Accessibility

Design & Construction

April
2021

What's Ahead?

- Brief **Overview** of the ADA
- Accessibility **Requirements**
- **Construction** Issues

OVERVIEW

Americans with **Disabilities** Act (ADA)

President George H.W. Bush – July 26, 1990

"Let the shameful **wall of exclusion** finally come tumbling down."

Race Color Religion Sex National Origin

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

Persons with Disabilities = a **Protected Class**!

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.

The ADA simply meant INDEPENDENCE!

See related videos and learn more about the *It's Our Story* project by visiting http://www.itsourstory.com

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."

ADA Accessibility Features

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

Note: State projects 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 for construction managers to base decisions on the **appropriate** design manual.

General

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

Pedestrians should be expected on **all** of Florida's **state roadways** except where restricted on Limited Access (LA) facilities.

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

→ Title II – Public Services ←

Pedestrian Facilities

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

- **Sidewalks**
- Curb ramps
- Crosswalks
- At-grade RR crossings
- Refuge islands
- Curb extensions
- Ped signals
- Public transit loading zones
- Ped bridges
- Shared use paths
- Street furniture

Pedestrian Facilities

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

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

(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.

(4) Providing adequate **lighting**.

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.

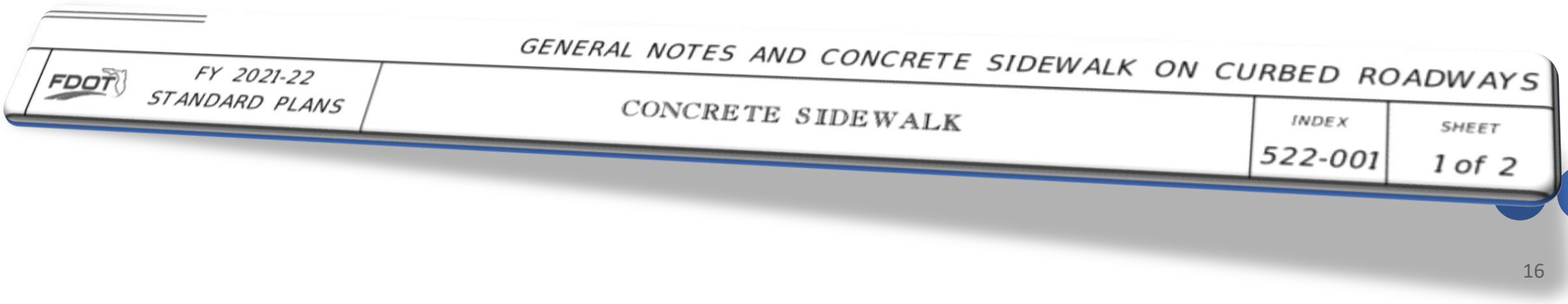
2. Include detectable warnings on sidewalk curb ramps in accordance with Index 522-002.

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



Sidewalk

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.

Sidewalk

***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

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

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

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

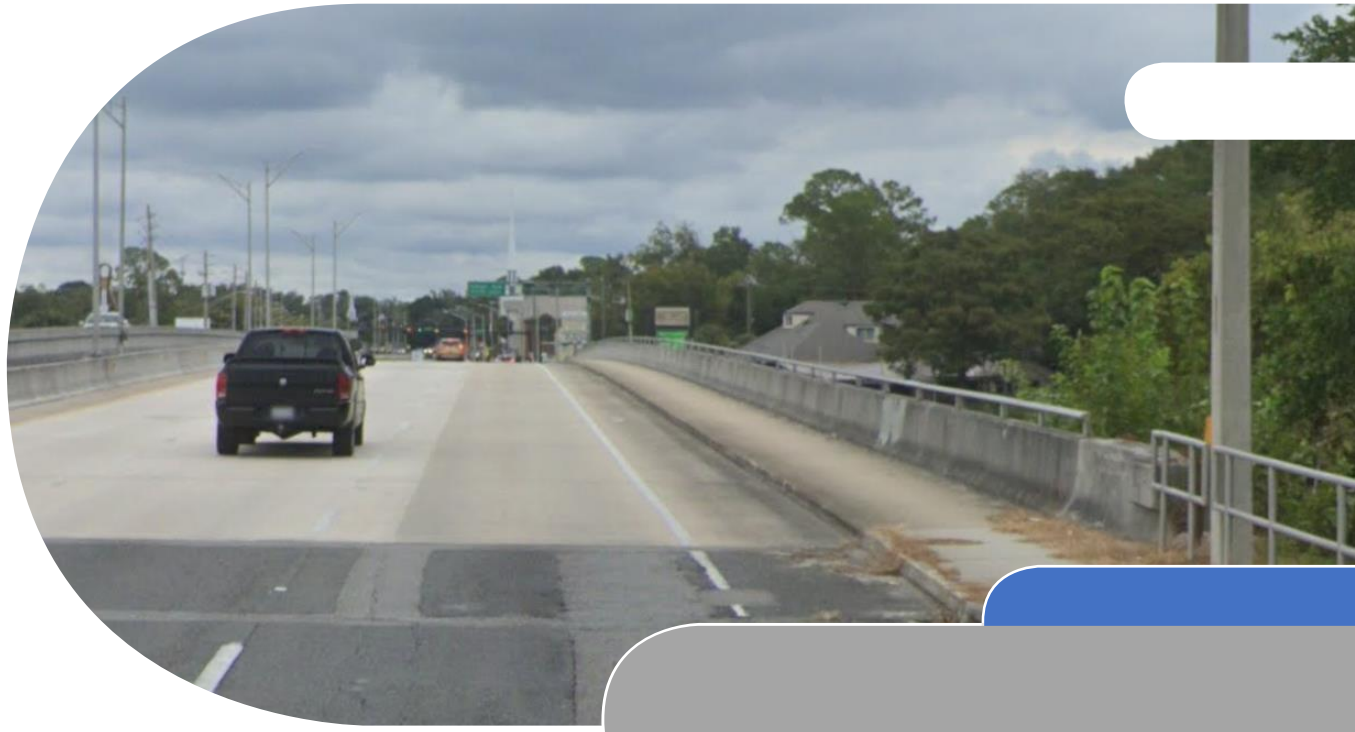
(4) At the limits of the full width shoulder.

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**.

Sidewalk

***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.



Sidewalk

***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.

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**.

Sidewalk Width

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

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.

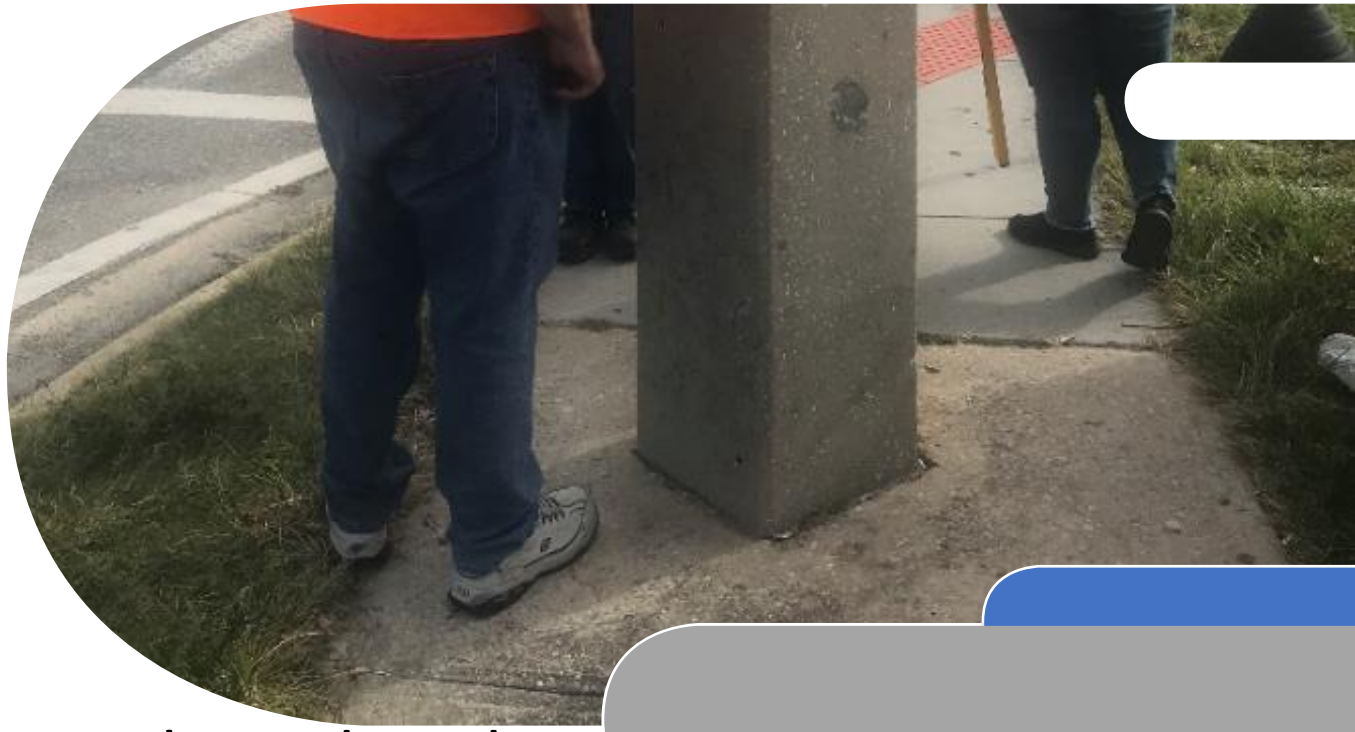
(2) For C5 and C6, when standard sidewalk width cannot be attained, provide the greatest attainable width possible, but not less than 6 feet.

(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.

**Exclusive of the width of the curb.*

Sidewalk Width



***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**

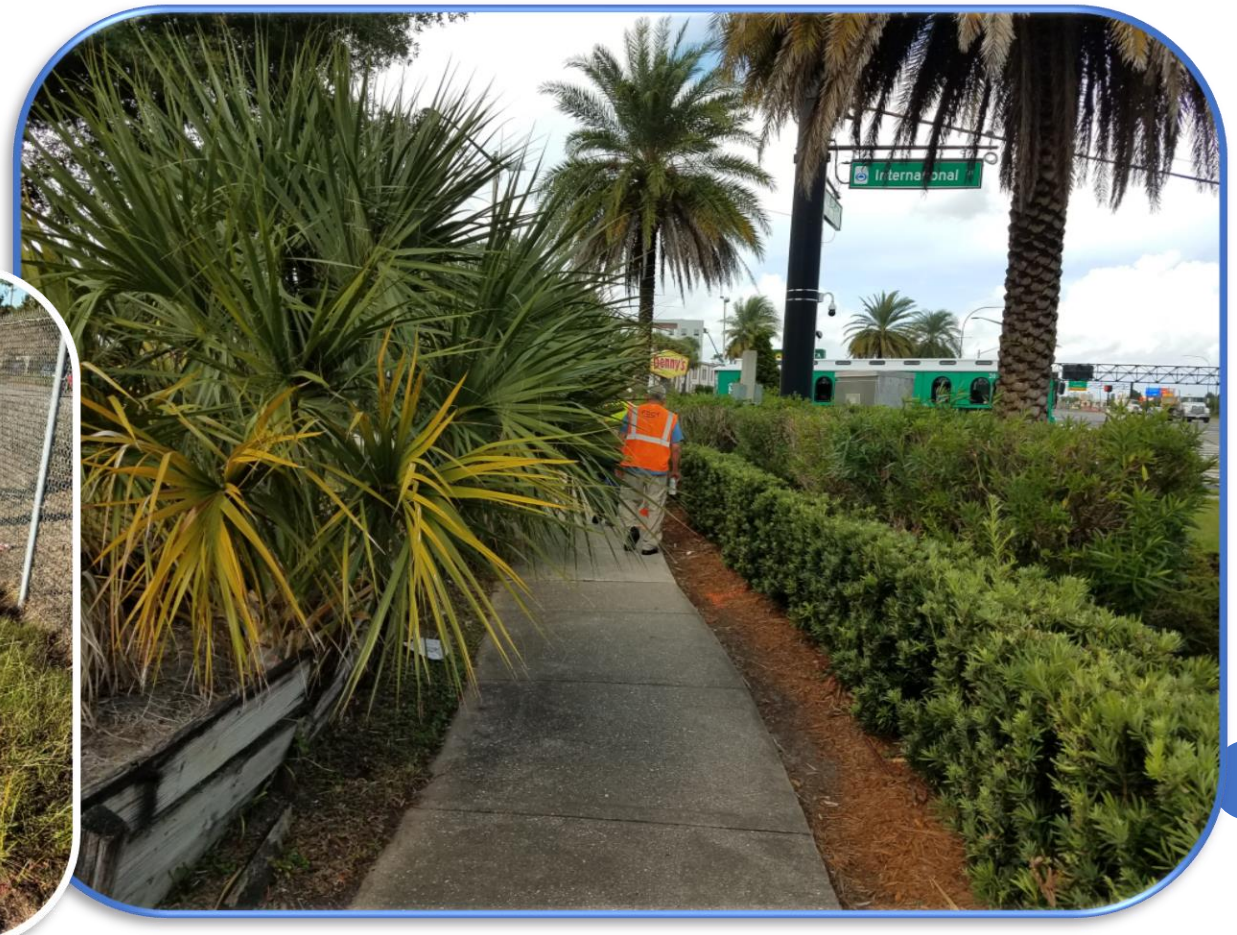
Sidewalk Width

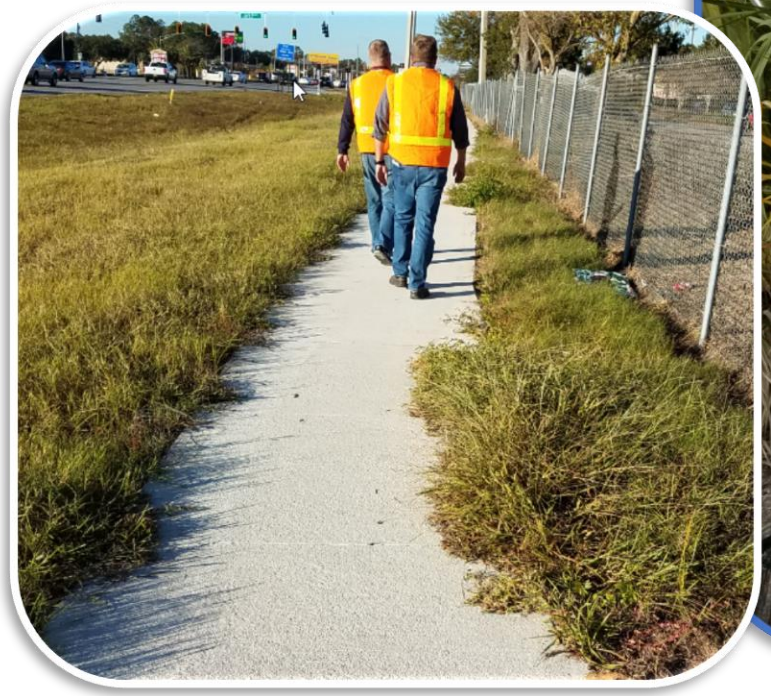
***FDM* 222.1.1 –**

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.

Vertical Clearance

***FDM* 222.2.1.2** – Provide a > **7'** vertical clearance over the **entire** walking surface. See ***FDM* 240.6** for pedestrian bridge vertical clearance requirements.





Grades & Cross Slopes

***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 travel way, sidewalk grades are **not** to exceed **5%**, unless accessible ramps* are provided.

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

Grades and Cross Slopes

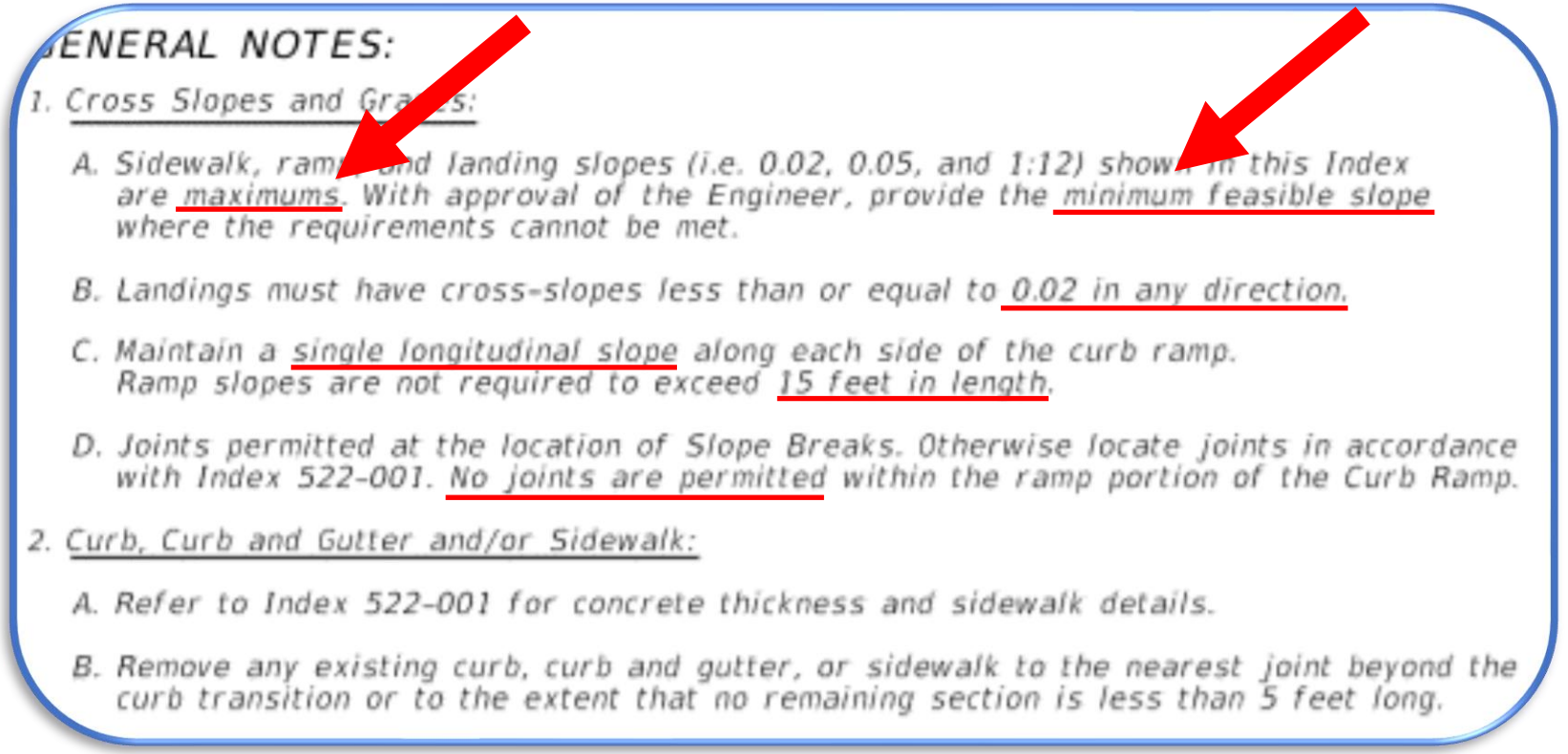
***FDM* 222.2.1.3 –** There should be **enough** sidewalk cross slope to allow for adequate **drainage**; however, to comply with ADA requirements, the **maximum** cross slope is **2%** [**1:48**]. A clear **1'** wide graded area with a maximum **1:6** slope should be provided adjacent to the sidewalk. Edge **drop-offs** should be **avoided**. When drop-offs cannot be avoided, they should be shielded as discussed in ***FDM* 222.4**.

Longitudinal Grades

***FDM* 224.6** – To meet ADA requirements, the maximum **longitudinal** grade is **5%**. Grades > **5%** should be considered ramps and designed accordingly. Maximum **ramp** slopes are **8.33%** and can have a maximum **rise** of **30”**, with a level landing at least **60”** in length.

*Edge cue Vs. Barrier

Curb Ramps and Blended Transitions



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.

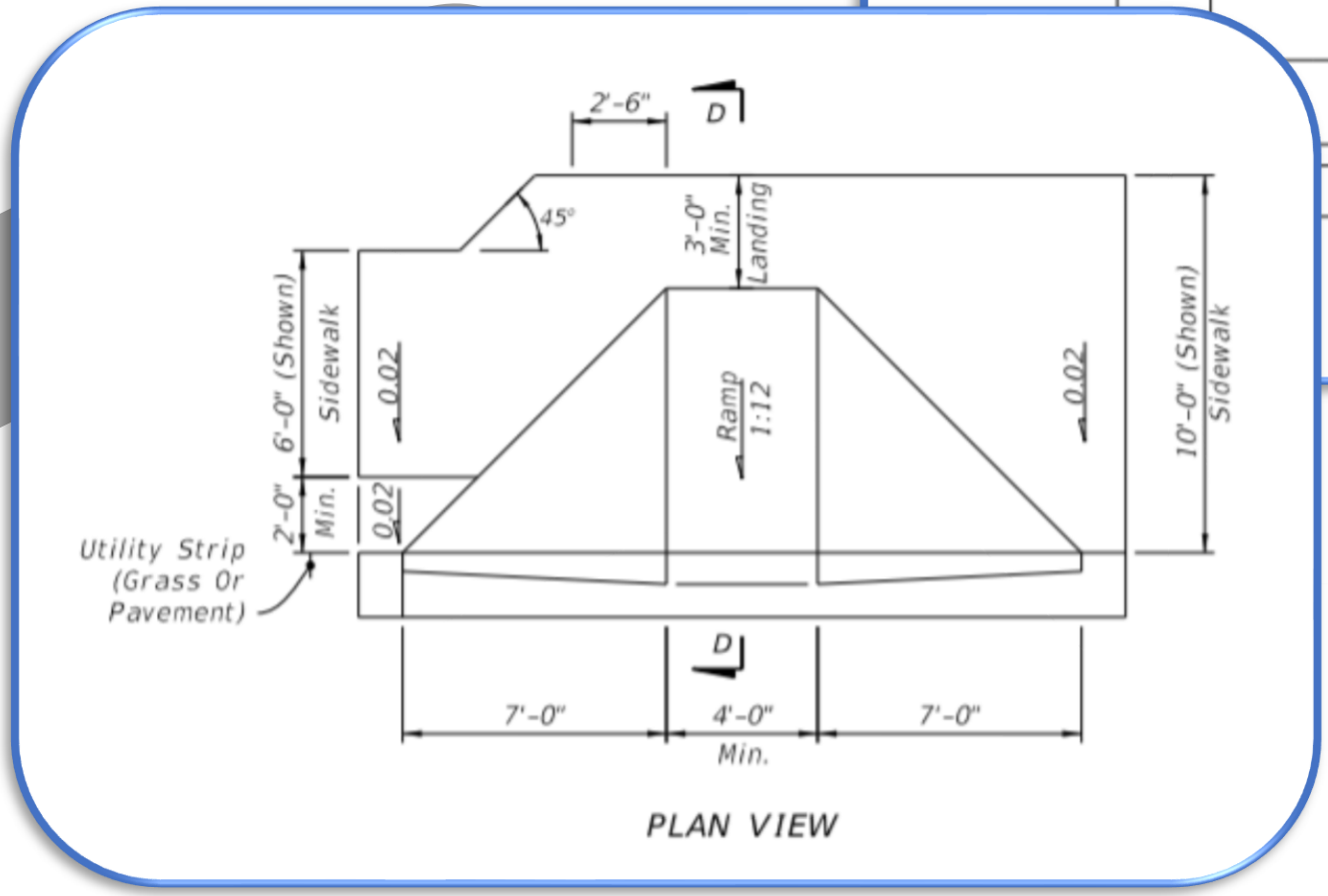
   B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.

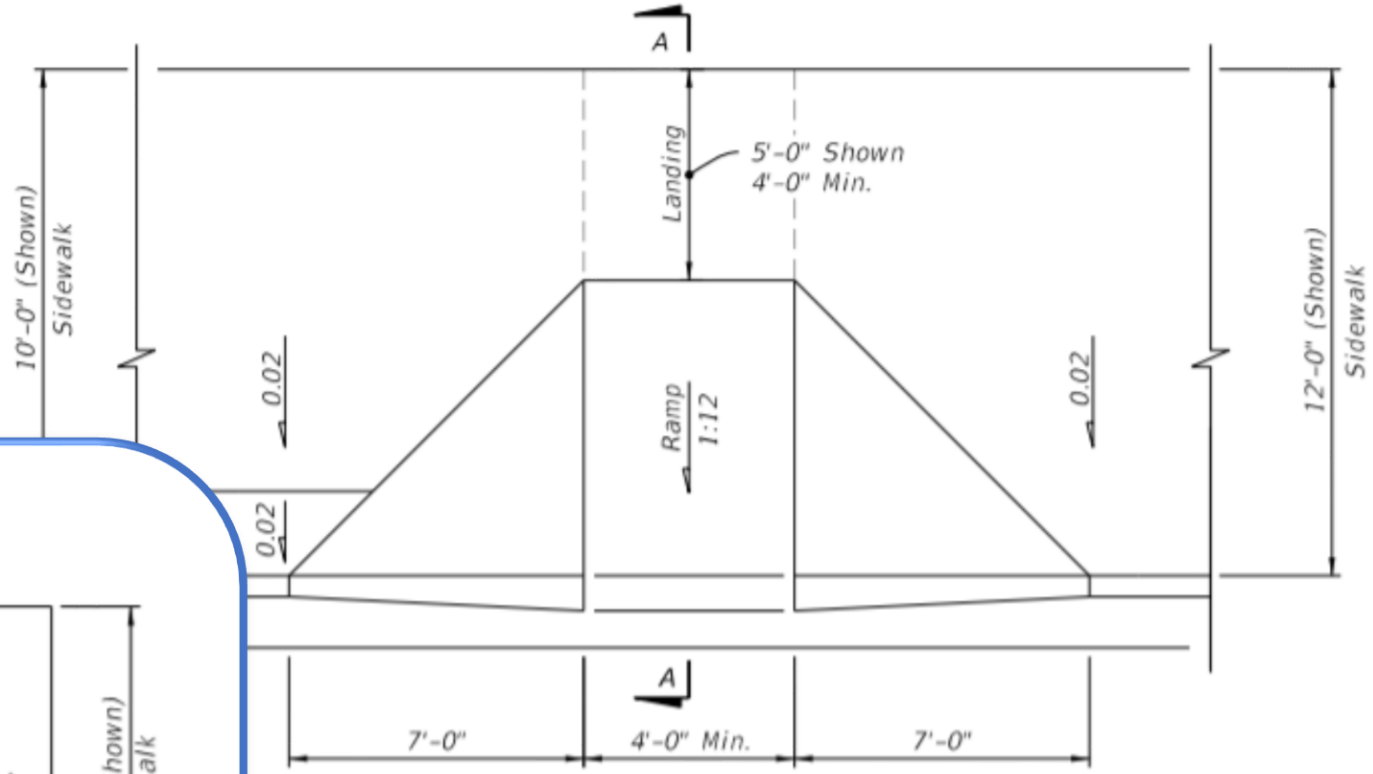
***FDM 222.2.2* –**

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***).

*

Level Landings



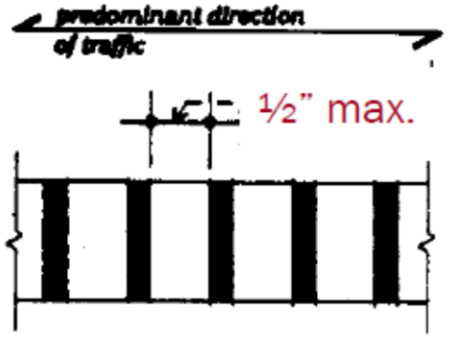


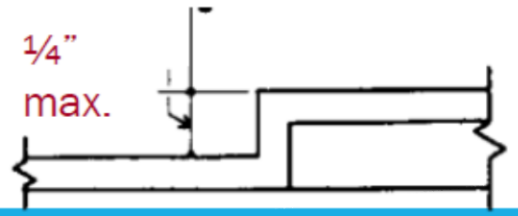
*

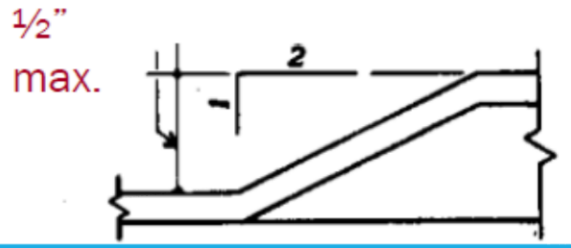

Very good! Measure before you build (Identity withheld)

Surfaces

- Firm, stable, slip-resistant **=> *FDM* 222 & 225; *Spec* 522**
  - Dry or wet!
- Changes in level
  - ≤ ¼" – Vertical **=> *Spec* 522**
  - > ¼" ≤ ½" – 1:2 slope
  - > ½" – 1:12 slope (ramp)
- Gratings
  - ½" max. gap *(!!!)*







Curb Ramps and Blended Transitions

***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.

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

Curb Ramps and Blended Transitions

***FDM* 222.2.2** –

Include sidewalk curb ramps at the following locations:

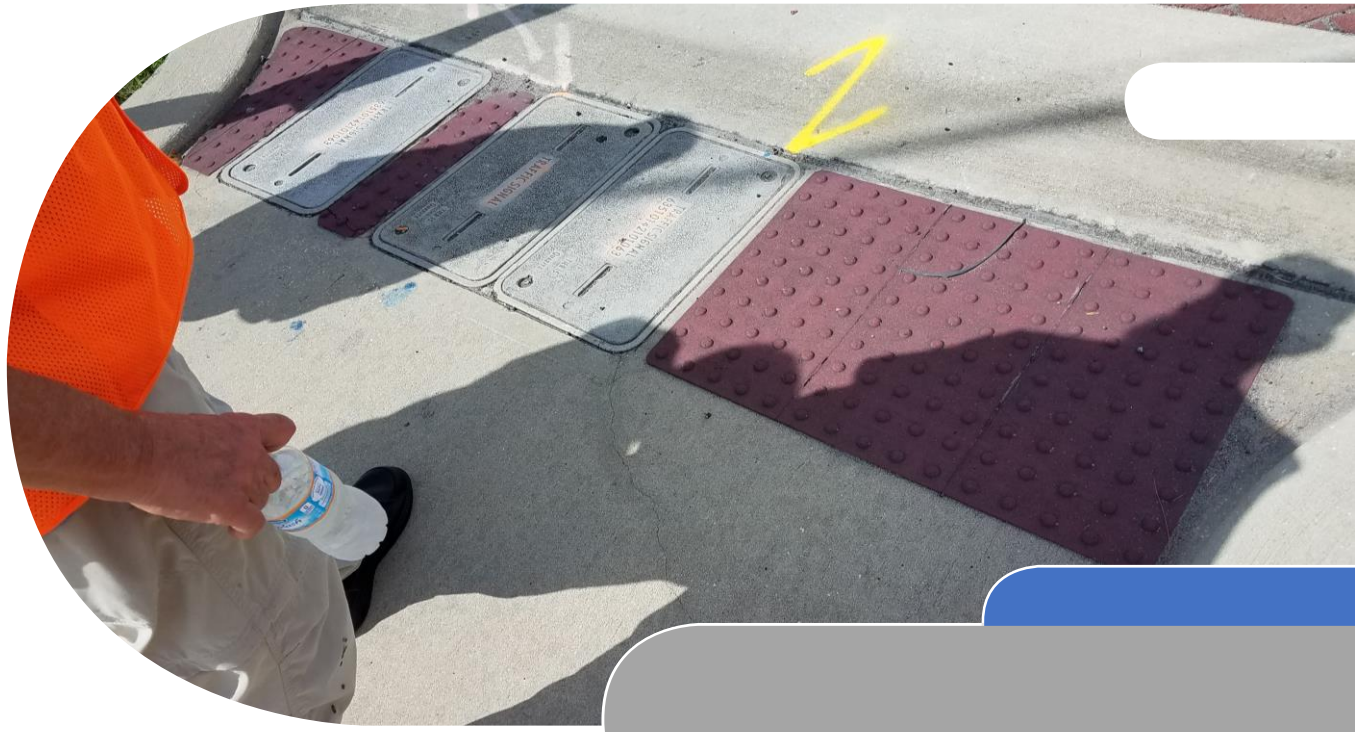
- All **intersections** and driveways with curbed returns. Include a landing at the top of each ramp.
- On curbed roadways between intersections where a **crosswalk** has been established.

Curb Ramps

***FDM* 222.2.2 –** 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.

Curb Ramps

***FDM* 222.2.2 –** 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).



Curb Ramps

***Provide least slope possible, per Index 522-002.**

***FDM* 222.2.2 –** Curb ramps should be **in line** with the crossing and must provide maximum* slope of **1:12** (**8.3%**).

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.

Curb Ramps

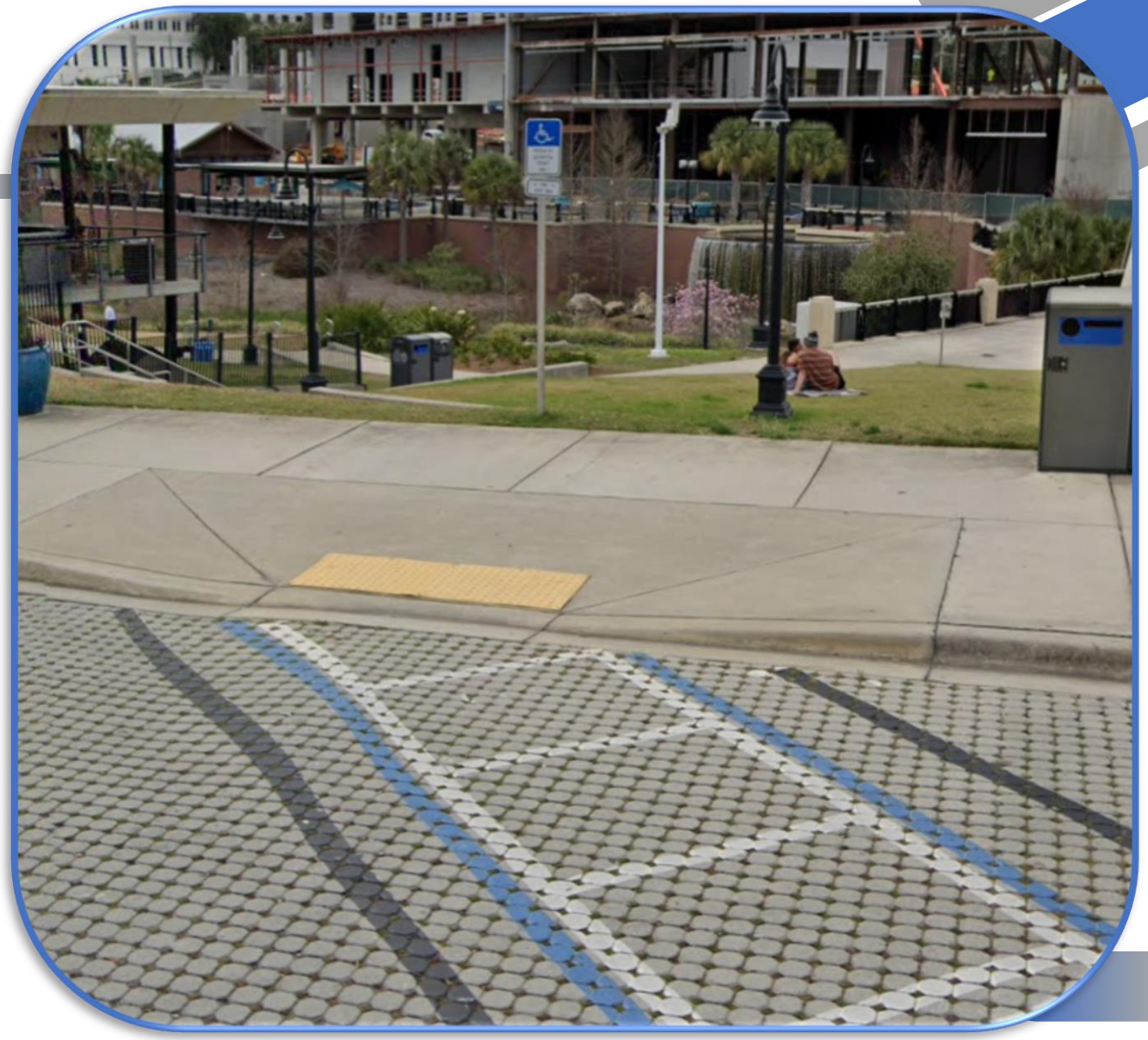
***FDM* 222.2.2 –**

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%**.

Curb Ramps

***FDM* 222.2. 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.



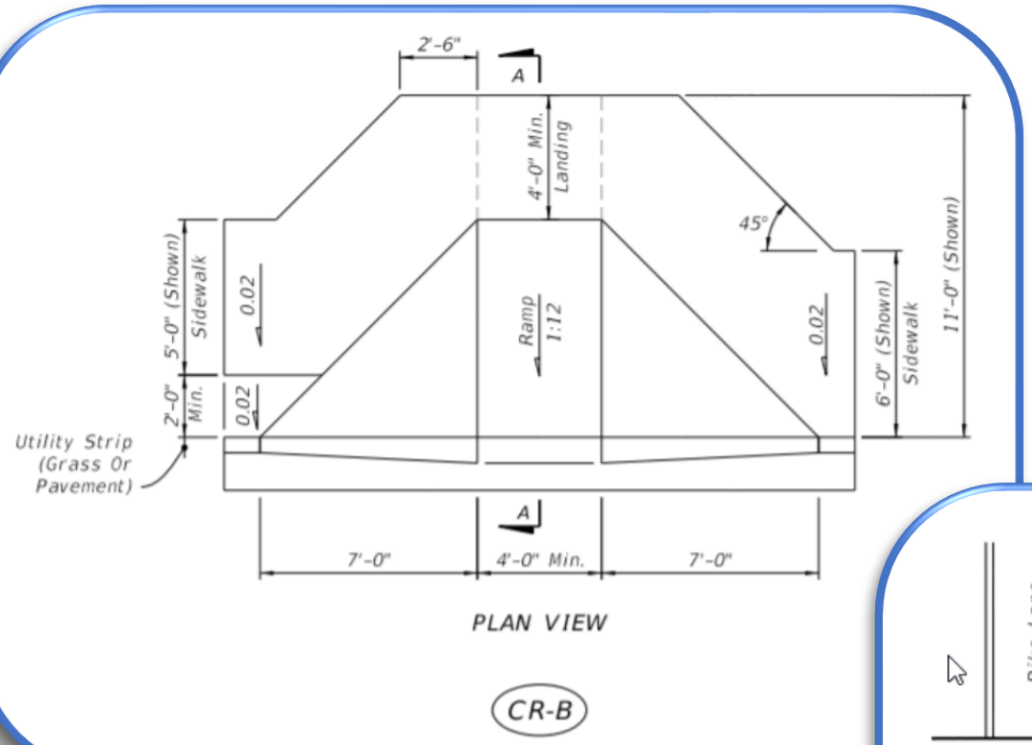
Curb Ramps

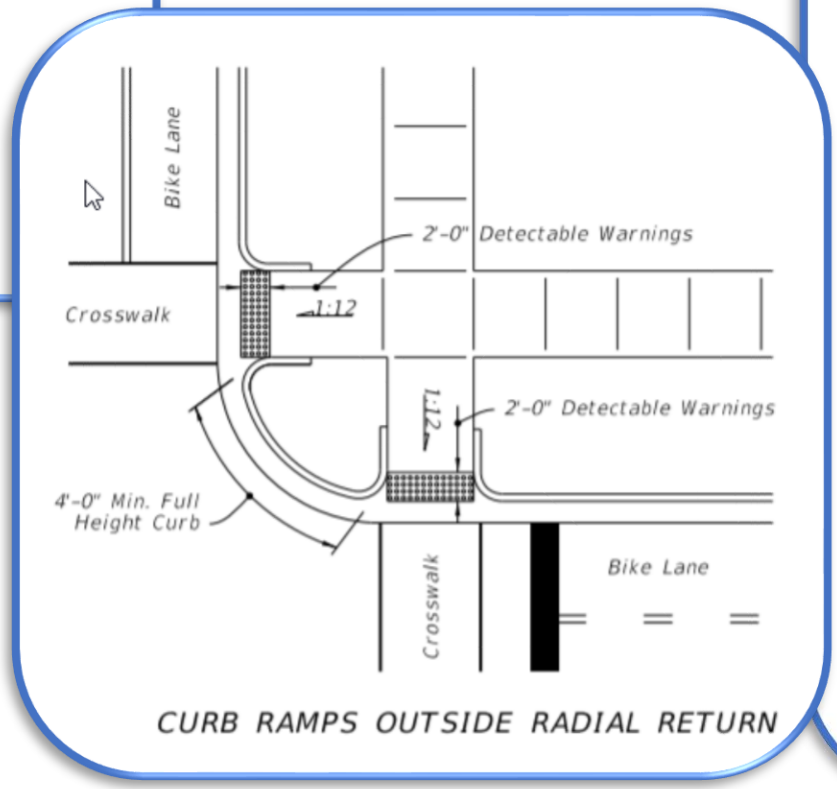
***FDM* 222.2.2 –**

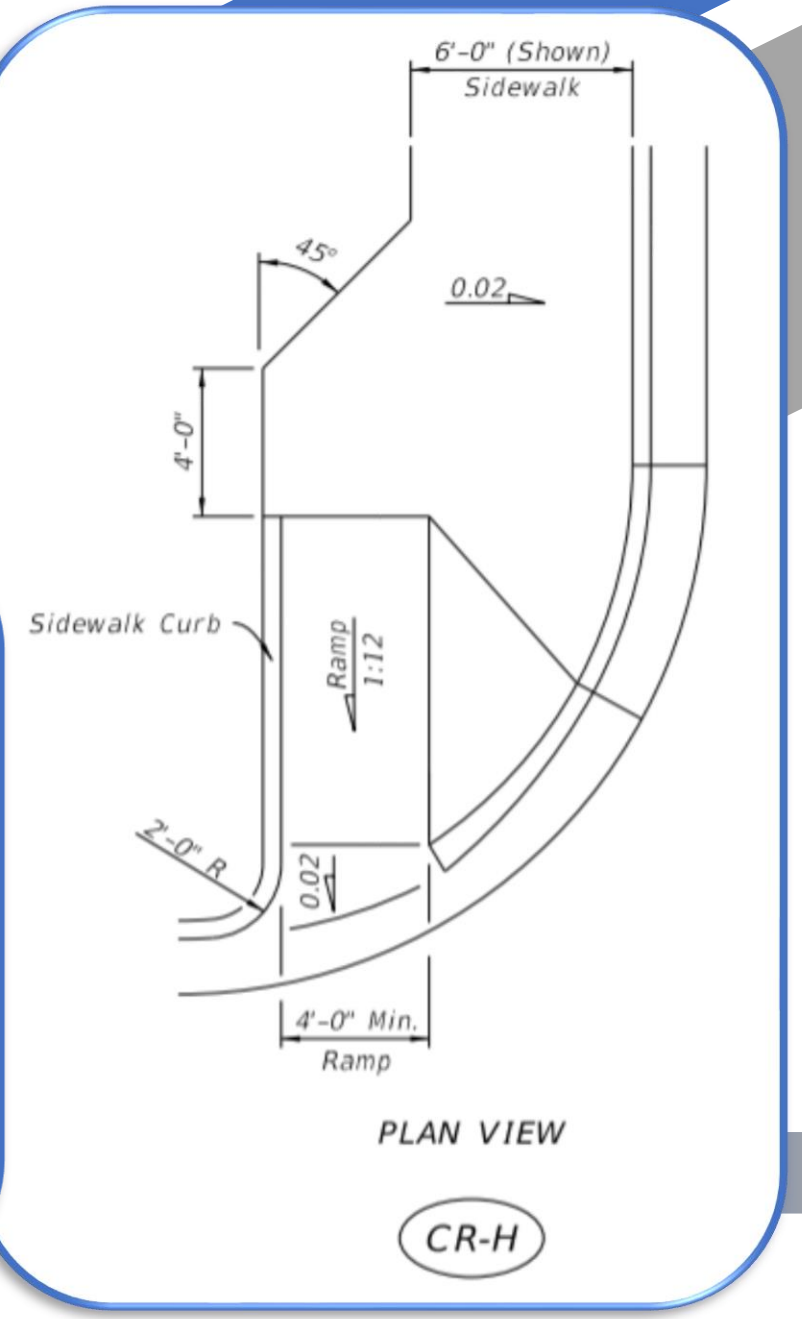
When **altering** an existing pedestrian facility and conditions preclude a maximum curb ramp slope of **1:12**, provide a slope from **1:12** to **1:10** with a max. rise of **6”**.

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.

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







Driveways

FDM* 222.2.2.1** – **New** and **reconstructed** driveways are to be in compliance with ***Standard Plans, **Index 330-001** and **522-003**.

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

Crosswalks

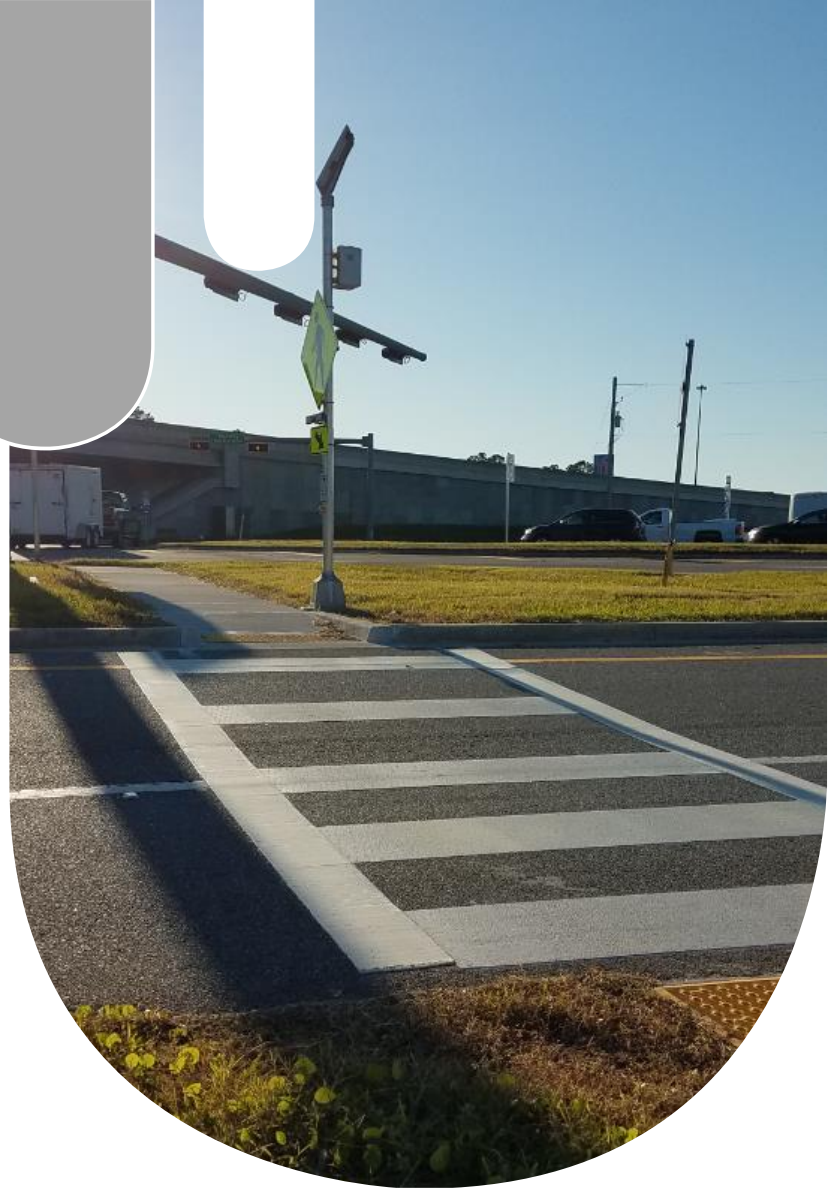
***FDM* 222.2.3** – Crosswalks are **marked paths** where pedestrians can **safely** cross a roadway. Marking of crosswalks helps **drivers** better identify the intersection and guides **pedestrians** to the best crossing location. For details on crosswalk pavement markings, see ***Standard Plans*,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

Crosswalks

***FDM* 222.2.3 –**

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

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**.



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 treatments**; e.g., signals, signs, beacons, curb extensions, raised medians, refuge islands, enhanced overhead lighting.

Intersections

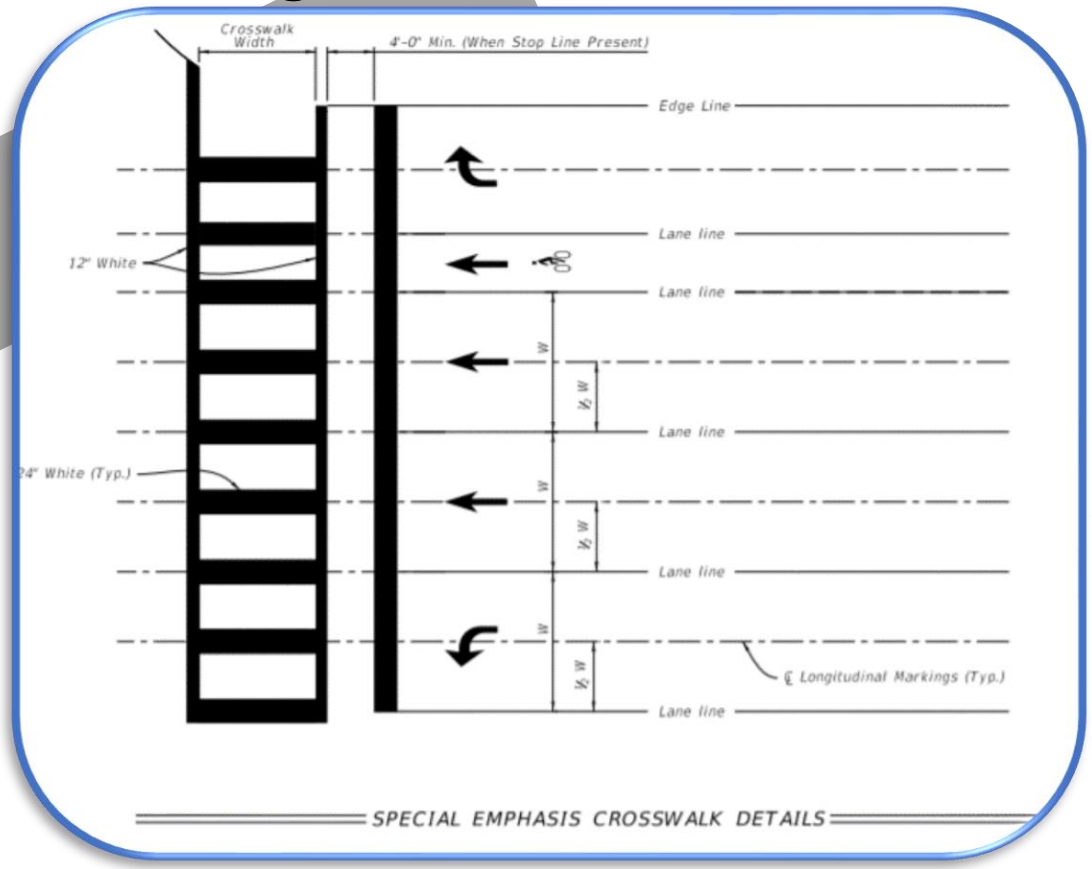
***FDM* 222.2.3.1** –

For six-lane divided roadways or crossing distances > **80’**, consider installing a **two-stage** pedestrian crossing with median **refuge island**. For more information on marked pedestrian crosswalks, see the ***Traffic Engineering Manual*** (***TEM***), **Section 5.2**.

Midblock

***FDM* 222.2.3.2 –**

Use **Special Emphasis** crosswalk markings at midblock crossings. For **illustrations** of midblock crossings, see ***FDM* 230.6**.



Midblock crosswalks are used to **supplement** pedestrian crossing in areas between intersections. Midblock crosswalks should be **illuminated**, marked, and signed in accordance with the ***MUTCD***, ***TEM*** (**Section 5.2**), ***FDM* 230.6**, and ***FDM* 231.3.4**.

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

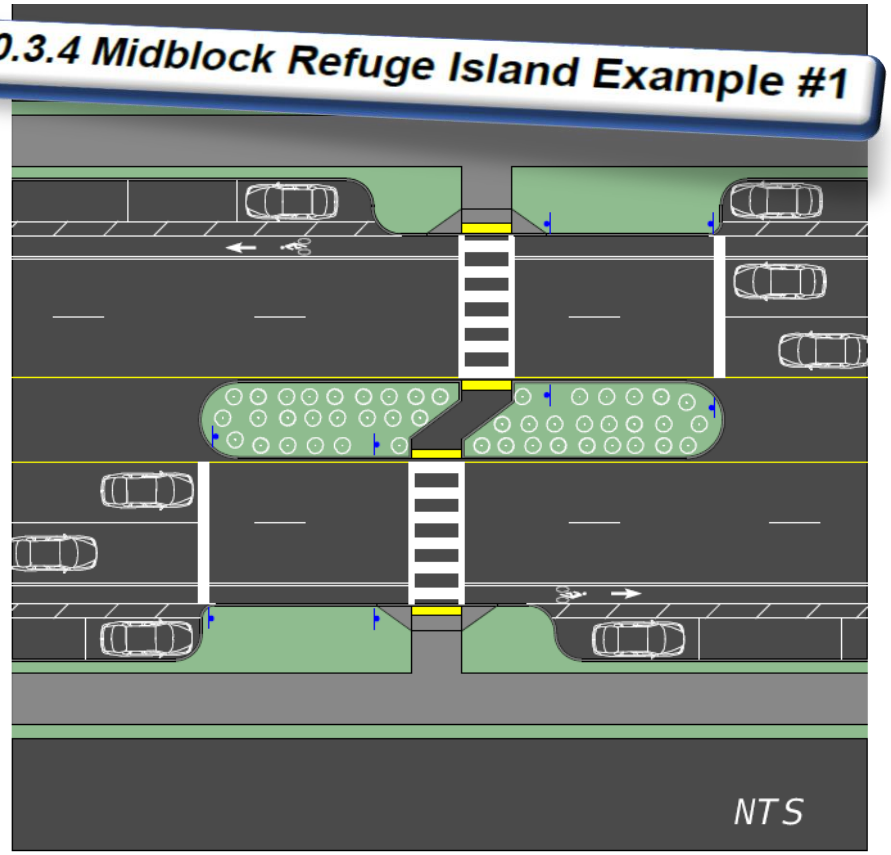
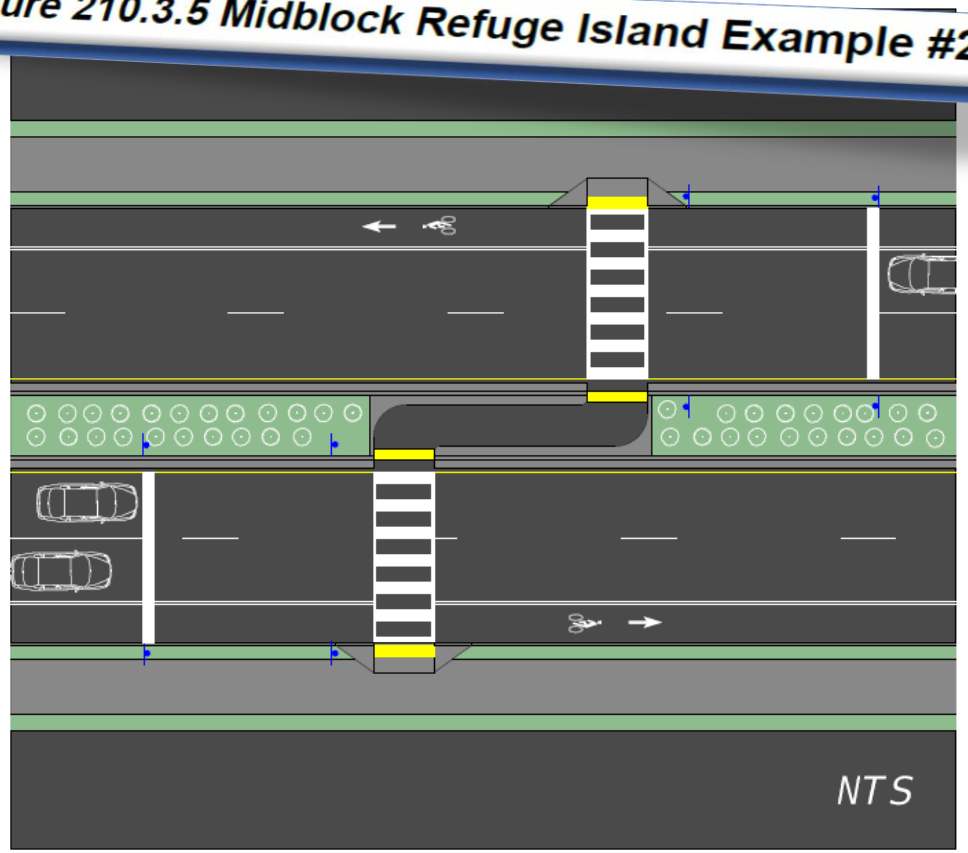


Figure 210.3.5 Midblock Refuge Island Example #2

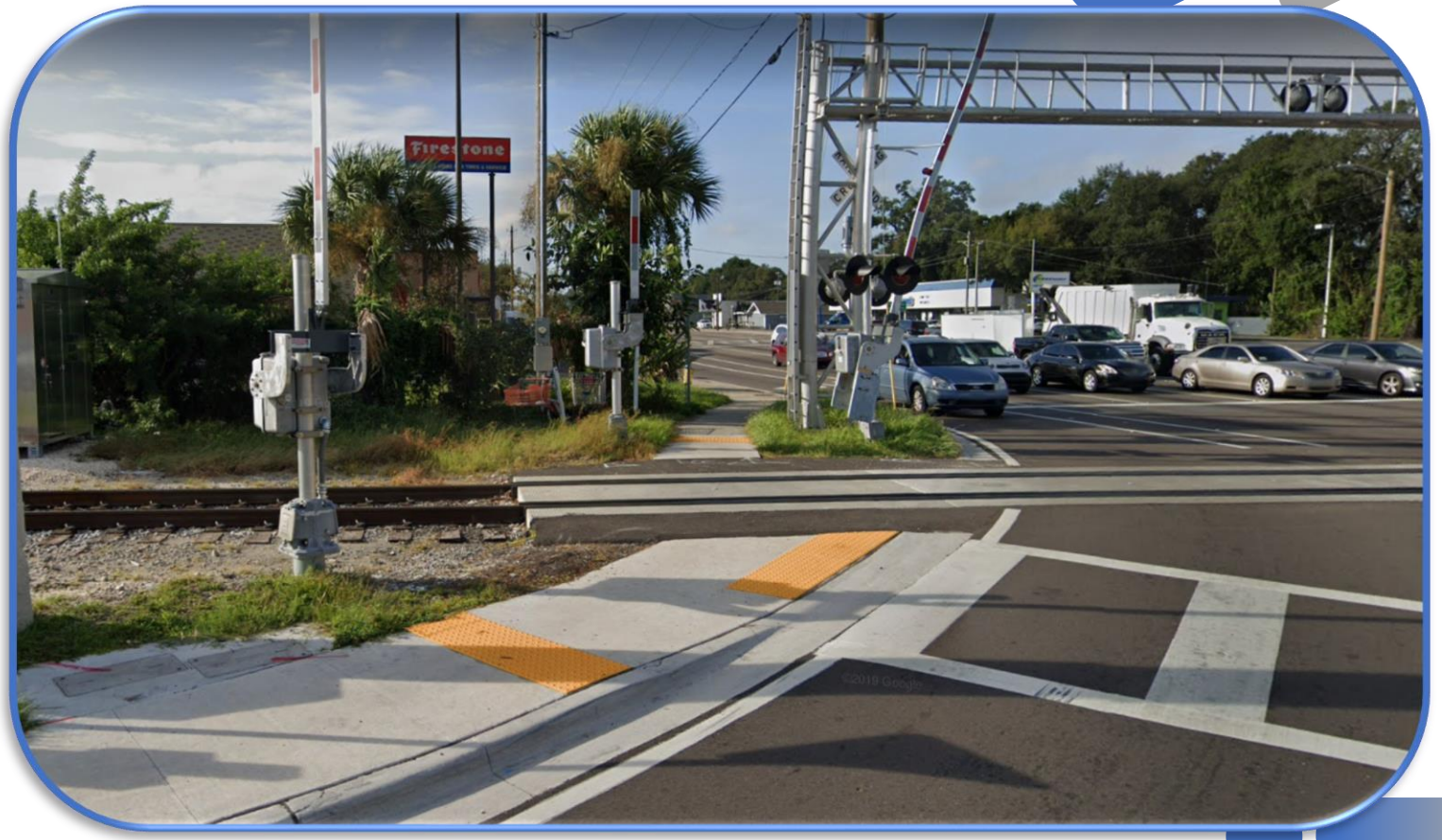


Midblock

***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** the crossing distance. Adjustments of the profile on the roadway crossing may be required to improve the **cross slope** of the crosswalk.

At-Grade Railroad Crossings

***FDM* 222.2.4** – Provide an ADA accessible route for pedestrians at railroad crossings by **extending** proposed or existing **sidewalks** or shared use paths through the rail crossing.



At-Grade Railroad Crossings

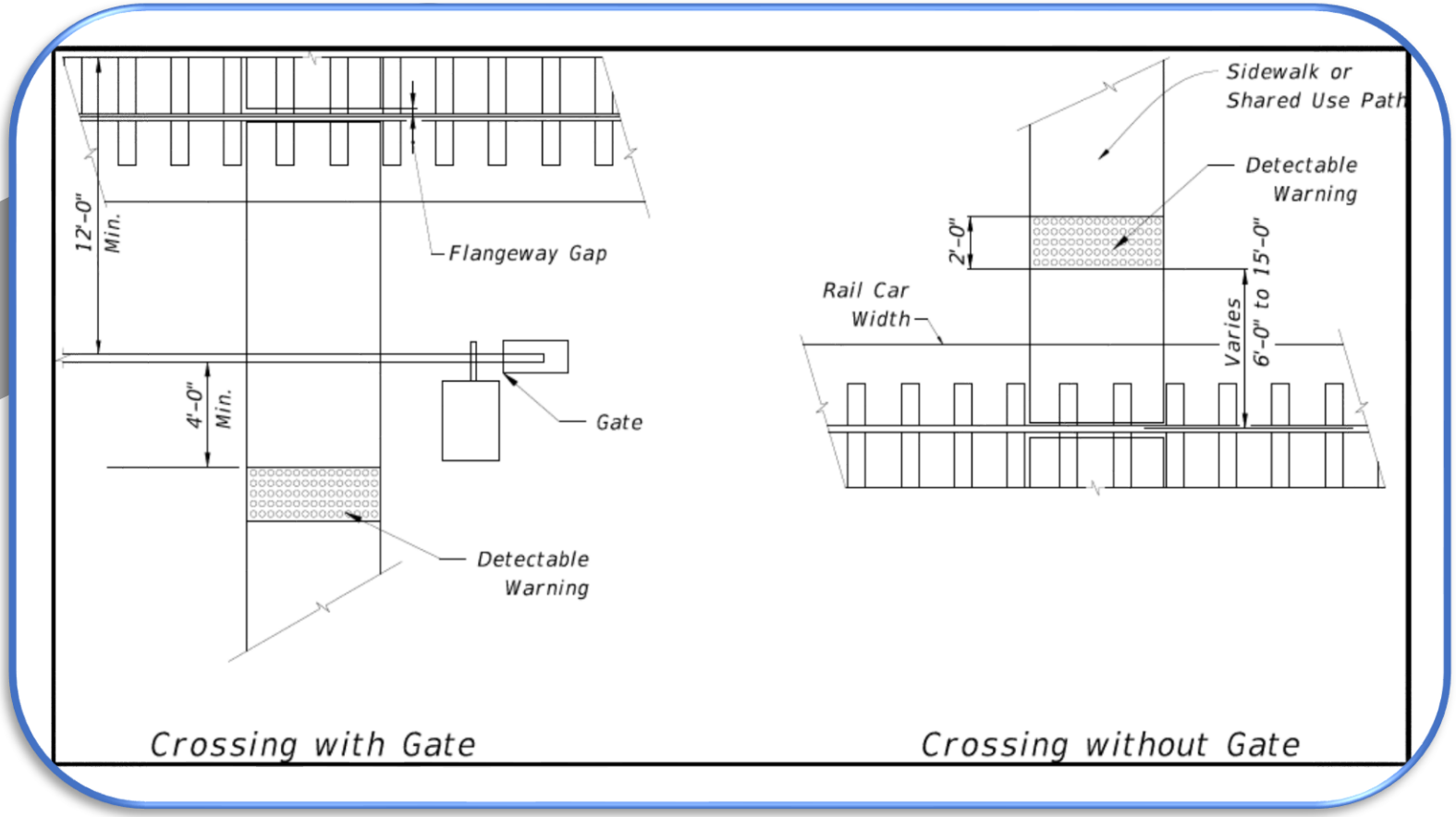
***FDM* 222.2.4 –** The **surface** of the crossing must be:

- 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.

An **audible** device, such as a bell, is used in conjunction with the traffic control signals. See the ***MUTCD*** for additional **guidance** for signals, signs, or pedestrian gates and designing **crossings** for shared use paths.

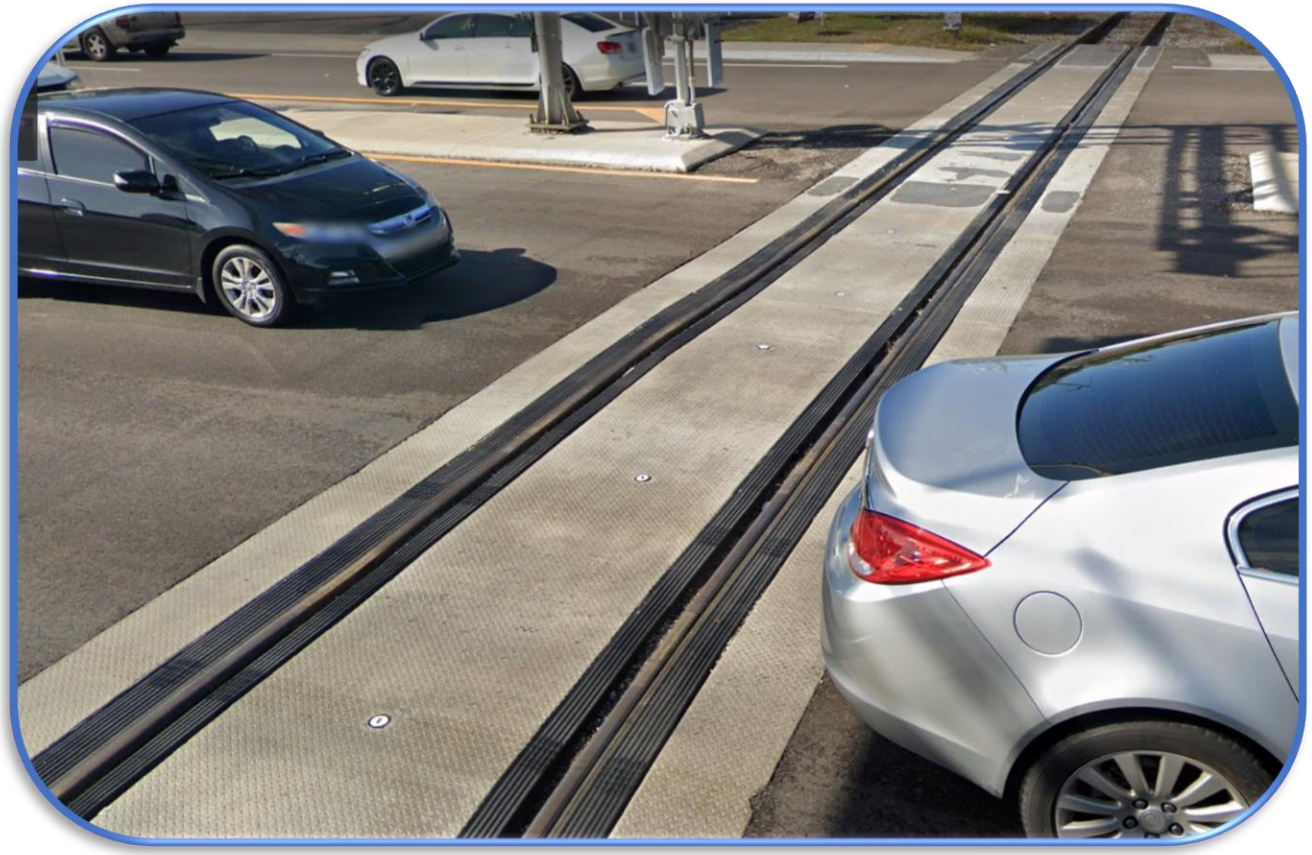
At-Grade Railroad Crossings

***FDM* 222.2.4 –** Place **detectable warnings** on each side of the railroad crossing as illustrated in ***FDM* Figure 222.2.1**.

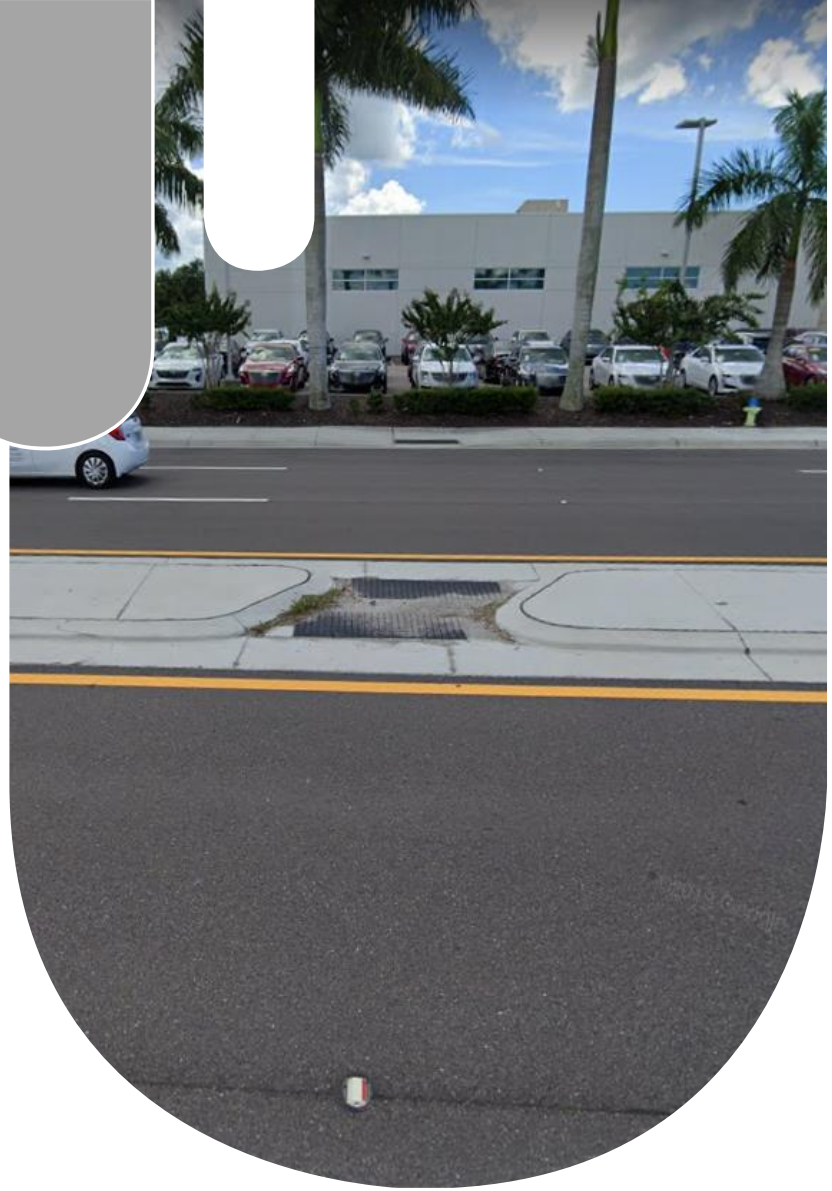


The edge of the detectable warning nearest the rail crossing is to be located between **6’** and **15’** from the **nearest** rail centerline. Where gates are provided, detectable **warnings** are to be placed a minimum of **4’** from the side of gates opposite the rail.

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 max. 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.



Refuge Islands

***FDM* 222.2.5 –**

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

Curb Extensions (Bulb-Outs)

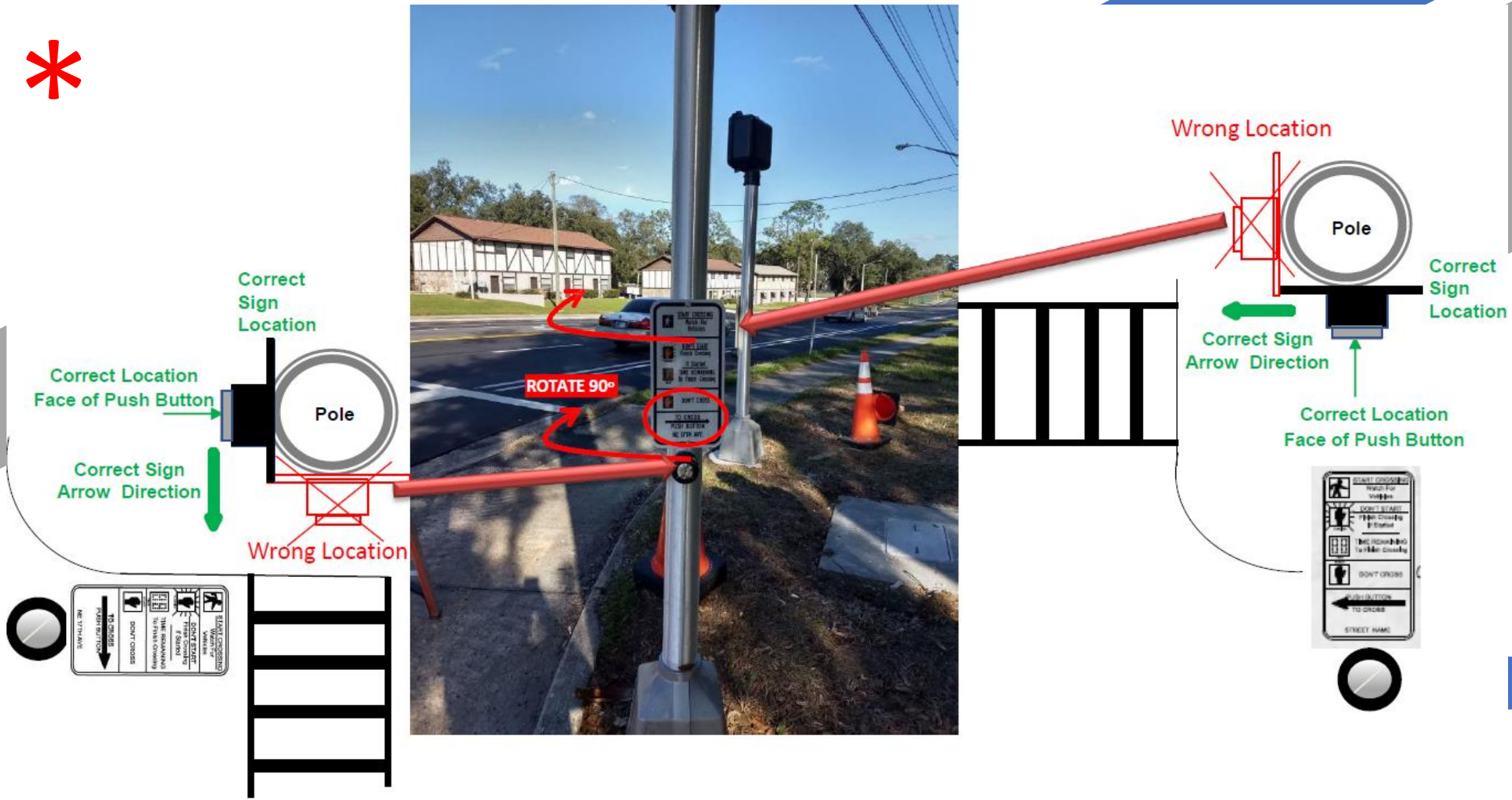
***FDM* 222.2.6** – Curb extensions (a.k.a. bulb-outs) may be used in **conjunction** with on-street parking at intersections or midblock crosswalk locations, provided there is **adequate** width for existing traffic movements. Curb extensions shorten the crossing **distance** and provide additional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

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**.

Pedestrian Signals

*



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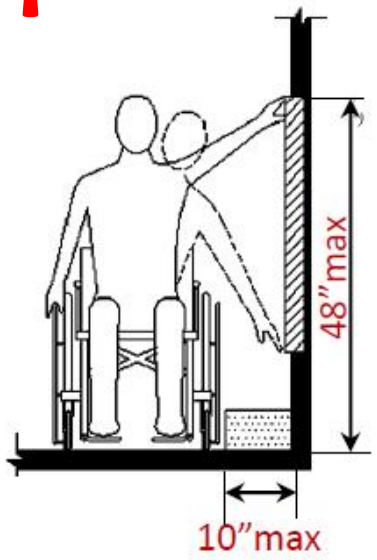
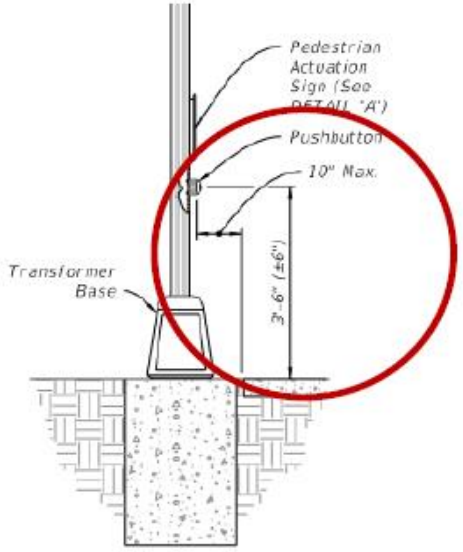
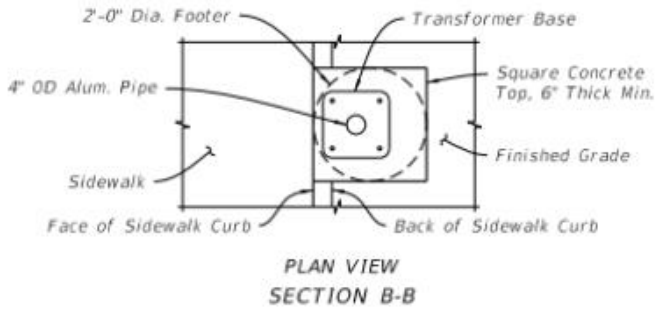
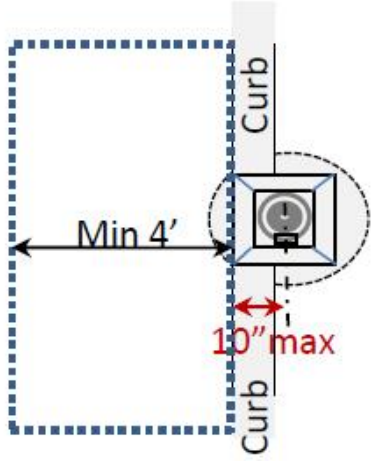
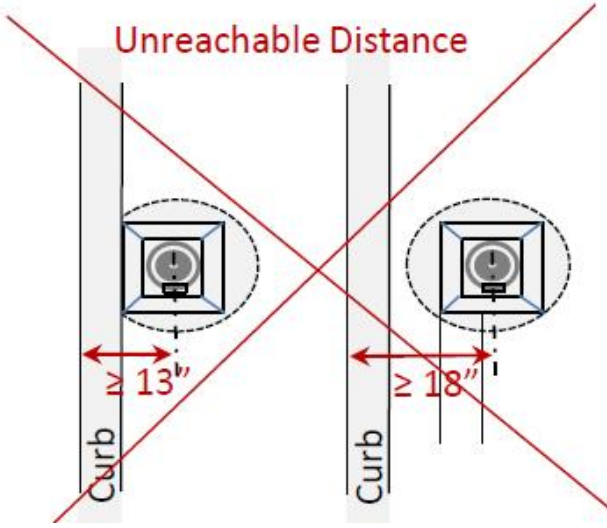


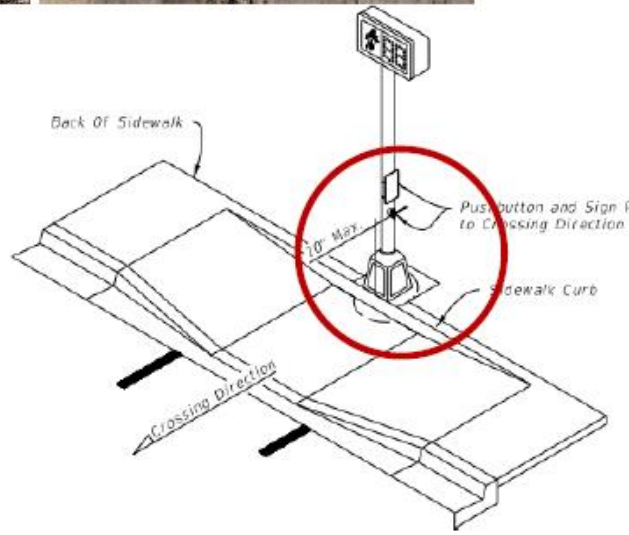


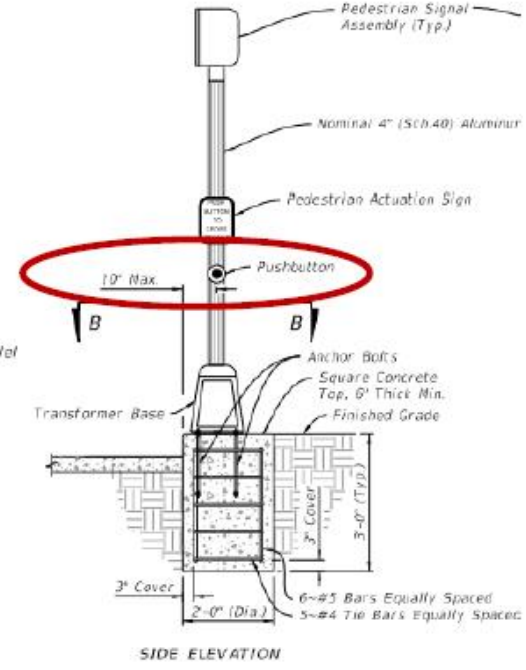
Index 464-001







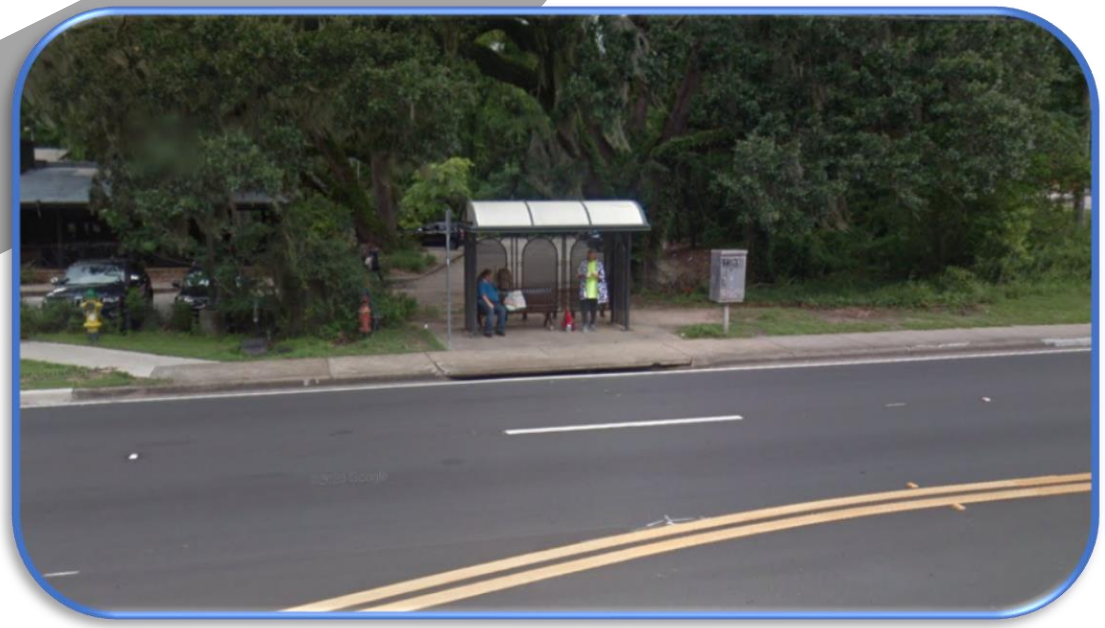




Index 665-001

Public Transit Loading Zones

***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.



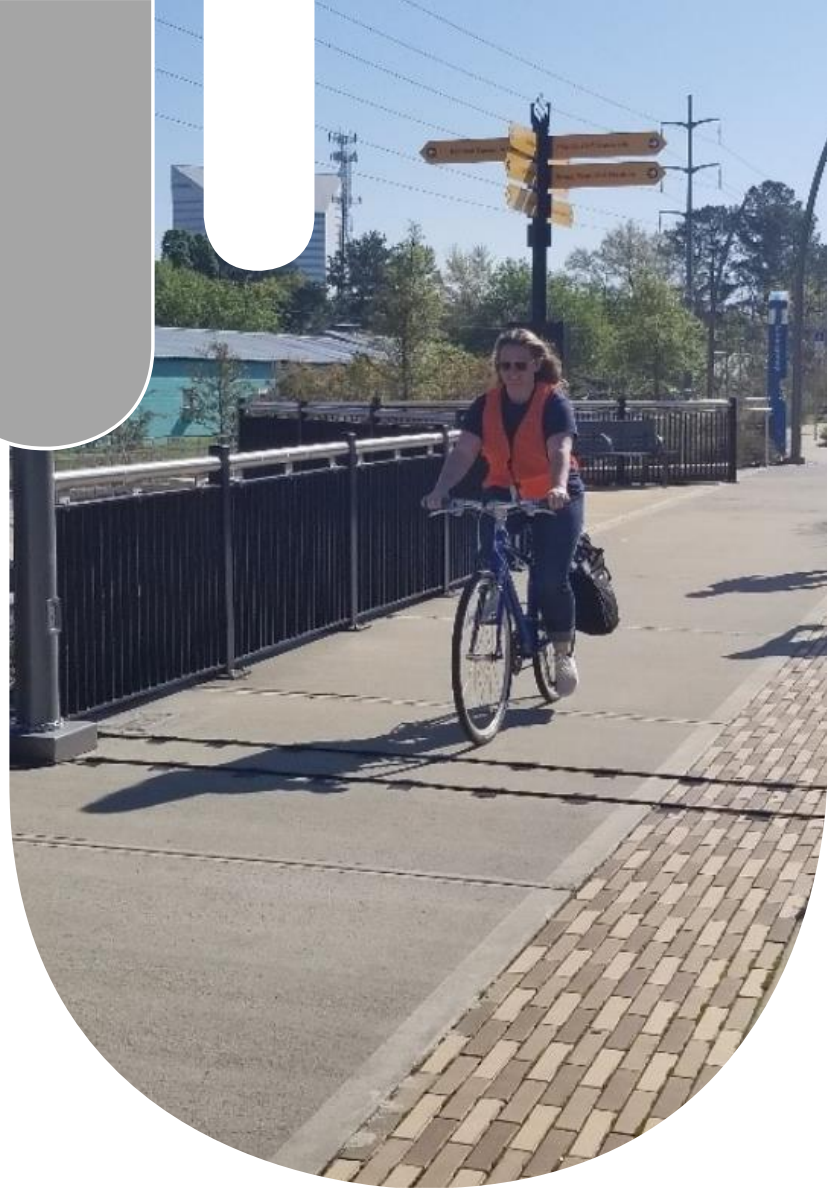
Coordination may be required for the optimum location of boarding and alighting areas, transit shelters, and bus bays:

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

Pedestrian Bridges

***FDM* 222.2.9 –**

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



Shared Use Paths

***FDM* 222.2.10** –

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

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**.

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**.

**Edge cue Vs. Barrier; Stop or Yield Sign; doesn't indicate best crossing location; doesn't indicate alignment information.*

Detectable Warnings

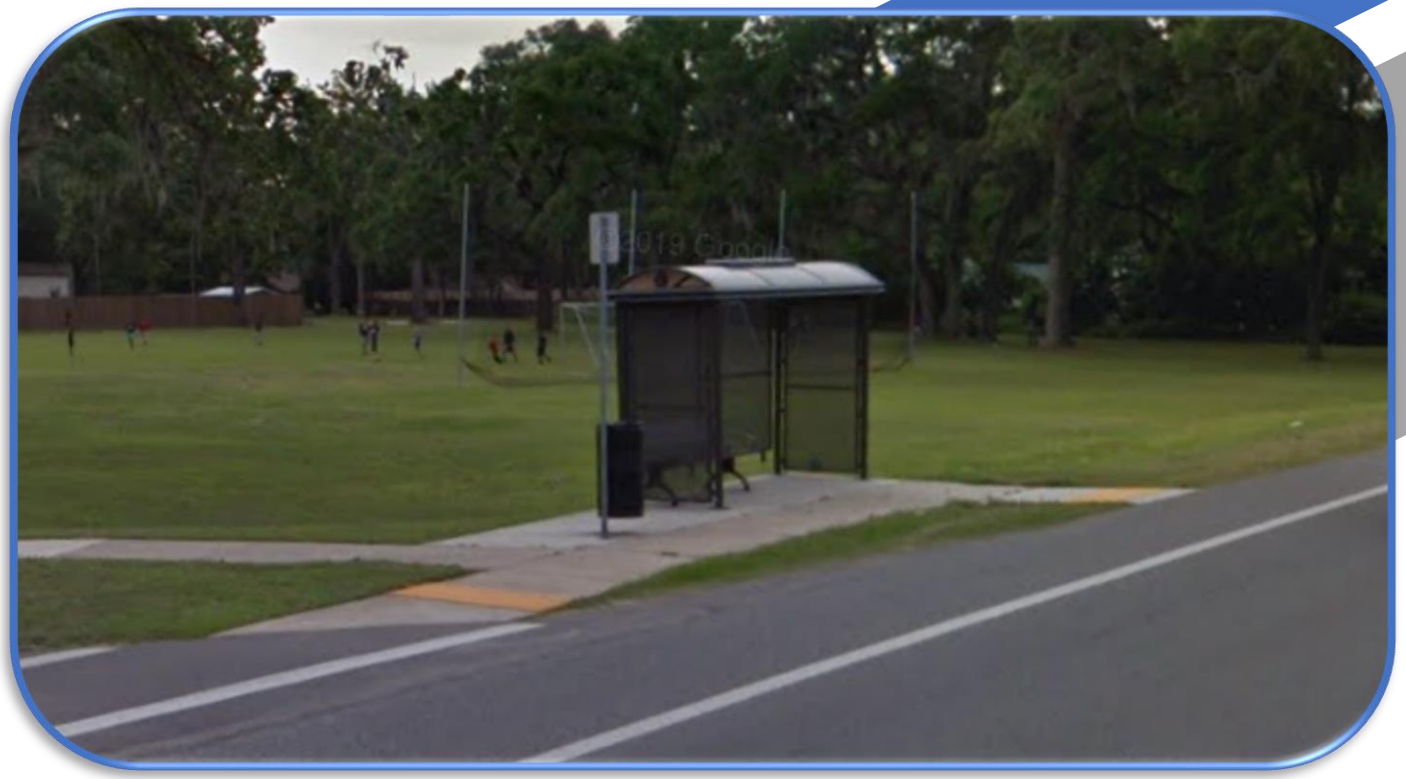
***FDM* 222.3 –**

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

- 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

Detectable Warnings

***FDM* 222.3 –** They are required on sidewalks at the following locations (**continued**):



- 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

Detectable Warnings

***FDM* 222.3** –

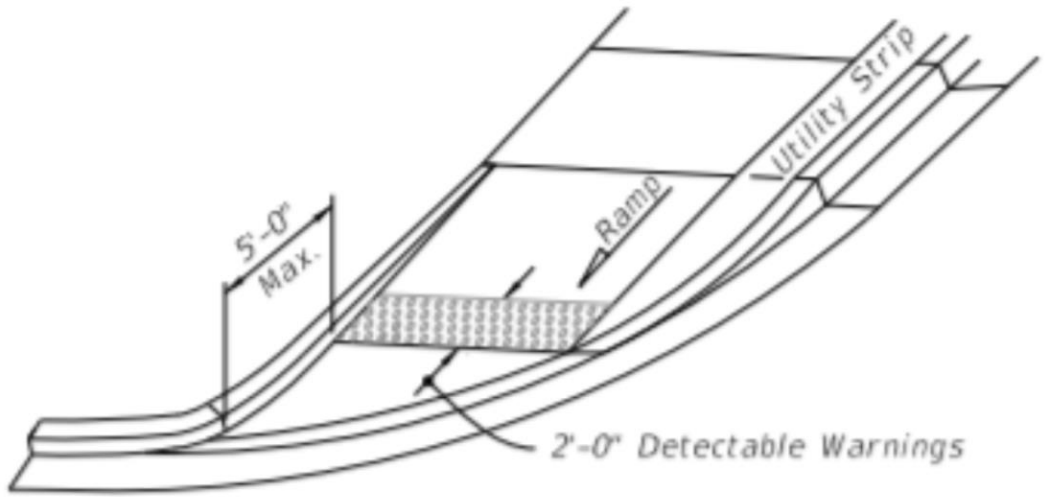
Detectable warnings should **not be placed** where sidewalk intersects urban **flared** driveways or on sidewalks that run continuously through **residential** driveways. Do not place detectable warnings on transition **slopes** or over grade **breaks**. Further guidance on detectable warnings is provided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

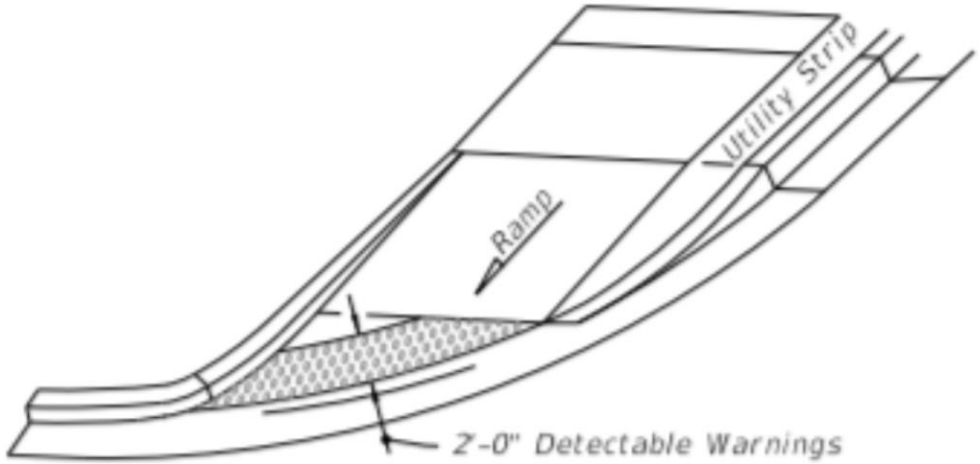
4. Detectable Warnings:

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.





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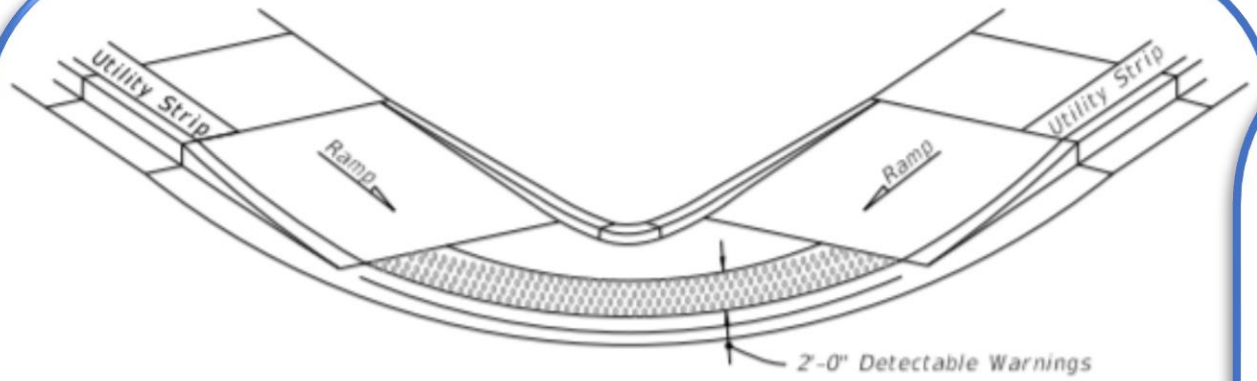
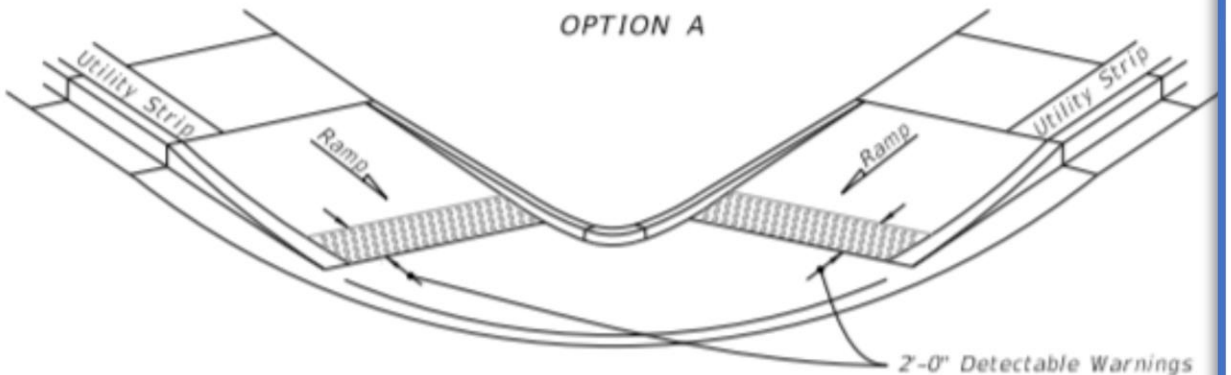
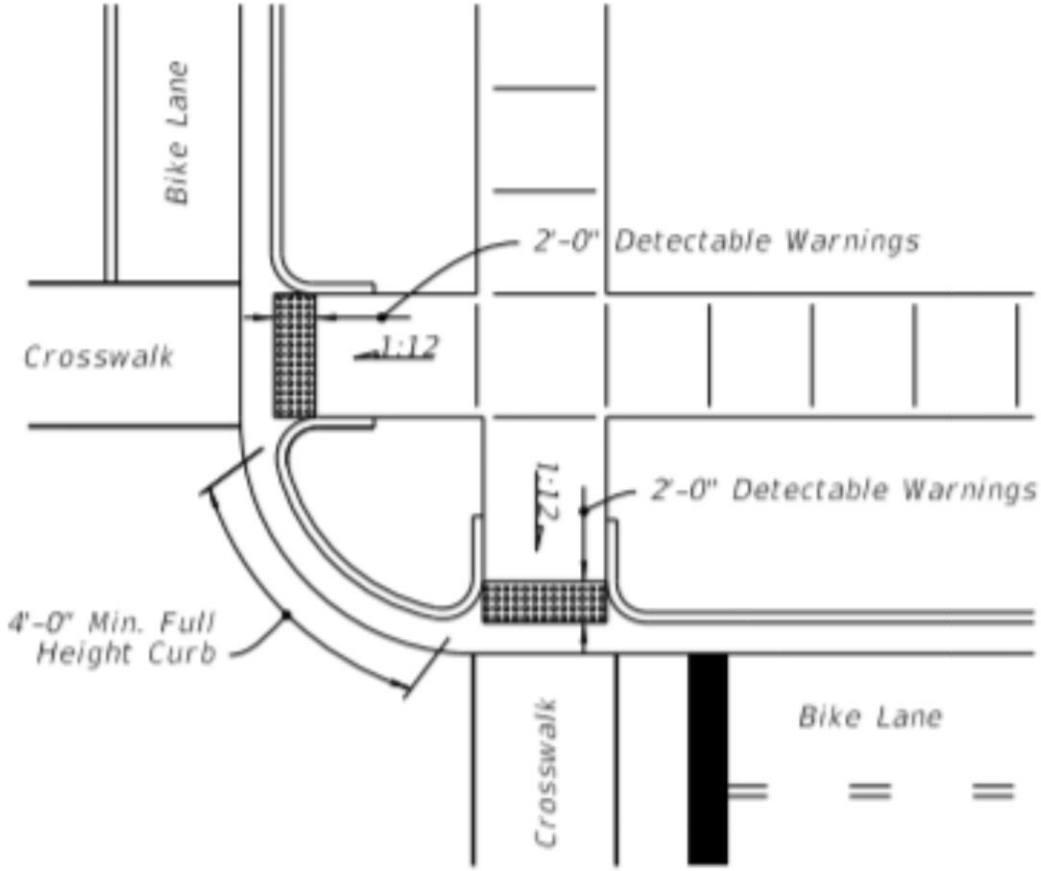


OPTION A



OPTION B



CURB RAMPS OUTSIDE RADIAL RETURN

Detectable Warnings

***FDM* 222.3 –**

Detectable warning systems on the APL are designed to work with **concrete** surfaces. In areas where the pedestrian facility has an **asphalt** surface, such as a shared use path, specify an appropriate detectable warning system or **consider** including a short section of concrete.

Pedestrian Drop-off Hazards and Railings

***FDM* 222.4** –

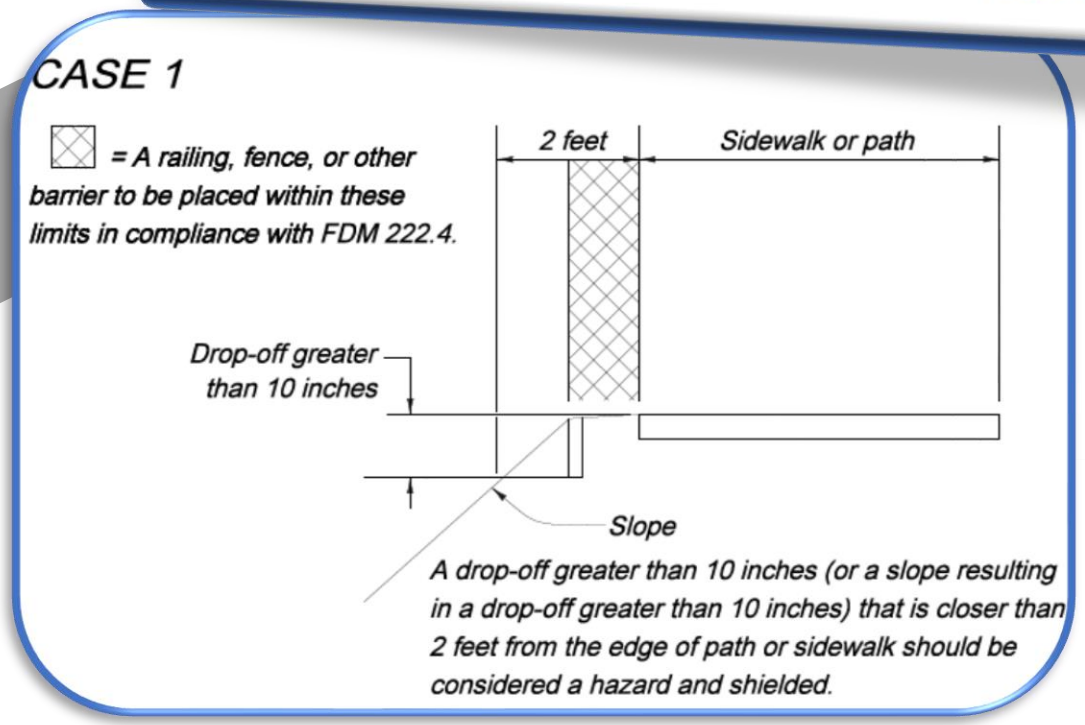
A pedestrian drop-off **hazard** is a steep or abrupt downward slope that can be **hazardous** to pedestrians.

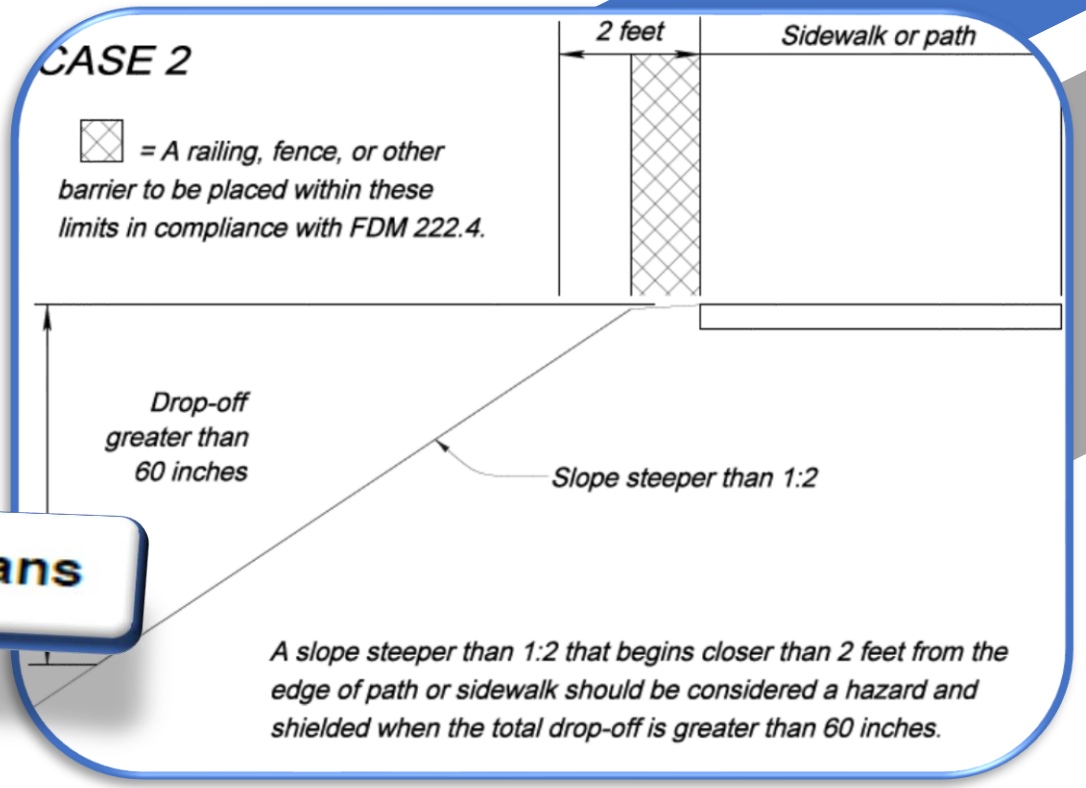
Pedestrian Drop-off Hazards

FDM 222.4 –

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.

Pedestrian Drop-off Hazards

***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 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.

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

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**.

CONSTRUCTION

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."

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.

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**.

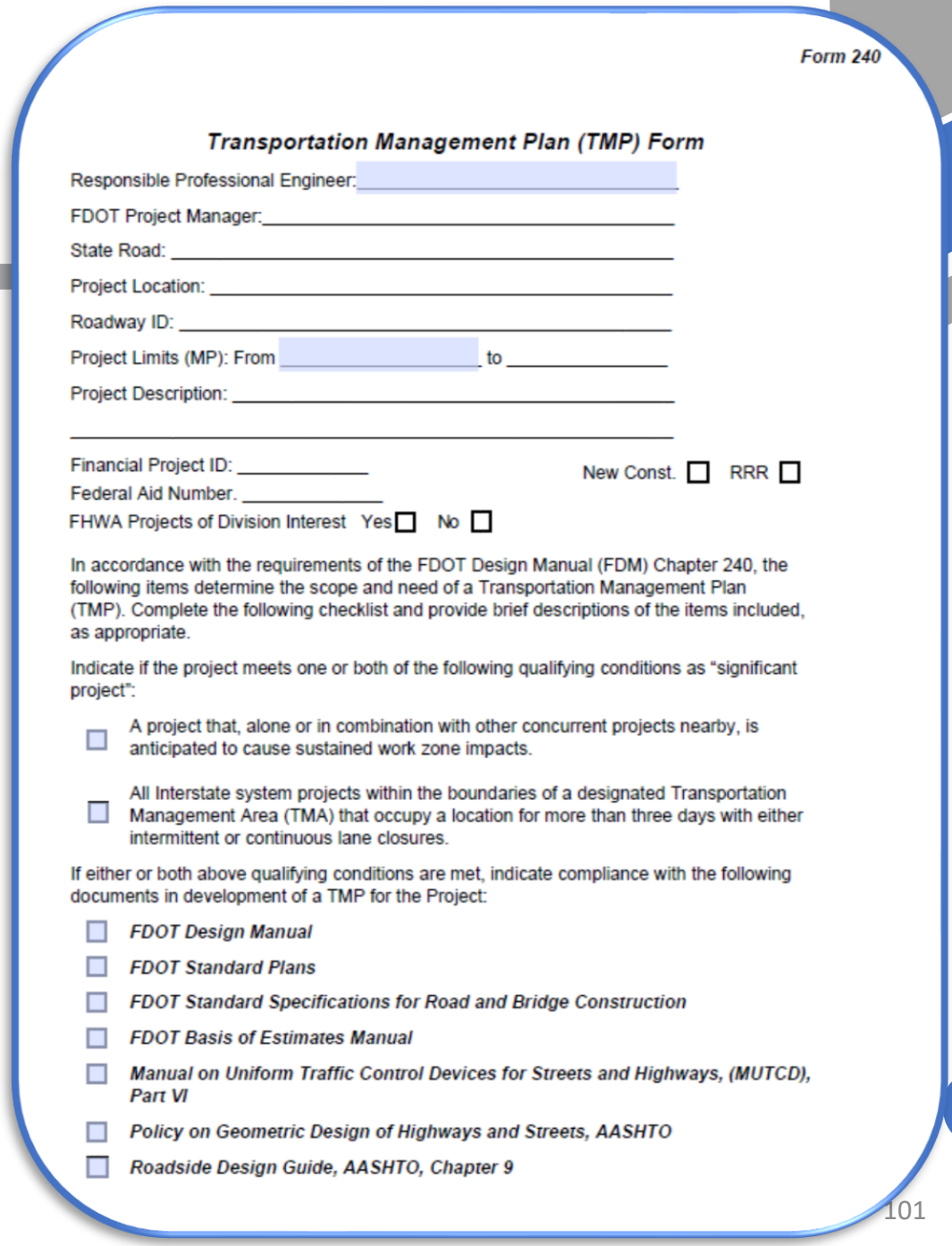
General

***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**.

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 ***CFR 23, **Part 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*

General

***FDM* 240.1** – **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**

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

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.

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

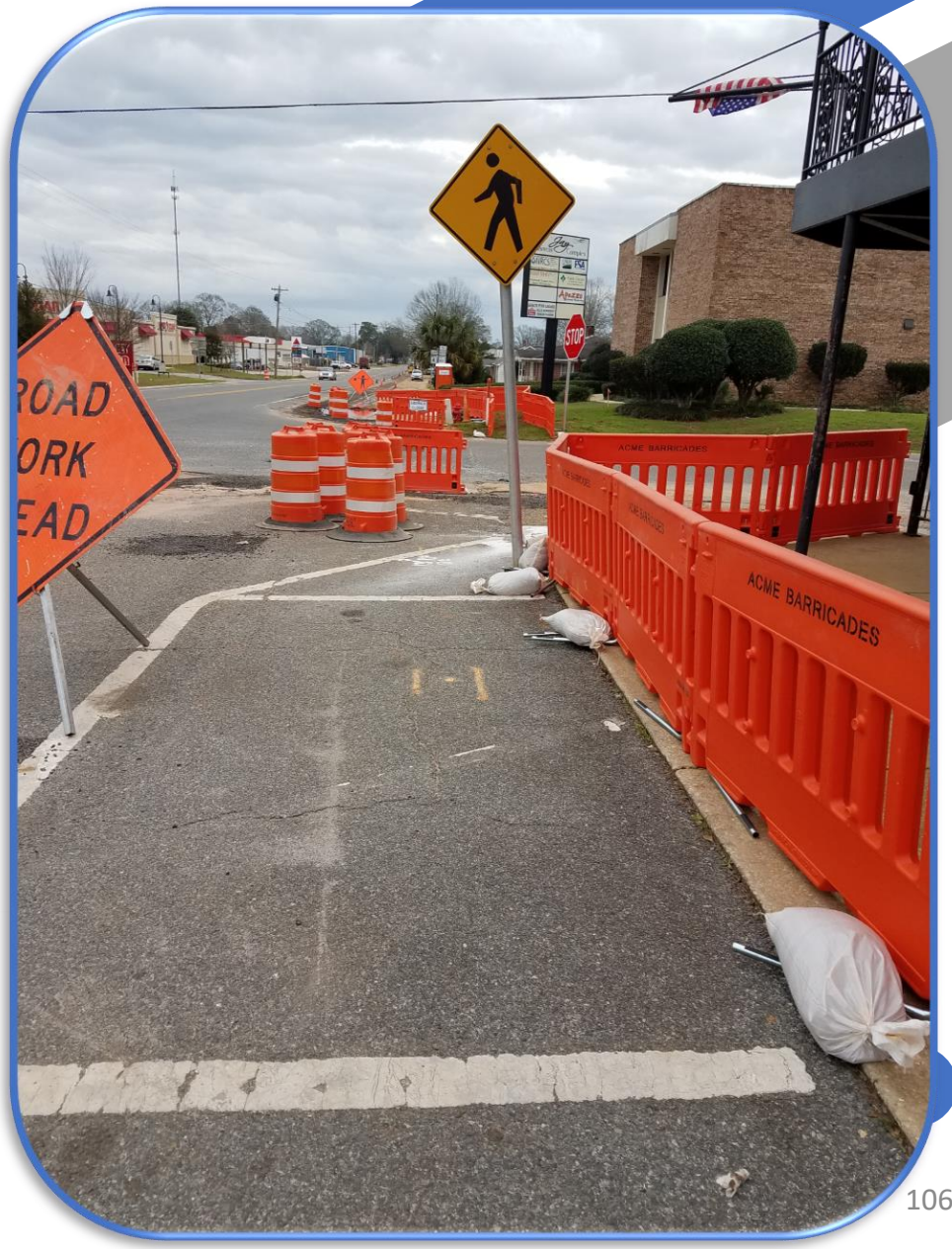
Provide accommodations on Florida National Scenic Trail and SUN Trail.

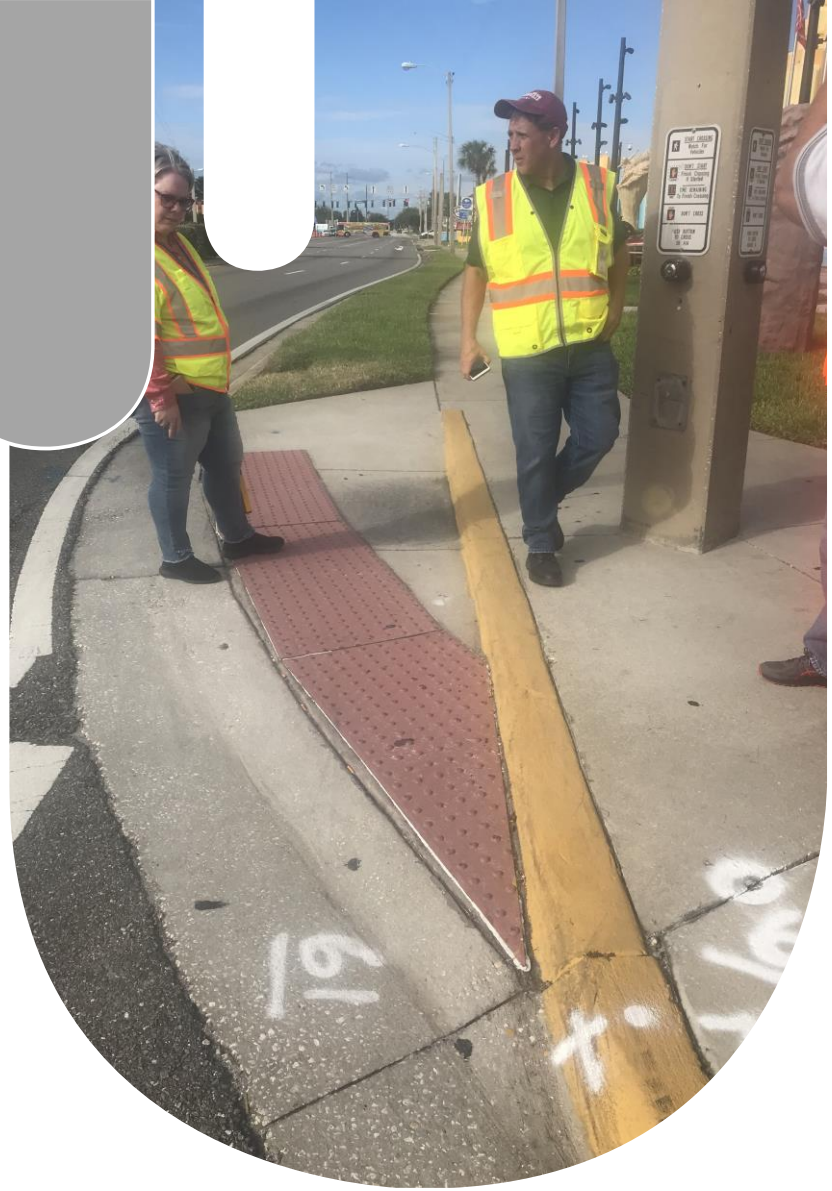
Bicycle, Pedestrian, and Transit Accommodation

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

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.





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

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 **cannot** be accomplished for bicycle facilities, **separate** motorized traffic from bike 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 bike facility should remain separated during construction. See ***FDM* 223** for more information on **separated** bike facilities.

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* 321** for more information on phasing.

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

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.

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.

Bicycle, Pedestrian, and Transit Accommodation

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

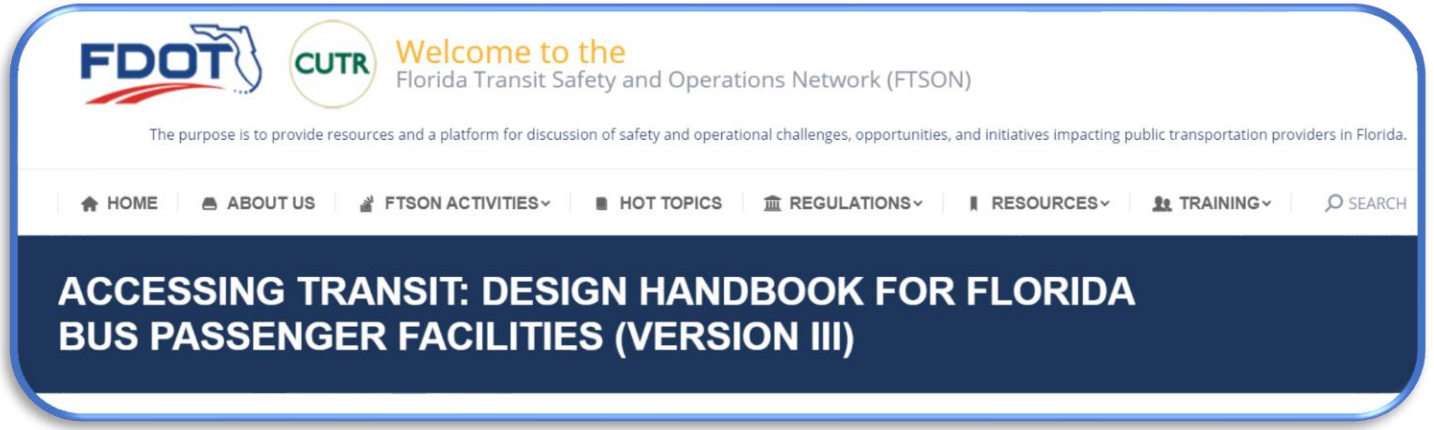
(3) The order of **preference** for routing:

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

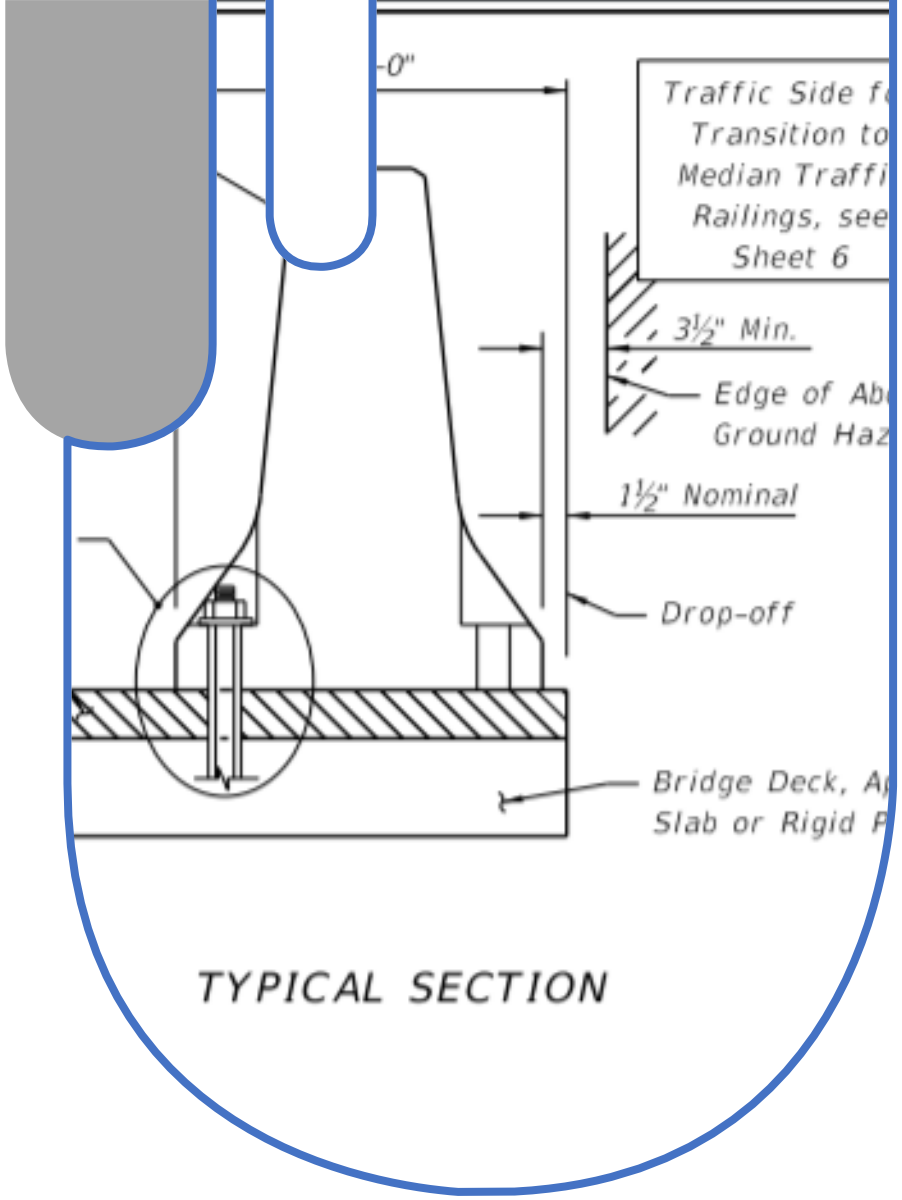
(b) Diversion to the **opposite** side of the road.
Return to original side of road as soon as possible.

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

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.



Drop-offs in Work Zones

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

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.

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.

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.

Pedestrian Longitudinal Channelizing Devices

***FDM* 240.2.2.5 – 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 feet** of the sidewalk or pedestrian walkway.
  - Along **both** sides of a temporary pedestrian way
    - LCDs not req'd w/ existing barrier

Temporary Traffic Control Devices

***FDM* 240.2.2.8 – Signals**

Include traffic control signal requirements or responsibilities in the **Technical Special Provisions**. Signal displays and location must meet ***MUTCD*** requirements. If **temporary** signals are used where a pedestrian crossing is present, the pedestrian must be **accommodated** in the signal timing.

Temporary Traffic Control Devices

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

Traffic control officers are used to increase the visibility of the work zone or work operation. **Uniformed** law enforcement officers are **respected** by motorists, cyclists, and pedestrians.

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 Systems (**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**.

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**.

Public Information Plan

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

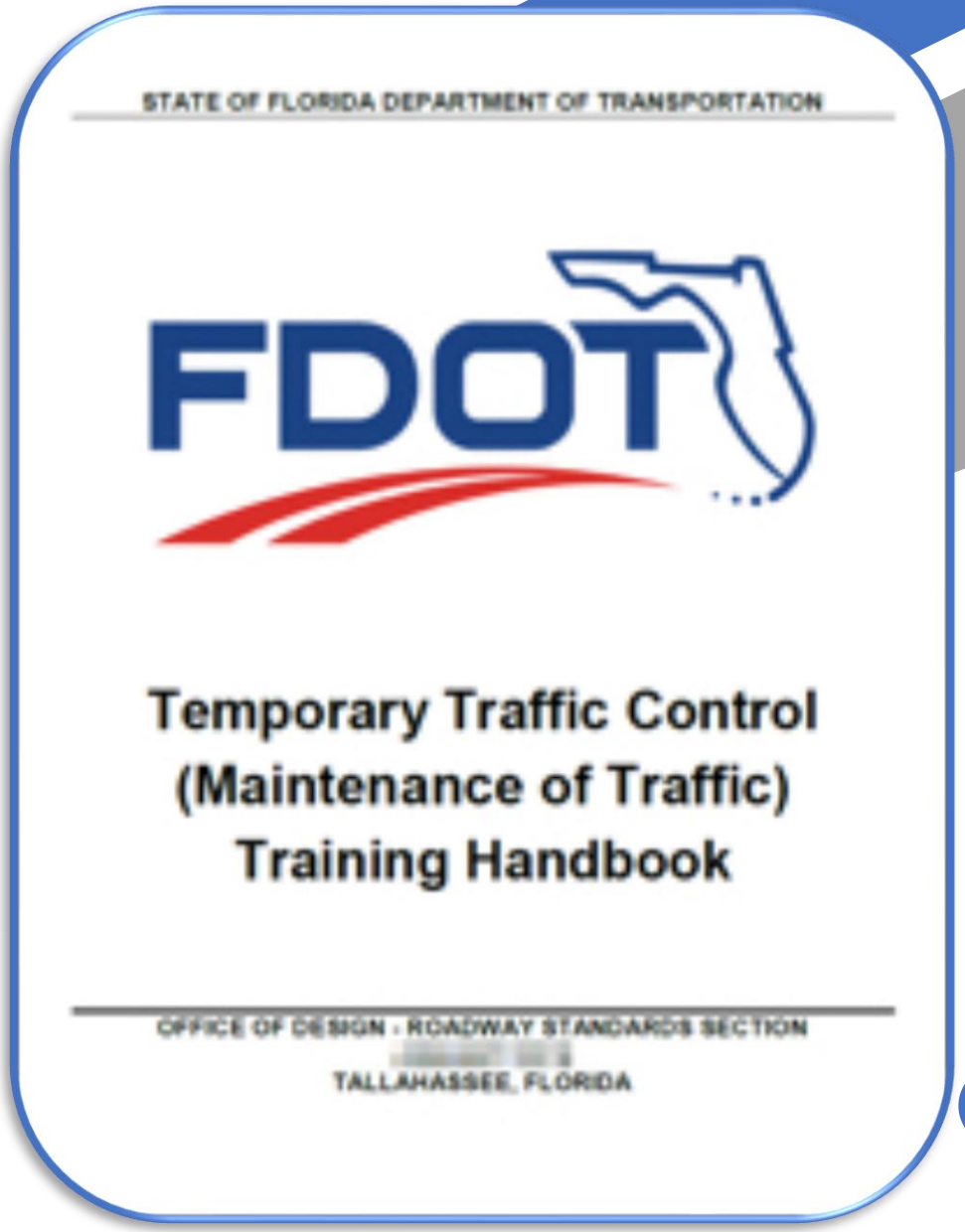
(1) ***FDM* 104**

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

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

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***.



THANK YOU!

Randy E. (Brad) Bradley II, P.E.

FDOT – State ADA Coordinator

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SPEEDING
WRECKS
YOUR DAY

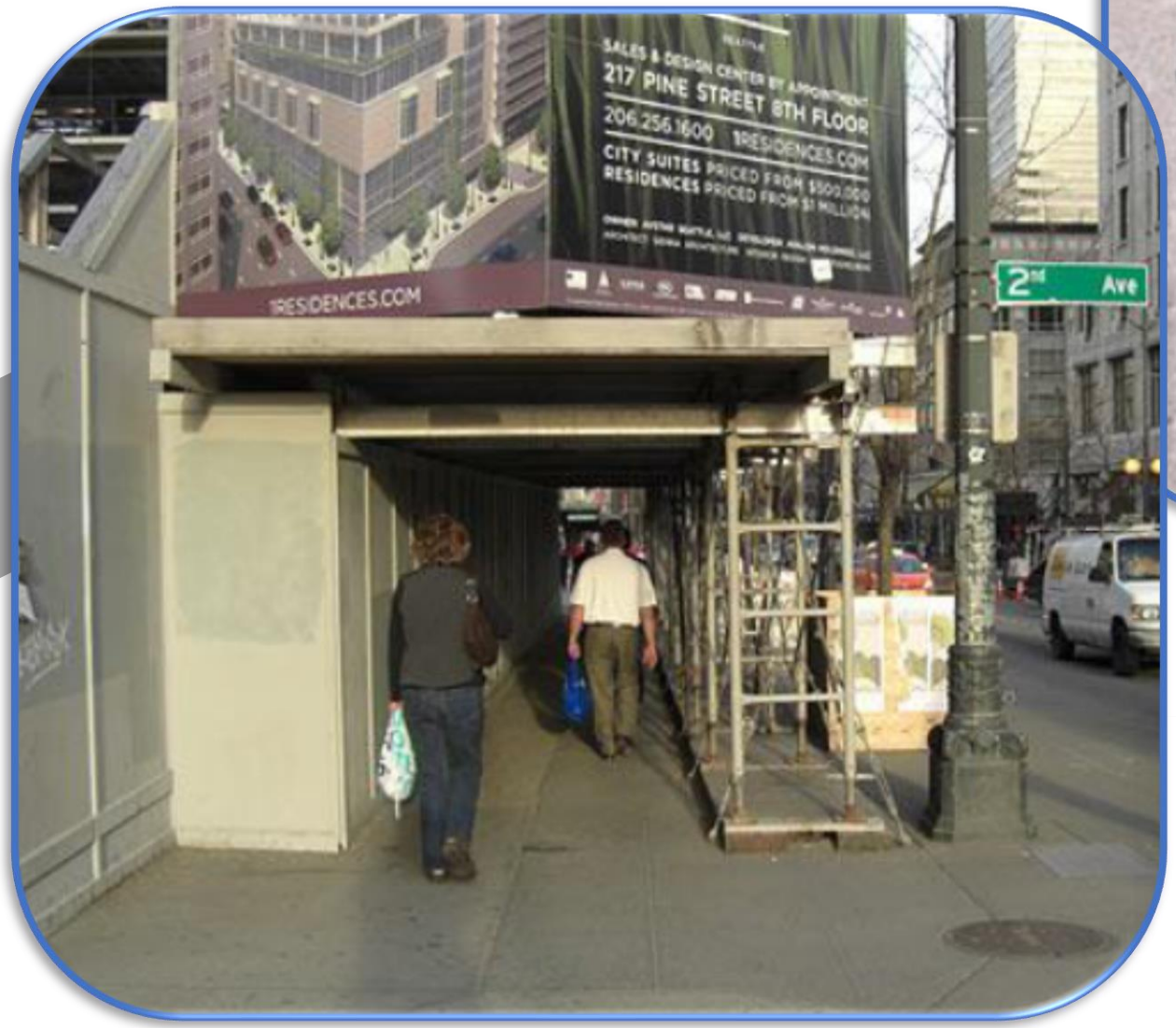

SIDEWALK
CLOSED
CAUTION
CAUTION
CAUTION
CAUTION
SIDEWALK
CLOSED
USE OTHER SIDE


DETOUR

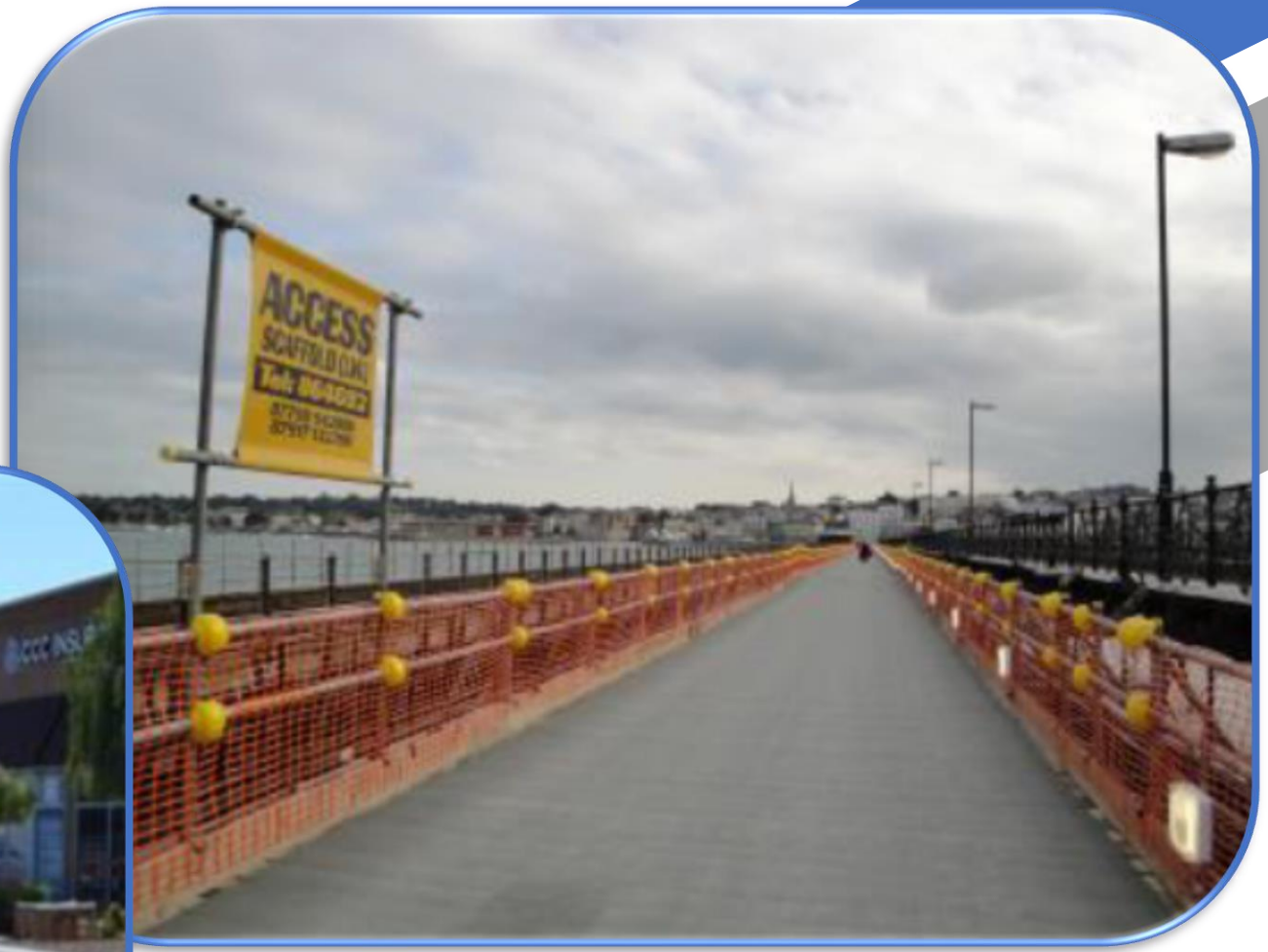

SIDEWALK
CLOSED


SIDEWALK
CLOSED


PEDESTRIAN


SALES & DESIGN CENTER BY APPOINTMENT
217 PINE STREET 8TH FLOOR
206.256.1600 1RESIDENCES.COM
CITY SUITES PRICED FROM $500,000
RESIDENCES PRICED FROM $1 MILLION
1RESIDENCES.COM
2nd Ave


PEDESTRIAN
SIDEWALK
CLOSED


ACCESS


WORK
ZONE
SPEED
LIMIT
25
CAT


SIDEWALK
CLOSED


DETOUR


SIDEWALK
CLOSED