

Chapter 1

Production of Plans

1.1	General	1-1
1.2	Displaying Information and Data	1-2
1.3	Converting from Metric to English	1-3
1.4	Base Sheet Format	1-4
Figures		
Figure 1.1	Project Information Block	1-4

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Chapter 1

Production of Plans

1.1 General

This volume, in conjunction with criteria contained in **Volume 1** of the **PPM** and requirements outlined in the **FDOT [CADD Manual](#)**, forms the basis for contract plans format and assembly.

Many of the chapters in this volume contain “Generic” exhibits to provide examples of the plan sheets covered in those chapters. These exhibits are examples which were developed using FDOT 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 in the **PPM**.

Abbreviations may be used where they save time and space. A list of standard abbreviations is given in the **Design Standards, Index No. 001**. Slight deviations from the standard abbreviations are allowed, provided that the abbreviation used is clear and easily understood.

Standard symbols for Roadway Design are shown in the **Design Standards, Index No. 002**, the Symbol Cell Library, and in other CADD sources.

1.2 Displaying Information and Data

Text and plan details should be readable from either the bottom or right edge of the sheet. Orientation of text is as follows:

1. Horizontal Line: Read left to right
2. Vertical Line: Read bottom to top
3. Diagonals: Read left to right

Apply the following rules for displaying information and data:

1. Dimensioning Requirements:
 - a. Typical Section Elements, including lane widths and shoulder widths - in feet, typically as a whole number.
 - b. Horizontal control points on plans, including survey centerline, baseline, intersections and alignment - in feet to 2 decimal places.
 - c. Vertical alignment control points, (PVC, PVI, PVT) and profile grade elevations - in feet to 2 decimal places.
 - d. Profile Grade - in percent to 3 decimal places.
 - e. Proposed flow lines - in feet to 2 decimal places.
 - f. Manhole tops and grate elevations - in feet to 2 decimal places.
 - g. Ditch elevations - in feet to 1 decimal place (to nearest 0.05 when controlled by percent of grade).
 - h. 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.
2. Display alignment bearings, degree of curve and delta angles for curve data in degrees, minutes and seconds, rounded to the nearest second.
3. Express slope ratios in vertical to horizontal (V:H) format; i.e. show roadside slopes as 1:6, 1:4, etc.

1.3 Converting from Metric to English

1. When converting metric values related to surveys, right of way and other geometric alignment use the U.S. Survey Foot taken to a minimum of 8 decimal places:

$$1 \text{ foot} = \frac{12 \text{ inches/foot}}{39.37 \text{ inches/meter}} = 0.30480061 \text{ meters}$$

For other direct mathematical conversions use the SI definition:

$$1 \text{ foot} = 0.3048 \text{ meters}$$

2. Display direct mathematical (soft) converted values to 2 decimal places.
3. On resurfacing projects where the original construction was done in metric, hard convert typical section dimensions (lane widths, shoulder widths, etc.) where existing conditions permit.

Use direct mathematical (soft) conversion for existing pavement widths in curbed sections, existing right of way widths, and existing median widths.

Further information that may be useful in the converting Metric to English may be found in **Appendix A** of this volume.

1.4 Base Sheet Format

All plan sheet formats are contained in the FDOT CADD Software. Sheet borders include a project information block to place the Financial Project ID as shown below:

Figure 1.1 Project Information Block

	<i>STATE OF FLORIDA</i> <i>DEPARTMENT OF TRANSPORTATION</i>		
	<i>ROAD NO.</i>	<i>COUNTY</i>	<i>FINANCIAL PROJECT ID</i>

The road number box is intended for the state road number; i.e. same state road number that is shown on the Key Sheet. 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.

The title block immediately left of the project information block is to contain information for the Professional of Record that Signs and Seals the sheet, as required in **Section 19.2, Volume 1**.

Print contract plans to scale to size B (11" X 17"). These prints are to be generated from CADD design files in accordance with the **CADD Manual**. Sheets that feature grids (cross sections, plan-profile, etc.) can be printed with minor grid lines turned off or on. If the minor grids are printed, they are to be half-toned. The FDOT CADD Software provides plot example configuration files for this task.

Plan sheets other than Drainage Maps may use photography (aerial or other) when approved by the District Design Engineer. Using photography for Drainage Maps or SWPPP supplemental site maps do not require approval.