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*** reflects adopted practices, processes, and procedures for plans production and delivery using Bentley's OpenRoads Designer (ORD) Edition or Autodesk Civil3D.

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 (LOD) is considered construction ready (LOD 300 and higher).

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, 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 Sheet Borders (Sheet Print Size)

Plan sheet borders are contained in the FDOT CADD Software. There are four allowable sheet border sizes that can be selected: standard-format sheet (11"x17") or large-format sheet (24"x36", 36"x48", or 36"x72"). Each ***FDM 900 series*** chapter specifies the allowable sheet border that may be used. When multiple sizes are allowed, select the size that will most efficiently display the information. ***Table 900.3.1*** provides a summary of allowable border sizes for each sheet used in the Contract Plans.

Sheet borders include an information block and revision block.

900.3.1 Project Information Block

The information block is in the lower right corner of the border. 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. If a project Key Sheet lists multiple state roads:

    - o Place all State Road Numbers in the box when there is adequate space (without reducing required font size)
    - o Place "Districtwide" when there are more roadways than available space allows

(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***.

900.3.2 Revision Block

Revision blocks are along the bottom of the sheet for standard (11”x17”) sheet borders

The Key Sheet and large-format sheets (24”x36”, 36”x48”, or 36”x72”) require the placement of a revision block cell on the sheet when a revision to that sheet is necessary. Place the revision block cell at the following locations:

- Bottom center on the Key Sheet
- Far right on large format plan sheets, just above the project information block

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

Table 900.3.1 Allowable Sheet Border Sizes

FDM	Sheet	11 x 17	24 x36	36 x 48	36 x 72
904	Landscape Opportunity	X	X	X	X
905	Cross Sections	X	X	X	X
906	Bridge Hydraulics Recommendation	X	X		
	Roadway Plans				
910	Key Sheet & Signature Sheet	X			
911	Model Management	X	X	X	X
912	PNC	X	X		
913	Typical Sections	X			
914	General Notes	X			
915	Plan-Profile	X	X	X	X
916	Drainage Structures	X	X	X	X
917	Stormwater Facilities	X	X	X	X
918	Drainage Map	X	X	X	X
919	Lateral Ditch	X	X	X	X
920	Soil Survey	X	X		
	Report of Core Borings	X	X		
921	TTC Plan	X	X	X	X
922	Misc Structures	X			
923	Utility Adj	X	X	X	X
924	Selective C&G	X	X	X	X
940	**S&PM Plans**				
	S&PM Plan Sheets	X	X	X	X
	Overhead Sign Cross Section Sheets	X	X		
	All other S&PM Sheets	X			
941	**Signal Plans**				
	Signalization Plan Sheet	X	X	X	X
	Interconnect/Communication Plan Sheet	X	X	X	X
	All other Signal Sheets	X			
942	**ITS Plans**				
	ITS Plan Sheet	X	X	X	X
	ITS Cross Section Sheet	X	X	X	X
	All other ITS Sheets	X			

Table 900.3.1 Allowable Sheet Border Sizes Con't

FDM	Sheet	11 x 17	24 x36	36 x 48	36 x 72
943	**Lighting Plans**				
	Lighting Plan Sheets	X	X	X	X
	All other Lighting Sheets	X			
944	**Landscape Plans**				
	Landscape Plan Sheets	X	X	X	X
	Landscape Detail Sheets	X			
947	**Toll Fac Plans**				
	All (excluding BHRS)	X			
948	**Utility Work by Contractor Plans**				
	UWHC Plan-Profile Sheets	X	X		
	UWHC TTC Plan Sheets	X	X		
	All other UWHC Sheets	X			