

901 Sequence of Plans Preparation

901.1 General

The set of plans depicting the proposed construction work is known as the "Contract Plans Set" and is comprised of component plans that are associated with a primary work type. The contract plans set should be prepared systematically, undergoing phases of review and updates to ensure technically correct and clear plans. Additional information can be found in **FDM 110, 111, 112, and 120**. These chapters contain a comprehensive discussion of design processes and activities from initial to final engineering.

Component plans are included in the Contract Plans Set in the following order:

- | | |
|--|---------------------|
| (1) Roadway | (6) Landscape |
| (2) Signing and Pavement Marking | (7) Architectural |
| (3) Signalization | (8) Structures |
| (4) Intelligent Transportation Systems (ITS) | (9) Toll Facilities |
| (5) Lighting | |

Prepare Toll Facility Plans in accordance with the Florida's Turnpike Enterprise [General Tolling Requirements \(GTR\)](#). Contact the Florida's Turnpike Enterprise Project Manager to request a copy of the GTR.

901.2 Phase Submittals

Modification for Non-Conventional Projects:

Delete **FDM 901.2** and follow **FDM 301.3**.

See **FDM 120** for design submittal requirements and guidance in preparing submittals for review by the Department. For bridge submittal requirements see **FDM 121**.

Standard phase submittals are: Phase I, Phase II, Phase III, Phase IV, and PS&E. RRR, operational improvement, and safety projects often omit some of these phase submittals.

Sheets typically required for each phase submittal and required level of completion are noted in **Table 901.2.1**. Levels of completion are indicated as follows:

- (1) Preliminary (P): Basic shapes, geometry, and information to convey the concept.

- (2) Complete but Subject to Change (C): The design, drawings and details are complete. Only reviewer-initiated changes should be expected at this level.
- (3) Final (F): All drawings and designs are complete. No changes are expected at this level. Plans are ready to be signed and sealed by the EOR.

Table 901.2.1 Summary of Phase Submittals

ITEM	PHASE I	PHASE II*	PHASE III	PHASE IV
Key Sheet	P	P	C	F
Signature Sheet		P	C	F
Typical Section	P	C	C	F
Model Management	C	C	C	F
Project Control	P	C	C	F
Roadway Plan-Profile	P	P	C	F
Traffic Monitoring Site		P	C	F
Drainage Structures		P	C	F
Stormwater Facility Plan		P	C	F
Drainage Map		P	C	F
Roadway Soil Survey		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 Standard Plans		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
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 with structures plans component must submit the latest set with the 60% roadway submittal.

901.2.1 Phase I Submittal

Develop Phase I Plans to include the following:

KEY SHEET

All Components

- All applicable Financial Project IDs
- (Federal Funds) notation, if applicable
- County Name and State Road Number
- Fiscal Year and sheet number
- Consultants name, address, and contract number, if applicable
- Department's Project Manager's Name

Lead Component (typically Roadway)

- Project Location Map (complete)
- Governing Standards and Specifications dates

TYPICAL SECTIONS

- Proposed typical section(s)
- R/W lines
- Special details and notes
- Traffic data

MODEL MANAGEMENT

- Complete

PROJECT CONTROL

- Benchmarks
- Reference points
- Control points

PLAN AND PROFILE

Plan View

- Existing topography including utilities
- North arrow and scale
- Centerline of construction or baseline of survey
- Equations and exceptions
- Curve data
- Preliminary horizontal geometrics
- Existing R/W lines
- Begin & end stations for the project
- Begin & end bridge stations

Profile View

- Scale
- Appropriate existing utilities
- Preliminary profile grade line
- Equations
- Existing ground line
- Begin & end stations for the project
- Begin & end bridge stations
- Preliminary highwater elevation

DRAINAGE MAP

- Photographic (aerial) base map
- Centerline of construction or baseline of survey and stationing
- North arrow and scale
- Street names and R/W lines
- Begin & end of project stations
- Begin & end of bridges stations
- Drainage areas and flow direction
- Drainage divides and ground elevations
- Highwater information
- Existing structures and pipes with relevant information
- State, Federal, and county highway numbers
- Label existing water bodies (e.g., lakes, rivers)

TEMPORARY TRAFFIC CONTROL PLANS

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

LANDSCAPE PLANS

- Conceptual landscape plan

901.2.2 Phase II Submittal

Typically, the work to be done during this phase is the following:

- (1) Address Phase I comments.
- (2) Load pay item numbers into Designer Interface for AASHTOWare Project™ Preconstruction and print a PDF of the Summary of Pay Items Report. Notify the Department Project Manager when this is completed via email with the PDF report attached.
- (3) Develop models to be contained in the BIM.zip file to the appropriate Level of Development specified in the **FDOT [CADD Manual](#)**. Do not include BIM.zip with Phase II Submittal.
- (4) Develop Phase II Plans to include the following:

KEY SHEET

- Index of sheets including Developmental Standard Plans
- Contract plans and component plans list (lead component only)

SIGNATURE SHEET

- Sections for each Professional of Record with Index of Sheets
- Image of the seals

TYPICAL SECTIONS

- Complete

PROJECT CONTROL

- Complete

PLAN AND PROFILE

Plan View

- Begin & end stations for construction
- Curb return numbers, station ties, and elevations
- Proposed drainage structures with pipes
- Proposed R/W lines
- Proposed side drainpipes
- Proposed geometrics
- Limits of wetlands

Profile View

- Final profile grades and vertical curve data
- Mainline storm drainpipes
- Special ditch gradients with DPI station and elevation
- Special gutter grades with DPI station and elevation.
- Nonstandard superelevation transition details
- Highwater elevations
- Existing utilities

TRAFFIC MONITORING SITE

- Complete

DRAINAGE STRUCTURES

- Drainage tabular information
- Vertical and horizontal scale
- Special sections at conflict points

Plan View

- Centerline of construction or baseline of construction with stationing
- All elements of roadway template and R/W lines
- Proposed drainage system with structure and pipe labeling
- Underground utilities

Profile View

- Sectional view along pipe runs with structure and pipe labeling
- Existing and proposed surface
- Underground utilities

STORMWATER FACILITY PLAN

- North arrow and scale
- Proposed baseline with stationing with ties to roadway centerline of construction or baseline of survey
- Existing topography, drainage structures, and utilities
- R/W lines
- Soil boring locations
- Fence and gate locations
- Drainage structures with structure and pipe labeling
- Stormwater facility delineation with side slopes, dimensions, and elevations
- Stormwater facility section views
- Outlet structure details and notes
- 100-year flood plain boundaries and elevations, contamination sites, delineated wetlands, and sink holes and depressions

DRAINAGE MAP

- Proposed drainage structures with structure numbers
- Proposed cross drains with pipe sizes and structure numbers
- Flow arrows along proposed ditches
- Retention and detention ponds, pond number and area size
- Bridges and bridge culverts with begin & end stations
- Flood Data Summary (if applicable)

ROADWAY SOIL SURVEY

- Soil data

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

- Narrative Description (with supplemental topographic maps, when used)

TEMPORARY TRAFFIC CONTROL PLANS

- Preliminary traffic control plan
- Detour plan
- Phasing plan
- R/W information
- Existing Utilities

UTILITY ADJUSTMENTS

- All existing utilities highlighted

SELECTIVE CLEARING AND GRUBBING

- Existing vegetation to be protected, relocated, or removed
- Project-specific notes and details

MITIGATION PLANS

- Project specific

MISCELLANEOUS STRUCTURES PLANS

- Retaining walls (cast in place, proprietary, or temporary) if required

SIGNING AND PAVEMENT MARKING PLANS - PLAN SHEETS

- North arrow and scale
- Basic roadway geometrics
- Begin & end stations and exceptions
- Station equations
- Conflicting utilities, lighting, and drainage
- Pavement markings
- Sign locations
- Applicable pay items

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

- Project specific

SIGNALIZATION PLAN SHEET

- North arrow and scale
- Basic roadway geometrics
- Begin & end stations and exceptions
- Station equations
- Conflicting utilities, lighting, and drainage
- Signal pole location
- Type and location of loops
- Type and location of signal heads

- Pedestrian signals including station and offset
- Location of stop bars
- Location of crosswalks
- Sheet title
- Applicable pay items

SIGNALIZATION PLANS - POLE SCHEDULE

- Pole location, number, and 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, and drainage
- Other project-specific details

ITS PLANS - PLAN SHEETS

- North arrow and scale
- Basic roadway geometrics
- Begin & end stations and exceptions
- Station equations
- Conflicting utilities, lighting, and drainage
- Applicable pay items

ITS PLANS - DETAIL SHEETS

- Project specific

LIGHTING PLANS - POLE DATA AND LEGEND SHEET

- Each pole listed 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
- Baseline of construction
- Begin & end stations and equations
- Basic roadway geometrics
- 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

- Project-specific foundation detail sheets
- Project-specific boring data sheets
- Conflicting utilities, drainage, and lighting

LANDSCAPE PLANS

- Complete

901.2.3 Phase III Submittal

Along with the Plans, the Phase III Submittal includes the BIM.zip file, and the Estimate of Quantities Report. Typically, the work to be done during this phase is the following:

- (1) Address Phase II comments
- (2) Complete all remaining Plan Sheets
- (3) Complete the development of models to be contained in the BIM.zip file. Place the BIM manifest on the Signature Sheet.
- (4) Confirm that project begin and end milepost and project exceptions are consistent with the limits of work shown in the Work Program Administration (WPA) system. Coordinate any needed changes to the WPA system with the District Work Program Coordinator.
- (5) Complete the Estimated Quantities Report (see **FDM 902**).
- (6) Input quantities into Designer Interface for AASHTOWare Project™ Preconstruction. The Department's Construction Office will perform a biddability review and will establish construction duration as a part of the Phase III. The Construction Time Memo and biddability review comments are typically included with the Phase III review comments.

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.

901.2.4 Phase IV Submittal

Along with the Plans, the Phase IV Submittal includes the BIM.zip file and the Estimate of Quantities Report. Typically, the work to be done during this phase is the following:

- (1) Address Phase III review comments
- (2) Finalize all plan sheets, including:
 - (a) Place the assigned Construction Contract Number on the Key Sheet
 - (b) Update Work Zone Traffic Control pay items based on established construction duration.
- (3) Finalize the models to be contained in the BIM.zip file. Update the BIM manifest on the Signature Sheet.
- (4) Finalize the Estimate of Quantities Report. Update quantities in Designer Interface for AASHTOWare Project™ Preconstruction.
- (5) Provide an EOR's construction cost estimate to the Department Project Manager (when requested).

After corrections noted during the Phase IV submittal review are completed and verified, the plans are referred to as Final Plans.

901.2.5 PS&E Submittal

There are two required submittals during the Plans, Specifications, and Estimates (PS&E) phase. Coordinate with the District Final Plans Office for scheduling these required submittals.

The first submittal consists of the Final Plans and BIM.zip, draft Specifications Package and Estimated Quantities Report. See the [Specifications Handbook](#) for information on preparing Specifications Packages and Supplemental Specifications Packages.

A review of the first submittal by the District Final Plans Office often require changes (e.g., pay item numbers and quantities, notes, design details). After changes to the Final Plans, BIM zip file, Specifications Package, and Estimated Quantities Report, have been completed and verified, deliver the second submittal consisting of the following:

- (1) Signed and Sealed Plans
- (2) Signed and Sealed Specifications
- (3) Signed and Sealed Estimated Quantities Report
- (4) BIM.zip file

CADD zip file is provided when the project does not require a BIM zip file.

Provide the Total Roadway Length, Total Bridge Length, and Total Project Length to the Department Project Manager (when requested). This information is shown on the transmittal form in the PSEE PS&E Module and used by the Contracts Office when posting the advertisement. These lengths are in miles to three decimals, and calculated as follows:

- Total Project Length = End Project MP – Begin Project MP
- Total Bridge Length = Sum of all bridge lengths (\sum End Bridge MP – Begin Bridge MP). Do not include bridge culverts.
- Total Roadway Length = Total Project Length – Total Bridge Length - Exceptions

Information on District activities during PS&E Phase is described in **FDM 131**.

Information on the delivery of Project Documentation is described in **FDM 111.7**.

901.3 Design-Build Phase Submittals

See **FDM 301.3** for requirements relating to Design-Build projects.

901.4 Alternative Intersection and Interchange Submittals

Alternative Intersection and Interchange reviews are generally required for the following configurations:

- Roundabout
- Median U-Turn (MUT)
- Restricted Crossing U-Turn (RCUT)
- Diverging Diamond Interchange (DDI)
- Jug Handle
- Displaced Left Turn
- Continuous Green-T
- Quadrant Roadway

Include Alternative Intersection and Interchange Review Packages with the Phase I Submittal and designate a representative of the State Roadway Design Office as a Lead Reviewer in ERC.

The following items are required for an Alternative Intersection and Interchange Review Package:

- (1) Geometric Layout (PDF and CADD):
 - (a) North Arrow and scale, Survey Baseline, equations
 - (b) Significant topographic features including buildings, driveways, bridges, drainage structures, utilities, bicycle and pedestrian facilities, and transit facilities
 - (c) Preliminary horizontal geometry including pavement edges, curb and gutter, traffic separators, islands, sidewalks, and curb ramps
 - (d) Preliminary pavement markings including edge lines, interior lane lines, extension lines, stop bars, crosswalks, direction arrows, and gore markings
- (2) Design Vehicle Turning Movements (PDF and CADD):
 - (a) Design vehicle swept path diagrams for all through movements, left turn movements, and right turn movements
- (3) Traffic Forecast (PDF)
 - (a) Opening year and design year, a.m. and p.m., peak hour volumes for all movements through the intersection
 - (b) Peak hour factor
 - (c) Percentage of heavy vehicles
 - (d) Volume distribution across lanes for multi-lane entries
- (4) Operational Analysis input and output (PDF)

901.4.1 Roundabouts

The following additional items are required for Roundabout Review Packages:

- (1) Fastest Path Speed Checks in accordance with NCHRP 672 Section 6.71 (PDF and CADD)
- (2) Sight Distance Checks in accordance with NCHRP 672 Section 6.7.3 (PDF and CADD)

901.4.2 Diverging Diamond Interchanges

The following additional items are required for Diverging Diamond Interchange Review Packages:

- (1) Horizontal alignment data including baseline locations, curve data, stationing, and cardinal points (PC, PT, etc.)
- (2) Vertical alignments
- (3) Cross slopes
- (4) Conceptual Drainage Plan