Design Guidelines
Central Florida Expressway Authority
Introduction

As part of Central Florida Expressway Authority’s (CFX) continuing quality development effort the Design Guidelines have been developed to provide consultants, reviewers, and management with a single source of design preferences. The guidelines serve to modify or add to the requirements included in the Florida Department of Transportation (FDOT) Design Manual January 2019 (FDM).

Additional guidance is available in the following documents:

- CFX Standards for Preparation of Signing and Pavement Marking Plans (2019)
- CFX ITS Design Standards (Version 7, March 2018)
- CFX Property Acquisition & Disposition Manual (September 2017)
- Drainage (To be provided at a later date)
- Specifications (To be provided at a later date)

The table of contents lists the FDM chapters and sections modified within this document. If a section has been modified the user should refer to the specific section in the Design Guidelines shown in the table of contents.

The Design Guidelines will be updated on an annual basis, following the official revision to the FDM. It is anticipated that there will be several revisions during the first six months from the date of issue. Interim updates to the Design Guidelines will be issued as Addenda to the annual revision.

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Part I
1.0 DEVELOPMENT AND PROCESSES

102 - Glossary of Terms

Add the following section:

102.3 - CFX Terms

(1) **Bridge Concept Memorandum (BCM):** A brief report of practical superstructure, substructure and foundation alternatives for a bridge widening or new bridge design. Plan, Elevation and Typical Section drawings should be included. For a new bridge, a comparison of superstructure and substructure alternatives in regard to constructability, cost, and transport should be included to determine the type of bridge if not dictated by the scope. CFX utilizes a BCM in lieu of the Bridge Development Report (BDR). Change all references in the FDM from Bridge Development Report to Bridge Concept Memorandum.

(2) **Central Florida Expressway Authority (CFX):** An agency of the State that builds and maintains a regional transportation network that connects Brevard, Lake, Orange, Osceola and Seminole counties.

(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 consider such items as contractor access, site constraints and relationship to other project work.

(4) **Design Deviations:** CFX follows the design criteria and standards contained in the FDM except where noted in the Design Guidelines. When it becomes necessary to deviate from the FDM, the minimum criteria established by AASHTO will be used. CFX utilizes the term Design Deviations in lieu of the Design Variations and Exceptions. Change all references in the FDM from Design Variations and Exceptions to Design Deviations. See Section 122.

(5) **Engineer of Record (EOR):** "A Florida professional engineer who is in responsible charge for the preparation, signing, dating, sealing and issuing of any engineering document(s) for any engineering service or creative work." F.A.C. CHAPTER 61G15-30. Throughout the Design Guidelines, the terms EOR and Designer are all synonymous.

(6) **Executive Director:** Whenever the FDOT-incorporated documents refer to the FDOT (the “Department”) or any FDOT offices or personnel (e.g., “Engineer”, “Estimates Engineer”, “Project Engineer”, “Inspector”), such words shall be taken to mean CFX’s Executive Director, or representative specifically and duly authorized to act on behalf of the Executive Director.
(7) **General Engineering Consultant (GEC):** A consulting firm that provides professional services in connection with general planning, design, engineering, management, and other services for projects related to the development, determination of feasibility, planning, design, permitting, right-of-way acquisition, bidding, construction, and maintenance of CFX’s existing and future system.

(8) **Phase submittals:** Throughout the FDM, Phases I, II, III & IV are equivalent with 30%, 60%, 90%, and 100% plans.

(9) **Preliminary Design Review/Report (PDR):** A document that provides a brief project overview and project specific design issues (e.g. auxiliary lanes, geometric changes, drainage design approach, basic weave analysis, maintenance of traffic, pier protection, typical sections, ramp realignment, etc.) including:

- A brief description of the design issue, including a summary of the research performed to identify the design issue
- A description of each design alternative considered (with exhibits)
- An analysis of alternatives including benefits and impacts of each alternative considered; and
- A design recommendation

(10) **Renewal and Replacement (R&R):** A CFX program designed to preserve their infrastructure assets and maintain the serviceability of the system by meeting the following standards:

- Routine Maintenance: Maintain an overall Maintenance Rating Program (MRP) of at least 90.
- Resurfacing: Ensure a minimum of 85% of its lane miles in good condition (rated 7 or above)
- Bridge Repair and Replacement: Ensure 95% or more of all bridges are in good condition.

CFX utilizes the term R&R in lieu of the Resurfacing, Restoration and Rehabilitation (RRR). Change all references in the FDM from Resurfacing, Restoration and Rehabilitation to Renewal and Replacement.

(11) **Responsible Agency:** When the FDM identifies an approval or review process to be performed by either a State or District Office, they are not obligated to provide the same service for the CFX system. Change all references in the FDM that requires State or District approval to the Chief of Infrastructure.

**103 - Standard Forms**

*Delete FDM 103.*
104 - Public Involvement

104.1 – General

Insert the following sentence after the last paragraph.
CFX is supported in these efforts through a Public Information Services contract. Design and Construction firms shall coordinate all public involvement efforts through this contract.

105 - Aesthetic Design

Add the following section:

105.7 - CFX Aesthetic Guidelines

CFX has developed aesthetic treatments for multiple corridors which are applied consistently throughout the system to mitigate the visual impacts of the expressway and provide context sensitive design features characteristic of the neighborhoods and areas it traverses. The future development along the right-of-way as well as the ultimate build out the corridors will impact the existing aesthetic treatments along the corridor. To maintain the existing level of treatments and communicate the current standards, CFX has developed general guidelines to define the potential impacts and provide standards for development of aesthetic treatments for the following corridors:

- SR 408
- SR 417
- SR 429
- SR 528
- Wekiva Parkway

These guidelines can be requested from CFX or the GEC.

106 - Exempt Public Documents

106.3 - Distribution of Exempt Documents

Delete all paragraphs and replace with:

The process for the distribution of documents can be found at CFX’s website below:

CFX Public Records Procedure

110 - Initial Engineering Design Process

110.2 - Initial Engineering Design

Delete activity (13) and add the following:
(13) Identify seasonal high water elevations and determine base clearances.

(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)

110.5.7 Traffic Monitoring Sites

Delete the last sentence of the first paragraph and replace with:

Inquiries about monitoring sites should be addressed to the ITS Department at CFX

110.6 Preliminary Geometry

Delete item 8 from the last set of activities.

111 - Final Engineering Design Process

111.2 - Final Engineering Design

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

(16) Toll facilities design

111.2.1 Work Program Administration (WPA) System

Delete FDM 111.2.1.

111.3 - Contract Plans Preparation
Add the following item to the list of major component sets:

(9) Toll Facilities

111.4 - Standard Specifications and Special Provisions

Delete FDM 111.4.

111.6 - PS&E Package Submittal

Delete FDM 111.6.

111.7 - Project Documentation

Delete all paragraphs and replace with:

The submittal of project documentation is required for all projects. This section describes the required process for delivery of project documentation, and a list of documents that are to be provided.

Create a project documentation folder structure as shown in APPENDIX A – CFX File Directory Structure.

General Requirements:

All PDF files shall be compressed prior to submittal.

111.7.1 - File Naming Convention

Delete all paragraphs and replace with:

Although the filename is limited to 240 characters, the number of characters used should not exceed 48. Filename is not to contain spaces or special characters (!@#$%^&*+).

Filenames are not case sensitive; however, the use of uppercase letters to begin each word in the filename is encouraged.

The filename should be easily searchable within the folder. See APPENDIX B – CFX Document Naming for commonly used file names.

Delete FDM 111.7.2 through 111.7.2.13

112 - Update Engineering Design Process

Delete FDM 112.
113 - Right of Way Requirements

Add the following section:

113.4 - CFX Property Acquisition, Disposition, & Permitting Procedures Manual

The Central Florida Expressway Authority Property Acquisition, Disposition, and Permitting Procedures Manual (“Manual”) is intended to provide recommended procedures to CFX employees and consultants for:

1) Obtaining necessary rights of way, easements and other property rights for roadway improvement projects and other projects for which CFX may be authorized to acquire such property rights
2) Disposing of property rights deemed available for disposal by CFX.

The Manual is intended for use in all projects for which CFX is the acquiring agency, unless the project is required by law or contract to be governed by Florida Department of Transportation procedures or other procedures.

CFX Property Acquisition & Disposition Manual (September 2017) can be found at the following site:

- CFX Property Acquisition & Disposition Manual

114 - Resurfacing, Restoration and Rehabilitation (RRR)

Revise title of Section.

114 - Renewal & Replacement (R&R)

114.1 - General

Add the following paragraph:

Unless otherwise noted in this Chapter or unless otherwise approved by CFX or their GEC, projects not specifically designated as “R&R” are required to apply new construction criteria for all design elements.

114.1.1 - Proposed Improvements (Type of Work)

Delete the first sentence and replace with:

The following items must be included in each R&R project unless written authorization to deviate from this policy is obtained from CFX.
Add the following item to the list:

(12) Improvements to facilitate future maintenance operations.

114.3.1.1 - Office Reviews

After the first sentence in the first paragraph add the following:

In review of historical documents, the following information shall be obtained and evaluated:

- Determine the FDOT or ASSHTO criteria used for the original design,
- Determine if the “old” criteria is current, and
- Document deficiencies and provide recommendation to correct.
- “Old” criteria will not be given an automatic approval to remain in place.

114.3.1.2 - Field Reviews

Replace Note (1) (j) with the following:

(j) Drainage (including erosion, siltation problems, or deficient surface conveyance systems)

114.3.1.3 - Identified Improvements

Add the following possible improvements:

(20) Add through lane capacity (requires use of new construction criteria).
(21) Correct shoulder gutter or inlet top deficiencies

114.3.1.4 - Design Exceptions and Design Variations

Delete FDM 114.3.1.4 replace with:

114.3.1.4 - Design Criteria Deviations (Modifications)

R&R projects with existing features not meeting minimum criteria values require processing a Design Deviation for the feature to remain. Refer to Section 122 for the Design Deviation procedures.

114.3.3 - Drainage

Delete the second sentence and replace with:
Field reviews should inspect and evaluate the existing drainage and coordinate with GEC drainage staff.

120 - Design Submittals

120.1 - General

Delete the first paragraph and replace with:

The design process will require various submittals to transfer technical information and decisions between the Engineer of Record (EOR) and GEC personnel. The GEC Project Manager is responsible for the adequacy of the submittals or requests and for the coordination of reviews between the GEC and the EOR. To the extent practical, the contract scope of work should list the information to be furnished by CFX functional areas and submittals (number and type) required of the EOR. FDM Figure 120.1.1, is a partial list of functional areas with typical submittals and requests.

120.2 - Design Documentation Submittals

Add the following paragraph:

Draft, pre-final, and final versions of all documents requiring CFX approval or concurrence must be submitted to the GEC Project Manager for review. Upon completion of the review process, the GEC Project Manager will proceed with obtaining the necessary approvals or concurrence.

120.2.2 - 18 Kip Equivalent Single Axle Loads (ESAL)

Delete the first paragraph and replace with:

The GEC will provide the AADT forecasts for the year a project opens to traffic and for the design year. In addition to the AADT, together with percent trucks (24-hour period) and other factors, the GEC will provide to the EOR, the pavement loading (18kip ESAL) information to be used for the pavement design.

120.2.3 - Typical Section Package

Delete the second paragraph and replace with:

Prepare a typical section package during the planning stages.

120.2.3.1 - Approval Process

Add the following paragraphs:
When cross roads or other facilities are maintained by another agency, the EOR must provide correspondence from that agency confirming their concurrence. The design documentation shall include a copy of the local agencies standard to document design conformance. The maintaining agency will not be required to upgrade their typical sections to meet higher FDOT or CFX criteria.

In addition, typical sections of ramp and mainline bridges over the initial and ultimate local roadway shall be included to confirm clear zones, future lanes and the proposed bridge length. All under bridge typical sections are to be included in the roadway plans.

120.2.3.3 - Typical Section Sheet

*Add the following paragraph:*

A separate future typical section must be provided. Future lanes on existing or proposed crossroad typical sections must be dashed and labeled "Future, By Others".

120.2.4 - Preliminary Drainage Design

*After the first paragraph delete Items 2, 3 & 5 and replace with:*

(2) Determination of design high water elevations for pond locations.

(3) Documentation of preliminary drainage coordination with permitting agencies facilitated by the GEC staff.

(5) Evaluation and documentation of hydroplaning risk associated with the proposed roadway typical and critical sections.

120.2.5 - Preliminary Geometry and Grades

*Add the following section:*

120.2.5.1 - Preliminary Line and Grade Submittal

Submit preliminary (15%) alignment and grade sketches depicting the proposed geometric design. The submittal should include the following in preliminary status:

- Typical Section
- Roadway – Plan & Profile (Roll Plots)
- Interchange Layout
- Pond Locations

120.2.6 - Preliminary Traffic Control Plan
Add the following:

(5) A preliminary traffic control plan on roll plots shall be submitted at the (30%) phase for review. If required, a comment resolution meeting with the GEC and CFX staff must be scheduled following the review.

120.2.7 - Pavement Selection and Design

Delete FDM 120.2.7 and replace with the following:

120.2.7 - Pavement Design

The pavement selection and design shall be completed as early in the process as possible. Pavement designs must meet the following minimum standards. Variations from these standards require concurrence from the GEC prior to the final pavement design being submitted to the GEC Project Manager.

Pavement Type Selection Reports are not required.

The GEC:

• Will provide the ESAL’s and traffic counts to the EOR
• Upon request will provide Rut, Ride and Crack reports to the EOR
• As directed by CFX, will provide the pavement layering for new construction to the EOR for their review and concurrence.
• As directed by CFX, will provide the pavement requirements to the EOR for toll plazas.

Design:

• All pavement designs on new construction must be calculated using a minimum reliability (%R) of 95%.
• All pavement designs on rehabilitation projects must be calculated using a minimum reliability (%R) of 99%.
• All pavement designs, with the exception of temporary pavement, must be calculated for a 20-year design life. The minimum design life and traffic (ESALd) for temporary pavements must be no less than the construction period for the project.
• Table 5.5 of the Flexible Pavement Design Manual contains the required minimum thickness for new construction and resurfacing projects.
• All travel lanes pavement must include PG 76-22 in the top structural lift and friction course regardless of traffic level.
• Use only Dark Granite for FC (Friction Course) Aggregate
• Limerock base LBR 100 and 12.5 Black Base are the only two base materials to be used on CFX projects. Local roads associated with the projects will follow local design criteria standards.

• 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 plus the FC-5 thickness of the travel lanes.
  - A detail of the longitudinal joint must be shown in the plans. The traffic control plan must accommodate the space necessary for this work in the phasing sequence plan notes and/or a table of dimensions must describe the limits of the milled shelf width and depth.
  - Show proposed pavement layer details for milling and resurfacing, widening and shoulders in the plan Typical Section details.

General Conditions:

• The references in the guidelines represent the minimum requirements, which must be met for flexible pavement design for new construction, pavement rehabilitation, and milling/resurfacing projects. It is the EOR’s task and responsibility to evaluate and apply the sound application of acceptable engineering criteria and standards.

• The reference documentation and preferences do not apply or cover all possible situations, when this occurs the EOR shall bring these conditions to the GEC for discussion and resolution.

• For specific projects prepare and submit a draft coring plan to the GEC for review and comment. This submittal and approval by the GEC shall take place before any physical coring takes place.

• Submit to the GEC for review the geotechnical coring report and recommendations.

• The 30% submittal package shall include a draft of the pavement design for review and comment

• Provide the final signed and sealed pavement design and report on or before the 60 % plans submittal

• Upon acceptance by the GEC, submit all the signed and sealed pavement design reports to the GEC.

Add the following section:

120.2.7.1 - Pavement Selection at Toll Plazas and Intersections
### FC-5 and FC-12.5 Limits at Toll Plazas and Intersections

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<th>Off-Ramps</th>
<th>On-Ramps</th>
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<td>Cash Plaza</td>
<td>FC-12.5 300’ in advance of the Toll Plaza concrete and FC 12.5 from the Toll Plaza to the local road</td>
<td>FC-12.5 from the local road intersection to the Toll Plaza concrete pavement and 300’ beyond the Toll Plaza concrete pavement</td>
</tr>
<tr>
<td>No Plaza</td>
<td>FC-12.5 500’ from the local road intersection</td>
<td>FC-12.5 500’ from the local road intersection</td>
</tr>
<tr>
<td>ORT</td>
<td>FC-5 only through toll lane and FC-12.5 500’ from the local road intersection</td>
<td>FC-5 only through toll lane and FC-12.5 500’ from the local road intersection</td>
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**Mainline Cash Plazas**

| Cash Plaza         | FC-12.5 shall be placed 300’ on either side of the Toll Plaza concrete pavement. | ORT Lanes | FC-5 only |

**Exceptions:**

1. Loop Ramp friction course limits shall be determined on a case by case basis and approved by the GEC and CFX.
2. No pavement messages shall be applied on the interface between the FC-5 and FC-12.5 friction course. The FC-12.5 and FC-5 limits shall be adjusted as necessary to support the placement of required pavement messages.

Note: The terms “in advance” and “beyond” refer to the respective direction of travel.

**Add the following section:**

### 120.2.9 - Roadway Design Documentation

Roadway design documentation must be provided at phase 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) Location Map

2. **Section 2 - Design Documentation**

   (a) Roadway Design Criteria

   (b) Horizontal and Vertical Alignments
Design Calculations and Exhibits

- Superelevation
- Horizontal and Vertical Stopping Sight Distance
- Vertical Clearance
- Barrier – Length of Need
- AutoTURN Analysis
- Intersection Sight Distance Analysis
- Cross Slope and Superelevation Analysis

MOT

- Lane Closure Analysis (Provided by GEC)
- Pacing Analysis
- Detour Analysis
- Impacts to Toll Facilities

Pavement Design Report (Final Signed and Sealed)

Documented Design Deviations

Meeting Minutes/Project Correspondence

Comments and Responses

The design documentation must include all design notes, data, and calculations to document the design conclusions reached during the development of the contract plans.

121 - Bridge Project Development

121.1- General

*Delete the first paragraph.*

*Delete the third paragraph and replace with:*

Structural designs for repair or rehabilitation of bridges are generally developed under the direction of the GEC or CFX and may not include all the submittal types discussed in this chapter.

121.2 - Organization

*Delete FDM 121.2.*
121.5 - Responsibility

Delete FDM 121.5.

121.7 - Bridge Project Development

Insert the following as the first paragraph:


Delete the second paragraph and replace with:

Bridge project development normally includes five phases of development;

- The first phase of development, bridge analysis, occurs during the Project Development and Environment (PD&E) process.
- After location design approval is granted, the second phase, Bridge Concept Memorandum is initiated. After approval of the BCM, the production plans phases of work will begin.
- The third phase is the 30% Structures Plans.
  - A 60% Structures Plans phase, is required for Category 2 Structures between the third and fourth phases.
- The fourth phase includes the 90% Structures Plans and specifications.
- The fifth phase includes the 100% Structures Plans and specifications. For efficiency, one engineering firm (one design team) should be responsible for the BCM and the final plans and specifications.

121.8.1 - General

Replace “The District Structures Design Engineer” with “CFX and the GEC” and “BDR” with “BCM”.

121.9 - Bridge Concept Memorandum / 30% Structures Plans

Delete the fifth sentence of the first paragraph.

121.9.3 - Aesthetics

Insert the following after the last paragraph:
CFX has developed aesthetic treatments for multiple corridors, see Section 105.7 for additional guidance.

121.9.5 - Historical Significance Considerations

*Delete FDM 121.9.5.*

121.9.9 - 30% Structure Plans

*In the first paragraph, first sentence replace Bridge Development Report with 60% Roadway Design Plans.*

121.10 - Bridge Concept Memorandum Submittal Checklist

*Replace the section with the following paragraphs:*

Each BCM is project specific and should be developed for its individual characteristics, however the referenced BCM is to serve as a guideline/example for all that is expected for a quality report.

The BCM shall contain the following for each bridge within the project limits:

1. A description of the existing bridge characteristics (e.g. length, width, deck thickness, superstructure beam type, foundation, skew, cross-slope, lane configuration, etc.), as applicable.
2. A description of the proposed bridge design characteristics (e.g. length, width, deck thickness, superstructure type, skew, cross-slope, lane configuration, etc.), including specific components such as beam type and spacing, wall type, and foundation type.
3. For a new bridge, a comparison of superstructure, substructure and foundation types (advantages and disadvantages). Configuration alternatives in regard to constructability, cost, and transport should be included to determine the type of bridge if not dictated by the scope.
4. Proposed bridge typical sections.
5. Proposed bridge profiles, including documenting horizontal and vertical clearances, span lengths, and facilities underneath the bridge, including water bodies, railroads, and roadway typical sections.
6. Existing inspection report and existing load rating analysis, if applicable.
7. Railroad requirements, if applicable.

122 - Design Exceptions and Design Variations

*Delete FDM 122 through 122.1.4 and replace with the following:*
122 - Procedure for Design Deviations

New, Reconstruction and or Widening Projects.

General:

CFX follows the design criteria and standards contained in the FDM except where noted in the Design Guidelines. When it becomes necessary to deviate from the FDM for the elements listed in Chapter 122.2, the minimum criteria established by AASHTO will be used. Documentation for all deviations shall be identified within the Preliminary Design Report (PDR) submitted to the GEC for review and approval. The PDR shall call out to the GEC and reviewers any criteria deviation from the FDM.

As the design progresses, the designer will continue to provide early notification and documentation to the GEC on any design deviations that were not included in the PDR and do not meet FDM requirements.

There are two approval procedures used by CFX and shall be used by designers.

Procedure One:

If the design criteria does not meet FDM criteria but meets AASHTO, the designer shall;

- Notify the GEC and document the notification and condition within the PDR and design documentation.
- The designer shall provide a complete narrative to the GEC PM, with possible solutions and recommendations that have been evaluated. Along with the AASHTO criteria that can be used or applied.
- The designer shall provide any additional information that the GEC requests, and upon review and with a full understanding of the requested FDM deviation, the GEC with CFX concurrence may approve the deviation.
- The designer shall document this approval and incorporate the approval at the next progress meeting. The meeting minutes shall provide sufficient background information, connecting the deviation to previous documentation.

Procedure Two:

If the design criteria does not meet FDM and/or AASHTO criteria, the designer shall:

- Notify the GEC in writing and document the notification and condition.
- Provide sufficient detail, explanations, possible solutions and recommendations to the GEC PM to justify approval.
• Evaluate the 10 Controlling Design Elements that are safety related. This justification may be used to defend design decisions made by the designer and approved by the GEC and CFX.

• Provide any additional information that the GEC requests, and upon review and with a full understanding of the requested FDM deviation, the GEC with CFX concurrence may approve the deviation.

Justification for Approval:

All deviations from criteria and standards must be uniquely identified, located, and justified; no blanket approvals are given. A strong case can be made if the following can be proven:

(1) The required criteria are not applicable to the site-specific conditions.

(2) The project can be as safe by not following the criteria and the level of safety will not be reduced due to criteria based deficiencies.

(3) The environmental or community needs prohibit meeting criteria.

Most often, a case is made by showing the required criteria are impractical and the proposed design wisely balances all design impacts. The impacts required for initial review, evaluation, and recommendation are:

(1) Safety and Operational performance

(2) Level of Service

(3) Right of Way impacts

(4) Community impacts

(5) Environmental impacts

(6) Costs

(7) Usability by all modes of transportation

(8) Long term and cumulative effects on adjacent sections of roadway

A case should not be made based solely on the basis that:

(1) The CFX can save money.

(2) The CFX can save time.

(3) The proposed design is similar to previous designs.

The designer will provide all supporting documentation as requested by the GEC during the review and approval process and is cautioned not to proceed with the design without the approval of the design criteria deviation.
Upon review of all supporting documentation the GEC and the CFX may approve the requested design deviation from the FDM/AASHTO criteria.

123 - Engineering Design Estimate Process

Delete FDM 123.3, 123.4.2, 123.4.3, and 123.4.4

126 - Lane Elimination Projects

Delete FDM 126.

128 - Federal-Aid Project Certification

Delete FDM 128.

130 - Signing and Sealing Documents

130.2.1 - Digital Signing and Sealing

Add the following paragraph:

Digital certificates used to sign documents submitted to CFX must be acquired from one of the FDOT approved digital Certificate Authorities. The current FDOT requirement is that the digital certificate meets a National Institute of Standards and Technology (NIST) assurance level of three (3) or higher (NIST Special Publication (SP) 800-63-2 Electronic Authentication Guideline). However NIST SP 800-63-2 was withdrawn and superseded in June 2017 (updated 12/1/2017) by SP 800-63-3 Digital Identity Guidelines (includes parts 800-63A, 800-63B and 800-63C). As part of SP 800-63-3, the definitions of assurance levels were revised from a scale of one to four to a scale of one to three. Based on NIST SP 800-63A, the required assurance level shall now be a two (2) or higher. (SP 800-63A assurance levels two and three replaced SP 800-63-2 assurance levels three and four, respectively). The list of approved Certificate Authorities can be found at the following website:

http://www.fdot.gov/it/ApprovedDigitalCertificateAuthorities.shtm

130.2.1.1 - Single Digital Signature

130.2.1.2 - Multiple Digital Signatures

Delete FDM 130.2.1.1 and FDM 130.2.1.2 replace with the following:

130.2.1.1 - Digital Signatures
A Signature Sheet is required for all component plans that will be signed and sealed by one or more professionals. See FDM 303 for Signature Sheet requirements.

**130.2.2 - Manual Signing and Sealing**

*Delete FDM 130.2.2.*

**131 - Plans Processing and Revisions**

*Delete FDM 131 and replace with the following:*

**131.1 - General**

This section describes the critical activities required to process the contract plans, specifications and estimate for letting.

**131.2 - Plans Processing**

All CFX construction contracts are let utilizing CFX’s Procurement Resources, located at [https://www.cfxway.com/doing-business/procurement/procurement-resources/](https://www.cfxway.com/doing-business/procurement/procurement-resources/).

**131.2.1 - Bid Plans (Prior to Advertisement for Construction)**

a. Submit bid plans with all digital signatures applied to the signature sheet(s) to CFX

b. The bid plans will be reviewed by CFX and CFX’s GEC

**131.2.2 - Addendums (During Advertisement for Construction)**

a. Plan changes during advertisement are to be issued as addendums

b. Submit addendums in clean pdf format (not signed and sealed) to CFX

**131.2.3 - Approved for Construction (AFC) Plans (After Award)**

a. Do NOT reprint/pdf the entire plan set to create the AFC Plan set

b. The AFC plan set shall be comprised of the original pdf sheets generated for and included in the digitally signed and sealed Bid Plans with the following exceptions:
   
   i. Replace the key sheet
      
      1. Remove all addendum triangles, clouds, dates and descriptions.
      
      2. Update the plans submittal label from “Bid Plans” to “Approved for Construction Plans” and the month and calendar year, ie: “October 2018”,


to the month and calendar year that the AFC Plans are to be submitted.

ii. Replace sheets modified per addendum
   1. Remove all addendum triangles, clouds, dates and descriptions.

iii. Replace the signature sheet if any sheets were added or deleted as part of the addendums.

iv. Submit the Approved for Construction Plans with all digital signatures applied to the signature sheet(s) to CFX.
   1. The AFC Plans will be reviewed by CFX and the CFX GEC to verify that the AFC Plans adhere to the process outlined above.

131.2.4 - Revisions

a. Prepare plans revisions in accordance with FDM Section 132.3 Revisions after Award
b. Prepare revision signature sheet in accordance with FDM Section 303 Signature Sheet, subsection 303.8 Revisions.
c. Sign and seal revisions in accordance with FDM Section 130.4 Signing and Sealing Revisions.
d. Submit plans revisions with all digital signatures applied to the signature sheet(s) to CFX and the Construction Engineering and Inspection (CEI) consultant.

131.2.5 - As-Built Plans

The as-built plans will be prepared and then signed and sealed by the CEI.

131.2.6 - Record Drawings

a. The record drawings will NOT be signed and sealed.
b. See CFX’s Record Drawings Guidelines dated December 2017, Revised April 2018 for CFX’s record drawings process. (See Appendix C)

140 - Lump Sum Projects

*Delete FDM 140.*
2.0 DESIGN CRITERIA

201 - Design Controls

201.4.1 - Design Speed Selection

*Delete the second paragraph.*

Table 201.4.2 Ramp Design Speeds

*Delete Express Lane Direct Connections.*

201.4.1.2 - Express Lanes

*Delete FDM 201.4.1.2.*

201.4.3 - RRR Projects

*Delete the second, third, and fourth paragraphs.*

211 - Limited Access Facilities

211.1 - General

*Delete the second paragraph.*

*In the fourth paragraph beginning with “The following manuals” delete:*

- Turnpike Design Handbook (TDH) and
- FDOT Express Lanes Manual (FELM)

*Delete the sixth paragraph and replace with the following:*

Specific requirements for placement of the toll site infrastructure (e.g., tolling equipment structures, equipment buildings, utilities) is provided in the General Tolling Requirements and amended per the CFX ITS Design Standards. The CFX ITS Design Standards can be found at the link below:

https://www.cfxway.com/doing-business/construction-resources/cfx-design-standards/

211.2.2 - Pavement Cross Slopes
Standard pavement cross slopes are shown in FDM Figure 211.2.1. An analysis of the surface drainage is required when more than three lanes are sloped in one direction.

211.2.2.1 - Existing Pavement Cross Slopes

When cross slope correction is necessary, work closely with the GEC PM to determine the appropriate method of correction.

211.2.3 - Hydroplaning Risk Analysis

The analysis should be completed during the PDR phase because the typical section cross slopes and superelevation rotation points could impact the roadway geometry. Evaluate key areas where there can be potentially problematic cross slopes such as sections with additional auxiliary and/or ramp lanes that are in superelevation. CFX corrects deficient cross slopes and superelevations. Modifications to cross slopes or superelevations should be discussed with the GEC Project Manager before completing each phase submittal. Travel lanes with existing cross slopes that are found to be non-compliant must be corrected to meet standard pavement cross slopes. The following information is offered to assist with this analysis:

- Travel lanes one direction, FDM Figure 211.2.1 (211.2.3) and FDM Table 210.9.1
- Sample section information
  - Hydroplaning analysis, indicate station of the section being analyzed.
  - Lane 1 should always be labeled as the inside lane.
  - Hydroplaning analysis is not applicable through areas of superelevation transition. Provide HP analysis of the full superelevation section and the typical section
  - The HP analysis summary table should include all lanes across the section and the contributing pavement widths should be provided at the top of each lane column.
  - If the predicated drivers speed is greater than the calculated hydroplaning speed on existing travel lanes evaluate the crash data provided within the project area to determine whether there is a correlation between collisions.
  - Provide a hydroplaning analysis summary for the minimum corrective cross slope to address the hydroplaning issues identified.

211.3 - Medians
Add note (2) to FDM Table 211.3.1.

(2) For CFX roadways (without barrier), provide a median width which will accommodate future lanes when planned. (106-ft median width for 4 lane sections planned to be future 8 lane section with special use lanes and 4-ft buffers)

211.3.2 - Median Crossovers

Delete the last sentence in the second paragraph.

Delete the fourth paragraph and replace with:

Crossover locations that do not meet the above criteria require approval by the CFX Chief of Infrastructure.

211.3.2.1 - Existing Crossovers

Delete criterion (2) and (3) and replace with:

(2) Crossover locations that do not meet the AASHTO Green Book criteria or the additional FDOT criteria require approval by the CFX Chief of Infrastructure to remain.

211.3.3 - Express Lanes Separation

Delete FDM 211.3.3 and Figures 211.3.1 thru 211.3.4 Express Lanes.

211.4 - Shoulders

Delete paragraph 3 and add the following paragraphs:

It is CFX preference to provide a wider useable shoulder for emergency use and to accommodate stopped or disabled vehicles. For new (2-Lane) or widened facilities (3-Lane or more), provide 14 ft. wide inside and outside shoulders with a 12 ft. paved width.

Per AASHTO Chapter 10.9.6, the left and right shoulder widths may be reversed if needed to provide additional sight distance.

211.4.1 - Express Lanes Shoulders

Delete FDM 211.4.1 and the rows for Express Lanes from Table 211.4.1.

211.4.2 - Express Lanes Shoulders

Replace Figure 211.4.1 Shoulder Superelevation with CFX Figure 211.4.1 Shoulder Superelevation
CFX Figure 211.4.1 Shoulder Superelevation
Replace Figure 211.4.2 Special Ramp Shoulder Superelevation with CFX Figure 211.4.2 Special Ramp Shoulder Superelevation

CFX Figure 211.4.2 Special Ramp Shoulder Superelevation

211.4.4.1 - Ground-in Rumble Strip

Add the following paragraph:

The minimum thickness of proposed structural asphalt on shoulders with ground-in rumble strips must be no less than 2.0 inches. On existing shoulders without rumble strips that call for new rumble strips to be placed, the minimum thickness of combined existing structural asphalt and proposed asphalt must be no less than 2.0 inches.

211.4.7.1 - Existing Curb

Delete the third sentence.

211.7 - Horizontal Alignment

Add the following paragraph:

Spiral curves should not be used on mainline curves equal to or less than 1.5 degrees and on ramp curves equal to or less than 3 degrees. Avoid the use of spirals on bridges and R/W lines.

211.8 - Superelevation

Add the following paragraph:
Zero percent cross slopes are to be avoided within 150 ft. of crest and sag vertical curves, especially at gore areas and bridges.

211.9.1 - Grades

*Add the following sentence to the last paragraph:*

The minimum distance between VPIs on curbed roadways is 250 feet. (FDM 210.10.1.1) The minimum distance required between VPIs on an expressway used to develop the profile grade line should be 5 x Design Speed.

211.9.2 - Vertical Curves

*Add the following sentence to the second paragraph:*

CFX roadways use Interstate criteria unless approved by the CFX Chief of Infrastructure.

Table 211.9.2

*Delete Note (2).*

Table 211.9.3

*Add the following note to the Table:*

Notes:
(1) This table provides general guidance for minimum vertical curve lengths. If a curve meets K value, stopping sight distance, decision sight distance, and provides positive drainage control, then a reduction in vertical curve length may be approved by the CFX Chief of Infrastructure.

211.10 - Stopping Sight Distance

*Delete the last paragraph and replace with:*

Do not place decision points e.g. ingress or egress within the limits of reduced sight distance.

211.11 - Structures

*Add the following sentence:*

The width of all CFX-owned bridges must equal the paved width of the approach roadway including the paved width of shoulders.

211.13 - Ramp Terminals
Add the following paragraphs:

For single lane ramp terminals, it is CFX’s preference to use the taper-type design for exit ramps and the parallel-type for entrance ramps. Per AASHTO, “the advantages in efficient traffic operations and low crash frequencies of long acceleration lanes provided by parallel type entrances are well recognized. A long acceleration lane provides more time for the merging vehicles to find an opening in the through-traffic stream. An acceleration lane length of at least 360 m [1,200 ft.] plus the taper is desirable wherever it is anticipated that the ramp and freeway will frequently carry traffic volumes approximately equal to the design capacity of the merging area.”

A parallel-type exit ramp will be considered in locations where both the main line and ramp carry high volumes of traffic. In this case, the deceleration lane provided by the parallel-type exit provides storage for vehicles that would otherwise undesirably queue up on the through lane or shoulder. See AASHTO for additional guidance for two-lane ramp terminal designs.

211.14 - Express Lanes Access Points and Access Types

Delete FDM 211.14.

211.17 - Sodding

Add the following section:

Sod must be used throughout the entire limits of CFX projects. Coordinate with the GEC for the type of sod to be used on each specific project.

215 - Roadside Safety

215.2.6 - Roadside Slope Criteria

Delete the last sentence of the third bullet in the second paragraph.

Add the following paragraphs:

To reduce future erosion and maintenance issues, utilizing a maximum slope of 1:3 is preferable. In constrained conditions, flattening, maintaining or shielding the existing slopes should be evaluated. Where the slopes are greater than 1:2 slopes and maintenance is difficult to perform, consider placing concrete pavement on slopes.

In areas where guardrail is adjacent to the roadway, provide a maintenance/landscaping berm behind the guardrail. The berm should be 10 ft. wide (3 ft. minimum), measured from the back of the miscellaneous asphalt and slope towards the roadway. The back of the berm (break point)
shall be maintained at an elevation equal to the outside edge of travel. This design is intended to prevent roadway runoff from bypassing treatment as well as preventing runoff from staging into the travel way in the event of a drainage structure malfunction/clog during a storm event. See CFX Figure 215.2.16 for additional information.

**CFX Figure 215.2.16 Grading Behind Guardrail**

![Grading Behind Guardrail Diagram]

**Table 215.2.3**

For front slope with height greater than 20 ft., delete the rate and replace with:

1:3 with guardrail and maintenance/landscaping berm.

**215.2.8 Aboveground Utilities**

Delete the last sentence in the first paragraph.

**215.4.2.1 - Guardrail End Treatments**

Delete the third sentence of the first note of the first paragraph and replace with:

Approach terminals are classified by a Test Level (TL-2 for Design Speeds ≤ 45 mph or TL-3, which is acceptable for all design speeds). All guardrail and end treatments on CFX’s System shall be TL-3.
215.4.3.2 - Temporary Crash Cushions

*Delete the first paragraph and replace with:*

Only redirective non-gating crash cushions are permitted for use as temporary crash cushions on CFX roadways unless otherwise approved.

*Delete the third paragraph.*

216 - Earthwork

216.1 - General

*Add the following sentence to paragraph 3:*

Landscape work may require excavation to remove and replace soils unsuitable for plant growth and finish grading for drainage and aesthetic purposes.

221 - Utilities

221.1 - General

*Add the following to the last paragraph:*

Guidance for accommodating utilities within CFX R/W can be found in CFX’s Property Acquisition and Disposition Procedures Manual:


230 - Signing and Pavement Marking

230.1 - General

*Add the following paragraph:*

CFX considers signing and pavement marking to be an essential component of roadway construction plans. These elements are used by CFX’s customers to easily and safely find their desired destinations when using CFX’s roads. The CFX Standards for Preparation of Signing and Pavement Marking Plans establishes guidelines for the preparation of Signing and Pavement Marking Plans. These standards can be found at the following location:

https://www.cfxway.com/doing-business/construction-resources/cfx-design-standards/
230.2.2 - Overhead Signs on Limited Access Facilities

Delete all paragraphs and replace with:

Overhead signing is required in accordance with the CFX Standards for Preparation of Signing and Pavement Marking Plans.

230.2.4 - External Lighting of Overhead Signs

Delete all paragraphs and replace with:

Provide external lighting for all CFX overhead signs.

230.2.5 - Signs on Barriers and Traffic Railings

Delete the second paragraph and replace with:

Utilize Standard Plans, Index 700-013 when attaching permanent sign supports to a median traffic railing.

Delete the first sentence in the third paragraph and add the following:

Utilize the Barrier Mounted Sign Details as shown in the CFX Standards for Preparation of Signing and Pavement Marking Plans Appendix for all outside traffic railing sign installations.

230.2.7 - Delineators, Object Markers and Express Lane Markers

Delete the fifth paragraph.

230.2.9 - Internally Illuminated Street Name Signs

Delete the first sentence in the first paragraph and replace with:

Do not exceed ten feet in width for any internally illuminated street name sign installed on CFX-maintained signals.

Delete the first sentence in the second paragraph and replace with:

Unless directed otherwise by the local agency responsible for the cross street at an interchange, design the street name sign in accordance with the TEM, Section 2.2.

230.2.10 - Tourist-Oriented Directional Signs

Delete FDM 230.2.10.
230.3 - Pavement Markings

*Delete the first sentence in the first paragraph and replace with:*

Pavement marking design are to comply with the CFX Standards for Preparation of Signing and Pavement Marking Plans, Standard Specifications, Standard Plans, TEM, MUTS, and the MUTCD.

230.3.1 - Selection of Pavement Marking Material

*Delete the first sentence in the first paragraph and replace with:*

For local roadways impacted by construction or maintenance of a CFX facility use the flowchart, shown in *FDM Figure 230.3.1*, as a tool to assist in determining the appropriate pavement marking material.

230.3.4 - Work Zone Pavement Markings

*Delete the second paragraph and replace with:*

Use Removable Tape for all temporary pavement markings on final asphalt or concrete surfaces. Removable Tape shall be 3M Brand Scotch-Lane Removable Tape Series 710, 711, and 715 or CFX Approved Equal.

230.3.5 - Raised Pavement Markers (RPMs)

*Delete the first paragraph and replace with:*

Reflective Pavement Markers (RPM’s) are to be placed along the entire length of the project in accordance with the CFX Standards for Preparation of Signing and Pavement Marking Plans and FDOT Standard Plans Index Nos. 706-001, 711-001, and 711-003 unless otherwise noted in the plans. All RPM’s installed within CFX’s jurisdiction shall be 3M Company Series 290 or CFX’s approved equal. All other RPM’s installed on non-CFX owned or maintained facilities shall be Class B.

230.4 - Exit Ramp Intersections

*Delete note (3) and replace with:*

(3) Wrong Way Signing shall be coordinated with the ITS Consultant and/or CFX’s General System Consultant to include the Wrong Way Detection System as directed by CFX.

*Delete the first sentence in note (6) and replace with:*
(6) Include a straight arrow and “RAMP” pavement message in left-turn lanes extending from the far-side ramp intersection through the near-side ramp intersection to prevent premature left turns.

230.5 - Signing and Pavement Marking Coordination

*Delete the second and fourth paragraphs.*

231 - Lighting

231.1.3 - Voltage Drop Criteria

*Delete the first sentence and replace with:*

When determining conductor sizes for lighting circuits, the maximum allowable voltage drop from the service point on any circuit shall not exceed 5% on combination of feeder and branch circuit.

231.1.4 - Grounding

*Delete note (3).*

231.1.5 - Underdeck Bridge Lighting

*Delete the second sentence.*

*Add the following section:*

231.1.6 - CFX Lighting Preferences

- CFX requires the utilization of LED fixtures for new installation and the retrofit of existing lighting systems.
- All fixtures must be able to accommodate a smart driver that will allow remote performance of diagnostics, adjustment of lighting levels and control with intelligent systems.
- All luminaires shall be produced by the same manufacturer.
- The models currently accepted by CFX for new installation and the retrofit of existing facilities are:

  Luminaires
  - Roadway: Signify/Philips RoadFocus Series supplied with Dimming driver, 22KA Surge Protection Device and 7-Pin photocell receptacle.
  - Sign Lighting: Signify/Philips DuraForm luminaire with remote LED drivers and
remote 22KA Surge Protection Device.
- Underdeck: Visionaire PGA series luminaire with capability of remote driver and remote 22KA Surge Protection Device.

**Driver Cabinet**

Remote mounted driver cabinets manufactured by The Arnold Group shall be utilized for all sign and underdeck luminaires providing illumination of CFX facilities. Remote driver cabinets for Underdeck luminaires shall only be provided when the underdecks are illuminating CFX toll roads. Underdecks illuminating non-toll facilities shall be provided with integral drivers and surge protection devices eliminating the requirement for remote driver cabinets on these non-toll facilities.

**Wireless Control Module**

Visionaire PangeaLink twist lock lighting control unit. Module shall be capable of monitoring, controlling and reporting energy usage, luminaire failures, knock-downs, power outages, ambient temperature, GPS location and usage scheduling.

**231.7 - Lighting Design Analysis Report**

*Delete the section and replace with:*

The design of all electrical systems for lighting must comply with FAC 61G15-33, Responsibility Rules of Professional Engineers Concerning the Design of Electrical Systems. These responsibilities are applicable for all new projects and any major modifications.

Prepare a Lighting Design Analysis Report (LDAR) that provides horizontal illumination photometric analysis for the mainline section, ramp section, interchange, signalized intersections including vertical illumination, overhead signs, structure with underdeck lighting, and veiling luminance for typical sections.

Provide load analysis, voltage drop calculations for combination of feeder and branch circuits, short circuit current analysis and device coordination, and arc flash hazard analysis.

The LDAR should include an evaluation of various lighting design alternatives which consider factors such as pole configurations, pole heights, arm lengths, luminaire wattages, and optics. A single alternative should be implemented on the project. The evaluation should be based on safety, constructability, maintainability, economics, and consistency with the adjacent projects.

In addition, the LDAR should include all correspondence with the local power company, coordination with other authorities having jurisdiction, meeting minutes, documentation on all gathered field data, FAA coordination, and any other related information.

**232 - Signalization**

**232.1 - General**
Add the following paragraph:

Make every reasonable effort to incorporate the design preferences of the local maintaining agency. These preferences may include but are not limited to pole types, conduit routing, specific equipment, signal timing methods, etc. Video shall be the CFX preferred vehicle detection type. Meet with the maintaining agency to ascertain their preferences and obtain all other pertinent information. Submit to the GEC for review and final approval. All documentation of preferences and correspondence with the local agencies shall be included in the signalization design documentation.

232.8.1 - Mast Arm Policy

Delete all paragraphs and replace with:

Provide mast arms in accordance with CFX preference for all new and/or reconstructed signals.

232.9 - Span Wire Assemblies

Delete the second paragraph.

232.9 - Traffic Signal Project Coordination

Delete the third paragraph and replace with:

Utilities - The Utility Coordinator provides the coordination between the designer and the various utilities that may be involved in the project. The Utility Coordinator may assist in identifying or verifying conflicts with overhead and underground utilities. The designer should coordinate with the utility company providing power for the preferred location for the electrical service.

Delete the sixth paragraph.

233 - Intelligent Transportation Systems (ITS)

233.1 - General

Add the following paragraph.

The CFX ITS Design Standards establishes guidelines for the preparation of ITS Plans for CFX facilities.

https://www.cfxway.com/doing-business/contractor-resources/

240 - Transportation Management Plan
240.1 - General

*Delete the first, fifth, sixth and seventh bullets from the second paragraph.*

240.1.1 - Emergency Shoulder Use (ESU)

*Delete second sentence of first paragraph.*

240.3 - TMP Considerations

*First paragraph item 3 delete the word Department and replace with CFX.*

240.4 - TTC Plan

*Add the following items to item (6) of the TTC plan information list:*

(6) “…. roadway CCTVs, and video detection sites.”

*Add the following items to the TTC plan information list:*

(22) Emergency responder access to maintained travel lanes within work zone and to work area.

*Add the following paragraph:*

Project specific conditions associated with milling and resurfacing require development of project specific notes for the plans. Generally, these notes are part of the TTCP. Ponding conditions during milling and resurfacing is prohibited. The Temporary Traffic Control Plan may require alternate stages/notes within a milling and resurfacing phase to meet this requirement. The plan may require the contractor to alternate stages or pave multiple lifts during the same work period to comply with the prevention of ponding requirement and drop off restrictions.

240.4.1 - TTC Plan Development

*Add the following item to Step #1:*

(8) Identify any special permit conditions including State and Federal Environmental Restrictions

*Add the following items to Step #6:*

(13) CFX communication and coordination for real-time activities.
(14) Need for temporary drainage and maintenance of offsite drainage.

240.4.2 - TTC Plan Details
Add the following conditions:

(11) Temporary pavement details.
(12) Drainage maintenance details required to ensure the drainage conveyances are maintained during construction based on flow patterns.

240.4.2.6 - Lane Widths

Add the following paragraphs:

The standard lane width for work zone travel lanes on CFX facilities is 12 feet for all mainline lanes. Prior to the 60% submittal, if the EOR finds or determines that the 12-foot lane width requirement cannot be met, the EOR shall evaluate the traffic control typical section and make a request to the GEC and CFX with a recommendation to reduce lane widths. The EOR is cautioned not to proceed with the design without approval from CFX.

240.4.2.7 - Lane Closure Analysis

Delete this section in its entirety and add the following paragraph:

Upon request, the GEC will analyze the traffic and provide the hours of closure to the designer. This request can also be made for traffic pacing design hours.

240.4.2.9 - Detours, Diversions, and Lane Shifts

Delete the second and third bullet from the fourth paragraph (Special Detour).

Add the following section:

240.4.2.17 - Emergency Pull Off Area

For all capacity improvements (widening, reconstruction, etc.) or interchange projects that are greater than 2 miles in length and where the outside mainline shoulder width is less than eight feet, provisions for an emergency pull off area should be considered. The emergency pull off area should be located to the right of the outside travel lane for use by customers and emergency management personnel.

Add the following section:

240.4.2.18 - Temporary Drainage

Design all temporary drainage facilities necessary during all construction phases. This includes but is not limited to designing temporary ditches, the size and length of pipes, placement of
inlets and where necessary, calculating inlet hydraulics and spread where water may pool along temporary barrier wall or curbing adjacent to a lane. All temporary drainage items must be shown in the plans.

Add the following section:

240.4.2.19 - Standard MOT General Notes


Add the following section:

240.4.2.20 - Paving Milled Surfaces Prior to Opening to Traffic

The temporary traffic control plan must ensure that all milled surfaces are paved prior to opening to traffic.

240.4.3 - TTC Plan Phase Submittals

Delete the section and replace with:

TTC plan phase submittals typically include the following:

1) 30% Submittal: a typical section for each phase as well as a description of the phasing sequence and work involved. Include a roll plot of the preliminary TTC.

2) 60% Submittal: a majority of the TTC plan completed (75-90%), including the information outlined in FDM 240.4, and a roll plot of the TTC.

3) 90% Submittal: a final TTC plan, including all notes.

4) 100% Submittal: finalize the plans and notes.

240.5.1 - Regulatory Speeds

Add the following paragraph after the first paragraph:

All diversions, lane shifts, and tapers for work zones must be based upon the preconstruction speed limits. For any locations incorporating speed reductions, speed limit signs must be installed departing the work zone to "restore" the speed limit to its preconstruction speed limit.

Delete the second paragraph and replace with:

The regulatory speed must not be reduced more than 10 mph below the current posted speed, and never below the minimum statutory speed for the class of facility, without approval from CFX.
Delete the fourth paragraph and replace with:

When conditions warrant speed reductions different from those shown in the TTC plan, the contractor must submit the request to the CEI. The CEI will submit the request to the GEC and CFX, with a signed and sealed study to justify the need for further reducing the regulatory speed.

Delete the fourth note of the fifth paragraph and replace with:

(4) Regulatory speed and “Reduced Speed Ahead” signs are to be considered incidental to the cost of 102-1 Maintenance of Traffic.

240.7 - Coordination

Delete the third paragraph.

240.7.1 - Bridge Construction

Delete the paragraph and replace with:

To facilitate the development of an optimal design minimizing traffic disruption and construction costs, the roadway engineer and structures engineer must collaborate with each other prior to completion of the Bridge Concept Memorandum (BCM). For very complex urban projects, this collaboration should begin as early as the PD&E

240.7.1.3 - ACROW Panel Bridge

Delete FDM 240.7.1.3.

240.9.1 - Signs

Add the following paragraph:

Prepare details for nonstandard TTC signs that do not have a standard MUTCD or FTP number. Provide the details on guide sign worksheets in the plans.

240.9.1.3 - Project Information

Delete FDM 240.9.1.3.

240.9.2 - Lighted Units

240.9.2.2 - Portable Changeable Message Signs
Add the following paragraph:

For planned lane closures and detours, a PCMS must be placed and display an advanced notification message one week prior to a travel lane or ramp closure or detour. Time may be extended if deemed necessary, but should not extend to more than 14 calendar days.

240.9.4 - Work Zone Markings

Add the following sentences to the first paragraph:

Resurfacing is the preferred method for obliterating existing pavement markings on asphalt. Water blasting and grinding will not be permitted for the removal of gore or lane transition pavement markings. Temporary markings on concrete pavement e.g., bridge decks and toll plazas, shall be 3M brand Scotch-Lane Removable Tape Series 710, 711, and 715 or CFX approved equal.

240.9.6 - Law Enforcement

Delete second paragraph.

240.9.6.1 - Speed and Law Enforcement Officers

Delete the last paragraph.

240.9.6.2 - Traffic Control Officer

Add the following sentence to the first paragraph:

A Traffic Control Officer is required for all CFX lane closures on CFX facilities, including ramps.

240.9.6.3 - Coordination, Documentation, and Payment

Delete FDM 240.9.6.3.

250 - Hydraulic Data and Agency Permits

250.1 - General

Add the following paragraph:

15% (roll plot) submittals for projects with bridges over water bodies should depict the existing and proposed bridge pile alignments (substructures) to indicate any impact or change to the hydraulics.
251 - Stormwater Pollution Prevention Plan (SWPPP) Development

251.1 – General

Delete the first paragraph and replace with:

A Stormwater Pollution Prevention Plan (SWPPP) must be developed and implemented for each CFX construction project that disturbs one or more acres of total land area or as directed by the GEC and discharges to waters of the United States. The State of Florida Department of Environmental Protection Generic Permit for Stormwater Discharges from Large and Small Construction Activities, herein referred to as the DEP Generic Permit, applies to projects where multiple, separate, and distinct construction activities may be taking place at different times and at different schedules under one contract plan. In these situations, the DEP Generic Permit will apply.

Delete the third paragraph and replace with:

The Contractor must prepare a plan that assures compliance with the terms and conditions of the DEP Generic Permit and any other State or Federal permits.

Delete the ninth paragraph and replace with:

The EOR will evaluate the site and describe the basic controls during the design phase which will be documented in the SWPPP sheets. The SWPPP sheets should be prepared in consultation with the GEC. The SWPPP sheets must be placed in the Roadway Plans, or other lead component. Refer to FDM 320 and the CFX Guidelines for assistance in preparing the SWPPP sheets.

252 - Drainage Design Documentation

Add Section 252 – Drainage Design Documentation.

252.1 - Introduction

This outline is not all-inclusive and the designer should anticipate that there may be circumstances when information is not included in this outline should be prepared to provide adequate explanations/documentation for project specific issues. Unless specified by the scope or directed by CFX, the report shall include the following components.

252.2 - General Information

(1) Project Location
• Overall project location (county, city, section/township/range, etc.).
• Datum used for this project. Provide datum conversion.

(2) Purpose.
• Brief description of the intent of the report and purpose of the project.

(3) Existing Drainage Patterns.
• General drainage patterns in the vicinity of the project, on a regional basis.
• Address offsite areas draining toward the CFX right-of-way.
• Review KMZ file containing Drainage Connection Permits for projects that discharge to the project’s right-of-way.
• Describe if project is in open and/or closed basins.
• Brief description of receiving water bodies and their classification (Outstanding Florida Water, etc.).
• Brief description of proximity to potable well fields and well field protection zones.
• Describe whether the project discharges to an impaired water body and what TMDL’s are associated with it.

(4) Tailwater
• Discuss tailwater elevations used in the design for all cases such as ponds, storm sewers, ditches, underdrain, etc. Include pertinent information such as, previous studies from state or local agencies, etc. References should be made to the appropriate Appendix and/or Document for calculations and information related to tailwater determinations.
• Refer to the FDOT Drainage Manual and CFX Supplement to the FDOT Drainage Manual for tailwater requirements.

(5) Floodplain Impacts and Mitigation/Floodway Involvement
• Describe whether or not the project impacts adjacent floodplain areas. If so, describe how it is being mitigated.
• Describe whether or not the project will have any floodway involvement and if a no-rise certification is needed.

(6) Rules & Regulations/Regulatory Agency Coordination
• Describe all stormwater and right of way occupancy permits needed to construct this project.
• Summarize drainage criteria specific to this project.
  a. Describe water quality and quantity criteria applicable to this project.
  b. Describe all stormwater recovery requirements applicable to this project.
• Describe any Special Basin Criteria that may apply to the project such as Outstanding Florida Waters or Wellfield Protection Zones.
All maps and figures should be included in Appendix A. These include the Project Location Maps, USGS Quadrangle Maps, Soils Maps, FEMA Maps, WMD Basin Maps and Wellfield Protection Zone Maps

### 252.3 - Pre-Development Analysis

The intent of this section is to provide a brief narrative describing the existing condition of the project site as it relates to stormwater management. The narrative should include information on the number of drainage basins with their respective outfalls, as well as the type of existing stormwater management systems currently in use. Tables summarizing pre-development analysis should be included in this section. All supporting calculations, documentation, and the pre-development drainage map, for the pre-development analysis, should be presented in Appendix B.

Refer to the FDOT Drainage Manual and the FDOT Drainage Design Guides Chapter 9 for guidance.

For each basin, the documentation should include the following:

- Basin name.
- Begin and end station limits.
- Existing drainage patterns (i.e., time of concentration flowpaths).
- Land uses (i.e., curve numbers).
- Describe soils and hydrologic grouping.
- Ultimate outfall location for discharge comparison (open or closed basin?).
- Document/justify tailwater (provide source of information).
- Identify hazardous materials, utilities, archeological, historical, and environmental information affecting the design of the stormwater facility.
- Identify offsite areas draining towards the road and how offsite runoff is currently conveyed through the project.
- Existing permitted stormwater management system, if applicable.
- Previously permitted/required water quality, if applicable (is there surplus volume and/or discharge available).

### 252.4 - Post-Development Analysis

The intent of this section is to provide a brief narrative describing the proposed condition of the project site as it relates to stormwater management. The narrative should include information on the number of drainage basins with their respective outfalls, as well as the type of recommended stormwater management systems to be used for the basin. Tables summarizing post-development analysis should be included in this section. Discharge rates may be
compared at the ultimate outfall locations if more than one basin shares the same downstream outfall. All supporting calculations and documentation, including the post-development drainage map, for the post-development analysis should be presented in Appendix C.

Refer to the FDOT Drainage Manual and the FDOT Drainage Design Guides Chapter 9 for guidance.

For each basin include the following:

- Basin name.
- Begin and end station limits.
- Proposed drainage patterns (flowpaths in ditches and swales for example, time of concentration, etc.).
- Land uses (i.e., curve numbers).
- Discuss direct discharge to Outstanding Florida Waters, TMDLs or facilities within a Wellfield Protection Zones, if any.
- Describe soils and summarize results from the geotechnical investigation.
- Ultimate outfall point.
- Discuss any Special Basin Criteria that may apply to the particular project basin.
- Document/justify tailwater, seasonal high water table, control, and weir elevations.
- Identify offsite areas draining towards the road and describe how it is to be conveyed through the project.
- Recommended stormwater management system.
- Total required and provided water quality (includes previously permitted, if applicable, as well as anything new) meet criteria.
- Treatment volume recovery meets criteria.
- Permanent pool volume meets criteria, if applicable.
- If compensating or over treatment to be used, provide detailed description of area of new impervious not being treated, area of existing pavement to be treated, etc.
- Retention system(s) infiltration rates certified by a Geotechnical Engineer.
- Post-development discharge rates compared to the pre-development discharge rates (meets critical duration criteria, as stated in Chapter 14-86, F.A.C.).
- Post-development stages provide for freeboard as stated in the FDOT Drainage Manual.

252.5 - Floodplain Analysis

The intent of this section is to provide a brief narrative describing the floodplain conditions at the project site and should include the following information. Tables summarizing floodplain
impacts, locations, and compensation should be included in this section. All supporting calculations and documentation for the floodplain analysis should be presented in Appendix D.

- Brief narrative. Floodway involvement? No-rise certification required?
- Statement describing impacts have been avoided or minimized.
- Describe limits of impacts and final cut/fill quantities, if applicable.
- Describe where compensation is to occur, if applicable.

### 252.6 - Base Clearance Analysis

The intent of this section is to provide a brief narrative describing site specific base clearance issues as well as issues involved in determining the base clearance water elevation. Tables summarizing the calculated base clearances should be included in this section. All supporting calculations and documentation for the base clearance analysis should be presented in Appendix E.

Refer to the FDM 210.10.3 and the Flexible Pavement Design Manual for base clearance water elevation guidance.

- Describe how the base clearance water elevation was established.
- Describe limits of project which do not meet FDM base clearance requirements.
- Describe how sections that do not meet base clearance are to be handled.

### 252.7 - Cross Drain Analysis

The intent of this section is to provide a brief narrative discussing existing cross drains along the project alignment, how these structures will be impacted by the proposed design, and discuss the need for any new cross drain structures along the project alignment. A table summarizing the pre-vs- post condition flows and stages should be included in this section. All supporting calculations and documentation for the cross drain analysis should be presented in Appendix F.

Refer to the FDOT Drainage Manual and the FDOT Drainage Design Guides Chapter 4 for guidance.

For each cross drain, include the following:

- Brief narrative.
- Cross drain name, size, shape, material.
- Location (include stationing).
- Describe the contributing drainage area for the cross drain.
- Describe the condition of the cross drain, including, but not limited to, age, erosion
issues, maintenance issues, structural deficiencies and if an extension or replacement is proposed.

- Document/justify tailwater used in the design and provide source of tailwater information.
- Document the pre-development and post-development flows and stages.
- Provide a statement verifying that stages on off-site properties are not increased in the proposed condition and that the allowable high water conditions are met.

### 252.8 On-Site Conveyance Analysis

The intent of this section is to provide a brief narrative discussing the proposed methods of conveyance for drainage from the project. All supporting calculations and documentation for the on-site conveyance analysis should be presented in Appendix G.


- Brief narrative describing methods of conveyance for proposed drainage basins within the project (ditch flow, storm sewer, side drains, etc.) Include existing conveyance systems being utilized.
- Document/justify tailwater used in the design and provide source of tailwater information.
- Describe critical ditch sections (such as sign post obstructions, narrow sections, steep slopes) and lining requirements, if applicable.
- Discuss areas of superelevation transitions, bridge end-treatments, sag inlets, etc.
- Discuss design frequencies used for the analysis of each method of conveyance. Reference the software used.
- Include verification of wall zones for Wall Zone Pipes as outlined in the FDOT Drainage Manual Section 3.11 and Appendix D.

### 252.9 - MOT Drainage

The intent of this section is to provide a brief narrative discussing the proposed methods of conveyance for project drainage for the temporary condition (during construction). All supporting calculations and documentation for MOT drainage should be presented in Appendix H and coordinated with the Traffic Control and Roadway EORs. Refer to the FDOT Drainage Manual for design frequencies and the FDOT Drainage Design Guides Chapter 10 for design guidance.

### 252.10 - Hydroplaning analysis

The intent of this section is to evaluate and document the hydroplaning risk associated with the proposed roadway typical and critical sections, particularly key areas where there can be potentially problematic cross slopes such as sections with additional auxiliary and/or ramp lanes that are in superelevation. All supporting calculations and documentation associated with
252.11 - Structure Analysis for Loaded Pipes

The intent of this section is to provide a structural pipe analysis anytime reinforced concrete pipe is designed and installed under deep fill embankments in excess of 14’ of cover, special loading conditions or wall zones. All supporting calculations and documentation associated with this analysis should be presented in Appendix J. Refer to the FDOT Drainage Design Guides Chapter 8 for guidance.

252.12 - References

At a minimum, the reference information should contain the pertinent information to the design and analysis of the systems located in the project.

- Survey information used to determine Tailwater (example: Photos showing stain lines)
- Geotechnical Information
- Existing Permit(s) and Calculations

252.13 - Appendices

Appendix A – Figures

- Project Location Maps
- USGS Quadrangle Maps
- Soils Maps
- FEMA Floodplain Maps
- WMD Basin Maps
- Maps
- Other

Appendix B – Pre-Development Calculations and Documentation including:

- Pre-development drainage map with aerial background. (Do not include storm sewer – only cross drains, ponds, and outfalls).
- If the stormwater management facility (SMF) is existing and permitted to accommodate the proposed improvements without modification, provide the relevant permit excerpts. Otherwise provide the information below:
  (a) Supporting pre-development stormwater facility calculations; Tc, CN, Areas, etc.
(b) Pre-development ICPR Input and Output Data
(c) Pre-development nodal diagram. Reference specific structure numbers and pond names as shown in the construction plans.

Appendix C – Post-Development Calculations and Documentation including:

- Post-development drainage map with aerial background. (Do not include storm sewer – only cross drains, ponds, and outfalls).
- If the SMF is existing and permitted to accommodate the proposed improvements without modification, provide the relevant permit excerpts. Otherwise provide the information below:
  - Supporting post-development stormwater facility calculations; Tc, CN, Areas, etc.
    (a) Post-development ICPR Input and Output Data
    (b) Post-development nodal diagram. Reference specific structure numbers and pond names as shown in the construction plans.
    (c) Post-Development recovery analysis

Appendix D – Floodplain Encroachment/Compensation Calculations and Documentation

Appendix E – Base Clearance Calculations and Documentation

Appendix F – Cross Drain Calculations and Documentation

Appendix G – On-site Conveyance Calculations and Documentation

- Ditch calculations – Document tailwater used in design. Describe critical ditch sections (narrow sections, steep slopes, etc.) and lining requirements. Include hydraulic worksheet and check freeboard
- Storm sewer tabulations – Document tailwater used in design and check HGL clearance and outfall erosion protection needs.
- Spread calculations – Include spread worksheet. Make note of areas of superelevation transition, bridge end treatment, sag inlets, auxiliary lanes etc.
- Shoulder capacity calculations – Include shoulder gutter conveyance worksheet.
- Noise Wall drainage analysis

Appendix H – MOT Drainage Calculations and Documentation

- Spread calculations; verify sufficient shoulder width in MOT plans.
- Shoulder gutter capacity calculations
• Storm tabs
• Ditch calculations
• Maintenance of flow, if needed, such as canal relocation or cross drain extension

Appendix I – Hydroplaning Calculations

• See CFX Exhibits 252-1 thru 252-3 for sample Hydroplaning Risk Analysis spreadsheets.

Appendix J – Structural Analysis Calculations and Documentation

• Run FDOT Culvert Service Life Estimator software (use latest version available).
• Include copy of geotechnical table of soil chemistry.
• Check CSLE results against Drainage Manual Appendix C for maximum and minimum fill heights and material availability (max cover check now included in the CSLE program).

Appendix K – Correspondence, Excerpts from Previous Permits and Studies
**Location:** SR 417 STA. 100+00 NB

<table>
<thead>
<tr>
<th>Roadway Section Assumptions</th>
<th>Design Speeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitudinal Slope: 0.30%</td>
<td>Mainline: 70 mph</td>
</tr>
<tr>
<td>Pavement Type: OGAC</td>
<td>Aux/Ramp: 65 mph</td>
</tr>
</tbody>
</table>

### Predicted Driver Speed

<table>
<thead>
<tr>
<th>Rainfall Intensity (in/hr)</th>
<th>Predicted Driver Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reduction² (mph)</td>
</tr>
<tr>
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<td>0</td>
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<tr>
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<td>8</td>
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<tr>
<td>2</td>
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<tr>
<td>3²</td>
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</tr>
<tr>
<td>4²</td>
<td>--</td>
</tr>
</tbody>
</table>

¹ Predicted speed reductions taken from Contract Study BDQ22 performed by Gulf Coast University.

² High intensity speed reductions are assumed to be large enough to reduce drivers’ speed below hydroplaning potential.

### Hydroplaning Risk Analysis

**Section:** PTSR sloped to median, 4-Lanes, 1-Ramp (Describe Section)

<table>
<thead>
<tr>
<th>Hydroplanning Speed Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross slope:</td>
</tr>
<tr>
<td>Contributing width:</td>
</tr>
<tr>
<td>Rainfall Intensity (in/hr)</td>
</tr>
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<tr>
<td>0.25</td>
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<tr>
<td>1</td>
</tr>
<tr>
<td>2 - Critical</td>
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<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

Hydroplaning Analysis Examples, Typ, 4-Lane

---

Hydroplaning Example

CFX Exhibit 252-1

Hydroplaning Example

---

FRICHT COURSE

FULL DEPTH PTSR*

PGP

CONCRETE MEDIAN BARRIER (38"

3/30/2020
Location: SR 417 STA. 100+00 NB

Roadway Section Assumptions
Longitudinal Slope: 0.30%
Pavement Type: OGAC

Design Speeds
Mainline: 70 mph
Aux/Ramp: 65 mph

<table>
<thead>
<tr>
<th>Rainfall Intensity (in/hr)</th>
<th>Predicted Driver Speed Reduction (mph)</th>
<th>Mainline (mph)</th>
<th>Aux/Ramp (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>65</td>
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<td>8</td>
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<td>12</td>
<td>58</td>
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<td>4²</td>
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</tbody>
</table>

¹ Predicted speed reductions taken from Contract Study BDQ22 performed by Gulf Coast University.
² High intensity speed reductions are assumed to be large enough to reduce drivers’ speed below hydroplaning potential.

Hydroplaning Risk Analysis
Super elevated Section: e = 0.028, 3-Lanes, 2-Ramps (Describe Section)

Hydroplaning Speed Results

<table>
<thead>
<tr>
<th>Cross slope</th>
<th>PT SR</th>
<th>Lane 1</th>
<th>Lane 2</th>
<th>Lane 3</th>
<th>Ramp A</th>
<th>Ramp B</th>
<th>Mainline</th>
<th>Aux/Ramp</th>
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<tr>
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<td>49</td>
<td>--</td>
<td>--</td>
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<td>45</td>
</tr>
</tbody>
</table>

Note: Lane 3 @ 0.028 2” rain => 55.0 mph HP speed

20’ FRICTION COURSE

Hydroplaning Analysis Examples, Super, 3-Lane, 2-Ramp

3/30/2020
Location: SR 417 STA. 100+00 NB

Roadway Section Assumptions

Longitudinal Slope 0.30%
Pavement Type OGAC

Design Speeds

Mainline 70 mph
Aux/Ramp 65 mph

<table>
<thead>
<tr>
<th>Rainfall Intensity (in/hr)</th>
<th>Predicted Driver Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reduction 1 (mph)</td>
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</tbody>
</table>

1 Predicted speed reductions taken from Contract Study BDQ22 performed by Gulf Coast University.
2 High intensity speed reductions are assumed to be large enough to reduce drivers' speed below hydroplaning potential.

Hydroplaning Risk Analysis

Section: PTSR sloped to median, 3-Lanes, 2-Ramps (Describe Section)

Hydroplaning Speed Results

<table>
<thead>
<tr>
<th>Rainfall Intensity (in/hr)</th>
<th>PTSR</th>
<th>Lane 1</th>
<th>Lane 2</th>
<th>Lane 3</th>
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</table>

Hydroplaning Analysis Examples, Typ, 3-Lane

3/30/2020
260 - Bridge Structures

260.1.1 - Partial Bridge Sections

Revise FDM Figure 260.1.1 with the following:

260.6 - Vertical Clearance

Add the following paragraph:

Existing bridge vertical clearances between 16 and 16.5 feet must be maintained.

261 - Structural Supports for Signs, Signals, Lighting, and ITS

261.7.2 - Category 2 Analytical Evaluation

Delete all paragraphs and replace with:

Sign panels, sizes, and/or locations may be modified on existing overhead sign structures that were designed to CFX's overdesign criteria in effect at time of the original design.

- Existing structures may be utilized subject to the following:
  - The sign structure shall be less than 35 years old.
  - If the new panel configuration is equal to or smaller than the originally upsized sign panel (20% overage)
    - It is the Consultant's responsibility to document the original and proposed sign modification and certify the proposed sign panels do not exceed the original upsized sign panel.
- A detailed analytical evaluation is not required.
- Existing structures recommended for re-use shall be in good condition per the latest inspection records and site observation. CFX will review and approve based on the merits of each case.
- It is the Consultant’s responsibility to request the approved shop drawings for existing sign structures.
- When possible existing mainline toll plaza approach structures containing a single line DMS/static panel combination with an adjacent static panel are to be adjusted such that all static signs are mounted on the same vertical plane with the front of the DMS box.
- Existing structures (with additional loading) may be utilized subject to:
  - If the new panel configuration is greater than the originally upsized sign panel or if the approved shop drawings for the existing structure are unavailable, provide a detailed analytical evaluation of the existing structure with the proposed additional loading and new structure criteria in accordance with the Structures Manual Volume 3, Section 18.3. The analysis including calculations of the Demand/Capacity (D/C) ratios, Combined Stress Ratios (CSRs), and the EOR’s recommendations shall be submitted to CFX’s GEC for review.
  - CFX’s approval will be based on the analysis, the EOR’s recommendation, and CFX’s GEC review results.
  - CFX will review and approve based on the merits of each case.

262 - Retaining Walls

262.1 - General

Add the following to the first paragraph:

Design retaining walls in accordance with FDM 105.

262.2 - Retaining Wall Plans Submittal Procedures

Add the following paragraph:

If any wall system is proposed to be connected to an existing MSE wall, and the existing soil reinforcement provides resistance for the new wall, an analysis must be submitted for review with the 90% Plans. Internal and external wall stability analyses must use the lowest soil friction angle, as determined by direct shear tests in accordance with FM 3-D3080 to model existing MSE wall backfill.

263 - Geosynthetic Design
263.1 - General

Add the following to the second paragraph:

Prior to selecting Reinforced Soil Slopes, coordinate with CFX to assure that geosynthetic reinforcement is compatible with beautification goals and planned landscape projects.

264 - Noise Walls and Perimeter Walls

264.2.2.2 - Reasonableness

Add the following paragraph:

Maintenance access points must be provided for noise walls constructed along the CFX system. The spacing between openings or the ends of the noise wall must be no greater than one-half mile. Coordinate all maintenance openings with the CFX Maintenance Department.

267 - Shop Drawing Submittals

267.1 - Introduction

Add the following after the third paragraph:

The CEI and or the EOR that attend the preconstruction meeting will describe and detail the Shop Drawing Process. The electronic submittal of shop drawings to the CEI and the procedures and routing will be included in the presentation. The presentation will also address the requirement for submission of CFX shop drawings, tracking of the submittal, and outlining the review and approval process.

Delete the tenth note of the fourth paragraph and replace with:

CFX Shop Drawing Review: The GEC assigned by CFX will be responsible for performing CFX shop drawing reviews for sign panels and structures, aesthetics for certain bridge and noise wall elements, and proprietary lighting items when specified as a CFX preference. The GEC will be responsible for documenting, tracking, and maintaining tracking records for the specific shop drawings as previously noted, disposition and distribution of Shop Drawings to other disciplines within the GEC organization for review as well as distribution back to the EOR.

Delete the eleventh note of the fourth paragraph and replace with:

Final Review Office: The CEI is responsible for performing the final review and final distribution of shop drawings which have been reviewed.

Replace within whole section:
It shall be understood that any references stated within the *FDM 267*, to the Department or the FDOT Shop Drawing Review Office shall be replaced with CFX or the CFX Shop Drawing Review Office.

**267.2 - Shop Drawing Submittals Not Required**

*Delete this section and replace with:*

Material certifications, welding procedures, paint procedures and concrete mix designs are typically submitted by the Contractor to the Engineer (CEI) who forwards the certifications to the EOR. These items do not need to be submitted for shop drawing review and approval. For non-standard items, the Engineer (CEI) will typically request approval by the EOR regarding applicability. Material certification for items on the Approved Product List (APL) is typically submitted by the Contractor to the Engineer (CEI).

**267.3 - Contractor Information Required**

*Replace first paragraph with the following:*

A shop drawing submittal which omits any of the minimum requirements listed in FDOT Standard Specifications, Sections 5-1.4.4.1, 5-1.4.4.2 and 5-1.4.6.1 must be returned for resubmittal.

**267.4 - Submittals Requiring a Specialty Engineer or Contractor’s Engineer of Record**

*In the first paragraph replace the word Department with CEI:*

**267.5 - Transmittal of Submittals**

*In the first paragraph delete the last sentence.*

*Delete the first sentence in the second paragraph.*

**267.5.1 - Requirements for Department EOR**

**267.5.2 - Requirements for Consultant EOR (Full Services)**

**267.5.3 - Requirements for Consultant EOR (Design Services Only)**

**267.5.4 - Requirements for Architectural or Building Structures**

*Delete FDM 267.5.1 through FDM 267.5.4.*
267.5.7 - Miscellaneous Requirements and Assistance

Replace this section with the following:

For items not specified above or for which questions may arise as to shop drawing requirements, the Contractor should be advised to contact the CEI or the appropriate CFX Shop Drawing Review Office personnel. Regardless of submittal type, a letter of transmittal must always accompany a shop drawing submittal.

267.6 Disposition of Submittals

Replace title with the following:

267.6 Disposition of Shop Drawing Submittals

After the first paragraph add the following:

The GEC has the responsibility to review and comment on specific shop drawings as specified in Section 267.1 or other shop drawings as directed and assigned by CFX. When assigned the GEC will proceed as follows:

- Upon receipt of the shop drawing(s) from the EOR, review and mark the shop drawings with comments, questions or clarifications.
- Call the EOR for discussions and electronically transmit a copy of the marked up shop drawing(s) to the EOR. The EOR will review and determine the final resolution.
- The GEC is not responsible to stamp the shop drawing for approval, disapproval, resubmit or not approved. The GEC can make a recommendation to the EOR however these actions are the responsibility of the EOR. The GEC may mark and date their copy of the shop drawing as “dated and reviewed”.
- For those cases where the GEC requests a resubmittal or recommends not approving the shop drawing, the EOR shall discuss and resolve all issues brought forth by the GEC prior to proceeding and shall not approve or approve as noted any shop drawing without the full concurrence of the GEC.
- The GEC shall maintain a historical record of all activity, from receipt to return, devoted to an individual submittal for all shop drawings that the GEC is directly assigned.

Delete the last paragraph.

267.7 - Distribution of Submittals

Delete the first three paragraphs and replace with:

CFX Figure 267-1 illustrates the submittal and distributional flow of shop drawing for reviews
performed by the EOR's and the GEC.

267.9 - Submittal Activity Record (Logbook)

Delete bullet (1) and replace with:

(1) CFX Project Number (if assigned)
267.11 - Shop Drawing Flow Diagrams

*Replace Figures 267.11.1 through 267.11.4 with:*

**CFX Figure 267-1** illustrates the submittal and distributional flow of shop drawings

- **Contractor**
  - Submits Shop Drawing Item List to Engineer (CEI).

- **Engineer (CEI)**
  - Submits Shop Drawing Item List to EOR for review/verification of technical components required. Submits items to GEC for concurrent review as needed.
  - Reviews concurrently and provides comments to EOR.

- **Engineer of Record (EOR)**
  - Verifies list and coordinates any deficiencies with the CEI and/or Contractor. Reviews GEC comments and makes final approval. Returns to CEI.

- **CEI**
  - Maintains a record of all shop drawings.

- **GEC**
  - Maintains a historical record of all activity for each submittal that GEC is responsible for.
Part III
3.0 PLANS PRODUCTION

300 - Production of Plans

300.3 - Base Sheet Format

Delete the first two paragraphs and replace with:

All plan sheet formats are contained in the FDOT CADD Software and amended by CFX’s Sheet Cell Library (to be provided by the GEC). Sheet borders include a project information block to place the CFX Project Name, state road designation, CFX’s Project Number, and CFX’s logo as shown below:

Replace the last paragraph with:

Plans sheets may use photography (aerial of other) when approved by the GEC. Using photography for Drainage Maps or SWPPP supplemental site maps do not require approval.

301 - Sequence of Plans Preparation

301.2 - Phase Submittals

Delete the second paragraph and replace with:

Standard submittal phases are: 15%, 30%, 60%, 90%, 100%, Pre-Bid, Bid, and Approved for Construction (AFC).

Delete the last paragraph and replace with:

Preliminary Line and Grade (15%) Submittal

Unless otherwise directed by CFX, the following elements are required for a 15% submittal:

TYPICAL SECTIONS

• Mainline and crossroad typical sections
• R/W lines

PLAN VIEW (ROLL PLOT)

• North arrow and scale
• Baseline of survey, equations
• Curve data (including superelevation)
• Existing topography
• Preliminary horizontal geometrics/dimensions
• Existing & proposed R/W lines (if available)
• Centerline of construction (if different from the baseline of survey)
• Begin and end stations for the project, bridges, bridge culverts and exceptions
• General locations of proposed retention/detention ponds

PROFILE VIEW (ROLL PLOT)

• Scale
• Preliminary profile grade line
• Equations
• Existing ground line with elevations at each end of sheet
• Begin and End Stations for the Project, bridges, bridge culverts and exceptions

INTERCHANGE DETAIL (ROLL PLOT)

• Schematic of traffic flow
• Preliminary configuration and geometrics
• Quadrant Identification
• Ramp Labels

DRAINAGE DESIGN DOCUMENTATION

• Preliminary Hydroplaning Analysis
Table 301.2.1 - Summary of Phase Submittals

Replace Table 301.2.1 with the following table:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>15%</th>
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<th>60%*</th>
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<td>3D Model Files</td>
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</table>
**Status Key:** P - Preliminary  C - Complete but subject to change  F - Final

* Projects with structures plans component must submit the latest set with the 60% roadway submittal.

** Submittal will include a roll plot at an appropriate scale for the entire project

### 301.2.1 - 30% Submittal

Add the following section:

**DRAINAGE DESIGN DOCUMENTATION**

- Existing Conditions Analysis with Recommendations
- Pre-Development Treatment Computations
- Pre-Development Bridge and Cross Drain Analysis
- Hydroplaning Analysis, based on available information
- Reference Material

### 301.2.2 - 60% Submittal

Delete section: **OPTIONAL MATERIALS TABULATION** and add the following sections:

**DRAINAGE DESIGN DOCUMENTATION**

- All items outlined as part of CFX Design Guidelines Section 252 as relevant to the project.
- Bridge Hydraulic Recommendation

**TOLL FACILITY**

- Site/Civil
- Architectural
- Structural
- Electrical
- Mechanical
- Plumbing
- Communications
301.2.3 - 90% Submittal

**DRAINAGE DESIGN DOCUMENTATION**

- All items outlined as part of CFX Design Guidelines Section 252 as relevant to the project.

**TOLL FACILITY**

- Site/Civil
- Architectural
- Structural
- Electrical
- Mechanical
- Plumbing
- Communications
- Systems

301.2.5 - PS&E Phase Submittal

**Delete this section and replace with:**

301.2.5 - Bid Submittal

After changes to the Final Plans, Specifications Package, and Summary of Pay Items Report, have been completed and verified, deliver the Bid Submittal consisting of the following:

1. Signed and Sealed Plans
2. Clean set of Plans – Not signed and sealed
3. Bid Form
4. CADD Files

**Add the following section:**
301.2.6 – Approved for Construction (AFC) Submittal

Once the bid phase is complete, incorporate all revisions and addendum into the bid set and provide the revised sheets. Replace the revised sheets from the original Bid Submittal to create the Approved for Construction Submittal.

302 - Key Sheet

302.1 - General

Delete the last sentence of the first paragraph and replace with:

The Key Sheet cell can be found in the CFX cell library (provided by the GEC).

Delete the second paragraph and replace with:

See CFX Exhibit 302-1 for an example of a lead Key Sheet. See CFX Exhibit 302-2 for an example of a component Key Sheet. See CFX Exhibit 302-3 for an example of the structures and geotechnical sheet border.

302.2 - Financial Project ID. Federal Funds, County Name and State Road Number

Delete FDM 302.2 and replace with:

302.2 - CFX Project Number, Project Name, and State Road Number

Place the Project Name immediately under the heading "CONTRACT PLANS" in the top center of the sheet. A description of the project limits shall be placed next; e.g., "Falk Avenue to Plant Street". This shall be followed by the state road number. The CFX Project Number is the main number identifying each individual project within CFX. Place the CFX Project Number below the state road number.

302.3 - Construction Contract Number, Fiscal Year and Sheet Number

Delete FDM 302.3 and replace with:

302.3 - Fiscal Year and Sheet Number

Show the fiscal year for which the letting is scheduled in the “Fiscal Year” box; i.e., enter “19” in the box for a project that has a Letting date during the July 1, 2018 to June 30, 2019 fiscal year. Show the sheet number in the lower right corner. The sheet number shall always be shown as a three digit number, i.e. "001".
302.4 - Project Location Map and North Arrow

Delete the last paragraph and add the following paragraph:

Show a small-scale inset of counties under CFX’s purview in the upper right portion of the lead component Key Sheet and indicate the location of the project thereon. Under the Engineer of Record’s contact information add the name of the designated CFX Project Manager. The counties map shall also be shown on the component Key Sheets.

302.6 - Index of Roadway Plans

Add the following Note to end of the Section:

Each sheet in the plan set must have a unique sheet number. Do not duplicate sheet numbers within the plan set.

302.7 - Professional Responsibility

Delete paragraph three, including notes one and two and replace with:

Place the name of CFX’s Project Manager below the EOR information.

302.8 - Governing Standard Plans and Standard Specifications

Add the following sentence after the first sentence in the first paragraph:

CFX currently utilizes FDOT’s July 2019 Standard Specifications. Place the following note on the lead component Key Sheet:

Governing Standard Specifications:

Florida Department of Transportation, July 2019 Standard Specifications

For Road and Bridge Construction at the following website:

http://www.fdot.gov/programmanagement/Implemented/SpecBooks

302.11 - Strung Projects

Delete FDM 302.11.
303 - Signature Sheet

303.1 - General

*Replace the second paragraph with the following:*

See CFX Exhibit 303-1 for an example of a Signature Sheet.

*Delete the last paragraph and replace with the following:*

Projects are to be delivered as individual Signed and Sealed components of the contract plans; e.g., Roadway Plans, Signing and Pavement Marking Plans, Structure Plans. A Signature Sheet is required for component plans that are to be Signed and Sealed by one or more licensed professionals.
<table>
<thead>
<tr>
<th>ROADWAY PLANS</th>
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<td></td>
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<td></td>
<td>3-5</td>
<td>SUMMARY OF PAY ITEMS</td>
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<td>17-25</td>
<td>TYPICAL SECTIONS</td>
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<td>TYPICAL SECTION NOTES</td>
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<td>27-28</td>
<td>PAY ITEM NOTES</td>
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<td>ROADWAY PLANS</td>
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**CFX Exhibit 303:1**

**Signature Sheet**
304 - Summary of Pay Items

Delete FDM 304 and replace with:

304.1 - Summary of Pay Items Sheet

The summary of pay items sheet(s) lists all pay items and quantities for all components for the project, or projects, in a contract. Place the summary of pay items sheets directly behind the lead signature sheet.

A summary of pay items sheet without quantities is required at the 60% submittal, and a complete summary of pay items sheet with quantities is required at the 90%, 100%, and Bid submittals.

305 - Drainage Map and Bridge Hydraulic Recommendation Sheet

305.1 - Drainage Map

Replace the second sentence in the first paragraph with the following sentence:

Drainage maps must be developed using an aerial base map and must be included in the construction plans.

305.1.1 - Plan View

Add the following to Number (4):

(4) Show and label (in acres) pond drainage basins on maps and include pond basin names.

Add the following plan view requirements:

(8) General location of landfills or contamination sites must be indicated on the plan view of the drainage maps.

(9) Wellfield Protection areas, if any, must be shown on the plan view. Include the wellfield name and associated regulatory agency.

(10) FDEP impaired water body basin boundaries, if any, must be shown on the plan view. Include the impaired water body name.

(11) Place the datum conversion from NAVD to NGVD on the drainage map. For example, NAVD 88 EL. 1.00 = NGVD 29 EL. 2.50.

(12) Section, Township, and Range lines labeled with their respective directions.
(13) Show the drainage area boundaries using a very heavy, broken line, with the area (in acres or square miles) shown within the boundary. The proposed structure location should be shown. Existing structures over the same water body and those structures that affect the hydraulics of the proposed structure should be located and numbered and corresponding existing structure information listed in the appropriate columns.

(14) Depressional areas (if closed basin)

305.1.2 - Profile View

Add the following profile requirements:

Seasonal high water information as determined from the geotechnical report

305.2.3 – Location Map and Drainage Area

Remove Section 305.2.3.

306 - Typical Sections

306.2 - Typical Section Sheet

Add the following sentence to the last paragraph:

See CFX Exhibits 306-13 through 306-14 for illustrations of various typical sections.

306.5 - Standard Notes for Typical Section Sheets

Add the following standard note:

(4) Embankment slope requirements are as follows:

- 1:6 for fill 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’
- 1:3 with guardrail for fills over 20’ and must include shoulder gutter
- Shoulder gutter is required in areas of guardrail where embankment slopes are steeper than 1:4 and any pavement is sloped toward the embankment
TYPICAL SECTION
4 LANE NEW ALIGNMENT

TYPICAL SECTION NO. 1

NEW CONSTRUCTION

OPTIONAL BASE GROUP 9 WITH
TYPE SP STRUCTURAL COURSE (TRAFFIC D) (2")
AND FRICTION COURSE FC-5 (PG 76-22)

OPTIONAL BASE GROUP 4 WITH
TYPE SP STRUCTURAL COURSE (TRAFFIC D) (2") (PG 76-22)
AND FRICTION COURSE FC-5 (PG 76-22)

SHOULDER PAVEMENT

TRAFFIC DATA

CURRENT YEAR = TBD
AADT = TBD
ESTIMATED OPENING YEAR = TBD
AADT = TBD
ESTIMATED DESIGN YEAR = TBD
AADT = TBD
K = TBD %
D = TBD %
T = TBD % (24 HOUR)

DESIGN SPEED = 70 MPH

POSTED SPEED = 70 MPH

CFX Exhibit 306-13
4 Lane Expressway
TYPICAL SECTION
8 LANE NEW ALIGNMENT

TYPICAL SECTION NO. 2

NEW CONSTRUCTION

OPTIONAL BASE GROUP 4 WITH
TYPE SP STRUCTURAL COURSE (TRAFFIC D) (2")
AND FRICITION COURSE FC-5 (PG 76-22)

SHOULDER PAVEMENT

OPTIONAL BASE GROUP 4 WITH
TYPE SP STRUCTURAL COURSE (TRAFFIC D) (2") (PG 76-22)
AND FRICITION COURSE FC-5 (PG 76-22)

TRAFFIC DATA

CURRENT YEAR = TBD
AADT = TBD

ESTIMATED OPENING YEAR = TBD
AADT = TBD

ESTIMATED DESIGN YEAR = TBD
AADT = TBD

K = TBD %
D = TBD %
T = TBD % (24 HOUR)

POSTED SPEED = 70 MPH
307 - Summary of Quantities

307.2.2 - Pay Item Notes

Delete all paragraphs and replace with:

Place the following applicable pay item notes on the first Summary of Quantities Sheet;

(1) 102-1
THE LUMP SUM PAYMENT INCLUDES ALL COSTS ASSOCIATED WITH WORK, PERSONNEL, MATERIALS, AND EQUIPMENT NECESSARY TO MAINTAIN TRAFFIC WITHIN THE CONSTRUCTION LIMITS OF THE PROJECT AS SPECIFIED UNDER SECTION 102 OF THE CFX TECHNICAL SPECIFICATIONS.

LITTER REMOVAL SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

(2) 102-99C
A CONTINGENCY ITEM, TO BE INCLUDED AS DIRECTED BY THE ENGINEER.

(3) 285-7XX
ALL BASE MATERIAL SHALL BE LIMEROCK, UNLESS OTHERWISE NOTED.

(4) 436-1-1
MDH 12-12" ID TRENCH FORMER SYSTEM WITH E-COATED FRAME AND UNCOATED GRATE (HI-INTAKE) OR APPROVED EQUAL. INCLUDES ALL ITEMS NEEDED TO FURNISH AND INSTALL TRENCH DRAIN AS SHOWN IN THE PLANS. INCLUDES BUT NOT LIMITED TO, CONCRETE TRENCH DRAIN, 12" PIPE, GRATE, CONCRETE JACKETS, SPECIAL DESIGN CONCRETE SHOULDER GUTTER AND CONCRETE SHOULDER GUTTER TRANSITION SEGMENTS.

307.4 - Litter Removal and Mowing

Delete all paragraphs and replace with:

All elements of CFX’s transportation system enjoy a high maintenance standard that provides a safe, efficient and effective facility for its customers. Litter removal shall occur once per week and in advance of each mowing cycle. As such, litter removal shall be incidental to the Maintenance of Traffic pay item.

308 - Summary of Drainage Structures and Optional Materials Tabulation

308.1 - General
Delete paragraphs 3 and 4.

308.3 - Optional Materials Tabulation

Delete FDM 308.3 Optional Materials Tabulation and replace with:

Unless otherwise approved, it is CFX preference to utilize reinforced concrete pipe (RCP) for all storm sewer pipes and bituminous coated corrugated metal pipe (BCCCMP) for gutter drains. Culvert extensions and end section replacements are to match the existing culvert material. For the case of wall zone pipes, RCP shall be utilized. Pipes to be installed via jack and bore shall utilize the steel casing as the carrier pipe. The steel casing should extend from structure to structure, where reasonable.

311 - General Notes

311.2.1 - Required General Notes

Replace sentence with:

See CFX Exhibit 311-1 for required standard general notes and CFX Exhibit 311-2 for project specific general notes.
1. BENCHMARK ELEVATIONS SHOWN ON THE PLANS ARE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) OR THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).

2. THE LOCATIONS(S) OF THE UTILITIES SHOWN IN THE PLANS (INCLUDING THOSE DESIGNATED K, VH, AND VHV) ARE BASED ON LIMITED INVESTIGATION TECHNIQUES AND SHOULD BE CONSIDERED APPROXIMATE ONLY. THE VERIFIED LOCATIONS/ELEVATIONS APPLY ONLY AT THE POINTS SHOWN. INTERPOLATIONS BETWEEN THESE POINTS HAVE NOT BEEN VERIFIED.

3. UTILITY/AGENCY OWNERS:
   - COMPANY: CFX ITS
     - CONTACT: STEVE GEISS
     - TELEPHONE NUMBER: (407) 680 - 5335
   - CFX FIBER
     - CONTACT: PAT COLLINS
     - TELEPHONE NUMBER: (407) 680 - 5056

4. SPECIAL EVENT DAYS FOR THIS PROJECT INCLUDE:

   (list applicable special event days e.g., UCF HOME SPORTING EVENTS)

5. ANY NGVD 29 OR NAVD 88 MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED.
   IF IN DANGER OF DAMAGE, NOTIFY:
   - BUREAU OF SURVEYING & MAPPING
   - DEPARTMENT OF ENVIRONMENTAL PROTECTION
   - COMMONWEALTH BOULEVARD, WP 105
   - TALLAHASSEE, FL 32399-3000
   - TELEPHONE (850) 245-2600

6. MAINTAIN THE INTEGRITY OF THE LIMITED ACCESS FENCING AT ALL TIMES.

7. DO NOT BRING ANY HAZARDOUS MATERIALS INTO THE PROJECT. SHOULD SUCH MATERIALS BE REQUIRED FOR PERFORMING THE CONTRACTED WORK, SUBMIT A WRITTEN REQUEST TO THE ENGINEER FOR APPROVAL. PROVIDE THE ENGINEER WITH A COPY OF THE MATERIAL SAFETY DATA SHEET (MSDS) FOR EACH HAZARDOUS MATERIAL PROPOSED FOR USE. BECAUSE STATE LAW DOES NOT TREAT PETROLEUM PRODUCTS THAT ARE PROPERLY CONTAINED AND INTENDED FOR EQUIPMENT USE AS A HAZARDOUS MATERIAL, SUCH PRODUCTS DO NOT NEED A SDS SUBMITTED.

   ANY KNOWN OR SUSPECTED HAZARDOUS MATERIAL FOUND ON THE PROJECT SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, WHO SHALL DIRECT THE CONTRACTOR TO PROTECT THE AREA OF KNOWN OR SUSPECTED CONTAMINATION FROM FURTHER ACCESS. THE ENGINEER IS TO NOTIFY CFX OF THE DISCOVERY; CFX WILL ARRANGE FOR INVESTIGATION, IDENTIFICATION, AND REMEDIATION OF THE HAZARDOUS MATERIAL. DO NOT RETURN TO THE AREA OF CONTAMINATION UNTIL APPROVAL IS PROVIDED BY THE ENGINEER.

8. NOTIFY ALL CONCERNED UTILITY COMPANIES 48 HOURS IN ADVANCE OF WORK NEAR THEIR EXISTING FACILITIES.

9. NO UNDERGROUND EXCAVATION SHALL COMMENCE UNTIL EXISTING UTILITIES HAVE BEEN PROPERLY MARKED.

10. A CFX FIBER OPTIC OWNER REPRESENTATIVE SHALL BE PRESENT DURING CONSTRUCTION IN THE VICINITY OF CFX ITS FACILITIES.

11. OUT OF SERVICE BURIED UTILITIES WITHIN THE LIMITS OF ROADWAY EXCAVATION SHALL BE REMOVED.

12. LIMITS OF CONSTRUCTION AS SHOWN ON THE TYPICAL SECTIONS REPRESENT THE LIMITS OF STANDARD CLEARING AND GRUBBING. ADDITIONAL AREAS ARE SHOWN ON THE APPLICABLE PLAN AND FLOOD SHEETS.

13. DISPOSE OF MILLED MATERIAL AWAY FROM THE PROJECT SITE AT A LOCATION PROVIDED BY THE CONTRACTOR. NO MILLED MATERIAL SHALL BE STOCKPILED WITHIN THE PROJECT RIGHT OF WAY. THIS INCLUDES MATERIAL REMOVED BY THE CONSTRUCTION OF THE GROUND IN RUMBLE STRIPS. DO NOT SHEET MILLED ASPHALT UNTIL UNPAVED SHOULDERS.

14. DURING MILLING OPERATIONS, ENCROACHMENT INTO THE LIMBERROCK BASE IS ANTIQUATED IN SOME OF THE MILLING SCHEMES. REMOVE ANY LOOSE ASPHALT REMNANTS AND ROLL THE EXPOSED LIMBERROCK BASE COURSE WITH A MINIMUM OF TWO PASSES OF A 5 TO 10 TON RUBBER TIRE ROLLER. AN APPLICATION OF PRIME OR TACK COAT AND A MINIMUM OF ONE LIFT OF ASPHALT IS REQUIRED BEFORE OPENING THE LANE TO TRAFFIC.

15. CONSTRUCT RETENTION/DETENTION PONDS AND OUTFALL STRUCTURES PRIOR TO ROADWAY CONSTRUCTION.

16. EXISTING DRAINAGE STRUCTURES WITHIN THE ROADWAY LIMITS SHALL REMAIN UNALTERED UNLESS OTHERWISE NOTED.

17. ALL TYPE S INLETS (INDEX 425-040) ARE TO BE PROVIDED WITH PARALLEL BAR TYPE GRATES.

18. ALL CONCRETE CURB AND PIPES SHALL BE CLASS 1/1/11/11/V/V (TO SPECIFY) UNLESS OTHERWISE NOTED.

19. WHERE A CONCRETE COLLAR/JACKET IS IDENTIFIED IN THE PLANS TO JOIN A NEW PIPE TO AN EXISTING PIPE, THE EXISTING PIPE MUST BE REMOVED TO THE NEAREST JOINT TO BEGIN THE PLACEMENT OF THE NEW PIPE. UNLESS IT WOULD REQUIRE ENCROACHMENT INTO THE ADJACENT TRAVEL LANE, THE CONCRETE MUST BE CURED AND INSPECTED TO CONFIRM THE INTEGRITY OF THE COLLAR PRIOR TO PLACEMENT OF FILL MATERIAL.

20. THE CROSS SLOPES AND SUPERELEVATIONS SHALL ADHERE TO THE FOLLOWING SIGN CONVENTION:

   [Diagram of sign convention]

21. VIBRATORY AND OSCILLATORY ROLLING OF PAVEMENT SHALL NOT BE PERMITTED.

22. EXISTING LIMBERROCK BASE THAT IS REMOVED SHALL NOT BE USED IN THE CONSTRUCTION OF THE NEW LIMBERROCK BASE. EXISTING LIMBERROCK THAT IS REMOVED MAY BE INCORPORATED INTO THE STABILIZED PORTION OF THE SUBGRADE OR DISPOSED OF PROPERLY OFF THE PROJECT SITE.

23. BITUMINOUS PRIME COAT SHALL BE APPLIED TO ALL LIMBERROCK BASES ON WHICH PAVEMENT IS TO BE PLACED AT A RATE NOT LESS THAN 0.15 GALLONS PER SQ YD. OR AS DIRECTED BY THE ENGINEER.

24. THE CONSTRUCTION JOINT BETWEEN LANES FOR SP LIFTS SHALL BE OFFSET 6" MIN. FROM THE LIFT BENEATH.


26. WHEN MEASURING FOR SURFACE IRRREGULARITIES, STRAIGHT EDGE ASPHALT, APPROACH SLABS, AND BRIDGE DECKS (15" ONTO BRIDGE DECK).

27. THE FRICITION COURSE ON CFX ROADS SHALL BE MADE WITH BLACK GRANITE AGREGATE ONLY.

28. THE FRICITION COURSE OVERLAP SHALL BE INSTALLED TO THE DIMENSION PROVIDED ON THE TYPICAL SECTIONS WITHIN A 1/2" TOLERANCE.
29. Tape pavement markings shall not be placed over longitudinal friction course joints.

30. All disturbed areas within the limits of construction shall be graded and sodded, unless otherwise noted.

31. All permanent grass areas, except pond bottoms, shall receive a 6" finish soil layer meeting the pH and organic matter levels required in specification Section 987.

32. All A-B material shall be stockpiled and used as embankment or finish soil layer in accordance with Index No J20-001 & J20-002.

33. All permanent and temporary crash cushions on CFX's system shall be redirective and non-scoring. All temporary crash cushions used on CFX's system shall be designed at the original posted speed not at the reduced TCP speed.

34. (New alignment) The station/offsets at right of way breakpoints and corners refer to the R/W line and not the fence location and are based upon centerline construction stationing.

35. (New alignment) Permanent turnouts and driveway connections to private property that lie outside the limits of limited access right of way and where access rights have not been acquired shall be constructed in accordance with the turnout details and state standard specifications referenced on the key sheet of these plans. Do not isolate adjacent and/or the remainder of the property unless access rights are acquired. Access shall be provided to such property whenever the construction interferes with the existing means of access.

1. Engineer of record to determine additional notes as required.

Notes to designers:

Standard notes as shown are applicable to the majority of projects along the CFX system.

Where a note does not apply, it shall be revised to "not used" such that the numbering of standard notes does not change.

Additional notes may be added under "Project Specific General Notes" as determined by the Section Engineer.

Delete this box and all "Notes to designers" prior to submittal of plans for review.

CFX Exhibit J31-2
Project Specific General Notes
312 - Roadway Plan-Profile

312.2.2 - Horizontal Curves

*Add the following paragraph:*

Horizontal curve information must also be shown on its own individual sheet(s) known as “Curve and Coordinate Data” and must contain all horizontal curve information as identified in the FDM as well providing the “Northing/Easting” information for the PC, PI, PT, and CC of the curves. The Design Speed (DS) of the curve shall also be identified.

312.2.6 - Plan Layout

*Add the following label requirement:*

(14) Plot the locations of roadway soil borings in the roadway plan view using a target symbol and boring number label.

312.3.4 - Superelevation and Special Profiles

*Add the following sentence the beginning of the first paragraph:*

For standard superelevated sections, superelevation transitions shall be plotted above the roadway profiles, with stationing labels indicating the beginning and ending points of the superelevation transitions as well as the location of zero cross slope.

313 - Special Profile and Back-of-Sidewalk Profile

*Add the following section:*

313.4 - Treatment/Attenuation Swales

*Identify treatment swales in the profile view of the plans and include the following:*

Begin Treatment/Attenuation Swale @ Sta. XXX LT (or RT)
Construct Ditch Block; Sta. XXX LT (or RT); Top Elevation xx.xx
End Treatment/Attenuation Berm Sta. XXX LT (or RT); Top Elevation, if required
DHW and SHWT elevations

For plan sets that do not have a profile view, the stations and elevations above must be summarized in a table that uses the same naming convention.

Note that treatment/attenuation berm locations need to be specified only if a special longitudinal berm is constructed above natural ground to increase storage in the swale. If the outside boundary of the treatment/attenuation swale is the intersection between the backslope and...
natural ground, confirm that the design high water does not exceed 0.5 feet below the elevation of the intersection point and that no special berm information is necessary in the plans.

314 - Intersection and Interchange Layout and Details

314.3.2 - Ramp Terminal Details

After the first paragraph add the following:

(15) A combined Plan and Profile Sheet is preferred

(16) Use 1"=2', 1"=4' or 1"= 5' for the vertical scale.

(17) At a minimum the Plan/Profile sheet should provide coverage for 100 ft. in advance of the ramp EOP flare to 100 ft. beyond the 17 or 19 ft. physical gore.

(18) Show elevations at 25 ft. incremental stations (i.e. 1+25, 1+50, 1+75, 2+00, etc.), in profile only, at all roadway edges, plus break lines.

(19) Provide a section through the 17 or 19 ft. physical gore.

315 - Drainage Structures

315.2 - Required Information

Delete paragraph nine and requirement in the non-conventional projects and replace with:

Include soil boring and SHWT elevation at the nearest station to the soil boring. For Cross Drains, include HW and tailwater elevations for the design storm as calculated per Section 252.7 of the CFX Design Guidelines. For Outfall structures shown on the plans, include tailwater elevations used in the storm sewer calculations.

320 - Stormwater Pollution Prevention Plan (SWPPP)

320.1- General

Delete the second paragraph and replace with:

For an example of SWPPP sheets on construction projects, see CFX Exhibits 320-1 and 320-2. Additional guidance for developing a SWPPP may be found in the DEP SWPPP template, found on the DEP web page at:

http://www.dep.state.fl.us/water/stormwater/npdes/seppp.htm
320.2 - Narrative Description

*Delete the first paragraph and replace with:*

The SWPPP sheets include a narrative that refers to other documents such as but not limited to the Standard Specifications or the Standard Plans as necessary. Use the following outline to prepare the narrative:

320.4 – Controls

*Delete the first paragraph and replace with:*

The SWPPP must include a description of the controls that will be implemented at the construction site. For each of the major activities identified in the narrative, describe the timing of the implementation of control measures during the construction process. Also describe the stormwater management measures that will be installed during construction to control pollutants in the stormwater discharges that will occur after construction.

*Delete the third and fourth paragraph.*

320.5 - Maintenance, Inspection and Non-Stormwater Discharges

*Delete the first and second paragraphs and replace with:

Include a narrative describing any additional maintenance and inspection requirements that are not stated in the standard specifications or amended by CFX. Include the inspection requirements, which will be either requirements of the DEP or the applicable requirements of another regulatory agency. If special procedures have been developed to minimize turbidity associated with normal construction dewatering, the designer will include a description of those procedures.

Special monitoring requirements described in the DEP Generic Permit may apply where the project discharges to waters listed in Section 303(d) of the Clean Water Act. Consult with the GEC environmental permitting staff to determine if the monitoring requirements are applicable. If applicable and at the direction of the GEC, the EOR will describe the special monitoring requirements in the inspection section of the narrative.
THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS PROVIDED TO ASSIST THE CONTRACTOR IN DEVELOPING THE REQUIRED SITE SPECIFIC Erosion Control PLAN AND OTHER ITEMS NECESSARY TO OBTAIN COVERAGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERIC PERMIT (CGP). REFER TO THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL FOR ADDITIONAL REQUIREMENTS.

10 SITE DESCRIPTION:

10.A. Nature of Construction Activity:

The project is the __________ type of construction activity _______ of __________ [ROADWAY] _______ in [COUNTY]. This involves __________ major activities such as constructing roadway surface, curbs and gutters, sidewalks, stormwater management facilities, etc. The project extends a distance of _______ miles.

10.B. Intended Sequence of Major Soil Disturbing Activities:

In the contractor’s site specific erosion and sediment control PLAN, prepare a detailed construction schedule to indicate dates of major grading activities and sequences of temporary and permanent soil disturbing activities on all portions of the project. For additional information, refer to section 4.2 of the NPDES CGP.

List of Intended Activities:

10.B.1 For each construction phase, install perimeter controls prior to clearing and grubbing or any other construction activities. Remove perimeter controls only after all upstream areas are stabilized and permanent vegetation is established.

10.B.2 Time Construction Activities to Limit Impact From Seasonal Changes or Weather Events.

10.B.3 The contractor will provide pollution control by implementing dust control during all phases of construction.

10.B.4 Offsite Runoff should be diverted away from or through the construction area, if possible. This additional flow, if not diverted, can add volume and size to structural practices, requiring more frequent maintenance and limiting effectiveness of erosion and sediment controls.

10.C. Project Area Estimates:

Total site area: _______ acres.

Total area to be disturbed: _______ acres.

10.D. Runoff Data:

Runoff coefficients before Cw (B), during Cw (D) and after Cw (A) construction.

Runoff Coefficients for:

Grassed shoulders adjacent to roadway: Cw = 0.35

Impervious roadways and paved shoulder: Cw = 0.05

Disturbed areas, exposed soil, etc. during construction: Cw = 0.40

Weighted runoff coefficient:

Before: Cw (B) = _______ During: Cw (D) = _______ After: Cw (A) = _______

10.E. Site Map:

The site map shall be comprised of the construction plans and the contractor’s site-specific erosion and sediment control plan.

10.F. Stormwater Management (Existing/Proposed)

10.F.1 Existing drainage flows are typically [PROJECT SPECIFIC, IE FROM SOUTH TO NORTH TOWARDS THE ST JOHNS RIVER]. The cross section sheets and plan-profile sheets provide the approximate slopes, areas of soil disturbance and areas to be stabilized. Unless otherwise approved by the permitting agencies, the construction activities shall not modify or affect the existing overflow patterns.

10.F.2 The proposed sediment basins, containment systems, and/or stormwater management facilities shall be constructed during the initial phase of construction and used during construction of the roadway. The outfall structures are to be projected when permanent sediment basins, containment systems, or permanent stormwater management facilities are used for erosion and sediment control to prevent downstream sedimentation.

2. Controls:

2.A. Sediment and Erosion Controls

2.A.1 Per section 5.4 of the NPDES CGP, stabilization shall take place as soon as practical in portions of the project where construction activities have ceased, but no later than 7 days after any construction activity ceases either temporarily or permanently.

2.A.2 Sediment barriers shall be used around the perimeter of stockpile areas.

---

REFERENCE: USDA SOIL SURVEY OF __________ COUNTY FLORIDA

OUTFALL INFORMATION:

OUTFALL TYPES:

The outfalls discharge into the following basins:

BASIN: NARREY POND

WHITEHALL, MACROPHOTUS, NUTRIENTS

NARREY POND CULVERT

OUTFALL LOCATIONS: (TEMPORARY AND PERMANENT)

DESCRIPTION DRAINAGE AREA LATITUDE LONGITUDE RECEIVING WATERBODY

(a) __________ AC __________ N __________ W __________

(b) __________ AC __________ N __________ W __________

This facility [does/does not] discharge to waters listed on the adopted FDEP verified list or adopted TMDL for impairment due to total suspended solids, turbidity, nutrients, dissolved oxygen, or fecal coliform.

Wetland and/or surface water impacts shall be limited to the areas described in the approved permits for the project.

---

CXX Exhibit 320-1

SWPPP SHEETS

STORMWATER POLLUTION PREVENTION PLAN

---

ENGINEER OF RECORD FULL NAME, P.E.

P.E. LICENSE NUMBER 99999

ENGINEER OF RECORD COMPANY NAME

ENGINEER OF RECORD COMPANY STREET

ENGINEER OF RECORD CITY, STATE AND ZIP

CERTIFICATE OF AUTHORIZATION 00009999

PROJECT NAME

5 to 8 LINES

ROAD NO.

PROJECT NO.

CENTRAL FLORIDA EXPRESSION AUTHORITY

SHEET NO.

---

IN GENERAL, THE SOILS ARE:

SOIL TYPE: HYDROLOGIC GROUP: DEPTH TO SHINE

A - ASTIUANA SAND: 5'-12'-12"
(2.A.3) STRUCTURAL PRACTICES

IN THE CONTRACTORS SITE SPECIFIC EROSION AND SEDIMENT CONTROL PLAN, DESCRIBE THE PROPOSED STRUCTURAL PRACTICES TO CONTROL OR TRAP SEDIMENT AND OTHERWISE PREVENT THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE. SEDIMENT CONTROLS SHALL BE IN PLACE BEFORE DISTURBING SOIL UPSTREAM OF THE CONTROL. STRUCTURAL PRACTICE EXAMPLES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING, AS APPROVED BY THE CONSTRUCTION ENGINEERING INSPECTOR (CEI):

TEMPORARY DEVICES:

* SILT FENCE
* STAKED TURBIDITY BARRIERS
* SOIL TRACKING PREVENTION DEVICES AT CONSTRUCTION ENTRANCES/EXITS
* FLOATING TURBIDITY BARRIERS
* INLET PROTECTION SYSTEMS INCLUDING SYNTHETIC BALEs AND SANDBAGS
* SEDIMENT BASIN/CONTAINMENT SYSTEMS
* CHEMICAL TREATMENTS SUCH AS POLYACRYLAMIDES AND ALUM

PERMANENT:

* STORMWATER PONDS
* SOD (MAY ALSO BE USED FOR TEMPORARY CONTROLS)
* VELOCITY DISSIPATION DEVICES SUCH AS RIPRAP OR OTHERS

(2.B) WATER QUALITY MONITORING

(2.B.1) WATER QUALITY MONITORING SHALL BE CONDUCTED IN ACCORDANCE WITH THE SPECIFIC CONDITIONS OF ANY ENVIRONMENTAL PERMIT, OR BY THE CONTRACTOR UPON THE OBSERVATION THAT WATER QUALITY STANDARDS MAY BE VIOLATED BY THE CONTRACTORS ACTIVITIES. MONITORING LOCATIONS MAY BE SPECIFIED IN THE ENVIRONMENTAL PERMIT OR MAY BE DESIGNATED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

(2.B.2) THE ENGINEER WILL BE RESPONSIBLE FOR MONITORING ANY ACTIVITIES FOR VIOLATION OF WATER QUALITY STANDARDS AS THEY RELATE TO TURBIDITY NO GREATER THAN 29 NEPHELOMETRIC TURBIDITY UNITS (NTUs) ABOVE BACKGROUND OR GREATERTHAN 0 NTUs ABOVE BACKGROUND FOR DIRECT DISCHARGES TO OUTSTANDING FLORIDA WATERS (OFWs).

(2.B.3) IF WATER QUALITY STANDARDS ARE VIOLATED, CONSTRUCTION SHALL BE STOPPED IMMEDIATELY. THE ENVIRONMENTAL PERMIT CONDITIONS FOLLOWED AND EROSION AND SEDIMENT CONTROL DEVICES, REEVALUATED AND APPROVED BY THE ENGINEER PRIOR TO ANY CONTINUATION OF ACTIVITY. MONITORING ACTIVITIES AND TURBIDITY READINGS SHALL BE RECORDED ON THE CONSTRUCTION INSPECTION REPORT AND CONTINUED UNTIL TURBIDITY READINGS FALL BELOW AN ACCEPTABLE LEVEL (LESS THAN 29 NTUs ABOVE BACKGROUND OR LESS THAN 0 NTUs ABOVE BACKGROUND FOR DIRECT DISCHARGES TO OFW).

(2.B.4) WATER QUALITY MONITORING MAY BE CONDUCTED DURING ANY PHASE OF CONSTRUCTION AS DIRECTED BY THE ENGINEER.

(2.C) DEWATERING CONTROLS

THE SITE SPECIFIC EROSION AND SEDIMENT CONTROL PLAN SHALL INCLUDE A DESCRIPTION OF THE BMPs THAT WILL BE USED TO ENSURE THAT DISCHARGES OF NONCONTAMINATED GROUND WATER FROM DEWATERING OPERATIONS DO NOT CAUSE OR CONTRIBUTE TO VIOLATIONS OF STATE WATER QUALITY STANDARDS.

(2.D) OTHER CONTROLS

(2.D.1) THE SITE SPECIFIC EROSION AND SEDIMENT CONTROL PLAN SHALL IDENTIFY CHEMICAL AND FUEL STORAGE AREAS, MEANS OF MINIMIZING EXPOSURE TO STORMWATER AND SPILL PREVENTION.

(2.D.2) OFFSITE VEHICLE TRACKING & GENERATION OF DUST

IN THE SITE SPECIFIC EROSION AND SEDIMENT CONTROL PLAN, DESCRIBE THE PROPOSED MEASURES TO MINIMIZING OFFSITE VEHICLE TRACKING OF SEDIMENTS AND GENERATING DUST. THE PROPOSED METHODS SHALL INCLUDE AT LEAST THE FOLLOWING, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

(2.D.2.a) LOADED HAUL TRUCKS ARE TO BE COVERED BY A TARPaulIN.
(2.D.2.b) REMOVING EXCESS DIRT FROM ROADS DAILY.
(2.D.2.c) USING WATER TRUCKS DURING DUST-GENERATING ACTIVITIES.
(2.D.2.d) SEDIMENT CONTROL MAY BE ACCOMPLISHED BY USING STREET OR VACUUM SWEEPERS.

3. MAINTENANCE

MAINTAIN AND REPAIR ALL EROSION AND SEDIMENT CONTROL DEVICES AND REMOVE EROSION AND SEDIMENT CONTROL DEVICES WHEN NOTICE OF TERMINATION IS MAILED. REMOVE AND PROPERLY DISPOSE SEDIMENT BUIILD THROUGH THE LIFE OF THE INSTALLED EROSION AND SEDIMENT CONTROL DEVICES.

(3.A) NECESSARY REPAIRS SHALL BE INITIATED WITHIN 24 HOURS OF NOTICE FOR THE CEI.
(3.B) SEDIMENT BARRIERS SHALL BE REPLACED WHEN IT IS NO LONGER EFFECTIVE OR AS DIRECTED BY THE ENGINEER.
(3.C) STABILIZED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED TO PREVENT CLOGGING OF ROCK BEDDING WHICH MAY IMPAIR THE USEFULNESS OF THE STRUCTURE.
(3.D) REMOVE SEDIMENT FROM SEDIMENT BASINS WHEN IT BECOMES MORE THAN HALF THE AVAILABLE VOLUME.

4. INSPECTION, TRACKING, AND REPORTING

INSTALL AND MAINTAIN RAIN GAUGES ON THE PROJECT SITE AND RECORD RAINFALL.

(4.A) SUBMIT A WEEKLY REPORT TO THE CONSTRUCTION ENGINEERING INSPECTOR DOCUMENTING THE DAILY INSPECTIONS AND MAINTENANCE OR REPAIRS TO THE EROSION AND SEDIMENT CONTROL DEVICES. MAINTAIN ALL REQUIRED REPORTS AND COMPLETE ALL SWPPP INSPECTION FORMS.

(4.B) PREPARATION OF ALL THE CONTRACTORS REPORTS OF INSPECTION, MAINTENANCE AND REPAIRS REQUIRED FOR THE CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION, SHALL BE INCLUD ED IN THE INDIVIDUAL COSTS OF THE EROSION AND SEDIMENT CONTROL DEVICES.

5. NON-STORMWATER DISCHARGES

THE SITE SPECIFIC EROSION AND SEDIMENT CONTROL PLAN SHALL IDENTIFY ALL ANTICIPATED NON-STORMWATER DISCHARGES AND DESCRIBE THE PROPOSED MEASURES TO PREVENT POLLUTION. THE PLAN SHALL INCLUDE PROCEDURES FOR SPILL CONTAINMENT, REPORTING AND RESPONSES. THE PLAN SHALL SPECIFY WHAT MANAGEMENT PRACTICES AND CONTAINMENT METHODS WILL BE USED TO PREVENT POTENTIAL POLLUTANTS (FUEL, LUBRICANTS, HORMONES, ETC.) FROM SPILLING INTO THE SOIL OR INTO THE SURFACE WATERS. IF A SPILL DOES OCCUR OR IF CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, CONTACT THE CONSTRUCTION ENGINEERING INSPECTOR IMMEDIATELY. IF A RELEASE CONTAINING HAZARDOUS SUBSTANCES OCCURS, THE CONTRACTOR SHALL ADHERE TO SECTION 9.2 OF THE NPDES COP.

CFX Exhibit 320-2
SWPPP Sheets Cont.
321 - Temporary Traffic Control Plan

321.2 - Required Information

Add the following sentence:


321.3.2 - Level II

Replace note (7) with:

Special Details, as necessary; e.g., temporary drainage, slope requirements due to diversions, temporary signalization, railroad work; intersection details, construction guide sign plan

321.3.3 - Level III

Replace note (7) with:

Special Details, as necessary; e.g., temporary drainage, slope requirements due to diversions, temporary signalization, railroad work; intersection details, construction guide sign plan
1. ALL TRAFFIC CONTROL PROCEDURES AND DEVICES SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD, 2009 EDITION), THE FOOT STANDARD PLANS INDEX 600-SERIES, AND THE FOLLOWING NOTES AND DETAILS INCLUDED IN THIS PLAN.

2. DURING OPERATIONS, NO LANE SHALL BE CLOSED FOR MORE THAN 2 MILES. A LANE SHALL NOT BE CLOSED OVERNIGHT EXCEPT AT AN ACTIVE WORK ZONE. IN THE EVENT OF AN ANTICIPATED EXTENDED STUPA OF WORK EXCEEDING 24 HOURS, ELEVATION OF ADJACENT LANE SHALL NOT EXCEED 1/2 INCHES.

3. LANE CLOSURES OR OTHER TRAFFIC CONTROL NEEDED FOR THE PLACEMENT, RELOCATION, OR REMOVAL OF BARRIERS, BARRIERS WALL OR OTHER TRAFFIC CONTROL DEVICES SHALL BE EXECUTED IN ACCORDANCE WITH FOOT STANDARD PLANS INDEX 102-600-SERIES.

4. TEMPORARY PAVEMENT SHALL BE AT A MINIMUM, 2" OF TYPE S ASPHALT ON 6" OF LIMESTONE BASE. TYPE SP ASPHALT MAY BE SUBSTITUTED FOR THE TYPE S ASPHALT FOR NO ADDITIONAL COMPENSATION.

5. MAINTAIN ADEQUATE DRAINAGE AND DRAINAGE PATTERN TO PREVENT FLOODING OR DRAINAGE TO FLOW TO ROADWAY OR ROADSIDE AREAS EXISTING UNDER CONSTRUCTION, OR COMPLETED. PROVIDE ANY TEMPORARY DRAINAGE MEASURES AS REQUIRED TO ADEQUATELY DRAIN THE PROJECT AND TEMPORARY TRAVELED ROADWAYS. ANY ADDITIONAL COSTS ASSOCIATED WITH DRAINAGE (TEMPORARY DRAINAGE STRUCTURES) AND THE REMOVAL OF THE SAME INCLUDING THE DESTRUCTION OF THE PERMANENT DRAINAGE STRUCTURES TO REMAIN SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM NO. 102-1 MAINTENANCE OF TRAFFIC.

6. SUBMIT A DRAINAGE CONTROL PLAN PRIOR TO CONSTRUCTION.

7. ALL DRAINAGE INLETS THAT ARE CONSTRUCTED PRIOR TO FINAL SURROUNDING GRADE BEING ACHIEVED WILL REQUIRE TEMPORARY COVERING TO ALLOW DRAINAGE FLOW AND PROTECT THE INLET DURING TCP PHASES AND SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM NO. 102-1.

8. REGULATORY SPEED FOR SR ___ DURING CONSTRUCTION SHALL BE MAINTAINED AT ____ MPH UNLESS OTHERWISE NOTED IN THE PLANS.

9. COMPLY WITH NOISE LEVEL RESTRICTIONS STATED IN THE LOCAL NOISE ORDNANCE. METHODS TO MAINTAIN NOISE LEVELS WITHIN ACCEPTABLE LIMITS SHALL INCLUDE BUT NOT BE LIMITED TO TEMPORARY NOISE BARRIERS, EXCLUSIONS FOR EQUIPMENT, NUISANCE, ETC.

10. HEAVY TRAFFIC CONDITIONS, ACCIDENTS, AND ANY UNFORESEEN EMERGENCIES MAY REQUIRE RESTRICTION OR REMOVAL OF ANY LANE CLOSURE. MAKE THE NECESSARY ADJUSTMENTS WITHOUT DELAY AT THE DIRECTION OF THE CFX CONSTRUCTION ENGINEER.

11. A TRAFFIC CONTROL OFFICER IS REQUIRED FOR ALL MAINLINE AND MULTI-LANE RAMP LANE CLOSURES AND SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM NO. 102-1 MAINTENANCE OF TRAFFIC.

12. SINGLE LANE CLOSURES ARE LIMITED TO THE HOURS OF:

| SR: | __PM TO ___ AM |
| RAMP: | ___ PM TO ___ AM |

SIDE STREET: ___ PM TO ___ AM

13. MULTI-LANE CLOSURES ARE LIMITED TO THE HOURS OF:

| SR: | ___ PM TO ___ AM, ___ DAY THROUGH ___ DAY ONLY |

14. TRAFFIC PACING PROCEDURES PER STANDARD PLANS INDEX 102-653 ARE LIMITED TO THE HOURS OF:

| ___ AM TO ___ AM, ___ DAY THROUGH ___ DAY ONLY |

15. MAINLINE ROADWAY CLOSURES WITH OFF-SITE DETOURS ARE LIMITED TO THE HOURS OF:

| ___ AM TO ___ AM, ___ DAY THROUGH ___ DAY ONLY |

REFER TO THE DETOUR DETAILS FOR ADDITIONAL INFORMATION.

16. RAMP CLOSURES WITH OFF-SITE DETOURS ARE LIMITED TO THE HOURS OF:

| ___ AM TO ___ AM, ___ DAY THROUGH ___ DAY ONLY |

REFER TO THE DETOUR DETAILS FOR ADDITIONAL INFORMATION.

17. WHEN CONSTRUCTION EQUIPMENT IS BEING TRANSPORTED OR DRIVEN ON OPEN TRAVEL LAKES, COMPLY WITH THE FOOT STANDARD PLANS INDEX 102-600-SERIES. MAINTAIN CLEAR ZONE REQUIREMENTS FOR EQUIPMENT, MATERIAL STORAGE, AND WORK ZONE PROTECTION AT THE REQUIREMENTS SPECIFIED IN STANDARD PLANS INDEX 102-600.

17. ALTERNATE TRAFFIC CONTROL PLANS AND/OR CHANGES MADE TO THE TRAFFIC CONTROL PLAN SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA AND BE APPROVED BY CFX AND THE TRAFFIC CONTROL MANAGER PRIOR TO IMPLEMENTATION.

18. A CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS) SHALL BE ON SITE WHEN CONSTRUCTION IS WORKING AND SHALL BE ON CALL FOR EMERGENCIES. PROVIDE THE ENGINEER WITH A 24 HOURS ON-CALL NUMBER.

19. ARROWS ( ) SHOWN IN THESE PLANS DENOTE NUMBER OF LANES AND DIRECTION OF TRAFFIC ONLY AND DO NOT INDICATE PAVEMENT MARKINGS.

20. ACCELERATION/DECELERATION OF CONSTRUCTION VEHICLES WITHIN AN ACTIVE TRAVEL LANE IS PROHIBITED DURING ALL PHASES OF TRAFFIC CONTROL. MAKE PROVISIONS FOR CONSTRUCTION INGRESS/EGRESS, INCLUDING MATERIALS DELIVERY.

21. TRAFFIC SHALL NOT BE MAINTAINED ON A MILLED/GROOVED SURFACE. DURING MILLING AND RESURFACING OPERATIONS, ALL MILLED LINES SHALL BE RESURFACED AND BROUGHT TO WITHIN 1/2" OF THE ADJACENT TRAVEL LANE IN ACCORDANCE WITH STANDARD PLANS INDEX 102-600.

22. MILLING, RESURFACING, AND OVERBUILD OPERATIONS ARE TO BE PHASED SUCH THAT ALL DROP-OFFS COMPLY WITH STANDARD PLANS INDEX 600. ANY TRAVEL LANE TREATMENTS OR ADDITIONAL TEMPORARY PAVEMENT NEEDED TO REMOVE DROP-OFF HAZARDS SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM NO. 102-1.

23. EXISTING CEMETARY STRIPING WHICH IS TO BE REMOVED AND RE-STRIPED AS PART OF THE TRAFFIC CONTROL PLANS SHALL BE MILLED AND RESURFACED PRIOR TO THE TEMPORARY MARKINGS. WATER BLASTING, AS A MEANS OF MARKING REMOVAL, WILL NOT BE PERMITTED WITHIN THE GORE AREAS.

24. ALL TEMPORARY BARRIER WALL TRANSITIONS SHALL COMPLY WITH STANDARD PLANS INDEX 102-662. IMPACT ATTENUATORS SHALL BE INSTALLED PER STANDARD PLANS INDEX 102-100 AND AS SHOWN IN THE PLANS.

25. MAINTAIN EXISTING ROADWAY LIGHTING LEVELS DURING ALL PHASES OF TRAFFIC CONTROL.

26. MAINTAIN EXISTING WARNING AND REGULATORY SIGNAGE DURING ALL PHASES OF TRAFFIC CONTROL AS APPLICABLE.

27. REMOVE ALL UNUSED TRAFFIC CONTROL DEVICES AND WORK ZONE SIGNS UPON COMPLETION OF THEIR USE. POST-MOUNTED SIGNS MAY BE COVERED OR TURNED TO FACE AWAY FROM TRAFFIC.

28. UNLESS OTHERWISE DIRECTED BY CFX, ALL CHANNELIZING DEVICES USED SHALL BE DRUMS.

29. WITH THE EXCEPTION OF FRICTION COURSE AND FINAL PAVEMENT MARKINGS, PROPOSED WORK IN ANY PHASE MAY BE CONSTRUCTED CONCURRENTLY PROVIDED THE WORK DOES NOT AFFECT THE TRAFFIC PATTERNS SHOWN IN APPLICABLE TCP PHASE.

30. FRICTION COURSE AND FINAL MARKINGS ARE TO BE PLACED DURING PHASE ___ AS NOTED ON THE APPLICABLE TCP PLANS SHEETS.

31. OBTAIN A PERMIT FROM __________ PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE LOCAL MAINTAINING AGENCY'S ROAD RIGHT-OF-WAY.

CFX Exhibit 321
TTC General Notes
PROJECT SPECIFIC TTC GENERAL NOTES

1. SECTION ENGINEER TO DETERMINE ADDITIONAL NOTES AS REQUIRED

NOTES TO DESIGNERS:

STANDARD NOTES AS SHOWN ARE APPLICABLE TO THE MAJORITY OF PROJECTS ALONG THE CFX SYSTEM

WHERE A GENERAL OR PAY ITEM NOTE DOES NOT APPLY, IT SHALL BE REVISED TO "NOT USE" SUCH THAT THE NUMERICAL ORDERING OF STANDARD NOTES DOES NOT CHANGE

ADDITIONAL NOTES MAY BE ADDED UNDER "PROJECT SPECIFIC TTC GENERAL NOTES" AS DETERMINED BY THE SECTION ENGINEER

DELETE THIS BOX AND ALL "NOTES TO DESIGNERS" PRIOR TO SUBMITTAL OF PLANS FOR REVIEW

TTC PAY ITEM NOTES

1. PAYMENT FOR TRAFFIC CONTROL WILL BE PER PAY ITEM NO. 102-1, MAINTENANCE OF TRAFFIC (LUMP SUM)

2. THE FOLLOWING NOTES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT INTENDED TO BE THE SOLID BASIS OF THE CONTRACTOR'S BID

3. THE FOLLOWING ITEMS ARE CONSIDERED TO BE INCIDENTAL TO PAY ITEM NO. 102-1

4. ALL LANE CLOSURES ALONG SR ___ ARE TO UTILIZE THE MOTORIST AWARENESS SYSTEM (M.A.S.) PER STANDARD PLANS INDEX 102-670

5. ALL TEMPORARY PAVEMENT AND ALL CLEARING, GRUBBING, AND EARTHWORK NECESSARY FOR PLACEMENT OF TEMPORARY PAVEMENT
   PHASE ___ BY TEMPORARY PAVEMENT
   PHASE ___ BY TEMPORARY PAVEMENT
   PHASE ___ BY TEMPORARY PAVEMENT
   PHASE ___ BY TEMPORARY PAVEMENT

6. CROSS STREET AND SIDE STREET TEMPORARY TRAFFIC CONTROL FOR INCIDENTAL CONSTRUCTION NOT SHOWN ON THE TTC PLANS

7. MAINTENANCE OF GUIDE SIGNING IN ACCORDANCE WITH TTC PLANS

8. ALL SIGNAGE AND TRAFFIC CONTROL DEVICES FOR ROAD CLOSURES AND DETOURS

9. MAINTENANCE OF EXISTING ROADWAY LIGHTING AND/OR TEMPORARY LIGHTING REQUIRED AS NECESSARY TO MAINTAIN EXISTING ROADWAY LIGHTING LEVELS UNLESS THE PROPOSED ROADWAY LIGHTING IS IN PLACE AND OPERATIONAL

10. TRAFFIC CONTROL OFFICERS ARE REQUIRED FOR ALL LANE CLOSURES ALONG SR ___ PER CFX SPECIFICATIONS

11. TRAFFIC CONTROL OFFICERS ARE REQUIRED FOR ALL RAMP CLOSURES AT THE INTERCHANGES

12. ALL TEMPORARY DRAINAGE INCLUDING ANY TEMPORARY TRENES, OR STRUCTURES, TEMPORARY SCALES OR Ditches, PARTIAL CONSTRUCTION OF PERMANENT STRUCTURES, ETC.

13. TEMPORARY ATTENUATORS ARE TO BE REMOVED AS SOON AS POSSIBLE WHEN NOT REQUIRED BY THE PLANS.

14. ALL NECESSARY HPW TROTTERS AND VMS BOARDS REQUIRED FOR TRAFFIC PAVING PROCEDURES PER STANDARD PLANS INDEX 102-630 DURING EXISTING OVERHEAD SIGN REMOVAL AND INSTALLATION OF PROPOSED OVERHEAD SIGNS.

15. MAINTENANCE OF ALL EXISTING RA W/R FENCING DURING CONSTRUCTION ACTIVITIES. IF THE EXISTING IS IN CONFLICT WITH CONSTRUCTION ACTIVITIES DURING A PARTICULAR TCP PHASE, PROVIDE A TEMPORARY FENCE AT A LOCATION DESIGNATED BY THE ENGINEER AND CFX. INCLUDES RESTORATION OF THE EXISTING RA W/R FENCE IN LOCATIONS WHICH ARE TO REMAIN THAT WERE REMOVED OR RELOCATED TO ACCOMMODATE CONSTRUCTION ACTIVITIES.

16. EXISTING WARNING, REGULATORY, AND EXIT (ES-1A) SIGNS ARE TO BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE SHOWN IN THE PLANS. CONFLICTING OR MISLEADING SIGNS ARE TO BE COVERED, RELOCATED, OR REMOVED DURING THE APPLICABLE TCP PHASES UNLESS OTHERWISE SHOWN IN THE PLANS.

17. EXTENSIVE COORDINATION WITH CFX, THE ENGINEER, AND THE TOLL EQUIPMENT CONTRACTOR WILL BE REQUIRED DURING THE INSTALLATION, MODIFICATION, REMOVAL, PARTIAL DEMOLITION, AND/OR CONSTRUCTION OF TOLL FACILITIES AND EQUIPMENT.

18. TEMPORARY MARKINGS ON CONCRETE PAVEMENT (BRIDGE DECKS AND TOLL PLAZAS) SHALL BE 3M BRAND SCOTCH-LAKE REMOVABLE TAPE SERIES 110, 111, AND 115 OR CFX APPROVED EQUAL

CFX Exhibit 32I-2
TTC General Notes Cont.
322 - Utility Adjustments

322.2 - Required Information

Replace the fourth paragraph with the following:

Place the following notes in the General Notes (see CFX Exhibit 311-1):

325 - Signing and Pavement Marking Plans

325.1 - General

Add the following paragraph:

See Section 230.1 for additional information.

325.5 - General Notes Sheet

Add the following sentence:

See CFX Exhibits 325-3 thru 325-5 for Signing and Pavement Marking Standard General Notes.
SIGNING CENTRAL NOTES

1. PROVIDE SHOP DRAWINGS FOR ALL SIGNS. SHOP DRAWINGS SHALL INCLUDE VBR CALCULATIONS FOR ALL STANDARD AND NON-STANDARD GROUND MOUNTED SIGNS, SINGLE AND MULTI-POST.

2. ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE NOTED. ANY SIGNS SCHEDULED TO BE RELOCATED OR TO REMAIN THAT ARE DAMAGED DURING THE CONSTRUCTION PROCESS SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

3. MAINTAIN ALL EXISTING HOMELAND SECURITY SHELTER SIGNING THROUGHOUT THE ENTIRE DURATION OF CONSTRUCTION.

4. ALL EXISTING SIGNS ARE TO REMAIN VISIBLE UNTIL SUCH TIME AS THE PROPOSED SIGN ASSEMBLY INSTALLATION IS COMPLETED.


6. ESTABLISH, Stake AND PAINT LOCATIONS WITH THE USE OF A FLORIDA REGISTERED LAND SURVEYOR. IF THE STAKES AND/OR PAINTED MARKS ARE OBSTRUCTED DURING THE CONSTRUCTION PROCESS, HAVE THE SIGNS LOCATIONS RE-ESTABLISHED BY A FLORIDA REGISTERED LAND SURVEYOR. NO ADDITIONAL PAYMENT WILL BE ALLOWED.

7. SIGN ASSEMBLY LOCATIONS SHOWN ON PLANS WHICH ARE IN CONFLICT WITH LIGHTING, UTILITIES, DRIVEWAYS, PUBLIC SIDEWALK CURB Ramps, ETC. MAY BE ADJUSTED SLIGHTLY AS DIRECTED BY THE REGISTERED ELECTRICIAN. THE ENGINEER OF RECORD MUST APPROVE EXTREME LOCATION CHANGES.

8. SET ROADWAY GROUND MOUNT SIGNS AT PROPER DEPTH ANGLE TO THE ROADWAY IN ACCORDANCE WITH FDOT STANDARD PLANS INDEX 700-101, UNLESS NOTED OTHERWISE IN THE PLANS.

9. THE CFI SHALL APPROVE COMMON POST MOUNTING OF REGULATORY SIGN PANELS PRIOR TO ASSEMBLY INSTALLATION. NO SIGNS SHALL BE MOUNTED BACK TO BACK WITH STEP OR STOP SIGNS.

10. CARE SHALL BE TAKEN THAT OVERHEAD PANELS ARE POSITIONED OVER THE LIMITS TO WHICH THEY APPLY AND AS SHOWN IN THE PLANS. THE CFI SHALL APPROVE THE LOCATIONS ALONG THE TRUNK PRIOR TO INSTALLATION.

11. WIDEPERM MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE VERTICAL CLEARANCE CRITERIA IN THE STANDARD PLANS INDEX 700-101 REGARDLESS OF LOCATION, I.E. ROADSIDE OR TOP OF BARRIER WALL. SEE SPECIAL DESIGN WIDEPERM SHEETS FOR ADDITIONAL DETAILS.

12. COMPLETELY fill IN ALL HOLES WITH SELECT MATERIALS IN 12 LIFTS AND SOD GROUND MOUNT AND OVERHEAD SIGN REMOVAL LOCATIONS WITHIN 24 HOURS. FOUNDATIONS FOR ALL OVERHEAD SIGN STRUCTURES SHALL BE REMOVED 3′ BELOW THE GROUND SURFACE. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO SIGN REMOVAL.

13. ALL WORK ITEMS MAY ONLY BE PERFORMED AT THE TIMES PERMITTED BY THE CONTRACTOR AFFECTED.

14. EROSION CONTROL CRITERIA AS REQUIRED IN THE SPECIFICATIONS. AN EROSION CONTROL PLAN SHALL BE SUBMITTED TO THE CFI FOR APPROVAL PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. PANELS FOR ALL EROSION CONTROL WORK AND MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE UNIT COST OF THE SIGN ASSEMBLY.

15. ALL MISCELLANEOUS WORK NECESSARY IN THE SHOULDIER AREA TO CONSTRUCT AN ADJACENT REMOVAL SIGNS (I.E. GRAVING, SODDING, CLEARING AND GRADING, GUARDRAIL, ETC) RE-SETTING OR FENCE RE-SETTING IS CONSIDERED INCIDENTAL AND SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE SIGN ASSEMBLY. ALL DISTURBED AREAS SHALL BE SODDED. HAIL ALL EXCESS EXCAVATION AND WASTE MATERIALS OFF-SITE. REMOVAL OF THESE MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE SIGN ASSEMBLY.

16. EXISTING SIGNS TO BE REMOVED SHALL BE MEASURED AND PAID FOR BY THE POST ASSEMBLY REGARDLESS OF THE NUMBER OF EXISTING PANELS ATTACHED.

17. VERIFY FIELD ELEVATIONS FOR VERTICAL SUPPORTS FOR ALL SIGNS PRIOR TO FABRICATION.

18. SIGN ITEMS 700-4.XXX: DESIGN WIND LOADS ARE BASED ON BASIC WIND SPEED OF 150 MPH AS SHOWN IN THE FDOT STANDARD PLANS. IN ACCORDANCE WITH THE FDOT STRUCTURES MANUAL, THE STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE LATEST FDOT STANDARD PLANS INDEX 700-101 AND THE FOLLOWING REQUIREMENTS:

   A) INCREASE THE PROPOSED SIGN PANEL DEPTH BY 20% FOR DESIGN WITH THE FUTURE PANEL(S) ASSUMED TO BE BUILT JUST ON TOP OF THE EXISTING PANEL(S). WHEN THE SPAN THICKNESS MUST ACCOMMODATE PANEL(S) OVER ONE DIRECT LINE OF TRAFFIC, THE FUTURE PANEL(S), INCLUDING EXISTING NUMBER, SHALL BE CONSIDERED OF THE OPPOSITE DIRECTION FOR THE PURPOSE OF PROVIDING MAXIMUM FLEXIBILITY FOR FUTURE USE.

   B) SPAN TYPE STRUCTURES SHALL MEET CRITERIA 1.A) ABOVE THE FDOT STRUCTURES MANUAL CRITERIA FOR URBAN AREAS, WHEREVER GOVERNED.

   C) CANTILEVER ARM LENGTHS AND UPRAIGHT HEIGHTS WERE DETERMINED BASED ON INITIAL SIGN CONFIGURATION. INITIAL PANEL SHALL BE POSITIONED TO MATCH THE END OF THE CANTILEVER ARM FOR AESTHETICS.

   D) FOUNDATION DETAILS SHALL BE ACCORDING TO FDOT STANDARD PLANS INDEX 700-390 OR 700-014. EXCEPT THAT THE DRILLED SHAFT OR PEE SIDEWALL EXTEND A MINIMUM 3 INCHES ABOVE THE GROUND LINE ON THE DESIGN HIGH WATER LINE AND A 3′ INCH CROCKET PLATE SHALL BE USED FOR ALL OVERHEAD SIGN STRUCTURES.

   E) CANTILEVER ARM LENGTHS WERE DETERMINED BASED ON THE INITIAL SIGN CONFIGURATION. THE 20% INCREASED SIGN PANEL AREAS ARE NOT SHOWN ON THE CROSS SECTIONS. ANY FUTURE PANELS SHOWN ON THE CROSS SECTIONS WERE FOR STRUCTURE DESIGN PURPOSES ONLY AND ARE NOT PART OF THIS CONTRACT.

19. PRIOR TO ERECTION OF ANY OVERHEAD SIGN STRUCTURES, THE AS BUILT LOCATION OF THE ANCHOR BOLTS SHALL BE SURVEYED BY A FLORIDA REGISTERED LAND SURVEYOR AND SUBMITTED IN A WRITTEN REPORT TO THE CFI FOR APPROVAL. COST TO BE CONSIDERED INCIDENTAL TO THE UNIT COST OF THE SIGN ASSEMBLY.

20. PRIOR TO THE TIMING OF ADJACENT CONTRACTS, THE CFI MAY DIRECT THE CONTRACTOR TO DELAY INSTALLATION OF CERTAIN PANELS. PANELS SHALL NOT BE INSTALLED AND COVERED WITHOUT PRIOR APPROVAL FROM CFX.

21. REPAIR AND INSTALL ALL EQUIPMENT ATTACHED TO SIGN UPRIGHTS PRIOR TO BEGINNING THE PAINTING PROCESS. EQUIPMENT SHALL INCLUDE BUT NOT LIMITED TO ELECTRICAL DISCONNECT SWITCH BOXES, ELECTRICAL ENTRANCE PANELS, CONTROL BOXES, ETC. ANY EQUIPMENT DAMAGED DURING THE PAINTING PROCESS SHALL BE REPAIRED OR REPLACED IN KIND BY THE CONTRACTOR AT HIS EXPENSE. ALL REPAIRS SHALL MEET THE SATISFACTION OF THE ENGINEER OF RECORD.

22. PROVIDE WIRING AND PULL BOXES (AS NECESSARY) TO ALL FUTURE SIGN PANEL CAPS AND CAP OFF IN THE CONNECTOR BOX.

23. WHEN REMOVING PANELS AND/OR ADDING PANELS TO AN EXISTING STRUCTURE, THE COST FOR ADJUSTING EXISTING LUMINARIES, INCLUDING REPAIR IF NEEDED, AND ANY OTHER HARDWARE AND COMPONENT PARTS REQUIRED FOR A COMPLETE LUMINARIES SHALL BE CONSIDERED INCIDENTAL TO THE UNIT COST FOR PANEL REMOVAL OR INSTALLATION. REMOVAL OF EXISTING LUMINARIES SHALL INCLUDE REMOVAL OF MOUNTING BRACKET ARM. INSTALLATION OF NEW LUMINARIES SHALL INCLUDE NEW MOUNTING BRACKET ARMS.
31. THE SIGN LIGHTING LUMINARIES SHALL BE "RIGHT AIMED" TO ASSURE PROPER ILLUMINATION OF THE SIGN SURFACE. THE LUMINARIES MUST BE AT AN ANGLE SUFFICIENT TO PREVENT THEM FROM SHINING INTO THE FACES OF DRIVERS TRAVELING IN THE OPPOSITE DIRECTION.

32. SIGN LIGHTING LUMINARIES MAY REQUIRE SHELTER TO PREVENT EXPOSURE TO THE WEATHER. ANY DISCREPANCIES WITH RESPECT TO THE ENGINEER OF RECORD FOR THE PROJECT SHALL NOT BE CONSIDERED INCIDENTAL TO THE SIGN LIGHTING LUMINARIES.

33. ENSURE SIGN LUMINARIES ARE WITHIN 24 HOURS OF INSTALLATION.

34. VERIFY LOCATIONS OF EXISTING ROADWAY LIGHTING CONDUIT PRIOR TO INSTALLATION OF ROADWAY SIGNAGE.

35. A SEPARATE GROUNDING ELECTRODE AND FUSE BOX IS REQUIRED PER UPRIGHT OF EACH NEW CANTILEVER. TWO SEPARATE GROUNDING ELECTRODES AND FUSE BOXES ARE REQUIRED PER UPRIGHT OF EACH NEW TRUSS STRUCTURE. PAYMENT SHALL BE INCIDENTAL TO COST OF STRUCTURE. INSTALLATION SHALL BE IN ACCORDANCE WITH STANDARD PLANS 720-023 WITH A MINIMUM REQUIRED LENGTH OF 20 LINEAR FEET AND A REACTIONS OF 25 OMS OR LESS. ALL CONNECTIONS SHALL BE ELECTRICALMELY WELDED.

36. FOR LOCATIONS THAT REQUIRE A GROUNDING ELECTRODE ARRAY (AS DETERMINED BY THE CEE), A SEPARATE FUSE BOX SHALL BE INSTALLED FOR EACH ELECTRODE IN THE ARRAY AND SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE SIGN ASSEMBLY.

37. J3M SCOTCH BRAND VERY HIGH BOND (VHB) ACRYLIC FOAM TAPE NUMBER 4600 OR CFX'S APPROVED EQUAL IN COMBINATION WITH MECHANICAL FASTENERS SHALL BE USED TO ATTACH PANELS TO WIND BEAMS, BRACKETS AND SPACER PLATES. ALL SINGLE AND MULTI-POST SIGN ASSEMBLIES SHALL MEET J3M REQUIREMENTS FOR PROPER INSTALLATION OF VHB. VHB TAPE SHALL NOT BE REUSED ONCE INSTALLED. DESIGN SHALL MEET CURRENT FOOT WIND LOAD CRITERIA.

38. MECHANICAL FASTENERS USED TO ATTACH SIGNS TO WIND BEAMS, BRACKETS AND SPACER PLATES FOR ALL OVERHEAD AND GRound MOUNTED PANELS SHALL BE COUNTERSUNK SCREWS.

39. PATCH ALL COUNTERSUNK SCREWS ON ALL NEW SIGNS FACES. RIVETS OR OVERLAPS AND/OR DUMMETS SHALL BE PAINTED WITH COLOR TO MATCH SCAFFETING AT RIVET LOCATION. SEE SPECIAL PROVISIONS.

40. NEW SIGNS ON EXISTING OVERHEAD STRUCTURES SHALL BE INSTALLED USING NEW SCREWS, NAILS AND HARDWARE NECESSARY TO SECURE THE PROPOSED SIGN PANEL(S) IN ACCORDANCE WITH FDOT STANDARD PLANS INDEX 700-030. PAYMENT SHALL BE INCIDENTAL TO THE UNIT PRICE OF THE OVERHEAD SIGN ASSEMBLY.

41. EXISTING SIGNS TO BE REPLACED TO PROPOSED STRUCTURES SHALL BE INSTALLED USING NEW COMPONENT PARTS REQUIRED FOR A COMPLETE SIGN INSTALLATION INCLUDING, BUT NOT LIMITED TO, HANGERS, LUMINARIES, LUMINATING BRACKETS, ARMS AND ALL HARDWARE ASSOCIATED WITH EACH COMPONENT. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO EXISTING SIGN INSTALLATION.

42. NEW SIGNS INSTALLED ON EXISTING POSTS (SINGLE OR MULTI-POST) SHALL BE MOUNTED USING NEW HARDWARE. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO NEW PANEL INSTALLATION.

43. WHEN FULL PANEL OVERLAYS ARE SPECIFIED, DETERMINE AND MARK EXISTING CORNER PANELS. ALL EXISTING DEMOUNTS OR OVERLAYS SHALL BE REMOVED PRIOR TO PROPOSED FULL OR PARTIAL OVERLAY INSTALLATION.

44. FOR PARTIAL PANEL OVERLAYS, ENSURE ALL EXISTING CORNER TO BE OVERLaid IS COMPLETELY COVERED. ENSURE THE OVERLAY DOES NOT COVER ANY PORTION OF THE EXISTING CORNER OR BORDER WHICH IS TO REMAIN VISIBLE.

45. UTILITY LOCATIONS SHOWN IN THE PLANS ARE APPROXIMATE. SEE UTILITY ADJUSTMENT PLANS. THERE MAY BE ADDITIONAL UTILITIES WITHIN THE CONSTRUCTION AREAS WHICH ARE NOT SHOWN. DETERMINE THE EXACT LOCATION AND LOCATION OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION ACTIVITY. FOR PROJECTS WITHOUT UTILITY ADJUSTMENT PLANS, THE SECTION ENGINEER SHALL DELETE THE SECOND SENTENCE AND SUPPLY THE LIST OF UTILITY OWNERS AND TELEPHONE NUMBERS.

46. CFX FIBER OPTIC FIBER WIRE, CONDUIT, AND LOCATE TAPE WITHIN (5) FEET OF MULTI-POST AND OVERHEAD SIGN STRUCTURES SHALL BE MANUALLY LOCATED VIA SOFT DIG EXCAVATION PRIOR TO THE CONSTRUCTION ACTIVITY.

47. VEGETATION SHALL BE REMOVED OR CUT BACK AS DIRECTED BY THE CEE TO PROVIDE ADEQUATE SIGHT DISTANCE FOR ALL OVERHEAD AND GRound MOUNTED SIGNS. VEGETATION REMOVAL AND TRIMMING SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE OF THE SIGN ASSEMBLY.

48. STRUCTURE NUMBERS XX, XX, AND XX ARE WITHIN THE LIMITS OF A LACRisations PROJECT OR AN EXISTING LACRATIONS PROJECT IN AN EXISTING CFX SPECIAL LACRATIONS AREA. STRUCTURES MAY BE REQUIREMENTS AS DIRECTED BY THE CEE IN ORDER TO MINIMIZE IMPACT TO LANDSCAPE MATERIAL. EXISTENCE CAUTION THROUGH LACRATIONS LIMITS DURING ALL PHASES OF CONSTRUCTION ACTIVITY. ANY EXISTING LANDSCAPE MATERIAL DAMAGED DURING THE CONSTRUCTION PROCESS SHALL BE REPLACED IN KIND.

49. IN ORDER TO ACCOMMODATE THE LACRATIONS ASSEMBLY, SOME LANDSCAPE MATERIAL MAY REQUIRE PERMANENT LOCATION OR REMOVAL AND REPLACEMENT WITH ANOTHER VARIETY OF MATERIAL. PROVIDE THE CEE WITH A PRELIMINARY LANDSCAPE ASSEMBLY PLAN INCLUDING PROPOSED PLANT MATERIAL(S). CFX SHALL APPROVE ANY PROPOSED RELOCATION OF LANDSCAPE MATERIAL PRIOR TO INSTALLATION. COST OF LANDSCAPE MATERIAL INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO THE UNIT COST OF THE SIGN ASSEMBLY.

50. AT LOCATIONS WHERE PLANNED LACRATIONS ARE COMPLETE, ALL WORK (I.E. GRAADING, CLEAN-UP, ETC.) SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF THE CFX SIGN SYSTEM SUCH THAT LACRATIONS FEATURES MAY BE INSTALLED.

51. THE FOLLOWING WORK ITEMS MAY ONLY BE PERFORMED AT THE DIRECTION OF THE CEE.

52. ALL NEW SIGNS PANELS REGARDLESS OF MOUNTING OVERHEAD, SINGLE POST OR MULTI-POST SHALL BE A MINIMUM OF 0.125 INCHES THICK. ALL SIGN OVERLAPS SHALL BE A MINIMUM OF 0.050 INCHES THICK. EXTRUDED PANELS SHALL NOT BE ALLOWED.

53. ALL ROADWAY AND TOLL PLAZA SIGN PANELS REGARDLESS OF LOCATION, MOUNTING TYPE OVERHEAD, SINGLE OR MULTI-POST OR LACRATIONS SHALL BE MADE WHITE OR BRUSHED ALUMINUM FINISH TO MATCH THE EXISTING SIGNS. EXCEPTION: OVERHEAD SIGNS, 265 AND 266, SUPPLEMENTAL SIGNS SHALL BE MADE WHITE OR BRUSHED ALUMINUM FINISH.

54. THE COLORS OF ALL PANELS POSITIONED ABOVE AND BELOW A ROAD SIGN (U.S., STATE, COUNTY AND TOLL IN ROUTE MARKER ASSEMBLIES SHALL MATCH THE ASSOCIATED SHEET.

55. ALL ES-1A PANELS SHALL BE MANUFACTURED IN ACCORDANCE WITH SPECIFICATIONS.

56. FOR FULL PANEL OVERLAYS, THE OVERLAY FABRICATOR SHALL PROVIDE A DETACHABLE BACK OF PANEL DECAL CONTAINING ALL REQUIRED INFORMATION. APPLY THE DECAL TO THE BACK OF THE EXISTING PANELS IN THE VICINITY OF THE EXISTING DECAL SHALL REMAIN VISIBLE.

57. A DECAL SHALL BE PROVIDED ON ALL NEW PANELS AND OVERLAYS (FULL OR PARTIAL) REGARDLESS OF MOUNTING TYPE (OVERHEAD, SINGLE OR MULTI-POST). LETTERS SHALL BE BLACK AND LARGE ENOUGH TO BE CLEARLY LEGIBLE. LETTERS SHALL BE WHITE IF THE BACK OF THE PANEL HAS BEEN PAINTED BLACK. THE DECAL SHALL CONTAIN THE FOLLOWING INFORMATION:

58. IF SIGN SHEETING, COLORS OR ADHESIVE TAPE MATERIALS ARE PROPOSED FOR USE OTHER THAN THE J3M PRODUCTS SPECIFIED IN THE GENERAL NOTES OR PLAN DETAILS, A "B" SIZE SHEETING OR "A" SIZE TAPE SAMPLE OF EACH IN ALL APPLICABLE MATERIALS TO BE SUBMITTED TO CFX FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION. ALL SAMPLES SHALL INCLUDE MANUFACTURER'S INFORMATION INCLUDING, BUT NOT LIMITED TO, SPECIFICATIONS, WARRANTY AND LOCAL SITES WHERE PRODUCT IS CURRENTLY IN USE.

59. (NOTE ONLY APPLIES TO SR 408 BETWEEN THE INTERCHANGE AT KINSMAN RD AND CHICKASHA (TAIL)) SINGLE PANEL AND MULTI-POST SIGN ASSEMBLIES SHALL HAVE THE FOLLOWING AESTHETIC TREATMENT:

60. HORIZONTAL PANELS SHALL BE FRAMED WITH A MINIMUM OF 2 INCHES HORIZONTAL EXTRUDED TAPE. THE BLACK PAINT SHALL BE SEMI-GLOSS "THEMOS" POWDER PAINT FINISH. FEDERAL COLOR # 2034. THE BACK OF PANELS CONTAINING ORDER AND FABRICATION INFORMATION SHALL BE APPLIED AFTER THE PAINTING PROCESS IS COMPLETED.

61. FALL OUT THE COLUMN ENTITLED "AS-BUILT "IN THE TABLE ON THE DETAIL SHEET FOR SPECIAL DESIGN WIDTHS

62. FOR PROJECTS WITH TOLL PLAZAS GROUND MOUNTED SIGNS (TYPICALLY TOLL FOLLO AND WALK FOR PEDESTRIANS). SIGNS MAY NOT EXTEND PAST THE CONCRETE CURB-TO-CURB FACE. IF THE FACE IS BEVELED THE PANELS SHALL NOT EXTEND PAST THE BEVELED EDGES. EACH PANEL SHALL BE MOUNTED FLAT WITH THE FLAT PORTION OF THE BARRIER FACE. THE ЦЕ1 SHALL IMMEDIATELY NOTIFY THE FOX AND CFX IF THIS REQUIREMENT IS NOT SATISFACTORY.

63. THE PANEL FABRICATOR SHALL BE AN AUTHORIZED M&C CERTIFIED FABRICATOR. CURRENT CERTIFICATE SHALL BE SUBMITTED TO THE CEE PRIOR TO INSTALLATION. THE CEE SHALL FORWARD ALL CERTIFICATES TO CFX'S REPRESENTATIVE FOR APPROVAL

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**GENERAL NOTES - SIGNING SHEET 2 OF 2**

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PAYMENT MARKING GENERAL NOTES

1. STOP BARS, CROSSWALKS, STANDARD PAVEMENT MARKINGS AND STANDARD DIRECTIONAL ARROWS SHALL BE THERMOPLASTIC. ALL OTHER STRIPING WITHIN CFX’S JURISDICTION SHALL BE 3M COMPANY SERIES 6200 OR CFX APPROVED EQUAL ON ASPHALT AND CONCRETE. PAYMENT, UNLESS OTHERWISE NOTED IN PLANS, THE OPTION LANE ARROW SHALL BE THERMOPLASTIC, 3MRT, OR STANDARD THERMOPLASTIC AS APPROVED BY CFX.

2. ALL PAYMENT MARKINGS ON NON CFX FACILITIES SHALL BE THERMOPLASTIC.

3. ALL MAINLINE AND RAMP SKIP LINES (12-30) SHALL BE PRE-FORMED PATTERNS OF REFLECTIVE CONTRAST TAPE (PPT) CONSISTING OF A 4" WHITE TAPE BORDERS ON BOTH SIDES (LONGITUDINAL) WITH A 1/2" MATT BLACK CONTRASTING TAPE, FOR A TOTAL WIDTH OF 9".

4. WHITE EDGE LINES SHALL BE PRE-FORMED PATTERNS OF REFLECTIVE CONTRAST TAPE (PPT) CONSISTING OF A 4" WHITE TAPE BORDERS ON BOTH SIDES (LONGITUDINAL) WITH A 1/2" MATT BLACK CONTRASTING TAPE, FOR A TOTAL WIDTH OF 9".

5. RETROREFLECTIVE PAVEMENT MARKERS (RPMS) ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE PROJECT IN ACCORDANCE WITH FOOT STANDARD PLANS (INDEX 706-002, 711-001, AND 711-003) UNLESS OTHERWISE NOTED IN PLANS. ALL RPMS INSTALLED ALONG CFX’s MAINLINE AND ALONG RAMP WITHIN CFX’S JURISDICTION SHALL BE 3M COMPANY SERIES 390 RPMS OR CFX APPROVED EQUAL.

6. REFLECTIVE PAVEMENT MARKER ADHESIVE FOR USE ON ASPHALT AND CONCRETE PAVEMENT SHALL BE BITUMINOUS MATERIAL UNLESS OTHERWISE NOTED IN THE SPECIAL PROVISIONS

7. PROVIDE A TEMPORARY LAYOUT OF ALL TOILET PLAZA RELATED PAYMENT MARKINGS FOR APPROVAL BY THE CEI PRIOR TO PERMNTANCE.

8. ANY EXISTING PAYMENT MARKINGS, RPMS OR DELINEATORS SCHEDULED TO REMAIN EITHER WITHIN OR BEYOND THE PROJECT LIMITS INCLUDING WELDING AND RESURFACING WHICH ARE DAMAGED DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT HIS EXPENSE. LIMIT OF REPLACEMENT IF REQUIRED, SHALL BE DETERMINED BY THE CEI.

9. ROADWAY MOUNTED FLEXIBLE TUBULAR DELINEATORS SHALL BE “SAFE-HIT” CORPORATION, TYPE 2 GUIDE POST (4") WITH FLAT TOP OR CFX APPROVED EQUAL.

10. ROADWAY MOUNTED FLEXIBLE SINGLE UNIT DELINEATORS SHALL BE FLAT TOP 4" FLAT, LOW PROFILE SURFACE MOUNT DELINEATOR, OR CFX APPROVED EQUAL. DELINEATOR ADHESIVE FOR USE ON ASPHALT AND CONCRETE PAVEMENT SHALL BE BITUMINOUS MATERIAL. ENTIRE DELINEATOR BASE SHALL BE ADHERED TO ROADWAY.

11. PAVEMENT MARKINGS (IE., EDGE LINES, CHANNELIZATION STRIPING, ETC.) SHALL NOT EXTEND THROUGH CROSSWALK AREAS.

12. ALL REMOVABLE PAYMENT MARKINGS SHALL BE 3M COMPANY WET REFLECTIVE REMOVABLE TAPE, SERIES 790 OR CFX APPROVED EQUAL.

13. DO NOT ADD MULTIPLE STRIPES IN ORDER TO MEET THE SPECIFIED WIDTH (IE., THREE 6" STRIPES TO MAKE ONE 18" STRIPE, ETC.). INSTALL ONE STRIPE OF THE SPECIFIED WIDTH.

14. THE EXISTING PAVEMENT MARKINGS AND RPMS SHALL BE COMPLETELY REMOVED AND REPLACED ON ALL CONCRETE BRIDGE DECKS (INCLUDING Approach Slabs) AND TOILET PLAZA DECKS WITHIN THE CONSTRUCTION LIMITS. REMOVAL OF RPMS AND PERMANENT MARKINGS SHALL BE INCIDENTAL TO THE RELATED MARKING PAY ITEM NUMBER.

15. IF DELINEATORS, RPMS OR PAVEMENT MARKING MATERIALS ARE PRODUCED BEFORE THE PRODUCTS SPECIFIED IN THE GENERAL NOTES OR PLAN DETAIL, A SAMPLE OF EACH IN ALL APPLICABLE COLORS SHALL BE SUBMITTED TO CFX FOR APPROVAL PRIOR TO INSTALLATION. ALL SAMPLES SHALL BE MANUFACTURER’S INFORMATION INCLUDING, BUT NOT LIMITED TO, SPECIFICATIONS, WARRANTY AND LOCAL CODES WHERE THE PRODUCT IS CURRENTLY USED.

16. PROPOSED 1/2 WHITE/BLACK ALTERNATING 3-3/8" SKIP STRIPING OR CONCRETE PAYMENT SHALL BE INSTALLED USING THE BUTT SPlice METHOD IN ACCORDANCE WITH THE LATEST EDITION OF 3M COMPANY “STICKY TAPE” PAVEMENT SURFACE PREPARATION AND APPLICATION TECHNIQUES, INFORMATION FOLDER 575, CONTACT 3M AT 1-800-553-1380 AS NEEDED.

17. PROVIDE A TEMPORARY LAYOUT OF THE OPTION LANE DIRECTIONAL ARROW FOR APPROVAL BY THE CEI PRIOR TO PERMANENT INSTALLATION. THE CEI SHALL ADJUST THE LOCATION AS NEEDED TO PROVIDE OPTIMUM VISUAL BENEFIT TO THE MOTORIST.

18. THE LINEAR DELINEATION SYSTEM (LDS) SHALL BE 3M SERIES 340 OR CFX APPROVED EQUAL. EACH PANEL SHALL BE 34" IN CHIENCE LONG. THE PANELS ARE SPACED APPROXIMATELY 18 INCHES APART. ANCHOR BOLTS AND BRACKETS SHALL BE USED WHEN ATTACHING LDS PANELS TO BARRIER WAI, AND GUARDRAIL, RESPECTIVELY. INSTALL THE LDS IN ACCORDANCE WITH 3M REQUIREMENTS AS SPECIFIED IN THE LATEST 3M PRODUCT BULLETIN. CONTACT 1-800-553-1380 FOR ADDITIONAL INFORMATION.

19. ADJUST LDS PANEL SPACING SUCH THAT EACH PANEL INSTALLED IS 34" IN LENGTH AND SPACING IS EQUISTANT. THE CEI SHALL APPROVE SPACING PRIOR TO INSTALLATION.

20. SHEETING ON THE LDS PANELS SHALL BE 3M D3 OR CFX APPROVED EQUAL AND COLOR SHALL MATCH ADJACENT EDGE LINE.

PAY ITEM NOTES

17. IT IS THE OR’S RESPONSIBILITY TO UPDATE AND/OR COMPLETE ALL PAY ITEM NUMBERS (IE., 700-41-XXX) AND STRUCTURE NUMBERS (IE., O1-30) AS WELL AS ADD AND/OR REVISE NOTES AS APPLICABLE WITHIN CFX’S JURISDICTION.

1. 700-1-XX (SML-XXX) - SIGNS ARE SPECIAL DESIGN WALL MOUNTED ASSEMBLIES. COST INCLUDES SIGN, HARDWARE, POST AND MATERIALS FOR A COMPLETE ASSEMBLY PER STRUCTURAL DETAILS IN PLANS. TO BE INCLUDED ONLY WHEN CFX DESIGNS A OTHER THAN FOOT INDEX 11813.

2. 700-1-XX (MCM, JCT, SHALEUSERS) - SIGNS ARE SPECIAL DESIGN SINGLE POST ASSEMBLIES. SEE STRUCTURAL DETAILS IN PLANS.

3. 700-1-XX (FLIP-UP SIGNS) - PANELS ARE PERMANENT FLIP-UP SIGNS AS DETAINED IN THE FOOT TRAFFIC ENGINEERING MANUAL. PAYMENT FOR THE MOUNTING AND ANY OTHER SPECIAL HARDWARE REQUIRED FOR THE FLIP-UP PANEL SHALL BE CONSIDERED INCIDENTAL TO THIS PAY ITEM.

4. 700-10 XXX-MULTI LINE OMS - SEE ITS PLANS FOR DETAILS.

5. 703-3 XXX - SIGN PANEL TO BE MOUNTED Flush WITH BRIDGE GIRDOR PARAPET WALLS.

6. 700-4-XXX, 700-10-XXX (SEE ITS PLANS) - SIGN UPRIGHT PAINTING SHALL BE CONSIDERED INCIDENTAL TO COST OF THE PROPOSED STRUCTURE.

7. 780-3 - EXISTING OVERHEAD SIGN STRUCTURE UPRIGHT PAINTING; REMOVAL AND REINSTALLATION OF EXISTING UPRIGHT ATTACHMENTS AND STRUCTURE IDENTIFICATION NUMBERS SHALL BE CONSIDERED INCIDENTAL TO COST OF THIS PAY ITEM.

8. 800-1-XX - WHEN EXISTING SIGN ASSEMBLIES ARE TO BE REMOVED FROM OR RELOCATED ALONG BARRIER WALLS AND BRIDGES, PATCH, SEAL AND PAINT ALL HOLES AS A RESULT OF ASSEMBLY REMOVAL OR RELocation. PAINT SHALL MATCH EXISTING AND MATERIALS SHALL BE APPROVED BY THE CEI PRIOR TO USE. COST SHALL BE CONSIDERED INCIDENTAL TO THIS PAY ITEM.

9. 700-4-XXX (FOR USE IN PROJECT CONTAINING TOILET PLAZA APPROACH SIGNS WITH A SINGLE LINE OMS) - FOR SIGN STRUCTURES 01-4, 02-4, AND 04-4, PAY ITEM SHALL INCLUDE SPECIAL UPN/sample PIECES. SUPPORTS FOR THE OMS SIGN. PAYMENT FOR THE OMS IS NOT INCLUDED. SEE ITS PLANS FOR ADDITIONAL DETAILS.

10. 113-1-A-XXX - FOR LOCATIONS THAT REQUIRE THERMOPLASTIC PAVEMENT MARKINGS, PAINT SHALL BE USED FOR THE INITIAL APPLICATION TO ALLOW FOR A 30 DAY ASPHALT CURE TIME. INSTALLATION OF THE FINAL THERMOPLASTIC STRIPING SHALL BE AS DIRECTED BY CFX’S DIRECTOR OF CONSTRUCTION AND THE CFI. THE COST OF THE INITIAL PAINT APPLICATION SHALL BE INCIDENTAL TO THIS PAY ITEM.

11. 780-1-A-BCD - PRE-FORMED TAPE SHALL BE 3M COMPANY SERIES 390 OR CFX APPROVED EQUAL. SEE GENERAL NOTES.

12. 780-5 - 3M LINEAR DELINEATION SYSTEM OR CFX APPROVED EQUAL. SEE PAYMENT MARKING GENERAL NOTES FOR DETAILS.
326 - Lighting Plans

326.2 - Key Sheet

Delete the order of lighting plan sheets and replace with:

1. Key Sheet
2. Signature Sheet (If required)
3. Tabulation of Quantities
4. General and Pay Item Notes
5. Legend
6. Pole Data (Roadway Lighting)
7. Luminaire Data (Sign and Underdeck Lighting)
8. Project Layout
9. Lighting Plan
10. Underdeck Lighting Plan
11. Maintenance Lighting (If required)
12. Underdeck Lighting Mounting Details
13. Remote LED Driver Cabinet Details
14. Sign Lighting Details
15. Service Point Details
16. Panelboard Schedules

Note: Refer to current CFX lighting standards for additional information.

326.5 - General Notes Sheet

Delete the second sentence and replace with:

See current CFX general notes for instructions creating a General Notes sheet.

326.6 - Lighting Data Table and Legend Sheet

Delete FDM 326.6 and replace with:

326.6 - Lighting Pole and Luminaire Data Tables and Legend Sheet

Prepare the Lighting Pole and Luminaire Data Tables and Legend sheet on a standard plan format and include details and notes pertaining to pole and luminaire placement and
326.6.1 - Pole Data Table

Provide a listing of each pole by pole number on this sheet. The following information must also be given for each pole:

(1) Quantity
(2) Plan Sheet*
(3) Load Center Pole Identification Number
(4) Roadway Station*
(5) Luminaire Basis of Design
(6) Arm Length
(7) Tilt Angle
(8) Luminaire Type
(9) Mounting Height
(10) Setback
(11) Right or Left Side of Roadway
(12) Operating Voltage
(13) Mounting Type
(14) Finish Color
(15) Pole Cable Distribution Type
(16) Pay Item

* This information should be provided at the earliest phase available. At the latest, it must be provided at the 100% plans phase.

326.6.2 - Luminaire Data Table

Provide a listing of each sign or underdeck luminaire number on this sheet.

326.2.1 - Underdeck Luminaire Data Table

The following information must also be given for each underdeck luminaire:

(1) Quantity
(2) Plan Sheet*
(3) Luminaire Wattage
(4) Load Center Circuit Number
(5) Roadway Station*
(6) Luminaire Basis of Design
(7) Mounting Height
(8) Luminaire Color
(9) Mounting Type
(10) Number of Luminaires Per LED Driver
(11) Number of LED Driver Cabinet
(12) Pay Item Number

* This information should be provided at the earliest phase available. At the latest, it must be provided at the 100% plans phase.

326.2.2 - Sign Luminaire Data Table

The following information must also be given for each sign luminaire:

(1) Sign Number
(2) Structure Number
(3) Luminaire Basis of Design
(4) Load Center Circuit Number
(5) Luminaire Wattage
(6) Roadway Station*
(7) Arm Length
(8) Tilt Angle
(9) Sign Size
(10) Configuration Type
(11) Spacings
(12) Number of LED Drivers and Luminaires
(13) Number of LED Driver Cabinets Per Upright

* This information should be provided at the earliest phase available. At the latest, it must be provided at the 100% plans phase.

Show the illumination design values for average initial intensities and uniformity ratios together with a legend and description of the symbols used on the plan sheets.

326.7.1 - Required Information

Delete sub-notes (7)(a) through (7)(c) and replace with:
(a) Service Point Location
(b) Power Service-Entrance Location stationing and Offset
(c) Voltage and Phases (e.g. 240/480 Volt, Single Phase)

326.8 - Foundation Details Sheet

*Delete the second sentence of the first paragraph.*

327 - Signalization Plans

327.2 - Key Sheet

*Add the following items to the signalization plans assembly list:*

(11) Internally Illuminated Street Name Signs Detail(s) (if required)
(12) Electrical Power Service Detail (if required)

327.5 - General Notes Sheet

*Add the following sentence after last paragraph:*

Coordinate with the maintaining agency of the traffic signal and include the appropriate notes that comply with maintaining agency requirements.

327.6 - Signalization Plan Sheet

327.6.1 - Required Information

*Replace item (7) in the list of signalization plan sheet requirements:*

(7) Electrical service location and proposed electrical service routing.

328 - Intelligent Transportation Systems Plans

*Add the following paragraph:*

The CFX ITS Design Standards establishes guidelines for the preparation of ITS Plans.

[https://www.cfxway.com/doing-business/contractor-resources/](https://www.cfxway.com/doing-business/contractor-resources/)
CFX Document File Naming

Plans Component PDF Files

ProjectNumber-PLANS-XX-COMPONENT-Submittal.pdf

XXX-XXXXA-

PLANS-01-ROADWAY
PLANS-02-SIGNINGMARKING
PLANS-03-SIGNALIZATION
PLANS-04-ITS
PLANS-05-LIGHTING
PLANS-06-LANDSCAPE
PLANS-07-ARCHITECHTURAL
PLANS-08-STRUCTURES
PLANS-09-TOLLFACILITIES
PLANS-10-UTILITYWORK

-Submittal

30, 60, 90, 100, PREBID, BID, AFC, REV#

EXAMPLE: 100% Submittal of Signing and Pavement Markings Plans for Contract 417-134:

417-134-PLANS-02-SIGNINGMARKING-100.pdf
Technical Reports and Memos PDF Files

ProjectNumber-REPORT_NAME-Submittal-Date.pdf

- PrelimDesignReport
- RoadwayDesignNotebook
- CrossSlopeEvaluation
- BridgeConceptMemo
- PavementDesignReport
- BridgeHydraulicsReport
- DrainageReport
- StructuralDesignCalcs
- MiscStructureDesignCalcs
- BridgeLoadRatingMemo
- RoadwayGeotechReport
- StructuresGeotechReport
- SignStructuresGeotechReport
- LightingDesignAnalysis
- TrafficAnalysisReport
- NoiseStudyReport

-Submittal (DRAFT or FINAL)

-Date (mo.da.yr)

EXAMPLE: Final Submittal of Preliminary Design Report for Contract 417-134:

417-134-PrelimDesignReport-FINAL-08.22.18.pdf
CFX File Directory Structure

ProjectNumber

1_Administration
2_CADD
3_Submittals
4_Bidding
5_Construction
6_Permanent_Records
CFX File Directory Structure (Expanded)

ProjectNumber

1_Administration

1.1_Board_Memos

1.2_Contract

  1.2.1_Consultant_Contract
  1.2.2_Supplemental_Agreements
  1.2.3_Scope_of_Services
  1.2.4_Project_Schedule
  1.2.5_Invoices

1.3_Coordination

  1.3.1_Correspondence
  1.3.2_Progress_Meetings
  1.3.3_Meetings
    /Agenda
    /Meeting_Minutes
  1.3.4_InterAgency_Coordination
  1.3.5_Stakeholder_Coordination
  1.3.6_Utility_Coordination
  1.3.7_Design

1.4_Existing_Data

  1.4.1_Traffic_Data
  1.4.2_Crash_Data
  1.4.3_ESAL
  1.4.4_Lane_Closure
  1.5.5_Bridge_Inspection
1.4_Permits

1.5.X_(Permit_Agency)

2_CADD

(FDOT File Structure and Naming Convention)

3_Submittals

3.1_Concepts

3.1.1_Preliminary_Design_Report

3.1.2_Concept_Exhibits

3.1.3_Supporting_Documentation

3.2_30%

3.2.1_Plans

3.2.2_Reports

3.2.3_QC

3.2.4_Review_Comments

3.3_60%

3.3.1_Plans

3.3.2_Reports

3.3.3_QC

3.3.4_Review_Comments

3.4_90%

3.4.1_Plans

3.4.2_Reports

3.4.3_QC

3.4.4_Review_Comments

3.4.5_CADD
3.5_100%
   3.5.1_Plans
   3.5.2_Reports
   3.5.3_QC
   3.5.4_Review_Comments
   3.5.5_CADD

3.6_Pre-Bid
   3.6.1_Plans
   3.6.2_Reports
   3.6.3_QC
   3.6.4_Review_Comments
   3.6.5_CADD

3.7_Bid
   3.7.1_Plans
   3.7.2_Reports
   3.7.3_QC
   3.7.4_Review_Comments
   3.7.5_CADD

4_Bidding
   4.1_Special_Provisions
   4.2_Technical_Specifications
   4.3_Technical_Special_Provisions
   4.4_Addenda
   4.5_Bid_Form
   4.6_Schedule
   4.7_Permits
4.8_Utility_Work_Schedules
4.9_Bid_Review

5_Construction
5.1_AFC
5.2_Revisions
5.3_RFIs
5.4_Shop_Drawings
5.5_Correspondence

6_Permanent_Records
6.1_AFC_Revisions
6.2_As-Builts
6.3_Record_Drawings
6.4_Final_Reports_Memos
6.5_Final_Permits
  6.5.1_Environmental
  6.5.2_Utilities
6.6_Agreements
6.7_Final_CADD
Central Florida Expressway Authority

Record Drawings Guidelines

1. Plan Sheet Preparation
   a. Make all plan updates listed below in the CAD files:
      i. Remove ALL revision clouds
      ii. Remove revision triangles
      iii. Leave revision dates and descriptions on the key sheet
      iv. Leave revision dates and descriptions in the revision block at the bottom left corner of the plan sheets
      v. Incorporate as-built conditions into the plans
         1. Redline hand markups
         2. Redline pdf markups
         3. Fill in final quantities
   b. Stamp all sheets with PDF software (i.e.: Adobe Acrobat or Bluebeam Revu) as described below:
      i. The key sheet stamp shall include the following information
         
         FINAL RECORD DRAWINGS

         CONTRACTOR:
         CEI CONSULTANT:
         SR. PROJECT ENGINEER:
         PROJECT ADMINISTRATOR:
         DATE WORK STARTED:
         FINAL ACCEPTANCE:

         NOTE: INFORMATION AS PRESENTED IN THESE "AS-CONSTRUCTED" RECORD DRAWINGS IS AS REPORTED BY THE GENERAL CONTRACTOR AND/OR THE C.E.I. CONSULTANT. ONLY LIMITED VERIFICATION WAS CONDUCTED BY THE EOR

      ii. All sheets (including the key sheet shall contain the following information

         RECORD DRAWING

         RECORD DRAWING INFORMATION FURNISHED:
         ON:
         BY:
         CONTRACTOR:

      iii. Lock all stamps once placement is complete

2. Submittal
   a. Two electronic copies (CD or DVD)
      i. Include ALL record drawing CADD files
      ii. Include As-built Plans PDF
      iii. Include Record Drawings PDF
      iv. Digital Media Labels including
         1. title “Final Record Drawings”
         2. Road Name / Number
         3. CFX Project Number
         4. Project Description
         5. Record Drawings Date
   b. Two hard copies
      i. Printed on 11” x 17” paper
      ii. Laminated card stock key sheet front cover and blank back cover
      iii. 3-hole punched and bound with screw posts