

CADD Manual

Record of Changes as of February 4, 2019

NOTE: All headings changed to update publish date. All links updated.

Chapter / Section	Description
Chapter 1	INTRODUCTION
1.1	PURPOSE - Added disclaimer note.
1.2	AUTHORITY
1.3	REFERENCES - Updated listing
1.4	DEFINITIONS - Corrected minor grammar / typographical errors and updated links
1.5	SCOPE
1.6	ORGANIZATION
1.7	ROLES AND RESPONSIBILITIES
1.7.1	CADD Office
1.7.2	CADD Managers
1.7.3	CADD Technical Advisory Committees (TACs) - Updated verbiage in first paragraph to clarify TAC accessibility by FDOT staff.
1.8	DISTRIBUTION
1.9	TRAINING
1.10	LINKS AND FORMS
1.10.1	CADD Quick Links - Updated links
1.10.2	Forms
1.10.2.1	Suggestions, Comments, or Questions for the CADD Manual
1.10.2.2	Compliance Certification Checklist
Chapter 2	CADD COMPUTER SYSTEMS
2.1	PURPOSE
2.2	SCOPE
2.3	PROCUREMENT OF CADD HARDWARE AND SOFTWARE
2.4	MINIMUM SYSTEM REQUIREMENTS - Updated verbiage in first paragraph to clarify accessibility by FDOT staff
2.4.1	Optimal CADD Hardware / Software Requirements
Chapter 3	CADD SOFTWARE, DEVELOPMENT AND DISTRIBUTION
3.1	PURPOSE
3.2	SCOPE
3.3	SUPPORTED CADD PLATFORMS
3.4	CADD SOFTWARE DEVELOPMENT
3.5	CADD SOFTWARE UPDATES
3.5.1	CADD Software Testing
3.5.2	CADD Software Release Notifications
3.5.3	CADD Software Release Distributions - Updated verbiage in first paragraph to clarify intent
Chapter 4	CADD SUPPORT
4.1	PURPOSE
4.2	SCOPE
4.3	OVERVIEW
4.4	SYSTEM SUPPORT
4.5	OPERATIONAL SUPPORT
4.6	TRAINING SUPPORT
4.7	REPORTING OF CADD ISSUES
Chapter 5	CADD STANDARDS
5.1	PURPOSE
5.2	SCOPE
5.3	GENERAL
5.4	DATABASE (DDB) RESOURCES
5.4.1	MicroStation
5.4.2	AutoCAD
5.5	SEED / SHEET TEMPLATE FILES
5.5.1	MicroStation Seed Files
5.5.2	AutoCAD Sheet Template Files
5.6	DESIGN LIBRARIES / TEMPLATES
5.6.1	MicroStation Design Libraries

Chapter / Section	Description
5.6.2	AutoCAD Design Template Files
5.7	DESIGN FILE NAMES - Updated table links - Added Architectural Standard Filename Table
5.7.1	Design File Naming Convention
5.7.1.1	<i>Structures Design File Naming Convention</i>
5.7.1.2	<i>Architectural Design File Naming Convention</i> - Removed duplication under the bullet: Discipline Code
5.7.1.3	<i>Architectural Sheet Naming Convention</i>
5.7.2	Critical or Non-Critical Percentage of Compliance
5.7.3	REFERENCE FILES
5.7.3.1	MicroStation Referencing
5.7.3.2	AutoCAD Referencing
5.7.3.3	Sharing of CADD Files
5.8	CADD RULES - Updated Standard Rule tables (see below) - Added new Standard Rule: CTLSRD (see below) - Renamed Standard Right of Way Rule from rweng10 to RightOfWay (see below) - Renamed Standard Structures rule from spst10 to Structures (see below)
	<u>CLIPRD</u> - Added existing Level: Monument_ep
	<u>CTLSRD</u> (NEW!) - New Rule created for Project Network Control Sheets to QC: <i>Survey (Existing) Filename :</i> CTLSRD*. * - Project Control Sheets <i>Right of Way (New) Filenames :</i> CSREF*. * - Control Survey Reference Points and Project Network Control MMREF*. * - Maintenance Map Reference Points and Project Network Control RWREF*. * - R/W Map Reference Points and Project Network Control
	<u>DSGNLT</u> - Added existing Level: SedimentBarrier
	<u>DSGNRD</u> - Added New Levels: CrashCushion - Permanent Crash Cushions PedSpecDetour - Permanent Special Detours
	<u>QTDSRD</u> - Added New Levels: CrashCushion - Permanent Crash Cushions PedSpecDetour - Permanent Special Detours
	<u>RWENG10</u> - Renamed Rule to: <u>RIGHTOFWAY</u>
	<u>SPST10</u> - Renamed Rule to: <u>STRUCTURES</u> - Corrected Critical settings for Levels: DrainMisc, PayItem_dp, PlotBorder_dp, SignMisc - Changed Color Setting for Level: DrainMisc from 10 to 35
	<u>SURVRD</u> - Added existing Levels: ConstLines, Miscellaneous0, Miscellaneous1, Miscellaneous2, Miscellaneous3, Miscellaneous4, Miscellaneous5, Miscellaneous6, Miscellaneous7, Miscellaneous8, Miscellaneous9 - Removed Levels: GlareScrn_ep, MonumentCSAT_ep - Changed Color and Line Style/Linetype settings for Level: PavtBreak_ep from (co=0 st=3/DGN3) to (co=14 st=5/DGN5)
	<u>TCDSRD</u> - Added New Levels: CrashCushion - Permanent Crash Cushions PedSpecDetour - Permanent Special Detours - Removed duplicate Level entries
	<u>TOPORD</u> - Removed Levels: GlareScrn_ep, MonumentCSAT_ep
	<u>TYPDRD</u> - Added New Level: CrashCushion - Permanent Crash Cushions
5.8.1	Exceptions to the CADD Rules
5.9	LEVELS / LAYERS AND SYMBOLOGY
5.9.1	Levels / Layers Naming Convention

Chapter / Section	Description
5.9.1.1	<i>Architectural Levels / Layers and Symbolology</i>
5.9.1.2	<i>Structures Levels / Layers and Symbolology</i> - Renamed Structures Rule from 'SPST10' to 'STRUCTURES' - Structures has adopted the use of the FDOTColor.tbl. Updated outdated verbiage.
5.9.1.3	<i>Survey Levels / Layers and Symbolology</i>
5.9.2	Color Symbology - Removed un-needed table and updated verbiage regarding Structures use of the FDOTColor.tbl.
5.9.3	Line Style / Linetype Symbology (Standard Symbols) - Renamed Right of Way Rule from 'RWENG10' to 'RIGHTOFWAY'
5.9.3.1	<i>Custom Line Styles/Linetypes</i>
5.9.3.2	<i>Non-standard Custom Line Styles / Linetypes</i>
5.9.4	Line Weight Symbology
5.10	TEXT
5.10.1	<i>Special Symbols</i>
5.10.2	Text Size and Spacing
5.10.2.1	<i>Architectural Text Sizes and Weights</i>
5.10.2.2	<i>Structures Text Sizes and Weights</i>
5.10.3	FDOT Standard Abbreviations
5.11	CELL LIBRARIES / BLOCK DRAWINGS - Added last to sentences to the first paragraph for clarification. - <u>Roadway.cel</u> : Corrected notebordertext field; Fixed text justification in NoteBorderText; Corrected justification on title block replacement text; Added new cells for narrow and wide permanent crash cushions to correspond to Standard Index 544-001 and to work with new D&C items for new pay items 544-2-A and 544-3-A; Corrected crash cushion models to be allowed to be placed as a cell; Revised width of Crash Cushion narrow and wide cells to reflect outside width of crash cushion instead of pad. - <u>TypicalSection.cel</u> : Updated TS Sheets to remove signature blocks and added separate signature sheet as requested in Innovators email; Added two new sheet borders for Typical Sections for digital delivery of package. Reverted all other previously modified sheet borders back to original pre-digital borders; Added Left, Right and Double 25" tall guardrail to match new 2018 standards; Updated Digital Delivery Borders for Typical Section Package; Updated Typical Section package sheets for digital delivery to add functionality for sheet navigator page numbers for both sheets and FPID number for data sheet; Added FDM Exhibits for Typical Sections. - <u>row.cel</u> : Revised and updated the Survey Report table: digsurvtbl cell with digsurvreporttbl cell.
5.12	PROFESSIONAL OF RECORD NOTE - Reorganized, updated verbiage and references for clarification.
5.12.1	Professional of Record Seals Cell Library
Chapter 6	CADD PRODUCTION PREREQUISITES
6.1	PURPOSE
6.2	SCOPE
6.3	PROJECT DEVELOPMENT & ENVIRONMENT
6.3.1	<i>PD&E CADD Deliverables</i>
6.4	RIGHT OF WAY MAPPING - Rewrote first paragraph for current clarification.
6.4.1	<i>Right of Way CADD Deliverables</i>
6.5	SURVEY - Rewrote first paragraph for current clarification.
6.5.1	Survey CADD Deliverables - Removed last sentence of this section referencing information..
6.5.2	Survey Data File
6.5.3	REMOVED Survey Feature Tables section and moved to the Surveying and Mapping Handbook
6.5.3.1	REMOVED Survey Field Zones for Points and Linear Features / Figures section and moved to the Surveying and Mapping Handbook
6.5.3.2	REMOVED Application Feature Tables section and moved to the Surveying and Mapping Handbook
6.5.4	REMOVED Survey Cell Libraries section and moved to the Surveying and Mapping Handbook
6.5.5	REMOVED Feature List Files section and moved to the Surveying and Mapping Handbook
6.5.6	REMOVED Translation Table section and moved to the Surveying and Mapping Handbook
6.5.7 6.5.3	County Mapping - Renumbered section from 6.5.7 to 6.5.3 - Updated verbiage current office changes
6.5.8 6.5.4	Utility Quality Levels - Renumbered section from 6.5.8 to 6.5.4 - Udated verbiage and moved Quality Level detail information to the Survey and Mapping Handbook and added reference the move to the Survey and Mapping Handbook.
6.6	GEOTECHNICAL
6.7	TRAFFIC DATA

Chapter / Section	Description
6.8	TYPICAL SECTIONS PACKAGE
6.9	DRAINAGE
6.10	PAVEMENT
6.11	UTILITIES
6.12	STRUCTURES - Added 'Preliminary design performed...' listing
7.6.8.3 6.12.1	Existing Bridge Plans - Moved and renumbered 7.6.8.3 section of this document to 6.12.1
Chapter 7	CADD PRODUCTION SUPPORT
7.1	PURPOSE
7.2	SCOPE
7.3	PROFESSIONAL ACCOUNTABILITY
7.4	PROJECT SETUP
7.4.1	Project Folder Structure
7.5	PRODUCTION WORKFLOW
7.6	SUPPORTED CADD SOFTWARE BY COMPONENT / DISCIPLINE
7.6.1	Roadway
7.6.1.1	GEOPAK, OPENROADS, CIVIL3D
7.6.2	Signing and Pavement Marking
7.6.2.1	Sign Design
7.6.2.2	Turn Radius Design
7.6.3	Signalization
7.6.4	Intelligent Transportation Systems
7.6.5	Lighting
7.6.5.1	Lighting Design Software
7.6.6	Landscape
7.6.7	Architectural
7.6.8	Structures - Updated 'Note' and Table to reflect Structures changed use of Color Table from 'Color.tbl' to 'FDOTColor.tbl' - Updated Table to reflect QC Rule name change from 'Spst10' to 'STRUCTURES' - Corrected 'Level Definitions' and 'Text/Dimension Styles Definitions' DGNLIB name from 'Str_levels.dgnlib' to 'Strlevels.dtnlib'
7.6.8.1	Structures Borders and Scales
7.6.8.2	Structures Dimension Settings
7.6.8.3	Existing Bridge Plans - Moved and renumbered to section 7.6.8.3 to 6.12.1 Existing Bridge Plans of this document
7.6.9	Toll Facilities
7.7	PROJECT JOURNAL - minor text correction
7.8	EXISTING AS BUILT PLAN SHEETS
7.9	SHEET NUMBERS
7.9.1	Structural Sheet Numbers
7.10	PRINTS
7.10.1	Print Drivers - Minor text correction.
7.10.1.1	MicroStation Half-Toning
7.10.1.2	Quality and Reproduction
7.10.2	Print Resource Files
7.10.2.1	MicroStation - Updated table to reflect current Print Resource File usage
7.10.2.2	AutoCAD Civil 3D - Updated table to reflect current Print Resource File usage
7.10.3	Print Borders - Minor text corrections
7.10.4	Print Image Files - Minor text corrections
7.10.4.1	Print Image File Naming Convention - Minor text corrections
7.10.4.2	Print Image File Naming Format
Chapter 8	CADD DELIVERY
8.1	PURPOSE
8.2	SCOPE
8.3	RECEIPT AND ACCEPTANCE OF ELECTRONIC DATA - Translation of Files bullet: Reworded first paragraph for current clarification.

Chapter / Section	Description
8.4	PRODUCTION DELIVERABLE FILES
8.4.1	Plans Component PDF Files - Minor text corrections
8.4.1.1	<i>Early Work Sheets of Plan Sets</i>
8.4.1.2	<i>Plans Component PDF Deviation</i> - Last bullet changed to 'Note' for clarifying emphasis.
8.4.2	3D Model PDF Files
8.4.3	Specifications PDF Files
8.4.4	CAD CADD ZIP Files - Corrected section name - Updated verbiage in "As a minimum..." bullets for clarification.
8.4.4.1	<i>Engineering Data</i> - Split out verbiage regarding Plan Summary Boxes to new section 8.4.5 Calculations Folder - Plan Summary Boxes and Quantity Files - Structures Engineering Data: Removed unnecessary 'Note' regarding quantity calculation reference.
8.4.5	<i>Calculations Folder - Plan Summary Boxes and Quantity Files</i> - New section created to address Project Plan Summary Boxes and Quantity files and the Calculations folder.
8.4.4.2 8.4.6	3D Deliverables - Automated Machine Guidance in Construction Renamed section for clarification to read: <i>3D Deliverables Folder - Automated Machine Guidance in Construction</i> - Renumbered section from 8.4.4.2 to 8.4.6 for more emphasis and to make information more accessible. - <i>3D Deliverables Supporting AMG for 3D Projects</i> : Updated bullet verbiage and table for current clarification. Moved NOTE to section 8.4.6 just after first paragraph. - <i>Corridor Frequency Interval Spacing for 3D Design</i> : Updated table for current clarification. Added verbiage in 2nd and 3rd paragraphs for clarification.
8.4.5 8.4.7	Merging External Project Files - Renumbered section from 8.4.5 to 8.4.7 - Minor text corrections
8.4.6 8.4.8	Reviewing the Project - Renumbered section from 8.4.6 to 8.4.8 - Minor text corrections
8.4.7 8.4.9	Sign and Seal Project Files - Renumbered section from 8.4.7 to 8.4.9 - Replaced entire section and subsections with verbiage removing all detail information already covered in the Florida Design Manual (FDM) and references updated to reflect the FDM.
8.4.7.1	<i>Digital Certificates</i> - Removed section (see section 8.4.9 of this document)
8.4.7.2	<i>Multiple Signature Sheets</i> - Removed section (see section 8.4.9 of this document)
8.4.7.3	<i>Securing the Project for Delivery</i> - Removed section (see section 8.4.9 of this document)
8.4.8 8.4.10	Legacy Electronic Signature Projects - Renumbered section from 8.4.8 to 8.4.10 - Minor text corrections
8.4.9 8.4.11	Media Requirements for Delivery - Renumbered section from 8.4.9 to 8.4.11
8.4.10 8.4.12	Compliance Certification Checklist - Renumbered section from 8.4.10 to 8.4.12 - Minor text corrections
8.5	SPECIFICATIONS
8.6	FINAL PLANS OFFICE - Updated reference links
8.7	REVISIONS
8.8	RE-LET PROJECTS AND ROLL BACK REVISIONS
8.9	STRUNG PROJECTS
8.10	AS-BUILT PROJECTS
8.11	DESIGN BUILD PROJECTS
8.12	PROJECT STORAGE AND ARCHIVAL
Chapter 9	QUALITY ASSURANCE & QUALITY CONTROL
9.1	PURPOSE - Minor text corrections
9.2	AUTHORITY
9.3	PRODUCTION ACCOUNTABILITY
9.3.1	Quality Control
9.3.1.1	Quality Control of Corridor Models and Extracted Surface

Chapter / Section	Description
9.4	QUALITY ASSURANCE PLAN
9.5	QUALITY ASSURANCE REVIEWS (QARs)