

**TURNPIKE SUPPLEMENT  
TO THE  
FDOT STRUCTURES MANUAL**



**FLORIDA'S TURNPIKE ENTERPRISE  
STRUCTURES DESIGN OFFICE**

**January 2022**

## INTRODUCTION

The ***Turnpike Supplement to the Florida Department of Transportation (FDOT) Structures Manual*** provides Turnpike-specific revisions to the ***FDOT Structures Manual***.

The ***Turnpike Supplement to the FDOT Structures Manual*** is updated on an annual basis, following the official revision of the ***FDOT Structures Manual***. Interim updates to the ***Turnpike Supplement to the FDOT Structures Manual*** will be issued as Addenda to the annual update.

Should you have any comments or suggestions for this document, please contact the Turnpike Structures Design Engineer.

## VOLUME 1 – STRUCTURES DESIGN GUIDELINES (SDG)

The following are Turnpike-specific revisions to the January 2022 FDOT Structures Manual, Topic #625-020-018.

### *The following supplements Sections 1.4.5 and 7.3.1.C.*

Turnpike offers the following guidance as to the implementation of [SDG 1.4.5](#) and [7.3.1.C](#). Project specific conditions may dictate that aesthetic treatments are required. For projects that involve coatings, textures, colors, or graphics on concrete structures, please see the guidance in **Table 1**, coordinate with the Turnpike Project Manager, and request the appropriate approvals from the DDE and others as necessary. Colors, textures, and graphics should be recommended by the EOR in the approval request. The historical colors below serve as a starting point. “Coating” refers to coatings, colors, tints, or stains. “Structures” include bridges, retaining walls, noise walls and traffic railings/parapets on bridges/walls.

For historical documentation, the following are the colors that were previously used on Turnpike structures:

1. Light Tan: Federal Standard 23717 for retaining walls
2. Dark Tan: Federal Standard 20475 for traffic railings, copings, and slab overhangs
3. Turnpike Green: Federal Standard 34090 for concrete beams and steel girders

The [Approval Letter for Concrete Surface Finishes](#) can be found on the Turnpike Design website.

**Table 1**

Projects With	Treatment
New Structures	<p><u>Bridges</u> – Class 5 coating</p> <p><u>Retaining Walls</u> – Class 5 coating with Ashlar Stone (Type B) or Vertical Fractured Fin (Type G) texture per FDOT <a href="#">Standard Plans Index 534-200</a></p> <p><u>Noise Walls (ground mounted)</u> – On traffic and residential sides, Class 5 coating with Ashlar Stone (Type B) or Vertical Fractured Fin (Type G) texture per FDOT <a href="#">Standard Plans Index 534-200</a> as a minimum (project specific graphics may be considered on traffic side)</p> <p><u>Noise Walls (barrier mounted)</u> – Class 2 smooth surface finish to match traffic barrier</p>
New Structures Adjacent to Existing Structures	<p>New bridge/wall adjacent to an existing bridge/wall that does not have an existing Class 5 coating: Class 5 coating on the existing bridge/wall if feasible</p> <p>New bridge/wall adjacent to an existing bridge/wall that has an existing Class 5 coating: Class 5 recoat the existing bridge/wall if necessary/feasible</p>
Bridge Widening	Class 5 coating on both new and existing concrete, painting for new and existing steel girders (if existing steel girders are painted)
Repainting Existing Steel Girders	Steel girder repainting projects should also include Class 5 coating on the existing bridge/wall concrete
Aesthetic Commitments	Meet aesthetic commitments
Other Agencies	If a local maintaining agency requests coatings, then follow <a href="#">SDG 1.4.5.C</a>
Anti-Graffiti Coating	Do not use
Colors/Textures/ Graphics	Use of colors, textures, and graphics on concrete is acceptable and DDE approval is required for colors, and for textures/graphics if they are not from the <a href="#">Standard Plans</a> per <a href="#">SDG 1.4.5</a> .

**Add the following to Section 1.8.**

- C. Turnpike Structures does not overview the design EOR’s review of shop drawings or other construction submittals (ex: RFIs) on Design-Bid-Build projects. Please engage Turnpike Structures if there are questions or issues that require Turnpike’s attention.

***Add the following to Section 2.6.3***

Every effort should be made to use standard pier protection barriers. Existing pier retrofits/strengthening require written (email) approval of the Turnpike Structures Design Engineer.

***Add the following to Section 6.7.1.F***

All bridge traffic railings and parapets must have the maximum number of conduits permitted by the [Standard Plans](#). Conduits not intended for current use must be labeled in the plans as "future use". In the case of a parapet and a traffic railing on one side of the structure (ex: sidewalk configuration), conduits are required in whichever feature is located closest to the coping. Median traffic railing must also have the maximum number of conduits permitted by the [Standard Plans](#). In the case of adjacent bridges with back-to-back traffic railings with a clear gap of five (5) feet or less, conduits are only required in one traffic railing. These requirements also apply to retaining wall barriers/parapets.

***Add the following to Section 6.7.4.A.2***

For a "widening" project, existing bridges should be evaluated against "widening" criteria in this section even if they are not physically widened as a part of the project.

***The following supplements Section 7.3***

[SDG 7.3.1 through 7.3.4](#) applies to all portions of the existing bridge, both superstructure and substructure. Bridge widenings should be "in-kind" with the existing structure. As an example, if an existing end bent has battered piles, then the proposed end bent extension should provide a means of lateral load restraint.

***Replace the first sentence of Section 7.3.5.A with the following***

Existing asphalt overlays on bridge decks generally should remain provided that the bridge has capacity to support the overlay load. Asphalt overlays on bridge decks should be milled and resurfaced at the same time as the roadway.

***Add the following to Section 7.6.D***

The Bridge Development Report should include back-up documentation confirming the proposed widening design and details are based on the actual field conditions for the items noted in the commentary section of SDG 7.6.D.

**Modification for Non-Conventional Projects:**

***Add the following to the “blue box” for Section 7.6.D***

The 90% submittal should include back-up documentation confirming the proposed widening design and details are based on the actual field conditions for the items noted in [SDG 7.6.D](#).

***Add the following to Section 7.7***

- G. All new bridge decks (including new decks of bridge widenings) that will not be surfaced with asphalt must be grooved. If an existing bridge deck (including the existing deck of bridge widenings) is not grooved, perform a hydroplaning analysis per [Turnpike Design Handbook \(TDH\) 211.2.3](#) and add grooving if required by the analysis. Before grooving an un-grooved existing deck, evaluate project specific conditions and consider alternatives to grooving. Grooving an un-grooved existing deck requires written (email) approval of the Turnpike Structures Design Engineer.

## **VOLUME 2 – STRUCTURES DETAILING MANUAL (SDM)**

The following are Turnpike-specific revisions to the January 2022 FDOT Structures Manual, Topic #625-020-018.

***No changes to the entire Volume***

## **VOLUME 3 – FDOT MODIFICATIONS TO LRFDLTS-1**

The following are Turnpike-specific revisions to the January 2022 FDOT Structures Manual, Topic #625-020-018.

### ***The following supplements Section 1.1***

Please refer to [TDH 261](#) for additional information on existing structures.

### ***The following supplements Section 2.4.2.2***

For projects that involve the re-use of existing sign structures carrying DMS signs, at a minimum, existing U-bolts which connect the truss chords to the upright must be replaced with high-strength U-bolts.

### ***The following supplements Section 2.6.1***

The following applies to existing bridge mounted signs:

- A. Evaluate existing bridge mounted signs per [FDM 261.7](#).
- B. Evaluate existing bridge mounted signs against the 'setback distance for discontinuous elements' requirements in [FDM 215.4](#). Remove existing bridge mounted signs not meeting these requirements.
- C. For existing bridge mounted signs attached to a bridge which will be widened:
  1. Proposed signs attached to the widening side must meet the requirements of **Section 2.6.1**.
  2. Existing signs attached to the non-widened side must be evaluated per items A and B above.

### ***Replace the first paragraph of Section 18.1 with the following***

See [FDM 261.7](#) for requirements for evaluating existing highway signs, luminaires, traffic signals, ITS, and tolling structures.

### ***Add the following to the end of Section 18.1***

FDOT minimum sign areas for overhead sign supports are not required when analyzing an existing structure.

## **VOLUME 4 – FIBER REINFORCED POLYMER GUIDELINES (FRPG)**

The following are Turnpike-specific revisions to the January 2022 FDOT Structures Manual, Topic #625-020-018.

***No changes to the entire Volume***