

Chapter 2

Sequence of Plans Preparation

2.1	General	2-1
2.2	Data Collection and Presentation.....	2-3
2.2.1	Type of Project.....	2-3
2.2.2	Presentation of Existing Data.....	2-4
2.2.3	Proposed Typical Section	2-4
2.2.4	Geometrics.....	2-4
2.2.5	Cross Sections.....	2-5
2.3	Phase Submittals	2-6
2.3.1	General	2-6
2.3.2	Phases	2-6
2.3.2.1	Requirements for Phase I Submittal	2-10
2.3.2.2	Requirements for Phase II Submittal	2-12
2.3.2.3	Phase III Plans Submittal.....	2-19
2.3.2.4	Phase IV Plans Submittal	2-19
2.4	Design-Build Phase Submittals.....	2-20
2.4.1	General	2-20
2.4.2	Phases	2-20
2.4.2.1	Requirements for Technical Proposal Submittal.....	2-23
2.4.2.2	Requirements for 90% Plans Component Submittal.....	2-25
2.4.2.3	Final Plans Submittal	2-31
2.4.2.4	Released For Construction Plans	2-31

Figures

Figure 2.1	Summary of Phase Submittals.....	2-8
Figure 2.2	Summary of Design-Build Phase Submittals	2-22

Chapter 2

Sequence of Plans Preparation

2.1 General

The set of plans depicting in detail all the desired construction work is known as the "Contract Plans Set". This set consists of all sheets pertaining to roadway design (Roadway Plans), and those of the other component plans. The other component plans are comprised of:

1. Signing and Pavement Marking Plans
2. Signalization Plans
3. Intelligent Transportation Systems (ITS) Plans
4. Lighting Plans
5. Landscape Plans
6. Architectural Plans
7. Structures Plans
8. Toll Facility Plans

All plan details shall be included in the Roadway Plans or one of the component plans listed above. Components other than those listed above shall not be used unless approved by the State Roadway Design Engineer. Such approval should be requested prior to the Phase II submittal.

Modification for Non-Conventional Projects:

Delete the last two sentences of the above paragraph and see RFP for requirements.

Utility Joint Participation Agreement Plans have a separate Financial Project ID and are placed in the back of the contract plans set.

The contract plans set should be prepared systematically, undergoing phases of review and revision to ensure technically correct and clear plans.

If the plans are structures plans and there is no work on the approach roadway, the structures plans become the lead project. Any other sheets incidental to the project typically found within the roadway plans or other component plans (i.e., traffic control plans, signing and marking, etc.), may be included in the structures plans and numbered consecutively in accordance with the **Structures Manual, Volume 2 – Structures Detailing Manual**.

2.2 Data Collection and Presentation

2.2.1 Type of Project

The type and amount of data required for each project depends on the project. For new construction and reconstruction projects which have had a Project Development and Environment (PD&E) phase the data to be used for plans preparation could include the following:

1. Preliminary Engineering Report
2. Project Scope
3. Project schedule
4. Field survey and/or CADD files (including existing features such as topography, ground elevations, drainage structures, and right of way)
5. R/W requirements
6. Soils information
7. Commitments for environmental permits or mitigation
8. Typical Section Package
9. Traffic Data
10. Pedestrian and bicycle considerations
11. Structural design requirements
12. Commitments to local government(s)

For projects without the PD&E phase, such as RRR or Safety projects, some of the items listed will not be available. All projects shall begin with a record search of available data, and a field review by the Engineer of Record to determine additional data requirements such as supplemental survey needs, traffic data, utility information, etc.

Modification for Non-Conventional Projects:

See RFP for available data.

Additional information can be found in **Chapters 13-16** of **Volume 1**. These chapters contain a comprehensive discussion of the critical issues and major activities for the design process, from initial to final engineering.

2.2.2 Presentation of Existing Data

CADD files generated from the field survey will contain existing topography and other characteristics of the project site. These also include the existing utilities and drainage structures within the limits of the project.

All data pertaining to topography, horizontal location of existing utilities and drainage structures shall be shown on the plan portion of the appropriate sheets (whether they are plan view only, or plan-profile).

2.2.3 Proposed Typical Section

Typical sections show the cross sectional design elements of a roadway. In addition to the Typical Section Sheet, certain elements of the typical section are shown on various other plan sheets, such as the Plan-Profile Sheets and Cross Sections. The various chapters for individual plan sheets address the specific requirements for displaying data (including typical section elements) on those sheets. Specific requirements for typical section sheets are presented in **Chapter 6** of this Volume.

2.2.4 Geometrics

The Engineer of Record (EOR) sets the horizontal and vertical geometrics for a project and develops or supervises development of the CADD files used in the production of various plans sheets.

Horizontal geometrics include the baseline survey/centerline construction with bearings, curve data, angles or bearings at street intersections, pavement widths, taper lengths, left turn lanes, and other geometric elements. These elements are plotted on the plan portion of the plan-profile sheets, as well as other appropriate plan sheets.

Vertical geometrics show the vertical curves and grades of the roadway along the profile grade line. On municipal projects back-of-sidewalk profiles are developed to provide a vertical alignment which addresses drainage requirements and harmonizes connections to adjacent properties. The back-of-sidewalk profiles may be included in the roadway plans as directed by the district.

On all projects which include the development of a vertical alignment, the existing ground line along the baseline of survey and the proposed profile grade line shall be plotted on the profile portion of appropriate sheets in the roadway or structures plans.

2.2.5 Cross Sections

Information required for plotting existing cross sections is obtained from survey data and CADD files. These data, along with existing utilities and proposed templates, are shown on the cross sections. Refer to **Chapter 18** of this volume for additional information.

2.3 Phase Submittals

Modification for Non-Conventional Projects:

Delete **PPM 2.3** and follow **PPM 2.4**.

2.3.1 General

Requirements relating to the *design process* for various submittals are given in **Chapter 16, Volume 1** of this manual. Refer to that chapter for additional guidance in preparing submittals for review by the Department.

For bridge submittal requirements see **Chapter 26, Volume 1**.

2.3.2 Phases

The remainder of this chapter outlines, in detail, the sequence for contract plans preparation and assembly, as well as the information required to be presented on the various plan sheets which are included in design phase submittals.

As stated in **Section 16.4** of **Volume 1**: "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."

Standard submittal phases are as follows:

SUBMITTAL PHASES

- Phase I
- Phase II
- Phase III
- Phase IV

Minor projects should typically have two phase reviews, which will be defined in the Scope of Services.

Figure 2.1 summarizes the plans sheet status for each submittal. No phase is complete until all review comments have been resolved and documented.

The technical accuracy required for the design is the responsibility of the Engineer of Record. Prior to submitting the plans for a formal FDOT Phase review, the design organization (in-house or consultant) shall conduct an internal Quality Control (Q/C) review to ensure technically correct and complete plans. Any revisions or corrections noted during the Q/C review shall be incorporated into the plans before submittal for the formal Phase review.

When deemed necessary by the Engineer of Record, or as requested by the district, phase submittals may include an additional plan sheet titled "Notes for Reviewers." This sheet is placed as the second sheet in the submittal package. It contains information pertinent to design criteria and special project requirements, as well as other details or notes which call the reviewer's attention to issues and features unique to the project design. The sheet is to be used only in the review process and is not included in the final plans.

Figure 2.1 Summary of Phase Submittals
 Provide the sheets listed as applicable

ITEM	PHASE	PHASE*	PHASE	PHASE
	I	II	III	IV
Key Sheet	P	P	C	F
Summary of Pay Items		P	C	F
Drainage Map	P	P	C	F
Interchange Drainage Map	P	P	C	F
Typical Section	P	C	C	F
Summary of Quantities			C	F
Summary of Drainage Structures		P	C	F
Optional Materials Tabulation		P	C	F
Project Layout	P	C	C	F
Roadway Plan-Profile	P	P	C	F
Special Profile	P	P	C	F
Back-of-Sidewalk Profile	P	C	C	F
Interchange Layout	P	P	C	F
Ramp Terminal Details		P	C	F
Intersection Layout/Detail	P	P	C	F
Drainage Structures		P	C	F
Three-Sided/Box Culvert Details			C	F
Lateral Ditch Plan-Profile		P	C	F
Lateral Ditch Cross Section		P	C	F
Retention/Detention Ponds		P	C	F
Cross Section Pattern		P	C	F
Roadway Soil Survey		P	C	F
Cross Sections	P	P	C	F
Stormwater Pollution Prevention Plan		P	C	F
Temporary Traffic Control Plans	P	P	C	F
Utility Adjustments		P	C	F
Selective Clearing and Grubbing		P	C	F
Developmental Design Standards		C	C	F
Mitigation Plans		P	C	F
Miscellaneous Structures Plans		P	C	F
Signing and Pavement Marking Plans		P	C	F
Signalization Plans		P	C	F
Intelligent Transportation System (ITS) Plans		P	C	F
Lighting Plans		P	C	F
Landscape Plans	P	P	C	F
Utility Work by Highway Contractor Agreement Plans			C	F
Computation Book			C	F
Contract Time			P	F
Toll Facility Plans				
Site/Civil	P	P	C	F
Architectural	P	P	C	F
Structural	P	P	C	F
Electrical		P	C	F
Mechanical		P	C	F
Plumbing		P	C	F
Communications		P	C	F
Systems		P	C	F

Status Key:

- P** - Preliminary
- C** - Complete but subject to change
- F** - Final

* Projects which have a structures plans component are required to submit the latest set of structures plans with the Phase II roadway submittal.

2.3.2.1 Requirements for Phase I Submittal

Unless otherwise directed by the district, the following elements are required for a Phase I set of plans.

KEY SHEET

Location Map w/ location of project on map
All applicable Financial Project ID's
(Federal Funds) notation, if applicable
Exceptions & Equations
County Name
State Road Number
Length of project box
North arrow and scale
Approval signature lines
Railroad crossing (if applicable)
Revision box
Governing Standards & Specifications dates
Project Manager's Name
Begin & end project station and begin mile post
Begin & end bridge stations
Consultant's name, address, contract number,
Certificate of Authorization number and vendor
number (if applicable)

DRAINAGE MAP - PLAN VIEW

North arrow and scale
Drainage divides and ground elevations
Drainage areas and flow direction arrows
Equations
High water information as required
Preliminary horizontal alignment
Section, township, range lines
Street names
Begin & end stations of project, bridge, bridge
culverts & exceptions
Existing structures & pipes with relevant
information
State, Federal, county highway numbers (as
appropriate)

DRAINAGE MAP - PROFILE VIEW

Preliminary profile grade & existing ground line
Horizontal & vertical scale
Begin & end stations of project, bridges, bridge
culverts & exceptions
Equations

INTERCHANGE DRAINAGE MAP

North arrow and scale
Stationing along baselines
Ramp baselines with nomenclature
Begin and end bridge stationing
Preliminary interchange configuration
R/W lines
Preliminary interchange drainage with drainage
areas and flow direction arrows

TYPICAL SECTIONS

Mainline and crossroad typicals
R/W lines
Special details (bifurcated sections, high fills, etc.)
Traffic data

PROJECT LAYOUT / Reference Points

Plan-profile sheet sequence (mainline and
crossroads)
Reference points (if layout sheet is required)

PLAN AND PROFILE - PLAN VIEW

North arrow and scale
Baseline of survey, equations
Curve data (including superelevation)
Existing topography including utilities
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
Reference points (if project layout sheet not included in plans set)

PLAN AND PROFILE - PROFILE VIEW

Scale
Appropriate existing utilities
Bench mark information
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.

SPECIAL PROFILE

Scale
Ramp profile worksheet including nose sections
Existing ground line of intersections
Preliminary grade line of intersections
Preliminary curb return profiles, if applicable

BACK-OF-SIDEWALK PROFILE (Worksheet)

Scale
Begin and end project stations
Begin and end sidewalk stations
Cross-street locations and elevations
Drainage flow direction arrows
Mainline equations
Existing driveway locations and details
Superelevation details
Back-of-sidewalk profile grades and vertical curve information
Building floor elevations with offset distance left and right

BACK-OF-SIDEWALK PROFILE (Worksheet) (con't)

Graseline notation: Specifically the numeric difference relative to roadway profile gradeline

INTERCHANGE DETAIL

North arrow and scale
Schematic of traffic flow and volumes
Proposed bridge limits
R/W lines
Preliminary configuration and geometrics
Quadrant Identification
Ramp Labels

INTERSECTION LAYOUT

North arrow and scale
Existing topography (if applicable)
Proposed R/W limits
Length of turn lanes
Taper lengths
Existing Utilities
Geometric dimensions (radii, offsets, widths)

CROSS SECTIONS*

Scale
Existing ground line
Existing survey baseline elevations
Station numbers
Baseline of survey labeled
Existing utilities
Proposed template with profile grade elevations along mainline and cross-streets as necessary

TEMPORARY TRAFFIC CONTROL PLANS

Project specific
Other worksheets as necessary to convey concept and scope.

LANDSCAPE PLANS

Conceptual landscape plan

*May require accompanying cross section pattern sheet

2.3.2.2 Requirements for Phase II Submittal

Unless otherwise directed by the district, the following elements are required for a Phase II set of plans.

KEY SHEET

Index of sheets
Contract plans and component plans list

SUMMARY OF PAY ITEMS

Item numbers with descriptions (on 8 ½" x 11" paper until the project proposal has been created)

DRAINAGE MAP - PLAN VIEW

Proposed structures with structure numbers
Proposed storm drain pipes
Flow arrows along proposed ditches
Retention/Detention ponds, pond number and area size
Cross drains with pipe sizes and structure numbers
Bridges/bridge culverts with begin and end stations
Flood data (if applicable)

DRAINAGE MAP - PROFILE VIEW

Ditch gradients including DPIs
Final roadway profile grade line
Mainline storm drain pipes
Mainline flow line elevations
Mainline structures with structure numbers and pipes
Bridge, Bridge Culvert
Cross drains with pipe sizes, structure numbers and flow line elevation

INTERCHANGE DRAINAGE MAP

Final geometrics including PC and PT
Proposed structures with structure numbers
Proposed storm drain pipes
Special ditches with DPI and elevation

TYPICAL SECTIONS

Pavement Design

OPTIONAL MATERIALS TABULATION

Material type
Structure number station and description
Durability, cover requirements
Optional culvert material application
Culvert service life estimator
Design service life

PROJECT LAYOUT

Complete

PLAN AND PROFILE - PLAN VIEW

Curb return numbers, station ties and elevations
Proposed drainage structures with structure no.
Proposed R/W lines
Existing utilities
Proposed side drain pipe requirements (including size) for access and intersections
Final geometrics and dimensions including radii, station pluses, offsets, widths, taper/transition lengths, curve data
General notes (if project layout sheet not included)
Flood data if not shown elsewhere
Limits of wetlands

PLAN AND PROFILE - PROFILE VIEW

Final profile grades and vertical curve data
Mainline storm drain pipes
Proposed special ditches
Ditch gradients with DPI station and elevation
Non-standard superelevation transition details
High water elevations
Existing utilities
Mainline drainage structures with structure numbers
Cross drains with structure number, size and flow line elevations

SPECIAL PROFILE

Final intersection profile grades
Final curb return profiles (if applicable)
Superelevation diagrams as required
Final ramp profile grades including nose sections
Preliminary access and frontage road profiles (may contain one or more types of special profiles.)

BACK-OF-SIDEWALK PROFILE

Complete

INTERCHANGE LAYOUT

Curve data including superelevation and design speed
Coordinate data, stationing and ties
Access and/or frontage roads with dimensions and R/W
Fence location
Ramp identification

RAMP TERMINAL DETAILS

Preliminary geometrics
Radii, transition/taper lengths
Ramp identification

INTERSECTION LAYOUT

Limits of proposed construction along side roads
Applicable notes
Cross drains with structure numbers and pipe sizes
Storm drain pipes including sizes
Final geometrics including dimensions, radii, offsets, station pluses and taper/transition lengths

DRAINAGE STRUCTURES

Vertical and horizontal scale
Roadway template with profile grade elevation
Underground utilities
Special sections at conflict points
R/W lines (at critical locations)
Storm drain construction notes
Flow arrows
Applicable notes
Structure numbers and location station along right side of sheet
Drainage structures with numbers in numerical order, type, size, location and flowline elevations

OUTFALL / LATERAL DITCH SYSTEM - PLAN VIEW

North arrow and scale
Roadway centerline
Existing and/or survey ditch centerline
Proposed ditch centerline with stationing
Begin and end ditch stations
Equations
Ditch centerline intersection stations
R/W lines
Bearings of ditch and mainline centerlines
Proposed storm drain pipes
Ditch PI stations with deflection angle left or right
Proposed drainage structures with structure numbers
Existing topography, drainage structures, utilities
Limits of wetlands

**OUTFALL / LATERAL DITCH SYSTEM -
PROFILE VIEW**

Bench mark information
Scale
Existing ground line
Proposed ditch profile with grades
Begin and end ditch stations
High water elevations
Proposed storm drain pipes with size
Existing Utilities
Overland flow or overtopping elevations
Proposed drainage structures with structure numbers
Typical section can be placed in either plan or profile

LATERAL DITCH CROSS SECTIONS

Horizontal and vertical scale
Existing ground line
Station numbers
Survey centerline and elevation
R/W
Begin and end ditch stations
Begin and end excavation stations
Earthwork quantities
Existing utilities
Total earthwork quantity in cubic yards (CY)
Proposed template with ditch bottom elevation

RETENTION/DETENTION POND DETAILS

North arrow and scale
Roadway centerline ties
Proposed pond centerline with stationing
Begin and end pond stations
Side slopes, dimensions, and elevations
R/W lines
Berm, fence and gate locations
Soil boring information
Proposed pond drainage structures with structure numbers
Existing topography, drainage structures, utilities
Pond sections (2 perpendicular to each other)
Pond Typical Section
Limits of wetlands

**RETENTION/DETENTION POND CROSS
SECTIONS**

Horizontal and vertical scale
Existing ground line
Station numbers
Begin and end pond stationing
Pond centerline and elevations
R/W
Soil borings
Water table
Extent of unsuitable material
Earthwork quantities
Existing utilities
Proposed template with bottom elevation

CROSS SECTION PATTERN

North arrow and scale
Interchange layout
Access and frontage roads
Mainline and ramp stationing
Begin and end bridge stations
Cross section location lines
Ramp baselines with nomenclature and stationing

ROADWAY SOIL SURVEY

Soil data
Project specific

CROSS SECTIONS

R/W
Special ditch bottom elevations
Equivalent stations for ramps and mainline
Mainline equation stations
Soil borings
Water table
Extent of unsuitable material
Proposed template with profile grade elevation
Earthwork Columns
Begin and end stationing for project, construction and earthwork, bridge and bridge culvert
Existing utilities affected by the template and where unsuitable materials are present

STORMWATER POLLUTION PREVENTION PLANS (SWPPP)

Narrative Description (with supplemental topographic maps, when used)

TEMPORARY TRAFFIC CONTROL PLANS

Preliminary traffic control plan
Detour plan
Phasing plan
R/W - existing and additional if required
Existing Utilities

UTILITY ADJUSTMENTS

All existing utilities highlighted

SELECTIVE CLEARING AND GRUBBING

Limits of construction by station and type of selective clearing and grubbing

MITIGATION PLANS

Project Specific

MISCELLANEOUS STRUCTURES PLANS

Retaining walls (Cast in place, proprietary, temporary) if required

SIGNING AND PAVEMENT MARKING PLANS - KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Engineer of Record
Consultants name & address, if applicable

SIGNING AND PAVEMENT MARKING PLANS - TABULATION OF QUANTITIES
Project Specific

SIGNING AND PAVEMENT MARKING PLANS - PLAN SHEETS

North arrow and scale
Basic Roadway Geometrics
Begin/End Stations and Exceptions
Station equations
Conflicting utilities, lighting or drainage
Pavement markings
Sign locations
Applicable pay items

**SIGNING AND PAVEMENT MARKING PLANS - SIGN DETAIL SHEETS
GUIDE SIGN WORK SHEETS**

Project Specific

SIGNALIZATION PLANS - KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Engineer of Record
Consultants name & address, if applicable

SIGNALIZATION PLANS - TABULATION OF QUANTITIES

Project Specific

SIGNALIZATION PLANS - PLAN SHEET

North arrow and scale
Basic Roadway Geometrics
Begin/End Stations and Exceptions
Station Equations
Conflicting utilities, lighting or drainage
Signal Pole Location
Type and location of loops
Type and location of signal heads
Pedestrian Signal
Location of Stop Bars
Location of Pedestrian Crosswalks
Sheet Title
Applicable pay items

SIGNALIZATION PLANS - POLE SCHEDULE

Pole location, number, type
Pole dimensions
Pay item number and quantity
Joint use pole details, if applicable
Foundation design

**SIGNALIZATION PLANS - INTERCONNECT/
COMMUNICATION CABLE PLAN**

Placement of interconnect/communication cable
Conflicting utilities, lighting or drainage
Other project specific details

ITS PLANS - KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Engineer of Record
Consultants name & address, if applicable

ITS PLANS - TABULATION OF QUANTITIES

Project Specific

ITS PLANS - PLAN SHEETS

Project Specific, but must include:
North arrow and scale
Basic Roadway Geometrics
Begin/End Stations and Exceptions
Station equations
Conflicting utilities, lighting or drainage
Applicable pay items

ITS PLANS - DETAIL SHEETS

Project Specific

LIGHTING PLANS - KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Engineer of Record
Consultants name & address, if applicable

LIGHTING PLANS - TABULATION OF QUANTITIES

Project Specific

LIGHTING PLANS - POLE DATA AND LEGEND SHEET

Each pole by number with location, arm length, mounting height and luminaire wattage noted.
Design value for light intensities and uniformity ratios shown.
Legend and sheet title

LIGHTING PLANS - PLAN SHEETS

North arrow and scale
Basic Roadway Geometrics
Begin/End Stations and Equations
Station Equations
Conflicting utilities, drainage, signal poles, etc.
Sheet title
Applicable pay items
Pole symbols shown at correct station location and approximate offset

LIGHTING PLANS - HIGH MAST

Foundation detail sheets (project specific)
Boring data sheets (project specific)
Conflicting utilities, drainage, lighting

LANDSCAPE PLANS - KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
Fiscal year and sheet number
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Landscape Architect of Record name and registration number
Consultants name, address, and contract number, if applicable
Index of landscape plans

LANDSCAPE PLANS - TABULATION OF QUANTITIES AND PLANT SCHEDULE

Project Specific

LANDSCAPE PLANS - TABULATION OF QUANTITIES AND SCHEDULE FOR IRRIGATION AND SITE AMENITIES

Project Specific

LANDSCAPE PLANS – PLANTING PLAN SHEETS

Project centerline
Edge of pavement (edge of traffic lanes)
Curbs or curb and gutter
Drainage systems
Guardrails
Right of way and/or limited access fence line
Sidewalks or other planned or existing structures
Lighting, signs, and signal poles
Intersections and driveways which are noted in the plans
Existing and proposed overhead and underground utility locations
Clear Zone/Horizontal clearance (should be plotted or safety setback distances noted frequently on each plan sheet)
View zones for permitted outdoor advertising signs
Canopy limits
Existing vegetation (to remain or be removed)
Existing off site features and conditions that affect or are affected by the project
Fence and gate locations
Setbacks from structural elements or drainage system
Limits of clear sight
Transit facilities
Proposed Planting Plan (Plant symbols and Plant quantities)

LANDSCAPE PLANS - IRRIGATION PLAN SHEETS

(if applicable)
Type of system
Location and size of mainlines and lateral lines
Type and location of spray heads and rotors
Type and location of valves, sleeves, controllers, water sources/point of connection, backflow preventers, and isolation valves

LANDSCAPE PLANS – DETAILS SHEET

Applicable landscape details
Irrigation symbology with associative descriptions (if applicable)

2.3.2.3 Phase III Plans Submittal

Ordinarily, the only other remaining work to be done will be to comply with comments received as a result of the review. The Work Zone Traffic Control items paid for on a 'per day' basis shall be estimated and included in the Phase III submittal.

The FDOT construction department will make a biddability review and will establish construction duration as a part of the Phase III review after receiving the computation book. This information should be included in the Phase III review comments transmitted back to the EOR. The estimated pay items for Work Zone Traffic Control shall be revised as necessary based on the established construction duration.

All plan sheets and computation books are complete and the Financial Management (FM) system has been updated. Final drainage tabulations shall also be furnished for review.

Utility Work by Highway Contractor (UWHC) Agreement Plans, consisting of a key sheet, and mainline plan-profile showing proposed utility horizontal and vertical locations, are also to be included in the Phase III submittal.

A "marked up" set of the plans and review comments shall be returned to the EOR for incorporation of the comments into the plans. When the review comments have been resolved and documented by the designer, the plans are ready to proceed to completion.

2.3.2.4 Phase IV Plans Submittal

After all corrections noted in the Phase III submittal are complete and the cost estimate is complete, the plans are considered final.

2.4 Design-Build Phase Submittals

Section 2.4 applies exclusively to Design-Build projects.

2.4.1 General

Requirements relating to the design process for various submittals are given in **Chapter 16, Volume 1** of this manual. Refer to that chapter for additional guidance in preparing submittals for review by the Department.

For bridge submittal requirements see **Chapter 26, Volume 1**.

2.4.2 Phases

The remainder of this chapter outlines, in detail, the sequence for contract plans preparation and assembly, as well as the information required to be presented on the various plan sheets which are included in phase submittals.

For Design-Build projects, the standard submittal phases are as follows:

SUBMITTAL PHASES

- Technical Proposal
- 90% Component Plans
- Final Component Plans

Figure 2.2 summarizes the plans sheet status required for each submittal.

The technical accuracy required for the design is the responsibility of the Engineer of Record. Prior to submitting the plans for a formal FDOT Phase review, the design organization (in-house, consultant, or Design-Build Firm) shall conduct an internal Quality Control (Q/C) review to ensure technically correct and complete plans. Any revisions or corrections noted during the Q/C review shall be incorporated into the plans before submittal for the formal Phase review.

When deemed necessary by the Engineer of Record, or as requested by the Department, phase submittals may include an additional plan sheet titled "Notes for Reviewers". This sheet is placed as the second sheet in the submittal package. It contains information pertinent to design criteria and special project requirements, as

well as other details or notes which call the reviewer's attention to issues and features unique to the project design. The sheet is to be used only in the review process and is not included in the final plans.

Figure 2.2 Summary of Design-Build Phase Submittals
 Provide the sheets listed as applicable

ITEM	TECHNICAL PROPOSAL	90% PLANS	FINAL PLANS
Key Sheet		P	F
Drainage Map	P	C	F
Interchange Drainage Map	P	C	F
Typical Section	P	C	F
Summary of Drainage Structures		C	F
Project Layout		C	F
Roadway Plan-Profile	P	C	F
Special Profile		C	F
Back-of-Sidewalk Profile		C	
Interchange Layout	P	C	F
Intersection Layout/Detail	P	C	F
Drainage Structures		C	F
Three-Sided/Box Culvert Details		C	F
Lateral Ditch Plan-Profile		C	F
Lateral Ditch Cross Section		C	F
Retention/Detention Pond Details		C	F
Roadway Soil Survey		C	F
Cross Sections		C	F
Temporary Traffic Control Plans	P	C	F
Utility Adjustments		C	
Selective Clearing and Grubbing		C	
Developmental Design Standards		C	F
Mitigation Plans		C	F
Miscellaneous Structures Plans		C	F
Signing and Pavement Marking Plans	P	C	F
Signalization Plans		C	F
Intelligent Transportation System (ITS) Plans		C	F
Lighting Plans		C	F
Landscape Plans		C	F
Utility Work by Highway Contractor Agreement Plans		C	F
Toll Facility Plans			
Site/Civil	P	P	F
Architectural	P	P	F
Structural	P	P	F
Electrical		P	F
Mechanical		P	F
Plumbing		P	F
Communications		P	F
Systems		P	F
Status Key:			
P - Preliminary			
C - Complete but subject to change			
F - Final			

2.4.2.1 Requirements for Technical Proposal Submittal

For the Technical Proposal only, the Design Build team may submit either plan sheets no larger than 24 inches by 36 inches. Roll plots may be submitted as an alternate neither wider than 36 inches nor longer than 96 inches. Unless otherwise directed by the Department, the following elements are required for a Technical Proposal Submittal:

DRAINAGE MAP - PLAN VIEW

Drainage divides and flow direction arrows
High water information as required
Preliminary horizontal alignment with stationing
State, Federal, county highway numbers (as appropriate)
Proposed storm drain trunk line and outfall locations
Proposed Retention/Detention Pond Locations

INTERSECTION DRAINAGE MAP - PLAN VIEW

Preliminary interchange drainage with drainage areas and flow direction arrows

TYPICAL SECTIONS

Mainline and crossroad typical sections
R/W lines
Traffic data
Pavement Design

PLAN AND PROFILE - PLAN VIEW

North arrow and scale
Baseline of survey, equations
Curve data (including superelevation)
Existing topography including utilities
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 and stations of equations and exceptions
Existing utilities
Guide sign locations
Limits of wetlands

PLAN AND PROFILE - PROFILE VIEW

North arrow and scale
Appropriate existing utilities

PLAN AND PROFILE - PROFILE VIEW (con't)

Preliminary profile grade line
Existing ground line with elevations at each end of sheet
Begin and end stations for the project and stations of equations and exceptions
Final profile grades and vertical curve data
High water elevations

INTERCHANGE LAYOUT

Curve data including superelevation and design speed
Stationing and ties
Access and/or frontage roads with dimensions and R/W
Ramp identification

INTERSECTION LAYOUT

North arrow and scale
Existing topography (if applicable)
Proposed R/W limits
Length of turn lanes
Geometric dimensions (radii, offsets, widths)
Limits of proposed construction along side roads

TEMPORARY TRAFFIC CONTROL PLANS

Project specific
Other worksheets as necessary to convey concept and scope
Preliminary traffic control plan
Detour plan
Phasing plan
R/W – existing and additional if required

SIGNING AND PAVEMENT MARKING PLANS - SIGN DETAIL SHEETS

Preliminary layout of multi-column and overhead guide sign worksheets

TOLL FACILITY PLANS

Site/Civil
Architectural
Structural

2.4.2.2 Requirements for 90% Plans Component Submittal

Unless otherwise directed by the Department, the following elements are required for a 90% Plans Component Submittal:

KEY SHEET

Location Map w/ location of project on map
All applicable Financial Project ID's
(Federal Funds) notation, if applicable
Exceptions & Equations
County Name
State Road Number
Length of project box
North arrow and scale
Approval signature lines
Railroad crossing (if applicable)
Revision box
Governing Standards & Specifications dates
Project Manager's Name
Begin & end project station and begin mile post
Begin & end bridge stations
Consultant's name, address, contract number,
Certificate of Authorization number and vendor
number (if applicable)
Index of sheets
Contract plans and component plans list

DRAINAGE MAP - PLAN VIEW

North arrow and scale
Drainage divides and ground elevations
Drainage areas and flow direction arrows
Equations
High water information as required
Preliminary horizontal alignment
Section, township, range lines
Street names
Begin & end stations of project, bridge, bridge
culverts & exceptions
Existing structures & pipes with relevant
information
Proposed structures with structure numbers
Proposed storm drain pipes
Flow arrows along proposed ditches
Retention/Detention ponds, pond number and
area size

DRAINAGE MAP - PLAN VIEW (con't)

Cross drains with pipe sizes and structure
numbers
Bridges/bridge culverts with begin and end
stations
Flood data (if applicable)
State, Federal, county highway numbers (as
appropriate)

DRAINAGE MAP - PROFILE VIEW

Horizontal & vertical scale
Begin & end stations of project, bridges, bridge
culverts & exceptions
Equations
Ditch gradients including DPIs
Final roadway profile grade line
Mainline storm drain pipes
Mainline flow line elevations
Mainline structures with structure numbers
and pipes
Bridge, Bridge Culvert
Cross drains with pipe sizes, structure numbers
and flow line elevation

INTERCHANGE DRAINAGE MAP

North arrow and scale
Stationing along baselines
Ramp baselines with nomenclature
Begin and end bridge stationing
Final interchange configuration
R/W lines
Final Interchange drainage with drainage
areas and flow direction arrows
Final geometrics including PC and PT
Proposed structures with structure numbers
Proposed storm drain pipes
Special ditches with DPI and elevation

TYPICAL SECTIONS

Mainline and crossroad typical sections

TYPICAL SECTIONS (con't)

R/W lines
Special details (bifurcated sections, high fills, etc.)
Traffic data
Pavement Design

DRAINAGE STRUCTURES

Vertical and horizontal scale
Roadway template with profile grade elevation
Underground utilities
Special sections at conflict points
R/W lines (at critical locations)
Storm drain construction notes
Flow arrows
Applicable notes
Structure numbers and location station along right side of sheet
Drainage structures with numbers in numerical order, type, size, location and flow line elevations

PROJECT LAYOUT

Reference points (if layout sheet is required)

ROADWAY PLAN PROFILE - PLAN VIEW

North arrow and scale
Baseline of survey, equations
Curve data (including superelevation)
Existing topography including utilities
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
Reference points (if project survey control sheet not included in plans set)
Curb return numbers, station ties and elevations
Proposed drainage structures with structure nos.
Proposed R/W lines
Existing utilities
Limits of wetlands
Flood data if not shown elsewhere
Proposed side drain pipe requirements (including size) for access and intersections
Final geometrics and dimensions including radii, station pluses, offsets, widths, taper/transition lengths, curve data

ROADWAY PLAN PROFILE - PLAN VIEW (con't)

General notes (if project layout sheet not included)

ROADWAY PLAN PROFILE - PROFILE VIEW

Begin and end stations for the project and stations of equations and exceptions
Existing ground line with elevations at each end of sheet
Final profile grades and vertical curve data
High water elevations
Appropriate existing utilities
Mainline storm drain pipes
Proposed special ditches
Ditch gradients with DPI station and elevation
Non-standard superelevation transition details
High water elevations
Mainline drainage structures with structure numbers
Cross drains with structure number, size and flow line elevations

SPECIAL PROFILE

Scale
Existing ground line of intersections
Final intersection profile grades
Final curb return profiles (if applicable)
Superelevation diagrams as required
Final ramp profile grades including nose sections
Final access and frontage road profiles (may contain one or more types of special profiles.)

BACK-OF-SIDEWALK PROFILE

Scale
Begin and end project stations
Begin and end sidewalk stations
Cross-street locations and elevations
Drainage flow direction arrows
Mainline equations
Existing driveway locations and details
Superelevation details
Back-of-sidewalk profile grades and vertical curve information
Building floor elevations with offset distance left and right

BACK-OF-SIDEWALK PROFILE (con't)

Grade line notation: Specifically the numeric difference relative to roadway profile grade line

INTERCHANGE LAYOUT

North arrow and scale
Quadrant Identification
Ramp Labels
Schematic of traffic flow and volumes
Proposed bridge limits
R/W lines
Final configuration and geometrics
Curve data including superelevation and design speed
Coordinate data, stationing and ties
Access and/or frontage roads with dimensions and R/W
Fence location

RAMP TERMINAL DETAILS

Ramp identification
Final geometrics
Radii, transition/taper lengths

INTERSECTION LAYOUT

North arrow and scale
Existing topography (if applicable)
Proposed R/W limits
Length of turn lanes
Taper lengths
Existing Utilities
Geometric dimensions (radii, offsets, widths)
Limits of proposed construction along side roads
Applicable notes
Cross drains with structure numbers and pipe sizes
Storm drain pipes including sizes
Final geometrics including dimensions, radii, offsets, station pluses and taper/transition lengths

DRAINAGE STRUCTURES

Vertical and horizontal scale
Roadway template with profile grade elevation
Underground utilities
Special sections at conflict points
R/W lines (at critical locations)
Storm drain construction notes
Flow arrows

DRAINAGE STRUCTURES (con't)

Applicable notes
Structure numbers and location station along right side of sheet
Drainage structures with numbers in numerical order, type, size, location and flowline elevations

THREE-SIDED/BOX CULVERT DETAILS

Complete

OUTFALL / LATERAL DITCH SYSTEM - PLAN VIEW

North arrow and scale
Roadway centerline
Existing and/or survey ditch centerline
Proposed ditch centerline with stationing
Begin and end ditch stations
Equations
Ditch centerline intersection stations
R/W lines
Bearings of ditch and mainline centerlines
Proposed storm drain pipes
Ditch PI stations with deflection angle left or right
Proposed drainage structures with structure numbers
Existing topography, drainage structures, utilities
Limits of wetlands

OUTFALL / LATERAL DITCH SYSTEM - PROFILE VIEW

Bench mark information
Scale
Existing ground line
Proposed ditch profile with grades
Begin and end ditch stations
High water elevations
Proposed storm drain pipes with size
Existing Utilities
Overland flow or overtopping elevations
Proposed drainage structures with structure numbers
Typical section can be placed in either plan or profile

LATERAL DITCH CROSS SECTIONS

Horizontal and vertical scale
Existing ground line
Station numbers

LATERAL DITCH CROSS SECTIONS (con't)

Survey centerline and elevation
R/W
Begin and end ditch stations
Begin and end excavation stations
Existing utilities
Proposed template with ditch bottom elevation

RETENTION/DETENTION POND DETAILS

North arrow and scale
Roadway centerline ties
Proposed pond centerline with stationing
Begin and end pond stations
Side slopes, dimensions, and elevations
R/W lines
Berm, fence and gate locations
Soil boring information
Proposed pond drainage structures with structure numbers
Existing topography, drainage structures, utilities
Pond sections (2 perpendicular to each other)
Pond Typical Section
Limits of wetlands

RETENTION/DETENTION POND CROSS SECTIONS

Horizontal and vertical scale
Existing ground line
Station numbers
Begin and end pond stationing
Pond centerline and elevations
R/W
Soil borings
Water table
Extent of unsuitable material
Earthwork quantities
Existing utilities
Proposed template with bottom elevation

ROADWAY SOIL SURVEY

Soil data
Project specific

CROSS SECTIONS

Scale
Existing ground line
Existing survey baseline elevations
Station numbers

CROSS SECTIONS (con't)

Baseline of survey labeled
Existing utilities
Proposed template with profile grade elevations along mainline and cross-streets as necessary

TEMPORARY TRAFFIC CONTROL PLANS

Project specific
Other worksheets as necessary to convey concept and scope.
Final traffic control plan
Detour plan
Phasing plan
R/W - existing and additional if required
Existing Utilities

UTILITY ADJUSTMENTS

All existing utilities highlighted

SELECTIVE CLEARING AND GRUBBING

Limits of construction by station and type of selective clearing and grubbing

MITIGATION PLANS

Project Specific

MISCELLANEOUS STRUCTURES PLANS

Retaining walls (Cast in place, proprietary, temporary) if required

SIGNING AND PAVEMENT MARKING PLANS - KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Engineer of Record
Consultants name & address, if applicable

SIGNING AND PAVEMENT MARKING PLANS - PLAN SHEETS

North arrow and scale
Basic Roadway Geometrics
Begin/End Stations and Exceptions

**SIGNING AND PAVEMENT MARKING
PLANS - PLAN SHEETS (con't)**

Station equations
Conflicting utilities, lighting or drainage
Pavement markings
Sign locations

**SIGNING AND PAVEMENT MARKING
PLANS - SIGN DETAIL SHEETS
GUIDE SIGN WORK SHEETS**

Project Specific

SIGNALIZATION PLANS - KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Engineer of Record
Consultants name & address, if applicable

SIGNALIZATION PLANS - PLAN SHEET

North arrow and scale
Basic Roadway Geometrics
Begin/End Stations and Exceptions
Station Equations
Conflicting utilities, lighting or drainage
Signal Pole Location
Type and location of loops
Type and location of signal heads
Pedestrian Signal
Location of Stop Bars
Location of Pedestrian Crosswalks
Sheet Title

SIGNALIZATION PLANS - POLE SCHEDULE

Pole location, number, type
Pole dimensions
Joint use pole details, if applicable
Foundation design

**SIGNALIZATION PLANS - INTERCONNECT/
COMMUNICATION CABLE PLAN**

Placement of interconnect/communication cable
Conflicting utilities, lighting or drainage
Other project specific details

ITS PLANS - KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Engineer of Record
Consultants name & address, if applicable

ITS PLANS - PLAN SHEETS

Project Specific, but must include:
North arrow and scale
Basic Roadway Geometrics
Begin/End Stations and Exceptions
Station equations
Conflicting utilities, lighting or drainage

ITS PLANS - DETAIL SHEETS

Project Specific

LIGHTING PLANS - KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Engineer of Record
Consultants name & address, if applicable

**LIGHTING PLANS - POLE DATA AND
LEGEND SHEET**

Each pole by number with location, arm length,
mounting height and luminaire wattage
Design value for light intensities and uniformity
ratios shown
Legend and sheet title

LIGHTING PLANS - PLAN SHEETS

North arrow and scale
Basic Roadway Geometrics
Begin/End Stations and Equations
Station Equations
Conflicting utilities, drainage, signal poles, etc.
Sheet title

LIGHTING PLANS - PLAN SHEETS (con't)

Pole symbols shown at correct station location and approximate offset

LIGHTING PLANS - HIGH MAST

Foundation detail sheets (project specific)
Boring data sheets (project specific)
Conflicting utilities, drainage, lighting

LANDSCAPE PLANS – KEY SHEET

Financial Project ID
(Federal Funds) notation, if applicable
Fiscal year and sheet number
State Road Number
County Name
FDOT Project Manager's Name
Begin/end stations & exceptions
Station Equations (if location map is shown)
Landscape Architect of Record name and registration number
Consultants name, address, and contract number, if applicable
Index of landscape plans

LANDSCAPE PLANS – PLANTING PLAN SHEETS

Project centerline
Edge of pavement (edge of traffic lanes)
Curbs or curb and gutter
Drainage systems
Guardrails
Right of way and/or limited access fence line
Sidewalks or other planned or existing structures
Lighting, signs, and signal poles
Intersections and driveways which are noted in the plans
Existing and proposed overhead and underground utility locations
Clear Zone/Horizontal clearance (should be plotted or safety setback distances noted frequently on each plan sheet)
View zones for permitted outdoor advertising signs
Canopy limits
Existing vegetation (to remain or be removed)
Existing off site features and conditions that affect or are affected by the project
Fence and gate locations

LANDSCAPE PLANS – PLANTING PLAN SHEETS (con't)

Setbacks from structural elements or drainage system
Limits of clear sight
Transit facilities
Proposed Planting Plan

LANDSCAPE PLANS - IRRIGATION PLAN SHEETS

(if applicable)
Type of system
Location and size of mainlines and lateral lines
Type and location of spray heads and rotors
Type and location of valves, sleeves, controllers, water sources/point of connection, backflow preventers, and isolation valves

LANDSCAPE PLANS – DETAILS SHEET

Applicable landscape details
Irrigation symbology with associative descriptions (if applicable)

2.4.2.3 Final Plans Submittal

Ordinarily, the only other remaining work to be done will be to comply with comments received as a result of the 90% review.

All plan sheets and the Financial Management (FM) system shall be updated. Final drainage tabulations shall also be furnished for review.

Utility Work by Highway Contractor (UWHC) Agreement Plans, consisting of a key sheet, and mainline plan-profile showing proposed utility horizontal and vertical locations, are also to be included in the Final submittal.

A "marked up" set of the plans and review comments shall be returned to the EOR for incorporation of the comments into the plans. When the review comments have been resolved and documented by the designer, the plans are ready to proceed to completion.

2.4.2.4 Released For Construction Plans

After all corrections noted in the Final Plans submittal have been satisfactorily resolved as determined by the Department, the Department's Project Manager will initial, date and stamp each submittal as "Released for Construction". Only signed and sealed plans stamped "Released for Construction" by the Department's Project Manager are valid. All work performed by the Design-Build Firm prior to the Department's release of Plans will be at the Design-Build Firm's risk.

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