Accommodations anyone???

ADA

Design
Construction &
Maintenance

2023

1

What's Ahead?

- Brief **Overview** of the ADA
- **Design** Requirements
- Access during **Construction**
- **Maintenance** Considerations

2

2

OVERVIEW

Americans with **Disabilities** Act (ADA)

President George H.W. Bush – July 26, 1990
"Let the shameful **wall of exclusion** finally come tumbling down."

3

3

ADA uses language **identical** to Title VI of the Civil Rights Act of 1964, which addressed **race**, **color**, and **national origin**. The ADA forbids "**excluding from participation in, denying the benefits of, or subjecting anyone to discrimination**" on the basis of disability.

Civil Rights of 1964

ADA of 1990 – A **Civil Right**!

Title I – Employment

Title II – Public Services

Title III – Private Entities

Title IV – Telecommunications

Title V - Miscellaneous

Disabilities = **Protected**!

The **Architectural Barriers** Act of 1968 and the **Rehabilitation** Act of 1973 were attempts to address **systemic** barriers to accessibility. Both were tied to entities receiving **federal funding**. The ADA dissolved the funding connection for accessibility and applies to **All** government entities.

4

4

March 12, 1990

Tossing aside their wheelchairs, walkers, and crutches to ascend the steps of the Capitol, the protesters – in what became known as the "**Capitol Crawl**" – drug themselves up the stairs to demonstrate their daily struggles due to physical barriers.

5

5

The ADA simply means **INDEPENDENCE**!

6

DESIGN REQUIREMENTS

Pedestrian Facilities

President George H.W. Bush – July 26, 1990
"Today we're here to rejoice in and celebrate another '**independence day**,' one that is long overdue."

7

7

It's not rocket science...

ADA **Accessibility** Features

- **Unobstructed** clr. width
- Protruding objects
  - signs & equipment
  - landscape material
- Running **slopes**
- Cross slopes
- Walking **surfaces**
  - Changes in level
  - Gaps & grates

Nominal Vs. Substantive

Note: Projects on the State and NHS are governed by the ***FDM***. Local projects (cities and counties) are governed by the ***FL Greenbook***. In some instances, the requirements may differ; so, it's important to base decisions on the **appropriate** design manual.

8

8

General

FGB Ch. 8

Refer to latest editions and other chapters!

***FDM* 222.1** – This chapter provides **minimum** criteria to be used for the design of pedestrian facilities on the **S**tate **H**ighway **S**ystem. The term "**pedestrian**" includes any person traveling on foot or in a **wheelchair**.

Highlights!

Pedestrians should be expected on **all** of Florida's **state roadways** except where restricted on Limited Access (LA) facilities. FGB 8.A and Local!

FGB Ch 14

Process a **Design Variation** (see ***FDM* 122**) when the design criteria for pedestrian facilities in this manual are **not** met.

Justification required by U.S. DOJ & federal regulation!

9

9

General

***FDM* 222.1** – Reference the following conditions that support **not** providing a pedestrian facility in the **Design Variation** documentation:

(1) The establishment of pedestrian facilities would be **contrary** to public safety.

(2) The cost of providing pedestrian facilities would be **excessively** disproportionate to the need or probable use.

10

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General

FDM 222.1 – Reference the following conditions that support **not** providing a pedestrian facility in the **Design Variation** documentation:

(3) The presence of **other** available means for pedestrian traffic. Other available means should meet the following **requirements**:

(a) Meet the design criteria for **pedestrian** facilities on state roadways.

(b) Provide access to the **same** services, origination and destination sites, and transit connections as the project corridor.

11

11

General

FDM 222.1 – Reference the following conditions that support **not** providing a pedestrian facility in the **Design Variation** documentation:

(3) The presence of **other** available means for pedestrian traffic. Other available means should meet the following **requirements**:

(c) **Not** result in a significant increase in **travel time** or trip **length**, **exposure** to **motorized traffic**, or substantial **elevation** changes.

(d) Provide appropriate **locations** to **cross** limited access, arterial or collector roadways, or railroad corridors.

For Local projects, see documentation requirements in the FGB Ch 14.

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Americans with Disabilities Act (ADA)

FGB 8.A

FDM* 222.1.1** – In addition to the **criteria** presented in the ***FDM and Department's ***Standard Plans***, the following documents provide ADA **guidance** in the **design** of pedestrian facilities in **public** R/W:

- United States Department of Justice 2010 ***ADA Standards for Accessible Design*** (***ADASAD***)
- United States Department of Transportation 2006 ***ADA Standards for Transportation Facilities*** (***ADASTF***)
- ***Florida Accessibility Code*** contains ADA requirements for accessibility to sites, facilities, buildings, and elements by individuals with disabilities.

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Are sidewalks required by the ADA???

→ Title II – Public Services ←

Pedestrian Facilities

FGB 8.A

***FDM* 222.2** – Features or elements used to support pedestrian travel:

- **Sidewalks**
- Curb ramps & New → Blended Trnsn's
- Crosswalks
- At-grade RR crossings
- Refuge islands
- Curb extensions
- Ped signals
- Public transit loading zones
- Ped bridges
- **Shared use paths**
- Street furniture

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Pedestrian Facilities

Vision Zero

FDM 222.2 – Pedestrian **safety** can be **enhanced** through the following measures:

(1) **Maintaining** a smooth, clean walking surface, **free** of obstructions.

Maintenance!

(2) Responsive and **appropriate** traffic control devices, consistent with guidance in the ***Manual on Uniform Traffic Control Devices*** (***MUTCD***), including providing pedestrian-oriented directional signage.

(3) Sidewalks and other pedestrian walkways are **continuous**, and termini connect to **existing** sidewalk, pedestrian crossing or access point. FGB 8.B.1

(4) Providing adequate **lighting**. FGB 8.H

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Sidewalks are NOT required by the ADA!

Sidewalk

GENERAL NOTES:

1. Construct sidewalks in accordance with Specification 522. Use 6" concrete for Sidewalks and Curb Ramps Located within Curb Returns (See Plan View). Install all other concrete with thickness as shown, unless otherwise detailed in the Plans.
2. Include detectable warnings on sidewalk curb ramps in accordance with Index 522-002.
3. For Driveways see Index 522-003.
4. Bond breaker material can be any impermeable coated or sheet membrane or preformed material having a thickness of not less than 6 mils and not more than ½".
5. Construct sidewalks with Edge Beam through the limits of any surface mounted Pedestrian/Bicycle Railing or Pipe Guiderail shown in the plans. (See RAILING DETAIL)

FDM 222.2.1 – FGB 8.B.1

Sidewalk is a **continuous** concrete pedestrian walkway as depicted in ***Standard Plans***, **Index 522-001**.

Continuity!

...so where are they required?

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Sidewalk – Location, **location**, Location!

FGB 8.B.1

FDM* 222.2.1** – Provide sidewalk on all **curbed** roadways, except where prohibited by **Section 316.130(18)**, ***Florida Statute (***F.S.***). The inclusion of sidewalk on short isolated sections of curbed roadway is **not required** when:

- Within C1 and C2 **context** classification, and
- There are **no** pedestrian facilities leading to, or from the location.

This is Where!

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Sidewalk

FGB 1.B.2

***FDM* 222.2.1** – Provide sidewalk on **high speed** curbed and flush shoulder roadways with C2T, C3R, C4, C5, or C6 context classification; and within C1, C2, or C3C where the demand for use is demonstrated.

For **high speed** curbed and flush shoulder roadways, place sidewalk in the following **order** of desirability

FGB 8.C.2.a

(1) As **near** the R/W line as possible.

(2) Outside the **clear zone**.

(3) **5'** beyond the limits of the full width **shoulder**.

(4) At the limits of the full width shoulder.

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Sidewalk

***FDM* 222.2.1 –** Sidewalk on flush shoulder roadways is **not** to be constructed directly **adjacent** to the roadway or shoulder pavement. Nearing intersections, the sidewalk should be **transitioned** as necessary to provide a more functional crossing location that also meets driver expectation. Further guidance on the **placement** of stop or yield lines and crosswalks is provided in the ***MUTCD* Part 3** and ***Standard Plans* Index 711-001**.

FGB 8.C.2.a & 8.G.1

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Sidewalk FGB 8.B.1

***FDM* 222.2.1** – Continue sidewalk across **bridge** structures when sidewalk is provided on the approach roadway. Also provide sidewalk on **new** bridges where sidewalk or shared use path is not present along the roadway but may be included with a **future** project.

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Sidewalk FGB 8.B.1

***FDM* 222.2.1 –** Sidewalk should be **constructed** on **both** sides of the roadway; however, if sidewalk is constructed on only one side, provide reasonable pedestrian **access** to destinations (e.g., transit stops, homes, places of work, stores, schools, post offices, libraries, parks) on the opposite side.

See FDM 114!

For RRR Projects, other than meeting detectable warning and curb ramp requirements, **unaltered** sidewalks that are not in compliance with ***FDM*** criteria, ***Standard Plans***, or ADA requirements are **not** required to be **reconstructed**.

Identify opportunities for improvement as part of RRR!

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Now we're talking ADA!

**Exclusive of the width of the curb.*

Sidewalk Width FGB 8.B.1

***FDM* 222.2.1.1 –** The standard **Sidewalk** width* varies by context classification as shown in **Table 222.2.1**.

See ***FDM* 214** for information on sidewalks across **driveways**.

Table 222.2.1 Standard Sidewalk Widths

Context Classification		Sidewalk Width (feet)
C1	Natural	5
C2	Rural	5
C2T	Rural Town	6
C3	Suburban	6
C4	Urban General	6
C5	Urban Center	10
C6	Urban Core	12

Notes:

(1) For C2T, C3 and C4, sidewalk width may be increased up to 8 feet when the demand is demonstrated.

(2) For C5 and C6, when standard sidewalk width cannot be attained, provide the greatest attainable width possible, but not less than 6 feet.

(3) For RRR projects, unaltered sidewalk with width 4 feet or greater may be retained within any context classification.

(4) See ***FDM 260.2.2*** for sidewalk width requirements on bridges.

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Sidewalk Width

FGB 8.B.1

***FDM* 222.2.1.1** – Provide the following **minimum** unobstructed sidewalk width (excluding the width of the curb) when there is no practical alternative to placing a **pole** within the sidewalk:

- **36”** for **aboveground** utilities. May be reduced to **32”**, not exceeding **24”** in length, when there is no practical alternative available to avoid an obstruction.
- **48”** for signal, light, sign **poles**

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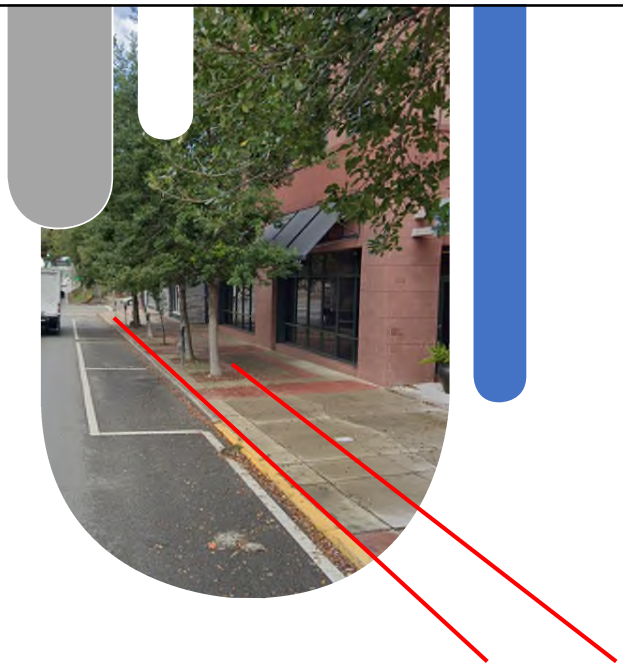

Sidewalk Width

***FDM* 222.2.1.1** – FGB 8.C.2.b

When used for **plantings** and street **furniture**, the area between the back of curb and sidewalk should be ≥ **5’** in width. Consider providing **treewells** in areas where on-street parking is provided.

Accommodates door-swing!

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Sidewalk Width

***FDM* 222.2.1.1 –** Appropriate types of street furniture may vary based on **frequency** and **density** of pedestrian activity. Street furniture must allow for minimum sidewalk **width** and **vertical** clearance as required in this section and ***FDM* 222.2.1.2**.

Refer to ***FDM* 223.5** for information on bicycle parking amenities and ***FDM* 225** for information on public transit facilities as related to use of sidewalk space.

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Vertical Clearance

***FDM* 222.2.1.2** – Provide a ≥ **7'** vertical clearance over the **entire** walking surface. See ***FDM* 260.6** for pedestrian **bridge** vertical clearance requirements.

FGB 8.E

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Grades & Cross Slopes

FGB 8.B.1

***FDM* 222.2.1.3 –** When sidewalk is **adjacent** to the roadway (i.e., located back of curb or consistent separation from curb), sidewalk grades may mirror **roadway profile**. When sidewalk is not adjacent to a traveled way, sidewalk grades are **not** to exceed **5%**, unless accessible ramps* are provided.

5% [**1:20**] < ***ADA Accessible Ramp Criteria** ≤ **8.3%** [**1:12**]

See 2020 ***FBC*** (*https://floridabuilding.org*).

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Grades and Cross Slopes

FGB 8.B.1

***FDM* 222.2.1.3 –** There should be **enough** sidewalk cross slope to allow for adequate **drainage**; however, to comply with ADA requirements, the **maximum** cross slope is **2%**.

A clear **1'** wide graded area with a maximum **1:6** slope should be provided adjacent to the sidewalk. Edge **drop-offs should be avoided**. When drop-offs cannot be avoided and lie within **2 feet** of the edge of sidewalk, they should be **shielded** as discussed in ***FDM* 222.4**.

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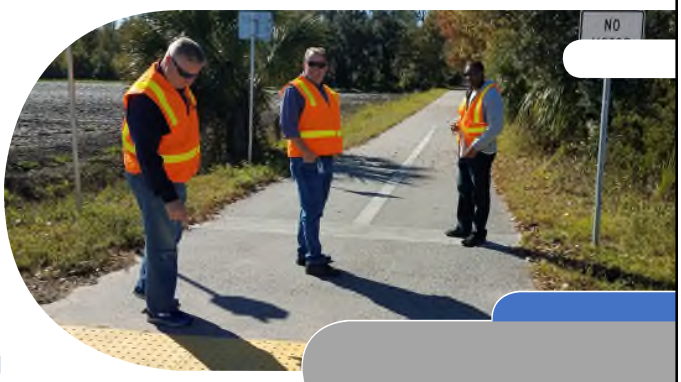
Longitudinal Grades



***FDM* 224.6** – When a shared use path is **adjacent** to the roadway (i.e., follows the roadway profile), shared use path grades may **mirror** the roadway **profile**. When not adjacent to a traveled way, shared use path grades are **not to exceed 5%**, unless accessible **ramps are provided**. Maximum ramp slopes are **8.33%** and can have a maximum rise of **30 inches**, with a level landing at least **60 inches** in length.

30

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Longitudinal Grades

FDM* 224.6** – Grades greater than **5%** cause ***difficulties for many path users including bicyclists. **Table 224.6.1** provides maximum grades and distances for areas in which the ***terrain*** makes it necessary to use steeper grades on short sections.

Refer to ***FDM* 224.11** for ***controls*** on grade changes.

Table 224.6.1 Maximum Grade Lengths

Longitudinal Grade (%)	Maximum Length (feet)
6	800
7	400
8	300
9	200
10	100
11+	50

Notes:

(1) When using a longer grade, consider adding 4 to 6 feet of additional width to the path to allow a bicyclist to dismount and walk their bicycle.

(2) Clear distances and sight distances should be adjusted to accommodate longer grades.

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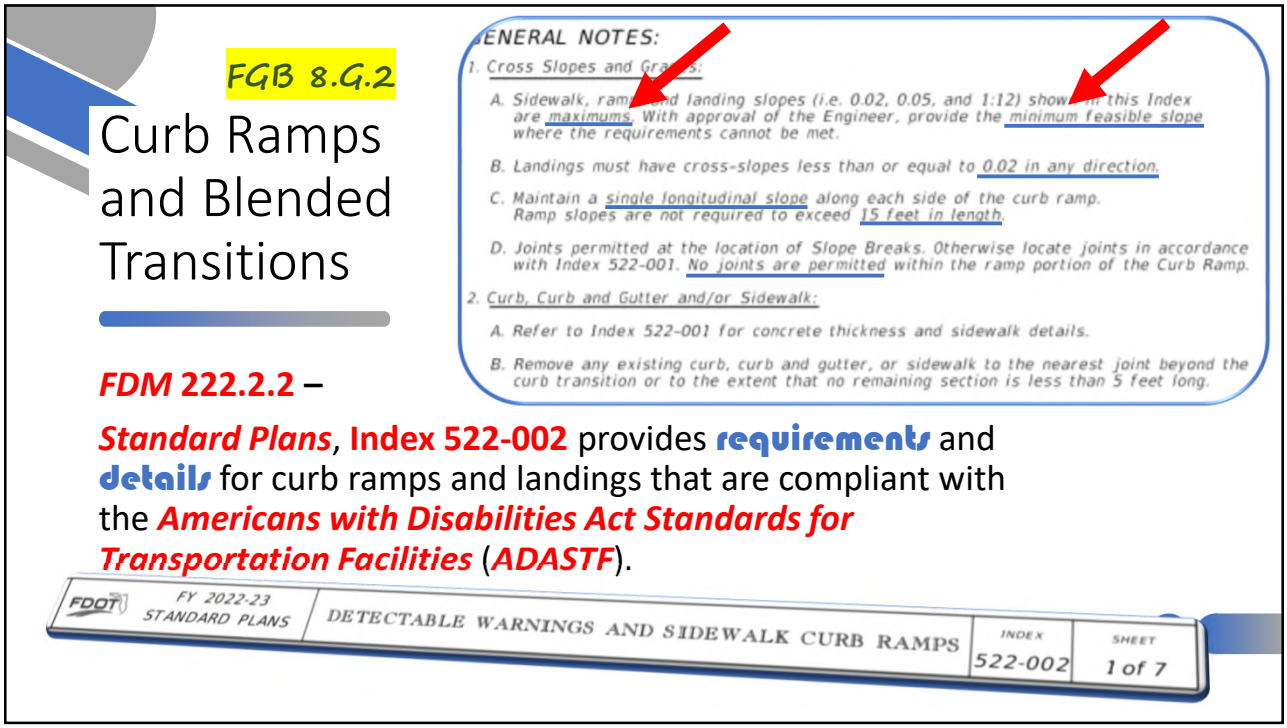
FGB 8.G.2

Curb Ramps and Blended Transitions

***FDM* 222.2.2** –

Standard Plans*, Index 522-002** provides ***requirements and ***details*** for curb ramps and landings that are compliant with the ***Americans with Disabilities Act Standards for Transportation Facilities*** (***ADASTF***).


GENERAL NOTES:

1. Cross Slopes and Grades:
   A. Sidewalk, ramp and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
   B. Landings must have cross-slopes less than or equal to 0.02 in any direction.
   C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.
   D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.
2. Curb, Curb and Gutter and/or Sidewalk:
   A. Refer to Index 522-001 for concrete thickness and sidewalk details.
   B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.

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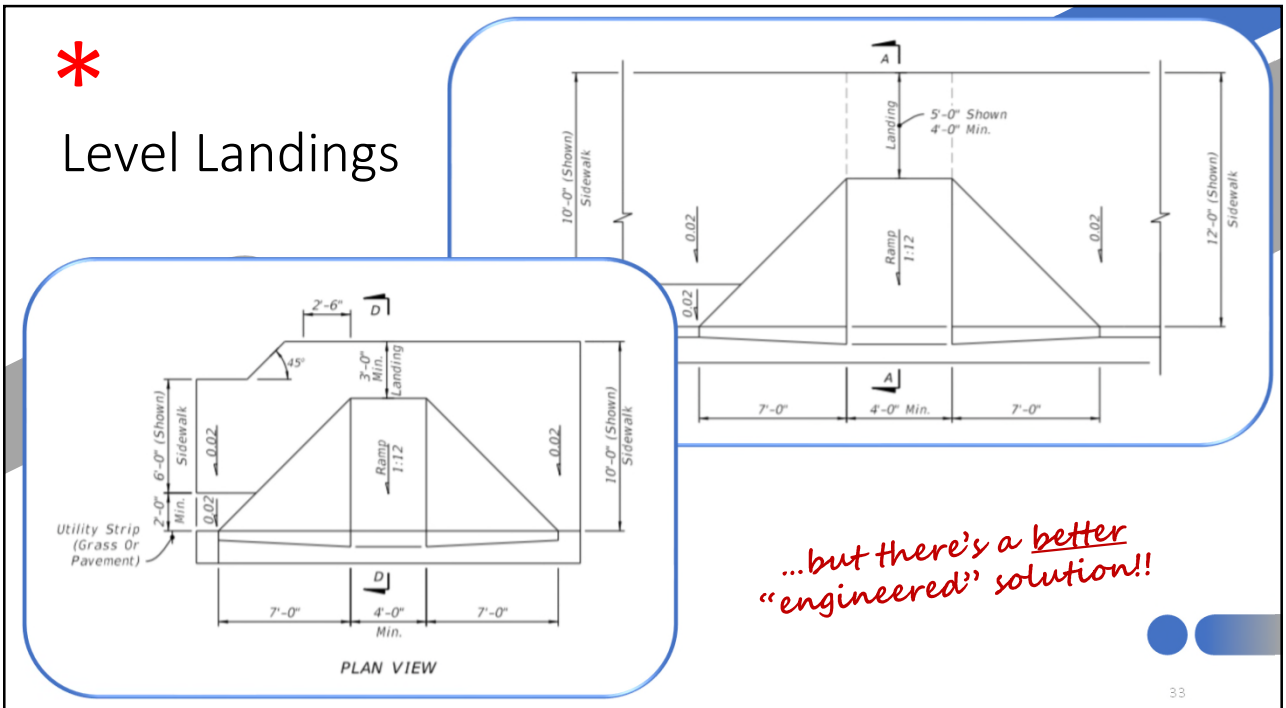
Level Landings



...but there's a better "engineered" solution!!

33

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Curb Ramps and Blended Transitions

FGB 8.G.2

FDM 222.2.2 – A **continuous** accessible pedestrian route, including curb ramps and blended transitions (e.g., depressed corners, raised street crossings, flush roadway connections), are **required** along sidewalks and shared use paths. Provide curb **ramps** to be the **same width** as the sidewalk where practicable.

Additional **information**, nomenclature, requirements, and details for curb ramps and landings are **provided** in the ***Standard Plans***, **Index 522-002**.

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Curb Ramps and Blended Transitions

Alpha-identifications have been provided in **Index 522-002** for the various curb ramp options (e.g., CR-A, CR-B, etc.) to facilitate ease of callouts in the Plans. Use the curb ramp options as follows:

- CR-A, CR-B & CR-C – where ramp and landing depths are **not restricted**.
- CR-D, CR-E, CR-F, CR-G and CR-H – for **linear** pedestrian traffic.
- CR-K and CR-L – where ramp and landing depths are **restricted**.

...but a SP detail is NOT a site-specific design...it's a concept!

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Curb Ramps and Blended Transitions

***FDM* 222.2.2** – *FGB 8.G.2*

Include sidewalk curb ramps at the following locations:

- All **intersections** and driveways with **curbed** returns. Include a landing at the top of each ramp.
- On **curbed** roadways between intersections where a **crosswalk** has been established.

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Curb Ramps and Blended Transitions

FDM 222.2.2 – FGB 8.G.2

Pull boxes, manholes (and other utility covers), and other types of existing **surface features** in the location of a proposed curb ramp or detectable warning should be **relocated**.

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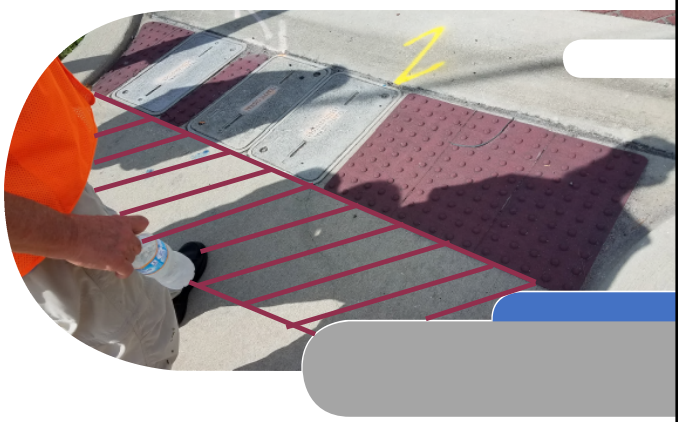
Curb Ramps and Blended Transitions

FDM 222.2.2 – FGB 8.G.2

When relocation is not feasible, **adjust** the feature to meet the ADA requirements for surfaces (including the provision of a **nonslip** top surface and adjustment to be **flush** with and at the **same slope** as the adjacent surface).



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Curb Ramps and Blended Transitions

FDM 222.2.2 – FGB 8.G.2

Must?!

Curb ramps should be **in line** with the crossing and must provide maximum* slope of **1:12** (**8.3%**).

*Least practicable!

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Curb Ramps and Blended Transitions

FGB 8.G.2

FDM 222.2.2 – ~~At intersections where more than one road is crossed,~~ provide curb ramps at **both ends** of each crossing.

Crossings are **required** to meet the same grade and cross slope **requirements** as sidewalks. Where criteria for maximum cross slope cannot be met, process a **Design Variation** and provide the **minimum** attainable cross slope.

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FGB 8.G.2

Curb Ramps

***FDM* 222.2.2 –**

When following the profile grade of the roadway, curb ramp slopes should **not exceed 15'** in length.

* Note: **8.3%** max on ramp with **5%** max roadway cross slope at crossing = **13.3%** algebraic difference. *Recommend* providing **2'** level area where algebraic difference ≥ **11.3%**.

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Curb Ramps

***FDM* 222.2. 2 –** FGB 8.G.2

Provide transition slopes (flared sides) where a pedestrian **circulation path** crosses the curb ramp. The maximum slope of transition slopes is **1:10**, measured parallel with and adjacent to the curb line.

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Curb Ramps

***FDM* 222.2.2 –** FGB 8.G.2

When **altering** an existing pedestrian facility and conditions preclude a maximum curb ramp slope of **1:12**, provide a slope from **1:12** to **1:10** with a max. rise of **6”**.

Provide a **landing** at all pedestrian **pushbutton** locations. The landing must provide a clear area of **30” x 48”** directly in front of the pedestrian pushbutton to allow persons using a wheeled mobility device to actuate the button while remaining **stationary**. Horizontally center the **48”** dimension on the pushbutton.

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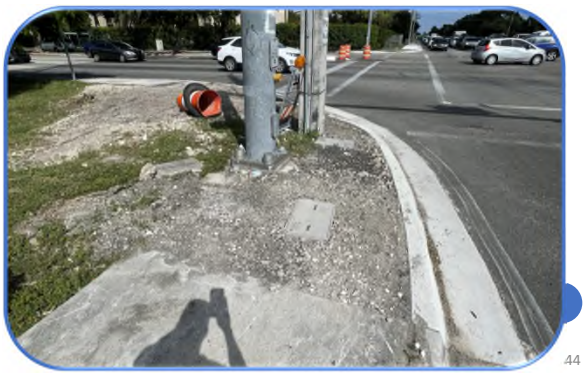
Curb Ramps

FGB 8.B.1

***FDM* 222.2.2** – When compliance with Department curb ramp requirements is determined to be **technically infeasible** (i.e., no engineering solution is available), a **Design Variation** is required.

This may occur where existing right of way is inadequate and where conflicts may occur with **existing features** which cannot be feasibly relocated or adjusted (e.g., drainage inlets, signal poles, pull and junction boxes, etc.).



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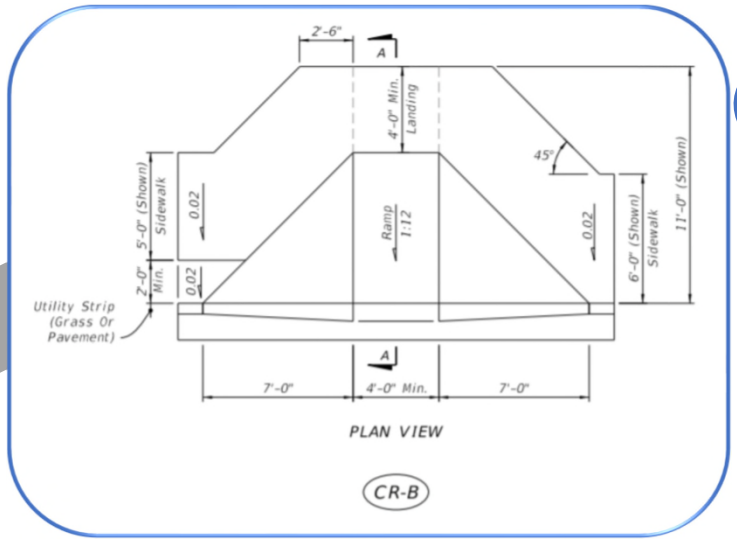
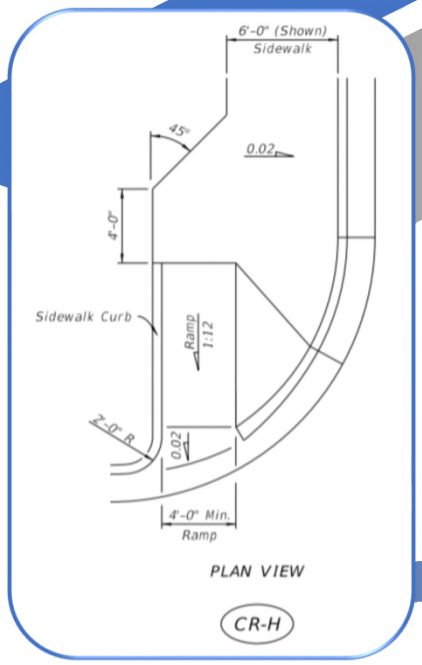
* Curb Ramp examples from ***Standard Plans***, **Index 522-002.**





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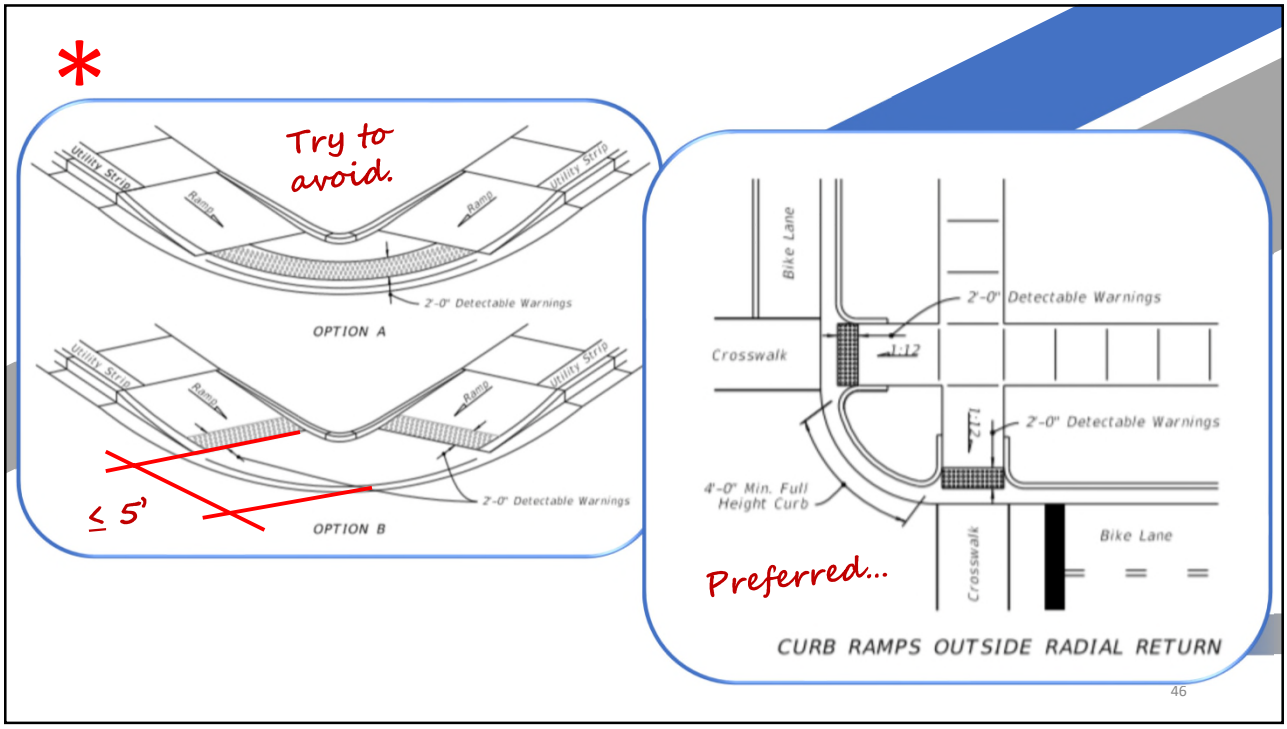

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Driveways FGB 8.B.1

***FDM* 222.2.2.1** –

See ***FDM* 214** for information on pedestrian **accommodations** at driveways.

New and **reconstructed** driveways are to be in compliance with ***Standard Plans***, **Index 330-001** and **522-003**.

Think FDM 114!

For RRR Projects, **unaltered** driveways that are not in compliance with ***Standard Plans*** or ADA requirements are **not required** to be reconstructed.

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Crosswalks FGB 8.G.1.a

FDM* 222.2.3** – Crosswalks are **marked paths** where pedestrians can **safely** cross a roadway. Marking of crosswalks helps **drivers** better identify the intersection and guides **pedestrians** to the best crossing location. For details on crosswalk pavement markings, see ***Standard Plans, **Index 711-001**.

Accessible parking details also provided in Index 711-001.

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Crosswalks FGB 8.G.1.a

FDM* 222.2.3 – Use *Special Emphasis crosswalk markings for all marked crosswalks except the following. Use ***standard*** crosswalk pavement markings at marked stop-controlled intersection approaches.

Coordinate with the District Traffic Operations Office on proposed new marked crosswalks.

For new and existing crosswalks, ***meet criteria*** and guidelines in ***Traffic Engineering Manual*** (***TEM***), **Section 5.2**.

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Crosswalks FGB 8.G.1.a

TEM* 5.2** also contains ***criteria and ***guidelines*** on additional treatments including signals, signing, pavement markings and other treatments at ***midblock*** and ***unsignalized*** intersections.

For crosswalk signing and pavement ***markings***, see ***FDM* 230**, ***MUTCD***, and ***Standard Plans*****, Index 711-001**.

The maximum cross slope for crosswalks is **2%.** For crosswalks located at ***signalized*** intersections, midblock, or driveways, cross slope may exceed **2%** but not greater than **5%**.

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Crosswalks

School Zone crosswalks have additional criteria for signing and pavement markings. For requirements for **school** signs and markings, see ***The Manual on Speed Zoning for Highways, Roads and Streets in Florida*, Chapter 15**.

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Intersections

***FDM* 222.2.3.1 –** Provide crosswalk **markings** for all legs of a **signalized** intersection unless there is a documented, project-specific justification not to do so (e.g., physical constraints, safety concern).

When separated **right-turn lanes** are used, place crosswalks so that an approaching motorist has a **clear view** of the pedestrian, and the crossing **distance** is minimized. See ***TEM*, 2.44** for signing criteria.

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Intersections FGB 8.G.1.a

***FDM* 222.2.3.1** – **Coordinate** with the District Traffic Operations Office for new marked crosswalks at **unsignalized** intersection locations and meet the criteria and guidelines identified in ***TEM* 5.2**.

*Commentary: Marked crosswalks at an uncontrolled location may be supplemented with other treatments such as beacons, signals, curb extensions, raised medians, raised traffic islands, and enhanced overhead lighting. See **TEM 5.2** for a complete and updated list of these types of treatments.*

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Intersections

***FDM* 222.2.3.1** – FGB 8.G.1.a

Additional **countermeasure** treatments are recommended at locations where any of the following conditions exist:

(1) Where posted speeds > **35 mph**,

(2) On a roadway of ≥ **4 lanes without** a raised median or raised traffic island with an ADT ≥ **12,000**, or

(3) On a roadway of ≥ **4 lanes with** a raised median or raised traffic island with or projected within **5 years** an ADT ≥ **15,000**.

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Intersections

***FDM* 222.2.3.1** –

As roadway volumes, speeds, and number of travel lanes **increase**, marked crosswalks are best used in conjunction with other **countermeasure treatments**.

55

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Intersections

***FDM* 222.2.3.1** –

For controlled intersections with six-lane divided roadways or crossing distances > **80'**, consider installing a **two-stage** pedestrian crossing with median **refuge island**. See ***FDM* 210** for more information on Intersection Refuge Islands and Hardened Centerlines.

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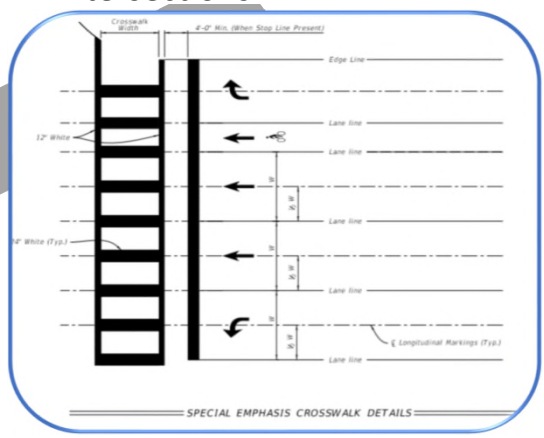
Midblock FGB 8.G.1.b

***FDM* 222.2.3.2 –**

Midblock crosswalks are used to **supplement** pedestrian crossings in areas between intersections.



Provide **illumination** for both new and existing midblock crosswalks in accordance with ***FDM* 231**.

An **engineering** study is required for all new Midblock Crosswalks. Follow the procedure and **guidelines** identified in ***TEM* 5.2**.

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Midblock

***FDM* 222.2.3.2 –**

Midblock crosswalks are **not recommended** at locations where any of the following exist:

(1) distance from crosswalk to **nearest** intersection (or crossing location) is < **300'**.

(2) crossing **distance** > **60'** (unless a median or crossing island is provided).

(3) **sight distance** for both the pedestrian and motorist is not adequate.

(4) crosswalk **cross slope** (roadway profile) > **5%**.

(5) crosswalk **grade** (roadway cross slope) exceeds normal crown.

58

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Midblock

FDM* 222.2.3.2** – See **Figures 210.3.4** and **210.3.5** for ***examples of midblock crossings with refuge islands.

Figure 210.3.4 Midblock Refuge Island Example #1

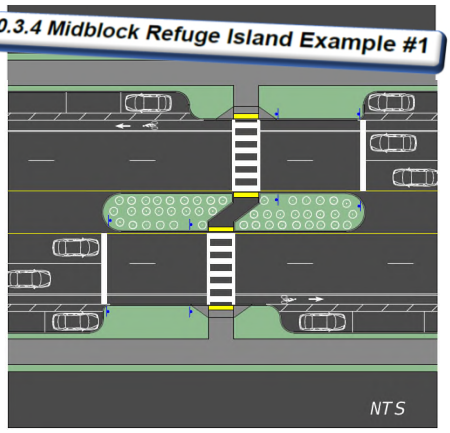
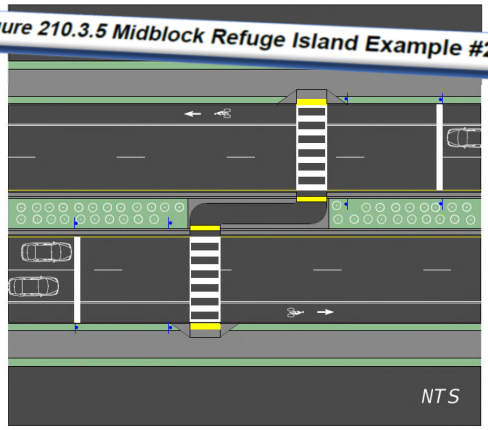


Figure 210.3.5 Midblock Refuge Island Example #2



59

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Midblock FGB 8.G.1.b

FDM* 222.2.3.2** – If site conditions are identified that would ***obstruct the placement of a midblock crosswalk, include additional ***features*** in the design to remedy these conditions. Features like overhead signing can help ***alert*** motorists and be used to ***light*** the crossing. Curb extensions or bulb-outs can ***improve*** sight distance and ***decrease*** crossing distance. Adjustments of the profile on the roadway crossing may be required to improve the ***cross slope*** of the crosswalk.

60

60

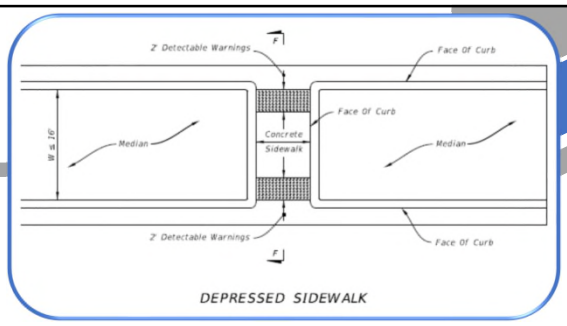
Midblock FGB 8.G.1.b

FDM* 222.2.3.2** – The ***sidewalk median crossing through a raised median will be either ***depressed*** or ***raised***, depending on the median width between the backs of curbs (W), as follows:

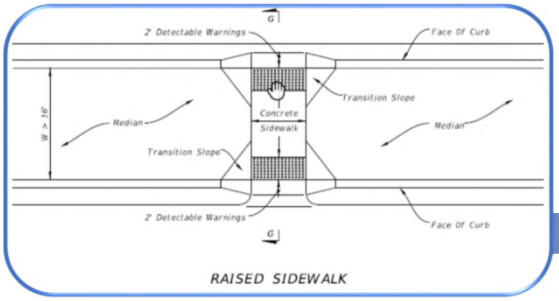
1. Depressed Sidewalk when W ≤ **16'**
2. Raised Sidewalk when W > **16'**

Think Must!

The ***width*** of the sidewalk for the median crossing ~~should~~ match the ***adjacent*** sidewalk width.



See **Exhibit 222-1** for more information.

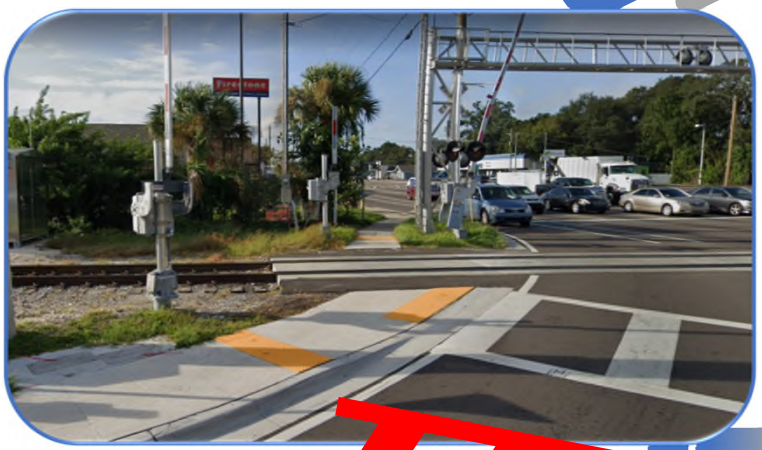


61

At-Grade Railroad Crossings

***FDM* 222.2.4** – FGB 8.G.6

Provide an ADA accessible route for pedestrians at railroad crossings by ***extending*** <u>proposed</u> or <u>existing</u> ***sidewalks*** or shared use paths through the rail crossing.



62

62

At-Grade Railroad Crossings

***FDM* 222.2.4 –** *FGB 8.G.6*

The ***surface*** of the crossing must be:

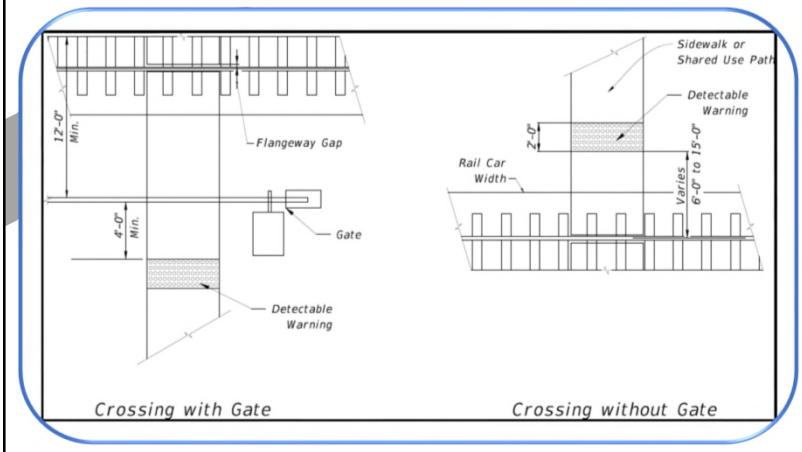
- Firm, stable and ***slip resistant***,
- Level and ***flush*** with top of rail at outer edges of the rails, and
- Area between rails ***aligns*** with the top of rail.

63

63

At-Grade Railroad Crossings

FDM* 222.2.4 –** Place ***detectable warnings on each side of the railroad crossing as detailed in ***Standard Plans*, Index 522-002**.



The edge of the detectable warning nearest the rail crossing is to be located between **6'** and **15'** from the centerline of the ***nearest*** rail. Where gates are provided, detectable ***warnings*** are to be placed a minimum of **4'** from the side of gates opposite the rail.

64

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At-Grade Railroad Crossings

***FDM* 222.2.4** –

An **audible** device, such as a bell, is used in conjunction with the traffic control signals, if traffic control signals are in operation at a crossing that is used by **pedestrians** or bicyclists. Additional information is located in the ***MUTCD*** regarding additional signals, signs, or pedestrian gates and designing **crossings** for shared use paths.

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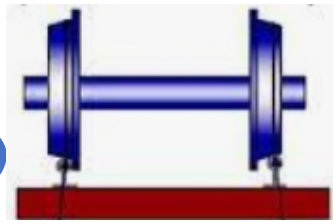

At-Grade RR Crossings

***FDM* 222.2.4** – Flangeway **gaps** are necessary to allow the passage of train wheel flanges; however, they pose a potential **hazard** to pedestrians who use wheelchairs because the gaps can **entrap** the wheelchair casters. A maximum flangeway gap is required for all at-grade pedestrian rail crossings of **2 ½"** for all **non-freight** rail track and **3"** for **freight** rail track.

Provide Perpendicular crossing!

Bicycles, too!

66

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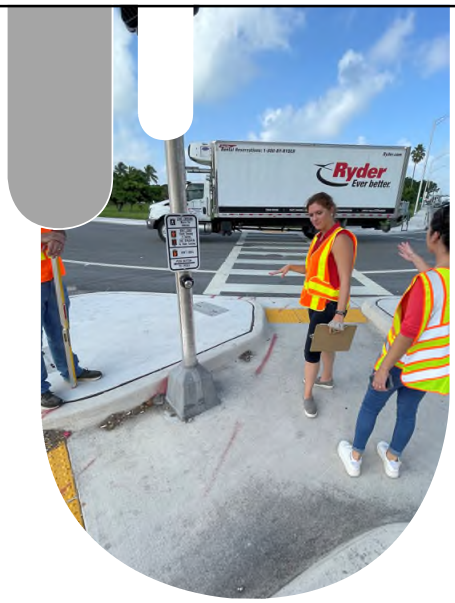

Refuge Islands

***FDM* 222.2.5** –

See ***FDM* 210.3** for **information** on refuge islands.

67

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Curb Extensions (Bulb-Outs)

***FDM* 222.2.6** – Consider the use of curb extensions (a.k.a. bulb-outs) in **conjunction** with on-street parking at intersections or midblock locations where there is a crosswalk, provided there is **adequate** width for existing traffic movements. Curb extensions **shorten** the crossing **distance**, and provide additional space at intersections, allowing pedestrians to see and be **seen** before entering a crosswalk.

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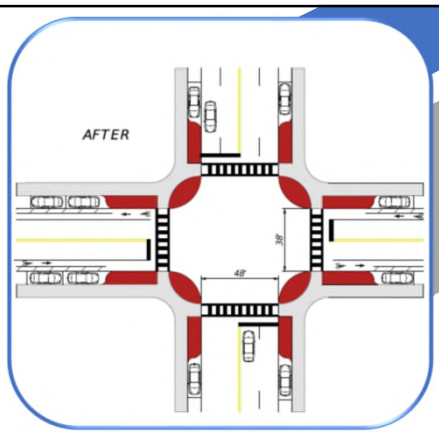
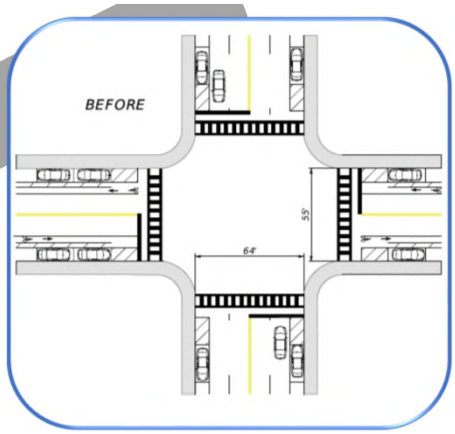
Curb Extensions (Bulb-Outs)

***FDM* 222.2.6 –** The design of curb extensions must take into **consideration** the needs of transit, emergency vehicles, commercial **trucks**, drainage, and **bicyclists**.





Consult with District drainage staff on drainage accommodations for the curb extension during Phase I of the design. See the ***Drainage Design Guide*** and **Figure 222.2.1**.

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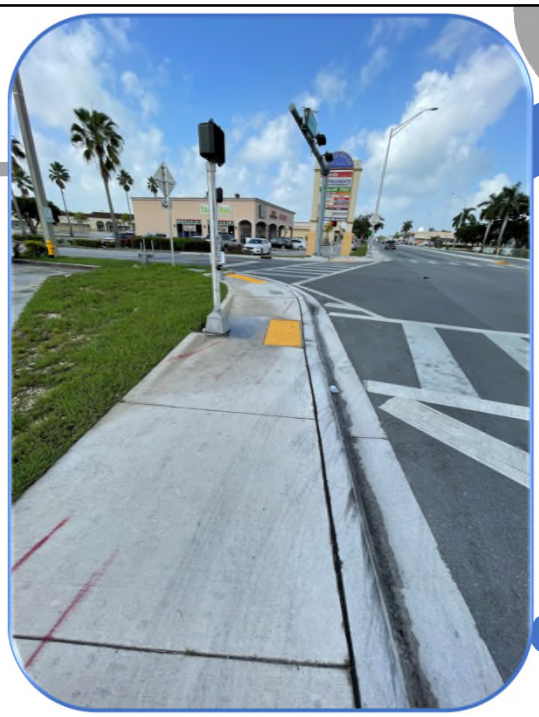
Pedestrian Signals

FDM* 222.2.7** – See ***FDM* 232.6** for **information** on pedestrian signals. Pedestrian **detector** assemblies and pedestrian **control** signals are detailed in ***Standard Plans, **Indexes 653-001** and **665-001**.



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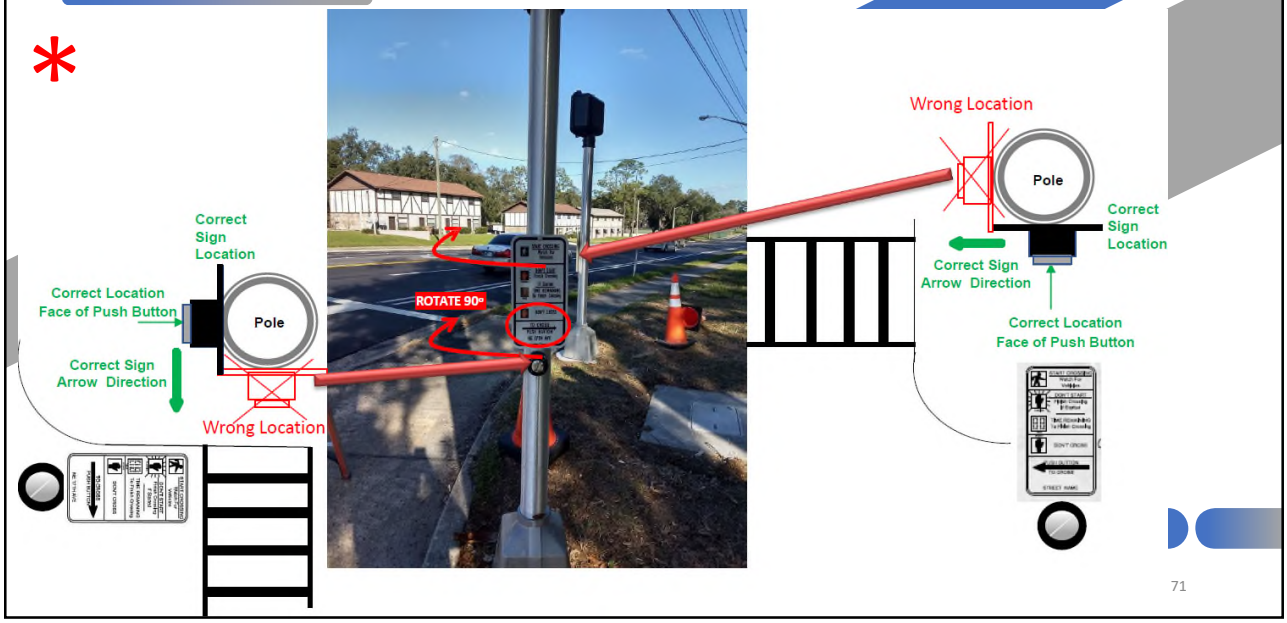
Pedestrian Signals

Note: ***SPI* 665-001** "*Plan Content Requirements*" **requires** designers to "*Call-out pedestrian detector location/orientation…*".



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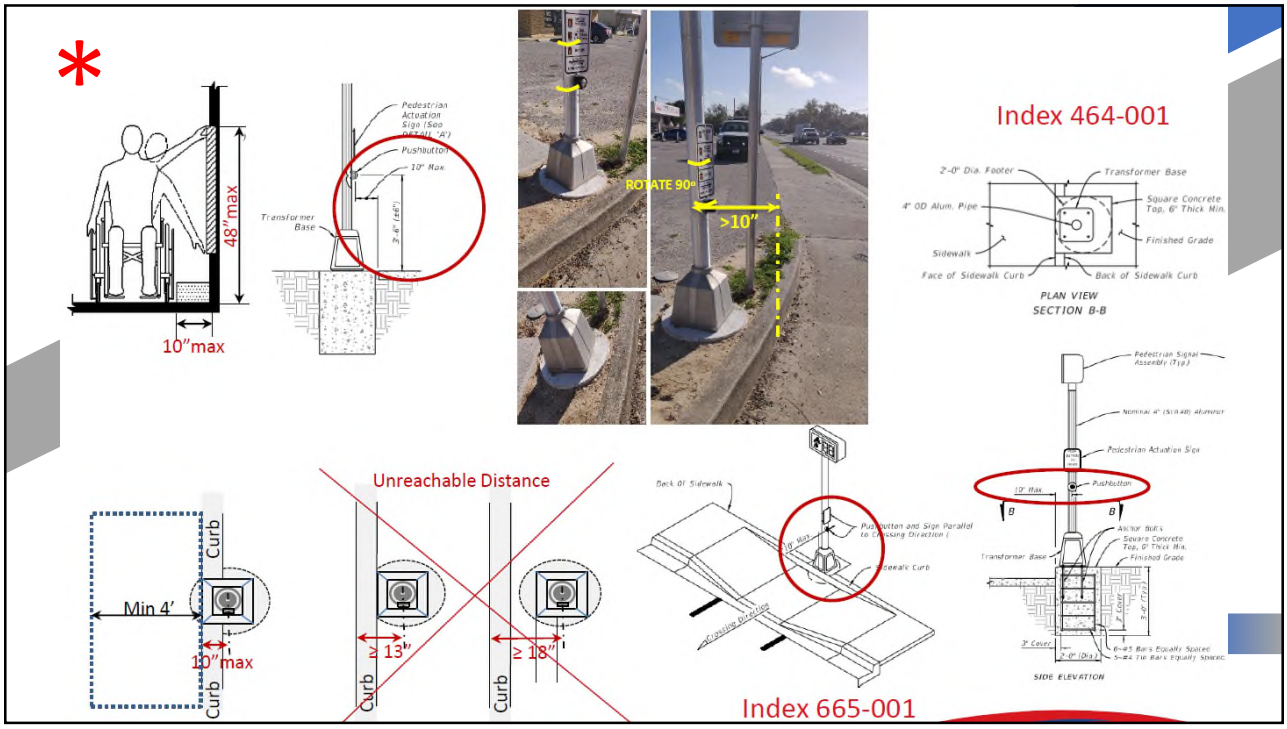

72

Public Transit Loading Zones

FGB 8.B.1

***FDM* 222.2.8** – See ***FDM* 225** for information on **public transit** facilities. Provide a minimum **5'**-wide sidewalk connecting transit stops to sidewalk or shared use paths.

Coordination may be required for the optimum **location** of boarding and alighting areas, transit shelters, and bus bays:

- District Pedestrian and Bicycle Coordinator
- District Modal Development Office Coord.
- District **ADA** Coordinator
- District Public Transportation Staff
- Local public **transit** provider

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Pedestrian Bridges

FGB 8.E.1

***FDM* 222.2.9** –
See ***FDM* 266** for **information** on pedestrian bridges.

74

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Shared Use Paths

***FDM* 222.2.10** – FGB 8.B.2

See ***FDM* 224** for **information** on shared use paths.

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Street Furniture

***FDM* 222.2.11** – Street furniture may include **benches**, lighting fixtures, transit shelters, and bicycle parking. These items may be placed within the R/W under certain **conditions**.

Ensure items **do not obstruct** sight distance or visibility of pedestrians at crosswalks. Do not use street furniture on **curb extensions**.

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Street Furniture

***FDM* 222.2.11 –**

Refer to ***FDM* 223.5** for information on bicycle parking **amenities**, and ***FDM* 225** for information on public transit facilities. Appropriate types of street furniture may vary based on **frequency** and **density** of pedestrian activity. Street furniture must allow for minimum sidewalk **width** and **lateral offset** requirements identified in ***FDM* 2222.1.1** and **222.2.1.2**.

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Detectable Warnings

***FDM* 222.3** – Detectable warnings are a distinctive surface **pattern** of **domes** detectable by **cane** or underfoot that alert people with **vision** impairments of their approach to street **crossings**.

Not an alignment indicator!

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Detectable Warnings

FDM 222.3 – FGB 8.G.3

...in direction of ped travel!

Install detectable warnings to cover the **full** width of the walking **surface** and **2'** deep. They are required on sidewalks at the following **locations** (**1/2**):

- Curb **ramps** and transition areas at street crossings
- Pedestrian refuge **islands** where there is one or more of the following:
  - Change in surface texture
  - Change in **elevation** (e.g., curb ramp)
  - Change in horizontal **alignment** of the path within the refuge island
  - Two-stage crossings

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Detectable Warnings

FDM 222.3 – FGB 8.G.3

They are required on sidewalks at the following locations (**2/2**):

- Pedestrian at-grade railroad **crossings**
- **Commercial** driveways with a stop sign, yield sign, or traffic signal
- Boarding and alighting areas adjacent to the roadway at bus stops where there is an **at-grade** connection to the roadway
- Edges of railroad boarding platforms not **protected** by screens or guards

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Detectable Warnings

***FDM* 222.3** – *FGB 8.G.3*

Detectable warnings should **not be placed** where sidewalk intersects ~~urban **flared** driveways or on sidewalks that run continuously~~ through **residential** driveways. Do not place detectable warnings on transition **slopes** or over grade **breaks**. Further guidance* on detectable warnings is provided in ***Standard Plans***, **Index 522-002**.

**See also Spec 527 for installation instructions.*

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*

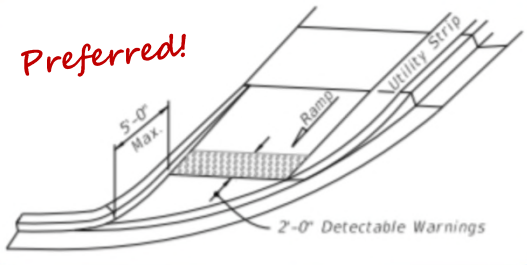
4. Detectable Warnings:

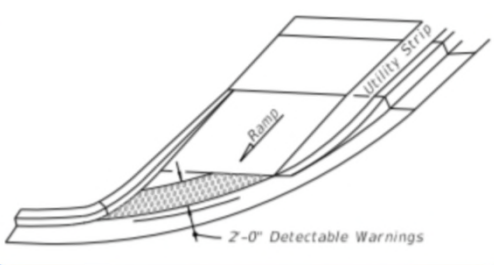
A. Install detectable warnings in accordance with Specification 527.

B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.

C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.

Preferred!





82

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Pedestrian Drop-off Hazards and Railings

FDM 222.4 – FGB 8.F

A pedestrian drop-off **hazard** is a steep or abrupt downward slope that can be **hazardous** to pedestrians.

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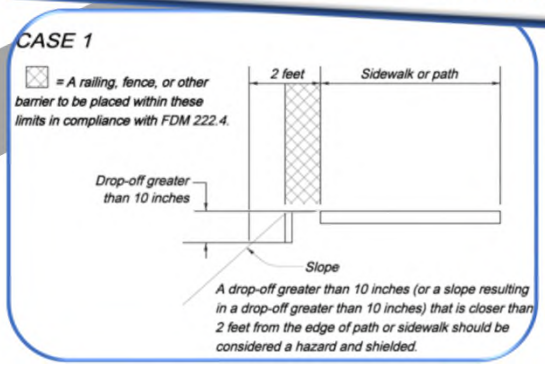
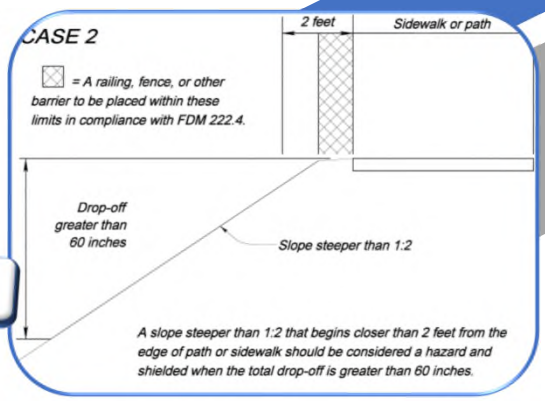
Pedestrian Drop-off Hazards

FDM 222.4 – FGB 8.F

There are two pedestrian drop-off hazard **conditions** defined in **Figure 222.4.1**.

Figure 222.4.1 Drop-Off Hazards for Pedestrians





Additionally, depending on the height of a slope and the severity of the conditions beyond, **cases** other than those shown in **Figure 222.4.1** may also be **considered** a pedestrian drop-off hazard.

84

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Pedestrian Drop-off Hazards

***FDM* 222.4** – FGB 8.F

When the pedestrian drop-off hazard cannot be **eliminated**, consider the following:

(1) **Fencing** is typically used in C1 and C2 **context** classifications and on shared use paths and trails.

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Pedestrian Drop-off Hazards

***FDM* 222.4** – FGB 8.F

(2) **Railing** is typically used in C2T, C3, C4, C5, and C6 context classifications and at locations attaching to **bridge** rail or along sidewalks.

(a) Pedestrian/Bicycle Railings (***Standard Plans***, **Index 515-021** through **-062**) are **adequate** for **shielding all drop-offs** but are generally intended for use on **drop-offs > 60”**.

(b) Pipe Guardrail (***Standard Plans***, **Indices 515-070** and **-080**) is **adequate** for shielding **drop-offs** which are **≤ 60”**.

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Pedestrian Drop-off Hazards

FDM 222.4 – FGB 8.F

(2) **Railing** is typically used in C2T, C3, C4, C5, and C6 context classifications and at locations attaching to **bridge** rail or along sidewalks.

(c) Along **continuous** sections where the drop-off **varies** above and below the **60”** threshold, for uniformity the engineer may consider using only one of the railing types **adequate** for shielding all drop-offs.

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Pedestrian Drop-off Hazards

FDM 222.4 – FGB 8.F

(2) **Railing** is typically used in C2T, C3, C4, C5, and C6 context classifications and at locations attaching to **bridge** rail or along sidewalks.

(d) Pedestrian/Bicycle Railings and Pipe Guardrail are **non**-crashworthy and are **not to be placed** within:

i. Lateral offset requirement for curbed roadways, or

ii. Clear zone for high-speed curbed and flush-shoulder roadways.

(3) Maintain driver’s line of **sight** at intersections and driveways.

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Pedestrian Drop-off Hazards

FGB 8.F

FDM 222.4 –

The **standard** height for Pedestrian/Bicycle Railing is **42”**. Provide **48” tall** Pedestrian/Bicycle Railing when all three of the following conditions exist:

(1) Bicyclists **permitted** to travel within **3’** of railing.

(2) Path is on a **downhill** grade > **5%**.

(3) There is a horizontal **curve** having **radius** less than that specified for the design speed of the bicycle facility. Taller railing should not extend more than **20’** beyond the point of tangency of the horizontal curve.

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Pedestrian Drop-off Hazards

FDM 222.4 – FGB 8.F

Pedestrian railings are not required where **W-beam** guardrail is **installed** at the back of the sidewalk or shared use path.

Pedestrian/Bicycle railings (**42”** in height) are **not required** where traffic railings **separate** the vehicular traffic from the pedestrian or bicycle facility.

Where Pedestrian/Bicycle Railing is used, the Department will cover the cost only for standard galvanized **steel** or standard **aluminum** railing. If the Local Agency desires a **painted** railing, they are required to provide the additional **funding** and commit to cover the **maintenance** cost.

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Pedestrian Drop-off Hazards

***FDM* 222.4 –**

The Department will cover the cost of the **standard** Infill Panel Types shown in the ***Standard Plans***. If the Local Agency desires a railing having **Custom** Infill Panels which increases the cost over standard infill panels, they are required to provide the additional **funding** to cover the initial premium cost. In addition, a maintenance agreement will be needed to address the **responsibilities** associated with maintaining Custom Infill Panels.

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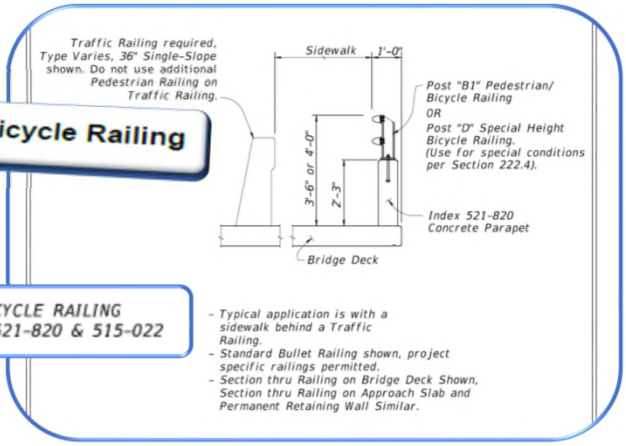
Bridge Pedestrian Railings and Fences

***FDM* 222.4.1 –**

Details and typical applications of various **crashworthy** pedestrian/ bicycle bridge railings and fencing, are provided in **Figures 222.4.2 – 222.4.8**. The **installation** of fencing on traffic railing between sidewalk or shared use paths and travel lanes on LA facilities must be **approved** by the **State Structures Design Engineer**.

The **Engineer** should work with the **District** to determine when an enclosed fencing option is **warranted**.

Figure 222.4.2 **Bridge Railing – Pedestrian/Bicycle Railing**



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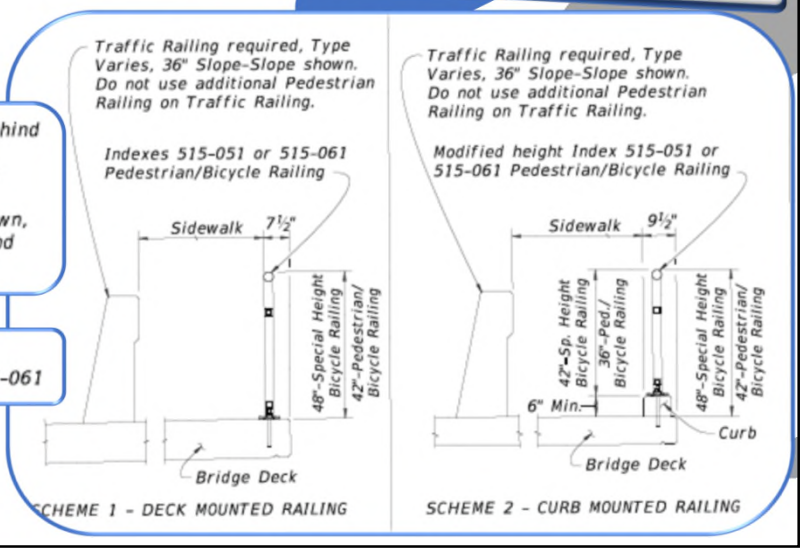
Bridge Pedestrian Railings and Fences

FDM 222.4.1 –

Figure 222.4.3 Bridge Railing – Pedestrian/Bicycle Railing

- Typical application is with a sidewalk behind a Traffic Railing.
- Standard railing shown, project specific railings permitted.
- Section thru Railing on Bridge Deck Shown, Section thru Railing on Approach Slab and Permanent Retaining Wall Similar.

BRIDGE PEDESTRIAN/BICYCLE RAILING
STANDARD PLANS, INDEXES 515-051 & 515-061



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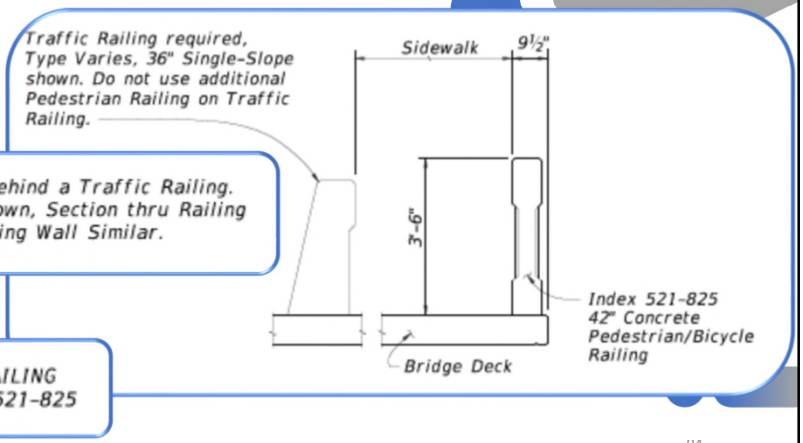
Bridge Pedestrian Railings and Fences

FDM 222.4.1 –

Figure 222.4.4 Bridge Railing – Pedestrian/Bicycle Railing

- Typical application is with a sidewalk behind a Traffic Railing.
- Section thru Railing on Bridge Deck Shown, Section thru Railing on Approach Slab and Permanent Retaining Wall Similar.

PEDESTRIAN/BICYCLE RAILING
STANDARD PLANS, INDEX 521-825



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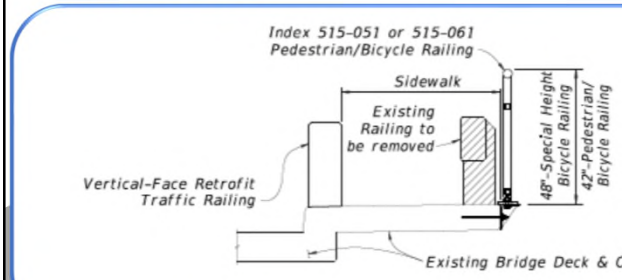
Bridge Pedestrian Railings and Fences

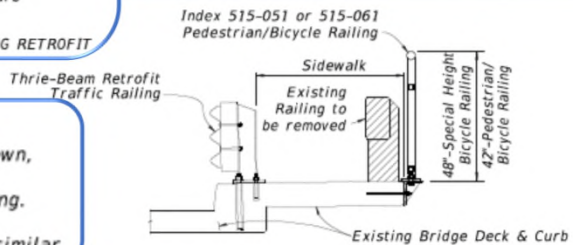
FDM 222.4.1 –

Figure 222.4.5 Bridge Railing and Pedestrian/Bicycle Railing Retrofit



TYPICAL SECTION WITH INDEXES 521-480 THRU 521-484 TRAFFIC RAILING RETROFIT

BRIDGE PEDESTRIAN/BICYCLE RETROFIT RAILING
STANDARD PLANS, INDEXES 515-051 & 515-061



TYPICAL SECTION WITH INDEXES 460-470 THRU 460-476 TRAFFIC RAILING RETROFIT

- Typical application is a retrofit in combination with a Traffic Railing retrofit (Indexes 460-470 & 521-480 shown, other Traffic Railing retrofits similar).
- No additional pedestrian rails permitted on Traffic Railing.
- Section thru Railing on Bridge Deck shown, Section thru Railing on Approach Slab and Permanent Retaining Wall similar.

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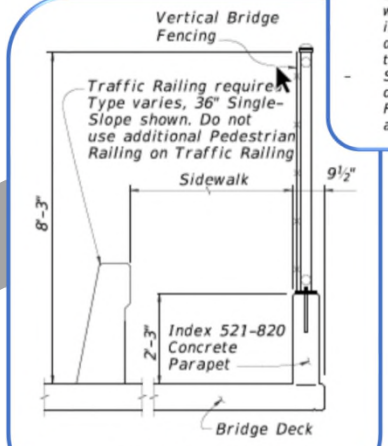
Bridge Pedestrian Railings and Fences

FDM 222.4.1 –

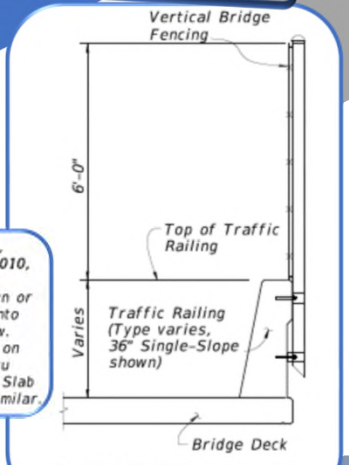
Figure 222.4.6 Bridge Railing and Bridge Parapet Fencing

- At the direction of the District, use Standard Plans, Index 550-010, where there are reoccurring incidents of debris being thrown or dropped over bridge railings onto traffic or railroad tracks below.
- Section thru Fence and Parapet on Bridge Deck shown. Section thru Fence and Parapet on Approach Slab and Pemanent Retaining Wall similar.



TYPICAL SECTION ON
ONCRETE PARAPET WITH INDEX 550-010

- At the direction of the District, use Standard Plans, Index 550-010, where there are reoccurring incidents of debris being thrown or dropped over bridge railings onto traffic or railroad tracks below.
- Section thru Fence and Railing on Bridge Deck shown. Section thru Fence and Railing on Approach Slab and Pemanent Retaining Wall similar.



TYPICAL SECTION ON TRAFFIC
AILING BARRIER WITH INDEX 550-01

VERTICAL BRIDGE FENCING
STANDARD PLANS, INDEX 550-010

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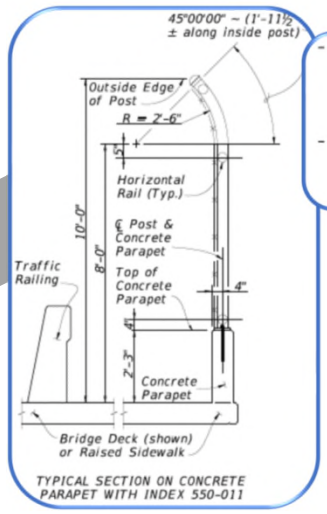
Bridge Pedestrian Railings and Fences

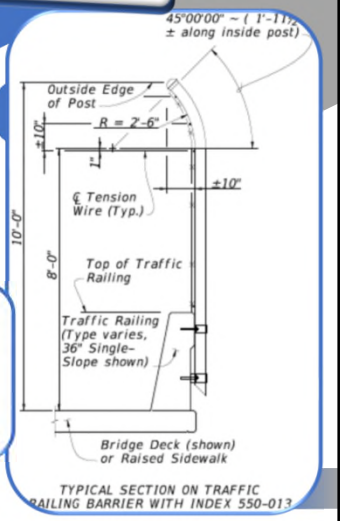
FDM 222.4.1 –

Figure 222.4.7 Curved Bridge Fencing



- At the direction of the District, use **Standard Plans, Index 550-011**, where there are reoccurring incidents of debris being thrown or dropped over bridge railings onto traffic or railroad tracks below.
- Section thru Fence and Parapet on Bridge Deck shown. Section thru Fence and Parapet on Approach Slab and Pemanent Retaining Wall similar.

- At the direction of the District, use **Standard Plans, Index 550-013**, where there are reoccurring incidents of debris being thrown or dropped over bridge railings onto traffic or railroad tracks below.
- Section thru Fence and Railing on Bridge Deck shown. Section thru Fence and Railing on Approach Slab and Pemanent Retaining Wall similar.



CURVED BRIDGE FENCING
STANDARD PLANS, INDEXES 550-011 & 550-013

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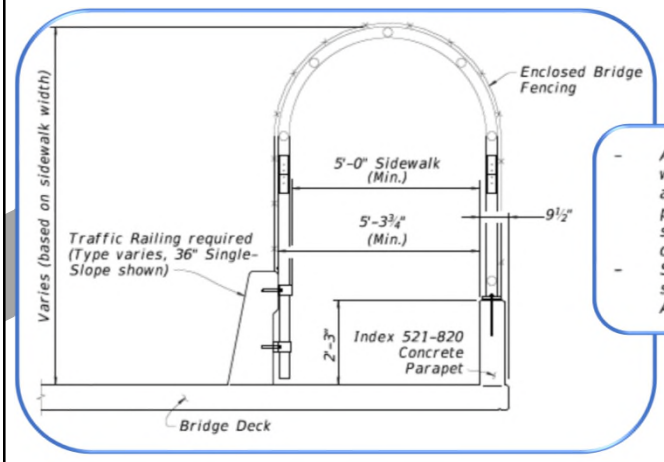
Bridge Pedestrian Railings and Fences

FDM 222.4.1 –

Figure 222.4.8 Bridge Railing – Enclosed Fencing



- At the direction of the District, use **Standard Plans, Index 550-012** when a Traffic Railing, sidewalk and parapet exists on a bridge and when Pedestrian Traffic from schools, residential neighborhoods, playgrounds and recreational facilities is encountered. The Engineer should work with the District to determine when the enclosed fencing option is warranted.
- Section thru Fence, Parapet and Traffic Railing on Bridge Deck shown, Section thru Fence, Parapet and Traffic Railing on Approach Slab and Permanent Retaining Wall similar.

ENCLOSED BRIDGE FENCING
STANDARD PLANS, INDEX 550-012

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Pedestrian Railings on RRR Projects

***FDM* 222.4.2 –**
For RRR projects, **existing** pedestrian railings and pipe guiderail should be **removed** that are within:

- Required **lateral offset** for curbed roadways, or
- Inside **clear zone** for high speed curbed and flush shoulder roadways

99

Maybe consider other mitigation strategies?

Pedestrian Railings on RRR Projects

***FDM* 222.4.2 –**
If there was a **documented** issue of traffic incidents involving pedestrians **prior** to the installation of the existing pedestrian railing or pipe guiderail that would likely **reoccur**, implement one of the following **treatments**, in order of priority:

(1) **Eliminate** the hazard and remove the pedestrian railings and pipe guiderail, or

(2) Allow the railing to **remain**.

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Movable Bridge Pedestrian Gates

***FDM* 222.5 –**

Refer to ***Structures Design Guidelines*** (***SDG***), **Chapter 8** for **moveable** bridge pedestrian **safety** design requirements.

101

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DESIGN FOR CONSTRUCTION

FGB 11.E, F, & G

Transportation **Management** Plan

President George H.W. Bush – July 26, 1990
"[The ADA] signals the end to the **unjustified segregation** and exclusion of persons with disabilities from the mainstream of American life."

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General

***FDM* 240.1** – A Transportation Management Plan (TMP) is **required** for **minimizing** activity-related traffic delay and crashes.

The **goal** of a TMP is to **reduce** congestion during construction by **managing** traffic through the project area.

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General

FDM* 240.1** – For TMPs, ***significant projects are defined as:

(1) A project that, alone or in combination with other concurrent projects nearby, is **anticipated** to cause ***sustained*** work zone impacts.

(2) All **interstate** system projects within the **boundaries** of a designated Transportation Management Area (**TMA**) that occupy a location for more than **three** days with either intermittent or continuous **lane closures**.

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General

***FDM* 240.1** – Significant projects may require a **multi-discipline** TMP team to plan, **coordinate**, implement, monitor, and evaluate the details of the TMP **elements**.

Depending on the project **logistics**, the team **composition** may include FHWA, local government, and business **representatives**.

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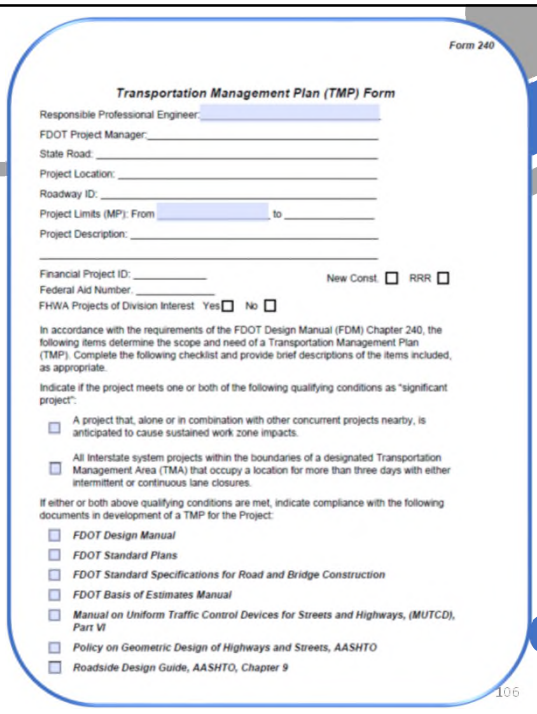
General

***FDM* 240.1** – Complete the Transportation Management Plan Form, **Form 240** (See ***FDM* 103**). This form is **required** for all projects (significant or not) to **document** compliance with the ***23 CFR* 630**, **Subpart J.240.1.1**, **TMP Reference Documents**.



Form 240

Transportation Management Plan (TMP) Form

Responsible Professional Engineer: _____

FDOT Project Manager: _____

State Road: _____

Project Location: _____

Roadway ID: _____

Project Limits (MP): From _____ to _____

Project Description: _____

_____

Financial Project ID: _____ New Const. ☐ RRR ☐

Federal Aid Number: _____

FHWA Projects of Division Interest Yes ☐ No ☐

In accordance with the requirements of the FDOT Design Manual (FDM) Chapter 240, the following items determine the scope and need of a Transportation Management Plan (TMP). Complete the following checklist and provide brief descriptions of the items included, as appropriate.

Indicate if the project meets one or both of the following qualifying conditions as "significant project":

☐ A project that, alone or in combination with other concurrent projects nearby, is anticipated to cause sustained work zone impacts.

☐ All Interstate system projects within the boundaries of a designated Transportation Management Area (TMA) that occupy a location for more than three days with either intermittent or continuous lane closures.

If either or both above qualifying conditions are met, indicate compliance with the following documents in development of a TMP for the Project:

☐ *FDOT Design Manual*

☐ *FDOT Standard Plans*

☐ *FDOT Standard Specifications for Road and Bridge Construction*

☐ *FDOT Basis of Estimates Manual*

☐ *Manual on Uniform Traffic Control Devices for Streets and Highways, (MUTCD), Part VI*

☐ *Policy on Geometric Design of Highways and Streets, AASHTO*

☐ *Roadside Design Guide, AASHTO, Chapter 9*

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TMP Reference Documents

***FDM* 240.1.1** – **Comply** with the following **documents** for the development of TMPs:

(1) ***Manual on Uniform Traffic Control Devices for Streets and Highways***, (***MUTCD***), **Part VI**

(2) ***Policy on Geometric Design of Highways and Streets***, AASHTO

(3) ***Roadside Design Guide***, AASHTO, **Chapter 9**

(4) ***Standard Plans***, **102 Series** and **711-002**.

(5) ***FDOT Standard Specifications for Road and Bridge Construction*** (***Standard Specifications***)

(6) ***Basis of Estimates Manual***

(7) ***FDOT Accessing Transit Handbook***, **Chapter 4.6**

(8) ***AASHTO Guide for the Development of Bicycle Facilities***, 4th Edition, **Chapter 7**

(9) ***FDOT Traffic Analysis Handbook***

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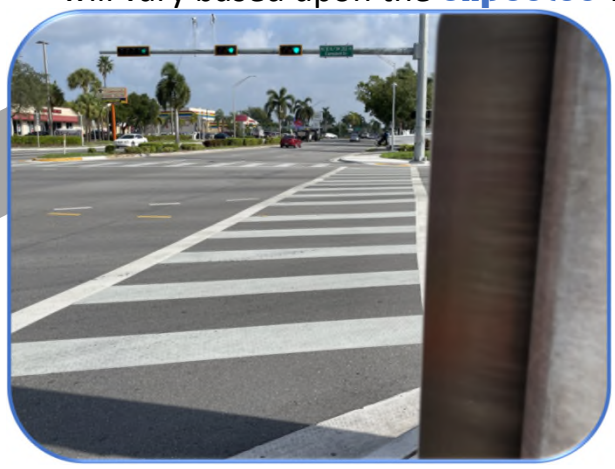
TMP Components

***FDM* 240.1.2** – A TMP consists of **strategies to manage** the work zone **impacts** of a project. The scope, content, and degree of detail will vary based upon the **expected** work zone impacts of the project.



A TMP may **include** the following three **components**:

- Temporary Traffic **Control** Plan
- Transportation **Operations** Plan
- Public **Information** Plan

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Temporary Traffic Control Plan

FDM* 240.2 –** A **Temporary** Traffic Control Plan (TTCP) is **required** for all **work zones** within, adjacent to highways, roads and streets as specified by ***Florida Statute and Federal regulations.

Typical applications of some **commonly** encountered situations are shown in the ***MUTCD***. Some of these typical applications have been **modified** by the ***Standard Plans*, 102 Series**.

Most work zones will require further **development** of the typical applications to address **project-specific** conditions.

'Engineer' a solution!

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Bicycle, Pedestrian, and Transit Accommodation

***FDM* 240.2.1.9 –**

Include accommodations for the following road users of all ages and abilities in the TTCP:

- **Pedestrians**
- Bicyclists
- Transit users

Provide accommodations on Florida National Scenic Trail and SUN Trail.

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Bicycle, Pedestrian, and Transit Accommodation

***FDM* 240.2.1.9 – ADA requirements apply during TTC.**

Important!

Include provisions for the disabled at the **same level** of accessibility as the existing facility **or greater**.

See ***Standard Specifications***, **Section 102** and ***FDM* 222**, **225** for more information.

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Bicycle, Pedestrian, and Transit Accommodation

***FDM* 240.2.1.9** – Minimize **impacts** to existing bicycle, pedestrian and transit facilities by **preserving** the following to the extent feasible:

- **Safety & accessibility** features
- **Connectivity** of the facilities to and through the project
- **Directness** of route

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Bicycle, Pedestrian, and Transit Accommodation

***FDM* 240.2.1.9 – Design Principals for Temp Bicycle and Ped Facilities:**

(1) Provide **like-for-like** bicycle and pedestrian facilities to the maximum extent possible. When this **cannot** be accomplished for bicycle facilities, ***separate*** motorized traffic from bicycle traffic whenever possible.

The higher the volumes of **motorized** traffic or percentage of **truck traffic** and the longer the **duration** of construction, the more ***substantial*** the ***separation*** should be.

Specify temp bicycle ways that replicate the geometric **characteristics** of the existing bicycle way. For example, a separated bicycle facility should remain separated during construction. See ***FDM* 223** for more information on ***separated*** bike facilities.

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Bicycle, Pedestrian, and Transit Accommodation

***FDM* 240.2.1.9 –**

(2) **Phase** the construction plans to ensure bicycle and pedestrian facilities are only **closed** when **necessary**. See ***FDM* 921** for more information on phasing.

(3) See ***Standard Plans***, **Series 102** for additional information and **requirements** on pedestrian facilities in **work zones**.

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Bicycle, Pedestrian, and Transit Accommodation

***FDM* 240.2.1.9** –

(4) Provide **temporary** barrier per ***FDM* 215** where temporary pedestrian ways divert pedestrian traffic to be immediately **adjacent** to **vehicular** traffic (e.g., a paved shoulder) or when a separated bike lane has been **moved**. This does not apply to temporary pedestrian ways behind curb.

(5) Ensure work zones **adjacent** to sidewalks or temporary pedestrian ways provide **separation** between pedestrians and the work area.

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Bicycle, Pedestrian, and Transit Accommodation

***FDM* 240.2.1.9 – Location of Temp Routes for Pedestrians and Bicyclists:**

(1) Do not lead **pedestrians** or bicyclists into direct conflicts with vehicles, equipment, or operations.

(2) Keep **detour** lengths and diversions as **short** as practicable.

(a) Detours should not create more than a **30%** increase in the length of the **non-motorized** facility or not longer than **0.5** miles for bicyclists or **0.25** miles for pedestrians.

(b) To **minimize** the detour length, consider providing a temporary mid-block **crosswalk** instead of detouring pedestrians to the nearest signalized intersection or existing crosswalk.

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Bicycle, Pedestrian, and Transit Accommodation

***FDM* 240.2.1.9 – Location of Temp Routes for Pedestrians and Bicyclists:**

(3) The order of **preference** for routing:

(a) Maintain facility on the **same side** of the road.

(b) Diversion to the **opposite** side of the road.
Return to original side of road as soon as possible.

See additional details in FDM!

(c) Detour to **another road**. Return to original road and side of road as soon as possible.

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Bicycle, Pedestrian, Transit Accommodation

***FDM* 240.2.1.9 – Transit Users:**
Ensure **provision** is made to allow transit users to **access** transit stops and to **board** and **depart** transit vehicles safely. Temporary transit access must include provisions for the disabled at the **same level** of accessibility as the **existing** facility or **greater**. See FDOT's ***Accessing Transit Handbook*** for guidance on transit stops.

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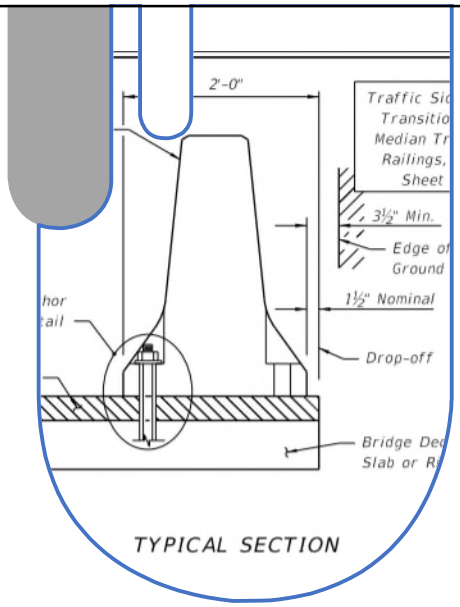

Drop-offs in Work Zones

***FDM* 240.2.1.14** – See ***Standard Plans*, 102 Series** for requirements related to **drop-offs** in work zones.

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Temporary Traffic Control Devices

FDM* 240.2.2 –** The ***MUTCD contains **detailed** instructions on the use of traffic control devices. **Special** design considerations applicable to **Florida** are discussed in the following sections.

Temporary traffic control devices should **not** be placed in locations where they will block or **interfere** with transit stops, pedestrians, or bicycle traffic.

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Temporary Traffic Control Devices

***FDM* 240.2.2.1 – Signs**
Work zone signs are typically post mounted in accordance with ***Standard Plans*, 102 Series**.

Signing for the **control** of traffic entering and leaving work zones by way of intersecting roadways must be adequate to **inform** drivers, cyclists and pedestrians of work zone **conditions**. At a minimum, provide a "**Road Work Ahead**" sign.

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Temporary Traffic Control Devices

***FDM* 240.2.2.1 – If the work zone **interrupts** the continuity of an existing bicycle or pedestrian way, then **provide** signs directing non-motorists alongside or around the work zone and **back** to the bicycle or pedestrian way.**

See the ***Standard Plans*, 102 Series** for **required** work zone signs and placement.

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Temporary Traffic Control Devices

***FDM* 240.2.2.1 –**

Existing Signs:
Specify **covering**, removing, or **relocating** existing regulatory or warning signs that conflict with the TTCP, or to **complement** the work zone conditions (e.g., if a stop sign on an existing side road is needed, use the existing sign and show the location that it is to be **relocated** to).

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Temporary Traffic Control Devices

***FDM* 240.2.2.1 –**

Modify existing guide signs to show changes made necessary by the construction **operations**. If existing guide signs are to be removed during construction, make provisions for **temporary** guide signing. The temporary sign should be black on orange with the legend designed in accordance with ***MUTCD* requirements** for permanent guide signing.

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Temporary Traffic Control Devices

***FDM* 240.2.2.5 – Ped LCDs** Specify the use of pedestrian Longitudinal **Channelizing** Devices (LCDs) for the following situations:

***See MUTCD* 6F**

- At each closed pedestrian **way** location, for the **full width**
- In locations where a drop-off **hazard** exists (see ***Standard Plans***, **102 Series**)
- In locations where the **active work zone** is within **2'** of the sidewalk or pedestrian walkway.
- Along **both sides** of a **temporary** pedestrian way
  - LCDs not required w/ **existing** barrier

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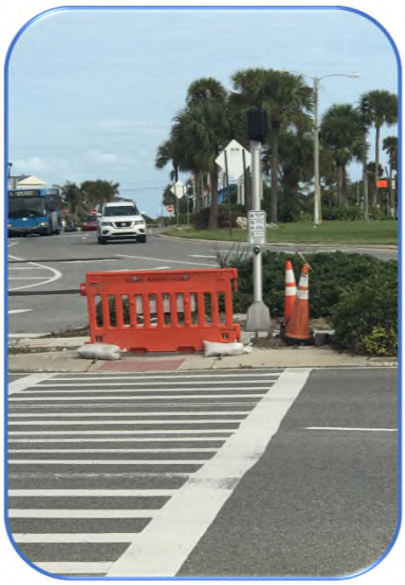
Temporary Traffic Control Devices



***FDM* 240.2.2.8 – Temp Traffic Signals**

Design and detail temporary poles and span wire assemblies for temporary traffic signals using the following criteria:

(1) **Design** temporary signal supports for an **80 mph** wind speed. See ***Structures Manual***, ***Volume 3*** for additional requirements.

(2) See **Lateral Offset** Criteria in ***FDM* 215** for placement of temporary traffic signal supports.

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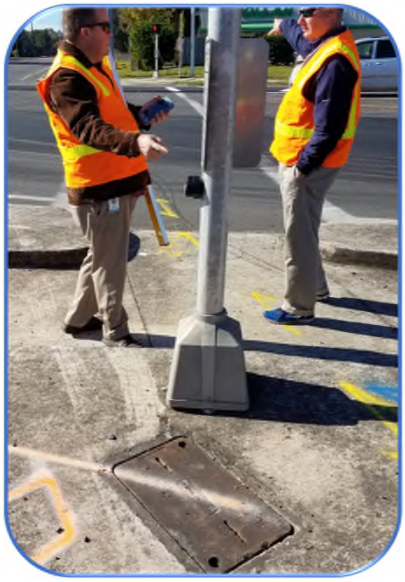
Temporary Traffic Control Devices



***FDM* 240.2.2.8 – Temp Traffic Signals**

Provide sufficient ***signal timing for pedestrians*** where a pedestrian crossing is present.

Include temporary traffic signals in the TTCP in accordance with ***FDM* 240.2.1.12**.

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Temporary Traffic Control Devices

FDM* 240.2.2.11 – Law Enforcement Officers**. Law enforcement officers are used to heighten the ***awareness of passing vehicular traffic and to improve safety through the work zone.

The following types of law enforcement officer are used in ***temporary*** traffic control:

- ***Speed*** and Law Enforcement Officer
- ***Traffic*** Control Officer

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Transportation Operations Plan

***FDM* 240.3** – The Transportations **Operation** Plan (**TOP**) contains strategies to **improve** mobility, work zone access, and safety. Strategies will include items such as work zone Intelligent Transportation System (**ITS**) components and incident management.

Table 240.3.1 provides **common** TOP items.

A TOP should be **considered** for significant projects, as defined in ***FDM* 240.1**.

Safety & Accessibility!

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Public Information Plan

***FDM* 240.4** – The Public Information Plan (**PIP**) describes how project information will be **communicated** to affected parties, traveling public, and project stakeholders prior to and during construction.

The PIP will also describe the most **efficient** method of communicating this information (e.g., local media, business groups, message signs).

The PIP should be integrated into the project's Community Awareness Plan (**CAP**) when the CAP is to include **communication** strategies. A PIP should be considered for **significant** projects, as defined in ***FDM* 240.1**.

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Public Information Plan

***FDM* 240.4 –**
See the following **additional** info on public involvement and CAP requirements:

(1) ***FDM* 104**

(2) ***Public Involvement Handbook***

(3) ***PD&E Manual***

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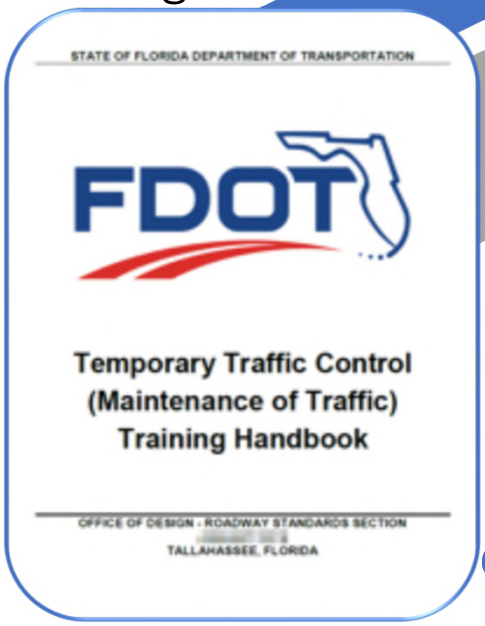
Temporary Traffic Control Training

FDM* 240.5 –** The Department has prescribed temporary traffic control **training** requirements outlined in the ***Temporary Traffic Control (Maintenance of Traffic) Training Handbook.



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DOS & DON'TS

Lessons **learned**

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Military Tr
START CROSSING
Watch for Vehicles
DON'T START
Finish Crossing
If Started
THE WARNING
To Finish Crossing
DON'T CROSS
PUSH BUTTON
TO CROSS
MILITARY TRAIL
BARRICADE
BARRICADE

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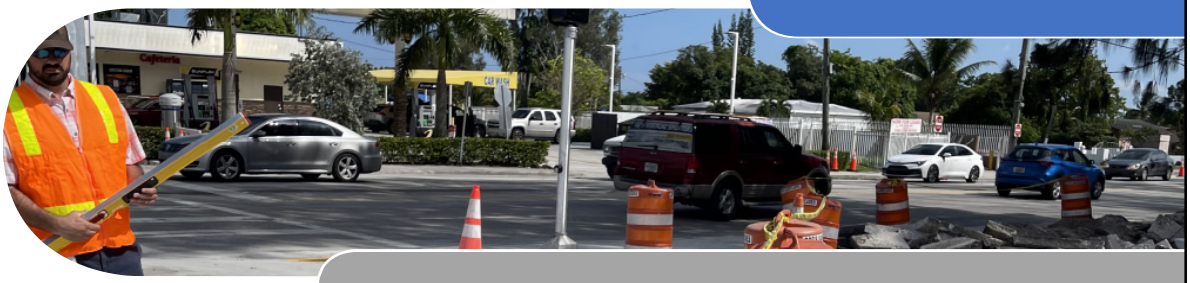
FDOT

DURING CONSTRUCTION

Temporary Traffic Control



FDOT

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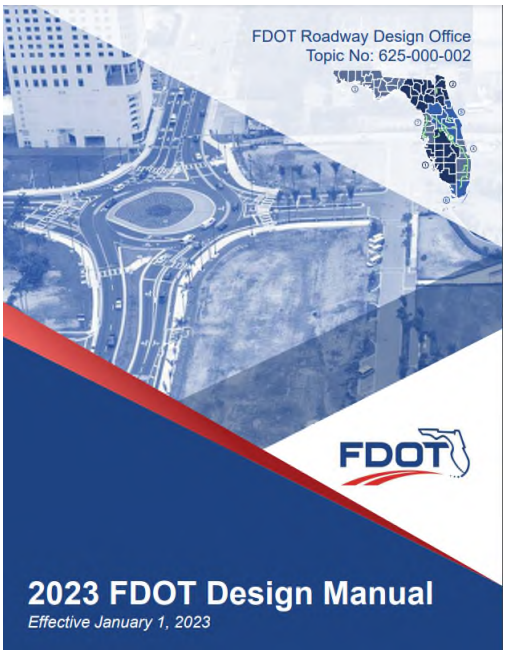
FDOT Design Manual

Designers



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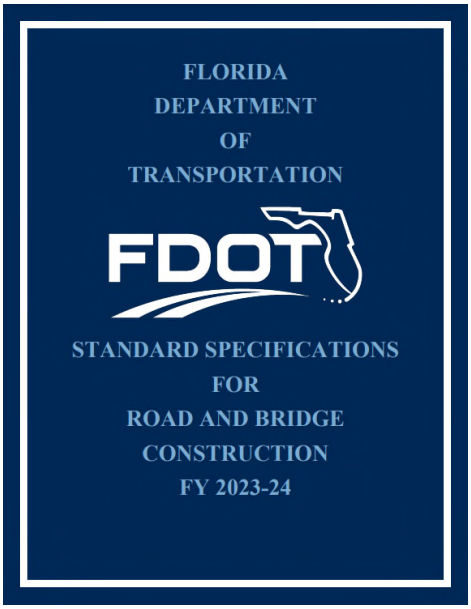
Standard Specifications

Contractors



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Pedestrian and Bicycle Accommodations

102-3.4 Pedestrian and Bicycle Accommodations: Provide accommodations for pedestrians as shown in the Temporary Traffic Control (TTC) plans or as directed by the Engineer. Accommodate pedestrians with a safe, accessible travel path around work sites separated from mainline traffic in compliance with the Americans with Disabilities Act (ADA) Standards for Transportation Facilities (i.e., stable, firm, slip-resistant, and free of any obstruction or hazards such as holes, debris, mud, construction equipment, and stored material. When a work operation requires a sidewalk or pedestrian way closure for 60 minutes or greater, provide a pedestrian detour or temporary pedestrian way. Provide and maintain pedestrian detours and temporary pedestrian ways that are ADA-compliant as described above. Provide appropriate signs for advanced notification of sidewalk closures and marked detours. Only approved pedestrian longitudinal channelizing devices may be used to close or delineate a pedestrian walkway.

Provide accommodations for the closure of bicycle facilities (i.e., marked bicycle lanes or paved outside shoulders 4 feet or greater in width on non-limited access roadways) as shown in the TTC plans or as directed by the Engineer.

Existing businesses in work areas are to be provided with adequate entrances for vehicular and pedestrian traffic during business hours.

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Standard Plans

Contractors

FDOT

FY 2023-24 STANDARD PLANS FOR ROAD CONSTRUCTION

Effective for Projects with Lettings in the Fiscal Year (FY) from July 1, 2023 through June 30, 2024

FY 2023-24 Standard Plans for
Road and Bridge Construction
Topic No. 625-010-003

State of Florida Department of Transportation
Office of Design
Mail Station 32
605 Suwannee Street
Tallahassee, Florida 32399-0450

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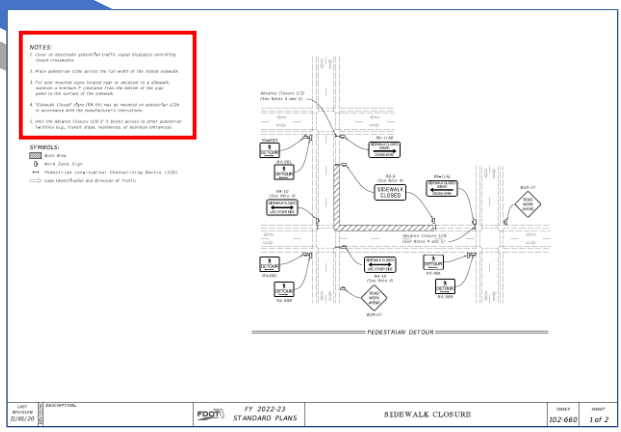
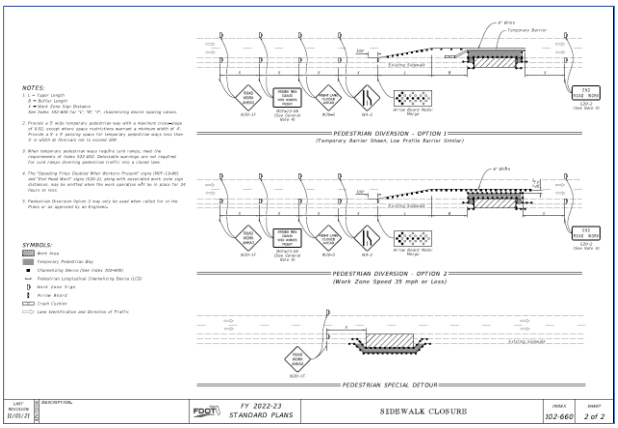
Index 102-660: Sidewalk Closure





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Index 102-660: Sidewalk Closure (Sheet 1)

NOTES:

1. *Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.*
2. *Place pedestrian LCDs across the full width of the closed sidewalk.*
3. *For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7' clearance from the bottom of the sign panel to the surface of the sidewalk.*
4. *"Sidewalk Closed" signs (R9-XX) may be mounted on pedestrian LCDs in accordance with the manufacturer's instructions.*
5. *Omit the Advance Closure LCD if it blocks access to other pedestrian facilities (e,g,, transit stops, residences, or business entrances).*

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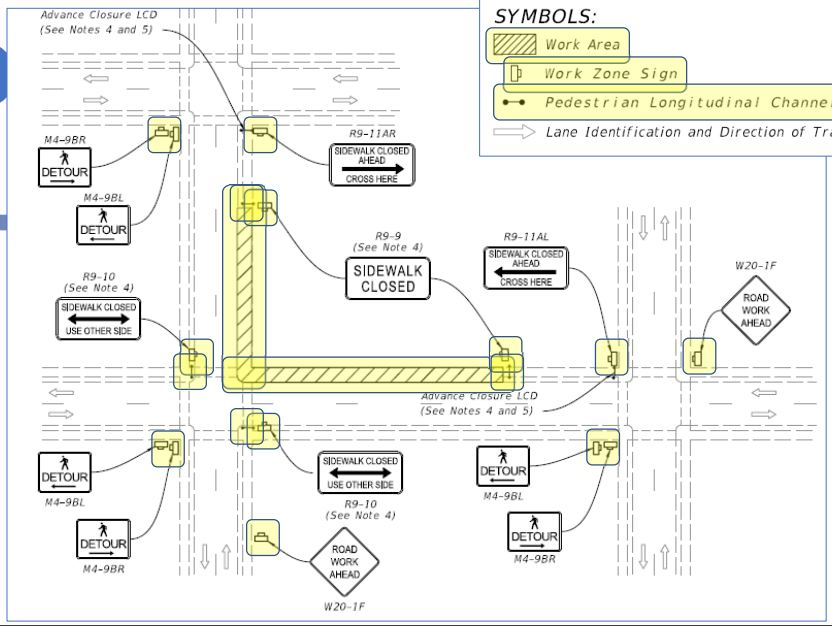
Index 102-660: Sidewalk Closure (Sheet 1)



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Index 102-660: Sidewalk Closure (Sheet 2)

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Distance
   See Index 102-600 for "L", "B", "X", channelizing device spacing values.

2. Provide a 5' wide temporary pedestrian way with a maximum cross-slope of 0.02, except where space restrictions warrant a minimum width of 4'. Provide a 5' x 5' passing space for temporary pedestrian ways less than 5' in width at intervals not to exceed 200'.

3. When temporary pedestrian ways require curb ramps, meet the requirements of Index 522-002. Detectable warnings are not required for curb ramps diverting pedestrian traffic into a closed lane.

4. The "Speeding Fines Doubled When Workers Present" signs (M0T-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less.

5. Pedestrian Diversion Option 2 may only be used when called for in the Plans or as approved by an Engineer.

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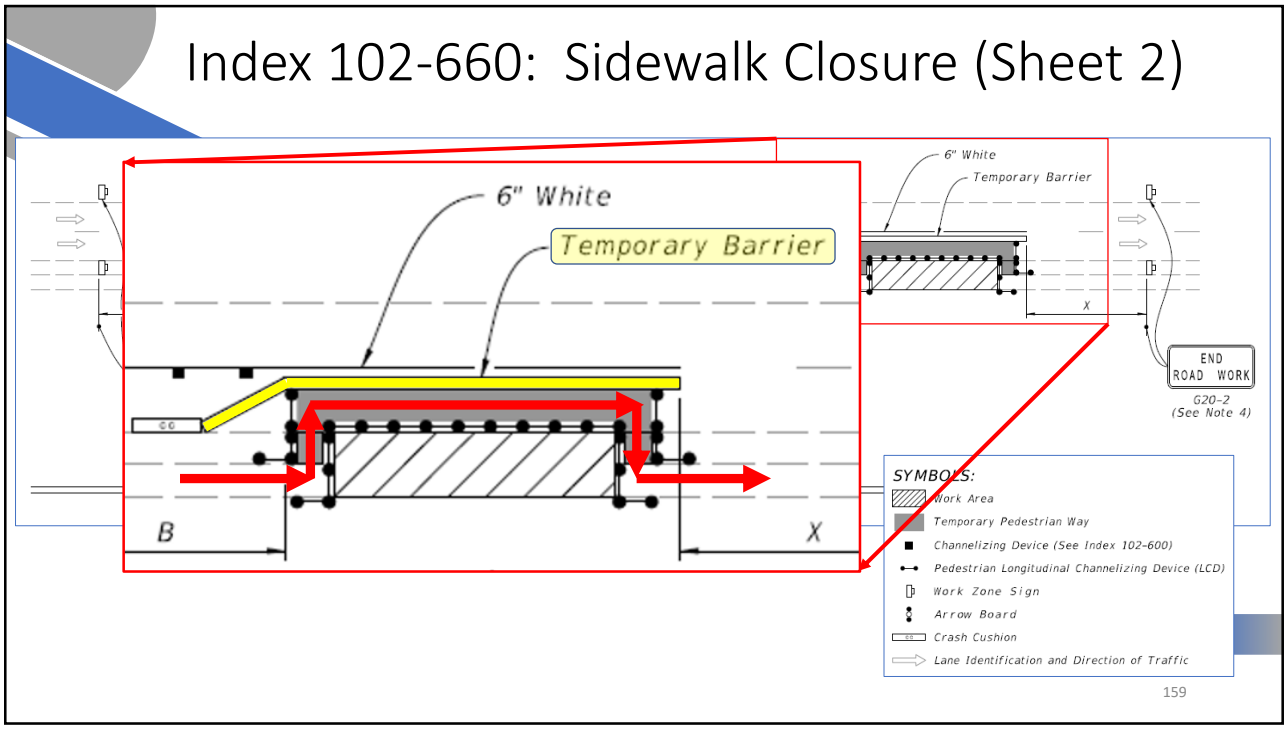
Index 102-660: Sidewalk Closure (Sheet 2)



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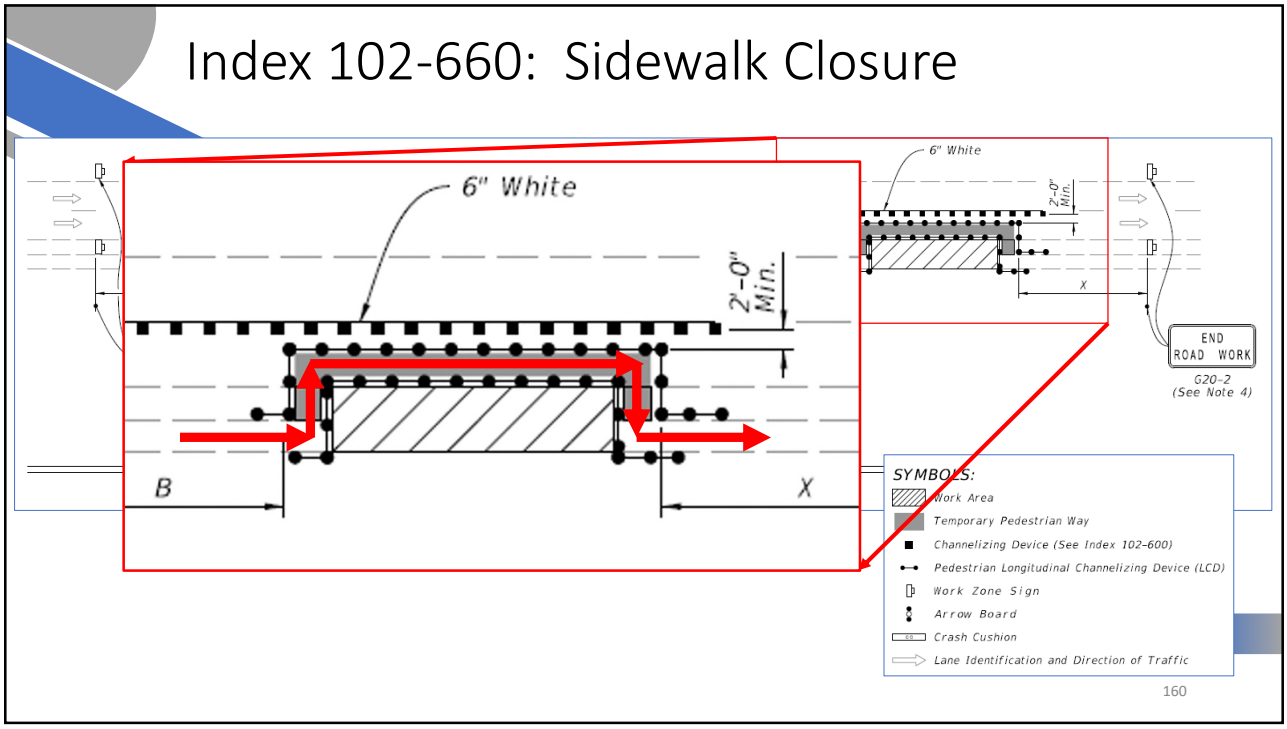
Index 102-660: Sidewalk Closure



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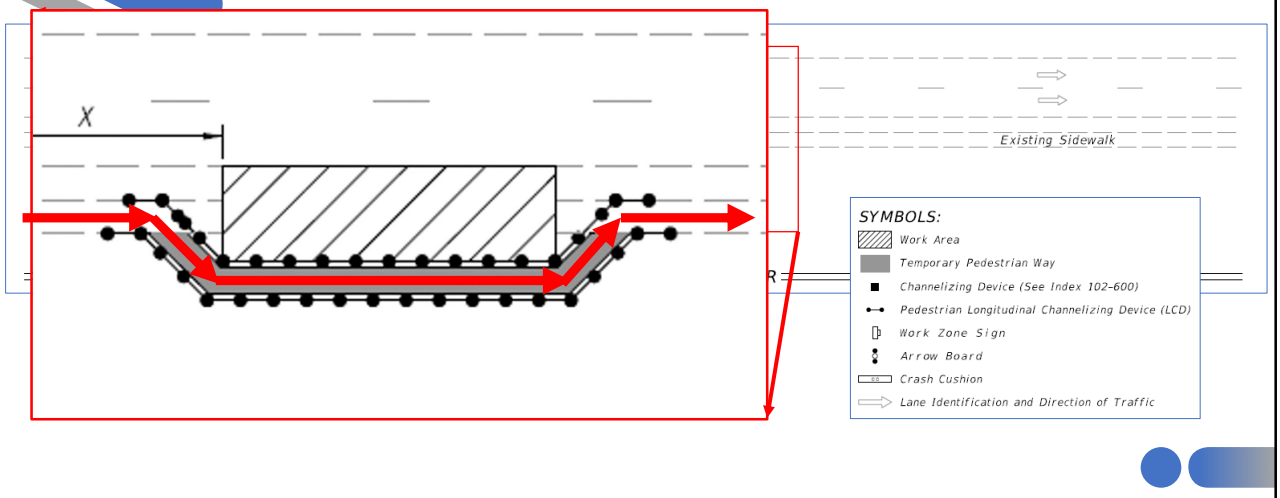
Index 102-660: Sidewalk Closure



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MAINTENANCE CONSIDERATIONS

…accessibility must be maintained!

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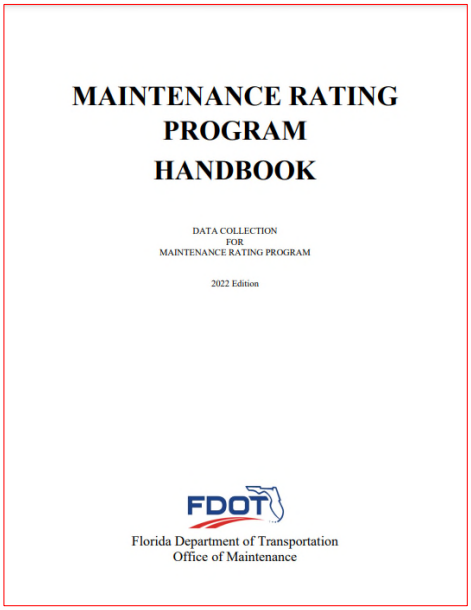
Maintenance Rating Program

Hitting the High Points



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Sidewalk

Sidewalk – Sidewalk is constructed of various materials and is subject to misalignments caused by growing tree roots, settling or deterioration. This measurement includes the normal sidewalk joint and the sidewalk to curb joint. Sidewalk should be projected across an urban flared paved turnout and that area evaluated as sidewalk. Any bike path located outside the roadway pavement area will be evaluated as sidewalk. Paved utility strips are evaluated as sidewalk if they are intended to be used as sidewalk.

Sidewalk shall not be evaluated across dedicated streets. Spalled areas greater than ½ inch in depth do not meet desired conditions. Uniform deviation from original grade that has vertical misalignments or cracks greater than ¼ inch do not meet desired maintenance conditions. Changes in level up to ½ inch may be beveled with a slope that complies with Fig. 7. For purposes of evaluating this characteristic, one linear foot of misalignment or cracking not meeting desired conditions equals one square foot of sidewalk area. Do not exceed one linear foot of cracking in a one square foot area. Unsealed joints greater than ½ inch do not meet desired maintenance conditions.

For MRP purposes, no rigid objects protruding from concrete greater than ¼ inch in height, or any single misalignment, or deviations greater than 1½ inches.

For MRP purposes if an entire slab is missing in a continuous section of sidewalk, multiply the length of the missing section by the width to get the area missing. For example, if a 5 ft. section of sidewalk 5 ft. wide is missing the area would be 25 sq. ft. If the area missing combined with the total area of cracking is greater than that allowed for the standard then sidewalk does not meet MRP standards.

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Sidewalk
Cracking
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Sidewalk
Vertical Misalignment
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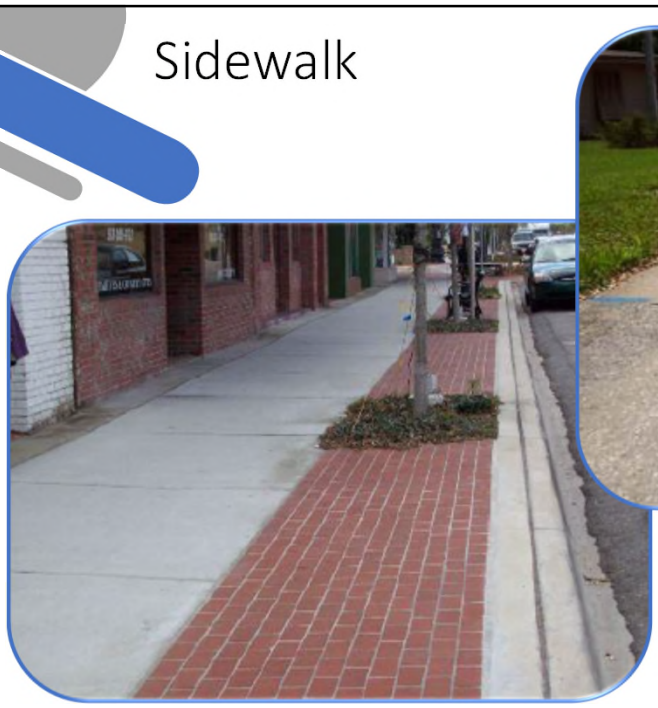
166

Sidewalk



Paved Utility Strip

167

167

Sidewalk

Protruding Objects

168

168

Sidewalk

ADA

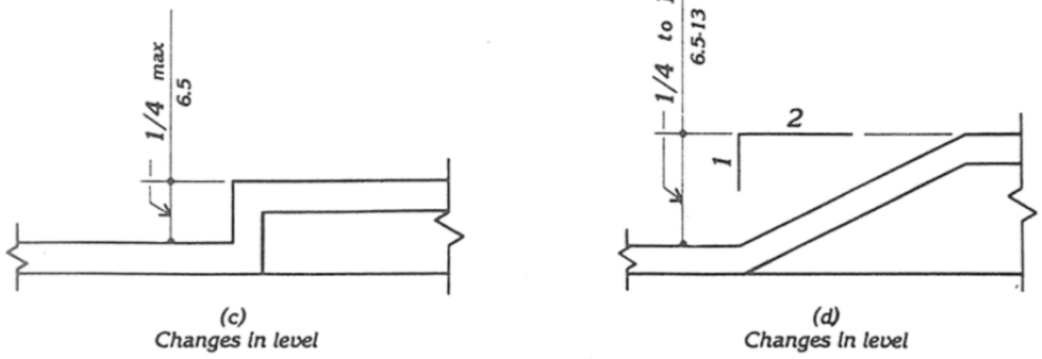


Fig. 7
Accessible Route

169

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Sidewalk (Wooden)

170

170

Railing

171

171

Roadway Sweeping

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172

Vegetation and Aesthetics

173

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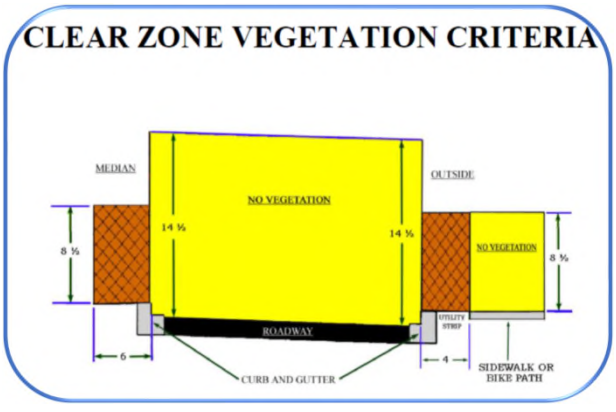
Tree Trimming

TREE TRIMMING: No encroachment of trees, tree limbs or vegetation in or over the travel way or clear zone lower than 14½ feet or lower than 8½ feet over sidewalks and curb and gutter clear zones. No vegetation violates the horizontal clearance as defined by this standard.



174

Edging

175

THANK YOU!

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https://www.fdot.gov/roadway/ADA/

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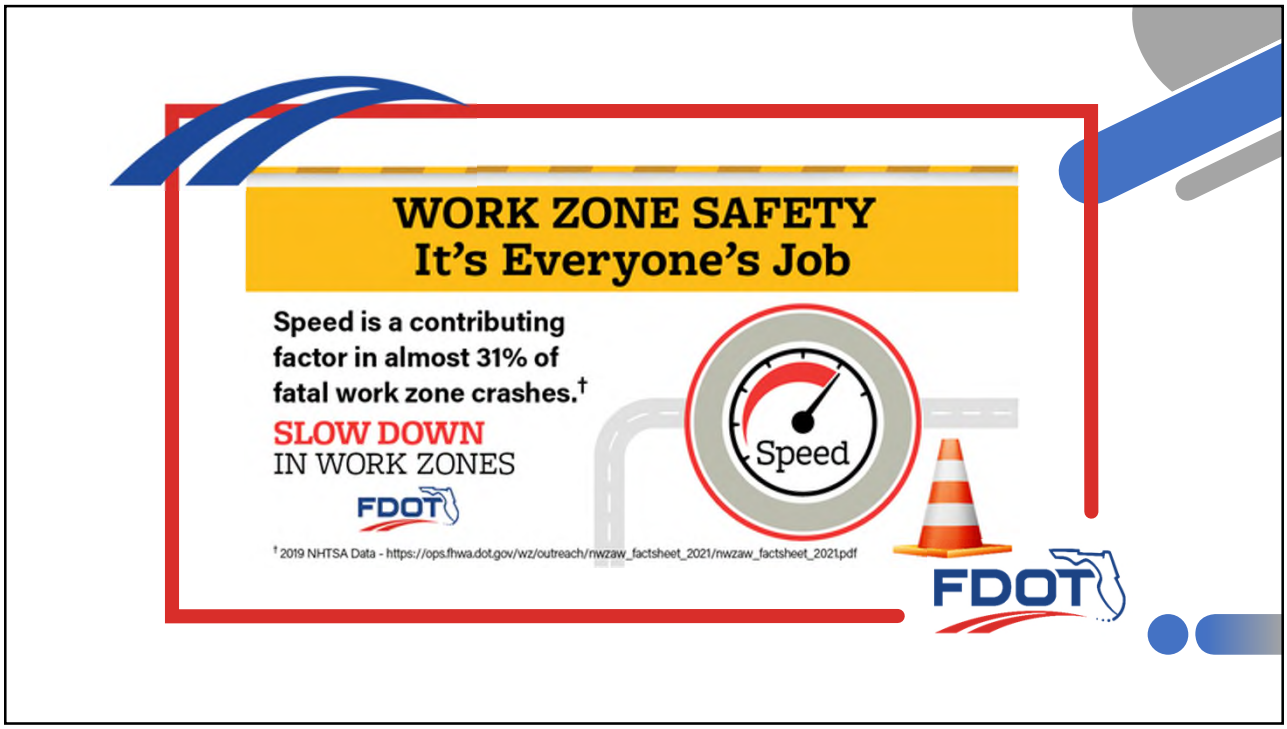
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It's Everyone's Job
Speed is a contributing factor in almost 31% of fatal work zone crashes.†
SLOW DOWN
IN WORK ZONES
FDOT
† 2019 NHTSA Data - https://ops.fhwa.dot.gov/wz/outreach/nwzaw_factsheet_2021/nwzaw_factsheet_2021.pdf
Speed
FDOT

177