DATE: September 19, 2017

TO: District Directors of Transportation Development, District Design Engineers, District Construction Engineers, District Geotechnical Engineers, District Structures Design Engineers, District Maintenance Engineers, District Roadway Design Engineers, District Traffic Operations Engineers, District Program Management Engineers, District Materials Engineers, District Environmental Managers

FROM: Michael Shepard, P.E., State Roadway Design Engineer
        Jason Watts, Director, Office of Environmental Management

COPIES: Brian Blanchard, Courtney Drummond, Tim Lattner, David Sadler, Rudy Powell, Amy Tootle, Dan Scheer, Vern Danforth, Robert Robertson, John Krause, Gregory Schiess, Erik Fenniman, Stefanie Maxwell, Trey Tillander, Jeffrey Ger (FHWA), Nick Finch (FHWA), Buddy Cunhill (FHWA), Khoa Nguyen (FHWA), Bren George (FHWA)

SUBJECT: Typical Section Package and Roadway Key Sheet Updates

This Memorandum is providing information on upcoming changes to the Department’s Typical Section Package and the Roadway Key Sheet. These changes will be incorporated in the FDOT Design Manual (FDM), but not the Plans Preparation Manual (PPM).

Typical Section Package

The new format has been developed to digitally sign and deliver Typical Section Packages, and is detailed in draft FDM 120.2.3, which is included as Attachment A. The new format will be added to the FDOT CADD Software in the next Maintenance Release in October 2017.

The assignment of a context classification for the roadway will be required with the implementation of the FDM. The context classification will be documented in the Typical Section Package; therefore, the new format is required for projects that use context classification as a design control.

Key Sheet

The standard Roadway Key Sheet has been modified as follows:

1. The Summary of Quantities sheets will be placed at the end of the Index of Roadway Plans.
   a. This change is effective on projects with lettings on or after July 2018.
2. Box Culvert plan sheets will no longer be placed in the Roadway component plans. These sheets will be placed in the Structure component plans, even when there are no bridge plans.
   a. This change is effective on projects with lettings on or after July 2018.

   a. This change will be implemented in accordance with *Roadway Design Bulletin 17-06*.

These updates are reflected in the draft FDM, and *Exhibits 302-1* and *302-2* provide an example of the Key Sheet, which are included as Attachment B.

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Attachments:

- Attachment A – FDM 120.2.3
- Attachment B – Exhibits 302-1 and 302-2
Attachment A

FDM 120.2.3
120.2.3 **Typical Section Package**

The purpose of the typical section package is to establish and document the following:

- Project Controls
- Cross Sectional Elements
- Design Variations and Design Exceptions

Prepare a typical section package for projects that alter cross section elements and for resurfacing projects. The typical section package must be prepared and sealed by the EOR.

There are two formats available in the FDOT CADD Software for the development of typical section packages:

1. Digitally signed and sealed Typical Section Packages as described in this chapter. The Typical Section Package consists of a Cover Sheet and Proposed Typical Section Sheets as illustrated in Exhibits 120-1 through 120-4.

2. 2017 PPM Typical Section Packages as described in PPM Volume 1, Chapter 16. This format may be used for projects that do not require context classification and are manually signed and sealed.

### 120.2.3.1 Approval Process

The typical section package will be approved as part of the Project Development & Environmental (PD&E) process. Typical section package preparation and coordination between the responsible PD&E Engineer and the District Design Engineer typically occurs during the development of project alternatives prior to the preferred alternative selection. The responsible PD&E Engineer will prepare, seal, and submit the typical section package for concurrence. Typical section package concurrence by the District Design Engineer is obtained after the preferred alternative is selected. Include a copy of the approved typical section package as part of the PD&E Final Preliminary Engineering Report.

For projects that do not contain a PD&E phase, the typical section package is prepared, sealed and submitted by the EOR for concurrence by the District Design Engineer. The typical section package should receive concurrence prior to the final engineering process.
120.2.3.2 Cover Sheet

The Cover Sheet contains the following:

1. Project Identification: Place the Financial Project ID number(s) immediately under the heading "TYPICAL SECTION PACKAGE" at the top of the sheet. When the project involves Federal funds, place the words "(Federal Funds)" under the Financial Project ID. Place the county name and roadway section number associated with the Straight Line Diagrams under the Financial Project ID or "(Federal Funds)". Include a description of work type under the state road number.

2. Project location map: See FDM 302.4 for requirements.

3. EOR Signature Block: See FDM 130 for requirements.

4. Sheet Index: Provide an index of sheets contained in the package that the EOR is responsible for.

5. Typical Section Concurrency Block: Concurrency from the District Design Engineers for all typical sections is required. Other concurrency signatures may be included; e.g., District Structures Design Engineer for bridge typical sections, County Engineer for local roadway typical sections.

6. Concurrence of the typical section package by the FHWA Transportation Engineer is required on Projects of Division Interest (PoDI). Refer to FDM 125 for additional information concerning PoDI.

7. Design Speed and Posted Speed Concurrency Block: The District Design Engineer and District Traffic Operations Engineer will discuss and agree to the posted speed. The selected design speed will be jointly approved by the District Design Engineer and the District Traffic Operations Engineer with a declaration that the posted speed is not expected to exceed the selected design speed.

8. Context Classification Concurrency Block: Context classification is determined by FDOT district staff on all projects. Coordinate with the FDOT Project Manager to obtain context classification(s). Concurrence from the District Intermodal Systems Development (ISD) Manager for the context classification assigned to each typical section is required.

120.2.3.1 Typical Section Sheet

Provide Typical Section Sheets for the state roadway and bridges for project limits that include:

- A change in the number of through lanes.
• A change in Project Controls; Functional Classification, Context Classification, or Design Speed
• Change in facility type; e.g. flush shoulder roadway to curbed roadway.
• A crossroad which may affect an existing structure.

Provide a Typical Section Sheet for intersecting roadway when work of significant length is required.

The Proposed Typical Section Sheet contains the following:

(1) Project Controls: Indicate the applicable control that applies to the typical section (context classification, functional classification, highway system, and access classification).

(2) Criteria: Indicate the type of construction.

(3) Design Variations and Design Exceptions: List anticipated Exceptions and Variations that relate to the typical section.

(4) Traffic Data: provide the following,
   (a) Current Year and AADT
   (b) Estimated Opening Year and AADT
   (c) Estimated Design Year and AADT
   (d) K, D, T (24 hour) factors.
   (e) Design Year T factor
   (f) Design Speed and Posted Speed

(5) Roadway Typical Section Drawing: provide the following,
   (a) Name of Roadway and Mile Post Limits (station limits or street names may be used when Mile Post data is not available).
   (b) Centerline Construction and/or Baseline Survey (label)
   (c) Lanes (label type, dimension width, show cross slope)
   (d) R/W Line (graphically show, label and dimension from centerline const.)
   (e) Shoulder (label and dimension width, show cross slope, paved shoulder is dimensioned and labeled separately)
   (f) Curb (graphically show curb, label curb type)
   (g) Median (graphically show median, dimension width, show slopes)
   (h) Slopes (label and dimension)
(i) Border Width (label and dimension for new construction / reconstruction)
(j) Ditches (show typical front slope and typical back slope, dimension typical ditch width and depth, and label)
(k) Natural Ground Line (graphically show and label)
(l) Pavement and Roadbed (graphically show)
(m) Barriers (graphically show, dimension, and label)
(n) Sidewalk or Shared Use Path (graphically show, dimension width, and label)

(6) Bridge Typical Section Drawing: provide the following,
(a) Bridge Description w/ Crossing Information
(b) Centerline Construction and/or Baseline Survey (label)
(c) Lanes (label type, dimension width, show cross slope)
(d) R/W Line (graphically show, label and dimension from centerline const.)
(e) Shoulder (label and dimension width, show cross slope)
(f) Gutter (graphically show, dimension width)
(g) Median (graphically show, dimension width)
(h) Barriers (graphically show including railing, dimension width, and label)
(i) Sidewalk or Shared Use Path (graphically show, dimension width, and label)
PROJECT CONTROLS

CONTEXT CLASSIFICATION

( ) C1: NATURAL
( ) C3: SUBURBAN COMM.
( ) C2: RURAL
( ) C4: URBAN GENERAL
( ) C3T: RURAL TOWN
( ) C5: URBAN CENTER
( ) C3R: SUBURBAN RES.
( ) C6: URBAN CORE
( ) N/A: L.A. FACILITY

FUNCTIONAL CLASSIFICATION

( ) INTERSTATE
( ) MAJOR COLLECTOR
( ) FREEWAY/EXPWY.
( ) MINOR COLLECTOR
( ) PRINCIPAL ARTERIAL
( ) LOCAL
( ) MINOR ARTERIAL

HIGHWAY SYSTEM

( ) NATIONAL HIGHWAY SYSTEM
( ) STRATEGIC INTERMODAL SYSTEM
( ) STATE HIGHWAY SYSTEM
( ) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

CRITERIA

( ) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (L.A. FACILITIES)
( ) RRR (ARterialS & COLlectORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN VARIATIONS
1. BORDER WIDTH

TYPICAL SECTION No. 1

SR 22
MP 3.560 TO MP 3.422
MP 3.471 TO MP 3.725

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 22800
ESTIMATED OPENING YEAR = 2020 AADT = 25800
ESTIMATED DESIGN YEAR = 2040 AADT = 30600
K = 6%  D = 55%  T = 2% (24 HOUR)
DESIGN HOUR T = 1%
DESIGN SPEED = 35 MPH
POSTED SPEED = 30 MPH

Exhibit 120-2
Date: 1/1/18

FINANCIAL PROJECT ID SHEET NO.
123456-1-53-01  2
### TRAFFIC DATA

- **Current Year:** 2018  
  **AADT:** 22,800

- **Estimated Opening Year:** 2020  
  **AADT:** 25,800

- **Estimated Design Year:** 2040  
  **AADT:** 30,600

- **K:** 6%  
  **D:** 65%  
  **I:** 2% (24 Hour)

- **Design Hour:** 7%  
  **Design Speed:** 35 MPH

- **Posted Speed:** 30 MPH

---

### TYPICAL SECTION No. 2

**SR 22 OVER CALLAWAY BAYOU**  
**MP 3.422 TO MP 3.471**

---

**NOT TO SCALE**
PROJECT CONTROLS

CONTEXT CLASSIFICATION

[ ] C1 : NATURAL  [ ] C1C : SUBURBAN COMM.
[ ] C2 : RURAL  [ ] C4 : URBAN GENERAL
[ ] C2T : RURAL TOWN  [ ] C5 : URBAN CENTER
[ ] C3R : SUBURBAN RES.  [ ] C6 : URBAN CORE
[ ] N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

[ ] INTERSTATE  [ ] MAJOR COLLECTOR
[ ] FREEWAY/EXPWY.  [ ] MINOR COLLECTOR
[ ] PRINCIPAL ARTERIAL  [ ] LOCAL
[ ] MINOR ARTERIAL

HIGHWAY SYSTEM

[ ] NATIONAL HIGHWAY SYSTEM
[ ] STRATEGIC INTERMODAL SYSTEM
[ ] STATE HIGHWAY SYSTEM
[ ] OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

[ ] 1 - FREEWAY
[ ] 2 - RESTRICTIVE w/Service Roads
[ ] 3 - RESTRICTIVE w/360 ft. Connection Spacing
[ ] 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
[ ] 5 - RESTRICTIVE w/440 ft. Connection Spacing
[ ] 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
[ ] 7 - BOTH MEDIAN TYPES

CRITERIA

[ ] NEW CONSTRUCTION / RECONSTRUCTION
[ ] RESURFACING (L.A. FACILITIES)
[ ] RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 3

SR 22
MP 3.725 TO MP 7.560

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 22800
ESTIMATED OPENING YEAR = 2020 AADT = 25800
ESTIMATED DESIGN YEAR = 2040 AADT = 30600
K = 6%  D = 55%  T = 2% (24 HOURS)
DESIGN HOUR T = 1%
DESIGN SPEED = 60 MPH
POSTED SPEED = 55 MPH

EXHIBIT 120-4
Date: 1/1/18
Attachment B

Exhibits 302-1 and 302-2
CONTRACT PLANS COMPONENTS
ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
SYSTEMS PLANS
LIGHTING PLANS
ARCHITECTURAL PLANS
STRUCTURE PLANS
TOLL FACILITIES PLANS

INDEX OF ROADWAY PLANS

1  KEY SHEET
2  DIGEST SHEET
3  SUMMARY OF PAY ITEMS
4  DRAINAGE MAP
5 - 6  TYPICAL SECTIONS
7  TYPICAL SECTION DETAILS
8  SUMMARY OF DRAINAGE STRUCTURES
9  OPTIONAL MATERIALS TABULATION
10  PROJECT LAYOUT
11  PROJECT CONTROL
12  GENERAL NOTES
13  - 16  ROADWAY PLAN PROFILES
17  TRAFFIC MONITORING SITE
18  SPECIAL PROFILES
19  INTERSECTION LAYOUT
20  - 25  DRAINAGE STRUCTURES
26  LATERAL DITCH PLAN-PROFILES
27  LATERAL DITCH CROSS SECTIONS
28  - 32  SPECIAL DETAILS
33  INTERSECTION LAYOUT
34  - 60  CROSS SECTIONS
41  STORMWATER PREVENTION PLAN
42  TEMPORARY TRAFFIC CONTROL PLANS
43  - 50  UTILITY ADJUSTMENTS
44  SELECTIVE CLEARING AND GRUBBING
45  SUMMARY OF QUANTITIES
46  - 80  ROADWAY SOIL SURVEY

DEVELOPMENTAL STANDARD PLANS:
D590.001
LANDSCAPE IRRIGATION SLEEVES

* This sheet is included in the Index of Roadway Plans only to indicate that it is part of the Roadway Plans. This sheet is contained in a separate digitally signed and sealed document.

GOVERNING STANDARD PLANS:
Florida Department of Transportation, FY2018-19 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs)

Standard Plans for Road Construction and associated IRs are available at the following website: https://www.fdot.gov/design/standardplans

APPLICABLE IRs: 14536-000-01, 15281-000-01

Standard Plans for Bridge Construction are included in the Structures Plans Component

GOVERNING STANDARD SPECIFICATIONS:
Florida Department of Transportation, July 2018 Standard Specifications for Road and Bridge Construction at the following website:
http://www.fdot.gov/programmanagement/Implemented/SpecBooks

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 123456-1-52-01
(FEDERAL FUNDS)
BAY COUNTY (46080)
STATE ROAD NO. 22 (WEWA HWY)

LOCATION OF PROJECT
https://goo.gl/maps/zmmkmmoLDvk

DATE: 9/19/2017
TIME: 11:10:25 AM

REVISIONS:
FINANCIAL PROJECT ID 123456-1-52-01
Roadway Sheet 2, 2A, 27, & 35A (Revised 10-14-17)
FINANCIAL PROJECT ID 123457-1-52-01
Structure Sheets 8.3 & 8.3.1 thru C.10 (Revised 10-14-17)

CONSTRUCTION CONTRACT NO.:
T0000
CONTRACT FISCAL YEAR:
18
SHEET NO.:
1A

9/19/2017 11:10:25 AM