120 Design Submittals

120.1 General

The design process will require various submittals to transfer technical information and decisions between the Engineer of Record (EOR), certain Department personnel, and functional areas. The Department Project Manager is responsible for the adequacy of the submittals or requests and for the coordination of reviews between the Department and the EOR. Each office head including the District Construction and Maintenance Engineers should assume direct responsibility for assigning reviewers and meeting the review schedules. To the extent practical, the contract scope of work should list the information to be furnished by FDOT functional areas and submittals (number and type) required of the EOR. ***Figure 120.1.1,*** shown on the following page, is a partial list of functional areas with typical submittals and requests.

During the design process, various items of information may be required from different sections or departments. The following is a list of some of those items and their source:

Figure 120.1.1 List of Requests and Contacts
Sheet 1 of 2

A) Planning
Request pavement design (18 Kip ESAL)
Request project traffic data
Request turning movements for intersections
Request updates of project traffic data (as needed)
Railroad contact (Phase I and III)
Plans transmittal letter data (railroad)
Notification that project is in vicinity of a traffic monitoring site

B) Traffic Plans/Traffic Operations
Request turns and counts for intersection design
Notification that project includes milling
Signing & pavement marking plans (Phase I, II, III)
Traffic signal plans (Phase I, II, III) & signal warrant
Lighting plans (Phase I, II) & justification report
Pedestrian and bicycle project traffic
Safety/crash analysis and recommendations
Operational and capacity review of design plans

C) Geotechnical
Request pavement design soil information
Request roadway soil survey
Soils data
Request foundation investigations
Request dynaflect testing
Phase III review, if unsuitable soils exist.
Soils and foundation recommendations
PH and soils resistivity for culvert material selection
Request pavement composition and milling recommendations
Review if any changes are made in alignment, grade or typical section.
Bridge Geotechnical Report

D) Surveying and Mapping
Request survey

E) Drainage
Request grade and high water review
Conceptual drainage plan & assumptions
Bridge Hydraulics Report
Request drainage design
Request final drainage review
Permit review
SWPPP
Erosion Control Plan

F) Maintenance
Pavement design comments
Phase I Plans review & response
Phase II Plans review & response
Phase III Plans review & response

G) Construction
Pavement design comments
Phase I Plans review & response
Phase II Plans review (constructability) & response
Phase III Plans review (biddability) & response
Submit traffic control plan request
Contract time

H) R/W Surveying and Mapping
Submit title search request
Request existing right of way maps
Transmit right of way requirements
Final right of way check
Plans transmittal letter data

I) Utilities
Preliminary (First) contact (Phase I)
Pre-Design conference and contact (Phase II)
Final contact (Phase III)
Horizontal and vertical verification of utilities
Plans transmittal letter data (utilities)
Number of sets of final prints for utility companies

Figure 120.1.1 List of Requests and Contacts Sheet 2 of 2

J) Estimates and Specifications
Preliminary estimate (LRE)
Preliminary estimate (Phase I)
Preliminary estimate (Phase II)
Preliminary estimate (Phase III)
Complete estimate (Phase IV)

K) Right Of Way Department
Project schedule updates as needed
R/W estimates as needed
Pre-Proposal appraisal conference
Field questions from R/W agents as needed
Plans transmittal letter data
Phase I Plans Review (by Appraiser)
Phase II Plans Review (by Appraiser)
Phase III Plans Review (by Appraiser)
Phase IV Plans Review (by Appraiser)

L) FHWA (if Project of Division Interest (PoDI)
Phase I Plans review & response
Phase II Plans review & response
Phase III Plans review & response
Phase IV Plans review & response
Submit for typical section approval
Submit for pavement design approval
Submit Design Exception request letters
R/W review
Submit Proprietary Product Certification Request

M) Value Engineering ($25,000,000+)
Phase I & II reviews

N) Environmental
Contamination Evaluation
SWPPP
Erosion Control Plan
Mitigation Plans
Asbestos-Containing Materials Survey
Phase I Plans review & response
Phase II Plans review & response
Phase III Plans review & response
Phase IV Plans review & response
PD&E Re-evaluation
Project Commitment Record
Preliminary Engineering Report (as applicable)
Approved Environmental Document (as applicable)

O) Materials
Environmental Classifications
Type of Structural Steel (existing)
Existence of Lead-Based Paint

P) Bridge
Phase I, Bridge Analysis, review & response
Phase II Plans review & response
BDR/30% Plans review and response
60% Plans review & response
90% Plans review & response
100% Plans review & response

Q) Public Transportation/Modal Development
Notification that project contains a transit route
Request transit agency contact(s)
Request facility locations and information
Identify any special transit needs
Phase I Plans review & response
Phase II Plans review & response
Phase III Plans review & response
Number of sets of final prints for transit agencies

R) Landscape
Notification of Local Agency for landscape coordination and agreements
Existing Vegetation Inventory and Disposition
Landscape Opportunity Plan or Concept Plan
Soils Analysis, existing and proposed
Irrigation Feasibility Study

Modification for Non-Conventional Projects:
Delete ***FDM 120.1*** above and replace with the following: See ***FDM 301*** for a list of submittal requirements.

120.2 Design Documentation Submittals

Certain engineering processes require the submittal of information to specific Department personnel for the purpose of making timely decisions and confirming project objectives. Submittals will take place as these activities are completed so that issues do not go unresolved before subsequent activities begin. The following are submittals that should take place during initial engineering. Ideally these engineering type submittals are done in lieu of traditional phase plans reviews.

120.2.1 Field Survey Data

Evaluate the following typical field survey data for sufficient breadth and accuracy to complete the proposed design. Bring deficiencies to the attention of the Department.

(1) Design location survey data including horizontal and vertical control, alignments, reference points, utilities, natural and manmade features, and topography or general shape of the terrain.

(2) Digitized aerial survey data, especially for large areas such as drainage maps. Drainage design survey data from site inspection and historical records.

(3) Right of Way and related property (land) survey data, including property owners and acreage.

(4) Geotechnical studies and foundation and soils report, including physical properties and classifications of soils, together with recommendations related to foundations, pavement and drainage design.

(5) Bridge data sheet surveys, channel alignment survey data, and bathymetric data.

120.2.2 Traffic Data

In the development of roadway plans, traffic data is used to justify:

- Number of through lanes,
- Geometric improvements to intersections,
- Traffic signal timings, and
- Pavement design.

The number of through lanes is usually determined during the project development phase, based on Annual Average Daily Traffic (AADT) and factors included in the typical section. Vehicular traffic data shown on the plans Typical Section sheet includes:

- AADT for the current year, opening year, and the design year
- Design hour factor (K is the Department's Standard "K" factor as provided by the State Transportation Statistics Office),
- Directional distribution (D is the percent of two-way peak-hour traffic that occurs in the peak direction), and
- Truck factors (T is the percent that trucks constitute of vehicular traffic) for the peak hour and a 24-hour period.

The source and methods used to produce this data must be documented.

120.2.2.1 Traffic Counts

Intersection improvements and signal timings require additional information on turning volumes. The ***FDOT Project Traffic Forecasting Procedure*** ***(Topic No.: 525-030-120)*** describes the input data required, explains the procedure to forecast turning volumes, and provides examples. A Project Traffic Report will be required. Traffic counts provide input on the number of motor vehicles, bicycles and pedestrians using an intersection. At proposed (non-existing) major intersections, turning volumes are estimated using transportation planning models or other means. Forecasts provide designers the information required to determine the need for turning lanes, turning bay length, signal timings, and pedestrian crossings. Also, the designer establishes right of way requirements based on documented needs to satisfy design year volumes.

120.2.2.2 18 kip Equivalent Single Axle Loads (ESAL)

In pavement design, the designer requires AADT forecasts for the year a project opens to traffic and for the design year. AADT, together with percent trucks (24-hour period) and other factors used by the Department, provides information on the pavement loadings (18kip ESAL) used in pavement design. The FDOT Project Traffic Forecasting Procedure provides additional information.

120.2.3 Typical Section Package

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

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

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

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

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

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

120.2.3.1 Approval Process

The typical section package will be approved as part of the Project Development & Environment (PD&E) process. Typical section package preparation and coordination between the responsible PD&E Engineer of Record (EOR) and the District Design Engineer typically occurs during the development of project alternatives prior to the preferred alternative selection. The PD&E EOR will prepare, seal, and submit the typical section package for concurrence. Typical section concurrence signatures are obtained

after the preferred alternative is selected. Include a copy of the approved typical section package as part of the PD&E Final Preliminary Engineering Report.

For projects that do not contain a PD&E phase or have significantly changed during the design process, the typical section package is prepared, sealed and submitted by the Design EOR. Typical section package concurrence signatures should be obtained prior to the final engineering process.

120.2.3.2 Cover Sheet

The Cover Sheet contains the following:

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

(2) Project location map: See ***FDM 302.4*** for requirements.

(3) PD&E or Design EOR Signature Block: See ***FDM 130*** for requirements.

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

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

(6) Concurrence of the typical section package by the FHWA Transportation Engineer is required on Projects of Division Interest (PoDI). Refer to ***FDM 128*** for additional information concerning PoDIs.

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

(8) Context Classification Concurrence Block: Context classification is determined by FDOT district staff on all projects. Coordinate with the FDOT Project Manager to obtain context classification(s). Concurrence from the District Intermodal Systems Development (ISD) Manager or Planning and Environmental Management

Administrator for the context classification assigned to each typical section is required.

120.2.3.3 Typical Section Sheet

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

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

Provide Typical Section Sheets for intersecting roadways when work of significant length is required.

Provide Typical Section Sheets for each proposed electronic toll point on toll facilities. These typical sections are intended to represent the required 100 feet of loop pavement underneath the toll gantry.

The Proposed Typical Section Sheet contains the following:

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

(2) Criteria: Indicate the type of construction.

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

(4) Traffic Data: provide the following,

  (a) Current Year and AADT

  (b) Estimated Opening Year and AADT

  (c) Estimated Design Year and AADT

  (d) K, D, T (24 hour) factors.

  (e) Design Year T factor

  (f) Design Speed and Posted Speed

(5) Roadway Typical Section Drawing: provide the following,

(a) Name of Roadway and Mile Post Limits (station limits or street names may be used when Mile Post data is not available).

(b) Centerline Construction and/or Baseline Survey (label)

(c) Lanes (label type, dimension width, show cross slope)

(d) R/W Line (graphically show, label and dimension from centerline const.)

(e) Shoulder (label and dimension width, show cross slope, paved shoulder is dimensioned and labeled separately)

(f) Curb (graphically show curb, label curb type)

(g) Median (graphically show median, dimension width, show slopes)

(h) Slopes (label and dimension)

(i) Border Width (label and dimension for new construction / reconstruction)

(j) Ditches (show typical front slope and typical back slope, dimension typical ditch width and depth, and label)

(k) Natural Ground Line (graphically show and label)

(l) Pavement and Roadbed (graphically show)

(m) Barriers (graphically show, dimension, and label)

(n) Sidewalk or Shared Use Path (graphically show, dimension width, and label)

(6) Bridge Typical Section Drawing: provide the following,

(a) Bridge Description w/ Crossing Information

(b) Centerline Construction and/or Baseline Survey (label)

(c) Lanes (label type, dimension width, show cross slope)

(d) R/W Line (graphically show, label and dimension from centerline const.)

(e) Shoulder (label and dimension width, show cross slope)

(f) Gutter (graphically show, dimension width)

(g) Median (graphically show, dimension width)

(h) Barriers (graphically show including railing, dimension width, and label)

Sidewalk or Shared Use Path (graphically show, dimension width, and label)

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

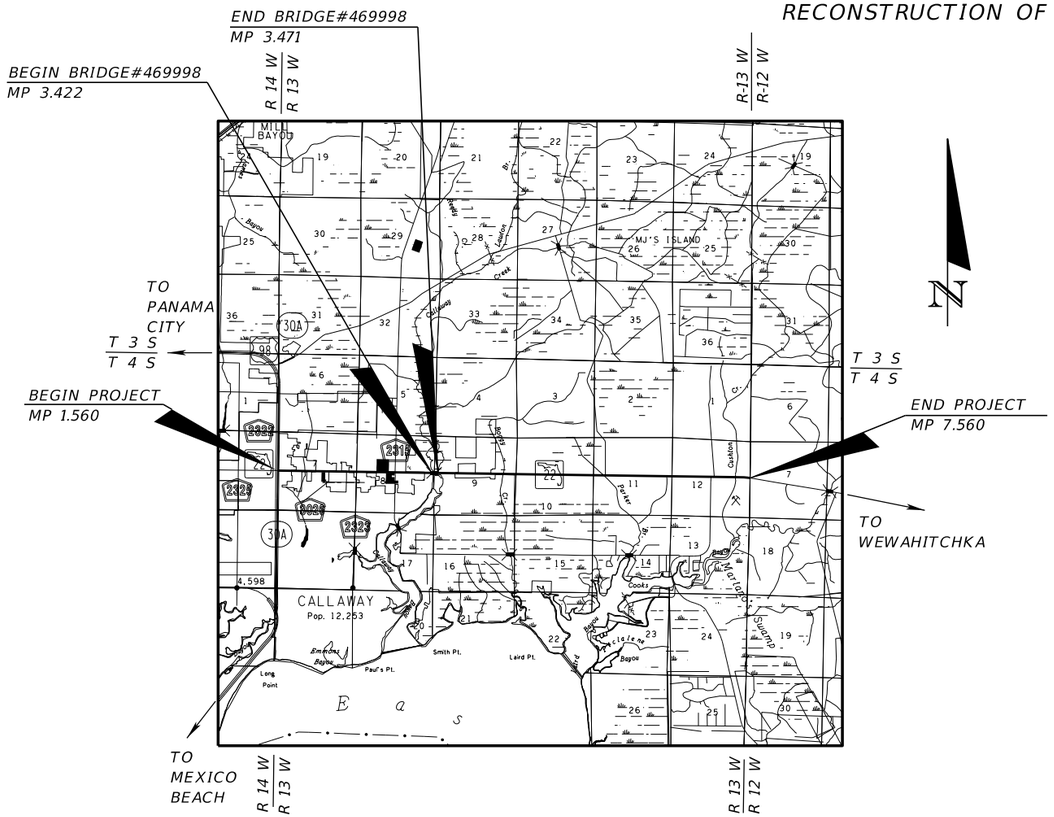
TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID 123456-1-52-01

BAY COUNTY (46080)

STATE ROAD NO. 22 (WEWA HWY)

RECONSTRUCTION OF SR 22 FROM 2-LANE TO 4-LANE



APPROVED BY:

LEIA I. CROSSWELL
LICENSE
No 99995
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Leia I. Crosswell
2017.10.09 16:40:48 - 4'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301
CERTIFICATE OF AUTHORIZATION: 12345
LEIA I. CROSSWELL, P.E. NO. 99995

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

TYPICAL SECTION PACKAGE

SHEET NO	SHEET DESCRIPTION
1	COVER SHEET
2	TYPICAL SECTION NO. 1
3	TYPICAL SECTION NO. 2
4	TYPICAL SECTION NO. 3

Exhibit 120-1
Date: 1/1/19

TYPICAL SECTION CONCURRENCE

Lan B. Solo 2017.10.11 08:11:45 - 4'00'	J.T. Hutt 2017.10.10 15:11:45 - 4'00'	
FDOT DISTRICT DESIGN ENGINEER	FDOT DISTRICT STRUCTURES DESIGN ENGINEER	FHWA TRANSPORTATION ENGINEER

DESIGN SPEED AND POSTED SPEED CONCURRENCE:		CONTEXT CLASSIFICATION CONCURRENCE:
Garth Paul 2017.10.10 14:10:15 - 4'00'	Lan B. Solo 2017.10.11 08:12:33 - 4'00'	Rey-Rey Olay 2017.10.10 12:01:30 - 4'00'
FDOT DISTRICT TRAFFIC OPERATIONS ENGINEER	FDOT DISTRICT DESIGN ENGINEER	FDOT DISTRICT INTERMODAL SYSTEMS DEVELOPMENT MANAGER

SHEET NO.
1

8/24/2018 8:42:34 AM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	( )	C3C : SUBURBAN COMM.
( )	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
(X)	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : L.A. FACILITY	( )	N/A : FL GREENBOOK

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

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

CRITERIA

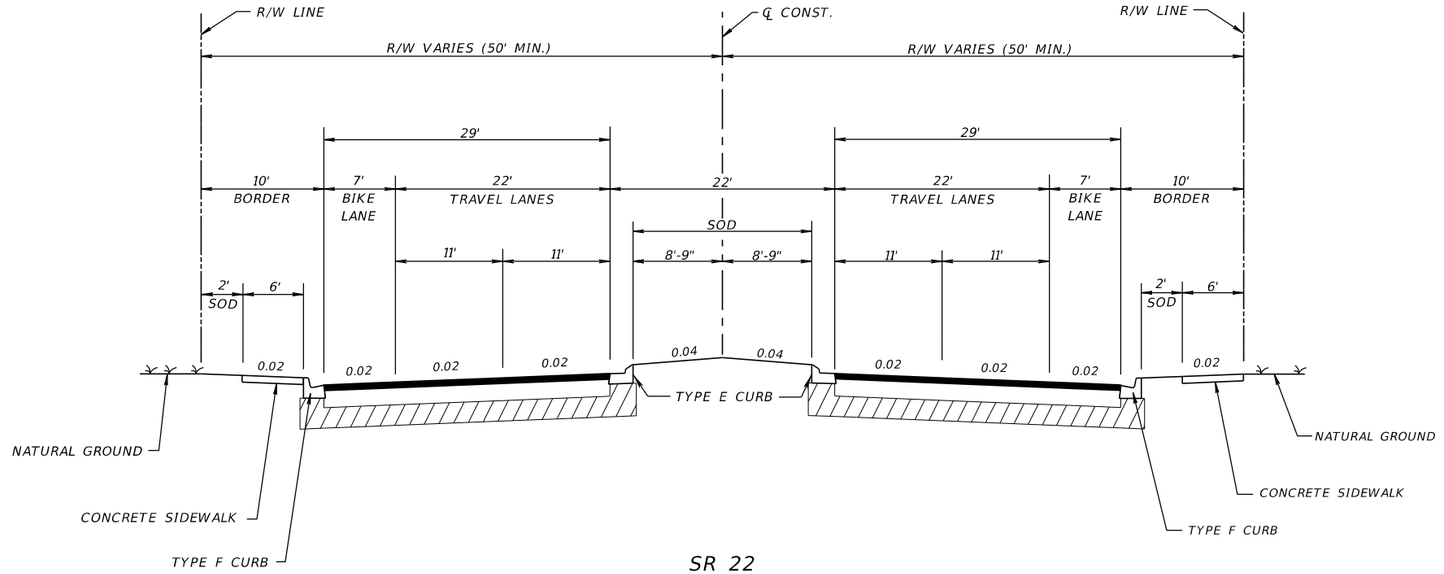
- (X) NEW CONSTRUCTION / RECONSTRUCTION
- ( ) RESURFACING (LA FACILITIES)
- ( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN VARIATIONS

1. BORDER WIDTH

TYPICAL SECTION No. 1



SR 22
MP 1.560 TO MP 3.422
MP 3.471 TO MP 3.725

NOT TO SCALE

TRAFFIC DATA

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

Exhibit 120-2
Date: 1/1/19

FINANCIAL PROJECT ID	SHEET NO.
123456-1-52-01	2

9/2/2018 1:40:14 PM

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	( )	C3C : SUBURBAN COMM.
( )	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
(X)	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : L.A. FACILITY	( )	N/A : FL GREENBOOK

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

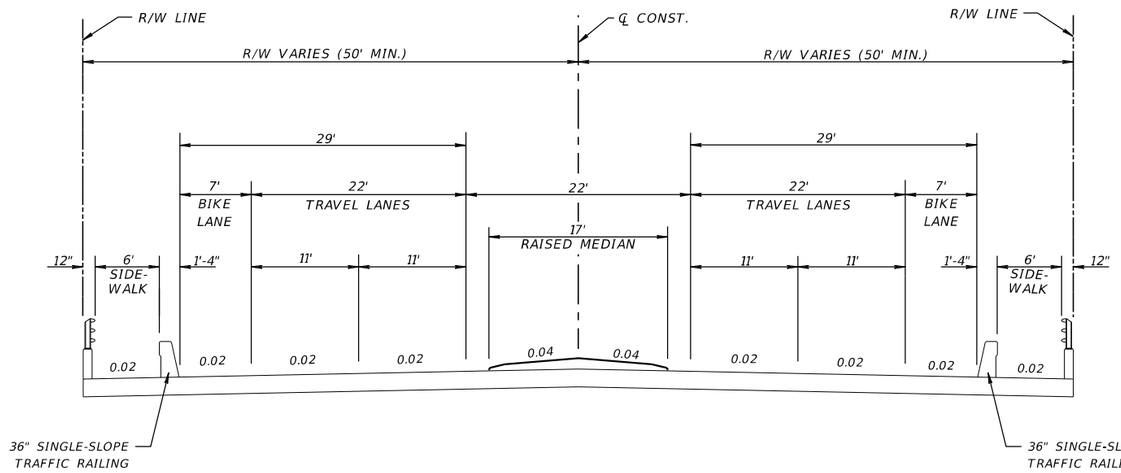
( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
(X) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

CRITERIA

(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 2



SR 22 OVER CALLAWAY BAYOU
MP 3.422 TO MP 3.471

NOT TO SCALE

TRAFFIC DATA

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

Exhibit 120-3
Date: 1/1/19

FINANCIAL PROJECT ID	SHEET NO.
123456-1-52-01	3

10/19/2018 8:54:24 AM

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	( )	C3C : SUBURBAN COMM.
(X)	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
( )	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : L.A. FACILITY	( )	N/A : FL GREENBOOK

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

- ( ) NATIONAL HIGHWAY SYSTEM
- ( ) STRATEGIC INTERMODAL SYSTEM
- (X) STATE HIGHWAY SYSTEM
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ACCESS CLASSIFICATION

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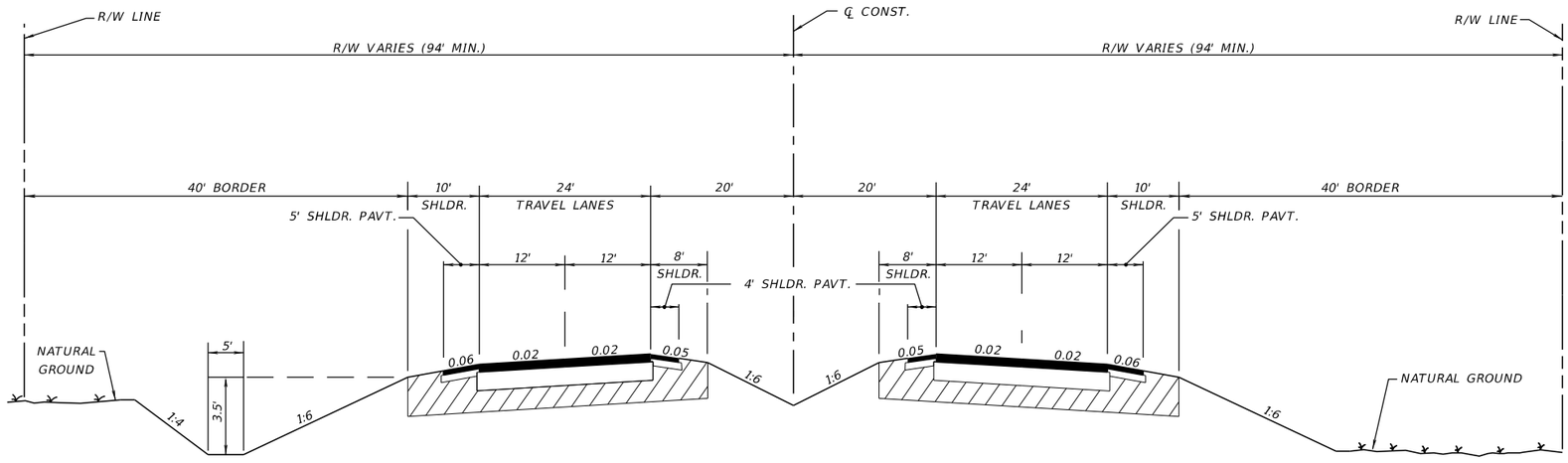
- ( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
- ( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 - BOTH MEDIAN TYPES

CRITERIA

- (X) NEW CONSTRUCTION / RECONSTRUCTION
- ( ) RESURFACING (LA FACILITIES)
- ( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 3



SR 22
MP 3.725 TO MP 7.560

NOT TO SCALE

TRAFFIC DATA

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ESTIMATED DESIGN YEAR = 2040 AADT = 30600
K = 6% D = 55% T = 2% (24 HOUR)
DESIGN HOUR T = 1%
DESIGN SPEED = 60 MPH
POSTED SPEED = 55 MPH

Exhibit 120-4
Date: 1/1/19

FINANCIAL PROJECT ID	SHEET NO.
123456-1-52-01	4

10/19/2018 9:02:16 AM

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120.2.4 Preliminary Drainage Design

On projects where the drainage design is a critical element the following items should require a preliminary submittal:

(1) Determination of water elevations affecting the roadway grade. These include base clearance water elevations and design flood elevations.

(2) Pond Siting Report

(3) Documentation of preliminary drainage coordination with permitting agencies

(4) Information that is essential to proper evaluation of drainage design concepts such as seasonal high ground water, soil types, existing cross drain peak design stages, historical pavement failure, floodplain elevation, present water elevations, and drainage areas.

(5) Documentation of coordination with the Landscape Architect and District Maintenance Engineer regarding aesthetics, including the accommodation of existing and proposed trees, particularly where additional R/W or Design Exceptions or Design Variations may be required.

120.2.5 Preliminary Geometry and Grades

On projects where connections to the facility make grades a critical element, back of sidewalk profiles, project profile grades, determination of water elevations affecting the roadway grade, and driveway and side street geometry should require a preliminary submittal. The Department may require the designer to present the project geometry and grade to a geometry and grade technical review team to encourage productive dialogue and proper communication regarding these design issues. If a bridge exists within the project limits, the early input of the structural designer as to approach grades and clearance needs should be coordinated to ensure proper bridge design.

120.2.6 Preliminary Traffic Control Plan

On projects where the traffic control plan is a critical element the following items should require a preliminary submittal.

(1) Typical sections of each construction phase with information that is essential to proper evaluation of each construction phase; e.g., location and nature of proper construction drainage; regulatory speed; location of work zone; proposed traffic control devices; number, width and location of maintained traffic; maximum drop-off; maintenance of existing lighting.

(2) Documentation addressing possible innovative construction techniques; e.g., need for temporary detours, hazardous material excavation, temporary structures.

(3) Documentation of coordination with the local community; e.g., city and county transportation engineers, businesses, police, hospitals, civic centers or arena operations, fire department, schools, mass transit.

(4) When a temporary bridge is used, the designer must coordinate with the State Bridge Evaluation Engineer in Tallahassee (Office of Maintenance) to ensure that a detour route for overweight vehicles is included in the plans. If no detour route is available, the temporary bridge may have to be designed to support multi-trip overweight vehicles.

120.2.7 Pavement Selection and Design

The pavement selection and design should be completed as early in the process as possible. The Rigid and Flexible Pavement Design Manuals are available through ***Pavement Management Publications***.

120.2.8 Preliminary Utilities

On projects where utility coordination is a critical element the following early involvement activities should be required.

(1) Prior to Phase I plans submittal, early involvement can be obtained by coordinating a review of the utility information in the topographic survey. This review may be accomplished by distribution of the topographic survey to all Utility Agency/Owners (UAOs) through the District Utility Office for mark-ups and confirmation of existing facilities.

(2) Once the designer has reviewed the early topographic survey mark-ups a meeting should be held with the UAOs, District Utility Office and the designer to discuss errors, omissions, and future plans of the utilities already identified within the corridor. This will allow the designer the ability to prioritize which utilities will ultimately impact the design.

120.3 Structures Submittals

Structures design elements go through decision-making reviews at various stages of the design as listed below:

120.3.1 Coordination of Structural Design - (Bridges and Retaining Walls)

Requests for structural design should include roadway plan and profile sheets showing horizontal and vertical alignment and cross sections within 500 feet of each end of the bridge or ends of retaining walls. Horizontal curvature that is on or near the end of the bridge or retaining wall must be shown. Nonstandard superelevation transition details or other special profiles must be included if any part or all of the transition is on the bridge or wall. The approved proposed typical section is required.

Provisions for access to property near the end of bridges and adjustments to avoid costly right of way takings should be resolved.

120.3.2 Bridges

Bridge design begins when the Phase I bridge geotechnical report is complete and proceeds on a schedule which allows simultaneous review of the final (90%) bridge plans and the Phase III roadway plans. All structures design work is coordinated through the District Structures Design Engineer or the State Structures Design Office in the Central Office, depending on the category or complexity of the structure. Determine the typical section of the facility crossing, the horizontal and vertical clearance requirements, and the profile grades prior to beginning structures design. For complete details and requirements for structural designs and plans preparation, the reader is referred to ***FDM 121*** and the Structures Detailing Manual issued by the State Structures Design Office.

Generally, the completion and review of bridge designs are accomplished in the following phases:

(1) BDR/30% Structures Plans

(2) 60% Structures Plans

  (a) (Foundation submittal for all Structures and full submittal)

  (b) (Full submittal for Category 2 or unusual structures only)

(3) 90% Structures Plans

(4) 100% Structures Plans

These reviews should be coordinated with the phase reviews of the roadway plans. Submit the latest set of structural plans with the Phase II roadway plans submittal. This joint submittal at Phase II roadway plans review is to ensure that roadway and bridge

structures plans are consistent; i.e., widths, superelevation transitions, vertical and horizontal alignment, and work zone traffic control agree. The precise number and type of plans submittals depends on the complexity of the design and the sensitivity of the project. Each submittal must include written responses to the comments received on the previous submittal.

Modification for Non-Conventional Projects:
Delete ***FDM 120.3.2*** above and replace with the following: **120.3.2 Bridges** For bridge submittal requirements see RFP and ***FDM 121.***

120.3.3 Other Structural Submittals and Reviews

In addition to bridge plans, structures plans may include retaining walls, sheet piling, noise barriers, box or three-sided culverts, pedestrian overpasses, temporary bridges, and special structural appurtenances. Special structural appurtenances that include transit related furnishings and amenities would require review by the local transit agency.

For projects where bridges and other structures plans are involved, preliminary and final plan submittals (usually along with bridge plans) should be handled according to the instructions for structures plans submittals covered in ***FDM 121*** and ***FDM 262***.

For projects where retaining walls are required along with roadway plans (no bridge in the project), follow the procedure outlined in ***FDM 262***. The submittal of detailed control plans should occur as early in the design process as possible.

120.4 Plans Phase Reviews

The number of submittals and phase reviews is determined on a project-by-project basis and defined in the scope. Submittals allow functional areas to review the development of the project as contained in the scope.

Formal plans phase review requirements are covered in the District Quality Control Plan. Reviews should include Department personnel that can assist in making timely decisions and confirm that the requirements have been met for their discipline. Reviews are driven by the engineering process and occur when input or a decision is needed. Some of these activities are discussed in ***FDM 120.2***. Reviews are complete when the comments from

all the various offices have been resolved and have been documented as required in ***FDM 128***.

Constructability and biddability reviews by the District Construction Office will be included at appropriate stages of the phase review process. Procedures for these reviews are provided in the ***Construction Project Administration Manual***.

Minor projects, such as resurfacing, typically have two plans phase reviews. The two reviews consist of a decision-making phase review on the scope and intent of the project and a final plans phase review for constructability and biddability. One of these will be an on-site review.

On complex projects plans phase reviews may be required at the Phase I, II and III stages and a final check at Phase IV. Two on-site reviews are typically required with one of these held early in the initial engineering phase.

FDM 301.2 outlines, in detail, the sequence for contract plans preparation and assembly required by the several design phase submittals. Also included in the chapter is information required to be presented on various plan sheets included with each submittal.

When the plans are in compliance with all phase review requirements and are considered final, they are to be submitted in accordance with the process described in ***FDM 131***.

Modification for Non-Conventional Projects:
Delete ***FDM 120.4*** above and replace with the following: **120.4 Plans Phase Reviews** ***FDM 301.3*** outlines, in detail, the sequence for contract plans preparation and assembly required by the design phase submittals.