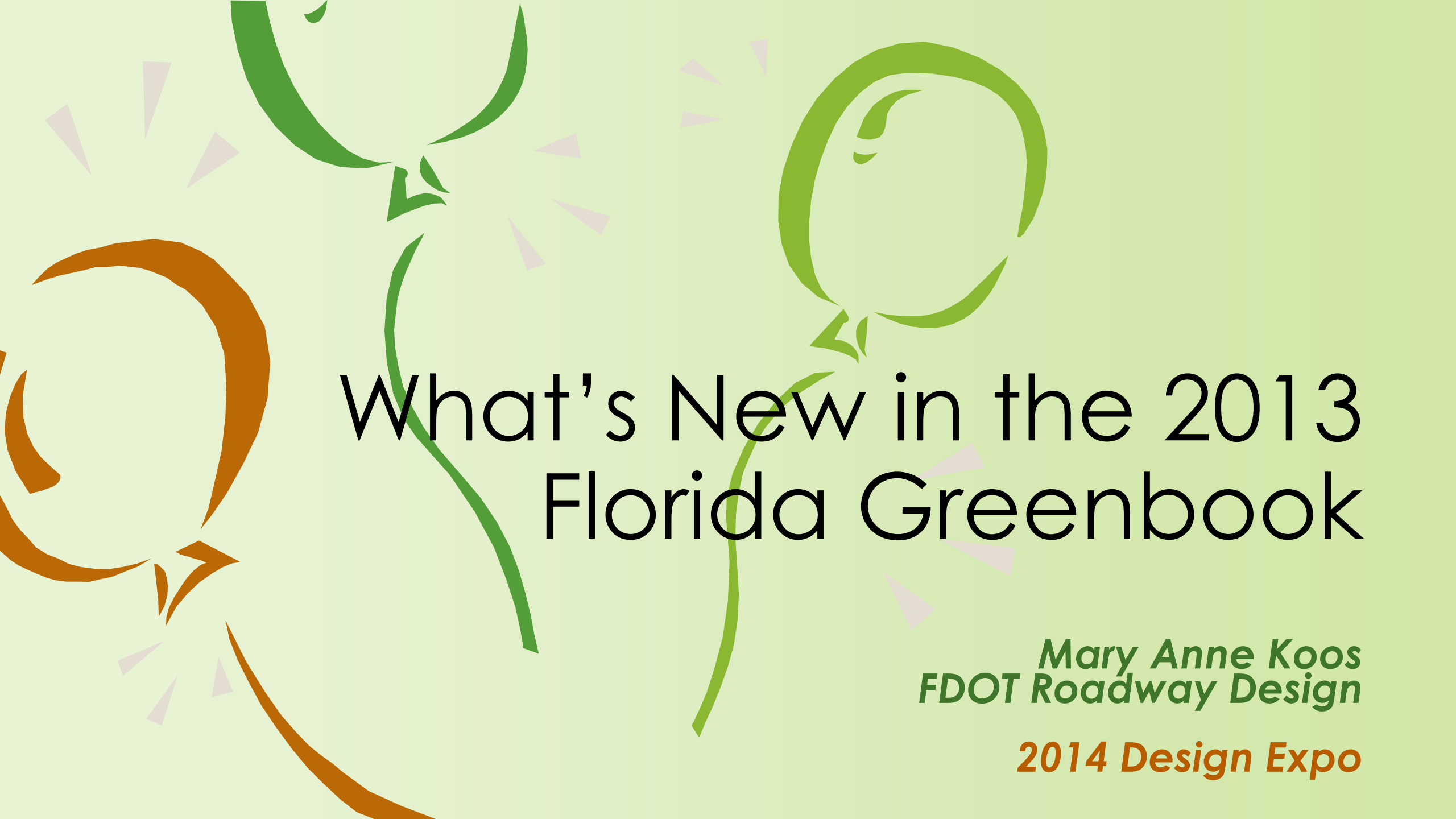

What's New in the 2013 Florida Greenbook

Mary Anne Koos
FDOT Roadway Design

2014 Design Expo

Overview

- Where does the Greenbook apply?
- How do Greenbook revisions come about?
- When can I start using the 2013 Greenbook?
- What are the major changes?
- How can I find out when its effective?
- Where should I be paying more attention?

Purpose of Greenbook

- Section 334.044, F.S. Florida Statutes
  - Provide uniform minimum standards and criteria
  - Design, construction, and maintenance
  - Public streets, roads, highways, bridges, sidewalks, curbs and curb ramps, crosswalks, bicycle facilities, underpasses and overpasses used by the public…

56th Street, Temple Terrace

Florida Greenbook Advisory Committee

- 4 members per FDOT District
  - Urban center
  - Rural area
  - Professional engineer not employed by a government agency
  - FDOT's District Design Engineer

Greenbook Committee Members

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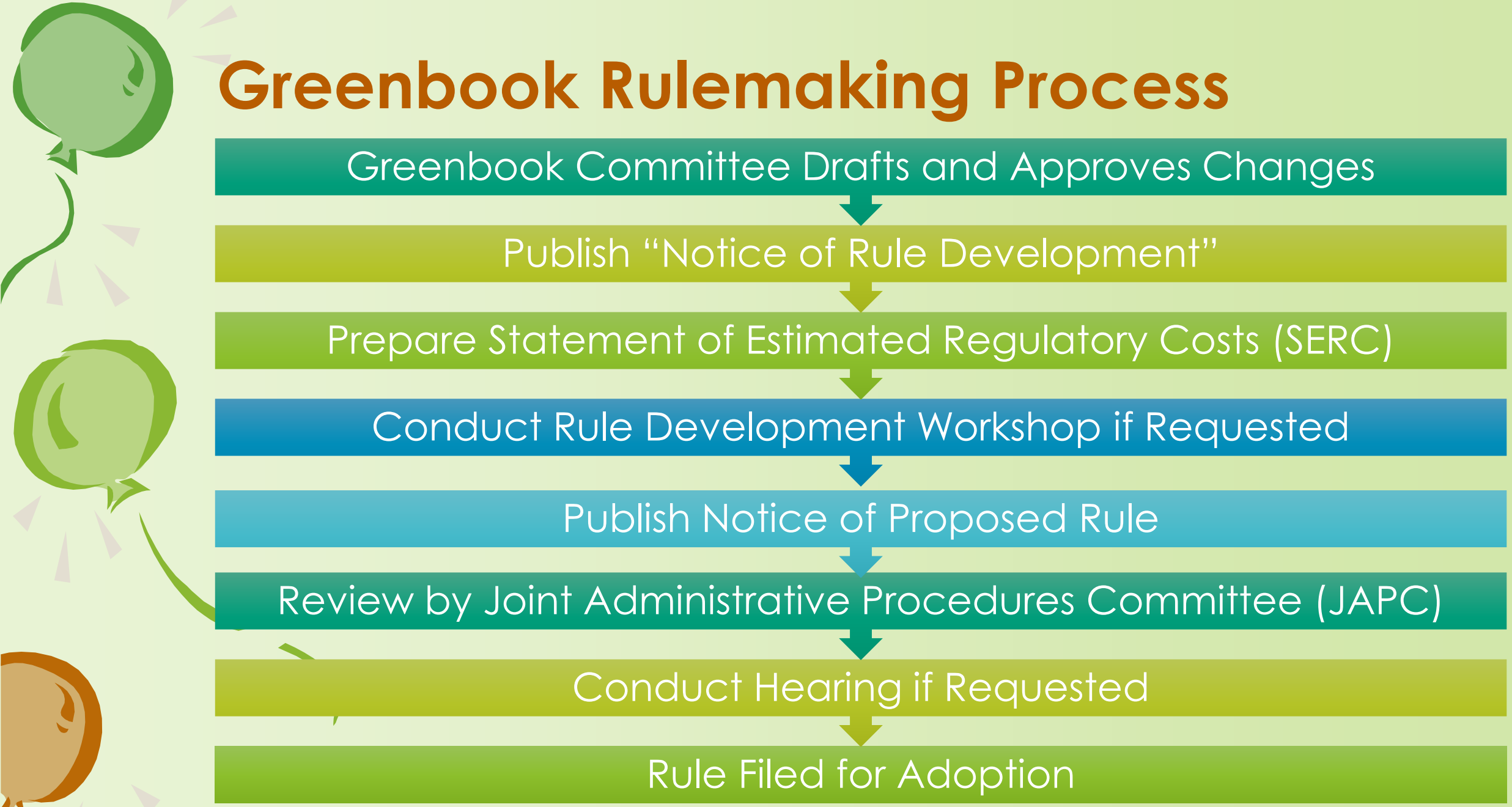
Greenbook Rulemaking Process



Contact Mailer

- How can I find out when its effective?
- "Self Service" web page where you can register to receive information from FDOT
- Options include information on design criteria and standard changes, specifications and estimates updates, training opportunities, and Greenbook!
- http://www.dot.state.fl.us/projectmanagementoffice/ContactDatabase.shtm

Major Changes

- Introduction and Definition of Terms
- Chapter 3 – Geometric Design
- Chapter 5 – Pavement Design
- Chapter 7 – Rail-Highway Grade Crossings
- Chapter 8 – Pedestrian Facilities
- Chapter 10 – Maintenance and Resurfacing
- Chapter 13 – Public Transit
- Chapter 17 – Bridges and Other Structures
- Chapter 19 – Traditional Neighborhood Design
- Chapter 20 – Drainage

Introduction

- Use on all new and resurfacing projects off the state highway and federal aid systems

US 44, Lecanto

USDOJ-FHWA Technical Assistance Memo

- Ensure that pedestrians with disabilities have access to pedestrian routes in the public right of way
- Whenever streets are altered provide ramps where walkways cross curbs

US 231/Harrison Avenue, Panama City

USDOJ-FHWA Technical Assistance Memo

- Projects altering use of the public right-of-way must meet ADA and Section 504
- Alterations include resurfacing
- See USDOJ/FHWA technical Assistance Memo (6-28-13)
  - http://www.fhwa.dot.gov/civilrights/programs/doj_fhwa_ta.cfm

Evansville, Indiana

Definition of Terms

- New definitions for crosswalk, maintenance, resurfacing, and traditional neighborhood development (TND)
- Deleted undesignated bike lanes (MUTCD requires all bike lanes to be marked)

Estero Blvd., Ft. Myers Beach

Chapter 3 – Geometric Design

- Reference 2006 ADA Standards for Transportation Facilities and 2012 Florida Accessibility Code
- Clarify criteria for accessible space at bus stop bench, at least 30" wide by 48" deep
- Reference to NCHRP Report 672: Roundabouts: An Informational Guide
- Establish minimum width for new two lane bridges on Low Volume Local Roads (ADT < 400) at 22 feet, 15 feet for a one lane bridge.

FSU Campus

Chapter 5 – Pavement Design and Construction

- Consider Safety Edge on roadways without curb or paved shoulders and speeds of ≥ 45 mph

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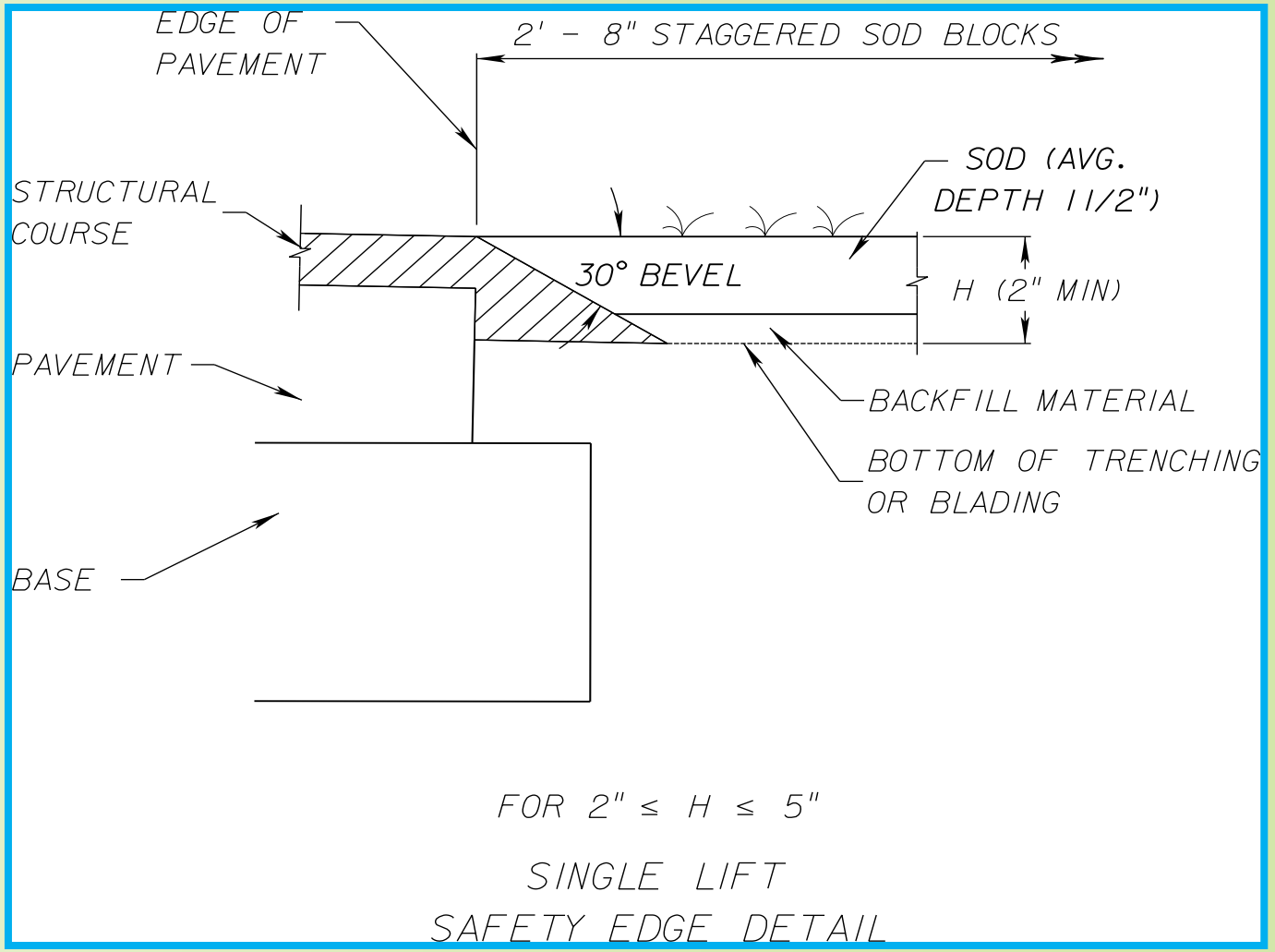
Chapter 5 – Pavement Design and Construction

- Detail for Safety Edge in Greenbook



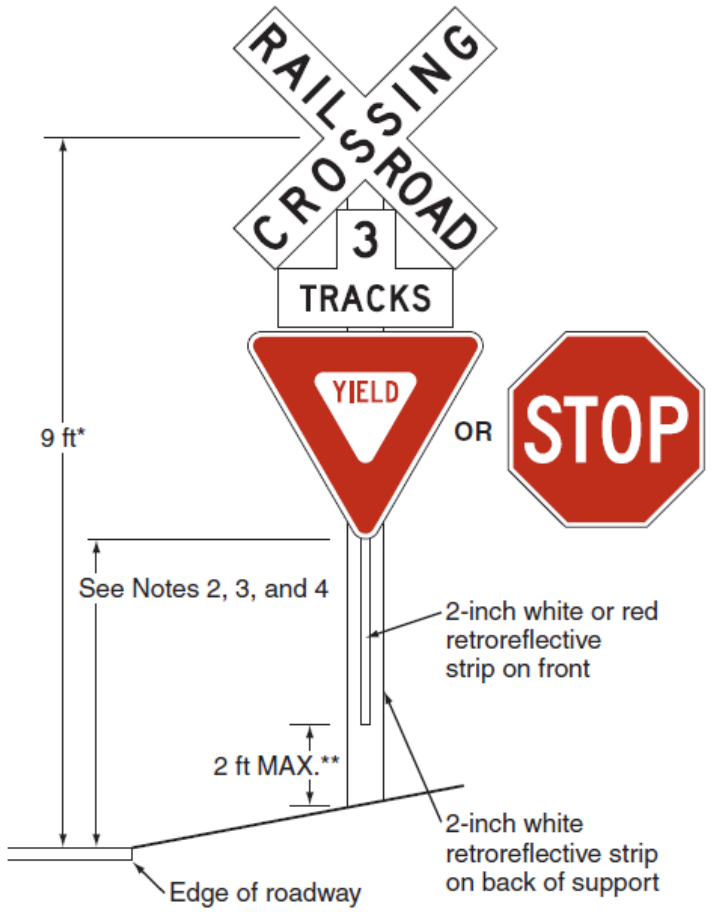
Chapter 5 – Pavement Design and Construction

- Consider transverse grooving of concrete pavements with heavy turning movements or traffic volumes
- Provide smooth transition from pavement to shoulder
- Shoulder pavement may improve drainage, serves bicyclists and pedestrians, and minimizes maintenance
- Added guidance on material selection for unpaved roads and encourage a life cycle cost analysis
- Requires the pavement surface to be inspected after construction for surface texture and slopes

Chapter 7 – Rail-Highway Grade Crossings

- Railroad-highway grade crossings near or within federal-aid project limits must be upgraded to meet the latest MUTCD requirements.

Figure 8B-2. Crossbuck Assembly with a YIELD or STOP Sign on the Crossbuck Sign Support

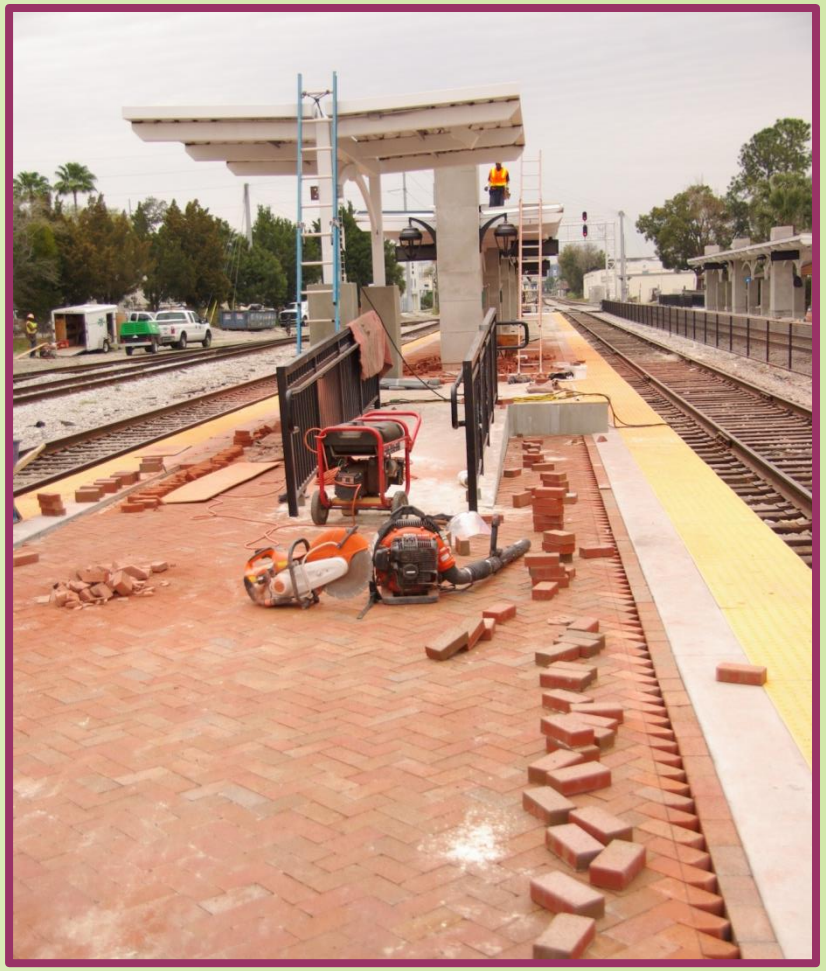


*Height may be varied as required by local conditions and may be increased to accommodate signs mounted below the Crossbuck sign

**Measured to the ground level at the base of the support

Chapter 8 – Pedestrian Facilities

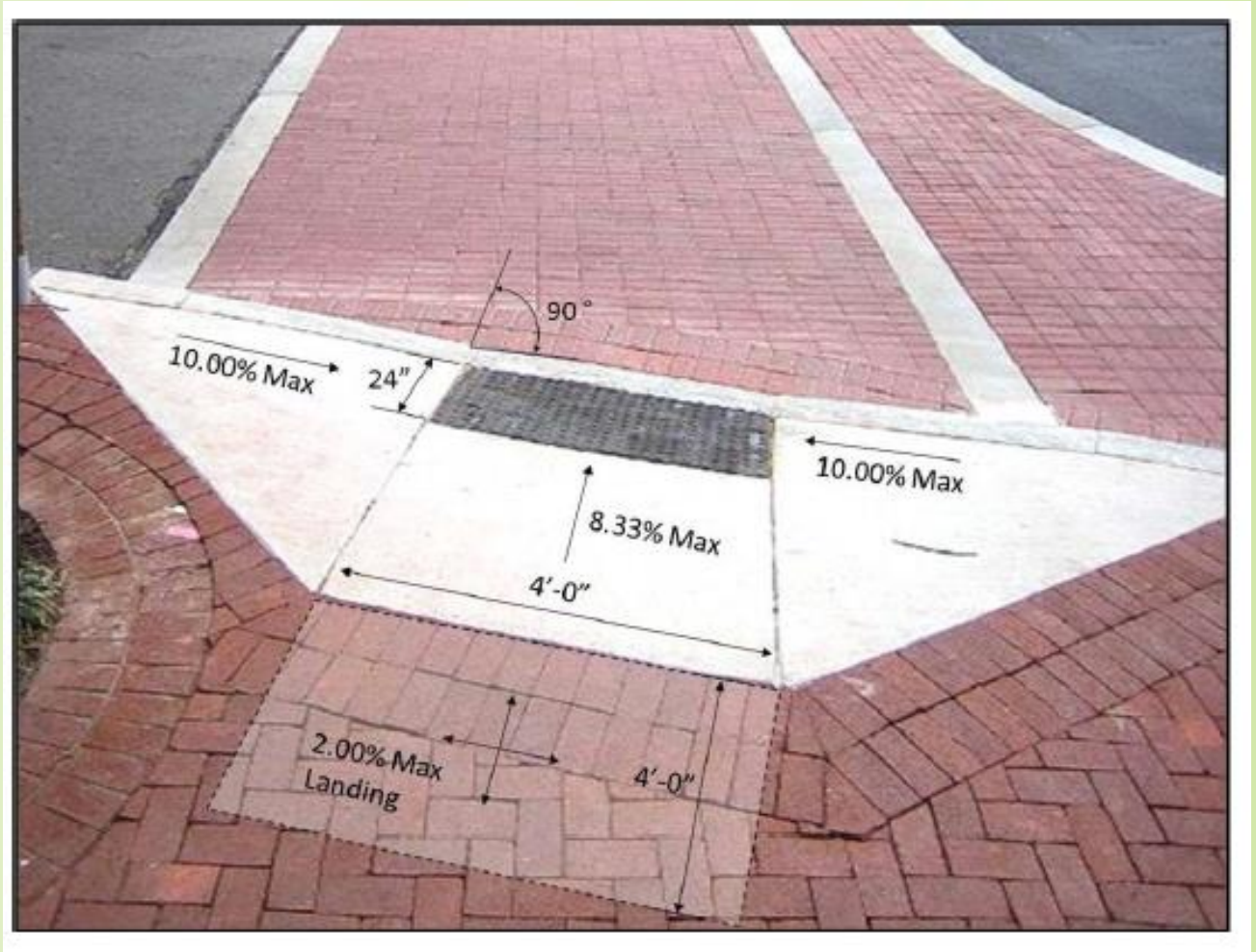
- Update the references to 2006 ADA Standards for Transportation Facilities
  - Applies to facilities used by state and local governments to provide designated public transportation services, including bus stops and stations, and rail stations
  - Unique provisions concerning:
    - Location of accessible routes
    - Detectable warnings on curb ramps
    - Bus boarding and alighting areas
    - Rail station platforms



Orlando Health Center, © Ride SunRail

Chapter 8 – Pedestrian Facilities

- Update the references to 2012 Florida Accessibility Code



Chapter 10 – Maintenance and Resurfacing

- "Routine Maintenance" now includes:
  - Inspection of pedestrian pavements and crossings with an emphasis on meeting ADA
  - Look for cracks, joint separations, accumulated debris, adjacent landscape materials

Chapter 10 – Maintenance and Resurfacing

- New "Resurfacing" section:
  - Criteria for compliance with the ADA
    - New sidewalks and driveways shall meet ADA
    - Existing ramps and detectable warnings shall be brought into compliance with ADA
    - Design should include an evaluation of existing driveways to determine if its feasible to meet ADA criteria (width and cross slope)

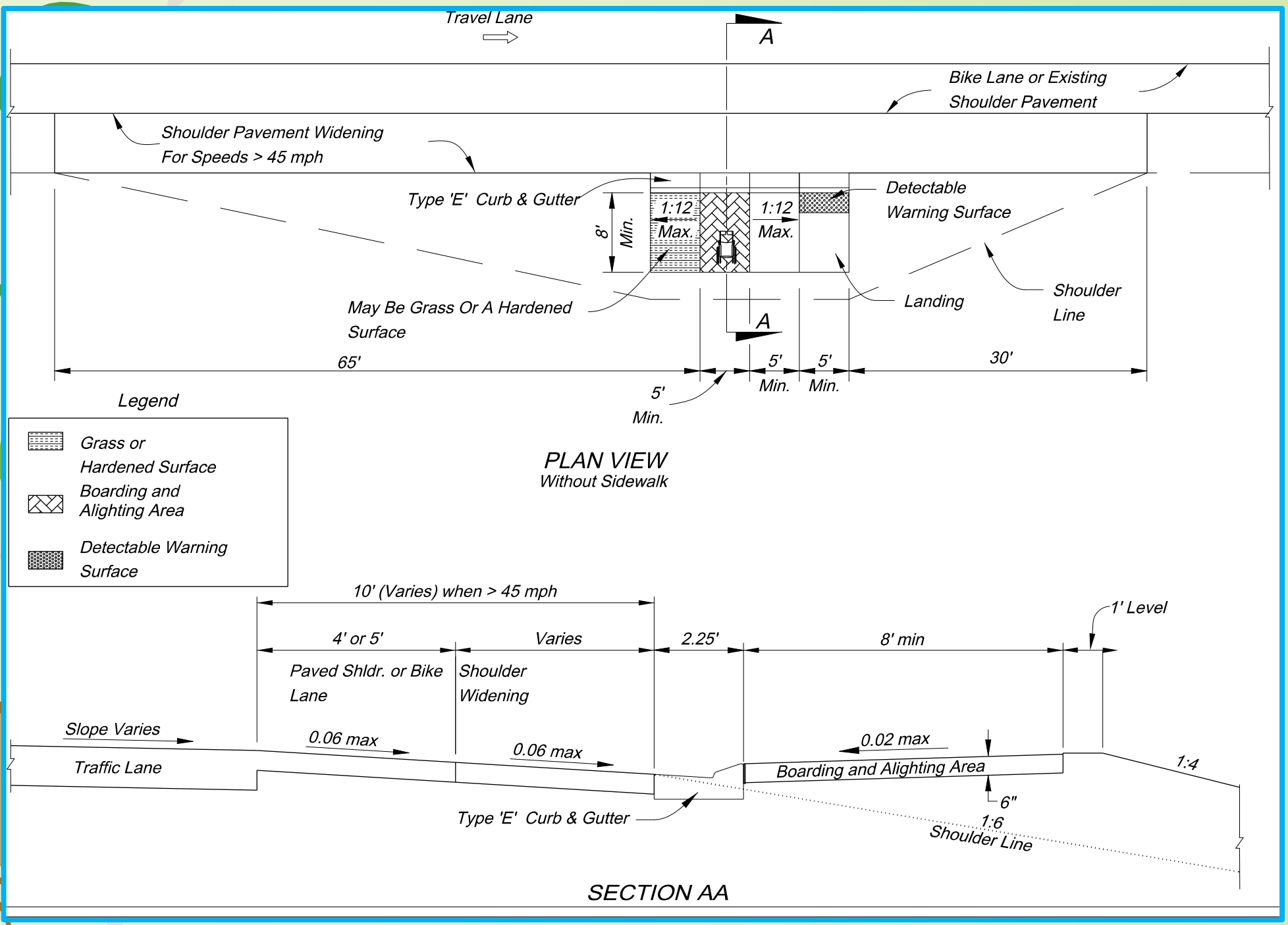
Chapter 10 – Maintenance and Resurfacing

- Review federal-aid projects for need to upgrade railroad-highway grade crossings that are near or within the limits of project
- Strive to upgrade the safety of facilities by including:
  - Crosswalks
  - Bicycle facilities
  - Safety Edge on rural roadways with no paved shoulder and speeds ≥45 mph
  - Improved guardrail end treatments and bridge-end transitions on high speed facilities
- Included the minimum requirements a project scope must contain for federal-aid assistance

Chapter 13 – Public Transit

Lakeland

- Description for boarding and alighting areas (B&A)
- When projects include a new bus stop or impact existing bus stops they should comply with FAC 14-20.



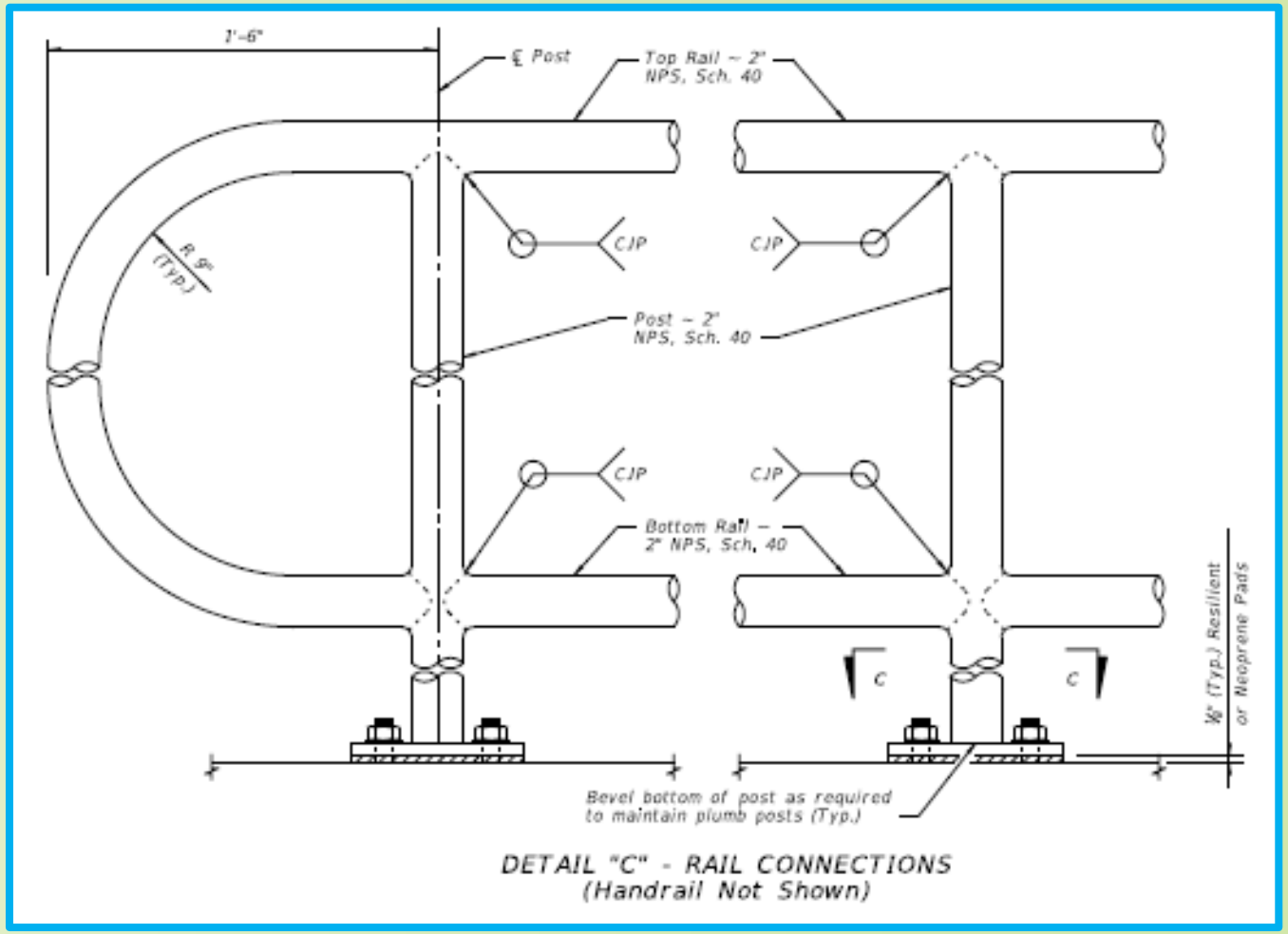
Boarding and Alighting Area

Chapter 17 – Bridges and Other Structures

- Any bridges on or over FDOT facilities or maintained by FDOT must comply with FDOT criteria (Greenbook does not apply)
- Use AASHTO's Load and Resistance Factor Design (LRFD) Bridge Design Specifications, 6th Edition (2012)
  - Meet the requirement for a FL 120 permit load rating > 1
  - Pedestrian and bicycle railings must also comply with LRFD
- Girder Transportation
  - EOR is responsible for investigating feasibility of transportation for heavy, long and/or deep girder field sections.

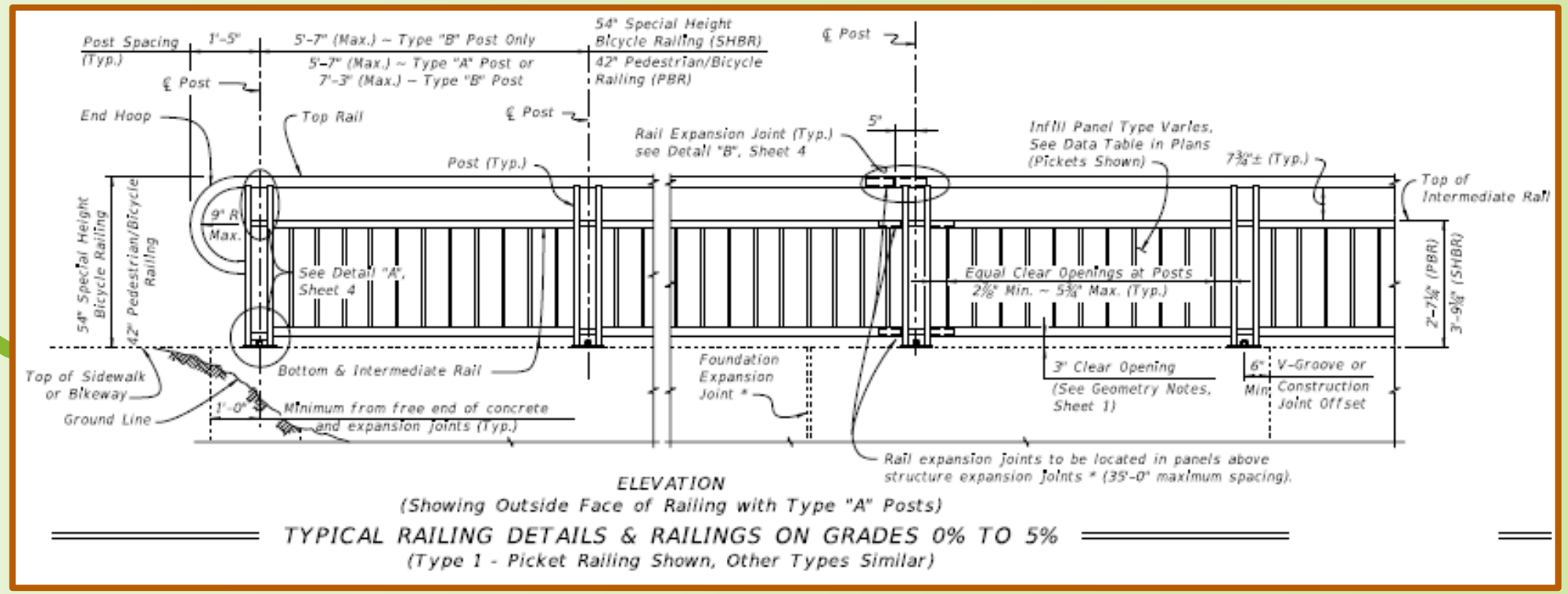
Chapter 17 – Bridges and Other Structures

- Bicycle and Pedestrian Railings
  - Two-pipe guiderails (Similar to Index 870 and 880) may be used for drop-offs 5’ or less



Chapter 17 – Bridges and Other Structures

- Bicycle and Pedestrian Railings
  - Concrete, aluminum or steel railings (Similar to Index 820 thru 862) shall be used when drop-off hazards near bicycle and pedestrian facilities are more than 5’



Chapter 17 – Bridges and Other Structures

- For bridges vulnerable to coastal storms, use Structures Design Guidelines (SDG) when evaluating scour loads and designing bridge fender systems
- Pedestrian bridges - Use the SDG for guidance

Legacy Trail, Sarasota County

Chapter 17 – Bridges and Other Structures

- Retaining Walls and Sound Barriers
  - Meet requirements of the SDG and AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications
- Sign, Lighting and Traffic Signal Supports
  - Meet requirements of the 2010 and 2011 Interims for AASHTO's Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals

Chapter 19 – Traditional Neighborhood Design

- TND is the development or redevelopment of a neighborhood or town to include:
  - range of housing types and commercial establishments
  - network of well-connected streets, civic buildings and public spaces
  - include other uses such as stores, schools, and worship within walking distances of residences
- Approval for TND design elements may be given based upon:
  - Roadway segment
  - Specific area

French Market

New Chapter - Chapter 20 – Drainage

- Minimum standards that should be used when designing roadway drainage systems
  - Design frequency
  - Hydrologic and hydraulic analysis
  - Materials
  - Construction and maintenance considerations
  - Protective treatments
  - General safety
  - Documentation

Ding Darling NWR

New Chapter - Chapter 20 – Drainage

- Overview of regulatory requirements for Stormwater Management
  - Florida Administrative Code
  - National Pollutant Discharge Elimination System Management

Lakeshore Drive, Tallahassee

New Chapter - Chapter 20 – Drainage

- Evaluation of Culvert Materials
  - Durability, structural and hydraulic capacity
  - Design service life should be based upon projected service life, importance of the facility, economics, potential difficulties with repair or replacement and projected future demands

Questions

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