

Chapter 16

Design Submittals

16.1	General	16-1
16.2	Design Documentation Submittals	16-4
16.2.1	Field Survey Data	16-4
16.2.2	Project Traffic.....	16-5
16.2.3	Typical Section Package.....	16-6
16.2.4	Preliminary Drainage Design	16-10
16.2.5	Preliminary Geometry and Grades.....	16-10
16.2.6	Preliminary Traffic Control Plan	16-11
16.2.7	Pavement Selection and Design.....	16-11
16.2.8	Preliminary Utilities	16-11
16.3	Structures Submittals	16-12
16.3.1	Coordination of Structural Design - (Bridges and Retaining Walls)	16-12
16.3.2	Bridges.....	16-12
16.3.3	Other Structural Submittals and Reviews	16-13
16.4	Plans Phase Reviews	16-14
Exhibits		
Exhibit 16-A	List of Requests and Contacts	16-2
Exhibit 16-B	Typical Section Package.....	16-15

THIS PAGE LEFT BLANK INTENTIONALLY

Chapter 16

Design Submittals

16.1 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 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. **Exhibit 16-A** 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:

Exhibit 16-A List of Requests and Contacts
Sheet 1 of 2

A) Planning

Request pavement design (18 Kip ESAL)
Request project traffic
Request turning movements for intersections
Request updates of project traffic (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

Exhibit 16-A 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 not exempt)

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 exception request letters
R/W review

M) Value Engineering (\$2,000,000+)

Phase I & II reviews

N) Environmental

Hazardous waste determination
SWPPP
Erosion Control Plan
Mitigation Plans

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

16.2 Design Documentation Submittals

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

16.2.1 Field Survey Data

The following are typical field survey data, which should be evaluated by the designer for sufficient breadth and accuracy to complete the proposed design.

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.
3. Drainage design survey data from site inspection and historical records.
4. Right of Way and related property (land) survey data, including property owners and acreage.
5. Geotechnical studies and foundation and soils report, including physical properties and classifications of soils, together with recommendations related to foundations, pavement and drainage design.
6. Bridge data sheet surveys, channel alignment survey data and bathymetric data.

16.2.2 Project Traffic

In the development of roadway plans, project traffic is primarily used to justify the 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 Average Annual Daily Traffic (AADT) and factors included in the typical section. Vehicular traffic data provided in the plans typical section includes AADT for the current year, opening year and the design year. Also included are the design hour factor (K is the proportion of AADT occurring during the 30th highest hour of the year), the 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.

Intersection improvements and signal timings require additional information on turning volumes. The ***FDOT Project Traffic Forecasting Procedure*** describes the input data required, explains the procedure to forecast turning volumes, and provides examples. A Project Traffic Report may be required. Manual and mechanical counts provide input on the number of vehicles and pedestrians using an intersection. At proposed (nonexisting) 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.

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 used in pavement design. The ***FDOT Project Traffic Forecasting Procedure*** provides additional information.

16.2.3 Typical Section Package

All projects that add or alter cross section elements, and all resurfacing projects, require the preparation and concurrence of a typical section package.

The typical section package shall be prepared and sealed by the responsible engineer.

The typical section package is the instrument for formal review and concurrence of the proposed project cross sectional elements by the appropriate FDOT District Design Engineer. Review and concurrence of the typical section package by the FHWA Transportation Engineer is required on projects that have FHWA oversight (see **Chapter 24** of this volume for determination of FHWA oversight).

The purpose of the typical section package review and approval process is to:

1. Establish typical transverse geometry
2. Consider safety related issues
3. Ensure compatibility between the bridge typical section and the roadway typical section

The typical section package consists of a Project Controls Sheet and Project Identification/ Proposed Typical Section Sheet. The Project Identification/ Proposed Typical Section Sheet should not be confused with the Typical Section Plan Sheet, which is part of the Contract Plans Set and is discussed in **Volume II, Chapter 6**. The Project Controls Sheet contains the project data, which serves as a basis for selecting criteria and establishing project standards for cross-sectional elements. The Project Identification/Proposed Typical Section Sheet contains: data which uniquely identifies the project; a detail of the proposed typical cross section with critical dimensions and cross sectional elements labeled; and signature blocks.

Usually, Project Identification/ Proposed Typical Section Sheets will be prepared for the main roadway and bridges. However, additional Project Identification/Proposed Typical Section Sheets:

1. **Shall** be required if:
 - a. A change in the number of through lanes occurs.
 - b. Flush shoulders change to curbing or vice versa.

- c. A crossroad which may affect a structure exists.
 - d. Major work of significant length is being done on an intersecting roadway.
2. **May** be required if a change in design speed occurs within the project limits.

The proposed typical sections for roadway and bridges are to be submitted by the responsible engineer for concurrence by the District Design Engineer. Coordination with the District Structures Design Engineer is also required on all bridge typical sections. The roadway and bridge typical sections shall be submitted together to ensure compatibility.

The typical section package for both roadway and bridges shall be approved as part of the Project Development & Environmental (PD&E) process. Typical section package preparation, and coordination between the responsible PD&E engineer and the District Design Engineer, must occur during the development of project alternatives prior to preferred alternative selection. The responsible PD&E engineer shall prepare, seal and submit the typical section package for concurrence. Typical section package concurrence by the District Design Engineer shall be obtained after the preferred alternative is selected. A copy of the approved typical section package shall be included as part of the PD&E Final Preliminary Engineering Report.

For projects that do not contain a PD&E phase, the typical section package shall be prepared, sealed and submitted by the responsible engineer for concurrence by the District Design Engineer. The typical section package should be concurred with prior to the final engineering process.

The Engineer of Record must coordinate with the District Design Engineer, the District Traffic Operations Engineer, and the responsible PD&E engineer to discuss the anticipated posted speed. The selected design speed shall be jointly approved by the District Design Engineer and the District Traffic Operations Engineer. This joint approval shall be documented on the Typical Section Data Sheet (see **Exhibit 16-B, Sheet 1 of 6**).

Exhibit 16-B contains example typical section package sheets. The following is an outline of the information which is required as part of the typical section package submittal. This information is critical for proper evaluation by the District Design Engineer. Missing information may require a resubmittal of the typical section package.

The following information is required on the project controls sheet:

1. Financial Project ID
2. County (and Section)

3. Project Description
4. Functional Classification
5. Highway System
6. Access Classification
7. Traffic Data (AADT, for Current, Opening and Design Year, Design Speed, Posted Speed; K, D, and T Factors)
8. Potential Exceptions and Variations related to the typical section elements
9. List Major Structures Requiring Independent Structures Design (including location and description)
10. List Major Utilities within project corridor
11. List other information pertinent to the design of the project

The following information is required on the project identification/proposed typical section sheet:

Project Identification:

1. Financial Project ID
2. State Project No. (if assigned)
3. Federal Aid Project No. (if assigned)
4. Work Program Item (if assigned)
5. Road Designation
6. County Name (and Section)
7. Limits (In Milepost)
8. Project Description

Proposed Roadway Typical Section Drawing:

1. Design Speed
2. Limits (station limits of the typical section shown if available)
3. Lanes (dimension width, show cross slope of each lane, label bike and HOV lanes)
4. R/W Line (graphically show, label and dimension from centerline const.)
5. Shoulder (dimension width, show cross slope, paved shoulder is dimensioned and labeled separately)

6. Curb (graphically show curb, label curb type)
7. Median (dimension width, show slopes, graphically show whether median is typically depressed or raised)
8. Centerline Construction and/or Baseline Survey (graphically show and label)
9. Profile Grade Line (label)
10. Slopes (dimension and label)
11. Border Width (dimension and label for new construction)
12. Ditches (show typical front slope and typical back slope, dimension typical ditch width and depth, and label)
13. Natural Ground Line (graphically show and label)
14. Pavement and Roadbed (graphically show)
15. Barriers (graphically show, dimension, and label)
16. Sidewalk (graphically show, dimension, and label)

Proposed Structure Typical Section Drawing:

1. Design Speed
2. Bridge Description w/ Crossing Information
3. Lanes (dimension widths, and show cross slope of each lane, label bike or HOV lanes)
4. R/W Line (graphically show, label and dimension from centerline const.)
5. Shoulder (dimension, show cross slope, and label)
6. Gutter (dimension width, and graphically show)
7. Median (dimension width, show slopes, graphically show whether median is typically depressed or raised)
8. Centerline Construction and/or Baseline Survey (graphically show and label)
9. Bridge Deck (graphically show, dimension)
10. Profile Grade Line (label)
11. Barriers (graphically show including railing, dimension width, and label)
12. Sidewalk (graphically show, dimension width, and label)

The typical section package sheets are in the FDOT Engineering CADD Systems Software.

16.2.4 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, flood plain elevation, present water elevations, drainage areas, etc.

16.2.5 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 Districts 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.

16.2.6 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 such as: 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; need for temporary detours, hazardous material excavation, temporary structures, etc.
3. Documentation of coordination with the local community: i.e., city and county transportation engineers, businesses, police, hospitals, civic centers or arena operations, fire department, schools, mass transit, etc.

16.2.7 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 the Maps and Publications Sales Office.

16.2.8 Preliminary Utilities

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

1. Before 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.

16.3 Structures Submittals

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

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

All 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 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.

16.3.2 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. A typical section of the facility crossing, horizontal and vertical clearances required and the profile grades shall be determined prior to beginning structures design. For complete details and requirements for structural designs and plans preparation, the reader is referred to **Chapter 26** of this volume 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)
 - b. (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. The latest set of structural plans shall be submitted 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/or the sensitivity of the project. Each submittal shall include written responses to the comments received on the previous submittal.

16.3.3 Other Structural Submittals and Reviews

In addition to bridge plans, structures plans may include retaining walls, sheet piling, sound 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 **Chapters 26** and **30** of this volume.

For projects where retaining walls are required along with roadway plans only (no bridge in the project), the Engineer of Record shall follow the procedure outlined in **Chapter 30** of this volume. The submittal of detailed control plans should occur as early in the design process as possible.

Where the District Roadway Office cannot carry out the structural review or verify the review as proper by a consultant, such review may be requested from the District Structures Design Office or the State Structures Design Office.

16.4 Plans Phase Reviews

The number of submittals and phase reviews shall be determined on a project-by-project basis and shall be 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. Ideally, reviews should be driven by the engineering process and should occur when there is a need for input or a decision to complete a critical activity before progressing with the design. Some of these activities are discussed in **Section 16.2** of this chapter. Reviews are complete when the comments from all the various offices have been resolved and have been documented as required in **Chapter 24** of this volume.

Constructability and biddability reviews by the District Construction Office shall be included at appropriate stages of the phase review process. Procedures for these reviews are provided in the **Construction Project Administration Manual (Topic No. 700-000-000)**.

Minor projects, such as resurfacing, should typically have two plans phase reviews. The two reviews should consist of a decision-making phase review on the scope and intent of the project and a final plans phase review for constructability/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 will be required. Generally, one of the site reviews is held early in the initial engineering phase.

Section 2.3 of **Volume II** 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 **Chapter 20** of this volume.

**Exhibit 16-B Typical Section Package
 Sheet 1 of 6**

PROJECT IDENTIFICATION																																									
FINANCIAL PROJECT ID _____ COUNTY (SECTION) _____																																									
PROJECT DESCRIPTION _____																																									
PROJECT CONTROLS																																									
<p align="center"><u>FUNCTIONAL CLASSIFICATION</u></p> <p align="center"> <input type="checkbox"/> RURAL <input type="checkbox"/> URBAN <input type="checkbox"/> FREEWAY/EXPWY. <input type="checkbox"/> MAJOR COLL. <input type="checkbox"/> PRINCIPAL ART. <input type="checkbox"/> MINOR COLL. <input type="checkbox"/> MINOR ART. <input type="checkbox"/> LOCAL </p>	<p align="center"><u>HIGHWAY SYSTEM</u></p> <p>Yes No</p> <p><input type="checkbox"/> <input type="checkbox"/> NATIONAL HIGHWAY SYSTEM</p> <p><input type="checkbox"/> <input type="checkbox"/> FLORIDA INTRASTATE HIGHWAY SYSTEM</p> <p><input type="checkbox"/> <input type="checkbox"/> STRATEGIC INTERMODAL SYSTEM</p> <p><input type="checkbox"/> <input type="checkbox"/> STATE HIGHWAY SYSTEM</p> <p><input type="checkbox"/> <input type="checkbox"/> OFF STATE HIGHWAY SYSTEM</p>																																								
<p align="center"><u>ACCESS CLASSIFICATION</u></p> <p> <input type="checkbox"/> 1 - FREEWAY <input type="checkbox"/> 2 - RESTRICTIVE w/Service Roads <input type="checkbox"/> 3 - RESTRICTIVE w/660 ft. Connection Spacing <input type="checkbox"/> 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing <input type="checkbox"/> 5 - RESTRICTIVE w/440 ft. Connection Spacing <input type="checkbox"/> 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing <input type="checkbox"/> 7 - BOTH MEDIAN TYPES </p>	<p align="center"><u>TRAFFIC</u></p> <table style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td align="center">YEAR</td> <td align="center">AADT</td> <td></td> <td></td> </tr> <tr> <td>CURRENT</td> <td align="center">_____</td> <td align="center">_____</td> <td></td> <td></td> </tr> <tr> <td>OPENING</td> <td align="center">_____</td> <td align="center">_____</td> <td></td> <td></td> </tr> <tr> <td>DESIGN</td> <td align="center">_____</td> <td align="center">_____</td> <td></td> <td></td> </tr> </table> <p align="right"><u>DISTRIBUTION</u></p> <table style="width:100%; border-collapse: collapse;"> <tr> <td>DESIGN SPEED</td> <td align="center">_____</td> <td align="center">K</td> <td align="center">%</td> </tr> <tr> <td>POSTED SPEED</td> <td align="center">_____</td> <td align="center">D</td> <td align="center">%</td> </tr> <tr> <td></td> <td></td> <td align="center">T₂₄</td> <td align="center">%</td> </tr> </table> <p align="center">DESIGN SPEED APPROVALS</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td align="center">_____</td> <td align="center">DATE</td> </tr> <tr> <td align="center">DISTRICT DESIGN ENGINEER</td> <td></td> </tr> <tr> <td align="center">_____</td> <td align="center">DATE</td> </tr> <tr> <td align="center">DISTRICT TRAFFIC OPERATIONS ENGINEER</td> <td></td> </tr> </table>		YEAR	AADT			CURRENT	_____	_____			OPENING	_____	_____			DESIGN	_____	_____			DESIGN SPEED	_____	K	%	POSTED SPEED	_____	D	%			T ₂₄	%	_____	DATE	DISTRICT DESIGN ENGINEER		_____	DATE	DISTRICT TRAFFIC OPERATIONS ENGINEER	
	YEAR	AADT																																							
CURRENT	_____	_____																																							
OPENING	_____	_____																																							
DESIGN	_____	_____																																							
DESIGN SPEED	_____	K	%																																						
POSTED SPEED	_____	D	%																																						
		T ₂₄	%																																						
_____	DATE																																								
DISTRICT DESIGN ENGINEER																																									
_____	DATE																																								
DISTRICT TRAFFIC OPERATIONS ENGINEER																																									
<p align="center"><u>CRITERIA</u></p> <p> <input type="checkbox"/> NEW CONSTRUCTION / RECONSTRUCTION <input type="checkbox"/> RRR INTERSTATE / FREEWAY <input type="checkbox"/> RRR NON-INTERSTATE / FREEWAY <input type="checkbox"/> TDLC / NEW CONSTRUCTION / RECONSTRUCTION <input type="checkbox"/> TDLC / RRR <input type="checkbox"/> MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK) (OFF-STATE HIGHWAY SYSTEM ONLY) </p>																																									
LIST ANY POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION ELEMENTS:																																									
LIST MAJOR STRUCTURES LOCATION/DESCRIPTION - REQUIRING INDEPENDENT STRUCTURE DESIGN:																																									
LIST MAJOR UTILITIES WITHIN PROJECT CORRIDOR:																																									
LIST OTHER INFORMATION PERTINENT TO DESIGN OF PROJECT:																																									

Exhibit 16-B, Sheet 2 of 6

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 000002-1-32-01 FEDERAL AID PROJECT NO. FEDERAL FUNDS COUNTY NAME HILLSBOROUGH

SECTION NO. 12345 ROAD DESIGNATION SR 99 LIMITS/MILEPOST (MP 7.381 TO MP 10.535)

PROJECT DESCRIPTION MULTILANE RECONSTRUCTION OF SR 99 FROM CR 239 (CALHOUN BLVD.) TO I-10

PROPOSED ROADWAY TYPICAL SECTION

The diagram illustrates a proposed roadway typical section with two configurations based on stationing:

- Configuration 1 (Left):** For stations 250+38.00 to 416+91.12. It features a 12' border, a 28' total width, and a 24' travel lane width. The travel lane is divided into a 12' lane, a 4' bike lane, and another 12' lane. It includes a 5' shoulder (S/W), a 0.02% slope, and a curb & gutter (Type F). The design speed is 45 mph.
- Configuration 2 (Right):** For stations 416+91.12 to 416+91.12. It features a 22' total width and an 8'-9" travel lane width. It includes a 0.04% slope and a curb & gutter (Type E). The design speed is 45 mph.

DESIGN SPEED = 45 mph
 STA. 250+38.00 TO STA. 416+91.12

APPROVED BY: (Engineer of Record Printed Name)	FDOT CONCURRENCE Signature Block _____ Printed Name _____ FDOT District Design Engineer	FHWA CONCURRENCE Signature Block _____ Printed Name _____ FHWA Transportation Engineer
Engineer of Record Signature and Date	Date	Date

Exhibit 16-B, Sheet 3 of 6

PROJECT IDENTIFICATION	
FINANCIAL PROJECT ID _____ FEDERAL AID PROJECT NO. _____ FEDERAL FUNDS _____ COUNTY NAME _____ HILLSBOROUGH SECTION NO. _____ ROAD DESIGNATION _____ SR 99 _____ LIMITS/MILEPOST _____ (MP 7.381 TO MP 10.535) PROJECT DESCRIPTION _____ MULTILANE RECONSTRUCTION OF SR 99 FROM CR 239 (CALHOUN BLVD.) TO I-10 _____	
PROPOSED STRUCTURE TYPICAL SECTION	
<p style="text-align: center;">DESIGN SPEED = 50 mph SR 99 BRIDGE OVER TUCKER CANAL</p>	
APPROVED BY: (Engineer of Record Printed Name) _____	FDOT CONCURRENCE Signature Block _____ Date _____ Printed Name _____ FDOT District Design Engineer
Engineer of Record Signature and Date _____	FHWA CONCURRENCE Signature Block _____ Date _____ Printed Name _____ FHWA Transportation Engineer

Exhibit 16-B, Sheet 4 of 6

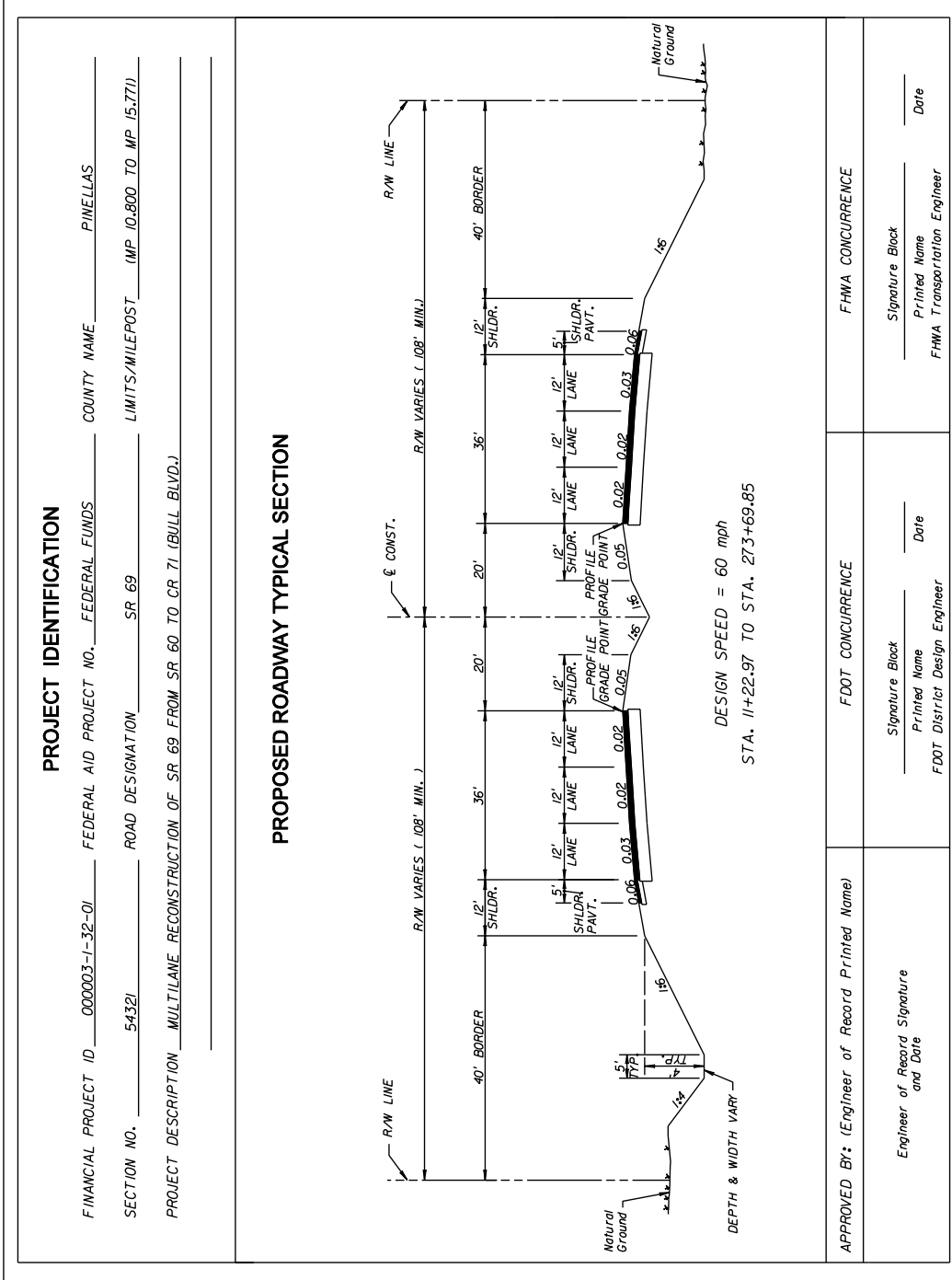


Exhibit 16-B, Sheet 5 of 6

<p>PROJECT IDENTIFICATION</p> <p>FINANCIAL PROJECT ID 000003-1-32-01 FEDERAL AID PROJECT NO. FEDERAL FUNDS COUNTY NAME PINELLAS</p> <p>SECTION NO. 54321 ROAD DESIGNATION SR 69 LIMITS/MILEPOST (MP 10.800 TO MP 15.771)</p> <p>PROJECT DESCRIPTION MULTILANE RECONSTRUCTION OF SR 69 FROM SR 60 TO CR 71 (BULL BLVD.)</p>	
<p>PROPOSED STRUCTURE TYPICAL SECTION</p> <p style="text-align: center;">DESIGN SPEED = 60 mph</p> <p style="text-align: center;">SR 69 BRIDGE OVER WHATCHAMACALLIT RIVER</p>	
<p>APPROVED BY: (Engineer of Record Printed Name)</p> <p>Engineer of Record Signature and Date</p>	<p>FDOT CONCURRENCE</p> <p>Signature Block Printed Name Date</p> <p>FDOT District Design Engineer</p>
<p>FHWA CONCURRENCE</p> <p>Signature Block Printed Name Date</p> <p>FHWA Transportation Engineer</p>	<p>FHWA CONCURRENCE</p> <p>Signature Block Printed Name Date</p> <p>FHWA Transportation Engineer</p>

Exhibit 16-B, Sheet 6 of 6

PROJECT IDENTIFICATION	
FINANCIAL PROJECT ID <u>000001-1-32-01</u> FEDERAL AID PROJECT NO. <u> </u> FEDERAL FUNDS <u> </u> COUNTY NAME <u>JACKSON</u>	SECTION NO. <u>99999</u> ROAD DESIGNATION <u>SR 71</u> LIMITS/MILEPOST <u>(MP 1.94) TO (MP 5.809)</u>
PROJECT DESCRIPTION <u>MILLING AND RESURFACING OF SR 71 FROM CR 481 (ONTZ RD.) TO BEAVER CREEK BRIDGE</u>	
PROPOSED ROADWAY TYPICAL SECTION	
APPROVED BY: <u> </u> (Engineer of Record Printed Name)	APPROVED BY: <u> </u> (FHWA CONCURRENCE)
Signature <u> </u> Printed Name <u> </u> Date <u> </u>	Signature <u> </u> Printed Name <u> </u> Date <u> </u>
Engineer of Record Signature and Date	FHWA Transportation Engineer