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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
- 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**.

Any Toll Facility Plans shall be prepared in accordance with the Florida's Turnpike Enterprise current **General Tolling Requirements (GTR)**. The **GTR** and **Addendum(s)** to the **GTR** can be downloaded from the following link:

http://www.floridasturnpike.com/design/prod_design/tppph/tppph.html

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
- 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 (inhouse 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

Provide the sheets listed as applicable						
ITEM	PHASE	PHASE*	PHASE	PHASE		
	I	<u>II</u>	III	IV		
Key Sheet	Р	Р	С	F		
Signature Sheet		Р	С	F		
Summary of Pay Items		Р	С	F		
Drainage Map	Р	Р	С	F		
Interchange Drainage Map	Р	Р	С	F		
Typical Section	Р	С	Ċ	F		
Summary of Quantities			C C C	F		
Summary of Drainage Structures		Р	Č	F		
Optional Materials Tabulation		P	Ċ	F		
Project Layout	Р	Ċ	000000	F		
Roadway Plan-Profile	P	P	C	F		
Special Profile	P	Р	Č	F		
Back-of-Sidewalk Profile	P	Ċ	C	F		
Interchange Layout	P	P	C	, F		
	ŗ	P	C	, F		
Ramp Terminal Details	п		C	F F		
Intersection Layout/Detail	Р	Р	C			
Drainage Structures		Р	C	F		
Three-Sided/Box Culvert Details		5	C	F		
Lateral Ditch Plan-Profile		Р	C	F		
Lateral Ditch Cross Section		Р	C	F		
Retention/Detention Ponds		Р	C	F_		
Cross Section Pattern		P	C	F -		
Roadway Soil Survey		Р	Ç	F		
Cross Sections	Р	Р	00000000000	F		
Stormwater Pollution Prevention Plan		Р	С	F		
Temporary Traffic Control Plans	Р	Р	С	F		
Utility Adjustments		Р	C C	F		
Project Network Control Sheets	Р	С	С	F		
Selective Clearing and Grubbing		Р	С	F		
Developmental Design Standards		С	Ċ	F		
Mitigation Plans		Р	C	F		
Miscellaneous Structures Plans		Р	С	F		
Signing and Pavement Marking Plans		Р	С	F		
Signalization Plans		Р	С	F		
Intelligent Transportation System (ITS) Plans		Р	С	F		
Lighting Plans		Р	C C C C	F		
Landscape Plans	Р	Р	Ċ	F		
Utility Work by Highway Contractor Agreement Plans			Ċ	F		
Contract Time			P	F		
Toll Facility Plans			•	·		
Site/Civil	Р	Р	С	F		
Architectural	P	r P	C	F		
Structural	P	P	C	F		
	Г	P	C	F F		
Electrical			C			
Mechanical		Р	C	F		
Plumbing		Р	C	F		
Communications		Р	000000	F		
Systems		Р	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.

Requirements for Phase I Submittal 2.3.2.1

Unless otherwise directed by the Department, 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, construction, 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

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)

Gradeline 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 Department, the following elements are required for a Phase II set of plans.

KEY SHEET

Index of sheets

Contract plans and component plans list

SIGNATURE SHEET

(Signature Sheet is not part of the Classical Electronic Delivery)

Sections for each Professional of Record

Index of sheets for each Professional of Record Image of the seal(s)

Appearance of the Digital Signature only to be applied in Phase IV

(Note: Digital Signatures are not to be applied in this Phase)

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

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

INTERCHANGE DRAINAGE MAP (con't)

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

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

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

North arrow and scale

LIGHTING PLANS - PLAN SHEETS

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/Lateral offset (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)

LANDSCAPE PLANS - PLANTING PLAN SHEETS (con't)

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 plan set. 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 quantity calculations 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. Plans are electronically or digitally signed and sealed after this phase.

Note: Sometimes there are more submittals after Phase IV – Specifications (First Mail) and Plans Processing (Second Mail/CD Submittal). Usually plans are not "final" or signed & sealed until Plans Processing Second Mail/CD Submittal.

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		Р	F
Signature Sheet		Р	F
Drainage Map	Р	С	F
Interchange Drainage Map	Р	С	F
Typical Section	Р	С	F
Summary of Drainage Structures		С	F
Project Layout		С	F
Roadway Plan-Profile	Р	С	F
Special Profile		С	F
Back-of-Sidewalk Profile		С	
Interchange Layout	Р	С	F
Intersection Layout/Detail	Р	С	F
Drainage Structures		С	F
Three-Sided/Box Culvert Details		С	F
Lateral Ditch Plan-Profile		С	F
Lateral Ditch Cross Section		С	F
Retention/Detention Pond Details		С	F
Roadway Soil Survey		С	F
Cross Sections		С	F
Temporary Traffic Control Plans	Р	С	F
Utility Adjustments		С	
Project Network Control Sheets	Р	C	F
Selective Clearing and Grubbing		С	
Developmental Design Standards		С	F
Mitigation Plans		С	F
Miscellaneous Structures Plans		С	F
Signing and Pavement Marking Plans	Р	С	F
Signalization Plans		С	F
Intelligent Transportation System (ITS) Plans		C	F
Lighting Plans		С	F
Landscape Plans		C	F
Utility Work by Highway Contractor Agreement Plans		С	F
Toll Facility Plans	_	_	_
Site/Civil	P	P	F -
Architectural	P -	P	F
Structural	Р	P	F -
Electrical		P	F -
Mechanical		P	F
Plumbing		P	F
Communications		Р	F
Systems		Р	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 shall submit a complete set of 11" X 17" plan sheets. As a supplement to the plan set, the team may submit select plan sheets no larger than 24" X 36" or roll plot(s) no larger than 24" X 96". Supplemental plan sheets or roll plots are desirable for such roadway features that cannot be presented adequately on 11" X 17" sheets, such as complex interchanges, Maintenance of Traffic phases and large complex intersections. 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

INTERCHANGE 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

TEMPORARY TRAFFIC CONTROL PLANS (con't)

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

SIGNATURE SHEET

(Signature Sheet is not part of the Classical Electronic Delivery)

Sections for each Professional of Record Index of sheets for each Professional of Record Image of the seal(s)

(Note: Digital Signatures are not to be applied in this Phase)

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

DRAINAGE MAP – PLAN VIEW

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

INTERCHANGE DRAINAGE MAP

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)

ROADWAY PLAN PROFILOE - PLAN VIEW (con't)

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

INTERSECTION LAYOUT (con't)

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

OUTFALL / LATERAL DITCH SYSTEM -PROFILE VIEW (con't)

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 scaleRoadway 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

RETENTION/DETENTION POND CROSS SECTIONS (con't)

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

SIGNALIZATION PLANS - PLAN SHEET (con't)

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

LIGHTING PLANS – KEY SHEET (con't)

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 proposed overhead and underground utility locations

Clear Zone/Lateral offset (should be plotted or safety setback distances noted frequently on each

View zones for permitted outdoor advertising signs

Canopy limits

plan sheet)

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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