225 Public Transit Facilities

225.1 General

Curbside and street-side transit facilities for bus stops should be considered in the roadway design process when a project includes a public transit route.

The Department's ***Accessing Transit: Version III, 2013 Design Handbook for Florida Bus Passenger Facilities***, commonly known as the ***Accessing Transit Handbook,*** provides guidance relating to provisions for curb-side and street-side facilities. Refer to ***FDM 215*** for criteria on the placement of shelters and benches. Coordination with the District Modal Development Office and local public transit provider(s) is necessary in developing the plans.

Additional guidance on the design of transit facilities is available in the 2014 AASHTO publication, ***A Guide for Geometric Design of Transit Facilities on Highways and Streets, 1st Edition***. This guide provides a comprehensive reference of current practice in the geometric design of transit facilities on streets and highways, including:

- Local buses, express buses, and bus rapid transit operating in mixed traffic
- Dedicated bus lanes
- Bus-only roads within street and freeway environments
- Streetcars and Light Rail Transit running in mixed traffic and transit lanes, and within medians along arterial roadways

The AASHTO guide is intended for use by public agencies, practitioners, and developers in need of basic information about planning, locating, sizing, designing, and implementing transit facilities along roadways.

For RRR projects, coordinate with the District Pedestrian/Bicycle Coordinator, the District Modal Development Office, and, as needed, the District Safety Engineer and/or District Safety Administrator when deficiencies in transit facilities are identified during the field review or project development.

225.2 Boarding and Alighting Areas

Boarding and alighting areas help to create an accessible bus stop by providing a raised platform that is compatible with a bus that kneels or extends a ramp. A boarding and alighting area must have a firm, stable, and slip-resistant surface with a minimum clear length of 8 feet (measured perpendicular to the curb or roadway edge), and a minimum clear width of 5 feet (measured parallel to the roadway). Firm, stable, and slip resistant boarding and alighting areas are required if amenities such as benches or shelters are added to a bus stop. Boarding and alighting areas are not required at bus stops on flush

shoulder roadways where only a bus stop sign is provided. Coordinate with the appropriate public transit provider(s) to determine compatibility with equipment and transit vehicles.

The slope of the boarding and alighting area parallel to the roadway should be the same as the roadway. For drainage purposes, a maximum slope of 1:50 (2%) (measured perpendicular to the roadway) is allowed.

On flush shoulder roadways, the boarding and alighting area should be constructed at the shoulder break to create an accessible bus stop, as shown in ***Figures 225.2.1*** and ***225.2.2***. The boarding and alighting area may be placed at the edge of shoulder pavement on roadways with a posted speed of 45 mph or less. The raised area provides a landing that is compatible with a bus that kneels or extends a ramp with a slope of 1:6 or less. Bus stops should be located in close proximity to existing intersections, and with sidewalk access. The boarding and alighting area is to:

(1) Use a Type E curb and gutter (5” curb height)

(2) Be connected to the sidewalk along the roadway or to the roadway when no sidewalk is present

Provide a sidewalk and/or ramp that is a minimum of 5 feet wide with a maximum slope of 1:12 for the boarding and alighting area. A detectable warning is required where a sidewalk associated with a boarding and alighting area connects to the roadway at grade. Except for the area adjacent to the 5-in curb, the areas surrounding the boarding and alighting area are to be flush with the adjacent shoulder and side slopes and designed to be traversable by errant vehicles. On the upstream side of the landing, a maximum slope of 1:12 should be provided, and may be grass or a hardened surface. The boarding and alighting area (and ramp and level landing if needed) are to be constructed with 6-in thick concrete.

Figure 225.2.1 Accessible Boarding and Alighting Area for Flush Shoulder Roadways with Connection to Sidewalk

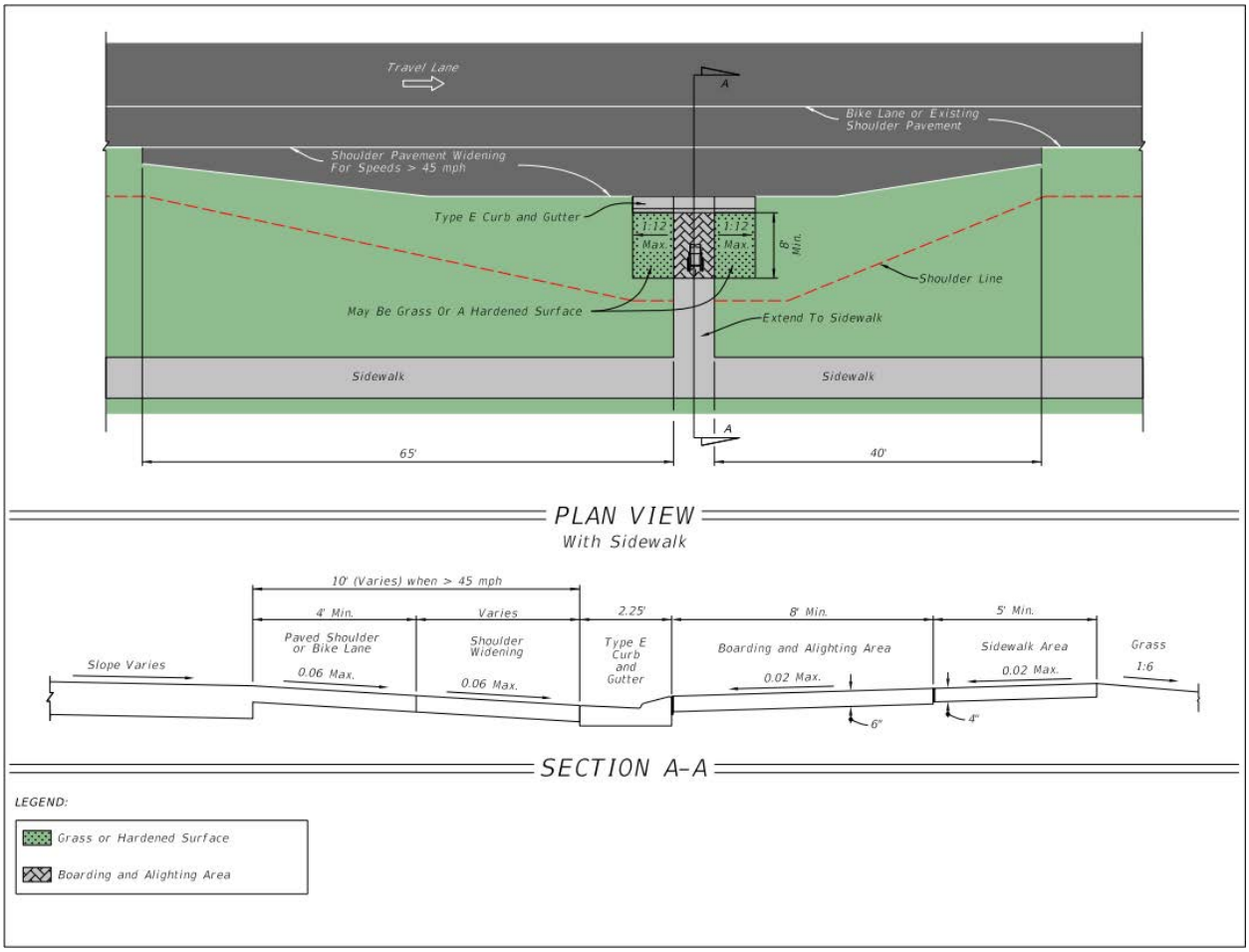
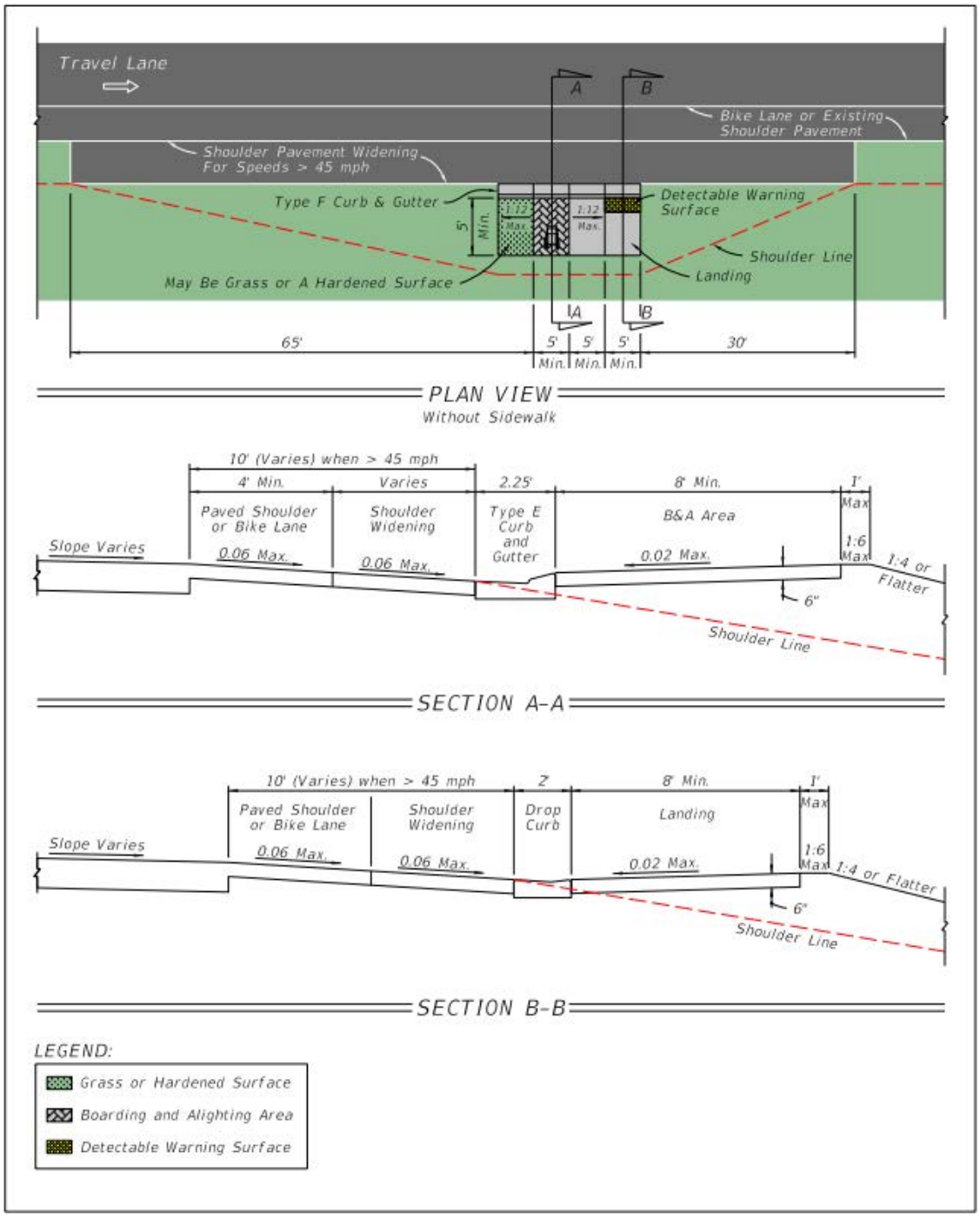


Figure 225.2.2 Accessible Boarding and Alighting Area for Flush Shoulder Roadways with Connection to Roadway



225.3 Street-Side Facilities

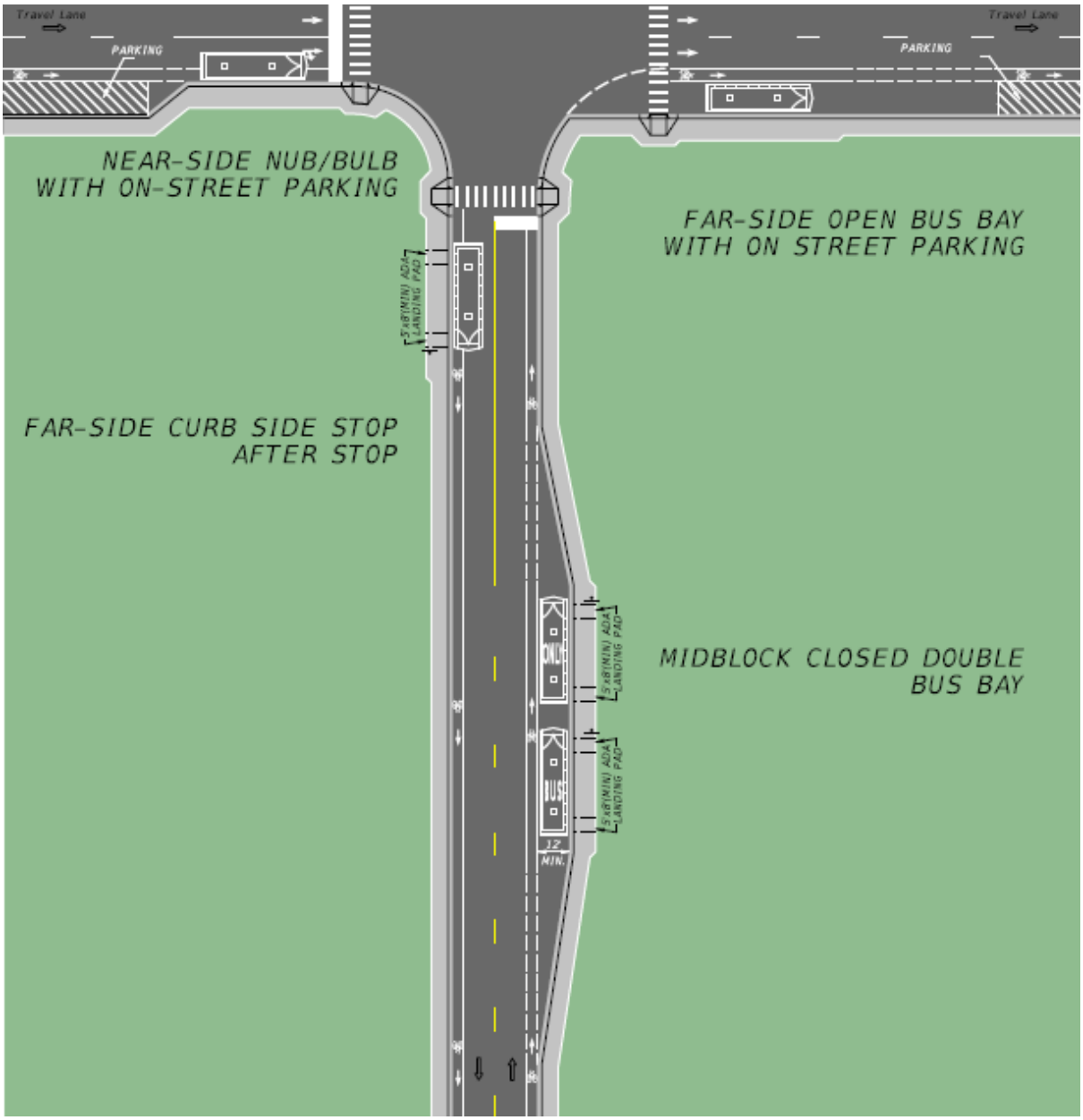
Bus stop locations can be categorized as far-side, near-side and midblock stops. Bus stops may be designed with a bus bay or pullout to allow buses to pick up and discharge passengers in an area outside of the travel lane. This design feature allows traffic to flow freely without the obstruction of stopped buses. See ***Figure 225.3.1*** for typical details for the bus stop and bus bay categories. ***Chapter 2*** of the Accessing Transit Handbook provides additional information for each facility. The greater distance placed between waiting passengers and the travel lane increases safety at a stop.

Bus bays are encouraged on roadways with posted speeds of 45 MPH and greater. A high frequency of crashes involving buses is a good indicator of the need for a bus bay. Bus bays are classified as closed, open or bulbs. Illustrations for various bus bay configurations are provided in the Accessing Transit Handbook.

Coordinate bus bay designs with applicable transit agencies to determine the site-specific needs. In locations where the traffic volumes exceed 1,000 vehicles per hour per lane, it is difficult to maneuver the bus into the bay and back into the travel lane. Incorporating an acceleration distance, signal priority, or a far-side (rather than near-side or midblock) placement, are potential solutions when traffic volumes exceed 1,000 vehicles per hour per lane.

The total length of the bus bay should allow room for an entrance taper, a stopping area, and an exit taper as a minimum. However, in some cases it may be appropriate to consider providing acceleration and deceleration lanes depending on the volume and speed of the through traffic. This decision should be based upon site specific conditions. Accessing Transit Handbook provides detailed bus bay dimensions for consideration when right of way is unlimited and access points are limited.

Figure 225.3.1 Bus Stop and Bus Bay Categories



225.4 Exclusive Transit Running Ways

The Department's ***Typical Sections for Exclusive Transit Running Ways*** is a guide which provides a starting point for designing exclusive transit running ways. Case-by-case evaluation of sites and corridors is essential in producing design drawings that are feasible and effective.

This guide presents conceptual typical sections for exclusive transit running ways that may see application in Florida. Typical section elements, general dimensions, analysis considerations, and intersection operations considerations are discussed in the guide for the following scenarios:

- Concurrent flow curb bus lanes
- Concurrent flow median bus lanes
- Contraflow bus lane on a one-way street
- Contraflow bus lane on a two-way street
- At-grade two-way busway on a two-way street
- At-grade reversible one-lane median busway on a two-way street
- At-grade exclusive busway in roadway R/W
- At-grade exclusive busway in separate R/W
- Exclusive bus street
- Shoulder-running bus lanes on an uninterrupted flow highway.