



Florida Department of Transportation

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MEMORANDUM

DATE: January 28, 2021
FROM: Patrick Muench, P.E., Turnpike Design Engineer
SUBJECT: 2021 Turnpike Design Criteria Documents

This memorandum announces the 2021 release of three (3) Florida's Turnpike Enterprise (Turnpike) design criteria documents:

- ***Turnpike Design Handbook (TDH) and associated Guide Drawings***
Available on the Turnpike Design website:
floridasturnpike.com/business-opportunities/design/turnpike-design-handbook/
- ***Turnpike Supplement to the FDOT Drainage Manual***
Available on the Turnpike Design website:
floridasturnpike.com/business-opportunities/design/design-criteria-and-standards/
- ***Turnpike Supplement to the FDOT Structures Manual***
Available on the Turnpike Design website:
floridasturnpike.com/business-opportunities/design/design-criteria-and-standards/

IMPLEMENTATION

These documents and associated criteria are effective on projects beginning design on or after February 1, 2021 and on projects currently in the design phase where implementation will not adversely impact production schedules as determined by the Turnpike Project Manager and Turnpike Design Engineer.

REQUIREMENTS

The major changes in Turnpike design requirements are listed below. Other changes consist of formatting, minor editing, updated references, and changes for consistency with FDOT Design Manual (FDM) 2021 updates.

Turnpike Design Handbook (TDH) – Parts 1, 2, 3, and 9**111.7 Project Documentation**

Added new section language that discusses documentation of project submittals in Project Suite Enterprise Edition (PSEE).

111.7.1 File Naming Convention

Deleted reference to “Pre-Final” submittal.

114.3.1.5 Design Documentation

Deleted list item (7) regarding ERCAR findings and recommendations.

120.2 Design Documentation Submittals

Deleted reference to “pre-final” submittal.

120.2.3.1 Approval Process

Deleted reference to “pre-final” submittal.

120.2.3.3 Typical Section Sheet

In list items (5) & (6) deleted reference to “Express” and “express lane markers” and require “Lane buffer widths” to be shown on Roadway and Bridge Typical Sections.

120.2.6.1 Turnpike Preliminary Traffic Control Plan

Modified requirements for the 45% traffic control plan submittal and associated workshop. Comments provided by the Turnpike in ERC for the 45% traffic control plan submittal are for information only and do not require responses in ERC.

120.2.7.1 Turnpike Pavement Design Submittals

Deleted reference to “pre-final” submittal.

Added list item (7) requiring equivalent baseline stations to be shown in the pavement design submittal package and appendices.

120.2.7.2 Cross Slope Analysis During Design

Deleted reference to FDM 211.2.2.1 and associated language.

Added list item (6) requiring equivalent baseline stations to be shown in the Cross Slope Analysis Report and appendices.

120.4 Plans Phase Reviews

Added new section language that requires the CADD.zip or BIM.zip, as outlined in the FDOT CADD Manual, to be included with each phase submittal.

122.3.1 Turnpike Design Exceptions, Formal Design Variations and Design Variation Memorandums

Deleted reference to “pre-final” submittal.

122.4 Documentation for Approval

Deleted list item (7) related to documentation requirements for Design Exceptions and Formal Design Variations.

124.2.1 QA/QC Staffing Plan

Clarified that staff replacements require written (e-mail) approval of updated staffing plans.

130 Signing and Sealing Documents

Deleted all language in this chapter (includes 130.1, 130.2, 130.2.2, 130.3, 130.3.2, and 130.4).

131.1.1 Definitions

Added list items (5), (7), & (11) which modify the definitions of: “Plans, Specifications, and Estimates (PS&E) Package,” “Production Date,” and “Supplemental Specifications Package.”
Added list item (12) which adds a new definition for “PS&E Submittal.”

131.2.1 PS&E Submittal Package to Tallahassee

Deleted this subsection.

131.2.2 Re-Submittal of Withdrawn Projects

Deleted this subsection.

131.3 Central Office Plans Processing

Deleted this section.

132 Plan Revisions

Deleted all language in this chapter (includes 132.2 and Exhibit 132-1).

200 Context Based Design

Deleted all language in this chapter (includes 200.1).

211.2.2 Pavement Cross Slopes

Modified the typical section requirement for the two inside travel lanes sloped towards the median to apply to eight (8) or more lanes.

211.2.3 Hydroplaning Risk Analysis

Changed “express lane buffer” to “managed lane buffer.”

Relocated language to this subsection from 211.8, regarding hydroplaning mitigation strategies at bridge transitions.

211.3.2.2 Crossovers on Turnpike Facilities

Deleted reference to the Roadway Guide Drawing – Emergency Crossover Design (which has been removed).

Added new language regarding median opening design.

211.4 Shoulders

Modified list item (4) for other shoulder requirements to indicate that when a twelve-foot shoulder is required for sections with shoulder gutter, use ten-foot paved shoulder with shoulder gutter and follow the Managed Lanes shoulder criteria outlined in FDM Table 211.4.1.

211.4.3 Limits of Friction Course on Paved Shoulders

Added new subsection language that details requirements for the placement of friction course relative to the inside shoulder in sections with barrier wall where the inside shoulder slopes towards the travel lane. This language replaces the Roadway Guide Drawing – FC Inside Shoulder Detail (which has been removed.)

211.8 Superelevation

Relocated language from this section to subsection from 211.2.3, regarding hydroplaning mitigation strategies at bridge transitions.

211.17 Maintenance Access

Relocated language to this new section from 215.4.6.4.2, regarding design of maintenance access points.

215.4.1.2 Semi-Rigid Barrier

Deleted this subsection, which related to Roadway Guide Drawing – W-Beam Guardrail Installation (which has been removed).

215.4.6.4.2 Access Openings

Relocated language from this subsection to 211.17, regarding design of maintenance access points.

215.9 Miscellaneous Asphalt Pavement

Added new section language detailing the evaluation of miscellaneous asphalt pavement under guardrail to remain.

216.4.5 Borrow Excavation (Truck Measure)

Modified language regarding the availability of borrow material within the project right of way.

222.4.1 Bridge Pedestrian Railings and Fences

Added new subsection language detailing requirements for bridge pedestrian fences.

228.2 Landscape Design Requirements

List items (1), (2), and (3), regarding landscaping design requirements, relocated from 329.6. Added new list item (4), regarding landscaping design requirements for Maintenance Plans.

228.3 Landscape Opportunity Plan

Deleted list item (5).

228.3.3 Purpose, Need and Feasibility Study

Relocated language to this new subsection from 329.1.1, regarding the need for a landscaping feasibility study.

230.1 General

Modified language to delete general description of Traffic Guide Drawings.

230.2.2 Overhead Signs on Limited Access Facilities

Deleted list item (4) regarding exit direction signs on overhead structures.
Deleted paragraph regarding express lane toll amount sign.

230.2.4 External Lighting of Overhead Signs

Deleted language regarding prohibition of top mounted luminaires.

231.1.5.2 Daytime Supplemental Underdeck Lighting

Deleted list item (1)(d) regarding the need for underpass daytime lighting and traffic volumes and pedestrian/cyclist traffic.
Deleted “blue box” regarding average pavement luminance for daytime lighting.

231.2 Design Criteria

Relocated language from this section to 231.7, regarding LDAR requirements.
Deleted “blue box” regarding use of shoulder mounted light poles.
Deleted paragraph regarding average initial illumination requirements for conventional lighting.
Deleted language regarding projects with open road tolling gantries and roadside lighting.

231.2.3 Lighting Load Center and Wiring Criteria

Added new subsection language that requires coordination with utility service providers.
Modified language regarding voltage rating requirements for Turnpike owned and maintained roadway luminaires.
Modified language regarding required tag for dedicated daytime lighting circuit conductors.

231.3 Design Methodology

Modified section language regarding photometric analysis requirements and delete reference to the FDM.

231.7 Lighting Design Analysis Report

Relocated language to this section from 231.2, regarding LDAR requirements.

Relocated language to this section from 326.12, regarding LDAR requirements.

232.10 Traffic Signal Project Coordination

Modified section language regarding maintenance agreements with local agencies for traffic signals and added requirement for inclusion of a TSMCA with the 90% submittal for new signals.

233.1.3 ITS Device Approval and Compatibility

Added new language regarding the need for coordination with maintaining agencies to determine equipment preferences.

233.3 ITS Power Design

Modified language regarding the power distribution management unit.

233.3.4 Power Design Requirements

Added new subsection that includes requirements for step-up and step-down transformers.

233.4.1 Conduit Infrastructure

Added new language regarding conduits installed under large water bodies.

233.4.3 Fiber Optic Cable Designating System

Modified language regarding the requirements of fiber route marker labeling.

Relocated language from this subsection to 328.5, regarding the provision of Turnpike ITS contact information.

233.7.3 Equipment Shelter

Deleted this subsection.

233.7.4 Maintenance Service Pads

Modified language regarding requirements for maintenance service pads.

233.9.5 Automatic Vehicle Identification (AVI) Systems

Added new paragraph regarding coordination needed to ensure VDS-AVI penetration.

Deleted paragraph regarding requirement to provide travel time origin-destination submittal.

240.2.1.2 Work Zone Speed

Relocated language from this subsection to 240.2.1.3, regarding transitions and tapers for work zones.

240.2.1.3 Tapers

Relocated language to this new subsection from 240.2.1.2, regarding transitions and tapers for work zones.

240.2.1.6 Lane Closure Analysis

Modified language to delete commentary regarding Turnpike System.

Modified language to clarify prohibition of daytime and weekend lane closures.

240.2.2.12 Motorist Awareness System

Deleted this subsection.

240.2.2.24 Paved Milled Surfaces Prior to Opening to Traffic

Modified language to delete reference to development specification DEV327SDP.

242.5 Traffic Pacing Restrictions

Modified language to clarify construction elements that require detours.

Modified language to clarify that written (e-mail or meeting note documentation) approval is required from the Turnpike Traffic Operations Engineer for traffic pacing operations.

Added new language regarding the requirements for a Safe Route traffic pacing plan if construction activities last longer than the allowable traffic pacing timeframe.

261.1 General

Modified language regarding the coating of ancillary structures.

267.3 Contractor Information Required

Added new subsection that includes language regarding minimum shop drawing submittal requirements.

267.4 Submittals Requiring a Specialty Engineer or Contractor's Engineer of Record

Added new language regarding digitally signed and sealed shop drawing submittals by a specialty engineer or contractor's engineer of record.

267.5 Transmittal of Submittals

Added new language regarding the requirement to submit shop drawings using ProjectSolve.

267.6 Disposition of Submittals

Modified language regarding disposition of submittals by EOR and Turnpike Reviewers.

Modified "blue box" language regarding disposition of submittals by EOR and the Department.

267.11 Working Drawing Flow Diagrams

Replaced Figure 267.11.3.

Replaced Figure 267.11.4.

300.3 Base Sheet Format

Deleted this section.

301.2 Phase Submittals

Relocated language regarding Notes to Reviewers sheet(s) from this section to 301.2.1 & 301.2.2.

301.2.1 Phase I Submittal

Relocated language regarding Notes to Reviewers sheet(s) to this subsection from 301.2.
Added list item under “PLAN AND PROFILE- PLAN VIEW” to include shoulder gutter, guardrail, and barrier wall limits.

301.2.2 Phase II Submittal

Relocated language regarding Notes to Reviewers sheet(s) to this subsection from 301.2.

301.2.5 PS&E Phase Submittals

Added new subsection language regarding the first PS&E submittal, to require that it is signed and sealed.

301.3.2 Technical Proposal Submittal Requirements

Deleted requirements for Landscape Opportunity Plan.

301.3.3 90% Plans Component Submittal Requirements

Deleted this subsection.

306.3 Typical Section Information

Added new section language that includes additional list item requirements for typical sections, consistent with TDH requirements for the Typical Section package.

319.1 General

Deleted this section (includes 319.1.1).

319.2 Required Information

Modified language to add additional requirements for labeling cross section elements.

321.3 Required Information

Added new chapter/section language regarding additional information required to be included in TTCP.

325.4 Tabulation of Quantities and Pay Item Notes

Deleted this section.

325.8 Multi-Post Sign Supports

Modified text to require that multi-post cross sections only have to be provided for Toll Schedule signs.

Deleted list item (4) regarding ability to include more than one multi-post cross section on a single cross section sheet.

326.4 Tabulation of Quantities and Standard Notes

Deleted this section.

326.12 Lighting Design Analysis Report (LDAR)

Relocated language from this section to 231.7, regarding LDAR requirements.

328.5 General Notes

Relocated language to this section from 233.4.3, regarding the provision of Turnpike ITS contact information.

328.5.1 Project Layout Sheet

Relocated language in this subsection to new section 328.8.

328.6.1.8 Closed-Circuit Television Systems

Added new subsection language including requirements for CCTV plans.

328.8 Project Layout Sheet

Relocated language to this new section from 328.5.1.

329.1.1 Phase Submittals

Deleted language regarding required phase submittals.

Relocated language from this subsection to new subsection 228.3.3, regarding the need for a landscaping feasibility study.

329.5 General Notes

Modified language to clarify that provided General Notes are for Maintenance-Let projects.

Deleted list items (2), (3), and (5) that provided General Notes.

329.6 Landscape Plan Sheets

Relocated language from this section to 228.2, regarding landscaping design requirements.

329.8 Landscape Opportunity Plan (LOP)

Added new section language including requirements for a Landscape Opportunity Plan.

329.9 Vegetation Disposition Plans

Added new section language including requirements for Vegetation Disposition Plans.

916.2.1 Required Information

Add new language regarding conflict of existing abandoned structures and proposed drainage structures.

Add new language regarding wall zones.

918.2 Required Information

Add new language regarding requirements for the Drainage Map sheet.

Turnpike Guide Drawings

Guide Drawings Introduction

Modified introduction language.

Lighting Guide Drawings

Sheet 203 – modified details and notes.

Sheet 204 – modified sheet title and details.

Sheet 205 – modified details.

Sheet 206 – REMOVED.

Roadway Guide Drawings

MOT General Notes – Removed “General” note 2; removed “Tolls AET Lane Milling and Resurfacing Restrictions” note 1 and note 2; removed “Special Notes for All Resurfacing Work” note 1.

Emergency Crossover Design - REMOVED

FC Inside Shoulder Detail - REMOVED

W-Beam Guardrail Installation - REMOVED

Traffic Guide Drawings

Sheet 108-3 – Modified logo for Peach Pass; added new logos for other Toll Agencies

Sheet 108-6 – Removed detail for sign “1LS”; added details for sign “TPK-INT1” and sign “TPK-INT2.”

CONTACT

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Turnpike Supplement to the FDOT Drainage Manual

3.7 Hydraulic Openings and Protective Treatment

Deleted this section (includes 3.7.3).

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Turnpike Supplement to the FDOT Structures Manual

Volume 1, Sections 1.4.5 and 7.3.1.C

Updated Table 1 and the surface treatment requirements for various structures and project types.

Volume 1, Section 2.6.4.E

Modified language to clarify that written (e-mail) approval is required from Turnpike Structures Design Engineer.

Volume 1, Section 7.7

Modified language to clarify that written (e-mail) approval is required from Turnpike Structures Design Engineer.

Volume 3, Section 18.1

Modified language to clarify that FDOT minimum sign areas for overhead sign supports are not required when analyzing an existing structure.

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