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Chapter 22 – Intelligent Transportation Systems (ITS)

CADD Production Criteria Handbook

22.1 GENERAL

ITS Plans are usually a component set of plans. Projects with minor ITS involvement may include these features on various applicable sheets in the Roadway plans set (See Chapter 13.1). They can also be shown in the signalization plans set or on applicable signalization sheets. When prepared as component plans they shall be assembled as a separate plans set complete with a key sheet, tabulation of quantities and all other relevant ITS sheets. The sheets shall be numbered consecutively with the sheet numbers prefixed by the letters "IT".

A complete set of ITS Plans shall include the following sheets:

1. Key Sheet
2. Tabulation of Quantities
3. General Notes
4. Plan Sheets
5. Detail Sheets (as required)

The ITS Plans show the construction details, electrical circuits, and other data relevant to an ITS project. Some of the different systems that may be produced under the ITS Component set of plans include, but are not limited to the following:

- Freeway Management System
- Incident Management System
- Arterial Management System
- Emergency Management Systems
- Transit Management Systems
- Electronic Toll Collection
- Electronic Fare Payment
- Highway Rail Intersections (under electronic surveillance)
- Regional Multimodal Traveler Information

22.2 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 lists the file name standards that apply to FDOT projects with regard to Intelligent Transportation Systems Plans. If the need arises to create a file that is defined by another discipline chapter, use the first 4 characters of the standard file name and append the Intelligent Transportation Systems filename designation (IT), followed by the file sequence numbers. An example is topoit01.dgn

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Border Cross Section	BDXSIT.dgn	rdxsrd	Border Cross-Section Sheet when Referenced	rdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	
Border Plan	BDPLIT.dgn	default	Border Sheet Reference Model for Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPLIT.dgn	default	Motif files for plan sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPRIT.dgn	default	Motif files for profile sheets	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping Borders	CLIPIT.dgn	default	ITS Clipping Borders	cliprd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Communications Network Details	NWDTIT.dgn	default	Communications Network Details	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Communications Network Layout	NWLYIT.dgn	default	Communications Network Layout / Block diagram	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Cross Section	SSXSIT.dgn	rdxsrd	Sign Support Cross-Sections	rdxssp.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
General Notes	GNNTIT.dgn	default	General ITS Notes Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Guide Sign Details	GSWKIT.dgn	default	Guide Sign Work Sheet and Details	gswksp.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Intersection Details	INTDIT.dgn	default	Intersection / Interchange Details	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Jacking Detail	JCDTIT.dgn	default	ITS Jacking Detail Sheet	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Key Sheet	KEYSIT.dgn	default	ITS Key Sheet	keysht.rul	$(MX_SEEDIR)fdotseedkeymap.dgn	
Luminaire Detail	LUDTIT.dgn	default	ITS Luminaire Detail Sheet (All Types)	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Mast Arm Detail	MSSGIT.dgn	default	Mast Arm Detail and Tables	itssp.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Plan Layout Sheet	PLAYIT.dgn	default	Plan Layout Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Plan Sheet	PLANIT.dgn	default	ITS Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Pole Details	PLDTIT.dgn	default	Pole Tabulation & Details for All Types	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	DSGNIT.dgn	default	Proposed ITS Signalization Design & information	itssp.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	DSLTIT.dgn	default	Proposed ITS Lighting Design	itssp.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	DSPMIT.dgn	default	Proposed ITS Signing & Pavement Marking Design	itssp.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Service Point Detail	SRPTIT.dgn	default	Service Point Detail Sheets	itssp.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Soil Borings	SLBRIT.dgn	default	Soil Borings for Poles and Overhead Structures	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SGDTIT.dgn	default	Special Signal Details	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SSDTIT.dgn	Default	Special Sign Detail and Miscellaneous Detail	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Sign Details	SPSGIT.dgn	default	DMS Detail for Overhead Signs	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Splice Details	SPDTIT.dgn	default	Splice Diagrams	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Splice Layout	SPLYIT.dgn	default	Splice Layout Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Summary of Pay Items	CESSIT.dgn	default	Summary of Pay Items	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Tabulation Sheet	TABQIT.dgn	default	ITS Tabulation Quantity Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Text labels	TEXTIT.dgn	default	Text Labels and Misc. Details, Misc. Descriptions	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Traffic Control Design	TCDTIT.dgn	default	Traffic Control Design Sheet	Itssp.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Utility Adjustment Sheets	UTADIT.dgn	default	Utility Adjustment Sheets	utadrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Vehicle Detector l Details	VHDTIT.dgn	default	Vehicle Detector Details & Instructions	itssp.rul	$(MX_SEEDIR)fdotseed2d.dgn	

22.3 RESOURCE FILES

FDOT Engineering/CADD Systems Office (ECSO) provides the standard resource files for Computer Aided Design and Drafting (CADD) Intelligent Transportation Systems Plans using MicroStation, GEOPAK and other FDOT approved software for the production of an electronic project data delivery. If a custom line style or font is needed that is not standard, this file must be included as part of the electronic delivery and the justification noted in the appropriate discipline journal file.

22.4 ENGINEERING DATA

The ITS discipline directory contains an additional sub-directory named \eng_data. This sub-directory is designated to contain the following:

- PostScript image files of the plan sheets for the ITS design
- Quality control reports
- ASCII Engineering Data output files
- All computer input and output files (PostScript and Native File Formats) used in the structural design of ITS-related structures.
- All supplemental hand calculation (scanned and saved in PDF and PostScript Formats)
- Other data pertinent to the overall ITS design.

22.5 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.

22.6 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 22.2 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)

states	views
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"** portion 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

22.7 MODEL REFERENCING

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