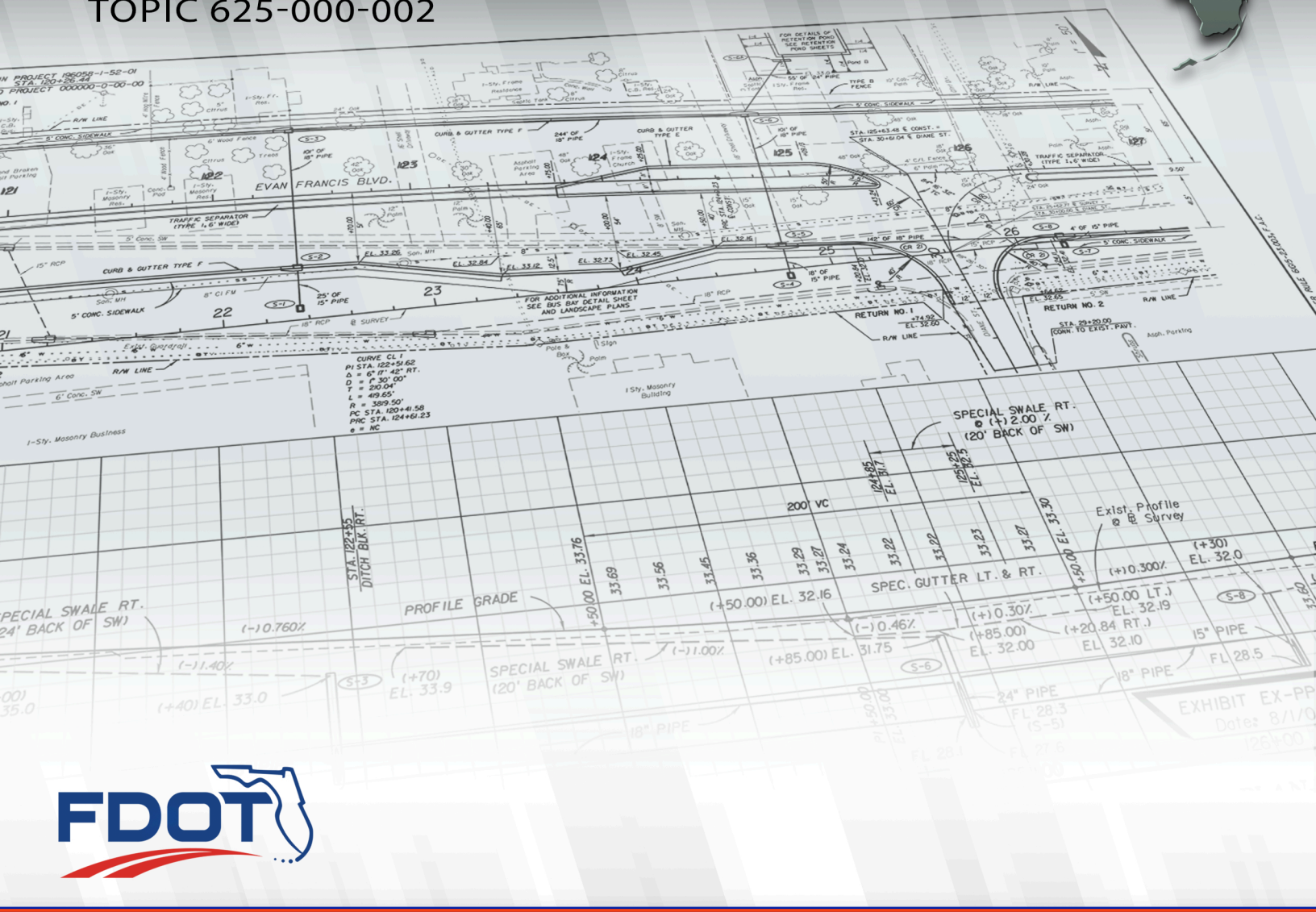
FDOT DESIGN MANUAL

NEXGEN PLANS

TOPIC 625-000-002



FDOT

JANUARY 2022

900 Production of NexGen Plans

900.1 General

The requirements provided in the ***FDM 900 series*** and the ***FDOT CADD Manual*** form the basis for format and assembly of the Contract Plans Set.

The ***FDM 900 series*** is being developed to replace the FDM 300 series. The new series reflects adopted practices, processes, and procedures because of the Department's transition from Bentley's Select Series Edition to OpenRoads Designer (ORD) Edition.

The ***FDM 900 series*** also provides instruction when Building Information Model (BIM) files are provided. BIM files are required for:

- All related surfaces for earthwork operations and used to determine earthwork quantities.
- All related surfaces for automated machine guidance (AMG) milling and pavement operations are anticipated.
- When appropriate, other files where the level of development is considered construction ready (LOD 300 and higher).

If an ***FDM 900 series*** chapter is shown as "under development" for a required sheet, use the corresponding ***FDM 300 series*** chapter.

The ***FDM 900 series*** is divided into three sections:

(1) Plans Production – This section provides general plans production information, and requirements for documents that are not delivered within a Contract Plans Set.

(2) Roadway Plans Set – This section provides specific information concerning the content of each required sheet delivered within the Roadway Plans Set.

(3) Component Plans Set – This section provides supplemental information concerning the content of a Component Plans Set.

Placing the Consultant's business logo on any plan sheet contained in the Contract Plans is prohibited .

900.1.1 Exhibits

Many chapters contain “generic” exhibits that provide examples of the plan sheets covered by that chapter. These exhibits were developed using criteria and standards in force at the time of their creation. These exhibits are not to be used as a source for criteria unless specified as such within the ***FDM*** chapter.

900.1.2 Symbols and Abbreviations

Standard symbols for Roadway Design are shown in the CADD Symbol Cell Library.

Abbreviations may be used to save space. A list of standard abbreviations is contained in the ***Standard Plans***. Minor deviations from these standard abbreviations are allowed, provided that the abbreviation used is clear and easily understood.

900.1.3 Photography

Plan sheets may use photography (aerial or other) when appropriate (e.g., for Drainage Maps, SWPPP supplemental site maps, bridge repair plans).

900.2 Labeling and Dimensioning Requirements

Orient horizontal and diagonal text to read left to right. Orient vertical text to read bottom to top.

Display information and data in accordance with the following:

- **Typical Section Elements** (e.g., lane widths, shoulder widths) - in feet, typically as a whole number.
- **Cross Slopes** (e.g., pavement, shoulder surfaces, sidewalks, bridge decks) - as a decimal part of a foot vertical per foot horizontal. These cross slopes are typically rounded to two decimal places (i.e., 0.02, 0.06) but may be shown to three decimal places when required.
- **Horizontal Control Points** (e.g., survey centerline, baseline, intersections and alignment) - in feet to 2 decimal places.
- **Vertical Control Points** (e.g., PVC, PVI, PVT) - in feet to 2 decimal places.
- **Profile Grade Elevations** - in feet to 2 decimal places.

- **Profile Grade Slope** - in percent to 3 decimal places.
- **Flow Line Elevations** - in feet to 2 decimal places.
- **Drainage Structure Elevations** (e.g., manhole tops, grate elevations) - in feet to 2 decimal places.
- **Ditch Elevations** - in feet to 1 decimal place (to nearest 0.05 when controlled by percent of grade).
- **Box or Three-sided Culvert Spans and Heights** - Show inside dimensions using "span by height" format (10 x 6 means the span is 10 feet and the height is 6 feet). In feet as a whole number for new construction; in feet to 2 decimal places for extensions of existing box culverts.
- **Alignment Bearings, Degree of Curve and Delta Angles** - in degrees, minutes and seconds, rounded to the nearest second.
- **Slope Ratios** - in vertical to horizontal (V:H) format; e.g., 1:6, 1:4.

900.3 Project Information Block

All plan sheet formats are contained in the FDOT CADD Software. Sheet borders include information blocks in the lower right corner. Enter the following information into the information box:

(1) Sheet Number (far right corner) – Number plan sheets in sequential order as shown in the Index of Plans Sheets that is placed on the Key Sheet.

(2) Sheet Title (immediately left of the sheet number) – This should be the same title that is shown in the Index of Plans Sheets that is placed on the Key Sheet.

(3) Project Information (immediately left of the sheet title) - This should be the same information that is shown on the Key Sheet.

  (a) State Road Number – Place the prefix "SR" before the number for clarification. When a county road is shown in the box use the prefix "CR". The box should remain blank when the facility is neither a state nor county road.

  (b) County

  (c) Financial Project ID - On projects which have multiple Financial Project IDs, show only the lead Financial Project ID

(4) Designer Information (immediately left of the project information) – provide information for the Professional of Record that Signs and Seals the sheet, as discussed in ***FDM 130***.

900.4 Revision Block

11x17 sheet borders include revision blocks along the bottom of the sheet.

The Key Sheet and large format plan sheets require the placement of a revision block cell on the sheet when a revision to that sheet is necessary. Place the revision block at the bottom center on the Key Sheet. Place the revision block at the far right on large format plan sheets, as close to the project information block as possible.

See ***FDM 132*** for required information to be placed in the revision block.

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

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 (∑ 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

902 Estimated Quantities Report

Modification for Non-Conventional Projects:
Delete ***FDM 902*** and replace with the following: Provide a Summary of Pavement summary box with planned asphalt quantities on a General Notes sheet within the "Released for Construction" plan set. Develop and report quantities in accordance with the ***Basis of Estimates Manual***. Include documentation that supports the asphalt quantities shown in the summary box.

The Estimated Quantities (EQ) Report is required for all projects that begin the design phase starting in January 2021. The EQ Report is also required for projects being produced in OpenRoads Designer that began design prior to January 2021.

902.1 General

The EQ Report is a single PDF file that contains all pay item and quantity information for the project. The EQ Report consists of a signature page and a series of summary tables, and must be developed and delivered according to the guidelines and formats defined by:

- ***Basis of Estimates Manual***
- Structures Manual
- ***CADD Manual***, Section 8.4.3
- ***FDM 902***

The FDOT Automated Quantities Training Guides provide additional instructional information.

Beginning with the Phase III submittal include the EQ Report with each required phase submittal. Submittals are to include the electronic shape files and other appropriate documentation (e.g., calculations, sketches, or spreadsheets) that support the quantities shown in the report.

For a strung project with two or more FPID numbers, develop an EQ Report for each FPID number.

For a single project with multiple FPID number sequencing, develop a single EQ Report with separate summary tables for each sequencing.

902.2 Signature Page

The signature page is typically an 11”x17” sheet (landscape). Place this page at the front of the EQ Report and include the information shown in ***Figure 902.2.1***. Show all FPID numbers on the signature page when a project has multiple funding sources.

The final EQ Report document is digitally signed and sealed only by the Department’s lead designer or lead consultant firm Engineer of Record (EOR). The page must show the Digital Signature Appearance of the EOR along with a representation of their Seal.

See ***FDM 130*** for digital Signing and Sealing requirements.

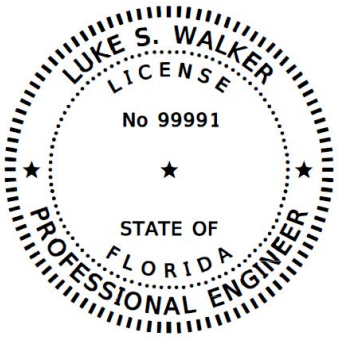
Figure 902.2.1 Signature Page Information

ESTIMATED QUANTITIES REPORT

Financial Project ID: 123456-1-52-01

Contract Number: T0000

Project Description: SR 22 (Wewa Highway), Bay County



This item has been digitally signed and sealed by:

Luke S. Walker
2020.10.14 16:52:48 – 4’00’

on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Roadway Engineers, Inc.
123 Main Street
Tallahassee, FL 32301
Luke S. Walker, P.E. No. 99991

The estimated quantities contained in this document:

1. Were developed in compliance with Florida Department of Transportation procedures, processes, and requirements.
2. Contain no known errors or omissions.
3. Match the pay item numbers and quantities in Designer Interface for AASHTOWare Project Preconstruction™.

902.3 Summary Tables

The summary tables to be used to create the EQ Report must be generated using the Quantity Takeoff Manager (QTM). The ***CADD Manual*** provides a list of summary tables that will be generated by the QTM. Do not modify the filename of the spreadsheets or format of the summary tables. Any modification to file name or format creates errors in the generated EQ Report.

Place quantity and location information into the created summary tables for those items that are not auto populated (extracted quantities from the design files). Once the Excel summary tables are fully populated use the Summary Reports Builder tool to create the EQ Report. The created report is done on 11”x17” pages (landscape) and are generally in ascending order of pay item numbers.

Each page of the report will contain only one summary table type. A continuation of a summary table onto subsequent pages may occur.

902.3.1 Designer Notes and Construction Remarks

Designer notes can be added to the summary tables prior to generating the EQ Report. The Designer Notes column is used to provide clarification on how the quantities were derived. Do not use this column to provide direction to the contractor.

Do not place any data or information in the Construction Remarks column.

902.4 EQ Report Requirements

The Department’s lead designer or lead firm Engineer of Record (EOR) is responsible for generating the EQ Report and for validating that the pay items and quantities contained in the report are the same as those loaded into Designer Interface for AASHTOWare Project™ Preconstruction.

Title the EQ Report PDF file with the FPID number followed by “-ESTIMATES-QUANTITIES.pdf. (e.g., 12345615201-ESTIMATES-QUANTITIES.pdf).

902.5 Loading Pay Item Information into Designer Interface

For the Phase II submittal the designer is typically responsible for loading only pay item numbers into Designer Interface for AASHTOWare Project™ Preconstruction. When only loading pay item numbers, create a PDF file of the Summary of Pay Item Report

generated in AASHTOWare Project™ Webgate Reporting. Notify the Department Project Manager when this is completed via email with the report PDF file attached.

When including preliminary quantities at Phase II (at request of the district), create the EQ Report and include with Phase II submittal. Creating the Summary of Pay Item Report and notifying the Department Project Manager is not required.

For the Phase III submittal, and subsequent submittals, the designer is responsible for entering (or updating) pay items and quantities into Designer Interface.

902.5.1 Designer Interface Quantities Builder

When the summary tables are populated with quantities, the Designer Interface Quantities Builder tool can be used to upload pay item number and quantity information into Designer Interface for Phase III submittal and all subsequent submittals.

Only the Department's lead designer or the lead consultant firm EOR may use the quantity tool to upload pay items and quantities. Each time the export tool is used the existing Designer Interface information is over-written.

905 Cross Sections

905.1 General

Cross sections depict the existing ground and manmade features, and proposed roadway template as sections perpendicular to the respective stations along a centerline or baseline of construction.

Cross section sheets are used to provide supplemental information during the plans phase review process. These sheets may also be used for coordination purposes (e.g., permit or utility, local agency, public meetings). These sheets are not to be placed within the Contract Plans Set. Signing and sealing these sheets is not required.

Enter a PDF of these sheets into the Electronic Review Comments (ERC) system with the Phase II and Phase III plans submittals. Include these sheets with the Phase IV ERC submittal when there are Phase III comments related to the cross sections. Provide a PDF of the cross-section sheets for coordination purposed as needed (e.g., permits, utilities, public meetings).

See ***Exhibit 905-1*** for an example of a Cross Section Sheet.

905.2 Sheet Set Up

This sheet may be produced on a standard-format sheet (11”x17”) or a large-format sheet (36”x48” or 36”x72”). Use landscape orientation regardless of sheet size selected.

Place as many cross sections on a sheet as possible using multiple columns of sections when appropriate. Create cross sections using a scale of 1” = 20' horizontal and 1” = 10’ vertical. The standard cross section interval is 50 feet. Another interval may be used when appropriate based on the type and complexity of the project.

Show cross sections with stations increasing from the bottom to the top of the sheet and multiple columns placed from the left to the right.

Cross sections for mainline, side streets, and ramps are typically shown on separate sheets within a single PDF. The order of cross sections contained in the PDF should be the mainline, side streets, then ramps.

Display the begin and end earthwork stations and include the name of the mainline (e.g., SR 22), side street (e.g., Easy Street), or ramp (e.g., Ramp A). Indicate exception limits (e.g., Bridge No. 770175 STA 105+20 to 109+60).

905.3 Required Information

As illustrated in ***Exhibit 905-1***, each cross section must include a background grid at the appropriate scale. Display the station for each cross section must be shown in the lower right area of the grid. Display (in feet) the horizontal offset from centerline along the bottom of the grid. Display the vertical elevation along both sides of the grid.

Each cross section must provide the following:

(1) Label the centerline or baseline of construction.

(2) Show and label R/W limits.

(3) Show existing ground lines.

(4) Show below ground portions of existing features, e.g., pavement, curb, sidewalk.

(5) Show and label parallel underground utilities.

(6) Show the proposed roadway template and include:

  (a) Profile grade elevation

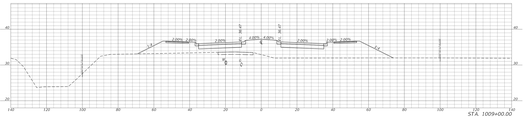
  (b) Special ditch elevation

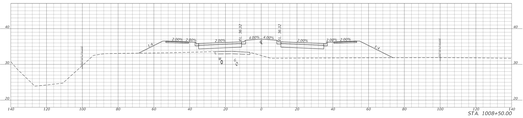
  (c) Pavement and sidewalk cross slope

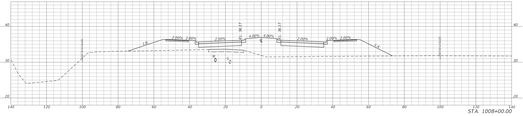
  (d) Median and outer slope ratio

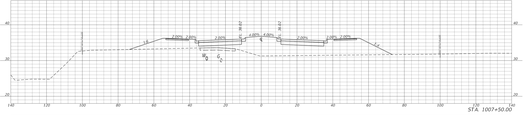
(7) Show, and label, the lower limits (undercut line) of the removal of organic or plastic material. See ***FDM 216*** and ***Standard Plans***, ***Index 120-002*** for the requirements of subsoil excavation; i.e., removal of unsuitable organic or plastic soils.

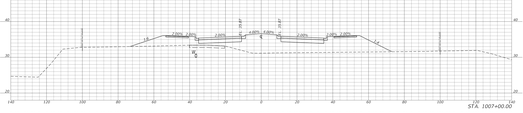
Showing parallel drainage pipes or structures is not required.

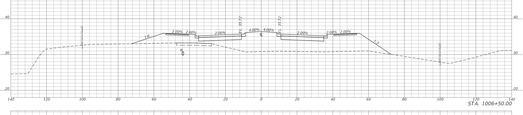


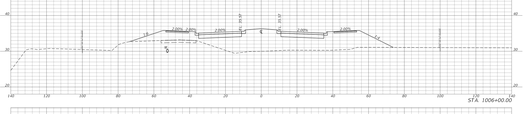


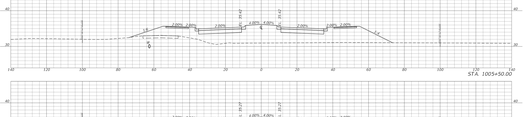


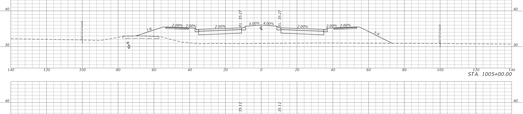


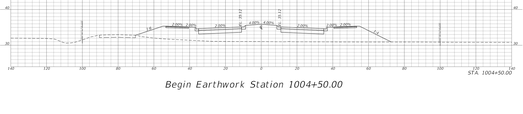




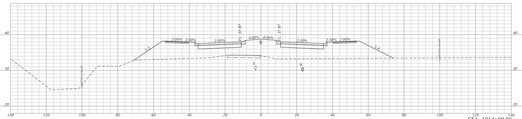


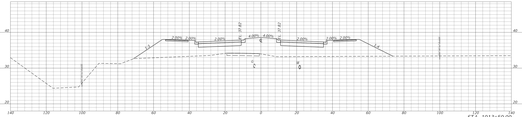


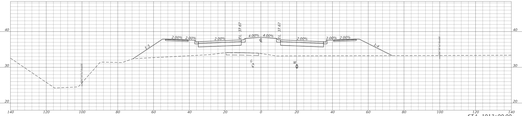


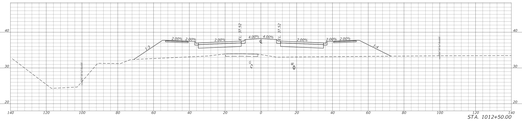


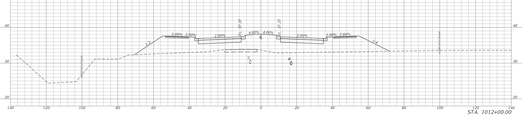
Begin Earthwork Station 1004+50.00

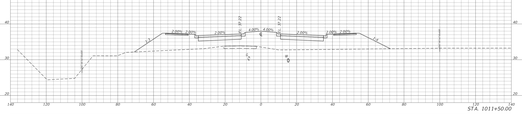


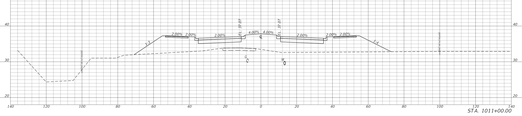


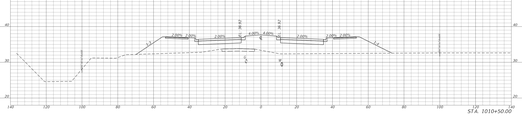


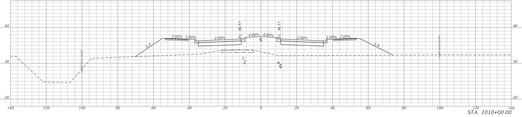


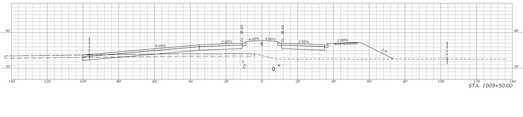


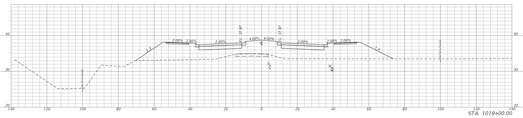


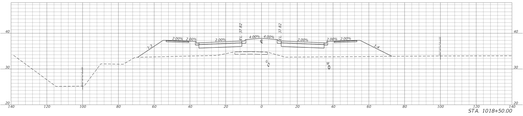


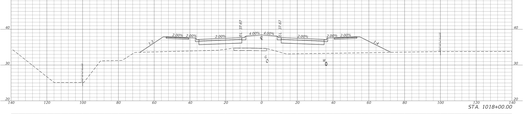


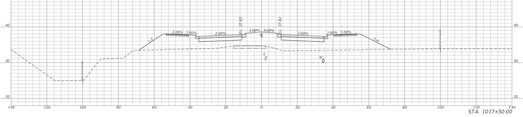


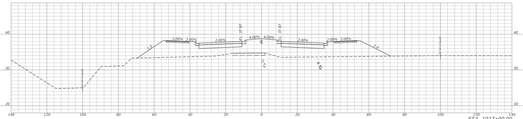


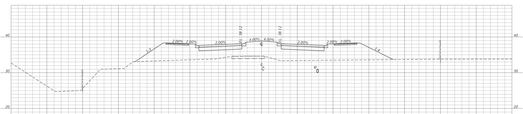


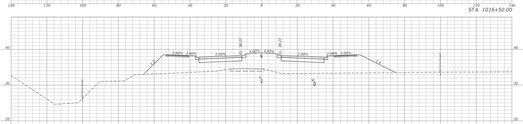


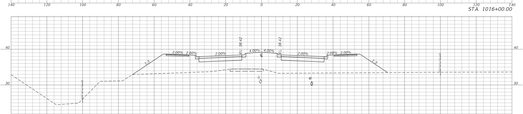


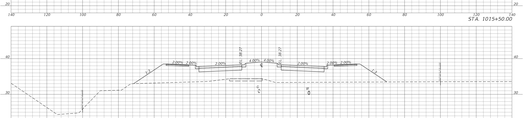


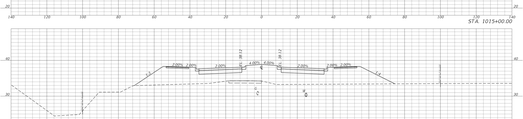




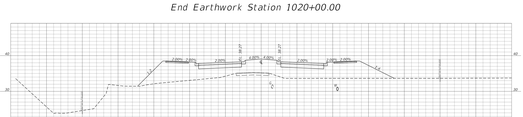








End Earthwork Station 1020+00.00



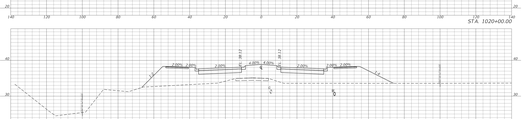


Exhibit 905-1
Date: 1/1/21

ENGINEER OF RECORD
JOE D. BAKER, P.E.
NO. 0041 - STATE OF FLORIDA
ATKINS GLOBAL
1000 ABERNATHY ROAD, SUITE 1600
ATLANTA, GEORGIA 30328-5614
PHONE: 770-604-9095

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROW NO.	COUNTY	FINANCIAL PROJECT ID
0	BAY	0246841-52-01

CROSS SECTIONS

SHEET NO.
33

910 Key Sheet and Signature Sheet

910.1 General

The Key Sheet is the first sheet of each contract plans. The Signature Sheet, when required, is typically the second sheet of the contract plans.

Projects are to be delivered as individual Signed and Sealed components of the Contract Plans set; e.g., Roadway Plans, Signing and Pavement Marking Plans, Structure Plans.

910.2 Key Sheet

The Key Sheet describes the project and the contents of the Contract Plans set. The Key Sheet is created using the FDOT CADD Software.

The top center of the sheet is to display “STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION” followed by the title of the component “CONTRACT PLANS”; e.g., “ROADWAY CONTRACT PLANS”, “LIGHTING CONTRACT PLANS”.

See ***Exhibit 910-1*** for an example of a lead Key Sheet with no revisions and ***Exhibit 910-2*** for a lead Key Sheet with revisions. See ***Exhibit 910-3*** for an example of a component Key Sheet.

910.2.1 Work Program Data

Work program data is placed directly below component contract plans designation, and includes the Financial Project ID, Federal Funds designation, County name and roadway section number, and State Road number with local name.

910.2.1.1 Financial Project ID

The Financial Project ID is the main number identifying each individual project within the Work Program. On projects which have one Contract Plans set, but multiple Financial Project IDs, list all the Financial Project IDs on the key sheet. Show only the lead Financial Project ID in the title block on all other plan sheets.

910.2.1.2 Federal Funds

When any of the Financial Project IDs listed on the Key Sheet involves Federal funds, display the words "(Federal Funds)" directly under the list.

Do not display the words "(Federal Funds)" for projects that use only State funds, even when strung with a project that uses Federal funds.

910.2.1.3 County Name and State Roadway Section Number

Place the county name and (in parentheses) the roadway section number directly under the Financial Project ID or “(Federal Funds)”. The roadway section number can be found with the ***Straight Line Diagrams*** (SDL). On projects which involve multiple counties, or multiple roadways, list all counties and associated roadway section numbers.

910.2.1.4 State Road Number and Project Description

Place the state road number and (in parentheses) the local road name directly under the county name and roadway section number. Under the state road number display a general description of work type and limits; e.g., “RRR from Crim Boulevard to Kurt Street".

910.2.2 Project Work Limits and Features

Show project work limits and features directly below the State Road number and project description. This data is reported in milepost (MP), correct to three decimals. A box is typically used as shown in ***Exhibit 910-1***, and includes the following required information:

(1) Provide a Project Location URL. The intent of the project location link is to provide a visual of the project location. GIS mapped project locations, developed to support the Work Program, is used to accomplish this. The link is created using a set string, with the first seven digits of the FPID number appended. For example, FPID number **443283-1**-52-01 would display the following URL: ***https://owpbstandardmap.fdot.gov/?query=WorkProgram_Tbl15_Dissolved_2004,itemseg,4432831***

(2) Begin and end project MP limits. Provide limits for each State Road included in the project.

(3) Begin and end MP limits of bridge structures, including the structure number(s). Do not include bridge culverts. When an existing bridge structure is being replaced, indicate the proposed structure and not the existing.

(4) Begin and end MP limits for each Project Exception (i.e., excluded roadway limits from project)

(5) Center line MP for each railroad crossing within the limits of construction, including name of railroad and DOT/AAR crossing number.

Project work limits must be consistent with milepost information entered into the Work Program Administration (WPA) system during final design. See ***FDM 111.2.1*** for information on updating the WPA system.

910.2.3 Project Location

Show a small-scale state map at the upper right portion of the Key Sheet and indicate with leader line the general location of the project within the state.

910.2.4 Construction Contract Number and Fiscal Year

Provide the Construction Contract Number and Fiscal Year in the data block located in the lower right corner of the sheet. The Key Sheet of each component of the Contract Plans set will be numbered as the first sheet of that component.

The Construction Contract Number is typically issued late in the design process and may remain blank until provided. Show the fiscal year for which the Letting is scheduled in the "Fiscal Year" box; i.e., enter "18" in the box for a project that has a Letting date during the July 2017 to June 2018 fiscal year.

910.2.5 Contract Plans Set Components

The Contract Plans Set is typically assembled as component plans that are associated with a primary work type. List of all component plans included in the Contract Plans Set in the upper left corner of the Key Sheet in the following order:

(1) Roadway

(2) Signing and Pavement Marking

(3) Signalization

(4) Intelligent Transportation Systems

(5) Lighting

(6) Landscape

(7) Architectural

(8) Structures

(9) Toll Facilities

Roadway plans are most often the lead component of the Contract Plans set; however, another component may become the lead component when there are no roadway plans. Any sheets incidental to the project typically found within the roadway plans may be included in the lead component plans and numbered consecutively. Sheet number prefixing is not required for the lead component plan; i.e., "IT-#" is not required for ITS Plans when they are the lead component.

Utility Work by Highway Contractor Agreement Plans have a separate Financial Project ID and are typically treated as a strung project (see ***FDM 910.2.10***). When utility work is minimal, Utility Work by Highway Contractor Agreement Plans may be included as component plans within the Contract Plans set.

See the ***Structures Manual, Volume 2 – Structures Detailing Manual*** when Structures plans become the lead component.

910.2.6 Index of Roadway Plans

Place an index of roadway sheets on the left side of the Key Sheet below the list of component plans. Each component Key Sheet will have an index of sheets contained in that component.

Assemble Roadway Plans in the following order:

(1) Key Sheet

(2) Signature Sheet

(3) Drainage Map

(4) Typical Sections

(5) Typical Section Details

(6) Model Management

(7) Project Control

(8) General Notes (and Pay Item Notes, when appropriate)

(9) Roadway Plan and Profiles

(10) Traffic Monitoring Site

(11) Special Profiles

(12) Interchange Layout

(13) Ramp Terminal Details

(14) Intersection Details

(15) Special Details

(16) Drainage Structures

(17) Roadway Soil Survey

(18) Tree Survey

(19) Verified Utility Locate

(20) Stormwater Pollution Prevention Plans (SWPPP)

(21) Temporary Traffic Control Plans

(22) Utility Adjustments

(23) Selective Clearing and Grubbing

(24) Tree Disposition

(25) If the work is minor, the following may be included as sheets within in the Roadway Plans.

(26) Signing and Pavement Marking Plans

(27) Signalization Plans

(28) Intelligent Transportation Systems Plans

(29) Lighting Plans

(30) Landscape Plans

(31) Mitigation Plans

(32) Miscellaneous Structures Plans

(33) Toll Facilities

Do not place Box Culvert plan sheets in the Roadway component plans. These sheets are to be placed in a Structure component, even when there are no bridge plans.

910.2.6.1 Early Works

The roadway plans may require insertion of sheets that were prepared early, or prior to the design process. These sheets may be identified and numbered with the following prefixes:

(1) GR-# Soil Survey and Report of Core Borings normally associated with the roadway plans set (including miscellaneous structures but excluding bridges and walls)

(2) TR-# Tree Survey

(3) UTV-# Verified Utility Locate

When submitted as early works, list these sheets below the index of roadway plan sheets with an asterisk and a note as shown in ***Exhibit 910-1.***

No plan sheets other than those listed above are to be separated from the component plans.

910.2.7 Engineer of Record (EOR) and Project Manager

Place on the right side of the Key Sheet the following information in the order shown:

(1) Name and license number of the EOR, name, address, and phone number of the engineering business or agency where the EOR is employed. Include consultant contract number and vendor number when appropriate. For non-engineering licensed professionals, change title to “Licensed Professional of Record”, and include similar information that applies to their profession.

(2) Name of the Department’s Project Manager below the EOR information. Show only the Department’s Project Manager at this location, except for:

  (a) When plans are prepared by the Department, the name of the Department’s designer may be placed immediately below the name of the Department’s Project Manager.

  (b) When appropriate, the name of the GEC Project Manager may be placed immediately below the Department’s Project Manager.

910.2.8 Governing Standards

Indicate the governing ***Standard Plans*** and ***Standard Specifications*** in the lower left corner of the Key Sheet as shown on ***Exhibit 910-1***.

For requirements of the Structures General Notes and inclusion of the relevant bridge related ***Standard Plans*** in the structures component plan set, see the ***Structures Detailing Manual***. For additional information on the ***Standard Plans*** and ***Standard Specifications***, see ***FDM 115***.

When ***Standard Plans*** ***Interim Revisions*** (***IRs***) are released, the engineer must determine if any ***IRs*** apply to the project and reference those applicable ***IRs*** as shown on ***Exhibit 910-1***.

910.2.8.1 Developmental Standard Plans

List ***Developmental*** ***Standard Plans*** to be included in the component plans below either the "Index of Sheets" or the early works note as shown on ***Exhibit 910-1***.

Insert ***Developmental*** ***Standard Plans*** sheets at the end of each applicable component plan set as applicable. When included in structure component plans, insert ***Developmental*** ***Standard Plans*** sheets before existing bridge plans.

910.2.9 Revisions

For information on the process and requirements for completing plan revisions:

- See ***FDM 132*** for revisions prior to Letting
- See ***FDM 151*** for revisions during construction

Show a complete record of all revisions made to the Contract Plans Set on the lead component Key Sheet under a "REVISIONS" header located in the bottom center of the sheet. For each revision, indicate the component (e.g., roadway, structures, lighting), the sheet numbers, and the date of the revision. Show the unique numbered symbol that corresponds to the Revision Number on the Revision Memo and modified plan sheets.

Show revisions to the Key Sheet in the Key Sheet Revisions block placed to the right of the "REVISIONS" header. List the revision date and a brief description of the revision. The Key Sheet Revisions block is only used to record changes to the Key Sheet other than recorded revisions under the "REVISIONS" header. A revision lead component Key Sheet is required when any sheet within the Contract Plans set is revised.

Do not show the “REVISIONS” header or the Key Sheet Revisions block on the Key Sheet until needed.

910.2.10 Strung Projects

Contract Plans sets that are independently prepared but are let in the same construction contract are referred to as strung projects. Show the strung project note only on lead component Key Sheet, which most often it is the Roadway Plans. The note is show in the top right corner above the small-scale state map as shown in ***Exhibit 910-1***. The note must contain all Financial Project IDs (lead project first) being strung together, including project numbers without contract plans.

When a federally funded project is strung with a non-federal eligible (NFE) project, the federally funded project is often the lead project.

When a federally funded project is strung with a state funded project, the entire contract becomes federalized; i.e., both the state funded project and the federally funded project must comply with all applicable federal laws, rules, and regulations related to the federalized contract. Do not put “(Federal Funds)” on the Key Sheet of a state funded project that is being strung with a federal project, even though that project has become federalized.

Record revisions to any strung project on the lead component Key Sheet of the lead project under the “REVISIONS” header, under the respective Financial Project ID.

910.3 Signature Sheet

The Signature Sheet defines a professional's area of responsibility for those portions of the document being digitally signed. The Signature Sheet shows the Digital Signature Appearance of the Professional(s) of Record.

When component plans are Signed and Sealed by a single licensed professional a signature block can be placed on the Key Sheet in lieu of using a Signature Sheet. When the component plans are signed by more than one licensed professional, or a BIM file manifest is required, a Signature Sheet is often needed.

See ***Exhibits 910-4*** for an example of a Signature Sheet.

910.3.1 Title Block

The Signature Sheet title block is to contain the information for the licensed professional that is responsible for the creation and content of the sheet. Do not place the Official Record note along the right edge of this sheet.

See ***FDM 130*** for digital Signing and Sealing requirements.

910.3.2 Digital Signature Placement

By placing a digital signature on the Signature Sheet of a multi-sheet plans set, the licensed professional associates their professional signature with the entire plans set. The Signature Sheet provides a Statement of Responsibility delineating the extent of the professional's responsibility and identifies the specific sheets for which the professional is accepting responsibility.

910.3.2.1 Digital Signature Appearance

A Digital Signature Appearance is the visual representation of a Digital Signature applied to a document. The Digital Signature Appearance is composed of combinations of informational fields; e.g., dates or text, and other information. The Digital Signature Appearance must include the professional's name, and the date and time of signing stamp.

910.3.2.2 Seal

The professional will include a representation of their Seal next to the Digital Signature Appearance. Seal representations are provided with the FDOT CADD Software. Each respective Board of Professional Regulation has enacted in their section of the Florida Administrative Code the requirements for the size and representation of a Seal.

910.3.2.3 Statement of Responsibility

The Statement of Responsibility is used to define the licensed professional's limits of responsibility and any exculpatory language. Place this statement below the Seal and Digital Signature Appearance and above the sheet index. The Statement of Responsibility must indicate the applicable Rule of the Florida Administrative Code (F.A.C.).

910.3.3 Index of Sheets

List the plan sheets below the Statement of Responsibility that the licensed professional is signing and sealing. Exculpatory language should be included in cases where professionals share responsibility for content on any given sheet.

910.3.4 BIM File Manifest

The BIM file manifest is table placed below the Index of Sheets.

910.3.5 Revisions

A revision Signature Sheet is created when more than one licensed professional is required to Sign and Seal a revision package. The revision Signature Sheet is numbered using an alphabetic suffix; e.g., 2A, 2B. Only the licensed professionals required to Sign and Seal the revision are to be included on the revision Signature Sheet.

See ***Exhibit 910-2*** for an example of a revision Signature Sheet.

THIS PROJECT TO BE LET TO CONTRACT
WITH FINANCIAL PROJECT ID(S):
123456-1-56-01, 123457-1-52-01, 123457-1-56-01

COMPONENTS OF CONTRACT PLANS SET

ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
SIGNALIZATION PLANS
INTELLIGENT TRANSPORTATION SYSTEMS PLANS
LIGHTING PLANS
LANDSCAPE PLANS
ARCHITECTURAL PLANS
STRUCTURE PLANS
TOLL FACILITIES PLANS

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	SIGNATURE SHEET
3	DRAINAGE MAP
4 - 5	TYPICAL SECTIONS
6	CROSS SLOPE CORRECTION DETAILS
7 - 9	MODEL MANAGEMENT
10	PROJECT CONTROL
11	GENERAL NOTES
12 - 14	ROADWAY PLAN-PROFILES
15 - 16	DRAINAGE STRUCTURES
17	LATERAL DITCHES
18	STORMWATER POLLUTION PREVENTION PLAN
19 - 26	TEMPORARY TRAFFIC CONTROL PLANS
27 - 32	UTILITY ADJUSTMENTS
33 - 36	SELECTIVE CLEARING AND GRUBBING
GR-1*	ROADWAY SOIL SURVEY

DEVELOPMENTAL STANDARD PLANS:
D591-001 LANDSCAPE IRRIGATION SLEEVES

* This sheet is included in the Index of Roadway Plans only to indicate that it is part of the Roadway Plans. This sheet is contained in a separate digitally signed and sealed document.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROADWAY PLANS

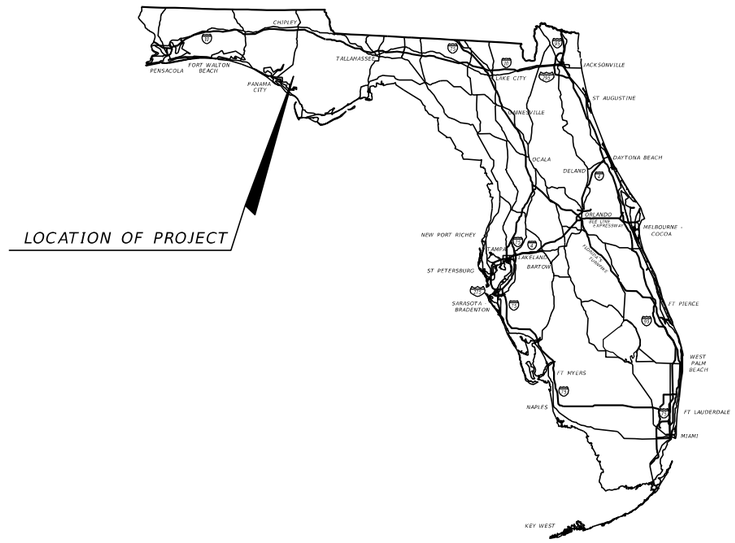
FINANCIAL PROJECT ID 123456-1-52-01

(FEDERAL FUNDS)

BAY COUNTY (46080)

STATE ROAD NO. 22 (WEWA HWY)

PROJECT LOCATION URL:	https://owpbstandardmap.fdot.gov/?query=WorkProgram_Tbl15_Dissolved_2004,_itemseg,1234561
WORK PROGRAM DESC.:	WIDENING FROM 2 TO 4 LANES
PROJECT LIMITS:	BEGIN MP 1.560 - END MP 7.560
EXCEPTIONS:	NONE
BRIDGE LIMITS:	(469998) MP 3.422 - MP 3.471
RAILROAD CROSSING:	NONE



GOVERNING STANDARD PLANS:

Florida Department of Transportation, FY2021-22 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website: http://www.fdot.gov/design/standardplans

APPLICABLE IRs: IR536-001-01, IR521-001-01

Standard Plans for Bridge Construction are included in the Structures Plans Component.

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, July 2021 Standard Specifications for Road and Bridge Construction at the following website: http://www.fdot.gov/programmanagement/Implemented/SpecBooks

Exhibit 910-1
Original Key Sheet
Date: 1/1/22

ROADWAY PLANS
ENGINEER OF RECORD:

LUKE S. WALKER, P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301
(850) 671-1313
CONTRACT NO.: C0000
VENDOR NO.: 99-999999

FDOT PROJECT MANAGER:

BEN K. UWAIBI, P.E.

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
T0000	22	1

$DATE$ $TIME$

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

THIS PROJECT TO BE LET TO CONTRACT
WITH FINANCIAL PROJECT ID(S):
123456-1-56-01, 123457-1-52-01, 123457-1-56-01

COMPONENTS OF CONTRACT PLANS SET

ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
SIGNALIZATION PLANS
INTELLIGENT TRANSPORTATION SYSTEMS PLANS
LIGHTING PLANS
LANDSCAPE PLANS
ARCHITECTURAL PLANS
STRUCTURE PLANS
TOLL FACILITIES PLANS

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2 - 2A ⚠1	SIGNATURE SHEET
3	DRAINAGE MAP
4 - 5 ⚠1	TYPICAL SECTIONS
6	CROSS SLOPE CORRECTION DETAILS
7 - 9	MODEL MANAGEMENT
10	PROJECT CONTROL
11	GENERAL NOTES
12 - 14	ROADWAY PLAN-PROFILES
15 - 16 ⚠1	DRAINAGE STRUCTURES
17	LATERAL DITCHES
18	STORMWATER POLLUTION PREVENTION PLAN
19 - 26	TEMPORARY TRAFFIC CONTROL PLANS
27 - 32	UTILITY ADJUSTMENTS
33 - 36	SELECTIVE CLEARING AND GRUBBING
GR-1*	ROADWAY SOIL SURVEY

DEVELOPMENTAL STANDARD PLANS:
D591-001 LANDSCAPE IRRIGATION SLEEVES

* This sheet is included in the Index of Roadway Plans only to indicate that it is part of the Roadway Plans. This sheet is contained in a separate digitally signed and sealed document.

GOVERNING STANDARD PLANS:

Florida Department of Transportation, FY2021-22 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website: http://www.fdot.gov/design/standardplans

APPLICABLE IRs: IR536-001-01, IR521-001-01

Standard Plans for Bridge Construction are included in the Structures Plans Component.

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, July 2021 Standard Specifications for Road and Bridge Construction at the following website: http://www.fdot.gov/programmanagement/Implemented/SpecBooks

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROADWAY PLANS

FINANCIAL PROJECT ID 123456-1-52-01

(FEDERAL FUNDS)

BAY COUNTY (46080)

STATE ROAD NO. 22 (WEWA HWY)

PROJECT LOCATION URL:	https://owpbstandardmap.fdot.gov/?query=WorkProgram_Tbl15_Dissolved_2004,_itemseg,1234561
WORK PROGRAM DESC.:	WIDENING FROM 2 TO 4 LANES
PROJECT LIMITS:	BEGIN MP 1.560 - END MP 7.560
EXCEPTIONS:	NONE
BRIDGE LIMITS:	(469998) MP 3.422 - MP 3.471
RAILROAD CROSSING:	NONE

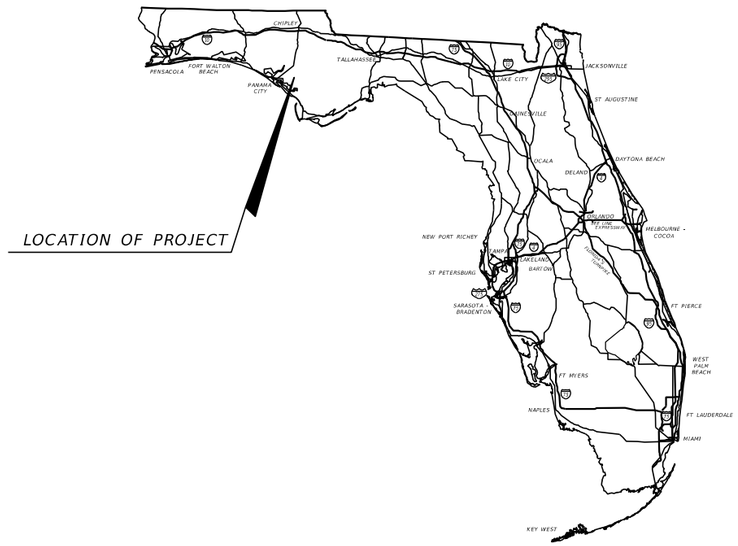


Exhibit 910-2
Revised Key Sheet
Date: 1/1/22

ROADWAY PLANS ENGINEER OF RECORD:

LUKE S. WALKER, P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301
(850) 671-1313
CONTRACT NO.: C0000
VENDOR NO.: 99-999999

FDOT PROJECT MANAGER:

BEN K. UWAIBI, P.E.

REVISIONS:

⚠1 FINANCIAL PROJECT ID 123456-1-52-01
Roadway Sheets 1, 2A, 5, & 16 (Revised 04-20-22)

⚠1 FINANCIAL PROJECT ID 123457-1-52-01
Structure Sheets B-1 & C-1 THRU C-10 (Revised 04-20-22)

KEY SHEET REVISIONS

DATE	DESCRIPTION
04-20-22	Added Sheet Number 2A to the Index and Revised Sheet Numbers 5 & 16.

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
T0000	22	1

$DATE$ $TIME$

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

COMPONENTS OF CONTRACT PLANS SET

ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
SIGNALIZATION PLANS
INTELLIGENT TRANSPORTATION SYSTEMS PLANS
LIGHTING PLANS
LANDSCAPE PLANS
ARCHITECTURAL PLANS
STRUCTURE PLANS
TOLL FACILITIES PLANS

INDEX OF SIGNING AND PAVEMENT MARKINGS PLANS

SHEET NO.	SHEET DESCRIPTION
S-1	KEY SHEET
S-2	GENERAL NOTES
S-3	PLAN SHEET
S-4 - S-8	GUIDE SIGN WORKSHEETS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

SIGNING AND PAVEMENT MARKINGS PLANS

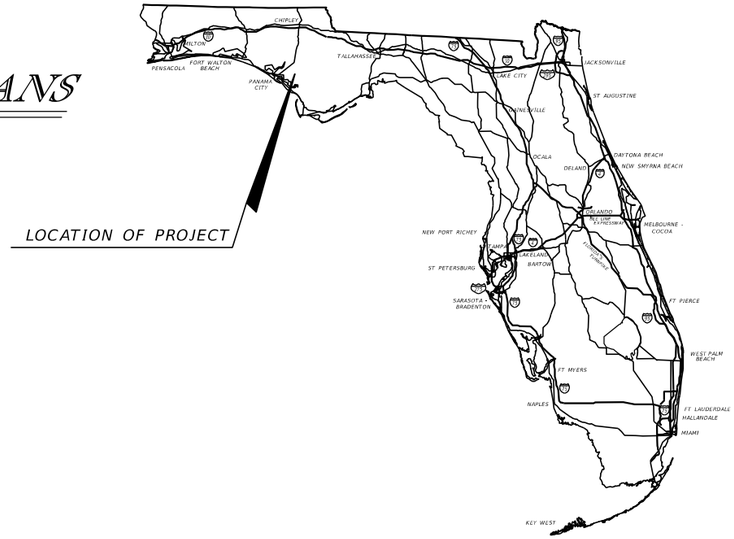
FINANCIAL PROJECT ID 123456-1-52-01

(FEDERAL FUNDS)

BAY COUNTY (46080)

STATE ROAD NO. 22 (WEWA HWY)

PROJECT LOCATION URL:	https://owpbstandardmap.fdot.gov/?query=WorkProgram_Tbl15Dissolved_2004,_itemseg,1234561
WORK PROGRAM DESC.:	WIDENING FROM 2 TO 4 LANES
PROJECT LIMITS:	BEGIN MP 1.560 - END MP 7.560
EXCEPTIONS:	NONE
BRIDGE LIMITS:	(469998) MP 3.422 - MP 3.471
RAILROAD CROSSING:	NONE



CHUY J. JAMESON
LICENSE
No 99992
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Chuy J. Jameson
2022.04.20 17:33:55 - 04'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SIGNING AND PAVEMENT MARKINGS PLANS ENGINEER OF RECORD:

CHUY J. JAMESON, P.E. NO.: 99992
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301
(850) 671-1313
CONTRACT NO.: C0001
VENDOR NO.: 99-999999

FDOT PROJECT MANAGER:

BEN K. UWAIBI, P.E.

GOVERNING STANDARD PLANS:

Florida Department of Transportation, FY2021-22 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website: http://www.fdot.gov/design/standardplans

APPLICABLE IRs: IR536-001-01, IR521-001-01

Standard Plans for Bridge Construction are included in the Structures Plans Component.

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, July 2021 Standard Specifications for Road and Bridge Construction at the following website: http://www.fdot.gov/programmanagement/Implemented/SpecBooks

Exhibit 910-3
Component Key Sheet
Date: 1/1/22

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
T0000	22	1

$DATE$ $TIME$

LUKE S. WALKER
LICENSE
No 99991
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Luke S. Walker
2022.01.11 16:52:48 - 4'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301
CERTIFICATE OF AUTHORIZATION: 12345
LUKE S. WALKER, P.E. NO. 99991

THE ABOVE NAMED POFESSIONAL IS RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	SIGNATURE SHEET
3	DRAINAGE MAP
4 - 5	TYPICAL SECTIONS
6	CROSS SLOPE CORRECTION DETAILS
7 - 9	MODEL MANAGEMENT
10	PROJECT CONTROL
11	GENERAL NOTES
12 - 14	ROADWAY PLAN-PROFILES
15 - 16	DRAINAGE STRUCTURES
17	LATERAL DITCHES
18	STORMWATER POLLUTION PREVENTION PLAN
27 - 32	UTILITY ADJUSTMENTS

LAN B. SOLO
LICENSE
No 99994
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Lan B. Solo
2022.01.11 16:42:28 - 4'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301
CERTIFICATE OF AUTHORIZATION: 12345
LAN B. SOLO, P.E. NO. 99994

THE ABOVE NAMED POFESSIONAL IS RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

SHEET NO.	SHEET DESCRIPTION
2	SIGNATURE SHEET
19 - 26	TEMPORARY TRAFFIC CONTROL PLANS

ARTURITO T. GOMEZ
LICENSE
No 99999
STATE OF FLORIDA
LANDSCAPE ARCHITECT

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Arturito T. Gomez
2022.01.11 15:35:15 - 8'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

LAND DESIGN, LLC.
345 IVY LANE
ORLANDO, FL 32801
CERTIFICATE OF AUTHORIZATION: 98765
ARTURITO T. GOMEZ, L.A. NO. 99999

THE ABOVE NAMED POFESSIONAL IS RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G10-11.011, F.A.C.

SHEET NO.	SHEET DESCRIPTION
2	SIGNATURE SHEET
33 - 36	SELECTIVE CLEARING AND GRUBBING

THE ABOVE NAMED POFESSIONAL IS RESPONSIBLE FOR THE FOLLOWING BIM FILES IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

BIM FILES IDENTIFIED AS PLANS			
FILE NAME	**FILE DESCRIPTION**	**SHA256 Encryption Code**	**Revision**
22049555201_CE\Roadway\MODLRDMainline61.dgn	3D Proposed Design for SR61 Corridor	8782fc9e232aaccb119a608544f31e5ba7017c1cad9059311bb0ae7cb4b88755	
22049555201_CE\Roadway\MODLRDUS98.dgn	3D Proposed Design for US98 Corridor	e6975e4966fd17b84565dae8266246c527a20a3e24016fbeb6008a51bdc6b149	
22049555201_CE\Roadway\MODLRDDetail61.dgn	3D Proposed Intersection and End Conditions for SR61	da9ced66d47ada55c60f6984a6566014239cec68a1cada424b7b5ccb6d70f7d8	
22049555201_CE\Roadway\MODLRD_Existing_Features01.dgn	Existing Features Model for SR61 and US98	87d28285f7fb87d07419b9a7126f28dd87140c573055869e63ac2cfd0d560360	
22049555201_CE\3DDeliverables\AMG-3DSGNRD01.dgn	Finish Terrain Model and 3D Breaklines	ff267609529f1e9a5741358e21f38e27739ff405abc9813ffdcdeb666abc66c0	
22049555201_CE\3DDeliverables\AMG-3DSGNRD01EW01.dgn	Finished Subgrade Terrain and 3D Breaklines	9afda29affb572f2555c9c6574ecbd52d30e48379e5cdc057f7d60ba77cf7e4c	
22049555201_CE\3DDeliverables\AMG-3SURFACEEX01.xm	Existing Terrain Model from Survey	58793efdd20a3452e7b521c101e5ffacb081b57fade42401e3ab58ae2abea121	
		https://emn178.github.io/online-tools/sha256_checksum.html	

Exhibit 910-4:
Original Signature Sheet
Date: 1/1/22

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. LICENSE NUMBER 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

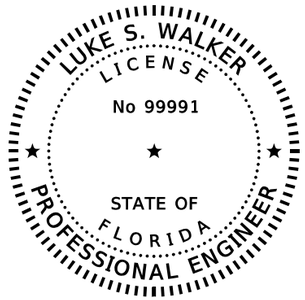
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

SIGNATURE SHEET

SHEET NO. 2

$DATE$ $TIME$



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Luke S. Walker
2022.04.20 08:30:08 - 4'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301
CERTIFICATE OF AUTHORIZATION: 12345
LUKE S. WALKER, P.E. NO. 99991

THE ABOVE NAMED POFESSIONAL IS RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

SHEET NO.	*SHEET DESCRIPTION*
2A	*SIGNATURE SHEET*
5	*TYPICAL SECTIONS*
16	*DRAINAGE STRUCTURES*

THE ABOVE NAMED POFESSIONAL IS RESPONSIBLE FOR THE FOLLOWING BIM FILES IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

BIM FILES IDENTIFIED AS PLANS			
FILE NAME	**FILE DESCRIPTION**	**SHA256 Encryption Code**	**Revision**
22049555201 CE\Roadway\MODLRDUS98.dgn	3D Proposed Design for US98 Corridor	e6975e4966fd17b84565dae8266246c527a20a3e24016fbeb60y55jld8n9q0x3	Updated Drainage System
		https://emn178.github.io/online-tools/sha256_checksum.html	

Exhibit 910-5:
Revision Signature Sheet
Date: 1/1/22

REVISIONS			
DATE	*DESCRIPTION*	*DATE*	*DESCRIPTION*

LUKE S. WALKER, P.E.
P.E. LICENSE NUMBER 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	*COUNTY*	*FINANCIAL PROJECT ID*
SR 22	*BAY*	*123456-1-52-01*

SIGNATURE SHEET

SHEET NO.
2A

$DATE$ $TIME$

911 Model Management Sheet

911.1 General

The Model Management sheet provides information for the order and naming of the models developed for the project.

The Model Management sheet is produced as a contract document and placed within the Roadway Plans. The sheet may be a standard-format plan sheet (11”x17”) or a large-format plan sheet (36”x48” or 36”x72”) and may use any scale provided that the required information is clearly depicted.

The required information should be shown on a single plan sheet. Development of this sheet early in the design phase establishes an effective segmentation of the project.

See ***Exhibit 911-1*** for an illustration of the Model Management sheet.

911.2 Creation of Model Management Sheet

Display and label the centerline or baseline of construction on the sheet with station numbers close to station ticks. Include a north arrow, typically in the upper right portion.

Display proposed limits of pavement, curbs, traffic separators, sidewalks, curb ramps, and driveways. Show proposed bridges and approach slabs by simple outline. The labeling of any of these features is not required. If the topographic file is displayed, it should be gray scale. The intent is to show an outline of the proposed roadway to give context to the limits of each model segment.

Indicate the segments (portions of the centerline) that the project is broken into for the purpose of model development. Provide labeling that includes:

(1) File name of model(s) associated with a segment.

(2) Name of roadway centerline of baseline construction.

(3) Station limits contained within the model.

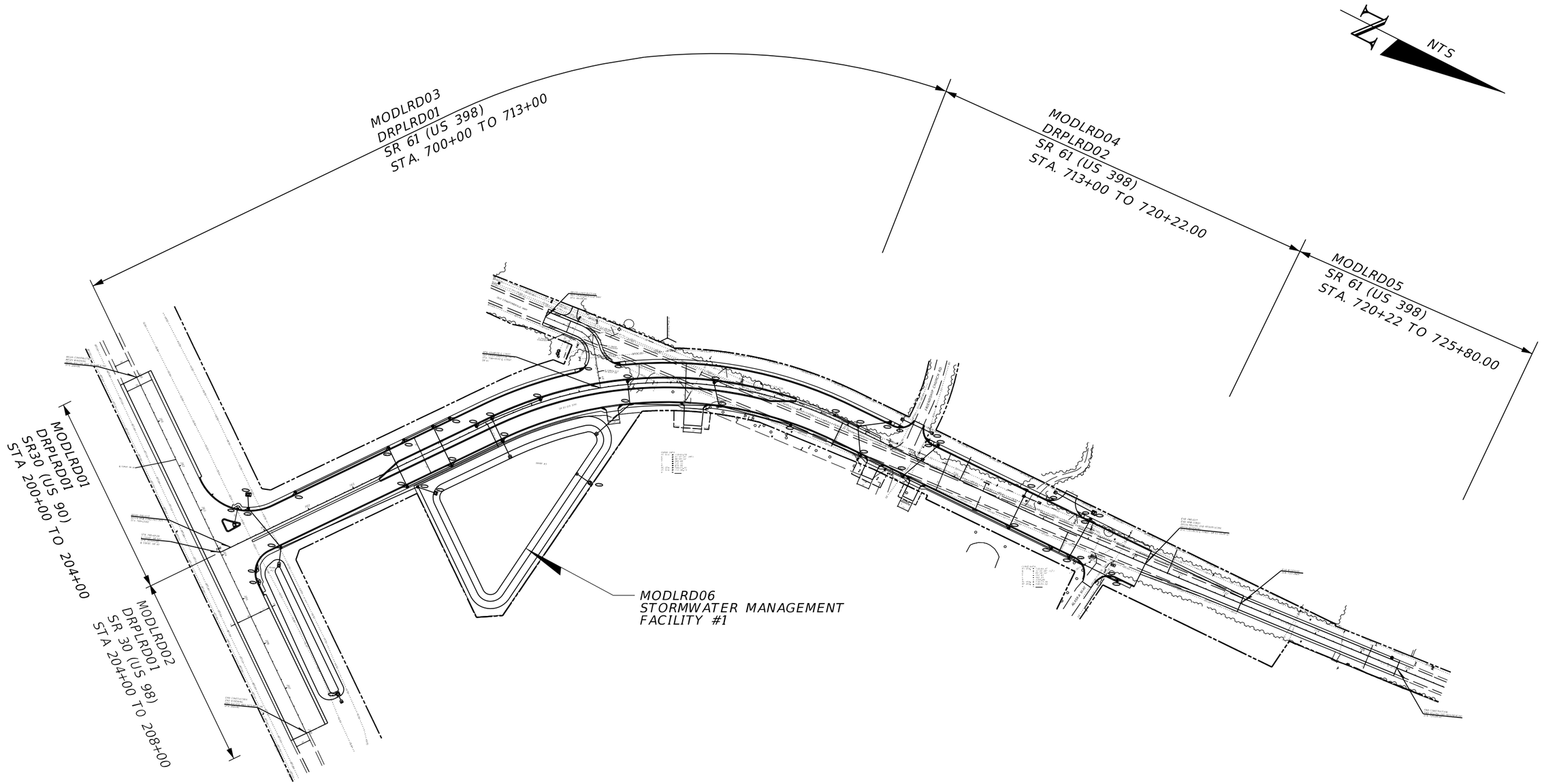


EXHIBIT 911-1
DATE: 1/1/21

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

GARTH REVAN, P.E.
P.E. NO.: 12288
STAR FORGE ENGINEERING
603 MANDALOR WAY
KORRIBAN, FL 5689

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 61	WAKULLA	867530-9-52-01

MODEL MANAGEMENT

SHEET NO. 1

912 Project Control

912.1 General

The Project Control sheet provides a summary of horizontal and vertical datum (i.e., reference points, benchmarks, and control points). The reported datum shown on this sheet must provide clear and sufficient information to establish horizontal and vertical control during the construction of the project. The data shown can be extracted from the project network control survey and historical control data or reflect assumed datum.

The Engineer of Record will create the Project Control sheet from data extracted from the project survey and sign and seal the Project Control sheet. These sheets are to be placed in the component plans in accordance with ***FDM 910.2***.

See ***Exhibit 912-1*** for example of a Project Control sheet.

912.2 Sheet Setup

This sheet is typically produced on a standard-format sheet (11”x17”) provided in the FDOT CADD Software. Large-format sheet (36”x48” or 36”x72”) may be used. Use landscape orientation regardless of sheet size selected. Use standard symbols contained in the ***CADD Manual***.

Provide a note on the Project Control sheet that identifies horizontal and vertical datum that the survey is based on.

912.3 Reference Points

Reference points are prominent, easily located points in the terrain used to define a location of another point that is located on the baseline of survey. The purpose of reference points is to provide horizontal location to re-establish primary control points along the baseline of survey. Reference points should not be located on the baseline. Detailed descriptions of each reference point are illustrated with a sketch normally not drawn to any scale.

Place survey reference points on the Project Control sheet along the top of the sheet or where other space allows. Clearly indicate the baseline of survey and reference points, including all ties. Complete length of survey baseline between two consecutive reference points need not be shown. Clearly label each reference point, beginning at the first reference point within the limits of the project, and progressing in the direction of

stationing. Reference points need not be drawn to any scale, but distances and angles shown must be proportionate.

912.4 Benchmarks

Benchmarks provide a known elevation that is used as the basis for measuring the elevation of other topographical points. When benchmarks are not used to provide horizontal control, they may be placed on the Project Control sheet along the bottom of the sheet or where other space allows. At a minimum, benchmarks are to include:

(1) Identifying name (e.g., BM No. 9)

(2) Description (e.g., nail in tree, concrete monument)

(3) Station and offset

(4) Elevation (in feet to two decimal places)

912.5 Control Points (Horizontal and Vertical Datum)

Control points provide information for the location and elevation of established monuments. Control points that provide vertical datum are also known as benchmarks.

Place the following information for the control points in a table titled Horizontal and Vertical Control:

(1) Point Name – Often identified on the stamped disk placed on the established monument.

(2) Northing and Easting – Show to three decimal places. Show Northing and Easting to the nearest foot when control point serves only as a Benchmark.

(3) Scale Factor – Show to eight decimal places.

(4) Latitude and Longitude – Show seconds to five decimal places. If control point serves only as a Benchmark show Latitude and Longitude to the nearest second.

(5) Baseline Station and Offset – Show to two decimal places.

(6) Elevation – If control point only serves as horizontal control show elevation as “N/A”.

(7) Description – Indicate the size, type, if the monument is “found” or “set” and include the monument ID number.

When this table is the sole means to convey horizontal and vertical datum, include a project sketch on the Project Control sheet that provides a visual reference for the location

of the control points. The sketch normally is not to scale but must provide clarity and legibility. Include the following information on the sketch:

(1) Show the baseline of survey with stationing.

(2) Flag and label beginning and ending stations for project.

(3) Show bearings for all tangent sections, in the direction of stationing.

(4) Label PC and PT points and show horizontal curve data.

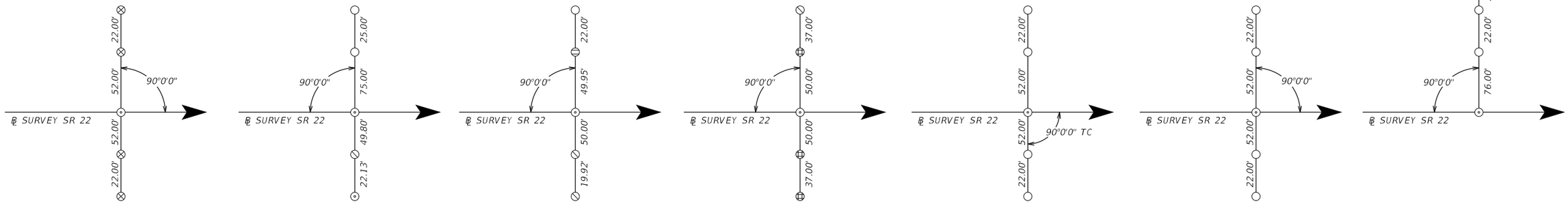
(5) Indicate graphically the location of intersecting roadways and railroads.

(6) Indicate Township, Range and Sections that the survey traverses. Show the location where section lines cross the baseline of survey.

(7) Place a north arrow and scale in a conspicuous location, typically in the upper right portion of the sheet.

℄ REFERENCE POINTS

(NOT TO SCALE)



BEGIN SURVEY
STA. 8+00.00

STA. 9+00.00

STA. 25+00.00

PC STA. 45+45.51

STA. 63+00.00

PT. STA. 81+53.78

END SURVEY
STA. 84+99.67

℄ STATION	(Y) NORTHING	(X) EASTING	SCALE FACTOR
08+00.00	731006.941	1104363.972	1.00002712
09+00.00	730958.261	1104451.323	1.00002771
25+00.00	730179.373	1105848.941	1.00002829
45+45.51	729183.610	1107635.714	1.00002892
63+00.00	728109.980	1109014.692	1.00002967
81+53.78	726580.821	1110048.276	1.00003004
84+99.67	726266.795	1110193.287	1.00003049

LEGEND

- ○ = SET 5/8" IRC STAMPED F.D.O.T. REF.
- ⊙ = SET NAIL W/ DISC STAMPED F.D.O.T. CONTROL
- ⊗ = SET X CUT IN CONCRETE NO ID
- ⦸ = FOUND 100D NAIL NO ID
- ⊖ = FOUND 1/2" IRON ROD NO ID
- ⊕ = FOUND 5/8" IRON ROD NO ID

PROJECT CONTROL NOTES

1. PROJECT IS BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM NAD 1983 / 2011 HORIZONTAL DATUM.
2. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88)

HORIZONTAL AND VERTICAL CONTROL

CONTROL POINT	℄ SURVEY STATION	OFFSET	(Z) ELEVATION	DESCRIPTION	(Y) NORTHING	(X) EASTING	LATITUDE	LONGITUDE	SCALE FACTOR
C-02	08+22.65	44.80' LT.	3.05'	FOUND FDOT BRASS DISK IN CONCRETE STAMPED "842 86 11 C02"	731019.964	1104363.964	26°07'18.96289"	80°09'56.29283"	1.00002712
B-01	14+66.25	33.25' LT.	7.23'	SET FDOT BRASS DISK IN CONCRETE STAMPED "842 86 14 B01"	730958.234	1104451.326	26°07'18.90268"	80°09'45.88657"	1.00002967
C-03	25+73.33	36.96' RT.	4.18'	FOUND FDOT BRASS DISK IN CONCRETE STAMPED "842 86 11 C03"	730456.349	1105848.917	26°07'18.38998"	80°09'35.78475"	1.00003088
B-02	31+18.07	25.60' RT.	4.05'	SET FDOT BRASS DISK IN CONCRETE STAMPED "842 86 14 B02"	730229.364	1108642.646	26°07'18.79454"	80°09'24.88094"	1.00003148
C-04	46+75.51	83.53' LT.	4.12'	FOUND FDOT BRASS DISK IN CONCRETE STAMPED "842 86 11 C04"	729283.642	1109014.635	26°07'20.21998"	80°09'11.99337"	1.00003203
B-03	55+98.14	22.04' LT.	4.84'	SET FDOT BRASS DISK IN CONCRETE STAMPED "842 86 14 B03"	729002.211	1109544.542	26°07'19.77658"	80°08'41.06068"	1.00003253
C-05	63+00.00	40.41' RT.	4.23'	FOUND FDOT BRASS DISK IN CONCRETE STAMPED "842 86 11 C05"	728109.925	1110193.265	26°07'19.35577"	80°08'31.67213"	1.00003301

Exhibit 912-1
Date: 1/1/22

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

PROJECT CONTROL

SHEET NO. 10

$DATE$ $TIME$

913 Typical Sections

913.1 General

The primary purpose of Typical Section sheets are to provide sectional depictions of the roadway or bridge elements that illustrate “typical” conditions found between specified station or milepost limits.

Typical Section sheets also provide traffic data and pavement design associated with the typical section being displayed.

This sheet is produced on a standard-format sheet (11”x17”) provided in the FDOT CADD Software. For illustrations of various typical sections, see ***Exhibits 913-1*** through ***913-6***.

913.2 Typical Sections

Typical sections must cover the entire project limits; i.e., omit only Project Exceptions. Include the limits of typical section transitions with the typical section that begins the transition. Conditions that occur for short distances should not be shown as a separate typical section, such as turn lanes.

Typical Sections must show existing road or bridge elements that are to be incorporated into the final Typical Section, along with the proposed elements. The FDOT CADD Software contains templets for generic typical sections that can be modified to reflect project conditions. Typical Sections are typically not be drawn to scale, but horizontal distances and slope angles shown must be proportionate.

Typical Section sheets should contain only one typical section. Place Typical Section sheets in the plans in the following order:

(1) Roadway mainline

(2) Bridges for projects including bridges (new or widened)

(3) Ramps and service roads for projects which include an interchange

(4) Intersecting roadways when significant work length is required

(5) Sideroads or streets when significant work length is required

913.2.1 Required Information

Show the road name and station (or milepost) limits below the TYPICAL SECTION header.

Existing typical section elements are shown as dashed lines and proposed as solid lines. Typical sections must label and dimension the following information, as applicable:

(1) Centerline or Baseline of Construction.

(2) Natural ground.

(3) Profile grade point.

(4) R/W or easements, and limits of Construction.

(5) Limits of Clearing and Grubbing (Standard and Selective).

(6) Limits of sod and turf.

(7) Total shoulder width and paved shoulder width. Label shoulder treatment on RRR projects.

(8) Travel lane width (total and individual lanes), and limits of friction coarse.

(9) Show median or roadside barrier when continuous (or mostly continuous) through the typical section limits.

(10) Bicycle lanes.

(11) Indicate width of existing pavement and proposed pavement on widening projects.

(12) Curb location and type (show Type E or F Curb, not the dimension).

(13) Sidewalk location and width.

(14) Cross slopes of roadway pavement, shoulder surfaces, sidewalks, and bridge decks as a decimal part of a foot vertical per foot horizontal. These cross slopes should be rounded to two decimal places, i.e., 0.02, 0.06. Three decimal places may be required for pavement cross slope.

(15) Median width and type, show slopes by ratio, vertical to horizontal, i.e., 1:4, 1:2.

(16) Roadside slopes and ditches, show slopes by ratio, vertical to horizontal.

(17) Depict pavement construction by indicating the LBR requirement and the thickness of the subgrade stabilization, subbase, or base, as well as thickness for structural course, friction course and shoulder pavement. Use 4 inches for both base extension on rural sections and for stabilization extension on curbed sections.

913.2.2 Required Notes and Details

Show the following notes and details on Typical Section sheets as applicable:

(1) For projects using Selective Clearing and Grubbing include the following note:

See Selective Clearing and Grubbing sheets for details and limits of selective clearing and grubbing.

(2) For projects constructing paved shoulders include a Shoulder Pavement Detail (shown on ***Exhibit 913-1***) with the following note:

This area may be constructed of base material (granular only) at no additional compensation.

(3) For widening projects include the following note:

Actual width of base widening may vary due to actual existing pavement width. A uniform width base widening strip may be constructed at no additional compensation.

(4) For projects constructing ditches include the following note:

Depth and bottom width of ditch may vary.

(5) For projects constructing new construction curb with Asphalt Base, Type B-12.5 only, indicate the asphalt curb pad on the typical section and include an Asphalt Base Curb Pad Detail.

(6) For resurfacing projects on curbed roadways where the milling depth is less than the overlay thickness, include a feathering detail with notes.

913.2.3 Partial Sections

Partial sections are used to illustrate a changed condition (e.g., ditch or drainage features, bicycle or pedestrian features, longitudinal barriers) that occur for significant limits with the typical section being shown. ***Exhibit 913-4*** demonstrates the use of a partial section.

Place partial sections on the same sheet as the typical section to which they apply.

913.3 Traffic Data

Traffic data is required only for mainline roadways and bridges, and ramps. Show the following traffic data (consistent with the data used for pavement design) below and to the left of the typical section:

(1) Current Year and AADT

(2) Estimated Opening Year and AADT (not required for skid hazard projects)

(3) Estimated Design Year and AADT (not required for skid hazard projects)

(4) K, D, T (24 hour) and T (Design Hour) factors

(5) Design Speed (do not show Posted Speed or Target Speed)

(6) Context Classification

913.4 Pavement Design

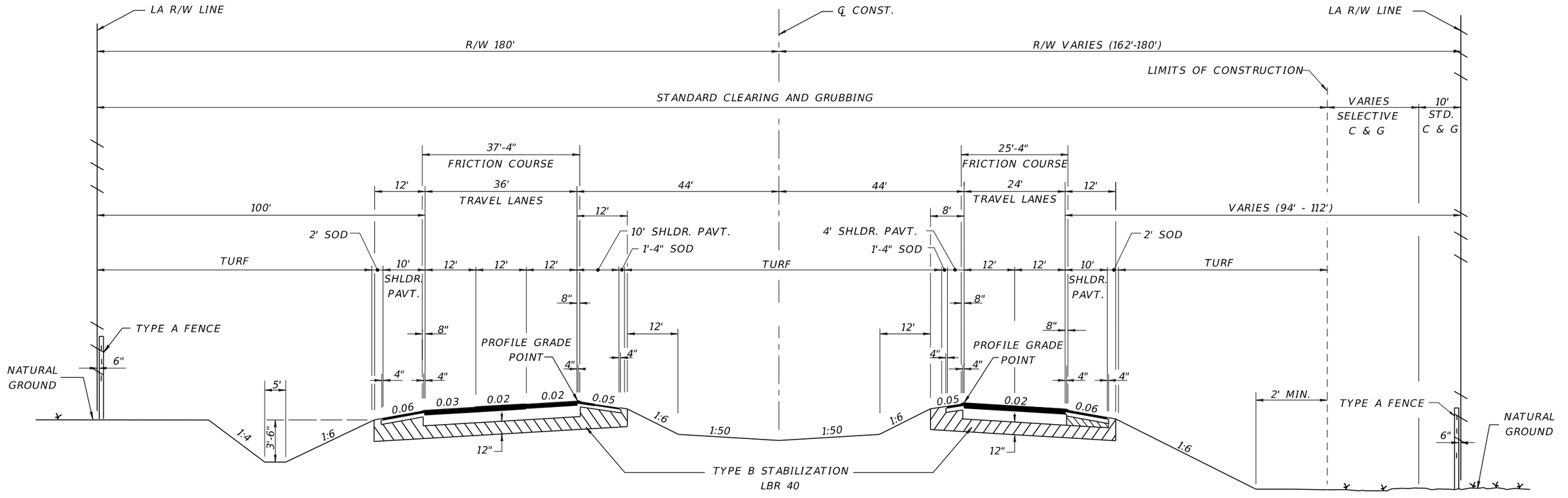
Show the approved pavement design directly below the typical section described in the order of construction as follows:

- For new construction start with Option Base Group and end with friction course.
- For resurfacing projects start with milling depth, then list the structural courses and end with friction course.

913.5 Cross Slope Correction Details

When cross slope correction is necessary, include special milling and layering details showing the method of correction in the plans.

Exhibit 913-7 provides an example of overbuild details.



TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 22300
ESTIMATED OPENING YEAR = 2020 AADT = 23300
ESTIMATED DESIGN YEAR = 2040 AADT = 51500
K = 9 % D = 56 % T = 10 % (24 HOUR)
DESIGN HOUR T = 5 %
DESIGN SPEED = 70 MPH
CONTEXT CLASSIFICATION = N/A

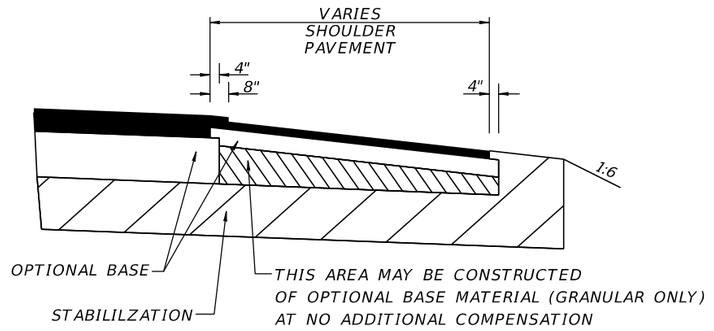
TYPICAL SECTION
I-10 (SR 8)
STA. 567+25.67 TO STA. 1056+84.35

TRAVEL LANES

OPTIONAL BASE GROUP 9
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (2 ½")
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (1 ½") (PG 76-22)
FRICTION COURSE FC-5 (¾") (PG 76-22)

SHOULDER PAVEMENT

OPTIONAL BASE GROUP 1
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (1 ½") (PG 76-22)
GROUND-IN RUMBLE STRIPS (INDEX 546-010)



SHOULDER PAVEMENT DETAIL

Exhibit 913-1
Limited Access Facility
Date: 1/1/22

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

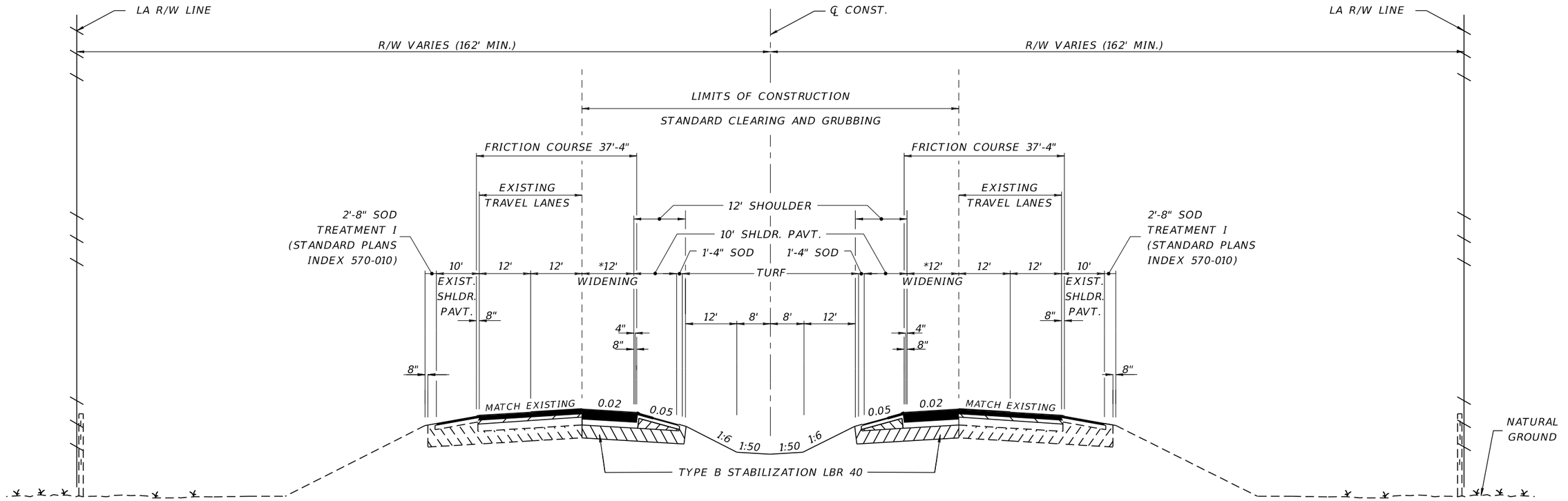
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 8	BAY	123456-1-52-01

TYPICAL SECTION

SHEET NO.

$DATE$ $TIME$

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



TYPICAL SECTION
I-75 (SR 93)
STA. 1342+25.00 TO STA. 1950+85.75

TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 22300
ESTIMATED OPENING YEAR = 2020 AADT = 23300
ESTIMATED DESIGN YEAR = 2040 AADT = 51500
K = 9 % D = 56 % T = 10 % (24 HOUR)
DESIGN HOUR T = 5 %
DESIGN SPEED = 70 MPH
CONTEXT CLASSIFICATION = N/A

TYPICAL SECTION NOTES:

1: ACTUAL WIDTH OF BASE WIDENING MAY VARY DUE TO EXISTING PAVEMENT WIDTH. A UNIFORM WIDTH BASE WIDENING STRIP MAY BE CONSTRUCTED AT NO ADDITIONAL COMPENSATION.

WIDENING

OPTIONAL BASE GROUP 9
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (2 ½")
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (1 ½") (PG 76-22)
FRICTION COURSE FC-5 (¾") (PG 76-22)

EXISTING TRAVEL LANES

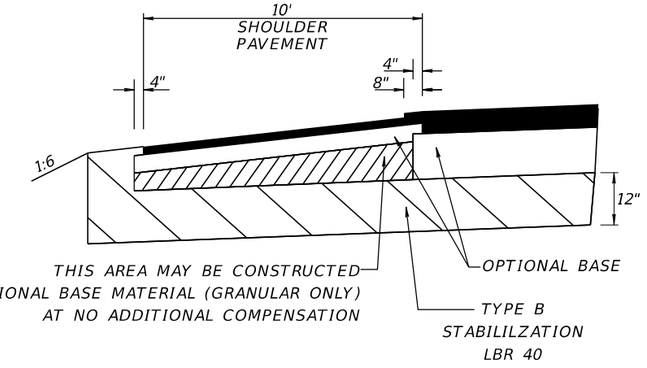
MILL EXISTING ASPHALT PAVEMENT (2 ¼" DEPTH)
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (1 ½") (PG 76-22)
FRICTION COURSE FC-5 (¾") (PG 76-22)

EXISTING OUTSIDE SHOULDER PAVEMENT

MILL EXISTING ASPHALT PAVEMENT (1 ½" DEPTH)
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (1 ½") (PG 76-22)
GROUND-IN RUMBLE STRIPS (INDEX546-010)

NEW INSIDE SHOULDER PAVEMENT

OPTIONAL BASE GROUP 1
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (1 ½") (PG 76-22)
GROUND-IN RUMBLE STRIPS (INDEX 546-010)



INSIDE SHOULDER PAVEMENT DETAIL

Exhibit 913-2
6-Lane Limited Access Facility
Date: 1/1/22

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93	BAY	123456-1-52-01

TYPICAL SECTION

SHEET NO.

$DATE$ $TIME$

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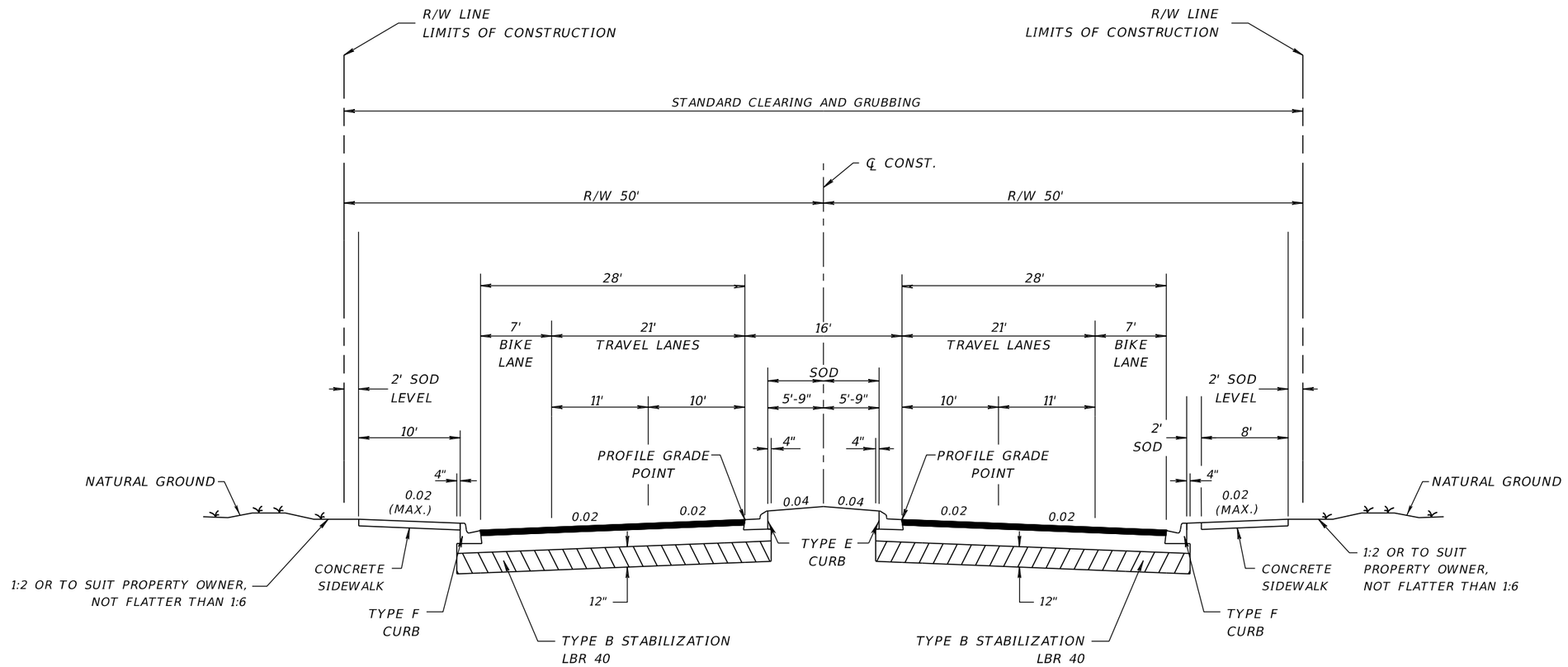


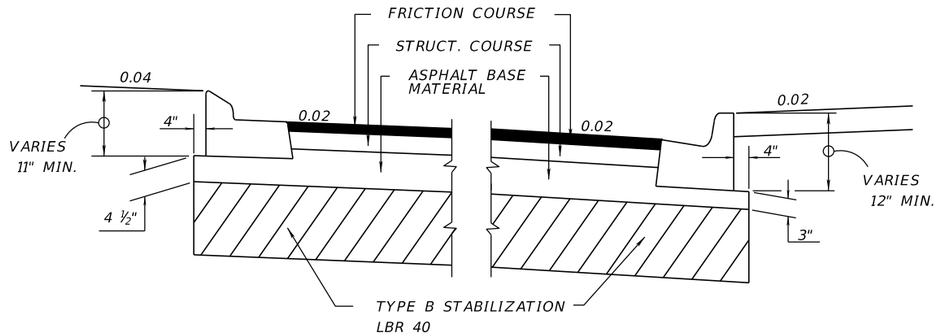
TYPICAL SECTION
SR 22
STA. 98+40.00 TO STA. 202+33.00

TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 22800
ESTIMATED OPENING YEAR = 2020 AADT = 25800
ESTIMATED DESIGN YEAR = 2040 AADT = 30600
K = 6% D = 55% T = 2% (24 HOUR)
DESIGN HOUR T = 1%
DESIGN SPEED = 30 MPH
CONTEXT CLASSIFICATION = C2T

TRAVEL AND BIKE LANES

OPTIONAL BASE GROUP 9 (TYPE B-12.5 ONLY)
TYPE SP STRUCTURAL COURSE (TRAFFIC C) (2")
FRICTION COURSE FC-12.5 (TRAFFIC C) (1 ½") (PG 76-22)



DETAIL OF ASPHALT BASE CURB PAD

Exhibit 913-3
4-Lane Curbed
Date: 1/1/22

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

TYPICAL SECTION

SHEET NO.

$DATE$ $TIME$

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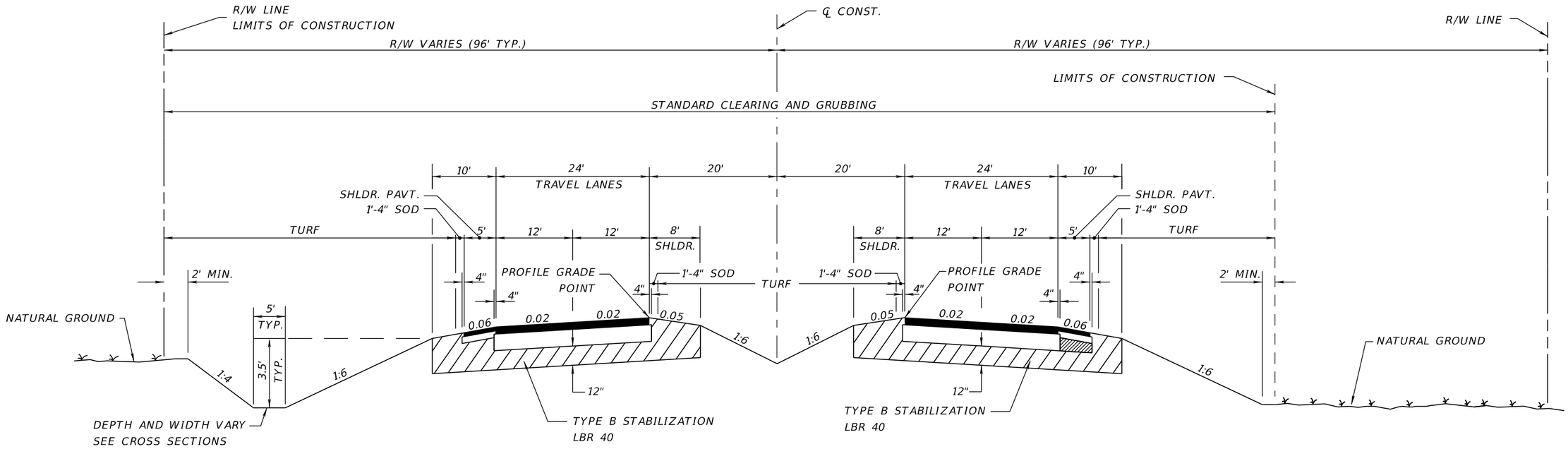


TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 22300
ESTIMATED OPENING YEAR = 2020 AADT = 23300
ESTIMATED DESIGN YEAR = 2040 AADT = 51500
K = 9% D = 56% T = 10% (24 HOUR)
DESIGN HOUR T = 5%
DESIGN SPEED = 55 MPH
CONTEXT CLASSIFICATION = C1

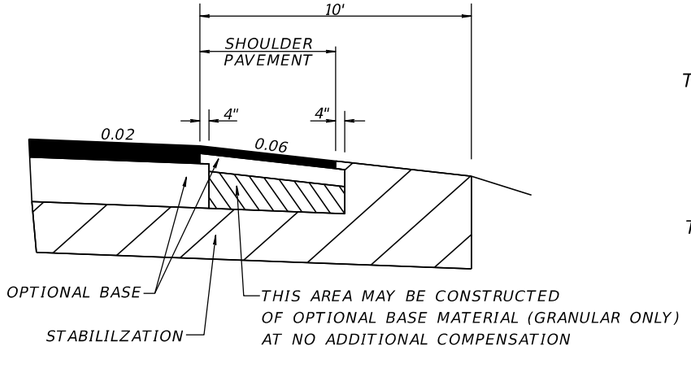
TYPICAL SECTION
SR 22
STA. 63+65.42 TO STA. 328+65.14

TRAVEL LANES

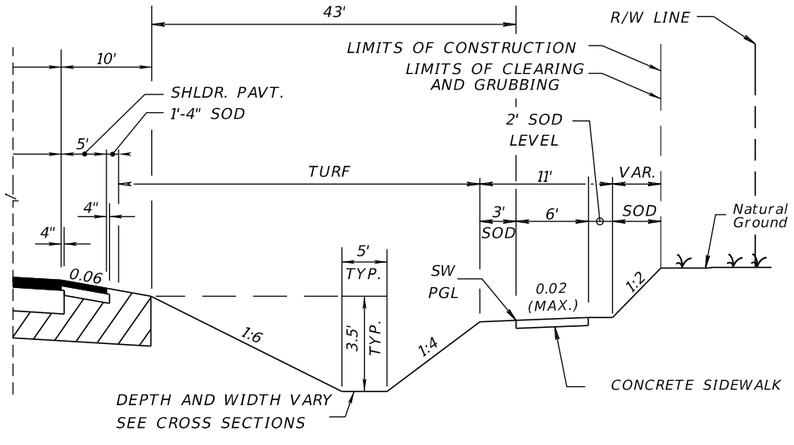
OPTIONAL BASE GROUP 9
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (2")
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (1 ½") (PG 76-22)
FRICTION COURSE FC-5 (¾") (PG 76-22)

SHOULDER PAVEMENT

OPTIONAL BASE GROUP 1
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (1 ½") (PG 76-22)
FRICTION COURSE FC-5 (¾") (PG 76-22)



SHOULDER PAVEMENT DETAIL



TYPICAL SECTION DETAIL
STA. 157+75.40 TO STA. 215+45.22

Exhibit 913-4
4-Lane Flush Shoulder
Date: 1/1/22

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

TYPICAL SECTION

SHEET NO.

$DATE$ $TIME$

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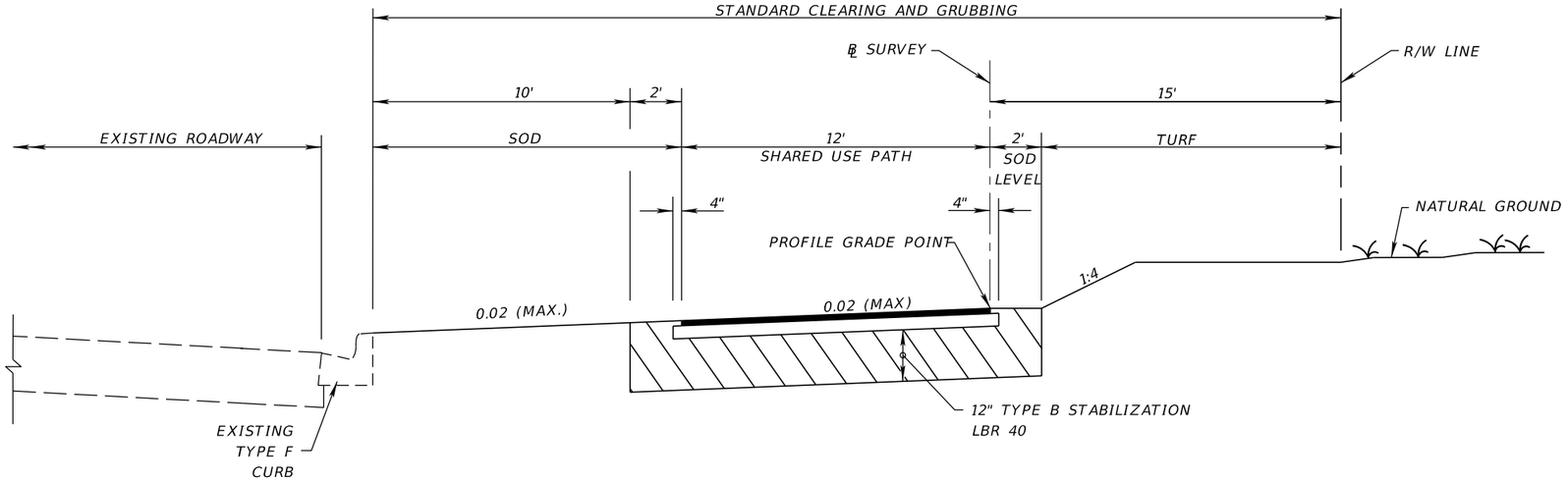
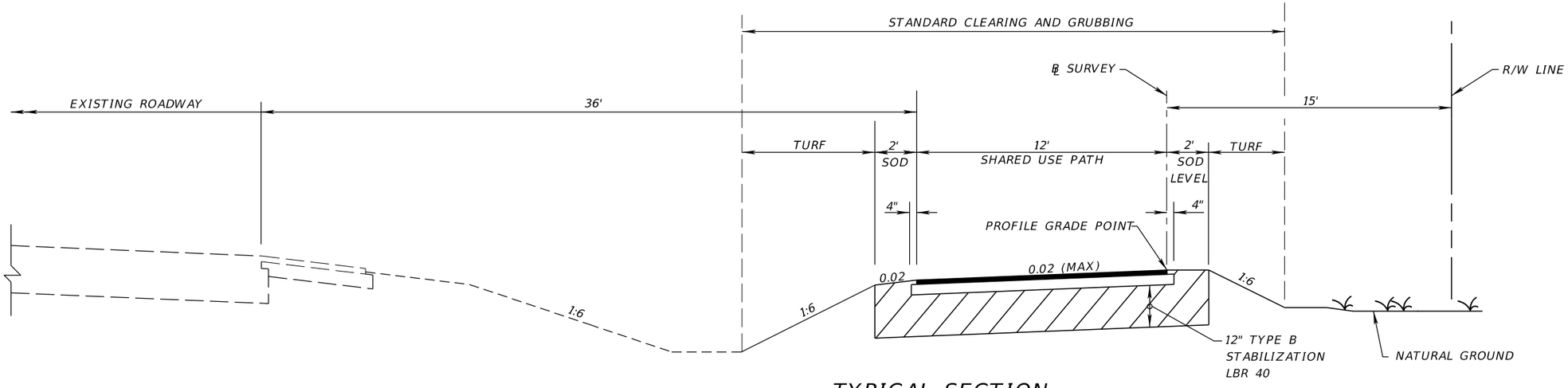


TYPICAL SECTION
SR 22 (WILLOW BEND WAY)
STA. 122+00.000 TO STA. 210+65.000

SHARED USE PATH

OPTIONAL BASE GROUP 1

TYPE SP STRUCTURAL COURSE (TRAFFIC B) (1 $\frac{1}{2}$")



TYPICAL SECTION
SR 22 (WILLOW BEND WAY)
STA. 210+65.000 TO STA. 305+15.000

SHARED USE PATH

OPTIONAL BASE GROUP 1

TYPE SP STRUCTURAL COURSE (TRAFFIC B) (1 $\frac{1}{2}$")

Exhibit 913-5
Shared Use Path
Date: 1/1/22

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

TYPICAL SECTION

SHEET NO.

$DATE$ $TIME$

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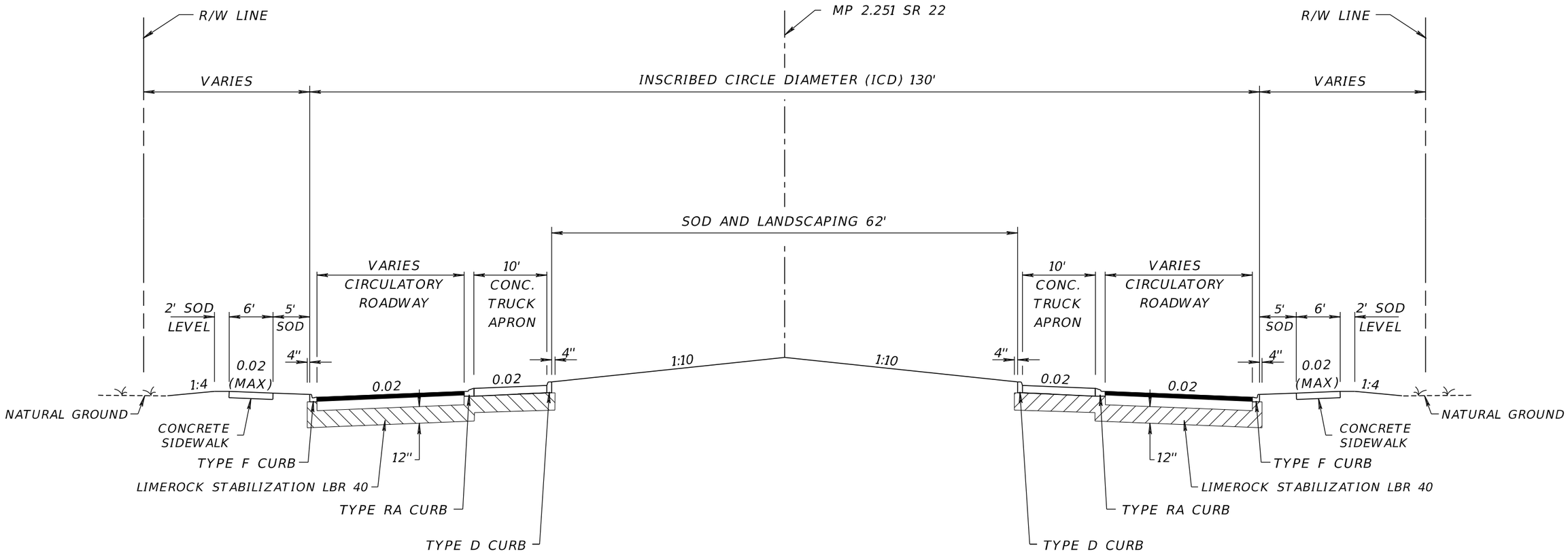

TYPICAL SECTION
MP 2.251 SR 22 = ℄ ALDERAAN RD.

TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 22800
ESTIMATED OPENING YEAR = 2020 AADT = 25800
ESTIMATED DESIGN YEAR = 2040 AADT = 30600
K = 6% D = 55% T = 2% (24 HOUR)
DESIGN HOUR T = 1%
CONTEXT CLASSIFICATION = N/A

CIRCULATORY AND CONNECTING ROADWAYS

OPTIONAL BASE GROUP 9
TYPE SP STRUCTURAL COURSE (TRAFFIC C) (1 ½")
FRICTION COURSE FC-9.5 (TRAFFIC C) (1 ½")

Exhibit 913-6
Roundabout
Date: 1/1/22

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

TYPICAL SECTION

SHEET NO.

$DATE$ $TIME$

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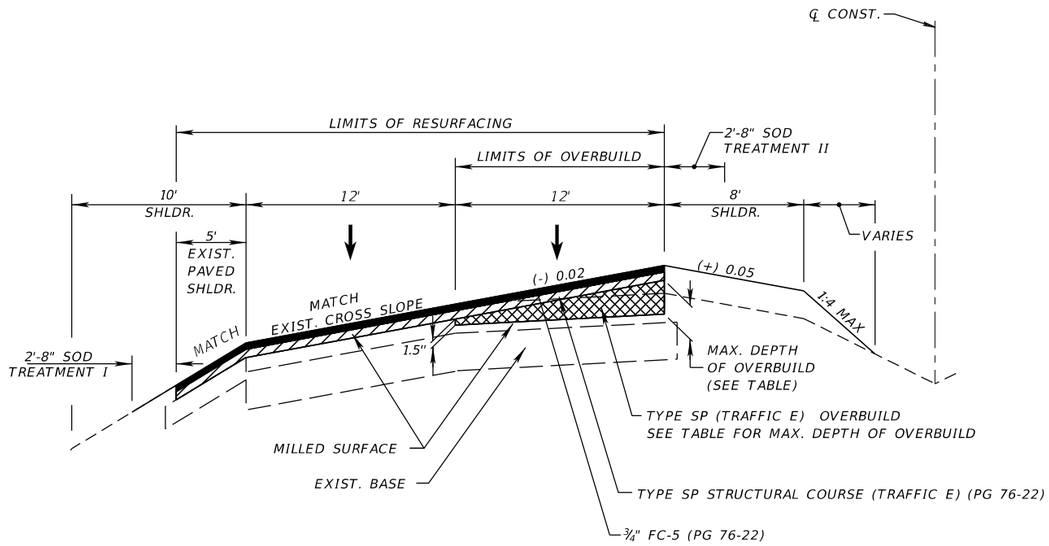

OVERBUILD
AND RESURFACING DETAIL

NTS

STA. 145+00.00 TO STA. 166+00.00

SR 22 SOUTHBOUND LANES

OVERBUILD DETAILS

LOCATION		EXIST. SLOPE (%)	PROPOSED SLOPE (%)	MAX. DEPTH OF OVERBUILD (IN.)	WIDTH OF OVERBUILD (FT.)	AREA OF OVERBUILD (SQ. FT.)
STATION	LANE					
145+00.00	SOUTHBOUND - INSIDE	(+) 1.6	EXIST.	0.0	12.0	0.0
146+00.00	SOUTHBOUND - INSIDE	(+) 1.0	(-) 2.0	5.1	12.0	2.8
147+00.00	SOUTHBOUND - INSIDE	(+) 1.6	(-) 2.0	5.8	12.0	3.1
148+00.00	SOUTHBOUND - INSIDE	(+) 0.9	(-) 2.0	4.7	12.0	2.5
149+00.00	SOUTHBOUND - INSIDE	(+) 0.4	(-) 2.0	3.9	12.0	2.2
150+00.00	SOUTHBOUND - INSIDE	(+) 0.9	(-) 2.0	4.5	12.0	2.5
151+00.00	SOUTHBOUND - INSIDE	(+) 0.4	(-) 2.0	3.5	12.0	1.9
152+00.00	SOUTHBOUND - INSIDE	(+) 0.3	(-) 2.0	3.8	12.0	2.1
153+00.00	SOUTHBOUND - INSIDE	(+) 0.0	(-) 2.0	3.4	12.0	1.9
154+00.00	SOUTHBOUND - INSIDE	(+) 0.6	(-) 2.0	4.2	12.0	2.3
155+00.00	SOUTHBOUND - INSIDE	(+) 1.2	(-) 2.0	5.2	12.0	2.8
156+00.00	SOUTHBOUND - INSIDE	(+) 1.4	(-) 2.0	5.6	12.0	3.0
157+00.00	SOUTHBOUND - INSIDE	(+) 0.8	(-) 2.0	4.7	12.0	2.9
158+00.00	SOUTHBOUND - INSIDE	(+) 1.1	(-) 2.0	5.6	12.0	3.0
159+00.00	SOUTHBOUND - INSIDE	(+) 1.0	(-) 2.0	4.9	12.0	2.6
160+00.00	SOUTHBOUND - INSIDE	(+) 1.2	(-) 2.0	5.4	12.0	2.9
161+00.00	SOUTHBOUND - INSIDE	(+) 2.2	(-) 2.0	7.5	12.0	4.1
162+00.00	SOUTHBOUND - INSIDE	(+) 2.2	(-) 2.0	7.1	12.0	3.8
163+00.00	SOUTHBOUND - INSIDE	(+) 1.2	(-) 2.0	5.4	12.0	2.9
164+00.00	SOUTHBOUND - INSIDE	(+) 0.8	(-) 2.0	4.7	12.0	2.5
165+00.00	SOUTHBOUND - INSIDE	(+) 0.6	(-) 2.0	4.6	12.0	2.4
166+00.00	SOUTHBOUND - INSIDE	(+) 1.5	EXIST.	0.0	12.0	0.0

Exhibit 913-7
Cross Slope Correction Details
Date: 1/1/22

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

CROSS SLOPE CORRECTION DETAILS

SHEET NO.

$DATE$ $TIME$

914 General Notes

914.1 General

Place general notes on a 11” x 17” plan sheet available in the FDOT CADD Software. Place the General Notes sheet before the first roadway plan-profile sheet in the plans set. See ***Exhibit 914-1*** for an example of a General Notes sheet.

Many Department offices may be involved in the determination of the suitability of general or pay item notes added to the plans, however, the final acceptance of the proposed language is the responsibility of the District Specifications Office.

914.2 General Notes

General notes provide information and direction to the contractor by clarifying design details or construction practices. General notes are project-specific and must not restate, broaden or curtail requirements in the ***Standard Specifications*** or ***Standard Plans***.

General notes are not a substitute for specifications; refer to the Specifications Handbook for guidance.

914.2.1 Writing General Notes

Notes are written to the contractor and should be written as a command.

Follow the Federal Guidelines for Plain Language when writing notes and use terminology and abbreviations commonly used in the ***Standard Specifications*** and ***Standard Plans***. Other rules to follow include:

(1) Do not include “Contractor must”, “by the Contractor”, or similar phrases in notes.

(2) Use “must” instead of “shall”.

(3) Use active voice and present tense to structure the sentence as a command. “Must” is often not needed when writing in active voice.

(4) Use short sentences; i.e., be precise and concise.

(5) Omit unnecessary words such as particularly, somewhat, absolutely, actually, completely, really, quite, totally, all, utmost, and very.

(6) Avoid using “if-then” sentence structure; e.g., “If base is exposed during milling, immediately place tack coat over area.” A more correct sentence structure is: “Immediately place tack coat over any base that is exposed during milling.”

914.2.2 Required General Notes

Place the following notes on the General Notes sheet:

(1) All survey information was obtained from a licensed Florida Professional Surveyor and Mapper and utilized as supporting data in the production of design plans and for construction on subject project. The professional surveyor and mapper of record is:

{Surveyor name, P.S.M.}
{P.S.M. NO: #}
{Company Name}
{Company Address}
{Certificate of Authorization: #}

(2) Utility/Agency Owners for this project include:

{List Company Name, Contact Name, and Phone Number}

914.3 Pay Item Notes

Place pay item notes on the General Notes sheet.

Information on how quantities are determined are contained in the Estimated Quantities (EQ) Report and should not be repeated in the plans as a Pay Item Note.

Pay item notes are used to provide unique project information not covered by basis of payment information contained in the ***Standard Specifications***, such as:

- Clarify how incidental work is to be paid for.
- Clarify the purpose, uses, or requirements.

914.4 Notes to Reviewer

The use of Notes for Reviewer is optional. However, these notes are particularly useful in documenting a project's status when the plans are to be "shelved".

Notes for Reviewer provides relevant information to reviewers to provide status on utility, R/W, permit, Technical Special Provision, or other project activities that may have a bearing on the level of completion for plan sheets. They also provide clarification on Department commitments or agreements that reviewers should be apprised of but is not information for the contractor.

Place the Notes for Reviewer conspicuously on the General Notes sheet. Include these notes only with Phase I, Phase II and Phase III submittals.

914.4.1 FDM Reference Table

The FDM Reference Table identifies the FDM 300 or 900 series chapter that was used to develop the plan sheets. An example of an FDM Reference Table is shown in ***Exhibit 914-1***.

GENERAL NOTES

1. ALL SURVEY INFORMATION WAS OBTAINED FROM A LICENSED FLORIDA PROFESSIONAL SURVEYOR AND MAPPER AND UTILIZED AS SUPPORTING DATA IN THE PRODUCTION OF DESIGN PLANS AND FOR CONSTRUCTION ON SUBJECT PROJECT. THE PROFESSIONAL SURVEYOR AND MAPPER OF RECORD IS:
   ANNA KING, P.S.M.
   P.S.M. NO.: 9993
   MAPS R US, INC.
   678 COMPASS ROAD
   MIAMI, FL 33179
   CERTIFICATE OF AUTHORIZATION: 99699

2. UTILITY/AGENCY OWNERS:

COMPANY	CONTACT	TELEPHONE NUMBERS
SHINRA POWER	CLOUD CROSS	(904) 555-1234
ENCOM	NOLEY McGEE	(904) 555-2345
SILPH CO.	GIO KOALA	(904) 555-3456
MAKO COMMUNICATIONS	ROB CUE	(904) 555-4567
CITY OF TALLAHASSEE UTILITIES	CHESTER DIGGER	(904) 555-5678

PHASE II NOTES FOR REVIEWERS

1. A RRR REPORT HAS BEEN PREPARED AND IS INCLUDED WITH THIS SUBMITTAL.

2. THE TYPICAL SECTION PACKAGE IS COMPLETE AND PENDING SIGNATURE CONCURRENCE.

3. DESIGN VARIATIONS ARE BEING PROCESSED FOR:
   - PAVEMENT CROSS SLOPE
   - SHOULDER CROSS SLOPE
   - SHOULDER WIDTH
   - LATERAL WIDTH TO GUARDRAIL
   - SUPERELEVATION
   - MAXIMUM CHANGE IN CROSS SLOPE BETWEEN ADJACENT LANES
   - 10-FT-WIDE MAINTENANCE AREA FOR RETAINING WALL
   - DEFLECTION IN ALIGNMENT
   - MAXIMUM DEFLECTION THROUGH AN INTERSECTION
   - CLEAR ZONE FOR DRAINAGE FEATURES

   THESE VARIATIONS WILL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO PHASE III SUBMITTAL.

4. MAINTENANCE AGREEMENT FOR ARCHITECTURAL LIGHTING IS BEING PROCESSED.

5. DDI DESIGN FOLLOWS CRITERIA SET BY FDM D217 DATED JANUARY 2021.

FDM REFERENCE TABLE

SHEET NAME	FDM CHAPTER	NOTES
KEY SHEET	910	
SIGNATURE SHEET	910	
DRAINAGE MAP	918	
TYPICAL SECTIONS	913	
MODEL MANAGEMENT PLAN	911	
PROJECT CONTROL	310	LARGE FORMAT SHEETS.
GENERAL NOTES	914	
ROADWAY PLAN-PROFILE	915	
DRAINAGE STRUCTURES	916	
STORMWATER FACILITIES	917	
DRAINAGE MAP	918	
SOIL SURVEY	318	
TEMPORARY TRAFFIC CONTROL PLAN	321	LARGE FORMAT SHEETS.
UTILITY ADJUSTMENTS	921	CONFLICTS UNDER REVIEW.
SELECTIVE CLEARING AND GRUBBING	323	
MISCELLANEOUS STRUCTURES	923	
STORMWATER POLLUTION PREVENTION PLAN	320	
SIGNING AND PAVEMENT MARKING PLANS	940	
LIGHTING PLANS	943	

Exhibit 914-1
Date: 1/1/22

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

GENERAL NOTES

SHEET NO. 11

$DATE$ $TIME$

915 Roadway Plan-Profile Sheet

915.1 General

The signed and sealed Building Information Model (BIM) files contain the complete horizontal and vertical geometry definitions for the project. The Roadway Plan-Profile sheet shows a 2D representation of the design contained within the model(s). Various roadway elements such as pavement width, medians, paved shoulders, curbs, drainage elements, tapers, turn provisions, and intersecting roadways, are annotated on this sheet.

This sheet may be produced on a standard-format sheet (11”x17”) or a large-format sheet (36”x48” or 36”x72”). Use landscape orientation regardless of sheet size selected.

Roadway profiles are typically provided for new construction and reconstruction projects and are shown with the plan view on the same sheet. When roadway profiles are not needed, title the sheet as Roadway Plan Sheet.

When appropriate, the plan or plan-profile sheet may utilize multi-stacking (subdividing sheet horizontally); each panel containing a roadway plan view with (when appropriate) the corresponding roadway profile directly below.

Use the following horizontal scales:

	Standard	Optional
Curbed Roadways	1” = 40’	1” = 50’
Flush-shoulder Roadways	1” = 50’	1” = 100’

See ***Exhibit 915-1*** for an example of a Roadway Plan-Profile sheet.

915.2 Roadway Plan

Display a north arrow and scale within each plan view, typically in the upper right portion.

Display roadway plan view such that the centerline of construction or baseline of construction stationing is increasing from left to right. Display bearings for tangent sections (in the direction of stationing) below the centerline or baseline. Display station numbers close to station ticks.

Display and label existing topography, including roads, streets, drives, buildings, underground and overhead utilities, walls, curbs, pavements, fences, railroads, bridges, drainage structures and similar items, as well as streams, ponds, lakes, wooded areas,

ditches, existing gasoline storage tanks within limits of topographical survey, and other physical features.

915.2.1 Required Labeling and Information

Include labeling and dimensions only to the extent necessary to convey the design intent of the improvements. Provide the following labeling and dimensions:

- Flag and station the begin and end project limits, and construction limits. Project limits should be at the beginning and the end of the full typical sections. Begin construction and end construction where construction limits are other than project limits. Transitions for maintenance of traffic and other construction work such as feathering, friction course, guardrail, drainage work, signing and marking work, and sidewalk may fall outside of the project limits but must be included within the construction limits. If plans include more than one project, identify the limits for each by Financial Project ID.
- Display station equations along centerline or baseline of construction.
- Flag and station the begin and end of project exceptions (e.g., excluded intersections, bridges).
- Indicate each type of construction classification where more than one type is involved (e.g., new construction, resurfacing, bridge work, widening, and milling). Use shading, patterning, or labeling to convey the information. Indicate the limits of pavement and grading at side street intersections. Provide a legend when shading or patterning is used.
- Display proposed curbs, traffic separators, sidewalks, curb ramps, retaining walls, and driveways. Label curbs and curb ramps indicating type. Label and dimension sidewalks, medians, and traffic separators at intervals no greater than 2,500 ft.
- Dimension traveled way along mainline at intervals no greater than 2,500 ft., or where pavement widths change. Dimension traveled way of side streets and driveways.
- Display drainage system by depicting drainage pipes and French drain with a single line, and the outline of inlets, manholes, junction boxes, and outfall features (e.g., MES, end wall). Identify by structure number only. Do not label pipe size or length.
- Display box culverts and three-sided culverts. Identify by structure number only. Do not label culvert size or length.

- Display and label R/W lines at intervals no greater than 2,500 ft. Display and label construction easements or license agreements.
- Display and label the limits of wetlands based on permit or regulatory requirements.
- Display and label utilities. Indicate the line voltage for all overhead electrical power lines. Label field verified underground utilities with the following symbol:

V_{vh} = Verified Vertical Elevation and Horizontal Location

- Identify all traffic monitoring sites in or within one-half mile of the project limits with the following notation:

  Traffic Monitoring Site Number (XXXX)

  Roadway Section Number (XXXX)

  Milepost (XX.XXX)

  Site includes vehicle detectors in roadway and pedestal, pole or base mounted cabinet, buried cable, and solar power unit on R/W. Inquiries about monitoring sites should be addressed to the Traffic Data Section Manager of the Transportation Data and Analytics Office, Office of Planning.

Projects with minor utility work or impacts may include these features on the Roadway Plan-Profile sheet.

915.2.2 Horizontal Curves

PC and PT points of horizontal curves are designated by small circles with short radial lines from these points, and PI points by a small triangle with a short section of tangent on either side. Display horizontal curve data using the following format:

CURVE DATA

PI	(Station)	R	(Radius Length)
Δ	(Delta Angle with Direction)	PC	(Station)
D	(Degree of Curve)	PT	(Station)
T	(Tangent Length)	e	(Superelevation Rate)
L	(Length of Curve)		

915.2.3 Bridges and Bridge Culverts

Bridge-sized culverts (a.k.a., bridge culverts) are defined in ***FDM 265.1***. Flag and station the begin station and end station for the bridge culvert (outside wall to outside wall). Provide a bridge number and a drainage structure number for all bridge culverts.

Display proposed bridges and approach slabs by simple outline. Flag and station the begin station and end station for the bridge and for the approach slabs. Provide a bridge number for all bridges.

When appropriate, display a short section of lateral ditch/outfall centerline on the Roadway Plan-Profile sheet.

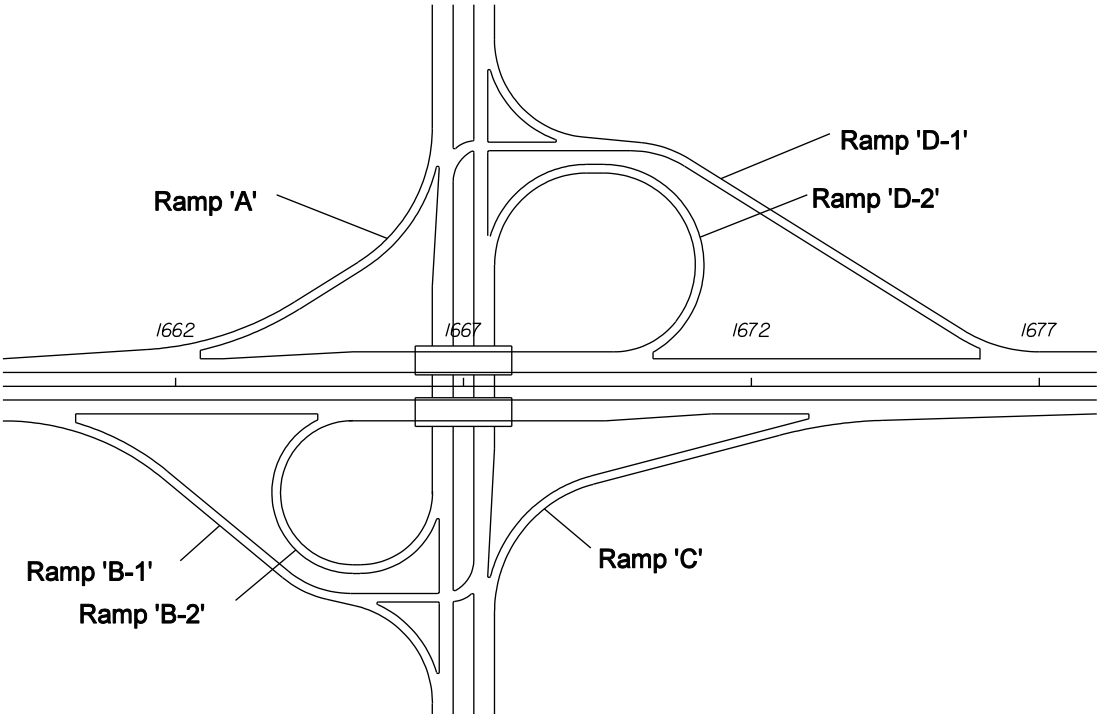
915.2.4 Interchanges

The entire interchange should be shown on one sheet using a 1" = 100' scale. With larger interchanges, consider using match lines and placing extended potions of alignment in available space on the sheet.

Display the ramp baseline of construction, typically located on the right edge of the pavement with respect to the direction of traffic. Ramp stationing should be increasing in the same direction as the project.

Identify ramps using letters or a combination of letters and numbers (e.g., Ramp A, Ramp B-1, Ramp B-2). Ramps in the first left quadrant along mainline stationing should be assigned first. Name assignments progress in a counterclockwise direction around the interchange (see ***Figure 915.2.1***). For projects with two or more interchanges, continue name assignments with the next letter and in same counterclockwise direction noted above.

Figure 915.2.1 Interchange Layout



Frontage roads should be assigned a unique alpha or numeric designation to avoid confusion with ramp nomenclature.

915.2.4.1 Ramp Terminal Details

Consider providing ramp terminal details at a scale of 1" = 40'. Ramp terminal details should be shown on the same page as the interchange.

915.3 Roadway Profile

Display roadway profiles directly below the corresponding roadway plan view. As illustrated in ***Exhibit 915-1***, each roadway profile must include a background grid at the appropriate scale. The horizontal scale and interval stationing for the roadway profile must be the same as that used for the roadway plan view. The vertical scale is typically 10% of the horizontal scale (e.g., 1” = 100’ horizontal scale would typically use a 1” = 10’ vertical scale)

Align the begin roadway profile stationing with the begin roadway plan view stationing. Display stationing along the bottom of the grid. Display the vertical elevation along both sides of the grid.

915.3.1 Required Labeling and Information

Include labeling and dimensions only to the extent necessary to convey the design intent of the improvements. Provide the following labeling and dimensions:

- Flag and station the begin and end project, and construction limits matching what is shown in the roadway plan view.
- Label percent grade for each tangent section. When two tangent grades intersect and no vertical curve is required, label the PI station and elevation.
- Flag and station the superelevated sections (see ***FDM 915.3.3***).
- Show the cross-section template of the underlying road, railroad, or waterway for bridges and box culverts along the centerline or baseline of construction. Display minimum vertical clearances for bridges.
- Display and label only transverse underground utilities.

Do not display proposed drainage pipes or inlets in the profile view.

915.3.2 Vertical Curves

Indicate vertical curve PCs and PTs by small circles and PIs by a small triangle with short sections of tangent shown on each side. Extend vertical lines from the PC and PT points and place a dimension line indicating the length of the vertical curve. The PC and PT stations and elevations must be labeled on the vertical lines.

For vertical curves, show the profile grade elevations on even stations and at appropriate intervals. Place the elevations between the dimension line and the grade line. Also, place the curve length, dimension lines and the profile grade elevations above the grade line for sag vertical curves and below the grade line for crest vertical curves. Place the dimensions and elevations reasonably near the grade line. The PI station and elevation must be noted, lettered vertically above the PI symbol for crest curves and below for sag curves.

Show the profile grade elevation of the beginning and ending station of each sheet vertically just above the grade line, except when the beginning or ending station is on a vertical curve.

915.3.3 Superelevation

Standard superelevation details shown in ***Standard Plans*****, *Indexes 000-510*** and ***000-511*** may be used for projects with simple curves.

Show superelevation profiles for:

- Reverse curves
- Compound curves
- Other conditions requiring special superelevation not covered in the standards

Show complete profile grade line and edges of pavement (right and left) within the superelevation zone on the grid format. Label the begin and end superelevation stations and indicate the section in full superelevation.

915.3.4 Special Ditch Profile

For flush-shoulder roadways, display and label special ditches in the profile. Show percent ditch grade and a beginning or ending ditch PI with elevation and station plus. For multi-lane divided projects, three special ditch grades (right and left roadway ditches and median ditch) sometimes occur at the same location. In such cases, it may be advantageous to show the median ditch at a convenient location on the sheet with a separate elevation datum.

Depict uniform ditches of non-standard depth by a dimension line in the lower portion of the grid and label as a special ditch with location and depth or show them by flagging the DPIs at each end with station elevation and side. Standard depth ditches are not labeled.

915.3.5 Special Gutter Grades

Show special gutter grades in profile for cases where the gutter grades are not controlled by the typical section. Include prolongations of gutter profile grades across street intersections on plan-profile sheets if an inlet is not provided before the intersection.

915.3.6 Special Sidewalk Profiles

Display and label special sidewalk profiles when the profile grade of the proposed sidewalk is independent of the roadway profile. Sidewalk profiles are typically located at the back of the proposed sidewalk (closest to the R/W).

When special sidewalk profiles are included on the Roadway Plan-Profile sheet, indicate the location of the sidewalk profile grade line (PGL) on the typical section.

915.4 Ramp Profiles

Develop ramp profile grades along the baseline of each ramp. A profile of the edge of the pavement opposite the baseline is typically shown as well. Show ramp profiles anywhere within available space on the Roadway Plan-Profile sheet.

Use the same scales used for the Roadway Plan-Profile sheet displaying the interchange. Each ramp profile must include a background grid at the appropriate scale.

915.4.1 Spline Grade

Spline grades are used to show the interconnection and interrelation of the ramp edge of pavement with the mainline edge of pavement. Showing this profile in the plans is typically not necessary. However, if the mainline pavement is superelevated or within the superelevation transition zone, the profile can be beneficial to illustrate the design intent.

Display the spline grade elevations at intervals of 20 or 40 feet. Show elevations for the outer edge of mainline pavement and inner and outer edges of the ramp pavement at the nose areas.

Join the grades of each pavement edge by smooth splines or simple curves. Label the three grade profiles and all equality stations. Flag and label nose stations. Place the scale in proximity of the profile.

915.5 Special Profiles

Showing special profiles in the plans is typically not necessary. However, if it is determined that providing a special profile in the plans is beneficial to show the design intent, they should be shown anywhere within available space on the Roadway Plan-Profile sheet.

Standard scale used for special profiles should be 1" = 20' horizontally and 1" = 2' vertically. Each profile must include a background grid at the appropriate scale.

915.5.1 Intersections

Supplemental profiles at intersections may be necessary to define edge of pavement profiles. Include sections showing pavement surface elevations for nose points and other critical locations. Label the existing ground line and curb line per the ***CADD Manual***.

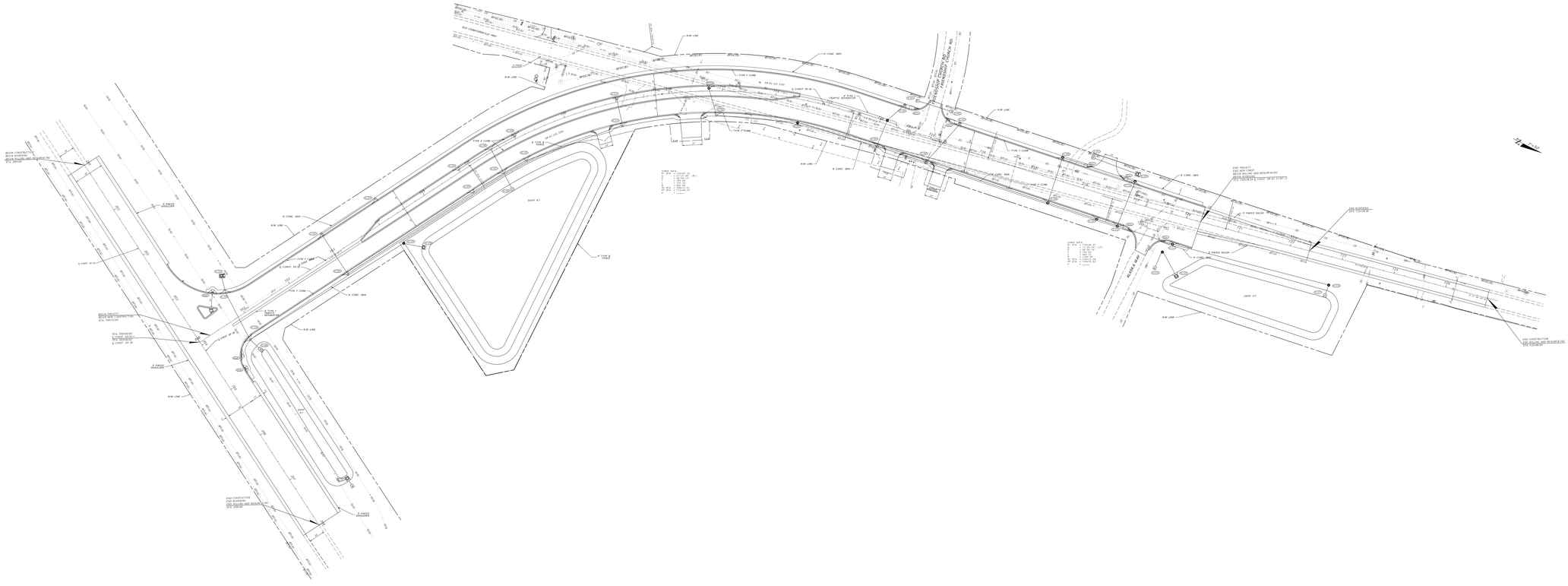
915.5.2 Curb Returns

Curb return profiles may be necessary to define the gutter flow line from the PC to the PT point of the return at an intersection.

Identify each return profile and its PC and PT stations shown. Elevations should be shown at appropriate intervals and low and high spots must be identified by location and elevation.

915.5.3 At-Grade Railroad Crossings

Supplemental profiles for at-grade railroad crossings may be necessary to define lane lines, edges of pavement, and gutter flow lines.


BEGIN CONSTRUCTION
BEGIN WIDENING
BEGIN PAVED SHOULDER RESURFACING
STA. 700+00.00
OLD CAMPGROUND RD
N
S
E
W
NORTH
SOUTH
EAST
WEST
R/W LINE
℄ CONC. SWK.
℄ TYPE F CURB
℄ CONST. SR 87
TRAFFIC SEPARATOR
℄ TYPE E CURB
℄ TYPE F CURB
SWAMP
SWAMP
SWAMP

916 Drainage Structures Sheet

916.1 General

The signed and sealed Building Information Model (BIM) files contain the complete drainage system information for the project. The Drainage Structures sheet provides supplemental data and information for proposed drainage structures, including:

(1) Drainage Plan View

(2) Drainage Profiles

(3) Drainage Tabular Information

(4) Drainage Special Details and Notes

(5) Optional Materials Tabulation

The Drainage Structures sheet is produced as a contract document and placed within the Roadway Plans. This sheet may be produced on a standard-format sheet (11”x17”) or a large-format sheet (36”x48” or 36”x72”). Use landscape orientation regardless of sheet size selected. Sheet size selection should be based on size and extent of drainage network(s). The Drainage Structures sheet should display the complete extents of individual drainage network(s).

Use the following horizontal scales:

	Standard	Optional
Curbed Roadways	1” = 40’	1” = 50’
Flush-shoulder Roadways	1” = 50’	1” = 100’

Provide a legend for all abbreviations included in the drainage tabular information. See ***Exhibit 916-1*** for an illustration of the Drainage Structures sheet.

916.2 Drainage Plan View

The drainage plan view is typically shown in the upper half of the sheet. The purpose of this view is to highlight the drainage network(s) that will be shown in the profile views and included in the tabular data. The display limits of the drainage plan view should contain the entire proposed drainage network. If multiple drainage networks are shown or overlap, clearly indicate which network the profile and tabular information is associated with.

916.2.1 Required Information

Provide the following information in the plan view:

- Display the view such that the centerline of construction or baseline of survey stationing is increasing from left to right. Display station numbers close to station ticks. Include a north arrow and scale above and near the drainage plan view.
- Display proposed limits of pavement, curbs, traffic separators, sidewalks, curb ramps, and driveways. Show proposed bridges and approach slabs by simple outline and indicate the bridge structure number. The intent is to show an outline of the proposed roadway to give context to the location of the drainage structures. The elements of the proposed roadway should be gray scaled.
- Display and label existing and proposed underground utilities only where a conflict exists. Identify the underground utility as a conflict node.
- Display the proposed drainage system by depicting drainpipes with a single pipeline style indicating direction of flow, and the outline of inlets, manholes, junction boxes, and outfall features (e.g., MES, endwall).
- Display and label existing structures that are to be filled, plugged, and remain in place.

Do not display existing topography, except to the extent those elements are to be incorporated into, affected by, or accommodated by the proposed drainage system. Existing topography elements may include roads, streets, driveways, buildings, underground and overhead utilities, walls, curbs, pavements, fences, railroads, bridges, drainage structures and similar items, as well as streams, ponds, lakes, wooded areas, ditches, existing gasoline storage tanks within limits of topographical survey, and other physical features. When shown, display existing topography elements as gray scaled.

916.2.2 Structure and Pipe Numbers

Provide drainage structure numbers, and a pipe number between structures. Include the bridge number for proposed bridge culverts. Established the structure and pipe numbers using the convention shown in ***Exhibit 916-1*** and described as follows:

(1) Storm drain networks: Assign structure numbers in ascending order along the centerline of construction or baseline of construction. Assign pipe numbers to correlate with the structure at the hydraulically upper end of pipe.

(2) Cross drains: Assign structure number in ascending order along the direction of flow (hydraulic upper end to lower end). Intermediate structure numbers along the same cross drain typically use the same beginning structure number with suffix letter. Assign pipe numbers to correlate with the structure at the hydraulically upper end of pipe.

916.3 Drainage Profile

Drainage profiles are typically shown in the lower left portion of the sheet as illustrated in ***Exhibit 916-1***. Stack or space the profiles to avoid overlapping of structures or notes. Display drainage profiles from left to right, beginning with the structure at the hydraulically upper end of the system run to the outfall or structure at the hydraulically lower end. All storm drain networks, cross drains and side drains are to be shown in profile view.

Each drainage profile must include a background grid at the appropriate scale. Use the same horizontal scale for the profile portion that is used for the plan portion. The vertical scale is typically 10% of the horizontal scale (e.g., 1” = 50’ horizontal scale would typically use a 1” = 5’ vertical scale).

916.3.1 Required Information

Drainage profiles depict vertical relationships of the drainage network or cross drain along the centerline of the pipes. Provide the following information for each drainage profile:

- Display drainage structures (typically depicted as rectangles) and connecting pipes. Place the outside edge of the first structure at the first vertical grid line as shown in ***Exhibit 916-1***. Assign the value of zero to the first vertical grid line; subsequent vertical grid lines reflect the true distance along the pipe system.
- Label drainage pipes and structure numbers.
- Display and label existing and proposed surfaces along centerline of pipe. Displaying surfaces past the limits of the first and last pipes is not required.
- Provide horizontal grid line elevations along the left side of the background grid.
- Display and label existing and proposed underground utilities. When appropriate, identify underground utility as a conflict node.

916.4 Drainage Tabular Information

The Drainage Tabular Information is typically shown on the lower right portion of the sheet and consists of four tables:

(1) Pipe Data

(2) Structures Data

(3) Endwall and MES Data

(4) Optional Materials

If there is insufficient space on the Drainage Structures sheet, the Drainage Tabular Information may be placed on a separate sheet titled “Drainage Structures Data”.

916.4.1 Pipe Data

The Pipe Data table contains the following information:

- Pipe number, length, and size
- Hydraulic upper end structure number with invert elevation
- Hydraulic lower end structure number with elevation
- Optional materials group number

916.4.2 Structures Data

The Structure Data table contains the following information for each structure:

- Structure number
- Baseline feature
- Structure location (baseline station and offset)
- Structure type and bottom dimensions
- FDOT Standard Plans (Index 400 series) Notes
- Reference point elevation
- Pipe label for each pipe entering or exiting the structure

916.4.3 Endwall and MES Data

The Endwall and MES Data table contains the following information:

- Structure number
- Baseline feature
- Structure location (baseline station and offset)
- Structure type
- Pipe invert elevation
- Structure notes

916.4.4 Optional Materials

Modification for Non-Conventional Projects:
Delete ***FDM 916.6*** and see ***Chapter 6*** of the ***Drainage Manual*** for Optional Material requirements.

Consider optional materials for all pipes; however, match pipe extensions and end section replacements to the existing pipe material. See the Department's ***Drainage Design Guide*** (Optional Pipe Material Chapter) for more information.

Conduct an Optional Pipe Materials Analysis and place an Optional Materials table with the Drainage Tabular Information. The Optional Materials table shows all materials allowed and indicates which material is plotted in the plans and used as the basis for pay item quantities. The Optional Materials table is to include:

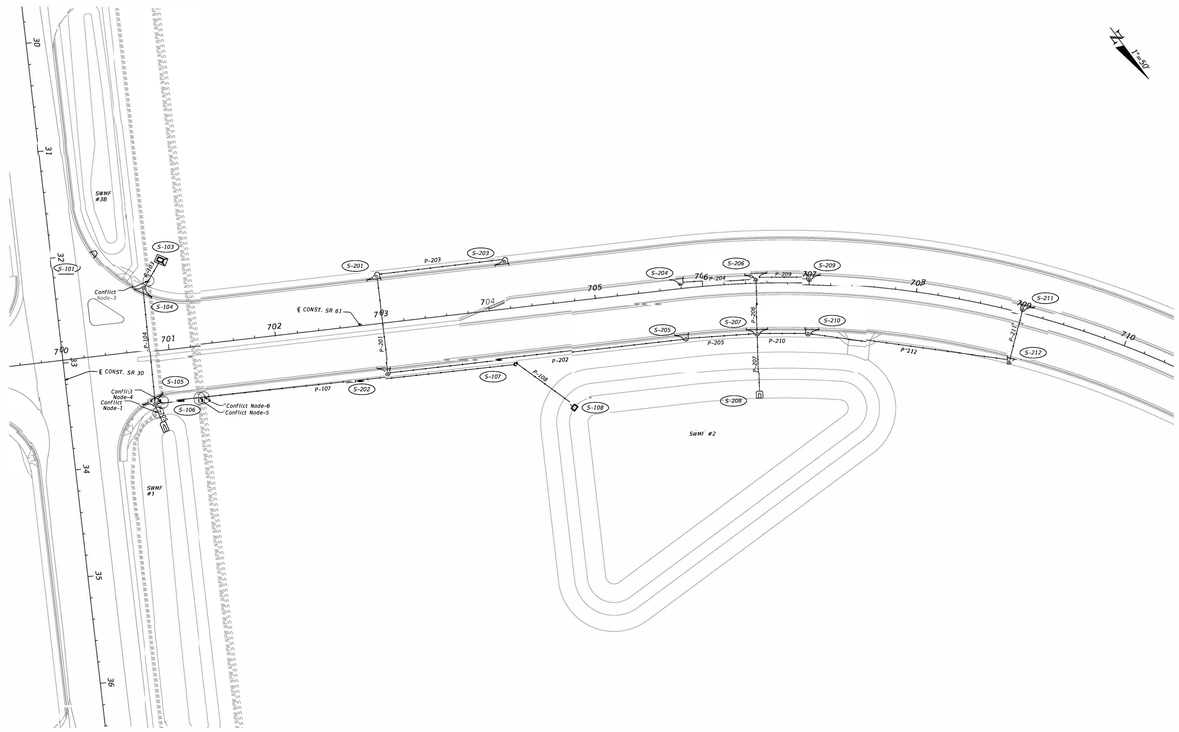
- Optional Pipe Group Number
- Size(s)
- Material, thickness or class, corrugation requirements, and protective coating
- Plotted and as-built notations, and construction remarks

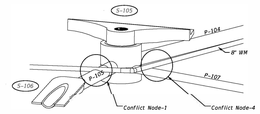
916.5 Drainage Special Details

Showing special horizontal or vertical details in the plans is typically not necessary. However, if it is determined that providing a special drainage detail is beneficial to show the design intent, the detail is typically placed in the upper right portion of the sheet but may be shown anywhere within available space on the sheet. Any scale may be used.

The following are examples of information that may be depicted:

- Clash detection results and utility clearances
- Drainage structure details (non-standard structures, pond outfall structures multiple or off-centered pipe connections to a structure wall)
- Isometric and 3D views with identifying labels

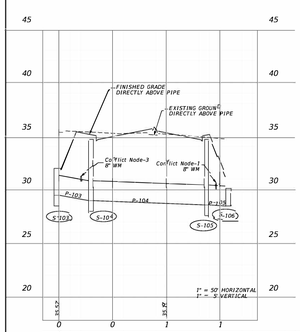


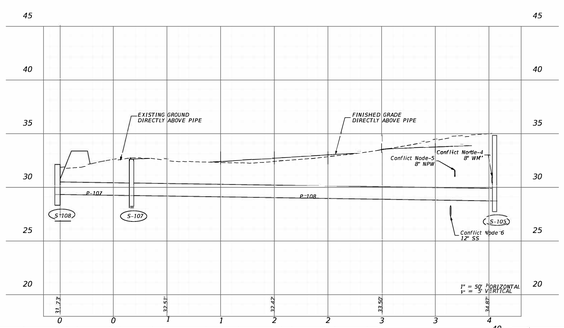


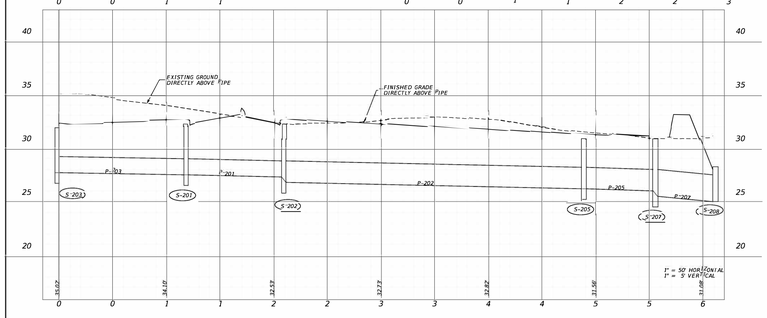
S-105 DETAIL

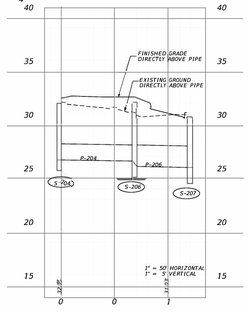
S-108 DETAIL

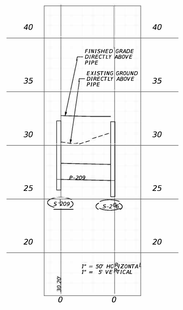
Utility Conflicts								
Label	Conflictee	Conflicter	Baseline Feature	Baseline Station (ft)	Baseline Offset (ft)	X (ft)	Y (ft)	Notes
Conflict Node-1	P-105	8" WM	CL_SR61	700+83.58	57.63	2006796.65	402739.60	SEE S-105 DETAIL
Conflict Node-2	P-102	8" WM	CL_SR61	700+88.60	-92.35	2006717.29	402612.23	
Conflict Node-3	P-103	8" WM	CL_SR61	700+88.60	-65.88	2006730.53	402635.15	
Conflict Node-4	P-107	8" WM	CL_SR61	700+88.55	49.05	2006788.05	402734.65	SEE S-105 DETAIL
Conflict Node-5	P-107	8" NPW	CL_SR61	701+22.58	49.27	2006758.69	402751.86	
Conflict Node-6	P-107	12" SS	CL_SR61	701+26.58	49.28	2006755.23	402753.87	

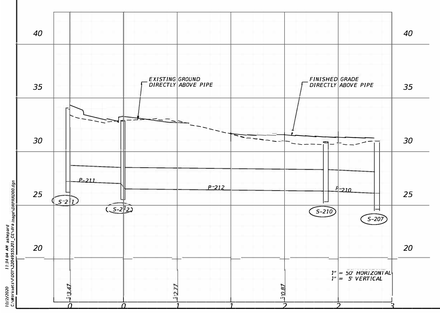












Pipe Data								
Label	Barrels	Length (Construction) (ft)	Size	Start Node (Upper)	Start Invert (ft)	Stop Node (Lower)	Stop Invert (ft)	Optional Pipe
P-103	1	28	24 inch	S-103	29.50	S-104	29.00	Group 1
P-104	1	103	24 inch	S-104	29.00	S-105	28.60	Group 1
P-105	1	15	24 inch	S-105	28.60	S-106	28.50	Group 1
P-107	1	334	14x23 inch	S-107	29.10	S-105	28.60	Group 4
P-108	1	70	14x23 inch	S-108	29.20	S-107	29.10	Group 4
P-201	1	87	18 inch	S-201	27.50	S-202	27.30	Group 1
P-202	1	276	24 inch	S-202	26.80	S-205	26.20	Group 1
P-203	1	116	18 inch	S-203	27.70	S-201	27.50	Group 1
P-204	1	66	18 inch	S-204	26.70	S-206	26.60	Group 1
P-205	1	62	24 inch	S-205	26.20	S-207	26.00	Group 1
P-206	1	47	24 inch	S-206	26.10	S-207	26.00	Group 1
P-207	1	42	30 inch	S-207	25.50	S-208	25.00	Group 2
P-209	1	46	18 inch	S-209	26.70	S-206	26.60	Group 1
P-210	1	43	24 inch	S-210	26.20	S-207	26.00	Group 1
P-211	1	47	18 inch	S-211	27.10	S-212	26.90	Group 3
P-212	1	185	24 inch	S-212	26.40	S-210	26.20	Group 1

Optional Materials Tabulation					
Group Number	Size(s)	Material	Plotted	As Built	Remarks
Group 1	18 – 24	RCP CLASS II	X		
		SRAP, 16 GA.			
		SRSP, 14 GA.			
		SRASP, 16 GA.			
Group 2	30	RCP CLASS II			
		SRAP, 14 GA.			
		SRASP, 14 GA.			
Group 3	18	RCP CLASS I	X		
		HDPE CL II			
		PVC ASTM F-949			
		PP			
Group 4	14x23	ERCP, CLASS II	X		

Structure Data								
Label	Baseline Feature	Baseline Station (ft)	Baseline Offset (ft)	Structure Type	Bottom Dimensions	FDOT Standard Plans (400 index series) Notes	Reference Point Elevation (ft)	Sump Elevation (Structure Invert) (ft)	-Pipe- Label
S-101	US98	32+02	-38.55	CLOSED FLUME			34.76	33.26	
S-103	CL_SR61	701+02	-83.90	DBI TYPE E		TRAVERSABLE INLET WITH SLOT EL 31.42	32.00	28.50	
									(Out) P-103
S-104	CL_SR61	700+80	-54.04	CURB INLET TYPE 2	4' DIA.		34.71	28.00	
									(In) P-103
									(Out) P-104
S-105	CL_SR61	700+79	43.76	CURB INLET TYPE 2	4' DIA.		34.71	27.60	
									(In) P-104
									(In) P-107
									(Out) P-105
S-107	CL_SR61	704+19	51.15	MANHOLE TYPE 8	3.5' DIA.		32.63	28.10	
									(In) P-108
									(Out) P-107
S-108	CL_SR61	704+69	97.32	DBI TYPE D		NON-TRAVERSABLE INLET	32.00	28.20	
									(Out) P-108
S-201	CL_SR61	703+00	-40.00	CURB INLET TYPE 1	4' DIA.		32.40	26.50	
									(In) P-203
									(Out) P-201
S-202	CL_SR61	703+00	40.00	CURB INLET TYPE 1	4' DIA.		32.40	25.80	
									(In) P-201
									(Out) P-202
S-203	CL_SR61	704+20	-40.00	CURB INLET TYPE 1	4' DIA.		31.90	26.70	
									(Out) P-203
S-204	CL_SR61	705+80	-11.00	CURB INLET TYPE 1	4' DIA.		31.98	25.70	
									(Out) P-204
S-205	CL_SR61	705+80	40.00	CURB INLET TYPE 1	4' DIA.		31.00	25.20	
									(In) P-202
									(Out) P-205
S-206	CL_SR61	706+50	-11.00	CURB INLET TYPE 2	4' DIA.		32.07	25.10	
									(In) P-204
									(In) P-209
									(Out) P-206
S-207	CL_SR61	706+50	40.00	CURB INLET TYPE 2	4' x 4'		30.85	24.50	
									(In) P-205
									(In) P-206
									(In) P-210
									(Out) P-207
S-209	CL_SR61	707+00	-11.00	CURB INLET TYPE 1	4' DIA.		32.15	25.70	
									(Out) P-209
S-210	CL_SR61	707+00	40.00	CURB INLET TYPE 1	4' DIA.		30.93	25.20	
									(In) P-212
									(Out) P-210
S-211	CL_SR61	709+00	-11.00	CURB INLET TYPE 1	4' DIA.		33.94	26.10	
									(Out) P-211
S-212	CL_SR61	709+00	40.00	CURB INLET TYPE 1	4' DIA.		32.72	25.40	
									(In) P-211
									(Out) P-212

Endwall and MES Data						
Label	Baseline Feature	Baseline Station (ft)	Baseline Offset (ft)	Structure Type	Elevation (Invert) (ft)	FDOT Standard Plans (400 index series) Notes
S-106	CL_SR61	700+87	69.15	CD MES 1:4	28.50	
S-208	CL_SR61	706+50	102.50	CD MES 1:2	25.00	

Exhibit 916-1
Date: 1/1/21

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 60G15-23.004 F.A.C.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 61	WAKULLA	220493-5-52-01

DRAINAGE STRUCTURES

SHEET NO. PLAN 1

917 Stormwater Facilities

917.1 General

A stormwater facility is often located at the downstream end of the drainage system for the purpose of treatment and attenuation of stormwater runoff. The Stormwater Facilities sheet provides data and information for proposed stormwater facilities, including:

(1) Stormwater Facility Plan View

(2) Stormwater Facility Sectional Views

(3) Outlet Structure Details

This sheet may be produced on a standard-format sheet (11”x17”) or a large-format sheet (36”x48” or 36”x72”). Use landscape orientation regardless of sheet size selected.

See ***Exhibit 917-1*** for an example of a Stormwater Facilities sheet.

917.2 Stormwater Facility Plan View

The stormwater facility plan view is typically located in the upper left area of the sheet. It is preferrable to display a stormwater facility in its entirety on a single plan sheet. A common horizontal scale for the plan view is 1” = 50’ and should not be larger than 1” = 20’.

917.2.1 Required Information

Display and label the following information in the plan view:

(1) Baseline of construction stationing (typically increasing from left to right) with station and offset ties to the project centerline of construction. Include a north arrow and scale above and near the drainage plan view.

(2) Elements of the proposed roadway, including drainage pipes and structures.

(3) Location of stormwater facility sectional views (i.e., A-A, B-B).

(4) Location of soil borings

(5) Stormwater facility delineations:

a) Facility bottom and top (often referred to as Top of Bank). Provide Station/Offset callouts and radiuses along the Top of Bank delineation.

b) Change of side slope (e.g., 1:2 to 1:4)

c) Maintenance berm limits

(6) Maintenance access road, fence and gates, and R/W lines

(7) Stormwater facility drainage structures and pipes with location of outlet structure sectional views (i.e., C-C, D-D)

917.3 Stormwater Facility Sectional Views

The stormwater facility sectional views are typically located below or adjacent to the plan view. Include a minimum of two sectional views, taken in directions perpendicular to each other (as shown on ***Exhibit 917-1***). The horizontal scale should be the same as used for the stormwater facility plan view. The vertical scale is typically 4 to 5 times larger than the horizontal scale; e.g., 1” = 20' horizontal and 1” = 4’ vertical.

917.3.1 Required Information

Display and label the following information in the sectional views:

- Stormwater facility bottom and top (often referred to as Top of Bank) with elevations, side slopes, and maintenance berm.
- Existing groundline, limits of clearing and grubbing, limits of sod or vegetation, and location of R/W and fence
- Symbols and elevation for Normal Highwater and Peak Design Stage.
- Soil borings

Dimension the maintenance berm, and horizontal distance between stormwater facility delineations.

917.3.2 Cross Sections

Showing cross sections of the stormwater facility in the plans is typically not necessary. However, if it is determined that the sectional views do not adequately show the design intent, cross sections may be included. Place cross sections anywhere within available space on the Stormwater Facilities sheet and include required information specified in ***FDM 917.3.1***.

917.4 Outlet Structure Details

The stormwater facility outlet structure details are typically shown adjacent to the plan view. Outlet structure information, elevations, and dimensions may be placed in a data table (as shown on ***Exhibit 917-1***) or shown and labeled directly on the outlet structure sectional views. Information, elevation, and dimensions should clearly indicate the fabrication requirement of the modified inlet and skimmers.

917.4.1 3D Isometric View

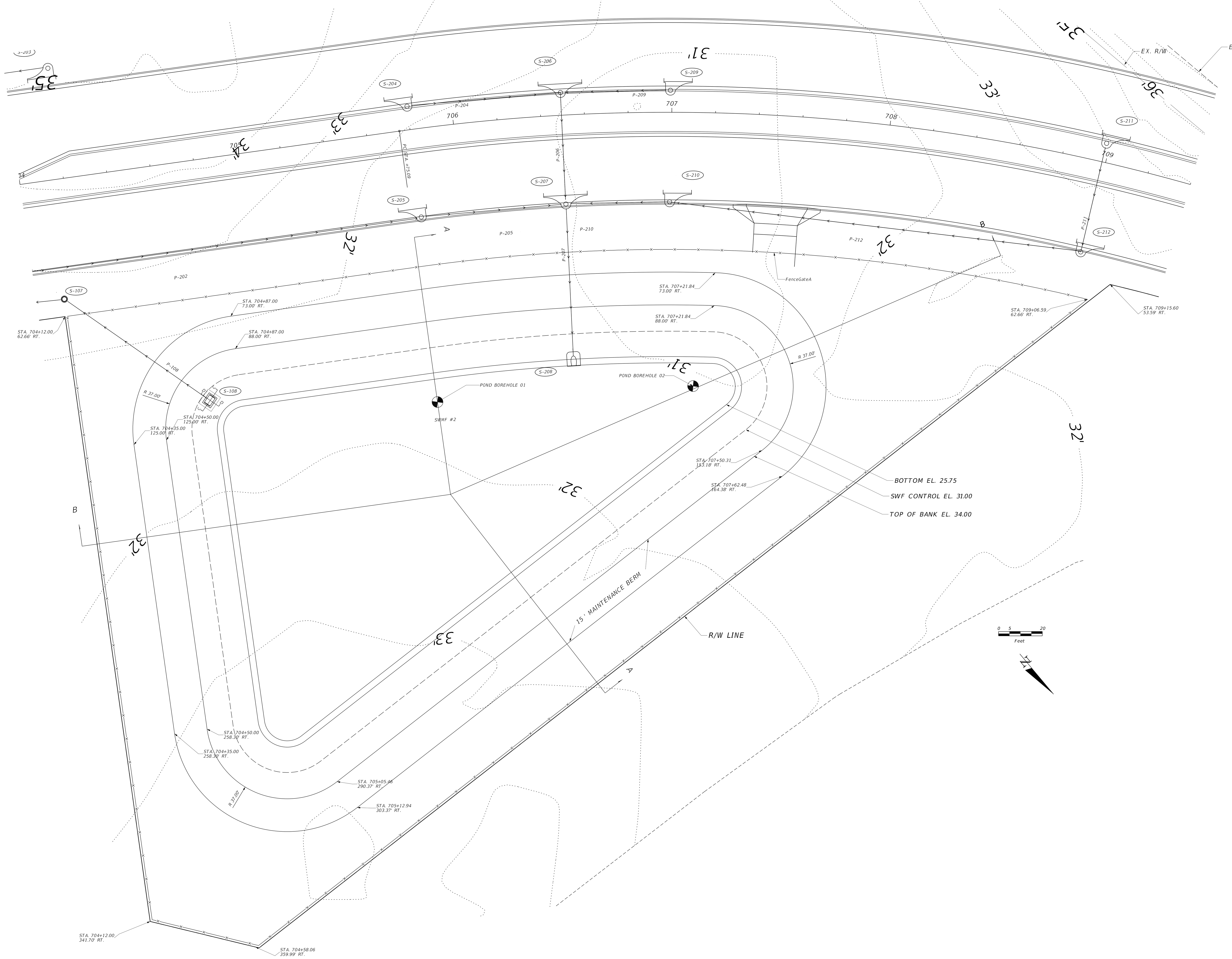
Provide a 3D isometric view of the stormwater facility outlet structure that illustrates:

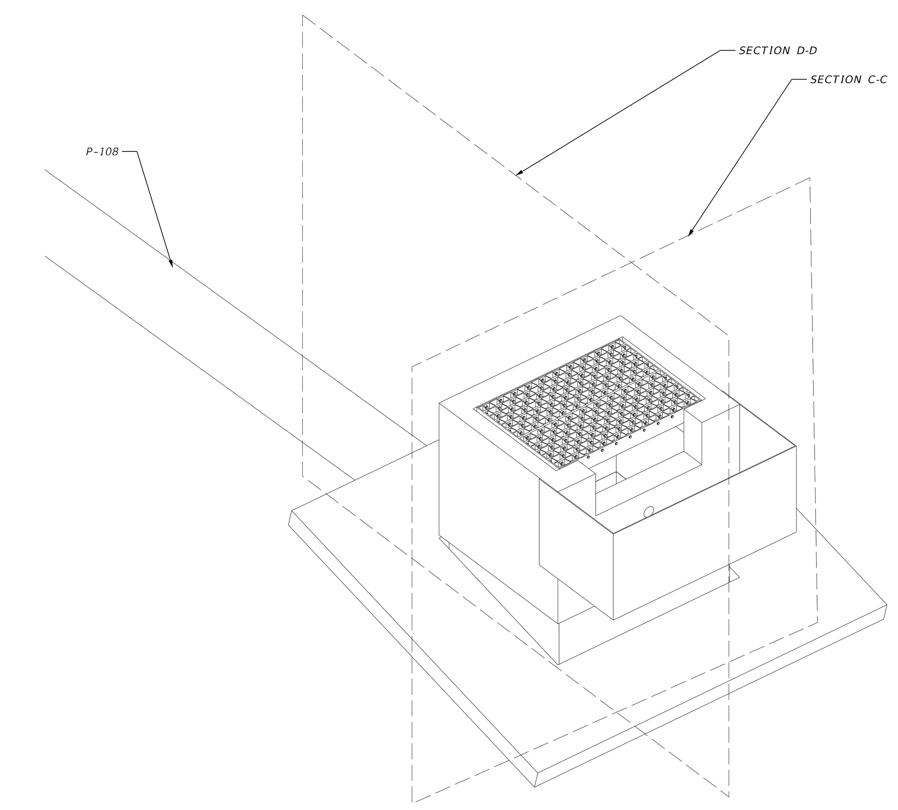
- Inlet with weir and drawdown. Provide outlet structure drainage structure number.
- Outlet pipe(s), with pipe number
- Skimmer(s)
- Concrete apron

Placement of the 3D isometric view may use any scale and angle that best displays the various components of the outlet structure.

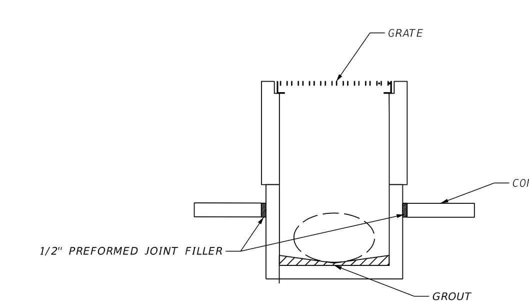
917.4.2 Sectional Views

Provide a sectional view across each outlet structure side that contains a weir or drawdown. Sectional views must provide all pertinent dimensions and elevations needed to fabricate the outlet structure and at a minimum illustrate the same elements required for the 3D isometric view. Any scale may be used that clearly conveys the requirements of the outlet structure. Elevation data may be provided in table format as shown in ***Exhibit 917-1.***

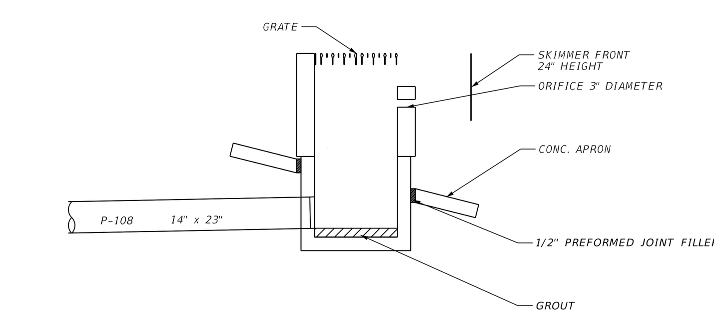




S-108
SWF OUTLET STRUCTURE DETAIL
NTS

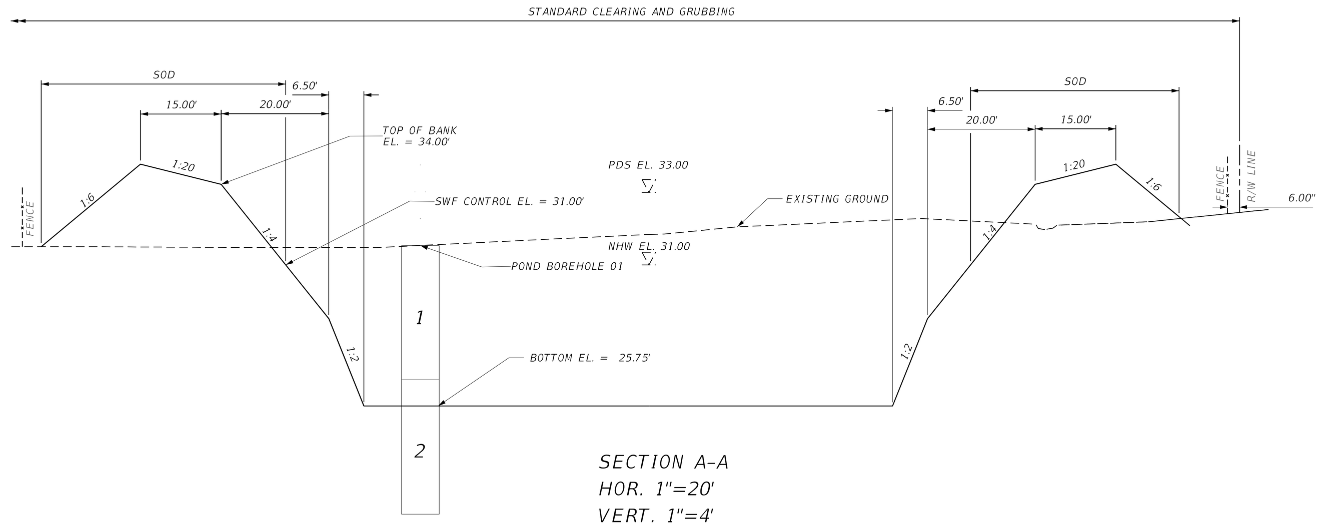


S-108
SECTION C-C
NTS

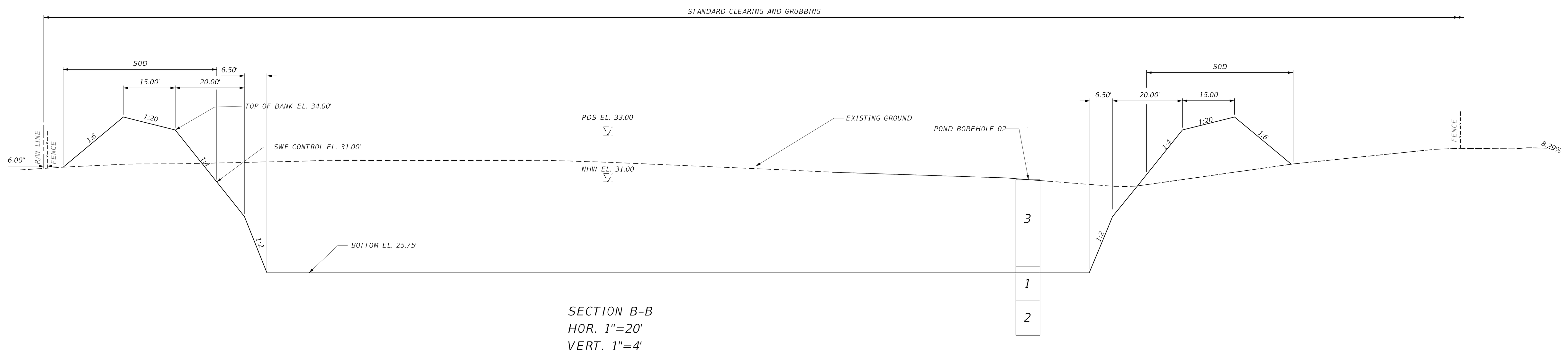


S-108
SECTION D-D
NTS

OUTLET STRUCT.	SWF	STATION	OFFSET	REF.	INLET TYPE	INDEX NO.	GRATE EL. (FT NAVD)	WEIR EL. (FT NAVD)	OUTFALL PIPE EL. (FT NAVD)	ORIFICE EL. (FT NAVD)	CONC. DITCH PAVT. (SY)	TOP OF SKIMMER EL. (FT NAVD)
S-108	#2	704+72	109.75	SR61	D	425-052 425-070	33.00	32.00	29.20	31.00	10.91	33.00



SECTION A-A
HOR. 1"=20'
VERT. 1"=4'



SECTION B-B
HOR. 1"=20'
VERT. 1"=4'

EXHIBIT 917-1
Date 1/1/21

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 61	WAKULLA	220495-5-52-01

STORMWATER FACILITY
SWF #2

SHEET NO. 1

918 Drainage Map

918.1 General

The Drainage Map sheet is required for new construction and reconstruction projects, and for other project types that propose significant changes to the existing hydrology and hydraulics.

The Drainage Map sheet provides an overview of the overland drainage patterns as well as the storm drain system layout and outfall locations. This sheet is used for establishing the appropriate drainage facilities during design, confirmation of overland flow patterns during construction, and for emergency response and maintenance purposes.

This sheet may be produced on a standard-format sheet (11”x17”) or a large-format sheet (36”x48” or 36”x72”). Use landscape orientation regardless of sheet size selected.

Use the following horizontal scales:

	Standard	Optional
Closed Drainage System	1” = 200’	1” = 500’
Open Drainage System	1” = 1000’	1” = 2000’

See ***Exhibit 918-1*** for an example of a Drainage Map.

918.2 Required Information

The Drainage Map sheet must comply with the following:

(1) Use a grey-scaled photographic (aerial) base map as shown in ***Exhibit 918-1***.

(2) Display a north arrow and scale, typically in the upper right portion.

(3) Display the centerline or baseline of construction with station equations. Show stationing at an appropriate interval.

(4) Flag and station the begin and end project limits.

(5) Flag and station the begin and end of bridges and bridge culverts.

(6) Label road names and state numbers, and side street names.

(7) Display and label existing physical land features affecting drainage (e.g., lakes, streams, swamps) by name and direction of flow. Show past highwater elevations with date of occurrence, if available, and present water elevations with date of reading.

(8) Show drainage divides and other information (e.g., pop-off elevations, spot elevations) to indicate the overland flow of water. Show drainage areas in acres.

Use inserts to show areas that are of such magnitude that the boundaries cannot be plotted at the selected scale. Display basin or subbasin names.

(9) Display the 100-year flood plain boundaries and elevations. Display delineated wetlands. Identify sink holes and depressions.

(10) Display arrows to indicate direction of flow along proposed ditches. Show flow arrows from offsite areas at the point where stormwater would approach the FDOT R/W to be routed or controlled by FDOT. Show flow arrows from onsite areas where the flow leaves FDOT R/W.

(11) Display and label existing drainage structures with type, size, flow line elevations, flow arrows and any other pertinent data. Refer to the ***FDOT CADD Manual*** for correct symbols for existing drainage facilities.

Data relating to existing drainage structures and pipes may be compiled in a table format and placed within available space on the sheet.

(12) Display proposed drainage structures, cross drains, storm drainpipes, outfall structures and retention/detention pond locations.

(a) Label cross drains by pipe size and structure number

(b) Label structures by structure number

(c) Label ponds by pond number

918.2.1 Flood Data Summary Box

The Flood Data Summary box provides design discharge, base discharge, and overtopping or greatest flood discharge with corresponding stage values.

Provide the Flood Data Summary box when a new or modified cross drain or box culvert (regardless of size) is proposed, or an existing cross drain or box culvert is impacted by changes to the existing hydrology and hydraulics, and the location of the cross drain or box culvert is within the 100-year floodplain or has a history of flooding or other hydraulic problems.

If there is insufficient space on the Drainage Map sheet, or the Drainage Map is not produced, place the Flood Data Summary box on its own sheet titled “Flood Data Sheet”.

The required preformatted summary box is available within in the FDOT CADD Software. An example of a Flood Data Summary box is shown in ***Table 918.2.1***.

Table 918.2.1 Example of a Flood Data Summary Box

STRUCT. NO.	STATION	DESIGN FLOOD		BASE FLOOD		OVERTOPPING FLOOD				GREATEST FLOOD	
		2% PROB. DISCHARGE	50 YR. FREQ. STAGE	1% PROB. DISCHARGE	100 YR. FREQ. STAGE	DISCHARGE	STAGE	PROB. X	FREQ. YR.	0.2% PROB. DISCHARGE	500 YR. FREQ. STAGE
CD-1	1525+40.00	15.6	34.84	17.8	34.86	--	--	--	--	30.3	34.96
CD-2	1561+00.00	39.4	38.35	44.9	38.54	65.75	39.5	0.32	314	--	--
CD-3	1679+00.00	24.0	34.60	28.0	34.73	--	--	--	--	48.0	35.36
CD-4	2257+22.00	9.0	35.77	11.0	35.77	--	--	--	--	18.0	35.81
CD-5	2283+02.75	24.0	35.70	28.0	35.90	--	--	--	--	48.0	36.87

NOTE: THE HYDRAULIC DATA IS SHOWN FOR INFORMATIONAL PURPOSES ONLY, TO INDICATE THE FLOOD DISCHARGES AND WATER SURFACE ELEVATIONS WHICH MAY BE ANTICIPATED IN ANY GIVEN YEAR. THIS DATA WAS GENERATED USING HIGHLY VARIABLE FACTORS DETERMINED BY A STUDY OF THE WATERSHED. MANY JUDGEMENTS AND ASSUMPTIONS ARE REQUIRED TO ESTABLISH THESE FACTORS. THE RESULTANT HYDRAULIC DATA IS SENSITIVE TO CHANGES, PARTICULARLY OF ANTECEDENT CONDITIONS, URBANIZATION, CHANNELIZATION, AND LAND USE. USERS OF THIS DATA ARE CAUTIONED AGAINST THE ASSUMPTION OF PRECISION WHICH CANNOT BE ATTAINED. DISCHARGES ARE IN CUBIC FEET PER SECOND AND STAGES ARE IN FEET, NGVD '88.

DEFINITIONS:

DESIGN FLOOD:	THE FLOOD SELECTED BY FOOT TO BE UTILIZED TO ASSURE A STANDARD LEVEL OF HYDRAULIC PERFORMANCE.
BASE FLOOD:	THE FLOOD HAVING A 1% CHANCE OF BEING EXCEEDED IN ANY YEAR. (100 YR. FREQUENCY)
OVERTOPPING FLOOD:	THE FLOOD WHERE FLOW OCCURS (A) OVER THE HIGHWAY, (B) OVER A WATERSHED DIVIDE, OR (C) THROUGH EMERGENCY RELIEF STRUCTURES.
GREATEST FLOOD:	THE MOST SEVERE FLOOD WHICH CAN BE PREDICTED WHERE OVERTOPPING IS NOT PRACTICABLE, NORMALLY ONE WITH A 0.2% CHANCE OF BEING EXCEEDED IN ANY YEAR (500 YR. FREQUENCY)

1 STORM SEWER
18" RCP
SW FL 38.94
NE FL 37.97

1A 14"x23" ERCP
NW FL 37.61
SE FL NOT LOCATED

2 STORM SEWER
15" RCP
N FL 35.12
S FL 40.50

3 SIDE DRAIN
18" CMP
SW FL 37.34
NE FL 36.90

4 SIDE DRAIN
18" CMP
SW FL 37.34
NE FL 36.90

5 SIDE DRAIN
18" CMP
SW FL 34.75
NE FL 34.29

6 SIDE DRAIN
18" CMP
SE FL 35.14
NE FL 34.76

SIDE DRAIN
18" CMP
SW FL 3.98
NE FL 33.50

7 SIDE DRAIN
18" CMP
SW FL 32.85
NE FL 33.13

8 SIDE DRAIN
18" CMP
SW FL 30.96
NE FL 30.68

9 CROSS DRAIN
24" RCP
SE FL 30.52
NW FL 30.08

10 SIDE DRAIN
18" CMP
SW FL 30.54
NW FL 30.95

11 SIDE DRAIN
18" CMP
SW FL 31.58
NE FL 31.44

12 SIDE DRAIN
18" CMP
SW FL 30.94
NE FL 31.08

13 SIDE DRAIN
18" CMP
N FL 32.23
S FL 32.25

14 SIDE DRAIN
18" CMP
N FL 32.23
S FL 32.25

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 61	WAKULLA	220495-5-52-01

DRAINAGE MAP

SHEET NO. 5

8/12/2020 2:52:07 PM RD960JM
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919 Lateral Ditch Sheets

919.1 General

Lateral ditches are sometimes needed to convey stormwater runoff to retention areas, detention areas, or convey the discharge to an outfall point. This information may be placed on the Plan-Profile sheet or Stormwater Facilities sheet when space is available.

Lateral Ditch sheet or Outfall sheet consists of a plan view and a profile view but may also include a typical section or cross sections. These sheets may be produced on a standard-format sheet (11”x17”) or a large-format sheet (36”x48” or 36”x72”). Use landscape orientation regardless of sheet size selected.

The standard horizontal scale for plan and profile views is 1” = 100’ but may use 1” = 50’ when appropriate. The vertical scale for profile view is typically 10% of the horizontal scale (e.g., 1” = 100’ horizontal scale would use a 1” = 10’ vertical scale).

919.2 Plan View

Display a north arrow and scale within each plan view, typically in the upper right portion.

Display the lateral ditch plan view such that the centerline or baseline of construction stationing is increasing from left to right. Display bearings for tangent sections (in the direction of stationing) below the centerline or baseline. Display station numbers close to station ticks. Display station equations along centerline or baseline.

Show R/W (or easement), alignment data, and topography. Tie the alignment of the lateral ditch to the centerline of construction.

919.2.1 Required Information

Include labeling and dimensions only to the extent necessary to convey the design intent. Provide the following labeling and dimensions as appropriate:

- Flag and station the begin and end lateral ditch or outfall construction limits.
- Display planned improvements.
- Label and dimension lateral ditch or outfall, and tie to the baseline alignment of construction.
- Display drainage pipes, inlets, manholes, box culverts, and outfall features.

- Display and label R/W lines, and construction easements or license agreements.
- Display and label the limits of wetlands based on permit or regulatory requirements.

919.3 Profile View

Display the lateral ditch profile directly below the corresponding ditch plan view. Each profile must include a background grid at the appropriate scale. Align the begin lateral ditch profile stationing with the begin lateral ditch plan view stationing. Display stationing along the bottom of the grid. Display the vertical elevation along both sides of the grid.

Display the following information:

- Existing ground line profiles
- High water elevations
- Transverse underground utilities
- Benchmark information
- Elevation datum

If storm drain construction is proposed along a lateral ditch or at an outfall, plot the proposed structures on the lateral ditch profile. Include the following information for the structures shown in the profile:

- Flow line elevations
- Structure numbers
- Pipe or culvert sizes
- Utilities (if applicable)
- Label the normal water elevation of the receiving system.

919.3.1 Required Labeling and Information

Required labeling and dimensions necessary to convey the design intent, include the following:

- Flag and station the begin and end lateral ditch.
- Label percent grade for each tangent section. When two tangent grades intersect and no vertical curve is required, label the PI station and elevation.
- Label transverse underground utilities.

919.4 Typical Section

Display a later ditch typical section on the Lateral Ditch sheet showing the following:

- Limits of clearing and grubbing
- Ditch bottom width
- R/W or easement limits
- Side slopes or berms

The typical section does not need to be to scale but must be dimensionally proportionate. If the width of proposed clearing and grubbing is variable, note the various widths and their respective station limits below the typical section.

919.5 Cross Sections

Showing lateral ditch cross sections in the plans is typically not necessary. However, if it is determined that providing cross sections in the plans is beneficial to show the design intent, they should be shown anywhere within available space on the Lateral Ditch sheet.

Cross sections often use a horizontal scale of 1” = 20’ and a vertical scale of 1" = 10', and display the same elements listed for typical section.

When cross sections are included on the Lateral Ditch Sheet, omit the Lateral Ditch Typical Section.