FY 2018-19 Standard Plans
Update Training

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Update Training Agenda

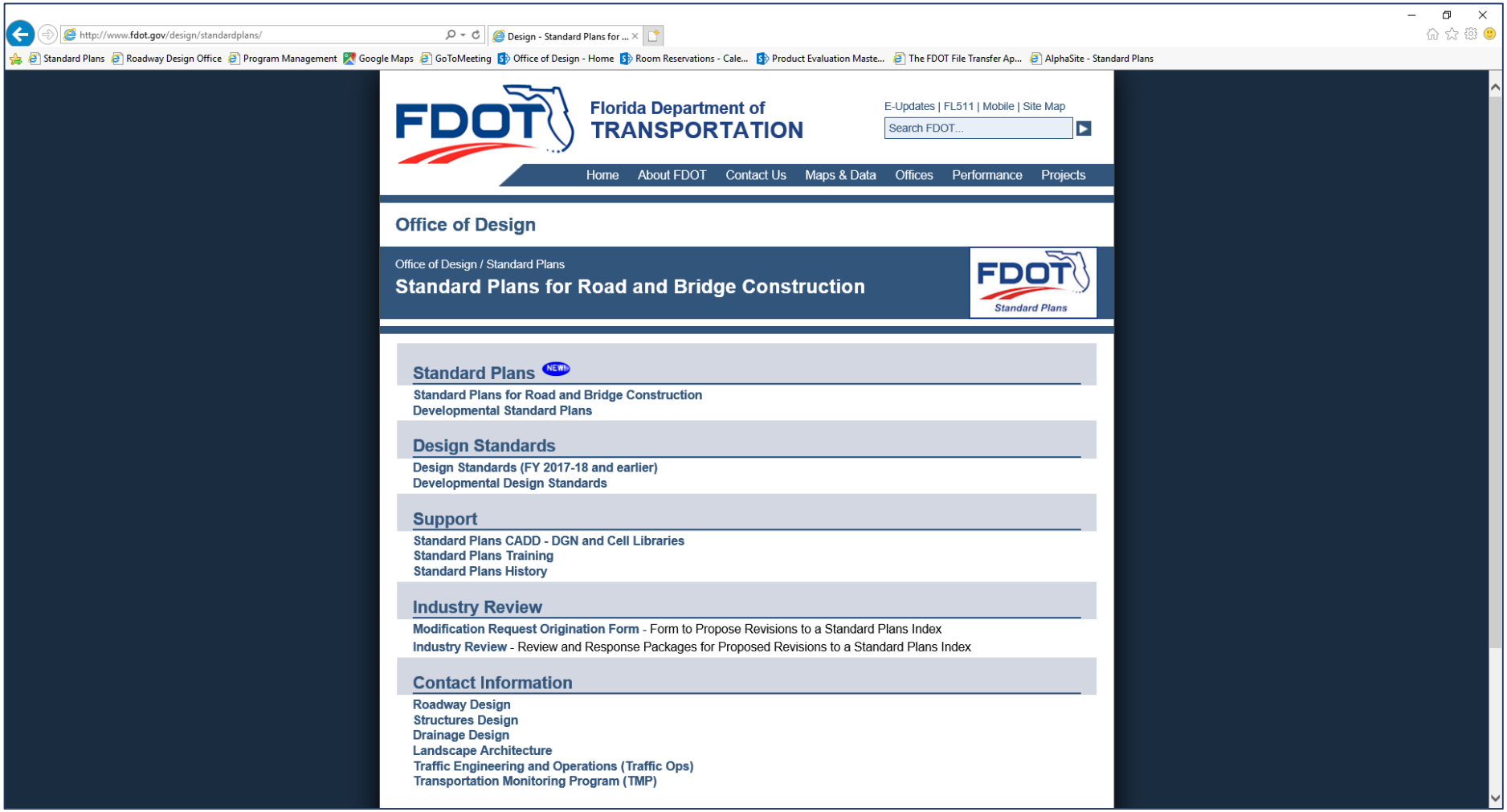
- General Overview and Website Changes
- Revision History Log
- Deleted Indexes
- Standard Plans Updates
  - **Derwood Sheppard**
    - Misc. Indexes – Turnouts, Utility Adjustments, Traffic Separators, Sidewalk, & Curb Ramps
    - Intelligent Transportation Systems (ITS) Indexes – CCTV Poles and DMS
  - **Richard Stepp**
    - Guardrail and Single-Slope Concrete Barrier Indexes
  - **Ed Cashman**
    - Temporary Barrier & Temporary Traffic Control Indexes
    - Signing, Signal & Pavement Marking Indexes
  - **Steve Nolan**
    - Structures Related Indexes

General Overview and Website Changes

- ***"Design Standards"*** to ***"Standard Plans"***
  - **Bulletins/Memos**
    - General Information – **RDM 17-01**
    - Crosswalk & Nomenclature – **RDB 17-06**
    - Bridge Standard Plans – **SDB 17-09**
    - Lead Key Sheet Reference – **RDM 17-04**
  - **Webinars/Training**
    - ***Standard Plans for Road and Bridge Construction Implementation***
- **Website Updates**
  - http://www.fdot.gov/design/standardplans/

Standard Plans – New Website

New Website:



http://www.fdot.gov/design/standardplans/

Revision Log & Deleted Indexes:

STANDARD PLANS
FY 2018-19 REVISIONS LOG

Design Standards Index	Standard Plans Index	Description
N/A	All	Updated to align with the "Design Standards" to "Standard Plans" Implementation; Updated to align with the "PPM" to "FDM" Implementation.
001	N/A	Deleted abbreviations not used in the Standard Plans (i.e Not an Abbrev. List for anything that could be in a set of Plans). Changed to a Cover Document and no longer an Index.
002	N/A	Deleted Index. Refer to FDOT CADD Manual for Line Types, Cells, and Symbols used in a set of Plans.
258	N/A	Deleted. No longer Supported for New Construction by State Drainage.
268	N/A	Deleted. No longer Supported for New Construction by State Drainage.
301	N/A	Deleted Index and moved content to FDOT Design Manual (FDM) Section 212, Intersections, Exhibit 212-1; Moved the MEDIAN CURB AND TRAFFIC SEPARATOR JUNCTURE DETAILS to Index 520-020.
303	N/A	Deleted Index.
424	N/A	Deleted Index.
425	N/A	Deleted Index.
530	N/A	Deleted Index.
535	N/A	Deleted Index.
420	N/A	Deleted Index.
421	N/A	Deleted Index.
526	N/A	Deleted Index (Content moved to FDM 212, Intersections, Exhibits 212-2 & 212-3).
527	N/A	Deleted Index (Content moved to FDM 212, Intersections, Exhibits 212-8 thru 212-10).
546	N/A	Deleted Index (Content moved to FDM 212.2.7, Clear Sight Triangles).
17344	N/A	Deleted Index. **Sheet 1:** SCHOOL pavement marking details moved to Index 711-001 (Previously Design Standards, Index 17346). **Sheet 5:** Moved all overhead school sign assembly details to Index 700-120 (Previously Design Standards, Index 11862). **All Other Sheets:** Moved Content to the Speed Zoning for Highways, Roads and Streets in Florida, Rule 14-15.012, F.A.C.

Standard Plans – Primary Updates

✓ *1) General Overview and Website*

2) Misc. Indexes

→ *a) Indexes 000-515 & 000-516* – Turnouts & Driveways

b) Index 125-0001 – Utility Adjustments thru Existing Pavement

c) Index 520-020 – Traffic Separators

d) Index 522-001 – Concrete Sidewalks

e) Index 522-002 – Detectable Warnings and Sidewalk Curb Ramps

3) ITS Indexes

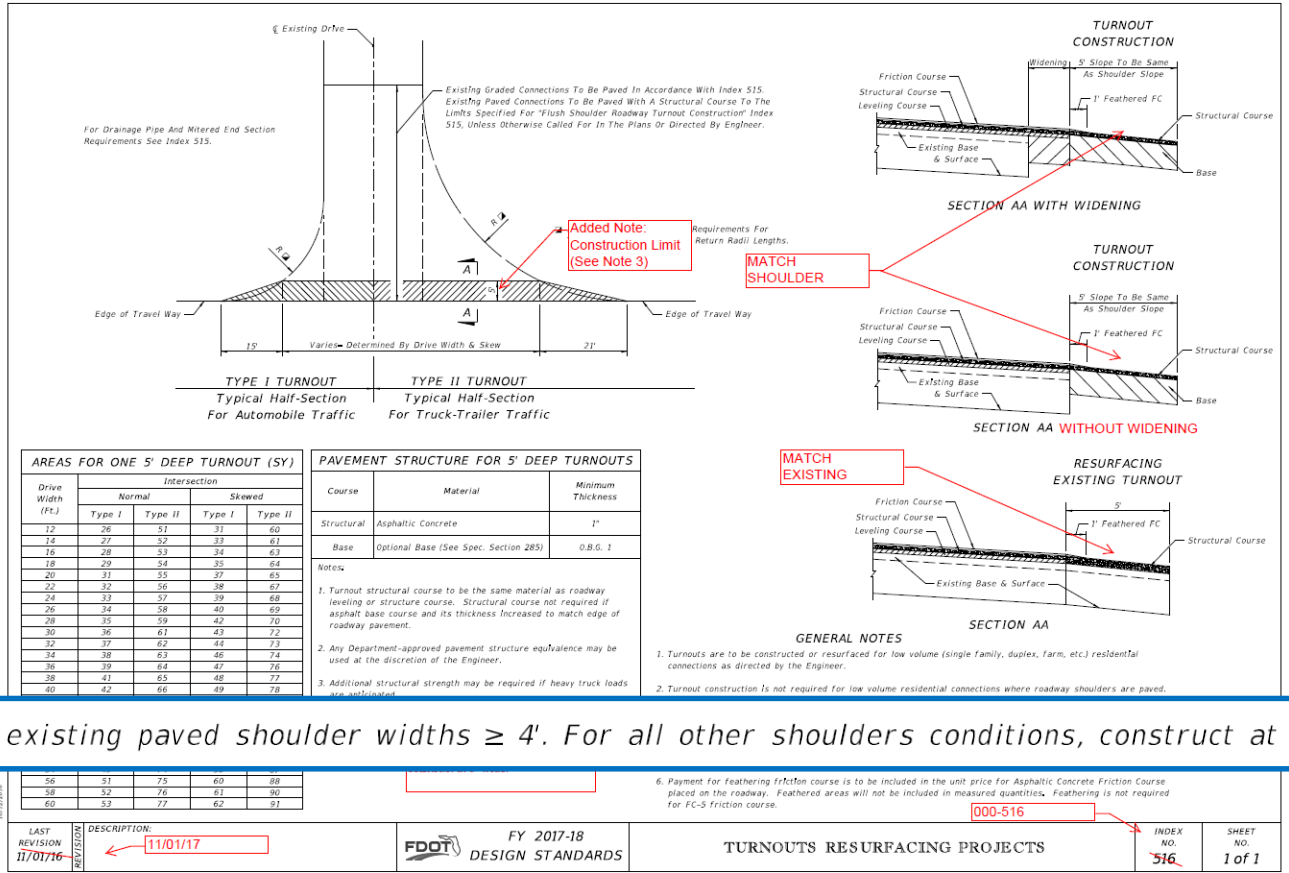
a) Index 641-020 – Concrete CCTV Poles

b) Index 649-020 – Steel CCTV Poles

c) Index 700-090 – Dynamic Message Sign Walk-in

Turnouts Resurfacing Projects – Index 000-516 (Sheet 1 of 1):

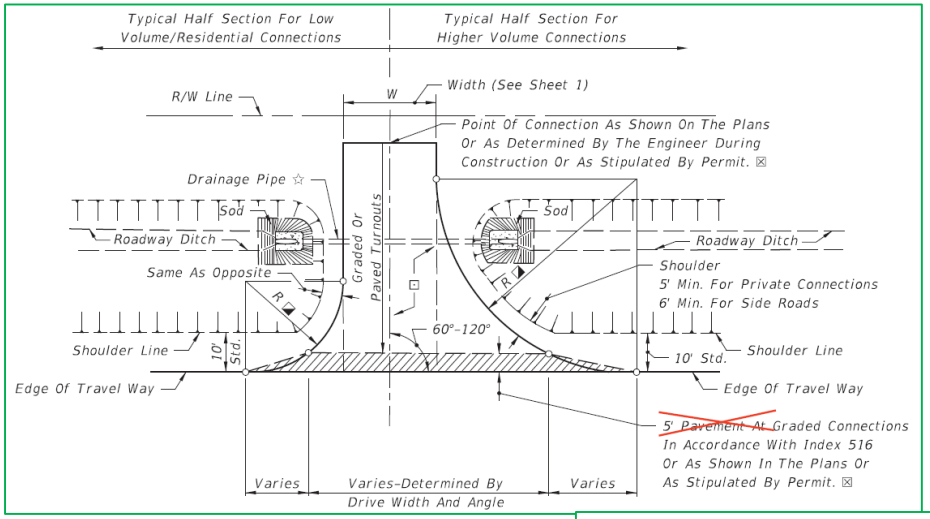
- 5-ft is no longer the maximum paved shoulder width.
- 7-ft now possible with buffered bike lanes.
- Updated Index to remove reference to 5-ft turnout construction limit (4-ft Min.)



3. Match existing paved shoulder widths ≥ 4'. For all other shoulders conditions, construct at 5' wide.

Turnouts and Driveways – Index 000-515 (Sheet 5 of 7):

- 5-ft is no longer the maximum paved shoulder width.
- 7-ft now possible with buffered bike lanes.
- Updated Index to remove reference to 5-ft turnout construction limit (4-ft Min.)



DRIVE ENTRANCES NOTES:

☆ *Drainage pipe size and length shall be that shown on the plans, or as stipulated by permit, or, as determined by the Engineer during construction. The size shall be at least that established by the FDOT District, but not less than 15" diameter or equivalent. For minimum cover over drainage pipe see Specification Section 125. Pipe arch or elliptical pipe may be required to obtain necessary cover. At minimal cover applications a modified pavement apron is permitted. See 'PERMISSIBLE PAVEMENT MODIFICATION' Index 273. For spacing between adjacent pipe end treatments see Index 273.*

⊡ *Stable material may be required for graded turnouts to private property as directed by the Engineer in accordance with Section 102-8 of the Standard Specifications.*

☒ *The turnout pavement requirement at graded connections may be waived for connections serving one or two homes or field entrances with less than 20 trips per day, or 5 trips per hour as approved by permit or by the Engineer, or when not itemized in the plans.*

Paved turnouts shall be constructed for all paved connecting facilities. The connecting point will be determined by the Engineer.

Standard Plans – Primary Updates

✓ *1) General Overview and Website*

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→ *b) Index 125-001* – Utility Adjustments thru Existing Pavement

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3) ITS Indexes

a) Index 641-020 – Concrete CCTV Poles

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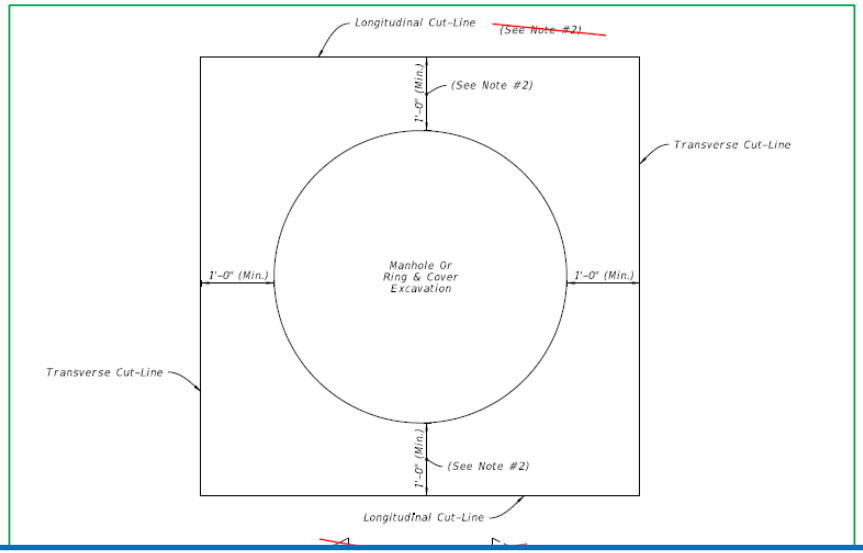
c) Index 700-090 – Dynamic Message Sign Walk-in

Utility Adjustments thru Existing Pavement – Index 125-001 (Sheet 2 of 2):

Old Index 307

- Require adjustments be made prior to placing Friction Course; and
- Place joints outside of wheel path.



NOTES

1. *Cut-Lines must be straight and cleanly sawed.*
2. *See Sheet 1 for replacement pavement.*
3. *Adjust manholes prior to placing friction course when pavement resurfacing is occurring in the area adjacent to the manhole.*
4. *Align Longitudinal Cut-Lines with pavement joint or center of traffic lane to avoid wheel path.*
5. *For rigid pavement, align Transverse Cut-Lines with nearest existing joint.*

Standard Plans – Primary Updates

1) ***General Overview and Website*** ✓

2) ***Misc. Indexes***

   a) ***Indexes 000-515 & 000-516*** – Turnouts & Driveways ✓

   b) ***Index 125-001*** – Utility Adjustments thru Existing Pavement ✓

   c) ***Index 520-020*** – Traffic Separators →

   d) ***Index 522-001*** – Concrete Sidewalks

   e) Index 522-002 – Detectable Warnings and Sidewalk Curb Ramps

3) ITS Indexes

   a) Index 641-020 – Concrete CCTV Poles

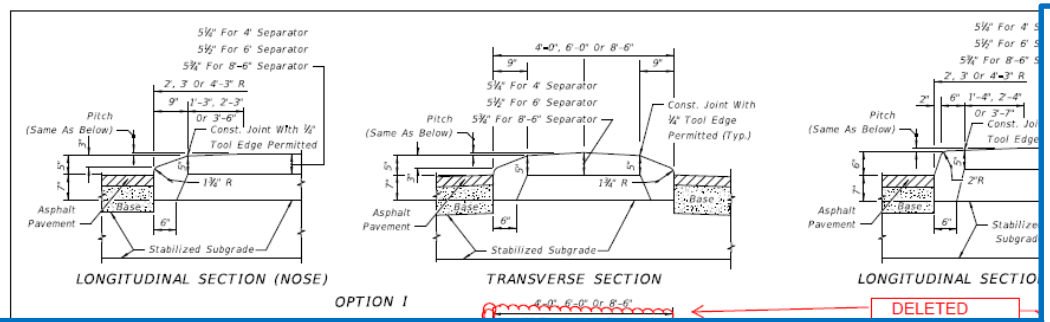
   b) Index 649-020 – Steel CCTV Poles

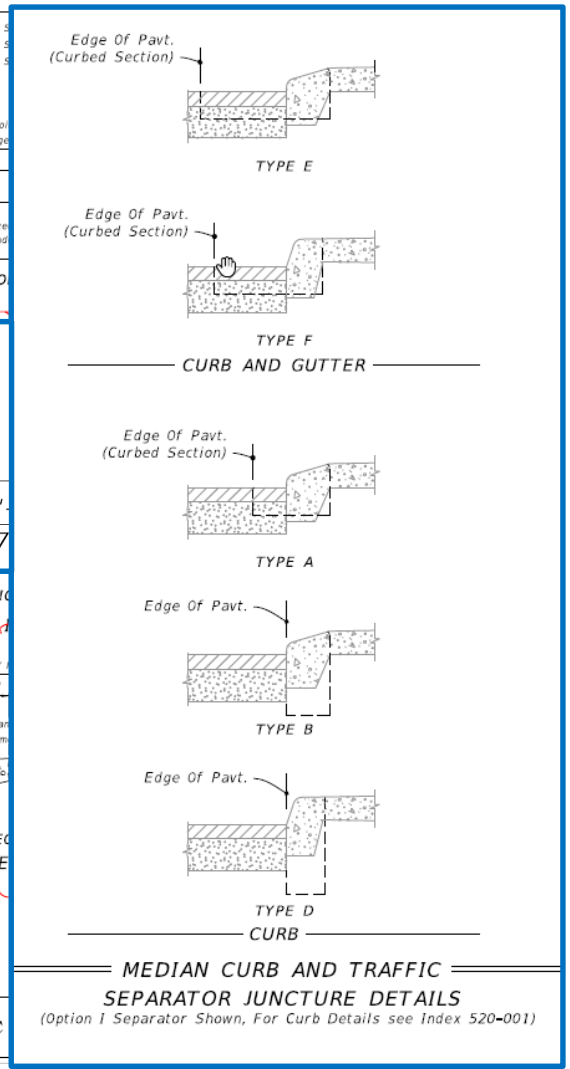
   c) Index 700-090 – Dynamic Message Sign Walk-in

Traffic Separators – Index 520-020 (All Sheets):

- Reorganized to add MEDIAN CURB AND TRAFFIC SEPARATOR JUNCTURE DETAILS from the deleted Design Standards, Index 301 (*Turn Lanes*).

Old Index 302





Standard Plans – Primary Updates

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✓ *c) Index 520-020* – Traffic Separators

→ *d) Index 522-001* – Concrete Sidewalks

e) Index 522-002 – Detectable Warnings and Sidewalk Curb Ramps

3) ITS Indexes

a) Index 641-020 – Concrete CCTV Poles

b) Index 649-020 – Steel CCTV Poles

c) Index 700-090 – Dynamic Message Sign Walk-in

Concrete Sidewalk – Index 522-001 (Sheet 1 of 2):

Old Index 310

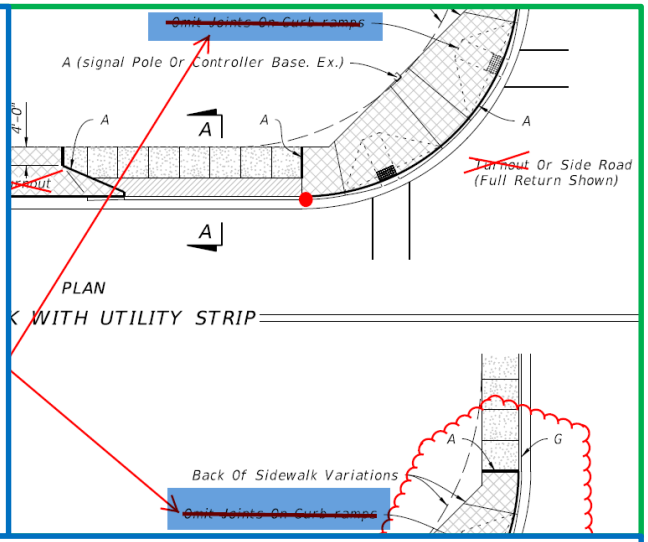
- Clarified 4” vs 6” thickness
- Add Example of Different Curb Ramp

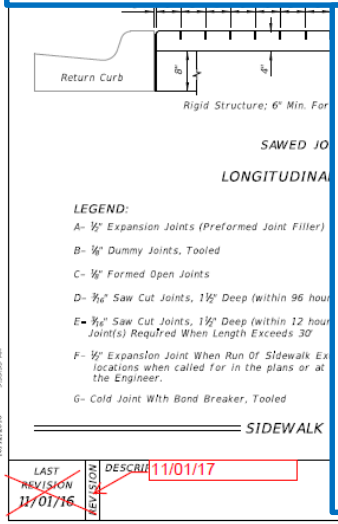
GENERAL NOTES:

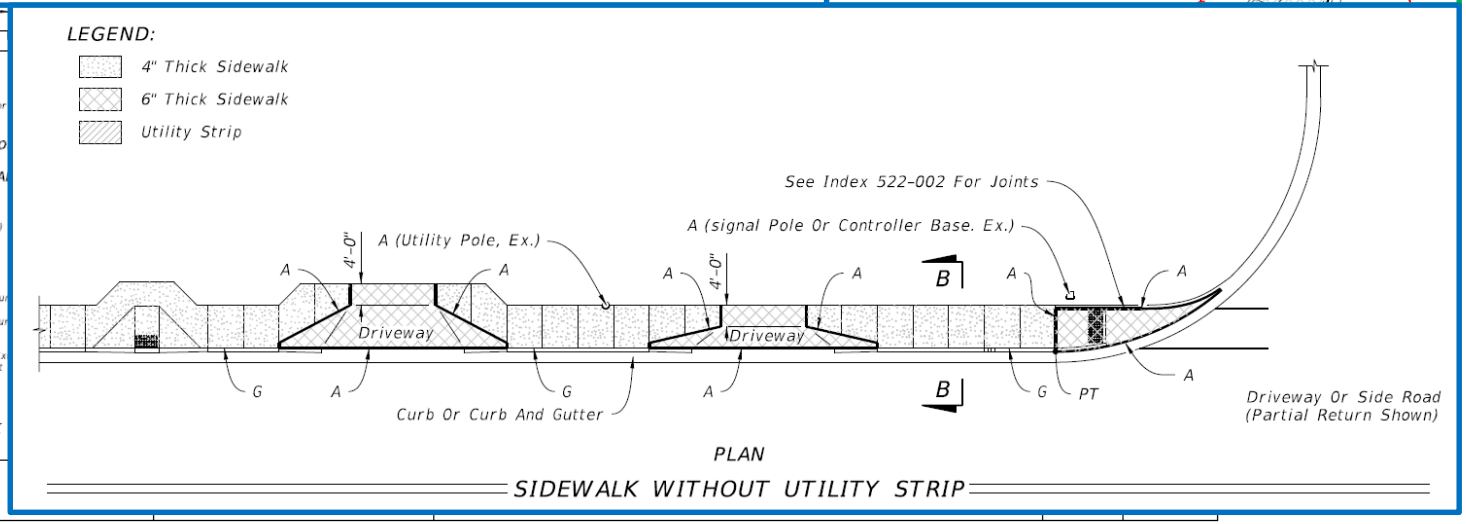
1. Construct sidewalks in accordance with Specification 522. Use 6" concrete for Sidewalks and Curb Ramps Located within Curb Returns (See Plan View). Install all other concrete with thickness as shown, unless otherwise detailed in the Plans.
2. Include detectable warnings on sidewalk curb ramps in accordance with Index 522-002.
3. For TURNOUTS see Index 000-515.
4. Bond breaker material can be any impermeable coated or sheet membrane or preformed material having a thickness of not less than 6 mils 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)
6. When roadways or driveways are newly constructed, reconstructed or altered, construct the cross slopes for crosswalks and discontinuous sidewalks as follows:

A. Max. 0.02 cross slope for roadways or driveway controlled by "STOP" Sign or "YIELD" sign.

B. Max. 0.05 cross slope for roadways or driveways controlled by traffic signal.







Standard Plans – Primary Updates

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✓ *c) Index 520-020* – Traffic Separators

✓ *d) Index 522-001* – Concrete Sidewalks

→ e) Index 522-002 – Detectable Warnings and Sidewalk Curb Ramps

3) ITS Indexes

a) Index 641-020 – Concrete CCTV Poles

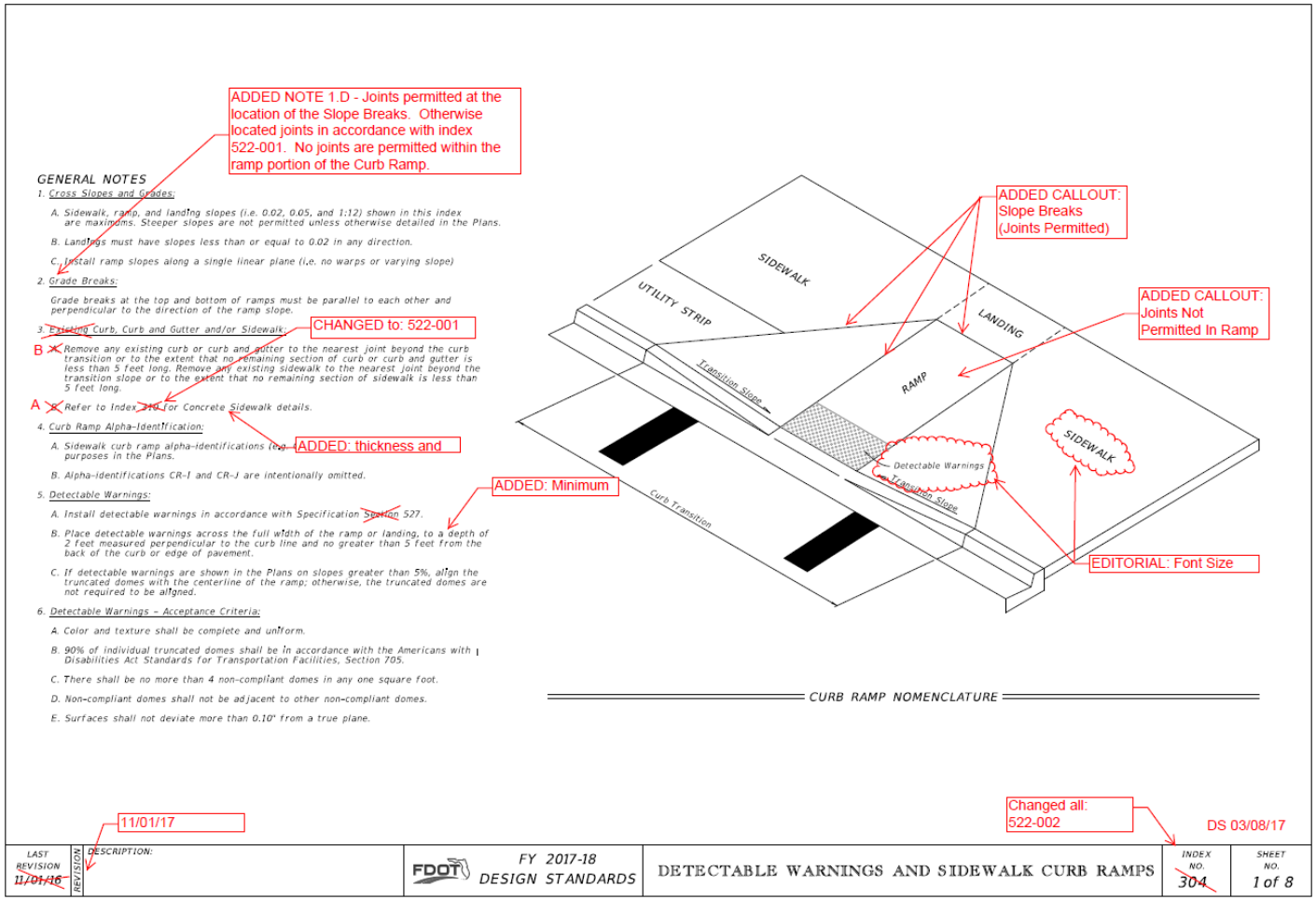
b) Index 649-020 – Steel CCTV Poles

c) Index 700-090 – Dynamic Message Sign Walk-in

Detectable Warnings and Sidewalk Curb Ramps – Index 522-002 (Sheet 1 of 2):

- Clarified 4” vs 6” thickness
- Add Example of Different Curb Ramp

Old Index 304



Standard Plans – Primary Updates

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- *a) Indexes 000-515 & 000-516* – Turnouts & Driveways
- *b) Index 125-001* – Utility Adjustments thru Existing Pavement
- *c) Index 520-020* – Traffic Separators
- *d) Index 522-001* – Concrete Sidewalks
- e) Index 522-002 – Detectable Warnings and Sidewalk Curb Ramps

→ **3) ITS Indexes**

- a) Index 641-020 – Concrete CCTV Poles
- b) Index 649-020 – Steel CCTV Poles
- c) Index 700-090 – Dynamic Message Sign Walk-in

Index 522-002

- **Concrete CCTV Poles Steel – Index 641-020**
- **Steel CCTV Poles Steel – Index 649-020**
- **Dynamic Message Sign Walk-in – Index 700-090**

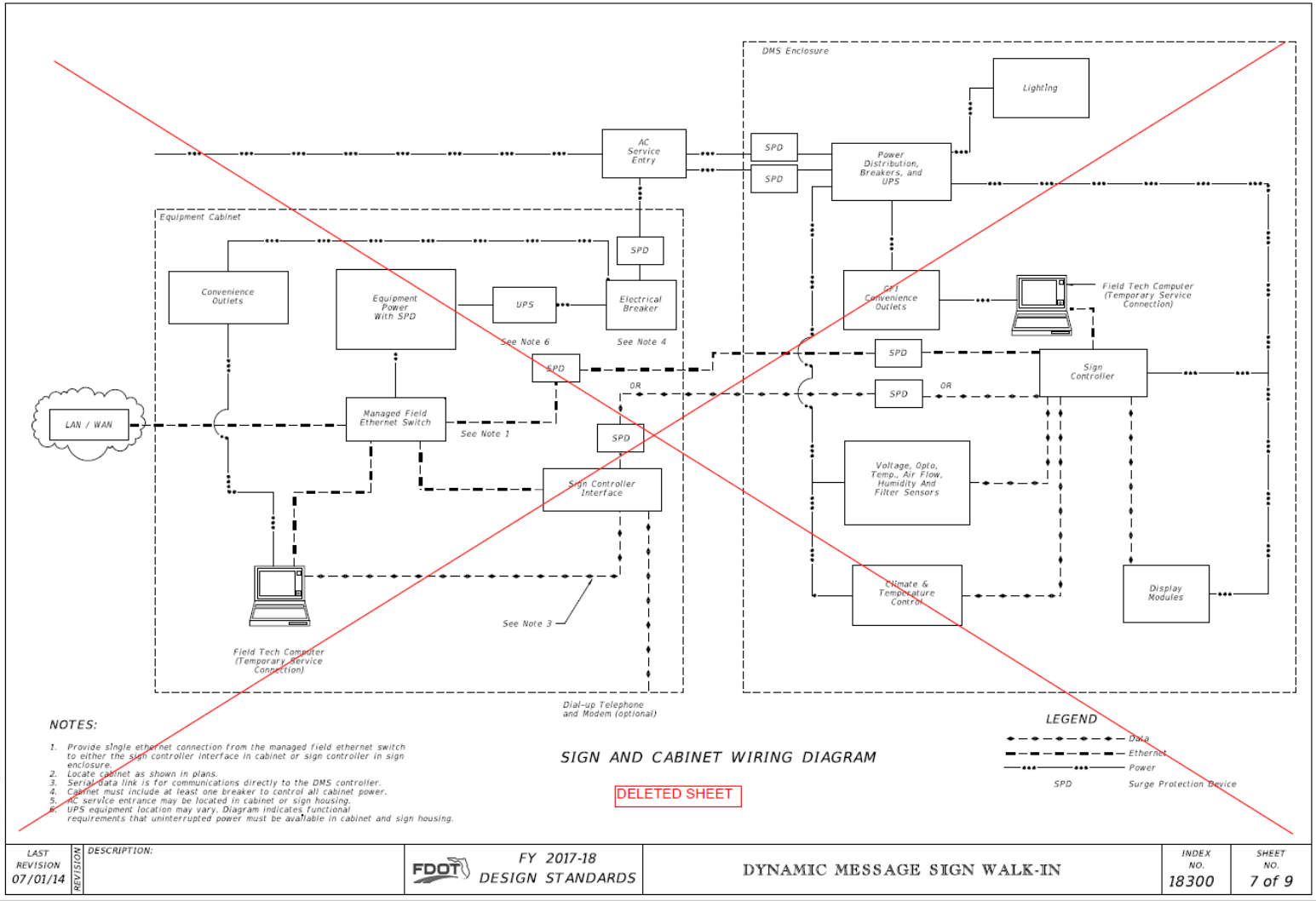
Summary of Changes:

Old Index 18000's Series

- **Consolidated All Previous ITS Indexes**
- **Deleted the Following Old *Design Standards*:**
  - Index 18100 – CCTV Pole Placement **<- Location Controlled by FDM 215**
  - Index 18101 – Typical CCTV Site **<- Layout is Project Specific**
  - Index 18102 – Grounding and Lighting Protection **<- Consolidated w/Above**
  - Index 18104 – Typical CCTV Cabinet Equipment Layout **<- Consolidated w/Above**
  - Index 18105 – CCTV Block Diagram **<- Obsolete**
  - Index 18107 – Ground Mounted CCTV Cabinet **<- Consolidated w/Above**
  - Index 18109 – Pole Mounted CCTV Cabinet **<- Consolidated w/Above**

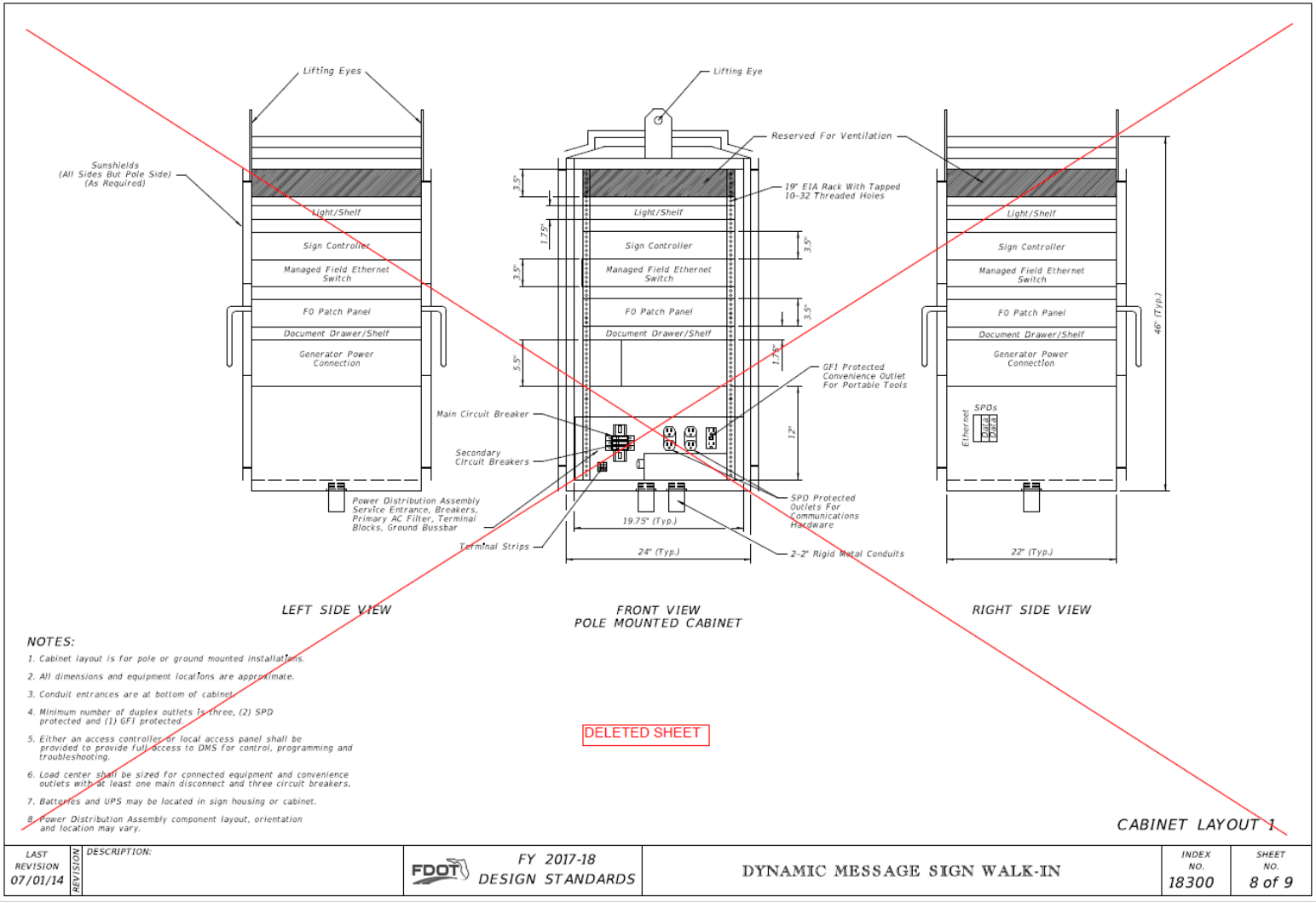
Dynamic Message Sign Walk-in – Index 700-090 (Sheets 6, 7, & 8 of 9 Deleted):

Old Index 18300



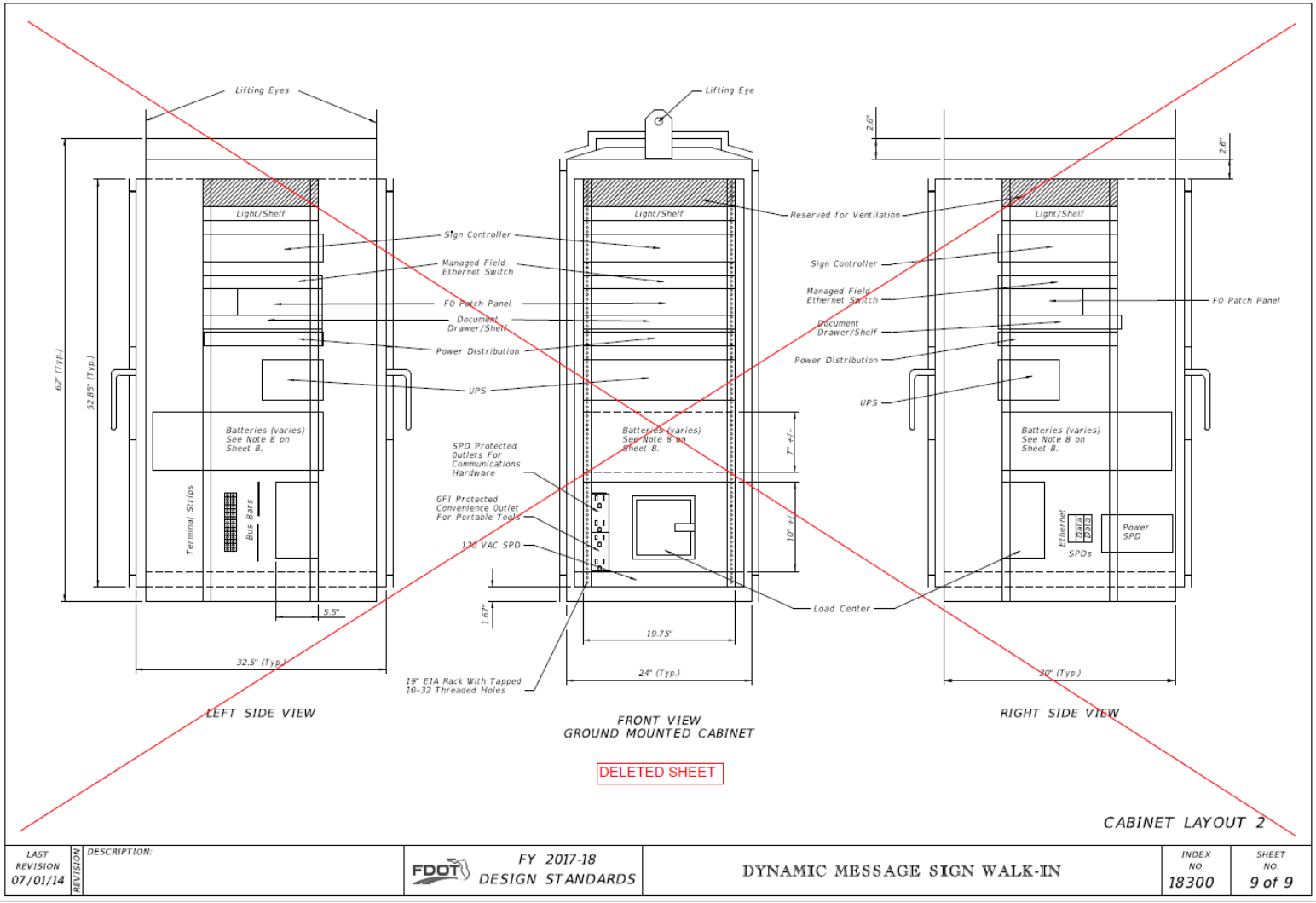
Dynamic Message Sign Walk-in – Index 700-090 (Sheets 6, 7, & 8 of 9 Deleted):

Old Index 18300



Dynamic Message Sign Walk-in – Index 700-090 (Sheets 6, 7, & 8 of 9 Deleted):

Old Index 18300



LAST REVISION 07/01/14	REVISION DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	DYNAMIC MESSAGE SIGN WALK-IN	INDEX NO. 18300	SHEET NO. 9 of 9

Standard Plans – Primary Updates

✓ *1) General Overview and Website*

✓ *2) Misc. Indexes*

- *a) Indexes 000-515 & 000-516* – Turnouts & Driveways
- *b) Index 125-001* – Utility Adjustments thru Existing Pavement
- *c) Index 520-020* – Traffic Separators
- *d) Index 522-001* – Concrete Sidewalks
- e) Index 522-002 – Detectable Warnings and Sidewalk Curb Ramps

✓ **3) ITS Indexes**

- a) Index 641-020 – Concrete CCTV Poles
- b) Index 649-020 – Steel CCTV Poles
- c) Index 700-090 – Dynamic Message Sign Walk-in

Questions?

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FY 2018-19 Standard Plans
Update Training

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Standard Plans – Primary Index Updates:

1) ***Index 536-001*** **– Guardrail**
   - Miscellaneous Updates

2) ***Index 521-001*** **– Concrete Barrier**
   - Complete Redevelopment – **Single-Slope Barrier**

3) ***Index 521-002*** **– Pier Protection Barrier**
   - Extensive Redevelopment – **Single-Slope Barrier**

4) ***Index 425-030*** **– Median Barrier Inlets Types 1 & 2**
   - Modified – **Single-Slope Barrier**
   - Removed Approach and Trailing “Throats”

5) ***Index 425-031*** **– Shoulder Barrier Inlet**
   - Modified – **Single-Slope Barrier**

6) ***Index 425-032*** **– Curb & Gutter Barrier Inlet**
   - Modified – **Single-Slope Barrier**
   - New PVC Drainage Pipes from Sidewalk

7) ***Index 715-002*** **– Standard Aluminum Lighting**
   - Modified – **Single-Slope Barrier**

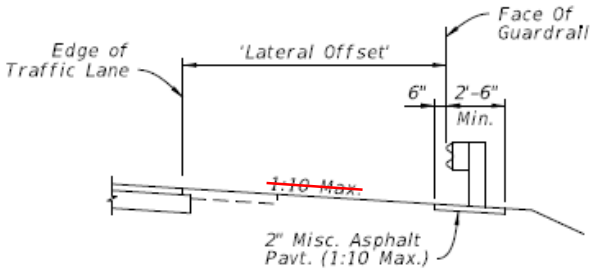
Standard Plans – Primary Index Updates:

1) ***Index 536-001*** **– Guardrail**
   - Miscellaneous Updates

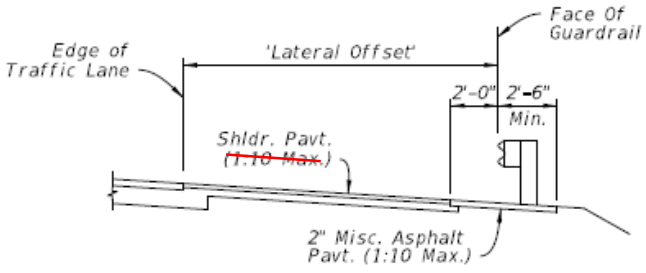
Guardrail -
Summary of Changes:

- Single-Slope Barriers – updated all connecting barrier and offset blocks details throughout
- Miscellaneous updates for constructability and clarity
- Today's presentation covers select items of interest for designers
- For complete red lines of all changes, see the Office of Design - Industry Review website at: http://www.fdot.gov/design/standardplans/IRR/Default.shtm

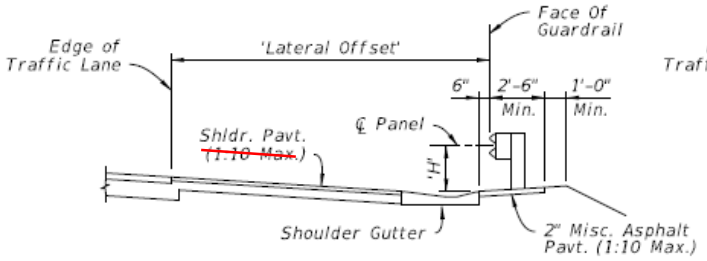
Sheets 6, 7, & 8;
Example Sections Throughout:



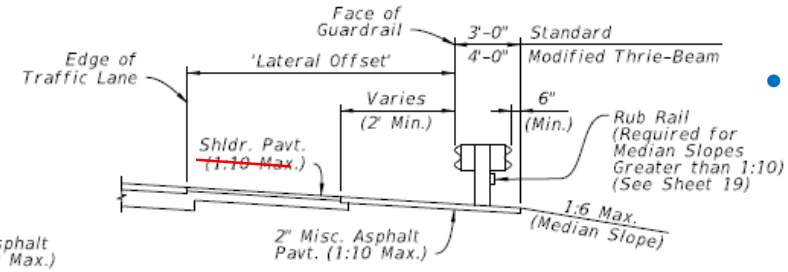
UNPAVED OR PARTIALLY PAVED SHOULDER



FULLY PAVED SHOULDER



SHOULDER GUTTER

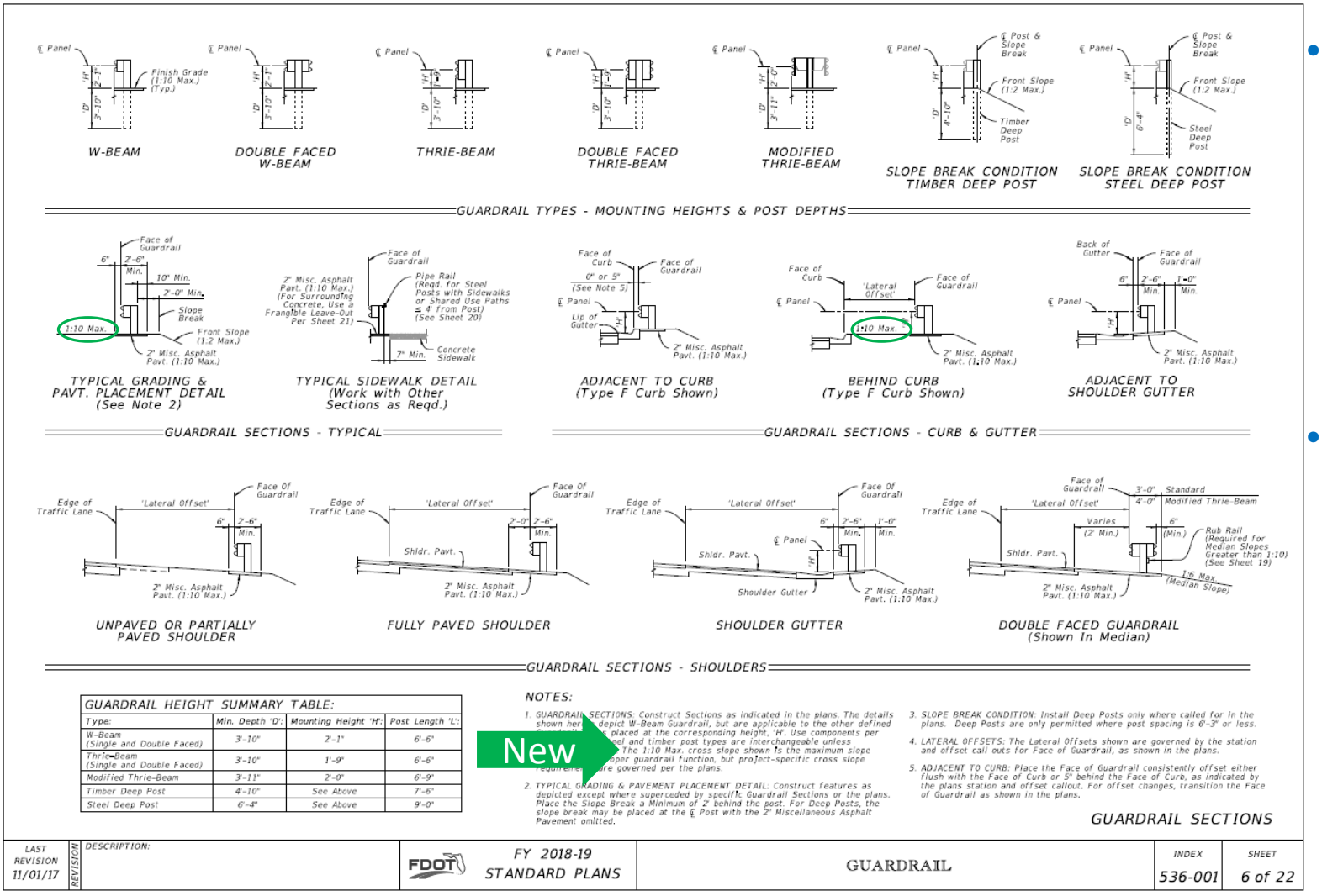


DOUBLE FACED GUARDRAIL (Shown In Median)

- Removed “1:10 Max.” cross-slope on Shoulder Depictions
- “1:10 Max.” does not conflict with FDM requirements, but…
- Removal avoids misconception that “1:10 Max.” supersedes Plans and FDM requirements

Index 536-001 - Guardrail

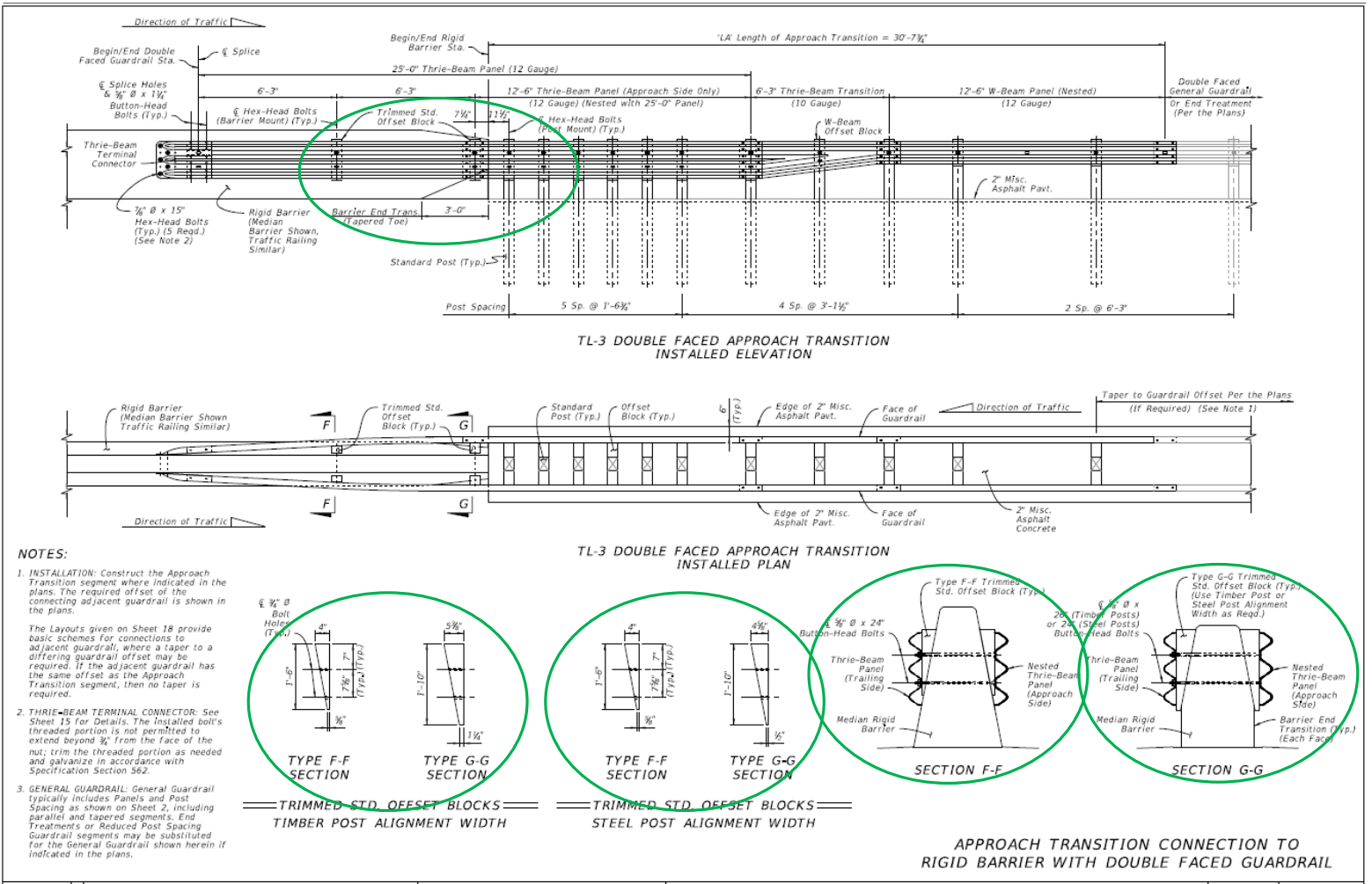
Sheet 6:



- "1:10 Max." label remains on generic approach, sidewalk, and misc. asphalt details
- Added new note explaining "1:10 Max." is for guardrail function only; the slope shown in Plans governs (FDM requirements)

Index 536-001 - Guardrail

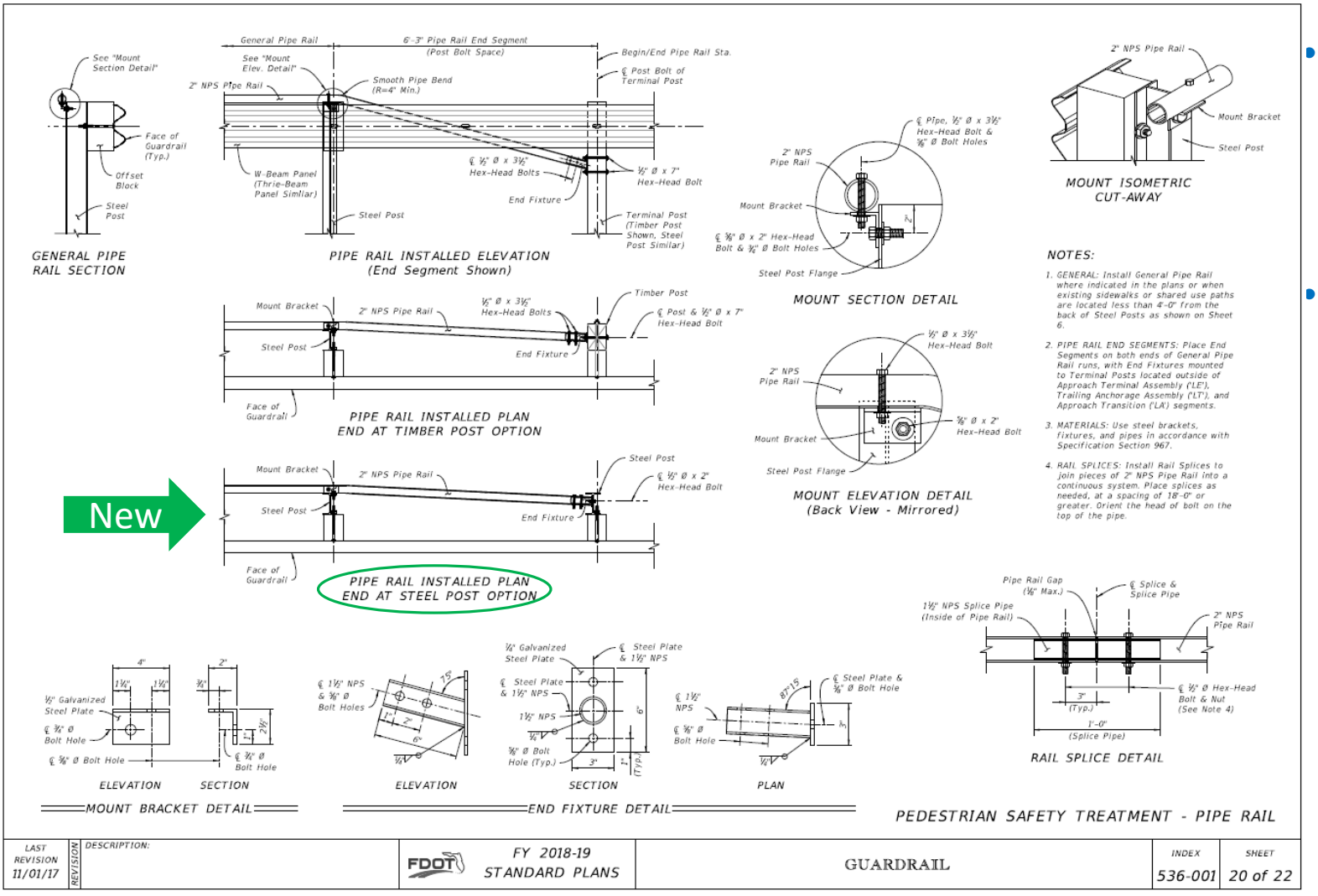
Sheet 16:



- Example of Changes for Single-Slope Barrier (which show up on numerous other Sheets)
- Barrier Height now Tapers Down for GR Connection
- Offset Blocks Revised
- Overall Guardrail System Width Unchanged!

Index 536-001 - Guardrail

Sheet 20:



- Added Option to Terminate Pipe Rail on Steel Post
- If Pipe Rail is no longer needed because a sidewalk veers greater than 4 feet from guardrail, a timber post is no longer required within the steel post run.

Standard Plans – Primary Index Updates:

1) ***Index 536-001*** **– Guardrail**
   - Miscellaneous Updates

2) ***Index 521-001*** **– Concrete Barrier**
   - Complete Redevelopment – **Single-Slope Barrier**

Concrete Barrier - Summary of Changes:

- All barriers upgraded to **Single-Slope** sections to accommodate larger vehicles for MASH compliance
- "Standard Plans" sheets were completely redrawn, rewritten, and reorganized to improve clarity of notes and details for designers and contractors
- ***New*** "Standard Plans Instructions (SPIs)" for improved clarity of process for designers
- ***New*** "Length of Need (LON) Design Tool" to assist designers with learning the *AASHTO Roadside Design Guide* barrier length process
- Today's presentation covers select items of interest for designers

Index 521-001 – Concrete Barrier

Sheet 1: All new!

SHEET NO.	CONTENTS
1	Index Contents; General Notes
2	Median Barrier
3	Median Barrier – Reinforcing Details
4	Median Barrier – Sloped End Treatment
5	Median Barrier – Grade Separated
6	Median Barrier – 56" Height Section for Barrier-Mounted Sign Support Shielding – Symmetrical
7	Median Barrier – 56" Height Section for Barrier-Mounted Sign Support Shielding – Asymmetrical
8	Median Barrier – 38" Height Split Section for Stand-Alone Sign Support Shielding
9	Median Barrier – 44" Height Split Section for Pier Shielding
10	Median Barrier – 44" Height Split Section for Pier Shielding – Details
11	Median Barrier – Connection to F-Shape
12	Shoulder Barrier
13	Shoulder Barrier – Reinforcing Details
14	Shoulder Barrier – Section Options
15	Shoulder Barrier – Section Options (Continued)
16	Shoulder Barrier – 38" Height Rear-Flush Section for Reduced Setback Pier Shielding (Low-Speed)
17	Shoulder Barrier – 44" Height Rear-Flush Section for Reduced Setback Pier Shielding
18	Shoulder Barrier – Connection to F-Shape
19	Curb and Gutter Barrier
20	Curb and Gutter Barrier – Reinforcing Details
21	Curb and Gutter Barrier – Sloped End Treatment
22	Reinforcing Bar Bending Diagrams

GENERAL NOTES:

1. CONCRETE: Use Class II concrete for all barriers constructed in slightly aggressive environments, and use Class IV Concrete for all barriers constructed in moderately or extremely aggressive environments. On all exposed surfaces, apply a Class 3 surface finish in accordance with Specification 400.

2. STEEL BAR REINFORCEMENT: Where required to maintain continuity, provide lap splices of at least 18 inches for No. 4 bars and 20 inches for No. 5 bars, unless otherwise shown herein (including shorter splices as provided by the default bar bending diagrams).

   The default reinforcing details shown herein, including bar shapes and lap splice positions, are intended to show required steel locations and provide for a constructible design. However, with the approval of the Engineer, alternate steel configurations may be used in the same locations shown herein, given that the equivalent strength reinforcing is provided and the cover, maximum spacing, and continuity requirements are maintained.

3. OPTIONAL WELDED WIRE REINFORCEMENT: With the approval of the Engineer, steel welded wire reinforcement in accordance with Specification 415 may be substituted for the steel bars shown herein. Place the welded wire in the same locations specified for the steel bars, and maintain the equivalent strength, cover, maximum spacing, and continuity requirements.

4. TOP FACE LONGITUDINAL REINFORCEMENT: Unless otherwise specified, the longitudinal reinforcement shown closest to the top face of the barrier has a maximum cover of 4½", measured from the top face of the barrier.

5. MINIMUM BARRIER LENGTH: Unless otherwise shown in the Plans, the minimum Concrete Barrier length is 40 feet.

6. CONSTRUCTION JOINTS: Install Construction Joints only as needed for discontinuous concrete casting or cold joints. Maintain continuity of steel reinforcement across Construction Joints. Construction Joints are classified herein as Transverse Joints or Longitudinal Joints.

   Transverse Joints are permitted at 20-foot or greater intervals along the barrier. For Tall Grade-Separated Sections, see Sheet 5 for additional Transverse Joint requirements.

   Longitudinal Joints are only permitted where indicated in the following details and notes, with a vertical position tolerance of ± 1½" from the locations shown.

7. DOWELED JOINTS: As shown in the Dowel Details on Sheets 2 & 12, install ¾" Doweled Joints for Concrete Barrier connections to Pier Protection Barrier and Traffic Railings. Doweled Joints are also required for expansion mitigation in Median Barrier as defined per Sheets 2 & 5. Doweled Joints are not permitted within Grade-Separated Median Barrier.

8. CRACK CONTROL V-GROOVES: At 20-foot intervals, place ⅜" depth V-grooves that run vertically and/or transversely in the front, top, and back faces of barriers. The V-grooves can be either molded or scored while the concrete is still plastic.

9. SUBGRADE: Compact the top layer of subgrade with Type B Stabilization, LBR 40 (12 in.).

10. FOOTING BOTTOM CONCRETE COVER: At the bottom of barrier footings shown throughout this Index, up to 2 inches of additional concrete cover is permitted beyond what is shown herein to accommodate soil grade irregularities.

11. FINISH GRADE ELEVATION: At the barrier face location, the finish grade pavement has a vertical position tolerance of ± ½" from the locations shown herein, relative to the barrier elevation. Maintain visually smooth and even pavement at the barrier face, per the approval of the Engineer.

12. DRAINAGE INLETS: Where called for in the Plans, install corresponding inlets per Indexes 425-030 thru 425-032.

13. LIGHT POLE MOUNTING: Where called for in the Plans, install aluminum light poles per Index 715-002.

14. OPAQUE VISUAL BARRIER: Where called for in the Plans, install Opaque Visual Barrier per Index 521-010.

15. BARRIER END MARKERS: For all free ends of concrete barriers that are not shielded with an end treatment or connection to another barrier or traffic railing type, install a Type 3 Object Marker on the end face per Specification 705.

16. BARRIER DELINEATORS: Install Barrier Delineators in accordance with Specification 705. For median barriers, mount the delineator on the top of the barrier, at the centerline of barrier, with reflective sheeting facing traffic on both approaches. For shoulder barriers and split sections, mount the delineators on the top of the barrier, with the roadway side of the delineator located 2" from the front face of the barrier and the reflective sheeting facing traffic of the nearest approach.

LAST REVISION 11/01/17	REVISION DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 1 of 22

- New Table of Contents
- Three Distinct Barrier Types
- Re-written notes throughout– Concise active voice with headings
- New welded-wire reinforcement option

Index 521-001 – Concrete Barrier

Sheet 1: All new!

SHEET NO.	CONTENTS
1	Index Contents; General Notes
2	Median Barrier
3	Median Barrier – Reinforcing Details
4	Median Barrier – Sloped End Treatment
5	Median Barrier – Grade Separated
6	Median Barrier – 56" Height Section for Barrier-Mounted Sign Support Shielding – Symmetrical
7	Median Barrier – 56" Height Section for Barrier-Mounted Sign Support Shielding – Asymmetrical
8	Median Barrier – 38" Height Split Section for Stand-Alone Sign Support Shielding
9	Median Barrier – 44" Height Split Section for Pier Shielding
10	Median Barrier – 44" Height Split Section for Pier Shielding – Details
11	Median Barrier – Connection to F-Shape
12	Shoulder Barrier
13	Shoulder Barrier – Reinforcing Details
14	Shoulder Barrier – Section Options
15	Shoulder Barrier – Section Options (Continued)
16	Shoulder Barrier – 38" Height Rear-Flush Section for Reduced Setback Pier Shielding (Low-Speed)
17	Shoulder Barrier – 44" Height Rear-Flush Section for Reduced Setback Pier Shielding
18	Shoulder Barrier – Connection to F-Shape
19	Curb and Gutter Barrier
20	Curb and Gutter Barrier – Reinforcing Details
21	Curb and Gutter Barrier – Sloped End Treatment
22	Reinforcing Bar Bending Diagrams

GENERAL NOTES:

1. CONCRETE: Use Class II concrete for all barriers constructed in slightly aggressive environments, and use Class IV Concrete for all barriers constructed in moderately or extremely aggressive environments. On all exposed surfaces, apply a Class 3 surface finish in accordance with Specification 400.

2. STEEL BAR REINFORCEMENT: Where required to maintain continuity, provide lap splices of at least 18 inches for No. 4 bars and 20 inches for No. 5 bars, unless otherwise shown herein (including shorter splices as provided by the default bar bending diagrams).

   The default reinforcing details shown herein, including bar shapes and lap splice positions, are intended to show required steel locations and provide for a constructible design. However, with the approval of the Engineer, alternate steel configurations may be used in the same locations shown herein, given that the equivalent strength reinforcing is provided and the cover, maximum spacing, and continuity requirements are maintained.

3. OPTIONAL WELDED WIRE REINFORCEMENT: With the approval of the Engineer, steel welded wire reinforcement in accordance with Specification 415 may be substituted for the steel bars shown herein. Place the welded wire in the same locations specified for the steel bars, and maintain the equivalent strength, cover, maximum spacing, and continuity requirements.

4. TOP FACE LONGITUDINAL REINFORCEMENT: Unless otherwise specified, the longitudinal reinforcement shown closest to the top face of the barrier has a maximum cover of 4½", measured from the top face of the barrier.

5. MINIMUM BARRIER LENGTH: Unless otherwise shown in the Plans, the minimum Concrete Barrier length is 40 feet.

6. CONSTRUCTION JOINTS: Install Construction Joints only as needed for discontinuous concrete casting or cold joints. Maintain continuity of steel reinforcement across Construction Joints. Construction Joints are classified herein as Transverse Joints or Longitudinal Joints.

   Transverse Joints are permitted at 20-foot or greater intervals along the barrier. For Tall Grade-Separated Sections, see Sheet 5 for additional Transverse Joint requirements.

   Longitudinal Joints are only permitted where indicated in the following details and notes, with a vertical position tolerance of ± 1½" from the locations shown.

7. DOWELED JOINTS: As shown in the Dowel Details on Sheets 2 & 12, install ¾" Doweled Joints for Concrete Barrier connections to Pier Protection Barrier and Traffic Railings. Doweled Joints are also required for expansion mitigation in Median Barrier as defined per Sheets 2 & 5. Doweled Joints are not permitted within Grade-Separated Median Barrier.

8. CRACK CONTROL V-GROOVES: At 20-foot intervals, place ⅜" depth V-grooves that run vertically and/or transversely in the front, top, and back faces of barriers. The V-grooves can be either molded or scored while the concrete is still plastic.

9. SUBGRADE: Compact the top layer of subgrade with Type B Stabilization, LBR 40 (12 in.).

10. FOOTING BOTTOM CONCRETE COVER: At the bottom of barrier footings shown throughout this Index, up to 2 inches of additional concrete cover is permitted beyond what is shown herein to accommodate soil grade irregularities.

11. FINISH GRADE ELEVATION: At the barrier face location, the finish grade pavement has a vertical position tolerance of ± ½" from the locations shown herein, relative to the barrier elevation. Maintain visually smooth and even pavement at the barrier face, per the approval of the Engineer.

12. DRAINAGE INLETS: Where called for in the Plans, install corresponding inlets per Indexes 425-030 thru 425-032.

13. LIGHT POLE MOUNTING: Where called for in the Plans, install aluminum light poles per Index 715-002.

14. OPAQUE VISUAL BARRIER: Where called for in the Plans, install Opaque Visual Barrier per Index 521-010.

15. BARRIER END MARKERS: For all free ends of concrete barriers that are not shielded with an end treatment or connection to another barrier or traffic railing type, install a Type 3 Object Marker on the end face per Specification 705.

16. BARRIER DELINEATORS: Install Barrier Delineators in accordance with Specification 705. For median barriers, mount the delineator on the top of the barrier, at the centerline of barrier, with reflective sheeting facing traffic on both approaches. For shoulder barriers and split sections, mount the delineators on the top of the barrier, with the roadway side of the delineator located 2" from the front face of the barrier and the reflective sheeting facing traffic of the nearest approach.

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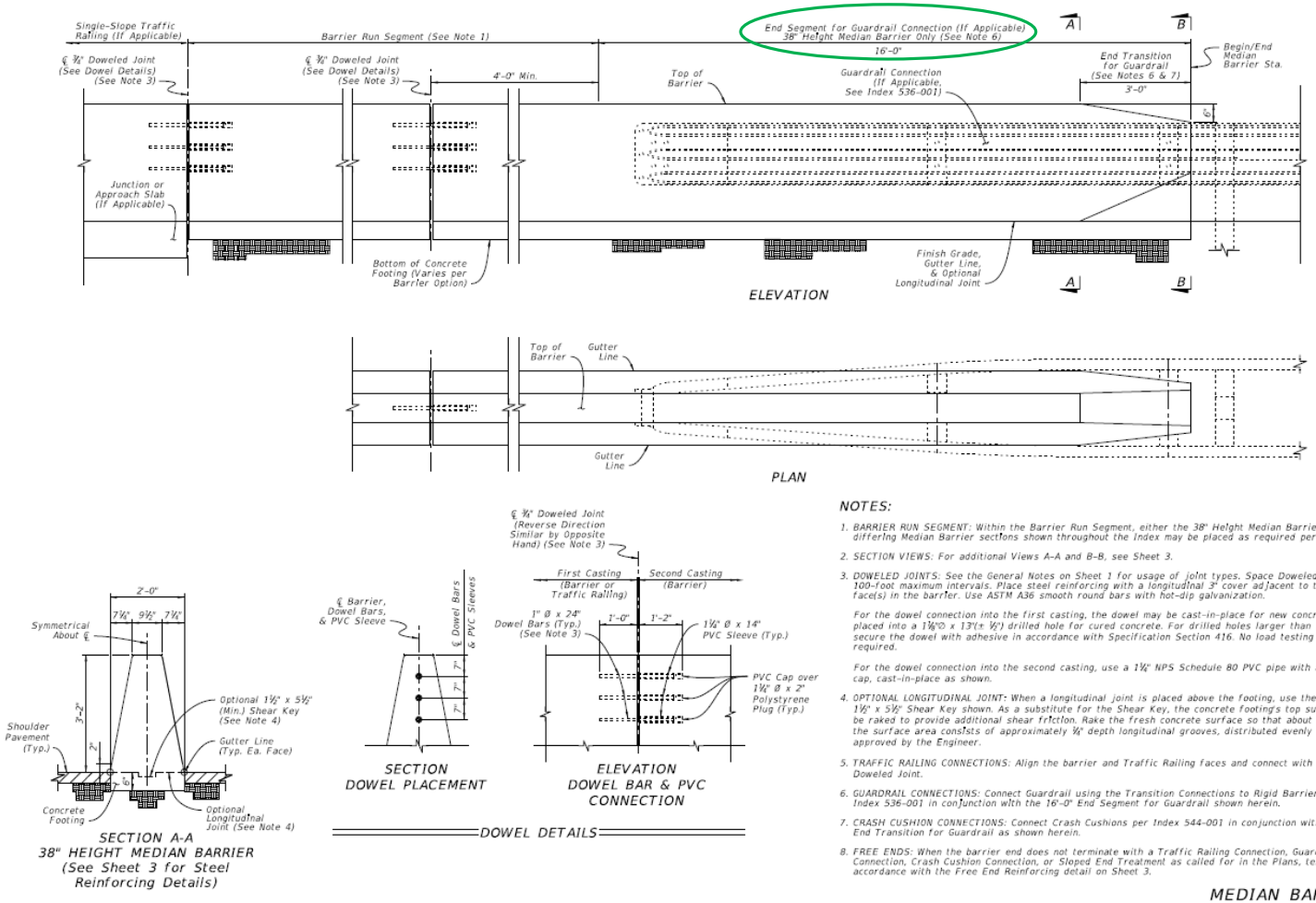
- Minimum Barrier Length is 40 feet (dead load required to resist barrier overturn)
- Other miscellaneous details for contractors

Index 521-001 – Concrete Barrier

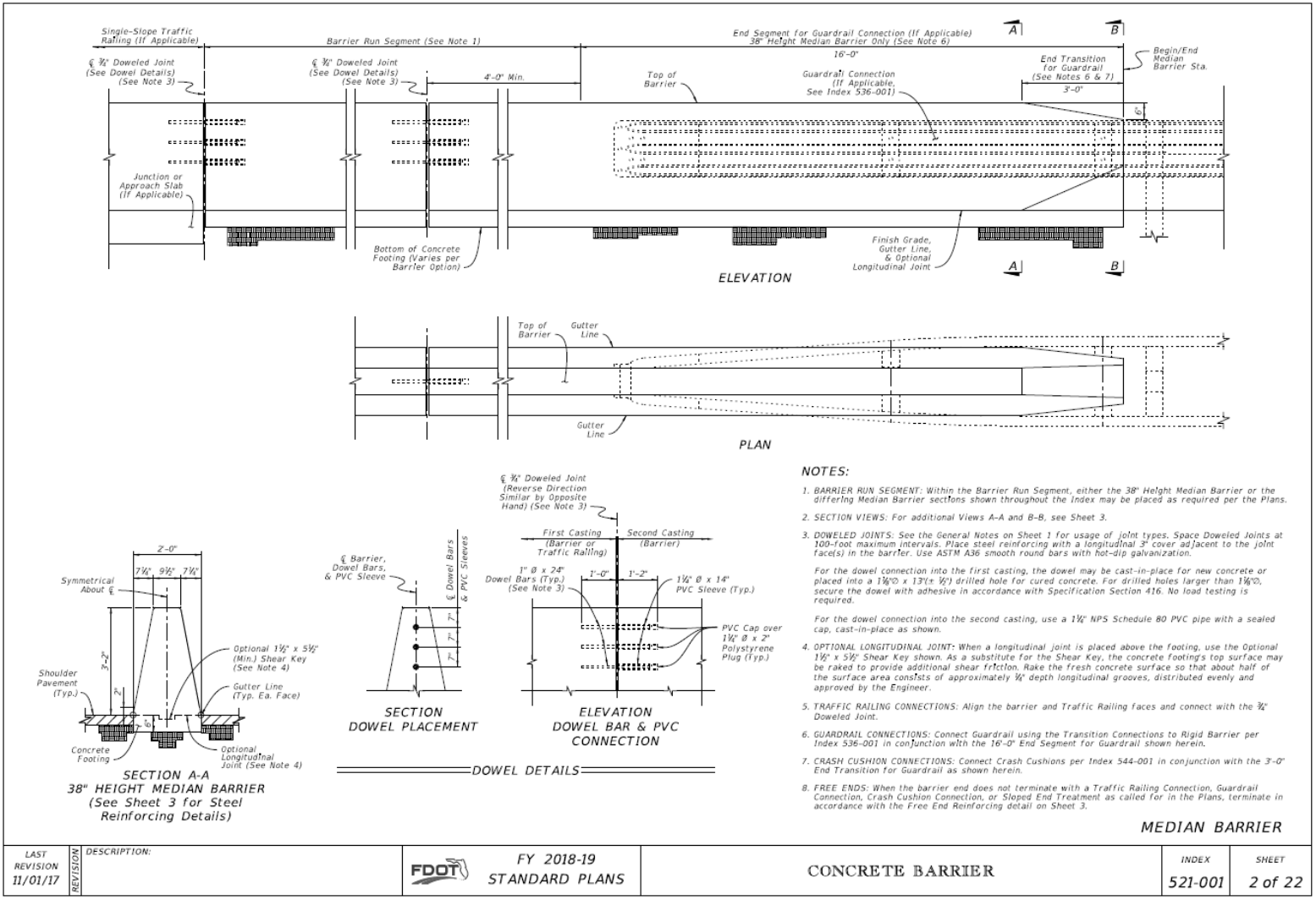
Sheet 2: All new!



- Shows a basic Plan, Elevation, & Section at the start of each barrier type grouping
- Shows connection to guardrail and bridge Traffic Railing as applicable
- 16'-0" end segment for guardrail connection

Index 521-001 – Concrete Barrier

Sheet 2: All new!



NOTES:

1. BARRIER RUN SEGMENT: Within the Barrier Run Segment, either the 38" Height Median Barrier or the differing Median Barrier sections shown throughout the Index may be placed as required per the Plans.
2. SECTION VIEWS: For additional Views A–A and B–B, see Sheet 3.
3. DOWELED JOINTS: See the General Notes on Sheet 1 for usage of joint types. Space Doweled Joints at 100-foot maximum intervals. Place steel reinforcing with a longitudinal 3" cover adjacent to the joint face(s) in the barrier. Use ASTM A36 smooth round bars with hot-dip galvanization.

   For the dowel connection into the first casting, the dowel may be cast-in-place for new concrete or placed into a 1⅛"Ø x 13"(± ½") drilled hole for cured concrete. For drilled holes larger than 1⅛"Ø, secure the dowel with adhesive in accordance with Specification Section 416. No load testing is required.

   For the dowel connection into the second casting, use a 1½" NPS Schedule 80 PVC pipe with a sealed cap, cast-in-place as shown.
4. OPTIONAL LONGITUDINAL JOINT: When a longitudinal joint is placed above the footing, use the Optional 1½" x 5½" Shear Key shown. As a substitute for the Shear Key, the concrete footing's top surface may be raked to provide additional shear friction. Rake the fresh concrete surface so that about half of the surface area consists of approximately ¼" depth longitudinal grooves, distributed evenly and approved by the Engineer.
5. TRAFFIC RAILING CONNECTIONS: Align the barrier and Traffic Railing faces and connect with the ¾" Doweled Joint.
6. GUARDRAIL CONNECTIONS: Connect Guardrail using the Transition Connections to Rigid Barrier per Index 536-001 in conjunction with the 16'-0" End Segment for Guardrail shown herein.
7. CRASH CUSHION CONNECTIONS: Connect Crash Cushions per Index 544-001 in conjunction with the 3'-0" End Transition for Guardrail as shown herein.
8. FREE ENDS: When the barrier end does not terminate with a Traffic Railing Connection, Guardrail Connection, Crash Cushion Connection, or Sloped End Treatment as called for in the Plans, terminate in accordance with the Free End Reinforcing detail on Sheet 3.

MEDIAN BARRIER

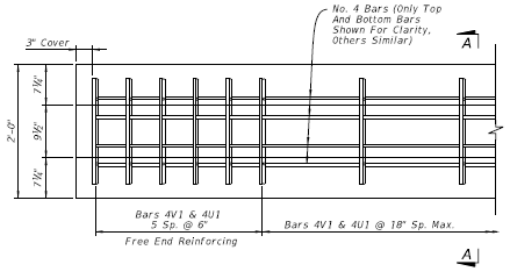
LAST REVISION 11/01/17	REVISION DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 2 of 22

4 Pay Items for Median Barrier:

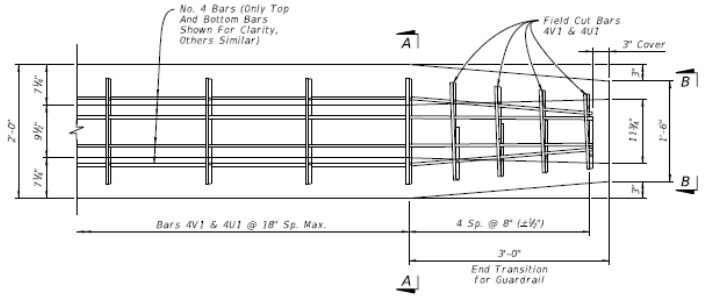
- 38" Height Symmetrical (Shown here)
- Short Grade-Separated (Upcoming Slides)
- Tall Grade-Separated (Upcoming Slides)
- Variable Section for Sign or Pier Shielding (Upcoming Slides)

Index 521-001 – Concrete Barrier

Sheet 3: All new!



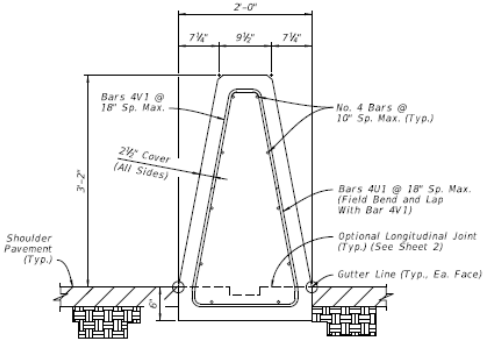
PLAN VIEW - 38" HEIGHT MEDIAN BARRIER
FREE END REINFORCING (See Note 3)



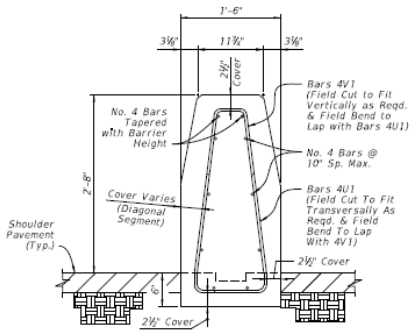
PLAN VIEW - END SEGMENT FOR
GUARDRAIL CONNECTION (See Note 3)

NOTES:

1. GENERAL: Work with the Plan and Elevation Views on Sheet 2.
2. BAR BENDING DIAGRAMS: For additional information on Bars 4V1 and 4U1, see the details on Sheet 22.
3. PLAN VIEWS: Only top and bottom longitudinal reinforcing is shown for clarity. For all longitudinal steel locations, see the section views.



SECTION A-A
38" HEIGHT
MEDIAN BARRIER
Concrete Qty. = 0.20 CY/FT
Steel Qty. = 11.8 LB/FT



VIEW B-B
REDUCED SECTION
OF END TRANSITION
FOR GUARDRAIL
(End of Barrier)

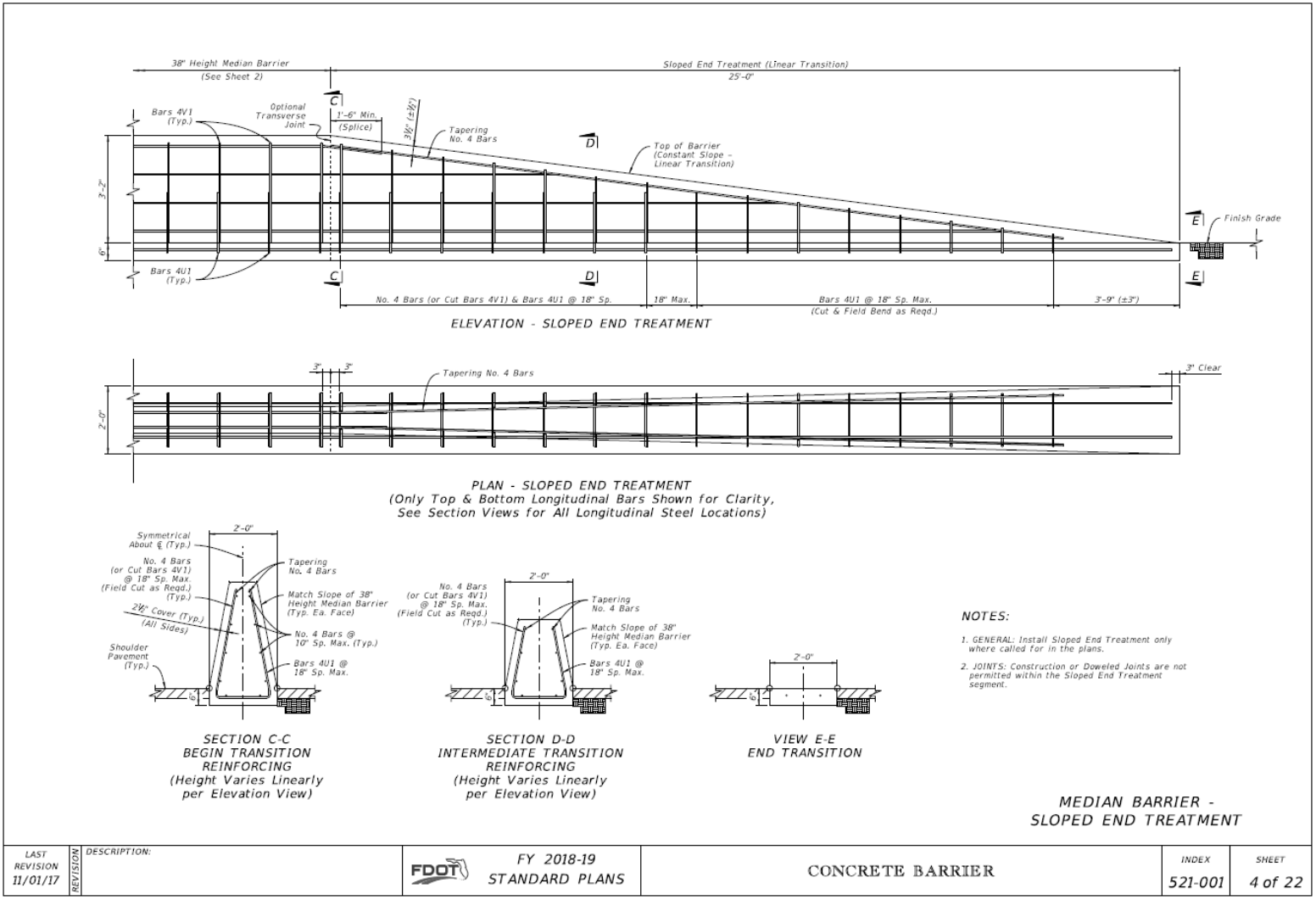
MEDIAN BARRIER - REINFORCING DETAILS

LAST REVISION 11/01/17	REVISION DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 3 of 22

- New reinforcing details for normal run and connection to guardrail
- Provides minimum reinforcing required for slip-forming

Index 521-001 – Concrete Barrier

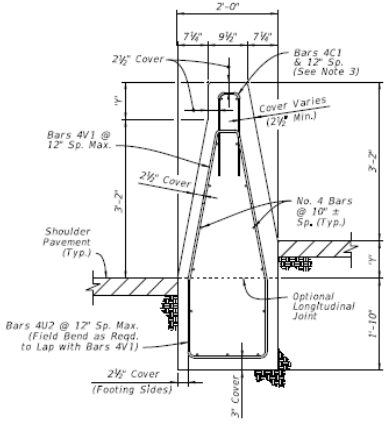
Sheet 4: All new!



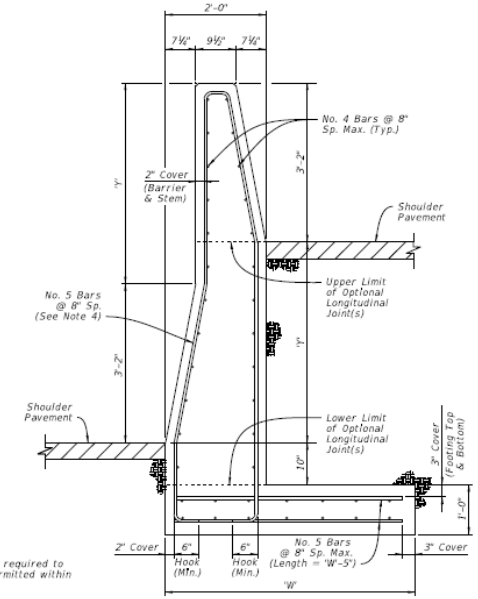
- Permitted for Median Barriers on the Trailing End or outside of any approaching lane's Clear Zone.
- Usage explained in the Standard Plans Instructions (SPI) table

Index 521-001 – Concrete Barrier

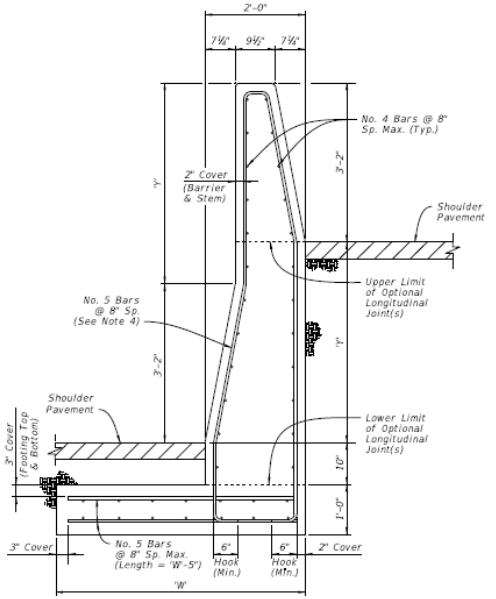
Sheet 5: All new!



SHORT GRADE-SEPARATED SECTION FOR Y ≤ 9"



TALL GRADE-SEPARATED HEEL FOOTING SECTION FOR Y ≤ 4'-0"



TALL GRADE-SEPARATED TOE FOOTING SECTION FOR Y ≤ 4'-0"

NOTES:

1. GENERAL: Install the Grade-Separated sections where shown in the Plans and as required to accommodate vertical offsets in pavement of Height Y. Doweled Joints are not permitted within Grade-Separated sections.
2. CONNECTIONS BETWEEN DIFFERENT SECTIONS: Connect Short Grade-Separated sections and Tall Grade-Separated sections using a continuous pour or Transverse Joint, where longitudinal steel that aligns within the adjacent section is maintained continuously between sections or has a full lap splice with the adjacent section's longitudinal steel. Connect Short Grade-Separated sections and 38" Height Median Barrier sections of Sheet 2 using a ¾" Doweled Joint.
3. SHORT GRADE-SEPARATED SECTIONS: Bars 4C1 and the two uppermost longitudinal bars may be omitted for segments where Y < 2".
4. TALL GRADE-SEPARATED SECTIONS: For the vertical and transverse steel reinforcement shown in the Tall Grade-Separated Sections, bar bending diagrams are not provided due to varying section dimensions and Longitudinal Joint locations. Use any combination of spliced reinforcing steel to position the reinforcement with the same cover, spacing, continuity, and equivalent strength shown herein, as approved by the Engineer.

   Longitudinal Joints are permitted between the vertical limits shown, and must remain level and at a consistent height per each continuous casting of concrete. Longitudinal Joints may change elevations at Transverse Joint locations. Field bending of bars is permitted at Longitudinal Joint locations.

   Transverse Joints between Tall Grade-Separated Sections do not require continuous steel across the joint if the following conditions are met:
   i. The barrier length on both sides is at least 40 feet, where each segment has continuous steel reinforcement.
   ii. The barrier's vertical steel spacing is reduced to 4" O.C. for a total of 12 spaces on both sides of the joint.

   Grade separation Heights of Y ≤ 9" are permitted on a limited basis using the Tall Grade-Separated section; this is to accommodate cases where maintaining the spread footing through lower height segments is more practical than changing to the Short Grade-Separated section.

TALL GRADE-SEPARATED SECTIONS DIMENSION TABLE

Max. Height, Y	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"
Footing Width, W	3'-3"	3'-6"	3'-9"	4'-0"	4'-3"	4'-6"	4'-6"

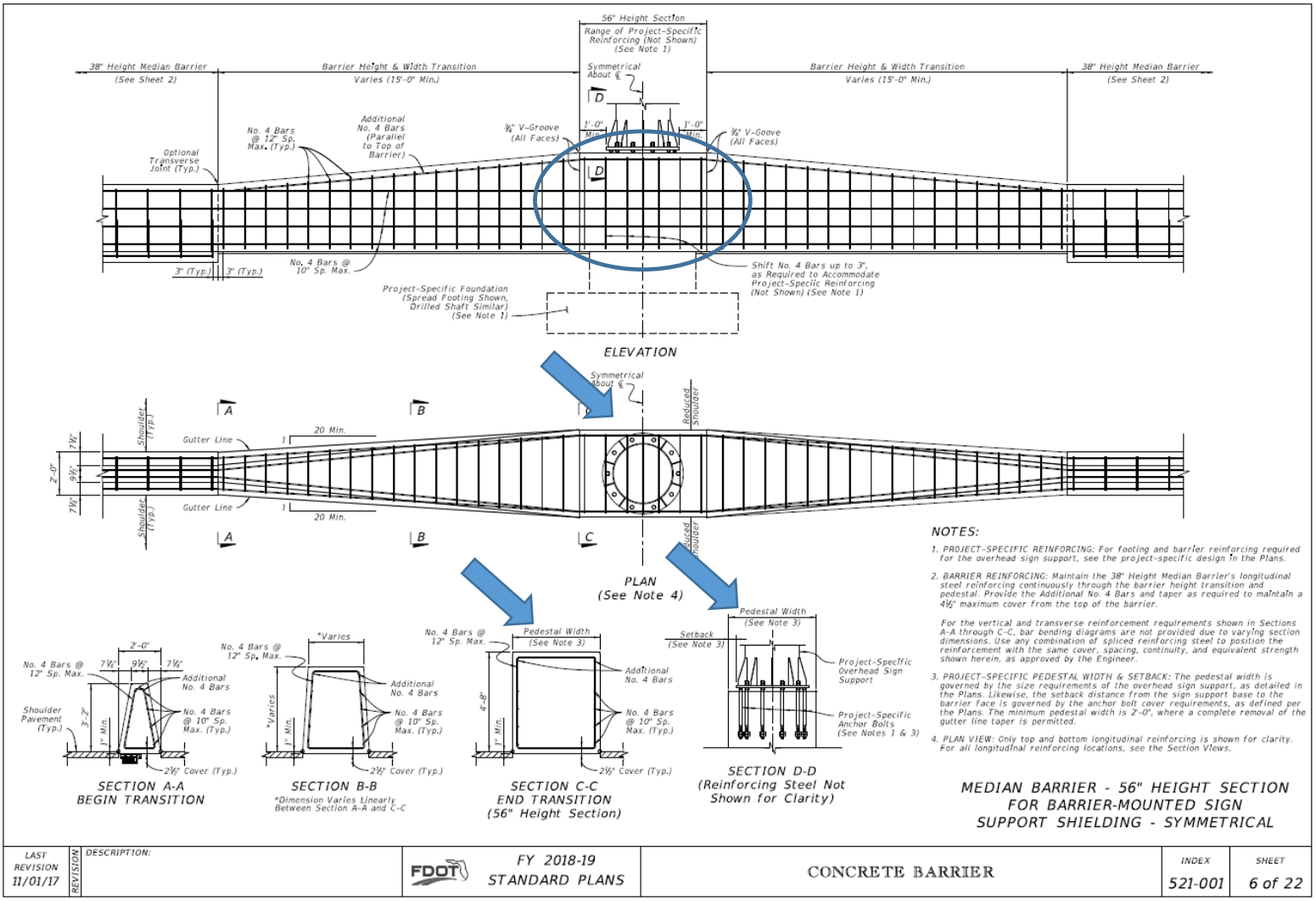
MEDIAN BARRIER - GRADE-SEPARATED

LAST REVISION 11/01/17	REVISION DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 5 of 22

- Similar to Previous Standard from Design Standpoint
- Larger foundations and footings for MASH

Index 521-001 – Concrete Barrier

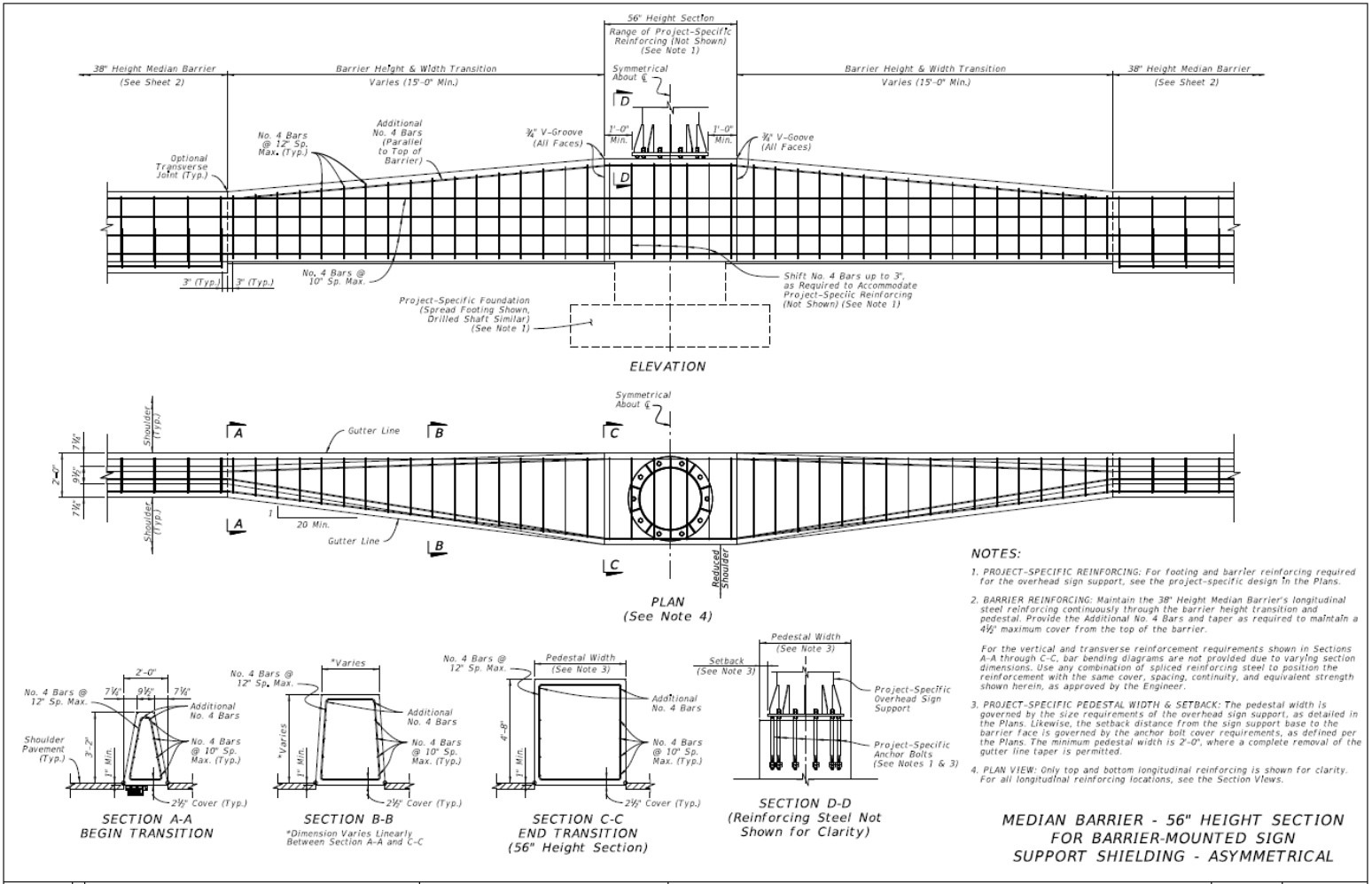
Sheet 6: All new!



- Clarified where project-specific steel design is required for connection to sign support foundation
- Pedestal Width varies as required
- May be used at 2'-0" wide Pedestal Width (zero taper)

Index 521-001 – Concrete Barrier

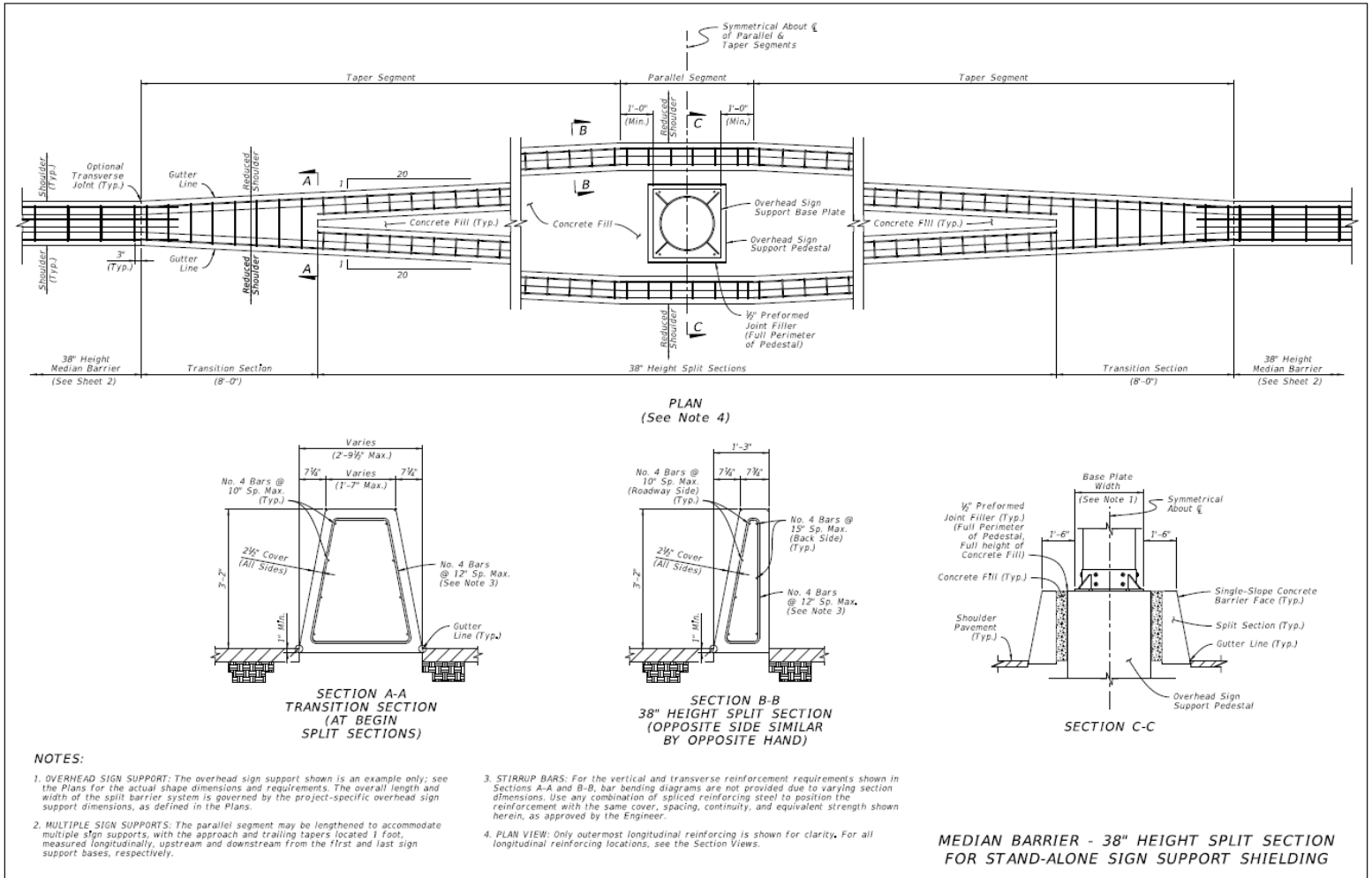
Sheet 7: All new!



- Similar to previous sheet, but asymmetrical – shoulder reduction only on one side

Index 521-001 – Concrete Barrier

Sheet 8: All new!



NOTES:

1. OVERHEAD SIGN SUPPORT: The overhead sign support shown is an example only; see the Plans for the actual shape dimensions and requirements. The overall length and width of the split barrier system is governed by the project-specific overhead sign support dimensions, as defined in the Plans.
2. MULTIPLE SIGN SUPPORTS: The parallel segment may be lengthened to accommodate multiple sign supports, with the approach and trailing tapers located 1 foot, measured longitudinally, upstream and downstream from the first and last sign support bases, respectively.
3. STIRRUP BARS: For the vertical and transverse reinforcement requirements shown in Sections A-A and B-B, bar bending diagrams are not provided due to varying section dimensions. Use any combination of spliced reinforcing steel to position the reinforcement with the same cover, spacing, continuity, and equivalent strength shown herein, as approved by the Engineer.
4. PLAN VIEW: Only outermost longitudinal reinforcing is shown for clarity. For all longitudinal reinforcing locations, see the Section Views.

MEDIAN BARRIER - 38" HEIGHT SPLIT SECTION FOR STAND-ALONE SIGN SUPPORT SHIELDING

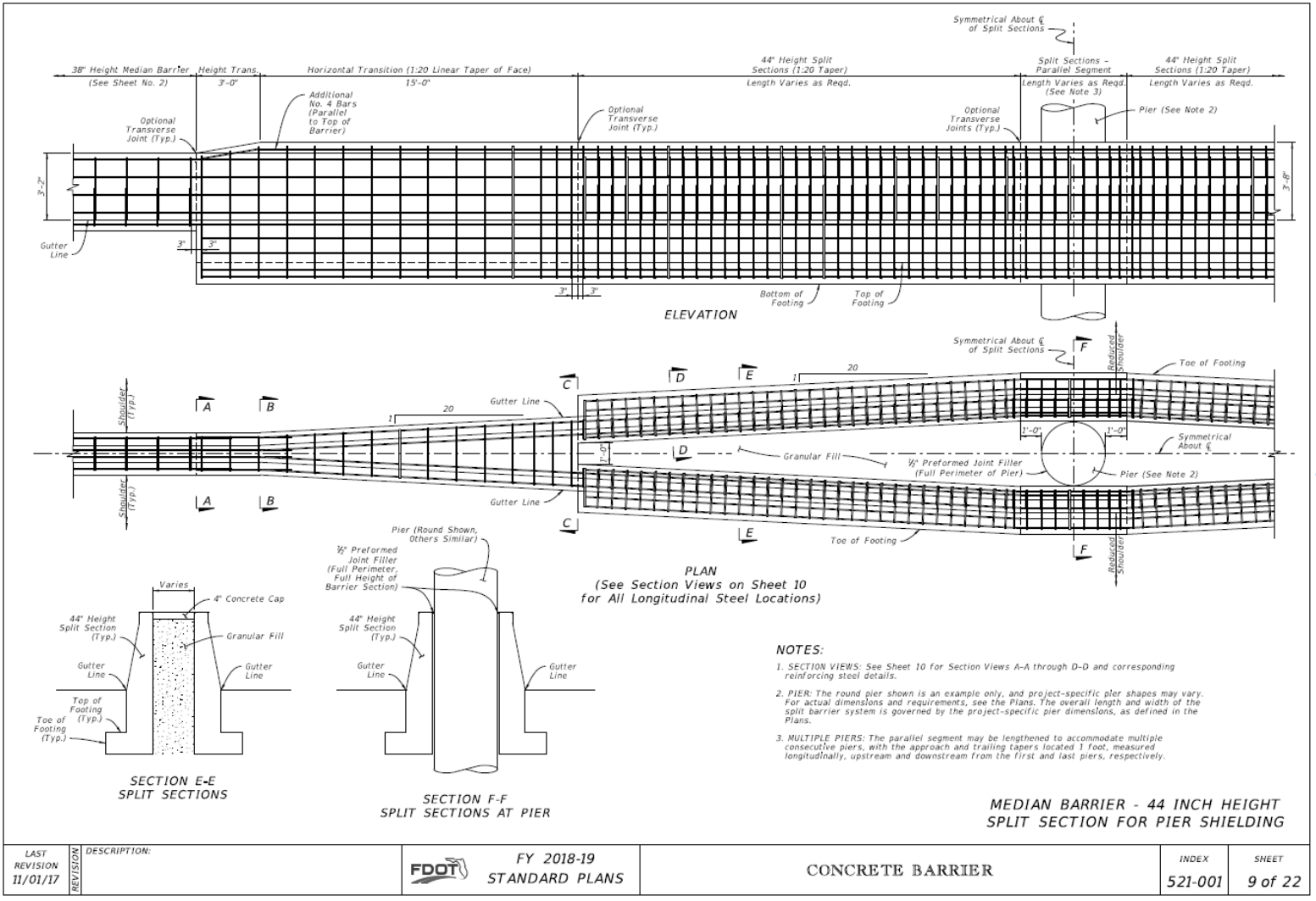
LAST REVISION 11/01/17	REVISION	DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 8 of 22

An alternative for sign support shielding where…

- Shielding an existing sign support, or…
- Designer prefers independent foundation for sign support
- Lateral space is available

Index 521-001 – Concrete Barrier

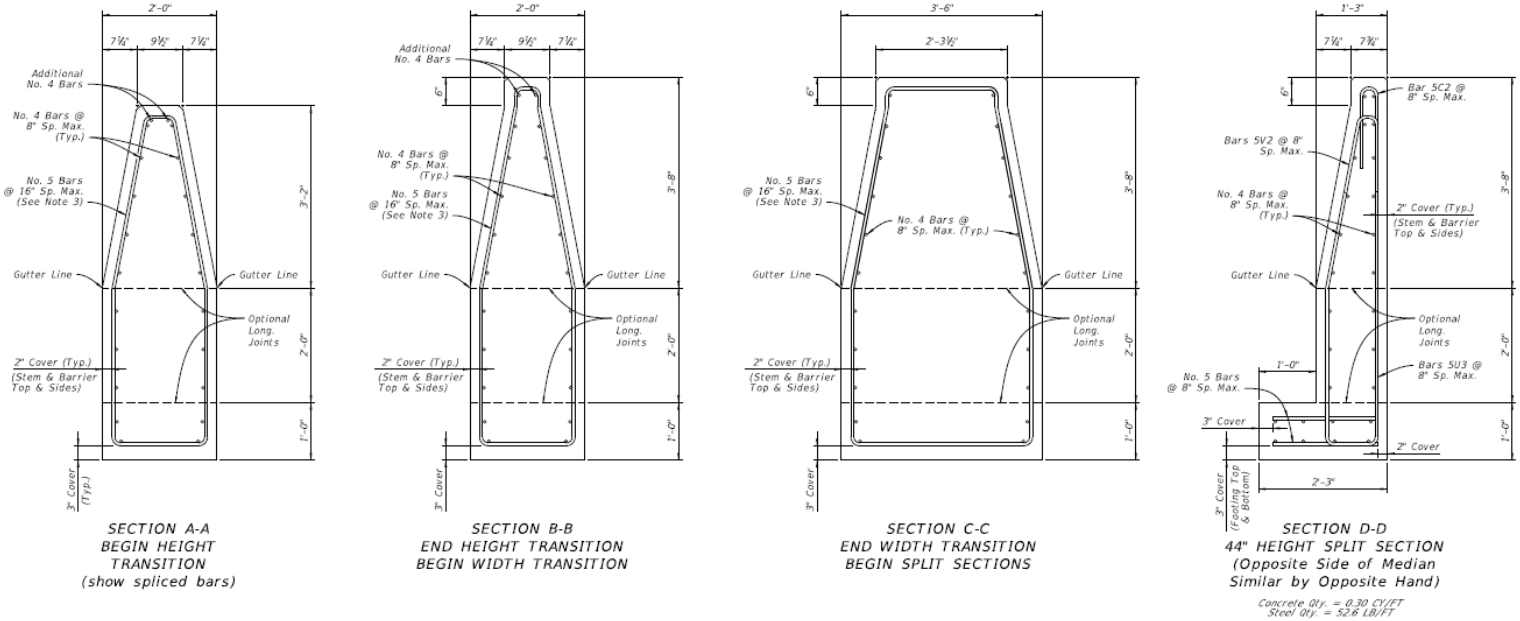
Sheet 9: All new!



- For shielding pier for crash-worthiness benefit to vehicle only **(assumes pier is designed to withstand impact)**
- Where a pier is not designed to withstand impacts, use "Pier Protection Barrier" per 521-002 (See SPI & FDM for Guidance)

Index 521-001 – Concrete Barrier

Sheet 10: All new!



NOTES:

1. GENERAL: Work with the Plan and Elevation views on Sheet 9.
2. LONGITUDINAL REINFORCING CONTINUITY: Maintain all longitudinal steel reinforcing shown in Section C-C continuously into Section D-D (spliced where required). The additional longitudinal reinforcing shown in Section D-D does not require continuity into Section C-C, and it starts 3" from the construction joint or edge of concrete per the details on Sheet 9.
3. STIRRUP BARS: For the vertical and transverse reinforcement requirement shown, bar bending diagrams are not provided due to varying section dimensions. Use any combination of spliced reinforcing steel to position the reinforcement with the same cover, spacing, continuity, and equivalent strength shown herein, as approved by the Engineer.

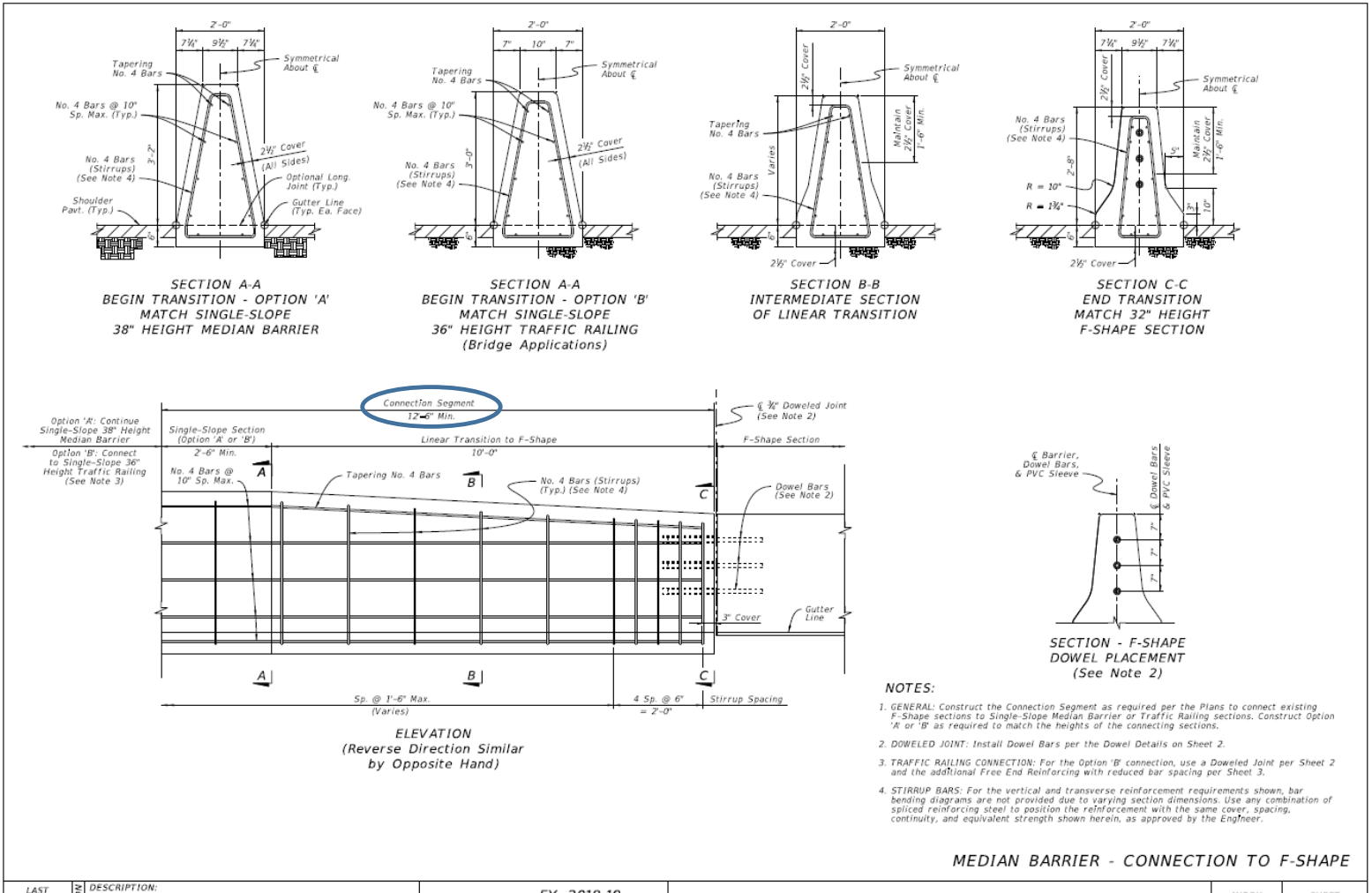
MEDIAN BARRIER - 44 INCH HEIGHT
SPLIT SECTION PIER SHIELDING - DETAILS

LAST REVISION	DESCRIPTION:	FDOT		INDEX	SHEET
11/01/17		FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	521-001	10 of 22

- Required Section dimensions and reinforcing details for the previous sheet

Index 521-001 – Concrete Barrier

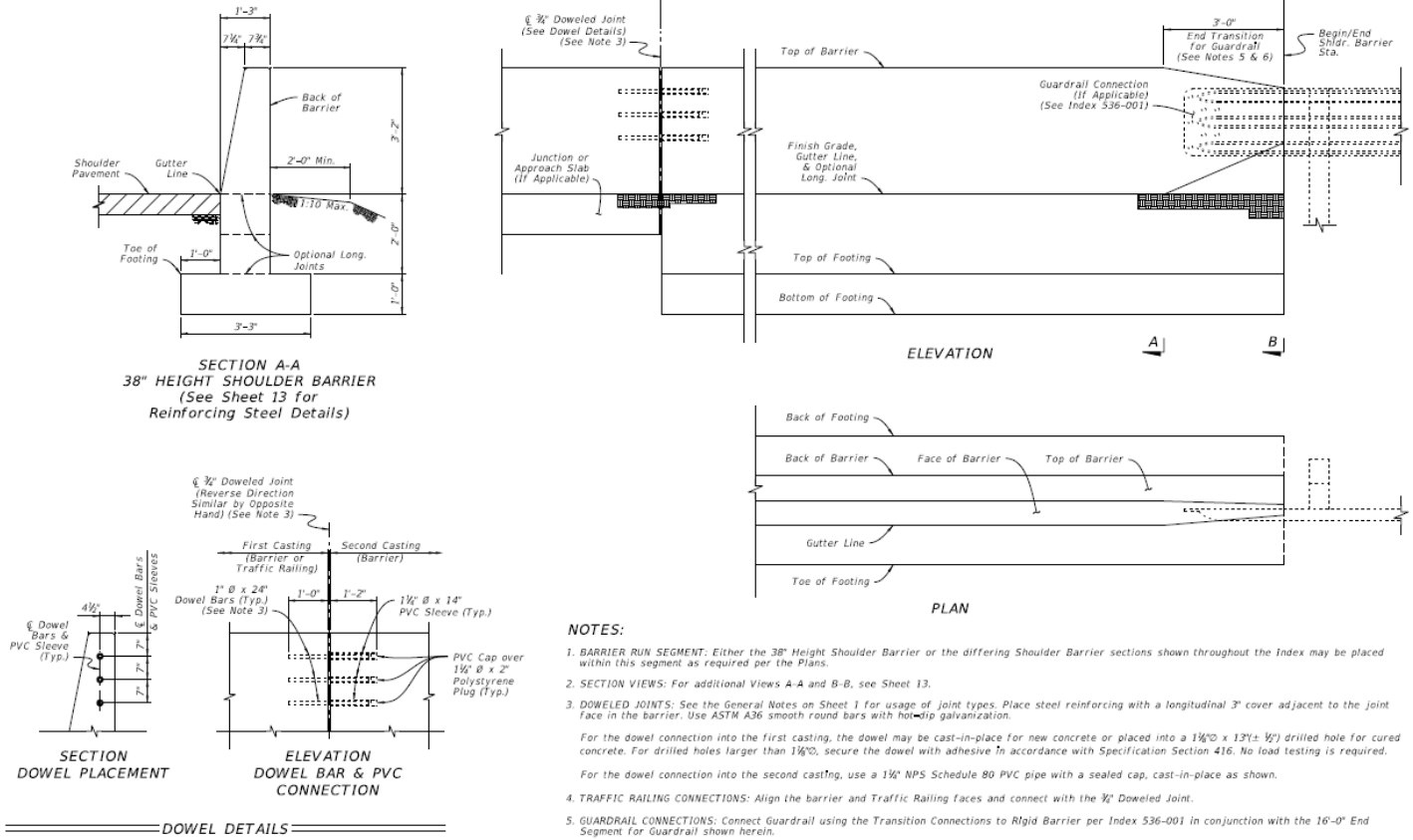
Sheet 11: All new!



- For transitioning any existing F-Shape to Single-Slope Section
- Requires 12'-6" minimum length between connecting section types

Index 521-001 – Concrete Barrier

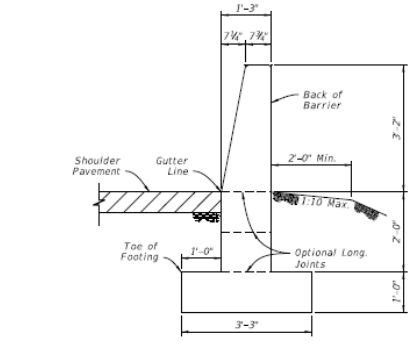
Sheet 12: All new!



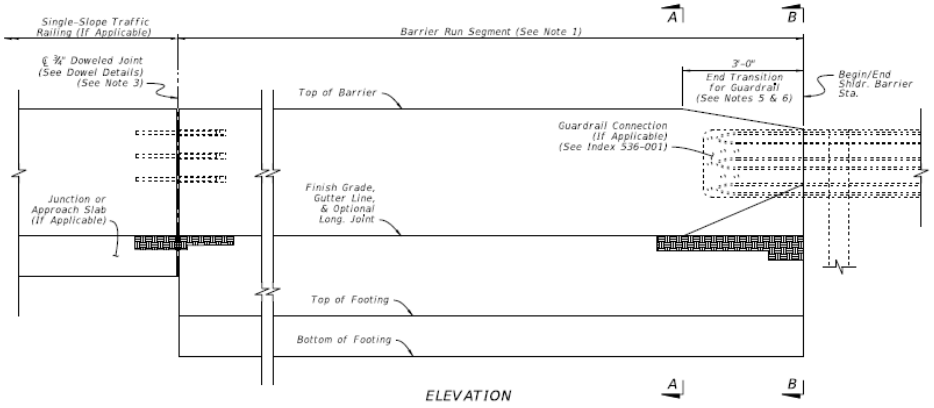
- This sheet begins the "Shoulder Barrier" grouping with basic Plan, Elevation, & Section
- Typically used on "outside" shoulders (where Median Barrier or Curb & Gutter Barrier is not used)

Index 521-001 – Concrete Barrier

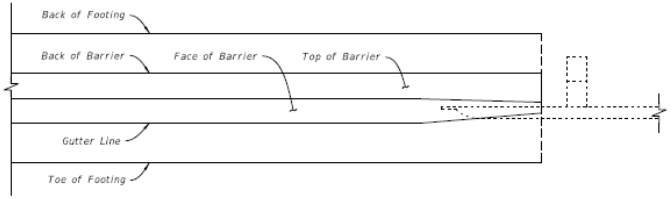
Sheet 12: All new!



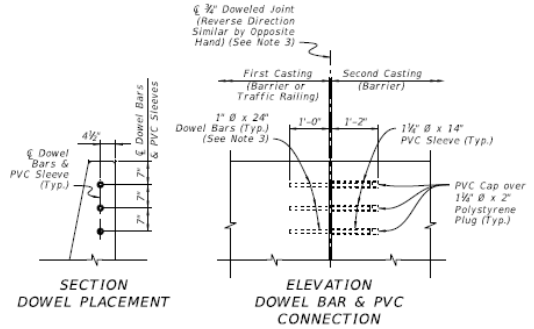
SECTION A-A
38" HEIGHT SHOULDER BARRIER
(See Sheet 13 for Reinforcing Steel Details)



ELEVATION



PLAN



SECTION DOWEL PLACEMENT

ELEVATION DOWEL BAR & PVC CONNECTION

DOWEL DETAILS

NOTES:

1. BARRIER RUN SEGMENT: Either the 38" Height Shoulder Barrier or the differing Shoulder Barrier sections shown throughout the Index may be placed within this segment as required per the Plans.
2. SECTION VIEWS: For additional Views A-A and B-B, see Sheet 13.
3. DOWELED JOINTS: See the General Notes on Sheet 1 for usage of joint types. Place steel reinforcing with a longitudinal 3" cover adjacent to the joint face in the barrier. Use ASTM A36 smooth round bars with hot-dip galvanization.

   For the dowel connection into the first casting, the dowel may be cast-in-place for new concrete or placed into a 1⅛"℄ x 13"(± ½") drilled hole for cured concrete. For drilled holes larger than 1⅛"℄, secure the dowel with adhesive in accordance with Specification Section 416. No load testing is required.

   For the dowel connection into the second casting, use a 1½" NPS Schedule 80 PVC pipe with a sealed cap, cast-in-place as shown.
4. TRAFFIC RAILING CONNECTIONS: Align the barrier and Traffic Railing faces and connect with the ¾" Doweled Joint.
5. GUARDRAIL CONNECTIONS: Connect Guardrail using the Transition Connections to Rigid Barrier per Index 536-001 in conjunction with the 16'-0" End Segment for Guardrail shown herein.
6. CRASH CUSHION CONNECTIONS: Connect Crash Cushions per Index 544-001 in conjunction with the 3'-0" End Transition for Guardrail as shown herein.
7. FREE ENDS: When the barrier end does not terminate with a Traffic Railing Connection, Guardrail Connection, or Crash Cushion Connection as called for in the Plans, terminate in accordance with the Free End Reinforcing Note on Sheet 13.

SHOULDER BARRIER

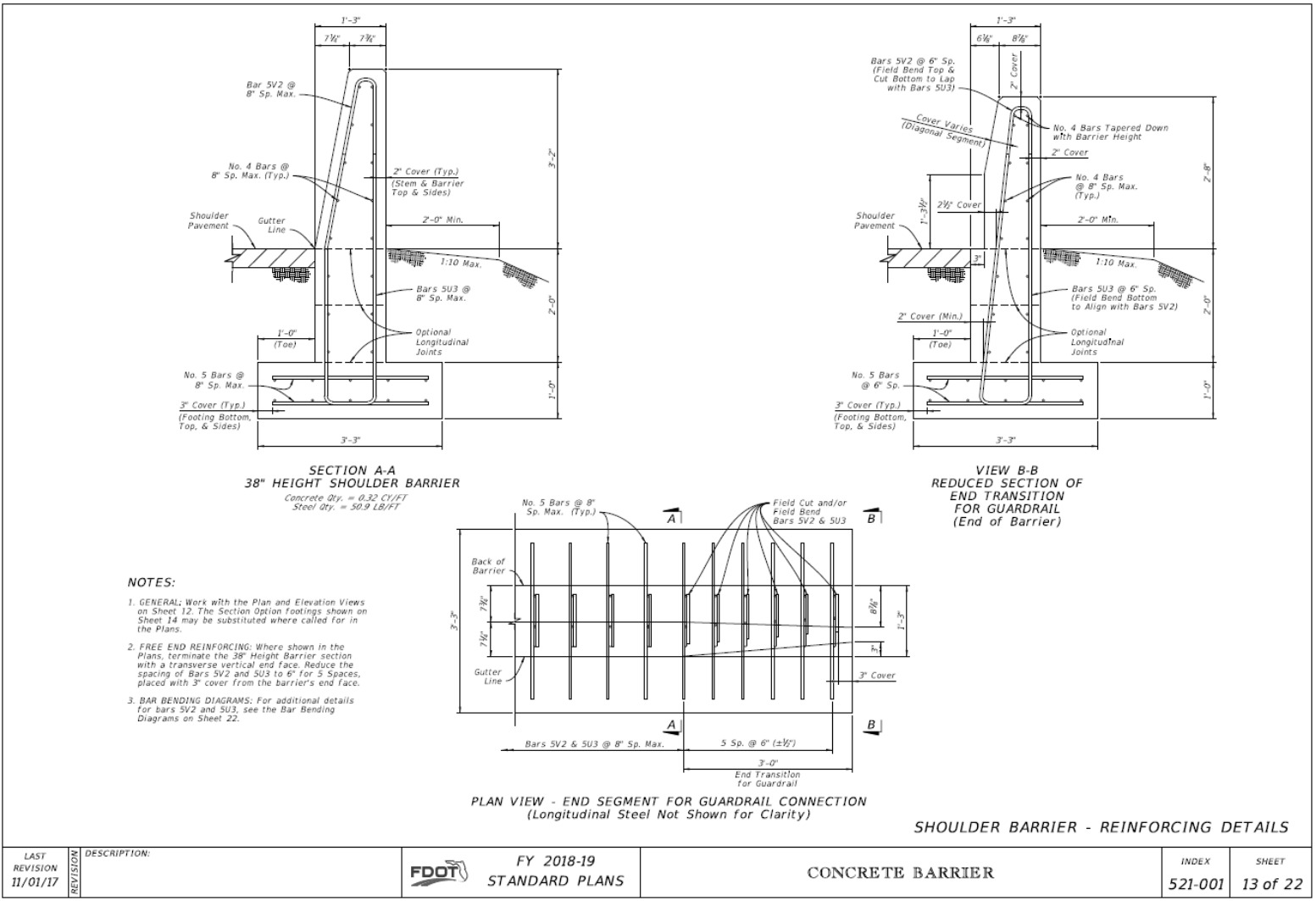
LAST REVISION 11/01/17	REVISION DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 12 of 22

[3 Pay Items for Shoulder Barrier:]

- 38" or 44" Height (Shown here)
- Retaining Section (Upcoming Slides)
- Trench Footing Section (Upcoming Slides)

Index 521-001 – Concrete Barrier

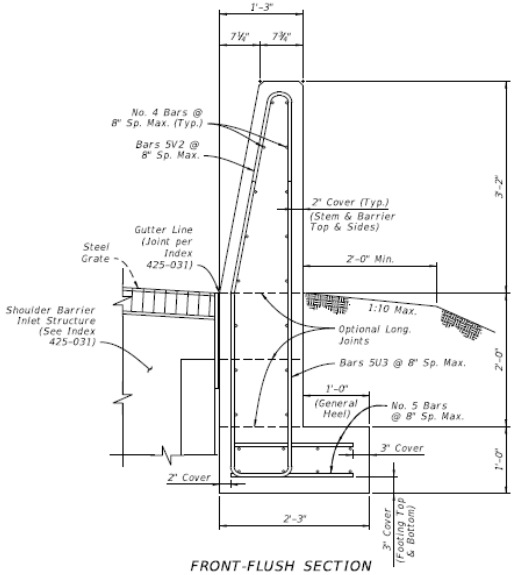
Sheet 13: All new!



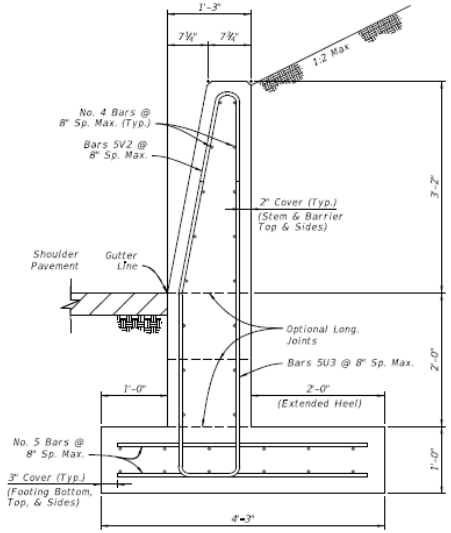
- Sheet shows reinforcing details, both in a normal run and as required to taper down for a guardrail connection

Index 521-001 – Concrete Barrier

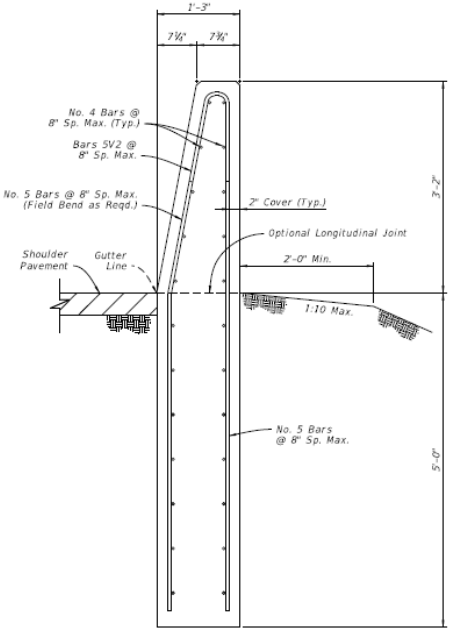
Sheet 14: All new!



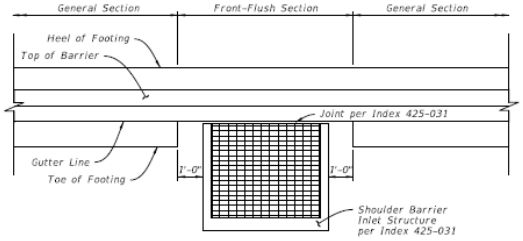
FRONT-FLUSH SECTION
(Where Required For Barrier Inlet Locations)
Concrete Qty. = 0.29 CY/FT
Steel Qty. = 46.6 LB/FT



RETAINING SECTION
Concrete Qty. = 0.36 CY/FT
Steel Qty. = 55.3 LB/FT



TRENCH FOOTING SECTION
Concrete Qty. = 0.35 CY/FT
Steel Qty. = 46.2 LB/FT



FRONT-FLUSH SECTION - PLAN VIEW
(Not Applicable for Trench Footing Sections)

NOTES:

1. GENERAL: Install the differing Section Options as required per the Plans.
2. CONNECTIONS BETWEEN DIFFERENT SECTIONS: Connect differing Shoulder Barrier sections using a continuous pour or Transverse Joint, where longitudinal steel that aligns within the adjacent section is maintained continuously between sections. Alternatively, a Doweled Joint may be used as shown on Sheet 12.
3. FLUSH RETAINING SECTION COMBINATION: Where Barrier Inlets are required in retaining segments, install the Flush Section, except replace the 1'-0" General Heel with the 2'-0" Extended Heel as shown in the Retaining Section. Use longer lateral reinforcing bars of 2'-10" length to maintain the cover shown.

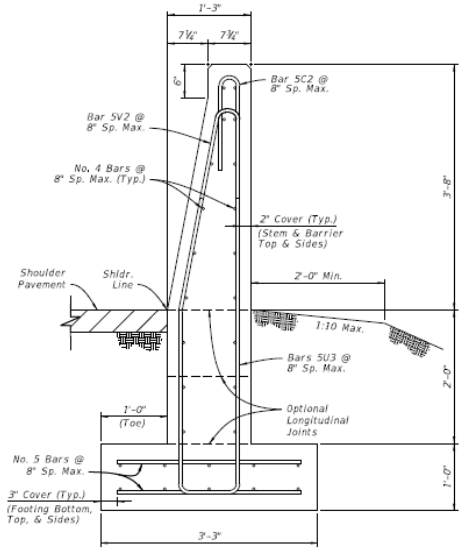
SHOULDER BARRIER - SECTION OPTIONS

LAST REVISION 11/01/17	REVISION DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 14 of 22

- Section alternatives as required
- Retaining Section Heel larger than previous
- New Trench footing option

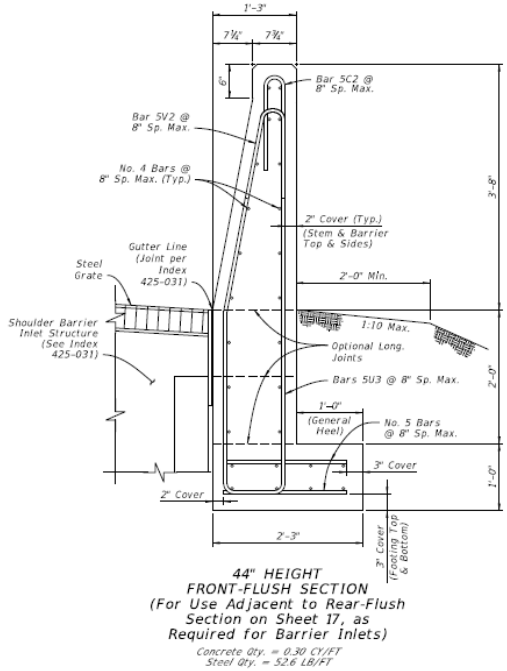
Index 521-001 – Concrete Barrier

Sheet 15: All new!



44" HEIGHT SECTION
(For Use Adjacent to Rear-Flush Section on Sheet 17)

Concrete Qty. = 0.34 CY/FT
Steel Qty. = 56.8 LB/FT



44" HEIGHT
FRONT-FLUSH SECTION
(For Use Adjacent to Rear-Flush Section on Sheet 17, as Required for Barrier Inlets)

Concrete Qty. = 0.30 CY/FT
Steel Qty. = 52.6 LB/FT

NOTE:

1. GENERAL: See the applicable Notes on Sheet 14.

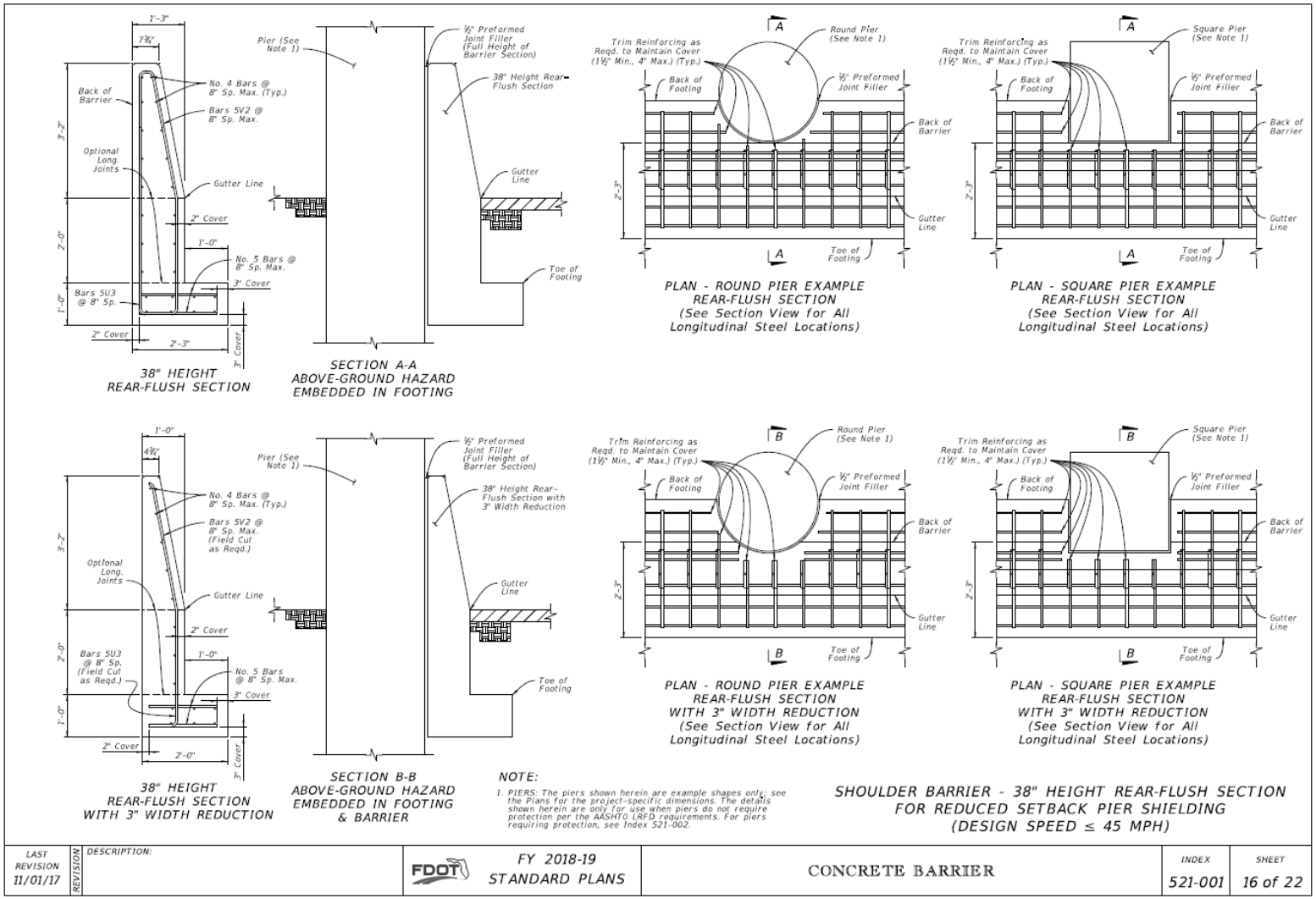
SHOULDER BARRIER - SECTION OPTIONS (CONTINUED)

LAST REVISION 11/01/17	REVISION DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 15 of 22

- A few more sections as they work with pier shielding on following sheets
- 44” Height Section has same Pay Item as “regular” 38” Height Section (named: *38” or 44” Height Shoulder Barrier* in BOE)

Index 521-001 – Concrete Barrier

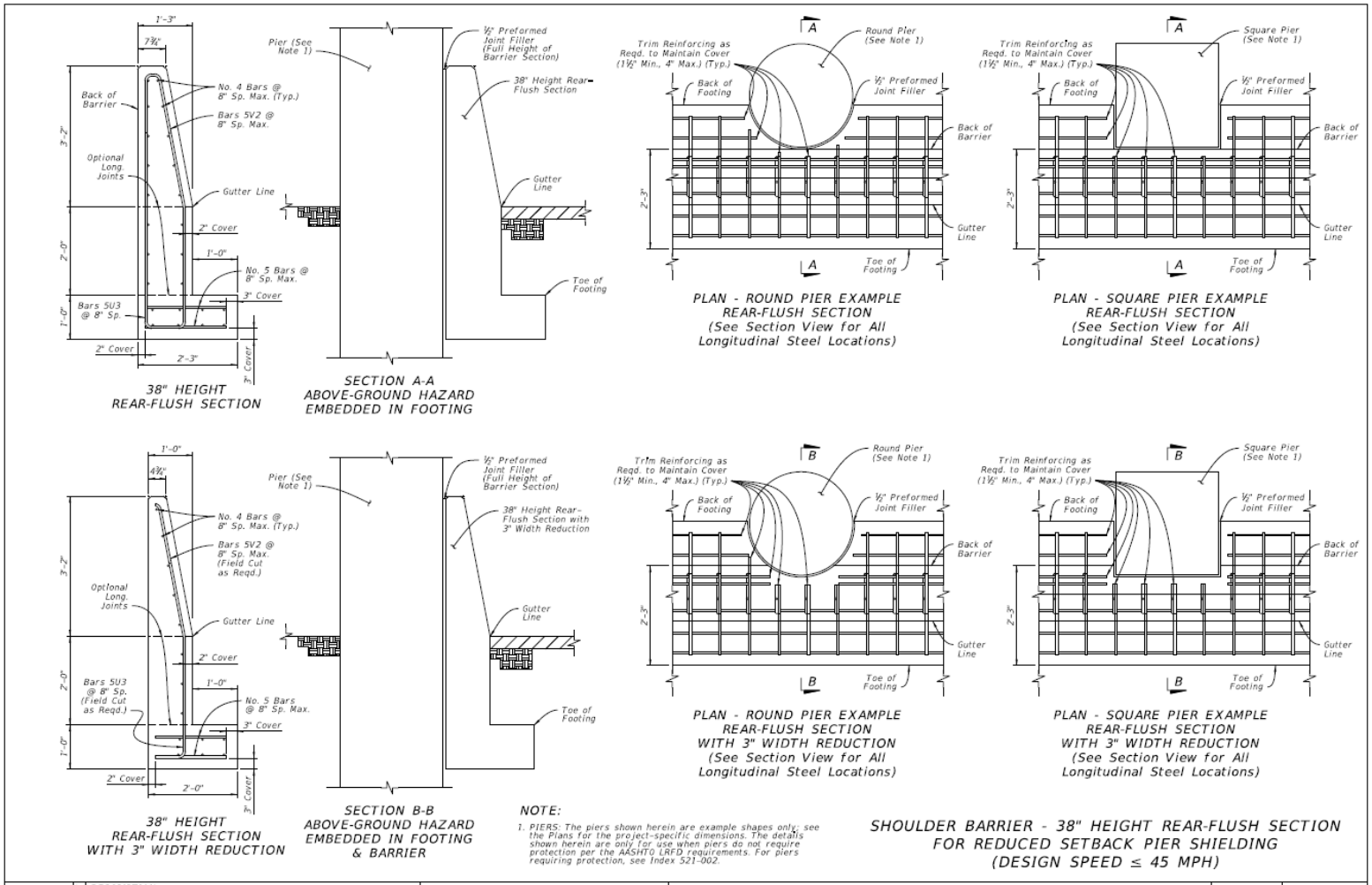
Sheet 16: All new!



- For shielding pier for crash-worthiness benefit to vehicle only **(assumes pier is designed to withstand impact)**
- Where a pier is not designed to withstand impacts, use “Pier Protection Barrier” per 521-002 (See SPI & FDM for Guidance)

Index 521-001 – Concrete Barrier

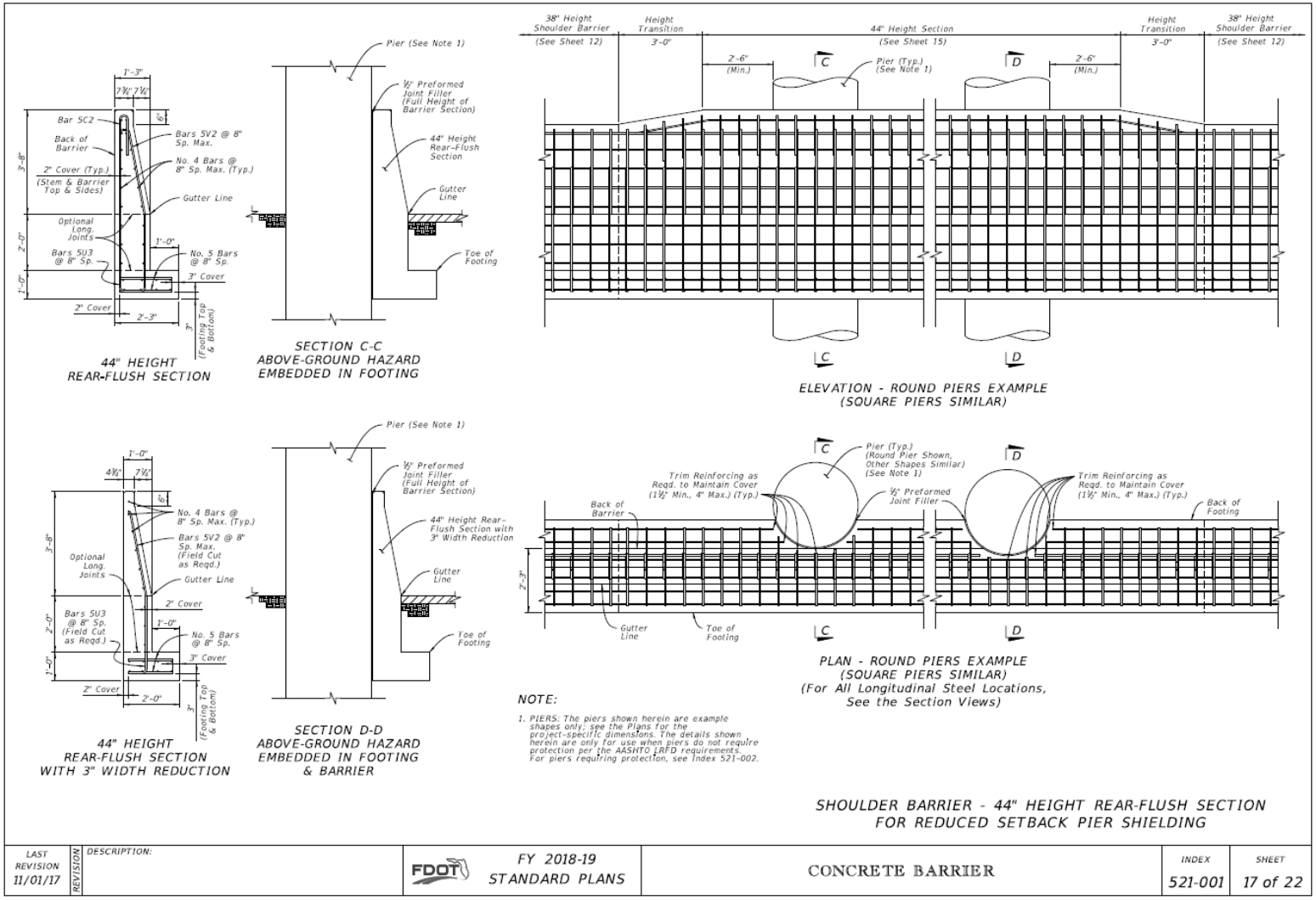
Sheet 16: All new!



- For "Low Speed" Pier Shielding (≤45 mph)
- Setback requirement is 0 feet for "Low-Speed", so height maintained at 38"
- Two options: Full Barrier Width (when space permits) or 3" width reduction.

Index 521-001 – Concrete Barrier

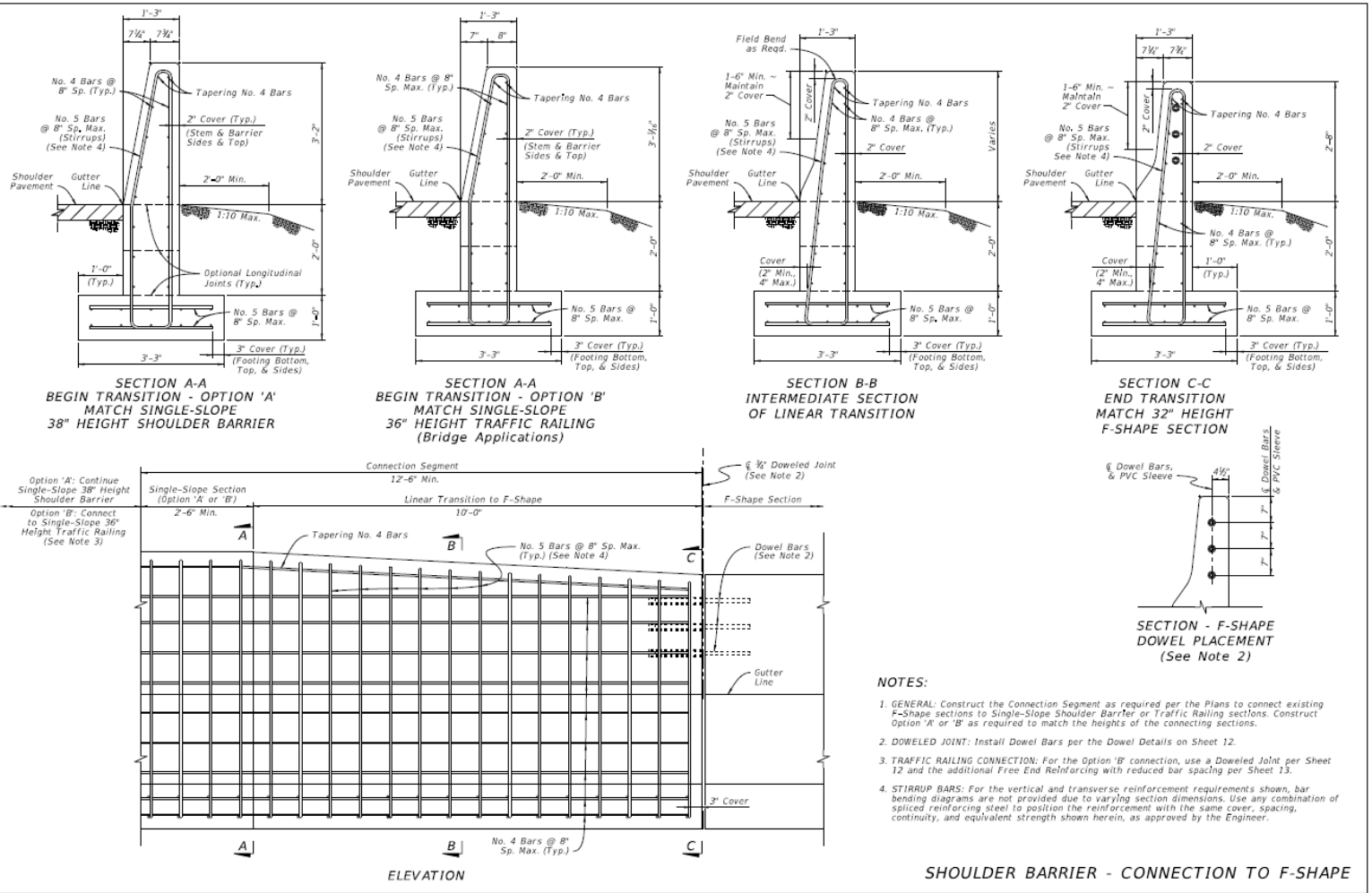
Sheet 17: All new!



- Same width options as previous
- Used for all design speeds.
- Difference from previous… The Barrier height is raised to reduce setback requirement for Zone of Intrusion (ZOI) per FDM Table 215.4.2

Index 521-001 – Concrete Barrier

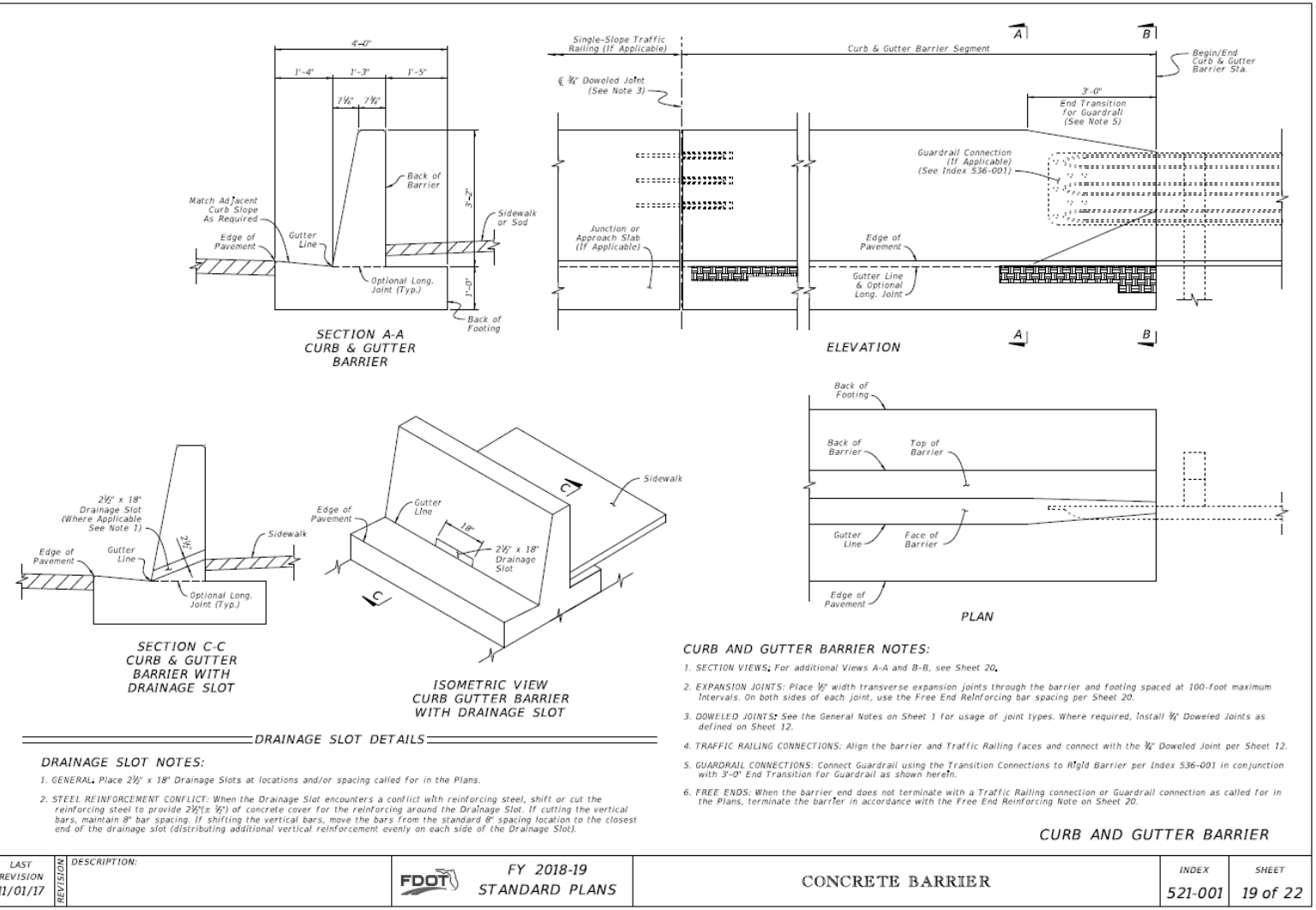
Sheet 18: All new!



- Transition to F-Shape for Single-Faced Barrier
- Similar concept to double-faced Median Barrier already seen on Sheet 11!

Index 521-001 – Concrete Barrier

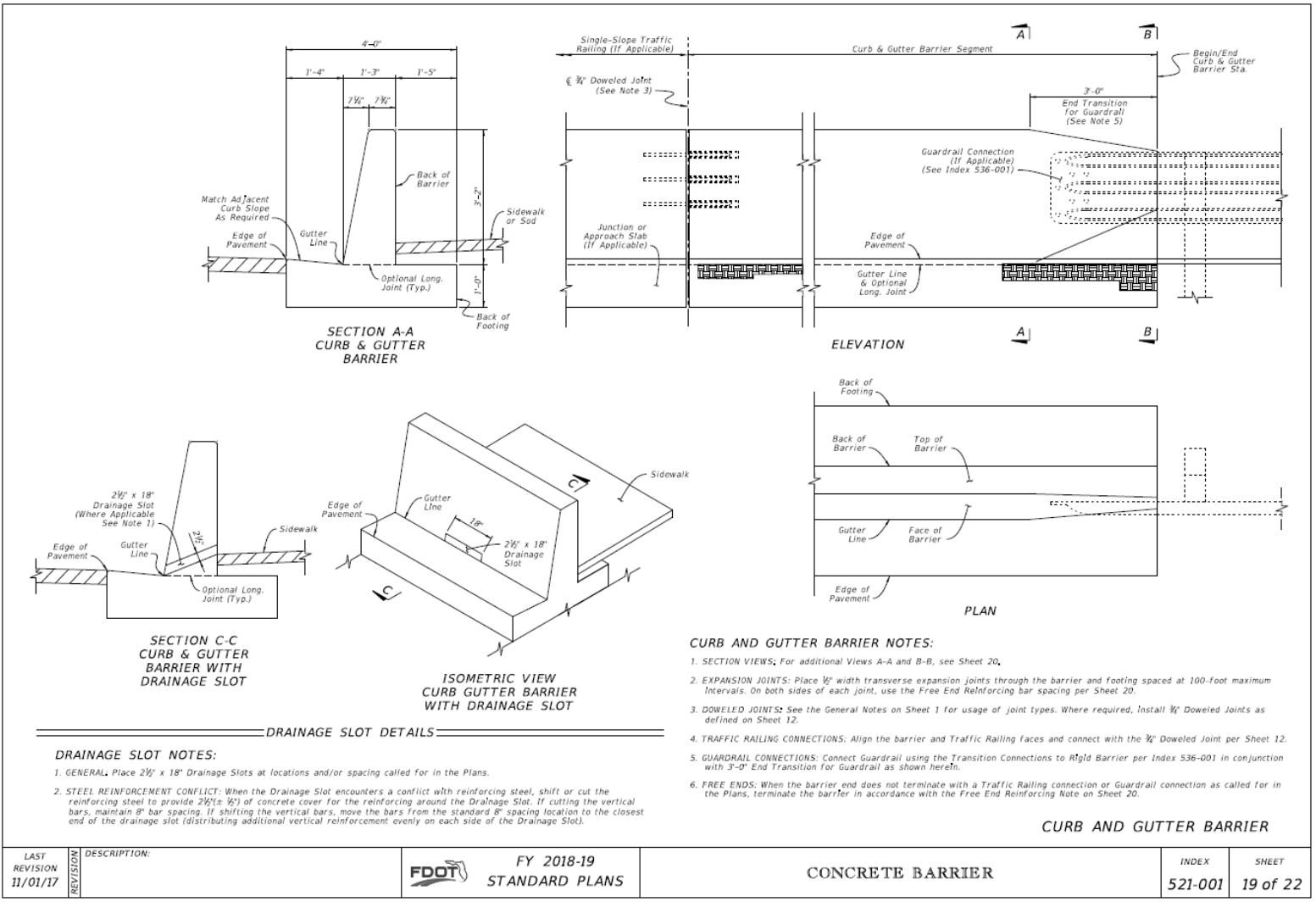
Sheet 19: All new!



- "Curb & Gutter Barrier" is the third category of concrete barrier.
- Typically used in urban areas
- Design Speed (≤45 mph)
- Aligns with "Type F" curb for water conveyance

Index 521-001 – Concrete Barrier

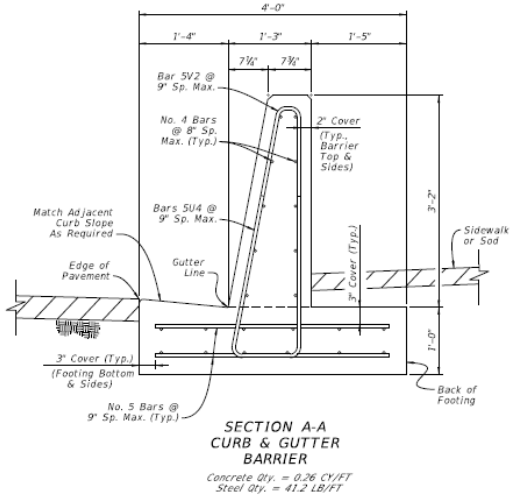
Sheet 19: All new!



- Has its own "Curb and Gutter Barrier" Pay Item
- New Guardrail connection details
- **Guardrail Approach Terminal is primary "first-choice" End Treatment (where space permits)**

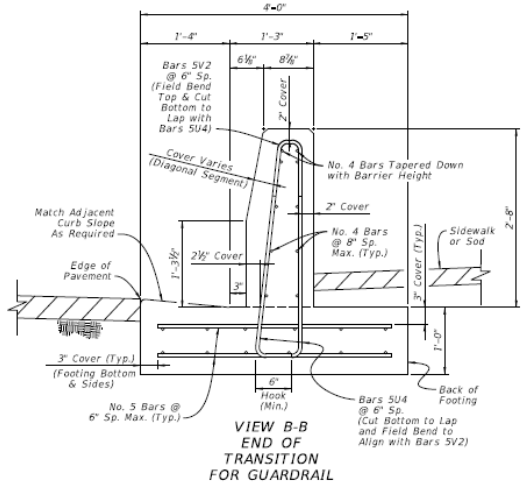
Index 521-001 – Concrete Barrier

Sheet 20: All new!

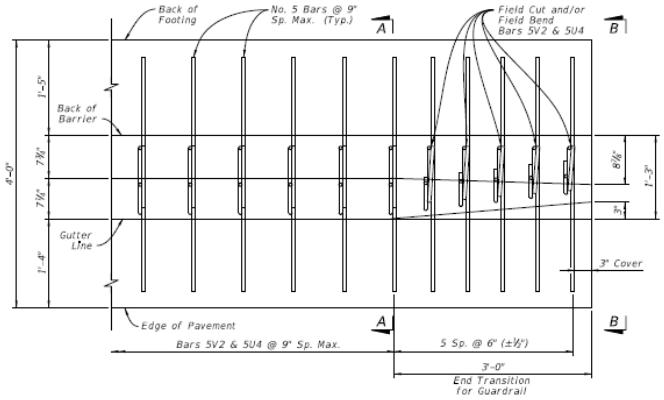


SECTION A-A
CURB & GUTTER BARRIER

Concrete Qty. = 0.26 CY/FT
Steel Qty. = 41.2 LB/FT



VIEW B-B
END OF TRANSITION
FOR GUARDRAIL



PLAN VIEW - END SEGMENT FOR GUARDRAIL CONNECTION
(Longitudinal Steel Not Shown for Clarity)

NOTES:

1. GENERAL: Work with the Plan and Elevation Views on Sheet 19.
2. FREE END REINFORCING: Where shown in the Plans, terminate the 38" Curb & Gutter Barrier section with a transverse vertical end face. Reduce the spacing of Bars 5V2 and 5U4 to 6" for 5 Spaces, placed with 3" cover from the barrier's end face.
3. BAR BENDING DIAGRAMS: For additional details for bars 5V2 and 5U4, see the Bar Bending Diagrams on Sheet 22.

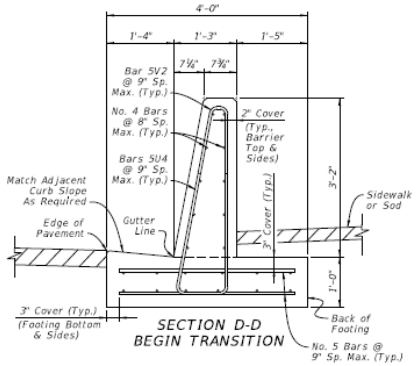
CURB AND GUTTER BARRIER - REINFORCING DETAILS

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 20 of 22

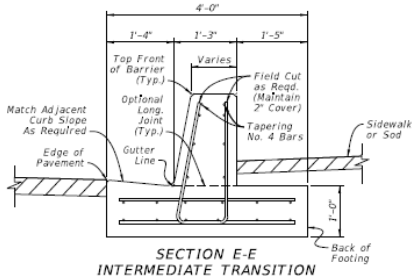
- Reinforcing details for general run and connection to guardrail

Index 521-001 – Concrete Barrier

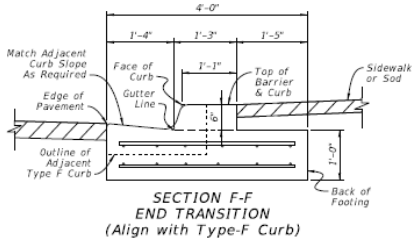
Sheet 21: All new!



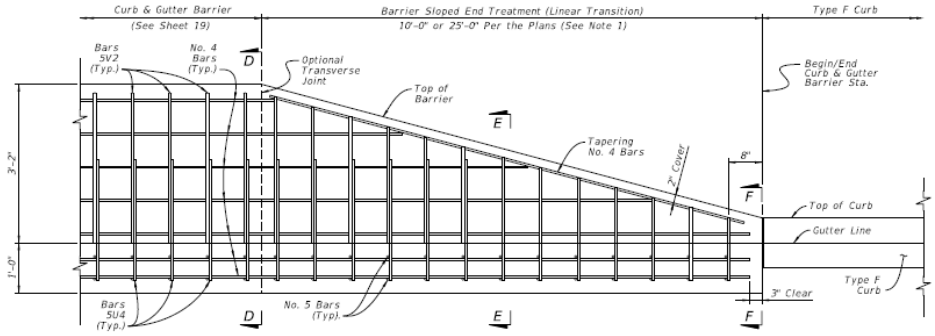
SECTION D-D
BEGIN TRANSITION



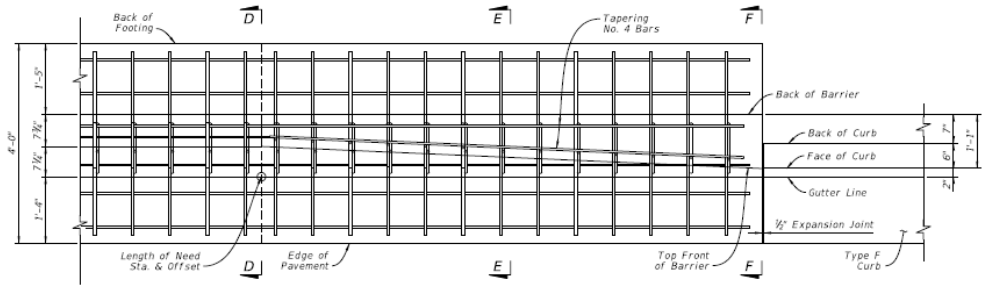
SECTION E-E
INTERMEDIATE TRANSITION
(Height Varies Linearly
Per Elevation View)



SECTION F-F
END TRANSITION
(Align with Type-F Curb)



ELEVATION - CURB AND GUTTER BARRIER
SHOWING SLOPED END TREATMENT
(Approach and Trailing
End Similar by Opposite Hand)



PLAN - CURB AND GUTTER BARRIER
SHOWING SLOPED END TREATMENT
(Approach and Trailing End
Similar by Opposite Hand;
See Sections for All
Longitudinal Steel Locations)

NOTES:

1. GENERAL: Install a Sloped End Treatment only where called for in the Plans, using either a 10'-0" length or 25'-0" length treatment as specified in the Plans. The 10'-0" length option is shown herein, while the 25'-0" length option requires additional trimmed Bars 5U4 & 5V2 at the same 9" longitudinal spacing.
2. BAR BENDING DIAGRAMS: For additional details on Bars 5V2 & 5U4, see the Bar Bending Diagrams on Sheet 22.

CURB AND GUTTER BARRIER -
SLOPED END TREATMENT

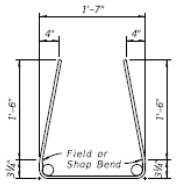
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX	SHEET
11/01/17						521-001	21 of 22

- Use Sloped End Treatment only where Guardrail Approach Terminal will not fit
- Design Speed (≤35 mph)
- Requires DDE approval per FDM 215
- Requirements explained in SPI

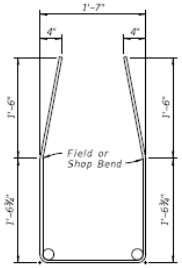
Index 521-001 – Concrete Barrier

Sheet 22: All new!

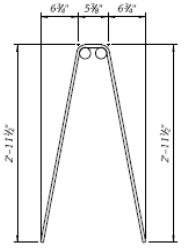
BILL OF REINFORCING STEEL		
MARK	SIZE	LENGTH
C1	4	3'-8"
C2	5	3'-0"
U1	4	5'-1"
U2	4	7'-8"
U3	5	9'-7"
U4	5	5'-9"
V1	4	6'-4"
V2	5	6'-3"



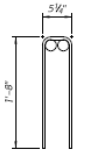
BARS 4U1



BAR 4U2



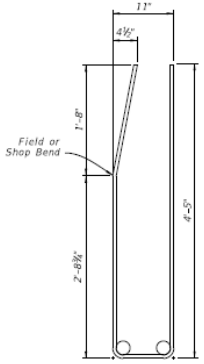
BAR 4V1



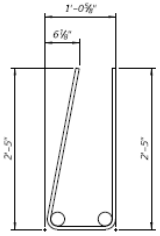
BAR 4C1

NOTES:

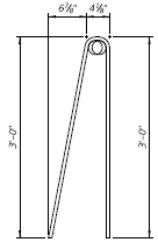
1. Work with the Standard Bar Bending Details per Index 415-001.
2. All bar dimensions in the bending diagrams are out to out.



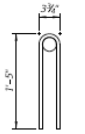
BAR 5U3



BAR 5U4



BAR 5V2



BAR 5C2

REINFORCING BAR BENDING DIAGRAMS

LAST REVISION 11/01/17	REVISION DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 22 of 22

- Reinforcing details for contractors!

Index 521-001 – Concrete Barrier

STANDARD PLANS INSTRUCTIONS: All new!

Standard Plans Website: http://www.fdot.gov/design/standardplans/current/default.shtm

New

		Concrete Barriers, Traffic Railings, and Parapets				
521-001		Concrete Barrier	410	SPI	XLS	Roadway
521-002		Pier Protection Barrier	411	SPI	XLS	
521-010		Opaque Visual Barrier	461			

http://www.fdot.gov/design/standardplans/current/SPI/SPI-521-001.pdf

Index 521-001 – Concrete Barrier

DESIGN TOOL – 'Length of Need' (Excel): All new!

Standard Plans Website: http://www.fdot.gov/design/standardplans/current/default.shtm

New

		Concrete Barriers, Traffic Railings, and Parapets				
521-001		Concrete Barrier	410	SPI	XLS	Roadway
521-002		Pier Protection Barrier	411	SPI	XLS	
521-010		Opaque Visual Barrier	461			

http://www.fdot.gov/design/standardplans/current/XLS/ConcreteBarrier-LON.XLSM

Standard Plans – Primary Index Updates:

1) ***Index 536-001*** **– Guardrail**
   - Miscellaneous Updates

2) ***Index 521-001*** **– Concrete Barrier**
   - Complete Redevelopment – **Single-Slope Barrier**

3) ***Index 521-002*** **– Pier Protection Barrier**
   - Extensive Redevelopment – **Single-Slope Barrier**

Index 521-002 – Pier Protection Barrier

Sheet 1: Revised!

SHEET NO.	CONTENTS
1	Index Contents; General Notes
2	Example Layouts – Footing Placement and Connections
3	Barrier Plan and Elevation – Connection to Concrete Barrier – Connection to Guardrail
4	Barrier Details – Connection to Concrete Barrier
5	Barrier Details – Connection to Guardrail
6	Barrier Footing Options
7	Crash Wall Details
8	Reinforcing Bar Bending Diagrams

GENERAL NOTES:

1. CONCRETE: Use Class III or IV concrete unless otherwise called for in the Plans.

2. CONSTRUCTION JOINTS: Maintain continuity of reinforcement steel across Construction Joints; reinforcement lap splices are permitted immediately adjacent to joints. Construct all Pier Protection Barrier continuously, with no expansion or contraction joints. Construction Joints are classified herein as Transverse Joints or Longitudinal Joints.

   Transverse Joints are permitted at 40 foot or greater intervals along the barrier.

   Longitudinal Joints may only be installed where indicated in the following details and notes, with a location tolerance of ± 1" from the locations shown.

3. SUBGRADE: Compact the top layer of subgrade with Type B Stabilization, LBR 40 (12 in.).

4. DRAINAGE INLETS: See Index 425-001 for Shoulder Barrier Inlets, and isolate these structures from Pier Protection Barriers and Footings with 1" Preformed Joint Filler.

5. BARRIER END MARKERS: For all free ends of barriers that are not connected to guardrail or concrete barrier, install a Type 3 Object Marker on the end face per Specification 705.

6. BARRIER DELINEATORS: Install Barrier Delineators in accordance with Specification Section 705. Mount the delineators on the top face of the barrier, with the roadway side of the delineator located 2" from the front face of the barrier and the reflective sheeting facing traffic of the nearest approach.

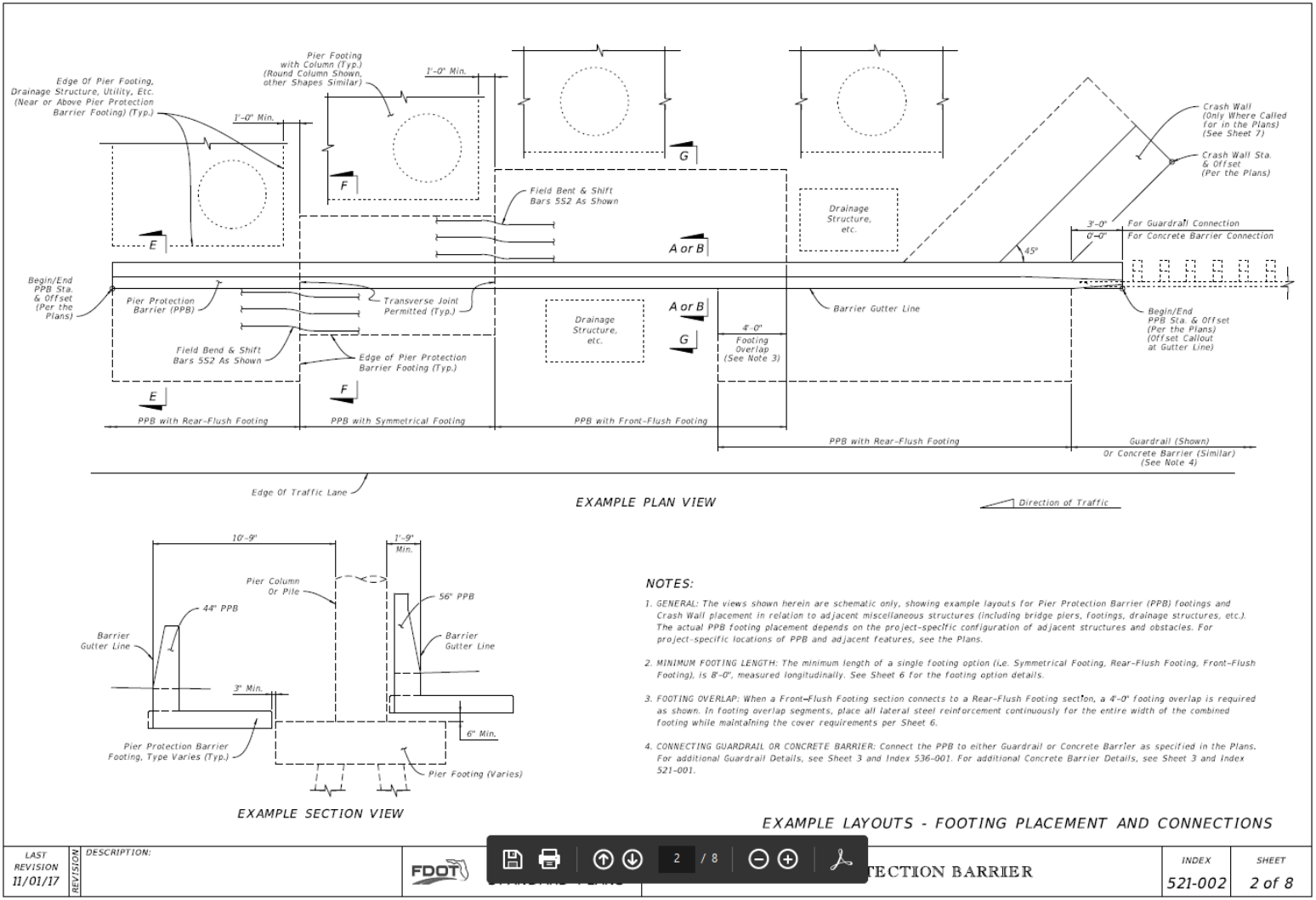
7. CRACK CONTROL: Provide ½" depth crack control V-Grooves at 15' to 30' spacing. Locate V-Grooves above any joint or discontinuity in the barrier footing. Align V-Grooves perpendicular to the longitudinal axis of the Pier Protection Barrier and make continuous across the top surface and both side faces. For slip formed barriers, score ½" V-Grooves while the concrete is still plastic, otherwise pre-form the joints when stationary forms are utilized.

LAST REVISION	REVISION	DESCRIPTION:		INDEX	SHEET
11/01/17			TECTION BARRIER	521-002	1 of 8

- New Table of Contents
- Revised some notes for clarity.
- Added note headings

Index 521-002 – Pier Protection Barrier

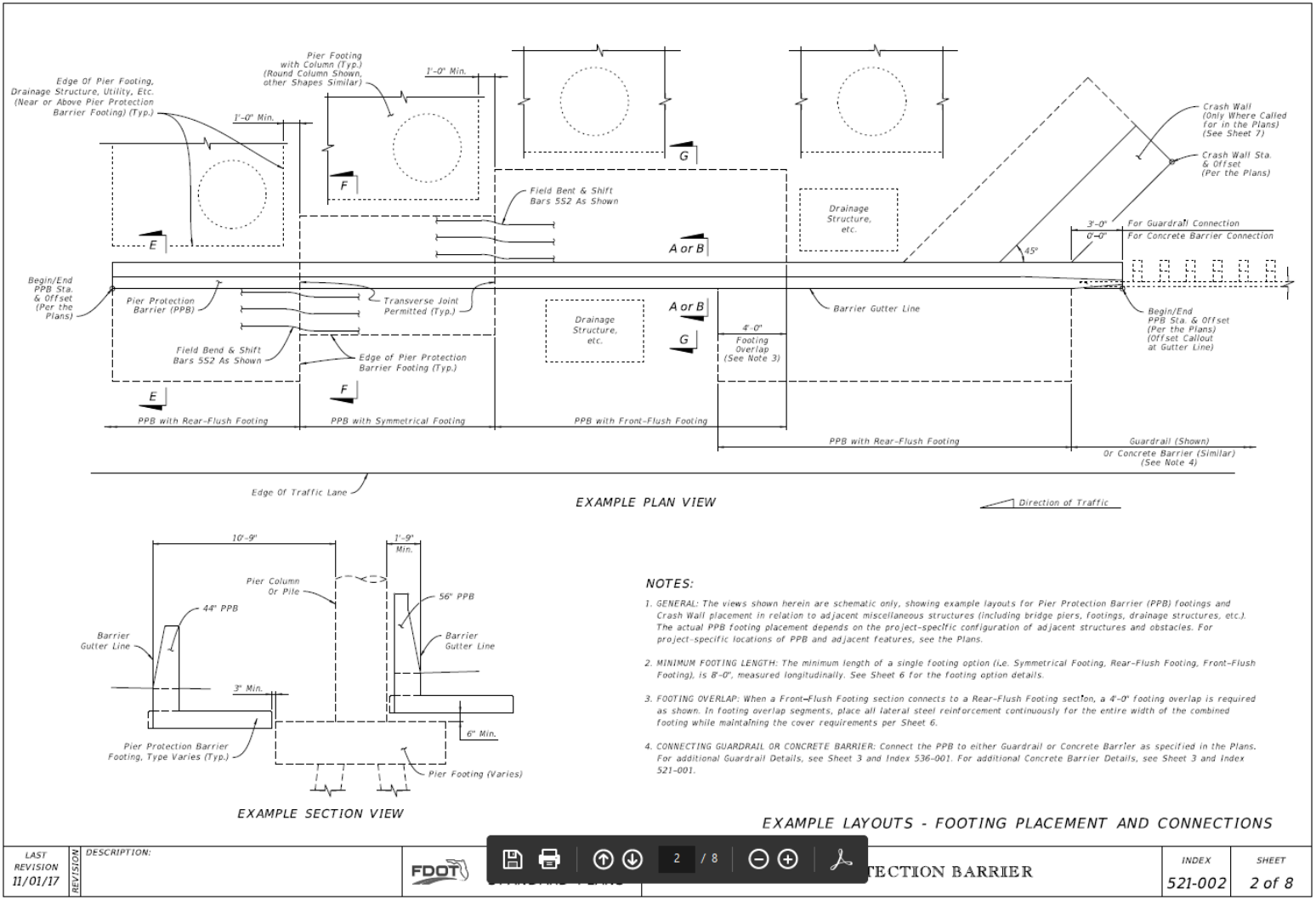
Sheet 2: Revised!



- More detail added to example layouts
- Now shows Station & Offset Points to correspond with Plans
- Now shows optional Crash Wall

Index 521-002 – Pier Protection Barrier

Sheet 2: Revised!

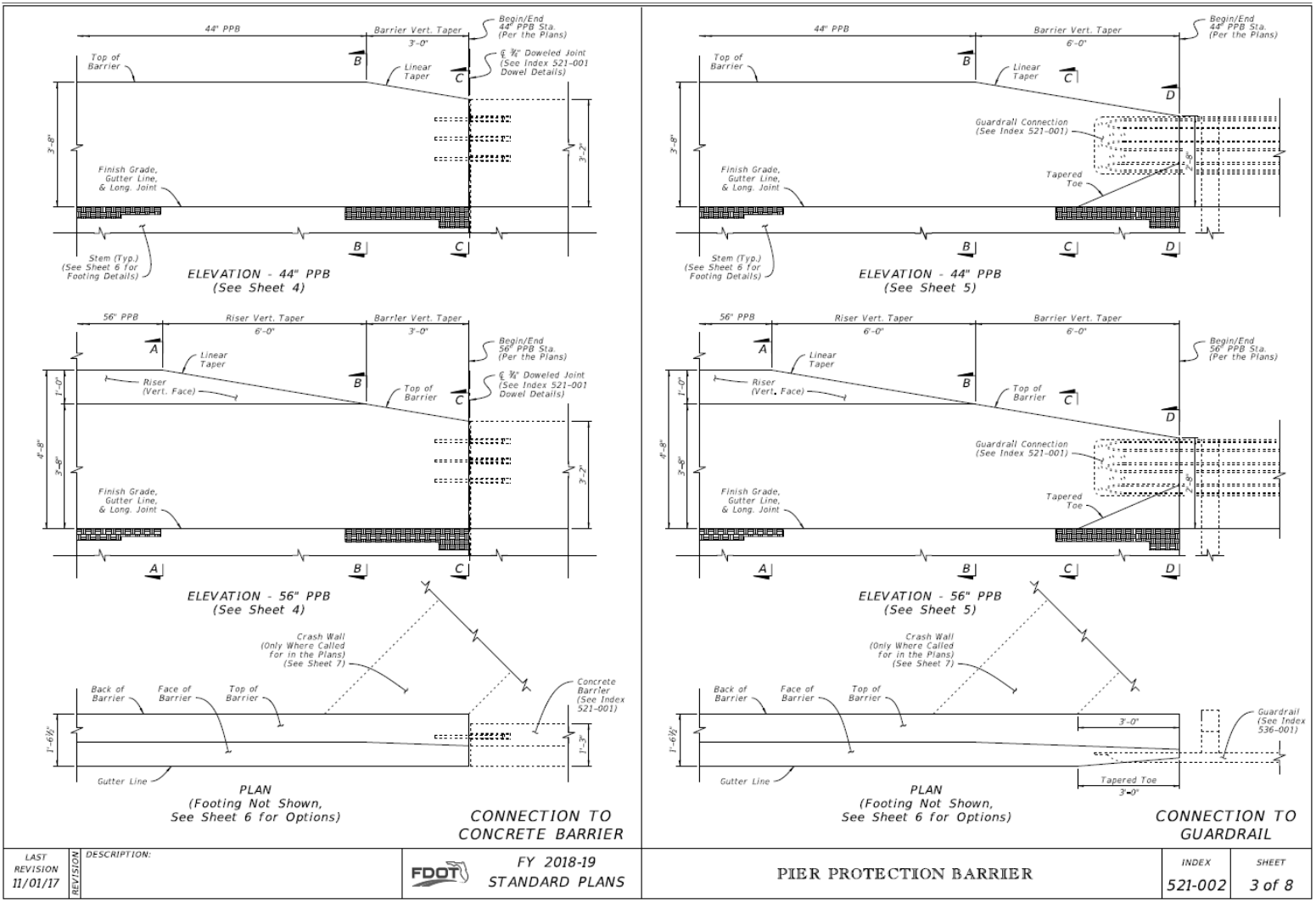


Crash Wall connection to PPB location differs per Guardrail or Concrete Barrier connection:

- Guardrail Connection: 3 Ft. Offset
- Concrete Barrier Connection: Zero Offset

Index 521-002 – Pier Protection Barrier

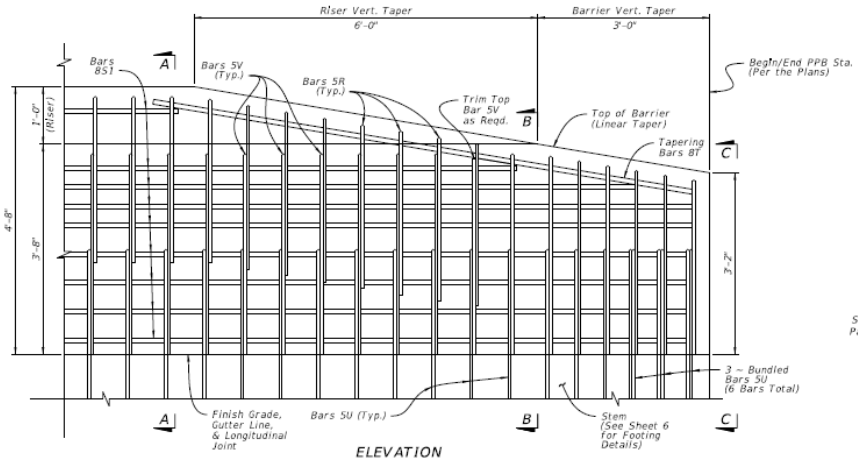
Sheet 3: All new!



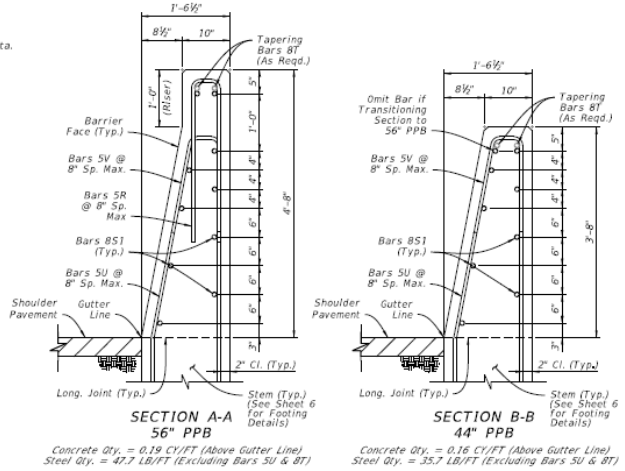
- New plan and elevations show all height and end connection configurations
- Heights Required:
  ~56” for pier within 10’-0” of PPB
  ~44” for pier beyond 10’-0” from PPB
- Guidance per SPI and LRFD

Index 521-002 – Pier Protection Barrier

Sheet 4: All new!

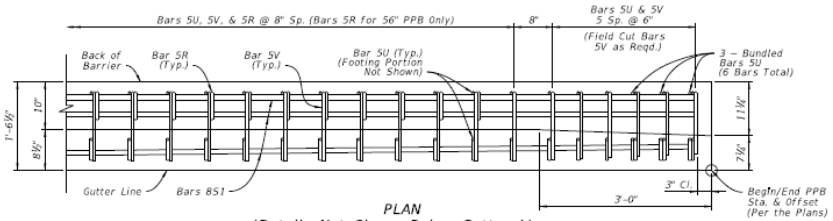


ELEVATION
(56" PPB Shown, 44" PPB Similar with 1'-0" Riser and Related Reinforcing Removed)

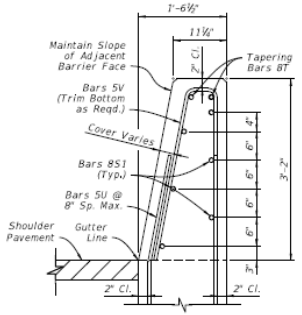


SECTION A-A
56" PPB
Concrete Qty. = 0.19 CY/FT (Above Gutter Line)
Steel Qty. = 47.7 LB/FT (Excluding Bars 5U & 8T)

SECTION B-B
44" PPB
Concrete Qty. = 0.16 CY/FT (Above Gutter Line)
Steel Qty. = 35.7 LB/FT (Excluding Bars 5U & 8T)



PLAN
(Details Not Shown Below Gutter Line, See Sheet 6 for Footing and Stem Details)
(Only Top & Bottom Longitudinal Steel Shown, See Section Views for All Steel Locations)



END VIEW C-C
(Connects to Adjacent Concrete Barrier, Aligned at Gutter Line)

NOTES:

1. GENERAL: Construct either the 56" PPB or the 44" PPB height as called for in the Plans. See Sheets 2 & 3 for additional plan and elevation details.
2. FOOTING OPTIONS: See Sheet 6 for the supporting stem and footing details.

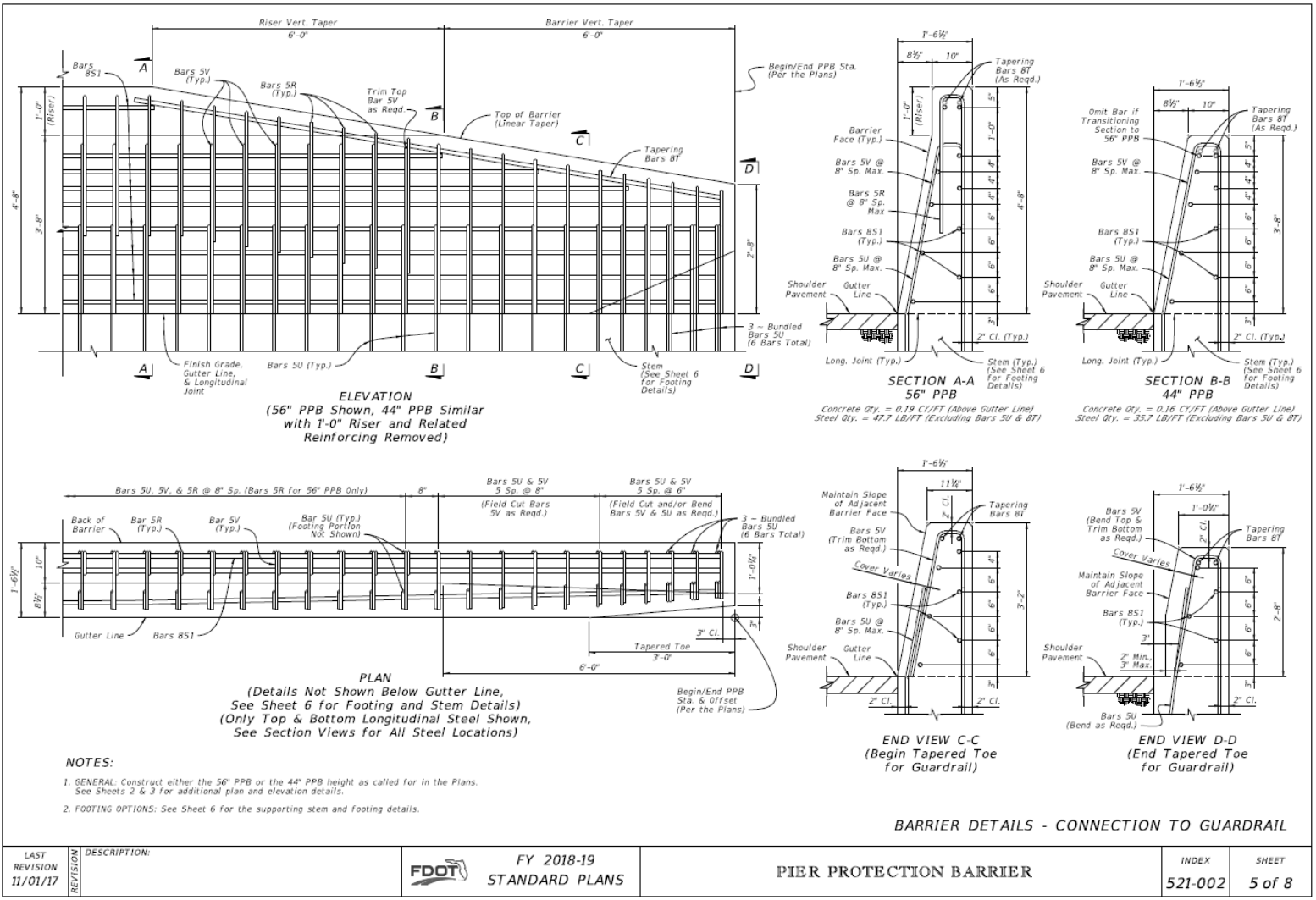
BARRIER DETAILS - CONNECTION TO CONCRETE BARRIER

LAST REVISION	DESCRIPTION:			INDEX	SHEET
11/01/17	REVISION	FDOT FY 2018-19 STANDARD PLANS	PIER PROTECTION BARRIER	521-002	4 of 8

- Reinforcing details when connecting to Concrete Barrier (38” height at end)

Index 521-002 – Pier Protection Barrier

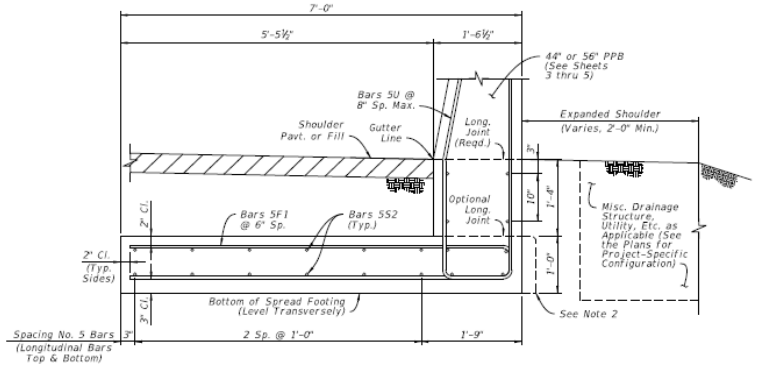
Sheet 5: All new!



- Reinforcing details when connecting to Guardrail (32” Height at end)

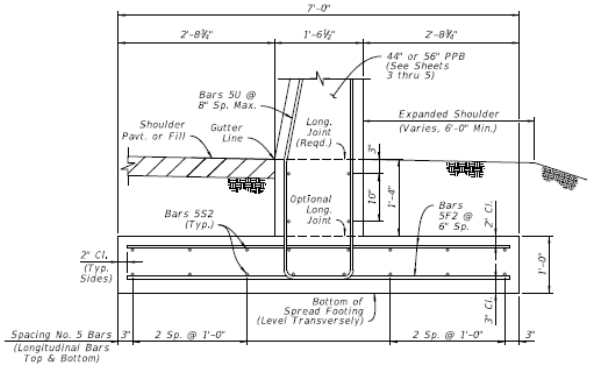
Index 521-002 – Pier Protection Barrier

Sheet 6: Revised!



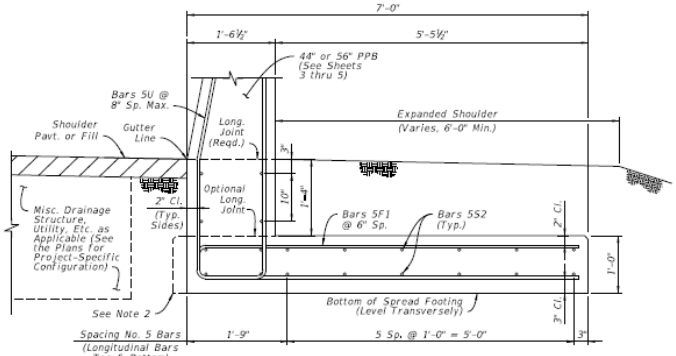
SECTION E-E
FRONT-FLUSH FOOTING OPTION

Concrete Qty. = 0.34 CY/FT (Below Gutter Line)
Steel Qty. = 63.5 LB/FT (Including Bars 5U)



SECTION F-F
SYMMETRICAL FOOTING OPTION

Concrete Qty. = 0.34 CY/FT (Below Gutter Line)
Steel Qty. = 62.6 LB/FT (Including Bars 5U)



SECTION G-G
REAR-FLUSH FOOTING OPTION

Concrete Qty. = 0.34 CY/FT (Below Gutter Line)
Steel Qty. = 63.5 LB/FT (Including Bars 5U)

NOTES:

1. GENERAL: Install the footing options per project-specific requirements, as defined on Sheet 2 and specified per the Plans.

   Work with the supported 44" PPB and 56" PPB as shown on Sheets 3, 4, & 5.

2. OPTIONAL SLIP FORMING SUPPORT: The 1'-0" depth spread footing may be extended by 3" laterally beyond the face of the stem to provide support for a subsequent slip forming operation above. Do not adjust the steel reinforcement location for the additional concrete.

3. GUARDRAIL CONNECTION TAPERED TOE: For tapering the barrier as shown on Sheet 5, View D-D, bend Bars U away from the stem face as required. For this case, the cover requirement is variable for one side of the stem (only at the tapered toe locations).

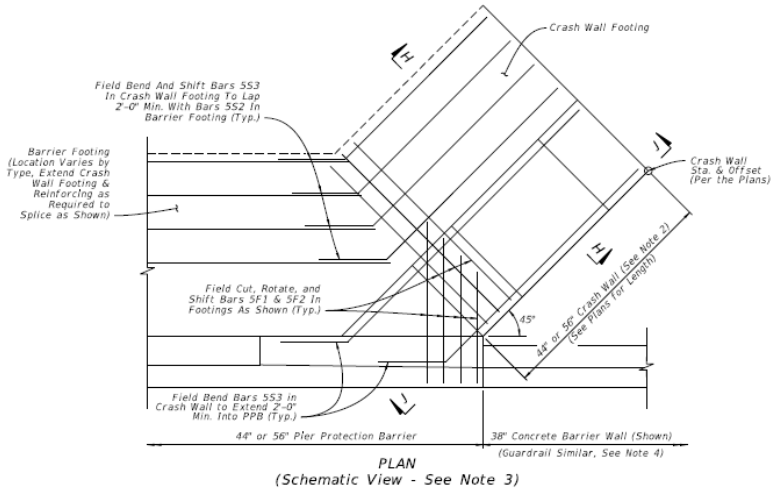
BARRIER FOOTING OPTIONS

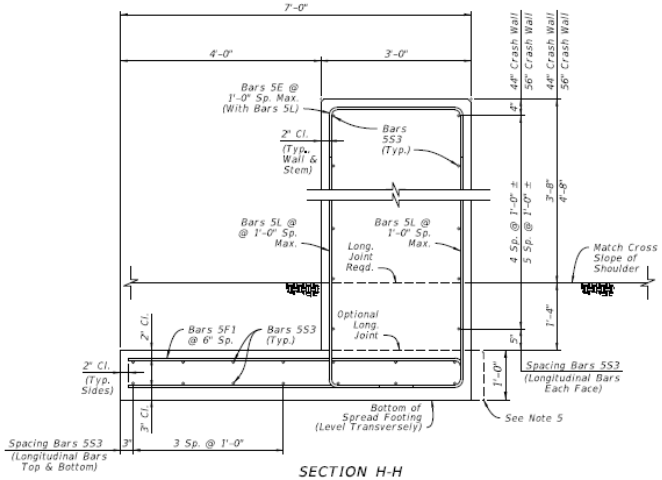
LAST REVISION 11/01/17	REVISION DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	PIER PROTECTION BARRIER	INDEX 521-002	SHEET 6 of 8

- Differing footing options for fitting around piers, drainage, utilities, etc…
- Same dimensions as FY 2017-18 Standard

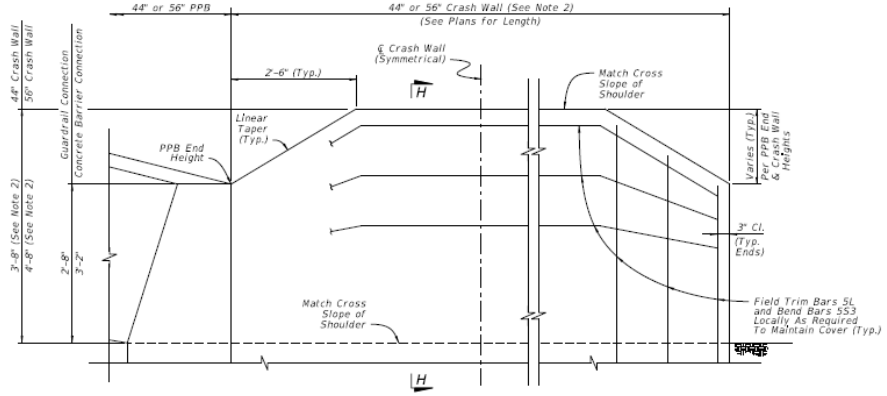
Index 521-002 – Pier Protection Barrier

Sheet 7:





Concrete Qty. = 0.82 CY/FT (44" Crash Wall) or 0.93 CY/FT (56" Crash Wall)
Steel Qty. = 71.8 LB/FT (44" Crash Wall) or 76.0 LB/FT (56" Crash Wall)



NOTES:

1. GENERAL: Only where called for in the Plans, install the Crash Wall as a supplement for PPB. If applicable, see the Plans for the corresponding Station and Offset required.

   For additional layout details, see Sheets 2 & 3.
2. CRASH WALL HEIGHT: Install the Crash Wall at a height which matches the adjacent PPB (either 44" or 56").
3. SCHEMATIC VIEWS: Only partial reinforcing is shown in the Schematic Views to establish a trend while keeping clarity. For all reinforcing steel locations and spacing requirements, see Section H-H.
4. GUARDRAIL CONNECTIONS: To facilitate guardrail connections, shift the Crash Wall 3 feet from the end of the PPB as shown on Sheets 2 & 3.
5. OPTIONAL SLIP FORMING SUPPORT: The 1'-0" depth spread footing may be extended by 3" laterally beyond the face of the wall to provide support for a subsequent slip forming operation above. Do not adjust the steel reinforcement location for the additional concrete.

CRASH WALL DETAILS

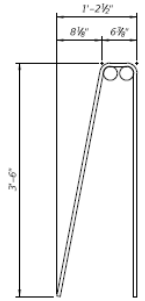
LAST REVISION 11/01/17	DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	PIER PROTECTION BARRIER	INDEX 521-002	SHEET 7 of 8

- Crash Wall used to reduce Length of Need and overall system length of barrier
- Same design dimensions as FY 2017-18 Standard
- New Crash Wall Sta. and Offset Point to corresponds to Plans

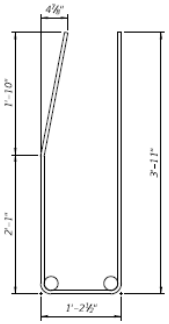
Index 521-002 – Pier Protection Barrier

Sheet 8: All new!

BILL OF REINFORCING STEEL		
MARK	SIZE	LENGTH
V	5	7'-5"
U	5	8'-11"
R	5	6'-0"
F1	5	13'-9"
F2	5	Varies (Straight)
L	5	6'-5" / 7'-5"
E	5	4'-6"
S1	8	Varies (Straight)
S2, S3	5	Varies (Straight)



BARS 5V

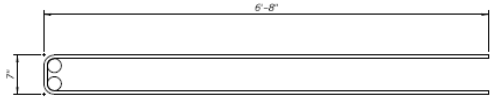


BARS 5U

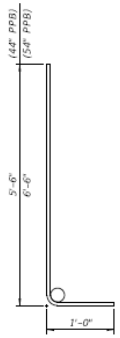
BARS 5R

NOTES:

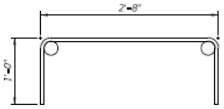
1. Work with the Standard Bar Bending Details per Index 415-001.
2. All bar dimensions in the bending diagrams are out to out.



BARS 5F1



BARS 5L



BARS 5E

BAR BENDING DIAGRAMS

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2018-19 STANDARD PLANS	PIER PROTECTION BARRIER	INDEX	SHEET
11/01/17						521-002	8 of 8

- Reinforcing details for contractors!

Index 521-002 – Pier Protection Barrier

STANDARD PLANS INSTRUCTIONS: Redeveloped!

Standard Plans Website: http://www.fdot.gov/design/standardplans/current/default.shtm

Revised

		Concrete Barriers, Traffic Railings, and Parapets				
521-001		Concrete Barrier	410	PI	XLS	Roadway
521-002		Pier Protection Barrier	411	SPI	XLS	
521-010		Opaque Visual Barrier	461			

http://www.fdot.gov/design/standardplans/current/SPI/SPI-521-002.pdf

Index 521-002 – Pier Protection Barrier

DESIGN TOOL – 'Length of Need' (Excel): All new!

Standard Plans Website: http://www.fdot.gov/design/standardplans/current/default.shtm

		Concrete Barriers, Traffic Railings, and Parapets				
521-001		Concrete Barrier	410	SPI	XLS	Roadway
521-002		Pier Protection Barrier	411	SPI	XLS	
521-010		Opaque Visual Barrier	461			

New

http://www.fdot.gov/design/standardplans/current/XLS/PierProtectionBarrier-LON.XLSM

Standard Plans – Primary Index Updates:

1) ***Index 536-001*** **– Guardrail**
   - Miscellaneous Updates

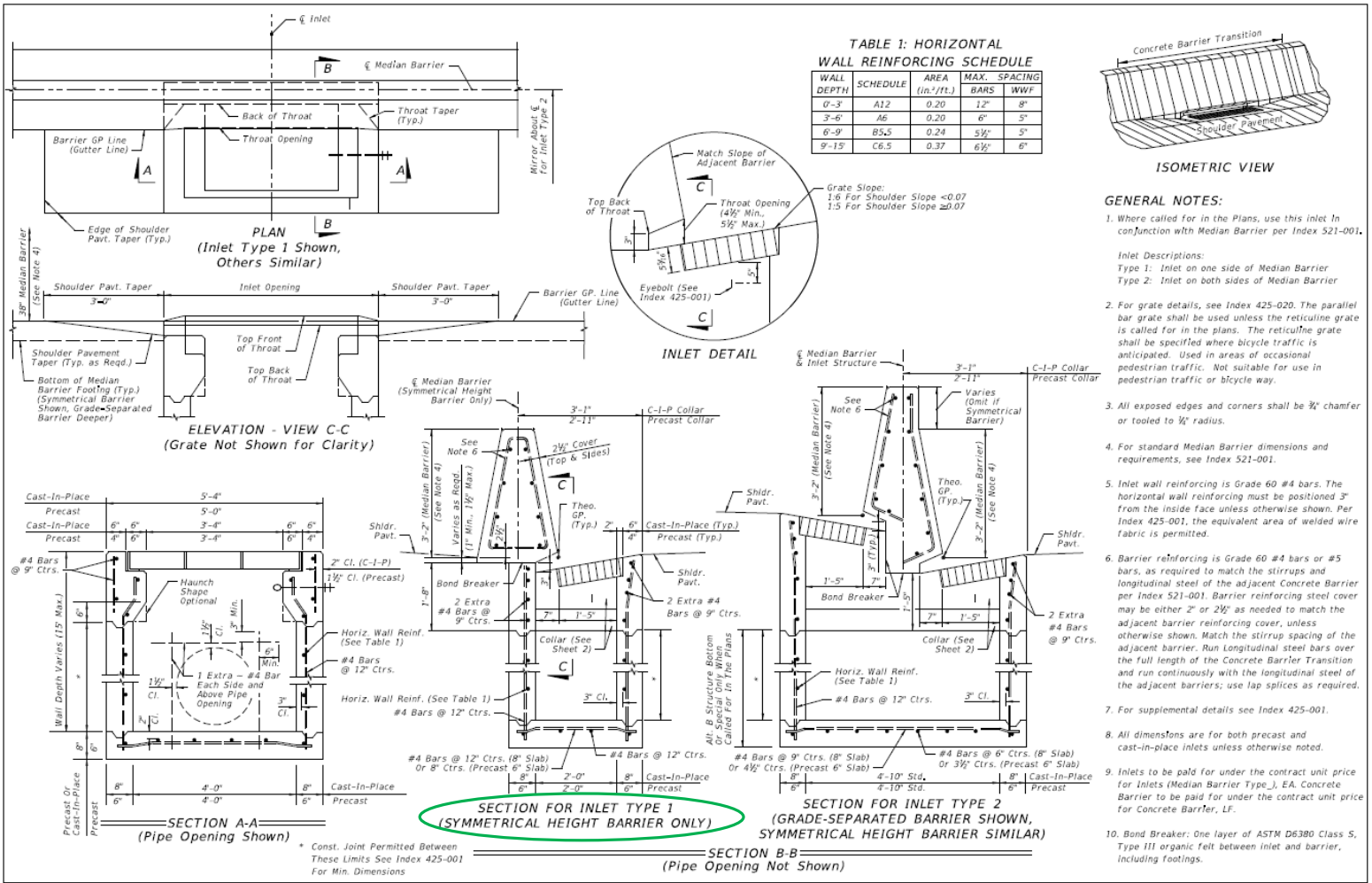
2) ***Index 521-001*** **– Concrete Barrier**
   - Complete Redevelopment – **Single-Slope Barrier**

3) ***Index 521-002*** **– Pier Protection Barrier**
   - Extensive Redevelopment – **Single-Slope Barrier**

4) ***Index 425-030*** **– Median Barrier Inlets Types 1 & 2**
   - Modified – **Single-Slope Barrier**
   - Removed Approach and Trailing “Throats”

Index 425-030 – Median Barrier Inlets Type 1 & 2

Sheet 1: Revisions for Single-Slope



- Clarified Usage Note, Plan, Elevation, and Section Views
- Removed upstream "throat" indentation
- Reduced inlet Type quantity from 5 to 2
- Clarified Label: Type 1 inlet for symmetrical barrier only

Standard Plans – Primary Index Updates:

1) ***Index 536-001*** **– Guardrail**
   - Miscellaneous Updates

2) ***Index 521-001*** **– Concrete Barrier**
   - Complete Redevelopment – **Single-Slope Barrier**

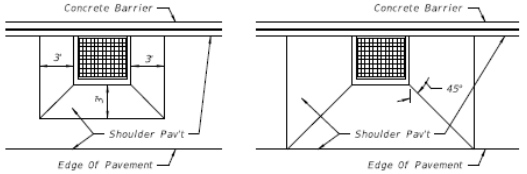
3) ***Index 521-002*** **– Pier Protection Barrier**
   - Extensive Redevelopment – **Single-Slope Barrier**

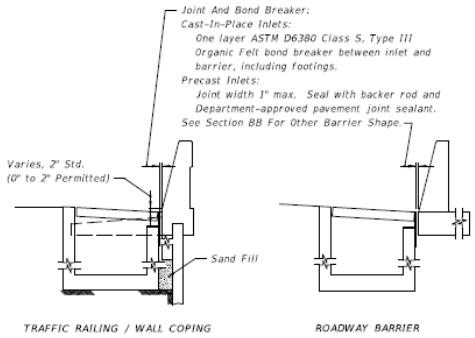
4) ***Index 425-030*** **– Median Barrier Inlets Types 1 & 2**
   - Modified – **Single-Slope Barrier**
   - Removed Approach and Trailing “Throats”

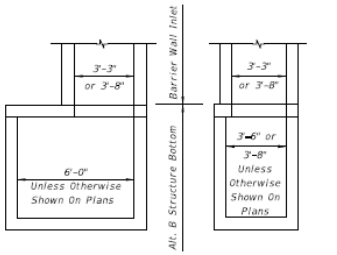
5) ***Index 425-031*** **– Shoulder Barrier Inlet**
   - Modified – **Single-Slope Barrier**

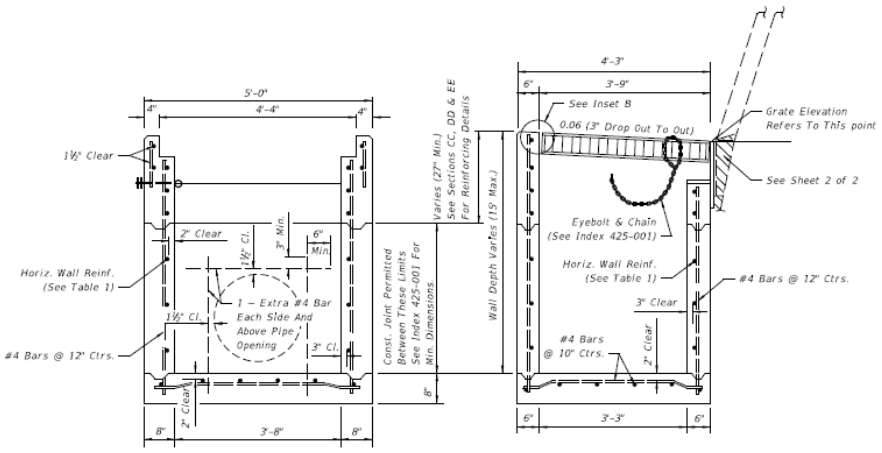
Index 425-031 – Shoulder Barrier Inlet

Sheet 1: Revisions for Single-Slope









GENERAL NOTES:

1. Where called for in the Plans, use this inlet in conjunction with Shoulder Barrier per Index 521-001 or a Wall Coping with Traffic Railing/Junction Slab per Index 521-610. Use of the inlet adjacent to other Concrete Barrier or Traffic Railing types requires approval of the Drainage Engineer. The inlet is suitable for bicycle and occasional pedestrian traffic, with roller bar installation (see INSET B), but should not be placed in a designated pedestrian travel way.
2. Inlets located in embankments constructed with earth anchored retaining wall shall be designed with minimum depths to reduce adverse impact on the anchorage system. Runs of pipe parallel to and near anchored wall shall be avoided wherever practical. Special coordination must be exercised during the design and construction of storm water systems within anchored wall systems.
3. Inlet bottoms and/or tops may be either precast or cast-in-place. Whether cast as a single unit or as multiple segments, and whether precast or cast-in-place, the upper 2'-3" of the inlet shall be reinforced in accordance with sections CC, DD and EE.
4. All exposed edges and corners shall be ¾" chamfer or tooled to ¼" radius.
5. When Alternate G grate is specified in the plans, the grate is to be hot-dip galvanized after fabrication. Field installation of the filler bar called for in Inset B will not be permitted, thereby requiring tolerance adjustment during fabrication and/or casting, or, matching grate to structure prior to galvanizing.
6. All reinforcing is Grade 60 bars. See Index 425-001 for equivalent area of welded wire fabric.
7. All dimensions are for both precast and cast-in-place inlets unless otherwise noted.
8. For supplemental details see Indexes 425-001 and 425-010.
9. Inlets to be paid for under the contract unit for Inlets (Concrete Barrier), Ea.

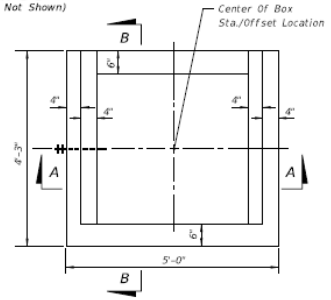


TABLE 1: HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0'-5'	A12	0.20	12"	8"
5'-10'	A6	0.20	6"	5"
10'-15'	A4	0.20	4"	3"
10'-15'	B5.5	0.24	5½"	5"

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2018-19 STANDARD PLANS	SHOULDER BARRIER INLET	INDEX	SHEET
11/01/17						425-031	1 of 2

- Clarified usage with specific Index numbers in Note 1.
- Previously, this Index was named "Barrier Wall Inlet"… similar sounding to other inlet Index titles

Standard Plans – Primary Index Updates:

✓ 1) ***Index 536-001*** **– Guardrail**
- Miscellaneous Updates

✓ 2) ***Index 521-001*** **– Concrete Barrier**
- Complete Redevelopment – **Single-Slope Barrier**

✓ 3) ***Index 521-002*** **– Pier Protection Barrier**
- Extensive Redevelopment – **Single-Slope Barrier**

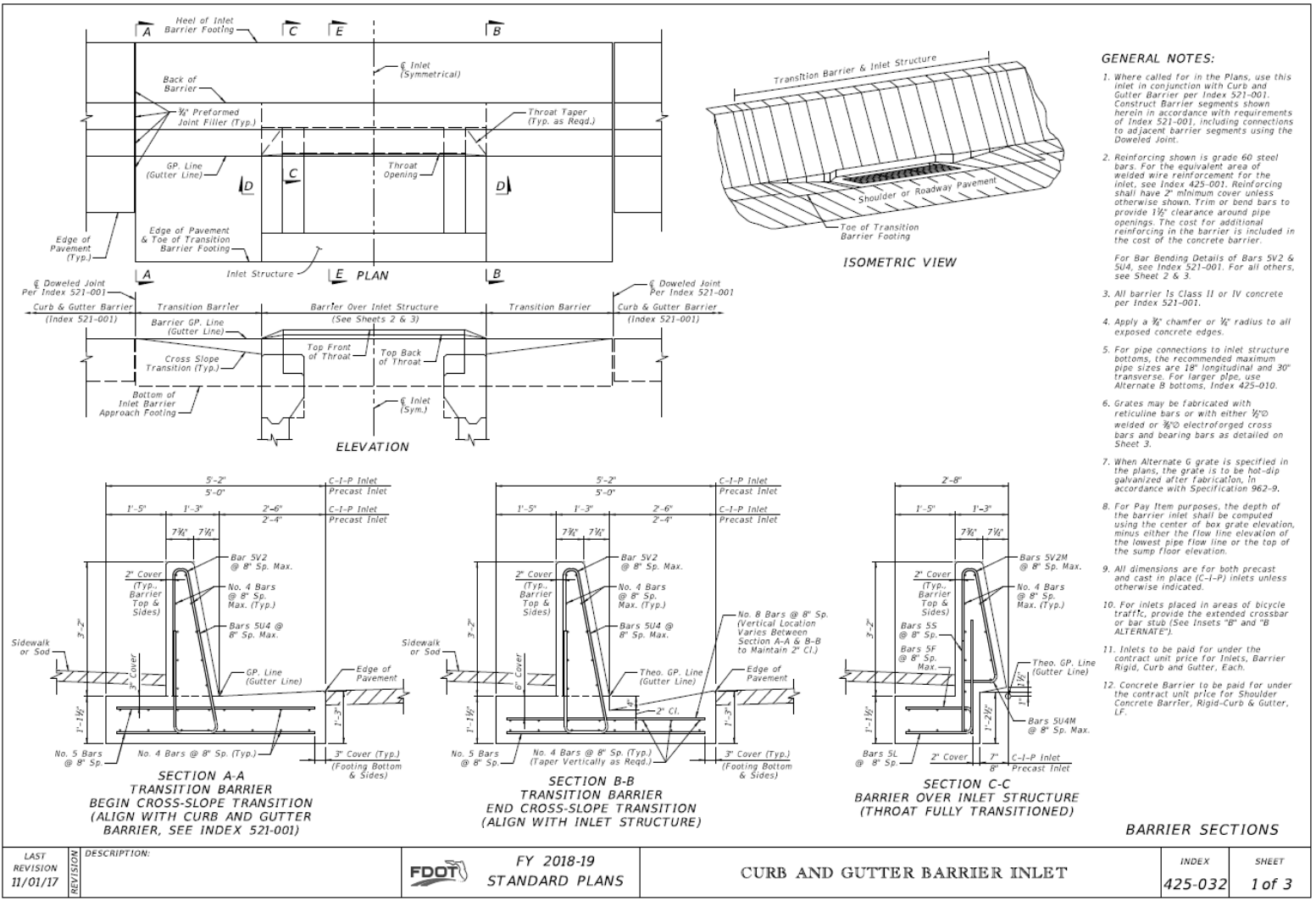
✓ 4) ***Index 425-030*** **– Median Barrier Inlets Types 1 & 2**
- Modified – **Single-Slope Barrier**
- Removed Approach and Trailing “Throats”

✓ 5) ***Index 425-031*** **– Shoulder Barrier Inlet**
- Modified – **Single-Slope Barrier**

→ 6) ***Index 425-032*** **– Curb & Gutter Barrier Inlet**
- Modified – **Single-Slope Barrier**
- New PVC Drainage Pipes from Sidewalk

Index 425-032 – Curb & Gutter Barrier Inlet

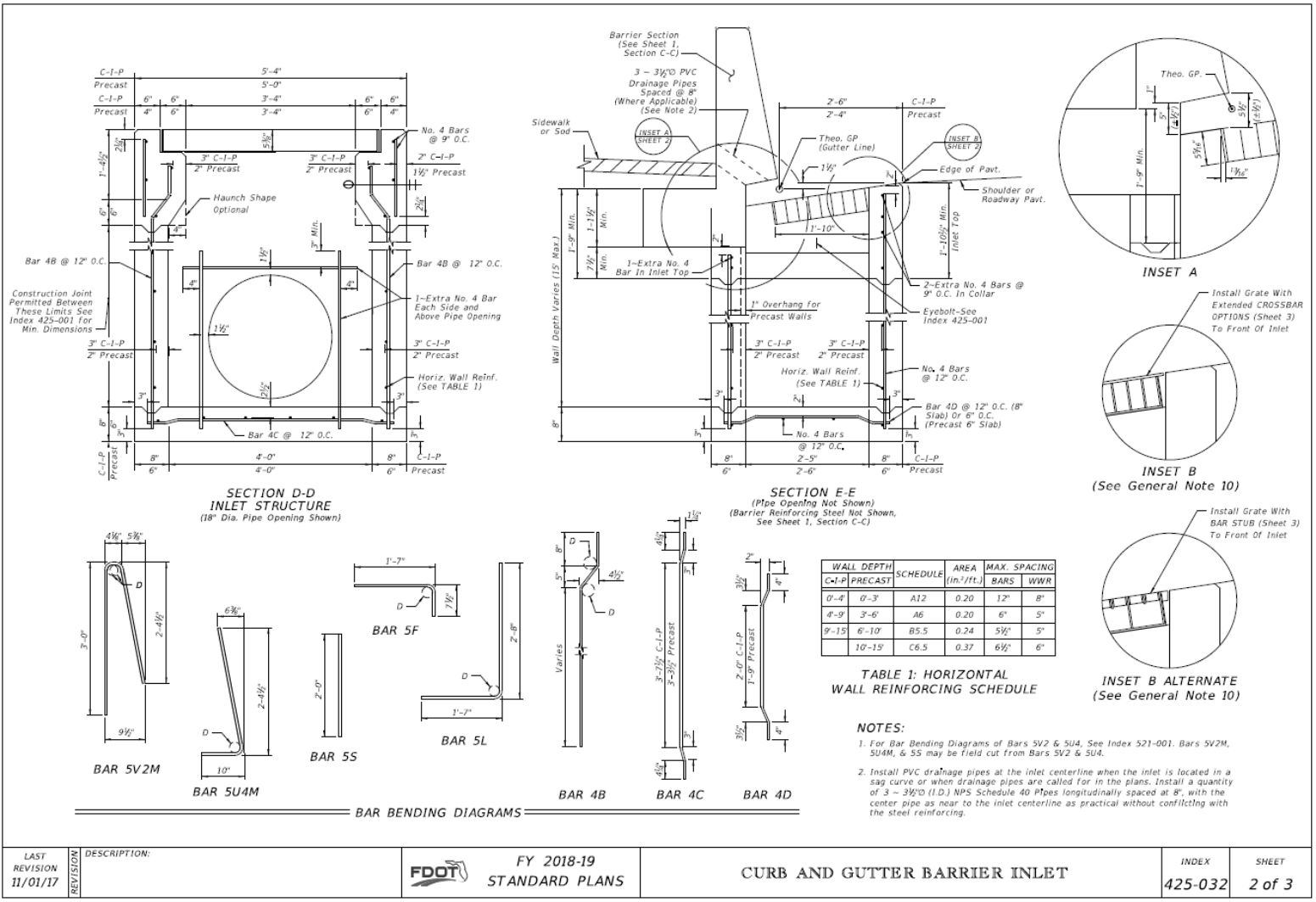
Sheet 1: Revised for Single-Slope



- Clarified Usage Note 1, Plan, Elevation, and Section Views
- Removed upstream "throat" indentation

Index 425-032 – Curb & Gutter Barrier Inlet

Sheet 2: Revised for Single-Slope



- Replaced 18" drainage slot with 3 ~ 3.5" PVC pipes (improved construct-ability, less interference with rebar)
- Revised reinforcing

Standard Plans – Primary Index Updates:

1) ***Index 536-001*** **– Guardrail**
   - Miscellaneous Updates

2) ***Index 521-001*** **– Concrete Barrier**
   - Complete Redevelopment – **Single-Slope Barrier**

3) ***Index 521-002*** **– Pier Protection Barrier**
   - Extensive Redevelopment – **Single-Slope Barrier**

4) ***Index 425-030*** **– Median Barrier Inlets Types 1 & 2**
   - Modified – **Single-Slope Barrier**
   - Removed Approach and Trailing “Throats”

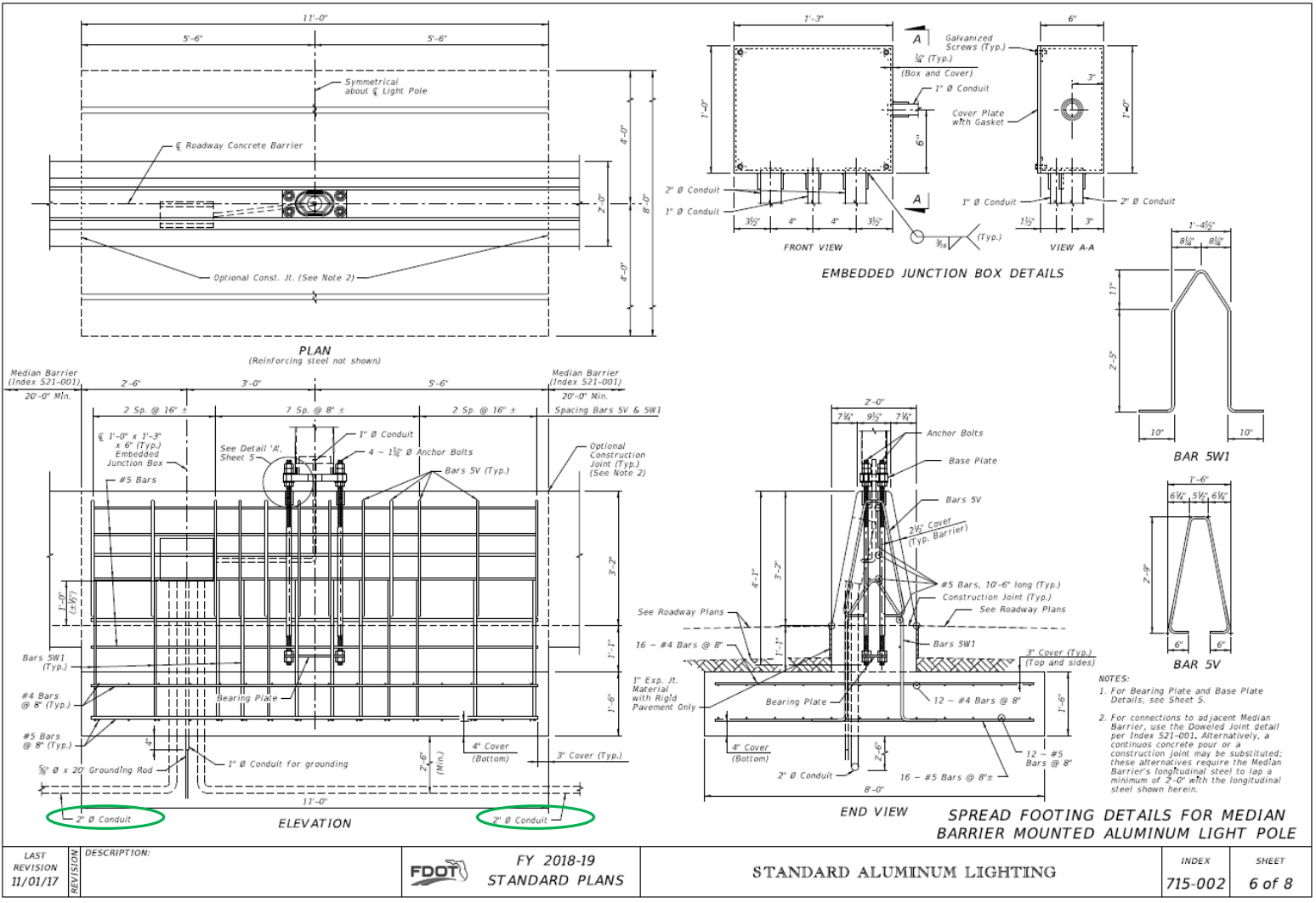
5) ***Index 425-031*** **– Shoulder Barrier Inlet**
   - Modified – **Single-Slope Barrier**

6) ***Index 425-032*** **– Curb & Gutter Barrier Inlet**
   - Modified – **Single-Slope Barrier**
   - New PVC Drainage Pipes from Sidewalk

7) ***Index 715-002*** **– Standard Aluminum Lighting**
   - Modified – **Single-Slope Barrier**

Index 715-002 – Standard Aluminum Lighting

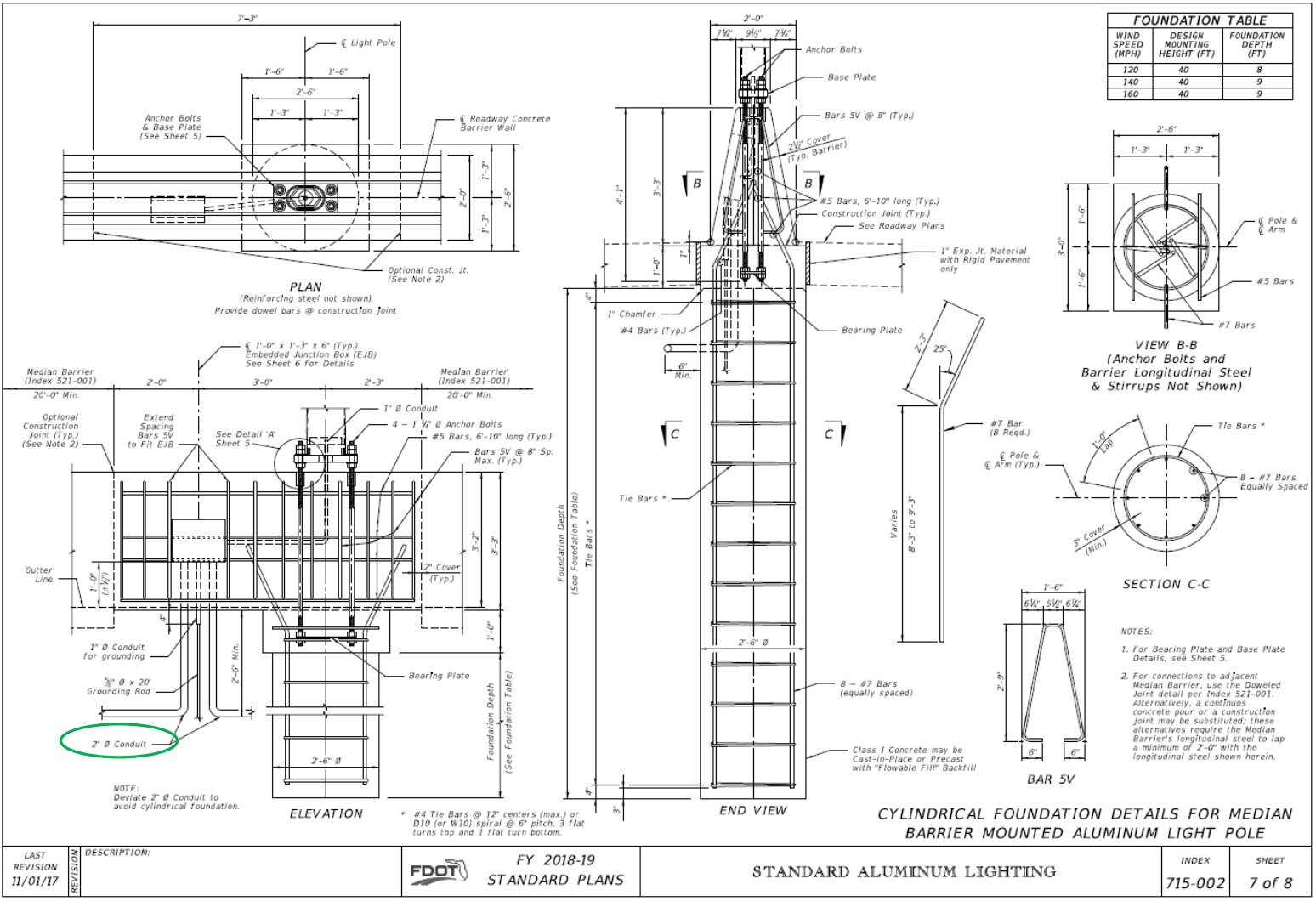
Sheet 6: Revised for Single-Slope



- Updated reinforcing: vertical bars now throughout
- Reminder: For roadside Concrete Barrier, longitudinal conduit runs underground (not in the barrier itself!)

Index 715-002 – Standard Aluminum Lighting

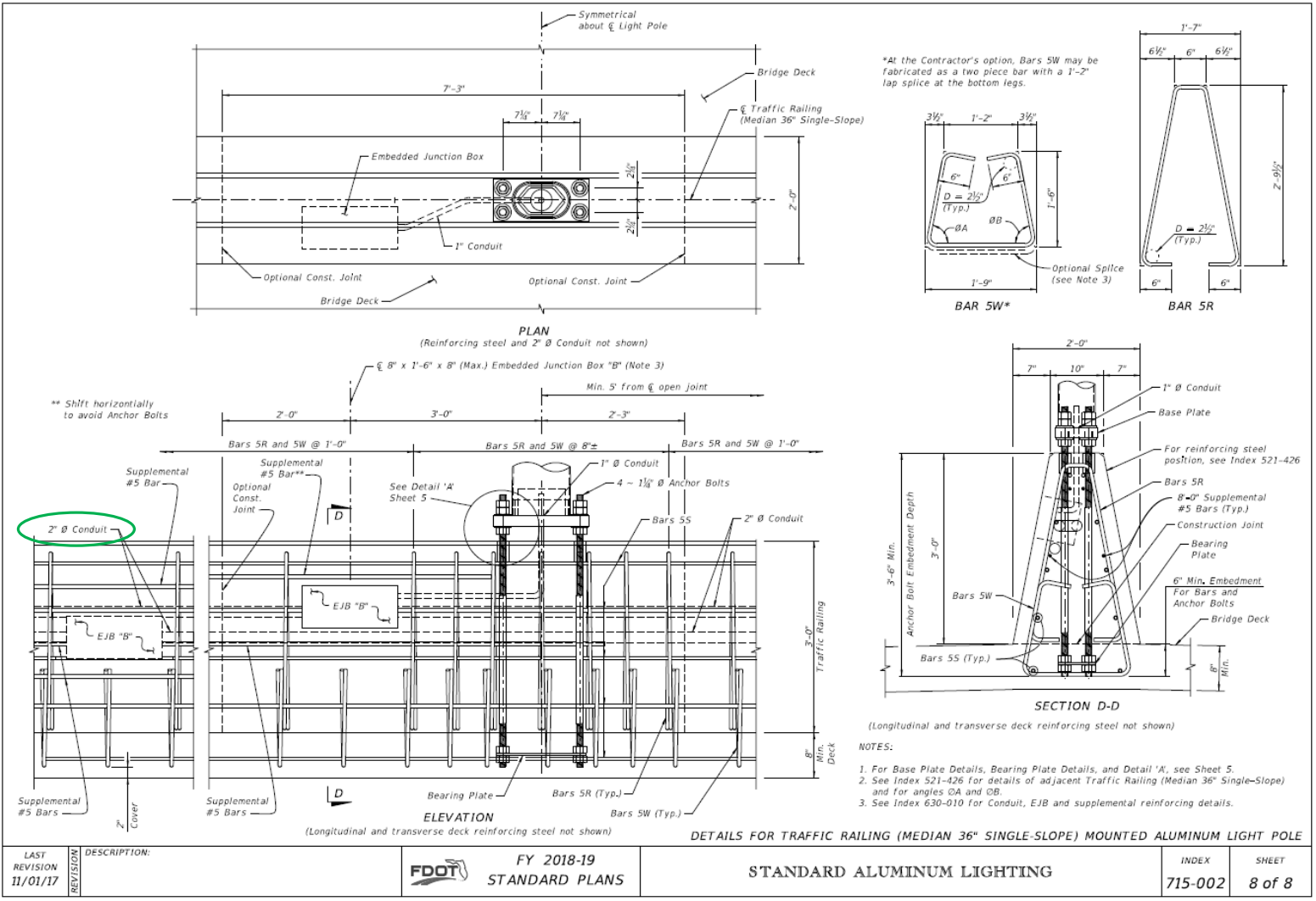
Sheet 7: Revised for Single-Slope



- Updated reinforcing: vertical bars now throughout
- Reminder: For roadside Concrete Barrier, longitudinal conduit runs underground (not in the barrier itself!)

Index 715-002 – Standard Aluminum Lighting

Sheet 8: Revised for Single-Slope



- Updated reinforcing
- Reminder: For bridge deck Traffic Railing, longitudinal conduit runs within the Traffic Railing

Standard Plans – Primary Index Updates:

1) ***Index 536-001*** **– Guardrail**
   - Miscellaneous Updates

2) ***Index 521-001*** **– Concrete Barrier**
   - Complete Redevelopment – **Single-Slope Barrier**

3) ***Index 521-002*** **– Pier Protection Barrier**
   - Extensive Redevelopment – **Single-Slope Barrier**

4) ***Index 425-030*** **– Median Barrier Inlets Types 1 & 2**
   - Modified – **Single-Slope Barrier**
   - Removed Approach and Trailing “Throats”

5) ***Index 425-031*** **– Shoulder Barrier Inlet**
   - Modified – **Single-Slope Barrier**

6) ***Index 425-032*** **– Curb & Gutter Barrier Inlet**
   - Modified – **Single-Slope Barrier**
   - New PVC Drainage Pipes from Sidewalk

7) ***Index 715-002*** **– Standard Aluminum Lighting**
   - Modified – **Single-Slope Barrier**

Questions?

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Index 102-100 (previously Index 415) "Temporary Barrier"

- This index is now generic to multiple types of temporary barrier systems.

1. Temporary concrete barrier systems on roadways may be any of the following:

   a. The FDOT Type K Temporary Concrete Barrier system (Design Standard Index 414). F-Shape Units. For temporary concrete barrier systems on bridges see Design Standard Index No. 414.

   b. Proprietary temporary concrete barrier systems meeting NCHRP Report 350 Test Level 3 criteria which are included on the Approved Products List.

   c. Water Filled Barrier (Free-Standing)

- "Deflection Space" is now "Setback Distance" and the previous table has been revised and simplified. Anchored "Setback Distance" was previously as low as 1' and is now 2'.

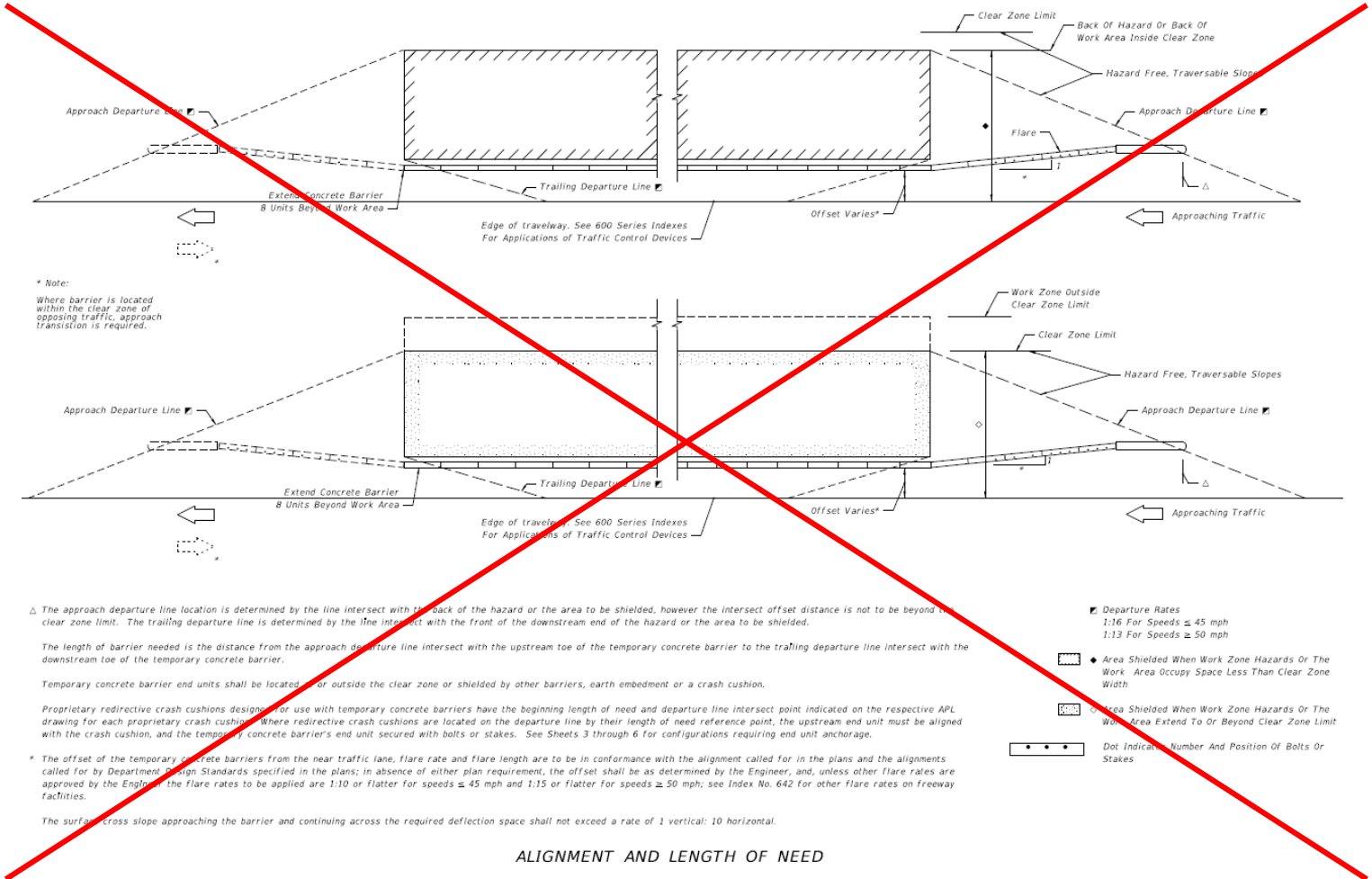
INSTALLATION DATA			
CONDITION	LATERAL OFFSET	SETBACK DISTANCE	PAVEMENT/ ASPHALT WIDTH
Anchored	2' Min.	2' Min.*	1' Min.
Free-standing	2' Min.	4' Min.	4' Min.

* For Bridge Decks see Index 102-110 or APL.

Standard Plans Update Training

Index 102-100 (previously Index 415) "Temporary Barrier"

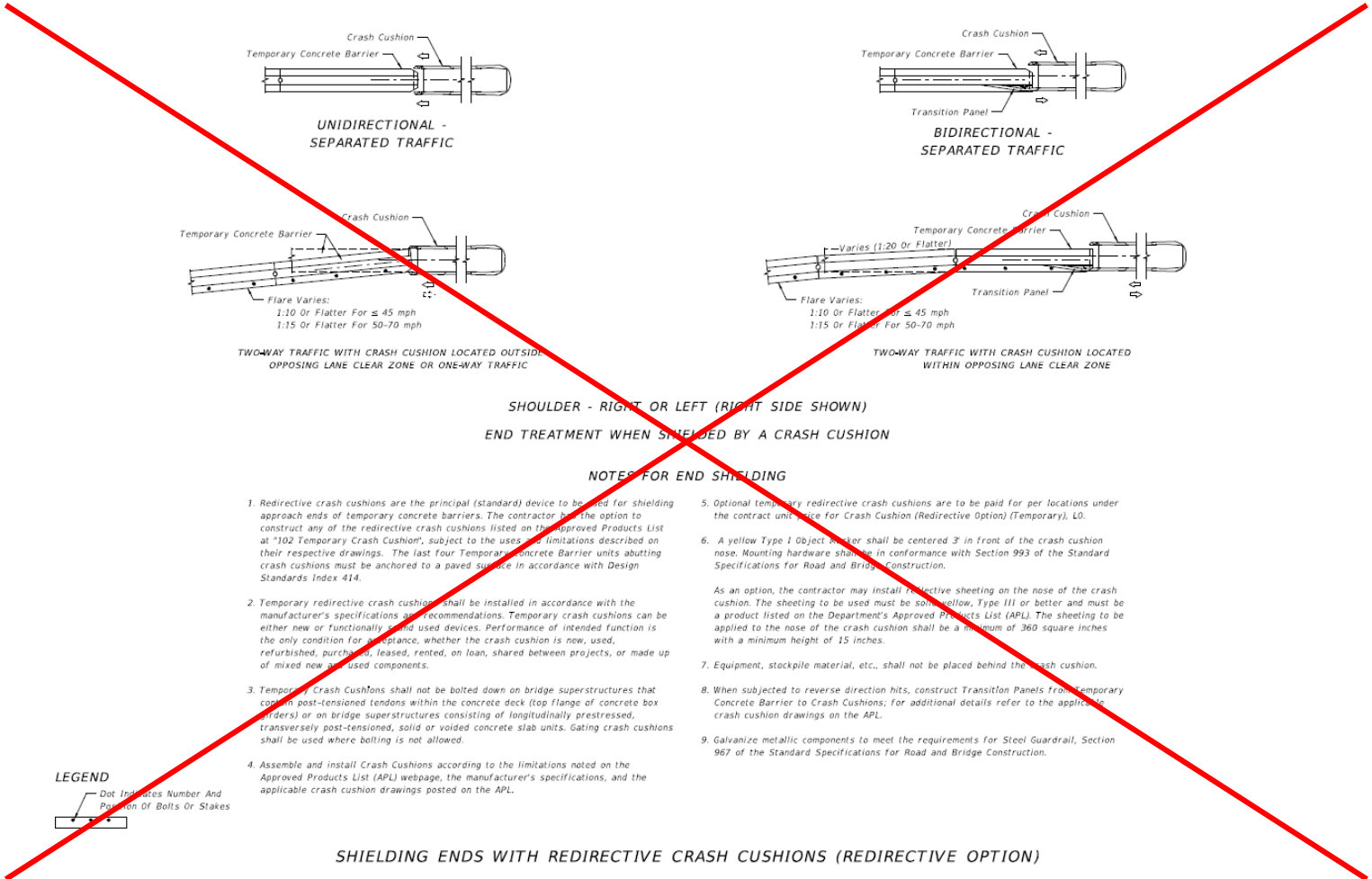
- Length of need has been removed from the index. See the Standard Plan Instructions for length of need calculations.



Standard Plans Update Training

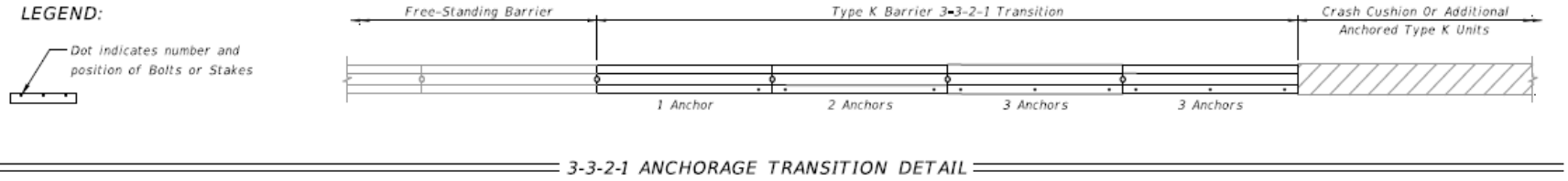
Index 102-100 (previously Index 415) “Temporary Barrier”

- Crash cushion details have been moved to Index 102-110. See APL drawings for crash cushion details related to proprietary barriers.



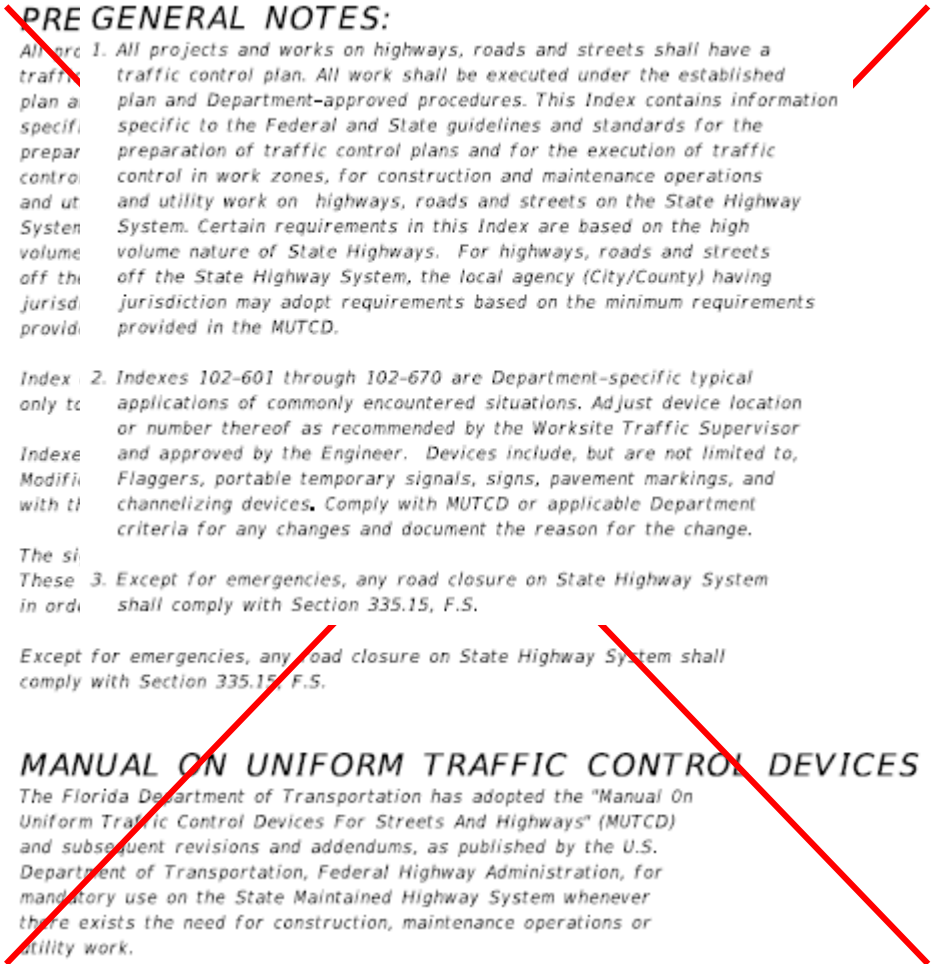
Index 102-110 (previously Index 414)
"Type K Temporary Concrete Barrier System"

- There are Index-wide revisions, but they are mostly minor and relate to the temporary barrier changes. Some information that was previously shown (e.g., setback distance) is now located solely in Index 102-100 "Temporary Barrier".
- The fabrication details that were on sheets 1-3 of 15 are now shown on sheets 15-17 of 17.
- Significantly, added a "3-3-2-1 Anchorage Transition Detail" on sheet 1 of 17.



Index 102-600 (previously Index 600) "General Information for Traffic Control Through Work Zones" Sheet 1 of 12

- Revised Preface to General Notes along with the information contained therein.



PRE GENERAL NOTES:

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1. All projects and works on highways, roads and streets shall have a traffic control plan. All work shall be executed under the established plan and Department-approved procedures. This Index contains information specific to the Federal and State guidelines and standards for the preparation of traffic control plans and for the execution of traffic control in work zones, for construction and maintenance operations and utility work on highways, roads and streets on the State Highway System. Certain requirements in this Index are based on the high volume nature of State Highways. For highways, roads and streets off the State Highway System, the local agency (City/County) having jurisdiction may adopt requirements based on the minimum requirements provided in the MUTCD.

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2. Indexes 102-601 through 102-670 are Department-specific typical applications of commonly encountered situations. Adjust device location or number thereof as recommended by the Worksite Traffic Supervisor and approved by the Engineer. Devices include, but are not limited to, Flaggers, portable temporary signals, signs, pavement markings, and channelizing devices. Comply with MUTCD or applicable Department criteria for any changes and document the reason for the change.

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3. Except for emergencies, any road closure on State Highway System shall comply with Section 335.15, F.S.

Except for emergencies, any road closure on State Highway System shall comply with Section 335.15, F.S.

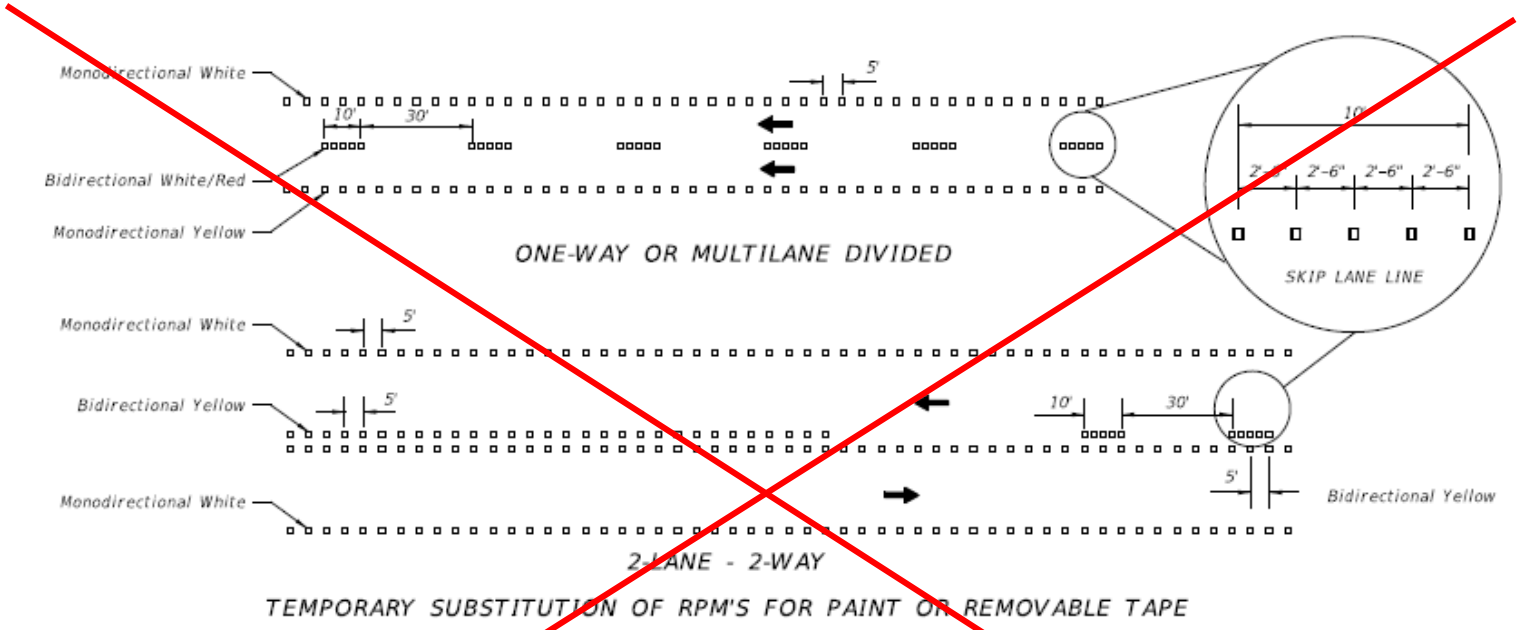
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

The Florida Department of Transportation has adopted the "Manual On Uniform Traffic Control Devices For Streets And Highways" (MUTCD) and subsequent revisions and addendums, as published by the U.S. Department of Transportation, Federal Highway Administration, for mandatory use on the State Maintained Highway System whenever there exists the need for construction, maintenance operations or utility work.

Standard Plans Update Training

Index 102-600 (previously Index 600)
"General Information for Traffic Control Through Work Zones"
Sheet 12 of 12

- Removed Temporary Substitution of RPM's for Paint or Removable Tape.



TEMPORARY SUBSTITUTION OF RPM'S FOR PAINT OR REMOVABLE TAPE

1. Paint or removable tape are the required work zone markings and shall be placed in accordance with the plans and specifications. If these work zone markings can not be placed due to weather restrictions identified in the appropriate specification, temporary substitution of RPM's for work zone markings will be allowed until the weather condition permits the placement of appropriate work zone marking. Temporary substitution of RPM's for work zone markings will be allowed for equipment malfunction, placement of the appropriate work zone marking shall be made within 3 days, or sooner if possible. When RPM's are used as a temporary substitution for work zone markings the following shall apply:

   a. Lane widths identified in the plans must be maintained. Placement of RPM's should consider where work zone markings will be placed as soon as conditions allow. If the RPM's can not be placed so that the lane width is maintained after the placement of the work zone markings, the conflicting RPM's must be removed.

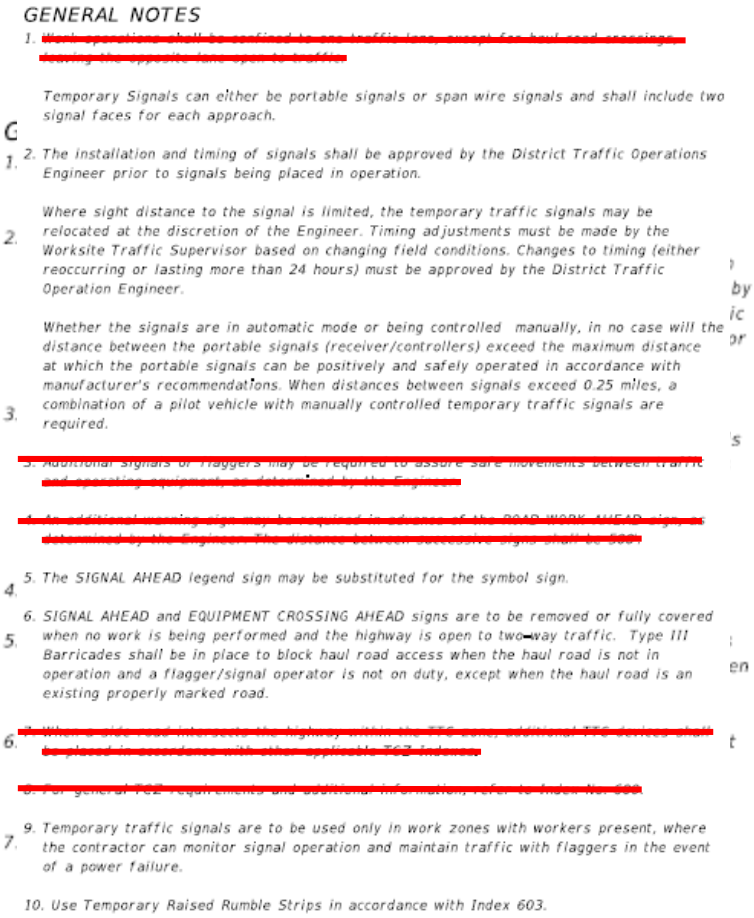
   b. The color of the RPM body and the reflective face shall conform to the color of the marking for which they substitute.

   c. In work zones, B RPM's must be used to form lane lines, edge lines and temporary gore areas as a temporary substitute for paint or removable tape at the spacing shown above.

Standard Plans Update Training

Index 102-606 (previously Index 606) "Two-Lane, Two-Way, Work Within the Travel Way – Signal Control" Sheet 1 of 4

- Revised General Notes. Added another option for a 0.50 mile closure.



GENERAL NOTES

1. [redacted]

   Temporary Signals can either be portable signals or span wire signals and shall include two signal faces for each approach.

2. The installation and timing of signals shall be approved by the District Traffic Operations Engineer prior to signals being placed in operation.

   Where sight distance to the signal is limited, the temporary traffic signals may be relocated at the discretion of the Engineer. Timing adjustments must be made by the Worksite Traffic Supervisor based on changing field conditions. Changes to timing (either reoccurring or lasting more than 24 hours) must be approved by the District Traffic Operation Engineer.

3. Whether the signals are in automatic mode or being controlled manually, in no case will the distance between the portable signals (receiver/controllers) exceed the maximum distance at which the portable signals can be positively and safely operated in accordance with manufacturer's recommendations. When distances between signals exceed 0.25 miles, a combination of a pilot vehicle with manually controlled temporary traffic signals are required.

4. [redacted]

5. The SIGNAL AHEAD legend sign may be substituted for the symbol sign.

6. SIGNAL AHEAD and EQUIPMENT CROSSING AHEAD signs are to be removed or fully covered when no work is being performed and the highway is open to two-way traffic. Type III Barricades shall be in place to block haul road access when the haul road is not in operation and a flagger/signal operator is not on duty, except when the haul road is an existing properly marked road.

7. [redacted]

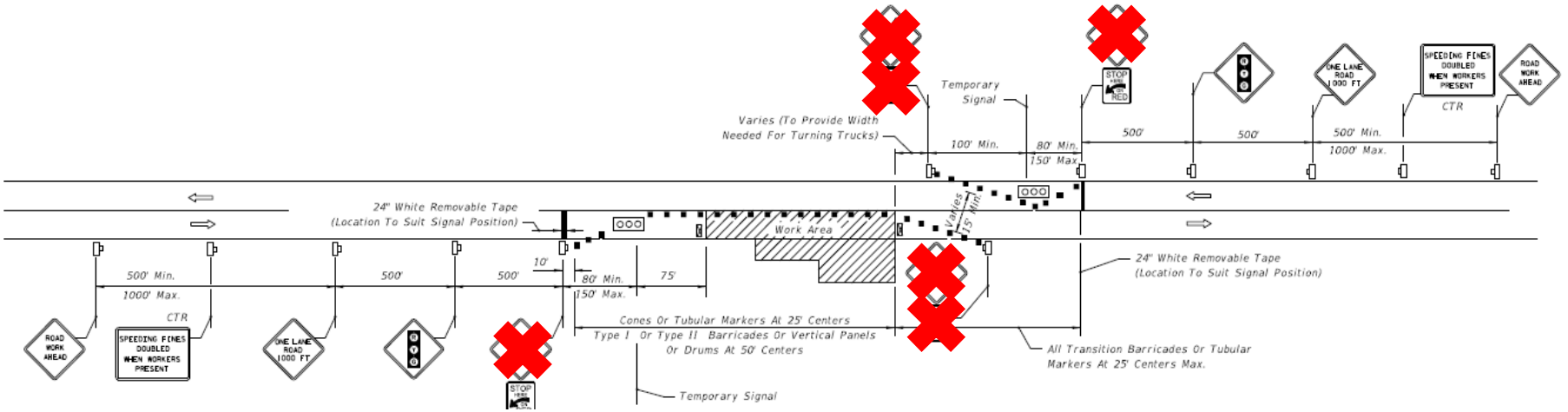
8. [redacted]

9. Temporary traffic signals are to be used only in work zones with workers present, where the contractor can monitor signal operation and maintain traffic with flaggers in the event of a power failure.

10. Use Temporary Raised Rumble Strips in accordance with Index 603.

Index 102-606 (previously Index 606) "Two-Lane, Two-Way, Work Within the Travel Way – Signal Control"

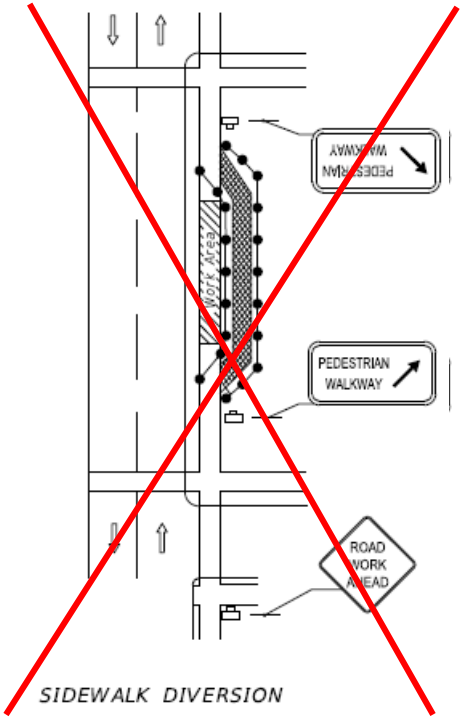
- Removed "Reverse Curve" and "Keep Right" signs from all sheets.



Index 102-660 (previously Index 660) "Pedestrian Control for Closure of Sidewalks"

- Revised "General Notes". The most significant change being shown below.
- Revised "Sidewalk Diversion" detail to show temporary sidewalk instead of a diversion into the traveled way. A diversion into the traveled way is still allowed, but the feasibility is limited.

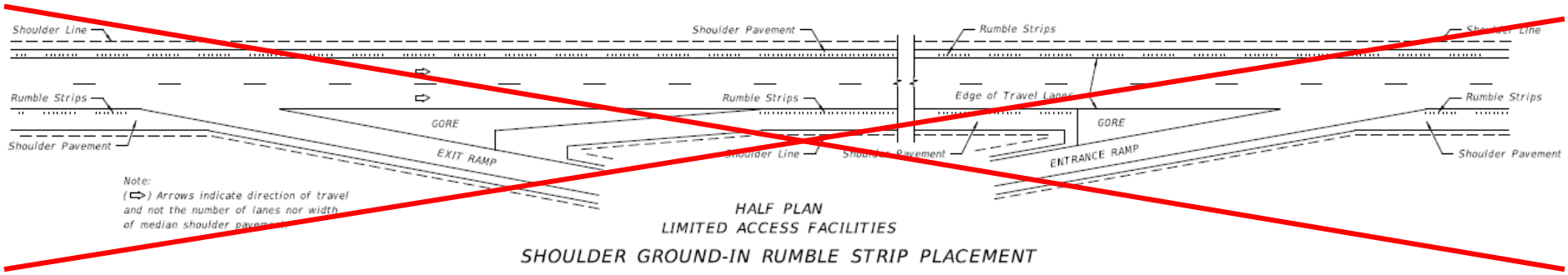
6. When construction activities involve sidewalks on both sides of the street, stage the construction so that one sidewalk is in service at all times. If this is not feasible and both sidewalks must be closed, as determined by the Engineer, provide a detour to guide pedestrians around the construction zone.



SIDEWALK DIVERSION

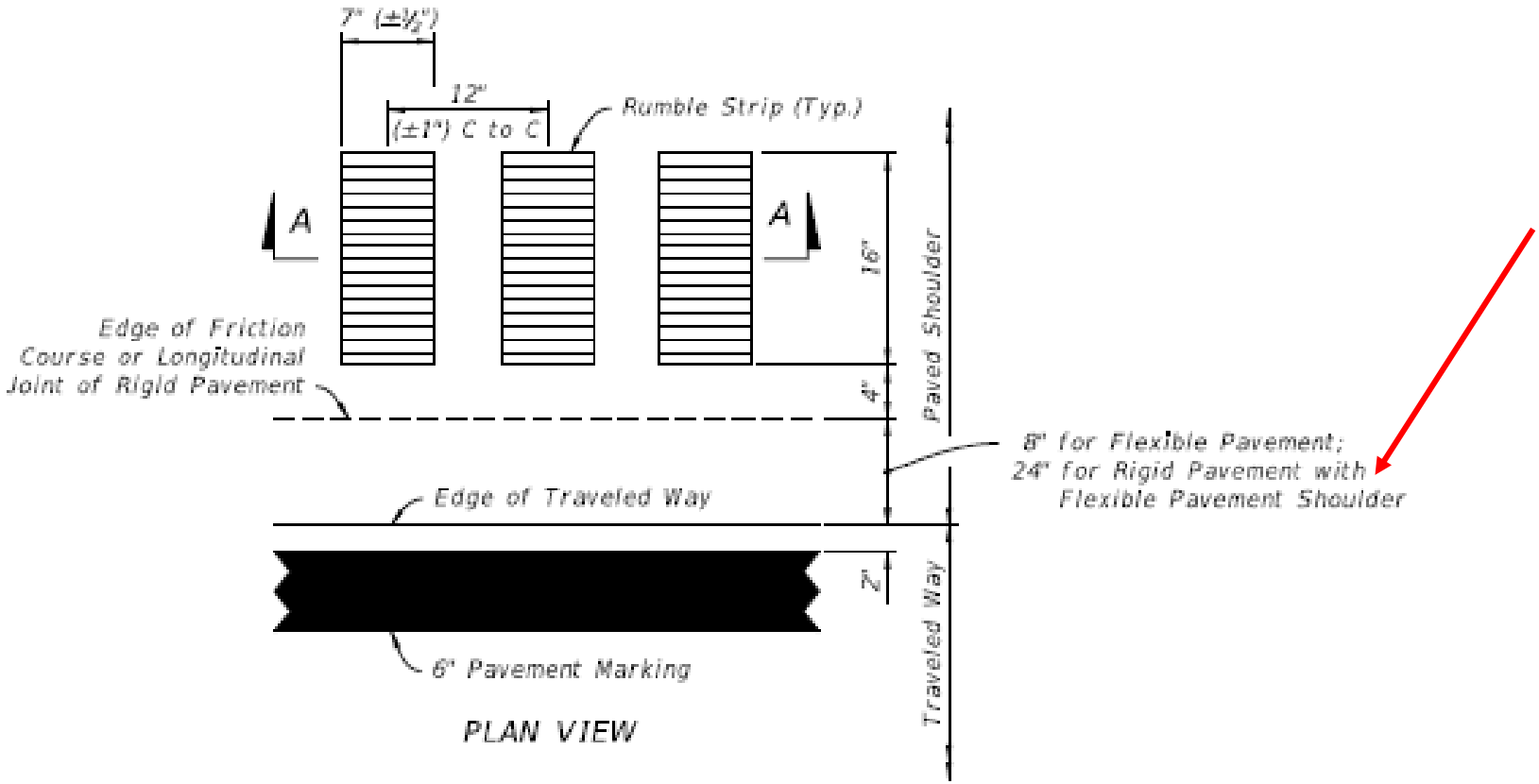
Index 546-010 (previously Index 518) "Ground-In Rumble Strips"

- As part of the effort to remove design information from the Standard Plans, the "Shoulder Ground-In Rumble Strip Placement" detail has been removed and placed into the FDM 211.4.4. For the time being, the placement details are also described in the "General Notes".



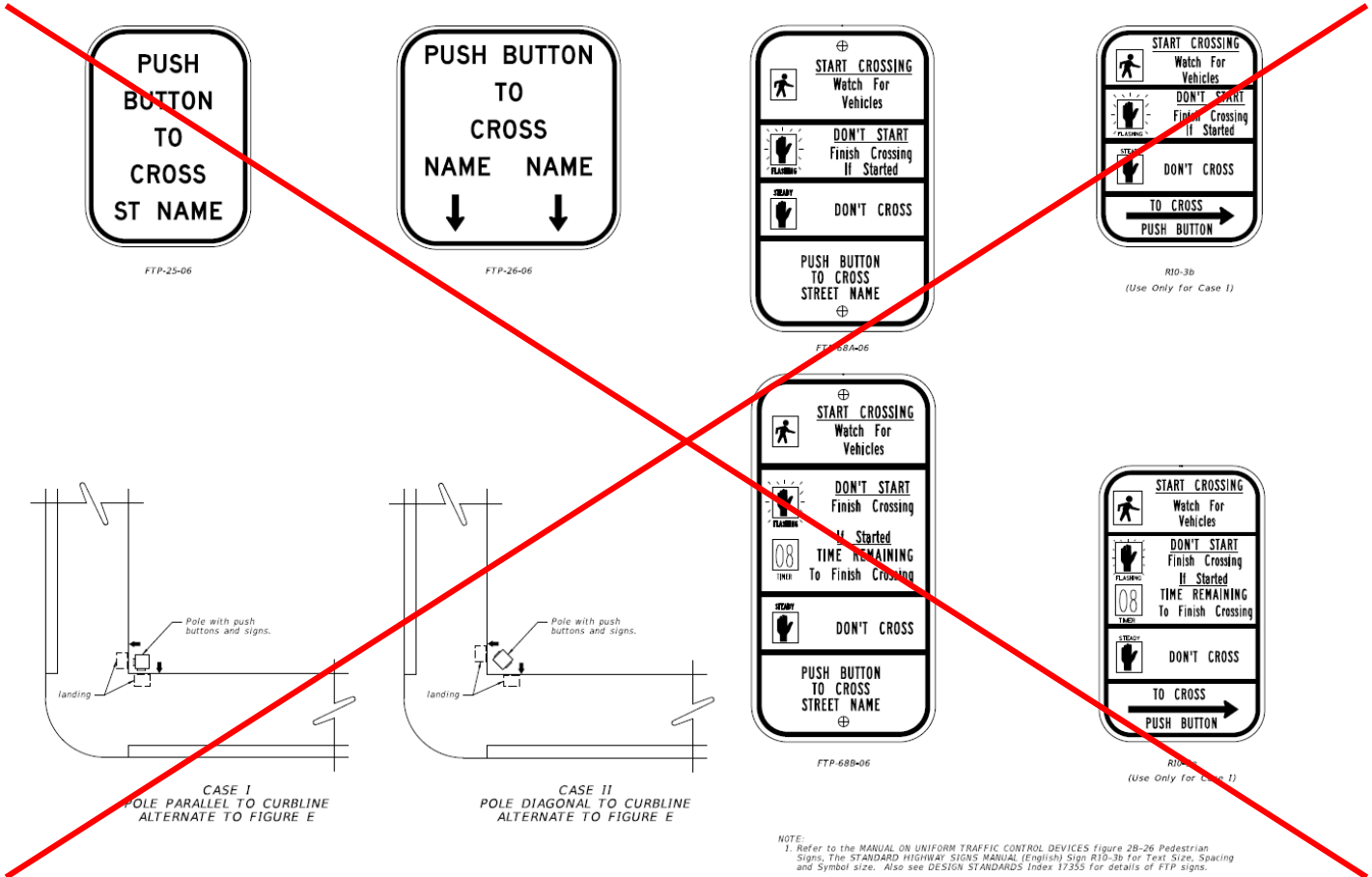
Index 546-010 (previously Index 518) "Ground-In Rumble Strips"

- The concrete pavement details on the old sheet 2 of 2 have been removed. The "Rigid Pavement with Flexible Pavement Shoulder" detail has been incorporated into "Detail 'A'" of the Standard Plan. The Profiled Thermoplastic criteria has been moved to FDM 211.4.4.2.



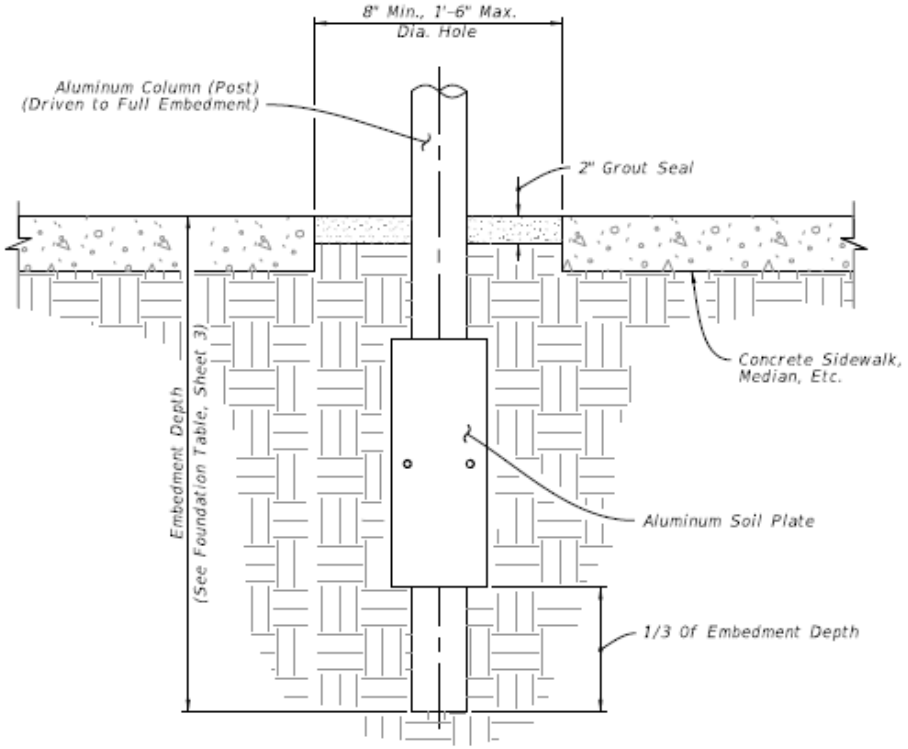
Index 665-001 (previously Index 17784) "Pedestrian Detector Assembly Installation Details"

- The entire Index has been reconfigured, but, in general, the content is the same.
- Removed sheet with sign details and pushbutton location details (old sheet 2 of 2).



Index 700-010 (previously Index 11860) "Single Column Ground Signs" Sheet 5 of 9

- Removed "Concrete/Stub Detail".
- Revised "Driven Post Detail".

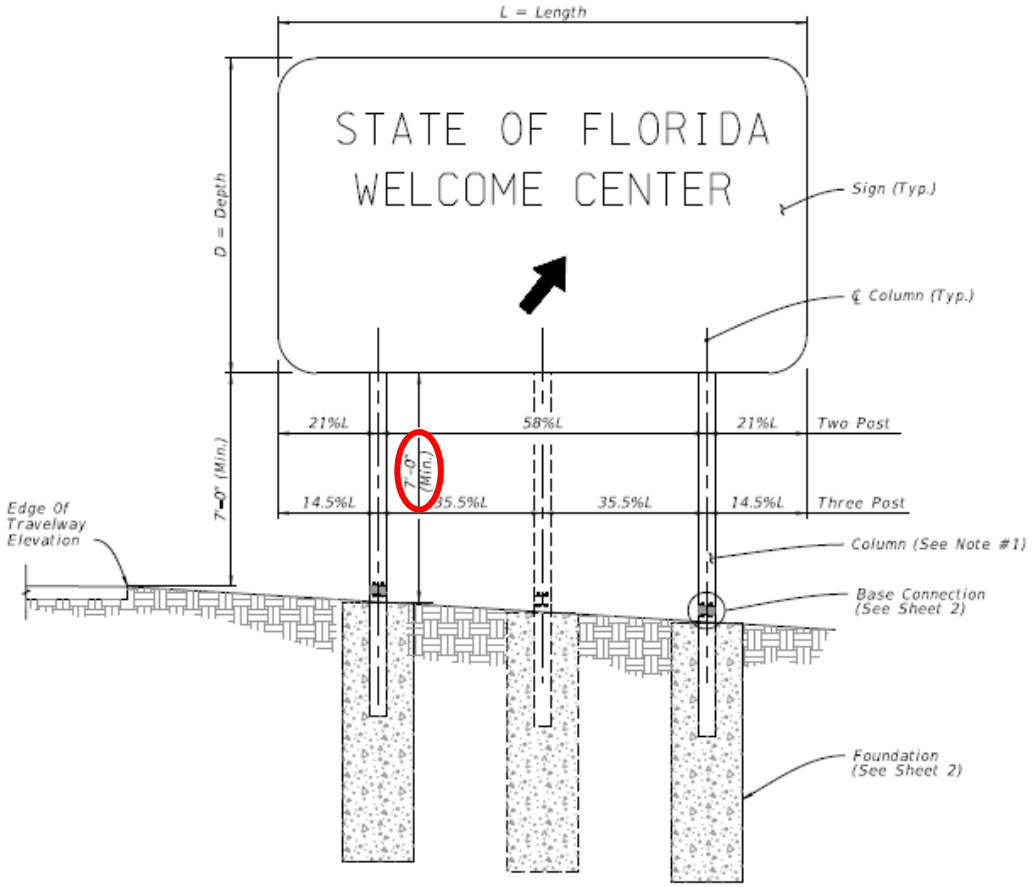


DRIVEN POST DETAIL

(Frangible Post In Crossovers, Medians & Sidewalks)

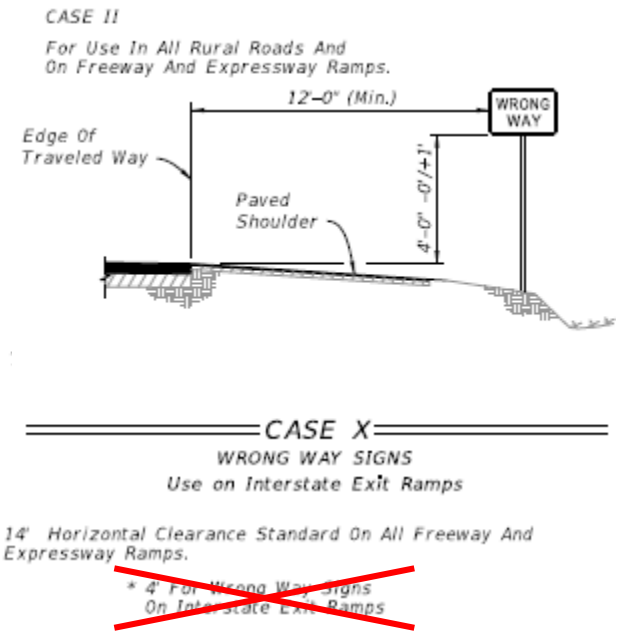
Index 700-020 (previously Index 11200) "Multi-Column Ground Sign" Sheet 1 of 3

- Deleted 8' (Max.) requirement.
- Added 7' (Min.) requirement for length of post from base connection to bottom of sign panel.



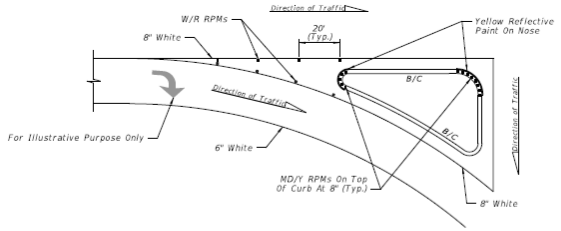
Index 700-101 (previously Index 17302)
"Typical Sections for Placement of Single & Multi-Column Signs"

- There are Index-wide changes for consistency, but most are relatively minor.
- Removed wrong way sign criteria out of the "Case II" detail and created a "Case X" detail specifically for wrong way signs.

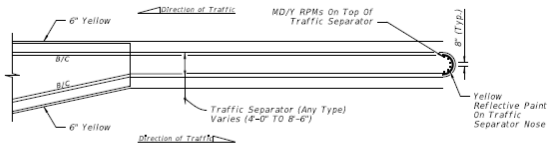


Index 706-001 (previously Index 17352) "Typical Placement of Raised Pavement Markers"

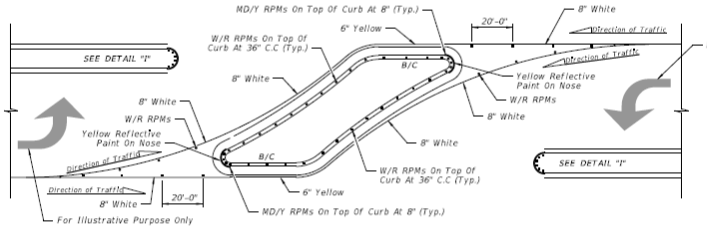
- There are Index-wide changes, but most are relatively minor (e.g., "Reflective" to "Raised", note changes, etc.).
- Two new sheets have optional RPM details for median openings, islands, and traffic separators that, if used, should be called for in the Plans.



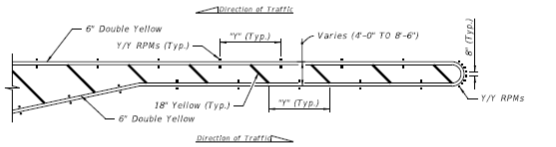
DETAIL "G"



DETAIL "J"



DETAIL "H"



DETAIL "K"

RPM PLACEMENT AT ISLANDS
(When called for in the Plans)

RPM PLACEMENT AT TRAFFIC SEPARATORS
(When called for in the Plans)

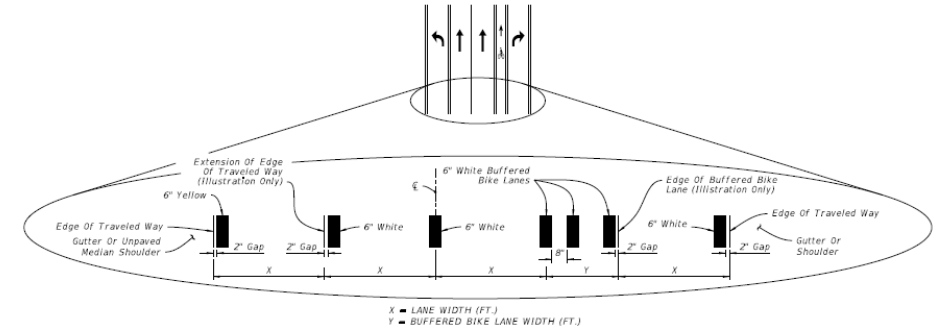
POSTED SPEED LIMIT MPH	"Y" FEET
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40

NOTES:
1. For Type "E" Curb install RPMs along the pavement edge marking using the same spacing shown.
2. Orient traffic faces of RPMs in median radii to be parallel to direction of travel lanes.

LEGEND:
B/C = BACK OF CURB
EOP = EDGE OF PAVEMENT
RPM = RAISED PAVEMENT MARKER
W/R = WHITE/RED RPM
Y/Y = YELLOW/YELLOW RPM
Y/R = YELLOW/RED RPM
MD/Y = MONO-DIRECTIONAL YELLOW RPM

Index 711-001 (previously Index 17346) "Pavement Markings"

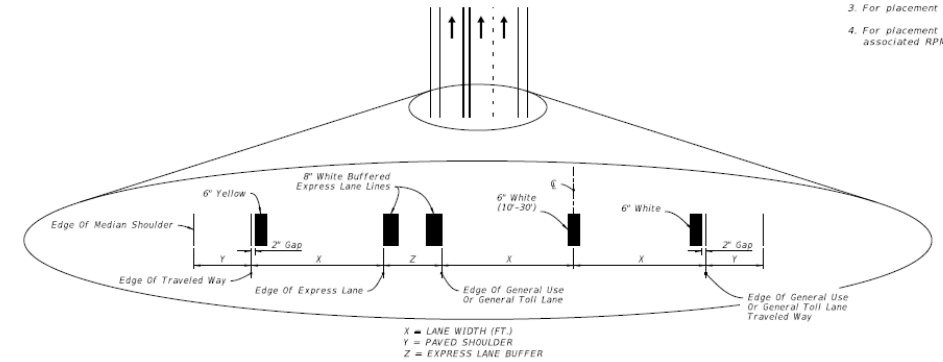
- There are Index-wide changes for consistency, but most are relatively minor.
- Two new sheets have been added to clearly show longitudinal markings.



INTERSECTION APPROACH STRIPING WITH TURN LANES AND BUFFERED BIKE LANE KEY HOLE

NOTES:

1. Lane widths (X) may not be same for each lane in the section.
3. For placement of RPMs, see Index 706-001.
4. For placement of Express Lane markers and associated RPMs, see the Plans.

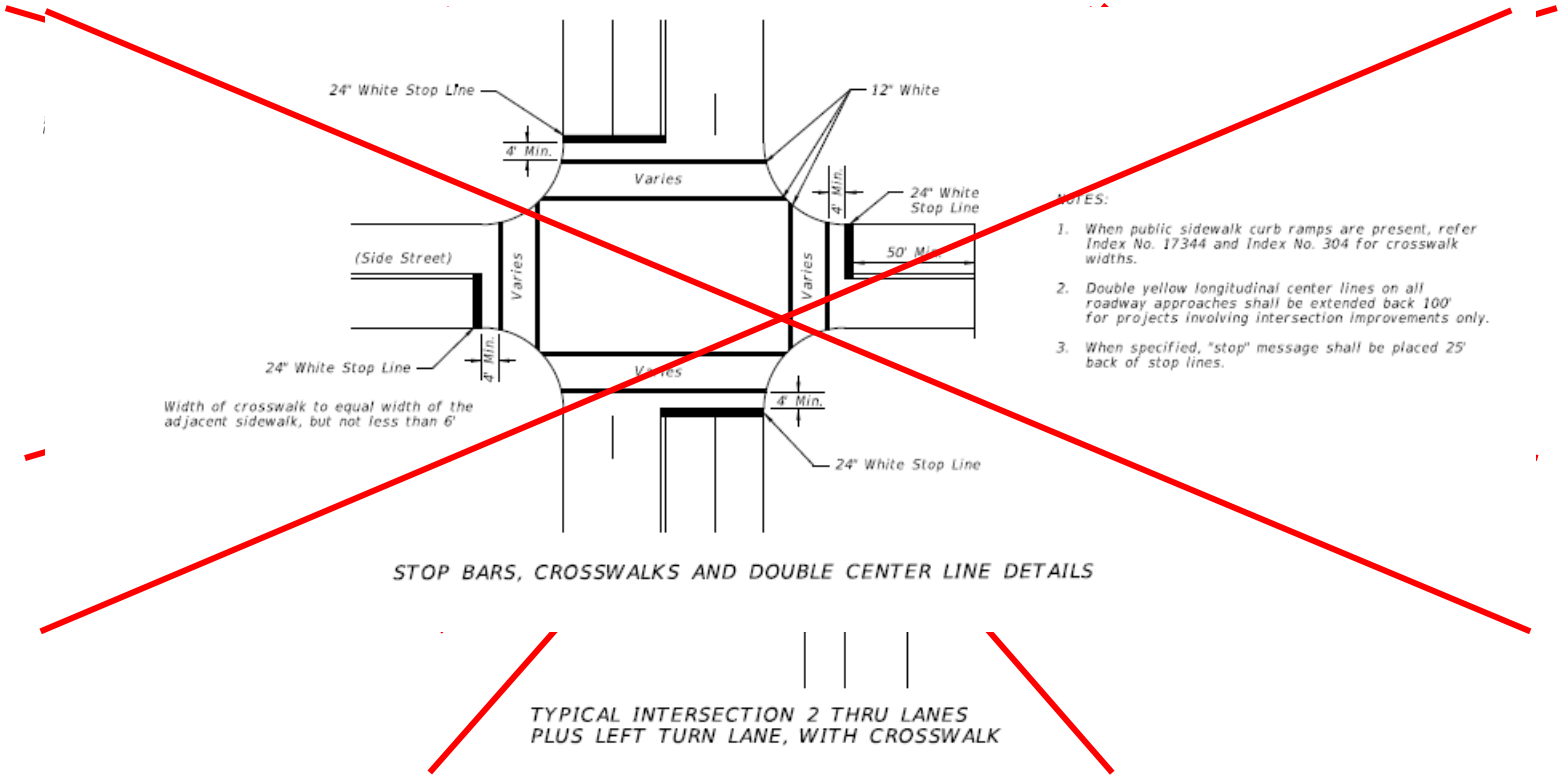


BUFFERED EXPRESS LANE STRIPING

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

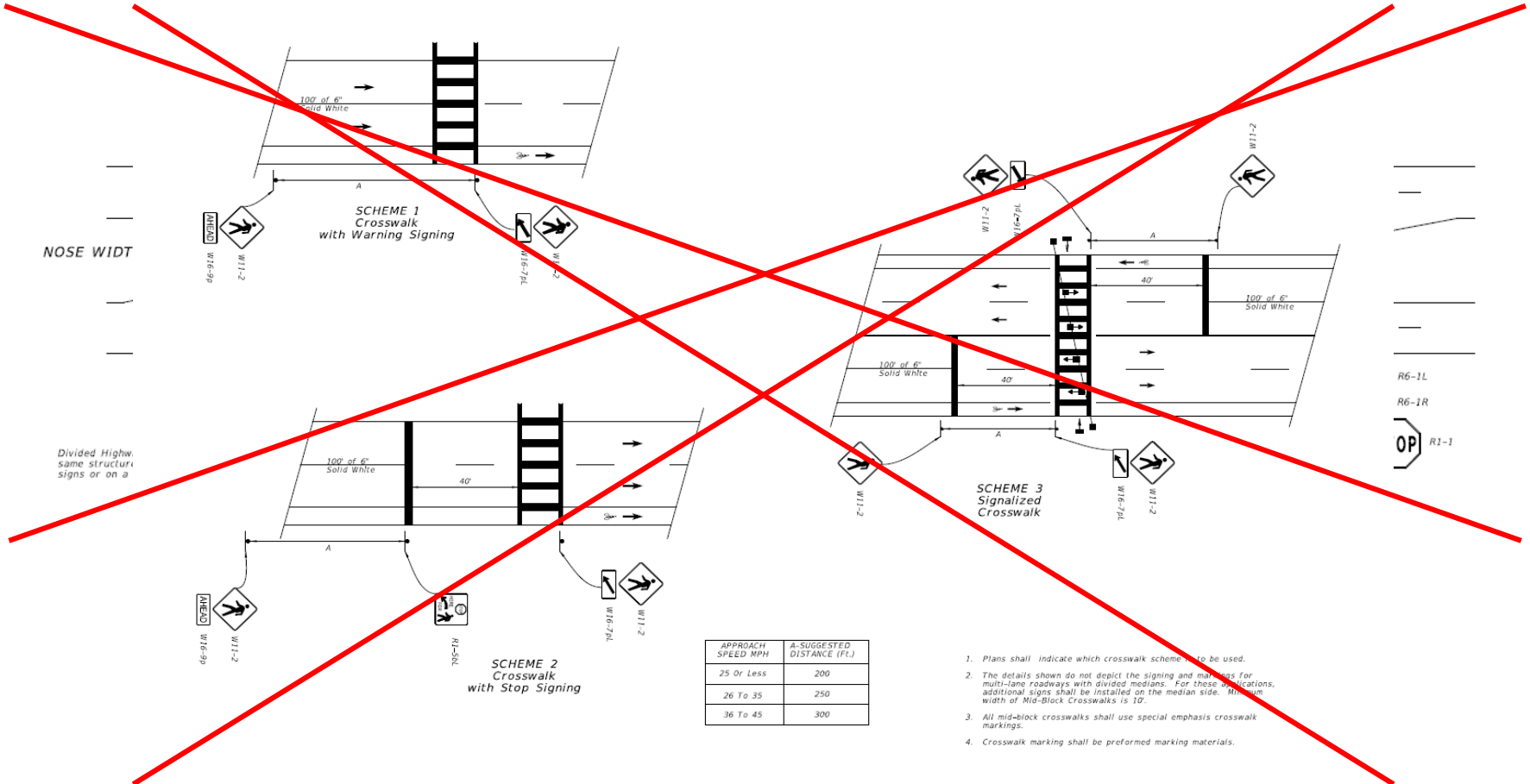
Index 711-001 (previously Index 17346) "Pavement Markings"

- Removed the following details:
  - "Typical Crosswalk Markings for Curb Ramps" on sheet 6 of 17 (old)
  - "Restricted Left Turn Marking" on sheet 7 of 17 (old)
  - "Typical Intersection 2 Thru Lanes Plus Left Turn Lane, with Crosswalk" on sheet 7 of 17 (old)
  - "Stop Bars, Crosswalks and Double Center Line Details" on sheet 7 of 17 (old)



Index 711-001 (previously Index 17346) "Pavement Markings"

- Removed the "One-Way Signs on Divided Highway Intersections" detail on sheet 8 of 17 (old) placed it in FDM 230 as an exhibit.
- Removed the sheet with Midblock Crossing details (old sheet 13 of 17) and placed it in FDM 230 as an exhibit.

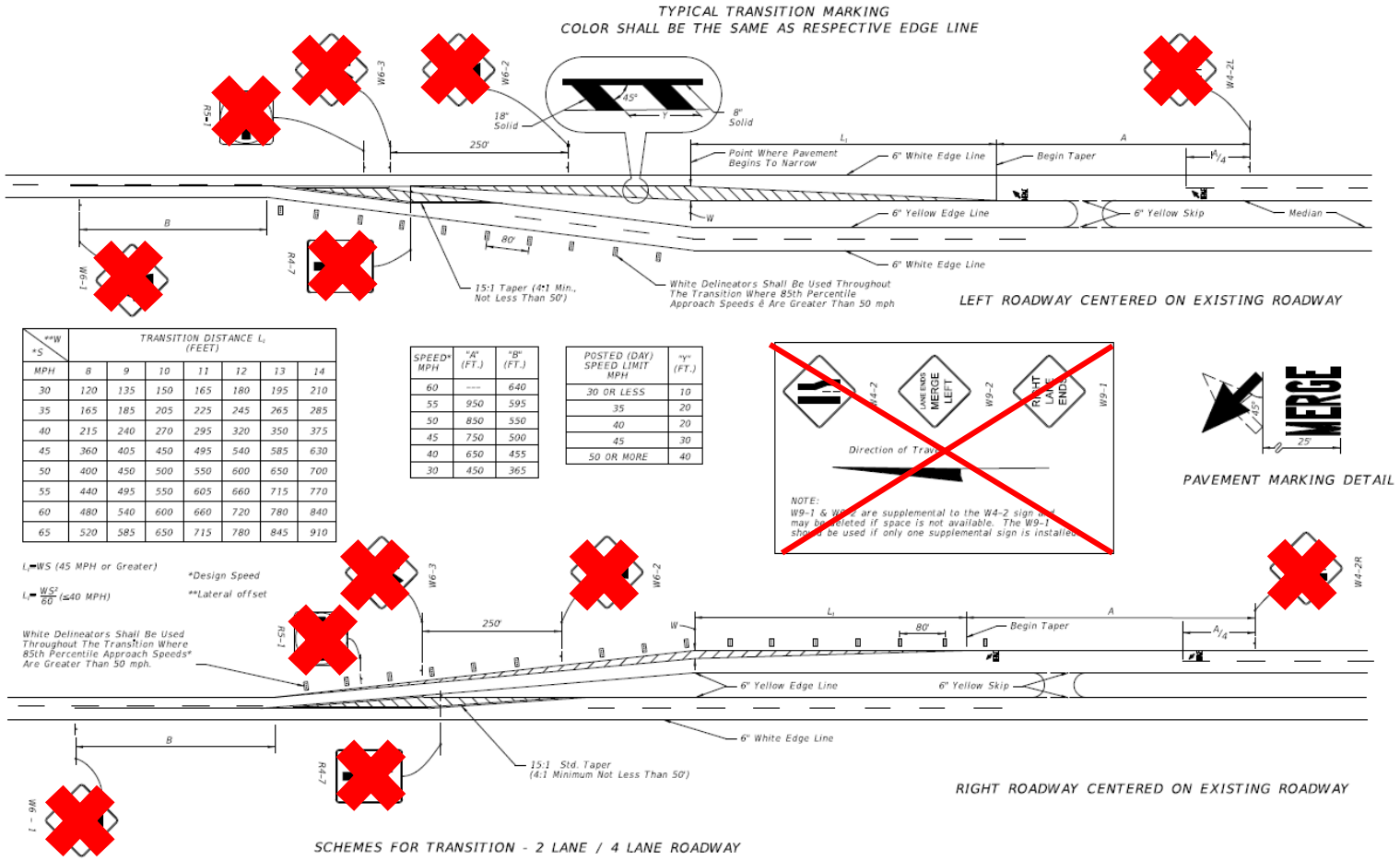


APPROACH SPEED MPH	A-SUGGESTED DISTANCE (Ft.)
25 Or Less	200
26 To 35	250
36 To 45	300

1. Plans shall indicate which crosswalk scheme is to be used.
2. The details shown do not depict the signing and marking for multi-lane roadways with divided medians. For these applications, additional signs shall be installed on the median side. Minimum width of Mid-Block Crosswalks is 10'.
3. All mid-block crosswalks shall use special emphasis crosswalk markings.
4. Crosswalk marking shall be preformed marking materials.

Index 711-001 (previously Index 17346) "Pavement Markings"

- Removed the signing details from "Schemes for Transition – 2 Lane / 4 Lane Roadway" on sheet 9 of 17 (old) and placed them in FDM 230 as an exhibit.



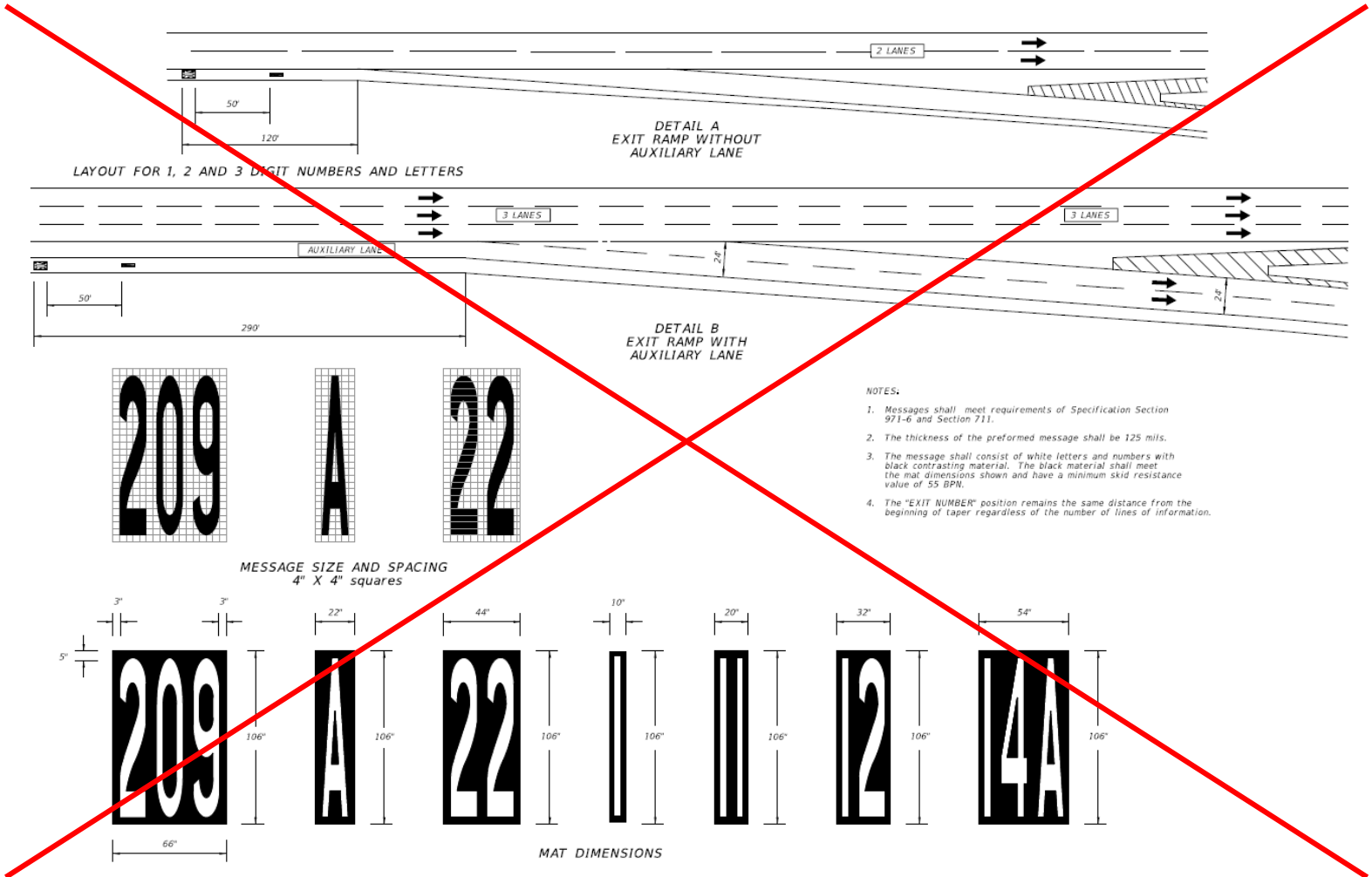
**W / *S	TRANSITION DISTANCE L (FEET)						
MPH	8	9	10	11	12	13	14
30	120	135	150	165	180	195	210
35	165	185	205	225	245	265	285
40	215	240	270	295	320	350	375
45	360	405	450	495	540	585	630
50	400	450	500	550	600	650	700
55	440	495	550	605	660	715	770
60	480	540	600	660	720	780	840
65	520	585	650	715	780	845	910

SPEED* MPH	"A" (FT.)	"B" (FT.)
60	---	640
55	950	595
50	850	550
45	750	500
40	650	455
30	450	365

POSTED (DAY) SPEED LIMIT MPH	"Y" (FT.)
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40

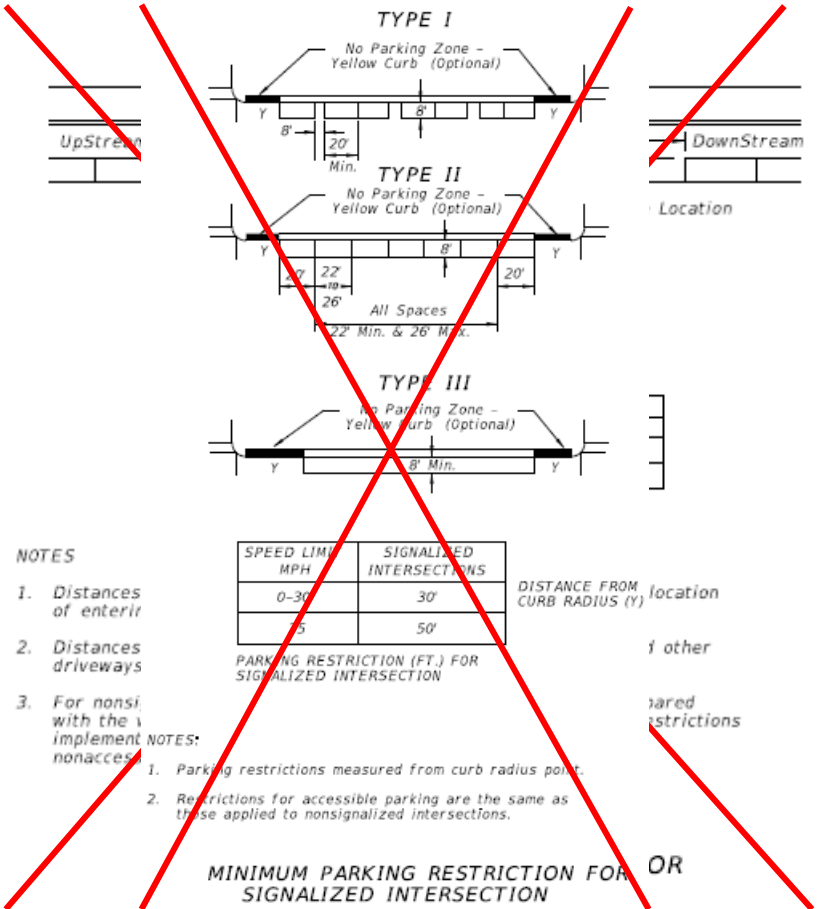
Index 711-001 (previously Index 17346) "Pavement Markings"

- Removed sheet with exit number details (old sheet 10 of 17) and placed it in Index 711-003.



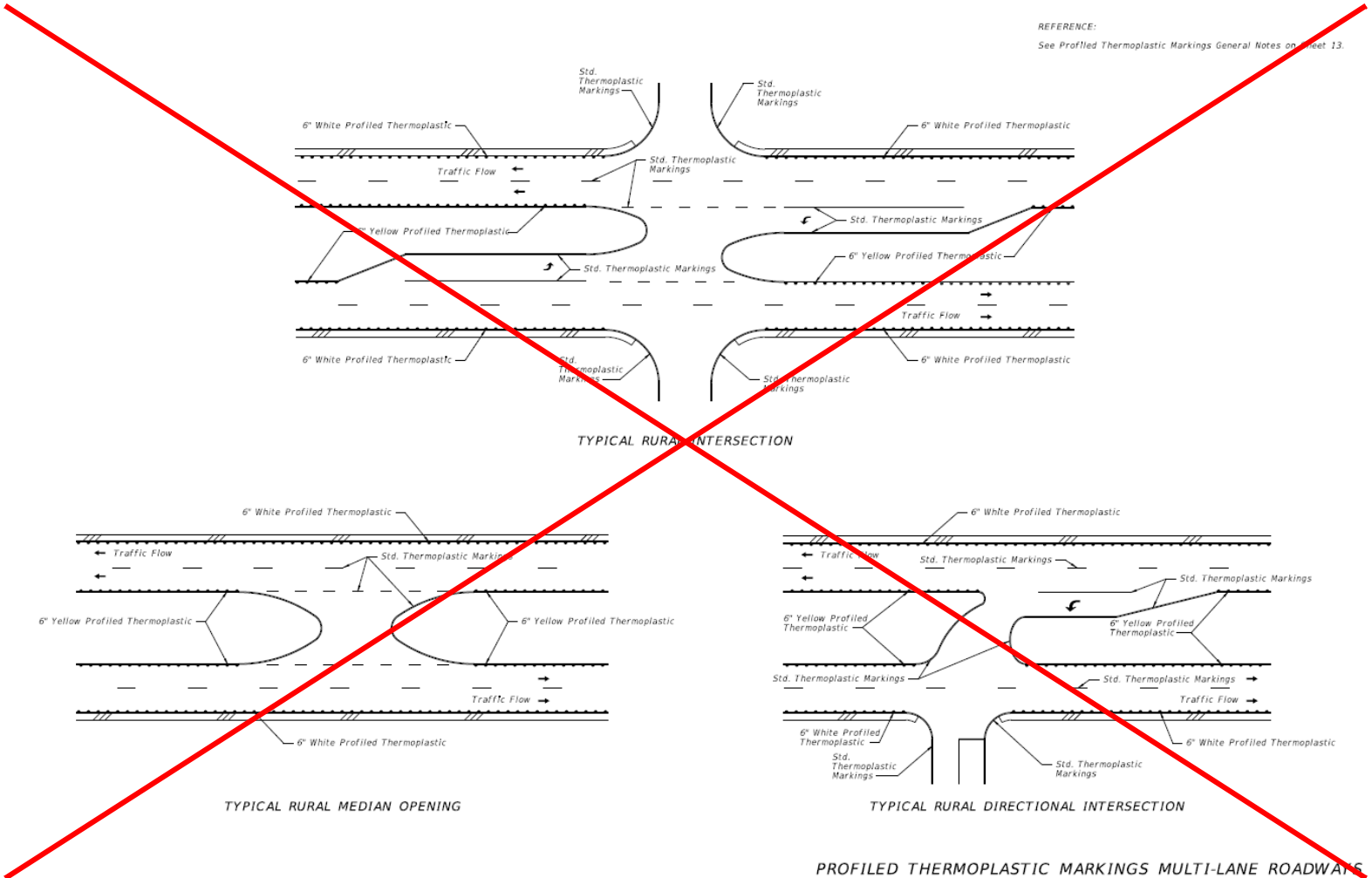
Index 711-001 (previously Index 17346) "Pavement Markings"

- Removed the following details from sheet 15 of 17 (old):
  - "Minimum Parking Restriction for Nonsignalized Intersections"
  - "Minimum Parking Restriction for Signalized Intersection"
- See FDM 212.11.5 for on-street parking at intersections.



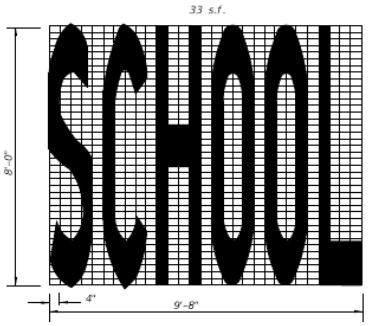
Index 711-001 (previously Index 17346) "Pavement Markings"

- Removed sheets with Profiled Thermoplastic details (old sheets 16-17 of 17). See FDM Figure 210.4.4 for the placement of audible and vibratory treatment.



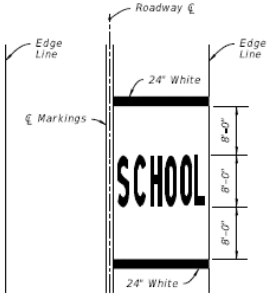
Index 711-001 (previously Index 17346) "Pavement Markings"

- Added sheet with "Markings for School Zones" details (new sheet 14 of 14).

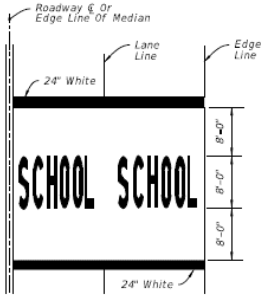


SCHOOL PAVEMENT MARKING

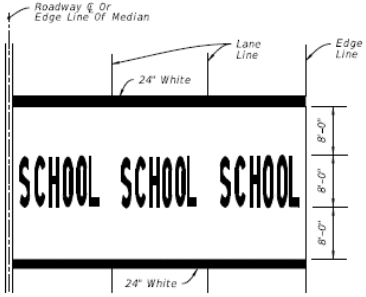
NOTES:
1. All grids are 4" x 4".
2. Pavement Marking Should Not Extend Into Opposing Lane.
3. Center School Pavement Marking in lane.



SINGLE-LANE APPROACH



TWO-LANE APPROACH

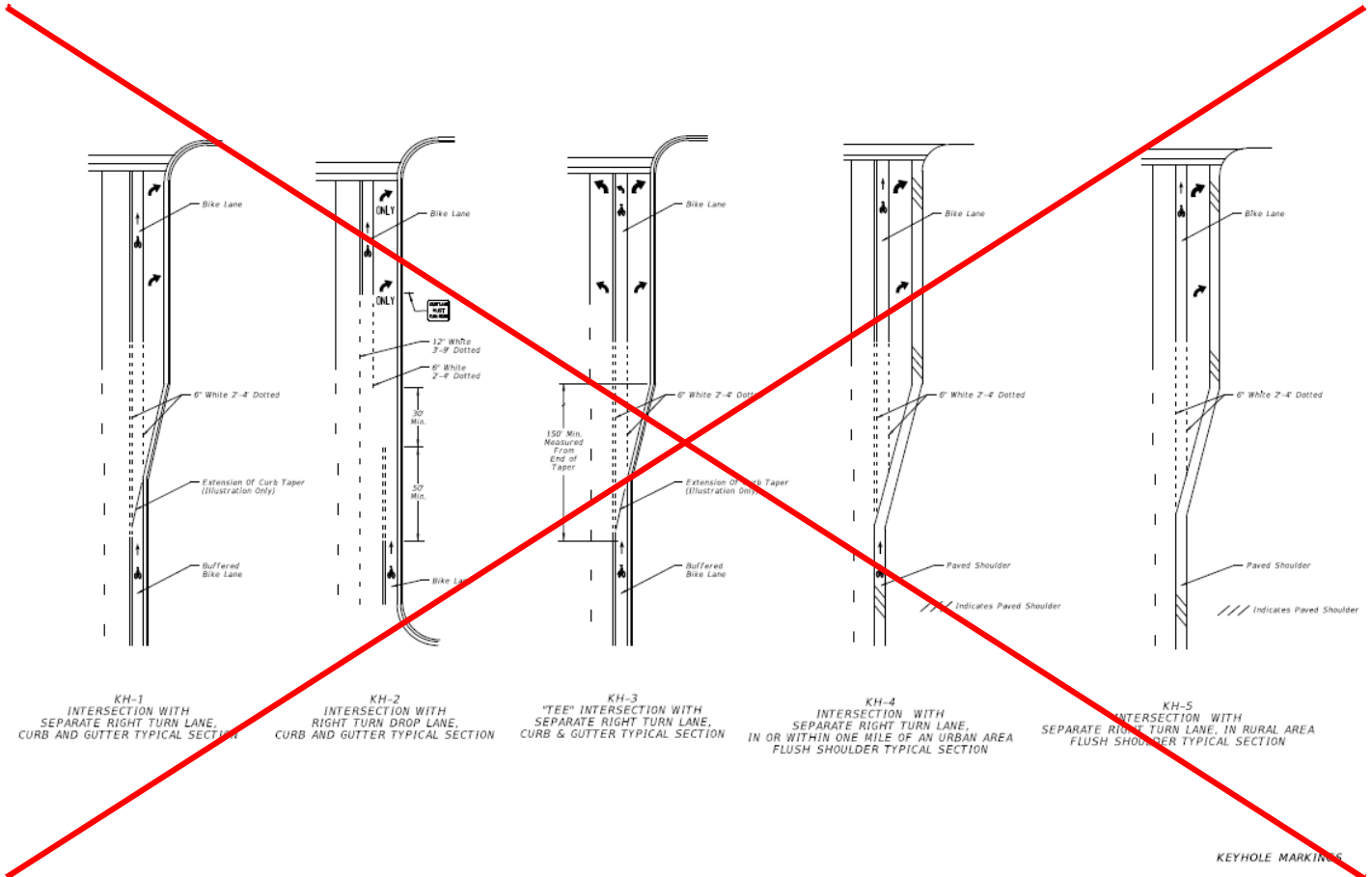


MULTI-LANE APPROCH (Three or More)

MARKINGS FOR SCHOOL ZONES

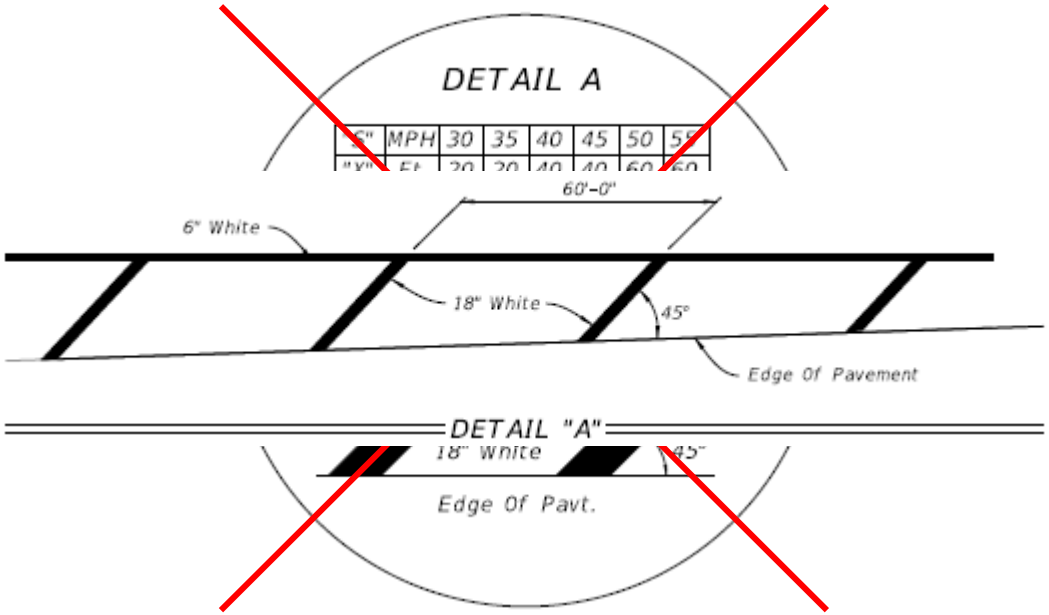
Index 711-002 (previously Index 17347) "Bicycle Markings"

- Removed sheet with "Shared Lane Markings" details (previously sheet 2 of 5). See FDM 223.3 for guidance on Shared Lane Markings.
- Removed sheets with bike lane typical layouts (previously sheets 4-5 of 5). See FDM 223 exhibits for updated bike lane typical layouts.



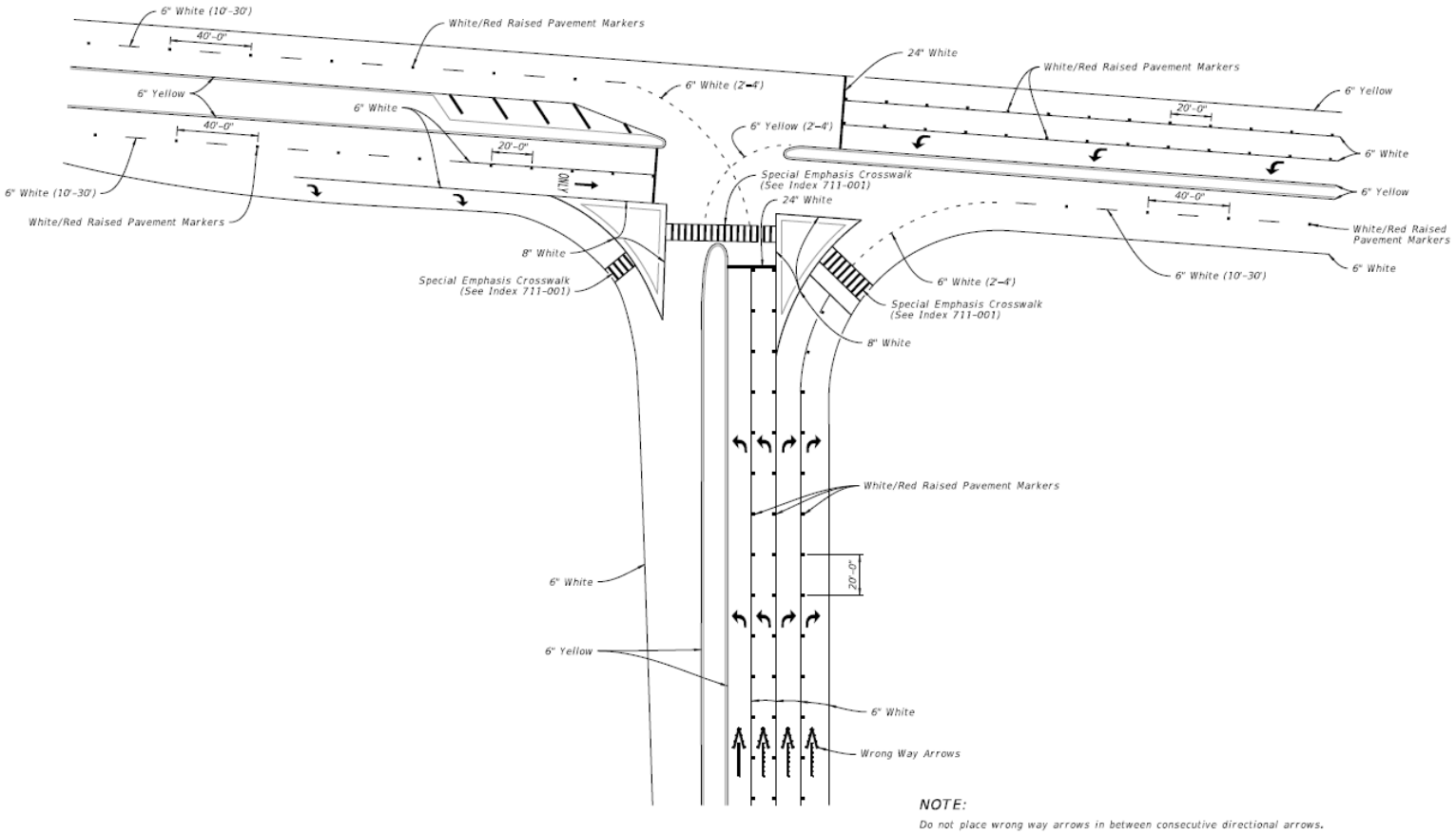
Index 711-003 (previously Index 17345) "Interchange Markings"

- There are Index-wide changes for consistency, but most are relatively minor.
- Revised the chevron spacing chart on sheet 1 of 1. All chevron spacing is now 60'.



Index 711-003 (previously Index 17345) "Interchange Markings"

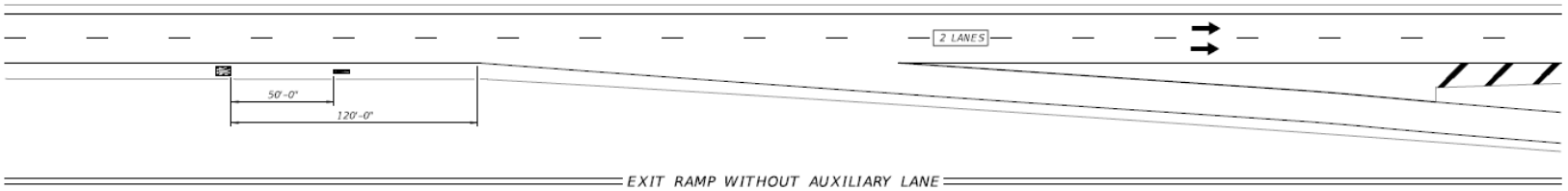
- Added new sheet with a interchange intersection (sheet 6 of 7).



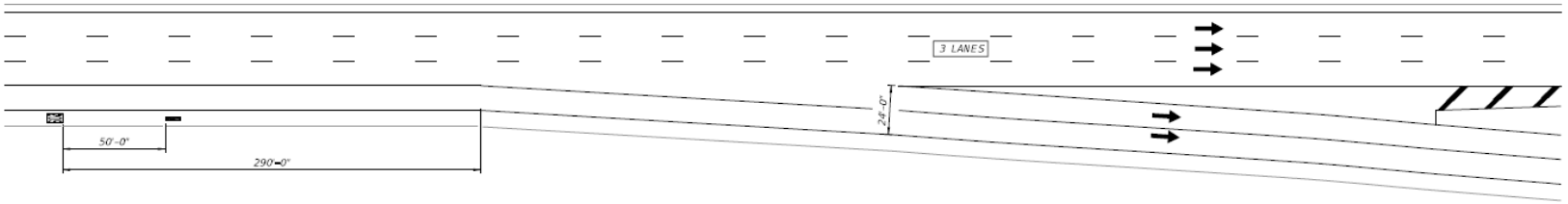
TYPICAL PARTIAL CLOVERLEAF/TRUMPET EXIT RAMP

Index 711-003 (previously Index 17345) "Interchange Markings"

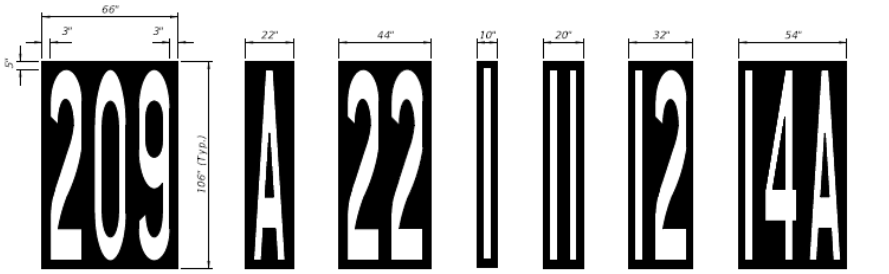
- Added new sheet with exit number details (sheet 7 of 7).



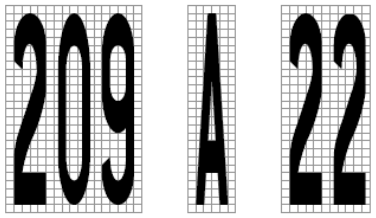
EXIT RAMP WITHOUT AUXILIARY LANE



EXIT RAMP WITH AUXILIARY LANE



MAT DIMENSIONS



MESSAGE SIZE AND SPACING

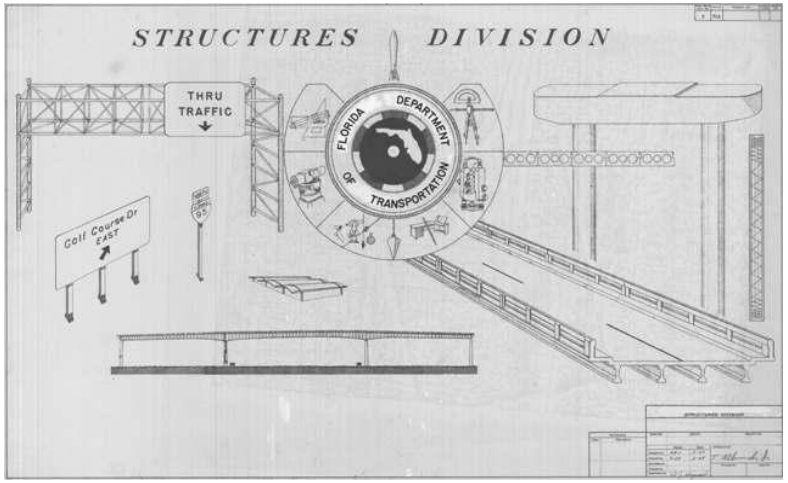
NOTES:

1. This Index shows layouts for 1, 2, and 3 digit numbers and letters.
2. The message consist of white letters and numbers with black contrasting material.
3. The "EXIT NUMBER" position remains the same distance from the beginning of taper regardless of the number of lines of information.
4. All Grids are 4" x4".

Questions

Ed Cashman, P.E.
Standard Plans Engineer
State Roadway Design Office
(850) 414-4314
edward.cashman@dot.state.fl.us

FY 2018-19 Standard Plans Update Training



Structures Design Office Updates

(December, 2017)

Steven Nolan, P.E.

Structures Design Standards Group

steven.nolan@dot.state.fl.us

(850) 414-4272

Outline

- **Global Changes**
  - ✓ Numbers, Titles, & Abbreviations
  - ✓ Standard Plans in Structures Component Plan Set
- Brief **BriExit** Overview
- Discontinued ***Design Standards***
- Minor ***Standard Plans*** Revisions
- Major ***Standard Plans*** Revisions
- ***SPI*** Revisions
- ***Cell*** Revisions (Data Tables)
- ***Developmental Design Standards/Standard Plans***
- Looking Ahead

http://www.fdot.gov/roadway/StandardPlans/Standards.shtm

Welcome to BriExit 2018

FY 201 ndards

from

of Florida Department of Transportation

Office of Design

Mail Station 32

605 Suwannee Street

Tallahassee, Florida 32399-0450

For Construction and Maintenance Operations
on the State Highway System
Topic No. 625-010-003

Including **Bridge *Design Standards*** in **Structures Plans** component

- Why?
  - ✓ Satisfy customer needs:
    - **Maintenance Office**'s custodian of bridge records for preservation of assets;
    - **Contractor**'s convenience for construction;
    - **Designer**'s reliability for developing future rehabilitation or widening projects based on accurate bridge records.
    - and more…
- How?

  …and still be true to the **One FDOT** principle.

BriExit Overview

Index Number	Title
861	Bridge Pedestrian/Bicycle Railing (Aluminum)
862	Aluminum Pedestrian/Bicycle Railing
870	Aluminum Pipe Guiderail
880	Steel Pipe Guiderail
Noise And Perimeter Wall Systems	
5200	Precast Noise Walls
5210	Traffic Railing/Noise Wall (8'-0")
5211	Traffic Railing/Noise Wall (14'-0")
5212	Traffic Railing/Noise Wall (8'-0") Junction Slab
5213	Traffic Railing/Noise Wall T-Shaped Spread Footing
5214	Traffic Railing/Noise Wall L-Shaped Spread Footing
5215	Traffic Railing/Noise Wall Trench Footing
5250	Perimeter Walls
Wall Systems	
6010	C-I-P Cantilever Retaining Wall
6011	Gravity Wall
6020	Permanent MSE Retaining Wall Systems
6030	Temporary MSE Retaining Wall Systems
6040	Precast Concrete Sheet Pile Wall
6100	MSE Wall Coping (Precast or C-I-P)
6110	Wall Coping With Traffic Railing/Junction Slab
6120	Wall Coping With Traffic Railing/Raised Sidewalk
420	Traffic Railing - (32" F Shape)
421	Traffic Railing - (Median 32" F Shape)
422	Traffic Railing - (42" Vertical Shape)
423	Traffic Railing - (32" Vertical Shape)
424	Traffic Railing - (Corral Shape)
425	Traffic Railing - (42" F Shape)
426	Traffic Railing - (Median 36" Single Slope)
427	Traffic Railing - (36" Single Slope)
428	Traffic Railing - (42" Single Slope)
~~430~~	~~Crash Cushion Details~~
~~431~~	~~Opaque Visual Barrier~~
470	Traffic Railing-(Thrie Beam Retrofit) General Note & Details
471	Traffic Railing-(Thrie Beam Retrofit) Narrow Curb
472	Traffic Railing-(Thrie Beam Retrofit) Wide Strong Curb Type 1
473	Traffic Railing-(Thrie Beam Retrofit) Wide Strong Curb Type 2
474	Traffic Railing-(Thrie Beam Retrofit) Intermediate Curb
475	Traffic Railing-(Thrie Beam Retrofit) Wide Curb Type 1
476	Traffic Railing-(Thrie Beam Retrofit) Wide Curb Type 2
477	Thrie-Beam Panel Retrofit (Concrete Handrail)
480	Traffic Railing-(Vertical Face Retrofit) General Notes & Details
481	Traffic Railing-(Vertical Face Retrofit) Narrow Curb
482	Traffic Railing-(Vertical Face Retrofit) Wide Curb
483	Traffic Railing-(Vertical Face Retrofit) Intermediate Curb
484	Traffic Railing- (Vertical Face Retrofit) Spread Footing Approach

Adding: CONCRETE BRIDGE CULVERTS
289 Concrete Box Bridge Culvert Details

17502	High Mast Lighting
17504	Service Point Details
17505	External Lighting For Signs
17515	Standard Aluminum Lighting
18101	Typical CCTV Site
18102	Grounding And Lightning Protection
18104	Typical CCTV Cabinet Equipment Layout
18105	CCTV Block Diagram
18107	Ground Mounted CCTV Cabinet
18108	Pole Mounted CCTV Cabinet
18110	Camera Mounting Details
18111	Steel CCTV Pole
18113	Concrete CCTV Pole
18300	Dynamic Message Sign Walk-In
Prestressed Concrete Beams	
20010	Typical Florida-I Beam Details and Notes
20036	Florida-I 36 Beam - Standard Details
20045	Florida-I 45 Beam - Standard Details
20054	Florida-I 54 Beam - Standard Details
20063	Florida-I 63 Beam - Standard Details
20072	Florida-I 72 Beam - Standard Details
20078	Florida-I 78 Beam - Standard Details
20084	Florida-I 84 Beam - Standard Details
20096	Florida-I 96 Beam - Standard Details
20120	AASHTO Type II Beam
20199	Build-Up & Deflection Data For Prestressed I-Beams
20210	Typical Florida-U Beam Details and Notes
20248	Florida-U 48 Beam - Standard Details
20254	Florida-U 54 Beam - Standard Details
20263	Florida-U 63 Beam - Standard Details
20272	Florida-U 72 Beam - Standard Details
20299	Build-Up and Deflection Data For Florida-U Beams
Bridge Bearings	
20502	Beveled Bearing Plate Details - Prestressed Florida-U Beams
20510	Composite Elastomeric Bearing Pads-Prestressed Florida-I & AASHTO Type II Beams
20511	Bearing Plates (Type 1) - Prestressed Florida-I & AASHTO Type II Beams
20512	Bearing Plates (Type 2) - Prestressed Florida-I & AASHTO Type II Beams

Index Number	Title
Square and Round Concrete Piles (With Carbon Steel)	
20600	Notes and Details For Square Prestressed Concrete Piles
20601	Square Prestressed Concrete Pile Splices
20602	EDC Instrumentation For Square Prestressed Concrete Piles
20612	12" Square Prestressed Concrete Pile
20614	14" Square Prestressed Concrete Pile
20618	18" Square Prestressed Concrete Pile
20620	20" Square Prestressed Concrete Pile
20624	24" Square Prestressed Concrete Pile
20630	30" Square Prestressed Concrete Pile
20631	High Moment Capacity 30" Square Prestressed Concrete Pile
20654	54" Precast/Post- Tensioned Concrete Cylinder Pile
20660	60" Prestressed Concrete Cylinder Pile
Approach Slabs	
20900	Approach Slabs (Flexible Pavement Approaches)
20910	Approach Slabs (Rigid Pavement Approaches)
Bridge Expansion Joints	
21100	Strip Seal Expansion Joint
21110	Poured Joint With Backer Rod Expansion Joint System
Structures Access and Lighting	
21200	Light Pole Pedestal
21210	Conduit Details
21220	Navigation Light System Details (Fixed Bridges)
21240	Maintenance Lighting For Box Girders
21250	Access Hatch Assembly For Steel Box Sections
21251	Access Hatch Assembly For Concrete Box Sections
21252	Access Door Assembly For Concrete Box Sections
Standard Bar Bending Details	
21300	Standard Bar Bending Details
Temporary Detour Bridges	
21600	Temporary Detour Bridge General Notes and Details
21610	Temporary Detour Bridge Details - Timber Pile Foundations
21620	Temporary Detour Bridge Details - Steel H Pile Foundations
21630	Temporary Detour Bridge Details - Steel Pipe Pile Foundation
21640	Temporary Detour Bridge Thrie-Beam Guardrail
Post-Tension Details	
21801	Post-Tensioning Vertical Profiles
21802	Post-Tensioning Anchorage Protection
21803	Post-Tensioning Anchorage and Grouting Details
Fender System Details	
21930	Fender System - Prestressed Concrete Piles
~~Wall System (Corrosion Resistant)~~	
~~22440~~	~~Precast Concrete CFRP/GFRP & HSSS/GFRP Sheet Pile Wall~~
Square and Round Concrete Piles (Corrosion Resistant)	
22600	Notes and Details for Square CFRP & SS Prestressed Concrete Piles
22601	Square CFRP and SS Prestressed Concrete Pile Splices
22612	12" Square CFRP and SS Prestressed Concrete Pile
22614	14" Square CFRP and SS Prestressed Concrete Pile
22618	18" Square CFRP and SS Prestressed Concrete Pile
22624	24" Square CFRP and SS Prestressed Concrete Pile
22630	30" Square CFRP and SS Prestressed Concrete Pile
22654	54" Square CFRP and SS Prestressed Concrete Pile
22660	60" Square CFRP and SS Prestressed Concrete Pile

BriExit 2018

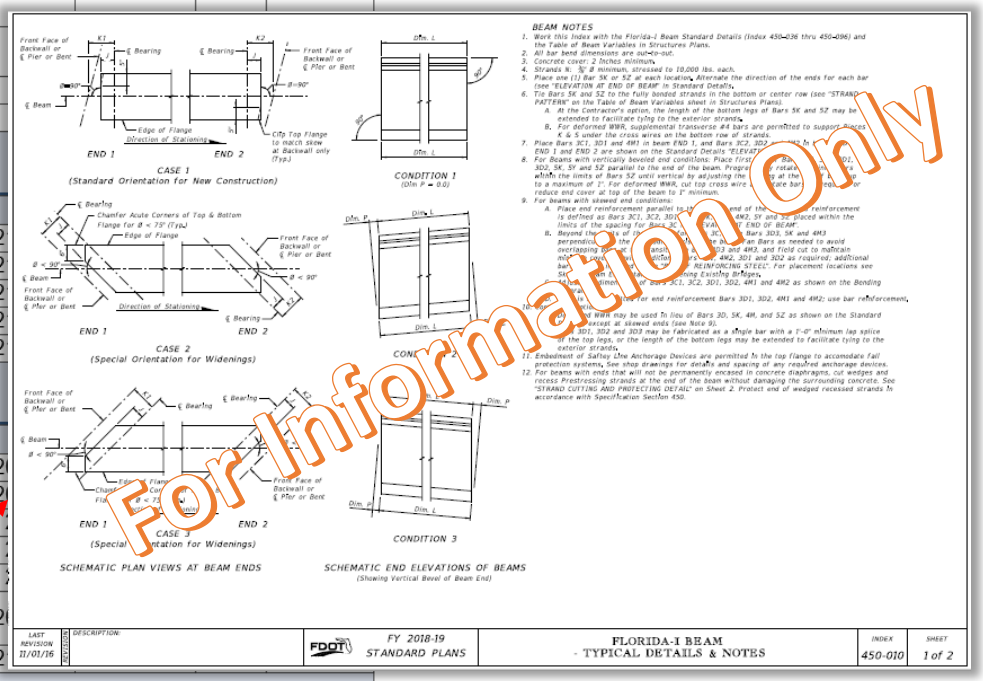
(Non-contract documents – See Structures Component of Contract Plans)

http://www.fdot.gov/design/standardplans/current/default.shtm#Bridges

Standard Plans for Bridge Construction

The Standard Plans for Bridge Construction shown on this site are for designers to use in preparing contract plans only and are not for direct use by the contractor. The required Standard Plans for Bridge Construction for projects are included in the Structures Component of the Contract Plan set.

Standard Plans Index	Revision Errata	Index Title	Design Standards Index	Standard Plans Instructions	Design Tools	Contact
Support Detail						
Cover		FY 2018-19 Cover Sheet				
TOC Bridge		Table of Contents - Bridge Construction				
Crosswalk		Crosswalk of Design Standards Index to Standard Plans				
Revisions		Revision History Log				
General Construction Operations						
		Maintenance of Traffic				
102-200		Temporary Detour Bridge General Notes and Details	2			
102-210		Temporary Detour Bridge - Timber Pile Foundations	2			
102-220		Temporary Detour Bridge - Steel H Pile Foundations	2			
102-230		Temporary Detour Bridge - Steel Pile Pipe Foundations	2			
102-240		Temporary Detour Bridge Thrie - Beam Guardrail	2			
Structures						
		Concrete Structures				
400-090		Approach Slabs (30 ft.) Flexible Pavement Approaches)	2			
400-091		Approach Slabs (30 ft.) Rigid Pavement Approaches)	2			
400-289		Concrete Box Culvert Details				
400-291		Precast Concrete Box Culverts Supplemental Detail				
400-292		Standard Precast Concrete Box Culverts				
400-510		Composite Elastomeric Bearing Pads - Prestressed Florida-I and AASHTO Type II Beams	2			
415-001		Bar Bending Details (Steel)	2			
		Precast Prestressed Concrete Construction				
450-010		Florida-I Beam - Typical Details and Notes	20010			



BriExit Overview

- Name changes coming for July 2018!

FY 2018-19 Standard Plans - for Road and Bridge Construction

FDOT

~~FY 2016-17 Design Standards~~

Effective for Projects with Lettings in the Fiscal Year (FY) from
July 1, ~~2016~~ through June 30, ~~2017~~

For Construction and Maintenance Operations
~~on the State Highway System~~
Topic No. 625-010-003

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

Also see ***Structures Design Bulletin 17-09/Production Support Bulletin 17-01***

CONSTRUCTION CONTRACT NO. T7380

INDEX OF STRUCTURE PLANS

SHEET NO.	SHEET DESCRIPTION
B-1	KEY SHEET
B-2	INDEX OF SHEETS
B-3	SIGNATURE SHEET
BQ1-1 AND BQ1-2	SUMMARY OF STRUCTURES QUANTITIES
B-4 AND B-5	GENERAL NOTES
B1-1 THRU B1-52	SR 43 (US 301) OVER BIG BULLFROG CREEK
BW-1 AND BW-2	TEMPORARY SHEET PILE WALL PLANS
BW-3 THRU BW-17	PERMANENT RETAINING WALL PLANS
BX1-1 THRU BX1-19	EXISTING BRIDGE PLANS

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

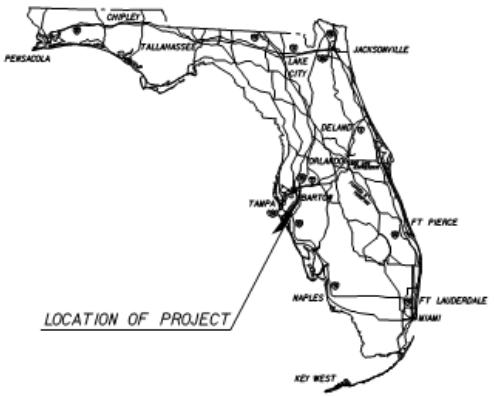
FINANCIAL PROJECT ID 415489-3-52-01
FINANCIAL PROJECT ID 415489-3-52-02
FINANCIAL PROJECT ID 415489-3-52-04

HILLSBOROUGH COUNTY (10010)

STATE ROAD NO. 43 (US 301)
FROM SR 674 TO SOUTH OF BALM RD.

STRUCTURE PLANS

SR 43 (US 301) OVER BIG BULLFROG CREEK
(BRIDGE NO. 100008)



INDEX 400-090 THRU 471-030 (20010 –THRU 21930) STANDARD PLANS FOR BRIDGE CONSTRUCTION

STRUCTURE SHOP DRAWINGS
TO BE SUBMITTED TO:

MARLIN A. REGISTER II, P.E.
HDR ENGINEERING, INC.
5426 BAY CENTER DRIVE, STE. 400
TAMPA, FL 33609-3444
TELEPHONE: (813) 282-2300
FAX: (813) 282-2430

PLANS PREPARED BY:

HDR ENGINEERING, INC.
5426 BAY CENTER DRIVE, STE. 400
TAMPA, FL 33609-3444
CONTRACT NO. C-8F04
VENDOR NO. VF-470680568
FBPR CERTIFICATE OF
AUTHORIZATION NO. 4213

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED BY REPRODUCTION.

THIS PROJECT TO BE LET TO CONTRACT WITH FINANCIAL PROJECT ID 415489-3-56-01

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

STRUCTURE PLANS
ENGINEER OF RECORD: NELSON E. CAMJURA, P.E.

P.E. NO.: 43235

FDOT PROJECT MANAGER : CHRISTINA BOULNOIS, PE, PTOE

FISCAL YEAR	SHEET NO.
16	B-1

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BriExit Example

*Also see **Structures Design Bulletin 17-09/Production Support Bulletin 17-01***

INDEX OF SHEETS

B-1 KEY SHEET
B-2 INDEX OF SHEETS
B-3 SIGNATURE SHEET
B01-1 SUMMARY OF STRUCTURES QUANTITIES (1 OF 2)
B01-2 SUMMARY OF STRUCTURES QUANTITIES (2 OF 2)
B-4 GENERAL NOTES (1 OF 2)
B-5 GENERAL NOTES (2 OF 2)

SR 43 (US 301) OVER BIG BULLFROG CREEK

B1-1 PLAN AND ELEVATION
B1-2 BRIDGE HYDRAULIC RECOMMENDATIONS
B1-3 CONSTRUCTION SEQUENCE
B1-4 BORING LOCATION PLAN
B1-5 REPORT OF CORE BORINGS (1 OF 3)
B1-6 REPORT OF CORE BORINGS (2 OF 3)
B1-7 REPORT OF CORE BORINGS (3 OF 3)
B1-8 FOUNDATION LAYOUT
B1-9 PILE DATA TABLE
B1-10 END BENT 1 (PHASE I)
B1-11 END BENT 1 (PHASE II)
B1-12 END BENT 6 (PHASE I)
B1-13 END BENT 6 (PHASE II)
B1-14 END BENT DETAILS (1 OF 2)
B1-15 END BENT DETAILS (2 OF 2)
B1-16 SLOPE PROTECTION DETAILS (1 OF 4)
B1-17 SLOPE PROTECTION DETAILS (2 OF 4)
B1-18 SLOPE PROTECTION DETAILS (3 OF 4)
B1-19 SLOPE PROTECTION DETAILS (4 OF 4)
B1-20 INTERMEDIATE BENTS 2 THRU 4 (PHASE I)
B1-21 INTERMEDIATE BENT 5 (PHASE I)
B1-22 INTERMEDIATE BENTS 2, 4 AND 5 (PHASE II)
B1-23 INTERMEDIATE BENT 3 (PHASE II)
B1-24 INTERMEDIATE BENTS DETAILS
B1-25 PRESTRESSED SLAB BEAM (1 OF 3)
B1-26 PRESTRESSED SLAB BEAM (2 OF 3)
B1-27 PRESTRESSED SLAB BEAM (3 OF 3)
B1-28 TABLE OF SLAB BEAM VARIABLES, BUILD UP AND DEFLECTION DAT[A]
B1-29 SECTION THROUGH BRIDGE
B1-30 FINISH GRADE ELEVATIONS (1 OF 2)
B1-31 FINISH GRADE ELEVATIONS (2 OF 2)
B1-32 SUPERSTRUCTURE SECTION
B1-33 SUPERSTRUCTURE PLAN - SPAN 1 PHASE I (1 OF 2)
B1-34 SUPERSTRUCTURE PLAN - SPAN 1 PHASE I (2 OF 2)
B1-35 SUPERSTRUCTURE PLAN - SPANS 2, 3 & 4 PHASE I (1 OF 2)
B1-36 SUPERSTRUCTURE PLAN - SPANS 2, 3 & 4 PHASE I (2 OF 2)
B1-37 SUPERSTRUCTURE PLAN - SPAN 5 PHASE I (1 OF 2)
B1-38 SUPERSTRUCTURE PLAN - SPAN 5 PHASE I (2 OF 2)
B1-39 SUPERSTRUCTURE PLAN - SPAN 1 PHASE II (1 OF 2)
B1-40 SUPERSTRUCTURE PLAN - SPAN 1 PHASE II (2 OF 2)
B1-41 SUPERSTRUCTURE PLAN - SPANS 2, 3 & 4 PHASE II (1 OF 2)
B1-42 SUPERSTRUCTURE PLAN - SPANS 2, 3 & 4 PHASE II (2 OF 2)
B1-43 SUPERSTRUCTURE PLAN - SPAN 5 PHASE II (1 OF 2)
B1-44 SUPERSTRUCTURE PLAN - SPAN 5 PHASE II (2 OF 2)
B1-45 SUPERSTRUCTURE DETAILS (1 OF 3)
B1-46 SUPERSTRUCTURE DETAILS (2 OF 3)
B1-47 SUPERSTRUCTURE DETAILS (3 OF 3)
B1-48 APPROACH SLAB
B1-49 REINFORCING BAR LIST (1 OF 3)
B1-50 REINFORCING BAR LIST (2 OF 3)
B1-51 REINFORCING BAR LIST (3 OF 3)
B1-52 LOAD RATING SUMMARY - BRIDGE NO. 100008

WALL PLANS

BW-1 TEMPORARY CRITICAL STEEL SHEET PILE RETAINING WALL DATA TABLE
BW-2 TEMPORARY CRITICAL STEEL SHEET PILE RETAINING WALLS TW-1 AND TW-2
BW-3 PERMANENT RETAINING WALL DATA TABLE AND NOTES
BW-4 PERMANENT RETAINING WALLS 1 AND 3 - CONTROL PLAN
BW-5 PERMANENT RETAINING WALL 1 - PLAN AND ELEVATION (1 OF 2)
BW-6 PERMANENT RETAINING WALL 1 - PLAN AND ELEVATION (2 OF 2)
BW-7 PERMANENT RETAINING WALL 2 - PLAN AND ELEVATION
BW-8 PERMANENT CONCRETE SHEET PILE WALL DETAILS
BW-9 CONCRETE RETAINING WALL DETAILS (1 OF 2)
BW-10 CONCRETE RETAINING WALL DETAILS (2 OF 2)
BW-11 WALL 3 - END WALL
BW-12 WALL 4 - GRAVITY WALL
BW-13 REINFORCING BAR LIST
BW-14 REPORT OF CORE BORINGS RETAINING WALLS (1 OF 4)
BW-15 REPORT OF CORE BORINGS RETAINING WALLS (2 OF 4)
BW-16 REPORT OF CORE BORINGS RETAINING WALLS (3 OF 4)
BW-17 REPORT OF CORE BORINGS RETAINING WALLS (4 OF 4)

EXISTING BRIDGE PLANS

BX1-1 THRU BX1-5 BRIDGE RAILING REPLACEMENT PLANS - 2000
BX1-6 THRU BX1-15 BRIDGE WIDENING PLANS - 1969
BX1-16 THRU BX1-19 ORIGINAL BRIDGE PLANS - 1936

STANDARD PLANS FOR BRIDGE CONSTRUCTION (Bridge No. 52xxxx)

Index 400-090 (20900) Approach Slabs (Flexible Pavement Approaches)
Index 400-510 (20510) Composite Elastomeric Bearing Pads-Prestressed Florida-I & AASHTO Type II Beams
Index 415-001 (21300) Standard Bar Bending Details
Index 450-010 (20010) Typical Florida-I Beam Details and Notes
Index 450-036 (20036) Florida-I 36 Beam - Standard Details
Index 450-199 (20199) Build-Up & Deflection Data For Prestressed I-Beams
Index 450-512 (20512) Bearing Plates (Type 2) - Prestressed Florida-I & AASHTO Type II Beams
Index 455-601 (20600) Notes and Details For Square Prestressed Concrete Piles
Index 455-602 (20601) Square Prestressed Concrete Pile Splices
Index 455-603 (20602) EDC Instrumentation For Square Prestressed Concrete Piles
Index 455-624 (20624) 24" Square Prestressed Concrete Pile
Index 458-110 (21110) Poured Joint With Backer Rod Expansion Joint System
Index 471-030 (21930) Fender System - Prestressed Concrete Piles

BRIDGE NO. 100008

REVISIONS							Names	Dates
Date	By	Description	Date	By	Description	Drawn by	JSR	5/15
						Checked by	JVD	5/15
						Designed by	JVD	5/15
						Checked by	CAS	5/15
						Approved by	NEC	

ENGINEER OF RECORD:

FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 43	HILLSBOROUGH	415489-3-52-01

SHEET TITLE: INDEX OF SHEETS

PROJECT NAME: SR 43 (US 301) OVER BIG BULLFROG CREEK

SHEET NO. B-2

DHERNAND 3/2/2016 5:09:03 PM

BriExit Tools

Pay Item – Index Crosswalk Application (***StandardsPlansPackager***) to pull PDF's into Structures Plans Component:

Pay Item #	Pay Item Description	SPI#	DSI#	Standard Description	SPI#	DSI#	Standard Description	SPI#	DSI#	Standa
0400- 4- 1	Concrete Class IV, Culverts	400-289	289	Concrete Box Culvert Details	400-291	291	Precast Concrete Box Culverts Supplemental Details	400-292	292	Standa Culver
0415- 1- 1	Reinforcing Steel - Roadway	400-289	289	Concrete Box Culvert Details	415-001	21300	Standard Bar Bending details (Steel)			
0521- 5- 11	Concrete Traffic Railing - Bridge, Retrofit - Post & Beam Railing	521-404	404	Guardrail Transitions - Existing Post & Beam Bridge Railings (Narrow & Recessed Curbs)	521-405	405	Guardrail Transitions - Existing Post & Beam Bridge Railings (Wide Curbs)			

2018StructuresPayItemToStandardReferences.xls

STANDARD PLANS FOR BRIDGE CONSTRUCTION (Bridge No. 52xxxx)

Index 400-090 (20900) Approach Slabs (Flexible Pavement Approaches)
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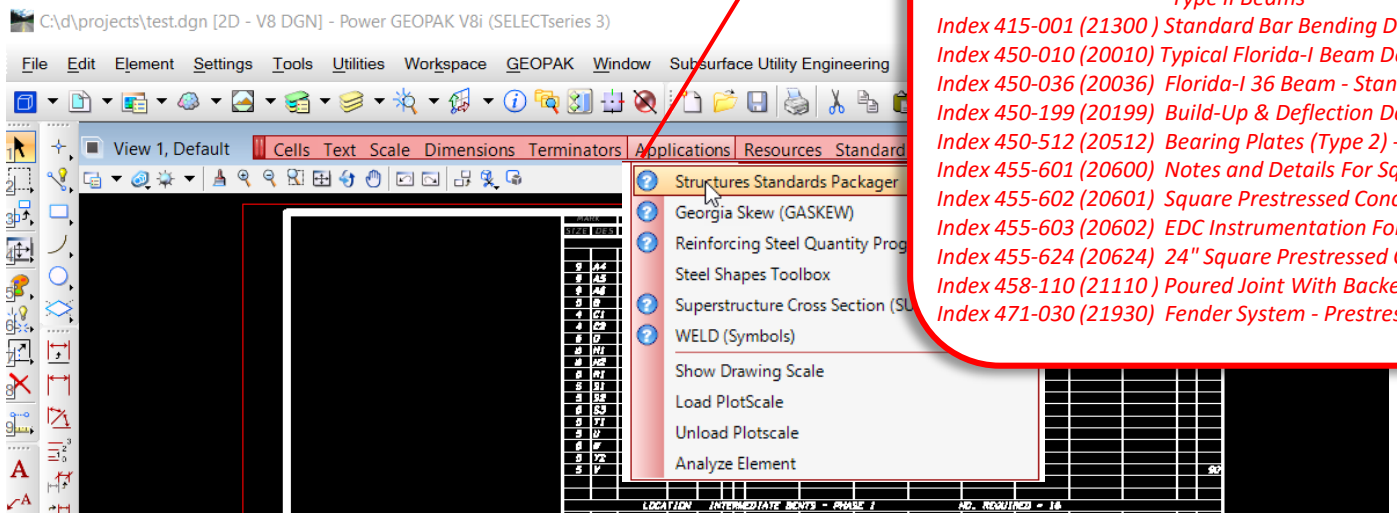
Index 471-030 (21930) Fender System - Prestressed Concrete Piles



BridgExit Tools

CADD Manual Sheet Ordering Sequence:

http://www.fdot.gov/cadd/downloads/publications/CADDManual/CADDManual.pdf

CADD Manual
Office: Engineering/CADD Systems

Effective: October 1, 20
Update: November 1, 201

Structures Plans Naming Convention and Numbering Convention

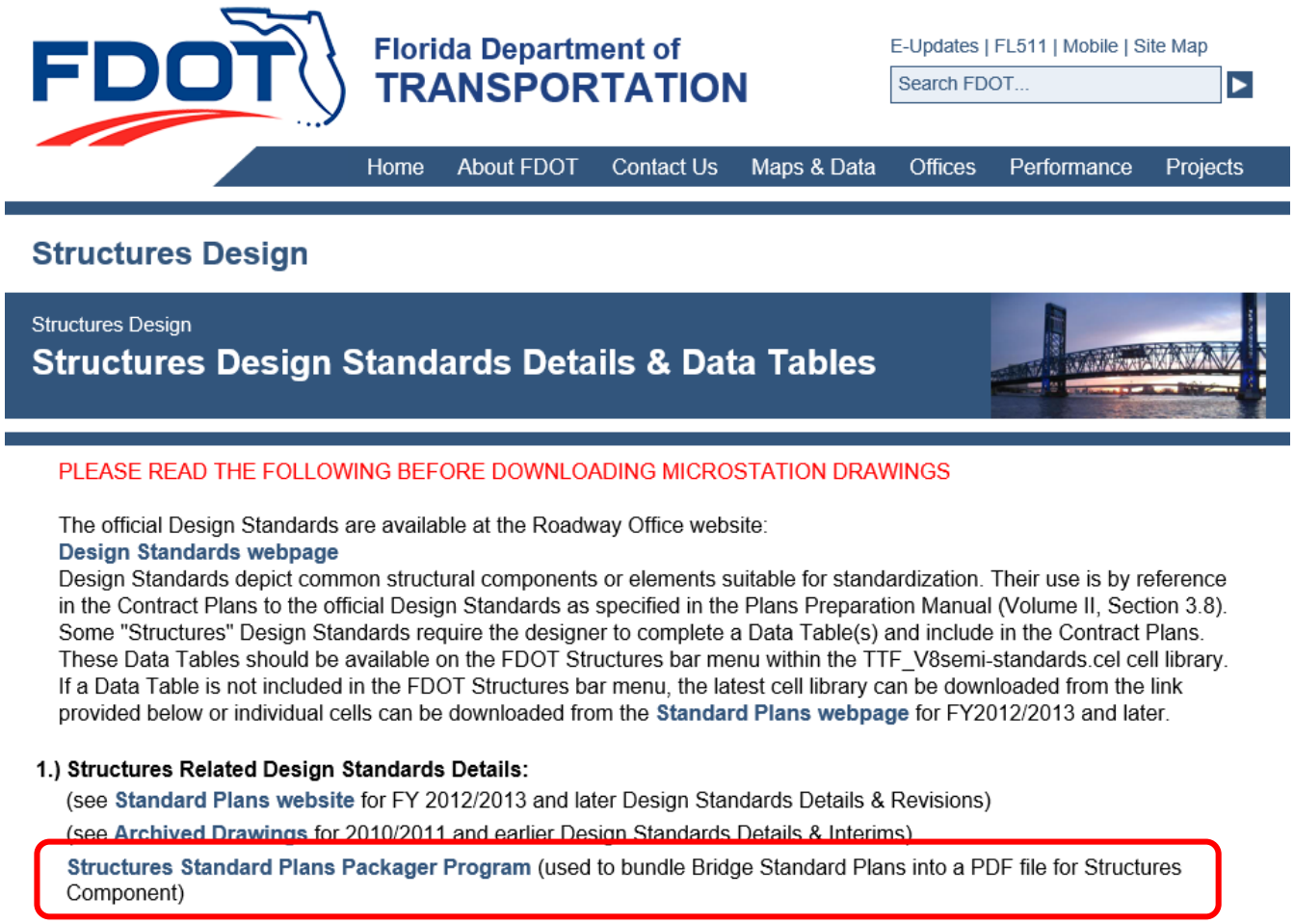
Sheet Order	File Name	File Title / Description	Control File	File Group	Sheet Prefix	Drawing Prefix
		* - Design Format ** - Lead or Component Key Sheet *** - Option				
234	B#Elec-CCTVSys*	Closed Circuit Television (CCTV) System	MECHELEC	MOVABL		
235	B#Elec-CommSys*	Communication System	MECHELEC	MOVABL		
236	B#Elec-LighProtSyst*	Lightning Protection System	MECHELEC	MOVABL		
237	B#Elec-GeneratorDet*	Generator Details	MECHELEC	MOVABLE BRIDGE - ELECTRICAL	B1-##,B2-##, …	BE-##
238	B#Elec-SubCondDet*	Submarine Conduit Details	MECHELEC	MOVABLE BRIDGE - ELECTRICAL	B1-##,B2-##, …	BE-##
239	B#Elec-FlexCableDet*	Flexible Cable Details	MECHELEC	MOVABLE BRIDGE - ELECTRICAL	B1-##,B2-##, …	BE-##
240	B#Elec-CondSchem*	Conduit Schematic	MECHELEC	MOVABLE BRIDGE - ELECTRICAL	B1-##,B2-##, …	BE-##
241	B#Elec-CondConductSched*	Conduit and BridgExit Tools edule	MECHELEC	MOVABLE BRIDGE - ELECTRICAL	B1-##,B2-##, …	BE-##
242	B#Elec-BTReflCeil*	Control House Reflected Ceiling Plans	MECHELEC	MOVABLE BRIDGE - ELECTRICAL	B1-##,B2-##, …	BE-##
243	B#PedBridgeDataTable*	Pedestrian Bridge Data	STRUCTURES	TABLES	BP-1, BP-2, BP-##	***
244	B#RebarList*	Reinforcing Bar List	STRUCTURES	CONSTRUCTION	B1-##,B2-##, …	***
245	B#DataTableLoadRating*|	Load Rating Summary Table	STRUCTURES	TABLES	B1-##,B2-##, …	***
246	B#WallControl*	Wall Control Drawing	STRUCTURES	WALLS	BW-##	W1-##,W2-##, …
247	B#Bulkhead*	Bulkhead	STRUCTURES	WALLS	BW-##	W1-##,W2-##, …
248	B#BulkheadDet*	Bulkhead Details	STRUCTURES	WALLS	BW-##	W1-##,W2-##, …
249	B#SheetPileWallAnchSteel*	Anchored Steel Sheet Pile Wall	STRUCTURES	WALLS	BW-##	W1-##,W2-##, …
250	B#SheetPileWallAnchConc*	Anchored Concrete Sheet Pile Wall	STRUCTURES	WALLS	BW-##	W1-##,W2-##, …
251	B#SheetPileWallCantSteel*	Cantilever Steel Sheet Pile Wall	STRUCTURES	WALLS	BW-##	W1-##,W2-##, …
252	B#SheetPileWallCantConc*	Cantilever Concrete Sheet Pile Wall	STRUCTURES	WALLS	BW-##	W1-##,W2-##, …
253	B#SheetPileWall*	Sheet Pile Wall	STRUCTURES	WALLS	BW-##	W1-##,W2-##, …
254	B#MSEwall*	Mechanically Stabilized Earth (MSE) Wall	STRUCTURES	WALLS	BW-##	W1-##,W2-##

STANDARD PLANS FOR BRIDGE CONSTRUCTION (~~20000 series~~ for Bridges) – Formerly DESIGN STANDARDS

Standards Plans Packager Program (Tool):

- for compiling Structures Standard Plans (Indexes) for the Structures Component Plans

  http://www.fdot.gov/structures/CADD/standards/CurrentStandards/MicrostationDrawings.shtm



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Structures Design

Structures Design

Structures Design Standards Details & Data Tables

PLEASE READ THE FOLLOWING BEFORE DOWNLOADING MICROSTATION DRAWINGS

The official Design Standards are available at the Roadway Office website:
Design Standards webpage
Design Standards depict common structural components or elements suitable for standardization. Their use is by reference in the Contract Plans to the official Design Standards as specified in the Plans Preparation Manual (Volume II, Section 3.8). Some "Structures" Design Standards require the designer to complete a Data Table(s) and include in the Contract Plans. These Data Tables should be available on the FDOT Structures bar menu within the TTF_V8semi-standards.cel cell library. If a Data Table is not included in the FDOT Structures bar menu, the latest cell library can be downloaded from the link provided below or individual cells can be downloaded from the **Standard Plans webpage** for FY2012/2013 and later.

1.) Structures Related Design Standards Details:

(see **Standard Plans website** for FY 2012/2013 and later Design Standards Details & Revisions)

(see **Archived Drawings** for 2010/2011 and earlier Design Standards Details & Interims)

Structures Standard Plans Packager Program (used to bundle Bridge Standard Plans into a PDF file for Structures Component)

Standards Plans Quantities Issues:

- **Box Culverts** (See ***FDM*** & ***BOE***) place in the **Structures Component Plans**
  - ✓ *"Box Culvert Data Table" & Index 400-289, (400-290, 400-291 when applicable).*
  - ✓ Notes & additional details
- **Box Culvert Quantities:**
  - ✓ Bridge Culvert *(Bridge #)* --> Structures Component *(similar to conventional bridge)*
  - ✓ Smaller Culverts *(no Bridge #)* --> Roadway Component *(similar to retaining walls)*

03/27/2017 11:56:10 AM

FLORIDA DEPARTMENT OF TRANSPORTATION
PROPOSAL SUMMARY OF PAY ITEMS
FOR PROPOSAL: T5589

These should be numbers

LEAD PROJECT : 238275-2-52-01 | DISTRICT : 05 | COUNTY/SECTION : 11130000

PROJECT(S) : 23827525201, 23827535201 | COUNTY : LAKE

0001 SUMMARY OF STRUCTURES

SPC	ALT	ITEM NUMBER	ITEM DESCRIPTION	UNIT	23827525201	23827535201	23827525201 BR# FLYOVER	23827525201 BR# POND RD	QUANTITY TOTAL
		0110- 3-	REMOVAL OF EXISTING STRUCTURES/BRIDGES 23827525201 110030, 110066	(LS)			1.000		1.000
		0400- 2- 4	CONC CLASS II, BRIDGE SUPERSTRUCTURE	CY			776.300	114.700	891.000
		0400- 2- 5	CONCRETE CLASS II, BRIDGE SUBSTRUCTURE	CY				50.400	50.400
		0400- 2- 10	CONCRETE CLASS II, APPROACH SLABS	CY			115.200	96.600	211.800
		0400- 2- 25	CONCRETE CLASS II, MASS, BRIDGE SUBSTRUCTURE	CY			375.500		375.500
		0400- 7-	BRIDGE DECK GROOVING, LESS THAN 8.5"	SY				444.000	444.000

BriExit Overview

Don't forget to include the ~~Index 20000 series +~~ (Bridge Standards) in the Structures Component Plans.

For more information:

Steve Nolan, P.E.

State Structures Design Office

Steven.nolan@dot.state.fl.us

(850) 414-4272

Number & Naming Changes

- **Grouped by controlling Specification Number – NOT the *Pay Item Number***
- **Last 3 number may be the same or similar to the previous *DS Index #'s***

(### - ###)

Bullet Railing & 27" Concrete Parapet *(previous 800 series)* **-**
split to relevant *Traffic Railing* and *Ped. Railing* specs:

- Concrete Parapet **521-820** <– *(DS 820)*
- Bullet Rails **515-021** & **515-022** <– *(DS 821 & 822)*

Composite Bearing Pads –
no separate construction spec:

- **400-510** <- (*DS 20510*, associated to concrete, not with prestressed beams)

Walls -
grouped together differently, but logically *(previously 6000 series):*

- C-I-P Cantilever & Gravity Walls **400-010** & **400-011** <– *(DS 6010 & 6011)*
- Precast Sheet Pile Walls **455-400** & **455-440** <– *(DS 6040 & 22440)*
- MSE Walls **548-020** & **548-030** <– *(DS 6020 & 6030)*

Conventional & FRP precast elements *(previously 22000 series)* **-**
grouped together by controlling specification but separated by material type:

- Piles **455-000 series** & **455-100 series**
- Sheet Pile Walls **455-400** & **455-440**

Title Tweaks/Changes

Purpose of Index Title Changes:

- Searchability
- Consistency
- Classification

Example: Subject - Description

- Typical Florida-I Beam Details and Notes
  → Florida-I Beam – Typical Details & Notes

Example: Subject - Classification

- Precast Sheet Pile Walls (Conventional)
- Precast Sheet Pile Walls (CFRP/GFRP & HSSS/GFRP)

Revision Log

- Revision Log
  http://www.fdot.gov/design/standardplans/current/SP-Revisions.pdf

STANDARD PLANS
FY 2018-19 REVISIONS LOG

Design Standards Index	Standard Plans Index	Description
220	425-040	**Sheet 1:** Clarified Dimensions on each side of Section BB.
233	425-053	**Sheet 1:** Changed GENERAL NOTE 1 - "clearance/gap from 1" to 5/8" to be consistent with Index 425-031.
280	430-001	**Sheet 1:** Updated the Notes for the "DISSIMILAR TYPES" detail.
20010	450-010	Changed Title: Florida-I Beam - Typical Details and Notes.
20199	450-199	Changed Title: Prestressed I-Beams Build-Up and Deflection Data.
20210	450-210	Changed Title: Florida-U Beam - Typical Details and Notes.
20299	450-299	Changed Title: Florida-U Beams Build-up & Deflection Data.
20600	455-001	Changed Title: Square Prestressed Concrete Piles - Typical Details & Notes.
20602	455-003	Changed Title: Square Prestressed Concrete Piles - EDC Instrumentation.
20631	455-031	Changed Title: 30" Square Prestressed Concrete Pile - High Moment Capacity.
22600	455-101	Changed Title: Square CFRP & SS Prestressed Concrete Piles - Typical Details & Notes. **Sheet 1:** Corrected Note 6 (Spec 962 to 926).
6040	455-400	**All Sheets:** Changed Title: Precast Concrete Sheet Pile Wall (Conventional). **Sheet 1:** Changed MATERIALS note.
22440	455-440	Changed Title: Precast Concrete Sheet Pile Wall (CFRP/GFRP & HSSS/GFRP).
21100	458-100	Changed Title: Expansion Joint System - Strip Seal.
21110	458-110	Changed Title: Expansion Joint System - Poured Joint with Backer Rod.

Discontinued the following Traffic Railings:

32” F Shape (DS Index 420)
32” F Shape Median (DS Index 421)
42” F Shape (DS Index 422)
Corral (DS Index 424)

Changes to remove details for those railings and add details for Single-Slope Traffic Railings/Concrete Barriers

- *521-660 Light Pole Pedestal – Bridge*
- *400-289 Box Culverts*
- *515 -### Bridge Railings …….etc.*

http://www.fdot.gov/design/Training/designexpo/2017/Presentations/2017-NolanBoyd-NewSingleSlopeandRetrofitTrafficRailings.pdf

Minor Revisions to Standard Plans

Standard Abbreviation Changes: ***SP (~~DS~~), SPI (~~IDS~~), FDM (~~PPM~~)***

Continuing to work towards consistency between Indexes, Instructions, and Specifications

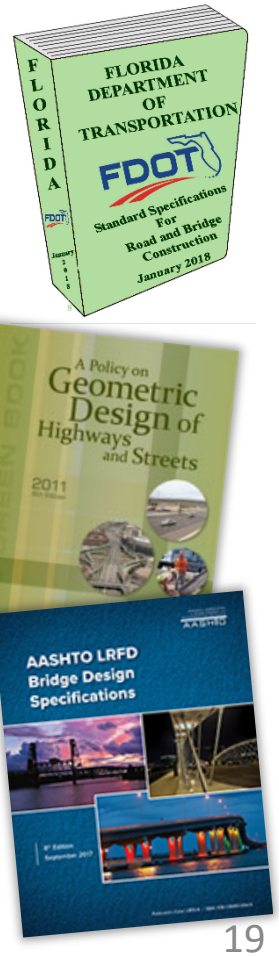
Editorial: Revised Neoprene Pads to Bearing Pads for Ancillary Structures to match Spec. language (460-470 & 550-010, 011, 012 , & 534-250).

Railings vs. Barriers: Joint effort in cooperation with Roadway and Specifications - the following rule of thumb:

If located on a Bridge or Approach Slab = *Traffic Railing*
If located on a wall or shoulder = *Concrete Barrier*

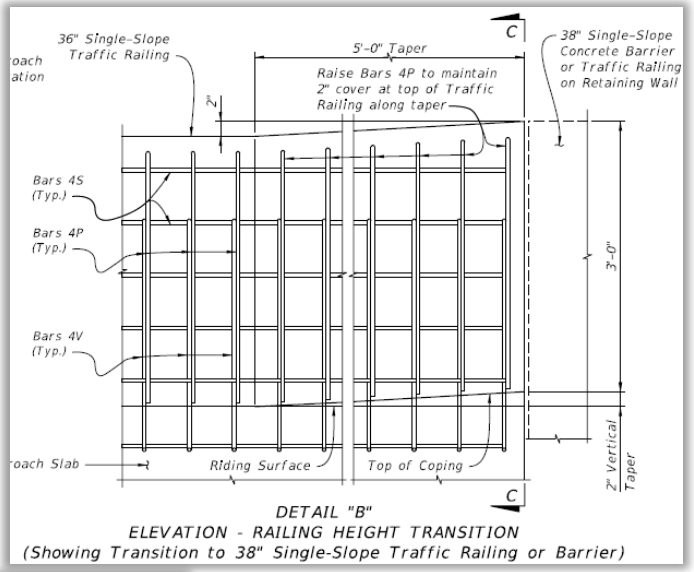
Examples:

Concrete Barriers with Junction Slab
Concrete Barrier/Noise Wall (Junction Slab, L, T, or Trench Footings)
Traffic Railing/Noise Wall (Bridge and Approach Slab)

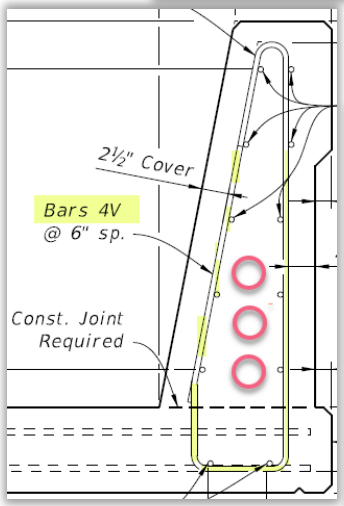


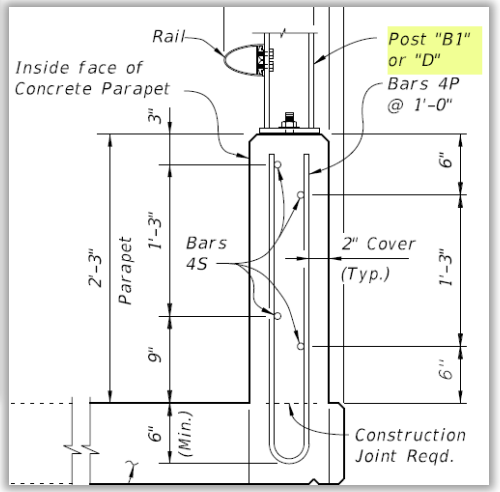
Minor Revisions (cont.)

- ***Index 515-021 & 022:*** *Bullet Railing*
  - Changed/Added additional post "Type" (Single-Slopes), due to change from 32" to 36" height
  - Dual dimensioned as necessary



- ***Index 521 series:*** *Traffic Railings*
  - Removed "Delineator Spacing" Table – see Specifications *(Section 705 ?)*
  - Added height transitions (2" for future asphalt overlay)
  - Added 3rd row of conduit
  - Changed anchorage reinf. (Bars 4V)

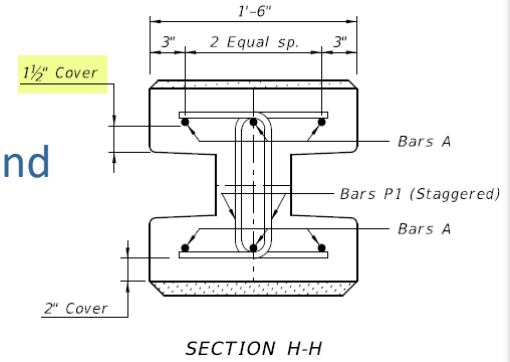


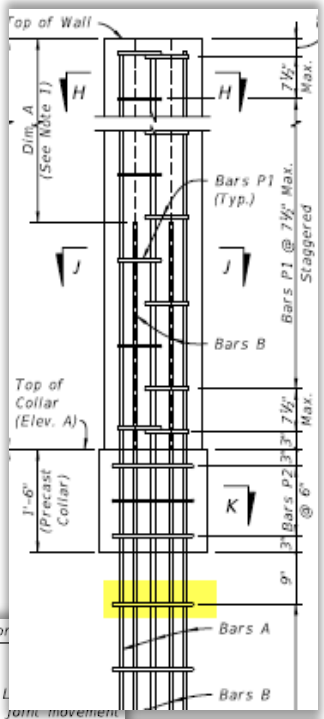


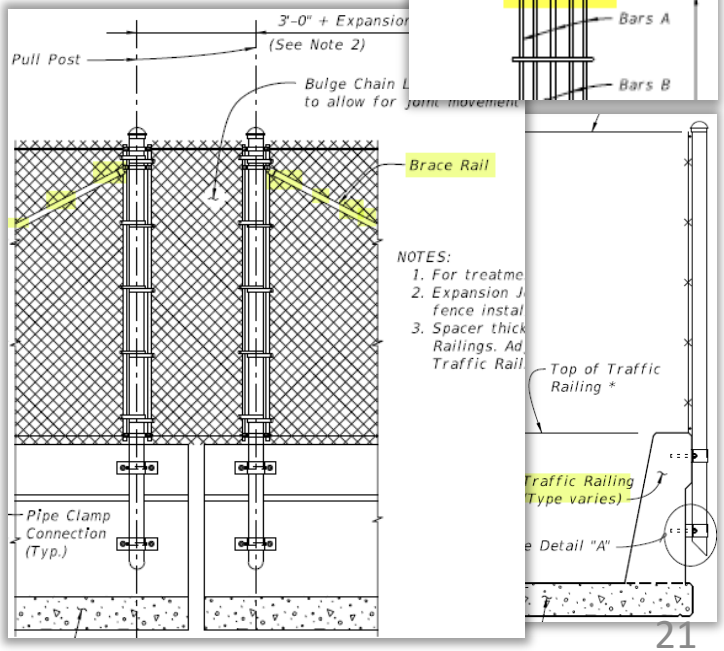
- ***Index 521-820*** *(27" Concrete Parapet)*
  - Changed post names
    (changes due to single-slope)

Minor Revisions (cont.)

- ***Index 534-200:*** *Noise Walls*
  - Updates to component tables rebar sizes and lengths
  - Cover in H-post for large size bars (#11's)
- ***Index 534-250:*** *Perimeter Walls*
  - Increased distance to first shear (tie) bar below precast section for 45° corner posts.
- ***Index 550-010:*** *Bridge Fencing (Vertical)*
  - Added Brace Rails to Expansion Assembly Detail
- ***Index 550-010 thru 550-012:*** *Bridge Fencing*
  - Changed 32" F-Shape to 36" Single-Slope





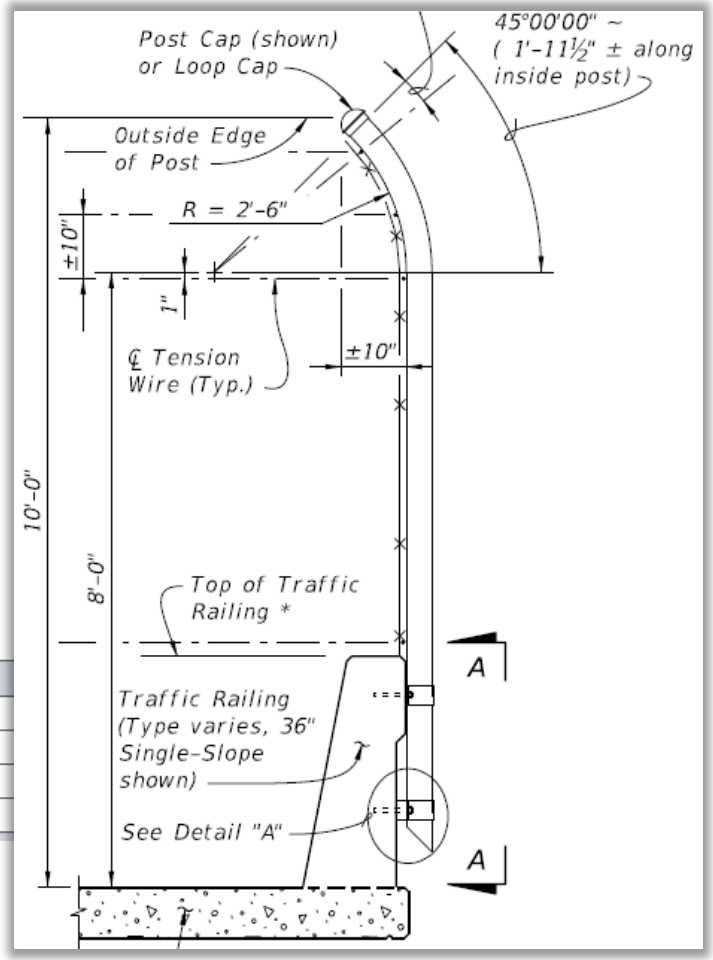


New Bride Fencing Type

Index 515-013: Bridge Fencing (Over Railroad):

- *For use when require by Railroad Permitting authority when no side walk is provided*
- *Curved Top adjacent to traffic*

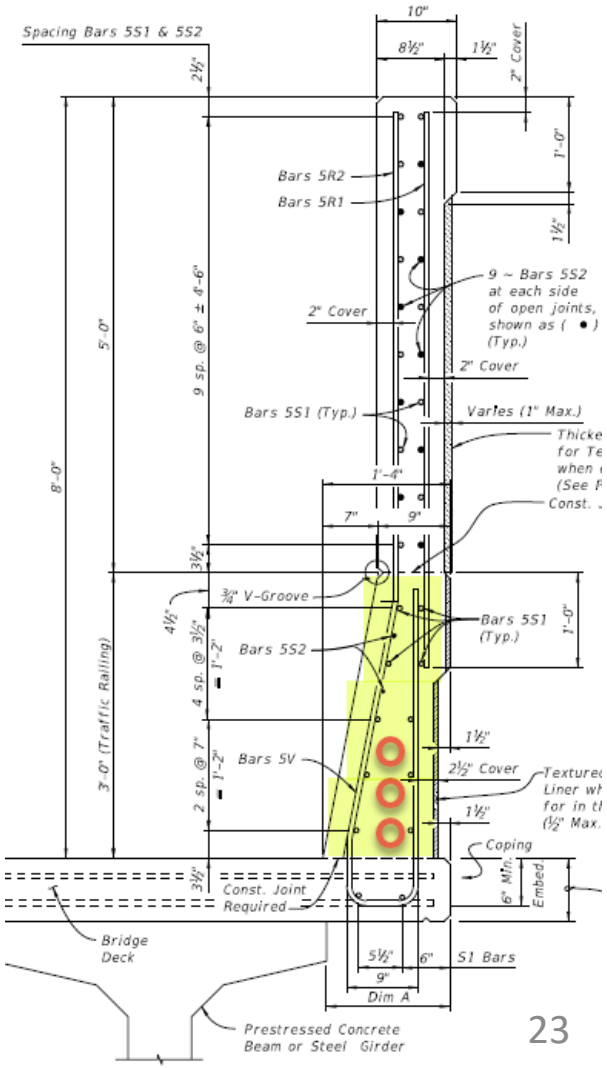
		Fencing - Type R	
550-010		Bridge Fencing (Vertical)	810
550-011		Bridge Fencing (Curved Top)	811
550-012		Bridge Fencing (Enclosed)	812
550-013		Bridge Fencing (Over Railroad)	812



Major Changes for Traffic Railing/Noise Walls

Index 521-509: Traffic Railing/Noise Wall (8'-0"):

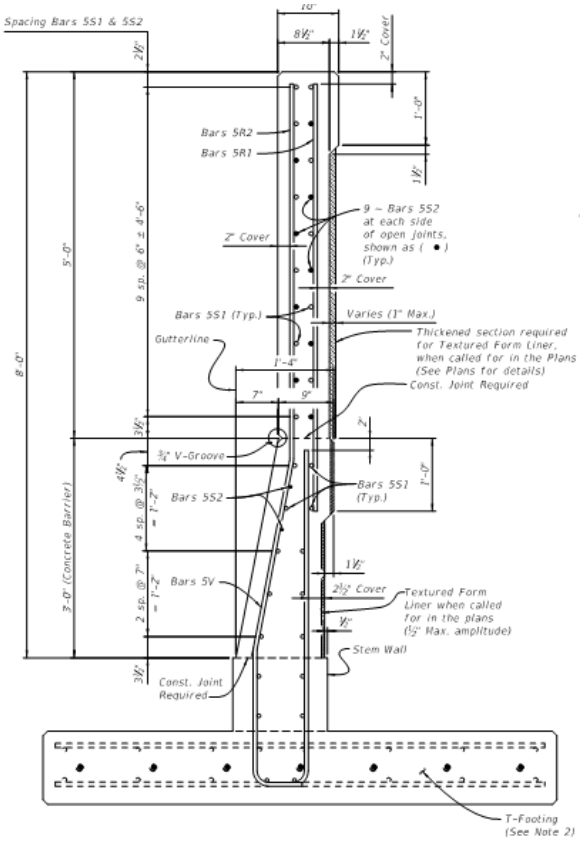
- *Modified lower traffic railing shape (36" Single-Slope)*
- *Wall similar to previous standards for traffic railing/noise wall*
  - ✓ *Bridge and Approach Slab*
  - ✓ *Must be included in the Structures Component Plans*
  - ✓ *Conduit can now fit in the Traffic Railing portion.*



Major Changes for Concrete Barrier/Noise Walls

Index 521-510 & 521-511: now called Concrete Barrier/Noise Walls

- *Concrete Barrier (36” Single-Slope)*
- *Wall similar to previous standards for traffic railing/noise wall (8’-0” and 14’-0”)*
  - ✓ *Use with Index 521-512, 513, 514 or 515 (footings)*
  - ✓ *Roadway Component Plans (i.e. do not include Standard Plans PDF’s)*



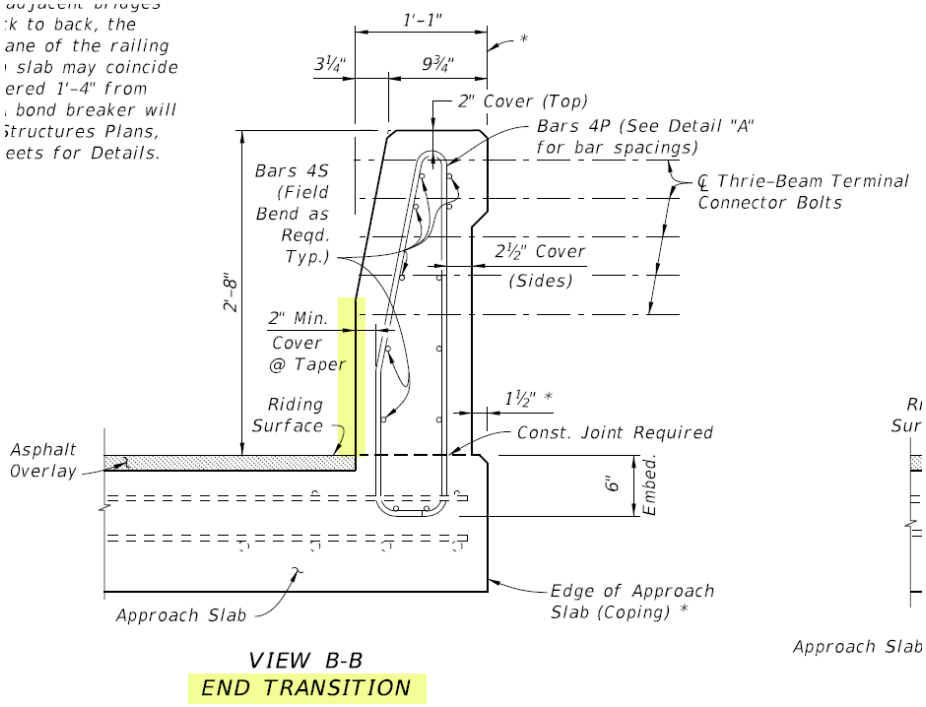
SECTION A-A
TYPICAL SECTION THRU CONCRETE BARRIER/NOISE WALL AT OPEN JOINT
(Section Thru T-Footing Shown, Section Thru Junction Slab, L or Trench Footings similar)

Major Changes/New Standards (cont.)

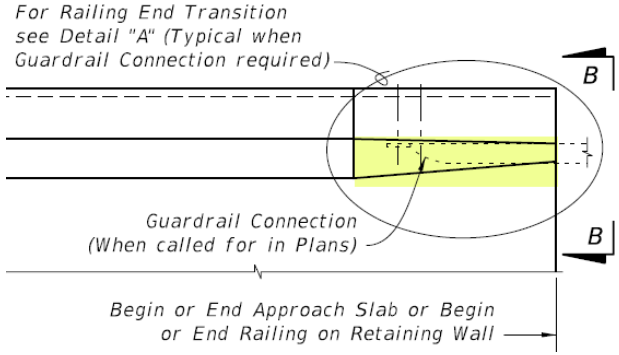
Toe Transitions for Traffic Railings & Concrete Barriers

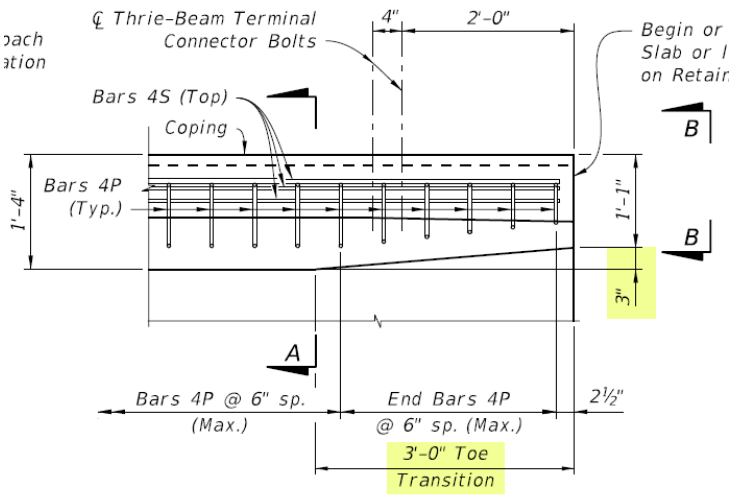
***All** traffic railings and concrete barriers **connected to guardrail**:*

✓ *Toe transition is now 3” over 3’-0”.*



VIEW B-B
END TRANSITION

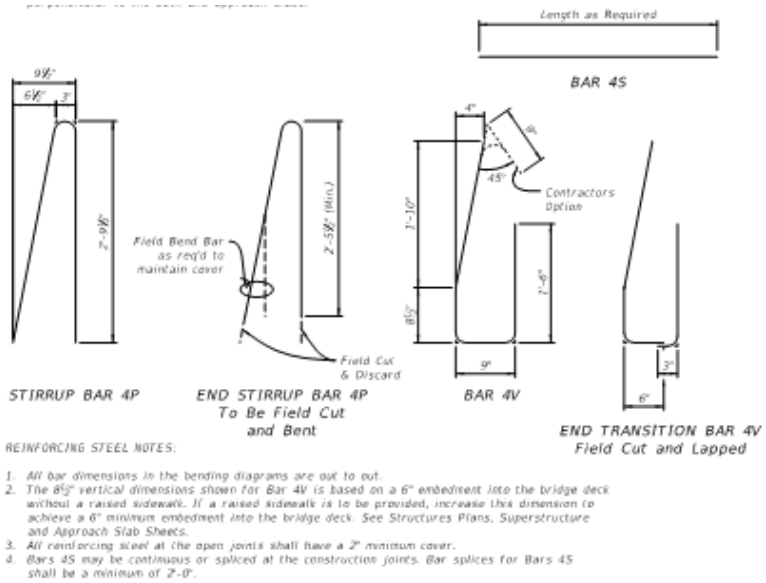


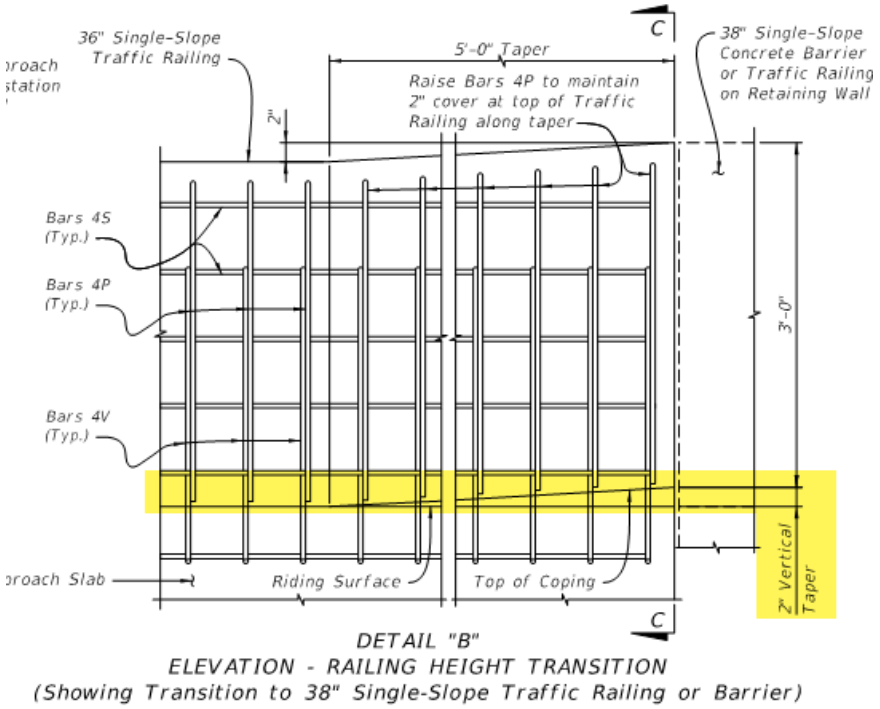


PLAN - RAILING END TRANSITION

Height Transitions (Bridge to Roadway)

- ***Index 521-427 & 521-428***: *Single-Slope Traffic Railings*
  - Added Height Transition from 36” Single-Slope to 38” Single-Slope
  - Changed reinforcing details for:
    - ✓ Consistency
    - ✓ Accommodate more conduits



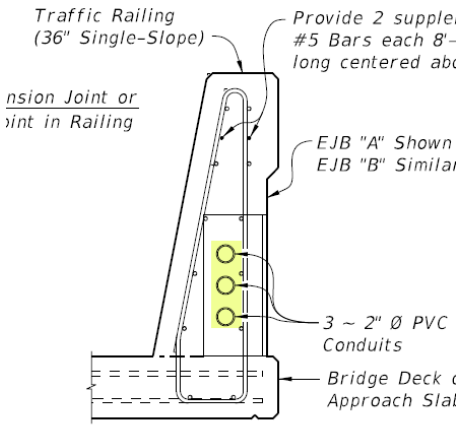


Major Changes/New Standards (cont.)

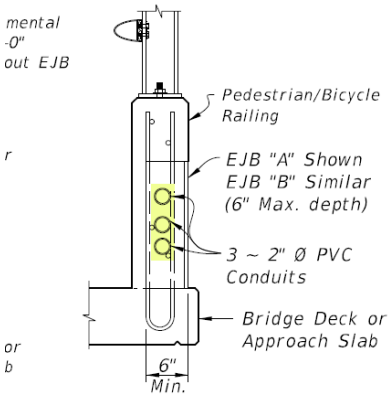
Conduit

Index 630-010 Conduit Details - Embedded:

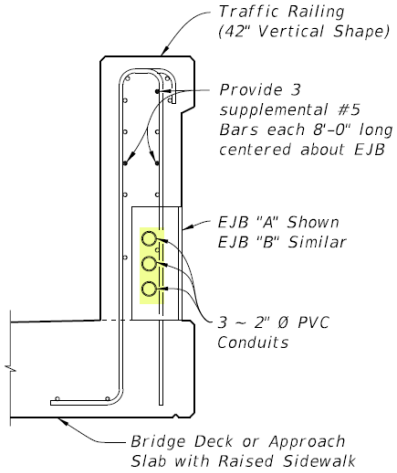
- Payment is no longer included in the cost of the traffic railing or parapet.
  - Change made in ***Specification Section 630***
  - New Pay Item Number in ***BOE***
  - Revised notes and added pay item to Instructions (***SPI***)
- Added third row of conduit for traffic railings, traffic railing/noise walls and concrete parapets.



SECTION THRU
TRAFFIC RAILING AT EJB
(36" SINGLE-SLOPE SHOWN,
42" SINGLE-SLOPE SIMILAR)



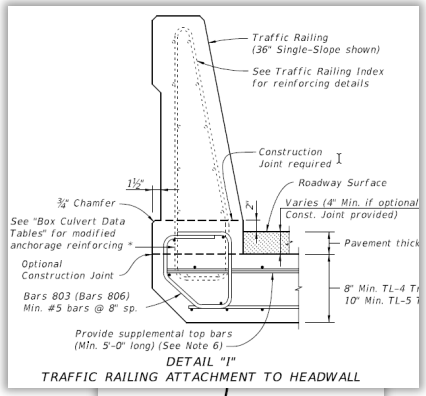
SECTION THRU PEDESTRIAN /
BICYCLE RAILING AT EJB



SECTION THRU
TRAFFIC RAILING AT EJB
(42" VERTICAL SHAPE SHOWN,
32" VERTICAL SHAPE SIMILAR)

Standard Plan Instructions (SPI)

- **Added Pay Item for Conduit Embedded (and Junction Boxes in Concrete to all applicable Indexes**
  - ✓ Pay Item: 630-2-16 Conduit, Furnish & Install (Embedded – Railings)
  - ✓ Include pay item and quantities for traffic railings or concrete parapets on bridges/approach slabs.

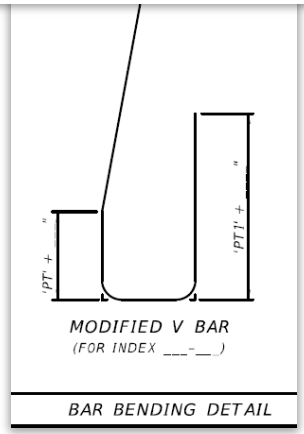


- **Added** instructions for traffic railings on concrete box culverts (See ***Index 400-289*** and "*Box Culvert Data Table*" Cell)

- **Added** details/clarification in the Design Assumptions and Limitations about sidewalk transitions and optional base to ***Index 400-090 & 400-091 Approach Slabs***

In the Roadway Plans:

Include details and payment for the optional base under the approach slab. The minimum structural requirement under the approach slab is Optional Base Group 2. If the optional base group for the roadway approaches is Group 2 or better, the same base group may be continued under the approach slab. Include embankment and optional base for the area of the approach slab in the roadway quantities.



Structures Cell Library/Data Tables

- **Changed the Index numbers to match Standard Plans Numbers (Editorial)**
- ***"Box Culvert Data Table"*** *(Index 400-289):* Added traffic railings reinforcing detail and note.
- ***"Build-up & Deflection Data Table"*** *(Index 450-199 &450-299):* Added column:
  - *Net Beam Camber (Prestress – Dead Load of Beam) @ Release*

BUILD-UP & DEFLECTION DATA TABLE FOR PRESTRESSED I-BEAMS — Table Date 07/01/17

LOCATION		REQUIRED THEORETICAL BUILD-UP OVER ℄ BEAM			NET BEAM CAMBER (PRESTRESS - DEAD LOAD OF BEAM) @ RELEASE	NET BEAM CAMBER (PRESTRESS - DEAD LOAD OF BEAM) @ 120 DAYS	DEAD LOAD DEFLECTION DURING DECK POUR @ 120 DAYS DIM A	BUILD-UP CASE NO.
SPAN NO.	BEAM NO.	AT BEGIN SPAN DIM B	AT ℄ SPAN DIM C	AT END SPAN DIM D				

NOTES: Work this sheet with Standard Plans Index 450-199.

Update your cells!!

2.) FDOT Structures Menu Data Table Cell Libraries:
(in Microstation format. PDF examples are available in the **Standard Plans Instructions** (SPI).)

TTF-V8semi-standards.cel v2016.3 (Jan 2016 - For use with FY 2016-17 Design Standards. Included in FDOTSS4 MR1 CADD Software Releases)
(0.9MB zip)

TTF-V8semi-standards.cel v2016.4 (Nov 2016 - For use with FY 2017-18 Design Standards. Included in FDOTSS4 MR2 CADD Software Releases, plus missing Data Table 17743 and updated Data Tables 21800B & 21800T)
(0.9MB zip)

TTF-StdDataTables.cel v2017.1 (Nov 2017 - For use with FY 2018-19 Standard Plans. Included in FDOTSS4 MR4 CADD Software Releases, plus updated Data Tables 450-199 & 450-299)
(0.9MB zip)

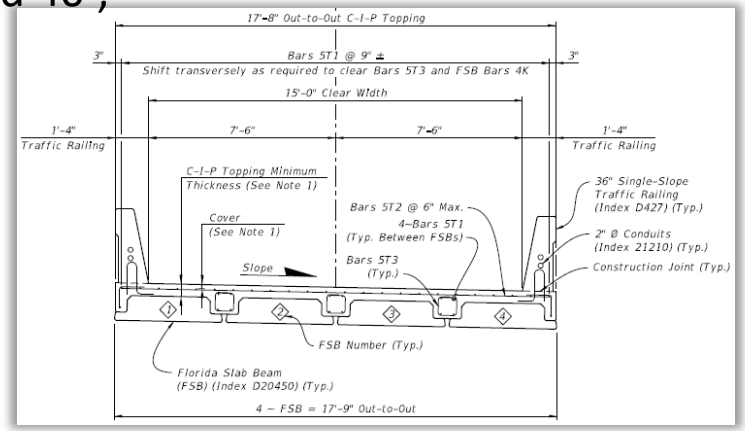
http://www.fdot.gov/structures/CADD/standards/CurrentStandards/MicrostationDrawings.shtm

Looking Ahead

Updates on other *Developmental Standards* in the works:

- ***Index D20700 series*** – Precast Intermediate Bent Cap;

- ***Index D30000 series*** – Off-System Bridge Packages (Superstructure):
  - 4 span lengths - 30', 40', 50' (done) and 60' (pending TBA);
  - 5 bridge clear widths – 15', 24', 28, 32' and 40';



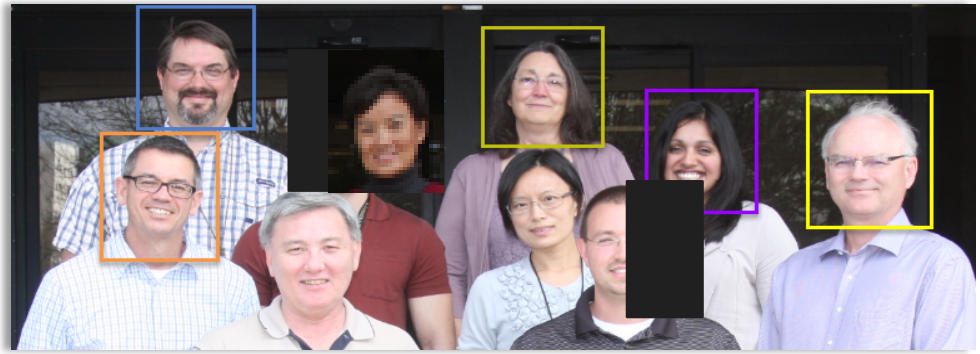
Join us June 18-20th for *"FITS" (Expo)* in Orlando !!

FLORIDA innovative TRANSPORTATION SYMPOSIUM

Message from the Design Technology Section (Structures Standards & Computer Applications)

We are here to assist you with your questions and concerns. Please contact us:

- If you have a suggestion:
  - for a new standard or
  - for an improvement to
  - an existing standard.



- If you have any issues during design or construction:
  - Fully explain the issue (photos help);
  - Provide suggestions (if you have any);
  - Provide any documentation that might support a proposed change and assist us during development.

- Anytime you have questions or concerns *(but, we recommend always thoroughly reviewing the **SPI** first)*.

Questions

Contact Information:

Steve Nolan, P.E.

State Structures Design Office

Steven.nolan@dot.state.fl.us

(850) 414-4272