

# **TURNPIKE PLANS PREPARATION AND PRACTICES HANDBOOK (TPPPH)**

## **VOLUME II**



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

**OCOEE, FL**

**August 29, 2014 EDITION**

## **Introduction**

As part of the Turnpike's continuing quality enhancement effort, the Turnpike Plans Preparation and Practices Handbook (TPPPH) that includes Volumes I, II, and the Turnpike Enterprise Guide Drawings, has been developed to provide Consultants, Reviewers and Management with a single source of additional Turnpike specific requirements that modify or add to the normal requirements included in the FDOT Plans Preparations Manual (PPM). These two sources include the normal criteria that govern our work and help our projects to better "conform to requirements", the official FDOT definition of quality.

For Turnpike requirements related to tolling, please see the General Toll Requirements which is a separate document.

The TPPPH Table of Contents for Volumes I and II show the PPM's Chapters and Sections that have been modified. If a section has been modified, the user can refer to the specific section in the TPPPH shown in the Table of Contents.

The TPPPH is updated on an annual basis (following the revisions to the PPM). We hope that you will find this document helps with the efficient production of quality plans.

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

## Table of Contents

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

### Chapter 1 – Production of Plans

1.3.2	Format and Scale .....	1-1
-------	------------------------	-----

### Chapter 2 – Sequence of Plans Preparation

2.2.2	Presentation of Existing Data .....	2-1
2.3	Phase Submittals .....	2-1
2.3.1	General .....	2-1
2.3.2	Phases .....	2-1
2.3.2.1	Requirements for Phase I Submittal .....	2-4
2.3.2.2	Requirements for Phase II Submittal .....	2-4
2.4.1	General .....	2-4

#### Figure

2.1	Summary of Phase Submittals .....	2-3
-----	-----------------------------------	-----

#### Exhibit

2-1	FTE Guidelines for Project File Creation + Naming .....	2-5
-----	---	-----

### Chapter 3 – Key Sheet

3.2.1	Financial Project ID, Federal Funds, County Name and State Road Number ...	3-1
3.2.4	Bench Mark Datum .....	3-1
3.3	Project Location Map .....	3-1
3.11	Revisions .....	3-1

### Chapter 4 – Summary of Pay Items

*No changes to the entire chapter*

### Chapter 5 – Drainage Map and Bridge Hydraulic Recommendation Sheet

5.1.1 Plan Portion .....	5-1
<b>Exhibit</b>	
5-1 Drainage Map Notes .....	5-2

## **Chapter 6 – Typical Sections**

### **Exhibit**

6-1 Standard Notes for Typical Section Sheets .....	6-1
---	-----

## **Chapter 7 – Summary of Quantities**

*No changes to the entire chapter*

## **Chapter 8 – Summary of Drainage Structures and Optional Materials Tabulations**

*No changes to the entire chapter*

## **Chapter 9 – Project Layout**

*No changes to the entire chapter*

## **Chapter 10 – Roadway Plan, Roadway Profile, and Roadway Plan – Profile**

### **Exhibit**

10-1 General Notes for Roadway Plan and Roadway Plan-Profile Sheets .....	10-1
---	------

## **Chapter 11 – Special Profiles**

11.8 Treatment/Attenuation Swales .....	11-1
---	------

## **Chapter 12 – Back-of-Sidewalk Profiles**

*No changes to the entire chapter*

## **Chapter 13 – Intersection and Interchange Details/Layouts**

*No changes to the entire chapter*

## **Chapter 14 – Drainage Structures**

*No changes to the entire chapter*

## **Chapter 15 – Lateral Ditch/Outfalls, Retention/Detention and Mitigation Areas**

*No changes to the entire chapter*

## **Chapter 16 – Special Details**

*No changes to the entire chapter*

## **Chapter 17 – Soil Survey**

*No changes to the entire chapter*

## **Chapter 18 – Roadway Cross Sections**

*No changes to the entire chapter*

## **Chapter 19 – Temporary Traffic Control Plan**

*No changes to the entire chapter*

## **Chapter 20 – Utility Adjustments**

*No changes to the entire chapter*

## **Chapter 21 – Selective Clearing and Grubbing**

*No changes to the entire chapter*

## **Chapter 22 – Miscellaneous Structures Plans**

*No changes to the entire chapter*

## **Chapter 23 – Signing and Pavement Marking Plans**

23.3	Tabulation of Quantities and Pay Item Notes .....	23-1
23.4	General Notes .....	23-1
23.6	Guide Sign Worksheet .....	23-1
23.7.1	Multi-Post Signs .....	23-1
23.7.2	Overhead Sign Cross Section and Support Structure .....	23-2

## Chapter 24 – Signalization Plans

24.1	General .....	24-1
24.4	General Notes .....	24-1
24.5.2	Required Information .....	24-1
24.6	Interconnect/Communication Plan .....	24-1

## Chapter 25 – Lighting Plans

25.1	General .....	25-1
25.3.1	Lighting General Notes Sheet .....	25-1
25.3.2	Pay Items .....	25-2
25.4	Pole Data and Legend Sheet .....	25-2
25.5.2	Required Information .....	25-3
25.7	Box Girder Maintenance Lighting and Power Plan Sheet(s).....	25-3
25.8	Load Center Schematic One-Line Diagram, Power Riser Diagram, Service Point Details, Panelboard Schedules, and Grounding Details Sheet(s) .....	25-4
25.9	Lighting Design Analysis Report (LDAR) .....	25-5

## Chapter 26 – Landscape Plans

26.1.1	Phase Submittals .....	26-1
26.4.3	Bid Factor Tabulation of Quantities .....	26-1
26.5	General Notes.....	26-1
26.6	Plan Sheets .....	26-2
26.6.2	Requirements for Plan Sheets .....	26-4
26.7	Details Sheet .....	26-4

## Chapter 27 – Utility Work by Highway Contractor Agreement Plans

*No changes to the entire chapter*

## Chapter 28 - Stormwater Pollution Prevention Plan

28.3	Site Map .....	28-1
------	----------------	------

## **Chapter 29 – Intelligent Transportation Systems Plans**

29.6.2.5 Fiber Optic Cable and Interconnect .....	29-1
---	------

## **Chapter 30 – Signature Sheet**

*No changes to the entire chapter*

# Chapter 1

## Production of Plans

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

### 1.3 Displaying Information and Data

*Add the following section*

#### 1.3.2 Format and Scale

The following are recommended scales for plans on projects for Florida's Turnpike Enterprise System.

##### Plan Sheet (including Traffic Control)

###### Mainline

100 Scale (1400' per sheet) – show 500' Station Callouts with 100 minor ticks

###### Ramp

50 Scale (700' per sheet) – show 100' Station Callouts

100 Scale (1400' per sheet) – Traffic Control – show 100' Station Callouts

##### Profile Sheets (including Traffic Control)

###### Mainline

1:100 Scale Horiz (1400' per sheet) – Show 100' Station – on standard 2x2 grid

1:5 Scale Vert (50' Vert) – Show 2' Elevations on standard 2x2 grid

###### Ramp

1:50 Scale Horiz (700' per sheet) – Show 100' Station – on standard 2x2 grid

1:5 Scale Vert (50' Vert) – Show 2' Elevations on standard 2x2 grid

##### Project Layout

1:400 Scale – 500' Stations for Mainline, 100' Stations on Ramps

##### Ramp Terminal

Plan – 50 Scale – 100' Stations

###### Profile

1:50 Scale – Horiz – Show 100' Station on standard 2x2 grid sheet

1:5 Scale – Vert – Show 2' Elevations on standard 2x2 grid sheet

##### Cross Sections (including Traffic Control)

1:50 Horiz

1:10 Vert = 30'-50' Elevations per Section – 2 Sections per sheet

Show 10' Elevations on standard 5x10 grid



## Chapter 2

### Sequence of Plans Preparation

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### 2.2.2 Presentation of Existing Data

*Add the following paragraph*

Minor projects, such as milling and resurfacing, may not require a full set of plan sheets. When directed by the Project Manager, the design engineer will develop a full set of plan sheets on aerial background, to be used in gathering utility data. The scale should typically be 1"=200'. When available, aerial photographs will be supplied by the Turnpike.

#### 2.3 Phase Submittals

*Add the following paragraph*

Modification for Non-Conventional Project:
Delete TPPPH, Vol. 2, 2.3 and follow PPM, Vol. 2, 2.4.

##### 2.3.1 General

*Add the following paragraph*

Comply with Exhibit 2-1 FTE Guidelines for Project File Creation + Naming for all deliverables submitted to Florida's Turnpike Enterprise.

##### 2.3.2 Phases

*Add the following paragraphs*

All phase and interim submittals will include an additional plan sheet(s) titled 'Notes for Reviewers'. This sheet shall also be added to the phase submittal listings in PPM Sections 2.3.2.1 to 2.3.2.4. To ensure completeness, the 'Notes to Reviewers' sheet(s) shall be submitted to the Turnpike Project Manager two weeks prior to the regular phase submittals.

On Turnpike projects this sheet will also contain Design Variations and Exceptions.

Examples of Variations and Exceptions could say, "The ramp 'A' crest K value of 8 falls below PPM value of 9 due to proximity of R/W and CR 44 (Submitted 6-6-96).

Special directives will note the source and date of the directive. Variations and exceptions shall note the latest current phase submittal status (preparing, submitted, approved/denied), and the appropriate date. Each note is not meant to be more than one or two sentences long. It shall

locate and define the issue's impact. Full details are not needed. These notes are to be a log or diary of issues as they occur and shall be updated at least monthly.

Without exception, Phase 1 (30%) Plans or the first submittal in the case of a project with reduced submittal requirements shall show all existing underground and overhead utilities, regardless of size or type.

**Figure 2.1 Summary of Phase Submittals***Revise the following table*

<b>Item</b>	<b>Phase I</b>	<b>45%</b>	<b>Phase II</b>	<b>Phase III</b>	<b>Phase IV</b>
Key Sheet	P	P	P	C	F
Signatures Sheet			P	C	F
Summary of Pay Items			P	C	F
Drainage Map	P	P	C	C	F
Interchange Drainage Map	P	P	C	C	F
Typical Section	P	P	C	C	F
Summary of Quantities			P	C	F
Box Culvert Data			P	C	F
Summary of Drainage Structures			P	C	F
Optional Materials Tabulation			P	C	F
Project Layout	P	P	C	C	F
Roadway Plan-Profile	P	P	P	C	F
Special Profile	P	P	P	C	F
Back-of-Sidewalk Profile	P	P	C	C	F
Interchange Layout	P	P	P	C	F
Ramp Terminal Details			P	C	F
Intersection Layout/Detail	P	P	P	C	F
Drainage Structures			P	C	F
Lateral Ditch Plan-Profile		P	P	C	F
Lateral Ditch Cross Section		P	P	C	F
Retention/Detention Ponds		P	C	C	F
Cross Section Pattern			P	C	F
Roadway Soil Survey		P	P	C	F
Cross Sections	P	P	P	C	F
Stormwater Pollution Prevention Plan		P	C	C	F
Traffic Control Plans	P	P	P	C	F
Utility Adjustment			P	C	F
Project Network Control Sheets	P		C	C	F
Selective Clearing and Grubbing			P	C	F
Mitigation Plans		P	C	C	F
Miscellaneous Structures Plans		P	P	C	F
Signing and Pavement Marking Plans			P	C	F
Signalization Plans			P	C	F
Intelligent Transportation System (ITS) Plans			P	C	F
Lighting Plans			P	C	F
Landscape Plans	P		P	C	F
Utility Work by Highway Contractor					
Agreement Plans				C	F
Computation Book				C	F
Contract Time				P	F

### **2.3.2.1 Requirements for Phase I Submittal**

*Add the following paragraph*

During the scoping and estimating of the project, the engineer should determine if a conceptual master signing plan is required by the Turnpike. When required, the conceptual master signing plan should be submitted concurrently with the Phase 1 Submittal. The designer shall prepare a signing roll plot at a legible scale and include existing signs; proposed regulatory, warning and guide signs on the mainline, ramps and cross street approaches; route markers; service and logo signs; post-interchange signs; call box locations; mile markers; dynamic message signs (DMS); toll signs; destination signs; lane control signs; proposed pavement markings; and proposed roadway geometry. The plan should use symbols to represent overhead cantilevers, overhead truss spans, bridge mounts, single post and multi post ground mount sign structure types. The designer shall include basic notes to indicate sign removals and relocates. The intent of conceptual master signing plan is to confirm overall traffic operations, sign spacing and sign messages.

### **2.3.2.2 Requirements for Phase II Submittal**

*Add the following*

#### **TRAFFIC CONTROL PLANS**

Identify Pay Items

### **2.4.1 General**

*Add the following paragraph*

Comply with Exhibit 2-1 FTE Guidelines for Project File Creation + Naming for all deliverables submitted to Florida's Turnpike Enterprise.

**Exhibit 2-1****FTE Guidelines for Project File Creation + Naming**General Requirements:

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 either 1) individual PDFs for each components or 2) one PDF for the entire plan set with bookmarks for each component.

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

Do not apply Professional of Record stamp or note referencing Digital Delivery until document is actually signed + sealed!

Scanning Requirements:

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

Set scanner resolution to a minimum of 300 dpi.

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

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

File Naming Convention:

Basic formula → 7-digits of FPID + phase + file content description + date submitted to FTE (YYYY-MM-DD)

Example: 123456-1 Phase IV Plan Set 2013-11-12.pdf

If the document is independent of a phase submittal, use DRAFT, REVISED, INITIAL or FINAL as an indicator.

Example: 123456-1 DRAFT Typical Section Package 2013-11-12.pdf

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

Example: 123456-1 S+S Typical Section Package 2013-11-12.pdf

**NOTES:**

1. These guidelines do not supersede CPCH standards for Digital Delivery processes and related file naming conventions.

Contact the Turnpike Program Services Manager if there are questions prior to submittal.

## Chapter 3

### Key Sheet

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### 3.2 Project Identification

##### 3.2.1 Financial Project ID, Federal Funds, County Name and State Road Number

*Add the following*

Include a descriptive Project Name under the State Road Number.

*Add the following section*

##### 3.2.4 Bench Mark Datum

Add one of the following notes, to the right side of the key sheet, depending on the type of datum used:

“This project is designed to NAVD, 1988 Datum.”

Or

“This project is designed to NGVD, 1929 Datum.”

#### 3.3 Project Location Map

*Add the following language*

When applicable, the county milepost as well as the Turnpike Mainline milepost must be shown correct to three decimal places under the begin project station.


#### 3.11 Revisions

*Add the following language*

When the “Revisions” area becomes so large that a new sheet is required to allow for the additional text, the Lead Key Sheet should still be included in the revision for reference. A numbered revision triangle as well as “See Sheet 1A” note should be placed in the “Revisions” area on the Lead Key Sheet.

When new sheets are being introduced as a part of the revision, identify those added sheets in the “Revisions” area as shown in the example below:

*REVISIONS**FINANCIAL PROJECT ID 419570-1-52-01 & 419570-3-52-01*

 *Roadway Sheets 1, 2, 3, 6, 11, 17, 18, 23, 25, 27, 32, 33 & 37 (Revised 12-2-08)*  
*Roadway Sheet 33A (Added 12-2-08)*

See both the TPPPH and PPM Volume I Chapter 20.4 for additional information on formatting the Key Sheet for revisions.



## **Chapter 4**

### **Summary of Pay Items**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## Chapter 5

### Drainage Map and Bridge Hydraulic Recommendation Sheet

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### 5.1.1 Plan Portion

*Add the following as items*

8. General location of landfills or contamination sites shall be indicated on the plan view of the drainage maps. Include a drainage map note to describe known details of site and potential for restrictions to construction methods.
9. Wellfield Protection areas, if any, shall be shown on the plan view. Include the wellfield name and associated regulatory agency.
10. FDEP impaired water body basin boundaries, if any, shall be shown on the plan view. Include the impaired water body name.

**Exhibit 5-1 Drainage Map Notes***Add the following item #3*

3. Place the following information note on the drainage map when plan elevations are given in NAVD 1988 Datum. (The **X.XX** value below is the conversion between NGVD '29 and NAVD '88 for the project location. (It may vary for the length of long projects. Add note as appropriate.)

If the conversion is negative, suggest showing the NGVD '29 value as **0.00** and the NAVD '88 as a positive number. The **YY.YY** below is relative to the conversion.)

**NOTE:**

All elevations are NAVD '88 Datum  
(NAVD '88 EL 0.00 = NGVD '29 EL X.XX)

For Example: 15.98 shown in plans is equal to YY.YY  
NGVD '29

## Chapter 6

### Typical Sections

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### **Exhibit 6-1    Standard Notes for Typical Section Sheets**

*Add the following*

4.    1:6 FOR FILLS TO 5'  
      1:6 TO EDGE OF CLEAR ZONE & 1:4 FOR FILLS 5' TO 10'  
      1:6 TO EDGE OF CLEAR ZONE & 1:3 FOR FILLS 10' TO 20'  
      1:2 WITH GUARDRAIL FOR FILLS OVER 20' AND SHALL INCLUDE  
      SHOULDER GUTTER  
      SLOPES STEEPER THAN 1:4 SHALL INCLUDE SHOULDER GUTTER FOR ALL  
      FILL HEIGHTS

## **Chapter 7**

### **Summary of Quantities**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 8**

### **Summary of Drainage Structures and Optional Materials Tabulation**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 9**

### **Project Layout**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## Chapter 10

### Roadway Plan, Roadway Profile, and Roadway Plan-Profile

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### **Exhibit 10-1 General Notes for Roadway Plan and Roadway Plan-Profile Sheets**

*Add the following notes*

10. All bottom profile elevations and cross section elevations for treatment/attenuation swales shall be constructed to within 0.1 feet +/- of the values shown on the plans. Also, ditch-block top elevations and/or any longitudinal berms adjacent to treatment/attenuation swales shall also be constructed within this earthwork tolerance.
11. Where a concrete collar/jacket is called for in the plans, the pipe is to be removed to the nearest joint to begin the placement of the new pipe; unless it would require encroachment into the adjacent lane. If a concrete collar/jacket is still necessary, the concrete is to be cured and inspected to assure the integrity of the collar prior to placement of fill material. Pipe joints shall be wrapped in accordance with Index 280. Filter fabrics used to wrap pipe joints in accordance with Specification 430 and shall meet the requirement of Index 199. Type D-3 with an A.O.S. of 70 to 100. *Designer Note: With the above comment, there needs to be added an additional 8' length of pipe in the quantities for the tie in at each site where a concrete collar would have been used. Also, if there is any way to do a mechanical type collar, it would be preferable.*



# Chapter 11

## Special Profiles

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*Add the following section*

### 11.8 Treatment/Attenuation Swales

The following labels shall be used to locate and identify treatment swales in the profile view of the plans:

Begin Treatment/Attenuation Swale Sta. 99+99 Left (or Right)

End Treatment/Attenuation Swale Sta. 108+46 Left (or Right)

Construct Ditch Block; Sta. 99+99 Left (or Right); Top Elevation 10.30

Begin Treatment/Attenuation Berm Sta. 99+99 Left (or Right); Top Elevation 10.50

End Treatment/Attenuation Berm Sta. 108+46 Left (or Right); Top Elevation 10.50

For plan sets that do not have a profile view, the stations and elevations above shall be summarized in a table that uses the same naming convention. Suggested formats are shown below.

Summary of Treatment/Attenuation Swale Locations				
Begin Station	Begin DPI	End Station	End DPI	Side
99+99	10.30	108+46	10.30	Left
103+02	10.70	106+53	10.20	Right
107+98	9.45	110+78	9.00	Right

Summary of Ditch Blocks		
Station	Side	Top Elev.
99+99	Left	10.30
100+02	Right	11.25
123+56	Left	9.70

Summary of Treatment/Attenuation Berm Locations				
Begin Station	Begin Top Elev.	End Station	End Top Elev.	Side
99+99	12.30	108+46	12.30	Left
103+02	13.00	106+53	12.50	Right

Note that Treatment/Attenuation Berm Locations need only be specified when a special longitudinal berm is to be constructed above natural ground in order to increase storage in the swale. Where the outside boundary of the treatment/attenuation swale is the intersection between the backslope and natural ground, the drainage engineer will ensure that the design high water does not exceed 1 foot below the elevation of the intersection point and no special berm information is necessary in the plans. See Exhibit 10-1 for a list of General Notes required.

## **Chapter 12**

### **Back-of-Sidewalk Profiles**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 13**

### **Intersection and Interchange Details/Layouts**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 14**

### **Drainage Structures**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 15**

### **Lateral Ditch/Outfalls, Retention/Detention and Mitigation Areas**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 16**

### **Special Details**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 17**

### **Soil Survey**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*



## **Chapter 18**

### **Roadway Cross Sections**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 19**

### **Temporary Traffic Control Plan**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 20**

### **Utility Adjustments**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 21**

### **Selective Clearing and Grubbing**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 22**

### **Miscellaneous Structures Plans**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## Chapter 23

### Signing and Pavement Marking Plans

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### 23.3 Tabulation of Quantities and Pay Item Notes

*Add the following paragraph*

The format of the quantity sheets shall include a breakdown of pay items by type. For example, quantities for RPM's shall be categorized by RPM type (mono-directional white, bi-directional yellow, bi-directional white/red, etc.)

#### 23.4 General Notes

*Add the following paragraphs*

Typical General Notes are shown in the TPPPH Traffic Plans Guide Drawings, sheet 108 (3 of 3).

The Applicable notes shown on the guide drawing should be added to the plans.

#### 23.6 Guide Sign Worksheet

*Add the following paragraph*

The **FHWA Standard Highway Signs Manual** and **MUTCD** guidelines for sign panel design, font usage and letter spacing shall be used as a standard. The Turnpike encourages the use of the "GuidSign" software by Transoft Solutions (version 5.0 or later) software for sign panel layouts. However, this software includes numerous user options that must be set as described in the remainder of this paragraph to obtain acceptable output. Coordinate settings (i.e., x and y) shall not be used. Horizontal letter spacing shall be shown using the incremental spacing of the character and the trailing space, except for the last character in a word which will be the width of the character only. Spaces between words shall be denoted with an "X" in the appropriate box and providing the dimension for the width of the space. Sufficient vertical and horizontal dimensions shall be provided on the sign face graphic to specify proper location of all elements. Code names for symbols, shields and arrows in the spacing table shall not be used. All elements (shields, symbols, arrows, etc.) shall be properly dimensioned within the sign layout area. The panel dimensions in the summary table shall not include the size of the exit number panel. The Exit Panel is manufactured separately, so the details for this panel shall be shown separately.

#### 23.7.1 Multi-Post Signs

*Add the following paragraph*

All multi-post signs shall have cross-sections. The cross sections shall include the location of ditches, guardrails, barrier walls, right of way lines, potentially conflicting utilities and lane lines for proper location of the signs. Sign cross sections should be drawn as viewed by approaching traffic. The edge of travel elevation of the roadway and all appropriate references to this point shall be clearly labeled. More than one multi-post cross section may be placed within a single cross section sheet as long as legibility is maintained. These types of cross sections do not require full roadway coverage. The recommended scale for the cross section is 1"= 10' horizontally and vertically. A graphic representation of each sign panel legend shall be shown on the cross section sheet.

### **23.7.2 Overhead Sign Cross Section and Support Structure**

*Add the following paragraph*

Proposed overhead truss span, overhead cantilever and bridge-mounted signs require cross sections. Sign panel replacements on overhead structures that are lane specific (such as down or up arrows) require cross sections. The cross sections shall include the location of ditches, guardrails, barrier walls, right of way lines, potentially conflicting utilities and lane lines for proper location of the signs. Sign cross sections should be drawn as viewed by approaching traffic. The grade elevation at the top of the foundation (along with its location), the elevation at the highpoint of the roadway directly beneath the structure and the vertical clearance from the high point of the roadway directly beneath the structure to the bottom of the sign luminaries shall be clearly labeled. A graphic representation of each sign panel legend shall be shown on the cross section sheet. For overhead signs with down arrows, up arrows at 45 degrees, or other lane specific legends, for which lateral placement is critical, that portion of the legend should be shown over the corresponding lane to ensure correct placement relative to the roadway. Any arrows, including down arrows and up arrows (straight or at 45 degrees), that designate lane assignments should be located within the center 1/3 of the associated lane. For overhead signs with down or up arrows, show the lane lines on the sign cross section to ensure the down arrow is centered over the appropriate lane. Where applicable, for historical documentation, a note shall be added to each sign structure cross-section that the design accounts for the 25% increase in area.

## Chapter 24

### Signalization Plans

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### 24.1 General

*Add the following items*

8. Interconnect/Communication Plan (if required)
9. Temporary Signalization Sheets (if required)
10. Internally Illuminated Street Name Signs Detail(s) (if required)
11. Electrical Power Service Detail (if required)

#### 24.4 General Notes

*Add the following*

The designer shall coordinate with the Maintaining Agency of the traffic signal and include the appropriate notes that comply with Maintaining Agency requirements.

#### 24.5.2 Required Information

*Add and modify the following*

6. Electrical service location and proposed electrical service routing.
7. Location of signal poles and span wires (ground elevation and elevation of roadway crown and bearing data).

*Add the following after 14*

The designer shall coordinate with the Traffic Signals Maintaining Agency and verify if requirements above are adequate. Some Traffic Signal Maintaining Agencies do their own signal controller timing and do not require the Timing Chart be shown in the plans.

#### 24.6 Interconnect/Communication Plan

*Add the following after last paragraph*

The designer shall coordinate with the Traffic Signals Maintaining Agency and verify if proposed interconnect cables and conduits are required.



## Chapter 25

### Lighting Plans

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### 25.1 General

*Replace the third paragraph with the following*

The Lighting Plans shall be assembled as follows:

1. Key Sheet
2. Tabulation of Quantities
3. Lighting General Notes
4. Legend Sheet \*
5. Pole Data \*
6. Underdeck Luminaire Data \*
7. Sign Luminaire Data \*
8. Layout Sheets (as applicable)
9. Plans Sheets
10. Underdeck Lighting Plan Sheets
11. Underdeck Lighting Section/Details Sheet
12. Load Center Schematic One-Line Diagram, Power Riser Diagram, Service Point Details, Panelboard Schedules, and Grounding Details Sheet(s)
13. Power Riser Diagram and Panelboard Schedules (for projects with box girders) Sheet(s)
14. Miscellaneous Details Sheet (as applicable)
15. Foundation Details - High Mast (if required)
16. Boring Data Sheets - High Mast (if required)

\* Sheets may be combined based on project size.

#### 25.3 Tabulation of Quantities and Standard Notes

*Add the following section*

##### 25.3.1 Lighting General Notes Sheet

A lighting general notes sheet shall be provided (see the latest Lighting Guide Drawings). All notes shall be modified as necessary to make them project specific and to describe any special considerations and directions to the Contractor. Remove general notes that do not apply. A note indicating “not all notes are applicable” or similar is not acceptable.

*Add the following section*

### **25.3.2 Pay Items**

Provide pay item notes below Tabulation of Quantities Table on first sheet only or reference the location of the pay item notes in all Tabulation of Quantities Tables (if not shown on the first sheet).

### **25.4 Pole Data and Legend Sheet**

*Add the following to the list in paragraph 2*

7. Pole Number
8. Tilt angle (in degrees) for pole-top luminaires
9. Aiming angle and direction/orientation for each luminaire on high mast poles

Note:

When a pole has two arms, then the number "two" shall be placed under the respective arm and luminaires column.

Pole numbering shall be coordinated and follow the maintenance scheme

*Add the following*

The following information shall be given for each sign luminaire:

1. Sign Panel
2. Circuit Number
3. Roadway Station and Offset
4. Arm Length
5. Tilt angle (in degrees)
6. Luminaire Wattage
7. Luminaire Placement (Configuration, Sign Size, Spacing Dimensions)

The following information shall be given for each underdeck luminaire:

1. Luminaire Name
2. Circuit Number
3. Roadway Station and Offset
4. Luminaire Wattage
5. Mounting Height
6. Pay Item Number

Provide a tilt angle convention detail for all fixtures types that are tilted.

The Legend section of this sheet should include the following information:

1. Provide a separate and unique symbol for each condition. Basically, a separate symbol is needed for each bid item number used on the tabulation of quantities. Do not use the same light pole luminaires symbol for two different mounting heights or two different mounting types.
2. Provide symbol with proper description for the conduit and pull boxes that are embedded in the bridge structures or traffic barrier walls.
3. Remove any symbols that are not applicable. A note indicating “not all symbols are applicable” or similar is not acceptable.

## 25.5.2 Required Information

*Modify the second paragraph as follows*

The lighting layout shall be shown on the plan format. This shall be accomplished by symbols which represent poles, underdeck luminaires, pull boxes, conduit, service points and all necessary light fixtures or electrical devices to be part of the project design. A flag or note shall be used to identify conduit runs.

*Add the following*

The lighting plan sheet that shows the load center shall show, label and identify the power company point of service and shall also show the routing of the service feeder from the power company service pole to the load center. The plan shall show the branch circuit conduit runs from the last light pole to the load center with a wiring call-out identifying the circuit designations in addition to the conductor sizes and quantities (in cross section). The phase, neutral, and ground conductors shall be clearly identified. Provide a detailed description of the load center to include the following information:

1. Load Center designation.
2. Station and offset of the load center.
3. Full description of the service voltage.
4. Service Type (Overhead or Underground).

An underdeck lighting plan sheet shall be prepared for each underdeck lighting location. This plan sheet shall be drawn to scale with the scale used properly identified, shall use the bridge plan as background with the intensity reduced, and shall also indicate the electrical work associated with bridge mounted signs if applicable. The plan shall show the location of the embedded junction boxes, conduits and associated electrical work with proper notation to indicate what items are incidental to the bridge. A separate section/detail sheet shall be prepared to show all necessary mounting details and associated hardware needed for the installation of the underdeck luminaires.

All widening, resurfacing, and All Electronic Tolling (AET) projects shall show existing light fixture locations.

*Add the following section*

## 25.7 Box Girder Maintenance Lighting and Power Plan

## Sheet(s)

FDOT Design Standards Index No. 21240 shall be used as a guide in the preparation of the box girder lighting/power plans. The Box Girder Maintenance Lighting Notes are minimum requirements that shall be maintained and met except as revised hereafter. A sheet shall be prepared for each box girder. This sheet shall show the internal lighting, receptacles, switches, load centers, life safety devices, and wiring needed for maintenance. The sheet shall be drawn to scale and shall provide a list or table identifying the quantity of each electrical item within each box girder.

A panelboard schedule shall be provided for the distribution panelboard and for each mini power center.

*Add the following section*

### **25.8 Load Center Schematic One-Line Diagram, Power Riser Diagram, Service Point Details, Panelboard Schedules, and Grounding Details Sheet(s)**

Provide a detailed design of the load center to include the following information:

1. Load Center designation.
2. Station and offset of the load center.
3. Full description of the service voltage.
4. Service Type (Overhead or Underground).
5. Indicate whether the enclosure will be pole mounted or pedestal mounted.
6. Indicate the enclosure NEMA rating.
7. Whether a photocell is required.
8. Power distribution riser diagram with short circuit values.
9. Conductor ampacities (sizes) and insulation type.
10. Circuit interrupting devices and fault current interrupting capability.
11. Location and characteristics of surge protective devices.
12. Main and distribution equipment, control devices, locations and sizes.
13. Load computations.
14. Grounding and bonding shall indicate at a minimum the following:
  - A. Type and location of grounding electrodes.
  - B. Bonding requirements.
  - C. Testing requirements.
  - D. Conductor material type, size and protection requirements.
  - E. Connections of separate grounding systems, bonded, and use requirements.
15. A note requiring shop drawings for all the electrical equipment associated with the load center. The load connected to each branch circuit breaker and the overall total load connected.

16. If future luminaires are included in the branch circuit conductor size, the affected lighting plans shall be provided with a proper note defining the number of future luminaires include.

*Add the following section*

## **25.9 Lighting Design Analysis Report (LDAR)**

A Lighting Design Analysis Report (LDAR) shall be provided (LDAR guidelines can be found at the link below). LDAR guidelines shall be modified as necessary to make them project specific and to describe any special considerations.

[http://design.floridasturnpike.com/prod\\_design/lightelect/doc/LDAR\\_Template.pdf](http://design.floridasturnpike.com/prod_design/lightelect/doc/LDAR_Template.pdf)

## **Chapter 26**

### **Landscape Plans**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### **26.1 General**

*Add the following section*

##### **26.1.1 Phase Submittals**

Stand-alone landscape projects shall have three phase submittals as follows which shall be accompanied by a full Electronic Plans Review process:

1. Phase I Submittal (30% plans)
2. Phase II Submittal (60% plans)
3. Phase III Submittal (100% plans)

Final Plans will be submitted following acceptable resolution of all Phase III ERC comments. The Final Plans review will consist of a back-check by the District Landscape Architect or assignee.

Depending on the project size and complexity, the consultant may be tasked with the development of a Purpose, Need and Feasibility Study which will include a comprehensive inventory and analysis of the existing conditions and preparation of a Concept Level or Landscape Opportunities Plan. The Purpose, Need and Feasibility Study will be submitted for full ERC review.

#### **26.4 Tabulation of Quantities and Schedule**

*Add the following section*

##### **26.4.3 Bid Factor Tabulation of Quantities**

Landscape projects that are scheduled to be let through the Bid Factor Contract shall include a separate spread sheet tabulation of quantities showing the item no., plant type, size, quantity and price in accordance with the applicable Bid Factor Contract documents.

#### **26.5 General Notes**

*Add the following paragraphs*

General notes should identify FDOT standard specification sections, included materials sections that are appropriate for the landscape project.

Where the FDOT specifications do not exist or where they are not adequate for the landscape design, existing site conditions or proposed plant materials, provide technical specification sections as required to include, but not limited to, soil mixtures, fertilizer requirement for different plant materials, mulches, plant material, vegetation, irrigation systems, site amenities, hardscaping, and any fences or lighting included in the project.

All FTE landscape designs shall comply with the “Florida Turnpike Enterprise Landscape BRAND Guidelines” most current issue. This document can be found at:

[http://design.floridasturnpike.com/prod\\_design/architecture/architecture.html](http://design.floridasturnpike.com/prod_design/architecture/architecture.html)

Utility Notes:

1. Utility information shown in the drawings is schematic in nature and a graphic depiction only. No utility facilities will be relocated. If a utility is in conflict with the proposed landscape, notify the engineer immediately.
2. Comply with Chapter 556 of the Florida Statutes during the performance of excavation or demolition operations. Notify utility owners through Sunshine State One Call of Florida, Inc. (ph# 811). The contractor shall have a representative present when the utility company designates their facilities. Have all utilities designated prior to the commencement of any construction.
3. FDOT/Turnpike (Department) owned utilities will not be located through the Sunshine State One Call system. Department owned utility facilities may include buried electric, Intelligent Transportation System (ITS) fiber optic lines, buried telephone, water, and sewer. The contractor shall designate all Department owned subsurface utility facilities within the project limits and, if necessary, physically expose Department owned utility facilities that may be affected.
4. There will be no separate compensation for performing this utility locate work. All costs shall be included in the unit cost for plant materials.
5. The Contractor shall exercise extreme care while excavating near utilities. The Contractor shall be responsible for the repair of any damage to existing utilities caused as a result of the work of this contract and shall be required to follow the general requirement for the preservation and repair of existing FTE ITS or other facilities. The Contractor is directed to the following URL:

[http://design.floridasturnpike.com/prod\\_design/util/utilities.html](http://design.floridasturnpike.com/prod_design/util/utilities.html)

## 26.6 Plan Sheets

*Replace the entire section*

Contract Plan sheets shall be prepared in a manner that is consistent with a set of construction documents rather than an illustrative plan. Therefore plan sheets shall utilize simplified symbols

depicting the location of materials in a legible manner. Plan sets shall employ a level of detail and clarity that allows the reviewer to assess the relationship between the proposed landscape design, the roadway plans, utilities, outdoor advertising signs, and adjoining land use.

Concept Plans and Landscape Opportunity Plans shall be plotted on a roll plot and be of sufficient size and scale as to adequately depict the inventory, analysis and concept design.

All Landscape Plans will include, at a minimum, the following General Notes and/or Specifications:

1. Construction documents shall include a provision that the Contractor shall restore all landscaped areas to roadway plan grading specification and cross section to original grade or grades acceptable to the Engineer.
2. Landscaping shall be located such that drainage ditches and swales are not blocked or flows impeded. Landscaping location shall also consider maintenance access along/across ditches and around storm water management facilities. Maintenance access should be provided at the top of the slope and bottom of the slope so that maintenance forces may gain access to the facility.
3. All planting details for beds on 2:1 (1:2 rise:run) slopes shall include the use of weed control and permanent erosion control fabrics, anchored or toed so that stormwater cannot run underneath the mat unless the plant types being used can successfully compete with the weeds or be a plant type that would be difficult to maintain, such as thorns, etc. Consider spacing plants closer together and/or installing in large container sizes to fill in more rapidly. Should weed control be used, it shall be biodegradable with a 3 years maximum life expectancy. Permanent erosion control fabrics are not preferred.
4. The planting plans and/or maintenance plans shall clearly indicate the limits of the installation contractor's mowing limits and maintenance limits. Mowing limits shall be a minimum of 6 feet outside the outermost plant when plants are "bedded" or 6 feet around a tree which is located in a turfgrass area.
5. Bid Factor Projects (BF) will not require landscape general notes, specifications or details. This information is included in the Contract Specifications. BF plans shall be prepared in accordance with these documents. Project cost estimates shall be generated utilizing the bid factor units included in the BF contract.
6. BF plans will not require an establishment period Maintenance Plan. A post-establishment Maintenance Plan shall be required for all projects

Although the clear zone, horizontal clearance and/or guardrail setback distance is plotted on the plans, these distances may not be enough to satisfy horizontal sight distance requirements along every horizontal curve, particularly along ramps and loop ramps at interchanges. There may be cases where the horizontal sight offset (HSO) requirement is outside either the clear zone or the guardrail setback line. In these instances the greater controlling criteria (e.g. the HSO) should be shown on the plans and be free from obstructions.



Setbacks from roadway and other related features to proposed landscape materials shall be as indicated on the "FTE Minimum & Preferred Landscape Setbacks for Installation and Maintenance Operations". Should there be conflicts between any FDOT standards or Indexes, the FDOT criteria shall control.

### **26.6.2 Requirements for Plan Sheets**

*Add the following to Item 4(after Drainage systems)*

(including but not limited to existing and proposed storm sewer systems, cross drains, underdrain systems, french drain systems, ditches, retention/detention facilities, floodplain compensation areas, etc.).

*Add the following item*

20. All FTE owned utilities (fiber optic, water, sanitary sewer, electric etc.)

### **26.7 Details Sheet**

*Add the following paragraph*

Bid Factor projects may not include details or specifications which materially differ from the FDOT standard details. Details describing unique effects, locations or which modify the FDOT standard details based on unique environmental conditions may be utilized.

## **Chapter 27**

### **Utility Work by Highway Contractor Agreement Plans**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*

## **Chapter 28**

### **Stormwater Pollution Prevention Plan**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### **28.3 Site Map**

*Add the following item*

9. The limits of construction and silt fence installation must be indicated at the same location on the plans.

## **Chapter 29**

### **Intelligent Transportation Systems Plans**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

#### **29.6.2.5 Fiber Optic Cable and Interconnect**

*Add the following paragraph*

A detail shall be included for the design of the ITS Splice Box. The Splice Box shall be a concrete drainage style manhole (see the latest ITS Guide Drawings).

## **Chapter 30**

### **Signature Sheet**

The following are changes, additions or deletions to the January 2014, Topic #625-000-008, Plans Preparation Manual (PPM), for use on Turnpike projects only.

*No changes to the entire chapter*