

# **TURNPIKE DESIGN HANDBOOK (TDH)**

## **DEVELOPMENT AND PROCESSES – PART 1**



### **FLORIDA'S TURNPIKE ENTERPRISE PRODUCTION DESIGN DEPARTMENT**

**OCOEE, FL**

**January 2018**

## Introduction

As part of the Turnpike's continuing quality enhancement effort, the ***Turnpike Design Handbook (TDH)*** has been developed to provide consultants, reviewers and management with a single source of additional Turnpike-specific requirements that modify or add to the requirements included in the ***Florida Department of Transportation (FDOT) Design Manual (FDM)***.

The ***FDM*** and the ***TDH*** are both three-part documents:

- Development and Processes – Part 1
- Design Criteria – Part 2
- Plans Production – Part 3

The TDH also includes the [\*\*\*Turnpike Enterprise Guide Drawings\*\*\*](#), which are available electronically on the Turnpike Design website.

For Turnpike requirements related to tolling, please see the [\*\*\*General Tolling Requirements \(GTR\)\*\*\*](#) which is a separate document.

The ***TDH*** table of contents for Parts 1, 2, and 3 show the ***FDM's*** chapters and sections that have been modified. If a section has been modified, the user can refer to the specific section in the ***TDH*** shown in the Table of Contents.

The ***TDH*** is updated on an annual basis, following the official revision of the FDM. Interim updates to the ***TDH*** will be issued as Addenda to the annual revision.

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

## Table of Contents

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### **100 Introduction**

*No changes to the entire chapter*

### **101 Context Classification**

*No changes to the entire chapter*

### **102 Glossary of Terms**

*No changes to the entire chapter*

### **103 Standard Forms**

*No changes to the entire chapter*

### **104 Public Involvement**

*No changes to the entire chapter*

### **105 Aesthetic Design**

*No changes to the entire chapter*

### **106 Exempt Public Documents**

*No changes to the entire chapter*

### **110 Initial Engineering Design Process**

110.2	Initial Engineering Design .....	110-1
110.5	Support Services .....	110-1
110.6	Preliminary Geometry.....	110-1

### **111 Final Engineering Design Process**

111.2	Final Engineering Design .....	111-1
111.3	Contract Plans Preparation .....	111-1

111.7	Project Documentation Submittal .....	111-1
-------	---------------------------------------	-------

## **Exhibits**

Exhibit 111-1	Turnpike Guidelines for Project File Creation + Naming.....	111-1
---------------	---	-------

## **112 Update Engineering Design Process**

*No changes to the entire chapter*

## **113 Right of Way Requirements**

113.1	Initial General .....	113-1
113.2	Procedures for Establishing Right of Way Requirements .....	113-1
113.2.3	Access Management .....	113-1
113.4	Property Owner Contacts .....	113-1
113.5	Construction Issues .....	113-2

## **114 Resurfacing, Restoration and Rehabilitation (RRR)**

114.1	General.....	114-1
114.3	RRR Design Process.....	114-1
114.3.1	Assessment of Existing Conditions.....	114-1
114.3.1.4	Design Exceptions and Design Variations .....	114-1
114.3.1.5	Design Documentation .....	114-3

### **Tables**

Table 114.3.1	Turnpike Design Exceptions and Design Variations.....	114-2
---------------	---	-------

## **115 Standard Plans and Standard Specifications**

*No changes to the entire chapter*

## **116 Roundabout Evaluation**

*No changes to the entire chapter*

## **120 Design Submittals**

120.2	Design Documentation Submittals.....	120-1
120.2.3	Typical Section Package .....	120-1

120.2.3.1	Approval Process .....	120-1
120.2.3.3	Typical Section Sheet.....	120-1
120.2.3.4	FTE Turnpike Processing .....	120-2
120.2.4	Preliminary Drainage Design .....	120-3
120.2.5	Preliminary Geometry and Grades .....	120-3
120.2.5.1	Turnpike Preliminary Line and Grade Submittal .....	120-3
120.2.6	Preliminary Traffic Control Plan .....	120-4
120.2.6.1	Turnpike Preliminary Traffic Control Plan .....	120-4
120.2.7	Pavement Selection and Design .....	120-5
120.2.7.1	Turnpike Pavement Design Submittals.....	120-5
120.2.7.2	Cross Slope Analysis During Design .....	120-7
120.2.7.3	Cross Slope Analysis Post Design .....	120-7
120.2.9	Roadway Design Documentation .....	120-8

## **121 Bridge Project Development**

121.9	Bridge Development Report (BDR)/30% Structures Plans .....	121-1
121.9.2	Format .....	121-1
121.10	Bridge Development Report (BDR) Submittal Checklist.....	121-1

## **122 Design Exceptions and Design Variations**

122.3	Justification for Approval .....	122-1
122.3.1	Turnpike Design Exceptions and Variations .....	122-1
122.7	Design Approval Request.....	122-1
122.7.3	Design Variation Approval .....	122-1
122.7.3.1	Turnpike Design Variations .....	122-1

## **123 Engineering Design Estimate Process**

123.6	Alternative Contracting Practices.....	123-1
-------	--	-------

## **124 Quality Assurance and Quality Control**

124.4	Turnpike Quality Control and Assurance Process .....	124-1
-------	--	-------

124.4.1	Quality Goals and General Requirements .....	124-1
124.4.2	Quality Control Procedure Requirements .....	124-3
124.4.2.1	Completion Checklists Requirements .....	124-3
124.4.2.2	Quality Control Tracking Stamp Requirements .....	124-3
124.4.2.3	Quality Process Log Requirements .....	124-4
124.4.3	Definitions.....	124-4

### **Exhibits**

Exhibit 124-1	Quality Control Tracking Stamp.....	124-6
Exhibit 124-2	Project Staffing List .....	124-7
Exhibit 124-3	Quality Process Log .....	124-11
Exhibit 124-4	Certificate of Compliance .....	124-12
Exhibit 124-5	Certification of Plans, Specifications and Quantities .....	124-13

## **125 Federal-Aid Project Certification**

*No changes to the entire chapter*

## **126 Lane Elimination Projects**

*No changes to the entire chapter*

## **127 Community Aesthetic Features**

*No changes to the entire chapter*

## **130 Signing and Sealing Documents**

130.2	Signing and Sealing Contract Plans .....	130-1
130.2.2	Manual Signing and Sealing .....	130-1
130.3	Signing and Sealing Other Documents.....	130-1
130.3.1	Digital Signing and Sealing.....	130-2
130.3.2	Manual Signing and Sealing.....	130-2
130.4	Signing and Sealing Revisions .....	130-2

## **131 Plans Processing and Revisions**

131.2	Plans Processing.....	131-1
-------	-----------------------	-------

131.2.1 PS&E Submittal Package to Tallahassee ..... 131-1  
131.2.2 Revisions to the PS&E Submittal..... 131-1  
131.2.3 Re-Submittal of Withdrawn Projects ..... 131-2

**Exhibits**

Exhibit 131-1 Contract Addendum Transmittal Memo ..... 131-3

**140 Lump Sum Projects**

*No changes to the entire chapter*

## 100 Introduction

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section.***



## 101 Context Classification

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## 102 Glossary of Terms

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## 103 Standard Forms

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## **104 Public Involvement**

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## 105 Aesthetic Design

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## **106 Exempt Public Documents**

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## 110 Initial Engineering Design Process

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 110.2 Initial Engineering Design

*Add the following activities*

- (13) Identify seasonal high water and base clearance water elevations and determine base clearance.
- (14) Identify applicable project drainage criteria and constraints. Determine impacts to project design and schedule.

### 110.5 Support Services

*Add the following functional areas*

22. Toll Operations
23. Environmental Permitting
24. ITS
25. Lighting/Electrical
26. Concepts
27. Architecture
28. Materials (pavement)

### 110.6 Preliminary Geometry

*Add the following sentence to the end of paragraph 3*

Refer to **TDH 120.2.5.1**, for specific submittal and coordination requirements of the preliminary line and grade.

## 111 Final Engineering Design Process

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 111.2 Final Engineering Design

*Add the following item to the list of major design activities*

(16) Toll facilities design

### 111.3 Contract Plans Preparation

*Add the following item to the list of major component sets*

(9) Toll Facilities

### 111.7 Project Documentation Submittal

*Add the following exhibit*

#### Exhibit 111-1 Turnpike Guidelines for Project File Creation + Naming

These guidelines do not supersede [CADD Manual](#) standards for Digital Delivery processes and related file naming conventions for the signed and sealed Contract Plans and Specifications Package deliverables. Contact the Turnpike Program Services Manager if there are questions prior to submittal to the Turnpike.

#### General Requirements:

Do not include the following characters in any folder or file names:

\ / : \* ? " < > | # { } % ~ &

Indicate the submittal phase and date (MM-DD-YYYY) on the front cover page of each file.

Print / plot / export to PDF file format directly from software used to create files.

For design documentation, the PDF file must have either 1) interactive table of contents or 2) bookmarks to assist with navigation.



For plan sets, provide individual PDFs for each component set.

If the PDF file has bookmarks, ensure the bookmarks tab shows when the PDF file is opened. In Adobe, select File → Properties → Initial View and then change Navigation Tab to “Bookmarks Panel and Page” drop-down option.

### **Scanning Requirements:**

Scan pages only if absolutely necessary (ex: scan manually signed + sealed cover page only, not entire report).

If scanning a page with a crimped seal, shade the seal to ensure it is visible when scanned.

Set scanner resolution to a minimum of 300 dpi.

Ensure scanned pages have the Optical Character Recognition (OCR) feature enabled (allows searchable text on scanned images).

### **File Naming Convention:**

Formula: 7-digits of FPID + phase + document description + date submitted to FTE (YYYY-MM-DD)

Example: 123456-1 PhIV Roadway Plans 2018-09-26.pdf

Example: 123456-1 PhIV Roadway Design Documentation 2018-09-26.pdf

If the document is independent of a phase submittal, use DRAFT, PRE-FINAL, FINAL or REVISED.

Example: 123456-1 DRAFT Typical Section Package 2018-09-26.pdf

If a document has been signed + sealed, include S+S in the file name.

Example: 123456-1 S+S Typical Section Package 2018-09-26.pdf

Example: 123456-1 S+S Roadway Design Documentation 2018-09-26.pdf

## **112 Update Engineering Design Process**

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## 113 Right of Way Requirements

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 113.1 General

*Add the following term definition*

Non-monetary Benefit is when an attorney represents a property owner, and the attorney secures a benefit for his client such as improved access, drainage or a re-design. When this benefit can be quantified in dollars, the attorney may add the value of this benefit to the acquisition price of the property when determining his statutory fee, which is based on the benefit achieved.

### 113.2 Procedures for Establishing Right of Way Requirements

#### 113.2.3 Access Management

*Add the following sentence to end of paragraph 1*

Access management criteria often affect the access to property after construction. These criteria should be discussed during the field review to lessen potential impacts.

*Add the following section*

### 113.4 Property Owner Contacts

Ensure that all property owners are contacted and given notice prior to entering their property for any reason. In many cases survey crews make the first contact with a property owner. The Department has received complaints from property owners where survey crews were on the property unbeknownst to the owner. In some cases, school age children were home alone; in others, the crews were disturbing livestock or cutting trees. When contacted, the company's response has been "we have the legal right to be there". While true, the Turnpike expects a more diplomatic and sensitive approach. A bad experience on the part of the property owner early in the process can sour the whole acquisition process.

Property owners often contact project managers by phone or at public hearings. There is a tendency to try to accommodate the needs of a property owner, which can lead the

property owner to believe they have a commitment from the Department. This is especially true with the initial design, access, and drainage. Avoid conjecture and speculating on possible changes to avoid misunderstanding. The Turnpike Right of Way Office is the point of contact with the property owner to discuss right of way impacts to the property. Provide copies of any responses sent to property owners to the Turnpike Right of Way Office and Turnpike Project Manager.

Throughout the life of a project, refer any contact by the property owner to the Turnpike Right of Way Office. Concessions made to a property owner may result in a non-monetary benefit to the owner's attorney. Include the Turnpike Right of Way Office in all discussions involving design changes that affect the land required or access to adjoining properties.

***Add the following section***

### **113.5 Construction Issues**

Fencing and encroachments are two issues that are repeated concerns upon letting a project to construction. The Turnpike routinely pays for fencing in the right of way and for replacement fencing as a "cost to cure." However, the property owner does not have to implement a "cost to cure" and therefore the contractor often finds a fence in place during clearing and grubbing. Contractors may be concerned that if they take the fence down they will incur some liability for damages, like cattle roaming free or trespassing.

The Turnpike Right of Way Office routinely notifies the property owner in writing that a fence will be removed by contractors and that the property owner is responsible for replacing the fence. Often though, the owner's inaction requires Turnpike legal staff to contact the owner's attorney to get the new fence erected. Including temporary fencing in the construction contract can help avoid any delays caused by fencing.

Other encroachments such as mailboxes and signs are found from time to time and the Turnpike Right of Way Offices charged with facilitating their removal.

## 114 Resurfacing, Restoration and Rehabilitation (RRR)

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 114.1 General

#### *Add the following paragraphs*

Unless otherwise noted in this chapter or unless otherwise approved by the Turnpike Design Engineer, projects not designated as “RRR” are required to apply new construction criteria for all design elements.

Existing median crossovers on Interstate highway and freeways must be evaluated for conformance to the criteria in **FDM 211.3.2.1**, Crossovers on Limited Access Facilities, and as modified in **TDH 211.3.2.2**. Crossovers that do not meet those criteria must be presented to Turnpike staff for internal review. Turnpike staff will provide direction to either remove or relocate the crossover.

### 114.3 RRR Design Process

#### 114.3.1 Assessment of Existing Conditions

##### 114.3.1.4 Design Exceptions and Design Variations

#### *Delete and Replace all with the following paragraphs*

Every effort must be made to adhere to new construction criteria. However, it may be necessary and appropriate to use values that are less than the minimum Turnpike preferred values. Application of lesser values must be identified and coordinated with Turnpike. The necessary evaluation, coordination, approval, and concurrence must be obtained at the earliest possible time, but not later than Phase II, so that the denial of any such request will not alter the project letting date.

Design Exceptions and Variations on resurfacing projects are processed as described in **Table 114.3.1**.

**Add the following table**

**Table 114.3.1 Turnpike Design Exceptions and Design Variations**

	Meets FDM New Construction Criteria?	Meets AASHTO New Construction Criteria?	Meets FDM Interstate RRR Criteria?	Documentation Required	Notes
<b>FHWA 10 Controlling Design Elements</b>	NO	NO	YES	DESIGN TECHNICAL MEMO	If a Design Exception is identified under the ERCAR, the element must be evaluated against <b>FDM</b> Interstate RRR criteria for final determination of a Design Exception. If the element meets <b>FDM</b> Interstate RRR criteria, a technical memo is submitted for approval by the Turnpike Design Engineer documenting that the element meets <b>FDM</b> Interstate RRR criteria and a Design Exception is not required.
	NO	NO	NO	DESIGN EXCEPTION	If a Design Exception is identified under the ERCAR and does not meet <b>FDM</b> Interstate RRR criteria, then a Design Exception is processed against new construction criteria.
	NO	YES	N/A	DESIGN VARIATION	All Design Variations identified under the ERCAR are processed against <b>FDM</b> and <b>TDH</b> new construction criteria. Refer to <b>TDH 122.7.3.1</b> for additional information on Turnpike Design Variations for non-controlling elements.
	YES	YES	N/A	NONE	No documentation required for design elements meeting both <b>FDM</b> and <b>AASHTO Green Book</b> new construction criteria.

All Design Exceptions and Design Variations identified in the Existing Roadway Conditions Assessment Report (ERCAR) must be tabulated with the following data:

- (1) Number; Location
- (2) Element; Criteria
- (3) Tech Memo (Y/N)
- (4) Estimated Cost
- (5) Explanatory Comments

The intent is to accumulate a ledger of Design Exceptions and Design Variations for inclusion in future widening or reconstruction projects.

### **114.3.1.5 Design Documentation**

***Delete and Replace paragraph 1 with the following paragraph***

Include in the design an ERCAR that substantiates the design process, evaluates all existing conditions against criteria, provides recommendation, and documents decisions made. It must include the following information:

***Add the following documentation information items***

- (7) The Turnpike will evaluate the ERCAR and determine what elements will require a Design Exception/Variation or the enhancement work to be included into the current project or a separate FPID. The Turnpike Project Manager will provide direction on how to proceed.
- (8) [\*\*ERCAR Sample Outline\*\*](#) can be found on the Turnpike Design web site.

## **115 Standard Plans and Standard Specifications**

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***



## **116 Roundabout Evaluation**

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## 120 Design Submittals

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 120.2 Design Documentation Submittals

*Add the following paragraph*

Draft, pre-final, and final versions of all documents requiring Turnpike approval or concurrence must be submitted to the Turnpike Project Manager for review through the ERC process. Once the ERC process is complete, the Turnpike Project Manager can proceed with obtaining the necessary approvals or concurrence.

#### 120.2.3 Typical Section Package

##### 120.2.3.1 Approval Process

*Add the following paragraph*

When cross roads or other facilities are maintained by another agency, the agency must sign and date their approval on the typical section before Turnpike concurrence. If this is not possible, a letter is sent by the Turnpike to the agency confirming their concurrence and requesting a concurrence signature. In that case, the design documentation includes a copy of the local agency standard to document design conformance. The maintaining agency does not need to upgrade their typical sections to meet higher FDOT or Turnpike criteria.

##### 120.2.3.3 Typical Section Sheet

*Add the following item to the list of typical section sheet contents in paragraph 1*

- There are realigned local roads, frontage roads, cul-de-sacs, railroads, canals, aerial transmission lines, or other facilities that impact the typical cross section.

*Add the following items to the list of typical section sheet contents in paragraph 4*

- (4) Traffic Data: provide the following,
  - (g) Truck DDHV
- (5) Roadway Typical Section Drawing: provide the following,

- (o) Express lane buffer widths with express lane markers
  - (p) Future lane widths (types and locations)
  - (q) Clear zone
  - (r) Vertical and horizontal clearances at crossing roads if project includes work within bridge limits.
  - (s) If shoulder widths are wider than standard widths (e.g. to accommodate SSD or high truck traffic), provide a note on each typical section to explain the reason for the additional shoulder width.
  - (t) Denote elements that require a Design Exception, Design Variation, or Design Technical Memorandum
  - (u) Toll equipment building, gantry and foundation outlines
- (6) Bridge Typical Section Drawing: provide the following,
- (i) Minimum vertical clearance
  - (j) If shoulder widths are wider than standard widths (e.g. to accommodate SSD or high truck traffic), provide a note on each typical section to explain the reason for the additional shoulder width.
  - (k) Denote elements that require a Design Exception, Design Variation, or Design Technical Memorandum
  - (l) Express lane buffer width with express lane markers

***Add the following paragraph***

If major changes will be made after initial construction, a separate future typical section drawing must be prepared. Future lanes on proposed crossroad typical sections must be dashed and labeled "Future, By Others". Future typical sections may be urban while proposed or may be rural with different design speeds. See ***TDH 211.2.4*** on for future lanes and profile grade lines.

***Add the following section***

### **120.2.3.4 Turnpike Processing**

Upon instruction from the Turnpike Project Manager submit the signed and sealed Typical Section Package to the Turnpike Roadway Design Engineer who will forward the typical section package to the Turnpike Design Engineer, Turnpike Traffic Operations Engineer, and Turnpike Planning and Environmental Management Administrator with a recommendation of approval. A digitally signed copy will be provided after receiving concurrence.

## **120.2.4 Preliminary Drainage Design**

*Add the following paragraph*

Complex projects require a preliminary 45% drainage submittal. The intention of this submittal is to verify that the design methodology used for stormwater ponds documents compliance with FDOT, Turnpike, and regulatory stormwater management criteria.

## **120.2.5 Preliminary Geometry and Grades**

*Add the following section*

### **120.2.5.1 Turnpike Preliminary Line and Grade Submittal**

Submit preliminary (approximately 15%) alignment and grade sketches or computer plots depicting the proposed geometric design. The submittal must include horizontal geometry for all mainline roadways, ramps, cross streets and side roads. Vertical geometry must be provided for all mainline roadways and cross streets. Vertical geometry for ramps and side roads must be provided if critical to the project. The sketches or computer plots can be in sheet or roll form and must be at a reasonable and useable scale. Base clearance water, seasonal high groundwater, and flood plain elevations must be shown in profile view.

Supporting calculations must also be submitted. Specific elements which must be addressed in the supporting documentation include:

- Design speed
- Lane widths
- Shoulder widths
- Bridge widths
- Horizontal and vertical clearances
- Stopping sight distance
- Intersection sight distance
- Aesthetics
- Access management
- Base clearance

The various elements must be developed to a level of detail consistent with the objectives of the preliminary (15%) submittal as described below. Continued development and refinement of the geometric elements for subsequent phase submittals is anticipated. The primary objectives of the Preliminary (15%) Line and Grade Submittal are to:

- (1) Check consistency with the intent and scope of the Project Concept Report.
- (2) Evaluate the impacts of changes to the project concept, resulting from the normal design development process as well as those due to changes in scope and the identification of adverse site conditions.
- (3) Verify the geometric viability of the project for the desired design speed and traffic volumes
- (4) Provide a basis for early coordination with other disciplines
- (5) Provide a basis for early identification of design constraints or problems.
- (6) Document off-site and pavement drainage constraints; such as flood plain elevations and base clearance and seasonal high water table.
- (7) Design criteria specific to the project.
- (8) Anticipated variations and exceptions that are associated with horizontal and vertical alignment.

## **120.2.6 Preliminary Traffic Control Plan**

*Add the following section*

### **120.2.6.1 Turnpike Preliminary Traffic Control Plan**

A preliminary traffic control plan design (45%) must be submitted for review. A comment resolution meeting with Turnpike production and construction staff must be scheduled following the review.

Deviations from [Turnpike Lane Closure Policy](#) or from the **TDH 240, 242, or 243** must be identified and approval requested via a technical memorandum as part of the 45% submittal. Approval as indicated in the [Turnpike Lane Closure Policy](#) must be obtained prior to the Phase II submittal.

This submittal must contain the following items:

- (1) Traffic pacing
- (2) Traffic detours, including lengths and impacts on toll revenue

- (3) Traffic crossovers
- (4) Paving approach and sequence, including proposed cross slope correction
- (5) Lane closure analysis and restrictions, and daytime and weekend considerations

The preliminary submittal must be on roll plots, in electronic format, and must include:

- (1) Documentation of off-site and pavement drainage constraints
- (2) Critical cross sections at temporary traffic shifts
- (3) Typical sections for each proposed phase
- (4) Traffic pacing and detour analysis as appropriate for the project

Coordinate with the Turnpike Traffic Operations Engineer for an appropriate speed to use in the pacing analysis.

## **120.2.7 Pavement Selection and Design**

*Add the following section*

### **120.2.7.1 Turnpike Pavement Design Submittals**

Pavement designs must be done to the following minimum standards. Variations from these standards require concurrence by the Turnpike Roadway Design Engineer prior to submittal of the final pavement design to the Turnpike Design Engineer for concurrence.

- (1) All pavement designs on new construction must be calculated using a minimum reliability (%R) of 95%.
- (2) All pavement designs on rehabilitation projects must be calculated using a minimum reliability (%R) of 99%.
- (3) All temporary pavement designs for use during construction must be calculated using a minimum reliability (%R) of 80%.
- (4) All pavement designs, with the exception of temporary pavement, must be calculated for a 20-year design life. The minimum design life and traffic (ESAL<sub>d</sub>) for temporary pavements must be no less than the construction period for the project.
- (5) Table 5.5 of the [\*Flexible Pavement Design Manual\*](#) is the required minimum thickness for new construction and resurfacing projects.
- (6) All travel lanes pavement must include PG 76-22 in the top structural lift and friction course regardless of traffic level.

- (7) Coordinate the use of FC 12.5 or FC 9.5 with the Turnpike Roadway Design Engineer, Turnpike Construction Engineer and Turnpike Bituminous Engineer at any ramp crossroad terminus that shows extensive failure of the existing friction course. Turnpike Roadway Design Engineer approval must be obtained prior to submitting signed and sealed pavement designs to the Turnpike Design Engineer for concurrence.
- (8) Using a much higher traffic level mix than traffic requires can cause premature deterioration and cracking of the pavement. Therefore, do not increase the traffic level mix in the pavement design documents or plans to anticipate optimization of contractor operations. [Standard Specification 334-1.2](#) provides the contractor this flexibility within the realms of required criteria.
- (9) If new pavement is proposed to be joined to existing pavement such as widening, auxiliary lanes, ramps, and turn lanes, a minimum 6-inch wide shelf must be created at the longitudinal joint by milling the existing pavement structure. The minimum depth of the milling equals the thickness of the final lift of structural course in the new pavement structure. This creates a milled offset in the longitudinal pavement joint from preceding lifts of structural asphalt. Tack coat is used in the shelf to aid in adhesion and imperviousness. A detail of the longitudinal joint must be developed and placed in the project typical section details. The traffic control plan must accommodate the space necessary for this work in the phasing sequence. Plan notes or a table of dimensions must describe the limits of the milled shelf width and depth.
- (10) All pavement designs through toll loop pavement area must meet the minimum pavement designs listed in the [GTR](#). If necessary, the pavement thickness must be increased from the [GTR](#) minimums in order to provide the required pavement structural number.

Upon acceptance by Turnpike staff, submit the signed and sealed pavement design reports. The Turnpike Roadway Design Engineer will forward the report to the Turnpike Design Engineer for concurrence and signature. A signed copy will be returned.

To simplify and reduce the effort and time processing pavement designs, digitally sign and seal the cover page of the pavement design report and provide a concurrence signature block for the Turnpike Design Engineer's approval.

A [Pavement Design Report Table of Contents](#) and [Pavement Coring and Evaluations Report Table of Contents](#) are available on the Turnpike Design website.

***Add the following section***

### **120.2.7.2 Cross Slope Analysis During Design**

Cross slope analysis on designated RRR projects must use the cross slope ranges defined in ***FDM 211.2.2.1 and FDM 210.9.2***. All non-designated RRR projects require new construction criteria and must use the cross slope tolerances for new construction cross slopes as defined by [\*\*\*Standard Specification 330-9\*\*\*](#).

Existing cross-slopes must be analyzed by averaging the cross slope on a sliding scale and comparing the average cross slope against the appropriate tolerances. For practical construction purposes, Turnpike generally uses 1000 feet on tangent and 500 feet through horizontal curves as the minimum sliding scale lengths. However, lengths may be increased or decreased based on project specific warrants. A separate cross slope analysis report must be submitted concurrently with the project pavement design and approved by the Turnpike Design Engineer prior to the Phase II project submittal.

Modification for Non-Conventional Projects:

Delete the last sentence above and replace with the following:

A separate cross slope analysis report must be submitted concurrently with the project pavement design and approved by the Turnpike Design Engineer prior to the 90% plans submittal.

***FDM 211.2.2.1*** requires tabulating existing cross slopes in the plans at 100 feet intervals, and preparing cross sections for the plans 50 feet before and after PC's and PT's and at 300 feet intervals along curves, for superelevation correction. Simplifying the cross slope correction design and providing greater plan clarity is necessary to accomplish cross slope correction in the field. Show milling at specific cross slopes between stations from a single constant depth control point for at least 1000 feet through tangent sections and 500 feet through horizontal curves, followed by constant depth resurfacing.

***Add the following section***

### **120.2.7.3 Cross Slope Analysis Post Design**

If a project includes cross slope correction, verification of the newly constructed corrected cross slopes is required. Profilograph data is collected by the Turnpike and provided for analysis. Submit a design memorandum to the Turnpike Roadway Design Engineer



indicating if the newly constructed cross slope correction meets the requirements detailed in the plans and in **FDM 211.2.2.1** and **FDM 210.9.2** or [Standard Specification 330-9](#).

***Add the following section***

## **120.2.9 Roadway Design Documentation**

Roadway design documentation must be provided at Phase I, II, III, IV, and production submittals. The design documentation must include, but is not limited, to the following information as applicable:

- (1) Section 1 - Summary
  - (a) Narrative - summary of existing and proposed design
  - (b) Design Decision Journal
    - Document design decisions for all disciplines both internal and external in tabular format
    - Include Identification Number, Date, Author, Discipline, Subject, Decision, and an Explanation
- (2) Section 2 - Design Documentation
  - (a) Location Map
  - (b) Roadway Design Criteria (**FDM, TDH, & AASHTO** in tabular format)
  - (c) Horizontal and Vertical Alignments (GEOPAK Output)
  - (d) Design Calculations and Exhibits (Existing, Proposed, and Temporary Traffic Control Conditions)
    - Superelevation
    - Horizontal and Vertical Stopping Sight Distance
    - Vertical Clearance
    - Barrier – Length of Need
    - AutoTURN Analysis
    - Intersection Sight Distance Analysis
    - Cross Slope and Superelevation Analysis
  - (e) MOT
    - Lane Closure Analysis (Final Signed and Sealed)
    - Pacing Analysis

- Detour Analysis
  - Impacts to Toll Facilities
- (f) Typical Section Package (Final Signed and Sealed)
  - (g) Pavement Design Report (Final Signed and Sealed)
  - (h) Design Variations/Exceptions (Final Signed and Sealed)
  - (i) Summary of 5-Year Crash Data
  - (j) Existing Roadway Conditions Assessment Report (ERCAR)
  - (k) Meeting Minutes/Project Correspondence (Related to Roadway Elements)
  - (l) Comments and Responses (Related to Roadway Elements)

The design documentation must include all design notes, data, and calculations to document the design conclusions reached during the development of the contract plans. The design notes, data, and computations must be recorded on size 8 ½" x 11" sheets, titled, numbered, dated, indexed and signed by the designer and the checker. Computer output forms and other oversized sheets are allowed. All documentation must be submitted electronically to the Turnpike Project Manager.

## 121 Bridge Project Development

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 121.9 Bridge Development Report (BDR)/30% Structures Plans

#### 121.9.2 Format

*Replace the last sentence with the following paragraph*

For most projects, the BDR contains exhibits/sketches and the 30% Plans are submitted after acceptance of the BDR recommendations.

### 121.10 Bridge Development Report (BDR) Submittal Checklist

*Add the following checklist item*

- (15) Bridge deck spread must be evaluated for all bridges. The Bridge Development Report (BDR) must include preliminary spread calculations for the bridge deck in order to determine whether additional drainage conveyance is required. Typical drainage conveyance costs may include, but are not limited to, additional shoulder width during construction, cross slope adjustment, bridge deck drains and conveyance systems. Costs for the bridge deck drainage must be considered when comparing alternative bridge designs.

## 122 Design Exceptions and Design Variations

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 122.3 Justification for Approval

*Add the following section*

#### 122.3.1 Turnpike Design Exceptions and Variations

Submit all Design Exceptions and Variations electronically to the Turnpike Project Manager for review through the ERC process. Refer to **TDH 120.2** for design submittal requirements.

Upon acceptance by Turnpike staff, the Turnpike Roadway Design Engineer advises the Turnpike Project Manager to request submittal of the digitally signed and sealed Design Exceptions and Variations to the Turnpike Roadway Design Engineer who forwards the documents to the Turnpike Design Engineer with a recommendation of approval. After receiving approval by the Turnpike Design Engineer, a copy of the digitally signed approval letter will be returned.

All Design Exceptions and Variations must have the appropriate checklist completed and included with the submittal. The [Request for FTE Design Exceptions & Variations Checklist](#) and [Example Turnpike Design Exceptions and Variations](#) can be found on the Turnpike Design website.

### 122.7 Design Approval Request

#### 122.7.3 Design Variation Approval

*Add the following section*

##### 122.7.3.1 Turnpike Design Variations

Design Variations and deviations from the **TDH** that are approved solely by the Turnpike, do not impact the FHWA 10 Controlling Design Elements and do not impact clear zones, sight distance, or Americans with Disabilities Act (ADA), may be submitted to the Turnpike

for approval from the Turnpike Design Engineer as a signed and sealed Design Memorandum.

## 123 Engineering Design Estimate Process

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 123.6 Alternative Contracting Practices

*Add the following sentence*

Obtain recommendations for alternative contracting practices from the Turnpike Construction Office.

## 124 Quality Assurance and Quality Control

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

*Add the following sections*

### 124.4 Turnpike Quality Control and Assurance Process

#### 124.4.1 Quality Goals and General Requirements

The Turnpike's definition of Quality is "Conformance to Requirements". The Turnpike's primary quality goal is that construction documents and reports be complete, orderly, correct, and appropriate for the intended purposes. The completed documents must not impose potential liability, or require supplemental agreements that increase construction time or cost, or require an excessive review effort by the Turnpike. The preparation of the work must meet or exceed normal, legally acceptable, "Due Diligence" ("Due or Ordinary Care") requirements that have been established, the standard of practice required on Turnpike work.

The following is the general quality control and assurance process criteria that is required by each project scope of services, including initiation, production, review and audit procedures.

- (1) Designate the appropriate project staffing for each element of the work in the project staffing list form included at the end of this section. Provide the required organization, planning, scheduling and project initiation. If the work produced is to comply with the quality requirements and goals, the work must be prepared and checked by qualified professionals that know the Turnpike and project requirements. They must use and document the "Due or Ordinary Care" production and review quality control and assurance requirements stipulated in the Standard Scope of Services performance criteria. Designated project team personnel include the qualified responsible professionals and associated project staff to produce the work, and reviewers with professional qualifications necessary to be the responsible professional who review and confirm that the work is accurate and complete. Reviewers must be independent of activities that take place during design and plans production for the project.
- (2) Focus on the prevention of rework and production errors by using quality oriented responsible professionals and production procedures (including self and documented responsible professional checking) to produce high quality work. Production quality is achieved through the careful development of the work and

- the continuous checking, concurrence (back checking) and verification of changes on all work and documents during their preparation and review.
- (3) Provide and document the required coordination, field and biddability reviews as provided in the scope of services to prevent production rework, errors and omissions.
  - (4) Support value engineering studies and provide special supplemental independent peer, constructability, and maintainability reviews on designated projects.
  - (5) Provide and document, the submittal and biddability reviews by qualified and experienced reviewers to confirm that the work produced is appropriate, complete, and correct. Checking is required for each document before it is used for further development or before a required phase submittal.
  - (6) Utilize a standard check and back check procedure that meets the Standard Scope of Services performance criteria to document the thoroughness of the checking and review process. Provide the documentation of the agreement between two qualified (licensed if required) professionals in a given field that the work produced and reviewed conforms to all requirements, is appropriate, complete, accurate and correct. The checking process must take place according to the requirements of the scope of services and the established project schedule.
  - (7) Use submittal sufficiency and quality assurance reviews to confirm completion and validate each submittal Certificate of Compliance.
  - (8) The Standard Scope of Services performance criteria require that a standard check and back checking procedure must be used to document all checking and reviews. Project production and review team members must use the following to document the production and review checking of all work: completion checklists, the Quality Control Tracking Stamp and the Quality Process Log. Project production and review quality control procedures are to be performed in compliance with the scope of services.
  - (9) The Standard Scope of Services performance criteria requires that the review documentation, developed during the production and review of the work, must be retained in the project files, according to requirements of the scope of services, for quality assurance review and audit purposes, and to demonstrate that the project quality control requirements have been met.
  - (10) If an information printout or document must be sent to the Turnpike before the required submittal review has been performed, the following procedure is to be followed:
    - (a) The principal or officer-in-charge approves the release of the documents.
    - (b) The documents are stamped "Advance Copy - For Information Only".



- (c) The Turnpike is notified in the transmittal letter that the submittal review process has not been completed on the documents and that the Turnpike personnel should not review the documents until the project quality control process is complete.
- (11) The Turnpike will provide compliance reviews, biddability audits, project manager monitoring, and quality process audits to complete the process.
- (12) The following forms are required to be completed as part of this process: Quality Control Tracking Stamp in **Exhibit 124-1**, Project Staffing List in **Exhibit 124-2**, Quality Process Log in **Exhibit 124-3**, Certificate of Compliance in **Exhibit 124-4**, and Certification of Plans, Specifications and Quantities in **Exhibit 124-5**. A Sample Project Quality Control Plan that meets the requirements of the Standard Scope of Services performance criteria is available through Turnpike project managers.
- (13) Definitions of terms utilized in the Standard Scope of Services performance criteria and explanations of these requirements are included in **TDH 124.4.3**.

#### Modification for Non-Conventional Projects:

All reviews and processes described within this chapter are required to be implemented and documented in the Quality Management Plan.

## 124.4.2 Quality Control Procedure Requirements

### 124.4.2.1 Completion Checklists Requirements

The Standard Project Scope of Services performance criteria requires use of appropriate completion checklists to document the thoroughness of their production review efforts and to reduce rework on each work element. Include copies of completion checklists as an appendix to the Project Quality Control Plan.

### 124.4.2.2 Quality Control Tracking Stamp Requirements

The Standard Project Scope of Services performance criteria requires use of the standard Quality Control Tracking Stamp or an equivalent CADD cell, to document and track the completion of the check and back check procedure on all types of checking and reviews. An acceptable version of the production certification to be included in the stamp is shown in **Exhibit 124-1**. The stamp is applied by the responsible professional to the cover of a bound set of documents or to individual sheets, if unbound or uses different project

personnel. The stamp is designed to track, guide, and document the quality review process and the standard checking procedure described herein. The person responsible for each step of the submittal review procedure is required to "sign-off" and to date the document being reviewed on the Quality Control Tracking Stamp as a record that their part of the procedure has been carried out. The Responsible Professional (RP) and Reviewer (R) that produce the work and conduct the submittal review will be those designated in the Project Staffing List. Secure Turnpike Project Manager approval of any changes of designated project staff prior to the revised staff beginning work on the project.

### 124.4.2.3 Quality Process Log Requirements

The Standard Scope of Services performance criteria requires use of the Quality Process Log to monitor, track and document the production and review process for each deliverable and support documentation. Quality Process Logs provide a record of the progress of the project and document the completion of each major phase of the submittal production and review process. Use the completion checklists, as well as the Quality Control Tracking Stamp to promote the thoroughness of the checking process and to eliminate oversights and omissions.

### 124.4.3 Definitions

- (1) **3D Model Review:** A review of the 3D model deliverables as defined in the [CADD Manual](#) and the project scope of services. These reviews occur prior to each phase submittal and are performed to confirm consistency between the 3D model and the construction documents. These reviews must be listed on the Quality Process Log and the quality control reviewer identified on the Project Staff List.
- (2) **Biddability Review:** A review of construction contract documents, prior to bidding, which seeks to identify errors, omissions, conflicts, ambiguities, inaccuracies, and deficiencies in and among the construction documents. Biddability reviews are made in addition to quality control reviews and focus on pay items and uniformity between the plan quantities and the AASHTOWare Project input forms.
- (3) **Constructability Review:** A supplemental and specialized review of construction plans and specifications, which seeks to identify construction requirements that are impractical, unnecessarily costly, or difficult to build. Constructability reviews are made in addition to quality control reviews, and considers such items as contractor access, site constraints and relationship to other project work.
- (4) **Coordination Review:** A review of combined work elements to identify and resolve any conflicts that may exist among all design elements such as lighting

- and drainage (i.e. foundation conflicts with pipe runs) prior to the quality control reviews.
- (5) **Deliverable:** A professional service product that is furnished to the Turnpike or others.
  - (6) **Field Review:** Mandatory visits to the project site to verify compatibility of the design with the field conditions encountered during construction.
  - (7) **Kick-Off Meeting:** A meeting held before any work begins on a project in which the project work plan and quality control requirements are discussed by the project manager, the responsible professionals, the reviewers, and others as appropriate.
  - (8) **KMZ Review:** A review of KMZ files to confirm quality and consistency with the Turnpike [KMZ Standards](#) which can be found on the Turnpike Design website.
  - (9) **Independent Peer Review:** A supplemental quality control review performed on selected projects, or portions of a project, by an independent team of qualified reviewers. This review is performed in addition to the regular submittal reviews and is conducted under the direction of the project manager. Normally, members of the independent peer review team are not assigned to the same organizational unit or location that managed and produced the project. The independent peer review is a comprehensive examination of the technical aspects of the project design that is made in addition to submittal reviews.
  - (10) **Maintainability Review:** A documented review performed prior to the Phase III submittal to determine the ease with which the roadway can be maintained in order to: isolate and correct defects or their cause, repair or replace damaged components, prevent unexpected failures, maximize the facilities' useful life, meet new requirements, make future maintenance easier, and maximize efficiency, reliability, and safety.
  - (11) **Production Review:** A documented review performed during production by the component Engineer of Record (EOR) prior to the quality control reviews.
  - (12) **Project Work Plan (PWP):** A document that programs the assignment from the kick-off meeting through production, submittal review, coordination, delivery of the product, and archiving of the project records.
  - (13) **Quality Assurance (QA) Review:** The principal or officer-in-charge review and certification procedure to determine whether or not production and review quality control procedures have been performed effectively and appropriately.

- (14) **Quality Control (QC) Process:** Prescribed production and review on procedures by which deliverables are produced, reviewed and brought into compliance with Turnpike and project requirements, professional standards, contractual obligations, and commitments.
- (15) **Standard Checking Procedure:** A color-coded check and back check process for reviewing and correcting work products before they are released for use by the Turnpike or otherwise released as a final work product.
- (16) **Submittal Review:** Review of submittal documents by the designated reviewer, a qualified professional other than the responsible professional for each element of the work, to confirm that the work is accurate, conforms to the project requirements, and is free of errors and omissions. The reviewer checks concepts, methods of preparation, and presentation.
- (17) **Project Staffing List:** Include key project team members dedicated to the production and review of the project deliverables included in **Exhibit 124-2**. Expand or reduce list to include all sub-consultants and project deliverables. Attached resumes of the principal or officer-in-charge, project manager, responsible professionals, and reviewers for all deliverables. Revise the Project Staffing List and secure approval from the Turnpike of any changes in key project team personnel made during the production and review of the project. Indicate applicable professional registration for staff included on the list.

**Add the following Exhibits**

### Exhibit 124-1 Quality Control Tracking Stamp

QUALITY CONTROL TRACKING STAMP PHASE		
SUBMITTAL REVIEW		
Responsible Professional (RP)	Reviewer (R)	Initials
		Date
PRODUCTION CHECKING COMPLETE READY FOR SUBMITTAL REVIEW (RP)		
CHECKED (R) Correct (Yellow) Change (Red)		
CONCURRENCE (RP) (Red Check OK or X-Out for Disagree)		
CHANGE INCORPORATION (RP) (Yellow Highlighter)		
VERIFICATION (R) (Green Check or Circle & Remark Incorrect)		

**Exhibit 124-2 Project Staffing List****Principal or Officer-In-Charge** (*Oversees Project & provides QA Review*): Name**Project Manager** (*Oversees Quality Control & Coordination, provides part of the QA Review*): Name

<b>ELEMENT / TASK</b>	<b>Deliverable</b>	<b>Responsible Professional (RP)</b>	<b>Reviewer (R)</b>
<b>ROADWAY</b>			
Engineer of Record			
Typical Sections	Package		
Pavement Design	Package		
Existing Roadway Conditions Report	Report		
Geometry & Alignment	Roadway Plans		
Design Documentation	Calculation Book		
Traffic Control Plans	Roadway Plans		
Utility Adjustments	Roadway Plans		
Drainage Design	Roadway Plans		
Geotechnical	Report		
Drainage Report	Report		
Quantity Computation	Calculations		
Specifications	Package		
Mitigation Plans	Roadway Plans		
3D Corridor Model	LandXML and CADD Files		
<b>SURVEY / RIGHT OF WAY</b>			
Design Survey	Field Notes		
Right of way Survey	Field Notes		
Right of way Control Survey	Plans		
Right of way Maps	Maps		
Legal Descriptions	Descriptions		

**Exhibit 124-2 Project Staffing List (cont.)**

<b>ELEMENT / TASK</b>	<b>Deliverable</b>	<b>Responsible Professional</b>	<b>Reviewer</b>
<b>SIGNING &amp; MARKING</b>			
Engineer of Record			
Signing Plans	Signing & Marking Plans		
Signing - Summary of Quantities	Signing & Marking Plans		
Pavement Marking	Signing & Marking Plans		
Quantity Computation	Calculations		
Specifications	Package		
<b>SIGNALIZATION</b>			
Engineer of Record			
Signal Design	Signalization Plans		
Phasing & Timing Design	Signalization Plans		
Summary of Quantities	Calculations		
Pole Calculations	Calculations		
Specifications	Package		
<b>LIGHTING</b>			
Engineer of Record			
Lighting / Electrical	Lighting Plans		
Quantity Computation	Lighting Plans		
Intensity & Voltage Calcs.	Calculations		
<b>ENVIRONMENTAL</b>			
Mitigation Report	Report		
Permits	Report		
Wetland Assessment	Report		

**Exhibit 124-2 Project Staffing List (cont.)**

<b>ELEMENT / TASK</b>	<b>Deliverable</b>	<b>Responsible Professional (RP)</b>	<b>Reviewer (R)</b>
<b>STRUCTURES</b>			
Engineer of Record			
Bridge Development Report (BDR)	Report		
Bridge Hydraulics Report (BHR)	Report		
Geotechnical	Report		
Structures Plans	Structures Plans		
Design Documentation	Report		
Specification	Package		
Quantity Computation	Calculations		
<b>TOLL FACILITIES</b>			
Roadway	Toll Facility Plans		
Civil Site including utilities	Toll Facility Plans		
Signing & Pavement Markings	Toll Facility Plans		
Traffic Control Plan	Toll Facility Plans		
Landscape & Irrigation	Toll Facility Plans		
Architectural	Toll Facility Plans		
Structural	Toll Facility Plans		
Electrical, Lighting & Toll Equipment Conduit	Toll Facility Plans		
Mechanical / Plumbing & HVAC	Toll Facility Plans		
Demolition	Toll Facility Plans		
Design Documentation	Calculation Book		
Specifications	Package		
Quantities	Calculations		

**Exhibit 124-2 Project Staffing List (cont.)**

Element / Task	Deliverable	Responsible Professional (RP)	Reviewer (R)
<b>PD&amp;E</b>			
State Environmental Impact Report	Reports - Draft & Final		
Type 2 Categorical Exclusion	Reports - Draft & Final		
Environmental Assessment	Reports - Draft & Final		
Finding Of No Significant Impact (FONSI)	Reports - Draft & Final		
Environmental Impact Statement	Reports - Draft & Final		
Preliminary Engineering Report	Reports - Draft & Final		
Noise Impact Study	Reports - Draft & Final		
Air Quality Report	Reports - Draft & Final		
Wetlands Evaluation Report	Reports - Draft & Final		
Biological Assessment	Reports - Draft & Final		
Conceptual Stage Relocation Plan	Reports - Draft & Final		
Contamination Screening Evaluation Report	Reports - Draft & Final		
Cultural Resources Assessment Report	Reports - Draft & Final		
Traffic Report	Reports - Draft & Final		
Location Hydraulics Report	Reports - Draft & Final		
Geotechnical Report	Reports - Draft & Final		
Bridge Development Analysis	Reports - Draft & Final		
Pond Siting Report	Reports - Draft & Final		





**Exhibit 124-4 Certificate of Compliance**

**CERTIFICATE OF COMPLIANCE** (Complete and Submit on Consultant's Letterhead)

**TO:** \_\_\_\_\_, P.E., Turnpike Director of Transportation Development  
\_\_\_\_\_, P.E., Turnpike Design Engineer  
\_\_\_\_\_, P.E., Design Program Manager  
\_\_\_\_\_, P.E., Production Project Manager  
\_\_\_\_\_, P.E., Turnpike Quality Initiatives Manager

**DATE:** \_\_\_\_\_

**RE:** **QUALITY ASSURANCE (QA) REVIEW - PHASE \_\_\_ SUBMITTAL**

**FPID:** \_\_\_\_\_

**DESCRIPTION:** \_\_\_\_\_

**COUNTY:** \_\_\_\_\_

**COMPONENT SETS:** \_\_\_\_\_

**CONSULTANT:** \_\_\_\_\_

**SUBCONSULTANTS:** \_\_\_\_\_ ( ) \_\_\_\_\_

\_\_\_\_\_ ( ) \_\_\_\_\_

\_\_\_\_\_ ( ) \_\_\_\_\_

This is to certify that we have monitored the quality control (QC) process during production and review of the above submittal, that we have completed and signed the attached QC Checklists for each element of the project, and that we have completed and documented (in the Quality Process Log) the required QA Review of the production and review quality control documentation for all component sets (elements) of the above phase submittal. This QA Review was conducted at the above office on (day, month, year), after all QC procedures were complete. Submittal plans, associated production and review check prints, and quality control documents for the referenced elements (including those of the Sub consultants) have been evaluated, initialed, and are available for review upon request.

This certificate is issued to document our reviews and to confirm that "due or ordinary care" processes were followed in producing the submittal documents. In our professional opinions, these documents meet the standards of the Turnpike and the Florida Department of Transportation, and are ready for review. These requirements include those stipulated in the Project Scope of Services performance criteria and Florida Department of Transportation requirements.

SIGNED: \_\_\_\_\_, P.E.  
Consultant Principal or Officer –In-Charge

PRINTED: \_\_\_\_\_, P.E.  
Consultant Principal or Officer-In-Charge

SIGNED: \_\_\_\_\_, P.E.  
Consultant Project Manager

PRINTED: \_\_\_\_\_, P.E.  
Consultant Project Manager

**Exhibit 124-5 Certification of Plans, Specifications and Quantities**

Date

\_\_\_\_\_, P.E.  
Turnpike Design Engineer  
Florida's Turnpike Enterprise  
Florida Department of Transportation  
P.O. Box 613069  
Ocoee, Florida 34761

Re: Certification of Plans, Specifications and Quantities  
Financial Project ID: 408694-1-52-01  
County: Martin  
Description: Drainage and Safety Improvements at Stuart Interchange

Dear Mr. \_\_\_\_\_:

The undersigned John Doe, P.E. hereby certifies that the plans, specifications and estimates for the above referenced project are free from design errors or omissions, and are ready to process for contract Letting. Further:

- All work has been prepared in accordance with this project Scope of Services.
- Engineering design conforms to the current FDOT Design Manual (FDM), Turnpike Design Handbook (TDH), and Standard Plans.
- All plans components are complete, accurate, and up to date.
- The Specifications Package has been prepared in accordance with FDOT Specifications Package Preparation Procedure. Included are any necessary Technical Special Provisions.
- All applicable general notes and pay item footnotes are included. All notes are clear and free of ambiguities and contradictions.
- Pay item numbers and quantities are consistent with related pay item notes. The Summary of Pay Items agrees with work called for in the plans.
- Required construction operations will not conflict with each other.
- The project is constructible and traffic can be maintained efficiently.
- All conditions included in permits issued to the FDOT have been addressed.
- Public Involvement requirements have been met and are documented in the project file.

If you should have any questions, please feel free to give me a call.

Sincerely,  
HOWARD, BRACKINS & ASSOCIATES, INC.

John Doe, P.E.  
Principal-in-Charge

## **125 Federal-Aid Project Certification**

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## **126 Lane Elimination Projects**

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## **127 Community Aesthetic Features**

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***

## 130 Signing and Sealing Documents

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 130.2 Signing and Sealing Contract Plans

#### 130.2.2 Manual Signing and Sealing

***Remove the first two paragraphs and replace with the following paragraphs***

Digital Delivery is the standard practice for signing and sealing the PS+E package. Manual signing and sealing any PS+E package deliverable must be approved by the Turnpike Program Services Manager.

If the manual signing and sealing method is chosen, scan the deliverable in conformance with ***F.A.C. Rule 1B-26.003 Electronic Recordkeeping***. The electronic version will be accepted as the Turnpike record. Turnpike will not accept any hardcopy deliverables.

### 130.3 Signing and Sealing Other Documents

***Add the following list***

The following signed and sealed documents are to be electronically archived in the district's Project File(s):

- (1) Specifications Package
- (2) Pavement Design Package
- (3) Typical Section Package
- (4) Drainage Computations
- (5) Hydraulics Reports
- (6) Bridge Development Report
- (7) Traffic Engineering Reports
- (8) Environmental Reports
- (9) Geotechnical Reports
- (10) Value Engineering Record

- (11) Permit Documentation
- (12) Design Exceptions and Design Variations
- (13) Lane Closure Analysis on Turnpike Facilities
- (14) Cross Slope Analysis Report

### 130.3.1 Digital Signing and Sealing

***Remove the first paragraph and replace with the following***

Signing and sealing PDF documents with a digital signature is the standard practice. Professional engineers should follow ***F.A.C. Rule 61G15-23.004 Procedures for Digitally Signing and Sealing Electronically Transmitted Plans, Specifications, Reports or Other Documents.***

### 130.3.2 Manual Signing and Sealing

***After the first paragraph, insert the following paragraphs***

Digital Delivery is the standard practice for signing and sealing the PS+E package. Manual signing and sealing any PS+E package deliverable must be approved by the Turnpike Program Services Manager.

If the manual signing and sealing method is chosen, scan the deliverable in conformance with the ***F.A.C. Rule 1B-26.003 Electronic Recordkeeping.*** The electronic version will be accepted as the Turnpike record. Turnpike will not accept any hardcopy deliverables.

***Remove list of documents to be signed and sealed***

### 130.4 Signing and Sealing Revisions

***Add the following sentence***

If a different professional is signing and sealing for the revision, change the professional's information in the sheet border title block and cloud the title block as part of the revision modifications.



## 131 Plans Processing and Revisions

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

### 131.2 Plans Processing

*Remove all paragraphs and replace with the following paragraphs*

All Turnpike construction contracts are let utilizing Turnpike's Contracts Administration Office. Turnpike does not let projects through the Central Office "Final Plans" section.

Transmit the finalized signed and sealed PS+E Package to the Turnpike Project Manager on or before the project's scheduled Production Date. All deliverables will then be reviewed by the Turnpike PS+E Team. Any comments will be provided to the Turnpike Project Manager and a request will be made to resubmit the updated deliverables. Any questions about Plans Processing should be vetted through the Turnpike Project Manager and Turnpike PS+E Team.

#### 131.2.1 PS&E Submittal Package to Tallahassee

*Remove entire section*

#### 131.2.2 Revisions to the PS&E Submittal

*Remove entire section and referenced figure. Replace with the following paragraphs*

Revisions are modifications to the PS+E Package after it has been advertised for construction contract. The Turnpike Project Manager ensures the construction contract addendum is completed as follows:

1. Turnpike Project Manager prepares Page 1 of Turnpike Addendum Transmittal Memo. Complete Page 2 and return to Turnpike.
2. Coordinates with Turnpike Project Manager and Turnpike Estimates on any changes to AASHTOWare Project Preconstruction (PrP). After changes are made, the output files are provided for incorporation into the plan set.

3. For formatting of revisions to the plan set, modify as follows:
  - Use a conspicuous unique numbered symbol (e.g. a numbered triangle) beside the plan sheet modification.
  - Begin the revision numbering with "1" and number subsequent revisions sequentially.
  - Place the revision date, corresponding numbered symbol for the revision, and a brief description of the modifications in the Revision Block on each modified sheet.
  - If adding sheets, use alphabetic suffix for the sheet name (e.g. 22A, 22B, 22C)
  - If an entire sheet is being deleted, strike through the entire drawing area and retain the deleted sheet in the plans package as a revised sheet.
  - See **FDM 302** and **TDH 302** for instructions on recording a revision on the Key Sheet.
4. The responsible professional signs and seals each revised deliverable in accordance with **FDM 130** and **TDH 130**.
5. Transmit the PS+E Package addendum deliverables to the Turnpike's Project Manager.
6. All deliverables will then be reviewed by the Turnpike PS+E Team. Any comments will be provided to the Turnpike Project Manager and a request will be made to resubmit the updated deliverables. Any questions about Plans Processing should be vetted through the Turnpike Project Manager and Turnpike PS+E Team.

Once the PS+E Package addendum deliverables have been reviewed, accepted, and signed-off, the PS+E Team will transmit to Turnpike Contracts Administration.

### **131.2.3 Re-Submittal of Withdrawn Projects**

***Remove entire section***

**Add the following exhibit**

**Exhibit 131-1 Contract Addendum Transmittal Memo**



*Operates the statewide  
Turnpike System as  
part of the Florida  
Department of  
Transportation*

RICK SCOTT  
Governor

ANANTH PRASAD, P.E.  
Secretary of Transportation

DIANE GUTIERREZ-SCACCETTI  
Executive Director and  
Chief Executive Officer

Turnpike Headquarters:  
Milepost 263, Bldg. 5315  
Turkey Lake Service Plaza  
Ocoee, FL 34761

Mailing Address:  
P.O. Box 613069  
Ocoee, FL 34761

Tel: 407.532.3999

www.floridasturnpike.com

**CONTRACT E8L46 MODIFICATIONS SUMMARY:**

**PLAN REVISIONS**

SHEET	DESCRIPTION OF MODIFICATION
1	Modified index of roadway plans
2	Added pay items
3	Added / revised pay items
13	Revised quantity
14	Added summary box
15	Added / revised pay item notes
17	Revised notes
44A	Added new sheet

**PAY ITEMS + QUANTITIES (TRNS\*PORT) 123456-1-52-01**

PAY ITEM	SHEET	ADD / MOD / DEL	OLD QUANTITY	NEW QUANTITY
0327-70-7	2	ADD	N/A	1915.000

**PAY ITEMS + QUANTITIES (TRNS\*PORT) 123456-3-52-01**

PAY ITEM	SHEET	ADD / MOD / DEL	OLD QUANTITY	NEW QUANTITY
0162-1-11	2	ADD	N/A	2054.000
0400-143	3	ADD	N/A	360.000
0401-70-4	3	MOD	26.700	52.300
0570-1-2	3	MOD	12571.000	14747.000

**SUPPLEMENTAL SPECIFICATIONS**

SECTION	DESCRIPTION OF MODIFICATION
975	Section 975 Structural Coating Materials is deleted and substituted

**CONTRACT E8L46 MODIFICATIONS NARRATIVE:**

Provide a brief description of modifications.

## **140 Lump Sum Projects**

The following are changes, additions or deletions to the January 2018 FDOT Design Manual (FDM), Topic #625-000-002, for use on Turnpike projects only.

***No changes to this section***