

# Improving Pedestrian Crossings

“Help me get there from here!”

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850-414-4321 and 850-414-4318

# Definitions

- **316.003 Definitions.—**
- (6) **CROSSWALK--**
  - (a) That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway, measured from the curbs or, in the absence of curbs, from the edges of the traversable roadway.
  - (b) Any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.
- (47) **SIDEWALK—**
  - That portion of a street between the curb line, or the lateral line, of a roadway and the adjacent property lines, intended for use by pedestrians.

# Where are crosswalks?

- At intersections
  - Marked and Unmarked
  - Controlled and Uncontrolled
- Midblock
  - Marked
  - Controlled and Uncontrolled

# Standard Crosswalk Marking

- 12" parallel white lines
- Min. width of 6', typical width is 8'-10'
- Curb ramp must be wholly within crosswalk



# Special Emphasis Marking



Florida  
State  
University  
Tallahassee, FL

Experimental!

Speed Table  
and Automatic  
Detection



# Brick Crosswalks



# Patterned Pavement

- Alternative to brick crosswalks.



# 2008 Legislative and DDE Direction

- Issue – Lack of consistent application on the marking of crosswalks on side streets at both stop controlled and signalized intersections.
- Florida Legislature added option for a stop condition for mid-block crosswalks if signed.
- Belief that marking of crosswalks:
  - Help drivers better identify intersection
  - Guide the pedestrian to the best crossing location
  - Provide guidance for people with low/no vision.

# 2008 DDE Direction

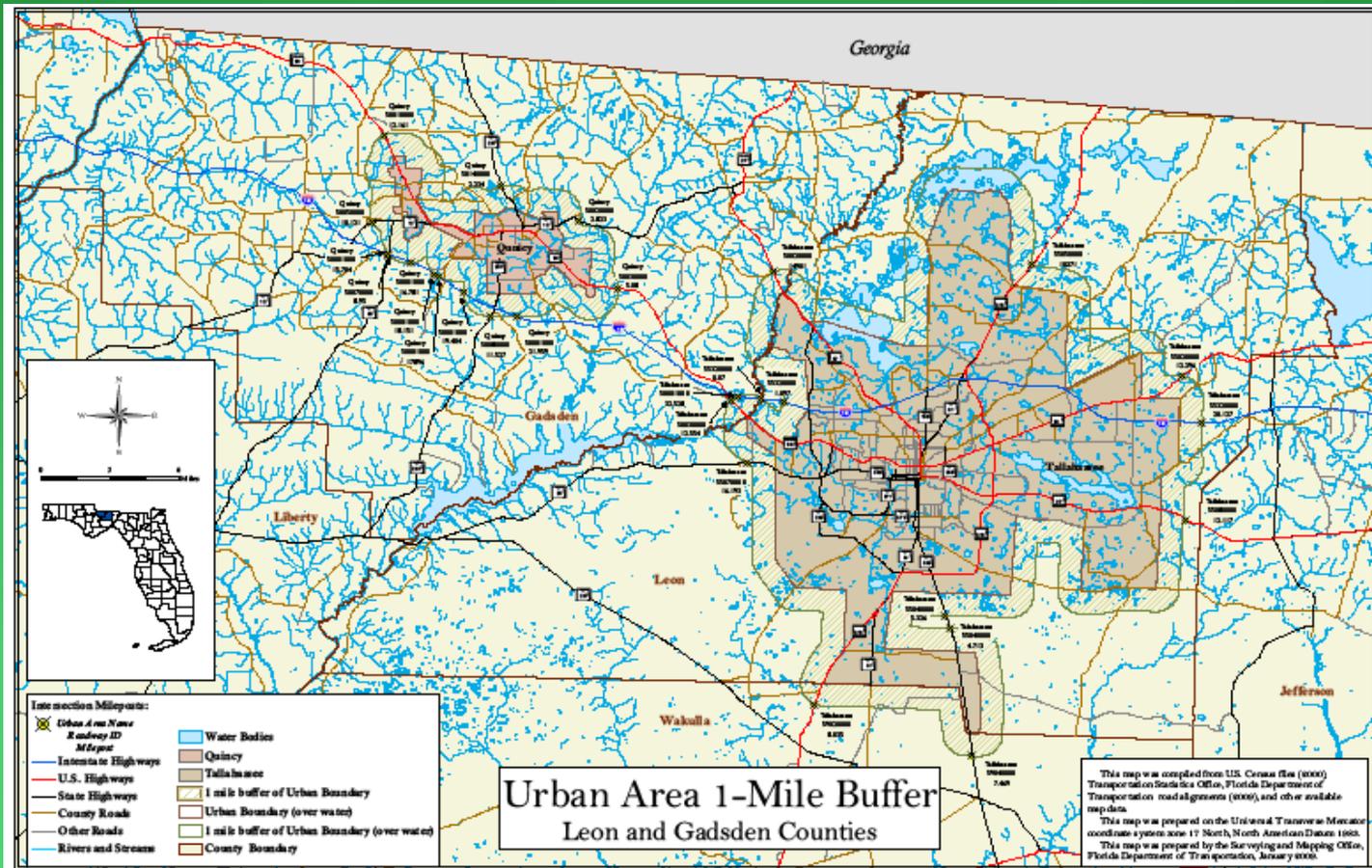


All side street pedestrian crosswalks shall be marked when there is a sidewalk.



# Urban Area Buffer Maps

- Priority maps for bike lanes and sidewalks
- Posted in conjunction with the PPM on Roadway Design's web page
- <http://www.dot.state.fl.us/rddesign/PPMManual/BM/BufferMaps.shtm>



# Sidewalk Location (Section 8.3)

- Sequence of desirability for new sidewalks
  - As near the right of way line as possible
  - Outside of the clear zone
  - 5' from the shoulder point
  - At the shoulder point
- Sidewalks shall not be contiguous to the roadway pavement
- Transition to provide functional crossing locations that meet driver expectation at intersections

# Sidewalk Location



# Sidewalk Location



# Sidewalk Location



# Plans Preparation Manual

## • 8.3.3 Crosswalks

- Occur at all intersections, whether or not marked, and on any portion of a roadway distinctly indicated for pedestrian crossing by lines or other markings on the surface.
- Reasonable accommodation should be made to make crossings both convenient and safe, and minimize the pedestrian's exposure in the roadway.

# Plans Preparation Manual

- **8.3.3 Crosswalks**

- Additional guidance

- *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities*

- *FHWA's Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines*

- [http://safety.fhwa.dot.gov/ped\\_bike/docs/cros.pdf](http://safety.fhwa.dot.gov/ped_bike/docs/cros.pdf)

# Crosswalks (Section 8.3)

◆ *FHWA's Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines*

◆ [http://safety.fhwa.dot.gov/v/ped\\_bike/docs/cros.pdf](http://safety.fhwa.dot.gov/v/ped_bike/docs/cros.pdf)

**Safety Effects of Marked vs Unmarked Crosswalks at Uncontrolled Locations:**  
**Executive Summary and Recommended Guidelines**



U.S. Department of Transportation  
**Federal Highway Administration**  
Research and Development  
Turner-Fairbank Highway Research Center  
6300 Georgetown Pike  
McLean, VA 22101-2296

November, 2000



# False Sense of Security?

- Myth
- Not a replacement for informed action
- Contradicts our other practices
- Challenge to make decisions at a detailed level

# Plans Preparation Manual

- **8.3.3.1 Crosswalks at Intersections**
  - As volume, speed and number of travel lanes increase, marked crosswalks are best used in conjunction with other treatments:
    - Signals, signs, beacons, curb extensions, raised medians, refuge islands and enhanced overhead lighting
  - Supplement marked crosswalks on an uncontrolled leg of an intersection:
    - Where posted speeds are greater than 40 mph
    - 4 or more lanes without a raised median or raised traffic island and an ADT of 12,000 or greater
    - 4 or more lanes with a raised median or raised traffic island and has or is projected to have (within 5 years) an ADT of 15,000 or greater

# Plans Preparation Manual

- **8.3.3.2 Midblock Crosswalks**

- Midblock crosswalks **can** be used to supplement the pedestrian crossing needs in an area between intersections
- Provides pedestrians with a more direct route to their destination
- When used, midblock crosswalks should be illuminated, marked and signed in accordance with the *MUTCD, Traffic Engineering Manual (Section 3.8)* and *Index 17346, Design Standards*

# Plans Preparation Manual

- **8.3.3.2 Midblock Crosswalks (con.)**
  - Should not be located where:
    - spacing between adjacent intersections is < than 660'
    - distance to the nearest intersection (or crossing location) is < than 300'
    - Where ADA cross slope and grade criteria cannot be met
  - Shall not be provided where:
    - crossing distance exceeds 60' (unless a raised median or crossing island is provided)
    - sight distance for the pedestrian and motorist is inadequate
  - An engineering study is required.

# Cherokee, NC



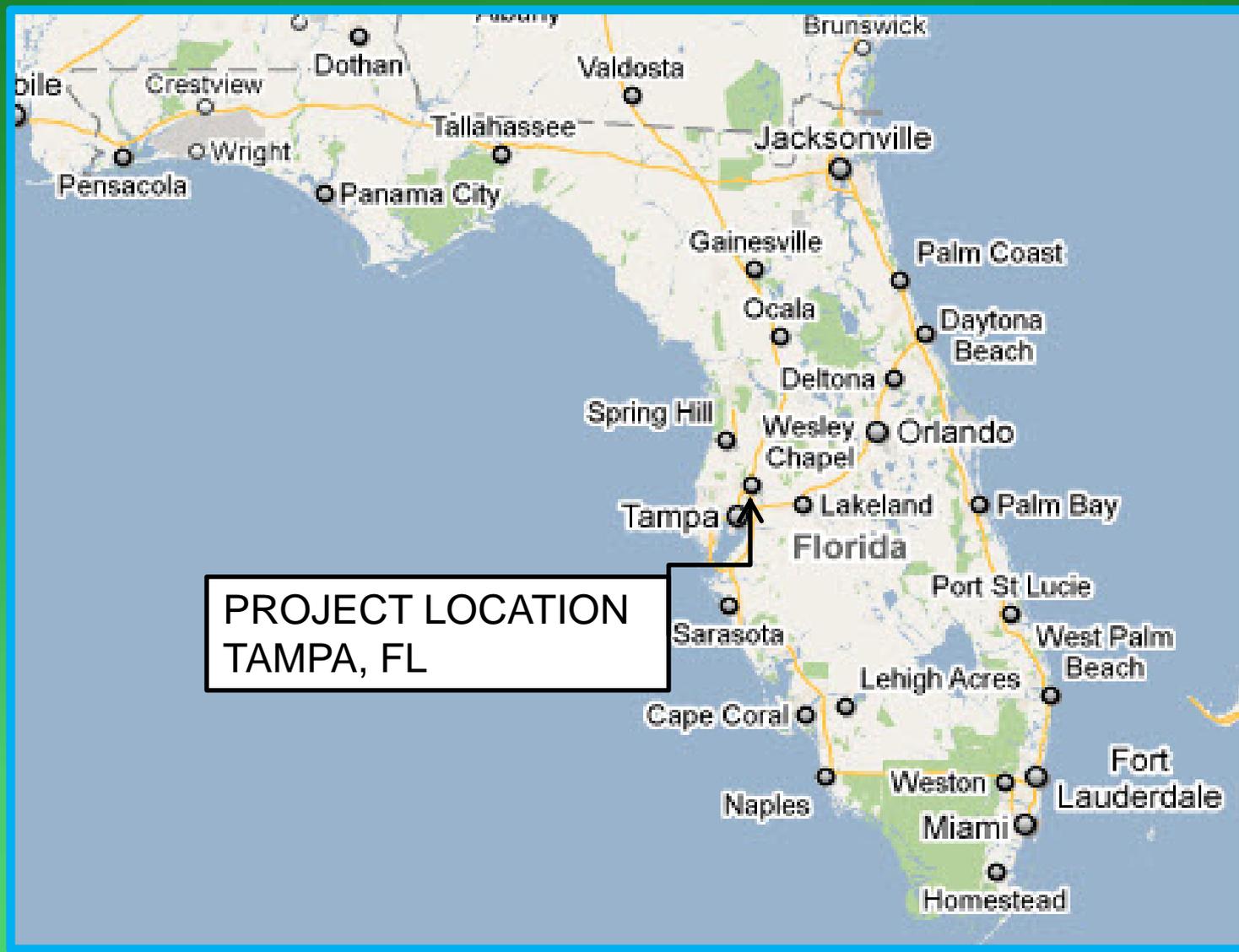
# Cherokee, NC



# Cherokee, NC



# Nebraska Ave Road Diet



# Before Conditions: 4 Lanes



# After Conditions: 2 Lane Divided



# After Condition: Signal Upgrades



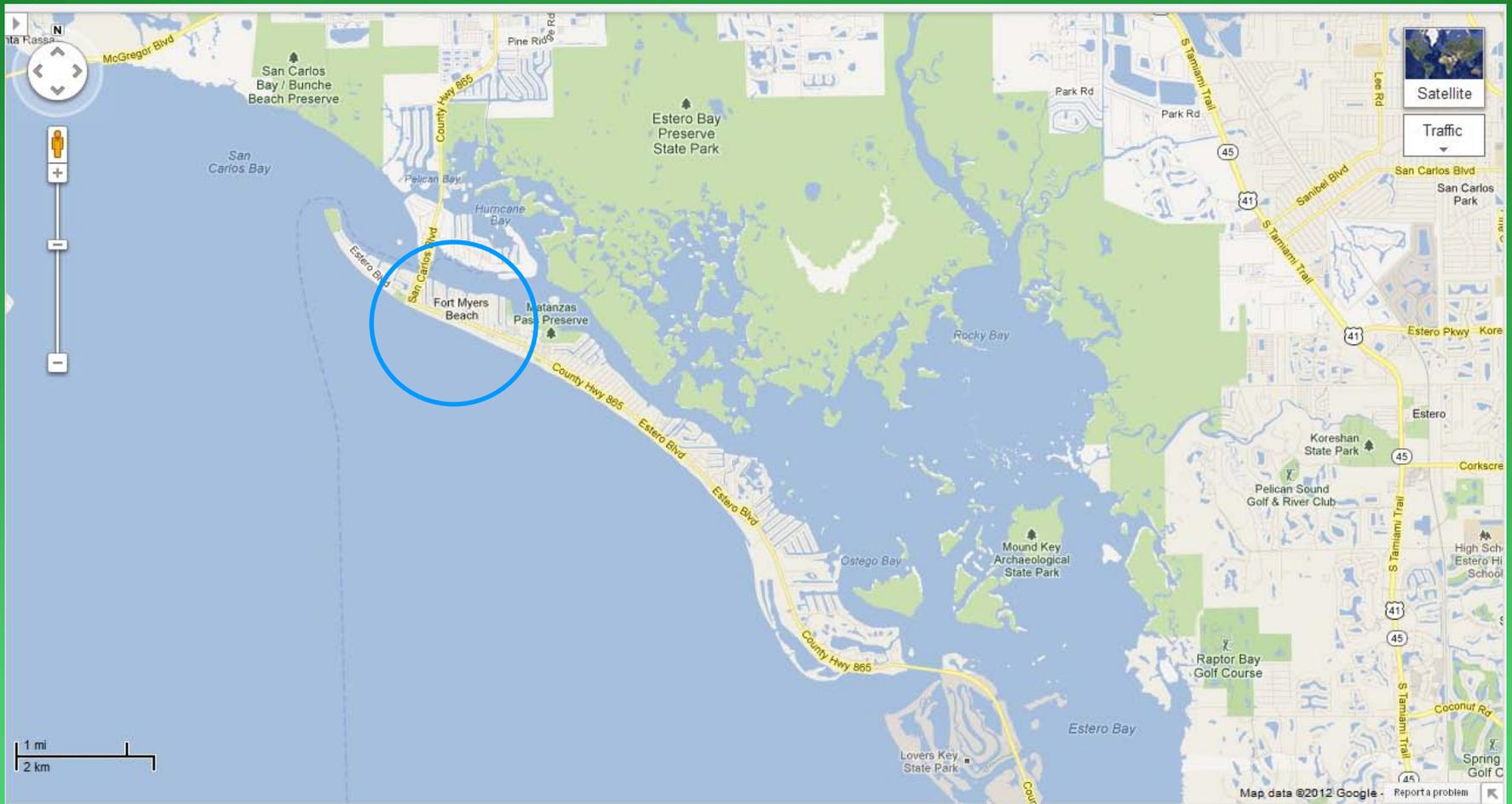
# After Condition: Midblock Crosswalk



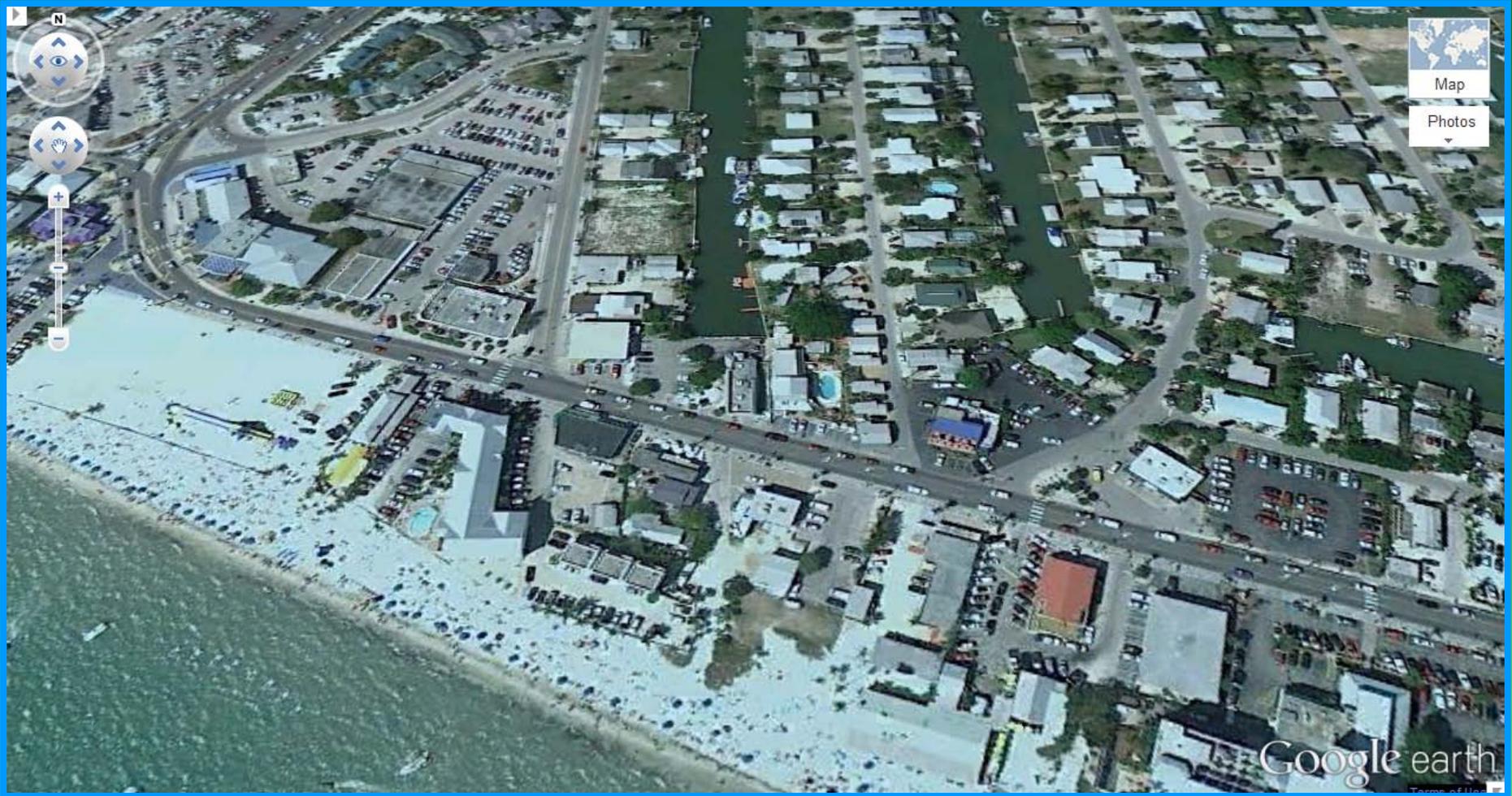
# Crash Reductions (Per year)

- Pedestrian crashes reduced from 7 to 2.5 crashes
- Bicycle crashes reduced from 5.0 to 1.7
- Sideswipe crash rate reduced from 0.76 to .15 crashes per MVMT
- Rear end crash rate has reduced from 1.18 to .82 crashes per MVMT
- Sidewalks, crosswalks, bicycle lanes, bus bays and a two way left turn lane were included in project.

# Fort Myers Beach



# Estero Drive

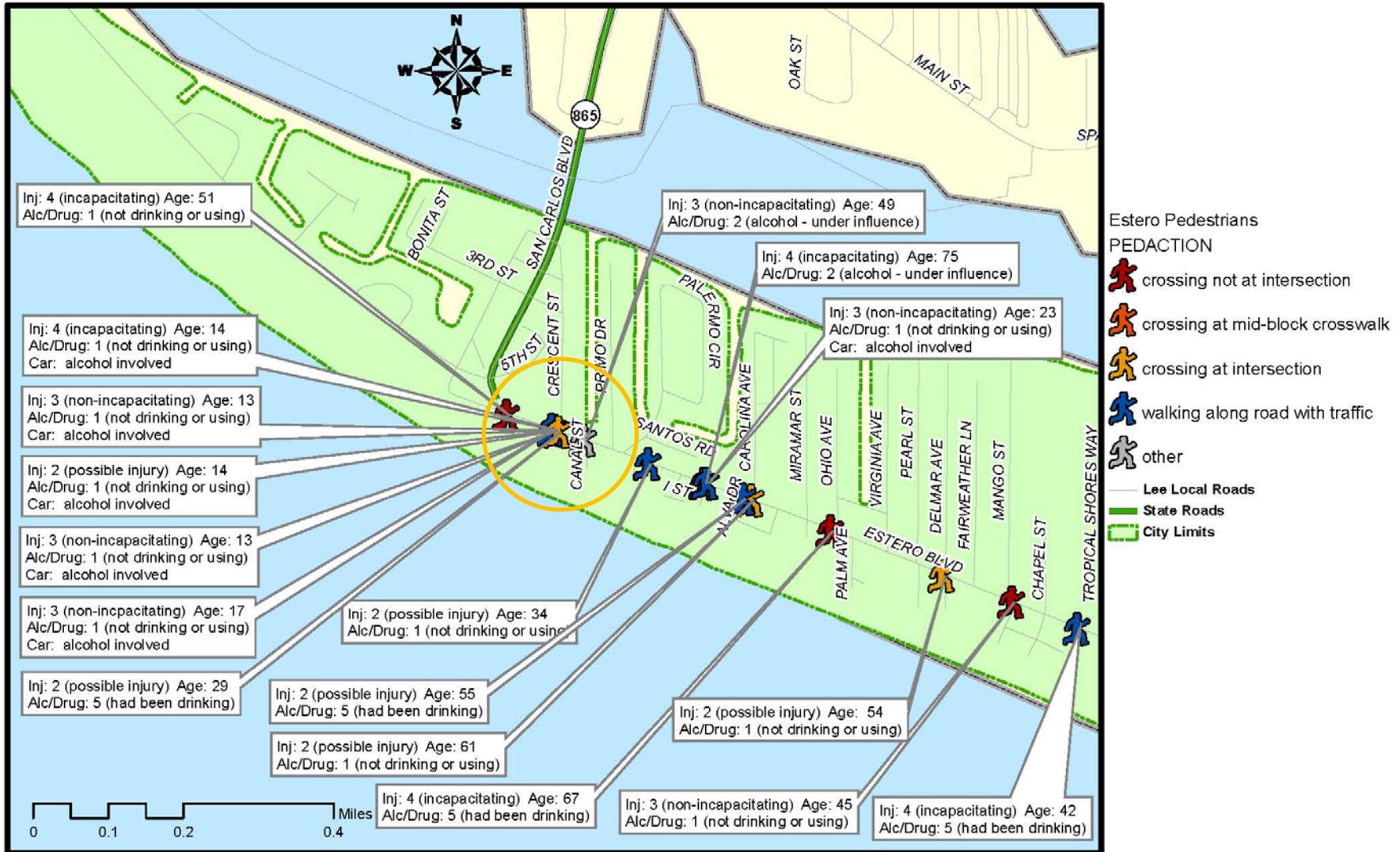


# Estero Drive

- Pavement Markings
- Raised Medians
- Pork Chop Island
- Signage
- Beacons
- Lighting

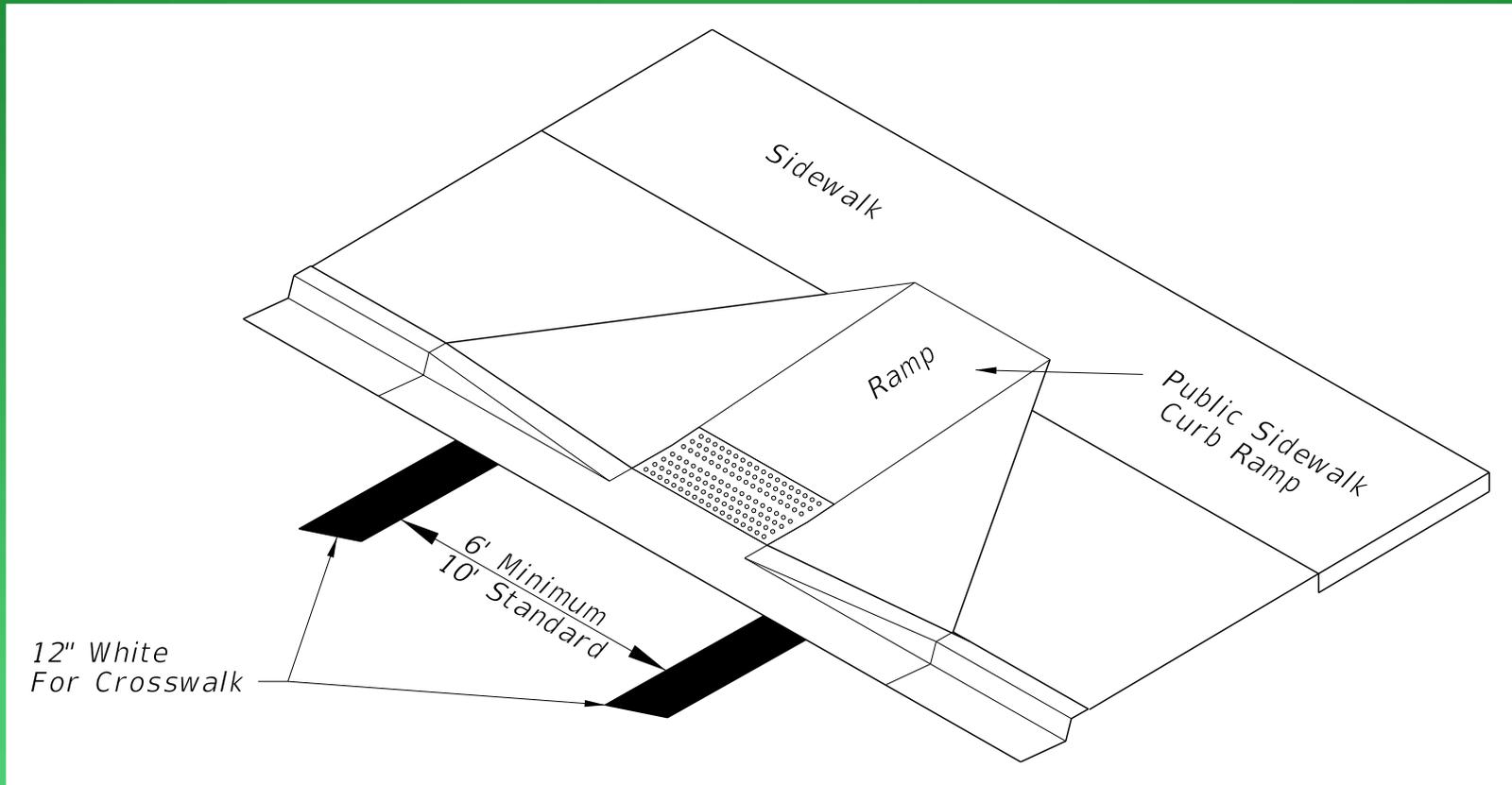


# Fort Myers Beach Pedestrians in Crashes on Estero Blvd, North End by Pedestrian Action, 2005-2010



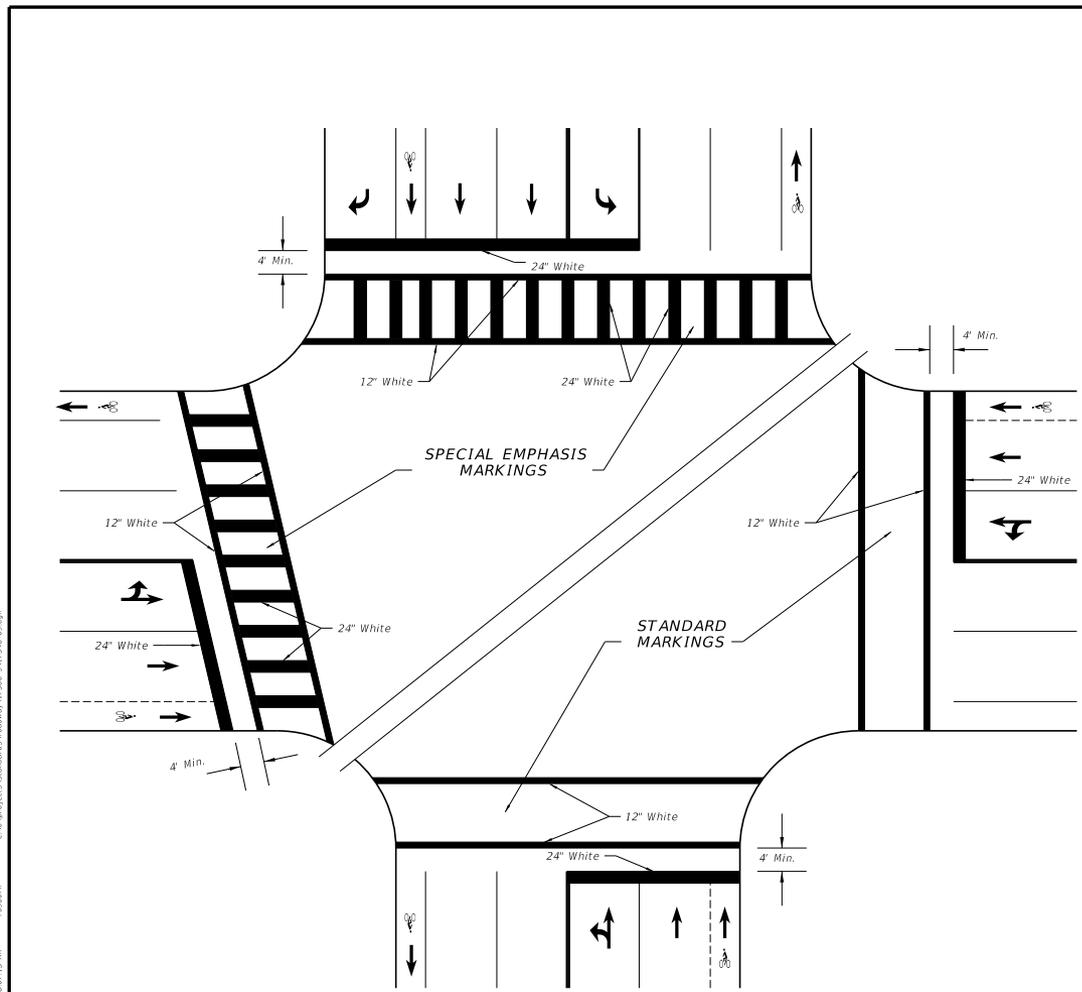
Data Source: Florida Department of Transportation, Safety Office, Crash Records and Research Division, from annual crash points shapefiles, compiled by Benjamin Jacobs, Crash Records and Research Specialist

# Florida Design Standards - Index 17346



# Index 17346

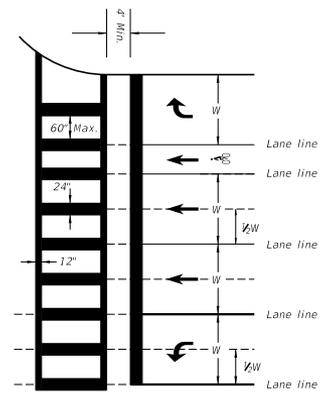
5/24/2012 8:07:13 AM r9960/n C:\w\projects\standards\roadway\17300-s\17346-00.dwg



SPECIAL EMPHASIS AND STANDARD CROSSWALKS  
SIGNALIZED OR STOP SIGN CONTROLLED INTERSECTION

### GENERAL NOTES

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



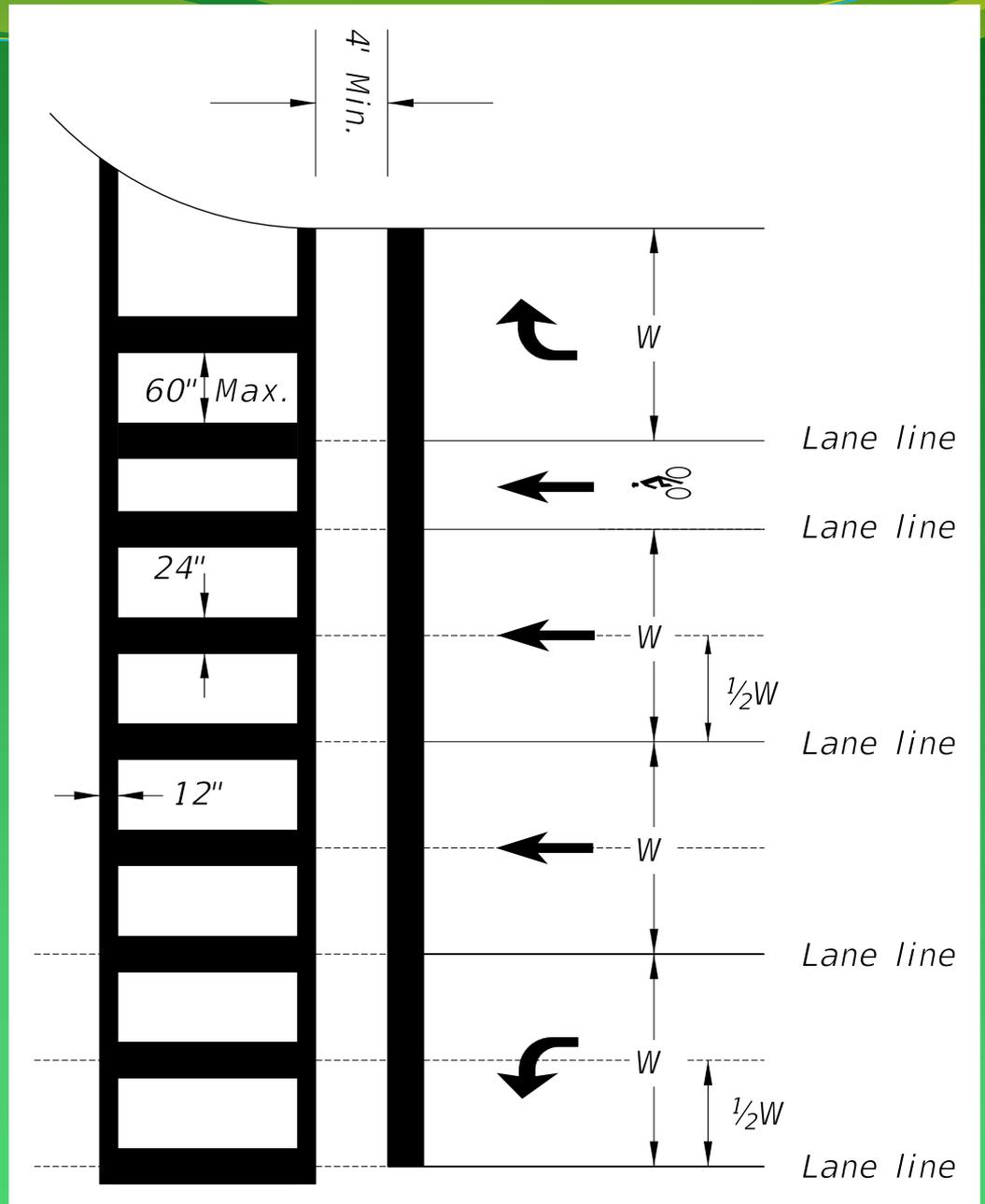
SPECIAL EMPHASIS  
CROSSWALK MARKING  
DETAIL

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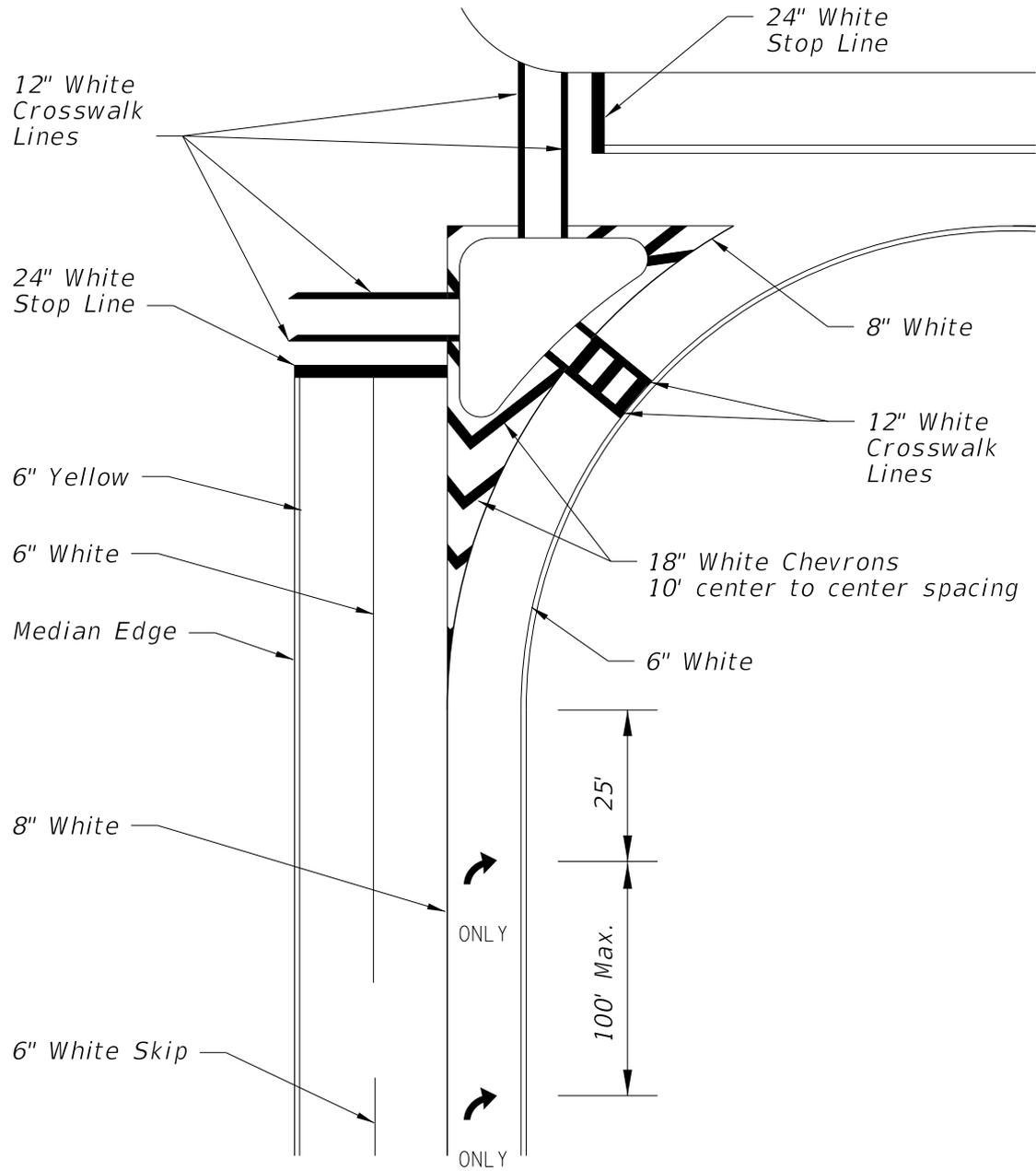
# Pensacola Street



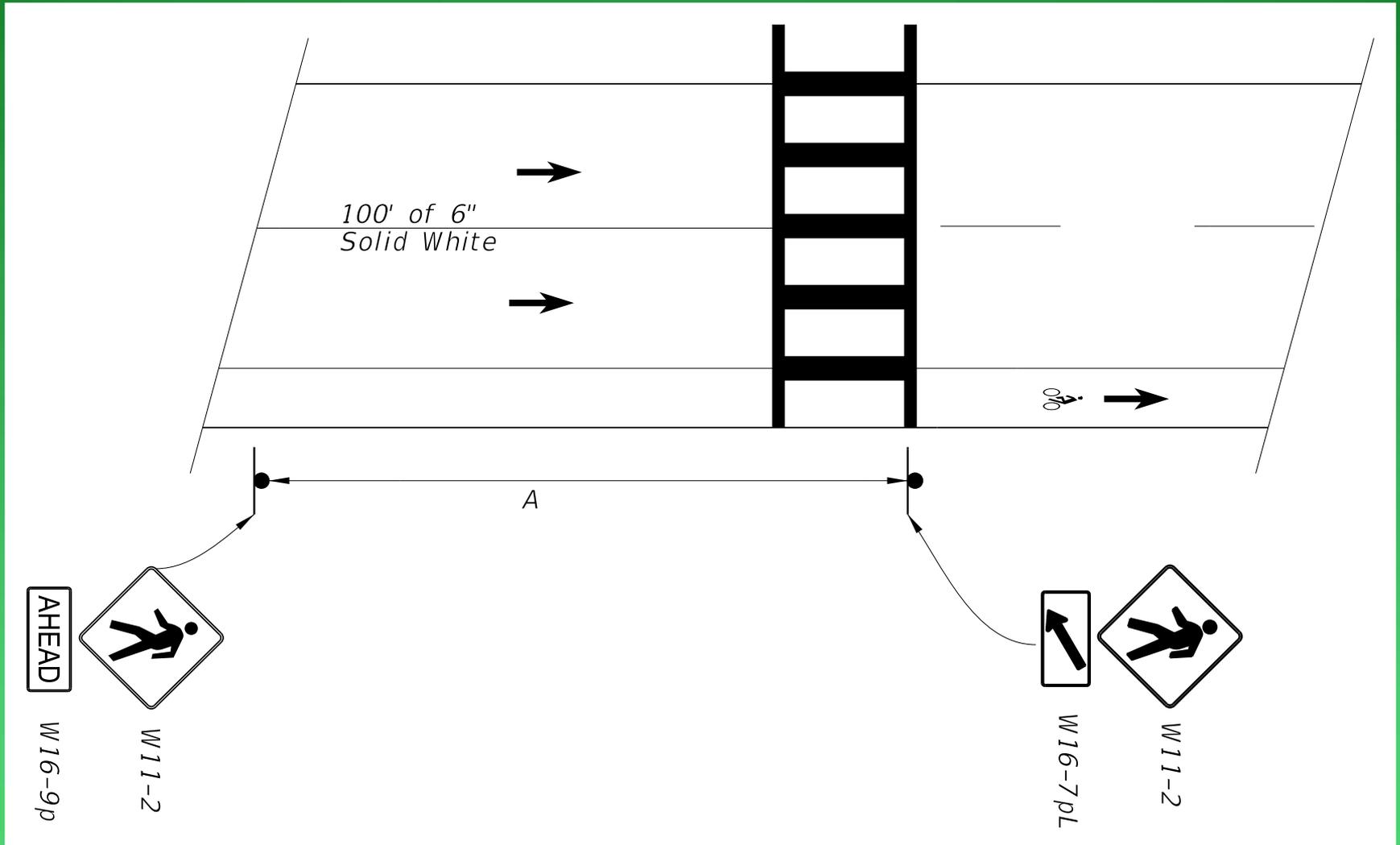
# Index 17346



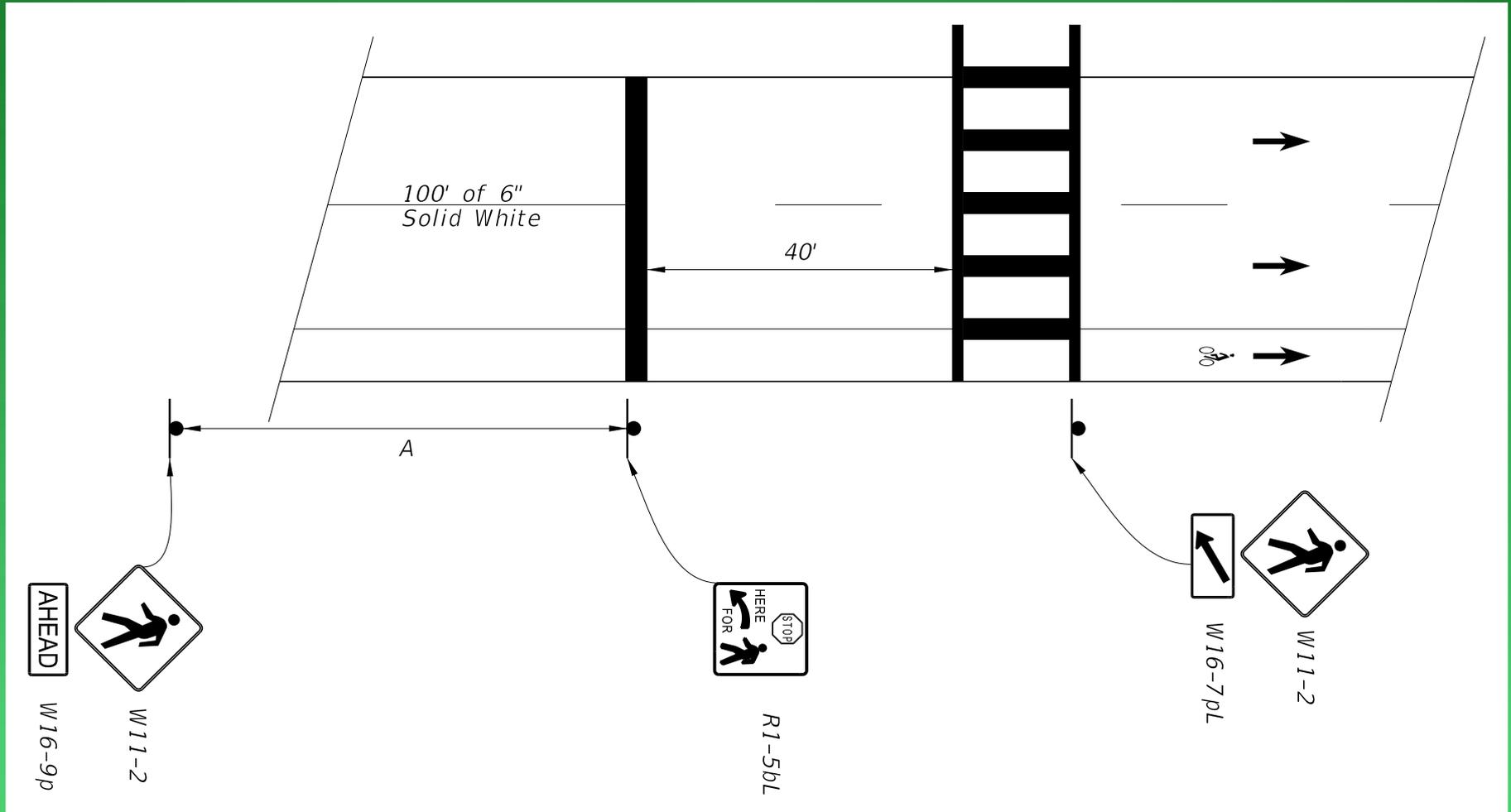
# Index 17346



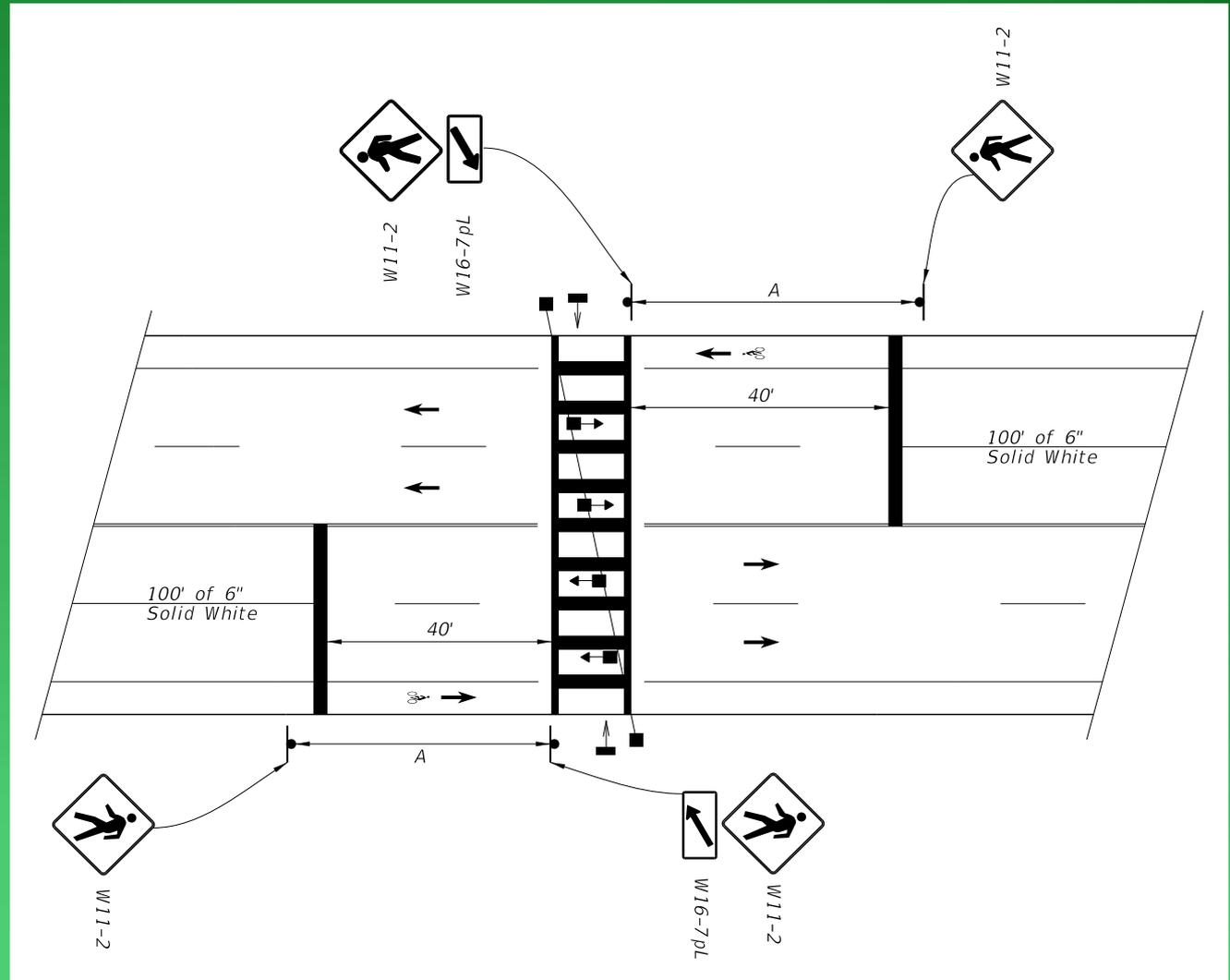
# Florida Design Standards - Index 17346



# Florida Design Standards - Index 17346



# Index 17346



# Gainesville- Hawthorne Trail

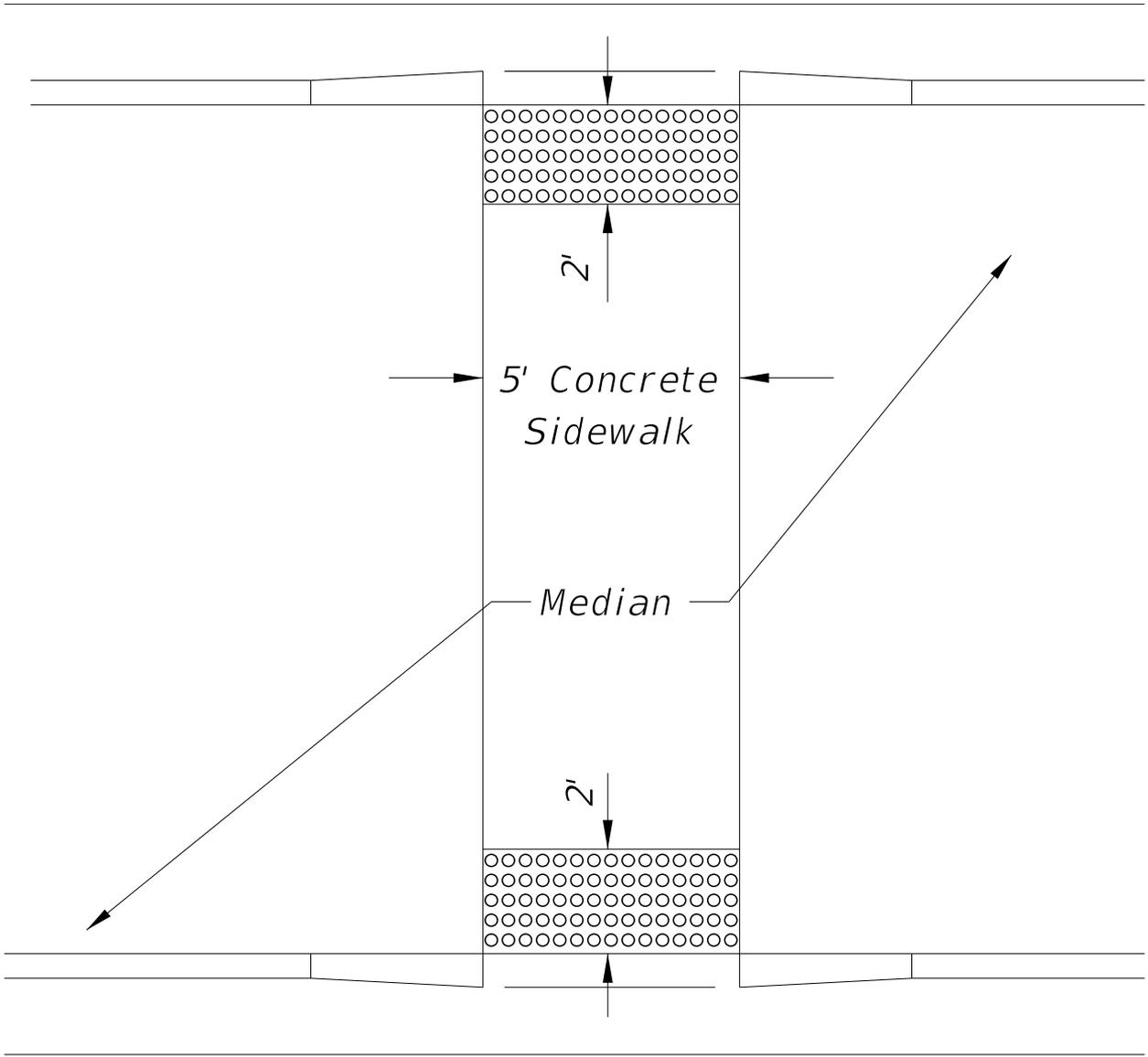
Williston Road  
Gainesville, FL



# Cady Way Trail

Baldwin Park  
Orlando, FL

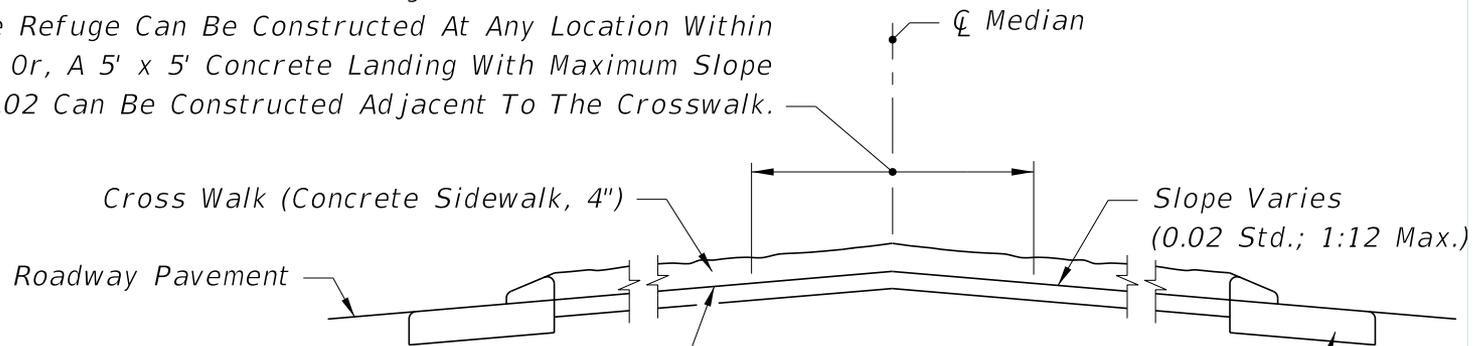




**PLAN**

# Florida Design Standards - Index 304

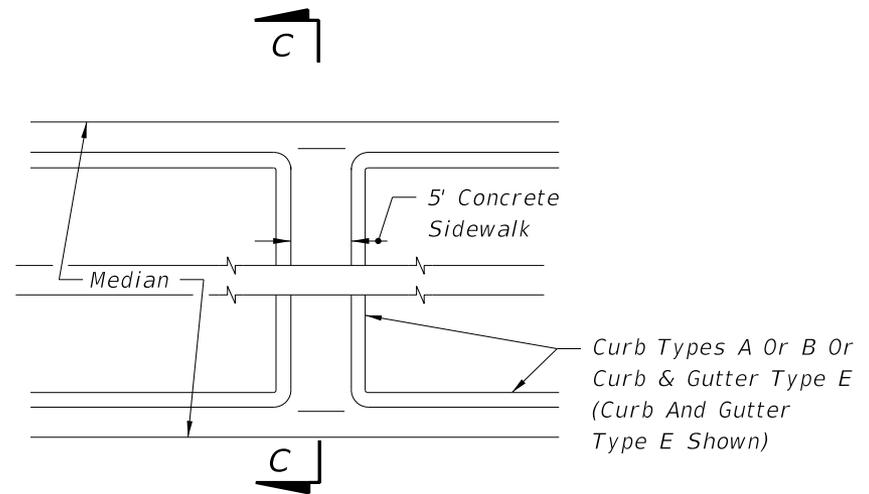
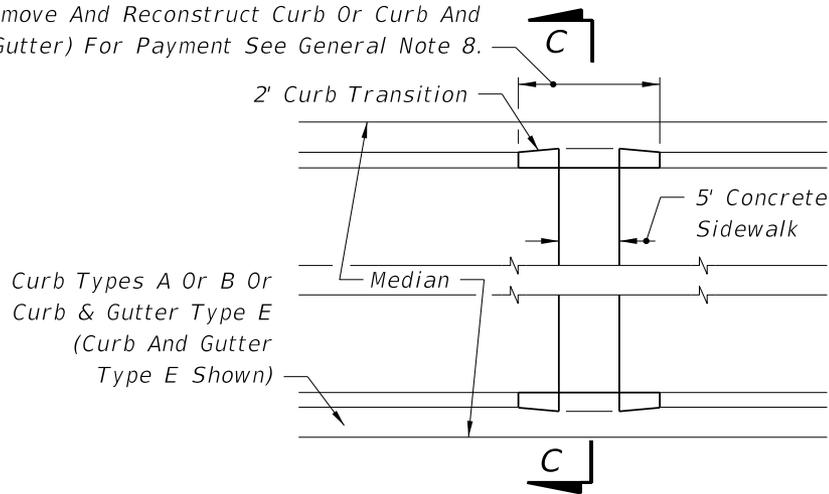
*5' Refuge With Maximum Slope Of 0.02 Must Be Provided When Slopes Of 0.05 Or Flatter And 5' In Length Are Not Available On Crosswalk; The Refuge Can Be Constructed At Any Location Within The Crosswalk; Or, A 5' x 5' Concrete Landing With Maximum Slope Of 0.02 Can Be Constructed Adjacent To The Crosswalk.*



*Slopes Shall Intersect At Centerline Of Median On The 0.02 Rate When The Edge Of Pavement Elevations Are Equal. The Slopes May Intersect Off The Centerline For Variable Edge Of Pavement Elevations Or To Accommodate Other Construction In The Median; However, Slopes Shall Not Be Steeper Than 1:12.*

# Florida Design Standards – Index 304

*Curb Transition (On Existing Facilities  
Remove And Reconstruct Curb Or Curb And  
Gutter) For Payment See General Note 8.*



# Drainage Grates

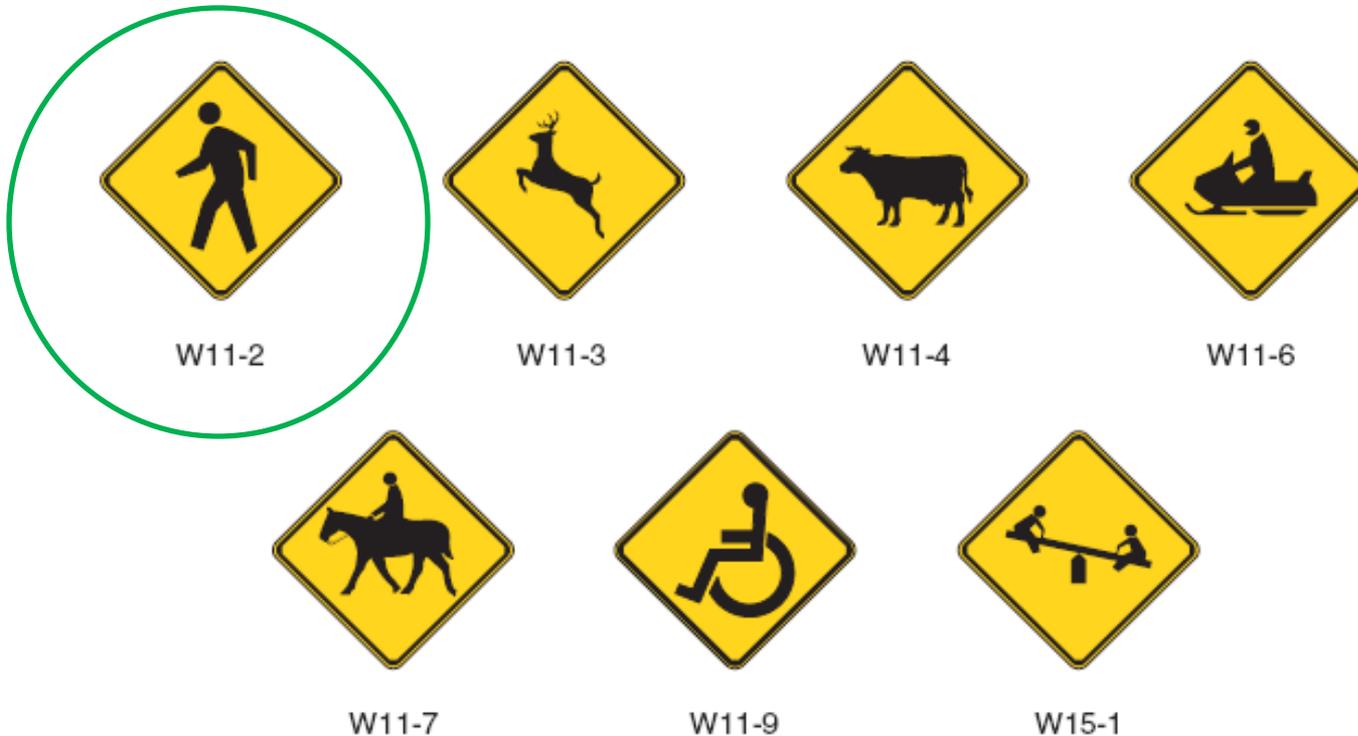


# Specifications and Materials

- **971-7 Preformed Thermoplastic Materials**
  - **971-7.5.1 Retroreflectivity:** ...All pedestrian crosswalks, bike lane symbols ... shall attain initial retroreflectivity of not less than 275 mcd/lx·m<sup>2</sup>.
  - **971-7.5.2 Skid Resistance:** The surface of the stripes and markings shall provide a minimum skid resistance value of 35 BPN (British Pendulum Number) when tested according to ASTM E-303. Bike lane symbols and pedestrian crosswalks shall provide a minimum skid resistance value of 55 BPN.

# MUTCD Pedestrian Warning Sign

Figure 2C-10. Nonvehicular Traffic Signs



# MUTCD Pedestrian Warning Sign

Figure 2B-2. Unsignalized Pedestrian Crosswalk Signs



# Questions

