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 primary work types. 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
(2) Signing and Pavement Marking
(3) Signalization
(4) Intelligent Transportation Systems (ITS)
(5) Lighting
(6) Landscape
(7) Architectural
(8) Structures
(9) Toll Facilities
(10) Utility Work by Highway Contractor

Prepare Toll Facilities Plans in accordance with ***FDM 947***.

901.2 Optional Line and Grade Submittal

At the discretion of the district, submit preliminary horizontal and vertical geometry depicting the proposed design at approximately the mid-point between Notice to Proceed (NTP) and Phase I Plans. Include horizontal geometry for mainline roadways, ramps, cross streets, and side roads. Provide vertical geometry for mainline roadways and cross streets, and when critical to the project, for ramps and side roads as well.

These sheets are typically produced using a scale of 1″ = 50′ horizontal and 1″ = 5′ vertical.

Show base clearance water elevations, seasonal high groundwater elevations, and floodplain elevations in the profile view.

Identify potential impacts or constraints (e.g., R/W, utilities, wetlands, existing bridge structures) in the plan view.

901.2.1 Requirements

The Line and Grade sheets should address the following objectives:

(1) Check consistency with the intent and scope of the Project Concept Report.

(2) Evaluate the impacts of changes to the project concept resulting from the normal design development process as well as those resulting from changes in scope and the identification of adverse site conditions.

(3) Verify the geometric viability of the project for the desired design speed and traffic volumes.

(4) Provide a basis for early coordination with other disciplines.

(5) Provide a basis for early identification of design constraints or problems.

(6) Document off-site and pavement drainage constraints such as base clearance water elevations, seasonal high groundwater elevations, and floodplain elevations.

(7) Establish design criteria specific to horizontal and vertical geometry.

(8) Identify Design Variations and Design Exceptions associated with the horizontal and vertical alignments.

Include supporting calculations and documentation with the Line and Grade submittal that address the following:

- Design speed
- Lane widths
- Shoulder widths
- Bridge widths
- Base clearances
- Access management
- Aesthetics
- Landscape opportunities
- Stopping sight distances
- Intersection sight distances
- Horizontal and vertical clearances
- Existing bridge approach slab evaluations
- Auto-turn exhibits for vehicle movements

901.3 Conventional (Design-Bid-Build) Projects

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

The standard phase submittals are: Phase I, Phase II, Phase III, Phase IV, and Plans, Specifications, and Estimates (PS&E) Phase. RRR, operational improvement, and safety improvement projects often omit some of these phase submittals.

The sheets typically required for each phase submittal and their required level of completion are noted in ***Table 901.3.1***. Levels of completion are described 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. The plans are ready to be signed and sealed by the EOR.

Roadway Plan sheets that support permit applications (e.g., Plan-Profile, Stormwater Management Facility Plan, Drainage Sheets, Mitigation Plan) should be at a permit-ready level of completion for the Phase II submittal.

Toll Facilities Plans are composed of several sub-component sets that define the scope of work and are the toll building permit plan sets submitted to the State Fire Marshal's office and Building Code Administrator. See ***FDM 286*** for the toll building permit requirements. The Turnpike has final review authority over design documents related to FDOT toll site infrastructure.

Table 901.3.1 Phase Submittals for Conventional Projects

ITEM	PHASE I	PHASE II*	PHASE III	PHASE IV
Roadway Plans Set				
Key Sheet	P	P	C	F
Signature Sheet		P	C	F
Drainage Map	P	P	C	F
Typical Sections	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 Sheets		P	C	F
Stormwater Management Facility Plan		P	C	F
Soil Survey		P	C	F
Roadway Cross Sections	P	P	C	F
Temporary Traffic Control Plan	P	P	C	F
Utility Adjustments		P	C	F
Selective Clearing and Grubbing		P	C	F
Mitigation Plan	P	P	C	F
Miscellaneous Structures		P	C	F
Component Plans Sets				
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
Landscape Maintenance Guide			C	F
Toll Facilities Plans				
Toll Siting Technical Memorandum (TSTM)			See ***FDM 280***	
Master and Sub-Component Key Sheets	P	P	C	F
Toll Site Location Map	P	P	C	F
Signature Sheets		P	C	F
Demolition/Renovation	P	P	C	F
Site Civil	P	P	C	F

Site Electrical	P	P	C	F
Architectural (Building)	P	P	C	F
Structural (Building)		P	C	F
Mechanical/Plumbing (Building)		P	C	F
Electrical (Building)		P	C	F
Structural (Non-Access/Access Gantry)	P	P	C	F
Electrical (Non-Access/Access Gantry)		P	C	F
Engineer's Estimate		P	C	F
Design Analysis Reports		P	C	F
Detour Toll Analysis Memorandum (DTAM)		P	C	F
KMZ/KML Files (Civil, Electrical, Utility, Comm)		P	C	F
Technical Special Provision (TSP) Sections		P	C	F
Modified Special Provisions (MSPs)		P	C	F
Utility Work by Highway Contractor Plans			C	F

Status Key: P - Preliminary C - Complete but subject to change F - Final

** Projects with a Structures Plans component must submit the latest set with the Phase II Roadway Plans submittal.*

901.3.1 Phase I Submittal

Develop Phase I plan sheets to include the following:

KEY SHEET

- All applicable Financial Project IDs
- (Federal Funds) notation, if applicable
- County Name and State Road Number
- Fiscal Year and sheet number
- Consultant's name, address, and contract number, if applicable
- Department's Project Manager's Name
- List of Component Plan Sets
- Project Location Map (if Lead Key Sheet) and Work Limits
- Governing Standards and Specifications

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)

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

ROADWAY PLAN-PROFILE

Plan View

- Existing topography
- Existing utilities, and V_{vh} data when available
- 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

ROADWAY CROSS SECTIONS

(may require accompanying Cross Section Pattern sheet)

- Scale
- Existing ground line
- Station numbers
- Baseline/centerline labeled
- Existing utilities
- Proposed template with profile grade elevations along the mainline and cross streets

TEMPORARY TRAFFIC CONTROL PLAN

- Typical section for each phase.
- Description of the phasing sequence and work involved.
- Other worksheets as necessary to convey concept and scope.

MITIGATION PLANS

- Project specific

LANDSCAPE PLANS

- Conceptual landscape plan

TOLL FACILITIES PLANS

TOLL FACILITIES PLANS COMPONENT SHEETS

- Master Key Sheet
- Toll Site Location Map

DEMOLITION PLANS (BUILDING)

- Key Sheet and Index of Sheets
- General Notes
- Site demolition plan(s)

SITE CIVIL PLANS

- Key Sheet and Index of Sheets
- General Notes
- Overall civil site plan
- Enlarged site plan(s)

SITE ELECTRICAL PLANS

- Symbol legend and abbreviations
- General Notes
- Overall electrical site plan

ARCHITECTURAL PLANS (BUILDING)

- Symbol legend and abbreviations
- General Notes and building code data
- Floor plan(s)

NON-ACCESSIBLE GANTRY STRUCTURAL PLANS

- Key Sheet and Index of Sheets
- General Notes
- Plan(s)
- Elevation(s)
- Foundation layout plan(s)

ACCESSIBLE GANTRY STRUCTURAL PLANS

- Key Sheet and Index of Sheets
- General Notes
- Plan(s)
- Elevation(s)
- Foundation layout plan(s)

Toll Facilities Plans must comply with the component breakdown and sheet requirements established in ***FDM 947***. Level of completion must correspond to the phase designations (P, C, F) in ***Table 901.3.1***.

901.3.2 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 Phase II plans to include the following:

KEY SHEET

- Index of sheets including Developmental Standard Plans (if appropriate)
- 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 (if appropriate)

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 numbers and area sizes
- Bridges and bridge culverts with begin & end stations
- Flood Data Summary (if applicable)

TYPICAL SECTIONS

- Complete

MODEL MANAGEMENT

- Complete

PROJECT CONTROL

- Complete

ROADWAY PLAN-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 drain pipes
- Preliminary horizontal geometrics and dimensions
- Limits of wetlands

Profile View

- Final profile grades and vertical curve data
- Mainline storm drain pipes
- Special ditch gradients with DPI stations and elevations
- Special gutter grades with DPI stations and elevations
- Nonstandard superelevation transition details
- Highwater elevations
- Existing utilities

TRAFFIC MONITORING SITE

- Complete

DRAINAGE SHEETS

Drainage Network Plan

- North arrow and scale
- Centerline of construction or baseline of construction with stationing
- All elements of the roadway template and R/W lines
- Proposed drainage system with structure and pipe labeling (tabular information)
- Underground utilities

Drainage Network Profile

- Vertical and horizontal scales
- Sectional view along pipe runs with structure and pipe labeling
- Existing and proposed surfaces
- Underground utilities
- Special sections at conflict points

STORMWATER MANAGEMENT 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 management facility delineation with side slopes, dimensions, and elevations
- Stormwater management facility section views
- Outlet structure details and notes
- 100-year floodplain boundaries and elevations, contamination sites, delineated wetlands, and sinkholes and depressions

SOIL SURVEY

- Soil data

ROADWAY CROSS SECTIONS

- R/W lines
- Special ditch bottom elevations
- Equivalent stations for ramps and mainline
- Mainline equation stations
- Extent of unsuitable materials
- Proposed template with profile grade elevation
- Begin and end project, construction, earthwork, and bridge and culvert stationing
- Existing utilities affected by the template

TEMPORARY TRAFFIC CONTROL PLAN

- General and phasing notes complete
- TTCP and detour plans mostly complete
- R/W and utilities information

UTILITY ADJUSTMENTS

- All existing utilities highlighted
- Develop conflict matrix

SELECTIVE CLEARING AND GRUBBING

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

MITIGATION PLAN

- Project specific

MISCELLANEOUS STRUCTURES

- 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 PLANS

- North arrow and scale
- Basic roadway geometrics
- Begin & end stations and exceptions
- Station equations
- Conflicting utilities, lighting, and drainage
- Signal pole locations
- Type and location of loops
- Type and location of signal heads
- Pedestrian signals
- Locations of stop bars
- Locations of crosswalks
- Sheet title
- Applicable pay items

SIGNALIZATION PLANS - POLE SCHEDULE

- Pole locations, number, and type
- Pole dimensions
- Pay item numbers and quantities
- Joint-use pole details, if applicable
- Foundation designs

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 values 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 locations and approximate offsets

LIGHTING PLANS - HIGH MAST

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

LANDSCAPE PLANS

- Complete

TOLL FACILITIES PLANS

In addition to the Phase I Toll Facilities Plans submittal elements, the following are required:

MASTER KEY SHEET

- Key Sheet and Index of Sheets
- Signature Sheet(s)

DEMOLITION PLANS (BUILDING)

- Floor demolition plan(s)
- Island/Lane demolition plan(s)

- Canopy/building demolition elevations (all sides)
- Structural demolition plan(s)
- Electrical site(s) demolition plan(s)
- Electrical demolition plan(s)
- Tunnel demolition plan(s) (includes electrical/mechanical/systems)
- Power riser diagram(s)
- Electrical panel schedules

SITE CIVIL PLANS

- Typical site details
- Report of Core Borings
- Detour Toll Analysis Memorandum

SITE ELECTRICAL PLANS

- Enlarged Electrical site plan(s)
- Lightning protection plan(s)
- Conduit and pull box details
- Miscellaneous site electrical details
- Power riser diagram(s) for RTC
- Electrical schedules and load summary for RTC

ARCHITECTURAL PLANS (BUILDING)

- Reflected ceiling plan(s)
- Roof plan(s)
- Exterior building elevations (all four walls) and color schedule
- Wall section(s) and details
- Door details
- Door, hardware, and finish schedules

STRUCTURAL PLANS (BUILDING)

- General notes
- Foundation plan and sections
- Roof plan and section(s)
- Exterior elevations (all four walls)
- Section(s) and detail(s)

MECHANICAL / PLUMBING PLANS (BUILDING)

- AC floor plan(s)
- AC equipment details and schedules
- Generator plan, elevations, details, and notes

ELECTRICAL PLANS (BUILDING)

- Symbol legend, abbreviations, and fixture schedule
- Power distribution system plan(s)
- Lighting and systems plans
- Lightning protection plan and details
- Security / Access control system plans, details, and riser diagrams
- CCTV system plan(s), details, and riser diagrams
- Interior elevations - all wall mounted equipment and conduit (all four walls)
- Tolling equipment raceway plan and details
- Miscellaneous electrical detail(s)
- Power riser diagram(s)
- Panelboard schedules and load summary
- SCADA system plan, notes, block diagrams and details

NON-ACCESSIBLE GANTRY STRUCTURAL PLANS

- Gantry plan(s) with toll equipment layouts – phased construction, interim and ultimate (each TEC)
- Elevation(s)
- Foundation notes and details
- Pile data table (if pile foundations are used)
- Report of core borings
- Table of variables
- Median concrete barrier (if required)
- Wireway mounting plans and details
- Truss section and details
- Toll equipment mounting details

NON-ACCESSIBLE GANTRY ELECTRICAL PLANS

- Electrical symbol legend and abbreviations
- General notes
- Toll equipment and wireway plans
- Power conductor routing details
- Toll equipment cable routing and miscellaneous detail(s)

ACCESSIBLE GANTRY STRUCTURAL PLANS

- Gantry plan(s) with toll equipment layouts – interim and ultimate (each TEC)
- Elevation(s)
- Foundation notes and details
- Report of Core Borings
- Columns to base connections
- Median concrete barrier (if required)
- Pedestal details
- Column elevations
- Column connection – Lower Chord
- Column connection – Upper Chord
- Access platform / stair details
- Truss framing – upper and lower chord plans, and elevations
- Truss connection details
- Typical section
- Camber and splice details
- Upper and lower grating plan(s)
- Upper and lower grating details
- Upper platform main post layout(s) – interim and ultimate
- Wireway mounting details
- Screen panel details
- Upper platform end fencing details

- Fall restraint details
- J-arm and gear box general notes
- Gear box details
- Equipment support arm details

ACCESSIBLE GANTRY ELECTRICAL PLANS

- Electrical symbol legend and abbreviations
- Electrical general notes
- Overall gantry electrical plan
- Enlarged electrical plan(s)
- Raceway layout plan – (accommodates ultimate)
- Aluminum shroud details
- Electrical details
- AVI wireway installation details
- Column wireway support details
- Access platform / stair lighting plan and details
- Lightning protection plan

DESIGN REPORTS

- Detour Toll Analysis Memorandum (DTAM)
- Power Design Analysis Report **(See *FDM 947.5*)**
- Mechanical Design Analysis Report **(See *FDM 947.5*)**
- Structural and geotechnical calculations:
  - Toll Site Equipment Slabs
  - Generator Slabs / Fuel Tanks
  - Gantry Foundations
  - Toll Gantries
  - Toll Equipment Building Foundations

TECHNICAL SPECIAL PROVISION AND MODIFIED SPECIAL PROVISION

- TSP Table of Contents
- List of MSP sections

ENGINEER'S ESTIMATE

- Engineer's estimate for each toll site using the "Toll Site EOR/AOR Estimate of Values Template". Coordinate with the Turnpike for the latest template.

TOLLING DEVIATIONS

- All Tolling Deviation submittal letters for items identified since the preparation of the TSTM.

Toll Facilities Plans must comply with the component breakdown and sheet requirements established in ***FDM 947***. The level of completion must correspond to the phase designations (P, C, F) in ***Table 901.3.1***.

901.3.3 Phase III Submittal

Typically, the remaining work to be done is to:

(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.

(4) Complete the Estimated Quantities Report (see ***FDM 902***) and input quantities into Designer Interface for AASHTOWare Project™ Preconstruction. Submit the Estimated Quantities Report with the Phase III submittal.

(5) Complete all Technical Special Provision reviews and enter them into the Electronic Review Comments (ERC) system.

Estimate the Work Zone Traffic Control items paid for on a 'per day' basis and include them in the Estimated Quantities Report. The Department's Construction Office will perform a biddability review and will establish construction duration as a part of the Phase III review after receiving the plan set. Include this information in the Phase III review comments transmitted back to the EOR.

For toll facilities components, in addition to the Phase II submittal elements, the following elements are required for a Phase III submittal:

SITE CIVIL PLANS

- Grading plan(s)
- Rigid concrete pavement joint layout within the toll loop pavement area

SITE ELECTRICAL PLANS

- Loop conduit stub-up in lanes for rigid concrete pavement
- Loop conduit stub-up locations along the concrete barrier for flexible pavement

TECHNICAL SPECIAL PROVISIONS AND MODIFIED SPECIAL PROVISIONS

- TSP sections
- Track changes version of TSP Sections in MS word
- MSP sections

Toll site non-standard pay items, associated specifications, and justifications must be submitted a minimum of two months prior to the Phase III plan submittal to allow new non-standard pay items to be coordinated with Central Office.

Utility Work by Highway Contractor (UWHC) 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.

901.3.4 Phase IV Submittal

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

(1) Address Phase III review comments.

(2) Update the Work Program Administration (WPA) system (see FDM 111.2.1) to reflect the begin and end project mileposts.

(3) Finalize all plan sheets, including:

  (a) Place the assigned Construction Contract Number on the Key Sheet.

  (b) Update the Work Zone Traffic Control pay items based on the established construction duration.

(4) Finalize the models to be contained in the BIM.zip file.

(5) Finalize the Estimate of Quantities Report and update quantities in Designer Interface for AASHTOWare Project™ Preconstruction. Submit the Estimated Quantities Report with the Phase IV submittal.

For toll facilities components, unless otherwise directed by the Turnpike, all elements required to provide a complete design must be included in the Phase IV submittal:

- New service connection commitments from the electrical service provider in accordance with ***FDM 282.3***.

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

901.3.5 Toll Building Permit Plans

The toll building permit plans submission must be in accordance with ***FDM 286*** and the applicable Technical Special Provisions (TSPs).

901.3.6 Plans, Specifications and Estimates (PS&E) Submittal

There are usually at least two required submittals during the PS&E phase. Coordinate with the District Final Plans Office to schedule these required submittals (if not included in the project schedule).

For projects including toll facilities, the PS&E submittal must include all toll component plans and supporting documentation in accordance with ***FDM 947*** and the applicable discipline manuals.

The first submittal (PS&E Review 1) must include the Final Plans, BIM.zip, draft Specifications Package, Estimated Quantities Report, and any applicable Technical Special Provisions (TSPs). See the ***Specifications Handbook*** for guidance on preparing Specifications Packages, TSPs, and Supplemental Specifications Packages.

The review of the first submittal by the District Final Plans Office often requires changes (e.g., pay item numbers and quantities, notes, design details). After changes to the Final Plans, Specifications Package, and Estimated Quantities Report have been completed and verified, a second submittal (PS&E Review 2) may be required. When all PS&E review comments have been fully resolved, submit the following:

(1) Signed and Sealed Final Plans

(2) Signed and Sealed Specifications Package

(3) Signed and Sealed Estimated Quantities Report

(4) BIM.zip or CADD.zip file

(5) TSPs (if applicable)

Provide the Total Roadway Length, Total Bridge Length, Total Project Exceptions Length (if applicable), and Total Project Length to the Department Project Manager for inclusion on the Transmittal of Plans, Specifications, and Estimate cover sheet.

District activities during the PS&E Phase are described in ***FDM 131***.

Sign and seal as-built plans and BIM files in accordance with ***FDM 130***.The delivery of as-built plans and BIM files and project documentation is described in ***FDM 111.7***.

901.4 Non-conventional (Design-Build) Projects

The following are required submittals for Design-Build projects:

(1) Technical Proposal

(2) 60% Plans for IDR associated with Category 2 structures

(3) 90% Component Plans

(4) Final Component Plans

(5) As-Built Plans

Toll Facilities Plans for Design-Build projects must comply with ***FDM 947*** and the applicable RFP requirements.

Toll Facilities Plans are composed of several sub-component sets that define the scope of work and are the Toll Building Permit Plan sets submitted to the State Fire Marshal's office and Building Code Administrator. All sub-component sets for a toll site must be submitted together for review. Piecemeal submittals are not allowed. Review comments must be resolved and documented by the designer before the plans can proceed to the next phase. The Turnpike has final authority over all design document reviews related to toll site infrastructure. In addition to the site-specific toll subcomponent Key Sheets, submit the Master Key Sheet and the Toll Site Location Map with each toll site submittal.

The required levels of completion for each phase submittal are noted in ***Table 901.4.1***. Levels of completion are Preliminary (P), Complete (C), and Final (F).

Table 901.4.1 Phase Submittals for Non-conventional Projects

Plan Sheet	Technical Proposal	90% Plans	Final Plans
Roadway Plans Set			
Key Sheet		C	F
Signature Sheet		C	F
Drainage Map	P	C	F
Typical Sections	P	C	F
Model Management		C	F
Project Control	P	C	F
Roadway Plan-Profile	P	C	F
Special Profiles		C	F
Traffic Monitoring Site	P	C	F
Drainage Sheets		C	F
Stormwater Facility Plan		C	F
Soil Survey		C	F
Roadway Cross Sections		C	F
Temporary Traffic Control Plan	P	C	F
Utility Adjustments		C	F
Selective Clearing and Grubbing		C	F
Mitigation Plan		C	F
Miscellaneous Structures		C	F
Component Plans Sets			
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
Toll Facilities Plans			
Master and Sub-Component Key Sheets	P	C	F
Toll Site Location Map	P	C	F
Signature Sheets	P	C	F
Demolition/Renovation		P	F
Site civil	P	C	F

Site electrical	P	C	F
Architectural (Building)	P	C	F
Structural (Building)		C	F
Mechanical/Plumbing (Building)		C	F
Electrical (Building)		C	F
Structural (non-accessible/accessible gantry)	P	C	F
Electrical (non-accessible/accessible gantry)		C	F
Schedule of Values		C	F
Design Analysis Report and DTAM		C	F
KMZ/KML files – civil, electric, util, comm (site plans)	P	C	F
Technical Special Provision sections	P	C	F
Modified Special Provision(s)		C	F
Utility Work by Highway Contractor Plans		C	F

Status Key: P – Preliminary C – Complete but subject to change F – Final

901.4.1 Discipline Phase Reviewer Requirements

There are two types of comments that may be provided during the review of submittals:

- **Response Required Comment:** These comments refer to direct violations of contract requirements and must be responded to.
- **FYI Comment:** These comments are informational and do not require a response. Phase reviews should focus on compliance with contract requirements, however, "for information only" comments may also provide valuable feedback.

Enter comments in the ERC system in the boxes labeled "Response Required Comment" or "FYI Comment". The ERC system will automatically add a statement at the end of each comment indicating "A written response is required." or "This comment is for information only. A written response is NOT required."

When providing a Response Required Comment, include the specific contract reference or requirement that is being violated, such as:

- An ***AASHTO*** provision that is being violated.
- A Governing Regulation (e.g., ***FDM, Structures Design Guidelines***) requirement that is being violated.

- A Technical Proposal commitment that is not being met.
- A Request for Proposal (RFP) requirement that is being omitted or violated.
- An omission in the plans or calculations.
- An inconsistency between the plans and calculations.
- An obvious error in math or basic engineering principles.
- An environmental commitment or permit commitment that is not being met.

The Department may provide mark-ups to support a review comment. The Department may allow the EOR to include supplemental details or revised plan sheets with their written responses, in lieu of resubmitting a component plan set.

901.4.1.1 Example of Response Required Comment

Example Comment: *The vertical curve length does not meet the minimum requirements of **Table 210.10.4** in the **FDM**. A written response is required.*

In this example, a requirement from the ***FDM*** is being violated. The plans must be corrected to address this situation, and a written response from the Design-Build Firm or Concessionaire is required.

Example Comment: *Calculations are consistent with two-phased post tensioning of the pier cap, but the plans indicate post-tensioning in a single phase. Update plans to be consistent with the calculations so that the cap will not be overstressed in the unloaded condition. A written response is required.*

In this example, the intent of the comment is to alert the Design-Build Firm or Concessionaire of an inconsistency between the calculations and the plans that result in the pier cap being overstressed. The plans must be corrected to address this situation, and a written response from the Design-Build Firm is required.

901.4.1.2 Example of FYI Comment

Example Comment: *The plans as submitted depict a land pier located very close to the shoreline of a major body of water and steel sheet piling are not shown along the water face of the footing. Ensure that the footing can be constructed in the dry per the requirements of the Specifications. This comment is for information only. A written response is NOT required.*

In this example, the intent of the comment is to ensure that the footing concrete is placed in the dry per the ***Standard Specifications***. Regardless of the action the Design-Build Firm or Concessionaire takes in response to the comment, the ***Standard Specifications*** requirements must be met; the reviewer is putting the Design-Build Firm or Concessionaire on notice.

901.4.2 Technical Proposal Submittal

Plan sheets contained in the Technical Proposal submittal must adhere to the requirements of the ***FDM 900 Series***.

Do not submit CADD files with the Technical Proposal submittal.

When required by the RFP, develop Technical Proposal submittal plan sheets to include the following:

DRAINAGE MAP

- Drainage divides and flow direction arrows
- High water information as required
- Preliminary horizontal alignment with stationing
- State, federal, and county highway numbers (as appropriate)
- Proposed storm drain trunk line and outfall locations
- Proposed retention/detention pond locations

TYPICAL SECTIONS

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

PROJECT CONTROL

- Benchmarks
- Reference points
- Control points

ROADWAY PLAN - PROFILE PLAN VIEW

- North arrow and scale
- Baseline of survey, equations
- Curve data (including superelevation)
- Existing topography including utilities
- Preliminary horizontal geometrics and dimensions
- 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

ROADWAY PLAN - PROFILE PROFILE VIEW

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

TRAFFIC MONITORING SITE

- Project specific

TEMPORARY TRAFFIC CONTROL PLAN

- General and phasing notes complete
- Preliminary TTCP and detour plans
- Typical section for each phase
- R/W and utilities information

SIGNING AND PAVEMENT MARKING PLANS - SIGN DETAIL SHEETS

- Preliminary layout of multi-column and overhead guide sign worksheets

TOLL FACILITIES PLANS

TOLL FACILITIES PLANS COMPONENT SHEETS

- Master Key Sheet
- Signature Sheet(s)
- Toll Site Location Map

SITE CIVIL PLANS

- Key Sheet and Index of Sheets
- General Notes
- Overall civil site plan
- Enlarged site plan(s)

SITE ELECTRICAL PLANS

- Symbol legend and abbreviations
- General Notes
- Overall electrical site plan(s)
- Enlarged electrical site plan(s)

ARCHITECTURAL PLANS (BUILDING)

- Key Sheet and Index of Sheets
- Symbol legend and abbreviations
- General notes and building code data
- Floor plan(s)

NON-ACCESSIBLE GANTRY STRUCTURAL PLANS

- Key Sheet and Index of Sheets
- General Notes
- Plan(s)
- Elevation(s)
- Foundation layout plan(s)

ACCESSIBLE GANTRY STRUCTURAL PLANS

- Key Sheet and Index of Sheets
- General Notes
- Plan(s)
- Elevation(s)
- Foundation layout plan(s)

TSTM and Tolling Deviations

- Revised Toll Siting Technical Memorandum (TSTM) as required by ***FDM 280***.
- All Tolling Deviation submittal letters for items identified since the preparation of the TSTM

901.4.3 90% Plans Component Submittal

After all comments associated with the Technical Proposal submittal have been resolved, the required plan sheets must be completed in accordance with the ***FDM 900 Series***.

Submit CADD files with the completed plans sets for the 90% Plans Component submittal.

For the Toll Facilities plans, the following elements in addition to the Technical Proposal submittal are required for a 90% submittal:

DEMOLITION PLANS

- Key Sheet and Index of Sheets
- General Notes
- Site demolition plan(s)
- Floor demolition plan(s)
- Island/lane demolition plan(s)
- Canopy/building demolition elevations (all sides)
- Structural demolition plan(s)
- Electrical site(s) demolition plan(s)
- Electrical demolition plan(s)
- Tunnel demolition plan(s) (includes electrical mechanical/systems)
- Power riser diagram(s)
- Electrical panel schedules

SITE CIVIL PLANS

- Typical site details
- Grading plan(s)
- Report of Core Borings
- Rigid concrete pavement joint layout within the toll loop pavement area (when applicable)

SITE ELECTRICAL PLANS

- Loop conduit stub-up in lanes (for rigid concrete pavement)
- Loop conduit stub-up locations along the concrete barrier for flexible pavement
- Lightning protection plan(s)
- Conduit and pull box details
- Miscellaneous site electrical details
- Power riser diagram(s) for RTC
- Electrical panel schedules for RTC

ARCHITECTURAL PLANS (BUILDING)

- Reflected ceiling plan(s)
- Roof plan(s)
- Exterior building elevations (all four walls) and color schedule
- Wall section(s) and details
- Door details
- Door, hardware, and finish schedules

STRUCTURAL PLANS (BUILDING)

- General notes
- Foundation plans and details
- Roof plan and section(s)
- Exterior elevations (all four walls)
- Section(s) and detail(s)

MECHANICAL / PLUMBING PLANS (BUILDING)

- AC floor plan(s)
- AC equipment detail(s) and schedule(s)
- Generator plan, elevation(s), detail(s), and notes

ELECTRICAL PLANS (BUILDING)

- Symbol legend, abbreviations, and fixture schedule
- Power distribution system plan(s)
- Lighting and systems plans
- Lightning protection plan and details
- Security / Access control system plans, details, and riser diagrams
- CCTV system plan(s), details, and riser diagram(s)
- Interior elevations - all wall mounted equipment and conduit (all four walls)
- Tolling equipment raceway plan and detail(s)
- Miscellaneous electrical detail(s)
- Power riser diagram(s)
- Panelboard schedules and load summary
- SCADA system plan, notes, block diagram and details

NON-ACCESSIBLE GANTRY STRUCTURAL PLANS

- General Notes
- Gantry plan(s) with toll equipment layouts – interim and ultimate (each TEC)
- Gantry elevation(s)
- Foundation notes and detail(s)
- Report of Core Borings
- Pile data table (if pile foundations are used)
- Table of variables
- Wireway mounting plan(s) and detail(s)
- Truss section and detail(s)

NON-ACCESSIBLE GANTRY ELECTRICAL PLANS

- Electrical symbols, legend, and abbreviations
- General Notes
- Toll equipment and wireway plans
- Power conductor routing details
- Toll equipment cable routing details
- Miscellaneous detail(s)

ACCESSIBLE GANTRY STRUCTURAL PLANS

- Gantry plans(s) with toll equipment layouts – interim and ultimate (each TEC)
- Report of Core Borings
- Connection detail(s)
- Column elevation(s)
- Column connection – lower chord
- Column connection – upper chord
- Platform / stair column detail(s)
- Main truss – upper and lower chord plans and elevation(s)
- Truss connection detail(s)
- Typical section(s)
- Truss chord camber and splice detail(s)
- Upper and grating plan(s)
- Grating detail(s)
- Upper platform main post layout(s)
- Screen panel detail(s)
- Upper platform end fencing detail(s)
- Fall restraint detail(s)
- Column and wireway mounting detail(s)
- Tolling equipment general notes
- Equipment support arm detail(s)

ACCESSIBLE GANTRY ELECTRICAL PLANS

- Electrical symbol legend and abbreviations
- Electrical general notes
- Overall gantry electrical plan
- Enlarged electrical plan(s)
- Raceway layout plan – (accommodates ultimate)
- Electrical details
- AVI wireway installation details
- Column wireway support details
- Access platform / stair lighting plan and details
- Lightning protection plan

DESIGN REPORTS

- Detour Toll Analysis Memorandum (DTAM)
- Power Design Analysis Report (See ***FDM 947.5***)
- Mechanical Design Analysis Report (See ***FDM 947.5***)
- Structural and geotechnical calculations:
  - Toll Site Equipment Slabs
  - Generator Slabs/Fuel Tanks
  - Gantry Foundations
  - Toll Gantries
  - Toll Equipment Building Foundations

TECHNICAL SPECIAL PROVISIONS AND MODIFIED SPECIAL PROVISIONS

- Complete TSP sections
- Complete MSP sections

901.4.4 Toll Building Permit Plans

Toll Building Permit plans must comply with ***FDM 286***, the applicable discipline manuals, and the FDOT Specifications framework.

901.4.5 Final Plans Component Submittal

After all comments associated with the 90% Plans Component submittal have been resolved, the required plan sheets and CADD files must be finalized.

Submit CADD files with the final plans sets for the Final Plans Component submittal.

901.4.6 Released for Construction Plans

After all comments associated with the Final Plans submittal have been resolved, the EOR must submit signed and sealed plan sets and BIM files for Department approval. The Department's Project Manager will initial, date, and stamp each submittal as "Released for Construction". Only signed and sealed plans and BIM files that have been stamped "Released for Construction" by the Department's Project Manager are valid.

Submit the BIM.zip file with the Released for Construction plan sets.

Sign and seal Final Plans and BIM files in accordance with ***FDM 130***.

901.4.7 As-Built Plans

As-Built requirements are specified in the Design-Build RFP. The Final As-Built Plans include all revisions and changes, both design and construction, that indicate precisely how the project was constructed.

Submit the BIM.zip or CADD.zip file with the As-Built Plans sets.

Sign and seal the As-Built Plans and BIM files in accordance with ***FDM 130***.

Provide Project Documentation in accordance with ***FDM 111.7***.

901.5 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, shared use paths, urban side paths, and curb ramps

  (d) Preliminary pavement markings including edge lines, interior lane lines, extension lines, stop bars, crosswalks, directional 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)

901.5.1 Roundabouts

The following additional items are required for Roundabout Review Packages:

(1) Fastest Path Speed Checks in accordance with ***NCHRP 672 Section 6.7.1*** (PDF and CADD)

(2) Sight Distance Checks in accordance with ***NCHRP 672 Section 6.7.3*** (PDF and CADD)

901.5.2 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