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Chapter 13 - Roadway Standards

CADD Production Criteria Handbook

13.1 GENERAL

The “Contract Plans” depicts in detail the required construction work. This set consists of Roadway Plans (all sheets pertaining to roadway design) and component plans. The component plans are:

- 1) Signing and Pavement Marking
- 2) Signalization
- 3) Intelligent Transportation Systems (ITS)
- 4) Lighting
- 5) Landscape
- 6) Architectural
- 7) Structures

Computer Aided Design and Drafting (CADD) standards for component plans are defined in their respective chapters. Though many component plans use roadway element symbology, the primary Roadway Symbology Standards shall not be modified for other disciplines use; except when specifically stated in that discipline’s chapter.

Example: Signal plans also show the proposed edge of pavement in their plans. The proposed edge of pavement symbology in the plan view shall be the same for all disciplines, except Right of Way. If other disciplines need to emphasize or de-emphasize specific elements, this can be accomplished using plot drivers with adjusted level symbology or pen tables.

Note: In addition, the roadway plans may contain sheets which were prepared separately (perhaps by a sub-consultant) and incorporated into the roadway plans early in the design process (prior to the establishment of sheet numbering). As an option, these may be identified with the following prefixes and placed at the end of the numbered sequence of the roadway plans:

- GR-# Soil Survey and Report of Core Borings normally associated with the roadway plans set (including miscellaneous structures but excluding bridges and walls)
- CTL-# Project Survey Control Sheets
- TR-# Tree Survey Sheets
- UTV-# Verified Utility Locate Sheets

Refer to the Plans Preparation Manual, Volume II Chapter 3.6 at:

<http://www.dot.state.fl.us/rddesign/PPMManual/2009/Volume2/2009Vol2.shtm>

13.2 STANDARD FILE NAMES

Florida Department of Transportation (FDOT) utilizes standard naming conventions for all of its files. Some of the automation implemented in various tools provided by FDOT depends on naming conventions being met. More importantly, the naming convention confers information to the downstream customer of the data.

Standard file names should follow this format: AAAABB##.ext
Where **AAAA** = *abbreviated file description*, **BB** = *Discipline Denotation*, **##** = *Sequence number*.

Note: Please see CADD Production Criteria Handbook (CPCH) Chapter 4 for more information.

The following table defines the Roadway File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequential numbering. If these file types are used by other disciplines, the first four characters of the file name shall remain the same, but the fifth and sixth characters shall reflect the discipline name. For example, if a Signing and Pavement Marking plan is the lead plan set in a project and a traffic control plan is required, the name shall be TCDSSP00.dgn.

Standard model names are provided in the following table. However, it is not mandatory to use more than the default model, with the exception of those listed in this table. CAUTION: When searching design files for elements, GEOPAK searches across all models. For example, if there are pattern lines in more than one model, GEOPAK locates all of them.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Borders & Sheets	BDBRRD.dgn	Default	Border Sheet Reference File for Bridge Hydraulics Sheet	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	BDPLRD.dgn	Default	Border Sheet Reference File for Plan Sheet	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	BDPPRD.dgn	Default	Border Sheet Reference File for Plan & Profile Sheet	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	BDPRRD.dgn	Default	Border Sheet Reference File for Profile Sheet	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	BDXSRD.dgn	rdxsrd	Border Sheet Reference File for Cross-Section Sheet	rdxsrd.rul	\$(MX_SEEDIR)fdotseedxs.dgn	
Borders & Sheets	GNNTRD.dgn	Default	General Notes	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	LDPRRD.dgn	Default	Lateral Ditch Plan / Profile Sheet	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLANRD.dgn	Default	Plan Sheets	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLPRRD.dgn	Default	Plan and Profile Sheets	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PRDSRD.dgn	Default	Project Profile Layout	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PROFRD.dgn	Default	Profile Sheets	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Clip Borders	CLIPRD.dgn	Default	Clip Borders	cliprd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPLRD.dgn	Default	Motif file for plan sheets	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Clipping	MTPRRD.dgn	Default	Motif file for profile sheets	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Cross Sections	AMGMRD.dgn	Default	Automated Machine Guidance Model (3D)	ctlsrd.rul	\$(MX_SEEDIR)fdotseed3d.dgn	
Cross Sections	GKLNDR.dgn	Default	Geopak Lines for Existing Features	topord.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Cross Sections	LDXSRD.dgn	Rdxsrd	Lateral Ditch Cross-Sections	rdxsrd.rul	\$(MX_SEEDIR)fdotseedxs.dgn	X
		Pattd	Lateral Ditch Pattern Lines			
		Xsshrd	Lateral Ditch Shapes			
		Rdxsrd_shg	Lateral Ditch Cross Section Sheets			
Cross Sections	RDXSRD.dgn	Rdxsrd	Roadway Cross-Sections	rdxsrd.rul	\$(MX_SEEDIR)fdotseedxs.dgn	X
		Pattd	Roadway Pattern Lines			
		Xsshrd	Roadway Shapes			
		Rdxsrd_shg	Roadway Cross Section Sheets			
Key Sheets	KEYSRD.dgn	Default	Key Sheet	keysht.rul	\$(MX_SEEDIR)fdotseedkeymap.dgn	
Proposed Design	ALGNRD.dgn	Algnrd ¹	Alignment layout	algnrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	BKSWRD.dgn	Default	Back of Sidewalk Profiles	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	CURCRD.dgn	Default	Curve or Coordinate Data Sheet	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	DSGNRD.dgn	Default	Proposed Design	dsgnrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	DSPFRD.dgn	Default	Proposed Profile	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	GCTRRD.dgn	Default	Contours 2D	dtmrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	INTDRD.dgn	Default	Intersection / Interchange Details	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	INTPRD.dgn	Default	Intersection / Interchange Profiles	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	MITGRD.dgn	Default	Mitigation Areas	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	PLAYRD.dgn	Default	Project Layout Sheets	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	QTDSRD.dgn	Default	Quantity Computation Shapes / Calculations	qtdsrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	QUANRD.dgn	Default	Quantity Computation Details	qtdsrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	SCGRRD.dgn	Default	Selective Clearing and Grubbing Sheet	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	

¹ The algnrd00.dgn model names should follow the format algnrd followed by the scale being used, algnrd40 for example. If more than one scale is needed for a project, then a separate model needs to be created for each scale.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Proposed Design	SWPPRD.dgn	Default	Storm Water Pollution Prevention Plan	plprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	TEXTRD.dgn	Default	Text Labels & Miscellaneous Descriptions	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	CSINRD.dgn	Default	Concrete Slab Inventory	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SPDTRD.dgn	Default	Special Details Sheet	spdtrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes / Tables	BRHYRD.dgn	Default	Bridge Hydraulics Recommendation Sheet	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes / Tables	BXCLRD.dgn	Default	Box Culvert / Wing Wall Design and Special Details	drdtrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes / Tables	CESSRD.dgn	Default	Summary of Pay Item Sheets	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes / Tables	SUMQRD.dgn	Default	Summary of Quantities Sheets	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Traffic Control	TCDSRD.dgn	Default	Traffic Control Design	tcdsrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	X
Traffic Control	TCDTRD.dgn	Default	Traffic Control Detail Sheet	tcdsrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Traffic Control	TCGNRD.dgn	Default	Traffic Control General Note Sheets	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Traffic Control	TCPLRD.dgn	Default	Traffic Control Plan Sheets	tcdsrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Typical Sections	TCTYRD.dgn	Default	Traffic Control Typical Section Sheets	typsrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Typical Sections	TYPDRD.dgn	Default	Typical Data Sheet	typdtd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Typical Sections	TYPSRD.dgn	Default	Typical Section Sheets and Details	typsrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Utilities	UTPRRD.dgn	Default	Utilities - Proposed	utprrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	X
Utilities	UTADRD.dgn	Default	Utility Adjustment Sheets	utadrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	
Verified Utilities	SBVHRD.dgn	Default	Summary of Verified Utilities (2D)	planrd.rul	\$(MX_SEEDIR)fdotseed2d.dgn	

Note: Refer to Chapter 12 for the plan view / profile view Drainage symbology standards.
Refer to Chapter 19 for the Utility symbology standards.

13.3 SUPPORT ROADWAY EXCEL FILES

File Type	File Name	File Description	Form	Excel File
Compbook	70005001.xls	Area Computations	700-050-01	\$(FDOT_EXCEL_CBFILES)70005001.XLS
Compbook	70005002.xls	Curb & Gutter Computation	700-050-02	\$(FDOT_EXCEL_CBFILES)70005002.XLS
Compbook	70005003.xls	Linear Computations	700-050-03	\$(FDOT_EXCEL_CBFILES)70005003.XLS
Compbook	70005004.xls	Volume Measurement Items	700-050-04	\$(FDOT_EXCEL_CBFILES)70005004.XLS
Compbook	70005005.xls	Lump Sum Quantities	700-050-05	\$(FDOT_EXCEL_CBFILES)70005005.XLS
Compbook	70005006.xls	Weight Measure Computations	700-050-06	\$(FDOT_EXCEL_CBFILES)70005006.XLS
Compbook	70005007.xls	Concrete Computations	700-050-07	\$(FDOT_EXCEL_CBFILES)70005007.XLS
Compbook	70005008.xls	Piling Tabulation	700-050-08	\$(FDOT_EXCEL_CBFILES)70005008.XLS
Compbook	70005009.xls	Linear with Components	700-050-09	\$(FDOT_EXCEL_CBFILES)70005009.XLS
Compbook	70005010.xls	Pay Item Summary Sheet	700-050-10	\$(FDOT_EXCEL_CBFILES)70005010.XLS

13.4 RESOURCE FILES

ECISO provides standard resource files for CADD Roadway Plans, which use MicroStation, GEOPAK and other approved FDOT software to produce an electronic project data delivery. If a custom line style or font is needed, it must either be embedded in the active design file or the corresponding resource file must be copied to the \SYMB sub-directory of the FDOT project directory structure and included as part of the electronic delivery of the project. The justification for the non-standard line style or font must be noted in the journal file.

13.5 ENGINEERING DATA

The Roadway discipline directory contains an additional sub-directory named **leng_data**. This sub-directory is designated to contain the PostScript image files of the plan sheets for the roadway design, quality control reports, ASCII Engineering Data output files and other data pertinent to the overall Roadway design.

13.6 PROFESSIONALS' ELECTRONIC DATA DELIVERY SYSTEM (PEDDS)

PEDDS shall be used to Secure and Authenticate project data. When projects are received, the FDOT authenticates the data on the delivered CD. Each time data is transmitted to or received by FDOT the data shall be secured and authenticated. PEDDS shall also be used to authenticate any project specific data received as part of a delivery from an outside source or discipline. For example, an electronic delivery to Roadway from Survey or EMO should be secured and authenticated. Roadway shall electronically secure all files for delivery.

13.7 SYMBOLOGY STANDARDS

Symbology Standards that apply to FDOT Projects are set up under a listing of Standard Level Names with specific ByLevel Color, Style and Weight attributes. These levels are grouped under specific Rule Files which are associated to each valid Standard Filename of each Discipline for the purpose of performing the Quality Control check for FDOT Standard compliancy of each FDOT project design file. Section 13.2 of this chapter provides for the complete Standard File Name listing with associated Rule File.

NOTE: Refer to Chapter 3 FDOT Resource and Support Files to review the Level names listing for each associated Rule File.

The following are the basic level naming convention rules to follow to always know what level an element should be placed on:

- 1) Level Names have 18 maximum characters.
- 2) The format of the name is: **object_sv**

object (represents element type)	s (represents state)	v (represents view)
	<u>states</u>	<u>views</u>
	p (proposed)	x (cross section)
	d (drafting element)	r (profile)
	e (existing)	p (plan) (DTM is the same as plan)

NOTE: Level Names without including the “_sv” in the name are assumed proposed plan view elements.

Example: With this information one can determine the following about the Level names below:

gas	- Proposed Plan view elements for “gas” related items
gas_ep	- Existing Plan view elements
gas_px	- Proposed cross section view elements

13.8 FILE SHARING AND MERGING

Every project will utilize and incorporate the entire FDOT standard directory structure regardless of the project requirements. Data for each discipline is maintained in its sub-directory and stored on the TIMS server (In-House). **If a discipline requires information from another discipline, the needed design file(s) or individual models shall be referenced from the original directory, not copied.**

There are times that the roadway discipline shares its files with other disciplines and situations may arise where roadway must differentiate between existing edge of pavement to be replaced and that to remain. This is because the elements representing existing edge of pavement often span several plan sheets. Because roadway files are referenced by other disciplines and the elements are possibly used in quantity calculations, it may be necessary to break these elements at key points to assist the other disciplines in using the information in a logical manner. This can be accomplished by redrawing the element(s) with logical breaks so it is not one long unmanageable element. Place breaks to coincide with clip borders or place the breaks at angular breaks in the element. Clip masking may also be used.