use Arrow
29 S.F.

U Turn Lane-Use Arrow
27 S.F.

Through Lane-Use Arrow
12 S.F.

Turn Lane-Use Arrow (Left Turn Shown - Right Turn Similar)
17 S.F.

Roundabout Approach Arrow
19 S.F.

Preferential Lane Symbol
11 S.F.

NOTES FOR PAVEMENT MESSAGES:

- When an arrow and a pavement message are used together, locate the arrow a distance of "5" downstream from the pavement message. Measure the distance from the base of the arrow to the base of the pavement message. See the Pavement Message Spacing Table for "S" value.
- Place all pavement messages 25' back from the stop line.
- Dimensions are within 1" ±.
- All grids are 4' x 4'.
- All pavement messages must be white except route shields.
- Increase width of route shield for routes with three digits.

PAVEMENT MESSAGE AND ARROW DETAILS

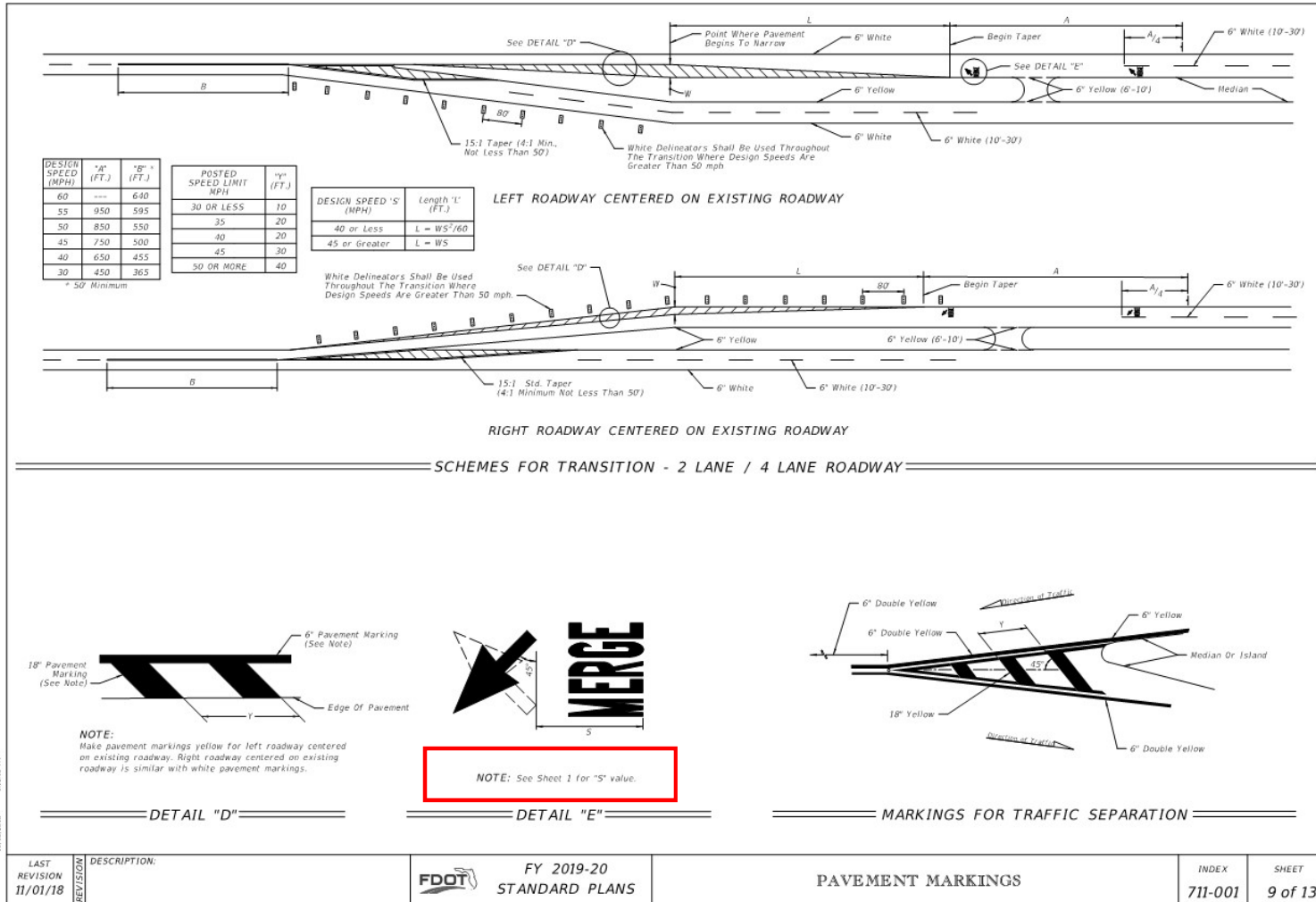
GENERAL NOTE:

- See Index 509-070 for pavement markings at railroad crossings.

PAVEMENT MESSAGE SPACING TABLE	
Posted Speed (mph)	Distance "S" (feet)
≤ 25	40
30 - 35	56
40 - 45	72
≥ 50	88

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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">LAST REVISION</th> <th style="text-align: left;">DESCRIPTION:</th> </tr> <tr> <td>11/01/18</td> <td></td> </tr> </table>	LAST REVISION	DESCRIPTION:	11/01/18		<p>FY 2019-20 STANDARD PLANS</p>	<p>PAVEMENT MARKINGS</p>	<p>INDEX 711-001</p>	<p>SHEET 1 of 13</p>
LAST REVISION	DESCRIPTION:							
11/01/18								



LAST REVISION
11/01/18

DESCRIPTION:



FY 2019-20
STANDARD PLANS

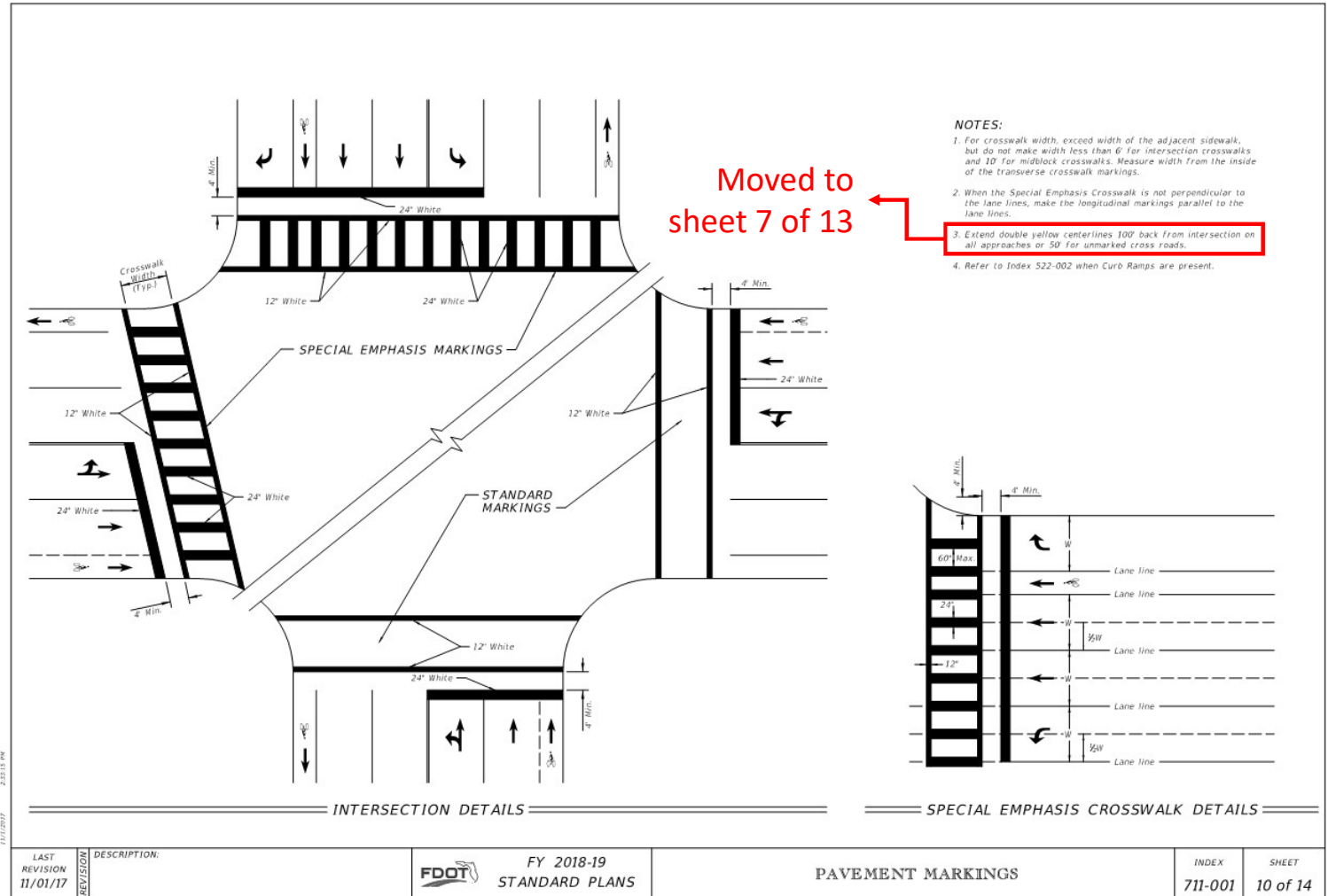
PAVEMENT MARKINGS

INDEX
711-001

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Sheet 10 of 13

Revised sheet to show only basic crosswalk pavement marking details.



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<table border="1"> <tr> <th>LAST REVISION</th> <th>DESCRIPTION</th> </tr> <tr> <td>11/01/17</td> <td></td> </tr> </table>	LAST REVISION	DESCRIPTION	11/01/17		<table border="1"> <tr> <td>FY 2018-19</td> <td>STANDARD PLANS</td> </tr> </table>	FY 2018-19	STANDARD PLANS	<table border="1"> <tr> <td>PAVEMENT MARKINGS</td> </tr> </table>	PAVEMENT MARKINGS	<table border="1"> <tr> <td>INDEX</td> <td>SHEET</td> </tr> <tr> <td>711-001</td> <td>10 of 14</td> </tr> </table>	INDEX	SHEET	711-001	10 of 14
LAST REVISION	DESCRIPTION													
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FY 2018-19	STANDARD PLANS													
PAVEMENT MARKINGS														
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SINGLE LEFT TURNS

** Queue Length L_q 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

Through Lane Becomes Optional Left Turn

TURN LANE MARKINGS

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

ARROW SPACING

1 Arrow: Less Than 100'

2 Arrows: Varies 100' To 150'

3 Arrows: Varies 150' To 200'

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

NOTES:

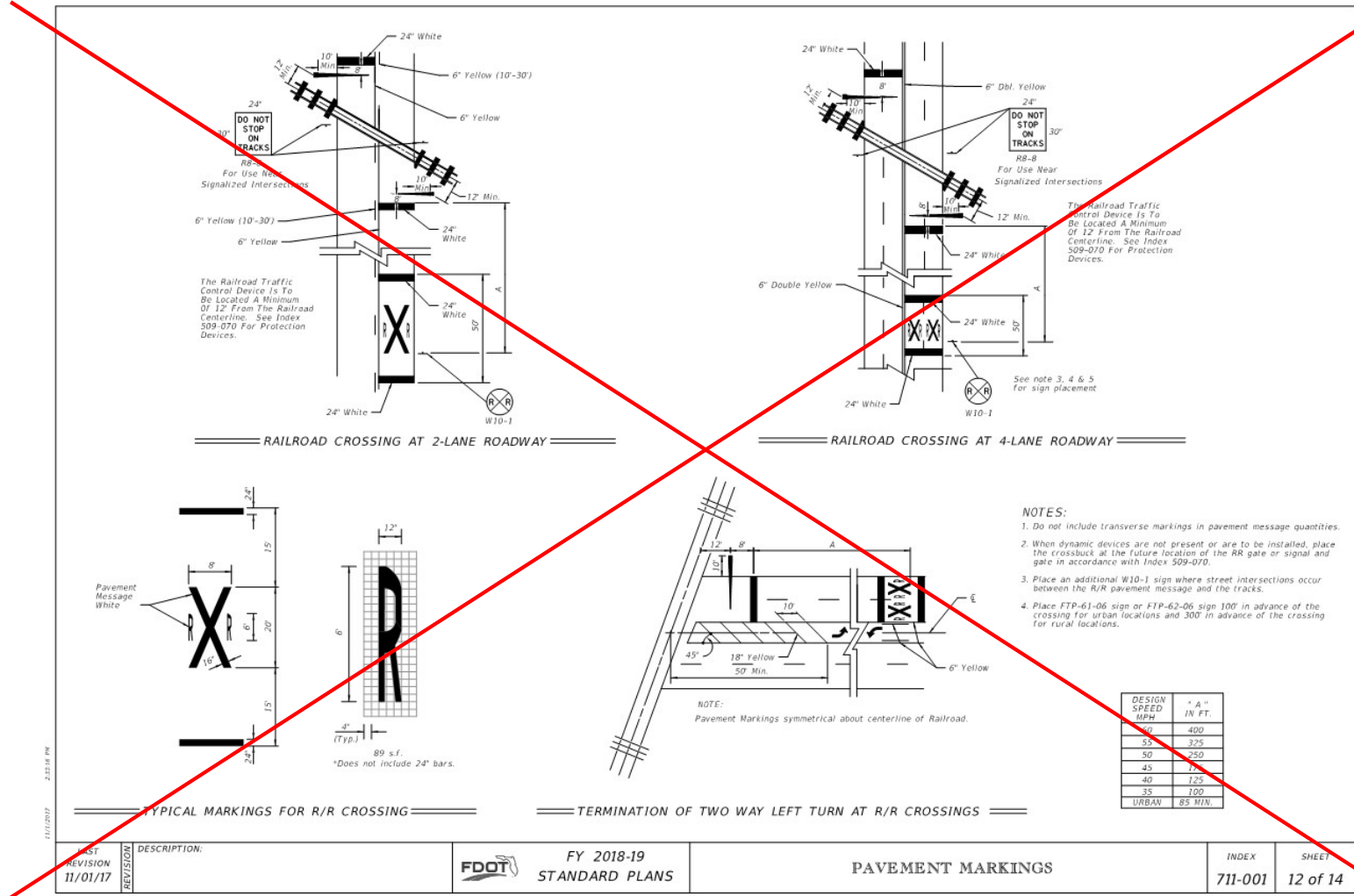
- This Index also applies to right turn lanes.
- Make pavement marking yellow for left-turn lanes and white for right-turn lanes.
- See Sheet 1 for "S" value.

REVISED 11/01/18

LAST REVISION 11/01/18	DESCRIPTION:	FY 2019-20 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 11 of 13
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Old Sheet 12 of 14

This sheet has been deleted.
See Index 509-070 for
pavement markings at at-
grade railroad crossings.



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<table border="1"> <tr> <th>REVISION</th> <th>DESCRIPTION</th> </tr> <tr> <td>11/01/17</td> <td></td> </tr> </table>	REVISION	DESCRIPTION	11/01/17		<table border="1"> <tr> <td> </td> <td> FY 2018-19 STANDARD PLANS </td> <td> PAVEMENT MARKINGS </td> <td> INDEX 711-001 </td> <td> SHEET 12 of 14 </td> </tr> </table>		FY 2018-19 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 12 of 14
REVISION	DESCRIPTION									
11/01/17										
	FY 2018-19 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 12 of 14						

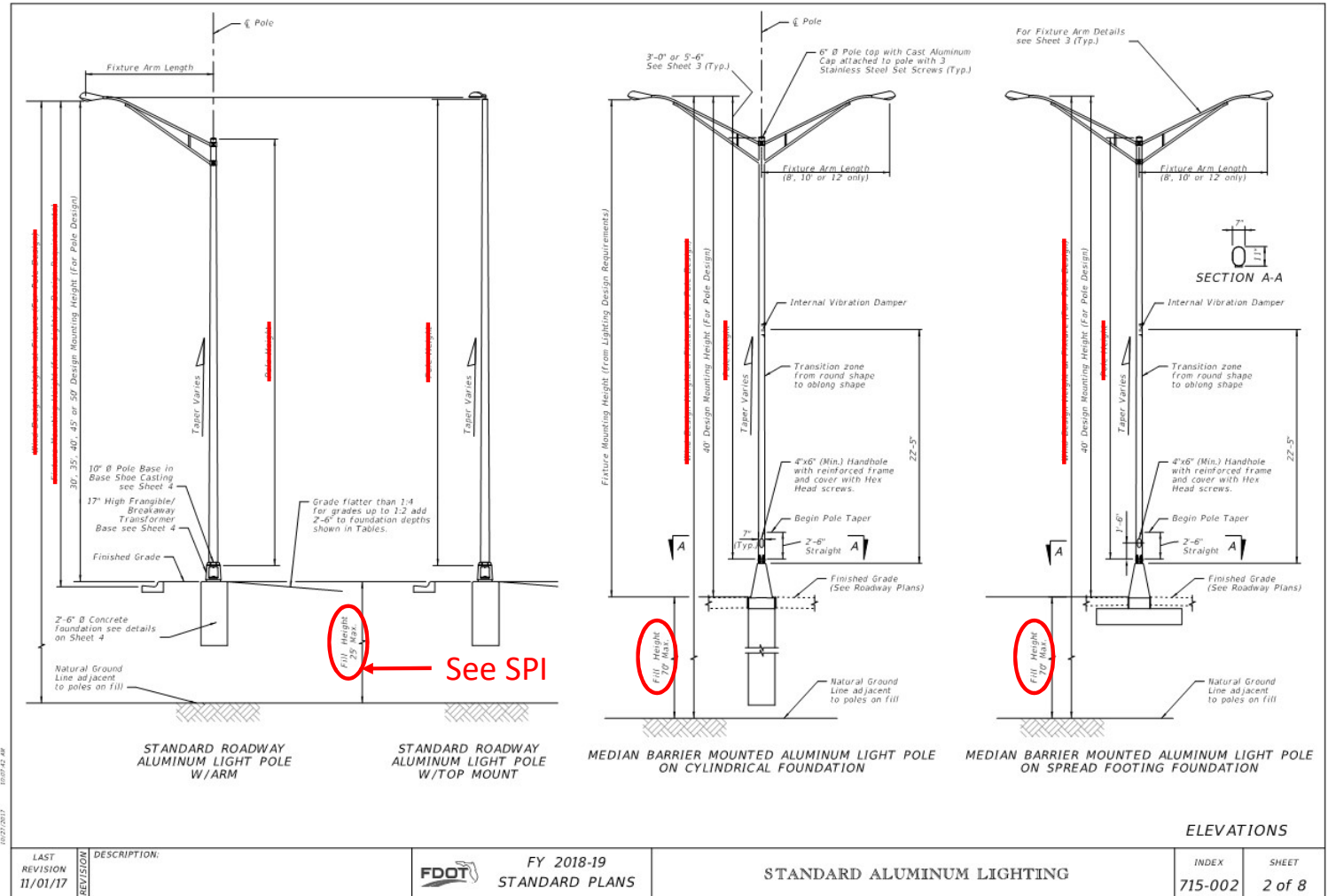
Standard Plans – Primary Updates

- ✓ 1) *Temporary Traffic Control Indexes*
- ✓ 2) *Signal, Signing & Pavement Marking Indexes*
- 3) *Lighting Indexes*
 - a) *Index 715-002 – Standard Aluminum Lighting*

Sheet 2 of 8

There are many revisions to this Index, but the changes are mostly formatting and for clarity.

Note: The values of tables that have changed or disappeared have been reworked, when possible, into the details to which the tables applied (see sheets 3-5 of 8).



Sheet 4 of 8

Pole wall thicknesses have been revised!

SECTION C-C
Pole & Arm
1-0" Lap
Tie Bars
8 - #7 Bars Equally Spaced
3" Cover (Typ.)

VIEW B-B
Pole & Arm
45° Typ.
2'-6" Ø
Typical Embedment - 36"
1'-3" Ø Bolt Circle
4 - Equally Spaced Anchor Bolts Oriented as Shown when the Shaft is Installed.

FOUNDATION
Foundation Depth (See Foundation Note 1)
7'-0" (Pole P1 and P3)
8'-0" (Pole P2)
1" Chamfer
Conduit with Elbow 1" Min. (Typ.)
Double Nuts (Typ.)
Tie Bars (See Foundation Note 2)
#6 AWG Bare Ground Wire Cast in Concrete or Placed in Conduit
8-#7 Bars Equally Spaced
Class I Concrete may be Cast-in-Place or Precast With "Flowable Fill" Backfill
Minimum Embedment 3'-6"

FOUNDATION NOTES:
1. Depths shown are for slopes flatter than 1:4, for slopes 1:2 or flatter, add 2'-6" to foundation depths shown.
2. Foundation Tie Bars: #4 Tie Bars @ 12" centers (max.) or D10 (or W10) spiral @ 6" pitch, 3 flat turns top and 1 flat turn bottom.

TOP MOUNT TENON
2 3/8" Ø
1/4" H

TOP VIEW TRANSFORMER BASE
Slots for Cast Aluminum Base Shoe 13 1/2" Bolt Circle

BOTTOM VIEW TRANSFORMER BASE
Slots for 15" Bolt Circle

POLE BASE ELEVATION
Fillet Weld Outside of Pole to Top of Base Shoe (See Pole Table)
10" Pole Base O.D.
Pole Wall Thickness: (See Pole Table)
Cast Aluminum Pressure Mounted Nut Cover - Bolted Attachment Optional
3/16" Min.
Cast Aluminum Base Shoe (See General Notes on Sheet 1)
Shoe Base Bolt with Nut and Washer
Fillet Weld Butt of Pole to Inside of Base Shoe (See Pole Table)
1'-5"
Cast Aluminum Frangible/Breakaway Transformer Base. See General Notes on Sheet 1.
Anchor Bolt and Washer as Required by Approved Breakaway Transformer Base Manufacture (Typ.)
DANGER HIGH VOLTAGE DO NOT TOUCH

ARM-POLE TABLE					
FOR STANDARD ALUMINUM LIGHT POLES WITH ARM					
Assembly Height (ft)	Wind Speed and Arm Lengths (ft)				
	120 mph	140 mph	160 mph		
30	8, 10, 12, 15	8, 10, 12	15	8, 10	12, 15
35	A1-P1	A1-P1	A2-P1	A1-P1	A2-P1
40				A1-P2	A2-P2
45	A1-P2	A1-P2	A2-P2	A1-P3	A2-P3
50					

ARM POLE NOTES:
1. See ARM SECTION detail on Sheet 3 for all A1 and A2 Values.
2. See Pole Table for all P1, P2, and P3 values.
3. For Median Barrier Mounted Pole, Use Arm A1.

POLE TABLE			
Pole	Pole Wall Thickness	Top of Base Shoe Weld	Inside of Base Shoe Weld
P1	0.156	3/8"	3/8"
P2	0.250	1/2"	1/2"
P3	0.313	5/8"	5/8"

POLE NOTES:
1. Pole wall thicknesses shown are nominal and must be within the Aluminum Association tolerances.
2. Thicker walls are permitted and tapered walls may be used in accordance with the minimum Aluminum Association thicknesses.

TOP MOUNT POLE TABLE				
FOR STANDARD ALUMINUM LIGHT POLES WITH TOP MOUNT				
Assembly Height (ft)	Wind Speed and Arm Lengths (ft)			
	120 mph	140 mph	160 mph	
30				Pole P1
35	Pole P1	Pole P1		Pole P1
40				Pole P2
45	Pole P2	Pole P2		Pole P2
50				

POLE AND BASE DETAILS FOR ROADWAY ALUMINUM LIGHT POLE

LAST REVISION	DESCRIPTION:
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STANDARD ALUMINUM LIGHTING

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Questions?



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