State of Florida
Department of Transportation

CADD PRODUCTION CRITERIA HANDBOOK

(Companion Document to the FDOT2010 CADD Software and Standards)

CPCH

Engineering / CADD Systems Office

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Chapter 1 - INTRODUCTION

CADD Production Criteria Handbook

1.1 PURPOSE

The electronic files created during the process of developing a Computer Aided Design and Drafting (CADD) project for Florida Department of Transportation (FDOT) are shared and referenced by many different individuals and disciplines, and therefore must satisfy diverse needs. Electronic files must be in formats that most parties can utilize and share. Therefore, processes, standards and requirements have been established for most disciplines involved in the plans development workflow. This ***CADD Production Criteria Handbook (CPCH)***, a companion to the ***FDOT CADD Manual (Topic Number 625-050-001)***, outlines the minimum standards, as well as file naming conventions and formats necessary to ensure a usable CADD data set for the life span of the project. It also provides the CADD data producer / developer the information necessary to accomplish their task(s).

1.2 SCOPE

This CPCH provides supplemental guidelines to the ***FDOT CADD Manual***. The material presented herein is monitored as a critical requirement to meet FDOT's CADD Quality Assurance Monitoring plans, which are maintained by the respective districts. The CADD Quality Assurance Monitoring plans are available for internal FDOT use on the Engineering / CADD Systems Office (ECSO) intranet website at:

http://infonet.dot.state.fl.us/EngineeringCADDSystemsOffice/Standards/StandardsQAR.htm

1.3 GENERAL

Chapter 334 of the Florida Statues, known as the ***Florida Transportation Code*** (Code), establishes the responsibilities of the State, Counties, and Municipalities for planning and developing transportation systems which serve the people of Florida, while meeting the objective of assuring the development of an integrated, balanced statewide system. The Code's purpose is to protect the safety and general welfare of the people of Florida and preserve and improve Florida's transportation facilities. Code Section 334.044(2) sets forth the powers and duties of the Department of Transportation to develop and adopt uniform minimum standards and criteria for the design, construction, maintenance, and operation of public roads.

The guidelines in this CPCH and the CADD Manual represent the minimum requirements that must be met for FDOT CADD projects. While the guidelines contained herein provide a basis for uniform CADD practices for FDOT projects, precise rules that apply to all possible situations are impossible to provide. Situations will exist where these standards will not apply. If variances from the ***CADD Manual*** or CPCH are required for a project, they must be approved in writing by the FDOT Project Manager and documented in the Project Journal as defined herein in Chapter 5.

The FDOT2010 V8i Release CPCH, effective November 15, 2010, is released as the companion document to the FDOT2010 CADD Software and Standards. Users not yet upgraded to this version should continue to refer to the FDOT2008 version of the CPCH, effective January 27, 2009, however, no further updates will be done to the FDOT2008 version of the CPCH, the latest Maintenance Release of which is the MR4 Update dated July 15, 2010.

1.4 DISTRIBUTION

The FDOT CPCH is available in electronic format on the ECSO Internet Website:

http://www.dot.state.fl.us/ecso/downloads/publications/CriteriaHandBook/CriteriaHB/criteria.shtm

The ***FDOT CADD Manual*** is available on the ECSO Internet Website:

http://www.dot.state.fl.us/ecso/downloads/publications/Manual/default.shtm

1.5 PROCEDURE FOR REVISIONS AND UPDATES

Users of the CPCH are encouraged to send comments and suggestions for changes or improvements to the ECSO. Major changes must be reviewed and approved by the Technical Advisory Committees (TACs) of the appropriate Discipline, before final acceptance and revisions can be implemented. Once revisions are implemented, the document is published on the ECSO website at the internet address listed in Section 1.4.

Users may utilize the form provided below and submit change requests via:

- By Email: ECSO Support: ecso.support@dot.state.fl.us
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  CADD Support Coordinator, Jimmie Prow: jimmie.prow@dot.state.fl.us
  CADD Development Coordinator, Ray L'Amoreaux: ray.lamoreaux@dot.state.fl.us
- In Person: Atkins Building, Suite 300
  Executive Center Drive
  Tallahassee, FL 32301
- By FAX: (850) 245-1601 or (850) 245-1602
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Chapter 1 - INTRODUCTION

CADD Production Criteria Handbook

1.1 PURPOSE

The electronic files created during the process of developing a Computer Aided Design and Drafting (CADD) project for Florida Department of Transportation (FDOT) are shared and referenced by many different individuals and disciplines, and therefore must satisfy diverse needs. Electronic files must be in formats that most parties can utilize and share. Therefore, processes, standards and requirements have been established for most disciplines involved in the plans development workflow. This ***CADD Production Criteria Handbook (CPCH)***, a companion to the ***FDOT CADD Manual (Topic Number 625-050-001)***, outlines the minimum standards, as well as file naming conventions and formats necessary to ensure a usable CADD data set for the life span of the project. It also provides the CADD data producer / developer the information necessary to accomplish their task(s).

1.2 SCOPE

This CPCH provides supplemental guidelines to the ***FDOT CADD Manual***. The material presented herein is monitored as a critical requirement to meet FDOT's CADD Quality Assurance Monitoring plans, which are maintained by the respective districts. The CADD Quality Assurance Monitoring plans are available for internal FDOT use on the Engineering / CADD Systems Office (ECSO) intranet website at:

http://infonet.dot.state.fl.us/EngineeringCADDSystemsOffice/Standards/StandardsQAR.htm

1.3 GENERAL

Chapter 334 of the Florida Statues, known as the ***Florida Transportation Code*** (Code), establishes the responsibilities of the State, Counties, and Municipalities for planning and developing transportation systems which serve the people of Florida, while meeting the objective of assuring the development of an integrated, balanced statewide system. The Code's purpose is to protect the safety and general welfare of the people of Florida and preserve and improve Florida's transportation facilities. Code Section 334.044(2) sets forth the powers and duties of the Department of Transportation to develop and adopt uniform minimum standards and criteria for the design, construction, maintenance, and operation of public roads.

The guidelines in this CPCH and the CADD Manual represent the minimum requirements that must be met for FDOT CADD projects. While the guidelines contained herein provide a basis for uniform CADD practices for FDOT projects, precise rules that apply to all possible situations are impossible to provide. Situations will exist where these standards will not apply. If variances from the ***CADD Manual*** or CPCH are required for a project, they must be approved in writing by the FDOT Project Manager and documented in the Project Journal as defined herein in Chapter 5.

The FDOT2010 V8i Release CPCH, effective November 15, 2010, is released as the companion document to the FDOT2010 CADD Software and Standards. Users not yet upgraded to this version should continue to refer to the FDOT2008 version of the CPCH, effective January 27, 2009, however, no further updates will be done to the FDOT2008 version of the CPCH, the latest Maintenance Release of which is the MR4 Update dated July 15, 2010.

1.4 DISTRIBUTION

The FDOT CPCH is available in electronic format on the ECSO Internet Website:

http://www.dot.state.fl.us/ecso/downloads/publications/CriteriaHandBook/CriteriaHB/criteria.shtm

The ***FDOT CADD Manual*** is available on the ECSO Internet Website:

http://www.dot.state.fl.us/ecso/downloads/publications/Manual/default.shtm

1.5 PROCEDURE FOR REVISIONS AND UPDATES

Users of the CPCH are encouraged to send comments and suggestions for changes or improvements to the ECSO. Major changes must be reviewed and approved by the Technical Advisory Committees (TACs) of the appropriate Discipline, before final acceptance and revisions can be implemented. Once revisions are implemented, the document is published on the ECSO website at the internet address listed in Section 1.4.

Users may utilize the form provided below and submit change requests via:

- By Email: ECSO Support: ecso.support@dot.state.fl.us
  CADD Manager, Bruce Dana: bruce.dana@dot.state.fl.us
  CADD Support Coordinator, Jimmie Prow: jimmie.prow@dot.state.fl.us
  CADD Development Coordinator, Ray L'Amoreaux: ray.lamoreaux@dot.state.fl.us
- In Person: Atkins Building, Suite 300
  Executive Center Drive
  Tallahassee, FL 32301
- By FAX: (850) 245-1601 or (850) 245-1602
  Submit FAX request to the primary contact.
- By Mail: 605 Suwannee Street, MS 69
  Tallahassee, FL 32399-0450

Users may also utilize the ECSO On-line Support to submit change requests:

By Electronic Issue Submittal: ECSO Support

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
CADD PRODUCTION CRITERIA HANDBOOK (CPCH)
SUGGESTION AND COMMENTS

Date: _____

Name: _____

Company or FDOT District: _____

Address: _____

_____

E-Mail: _____

Telephone: _____

FAX: _____ No. of Pages Including this page: _____

☐ (Comments or Suggestions are attached as marked-up copies of CPCH pages or other resources).

Comments: _____

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Chapter 2 - FDOT CADD SOFTWARE

CADD Production Criteria Handbook

2.1 GENERAL

The Florida Department of Transportation Computer Assisted Design and Drafting (FDOT CADD) Software is upgraded periodically as needed to issue enhancements and fixes. Both major releases (on a bi-annual basis), as well as interim Maintenance Releases and Hot fixes (released as required as cumulative service packs) are available for download from the Engineering / CADD Systems Office (ECSO) internet website. Notification of new releases and updates are posted on the ECSO website, through various newsletters, training sessions and other venues as appropriate. FDOT uses MicroStation and GEOPAK as its standard graphics and civil design packages. Many of the support and resource files contained in the FDOT CADD software are for these packages.

2.2 DISTRIBUTION

Notification and statewide distribution of FDOT CADD Software releases and upgrades for installation on FDOT hardware is made by ECSO to the designated CADD IT contacts in the districts using the Enterprise Application known as the Software Distribution Notification Application (SDNA). The District Information Systems Managers (DISMs) and the FDOT CADD Managers are copied during these notices. The designated individual(s) are responsible for management of the software, distribution of licenses, and installation and maintenance on district servers and workstations.

Consultants can acquire the software, fixes and upgrades from:

FDOT Maps & Publications Sales office internet website:

http://www.dot.state.fl.us/mapsandpublications/

<OR>

Engineering / CADD Systems Office (ECSO) internet website: http://www.dot.state.fl.us/ecso/

Some products contained in the FDOT CADD Software may require a license file. For further information on how to obtain a license, contact the District CADD Manager, District CADD Information Technology contact, or an ECSO contact: http://www.dot.state.fl.us/ecso/main/contacts/

2.3 SUPPORT

The FDOT CADD support structure and hierarchy is described in the ***CADD Manual.*** For information on obtaining help or support for the FDOT CADD Software or Core CADD Products, reference The FDOT CADD ***Customer Support Guide*** available at:

http://www.dot.state.fl.us/ecso/downloads/publications/CADDSupportGuide/CADDSupport.shtm

2.4 SUPPORTED PRODUCTS

The ECSO uses and supports a Core group of CADD software products. A list of the current versions of these products, with accompanying technical documentation, is available from:

http://www.dot.state.fl.us/ecso/main/version/version.shtm

Additional products used may also be found in the FDOT CADD ***Customer Support Guide*** mentioned in section 2.3 previously. Most of the core FDOT CADD Software products are commercial programs that FDOT has purchased a license to use. FDOT makes no warranty, expressed or implied, as to the documentation, functionality or performance of these or other FDOT developed programs described herein.

2.5 MINIMUM SYSTEM REQUIREMENTS

The current FDOT CADD Software was developed and tested for FDOT standard workstation configurations. This standard configuration is published in the ***Adopted Information Technology Resource Standards*** and is available from the Department's Office of Information Systems (OIS) intranet website:

http://infonet.dot.state.fl.us/officeofinformationsystems/Documentation.htm

The FDOT2010 V8i CADD Software was certified on Microsoft's Windows XP (32- and 64-bit), Windows 7 (32- and 64-bit) and Internet Explorer version 6 (or higher) and the versions of the Core CADD products linked in section 2.4 above.

Other software configurations may support the current FDOT CADD Software; however no substantial testing has been performed on any other configuration. Use and support of FDOT CADD Software on other configurations are the sole responsibility of the user.

2.6 TRANSLATION OF FILES

FDOT requires MicroStation format for the delivery of all graphics design files, except as specifically defined in subsequent CPCH chapters for specific disciplines. In addition, MicroStation shall be used for the production of the Postscript Image files as required by Chapter 3 of the ***CADD Manual.***

The data producer is solely responsible for any translation required to convert non-MicroStation graphics files to the MicroStation design file format (dgn) for delivery to FDOT, except those that are acceptable in AutoCAD format (dwg) as defined herein, ensuring the correctness of translation of the graphics design files and adherence to the specifications contained herein and the validity of the geometric elements. All translated design files shall conform to the file naming convention and symbology standards adopted by FDOT for electronic plans as specified herein and mandated by the ***CADD Manual***.

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Chapter 3 - RESOURCE AND SUPPORT FILES

CADD Production Criteria Handbook

3.1 GENERAL

FDOT has developed CADD Standards for the CADD production of Florida transportation systems to be delivered in the FDOT CADD Software suite. These FDOT CADD Standards are conveyed through customization within the FDOT approved design software and automated tools. The FDOT Menu, included in the FDOT CADD Software delivery, is a doorway into this customization. To define the FDOT CADD Standards and customization, FDOT also delivers CADD Resource and Support Files with the FDOT CADD Software suite. This chapter documents and defines those FDOT Resource and Support Files, which are stored in the FDOT2010 / RESOURCES directory.

3.2 CELL LIBRARIES

In MicroStation, a cell is a small 2D drawing, or a 3D object— usually of a frequently-used or complex symbol, notation, detail, or part. Cells are stored as models in a DGN file called a Cell Library, which can contain many cells (models). Cell Libraries are exactly like DGN files, but with a .cel extension. Any DGN file can be attached as a cell library and any cell library can be opened as a DGN file.

FDOT has designed cells of various drawings that are frequently used in the CADD production of Florida transportation systems. These cells have been grouped by disciplinary usage into the standard FDOT Cell Libraries delivered with the FDOT CADD Software. Updates and changes to the FDOT Cells are included in the FDOT CADD Maintenance Releases (MRs) and hot fixes.

The FDOT Menu provides the user with options to utilize the FDOT Cell Libraries and uses the MicroStation configuration variable, MS_CELLLIST, to point to the appropriate directory for the listing of FDOT Cell Libraries.

Standard FDOT Cell Libraries are listed in the following table:

CELL LIBRARY	DESCRIPTION
3D.cel	3-Dimensional
alphabet.cel	Alphabet & Number
arrows.cel	Distance & GuidSIGN Arrows
drplan.cel	Drainage Proposed
drplan_ex.cel	Drainage Existing
ftpsigns.cel	Florida Traffic Plans Signs
geotech.cel	Geotechnical
its.cel	Intelligent Transportation Systems Signs
Landscape.cel	Landscape

CELL LIBRARY	DESCRIPTION
Lighting.cel	Lighting
Mutcd.cel	Manual on Uniform Traffic Control Devices
PavementMarkings.cel	Pavement Markings
Roadway.cel	Roadway
row.cel	Right of Way
Signalization.cel	Signalization
SignalPoles.cel	Signal Poles
survey.cel	Survey Symbols for Right of Way
syeng.cel	Survey Symbols for Roadway
TollPlaza.cel	Toll Plaza Signs
tplabels.cel	Traffic Plans Labels
TrafficControl.cel	Traffic Control
ttf_V8DesignStandards.cel	Structures Standards
ttf_v8semi-standards.cel	Structures Semi-standards
ttf_v8structures.cel	Structures
TypicalSection.cel	Typical Sections
utilities.cel	Utilities
v8structurespatterns.cel	Patterns for Structures
XMSuperSection.cel	Structures for Supersections
xsections.cel	Cross Sections

3.3 CONTROL FILES

FDOT delivers the Create/Edit program as part of the FDOT software suite. Control Files have been created to control the parameters needed by the Create/Edit program for the creation of any new standard FDOT design file name in adherence with the FDOT naming convention set forth in Chapter 4 of this document. When creating new standard FDOT File Names, the correct control file must be used.

Standard FDOT Control Files:

- GEOTECH.CTL Standard FDOT Geotechnical File Names
- ROADWAY.CTL Standard FDOT Roadway File Names
- RW.CTL Standard FDOT Right of Way File Names
- STRUCTURES.CTL Standard FDOT Structures File Names
- MECHELEC.CTL Standard FDOT Mechanical and Electrical File Names

3.4 DATABASE

FDOT has created a GEOPAK Design and Computation Manager (D&C Manager) database file (DDB) in the FDOT2010 folder located at geopak\databases\FDOT2010.ddb. This database has been set up specifically by FDOT to create elements with the correct level symbology according to FDOT CADD Standards.

The Engineering CADD Systems Office is responsible for the development of the FDOT standard GEOPAK Design and Computation Manager databases. The Standard English database is FDOT2010.ddb. The database has been developed to comply with the CADD Standards as defined in the CADD Production Criteria Handbook. This database may need to be modified for project specific items or to comply with District standards. If the database is customized, the user would save the customized database into the project directory in the \symb folder. Saving the database to the project directory is important to ensure the modified database will be delivered with the project.

It also provides a central location for all modified sections that should be merged back into a single database at the end of the project.

When modifying a project specific database, use the following naming convention:

project #

dr	(drainage)
its	(intelligent transportation system)
lnd	(landscape)
lt	(lighting)
rdwy	(roadway)
sg	(signalization)
sp	(signing and pavement markings)
util	(utilities)

3.5 PRINTER DRIVER CONFIGURATION FILES

The FDOT CADD Software supplies plot drivers created to generate plots to scale using the sheet cells (also provided with the FDOT CADD Software) when used on specific plotters. All plot drivers have raster plotting enabled. These drivers are called examples due to various site-specific configurations and the types of plotters that may be encountered.

The table below lists the plot driver names and the type of printer / plotter on which it was tested and assured to work. Each printer/plotter has its own footprint or area on the paper on which it can plot. For this reason, if a printer/plotter, not listed below, is used to generate plots, the plot driver in use will require modification to plot to scale.

PLOT DRIVER	PRINTER / PLOTTER	DESCRIPTION
36x24.pro	N/A	Controls postscript image/plot output
Color.plt		Color 11x17 (Raster Capable) Uses FDOT.TBL pen table and pscript.pro prolog file.
Color_FDOTPDF.pltcfg	N/A	Creates a color .pdf file. (Raster Capable) Uses FDOT.TBL pen table.
Color_Keysheet.pltcfg	ANY	To be used when printing key sheets containing maps with filled shapes.
FDOT.tbl	N/A	Pen table enters username, date time, and sheet border path.
FDOT_GrayExisting.tbl	N\A	Pen table enters username, date time, sheet border path, and applies gray scale to files named like TOPO*, UTEX*, and DREX*
FDOTbatchplt.spc	N/A	Batch plot specification file customized for FDOT plot drivers. (Only used with old Batch Print dialog. It is being replaced with Print Styles in MicroStation V8i)
FDOTPDF.plt	N/A	Creates a .pdf file. (Raster Capable) Uses FDOT.TBL pen table.
FDOTprinter.plt	Windows Printer	Copy of Bentley's printer.plt with weights and styles set to FDOT standards. Uses FDOT.TBL pen table.
HP1055.plt	HP 1055 CM	Monochrome 36x24 (Raster Capable) Uses 36x24.pro prolog file.
HP1055C.plt	HP 1055 CM	Color 36x24 (Raster Capable) Uses 36x24.pro prolog file.
HP5000.plt	HP 5000 GN	Monochrome 11x17 (Raster Capable) Uses FDOT.TBL pen table and hpttabl1.pro prolog file.
HP5000Legal.plt	HP 5000 GN	Monochrome 8.5x14 (Raster Capable) Uses FDOT.TBL pen table and hptlegal.pro prolog file.

PLOT DRIVER	PRINTER / PLOTTER	DESCRIPTION
HP5000Letter.plt	HP 5000 GN	Monochrome 8.5x11 (Raster Capable) Uses FDOT.TBL pen table and hptleter.pro prolog file.
hpglrtl.pltcfg	Large Format	Intended for use when printing large format monochrome sheets. (Raster Capable)
hpglrtl_c.pltcfg	Large Format	Intended for use when printing large format color sheets. (Raster Capable)
PostScript.plt	N/A	Creates postscript image file. (Raster Capable) Uses FDOT.TBL pen table and hpttabl1.pro prolog file.
Postscript36x24.plt	N/A	Creates postscript image file. (Raster Capable) Uses FDOT.TBL pen table and 36x24.pro prolog file.
pscript.pro	N/A	Controls postscript image/plot output
XeroxN40.plt	XEROX Docuprint N4025	Monochrome 11x17 (Raster Capable) Uses FDOT.TBL pen table and hpttabl1.pro prolog file.

3.6 SEED FILES

MicroStation uses “seed” files to create all graphics design files. FDOT utilized these seed files to create templates in which standard parameters are set according to the drafting needs to begin a specific type of work in accordance with FDOT standards.

The FDOT seed file defines the working units for the graphics file, global origin of the coordinate system, view attributes, default color table, text settings, coordinate readout and several other important parameters. FDOT supplies English seed files for both 2D and 3D.

Working units and global origin are two of the most important settings in the seed file. Working units are expressed as master units and sub-units. FDOT has defined all seed files for MicroStation based on master unit of Survey Feet with a sub unit of Survey Inches. The global origin has been moved to the center of the design plane for all seed files.

The resolution is defined per the master unit and determines the size (working area) of the design plane.

3.6.1 ENGLISH 2D SEED FILE (FDOTSEED2D.DGN)

The following settings apply to all 2D seed files.

Working Units:

- Master Units = Survey Feet
- Sub-Units = Survey Inches
- Resolution = 304800 per Survey Foot
- Global Origin: Center of Design plane

3.6.2 ENGLISH 3D SEED FILE (FDOTSEED3D.DGN)

The following settings also apply to 3d seed files.

Working Units:

- Master Units = Survey Feet
- Sub-Units = Survey Inches
- Resolution = 304800 per Survey Foot
- Global Origin: Center of Design plane

3.7 TEXT

3.7.1 FONTS

FDOT delivers a set of True Type Font (ttf) files to ensure uniformity and legibility of FDOT CADD drawings. The FDOT CADD Software delivers a set of proportional and uniformed spaced True Type Font files using vertical and slanted characters, the detail of which is reflected in the table below. Specifying specific fonts with specific levels is not a requirement. Fonts should be determined using the guidelines provided in the table below, however, the level and style used are optional and left entirely up to the designer.The zdotfont.rsc and structuresfont.rsc files are delivered with the FDOT CADD software delivery to maintain legibility of legacy files.

MicroStation can utilize fonts contained within MicroStation RSC, AutoCAD SHX, and True Type Font files. MicroStation will read multiple font resource files according to the paths set by the MS_FONTPATH configuration variable in the selected workspace and True Types Fonts registered with the Windows operating system. Within a MicroStation design file, font resources are compiled into a list of fonts from all the resource files that are found. The MstnFontConfig.xml file located by the MS_FONTCONFIGFILE variable determines if duplicate font names are displayed in font selection lists and how to resolve duplicate font names.

3.7.1.1 FDOT True Type Fonts (ttf)

A single True Type Font file may contain thousands of characters. The FDOT ttf files contain special characters used by designers that are not normally found in standard publishing fonts. If the FDOT ttf files are registered with the operating system, the default behavior when installing the FDOT CADD software suite, the fonts may be used in any standard windows program like Word and Excel.

Font	**Description**
FDOT	Standard slanted proportional spaced font used for most annotations
FDOTBold	Bold version of FDOT font
FDOTImprint	Chiseled font used mainly within FDOT border
FDOTImprintBold	Bold version of FDOTImprint font
FDOTMono	Standard mono-spaced font used mainly in tables to keep characters aligned
FDOTMonoBold	Bold version of FDOTMono font
FDOTVert	Non-slanted proportional spaced version of FDOT font used mainly by ROW discipline
FDOTVertBold	Bold version of FDOTVert font used mainly by ROW
FDOTVertMono	Mono-spaced version for FDOTVert font used mainly in tables used mainly by ROW
FDOTVertMonoBold	Bold version of FDOTVertMono font used mainly by ROW

3.7.1.2 MicroStation Fonts

A single font resource file can contain up to 256 fonts. The fonts within zdotfont.rsc are no longer in use, but must be maintained for backward compatibility purposes. The fonts contained within the zdotfont.rsc file are described later.

FDOT Font resource file - Zdotfont.rsc:

Font	Description
0	(Fast font) Simple font - Upper and Lower Case, Fractions
2	Wide font - Upper Case (used by survey & mapping)
3	Narrow font - Upper and Lower Case (used by survey & mapping)
4	Italics font - Upper and Lower Case (used by survey & mapping)
5	Script font - Upper and Lower Case (used by survey & mapping)
6	Simple Block font - Upper Case (used by survey & mapping)
7	Filled font - Upper Case (used by survey & mapping)
8	Filled font - Lower Case (no numbers - used by survey & mapping)
9	Filled font - Upper and Lower Case (used by survey & mapping)
10	Simple font - Upper and Lower Case, Fractions (used by survey & mapping)
11	Slanted font - Upper and Lower Case (used by survey & mapping)
12	Filled font - Upper Case (no numbers - used by survey & mapping)
13	Outline Block font - Upper Case (used by survey & mapping)
14	Script font - Upper and Lower Case (used by survey & mapping)
15	Old English style font - Upper and Lower Case (used by survey & mapping)
16	Upper Case and Engineering Symbols
17	Arrow and Miscellaneous Symbols
23	Slanted Simple font - Upper and Lower Case, Fractions
25	Standard font - Upper and Lower Case, Fractions (English projects prior to 2000 - No longer used)
26	Greek Symbols
41	Hand lettering font - Upper Case
42	Block outline font - Upper Case for Architecture plans
48	Slanted font (proportional spacing) Upper and Lower Case, fractions (the new English font for Design and Traffic Plans for labels)
49	Slanted font (proportional spacing) Upper and Lower Case, fractions (the new English font for Design and Traffic Plans for notes)
58	Vertical font (proportional spacing) Upper and Lower Case, fractions (used by R/W Engineering and Mapping for labels in English projects)
59	Slanted font (proportional spacing) Upper and Lower Case, fractions (used by R/W Engineering and Mapping for labels in Metric projects)
67	Provided for backward compatibility, no longer used.
68	Slanted font (proportional spacing) Upper and Lower Case, fractions (used by Structures for labels)
69	Slanted font (proportional spacing) Upper and Lower Case, fractions (used by Structures for notes)

Font	Description
70	Standard font - Upper and Lower Case, fractions (used in the Roadway and Traffic Design Standards)
71	Slanted font - Upper and Lower Case, fractions
72	Simple font - Upper and Lower Case, fractions
77	Filled font - Upper and Lower Case used for the titles in Sheet borders
78	Slanted font (proportional spacing) Upper and Lower Case (the Metric font for Design and Traffic Plans for labels)
79	Slanted font (proportional spacing) Upper and Lower Case (the Metric font for Design and Traffic Plans for notes)
80	True Type font Arial
81	True Type font Arial Italics
82	True Type font Courier
83	True Type font Courier Italics
84	True Type font Engravers Gothic
85	True Type font Photina
86	True Type font CG Times
87	True Type font Swis721
88	True Type font Times New Roman
89	True Type font Times New Roman Italics
90	True Type font Times New Roman Bold Italics
91	True Type font Garait
92	True Type font Garamond
93	True Type font Garamond Bold
94	True Type Greek Alphabet and Symbol
95	True Type Wingding
96	True Type WPMathA
97	True Type WPMathB
98	Character symbol text from cross section files
99	Block filled fonts - Upper and Lower Case for signs
100	Symbol arrows
101	Symbol fonts for cross section files
102	Topography symbol fonts (used by Surveying and Mapping)
126	Topography symbol fonts (used by Surveying and Mapping)

3.7.2 SIZE AND SPACING

FDOT has selected standard text sizes to ensure uniformity and legibility on FDOT CADD drawings. The appropriate text size is dependent on the plot scale selected. Since the most important issue with text is legibility, font, weight and text size may vary as necessary. Text line spacing should be, on average, three-fourths of the text height.

FDOT CADD Software provides several Text Levels and Text Styles for designers to choose as guides or starting points to create text to fit their needs. Text Levels can be identified by the naming convention beginning with “Text”.

The following table should be used as a guideline for standard text size definitions for plans at given plot scales.

English Text for B-Size Plans (11” x 17” paper)

English (Scale)	1"=1'	1"=20'	1"=40'	1"=50'	1"=100'	1"=200'	1"=400'	1"=500'
Minimum	0.06	1.2	2.4	3	6	12	24	30
Desired	0.07	1.4	2.8	3.5	7	14	28	35
Maximum	0.1	2.0	4	5	10	20	40	50

Note *For Right of Way Mapping Standard Text Sizes, See Chapter 9.*

3.8 LEVELS AND SYMBOLOGY

FDOT defines CADD level/symbology Standards using Design Libraries, Color Tables, Line Styles Resource files, Line Weights and Toolboxes. FDOT has created standard FDOT DGN Libraries (DGNLibs) within MicroStation to store FDOT Standards for: cells, levels, level filters, line styles, multi-line styles, text styles, dimension styles, element templates, menu customizations, customized tools, tool boxes, and tasks. Each FDOT DGNLib contains data that is shared throughout files and among users.

Each FDOT Standard defined in a Design Library (DGNLib) is identified by a unique name. When used from a DGNLib, it is copied into the active design file and is given the same name. This allows for comparison of the local resource to the FDOT DGNLib resource for compliancy to FDOT CADD Standards.

FDOT DGNLibs allow administrators to create shared resources in one place and distribute them to many users. Having a central location for resources makes the maintenance and management of them easier.

The following is a listing of all standard FDOT DGNLibs:

DGNLib	DESCRIPTION
fdot_common_levels.dgnlib	FDOT Standard Common Levels
fdot_v8_levels.dgnlib	FDOT Standard Roadway Levels
FDOT_PrintStyles.dgnlib	FDOT Standard Print Styles
FDOT_Styles.dgnlib	FDOT Standard Styles
FDOTtoolboxes.dgnlib	FDOT Standard Toolboxes
GeoTech.dgnlib	FDOT Standard Geotechnical Levels
photogrammetry.dgnlib	FDOT Standard Photogrammetric Levels
rwlevels.dgnlib	FDOT Standard Right of Way Levels
StrLevels.dgnlib	FDOT Standard Structure Levels
survey_levels.dgnlib	FDOT Standard Survey Levels
V7_levels.dgnlib	FDOT Standard V7 Levels
countymappinglevels.dgnlib	FDOT Standard County Mapping Levels

3.8.1 LEVELS

The standard FDOT Level Libraries define the CADD Levels for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standard FDOT Levels to assign each element within FDOT CADD design files.

The FDOT Levels and symbology are grouped and translated into Rule Files utilized for Quality Control to check compliancy of each FDOT design file to the FDOT CADD Standards. Rule Files will be discussed in detail in the section to follow.

The following are FDOT's basic level naming convention rules to assist CADD users in placement of design elements:

- Level Names have 18 maximum characters.
- The format of the Level Name is: ***object_sv***

Where: ***object*** = element type
s = state
v = 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 with no "_sv" portion in the name are assumed to be: _pp (proposed plan).*

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

3.8.2 COLOR TABLES

The standard FDOT Color Table (FDOTColor.tbl) was created to allow users to visually identify elements with ease in shared files and for consistency in color plotting. The FDOT Color Table is a modified version of the MicroStation default color table (color.tbl) which defines 256 colors. The most important aspect for the standardization of colors is the number that is applied.

FDOT Color Table customizes various MicroStation colors 0 through 166 as defined in the table below. The remaining colors match the MicroStation's default color table. The FDOT Color Table is named "FDOTColor.tbl" as preset by the FDOT workspace variable MS_DEFCTBL and attached in the FDOT seed files. Some disciplines use the MicroStation default color table or their own customized color table in place of the standard FDOT Color Table. These are defined in the discipline specific chapters.

FDOT Color Table (FDOTColor.tbl):

MicroStation Color	MS RGB Value
0	255,255,255
1	0,0,255
2	0,255,0
3	255,0,0
4	255,255,0
5	255,0,255
6	255,165,0
7	0,255,255
8	148,0,211
9	140,88,44
10	200,176,125
11	192,192,192
12	255,192,203
13	0,100,0
14	176,176,176
15	0,240,240
16	240,240,240
17	0,0,240

MicroStation Color	MS RGB Value
18	0,240,0
19	240,0,0
20	225,225,225
21	240,0,240
22	240,122,0
25	0,0,240
27	240,0,0
28	240,240,0
30	240,122,0
55	0,210,210
68	195,195,0
81	0,0,180
130	0,135,0
150	120,82,0
152	120,120,120
154	0,120,0
157	120,0,120
166	105,77,0

3.8.3 LINE STYLES

FDOT Line style (LC=line code) is part of the symbology of graphic elements in MicroStation. It defines a line's appearance as being solid, continuous dashes, dots and dashes, and so on. Each element has its own line style (line code). An element can be set to a standard MicroStation line style (numbered 0 - 7) or to a custom line style as defined in a custom line style resource file or embedded in a design file.

Custom line styles are user defined linear elements that contain patterns, cells, or set intervals of dashes and gaps. Some examples of custom line styles are a tree line, fence line, guardrail, etc. When an element is drawn in MicroStation with a custom line style, the definition of the line style may or may not be contained within the design file, only the line style name and id number may be stored.

If the custom line style is not embedded in the active file, the resource file from which it was selected must accompany the design file and it must be found by MicroStation's configuration in order to properly display the line. Therefore, if it is advantageous to the user to create a non-standard custom line style, the resource file must be delivered in the project directory structure or the line style must be embedded in the appropriate design file. The user should not create a custom line style with the same name as a FDOT Standard Line Style.

User created resource files should be different in name from the FDOT resource files and copied to the **\SYMB** sub-directory of the FDOT project directory structure.

3.8.3.1 Standard English Line Style Measurements for Plotting

style(1)=(0.02, 0.04)

style(2)=(0.08, 0.04)

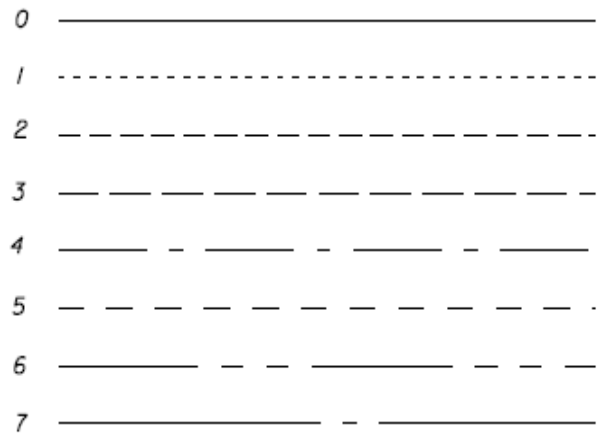
style(3)=(0.15, 0.05)

style(4) = (0.200, 0.053, 0.03, 0.053)

style(5) = (0.056, 0.056)

style(6) = (0.32, 0.056, 0.048, 0.056, 0.048,0.056)

style(7) = (0.59, 0.053, 0.03, 0.053)



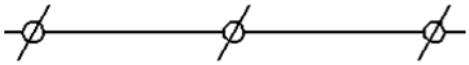
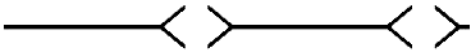
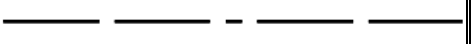
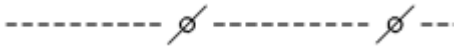
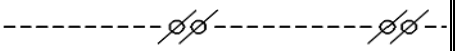
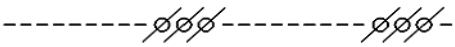
3.8.3.2 FDOT Custom Line Style Resource Files

FDOT has provided custom line styles for all linear repeating patterns. As previously mentioned, custom line styles are user definable in MicroStation. All standard FDOT custom line styles that will be carried forward on future releases of the FDOT CADD software have been embedded in the standard seed files.

Note *Users shall not modify the standard FDOT Custom Line Style resource files.*

3.8.3.3 Custom Line Style graphics

Discipline	Line Style	Description	Image
Maintenance of Traffic	attenuator	Attenuation Systems	
Maintenance of Traffic	barricade1	Barricade Symbol Type 1 or 2 at 15' spacing	
Maintenance of Traffic	barricade2	Barricade Symbol Type 1 or 2 at 30' Spacing	
Maintenance of Traffic	barricade3	Barricade Symbol Type 1 or 2 at 50' Spacing	
Maintenance of Traffic	barricade4	Barricade Symbol Type 1 or 2 at 100' Spacing	
Maintenance of Traffic	cone1	Cones at 25' Spacing	
Maintenance of Traffic	cone2	Cones at 50' Spacing	
Maintenance of Traffic	drum1	Drums at 15' Spacing	

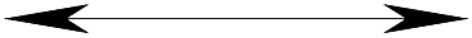
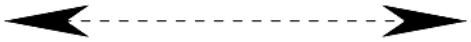
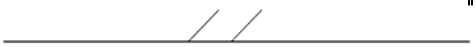
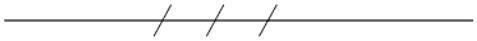
Discipline	Line Style	Description	Image
Maintenance of Traffic	drum2	Drums at 30' Spacing	
Maintenance of Traffic	drum3	Drums at 50' Spacing	
Maintenance of Traffic	drum4	Drums at 100' Spacing	
Maintenance of Traffic	sign1	Traffic Control Sign Symbol at 500' Spacing	
Maintenance of Traffic	sign2	Traffic Control Sign Symbol 400' Spacing	
Maintenance of Traffic	sign3	Traffic Control Sign Symbol 200' Spacing	
Roadway	barrier1	Turbidity Barrier 1 (floating)	
Roadway	barrier2	Staked Turbidity Barrier	
Roadway	Cable_Barrier	Cable Barrier	
Roadway	conduit1	Conduit for Utilities and Encasements	
Roadway	conduit2	Conduit & Encasements	
Roadway	directbore	Directional Bore	
Roadway	easement	Easement Lines	
Roadway	exlite_cond1	Conduit Underground (Existing)	
Roadway	exlite_cond2	Conduit Under pavement (Existing)	
Roadway	exlite_cond3	Conduit Jacked (Existing)	
Roadway	exlite_cond4	Conduit Surface Mounted (Existing)	

Discipline	Line Style	Description	Image
Roadway	exlite_cond5	Conduit In Box Girder (Existing)	
Roadway	grdbl	Guardrail Double Face	
Roadway	hay_bales silt_fence	Sediment Barriers – Synthetic Bales Sediment Barriers – Silt Fence	
Roadway	intcon1	Cable Interconnect	
Roadway	intcon2	Interconnect Cable (Existing)	
Roadway	lite_cond1	Street Lighting Conductors, Conduit Underground	
Roadway	lite_cond2	Conduit Under pavement	
Roadway	lite_cond3	Conduit Jacked Under pavement	
Roadway	lite_cond4	Conduit Surface Mounted	
Roadway	lite_cond5	Conduit In Box Girder	
Roadway	PS_PAT2'	Shoulder Paved 2ft	
Roadway	PS_PAT4'	Shoulder Paved 4ft	
Roadway	PS_PAT5'	Shoulder Paved 5ft	
Roadway	PS_PAT6'	Shoulder Paved 6ft	
Roadway	PS_PAT8'	Shoulder Paved 8ft	
Roadway	PS_PAT10'	Shoulder Paved 10ft	

Discipline	Line Style	Description	Image
Roadway	PS_PAT12'	Shoulder Paved 12ft	
Roadway	PS_PAT15'	Shoulder Paved 15ft	
Roadway	RockBag	Rock Bag	
Roadway	rpm_skip1	Reflective Pavement Markers Skip Striping Temporary	
Roadway	rpm_solid	Reflective Pavement Markers Solid Striping	
Roadway	rpm10	Reflective Pavement Markers 10’ spacing	
Roadway	rpm20	Reflective Pavement Markers 20’ spacing	
Roadway	rpm30	Reflective Pavement Markers 30’ spacing	
Roadway	rpm40	Reflective Pavement Markers 40’ spacing	
Roadway	rr1	Railroad	
Roadway	rr2	Railroad	
Roadway	rumble_cont	Rumble Strip Continuous	
Roadway	rumble_skip	Rumble Strip Skip	
Roadway	signal_cable	Signal Cable	
Roadway; Survey & Mapping	grail1	Guardrail Left	
Roadway; Survey & Mapping	grail2	Guardrail Right	
Roadway; Survey & Mapping	laflt	Fence Limited Access Left	

Discipline	Line Style	Description	Image
Roadway; Survey & Mapping	lafrt	Fence Limited Access Right	
Roadway; Survey & Mapping	LaneLine_exist	Lane Lines - Existing	
Roadway; Survey & Mapping	wetland	Edge of Mangrove, Wetlands (Marsh or Swamp)	
Roadway; Survey & Mapping	Wetland_ep	Edge of Mangrove, Wetlands (Marsh or Swamp) (Existing)	
Roadway; Survey & Mapping	woodline	Wood Line, Groves & Orchards Boundary, Scattered Trees	
Signing & Pavement Markings	10/10/20 Alt.Skip	Pavement Markings	
Signing & Pavement Markings	crosswalk1	Emphasis Crosswalk 6ft High	
Signing & Pavement Markings	crosswalk2	Emphasis Crosswalk 10ft High	
Signing & Pavement Markings	dbl_line	Pavement Marking Traffic Stripe 6" Double Yellow	
Signing & Pavement Markings	Delineators40	40’ Spacing	
Signing & Pavement Markings	Delineators300	300’ Spacing	
Signing & Pavement Markings	skip10/30 contrast	Pavement Marking Traffic Stripe Skip 10/30 (Contrast)	
Signing & Pavement Markings	skip/solid	Pavement Markings	
Signing & Pavement Markings	slip10/10/20contrast	Pavement Markings	
Signing & Pavement Markings	skip10_30	Pavement Marking Traffic Stripe Skip 10/30	
Signing & Pavement Markings	skip10_30ext	Pavement Marking Traffic Stripe Skip 10/30 (Existing)	

Discipline	Line Style	Description	Image
Signing & Pavement Markings	skip2_4	Pavement Marking Traffic Stripe Skip 2/4	
Signing & Pavement Markings	skip2_4ext	Pavement Markings Skip 2_4 (Existing)	
Signing & Pavement Markings	skip3_12 (6")	Pavement Markings Paint Skip 3_12 6"	
Signing & Pavement Markings	skip3_12ext (6")	Pavement Markings Paint Skip 3_12 6" (Existing)	
Signing & Pavement Markings	skip3_9 (6")	Pavement Markings Paint Skip 3_9 6"	
Signing & Pavement Markings	skip3_9ext (6")	Pavement Markings Paint Skip 3_9 6" (Existing)	
Signing & Pavement Markings	skip6_10	Pavement Markings	
Signing & Pavement Markings	skip6_10ext	Pavement Markings Paint Skip 6_10 8" (Existing)	
Signing & Pavement Markings	stripe06	Pavement Marking Traffic Stripe 6in	
Signing & Pavement Markings	stripe06ext	Pavement Marking Traffic Stripe 6in (Existing)	
Signing & Pavement Markings	stripe08	Pavement Marking Traffic Stripe 8in	
Signing & Pavement Markings	stripe08ext	Pavement Marking Traffic Stripe 8in (Existing)	
Signing & Pavement Markings	stripe12	Pavement Marking Traffic Stripe 12in	
Signing & Pavement Markings	stripe12ext	Pavement Marking Traffic Stripe 12in (Existing)	
Signing & Pavement Markings	stripe16	Pavement Marking Traffic Stripe 16in	
Signing & Pavement Markings	stripe16ext	Pavement Marking Traffic Stripe 16in (Existing)	
Signing & Pavement Markings	stripe18	Pavement Marking Traffic Stripe 18in	

Discipline	Line Style	Description	Image
Signing & Pavement Markings	stripe18ext	Pavement Marking Traffic Stripe 18in (Existing)	
Signing & Pavement Markings	stripe24	Pavement Marking Traffic Stripe 24in	
Signing & Pavement Markings	stripe24ext	Pavement Marking Traffic Stripe 24in (Existing)	
Signing & Pavement Markings	Vibratory	Audible and Vibratory Pavement Marking 6in	
Signing & Pavement Markings	yield	Yield Pavement Markings 3' Spacing	
Signing & Pavement Markings	yield1	Yield Pavement Markings 2' Spacing	
Survey & Mapping	Angle	Annotation Angles	
Survey & Mapping	ARROW2	Annotation: RW Width	
Survey & Mapping	ArrowPoint	Annotation: Station Offset	
Survey & Mapping	ArrowTie	Annotation: Station Tie	
Survey & Mapping	CLIMIT	City Limit Line	
Survey & Mapping	Climit2	City Limit	
Survey & Mapping	COLINE	County Line	
Survey & Mapping	EECL	Existing Easement Centerline	
Survey & Mapping	EXLA	Limited Access Right of Way (Existing)	
Survey & Mapping	fence1	Fence	
Survey & Mapping	GRTL	Government: Grant Line	

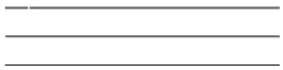
Discipline	Line Style	Description	Image
Survey & Mapping	LA	Limited Access Right of Way	
Survey & Mapping	LEADERLT	Annotation:Begin End Leader Left	
Survey & Mapping	LEADERRT	Annotation:Begin End Leader Right	
Survey & Mapping	LICENSE	Easement: License (Agreement)	
Survey & Mapping	LOC	Construction Limits	
Survey & Mapping	NONVH	Non-Vehicular Access	
Survey & Mapping	NSPF	Government: National or State Forest Park Line	
Survey & Mapping	NSPF2	Government: National or State Forest Park Line (Hash Only)	
Survey & Mapping	PESMT	Easement Lines Perpetual	
Survey & Mapping	PL	Property Line	
Survey & Mapping	QSEC	Quarter Section Line	
Survey & Mapping	RR	Railroad	
Survey & Mapping	RW	Right of Way Lines - Existing	
Survey & Mapping	SECLIN	Section Lines	
Survey & Mapping	STL	Government: State Line	
Survey & Mapping	SUBDIV	Annotation: Subdivision Boundary Arrows <--->	

Discipline	Line Style	Description	Image
Survey & Mapping	SUBDIV2	Annotation: Subdivision Boundary Arrows Double <<---->>	
Survey & Mapping	SUBDIV2LT	Annotation: Subdivision Boundary Arrows Two Left <<---->	
Survey & Mapping	SUBDIV2LTOnly	Annotation: Subdivision Boundary Arrows Two Left Only <<----	
Survey & Mapping	SUBDIV2RT	Annotation: Subdivision Boundary Arrows Two Right <---->>	
Survey & Mapping	SUBDIV2RTOnly	Annotation: Subdivision Boundary Arrows Two Right Only ---->>	
Survey & Mapping	SUBDIVLT	Annotation: Subdivision Boundary Arrows Single Left <----	
Survey & Mapping	SUBDIVRT	Annotation: Subdivision Boundary Arrows Single Right ---->	
Survey & Mapping	TEMPE	Easements Temporary (Existing)	
Survey & Mapping	TIITF	Safe Upland – Murphy Reservation	
Survey & Mapping	TWPRGE	Township / Range Lines	
Survey & Mapping	WaterMapBoundary	Major Water Mapping Boundary	
Utilities– existing; Survey & Mapping	e-be	Existing Conductors (Transmission), Buried Power	BE - - - - - - - - - - - - - BE
Utilities - Existing; Survey & Mapping	e-bfo	Existing Fiber Optics Cable (Underground)	BFO - - - - - - - - - - - - - BFO
Utilities - Existing; Survey & Mapping	e-bt	Existing Telephone (Buried), Duct, Toll	BT - - - - - - - - - - - - - BT

Discipline	Line Style	Description	Image
Utilities - Existing; Survey & Mapping	e-btv	Existing Cable TV Line (Buried)	BTV - - - - - - - - - - - - - BTV
Utilities - Existing; Survey & Mapping	e-cas	Existing Conduit & Pipe Encasements	CAS - - - - - - - - - - - - - CAS
Utilities - Existing; Survey & Mapping	e-dt	Existing Telephone Buried Duct	DT - - - - - - - - - - - - - DT
Utilities - Existing; Survey & Mapping	e-g	Existing Gas Line	G - - - - - - - - - - - - - G
Utilities - Existing; Survey & Mapping	e-npw	Existing Non-potable Water Line	NPW - - - - - - - - - - - - - NPW
Utilities - Existing; Survey & Mapping	e-oe	Existing Power Lines (Aerial), High Voltage Transmission Lines	OE - - - - - - - - - - - - - OE
Utilities - Existing; Survey & Mapping	e-ofo	Existing Fiber Optics Cable (Overhead)	OFO - - - - - - - - - - - - - OFO
Utilities - Existing; Survey & Mapping	e-ot	Existing Telephone Line (aerial)	OT - - - - - - - - - - - - - OT
Utilities - Existing; Survey & Mapping	e-otv	Existing Cable TV Line (Aerial)	OTV - - - - - - - - - - - - - OTV
Utilities - Existing; Survey & Mapping	e-pet	Existing Oil Line	PET - - - - - - - - - - - - - PET
Utilities - Existing; Survey & Mapping	e-rd	Existing Roof Drain	RD - - - - - - - - - - - - - RD
Utilities - Existing; Survey & Mapping	e-s	Existing Force Main, Sanitary Sewer	S - - - - - - - - - - - - - S
Utilities - Existing; Survey & Mapping	e-stm	Existing Steam Pipe	STM - - - - - - - - - - - - - STM

Discipline	Line Style	Description	Image
Utilities - Existing; Survey & Mapping	e-w	Existing Water Line	W - - - - - - - - - - - - W
Utilities - Proposed	be	Proposed Electrical Transmission Conductors Power (Buried)	BE BE BE BE BE
Utilities - Proposed	bfo	Proposed Fiber Optics Cable (Buried)	BFO BFO BFO BFO
Utilities - Proposed	bt	Proposed Telephone (Buried)	BT BT BT BT BT
Utilities - Proposed	btv	Proposed Cable TV Line (Buried)	BTV BTV BTV BTV
Utilities - Proposed	cas	Proposed Casing	CAS CAS CAS CAS
Utilities - Proposed	dt	Telephone Buried Duct	DT DT DT DT DT
Utilities - Proposed	g	Proposed Gas	G G G G G G G G G G G
Utilities - Proposed	npw	Proposed Water Line Non Potable, Sanitary Sewer Effluent NPW	NPW NPW NPW NPW
Utilities - Proposed	oe	Proposed Transmission Conductors High voltage Line (Overhead)	OE OE OE OE OE
Utilities - Proposed	ofo	Fiber Optics Cable (Aerial)	OFO OFO OFO OFO
Utilities - Proposed	ot	Cable TV Line (Aerial)	OT OT OT OT OT
Utilities - Proposed	otv	Proposed Overhead Television	OTV OTV OTV OTV
Utilities - Proposed	pet	Proposed Oil Pipeline, Petroleum	PET PET PET PET
Utilities - Proposed	rd	Proposed Roof Drain	RD RD RD RD RD
Utilities - Proposed	s	Proposed Sanitary Sewer, Force Main	S S S S S S S S S S S

Discipline	Line Style	Description	Image
Utilities - Proposed	stm	Proposed Steam Pipes	STM STM STM STM
Utilities - Proposed	w	Proposed Water	W W W W W W W W W W W
	(Border)	Default MicroStation	
	(Center)	Default MicroStation	
	(Dashdot)	Default MicroStation	
	(Dashed)	Default MicroStation	
	(Divide)	Default MicroStation	
	(Dot)	Default MicroStation	
	(Hidden)	Default MicroStation	
	(Phantom)	Default MicroStation	
	{-E-}	Default MicroStation -Electric Line	E E
	{Arrow}	Default MicroStation	
	{Batten}	Default MicroStation – Batt Insulation	
	{Cable/Tele}	Default MicroStation – Cable/Telephone	C T C T C
	{Chain Double-Dash}	Default MicroStation	
	{Curtain}	Glare Screen & Blinds Curtain Wall	
	{Dashed Triple-Dot}	Default MicroStation	
	{Diamond}	Default MicroStation	
	{Gas Line}	Default MicroStation	
	{Ground Line}	Ground Lines (Existing)	
	{Half Dash}	Default MicroStation	

Discipline	Line Style	Description	Image
	{Leader Line}	Default MicroStation	
	{Offset Lines}	Default MicroStation	
	{Origin Line}	Default MicroStation	
	{Rail Road}	Default MicroStation	
	{Tapered Dash}	Default MicroStation	
	{Tree Line}	Default MicroStation	
	{Wide Dash}	Default MicroStation	

3.8.4 LINE WEIGHT

Line weight is defined by a numerical index within the range of 0 to 30 that designates the stroke width or thickness of the line used to draw and plot a graphic element. Each element has its own line weight. The first position defines weight 0, second weight 1, and third weight 2 and so on up to weight 30. The standard line thickness (width) of a plotted graphic element is in dots per inch. Some printers may require the adjustment of these weights.

Note *For Right of Way Mapping Line Weight requirements see Chapter 9.*

Printed Outputs from the design files and postscript image files must be legible and of a quality to be reproducible on 2nd generation copies. Line Weights as defined in the table are default settings in the Plot drivers, but may need to be adjusted, depending on hardware, to produce the required quality of printed document.

FDOT Line Weights:

Line Weight	Weight (Inches)	Line Weight	Weight (Inches)	Line Weight	Weight (Inches)
0	0.003	11	0.036	21	0.066
1	0.006	12	0.039	22	0.069
2	0.009	13	0.042	23	0.072
3	0.012	14	0.045	24	0.075
4	0.015	15	0.048	25	0.078
5	0.018	16	0.051	26	0.081
6	0.021	17	0.054	27	0.084
7	0.024	18	0.057	28	0.087
8	0.027	19	0.060	29	0.090
9	0.030	20	0.063	30	0.093
10	0.033				

3.9 STANDARDS RULE FILES

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 FDOT Filename of each Discipline for the purpose of performing the Quality Control check for FDOT CADD Standard compliancy of each FDOT project design file.

Note *The individual Discipline chapters (Chapters 9-24) provide complete Standard File Name listings with associated Rule Files applicable to each respective Discipline.*

FDOT Standard Rule Files & Descriptions:

Rule Name	Rule Description
algnrd	Alignment Design
autosp	AutoTURN
cliprd	Clip Border
ctlsrd	Survey Control Sheet for Right of Way
drdtrd	Drainage Detail
drexrd	Drainage Existing
drmprd	Drainage Mapping
drprrd	Drainage Proposed
drxsrd	Drainage Cross Section
dsgnld	Landscaping Design
dsgnlt	Lighting Design
dsgnrd	Roadway Design
dsgnsg	Signalization Design
dsgnsp	Signing & Pavement Marking Design
dtmrd	Digital Terrain Model
geotech	Geotechnical
gswksp	GuidSIGN
irrgld	Irrigation
itssp	Intelligent Transportation System
keysht	Key Sheets

Rule Name	Rule Description
mrarsp	Mast Arm Details
pdxsrd	Pond Cross Section
planrd	Roadway Plan Sheet
plprrd	Roadway Plan/Profile Sheet
qtdsrd	Quantity Computation
rdxsrd	Roadway Cross Section
rdxssp	Signing & Pavement Cross Section
rwdtrd	Right of Way Detail for Roadway
rweng10	Right of Way
spdtrd	Special Detail
spst08	Structural
tcdsrd	Traffic Control
topord	Existing Topography for Roadway
toporw	Existing Topography for Right of Way
typdrd	Typical Section Data
typsrd	Typical Section Sheets
utadrd	Utilities Adjustment
utexrd	Utilities Existing
utprrd	Utilities Proposed

3.9.1 STANDARD FDOT LEVELS BY RULE FILE

As stated previously, FDOT has established CADD Standard symbology levels and grouped them into Standard Rule Files used to check compliancy of all FDOT project design files to these CADD Standards. In the tables to follow each Standard Rule Files is documented and the Standard Symbology Levels found within each one are defined.

Critical Levels are identified with an (X) and indicate that all symbology (color, line style, & line weight), as well as level name, will be check for compliancy when the Quality Control (QC) process is run. All other Non-critical levels will be checked ONLY for level name when compliancy is checked.

Note *For Right of Way's Rule File (rweng10.rul) table, see CPCH Chapter 9. For Structures' Rule File (spst10.rul) table, see CPCH Chapter 18.*

3.9.1.1 Alignment Design - ALGNRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
	algnrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	algnrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	algnrd	202	BaselineSurvey	Baseline Survey	0	0	2
	algnrd	234	CLConst_dp	Center Line of Construction	0	0	2
	algnrd	203	ClipBorder_dp	CLIP Border	3	0	0
	algnrd	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	algnrd	206	COGO_dp	COGO Information	3	0	1
	algnrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	algnrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	algnrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	algnrd	5027	EaseLicLine	License Agreement Line	5	6	0
	algnrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	algnrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	algnrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	algnrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	algnrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
	algnrd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
	algnrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	algnrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	algnrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	algnrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	algnrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	algnrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
	algnrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	algnrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	algnrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	algnrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	algnrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	algnrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	algnrd	215	NorthArw_dp	North Arrows	0	0	2
	algnrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	algnrd	216	PlotBorder_dp	Plot Border	3	0	0
	algnrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	algnrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	algnrd	5078	RoadwayMisc	Roadway Miscellaneous Items	4	0	2
	algnrd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	algnrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	algnrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	algnrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	algnrd	223	SheetBorder_dp	Sheet Border	1	0	4
	algnrd	224	SheetLines_dp	Sheet Lines	1	0	2
	algnrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	algnrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	algnrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	algnrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
	algnrd	5101	SpecialDetails	Special Details	6	0	1
	algnrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	algnrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
	algnrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	algnrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	algnrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	algnrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	algnrd	303	TextConstEle	Text - Construction Element	0	0	1
	algnrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	algnrd	305	TextDetails	Text - Detail Notes	4	0	2
	algnrd	1146	TextElevLabel	Elevation Labels	4	0	0
	algnrd	307	TextLabel	Text - Label	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
	algnrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	algnrd	308	TextMajor	Text - Major	0	0	5
	algnrd	309	TextMinor	Text - Minor	0	0	0
	algnrd	320	TextMisc	Text - Miscellaneous	0	0	1
	algnrd	310	TextNotes	Text - Notes	4	0	1
	algnrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	algnrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	algnrd	1147	TextPtLabel	Point Labels	4	0	0
	algnrd	313	TextShtNo	Text - Sheet Number	0	0	2
	algnrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	algnrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	algnrd	315	TextTitle	Text - Title	0	0	3
	algnrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	algnrd		XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.2 AutoTURN - AUTOSP.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
	autosp	200	ActivePointCell_dp	Active Point Cell	4	0	10
	autosp	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	autosp	9500	ATDims	AutoTurn Profile Dimensions, Tire Envelope	1	0	1
	autosp	9501	ATText	AutoTurn Profile and TT Dimensions, Annotation, TT Overhang	0	0	1
	autosp	9502	ATVHP	AutoTurn Temporary Profile for Building Custom Type	1	0	1
	autosp	206	COGO_dp	COGO Information	3	0	1
	autosp	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	autosp	5027	EaseLicLine	License Agreement Line	5	6	0
	autosp	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	autosp	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	autosp	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	autosp	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	autosp	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	autosp	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
	autosp	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Byleve l Weight
	autosp	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	autosp	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	autosp	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	autosp	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	autosp	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	autosp	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	autosp	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	autosp	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	autosp	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	autosp	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	autosp	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	autosp	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	autosp	216	PlotBorder_dp	Plot Border	3	0	0
	autosp	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	autosp	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	autosp	5078	RoadwayMisc	Roadway Miscellaneous Items	4	0	2
	autosp	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	autosp	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	autosp	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	autosp	223	SheetBorder_dp	Sheet Border	1	0	4
	autosp	224	SheetLines_dp	Sheet Lines	1	0	2
	autosp	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	autosp	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	autosp	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	autosp	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
	autosp	5101	SpecialDetails	Special Details	6	0	1
	autosp	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	autosp	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	autosp	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	autosp	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	autosp	303	TextConstEle	Text - Construction Element	0	0	1
	autosp	304	TextCurveData	Text - Curve Data Note	0	0	2
	autosp	305	TextDetails	Text - Detail Notes	4	0	2
	autosp	1146	TextElevLabel	Elevation Labels	4	0	0
	autosp	307	TextLabel	Text - Label	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	autosp	319	TextLandscape	Text - Landscape Labels	0	0	1
	autosp	309	TextMinor	Text - Minor	0	0	0
	autosp	320	TextMisc	Text - Miscellaneous	0	0	1
	autosp	310	TextNotes	Text - Notes	4	0	1
	autosp	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	autosp	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	autosp	1147	TextPtLabel	Point Labels	4	0	0
	autosp	313	TextShtNo	Text - Sheet Number	0	0	2
	autosp	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	autosp	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	autosp	315	TextTitle	Text - Title	0	0	3
	autosp	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	autosp	9532	TurningEle_dp	Miscellaneous Turning Radius Elements	4	0	1
	autosp	9533	TurningRadius_dp	Turning Radius Line	3	3	1
	autosp	9535	Vehicle	Vehicle for Calculating Turning Radius	7	0	2
	autosp	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
	autosp	1185	XSPt_ep	Cross Section Point, Station	2	1	0

3.9.1.3 Clip Border - CLIPRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	cliprd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	cliprd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	cliprd	203	ClipBorder_dp	CLIP Border	3	0	0
	cliprd	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	cliprd	205	Cloud_dp	Construction Cloud	7	0	2
	cliprd	206	COGO_dp	COGO Information	3	0	1
	cliprd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	cliprd	9508	ConstLimits	Construction Limits	3	LOC	2
	cliprd	9509	ConstLines	Construction Lines and References	1	0	0
	cliprd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	cliprd	5027	EaseLicLine	License Agreement Line	5	6	0
	cliprd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	cliprd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	cliprd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	cliprd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	cliprd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	cliprd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
	cliprd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
	cliprd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	cliprd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	cliprd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	cliprd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	cliprd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	cliprd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	cliprd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	cliprd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	cliprd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	cliprd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	cliprd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	cliprd	215	NorthArw_dp	North Arrows	0	0	2
	cliprd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	cliprd	216	PlotBorder_dp	Plot Border	3	0	0
	cliprd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	cliprd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	cliprd	5078	RoadwayMisc	Roadway Miscellaneous Items	4	0	2
	cliprd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	cliprd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	cliprd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	cliprd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	cliprd	223	SheetBorder_dp	Sheet Border	1	0	4
	cliprd	224	SheetLines_dp	Sheet Lines	1	0	2
	cliprd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	cliprd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	cliprd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	cliprd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
	cliprd	5101	SpecialDetails	Special Details	6	0	1
	cliprd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	cliprd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	cliprd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	cliprd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	cliprd	303	TextConstEle	Text - Construction Element	0	0	1
	cliprd	304	TextCurveData	Text - Curve Data Note	0	0	2
	cliprd	305	TextDetails	Text - Detail Notes	4	0	2
	cliprd	1146	TextElevLabel	Elevation Labels	4	0	0
	cliprd	307	TextLabel	Text - Label	0	0	2
	cliprd	319	TextLandscape	Text - Landscape Labels	0	0	1
	cliprd	308	TextMajor	Text - Major	0	0	5
	cliprd	309	TextMinor	Text - Minor	0	0	0
	cliprd	320	TextMisc	Text - Miscellaneous	0	0	1
	cliprd	310	TextNotes	Text - Notes	4	0	1
	cliprd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	cliprd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	cliprd	1147	TextPtLabel	Point Labels	4	0	0
	cliprd	313	TextShtNo	Text - Sheet Number	0	0	2
	cliprd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	cliprd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	cliprd	315	TextTitle	Text - Title	0	0	3
	cliprd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	cliprd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.4 Survey Control Sheet for Right of Way - CTLSRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	ctlsrd			<< Allows All Levels >>			

3.9.1.5 Drainage Detail - DRDTRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drdtrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	drdtrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	drdtrd	5001	ArtificialCovering	Artificial Coverings	10	0	2
X	drdtrd	6500	Berm	Berm (Top, Front, or Back)	10	0	2
X	drdtrd	6503	BoxCulvert	Box Culvert	10	0	2
X	drdtrd	6506	Canal	Canal	7	0	1
X	drdtrd	6507	CatchBasin	Catch Basin	10	0	2
	drdtrd	205	Cloud_dp	Construction Cloud	7	0	2
	drdtrd	206	COGO_dp	COGO Information	3	0	1
	drdtrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	drdtrd	9508	ConstLimits	Construction Limits	3	LOC	2
	drdtrd	9509	ConstLines	Construction Lines and References	1	0	0
	drdtrd	6508	ContourIndex_dp	Contour Index and special contour info	3	0	2
	drdtrd	6509	ContourIndex_ep	Contour Index (Existing)	3	0	2
	drdtrd	6510	ContoursMajor_dp	Contour Lines Major	3	0	2
	drdtrd	6511	ContoursMajor_ep	Contour Lines Major (Existing)	3	1	1
	drdtrd	6512	ContoursMinor_dp	Contour Lines Minor	4	0	1
	drdtrd	6513	ContoursMinor_ep	Contour Lines Minor (Existing)	4	1	0
X	drdtrd	6514	DesiltingPipes	Desilting Pipes	10	0	2
	drdtrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	drdtrd	6515	Ditch	Ditch Top	7	6	1
X	drdtrd	6516	DitchBot	Ditch Bottom	10	0	2
	drdtrd	6517	DitchProfLt_er	Ditch Profile Left (Existing)	8	3	1
	drdtrd	6518	DitchProfLt_pr	Ditch Profile Left	8	0	1
	drdtrd	6519	DitchProfMdn_er	Ditch Profile Median (Existing)	10	3	1
	drdtrd	6520	DitchProfMdn_pr	Ditch Profile Median	10	0	1
	drdtrd	6521	DitchProfRt_er	Ditch Profile Right (Existing)	9	3	1
	drdtrd	6522	DitchProfRt_pr	Ditch Profile Right	9	0	1
	drdtrd	6523	DrainDivideArw	Drainage Divide Arrow	0	0	1
	drdtrd	6524	DrainDivides00	Drainage Divides	10	2	4
	drdtrd	6525	DrainDivides00_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6526	DrainDivides01	Drainage Divides	10	2	4
	drdtrd	6527	DrainDivides01_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6528	DrainDivides02	Drainage Divides	10	2	4

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drdtrd	6529	DrainDivides02_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6530	DrainDivides03	Drainage Divides	10	2	4
	drdtrd	6531	DrainDivides03_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6532	DrainDivides04	Drainage Divides	10	2	4
	drdtrd	6533	DrainDivides04_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6534	DrainDivides05	Drainage Divides	10	2	4
	drdtrd	6535	DrainDivides05_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6536	DrainDivides06	Drainage Divides	10	2	4
	drdtrd	6537	DrainDivides06_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6538	DrainDivides07	Drainage Divides	10	2	4
	drdtrd	6539	DrainDivides07_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6540	DrainDivides08	Drainage Divides	10	2	4
	drdtrd	6541	DrainDivides08_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6542	DrainDivides09	Drainage Divides	10	2	4
	drdtrd	6543	DrainDivides09_ep	Drainage Divides (Existing)	9	2	4
	drdtrd	6544	DrainMisc	Miscellaneous Drainage Items	10	0	2
X	drdtrd	6545	DrainStruct_pr	Drainage Structures (All Types)	10	0	2
X	drdtrd	5027	EaseLicLine	License Agreement Line	5	6	0
	drdtrd	5029	EasePerpLine	Easement Lines Perpetual	4	PESMT	1
	drdtrd	5030	EaseTempLine	Easement Lines Temporary	6	TEMPE	0
X	drdtrd	6546	EdgeDrain	Edge Drain, Material and Outlet Pipe	10	0	2
X	drdtrd	6547	Endwall	Endwall (All Types)	10	0	2
	drdtrd	6099	Fence_ex	Fence Lines on Cross Sections (Existing)	6	3	1
X	drdtrd	6548	FES	Flared End Sections	10	0	2
X	drdtrd	6549	FlapGate	Flap Gates	10	0	2
	drdtrd	6550	FlowArrow_dp	Flow Arrow	10	0	2
X	drdtrd	6551	FlowLine	Flow Line	10	0	2
	drdtrd	6552	FlowLine_pr	Flow Line (Roadway Profile View)	0	0	2
X	drdtrd	6553	FrenchDrain	French Drain	10	0	2
X	drdtrd	5045	GovSectionLine_ep	Section Lines	10	SECLIN	2
X	drdtrd	5046	GovTwpRgeLine_ep	Township / Range Lines	10	TWPRGE	2
	drdtrd	6554	GPKDrBack_dp	Back Point on Drainage Cells	2	2	2
	drdtrd	6555	GPKDrBottom_dp	Bottom Point on Drainage Cells	3	3	2
	drdtrd	6556	GPKDrCellIns_dp	Cell Insertion Point on Drainage Cells	4	4	2
	drdtrd	6557	GPKDrCentroid_dp	Point on Centroid for Drainage	7	7	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drdtrd	106	GPKDrElv	Location point for drainage cells	5	5	2
	drdtrd	6558	GPKDrFront_dp	Front Point on Drainage Cells	1	1	2
	drdtrd	6559	GPKDrPipe_dp	Point on Drainage Pipe	6	6	2
	drdtrd	6560	GPKDrPipeCir_dp	Point on Pipe Circular	6	6	0
	drdtrd	5047	GradeLine_er	Grade Line Profile (Existing)	2	2	1
	drdtrd	5048	GradeLine_pr	Grade Line Profile	5	0	2
	drdtrd	5049	GradeLineCtr_dp	Grade Line Profile Center (shown in plan view)	5	0	0
	drdtrd	5050	GradeLineCtr_pr	Grade Line Profile Center	5	0	2
	drdtrd	5051	GradeLineLt_dp	Grade Line Profile Left (shown in plan view)	1	0	0
	drdtrd	5052	GradeLineLt_er	Grade Line Profile Left (Existing)	1	2	1
	drdtrd	5053	GradeLineLt_pr	Grade Line Profile Left	1	0	2
	drdtrd	5054	GradeLineRt_dp	Grade Line Profile Right (shown in plan view)	4	0	0
	drdtrd	5055	GradeLineRt_er	Grade Line Profile Right (Existing)	4	2	1
	drdtrd	5056	GradeLineRt_pr	Grade Line Profile Right	4	0	2
	drdtrd	5057	GradeSecPat	Grade Section Patterns	0	0	0
	drdtrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	drdtrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	drdtrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	drdtrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	drdtrd	6561	InletBottomJ	Inlet Bottom Type J	10	0	1
X	drdtrd	6562	InletBottomP	Inlet Bottom Type P	10	0	1
X	drdtrd	6563	InletClosedFlume	Closed Flume Inlet	10	0	2
X	drdtrd	6564	InletCurb	Curb Inlet (All Types)	10	0	2
X	drdtrd	6565	InletDBI	Ditch Bottom Inlet (All Types)	10	0	2
X	drdtrd	5110	InletProt	Rock Bags and Sand Bagging	10	0	2
X	drdtrd	6566	InletGutter	Gutter Inlet (All Types)	10	0	2
X	drdtrd	6567	InletMedian	Median Barrier Inlet	10	0	2
X	drdtrd	5066	LARWLine	Limited Access Right of Way	4	LA	2
X	drdtrd	5067	LARWLine_ep	Limited Access Right of Way (Existing)	4	EXLA	1
	drdtrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	drdtrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	drdtrd	6568	Manhole	Manhole (Drainage and unknown)	10	0	2
X	drdtrd	6569	MES	Mitered End Section	10	0	2
	drdtrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	drdtrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drdtrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	drdtrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	drdtrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	drdtrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	drdtrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	drdtrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	drdtrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	drdtrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	drdtrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	drdtrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	drdtrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	drdtrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical Cross Sections or drainage structures	4	0	2
	drdtrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical Cross Sections or drainage structures	5	0	2
	drdtrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	drdtrd	6570	Permit1	Permit 1 Wetlands, Mitigation Sites, Planting Areas	1	0	1
	drdtrd	6571	Permit2	Permit 2 Wetlands, Mitigation Sites, Planting Areas	2	0	1
	drdtrd	6572	Permit3	Permit 3 Wetlands, Mitigation Sites, Planting Areas	4	0	1
	drdtrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	drdtrd	6573	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	drdtrd	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	drdtrd	6574	PipeCulvertCD	Pipe Culvert Cross Drain	10	0	2
X	drdtrd	6575	PipeCulvertGD	Pipe Culvert Gutter Drain	11	0	2
X	drdtrd	6576	PipeCulvertSD	Pipe Culvert Side Drain	12	0	2
X	drdtrd	6577	PipeCulvertSS	Pipe Culvert Storm Sewer	9	0	2
X	drdtrd	216	PlotBorder_dp	Plot Border	3	0	0
	drdtrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	drdtrd	6109	Pond_px	Pond Lines on Cross Sections	2	0	2
X	drdtrd	6578	PondSideSlope	Pond Side Slope	0	0	2
X	drdtrd	5072	PropertyLine_ep	Property Lines	3	0	0
	drdtrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	drdtrd	6579	RetentionArea	Retention Area	2	0	2
X	drdtrd	5077	RipRap	Rip Rap, Rubble	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drdtrd	5081	RockGravelStone	Rock, Gravel, Stone, Boulders, Etc.	1	0	2
X	drdtrd	5085	RWLine	Right of Way Lines	4	RW	2
X	drdtrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
	drdtrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	drdtrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	drdtrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
X	drdtrd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	hay_bales	2
X	drdtrd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	silt_fence	2
X	drdtrd	6580	SedimentBasin	Sediment Basin Index 101	10	0	2
X	drdtrd	6581	SedimentBasin_ep	Sediment Basin Index 101 (Existing)	10	3	1
	drdtrd	223	SheetBorder_dp	Sheet Border	1	0	4
	drdtrd	224	SheetLines_dp	Sheet Lines	1	0	2
	drdtrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	drdtrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	drdtrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	drdtrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	drdtrd	6584	SlideGate	Slide Gate	10	0	2
X	drdtrd	6585	Slopes	Slopes (Top, Bottom)	9	3	0
X	drdtrd	6586	SlopeStakes1	Slope Stakes 1	4	1	3
X	drdtrd	6587	SlopeStakes2	Slope Stakes 2	1	1	3
X	drdtrd	6588	SlottedDrainPipe	Slotted Drain Pipe	10	0	1
X	drdtrd	6589	SlottedStormSewer	Storm Sewer Slotted or Perforated	10	0	2
	drdtrd	5101	SpecialDetails	Special Details	6	0	1
	drdtrd	6069	SpecialDetails_px	Special Details_XS	6	0	1
X	drdtrd	6590	Spillway	Spillway/ Flume/ Slope Drain	10	0	2
X	drdtrd	6591	StormSewer	Storm Sewer (All Types), Drain Pipes and Spouts	10	0	2
	drdtrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	drdtrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	drdtrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
X	drdtrd	6082	TerrainLine_ex	Existing Ground Line for Multiline	5	0	1
	drdtrd	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	drdtrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	drdtrd	303	TextConstEle	Text - Construction Element	0	0	1
	drdtrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	drdtrd	305	TextDetails	Text - Detail Notes	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drdtrd	1146	TextElevLabel	Elevation Labels	4	0	0
	drdtrd	307	TextLabel	Text - Label	0	0	2
	drdtrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	drdtrd	308	TextMajor	Text - Major	0	0	5
	drdtrd	309	TextMinor	Text - Minor	0	0	0
	drdtrd	320	TextMisc	Text - Miscellaneous	0	0	1
	drdtrd	310	TextNotes	Text - Notes	4	0	1
	drdtrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	drdtrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	drdtrd	1147	TextPtLabel	Point Labels	4	0	0
	drdtrd	313	TextShtNo	Text - Sheet Number	0	0	2
	drdtrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	drdtrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	drdtrd	315	TextTitle	Text - Title	0	0	3
	drdtrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	drdtrd	6592	Trench	Storm Sewer Trench	10	0	2
X	drdtrd	6593	TurbidityBarrier1	Turbidity Barrier 1 (floating)	10	barrier1	2
X	drdtrd	6595	TurbidityBarrier2	Turbidity Barrier 2 (staked)	10	barrier2	2
	drdtrd	6596	TurbidityBarrier2_ep	Turbidty Barrier (Staked) (Existing)	10	1	2
	drdtrd	6594	TurbidtiyBarrier1_ep	Turbidty Barrier (Floating) (Existing)	10	1	2
X	drdtrd	6597	UnderDrain	Underdrains (All Types)	10	0	2
X	drdtrd	6598	UnderDrainOP	Underdrain Outlet Pipes	10	0	2
	drdtrd	6599	Wetland	Wetland Boundary	2	wetland	1
	drdtrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	drdtrd	6200	XSExtendGrdLine_ex	Extend Ground Lines for Cross Sections (Existing)	21	2	1
X	drdtrd	6201	XSGrdLine_ex	Ground Lines for Cross Sections (Existing)	2	2	1
X	drdtrd	6202	XSGrdLine_px	Roadway Ground Lines on Cross Sections	1	0	2
	drdtrd	1185	XSPt_ep	Cross Section Point, Station	2	1	0
X	drdtrd	6600	YardDrain	Yard Drain	10	3	1

3.9.1.6 Existing Drainage - DREXRD.rul

Critical Level	Rule File	**Level No.**	Level Name	Level Description	**ByLevel Color**	**ByLevel Style**	**Bylevel Weight**	**Point / Line**	**Feature**
	drexrd	1008	BoxCulvert_ep	Box Culvert	10	3	1	L	BXC
	drexrd	1026	CrossDrain_ep	Underdrains and Cross drains	10	3	1	L	UD
	drexrd	1030	Ditch_ep	Ditch (Top, Bottom and Flow Lines)	7	6	0	L	DTCH
	drexrd	1031	DitchPavt_ep	Ditch Pavement	0	1	0	L	DTCHP
	drexrd	1033	DrainMisc_ep	Catch Basins	10	3	1	L	CB
	drexrd	1033	DrainMisc_ep	Drain Junction Box, Yard/Catch Sp	10	3	1	L	BAS
	drexrd	1033	DrainMisc_ep	Drainage Pipes and Spouts	10	3	1	L	DRNP
	drexrd	1033	DrainMisc_ep	Drainage Junction Box	10	3	1	L	JB
	drexrd	1033	DrainMisc_ep	Special Drainage Feature (Describe)	10	3	1	L	SPD
	drexrd	1033	DrainMisc_ep	Spillways, Flumes or Scuppers	10	3	1	L	SPL
	drexrd	1033	DrainMisc_ep	Yard Drain	10	3	1	L	YD
	drexrd	1036	EndTreat_ep	FES, MES, All Endwalls	10	3	1		
	drexrd	1036	EndTreat_ep	Flared End Section	10	3	1	L	FES
	drexrd	1036	EndTreat_ep	Mitered End Section	10	3	1	L	MES
	drexrd	1036	EndTreat_ep	Straight Endwall	10	3	1	L	SEW
	drexrd	1036	EndTreat_ep	Special Endwall	10	3	1	L	SPEW
	drexrd	1036	EndTreat_ep	U-Type Endwall	10	3	1	L	UEW
	drexrd	1036	EndTreat_ep	Winged End wall	10	3	1	L	WEW
	drexrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0		algnrd
	drexrd	1054	InletBottom_ep	Drainage Structure Bottoms	10	3	1	L	DRNB
	drexrd	1055	InletCurb_ep	Curb Inlets	10	3	1	L	CINL
	drexrd	1055	InletCurb_ep	Median Inlets	10	3	1	L	MEDI
	drexrd	1056	InletDBI_ep	Ditch Bottom Inlet	10	3	1	L	DTCHI
	drexrd	1057	InletGutter_ep	Gutter Inlets (All Types)	10	3	1	L	GI
	drexrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1		
	drexrd	1064	ManholeCovUnk_ep	Manhole Cover, Unknown	0	1	0	P	MH
	drexrd	1069	ManholeSW_ep	Manhole (Storm Water)	10	1	0	P	MHD
	drexrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1	L	PCULV
	drexrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0		
	drexrd	1137	StormSewer_ep	Storm Sewer (all sizes), Drain Pipes and Spouts	10	3	1	L	STS
	drexrd	1146	TextElevLabel	Elevation Labels	4	0	0		
	drexrd	320	TextMisc	Text - Miscellaneous	0	0	1		
	drexrd	310	TextNotes	Text - Notes	4	0	1		
	drexrd	1147	TextPtLabel	Point Labels	4	0	0		

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	drexrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0		
	drexrd	1158	UnderDrain_ep	Under Drain Box	10	3	0	P	UDBX

3.9.1.7 Drainage Mapping - DRMPRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drmprd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	drmprd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	drmprd	5001	ArtificialCovering	Artificial Coverings	10	0	2
	drmprd	202	BaselineSurvey	Baseline Survey	0	0	2
X	drmprd	6500	Berm	Berm (Top, Front, or Back)	10	0	2
X	drmprd	6503	BoxCulvert	Box Culvert	10	0	2
X	drmprd	6506	Canal	Canal	7	0	1
X	drmprd	6507	CatchBasin	Catch Basin	10	0	2
	drmprd	234	CLConst_dp	Center Line of Construction	0	0	2
	drmprd	205	Cloud_dp	Construction Cloud	7	0	2
	drmprd	206	COGO_dp	COGO Information	3	0	1
	drmprd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	drmprd	9508	ConstLimits	Construction Limits	3	LOC	2
	drmprd	9509	ConstLines	Construction Lines and References	1	0	0
	drmprd	6508	ContourIndex_dp	Contour Index and special contour info	3	0	2
	drmprd	6509	ContourIndex_ep	Contour Index (Existing)	3	0	2
	drmprd	6510	ContoursMajor_dp	Contour Lines Major	3	0	2
	drmprd	6511	ContoursMajor_ep	Contour Lines Major (Existing)	3	1	1
	drmprd	6512	ContoursMinor_dp	Contour Lines Minor	4	0	1
	drmprd	6513	ContoursMinor_ep	Contour Lines Minor (Existing)	4	1	0
	drmprd	207	CurveData_dp	Curve & Coordinate Data Elements incl. PC, PT, PI symbols	4	0	2
	drmprd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
X	drmprd	6514	DesiltingPipes	Desilting Pipes	10	0	2
	drmprd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	drmprd	6515	Ditch	Ditch Top	7	6	1
X	drmprd	6516	DitchBot	Ditch Bottom	10	0	2
	drmprd	6517	DitchProfLt_er	Ditch Profile Left (Existing)	8	3	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drmprd	6518	DitchProfLt_pr	Ditch Profile Left	8	0	1
	drmprd	6519	DitchProfMdn_er	Ditch Profile Median (Existing)	10	3	1
	drmprd	6520	DitchProfMdn_pr	Ditch Profile Median	10	0	1
	drmprd	6521	DitchProfRt_er	Ditch Profile Right (Existing)	9	3	1
	drmprd	6522	DitchProfRt_pr	Ditch Profile Right	9	0	1
	drmprd	6017	DrainAlert_px	Alert Symbology for Structural Elements	3	0	2
	drmprd	6523	DrainDivideArw	Drainage Divide Arrow	0	0	1
	drmprd	6524	DrainDivides00	Drainage Divides	10	2	4
	drmprd	6525	DrainDivides00_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6526	DrainDivides01	Drainage Divides	10	2	4
	drmprd	6527	DrainDivides01_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6528	DrainDivides02	Drainage Divides	10	2	4
	drmprd	6529	DrainDivides02_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6530	DrainDivides03	Drainage Divides	10	2	4
	drmprd	6531	DrainDivides03_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6532	DrainDivides04	Drainage Divides	10	2	4
	drmprd	6533	DrainDivides04_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6534	DrainDivides05	Drainage Divides	10	2	4
	drmprd	6535	DrainDivides05_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6536	DrainDivides06	Drainage Divides	10	2	4
	drmprd	6537	DrainDivides06_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6538	DrainDivides07	Drainage Divides	10	2	4
	drmprd	6539	DrainDivides07_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6540	DrainDivides08	Drainage Divides	10	2	4
	drmprd	6541	DrainDivides08_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6542	DrainDivides09	Drainage Divides	10	2	4
	drmprd	6543	DrainDivides09_ep	Drainage Divides (Existing)	9	2	4
	drmprd	6544	DrainMisc	Miscellaneous Drainage Items	10	0	2
X	drmprd	6545	DrainStruct_pr	Drainage Structures (All Types)	10	0	2
X	drmprd	5027	EaseLicLine	License Agreement Line	5	6	0
	drmprd	5029	EasePerpLine	Easement Lines Perpetual	4	PESMT	1
	drmprd	5030	EaseTempLine	Easement Lines Temporary	6	TEMPE	0
X	drmprd	6546	EdgeDrain	Edge Drain, Material and Outlet Pipe	10	0	2
X	drmprd	6547	Endwall	Endwall (All Types)	10	0	2
	drmprd	6099	Fence_ex	Fence Lines on Cross Sections (Existing)	6	3	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drmprd	6548	FES	Flared End Sections	10	0	2
X	drmprd	6549	FlapGate	Flap Gates	10	0	2
	drmprd	6550	FlowArrow_dp	Flow Arrow	10	0	2
X	drmprd	6551	FlowLine	Flow Line	10	0	2
	drmprd	6552	FlowLine_pr	Flow Line (Roadway Profile View)	0	0	2
X	drmprd	5038	FlowPaths	Time of Concentration Flow Paths	10	1	1
X	drmprd	6553	FrenchDrain	French Drain	10	0	2
X	drmprd	5040	Gabions	Gabion Baskets or Mats	10	0	2
X	drmprd	5041	Gabions_ep	Gabion Baskets or Mats (Existing)	10	1	2
X	drmprd	5046	GovTwpRgeLine_ep	Township / Range Lines	10	TWPRGE	2
	drmprd	6554	GPKDrBack_dp	Back Point on Drainage Cells	2	2	2
	drmprd	6555	GPKDrBottom_dp	Bottom Point on Drainage Cells	3	3	2
	drmprd	6556	GPKDrCellIns_dp	Cell Insertion Point on Drainage Cells	4	4	2
	drmprd	6557	GPKDrCentroid_dp	Point on Centroid for Drainage	7	7	2
	drmprd	106	GPKDrElv	Location point for drainage cells	5	5	2
	drmprd	6558	GPKDrFront_dp	Front Point on Drainage Cells	1	1	2
	drmprd	6559	GPKDrPipe_dp	Point on Drainage Pipe	6	6	2
	drmprd	6560	GPKDrPipeCir_dp	Point on Pipe Circular	6	6	0
	drmprd	5047	GradeLine_er	Grade Line Profile (Existing)	2	2	1
	drmprd	5048	GradeLine_pr	Grade Line Profile	5	0	2
	drmprd	5049	GradeLineCtr_dp	Grade Line Profile Center (shown in plan view)	5	0	0
	drmprd	5050	GradeLineCtr_pr	Grade Line Profile Center	5	0	2
	drmprd	5051	GradeLineLt_dp	Grade Line Profile Left (shown in plan view)	1	0	0
	drmprd	5052	GradeLineLt_er	Grade Line Profile Left (Existing)	1	2	1
	drmprd	5053	GradeLineLt_pr	Grade Line Profile Left	1	0	2
	drmprd	5054	GradeLineRt_dp	Grade Line Profile Right (shown in plan view)	4	0	0
	drmprd	5055	GradeLineRt_er	Grade Line Profile Right (Existing)	4	2	1
	drmprd	5056	GradeLineRt_pr	Grade Line Profile Right	4	0	2
	drmprd	5057	GradeSecPat	Grade Section Patterns	0	0	0
	drmprd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	drmprd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	drmprd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	drmprd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	drmprd	6561	InletBottomJ	Inlet Bottom Type J	10	0	1
X	drmprd	6562	InletBottomP	Inlet Bottom Type P	10	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drmprd	6563	InletClosedFlume	Closed Flume Inlet	10	0	2
X	drmprd	6564	InletCurb	Curb Inlet (All Types)	10	0	2
X	drmprd	6565	InletDBI	Ditch Bottom Inlet (All Types)	10	0	2
X	drmprd	6566	InletGutter	Gutter Inlet (All Types)	10	0	2
X	drmprd	6567	InletMedian	Median Barrier Inlet	10	0	2
X	drmprd	5110	InletProt	Rock Bags and Sand Bagging	10	0	2
	drmprd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
X	drmprd	5066	LARWLine	Limited Access Right of Way	4	LA	2
X	drmprd	5067	LARWLine_ep	Limited Access Right of Way (Existing)	4	EXLA	1
	drmprd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	drmprd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	drmprd	6568	Manhole	Manhole (Drainage and unknown)	10	0	2
	drmprd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
X	drmprd	6569	MES	Mitered End Section	10	0	2
	drmprd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	drmprd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	drmprd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	drmprd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	drmprd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	drmprd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	drmprd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	drmprd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	drmprd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	drmprd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	drmprd	214	NonPlottingEle_dp	Non plotting items (construction elements and type 66 elements)	4	0	0
	drmprd	215	NorthArw_dp	North Arrows	0	0	2
	drmprd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	drmprd	6570	Permit1	Permit 1 Wetlands, Mitigation Sites, Planting Areas	1	0	1
	drmprd	6571	Permit2	Permit 2 Wetlands, Mitigation Sites, Planting Areas	2	0	1
	drmprd	6572	Permit3	Permit 3 Wetlands, Mitigation Sites, Planting Areas	4	0	1
	drmprd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	drmprd	6573	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	drmprd	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	drmprd	6574	PipeCulvertCD	Pipe Culvert Cross Drain	10	0	2
X	drmprd	6575	PipeCulvertGD	Pipe Culvert Gutter Drain	11	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drmprd	6576	PipeCulvertSD	Pipe Culvert Side Drain	12	0	2
X	drmprd	6577	PipeCulvertSS	Pipe Culvert Storm Sewer	9	0	2
X	drmprd	216	PlotBorder_dp	Plot Border	3	0	0
	drmprd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	drmprd	6109	Pond_px	Pond Lines on Cross Sections	2	0	2
X	drmprd	6578	PondSideSlope	Pond Side Slope	0	0	2
X	drmprd	5072	PropertyLine_ep	Property Lines	3	0	0
	drmprd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	drmprd	6579	RetentionArea	Retention Area	2	0	2
X	drmprd	5077	RipRap	Rip Rap, Rubble	4	0	2
X	drmprd	5081	RockGravelStone	Rock, Gravel, Stone, Boulders, Etc.	1	0	2
X	drmprd	5085	RWLine	Right of Way Lines	4	RW	2
X	drmprd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
	drmprd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	drmprd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	drmprd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	drmprd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
X	drmprd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	hay_bales	2
X	drmprd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	silt_fence	2
X	drmprd	6580	SedimentBasin	Sediment Basin Index 101	10	0	2
X	drmprd	6581	SedimentBasin_ep	Sediment Basin Index 101 (Existing)	10	3	1
	drmprd	223	SheetBorder_dp	Sheet Border	1	0	4
	drmprd	224	SheetLines_dp	Sheet Lines	1	0	2
	drmprd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	drmprd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	drmprd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	drmprd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	drmprd	6584	SlideGate	Slide Gate	10	0	2
X	drmprd	6585	Slopes	Slopes (Top, Bottom)	9	3	0
X	drmprd	6586	SlopeStakes1	Slope Stakes 1	4	1	3
X	drmprd	6587	SlopeStakes2	Slope Stakes 2	1	1	3
X	drmprd	6588	SlottedDrainPipe	Slotted Drain Pipe	10	0	1
X	drmprd	6589	SlottedStormSewer	Storm Sewer Slotted or Perforated	10	0	2
	drmprd	5101	SpecialDetails	Special Details	6	0	1
	drmprd	6069	SpecialDetails_px	Special Details_XS	6	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drmprd	6590	Spillway	Spillway/ Flume/ Slope Drain	10	0	2
	drmprd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	drmprd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	drmprd	6591	StormSewer	Storm Sewer (All Types), Drain Pipes and Spouts	10	0	2
	drmprd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	drmprd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	drmprd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
X	drmprd	6082	TerrainLine_ex	Existing Ground Line for Multiline	5	0	1
	drmprd	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	drmprd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	drmprd	303	TextConstEle	Text - Construction Element	0	0	1
	drmprd	304	TextCurveData	Text - Curve Data Note	0	0	2
	drmprd	305	TextDetails	Text - Detail Notes	4	0	2
	drmprd	1146	TextElevLabel	Elevation Labels	4	0	0
	drmprd	307	TextLabel	Text - Label	0	0	2
	drmprd	319	TextLandscape	Text - Landscape Labels	0	0	1
	drmprd	308	TextMajor	Text - Major	0	0	5
	drmprd	309	TextMinor	Text - Minor	0	0	0
	drmprd	320	TextMisc	Text - Miscellaneous	0	0	1
	drmprd	310	TextNotes	Text - Notes	4	0	1
	drmprd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	drmprd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	drmprd	1147	TextPtLabel	Point Labels	4	0	0
	drmprd	313	TextShtNo	Text - Sheet Number	0	0	2
	drmprd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	drmprd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	drmprd	315	TextTitle	Text - Title	0	0	3
	drmprd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	drmprd	6592	Trench	Storm Sewer Trench	10	0	2
X	drmprd	6593	TurbidityBarrier1	Turbidity Barrier 1 (floating)	10	barrier1	2
X	drmprd	6595	TurbidityBarrier2	Turbidity Barrier 2 (staked)	10	barrier2	2
	drmprd	6596	TurbidityBarrier2_ep	Turbidty Barrier (Staked) (Existing)	10	1	2
	drmprd	6594	TurbidtiyBarrier1_ep	Turbidty Barrier (Floating) (Existing)	10	1	2
X	drmprd	6597	UnderDrain	Underdrains (All Types)	10	0	2
X	drmprd	6598	UnderDrainOP	Underdrain Outlet Pipes	10	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drmprd	6599	Wetland	Wetland Boundary	2	wetland	1
	drmprd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	drmprd	6200	XSExtendGrdLine_ex	Extend Ground Lines for Cross Sections (Existing)	21	2	1
X	drmprd	6201	XSGrdLine_ex	Ground Lines for Cross Sections (Existing)	2	2	1
X	drmprd	6202	XSGrdLine_px	Roadway Ground Lines on Cross Sections	1	0	2
X	drmprd	6600	YardDrain	Yard Drain	10	3	1

3.9.1.8 Drainage Proposed - DRPRRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drprrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	drprrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	drprrd	5001	ArtificialCovering	Artificial Coverings	10	0	2
X	drprrd	6500	Berm	Berm (Top, Front, or Back)	10	0	2
	drprrd	6501	BoundaryLineImp	Boundary Lines - Impervious	11	0	2
	drprrd	6502	BoundaryLineP	Boundary Lines - Pervious	9	0	2
X	drprrd	6503	BoxCulvert	Box Culvert	10	0	2
X	drprrd	6504	BuildingRes1	Boundaries of Single Family Residential Buildings	1	0	2
X	drprrd	6505	BuildingRes2	Boundaries of Multi-Family Residential Buildings	1	0	2
X	drprrd	6506	Canal	Canal	7	0	1
X	drprrd	6507	CatchBasin	Catch Basin	10	0	2
	drprrd	234	CLConst_dp	Center Line of Construction	0	0	2
	drprrd	203	ClipBorder_dp	CLIP Border	3	0	0
	drprrd	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	drprrd	206	COGO_dp	COGO Information	3	0	1
	drprrd	6508	ContourIndex_dp	Contour Index and special contour info	3	0	2
	drprrd	6509	ContourIndex_ep	Contour Index (Existing)	3	0	2
	drprrd	6510	ContoursMajor_dp	Contour Lines Major	3	0	2
	drprrd	6511	ContoursMajor_ep	Contour Lines Major (Existing)	3	1	1
	drprrd	6512	ContoursMinor_dp	Contour Lines Minor	4	0	1
	drprrd	6513	ContoursMinor_ep	Contour Lines Minor (Existing)	4	1	0
X	drprrd	6514	DesiltingPipes	Desilting Pipes	10	0	2
	drprrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	drprrd	6515	Ditch	Ditch Top	7	6	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drprrd	6516	DitchBot	Ditch Bottom	10	0	2
	drprrd	6517	DitchProfLt_er	Ditch Profile Left (Existing)	8	3	1
	drprrd	6518	DitchProfLt_pr	Ditch Profile Left	8	0	1
	drprrd	6519	DitchProfMdn_er	Ditch Profile Median (Existing)	10	3	1
	drprrd	6520	DitchProfMdn_pr	Ditch Profile Median	10	0	1
	drprrd	6521	DitchProfRt_er	Ditch Profile Right (Existing)	9	3	1
	drprrd	6522	DitchProfRt_pr	Ditch Profile Right	9	0	1
	drprrd	6017	DrainAlert_px	Alert Symbology for Structural Elements on	3	0	2
	drprrd	6523	DrainDivideArw	Drainage Divide Arrow	0	0	1
	drprrd	6524	DrainDivides00	Drainage Divides	10	2	4
	drprrd	6525	DrainDivides00_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6526	DrainDivides01	Drainage Divides	10	2	4
	drprrd	6527	DrainDivides01_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6528	DrainDivides02	Drainage Divides	10	2	4
	drprrd	6529	DrainDivides02_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6530	DrainDivides03	Drainage Divides	10	2	4
	drprrd	6531	DrainDivides03_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6532	DrainDivides04	Drainage Divides	10	2	4
	drprrd	6533	DrainDivides04_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6534	DrainDivides05	Drainage Divides	10	2	4
	drprrd	6535	DrainDivides05_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6536	DrainDivides06	Drainage Divides	10	2	4
	drprrd	6537	DrainDivides06_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6538	DrainDivides07	Drainage Divides	10	2	4
	drprrd	6539	DrainDivides07_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6540	DrainDivides08	Drainage Divides	10	2	4
	drprrd	6541	DrainDivides08_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6542	DrainDivides09	Drainage Divides	10	2	4
	drprrd	6543	DrainDivides09_ep	Drainage Divides (Existing)	9	2	4
	drprrd	6544	DrainMisc	Miscellaneous Drainage Items	10	0	2
X	drprrd	6545	DrainStruct_pr	Drainage Structures (All Types)	10	0	2
X	drprrd	5027	EaseLicLine	License Agreement Line	5	6	0
	drprrd	5029	EasePerpLine	Easement Lines Perpetual	4	PESMT	1
	drprrd	5030	EaseTempLine	Easement Lines Temporary	6	TEMPE	0
X	drprrd	6546	EdgeDrain	Edge Drain, Material and Outlet Pipe	10	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drprrd	6547	Endwall	Endwall (All Types)	10	0	2
X	drprrd	5033	Fence	Fence, Sand Fence	6	Fence1	1
X	drprrd	6548	FES	Flared End Sections	10	0	2
X	drprrd	6549	FlapGate	Flap Gates	10	0	2
	drprrd	6550	FlowArrow_dp	Flow Arrow	10	0	2
X	drprrd	6551	FlowLine	Flow Line	10	0	2
	drprrd	6552	FlowLine_pr	Flow Line (Roadway Profile View)	0	0	2
X	drprrd	5038	FlowPaths	Time of Concentration Flow Paths	10	1	1
X	drprrd	6553	FrenchDrain	French Drain	10	0	2
X	drprrd	5040	Gabions	Gabion Baskets or Mats	10	0	2
X	drprrd	5041	Gabions_ep	Gabion Baskets or Mats (Existing)	10	1	2
X	drprrd	5046	GovTwpRgeLine_ep	Township / Range Lines	10	TWPRGE	2
	drprrd	6554	GPKDrBack_dp	Back Point on Drainage Cells	2	2	2
	drprrd	6555	GPKDrBottom_dp	Bottom Point on Drainage Cells	3	3	2
	drprrd	6556	GPKDrCellIns_dp	Cell Insertion Point on Drainage Cells	4	4	2
	drprrd	6557	GPKDrCentroid_dp	Point on Centroid for Drainage	7	7	2
	drprrd	106	GPKDrElv	Location point for drainage cells	5	5	2
	drprrd	6558	GPKDrFront_dp	Front Point on Drainage Cells	1	1	2
	drprrd	6559	GPKDrPipe_dp	Point on Drainage Pipe	6	6	2
	drprrd	6560	GPKDrPipeCir_dp	Point on Pipe Circular	6	6	0
	drprrd	5047	GradeLine_er	Grade Line Profile (Existing)	2	2	1
	drprrd	5048	GradeLine_pr	Grade Line Profile	5	0	2
	drprrd	5049	GradeLineCtr_dp	Grade Line Profile Center (shown in plan view)	5	0	0
	drprrd	5050	GradeLineCtr_pr	Grade Line Profile Center	5	0	2
	drprrd	5051	GradeLineLt_dp	Grade Line Profile Left (shown in plan view)	1	0	0
	drprrd	5052	GradeLineLt_er	Grade Line Profile Left (Existing)	1	2	1
	drprrd	5053	GradeLineLt_pr	Grade Line Profile Left	1	0	2
	drprrd	5054	GradeLineRt_dp	Grade Line Profile Right (shown in plan view)	4	0	0
	drprrd	5055	GradeLineRt_er	Grade Line Profile Right (Existing)	4	2	1
	drprrd	5056	GradeLineRt_pr	Grade Line Profile Right	4	0	2
	drprrd	5057	GradeSecPat	Grade Section Patterns	0	0	0
	drprrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	drprrd	6561	InletBottomJ	Inlet Bottom Type J	10	0	1
X	drprrd	6562	InletBottomP	Inlet Bottom Type P	10	0	1
X	drprrd	6563	InletClosedFlume	Closed Flume Inlet	10	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drprrd	6564	InletCurb	Curb Inlet (All Types)	10	0	2
X	drprrd	6565	InletDBI	Ditch Bottom Inlet (All Types)	10	0	2
X	drprrd	6566	InletGutter	Gutter Inlet (All Types)	10	0	2
X	drprrd	6567	InletMedian	Median Barrier Inlet	10	0	2
X	Drprrd	5110	InletProt	Rock Bags and Sand Bagging	10	0	2
X	drprrd	5066	LARWLine	Limited Access Right of Way	4	LA	2
X	drprrd	5067	LARWLine_ep	Limited Access Right of Way (Existing)	4	EXLA	1
	drprrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
X	drprrd	6568	Manhole	Manhole (Drainage and unknown)	10	0	2
X	drprrd	6569	MES	Mitered End Section	10	0	2
	drprrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	drprrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	drprrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	drprrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	drprrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	drprrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	drprrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	drprrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	drprrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	drprrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	drprrd	214	NonPlottingEle_dp	Non plotting items (construction elements and type 66 elements)	4	0	0
	drprrd	215	NorthArw_dp	North Arrows	0	0	2
	drprrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	drprrd	6570	Permit1	Permit 1 Wetlands, Mitigation Sites, Planting Areas	1	0	1
	drprrd	6571	Permit2	Permit 2 Wetlands, Mitigation Sites, Planting Areas	2	0	1
	drprrd	6572	Permit3	Permit 3 Wetlands, Mitigation Sites, Planting Areas	4	0	1
	drprrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
	drprrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	drprrd	6573	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	drprrd	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	drprrd	6574	PipeCulvertCD	Pipe Culvert Cross Drain	10	0	2
X	drprrd	6575	PipeCulvertGD	Pipe Culvert Gutter Drain	11	0	2
X	drprrd	6576	PipeCulvertSD	Pipe Culvert Side Drain	12	0	2
X	drprrd	6577	PipeCulvertSS	Pipe Culvert Storm Sewer	9	0	2
	drprrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drprrd	6578	PondSideSlope	Pond Side Slope	0	0	2
X	drprrd	5072	PropertyLine_ep	Property Lines	3	0	0
	drprrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	drprrd	6579	RetentionArea	Retention Area	2	0	2
X	drprrd	5077	RipRap	Rip Rap, Rubble	4	0	2
X	drprrd	5081	RockGravelStone	Rock, Gravel, Stone, Boulders, Etc.	1	0	2
X	drprrd	5085	RWLine	Right of Way Lines	4	RW	2
X	drprrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
	drprrd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	drprrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	drprrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	drprrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
X	drprrd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	hay_bales	2
X	drprrd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	silt_fence	2
X	drprrd	6580	SedimentBasin	Sediment Basin Index 101	10	0	2
X	drprrd	6581	SedimentBasin_ep	Sediment Basin Index 101 (Existing)	10	3	1
X	drprrd	6584	SlideGate	Slide Gate	10	0	2
X	drprrd	6585	Slopes	Slopes (Top, Bottom)	9	3	0
	drprrd	1132	Slopes_ep	Natural Slopes, Levees, Dikes, Dams, Embankment (Top or Bottom)	9	3	0
X	drprrd	6586	SlopeStakes1	Slope Stakes 1	4	1	3
X	drprrd	6587	SlopeStakes2	Slope Stakes 2	1	1	3
X	drprrd	6588	SlottedDrainPipe	Slotted Drain Pipe	10	0	1
X	drprrd	6589	SlottedStormSewer	Storm Sewer Slotted or Perforated	10	0	2
X	drprrd	6590	Spillway	Spillway/ Flume/ Slope Drain	10	0	2
	drprrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	drprrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	drprrd	6591	StormSewer	Storm Sewer (All Types), Drain Pipes and Spouts	10	0	2
	drprrd	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	drprrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	drprrd	303	TextConstEle	Text - Construction Element	0	0	1
	drprrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	drprrd	305	TextDetails	Text - Detail Notes	4	0	2
	drprrd	1146	TextElevLabel	Elevation Labels	4	0	0
	drprrd	307	TextLabel	Text - Label	0	0	2
	drprrd	319	TextLandscape	Text - Landscape Labels	0	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drprrd	308	TextMajor	Text - Major	0	0	5
	drprrd	309	TextMinor	Text - Minor	0	0	0
	drprrd	320	TextMisc	Text - Miscellaneous	0	0	1
	drprrd	310	TextNotes	Text - Notes	4	0	1
	drprrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	drprrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	drprrd	1147	TextPtLabel	Point Labels	4	0	0
	drprrd	313	TextShtNo	Text - Sheet Number	0	0	2
	drprrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	drprrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	drprrd	315	TextTitle	Text - Title	0	0	3
	drprrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	drprrd	6592	Trench	Storm Sewer Trench	10	0	2
X	drprrd	6593	TurbidityBarrier1	Turbidity Barrier 1 (floating)	10	barrier1	2
X	drprrd	6595	TurbidityBarrier2	Turbidity Barrier 2 (staked)	10	barrier2	2
	drprrd	6596	TurbidityBarrier2_ep	Turbidty Barrier (Staked) (Existing)	10	1	2
	drprrd	6594	TurbidtiyBarrier1_ep	Turbidty Barrier (Floating) (Existing)	10	1	2
X	drprrd	6597	UnderDrain	Underdrains (All Types)	10	0	2
X	drprrd	6598	UnderDrainOP	Underdrain Outlet Pipes	10	0	2
	drprrd	6599	Wetland	Wetland Boundary	2	wetland	1
	drprrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	drprrd	6600	YardDrain	Yard Drain	10	3	1

3.9.1.9 Drainage Cross Section - DRXSRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drxsrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	drxsrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	drxsrd	5002	AsphaltConc	Asphaltic Concrete Quantity Shapes	6	0	3
X	drxsrd	6000	AsphaltMilling_px	Asphalt Milling Lines on Cross Sections	7	0	2
X	drxsrd	6226	AsphaltMisc_px	Miscellaneous Pavement on Cross Sections	1	0	2
X	drxsrd	6001	BarrierWall_ex	Barrier Wall for Cross Section (Existing)	6	3	1
X	drxsrd	6002	BarrierWall_px	Barrier Wall for Cross Section	6	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drxsrd	6003	Base_ex	Base Material for Cross Sections (All Types) (Existing)	3	3	1
X	drxsrd	6004	Base_px	Base Material for Cross Sections (All Types)	3	0	2
	drxsrd	202	BaselineSurvey	Baseline Survey	0	0	2
X	drxsrd	6005	Berm_px	Berm (Top, Front, or Back) for Cross Sections	10	0	2
X	drxsrd	6006	CandG_ex	Curb and Gutter for Cross Sections (All Types) (Existing)	4	2	1
X	drxsrd	6007	CandG_px	Curb and Gutter for Cross Sections (All Types)	4	0	2
X	drxsrd	6008	CandGBase_px	Curb and Gutter Base on Cross Sections	3	0	1
X	drxsrd	6009	CATVBur_ex	Cable TV and Miscellaneous on Cross Sections (Existing)	6	2	1
X	drxsrd	6010	CATVBur_px	Cable TV and Miscellaneous on Cross Sections	6	0	1
	drxsrd	234	CLConst_dp	Center Line of Construction	0	0	2
	drxsrd	205	Cloud_dp	Construction Cloud	7	0	2
	drxsrd	206	COGO_dp	COGO Information	3	0	1
X	drxsrd	6011	Concrete_px	Concrete Boundary Lines on Cross Sections	0	0	2
X	drxsrd	6012	Conduit_ex	Conduit and Encasements on Cross Sections (Existing)	3	2	1
X	drxsrd	6013	Conduit_px	Conduit and Encasements on Cross Sections	3	0	1
	drxsrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	drxsrd	9508	ConstLimits	Construction Limits	3	LOC	2
	drxsrd	9509	ConstLines	Construction Lines and References	1	0	0
	drxsrd	207	CurveData_dp	Curve & Coordinate Data Elements incl. PC, PT, PI symbols	4	0	2
	drxsrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	drxsrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	drxsrd	6014	Ditch_px	Ditch Top for Cross Sections	7	0	2
X	drxsrd	6015	DitchBot_px	Ditch Bottom for Cross Sections	10	0	2
X	drxsrd	6016	DitchPavt_px	Ditch Pavement for Cross Sections	3	0	3
	drxsrd	6017	DrainAlert_px	Alert Symbology for Structural Elements	3	0	2
	drxsrd	6018	DrainMisc_ex	All types of miscellaneous drainage elements (Existing)	10	3	1
X	drxsrd	6019	DrainStruct_ex	All Drainage Structures for Cross Sections (Existing)	10	3	1
X	drxsrd	6020	DrainStruct_px	Misc Drainage Structures and Elements for XSections	10	0	2
X	drxsrd	6107	Driveway_ex	Driveway Lines on Cross Sections - Existing	7	1	2
X	drxsrd	6021	Driveway_px	Driveway Lines on Cross Sections	7	0	2
X	drxsrd	6092	DrivewayBase_px	Proposed Driveway Subgrade	3	0	2
	drxsrd	6022	Earthwork1_px	Earthwork (color 0)	0	0	1
	drxsrd	6023	Earthwork2_px	Earthwork (color 1)	1	0	1
	drxsrd	6024	Earthwork3_px	Earthwork (color 2)	2	0	1
	drxsrd	6025	Earthwork4_px	Earthwork (color 3)	3	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drxsrd	6026	Earthwork5_px	Earthwork (color 4)	4	0	1
X	drxsrd	5027	EaseLicLine	License Agreement Line	5	6	0
	drxsrd	6027	EasePerpLine_px	Perpetual Easement Lines on Cross Sections	4	PESMT	1
	drxsrd	6028	EaseTempLine_px	Temporary Easement Lines on Cross Sections	6	TEMPE	0
X	drxsrd	6029	Endwall_px	Endwall for Cross Sections	10	0	2
	drxsrd	9512	ExcavationLimits_dp	Excavation Limits on Cross Sections	0	0	1
X	drxsrd	6030	Fence_px	Fence Lines on Cross Sections	6	Fence1	2
	drxsrd	6099	Fence_ex	Fence Lines on Cross Sections (Existing)	6	3	1
X	drxsrd	6031	FES_px	Flared End Sections for Cross Sections	10	0	2
	drxsrd	6550	FlowArrow_dp	Flow Arrow	10	0	2
X	drxsrd	6032	FOCBur_ex	Fiber Optics Cable (Buried) for XSections (Existing)	6	2	1
X	drxsrd	6033	FOCBur_px	Fiber Optics Cable (Buried) for XSections	6	0	1
X	drxsrd	6034	Gas_ex	Gas Pipe and Fittings, Misc for Xsections (Existing)	4	2	1
X	drxsrd	6035	Gas_px	Gas Pipe and Fittings, Misc for Xsections	4	0	1
	drxsrd	5750	GeotechFillPatt1	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	drxsrd	5751	GeotechFillPatt1_px	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	drxsrd	5752	GeotechFillPatt2	Geotechnical Fill Pattern - clay, sand	0	1	0
	drxsrd	5753	GeotechFillPatt2_px	Geotechnical Fill Pattern - clay, sand	0	1	0
	drxsrd	5754	GeotechFillPatt3	Geotechnical Fill Pattern - shell	3	1	0
	drxsrd	5755	GeotechFillPatt3_px	Geotechnical Fill Pattern - shell	3	1	0
	drxsrd	5756	GeotechFillPatt4	Geotechnical Fill Pattern - sand	4	0	0
	drxsrd	5757	GeotechFillPatt4_px	Geotechnical Fill Pattern - sand	4	0	0
	drxsrd	5758	GeotechFillPatt5	Geotechnical Fill Pattern - coquina	1	0	1
	drxsrd	5759	GeotechFillPatt5_px	Geotechnical Fill Pattern - coquina	1	0	1
	drxsrd	5760	GeotechFillPatt6	Geotechnical Fill Pattern - limestone	2	0	0
	drxsrd	5761	GeotechFillPatt6_px	Geotechnical Fill Pattern - limestone	2	0	0
	drxsrd	5762	GeotechFillPatt7	Geotechnical Fill Pattern - gravel	6	0	0
	drxsrd	5763	GeotechFillPatt7_px	Geotechnical Fill Pattern - gravel	6	0	0
	drxsrd	5764	GeotechMisc	Miscellaneous Geotechnical Elements	0	0	1
	drxsrd	6554	GPKDrBack_dp	Back Point on Drainage Cells	2	2	2
	drxsrd	6555	GPKDrBottom_dp	Bottom Point on Drainage Cells	3	3	2
	drxsrd	6556	GPKDrCellIns_dp	Cell Insertion Point on Drainage Cells	4	4	2
	drxsrd	6557	GPKDrCentroid_dp	Point on Centroid for Drainage	7	7	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drxsrd	106	GPKDrElv	Location point for drainage cells	5	5	2
	drxsrd	6558	GPKDrFront_dp	Front Point on Drainage Cells	1	1	2
	drxsrd	6559	GPKDrPipe_dp	Point on Drainage Pipe	6	6	2
	drxsrd	6560	GPKDrPipeCir_dp	Point on Pipe Circular	6	6	0
X	drxsrd	6036	GravityWall_px	Gravity Wall for Cross Sections	11	0	2
X	drxsrd	6092	GravWallBase_px	Proposed Gravity Wall Subgrade	3	0	2
	drxsrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	drxsrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	drxsrd	9515	GridMinG_dp	Grid Lines Minor Sub 2 in Cross Section Sheets	20	0	0
	drxsrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
X	drxsrd	6108	Guardrail_ex	Guardrail Lines on Cross Sections - Existing	0	1	2
X	drxsrd	6037	Guardrail_px	Guardrail	0	0	1
X	drxsrd	6038	Handrail_px	Handrail Lines on Cross Sections	9	0	1
	drxsrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	drxsrd	6039	Inlet_px	Inlets on Cross Sections	10	0	2
X	drxsrd	6040	InletBottom_px	Inlet Bottom on Cross Sections (All Types)	10	0	1
	drxsrd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
X	drxsrd	6041	LARWLine_ex	Limited Access Right of Way on Cross Sections (Existing)	4	EXLA	1
X	drxsrd	6042	LARWLine_px	Limited Access ROW Lines on Cross Sections	4	LA	2
X	drxsrd	6043	LateralLimits_px	Lateral Limits for Cross Sections	6	0	2
	drxsrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	drxsrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	drxsrd	6044	Manhole_px	Manhole on Cross Sections	10	0	2
X	drxsrd	6093	MedianWallBase_px	Proposed Median Wall Subgrade	3	0	2
X	drxsrd	6045	MES_px	Mitered End Section on Cross Sections	10	0	2
	drxsrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	drxsrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	drxsrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	drxsrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	drxsrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	drxsrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	drxsrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	drxsrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	drxsrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	drxsrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drxsrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
X	drxsrd	6046	Overbuild_px	Overbuild Areas on Cross Sections	4	0	2
X	drxsrd	6094	Overbuild1_px	Proposed Overbuild Binder Symbology (No Longer Used)	7	0	2
X	drxsrd	6095	Overbuild2_px	Proposed Overbuild Base Symbology (No Longer Used)	7	0	2
X	drxsrd	6096	Overlay_px	Proposed Overlay Layer for Cross Sections	1	0	2
X	drxsrd	6097	Overlay1_px	Proposed Overlay Layer for Cross Sections	14	0	2
X	drxsrd	6098	Overlay2_px	Proposed Overlay Layer for Cross Sections	7	0	2
	drxsrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	drxsrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	drxsrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical Cross Sections or drainage structures	4	0	2
	drxsrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical Cross Sections or drainage structures	5	0	2
X	drxsrd	6100	PavedMedianBase_px	Proposed Paved Median Subgrade	3	0	2
	drxsrd	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1
	drxsrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	drxsrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	drxsrd	6573	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	drxsrd	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	drxsrd	216	PlotBorder_dp	Plot Border	3	0	0
	drxsrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	drxsrd	6109	Pond_px	Pond Lines on Cross Sections	2	0	2
X	drxsrd	6050	Power_ex	Power on Cross Sections (Existing)	3	2	1
X	drxsrd	6052	Power_px	Power on Cross Sections	3	0	1
X	drxsrd	5072	PropertyLine_ep	Property Lines	3	0	0
	drxsrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	drxsrd	236	RegionBdry_dp	Boundary Line for Regions in Corridor Design (Autodesk)	0	0	0
X	drxsrd	6053	RetainWall_px	Retaining Walls on Cross Sections	6	0	1
X	drxsrd	6054	RipRap_px	Rip Rap, Rubble on Cross Sections	4	1	2
X	drxsrd	5083	RumbleStrip1	Rumble Strips Continuous Array	0	rumble_cont	2
X	drxsrd	5084	RumbleStrip2	Rumble Strips Skip Array	0	rumble_skip	2
X	drxsrd	5085	RWLine	Right of Way Lines	4	RW	2
X	drxsrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
X	drxsrd	6055	RWLine_ex	ROW Lines on Cross Sections (Existing)	3	RW	1
X	drxsrd	6056	RWLine_px	ROW Lines on Cross Sections	4	RW	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drxsrd	6057	SanitaryFM_ex	Force Main Lines on Cross Sections (Existing)	2	2	1
X	drxsrd	6058	SanitaryFM_px	Force Main Lines on Cross Sections	2	0	1
X	drxsrd	6059	SanitarySewer_ex	Sanitary Sewer Lines on Cross Sections (Existing)	10	2	0
X	drxsrd	6060	SanitarySewer_px	Sanitary Sewer Lines on Cross Sections	2	0	1
X	drxsrd	6061	SanitarySewerEff_px	Sanitary Effluent for Cross Sections	9	0	0
	drxsrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	drxsrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	drxsrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	drxsrd	223	SheetBorder_dp	Sheet Border	1	0	4
	drxsrd	224	SheetLines_dp	Sheet Lines	1	0	2
	drxsrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	drxsrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	drxsrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	drxsrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	drxsrd	6101	ShldrBase_px	Bottom of Proposed Paved Shoulder Base	3	0	2
X	drxsrd	6102	ShldrBaseTop_px	Top of Proposed Paved Shoulder Base	3	0	2
X	drxsrd	6062	ShldrPaved_px	Paved Shoulder Lines on Cross Sections	1	0	2
X	drxsrd	6063	ShldrUnpaved_px	Grass Shoulder Lines on Cross Sections	2	0	2
X	drxsrd	6103	ShldrWallBase_px	Proposed Shoulder Wall Subgrade	3	0	2
X	drxsrd	6064	Sidewalk_ex	Sidewalk Elements in Cross Sections (Existing)	0	2	1
X	drxsrd	6065	Sidewalk_px	Sidewalk Elements in Cross Sections	0	0	2
	drxsrd	5093	SidewalkBack_er	Back of Sidewalk Line Profile (Existing)	2	2	1
	drxsrd	5094	SidewalkBack_pr	Back of Sidewalk Line Profile	5	0	2
X	drxsrd	6104	SidewalkBase_px	Proposed Sidewalk Subgrade	3	0	2
X	drxsrd	6067	Slopes_px	Slope Lines on Cross Sections	9	0	2
X	drxsrd	6068	SoilBoxes_px	Soil Boxes and Borings for Cross Sections	4	0	1
	drxsrd	6069	SpecialDetails_px	Special Details_XS	6	0	1
X	drxsrd	6070	Stabilization_px	Stabilization for Cross Sections	5	2	2
	drxsrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	drxsrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	drxsrd	6071	StreetLights_px	Street Lights for Cross Sections	3	0	1
	drxsrd	6072	Structure_px	Signal and Sign Structures on Cross Sections	0	0	2
X	drxsrd	6073	SubDsgn_px	Sub Design for Cross Sections including sub base	4	0	1
X	drxsrd	6074	Subsoil_px	Subsoil Or Undercut for Cross Sections	4	0	2
X	drxsrd	6075	SubsoilFinal_px	Subsoil Final for Multiline	18	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	drxsrd	6076	SubsoilProp_px	Subsoil Proposed for Multiline	8	0	1
	drxsrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	drxsrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	drxsrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
X	drxsrd	6077	TeleBur_ex	Telephone for Cross Sections (Buried - Miscellaneous - Existing)	6	2	1
X	drxsrd	6078	TeleBur_px	Telephone for Cross Sections (Buried) (Miscellaneous)	6	0	
X	drxsrd	6079	TemplateBottom_px	Bottom of Template for Multiline	6	0	1
X	drxsrd	6080	TemplateFinal_px	Final Template for Multiline	2	0	1
X	drxsrd	6081	TemplateTop_px	Top of Template for Multiline	7	0	1
X	drxsrd	6082	TerrainLine_ex	Existing Ground Line for Multiline	5	0	1
	drxsrd	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	drxsrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	drxsrd	303	TextConstEle	Text - Construction Element	0	0	1
	drxsrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	drxsrd	305	TextDetails	Text - Detail Notes	4	0	2
	drxsrd	1146	TextElevLabel	Elevation Labels	4	0	0
	drxsrd	306	TextGeotech	Text for soil borings and labels	0	0	2
	drxsrd	307	TextLabel	Text - Label	0	0	2
	drxsrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	drxsrd	308	TextMajor	Text - Major	0	0	5
	drxsrd	309	TextMinor	Text - Minor	0	0	0
	drxsrd	320	TextMisc	Text - Miscellaneous	0	0	1
	drxsrd	310	TextNotes	Text - Notes	4	0	1
	drxsrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	drxsrd	1147	TextPtLabel	Point Labels	4	0	0
	drxsrd	313	TextShtNo	Text - Sheet Number	0	0	2
	drxsrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	drxsrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	drxsrd	315	TextTitle	Text - Title	0	0	3
	drxsrd	321	TextXSBL_dp	Cross Section Baseline Labels	0	0	2
	drxsrd	322	TextXSDrain_ex	Existing Drainage Labels	10	0	2
	drxsrd	323	TextXSDrain_px	Proposed Drainage Labels	10	0	2
	drxsrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	drxsrd	317	TextXSElev_ex	Existing cross section elevations	2	0	1
	drxsrd	318	TextXSElev_px	Proposed cross section elevations	0	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drxsrd	324	TextXSGPKPts_dp	Used by criteria to label points	4	0	0
	drxsrd	325	TextXSNotes_dp	Cross Section Notes	0	0	2
	drxsrd	326	TextXSSlope_dp	Cross Section Slope Labels (rise:run format)	0	0	2
	drxsrd	327	TextXSSlopePvt_dp	Cross Section Pavement Slope Labels	0	0	2
X	drxsrd	6083	TrafSeparator_ex	Traffic Separator (All Types) on Cross Sections (Existing)	6	2	1
X	drxsrd	6084	TrafSeparator_px	Traffic Separator (All Types) on Cross Sections	6	0	2
X	drxsrd	6105	TrafSeparatorBase_px	Proposed Traffic Separator Subgrade	3	0	2
	drxsrd	9534	TypicalMisc	Typical Miscellaneous Items	0	0	2
	drxsrd	7056	Utility_er	Existing Utilities in Profile View	3	2	1
	drxsrd	7057	Utility_pr	Proposed Utilities in Profile View	3	0	2
	drxsrd	6085	UtilsMisc_ex	Miscellaneous Utility Items on Cross Sections (Existing)	8	2	1
	drxsrd	6086	UtilsMisc_px	Miscellaneous Utility Items on Cross Sections	8	0	1
	drxsrd	9535	Vehicle	Vehicle for Calculating Turning Radius	7	0	2
	drxsrd	6087	VoidArea_dx	Void Area_XS	1	0	0
X	drxsrd	6088	Water_ex	Water for Cross Sections (Existing)	1	2	1
X	drxsrd	6089	Water_px	Water for Cross Sections	1	0	1
	drxsrd	1182	WetlandEdge_ep	Edge of Mangrove, Wetlands (Marsh or Swamp)	2	wetland	0
X	drxsrd	6190	XSBaseTop_px	Top of Proposed Base	3	0	2
X	drxsrd	6090	WaterNP_px	Raw Water Pipes for Cross Sections	1	0	1
	drxsrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	drxsrd	6200	XSExtendGrdLine_ex	Extend Ground Lines for Cross Sections (Existing)	21	2	1
X	drxsrd	6201	XSGrdLine_ex	Ground Lines for Cross Sections (Existing)	2	2	1
X	drxsrd	6202	XSGrdLine_px	Roadway Ground Lines on Cross Sections	1	0	2
	drxsrd	6203	XSMisc_ex	Roadway Miscellaneous Items on Cross Sections (Existing)	4	3	1
	drxsrd	6204	XSMisc_px	Cross Section Miscellaneous Items	0	0	2
	drxsrd	1185	XSPt_ep	Cross Section Point, Station	2	1	0
	drxsrd	6205	XSShapeDep01_dp	Cross Section Shape Dependent	11	0	2
	drxsrd	6206	XSShapeDep02_dp	Cross Section Shape Dependent	12	0	2
	drxsrd	6207	XSShapeDep03_dp	Cross Section Shape Dependent	13	0	2
	drxsrd	6208	XSShapeDep04_dp	Cross Section Shape Dependent	14	0	2
	drxsrd	6209	XSShapeDep05_dp	Cross Section Shape Dependent	15	0	2
	drxsrd	6210	XSShapeDep06_dp	Cross Section Shape Dependent	16	0	2
	drxsrd	6211	XSShapeDep07_dp	Cross Section Shape Dependent	17	0	2
	drxsrd	6212	XSShapeDep08_dp	Cross Section Shape Dependent	18	0	2
	drxsrd	6213	XSShapeDep09_dp	Cross Section Shape Dependent	19	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	drxsrd	6214	XSShapeDep10_dp	Cross Section Shape Dependent	20	0	2
	drxsrd	6215	XSShapeIndep01_dp	Cross Section Shape Independent	1	0	2
	drxsrd	6216	XSShapeIndep02_dp	Cross Section Shape Independent	2	0	2
	drxsrd	6217	XSShapeIndep03_dp	Cross Section Shape Independent	3	0	2
	drxsrd	6218	XSShapeIndep04_dp	Cross Section Shape Independent	4	0	2
	drxsrd	6219	XSShapeIndep05_dp	Cross Section Shape Independent	5	0	2
	drxsrd	6220	XSShapeIndep06_dp	Cross Section Shape Independent	6	0	2
	drxsrd	6221	XSShapeIndep07_dp	Cross Section Shape Independent	7	0	2
	drxsrd	6222	XSShapeIndep08_dp	Cross Section Shape Independent	8	0	2
	drxsrd	6223	XSShapeIndep09_dp	Cross Section Shape Independent	9	0	2
	drxsrd	6224	XSShapeIndep10_dp	Cross Section Shape Independent	10	0	2
X	drxsrd	6225	XSTypical_px	Roadway Pavement Typical on Cross Sections	1	0	2

3.9.1.10 Landscaping Design - DSGNLD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnld	200	ActivePointCell_dp	Active Point Cell	4	0	10
	dsgnld	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	dsgnld	9000	BillboardDim	Billboard Dimension	0	0	2
	dsgnld	9001	BillboardHt	Billboard Height	0	0	2
	dsgnld	9002	BillboardLoc	Billboard Location	0	0	2
	dsgnld	9003	BillboardVeg	Billboard Vegetation Area	6	1	1
	dsgnld	9004	BillboardZone	Billboard View Zone	3	3	4
	dsgnld	9505	ClearSight_dp	Clear Sight Lines and Limits	3	4	2
	dsgnld	9506	ClearZone_dp	Clear Zone Elements	3	1	1
	dsgnld	206	COGO_dp	COGO Information	3	0	1
	dsgnld	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	dsgnld	9005	DitchBankArea	Ditch Bank Areas for Landscape	1	0	1
X	dsgnld	5027	EaseLicLine	License Agreement Line	5	6	0
X	dsgnld	5037	Fertilizer	Fertilizer	11	0	1
X	dsgnld	9007	Flower	Flower Edge / Flower Symbol	2	0	1
	dsgnld	9008	GroundCover	Groundcover Edge Symbol	2	0	1
	dsgnld	9009	GroundCoverHatch	Groundcover Hatch Pattern	2	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnld	9010	HandWaterArea	Hand Watering Area	1	0	0
X	dsgnld	9012	HerbicideArea	Area to Receive Herbicide	5	0	1
	dsgnld	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	dsgnld	9017	LandscapeAccs	Landscape Accessories (Barbeque Grill, Bike Rack etc.)	1	0	1
	dsgnld	9018	LandscapeBlder	Landscape Boulders and Cobble	4	0	2
	dsgnld	9019	LandscapeBlock	Landscape Concrete Blocks, Patterns and Walls	3	0	1
	dsgnld	9020	LandscapeFills	Fills and Rock Sections	4	0	1
	dsgnld	9021	LandscapeMisc	Landscaping Miscellaneous Items	3	0	2
	dsgnld	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
X	dsgnld	9022	Luminaire	Luminaires (Decorative - All Types)	2	0	1
X	dsgnld	9023	MaintArea	Maintenance Areas for Landscape	10	0	2
	dsgnld	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	dsgnld	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	dsgnld	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	dsgnld	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	dsgnld	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	dsgnld	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	dsgnld	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	dsgnld	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	dsgnld	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	dsgnld	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
X	dsgnld	9025	MowingAreaLarge	Mowing and Maintenance Areas for Large Machine	2	0	2
X	dsgnld	9026	MowingAreaSmall	Mowing and Maintenance Areas	68	0	1
X	dsgnld	9027	Mulch	Mulch Area	10	0	1
X	dsgnld	9028	NaturalArea	Natural Landscape Areas	30	0	1
X	dsgnld	9029	NoMaint	Maintained by Others	7	0	1
	dsgnld	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	dsgnld	9030	Pavers	Pavers - Brick and Block	5	0	1
	dsgnld	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	dsgnld	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	dsgnld	9031	PlantingArea	Plant Areas, Patterns and Boundary Elements	13	0	0
	dsgnld	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	dsgnld	5081	RockGravelStone	Rock, Gravel, Stone, Boulders, Etc.	1	0	2
	dsgnld	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnld	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	dsgnld	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. These Elements Do Not Plot	3	0	0
X	dsgnld	9032	Shrub	Shrubs	2	0	1
X	dsgnld	9033	SlopeArea	Slope Areas for Landscape	3	0	0
X	dsgnld	9034	StakingArea	Staking Area	14	0	0
	dsgnld	9035	StreetFurniture	Benches, Trash Receptacles, Bus Stop Covers, etc.	4	0	1
X	dsgnld	9036	StreetLights	Street Lights	2	0	1
	dsgnld	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	dsgnld	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	dsgnld	303	TextConstEle	Text - Construction Element	0	0	1
	dsgnld	304	TextCurveData	Text - Curve Data Note	0	0	2
	dsgnld	305	TextDetails	Text - Detail Notes	4	0	2
	dsgnld	1146	TextElevLabel	Elevation Labels	4	0	0
	dsgnld	307	TextLabel	Text - Label	0	0	2
	dsgnld	319	TextLandscape	Text - Landscape Labels	0	0	1
	dsgnld	308	TextMajor	Text - Major	0	0	5
	dsgnld	309	TextMinor	Text - Minor	0	0	0
	dsgnld	320	TextMisc	Text - Miscellaneous	0	0	1
	dsgnld	310	TextNotes	Text - Notes	4	0	1
	dsgnld	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	dsgnld	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	dsgnld	1147	TextPtLabel	Point Labels	4	0	0
	dsgnld	313	TextShtNo	Text - Sheet Number	0	0	2
	dsgnld	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	dsgnld	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	dsgnld	315	TextTitle	Text - Title	0	0	3
	dsgnld	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	dsgnld	9038	Tree	Trees, Tree Line Pattern	2	0	1
X	dsgnld	9040	TreeGrate	Tree Grate	5	0	1
X	dsgnld	9041	TreeMaintArea	Area Designation for Tree Sheering and Pruning	6	0	0
X	dsgnld	9042	TreeProtection	Tree Protection Symbol	5	0	2
X	dsgnld	9044	WeedArea	Weeding Area	11	0	0
	dsgnld	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.11 *Lighting Design - DSGNLT.rul*

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnlt	200	ActivePointCell_dp	Active Point Cell	4	0	10
	dsgnlt	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	dsgnlt	205	Cloud_dp	Construction Cloud	7	0	2
	dsgnlt	206	COGO_dp	COGO Information	3	0	1
X	dsgnlt	8500	ConduitBG	Conduit In Box Girder	5	lite_cond5	1
X	dsgnlt	8501	ConduitBG_ep	Conduit In Box Girder (Existing)	5	exlite_cond5	0
X	dsgnlt	8502	ConduitC	Conduit Lead-in Cable	3	0	0
X	dsgnlt	8503	ConduitJ	Conduit Jacked Underpavement	1	lite_cond3	1
X	dsgnlt	8504	ConduitJ_ep	Conduit Jacked (Existing)	1	exlite_cond3	0
X	dsgnlt	8505	ConduitSM	Conduit Surface Mounted	4	lite_cond4	1
X	dsgnlt	8506	ConduitSM_ep	Conduit Surface Mounted (Existing)	4	exlite_cond4	0
X	dsgnlt	8507	ConduitUG	Conduit Underground	3	lite_cond1	1
X	dsgnlt	8508	ConduitUG_ep	Conduit Underground (Existing)	3	exlite_cond1	0
X	dsgnlt	8509	ConduitUP	Conduit Underpavement	2	lite_cond2	1
X	dsgnlt	8510	ConduitUP_ep	Conduit Underpavement (Existing)	2	exlite_cond2	0
	dsgnlt	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	dsgnlt	9508	ConstLimits	Construction Limits	3	LOC	2
	dsgnlt	9509	ConstLines	Construction Lines and References	1	0	0
	dsgnlt	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	dsgnlt	5027	EaseLicLine	License Agreement Line	5	6	0
	dsgnlt	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	dsgnlt	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	dsgnlt	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	dsgnlt	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	dsgnlt	8032	InterconCable	Cable Interconnect	1	intcon1	1
X	dsgnlt	8033	InterconCable_ep	Interconnect Cable (Existing)	1	intcon2	0
X	dsgnlt	8049	JunctBoxA	Junction Boxes (Aerial)	3	0	1
X	dsgnlt	8050	JunctBoxA_ep	Junction Boxes (Aerial) (Existing)	3	1	0
	dsgnlt	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	dsgnlt	8511	LightingMisc	Lighting Miscellaneous Items	4	0	2
X	dsgnlt	8512	LightingSP	Lighting Service Points	0	0	1
X	dsgnlt	8513	LoadCenter	Load Center	2	0	1
X	dsgnlt	8514	LoadCenter_ep	Load Center (Existing)	2	5	0
	dsgnlt	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnlt	9022	Luminaire	Luminaires (Decorative - All Types)	2	0	1
	dsgnlt	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	dsgnlt	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	dsgnlt	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	dsgnlt	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	dsgnlt	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	dsgnlt	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	dsgnlt	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	dsgnlt	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	dsgnlt	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	dsgnlt	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	dsgnlt	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	dsgnlt	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	dsgnlt	216	PlotBorder_dp	Plot Border	3	0	0
	dsgnlt	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	dsgnlt	8062	PoleConc	Concrete Strain Pole	0	0	2
X	dsgnlt	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	dsgnlt	8515	PoleFound	Pole Foundation	0	0	2
X	dsgnlt	8516	PoleLight	Light Pole	2	0	1
X	dsgnlt	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	dsgnlt	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	dsgnlt	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	dsgnlt	8520	PoleLightID	Light Pole Location / ID	4	0	1
X	dsgnlt	7029	PolePower	Power Pole w/ Transformer	3	0	2
X	dsgnlt	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	dsgnlt	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	dsgnlt	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	dsgnlt	7033	PoleTel	Telephone Pole	6	0	2
X	dsgnlt	7034	PoleUtil	Utility Pole	0	0	2
X	dsgnlt	7035	PoleWoodStrain	Wood Strain Pole	0	0	2
X	dsgnlt	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
X	dsgnlt	8521	PullBox	Pull Boxes (All Types)	3	0	1
	dsgnlt	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	dsgnlt	8064	SawCuts	Saw Cuts	3	conduit1	0
	dsgnlt	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnlt	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	dsgnlt	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	dsgnlt	223	SheetBorder_dp	Sheet Border	1	0	4
	dsgnlt	224	SheetLines_dp	Sheet Lines	1	0	2
	dsgnlt	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	dsgnlt	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	dsgnlt	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	dsgnlt	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
	dsgnlt	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	dsgnlt	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	dsgnlt	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	dsgnlt	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	dsgnlt	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	dsgnlt	303	TextConstEle	Text - Construction Element	0	0	1
	dsgnlt	304	TextCurveData	Text - Curve Data Note	0	0	2
	dsgnlt	305	TextDetails	Text - Detail Notes	4	0	2
	dsgnlt	1146	TextElevLabel	Elevation Labels	4	0	0
	dsgnlt	307	TextLabel	Text - Label	0	0	2
	dsgnlt	319	TextLandscape	Text - Landscape Labels	0	0	1
	dsgnlt	308	TextMajor	Text - Major	0	0	5
	dsgnlt	309	TextMinor	Text - Minor	0	0	0
	dsgnlt	320	TextMisc	Text - Miscellaneous	0	0	1
	dsgnlt	310	TextNotes	Text - Notes	4	0	1
	dsgnlt	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	dsgnlt	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	dsgnlt	1147	TextPtLabel	Point Labels	4	0	0
	dsgnlt	313	TextShtNo	Text - Sheet Number	0	0	2
	dsgnlt	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	dsgnlt	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	dsgnlt	315	TextTitle	Text - Title	0	0	3
	dsgnlt	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	dsgnlt	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.12 RoadwayDesign - DSGNRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	dsgnrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	dsgnrd	100	ArchSite_ep	Archeological Site	2	0	1
X	dsgnrd	5001	ArtificialCovering	Artificial Coverings	10	0	2
X	dsgnrd	5002	AsphaltConc	Asphaltic Concrete Quantity Shapes	6	0	3
X	dsgnrd	5003	AsphaltMilling	Asphalt Milling Quantity Shapes	7	0	2
	dsgnrd	5004	AsphaltMisc	Asphalt Miscellaneous Material	1	0	1
	dsgnrd	9500	ATDims	AutoTurn Profile Dimensions, Tire Envelope	1	0	1
X	dsgnrd	5501	Attenuator	Attenuation Systems	6	attenuator	1
X	dsgnrd	5502	AttenuatorTM	Attenuator Truck Mount	6	0	2
	dsgnrd	9501	ATText	AutoTurn Profile and TT Dimensions, Annotation, TT Overhang	0	0	1
	dsgnrd	9502	ATVHP	AutoTurn Temporary Profile for Building Custom Type	1	0	1
X	dsgnrd	5005	BarrierWall	Barrier Wall All Types	6	0	2
X	dsgnrd	5006	Base	Base Material (All Types)	3	0	2
	dsgnrd	202	BaselineSurvey	Baseline Survey	0	0	2
X	dsgnrd	6500	Berm	Berm (Top, Front, or Back)	10	0	2
X	dsgnrd	5007	Bollard	Concrete filled pipe bollards	11	0	2
X	dsgnrd	5008	Bridge	Bridge	0	0	2
X	dsgnrd	5009	BridgeAppSlab	Bridge Approaches and Slabs	0	0	2
X	dsgnrd	5010	BridgePiers	Bridge Piers	0	0	2
X	dsgnrd	5011	Building	Buildings	1	0	2
X	dsgnrd	5111	CableBarrier	Cable Barrier	0	cable_barrier	2
X	dsgnrd	6506	Canal	Canal	7	0	1
	dsgnrd	234	CLConst_dp	Center Line of Construction	0	0	2
X	dsgnrd	5012	ClearingGrubbing	Clearing and Grubbing Limits and Quantity Items	4	0	1
	dsgnrd	9506	ClearZone_dp	Clear Zone Elements	3	1	1
	dsgnrd	203	ClipBorder_dp	CLIP Border	3	0	0
	dsgnrd	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	dsgnrd	205	Cloud_dp	Construction Cloud	7	0	2
	dsgnrd	206	COGO_dp	COGO Information	3	0	1
X	dsgnrd	5013	ConcPavt	Concrete Pavement Edges	10	0	2
X	dsgnrd	5014	ConcPvtSC	Concrete Surface Coloring	9	0	1
X	dsgnrd	5015	Concrete	Concrete Areas (All Types plus miscellaneous)	0	0	2
X	dsgnrd	5016	ConcSlabs	Concrete Slabs	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	dsgnrd	9508	ConstLimits	Construction Limits	3	LOC	2
	dsgnrd	9509	ConstLines	Construction Lines and References	1	0	0
	dsgnrd	9510	ControlZone_dp	Control Zone	3	1	2
	dsgnrd	5017	Core	Core test hole	9	1	1
X	dsgnrd	5018	CurbBack	Back of Curb	4	0	1
X	dsgnrd	5019	CurbFace	Curb and Gutter (Face)	4	0	1
X	dsgnrd	5020	CurbRamp	Curb Cut Ramp	8	0	1
	dsgnrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	dsgnrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	dsgnrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	dsgnrd	6515	Ditch	Ditch Top	7	6	1
X	dsgnrd	6516	DitchBot	Ditch Bottom	10	0	2
X	dsgnrd	5021	DitchPavt	Ditch Pavement Including Quantity Shapes	3	0	1
X	dsgnrd	5022	Driveway	Driveway (Drive, Lane, Turnouts)	7	0	2
X	dsgnrd	5027	EaseLicLine	License Agreement Line	5	6	0
	dsgnrd	5029	EasePerpLine	Easement Lines Perpetual	4	PESMT	1
	dsgnrd	5030	EaseTempLine	Easement Lines Temporary	6	TEMPE	0
	dsgnrd	5031	EaseTempLine_ep	Easement:Temporary Easement Line (Existing)	6	TEMPE	1
	dsgnrd	5200	EnvImpact_ep	Locations for Portential Environmental Concerns	3	0	1
X	dsgnrd	5032	EOP	Edge of Pavement	0	0	2
X	dsgnrd	5033	Fence	Fence, Sand Fence	6	Fence1	1
X	dsgnrd	5035	FenceLt	Fence Limited Access Left	6	laflt	1
X	dsgnrd	5036	FenceRt	Fence Limited Access Right	6	lafrt	1
	dsgnrd	6550	FlowArrow_dp	Flow Arrow	10	0	2
X	dsgnrd	5038	FlowPaths	Time of Concentration Flow Paths	10	1	1
X	dsgnrd	5040	Gabions	Gabion Baskets or Mats	10	0	2
X	dsgnrd	5041	Gabions_ep	Gabion Baskets or Mats (Existing)	10	1	2
X	dsgnrd	5046	GovTwpRgeLine_ep	Township / Range Lines	10	TWPRGE	2
	dsgnrd	5049	GradeLineCtr_dp	Grade Line Profile Center (shown in plan view)	5	0	0
	dsgnrd	5051	GradeLineLt_dp	Grade Line Profile Left (shown in plan view)	1	0	0
	dsgnrd	5054	GradeLineRt_dp	Grade Line Profile Right (shown in plan view)	4	0	0
	dsgnrd	5057	GradeSecPat	Grade Section Patterns	0	0	0
X	dsgnrd	5058	Grass	Grass, Seeding and Mulching Areas	2	1	2
X	dsgnrd	5059	GravityWall	Gravity Wall	11	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnrd	5060	Guardrail	Guardrail	0	0	2
X	dsgnrd	5061	GuardrailDbl	Guardrail Double Face	0	grdbl	1
X	dsgnrd	5062	GuardrailEndAch	Guardrail End Anchorage	0	0	1
X	dsgnrd	5063	GuardrailLt	Guardrail Left	0	grail1	1
X	dsgnrd	5064	GuardrailRt	Guardrail Right	0	grail2	1
X	dsgnrd	5065	Handrail	Handrails	9	0	1
	dsgnrd	9011	HardscapeDetails	Paving Details, Fence Railing, Stamped Asphalt	4	0	2
	dsgnrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	Dsgnrd	5110	InletProt	Rock Bags and Sand Bagging	10	0	2
	dsgnrd	9518	LaneLine	Lane Lines (Defines Changes in Pavement Cross Slope – Non-Plotting)	4	3	2
X	dsgnrd	5066	LARWLine	Limited Access Right of Way	4	LA	2
X	dsgnrd	5067	LARWLine_ep	Limited Access Right of Way (Existing)	4	EXLA	1
	dsgnrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
X	dsgnrd	5068	Mailbox	Mailboxes	8	0	1
	dsgnrd	235	MatchLineMask_dp	Mask Area for Match Line Overlap Areas (Autodesk)	0	0	0
	dsgnrd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
	dsgnrd	5069	MillingLimits	Milling and Resurfacing Limits	1	0	2
	dsgnrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	dsgnrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	dsgnrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	dsgnrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	dsgnrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	dsgnrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	dsgnrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	dsgnrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	dsgnrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	dsgnrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	dsgnrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	dsgnrd	215	NorthArw_dp	North Arrows	0	0	2
	dsgnrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	dsgnrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	dsgnrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
	dsgnrd	9030	Pavers	Pavers - Brick and Block	5	0	1
	dsgnrd	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1
	dsgnrd	9529	PavtCrown	Pavement Crown	16	0	2
	dsgnrd	1088	PavtXover_ep	Crossovers and Detours (Temporary)	0	3	0
	dsgnrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	dsgnrd	6570	Permit1	Permit 1 Wetlands, Mitigation Sites, Planting Areas	1	0	1
	dsgnrd	6571	Permit2	Permit 2 Wetlands, Mitigation Sites, Planting Areas	2	0	1
	dsgnrd	6572	Permit3	Permit 3 Wetlands, Mitigation Sites, Planting Areas	4	0	1
X	dsgnrd	5071	Piling	Piling Piers or Column	8	0	2
	dsgnrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	dsgnrd	6578	PondSideSlope	Pond Side Slope	0	0	2
X	dsgnrd	5072	PropertyLine_ep	Property Lines	3	0	0
	dsgnrd	5073	RailroadDetails	Railroad Crossing Details	3	0	2
	dsgnrd	5074	RailroadXing	Railroad Crossing Elements	11	0	0
	dsgnrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	dsgnrd	236	RegionBdry_dp	Boundary Line for Regions in Corridor Design (Autodesk)	0	0	0
X	dsgnrd	5075	RetainWall	Retaining Wall System	6	0	1
X	dsgnrd	5076	RetainWall_pr	Retaining Wall Profile	9	0	2
X	dsgnrd	6579	RetentionArea	Retention Area	2	0	2
X	dsgnrd	5077	RipRap	Rip Rap, Rubble	4	0	2
	dsgnrd	5078	RoadwayMisc	Roadway Miscellaneous Items	4	0	2
X	dsgnrd	5083	RumbleStrip1	Rumble Strips Continuous Array	0	rumble_cont	2
X	dsgnrd	5084	RumbleStrip2	Rumble Strips Skip Array	0	rumble_skip	2
X	dsgnrd	5085	RWLine	Right of Way Lines	4	RW	2
X	dsgnrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
X	dsgnrd	8064	SawCuts	Saw Cuts	3	conduit1	0
	dsgnrd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	dsgnrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	dsgnrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	dsgnrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
X	dsgnrd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	hay_bales	2
X	dsgnrd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	silt_fence	2
X	dsgnrd	6580	SedimentBasin	Sediment Basin Index 101	10	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnrd	6581	SedimentBasin_ep	Sediment Basin Index 101 (Existing)	10	3	1
	dsgnrd	5089	ShldrHatch	Paved Shoulder Hatch Pattern	1	0	1
X	dsgnrd	5090	ShldrPaved	Paved Shoulder Line	1	0	1
X	dsgnrd	5091	ShldrUnpaved	Unpaved Shoulder Line	0	0	0
X	dsgnrd	5092	SidewalkBack	Sidewalk Back	2	0	1
X	dsgnrd	5095	SidewalkConc	Sidewalk Concrete Shape	0	0	2
X	dsgnrd	5096	SidewalkFront	Sidewalk Front	1	0	1
X	dsgnrd	6585	Slopes	Slopes (Top, Bottom)	9	3	0
X	dsgnrd	6586	SlopeStakes1	Slope Stakes 1	4	1	3
X	dsgnrd	6587	SlopeStakes2	Slope Stakes 2	1	1	3
X	dsgnrd	5097	Sod	Performance Sod	2	0	2
X	dsgnrd	5098	SoilBoring	Soil Boring Elements	5	0	1
	dsgnrd	5099	SoilBoringLoc_dp	Soil Boring Location Symbol	4	0	2
	dsgnrd	5100	SoilBoxes_dp	Soil Boxes	4	0	1
	dsgnrd	5101	SpecialDetails	Special Details	6	0	1
X	dsgnrd	5102	Stabilization	Stabilization Material Lines and Shapes	9	0	2
	dsgnrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	dsgnrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	dsgnrd	5103	StructuralCourse	Asphaltic Concrete Structural Course	6	0	2
	dsgnrd	5104	Structure	Structures	0	0	2
	dsgnrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	dsgnrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	dsgnrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	dsgnrd	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	dsgnrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	dsgnrd	303	TextConstEle	Text - Construction Element	0	0	1
	dsgnrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	dsgnrd	305	TextDetails	Text - Detail Notes	4	0	2
	dsgnrd	1146	TextElevLabel	Elevation Labels	4	0	0
	dsgnrd	307	TextLabel	Text - Label	0	0	2
	dsgnrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	dsgnrd	308	TextMajor	Text - Major	0	0	5
	dsgnrd	309	TextMinor	Text - Minor	0	0	0
	dsgnrd	320	TextMisc	Text - Miscellaneous	0	0	1
	dsgnrd	310	TextNotes	Text - Notes	4	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	dsgnrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	dsgnrd	1147	TextPtLabel	Point Labels	4	0	0
	dsgnrd	313	TextShtNo	Text - Sheet Number	0	0	2
	dsgnrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	dsgnrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	dsgnrd	315	TextTitle	Text - Title	0	0	3
	dsgnrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	dsgnrd	5107	TrafSeparator	Traffic Separator (All Types)	6	0	1
X	dsgnrd	6593	TurbidityBarrier1	Turbidity Barrier 1 (floating)	10	barrier1	2
X	dsgnrd	6595	TurbidityBarrier2	Turbidity Barrier 2 (staked)	10	barrier2	2
	dsgnrd	6596	TurbidityBarrier2_ep	Turbidty Barrier (Staked) (Existing)	10	1	2
	dsgnrd	6594	TurbidtiyBarrier1_ep	Turbidty Barrier (Floating) (Existing)	10	1	2
X	dsgnrd	5112	Turf	Performance Truf	100	0	2
	dsgnrd	9532	TurningEle_dp	Miscellaneous Turning Radius Elements	4	0	1
	dsgnrd	9533	TurningRadius_dp	Turning Radius Line	3	3	1
	dsgnrd	6599	Wetland	Wetland Boundary	2	wetland	1
	dsgnrd	5109	Widening	Widening Patterns and Miscellaneous Elements	1	0	1
	dsgnrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
	dsgnrd	1185	XSPt_ep	Cross Section Point, Station	2	1	0

3.9.1.13 Signalization Design - DSGNSG.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnsg	200	ActivePointCell_dp	Active Point Cell	4	0	10
	dsgnsg	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	dsgnsg	202	BaselineSurvey	Baseline Survey	0	0	2
	dsgnsg	234	CLConst_dp	Center Line of Construction	0	0	2
	dsgnsg	205	Cloud_dp	Construction Cloud	7	0	2
	dsgnsg	206	COGO_dp	COGO Information	3	0	1
X	dsgnsg	7005	Conduit	Conduit for Utilities and Encasements	3	conduit1	1
X	dsgnsg	8500	ConduitBG	Conduit In Box Girder	5	lite_cond5	1
X	dsgnsg	8501	ConduitBG_ep	Conduit In Box Girder (Existing)	5	exlite_cond5	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnsg	8502	ConduitC	Conduit Lead-in Cable	3	0	0
X	dsgnsg	8503	ConduitJ	Conduit Jacked Underpavement	1	lite_cond3	1
X	dsgnsg	8504	ConduitJ_ep	Conduit Jacked (Existing)	1	exlite_cond3	0
X	dsgnsg	8505	ConduitSM	Conduit Surface Mounted	4	lite_cond4	1
X	dsgnsg	8506	ConduitSM_ep	Conduit Surface Mounted (Existing)	4	exlite_cond4	0
X	dsgnsg	8507	ConduitUG	Conduit Underground	3	lite_cond1	1
X	dsgnsg	8508	ConduitUG_ep	Conduit Underground (Existing)	3	exlite_cond1	0
X	dsgnsg	8509	ConduitUP	Conduit Underpavement	2	lite_cond2	1
X	dsgnsg	8510	ConduitUP_ep	Conduit Underpavement (Existing)	2	exlite_cond2	0
	dsgnsg	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	dsgnsg	9508	ConstLimits	Construction Limits	3	LOC	2
	dsgnsg	9509	ConstLines	Construction Lines and References	1	0	0
X	dsgnsg	8004	Controller	Controller and Accessories	0	0	2
X	dsgnsg	8005	Controller_ep	Controller and Accessories (Existing)	0	2	1
X	dsgnsg	8006	ControllerAcess	Controller Accessories	0	0	1
X	dsgnsg	8007	ControllerB	Controller - Base Mounted	0	0	2
X	dsgnsg	8008	ControllerB_ep	Controller - Base Mounted (Existing)	0	2	1
X	dsgnsg	8009	ControllerP	Controller Pole Mount	0	0	2
X	dsgnsg	8010	ControllerP_ep	Controller Pole Mount (Existing)	0	2	1
	dsgnsg	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	dsgnsg	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
X	dsgnsg	5510	Delineator	Delineators (All Types)	4	0	1
X	dsgnsg	8011	Detector	Detector Cabinet, Button and Misc Assemblies	3	0	2
X	dsgnsg	8012	DetectorVeh	Detector Vehicle Assemblies (All Types)	3	0	1
	dsgnsg	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	dsgnsg	5027	EaseLicLine	License Agreement Line	5	6	0
X	dsgnsg	7007	ElectPS	Electrical Power Service Miscellaneous	3	0	1
X	dsgnsg	7008	ElectPSB	Electrical (Buried)	3	be	2
X	dsgnsg	7009	ElectPSO	Electrical Outlet	3	0	1
X	dsgnsg	7010	ElectServWire	Electrical Service Wire	3	0	2
X	dsgnsg	7013	FOCBur	Fiber Optics Cable (Buried)	6	bfo	1
X	dsgnsg	7018	Generator	Emergency Generator	0	0	2
	dsgnsg	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	dsgnsg	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	dsgnsg	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnsg	7503	GSBWFill	GuidSign Black and White Fill Level for GuidSign Cells	0	0	1
	dsgnsg	7504	GSColorFill	GuidSign Color Fill Level for GuidSign Cells	2	0	1
	dsgnsg	7505	GSDims	GuidSign Dimensions	0	0	1
	dsgnsg	7506	GSOutline	GuidSign Outline Level for GuidSign Cells	0	0	2
	dsgnsg	7507	GSSign	GuidSign Panel and Tag	7	0	0
X	dsgnsg	7019	GuyWire	Guy Wire	3	0	0
	dsgnsg	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	dsgnsg	8031	Insulator	Insulator, Fiberglass	3	0	4
X	dsgnsg	8032	InterconCable	Cable Interconnect	1	intcon1	1
X	dsgnsg	8033	InterconCable_ep	Interconnect Cable (Existing)	1	intcon2	0
X	dsgnsg	7020	JunctBox	Junction Boxes, Service Cabinet (Elec/Tel)	3	0	1
	dsgnsg	1058	JunctBox_ep	Junct. Box / Service Cabinet (Elec/Tel)	3	1	0
X	dsgnsg	8049	JunctBoxA	Junction Boxes (Aerial)	3	0	1
X	dsgnsg	8050	JunctBoxA_ep	Junction Boxes (Aerial) (Existing)	3	1	0
	dsgnsg	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
X	dsgnsg	8513	LoadCenter	Load Center	2	0	1
X	dsgnsg	8514	LoadCenter_ep	Load Center (Existing)	2	5	0
	dsgnsg	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	dsgnsg	8052	LoopLI	Loop Lead-In	3	0	1
X	dsgnsg	8053	LoopLI_ep	Loop Lead-In (Existing)	3	2	0
X	dsgnsg	8054	Loops	Loop Assembly (All Types)	2	0	2
X	dsgnsg	8055	Loops_ep	Loop Assembly (All Types) (Existing)	2	2	2
	dsgnsg	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
X	dsgnsg	8056	MessengerWire	Messenger Wire	3	0	1
	dsgnsg	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	dsgnsg	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	dsgnsg	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	dsgnsg	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	dsgnsg	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	dsgnsg	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	dsgnsg	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	dsgnsg	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	dsgnsg	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	dsgnsg	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	dsgnsg	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnsg	215	NorthArw_dp	North Arrows	0	0	2
X	dsgnsg	7509	ObjectMarker	Object and Reflective Markers	3	0	1
X	dsgnsg	7510	OverheadSign	Overhead Sign Panels	0	0	2
X	dsgnsg	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	dsgnsg	7512	OverheadStr	Mast Arm, Truss Assemblies, Signal Arms and Supports	0	0	2
X	dsgnsg	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
X	dsgnsg	7514	PavtMessage	Pavement Message (All types)	0	0	1
X	dsgnsg	7515	PavtMessage_ep	Pavement Message (Existing - All types)	0	2	0
	dsgnsg	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	dsgnsg	8057	PedDetector	Pedestrian Detector	0	0	2
X	dsgnsg	8058	Pedestal	Pedestal	1	0	1
X	dsgnsg	8059	Pedestal_ep	Pedestal (Existing)	1	2	1
X	dsgnsg	8060	PedHead	Pedestrian Head (All Types)	1	0	1
X	dsgnsg	8061	PedHead_ep	Pedestrian Head (All Types) (Existing)	0	2	1
X	dsgnsg	216	PlotBorder_dp	Plot Border	3	0	0
X	dsgnsg	7516	PMCeramic	Pavement Markers Ceramic	0	0	1
	dsgnsg	7517	PMMisc	Pavement Marking Miscellaneous Items	0	0	2
X	dsgnsg	7519	PMStripe12B	Pavement Marking Traffic Stripe 12in Black	3	stripe12	4
X	dsgnsg	7520	PMStripe12W	Pavement Marking Traffic Stripe 12in White	0	stripe12	4
X	dsgnsg	7521	PMStripe12Y	Pavement Marking Traffic Stripe 12in Yellow	4	stripe12	4
X	dsgnsg	7522	PMStripe16B	Pavement Marking Traffic Stripe 16in Black	3	stripe16	5
X	dsgnsg	7523	PMStripe16W	Pavement Marking Traffic Stripe 16in White	0	stripe16	5
X	dsgnsg	7524	PMStripe16Y	Pavement Marking Traffic Stripe 16in Yellow	4	stripe16	5
X	dsgnsg	7525	PMStripe18B	Pavement Marking Traffic Stripe 18in Black	3	stripe18	6
X	dsgnsg	7526	PMStripe18W	Pavement Marking Traffic Stripe 18in White	0	stripe18	6
X	dsgnsg	7527	PMStripe18Y	Pavement Marking Traffic Stripe 18in Yellow	4	stripe18	6
X	dsgnsg	7528	PMStripe24W	Pavement Marking Traffic Stripe 24in White	0	stripe24	7
X	dsgnsg	7529	PMStripe24Y	Pavement Marking Traffic Stripe 24in Yellow	4	stripe24	7
X	dsgnsg	7530	PMStripe6B	Pavement Marking Traffic Stripe 6in Black	3	stripe06	2
X	dsgnsg	7531	PMStripe6B(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Black	3	stripe06	2
X	dsgnsg	7532	PMStripe6Bl	Pavement Marking Traffic Stripe 6in Blue	1	stripe06	2
X	dsgnsg	7533	PMStripe6DY	Pavement Marking Traffic Stripe 6in Double Yellow	4	dbl_line	2
X	dsgnsg	7534	PMStripe6W	Pavement Marking Traffic Stripe 6in White	0	stripe06	2
X	dsgnsg	7535	PMStripe6W(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in White	0	stripe06	2
X	dsgnsg	7536	PMStripe6W(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in White	0	stripe06	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnsg	7537	PMStripe6W(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in White	0	stripe06	2
X	dsgnsg	7538	PMStripe6Y	Pavement Marking Traffic Stripe 6in Yellow	4	stripe06	2
X	dsgnsg	7539	PMStripe6Y(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	dsgnsg	7540	PMStripe6Y(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	dsgnsg	7541	PMStripe6Y(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	dsgnsg	7542	PMStripe8B	Pavement Marking Traffic Stripe 8in Black	3	stripe06	3
X	dsgnsg	7543	PMStripe8W	Pavement Marking Traffic Stripe 8in White	0	stripe08	3
X	dsgnsg	7544	PMStripe8W(3-9)	Pavement Marking 3/9 Skip Traffic Stripe 8in White	0	stripe08	2
X	dsgnsg	7545	PMStripe8Y	Pavement Marking Traffic Stripe 8in Yellow	4	stripe08	3
X	dsgnsg	7577	PMStripeVibeW	Pavement Marking Auditory and Vibratory 6in White	0	Vibratory	2
X	dsgnsg	7578	PMStripeVibeY	Pavement Marking Auditory and Vibratory 6in Yellow	4	Vibratory	2
	dsgnsg	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	dsgnsg	8062	PoleConc	Concrete Strain Pole	0	0	2
X	dsgnsg	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	dsgnsg	8515	PoleFound	Pole Foundation	0	0	2
X	dsgnsg	8516	PoleLight	Light Pole	2	0	1
X	dsgnsg	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	dsgnsg	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	dsgnsg	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	dsgnsg	8520	PoleLightID	Light Pole Location / ID	4	0	1
X	dsgnsg	7029	PolePower	Power Pole w/ Transformer	3	0	2
X	dsgnsg	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	dsgnsg	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	dsgnsg	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	dsgnsg	7033	PoleTel	Telephone Pole	6	0	2
X	dsgnsg	7034	PoleUtil	Utility Pole	0	0	2
X	dsgnsg	7035	PoleWoodStrain	Wood Strain Pole	0	0	2
X	dsgnsg	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
X	dsgnsg	8521	PullBox	Pull Boxes (All Types)	3	0	1
	dsgnsg	1104	PullBox_ep	Wiring Pull Box	3	1	1
	dsgnsg	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	dsgnsg	8064	SawCuts	Saw Cuts	3	conduit1	0
	dsgnsg	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	dsgnsg	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	dsgnsg	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnsg	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	dsgnsg	223	SheetBorder_dp	Sheet Border	1	0	4
	dsgnsg	224	SheetLines_dp	Sheet Lines	1	0	2
	dsgnsg	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	dsgnsg	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	dsgnsg	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	dsgnsg	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	dsgnsg	8065	SignalCable	Signal Cable	3	signal_cable	1
X	dsgnsg	8066	SignalCableAccs	Signal Cable Accessories	0	0	2
X	dsgnsg	8067	SignalDetail	Signal Details	0	0	1
	dsgnsg	8068	SignalHead	Signal Head Section Details	2	0	1
X	dsgnsg	8069	SignalHead_ep	Signal Head Section Details (Existing)	2	2	0
	dsgnsg	8070	SignalMisc	Signal Miscellaneous Equipment	3	0	1
X	dsgnsg	8071	SignalSOP	S.O.P. Box and Movements	0	0	2
X	dsgnsg	8072	SignalSym	Signal Head Symbols	0	0	1
X	dsgnsg	8073	SignalSym_ep	Signal Head Symbols (Existing)	3	2	0
X	dsgnsg	7556	SignCantilever	Sign Symbol Cantilever	0	0	1
X	dsgnsg	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	dsgnsg	7558	SignDetail	Sign Details	0	0	2
X	dsgnsg	8074	SignDMS	Dynamic Message Sign	0	0	1
	dsgnsg	7559	SignLettersAZ	Alphabet Cell Library Letter A-Z Numbers 0-9	0	0	0
	dsgnsg	7560	SignMisc	Miscellaneous Sign Symbols	1	0	2
	dsgnsg	7561	SignMisc_ep	Miscellaneous Sign Symbols (Existing)	1	1	1
X	dsgnsg	7562	SignPanel	Sign Panels - Regulatory	0	0	2
X	dsgnsg	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
X	dsgnsg	7564	SignPanelBorder	Sign Panel Border on Sign Details	0	0	1
X	dsgnsg	7565	SignPanelC	Sign Panels - Civil	1	0	2
X	dsgnsg	7566	SignPanelDetRed	Sign Panel Details in Red	3	0	2
X	dsgnsg	7567	SignPanelG	Sign Panels - Guide	2	0	2
X	dsgnsg	7568	SignPanelI	Sign Panels - Special Interest	9	0	2
X	dsgnsg	7569	SignPanelT	Sign Panels - Construction	6	0	2
X	dsgnsg	7570	SignPanelW	Sign Panels - Warning	4	0	2
X	dsgnsg	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	dsgnsg	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
X	dsgnsg	7573	SignSpecial	Special Signs / Guide Signs	2	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnsg	7574	SignSupport	Ground Mounted Sign Support Symbol (All Types)	1	0	1
X	dsgnsg	6066	SignSymbol_px	Sign Structure and Foundation on Cross Sections	4	0	2
X	dsgnsg	7575	SignTruss	Sign Symbol Truss	3	0	1
X	dsgnsg	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
	dsgnsg	5101	SpecialDetails	Special Details	6	0	1
	dsgnsg	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	dsgnsg	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
	dsgnsg	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	dsgnsg	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	dsgnsg	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	dsgnsg	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	dsgnsg	303	TextConstEle	Text - Construction Element	0	0	1
	dsgnsg	304	TextCurveData	Text - Curve Data Note	0	0	2
	dsgnsg	305	TextDetails	Text - Detail Notes	4	0	2
	dsgnsg	1146	TextElevLabel	Elevation Labels	4	0	0
	dsgnsg	307	TextLabel	Text - Label	0	0	2
	dsgnsg	319	TextLandscape	Text - Landscape Labels	0	0	1
	dsgnsg	308	TextMajor	Text - Major	0	0	5
	dsgnsg	309	TextMinor	Text - Minor	0	0	0
	dsgnsg	320	TextMisc	Text - Miscellaneous	0	0	1
	dsgnsg	310	TextNotes	Text - Notes	4	0	1
	dsgnsg	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	dsgnsg	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	dsgnsg	1147	TextPtLabel	Point Labels	4	0	0
	dsgnsg	313	TextShtNo	Text - Sheet Number	0	0	2
	dsgnsg	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	dsgnsg	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	dsgnsg	315	TextTitle	Text - Title	0	0	3
	dsgnsg	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	dsgnsg	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.14 *Signing and Pavement Marking Design - DSGNSP.rul*

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnsp	200	ActivePointCell_dp	Active Point Cell	4	0	10
	dsgnsp	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	dsgnsp	202	BaselineSurvey	Baseline Survey	0	0	2
	dsgnsp	234	CLConst_dp	Center Line of Construction	0	0	2
	dsgnsp	205	Cloud_dp	Construction Cloud	7	0	2
	dsgnsp	206	COGO_dp	COGO Information	3	0	1
X	dsgnsp	8500	ConduitBG	Conduit In Box Girder	5	lite_cond5	1
X	dsgnsp	8501	ConduitBG_ep	Conduit In Box Girder (Existing)	5	exlite_cond5	0
X	dsgnsp	8502	ConduitC	Conduit Lead-in Cable	3	0	0
X	dsgnsp	8503	ConduitJ	Conduit Jacked Underpavement	1	lite_cond3	1
X	dsgnsp	8504	ConduitJ_ep	Conduit Jacked (Existing)	1	exlite_cond3	0
X	dsgnsp	8505	ConduitSM	Conduit Surface Mounted	4	lite_cond4	1
X	dsgnsp	8506	ConduitSM_ep	Conduit Surface Mounted (Existing)	4	exlite_cond4	0
X	dsgnsp	8507	ConduitUG	Conduit Underground	3	lite_cond1	1
X	dsgnsp	8508	ConduitUG_ep	Conduit Underground (Existing)	3	exlite_cond1	0
X	dsgnsp	8509	ConduitUP	Conduit Underpavement	2	lite_cond2	1
X	dsgnsp	8510	ConduitUP_ep	Conduit Underpavement (Existing)	2	exlite_cond2	0
	dsgnsp	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	dsgnsp	9508	ConstLimits	Construction Limits	3	LOC	2
	dsgnsp	9509	ConstLines	Construction Lines and References	1	0	0
X	dsgnsp	7500	CrossWalk1	Emphasis Crosswalk 6ft High	0	crosswalk1	4
X	dsgnsp	7501	CrossWalk2	Emphasis Crosswalk 10ft High	0	crosswalk2	4
	dsgnsp	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	dsgnsp	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
X	dsgnsp	5510	Delineator	Delineators (All Types)	4	0	1
	dsgnsp	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	dsgnsp	7502	DirArrowsPavt	Pavement Marking Directional Arrows	0	0	1
X	dsgnsp	5027	EaseLicLine	License Agreement Line	5	6	0
	dsgnsp	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	dsgnsp	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	dsgnsp	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	dsgnsp	7503	GSBWFill	GuidSign Black and White Fill Level for GuidSign Cells	0	0	1
	dsgnsp	7504	GSColorFill	GuidSign Color Fill Level for GuidSign Cells	2	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dsgnsp	7505	GSDims	GuidSign Dimensions	0	0	1
	dsgnsp	7506	GSOutline	GuidSign Outline Level for GuidSign Cells	0	0	2
	dsgnsp	7507	GSSign	GuidSign Panel and Tag	7	0	0
	dsgnsp	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	dsgnsp	9517	LaneDirArrow	Lane Directional Arrow	0	0	1
	dsgnsp	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	dsgnsp	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
	dsgnsp	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
X	dsgnsp	7508	MetalButtons	Metal Buttons	0	0	2
	dsgnsp	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	dsgnsp	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	dsgnsp	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	dsgnsp	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	dsgnsp	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	dsgnsp	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	dsgnsp	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	dsgnsp	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	dsgnsp	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	dsgnsp	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	dsgnsp	214	NonPlottingEle_dp	Non plotting items (construction elements and type 66 elements)	4	0	0
	dsgnsp	215	NorthArw_dp	North Arrows			
X	dsgnsp	7509	ObjectMarker	Object and Reflective Markers	3	0	1
X	dsgnsp	7510	OverheadSign	Overhead Sign Panels	0	0	2
X	dsgnsp	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	dsgnsp	7512	OverheadStr	Mast Arm, Truss Assemblies, Signal Arms and Supports	0	0	2
X	dsgnsp	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
	dsgnsp	1081	Pavemk_ep	Pavement Markings (all)	0	2	0
X	dsgnsp	7514	PavtMessage	Pavement Message (All types)	0	0	1
X	dsgnsp	7515	PavtMessage_ep	Pavement Message (Existing - All types)	0	2	0
	dsgnsp	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	dsgnsp	216	PlotBorder_dp	Plot Border	3	0	0
X	dsgnsp	7516	PMCeramic	Pavement Markers Ceramic	0	0	1
	dsgnsp	7517	PMMisc	Pavement Marking Miscellaneous Items	0	0	2
X	dsgnsp	7518	PMStripe(10-10-20)	Pavement Marking 10/10/20 Skip Traffic Stripe 6in Contrast	0	skip10/10/20contrast	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnsp	7519	PMStripe12B	Pavement Marking Traffic Stripe 12in Black	3	stripe12	4
X	dsgnsp	7520	PMStripe12W	Pavement Marking Traffic Stripe 12in White	0	stripe12	4
X	dsgnsp	7521	PMStripe12Y	Pavement Marking Traffic Stripe 12in Yellow	4	stripe12	4
X	dsgnsp	7522	PMStripe16B	Pavement Marking Traffic Stripe 16in Black	3	stripe16	5
X	dsgnsp	7523	PMStripe16W	Pavement Marking Traffic Stripe 16in White	0	stripe16	5
X	dsgnsp	7524	PMStripe16Y	Pavement Marking Traffic Stripe 16in Yellow	4	stripe16	5
X	dsgnsp	7525	PMStripe18B	Pavement Marking Traffic Stripe 18in Black	3	stripe18	6
X	dsgnsp	7526	PMStripe18W	Pavement Marking Traffic Stripe 18in White	0	stripe18	6
X	dsgnsp	7527	PMStripe18Y	Pavement Marking Traffic Stripe 18in Yellow	4	stripe18	6
X	dsgnsp	7528	PMStripe24W	Pavement Marking Traffic Stripe 24in White	0	stripe24	7
X	dsgnsp	7529	PMStripe24Y	Pavement Marking Traffic Stripe 24in Yellow	4	stripe24	7
X	dsgnsp	7530	PMStripe6B	Pavement Marking Traffic Stripe 6in Black	3	stripe06	2
X	dsgnsp	7531	PMStripe6B(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Black	3	stripe06	2
X	dsgnsp	7532	PMStripe6Bl	Pavement Marking Traffic Stripe 6in Blue	1	stripe06	2
X	dsgnsp	7533	PMStripe6DY	Pavement Marking Traffic Stripe 6in Double Yellow	4	dbl_line	2
X	dsgnsp	7534	PMStripe6W	Pavement Marking Traffic Stripe 6in White	0	stripe06	2
X	dsgnsp	7535	PMStripe6W(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in White	0	stripe06	2
X	dsgnsp	7536	PMStripe6W(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in White	0	stripe06	2
X	dsgnsp	7537	PMStripe6W(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in White	0	stripe06	2
X	dsgnsp	7538	PMStripe6Y	Pavement Marking Traffic Stripe 6in Yellow	4	stripe06	2
X	dsgnsp	7539	PMStripe6Y(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	dsgnsp	7540	PMStripe6Y(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	dsgnsp	7541	PMStripe6Y(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	dsgnsp	7542	PMStripe8B	Pavement Marking Traffic Stripe 8in Black	3	stripe06	3
X	dsgnsp	7543	PMStripe8W	Pavement Marking Traffic Stripe 8in White	0	stripe08	3
X	dsgnsp	7544	PMStripe8W(3-9)	Pavement Marking 3/9 Skip Traffic Stripe 8in White	0	stripe08	2
X	dsgnsp	7545	PMStripe8Y	Pavement Marking Traffic Stripe 8in Yellow	4	stripe08	3
X	dsgnsp	7546	PMStripe9C(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 9in Contrast	0	skip 10/30 contrast	2
X	dsgnsp	7577	PMStripeVibeW	Pavement Marking Auditory and Vibratory 6in White	0	Vibratory	2
X	dsgnsp	7578	PMStripeVibeY	Pavement Marking Auditory and Vibratory 6in Yellow	4	Vibratory	2
	dsgnsp	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	dsgnsp	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	dsgnsp	7547	ReflPaintWht	Reflective Paint - Island Nose (White)	0	0	3
X	dsgnsp	7548	ReflPaintYel	Reflective Paint - Island Nose (Yellow)	4	0	3

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnsp	7549	RPM_ep	Reflective Pavement Markers (Existing)			
X	dsgnsp	7550	RPM1	Raised Pavement Markers, White	0	0	2
X	dsgnsp	7551	RPM2	Raised Pavement Markers, White - Red	3	0	2
X	dsgnsp	7552	RPM3	Raised Pavement Markers, Yellow	4	0	2
X	dsgnsp	7553	RPM4	Raised Pavement Markers, Yellow - Yellow	9	0	2
X	dsgnsp	7554	RPM5	Raised Pavement Markers, Yellow - Red	6	0	2
X	dsgnsp	7555	RPM6	Raised Pavement Markers, Blue	1	0	2
X	dsgnsp	8064	SawCuts	Saw Cuts	3	conduit1	0
	dsgnsp	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	dsgnsp	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	dsgnsp	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	dsgnsp	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	dsgnsp	223	SheetBorder_dp	Sheet Border	1	0	4
	dsgnsp	224	SheetLines_dp	Sheet Lines	1	0	2
	dsgnsp	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	dsgnsp	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	dsgnsp	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	dsgnsp	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	dsgnsp	7556	SignCantilever	Sign Symbol Cantilever	0	0	1
X	dsgnsp	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	dsgnsp	7558	SignDetail	Sign Details	0	0	2
	dsgnsp	7559	SignLettersAZ	Alphabet Cell Library Letter A-Z Numbers 0-9	0	0	0
	dsgnsp	7560	SignMisc	Miscellaneous Sign Symbols	1	0	2
	dsgnsp	7561	SignMisc_ep	Miscellaneous Sign Symbols (Existing)	1	1	1
X	dsgnsp	7562	SignPanel	Sign Panels - Regulatory	0	0	2
X	dsgnsp	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
X	dsgnsp	7564	SignPanelBorder	Sign Panel Border on Sign Details	0	0	1
X	dsgnsp	7565	SignPanelC	Sign Panels - Civil	1	0	2
X	dsgnsp	7566	SignPanelDetRed	Sign Panel Details in Red	3	0	2
X	dsgnsp	7567	SignPanelG	Sign Panels - Guide	2	0	2
X	dsgnsp	7568	SignPanelI	Sign Panels - Special Interest	9	0	2
X	dsgnsp	7569	SignPanelT	Sign Panels - Construction	6	0	2
X	dsgnsp	7570	SignPanelW	Sign Panels - Warning	4	0	2
	dsgnsp	1129	SignSingle_ep	Sign (Single Support)	3	2	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	dsgnsp	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	dsgnsp	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
X	dsgnsp	7573	SignSpecial	Special Signs / Guide Signs	2	0	2
X	dsgnsp	7574	SignSupport	Ground Mounted Sign Support Symbol (All Types)	1	0	1
	dsgnsp	1130	SignSupport_ep	Trusses and Cantilevers for Overhead Signs	0	3	1
X	dsgnsp	6066	SignSymbol_px	Sign Structure and Foundation on Cross Sections	4	0	2
X	dsgnsp	7575	SignTruss	Sign Symbol Truss	3	0	1
X	dsgnsp	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
	dsgnsp	5101	SpecialDetails	Special Details	6	0	1
	dsgnsp	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	dsgnsp	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
	dsgnsp	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	dsgnsp	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	dsgnsp	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	dsgnsp	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	dsgnsp	303	TextConstEle	Text - Construction Element	0	0	1
	dsgnsp	304	TextCurveData	Text - Curve Data Note	0	0	2
	dsgnsp	305	TextDetails	Text - Detail Notes	4	0	2
	dsgnsp	1146	TextElevLabel	Elevation Labels	4	0	0
	dsgnsp	307	TextLabel	Text - Label	0	0	2
	dsgnsp	319	TextLandscape	Text - Landscape Labels	0	0	1
	dsgnsp	308	TextMajor	Text - Major	0	0	5
	dsgnsp	309	TextMinor	Text - Minor	0	0	0
	dsgnsp	320	TextMisc	Text - Miscellaneous	0	0	1
	dsgnsp	310	TextNotes	Text - Notes	4	0	1
	dsgnsp	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	dsgnsp	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	dsgnsp	1147	TextPtLabel	Point Labels	4	0	0
	dsgnsp	313	TextShtNo	Text - Sheet Number	0	0	2
	dsgnsp	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	dsgnsp	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	dsgnsp	315	TextTitle	Text - Title	0	0	3
	dsgnsp	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	dsgnsp	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.15 *Digital Terrain Model - DTMRD.rul*

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dtmrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	dtmrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	dtmrd	9503	BreakLine_dp	Break Lines	0	0	1
	dtmrd	206	COGO_dp	COGO Information	3	0	1
	dtmrd	6508	ContourIndex_dp	Contour Index and special contour info	3	0	2
	dtmrd	6509	ContourIndex_ep	Contour Index (Existing)	3	0	2
	dtmrd	6510	ContoursMajor_dp	Contour Lines Major	3	0	2
	dtmrd	6511	ContoursMajor_ep	Contour Lines Major (Existing)	3	1	1
	dtmrd	6512	ContoursMinor_dp	Contour Lines Minor	4	0	1
	dtmrd	6513	ContoursMinor_ep	Contour Lines Minor (Existing)	4	1	0
	dtmrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
	dtmrd	5023	DTM	Digital Terrain Model, TIN Model Elements	1	0	2
	dtmrd	5024	DTM_ep	Digital Terrain Model, TIN Model Elements (Existing)	2	0	1
	dtmrd	5025	DTMTriangles	DTM Triangles	1	0	2
	dtmrd	5026	DTMTriangles_ep	DTM Triangles (Existing)	2	0	1
X	dtmrd	5027	EaseLicLine	License Agreement Line	5	6	0
	dtmrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	dtmrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	dtmrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	dtmrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	dtmrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	dtmrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	dtmrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	dtmrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	dtmrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	dtmrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	dtmrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	dtmrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	dtmrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	dtmrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	dtmrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	dtmrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	dtmrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	dtmrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	dtmrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	dtmrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	dtmrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	dtmrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	dtmrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	dtmrd	303	TextConstEle	Text - Construction Element	0	0	1
	dtmrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	dtmrd	305	TextDetails	Text - Detail Notes	4	0	2
	dtmrd	1146	TextElevLabel	Elevation Labels	4	0	0
	dtmrd	307	TextLabel	Text - Label	0	0	2
	dtmrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	dtmrd	308	TextMajor	Text - Major	0	0	5
	dtmrd	309	TextMinor	Text - Minor	0	0	0
	dtmrd	320	TextMisc	Text - Miscellaneous	0	0	1
	dtmrd	310	TextNotes	Text - Notes	4	0	1
	dtmrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	dtmrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	dtmrd	1147	TextPtLabel	Point Labels	4	0	0
	dtmrd	313	TextShtNo	Text - Sheet Number	0	0	2
	dtmrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	dtmrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	dtmrd	315	TextTitle	Text - Title	0	0	3
	dtmrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	dtmrd	6087	VoidArea_dx	Void Area_XS	1	0	0
	dtmrd	5108	Voids_dp	Voids	11	3	1
	dtmrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.16 Geotechnical - GEOTECH.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	geotech	200	ActivePointCell_dp	Active Point Cell	4	0	10
	geotech	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	geotech	206	COGO_dp	COGO Information	3	0	1
	geotech	2001	Dimension	Dimension Lines (Structures)	0	0	0
	geotech	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	geotech	5027	EaseLicLine	License Agreement Line	5	6	0
	geotech	5750	GeotechFillPatt1	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	geotech	5752	GeotechFillPatt2	Geotechnical Fill Pattern - clay, sand	0	1	0
	geotech	5754	GeotechFillPatt3	Geotechnical Fill Pattern - shell	3	1	0
	geotech	5756	GeotechFillPatt4	Geotechnical Fill Pattern - sand	4	0	0
	geotech	5758	GeotechFillPatt5	Geotechnical Fill Pattern - coquina	1	0	1
	geotech	5760	GeotechFillPatt6	Geotechnical Fill Pattern - limestone	2	0	0
	geotech	5762	GeotechFillPatt7	Geotechnical Fill Pattern - gravel	6	0	0
	geotech	5764	GeotechMisc	Miscellaneous Geotechnical Elements	0	0	1
	geotech	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	geotech	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	geotech	9515	GridMinG_dp	Grid Lines Minor Sub 2 in Cross Section Sheets	20	0	0
	geotech	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	goetech	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	geotech	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	geotech	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
	geotech	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	geotech	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	geotech	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	geotech	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	geotech	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	geotech	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	geotech	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	geotech	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	geotech	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	geotech	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	geotech	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	geotech	215	NorthArw_dp	North Arrows	0	0	2
	geotech	2703	Patterning	All; any Patterning	3	0	1
	geotech	1080	Patternlines_ep	Cross Section Chain	2	1	0
	geotech	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	geotech	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2
	geotech	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
	geotech	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	geotech	216	PlotBorder_dp	Plot Border	3	0	0
	geotech	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	geotech	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	geotech	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	geotech	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	geotech	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	geotech	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	geotech	223	SheetBorder_dp	Sheet Border	1	0	4
	geotech	224	SheetLines_dp	Sheet Lines	1	0	2
	geotech	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	geotech	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	geotech	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	geotech	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	geotech	5098	SoilBoring	Soil Boring Elements	5	0	1
	geotech	5099	SoilBoringLoc_dp	Soil Boring Location Symbol	4	0	2
	geotech	5100	SoilBoxes_dp	Soil Boxes	4	0	1
X	geotech	6068	SoilBoxes_px	Soil Boxes and Borings for Cross Sections	4	0	1
	geotech	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	geotech	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	geotech	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	geotech	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	geotech	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	geotech	303	TextConstEle	Text - Construction Element	0	0	1
	geotech	304	TextCurveData	Text - Curve Data Note	0	0	2
	geotech	305	TextDetails	Text - Detail Notes	4	0	2
	geotech	1146	TextElevLabel	Elevation Labels	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	geotech	306	TextGeotech	Text for soil borings and labels	0	0	2
	geotech	307	TextLabel	Text - Label	0	0	2
	geotech	319	TextLandscape	Text - Landscape Labels	0	0	1
	geotech	308	TextMajor	Text - Major	0	0	5
	geotech	309	TextMinor	Text - Minor	0	0	0
	geotech	320	TextMisc	Text - Miscellaneous	0	0	1
	geotech	310	TextNotes	Text - Notes	4	0	1
	geotech	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	geotech	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	geotech	1147	TextPtLabel	Point Labels	4	0	0
	geotech	313	TextShtNo	Text - Sheet Number	0	0	2
	geotech	2010	TextStructures	Structures Text	0	0	0
	geotech	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	geotech	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	geotech	315	TextTitle	Text - Title	0	0	3
	geotech	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	geotech	7078	Water	Water Line	1	w	2
	geotech	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.17 GuidSIGN - GSWKSP.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	gswksp	200	ActivePointCell_dp	Active Point Cell	4	0	10
	gswksp	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	gswksp	206	COGO_dp	COGO Information	3	0	1
	gswksp	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	gswksp	5027	EaseLicLine	License Agreement Line	5	6	0
	gswksp	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	gswksp	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	gswksp	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	gswksp	7503	GSBWFill	GuidSign Black and White Fill Level for GuidSign Cells	0	0	1
	gswksp	7504	GSColorFill	GuidSign Color Fill Level for GuidSign Cells	2	0	1
	gswksp	7505	GSDims	GuidSign Dimensions	0	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	gswksp	7506	GSOutline	GuidSign Outline Level for GuidSign Cells	0	0	2
	gswksp	7507	GSSign	GuidSign Panel and Tag	7	0	0
	gswksp	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	gswksp	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
	gswksp	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	gswksp	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
	gswksp	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	gswksp	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	gswksp	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	gswksp	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	gswksp	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	gswksp	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	gswksp	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	gswksp	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	gswksp	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	gswksp	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	gswksp	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	gswksp	215	NorthArw_dp	North Arrows	0	0	2
X	gswksp	7509	ObjectMarker	Object and Reflective Markers	3	0	1
X	gswksp	7510	OverheadSign	Overhead Sign Panels	0	0	2
X	gswksp	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	gswksp	7512	OverheadStr	Mast Arm, Truss Assemblies, Signal Arms and Supports	0	0	2
X	gswksp	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
	gswksp	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	gswksp	216	PlotBorder_dp	Plot Border	3	0	0
	gswksp	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	gswksp	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	gswksp	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	gswksp	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	gswksp	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	gswksp	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	gswksp	223	SheetBorder_dp	Sheet Border	1	0	4
	gswksp	224	SheetLines_dp	Sheet Lines	1	0	2
	gswksp	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	gswksp	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	gswksp	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	gswksp	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	gswksp	7556	SignCantilever	Sign Symbol Cantilever	0	0	1
X	gswksp	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	gswksp	7558	SignDetail	Sign Details	0	0	2
	gswksp	7559	SignLettersAZ	Alphabet Cell Library Letter A-Z Numbers 0-9	0	0	0
	gswksp	7560	SignMisc	Miscellaneous Sign Symbols	1	0	2
	gswksp	7561	SignMisc_ep	Miscellaneous Sign Symbols (Existing)	1	1	1
X	gswksp	7562	SignPanel	Sign Panels - Regulatory	0	0	2
X	gswksp	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
X	gswksp	7564	SignPanelBorder	Sign Panel Border on Sign Details	0	0	1
X	gswksp	7565	SignPanelC	Sign Panels - Civil	1	0	2
X	gswksp	7566	SignPanelDetRed	Sign Panel Details in Red	3	0	2
X	gswksp	7567	SignPanelG	Sign Panels - Guide	2	0	2
X	gswksp	7568	SignPanelI	Sign Panels - Special Interest	9	0	2
X	gswksp	7569	SignPanelT	Sign Panels - Construction	6	0	2
X	gswksp	7570	SignPanelW	Sign Panels - Warning	4	0	2
X	gswksp	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	gswksp	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
X	gswksp	7573	SignSpecial	Special Signs / Guide Signs	2	0	2
X	gswksp	7574	SignSupport	Ground Mounted Sign Support Symbol (All Types)	1	0	1
X	gswksp	6066	SignSymbol_px	Sign Structure and Foundation on Cross Sections	4	0	2
X	gswksp	7575	SignTruss	Sign Symbol Truss	3	0	1
X	gswksp	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
	gswksp	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	gswksp	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	gswksp	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	gswksp	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	gswksp	303	TextConstEle	Text - Construction Element	0	0	1
	gswksp	304	TextCurveData	Text - Curve Data Note	0	0	2
	gswksp	305	TextDetails	Text - Detail Notes	4	0	2
	gswksp	1146	TextElevLabel	Elevation Labels	4	0	0
	gswksp	307	TextLabel	Text - Label	0	0	2
	gswksp	319	TextLandscape	Text - Landscape Labels	0	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	gswksp	308	TextMajor	Text - Major	0	0	5
	gswksp	309	TextMinor	Text - Minor	0	0	0
	gswksp	320	TextMisc	Text - Miscellaneous	0	0	1
	gswksp	310	TextNotes	Text - Notes	4	0	1
	gswksp	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	gswksp	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	gswksp	1147	TextPtLabel	Point Labels	4	0	0
	gswksp	313	TextShtNo	Text - Sheet Number	0	0	2
	gswksp	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	gswksp	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	gswksp	315	TextTitle	Text - Title	0	0	3
	gswksp	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	gswksp	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.18 Irrigation - IRRGLD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	irrgld	200	ActivePointCell_dp	Active Point Cell	4	0	10
	irrgld	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	irrgld	206	COGO_dp	COGO Information	3	0	1
	irrgld	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
	irrgld	9006	DripSystem	Irrigation Drip System	1	0	2
X	irrgld	5027	EaseLicLine	License Agreement Line	5	6	0
	irrgld	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	irrgld	9016	IrrigationWaterLine	Irrigation Water Lines	1	0	2
X	irrgld	9013	IrrigationHeads	Irrigation Heads (All Types)	5	0	2
X	irrgld	9152	IrrigationLateral	Irrigation Lateral Line	7	0	1
X	irrgld	9154	IrrigationLateralNP	Irrigation Lateral (Reclaimed)	12	0	1
X	irrgld	9151	IrrigationMain	Irrigation Main Line	1	3	3
X	irrgld	9153	IrrigationMainNP	Irrigation Main Line (Reclaimed)	8	3	3
	irrgld	9014	IrrigationMisc	Irrigation Miscellaneous Items	0	0	2
X	irrgld	9155	IrrigationMiscNP	Irrigation Equipment (Reclaimed)	8	0	1
X	irrgld	9150	IrrigationSleeve	Irrigation Sleeve	6	5	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	irrgld	9015	IrrigationSprayPat	Irrigation Head Spray Pattern	1	1	1
	irrgld	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
X	irrgld	9024	MechanicalAccs	Mechanical Irrigation Items (valves, meters, pipe, clocks, back flow)	3	0	1
	irrgld	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	irrgld	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	irrgld	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	irrgld	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	irrgld	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	irrgld	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	irrgld	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	irrgld	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	irrgld	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	irrgld	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	irrgld	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	irrgld	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	irrgld	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	irrgld	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	irrgld	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	irrgld	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	irrgld	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	irrgld	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	irrgld	303	TextConstEle	Text - Construction Element	0	0	1
	irrgld	304	TextCurveData	Text - Curve Data Note	0	0	2
	irrgld	305	TextDetails	Text - Detail Notes	4	0	2
	irrgld	1146	TextElevLabel	Elevation Labels	4	0	0
	irrgld	307	TextLabel	Text - Label	0	0	2
	irrgld	319	TextLandscape	Text - Landscape Labels	0	0	1
	irrgld	308	TextMajor	Text - Major	0	0	5
	irrgld	309	TextMinor	Text - Minor	0	0	0
	irrgld	320	TextMisc	Text - Miscellaneous	0	0	1
	irrgld	310	TextNotes	Text - Notes	4	0	1
	irrgld	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	irrgld	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	irrgld	1147	TextPtLabel	Point Labels	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	irrgld	313	TextShtNo	Text - Sheet Number	0	0	2
	irrgld	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	irrgld	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	irrgld	315	TextTitle	Text - Title	0	0	3
	irrgld	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	irrgld	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.19 Intelligent Transportation System - ITSSP.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	itssp	200	ActivePointCell_dp	Active Point Cell	4	0	10
	itssp	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	itssp	202	BaselineSurvey	Baseline Survey	0	0	2
X	itssp	8000	CCTV	CC TV Camera and Accessories	4	0	1
X	itssp	8001	CCTVAer	CC TV Cable - Aerial	6	otv	1
X	itssp	8002	CCTVBur	CC TV Cable - Buried	5	btv	1
	itssp	8003	CCTVMisc	CC TV Service Box and Miscellaneous	6	0	0
	itssp	234	CLConst_dp	Center Line of Construction	0	0	2
	itssp	205	Cloud_dp	Construction Cloud	7	0	2
	itssp	206	COGO_dp	COGO Information	3	0	1
X	itssp	8500	ConduitBG	Conduit In Box Girder	5	lite_cond5	1
X	itssp	8501	ConduitBG_ep	Conduit In Box Girder (Existing)	5	exlite_cond5	0
X	itssp	8502	ConduitC	Conduit Lead-in Cable	3	0	0
X	itssp	8503	ConduitJ	Conduit Jacked Underpavement	1	lite_cond3	1
X	itssp	8504	ConduitJ_ep	Conduit Jacked (Existing)	1	exlite_cond3	0
X	itssp	8505	ConduitSM	Conduit Surface Mounted	4	lite_cond4	1
X	itssp	8506	ConduitSM_ep	Conduit Surface Mounted (Existing)	4	exlite_cond4	0
X	itssp	8507	ConduitUG	Conduit Underground	3	lite_cond1	1
X	itssp	8508	ConduitUG_ep	Conduit Underground (Existing)	3	exlite_cond1	0
X	itssp	8509	ConduitUP	Conduit Underpavement	2	lite_cond2	1
X	itssp	8510	ConduitUP_ep	Conduit Underpavement (Existing)	2	exlite_cond2	0
	itssp	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	itssp	9508	ConstLimits	Construction Limits	3	LOC	2
	itssp	9509	ConstLines	Construction Lines and References	1	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	itssp	8004	Controller	Controller and Accessories	0	0	2
X	itssp	8005	Controller_ep	Controller and Accessories (Existing)	0	2	1
X	itssp	8006	ControllerAcess	Controller Accessories	0	0	1
X	itssp	8007	ControllerB	Controller - Base Mounted	0	0	2
X	itssp	8008	ControllerB_ep	Controller - Base Mounted (Existing)	0	2	1
X	itssp	8009	ControllerP	Controller Pole Mount	0	0	2
X	itssp	8010	ControllerP_ep	Controller Pole Mount (Existing)	0	2	1
X	itssp	7500	CrossWalk1	Emphasis Crosswalk 6ft High	0	crosswalk1	4
X	itssp	7501	CrossWalk2	Emphasis Crosswalk 10ft High	0	crosswalk2	4
	itssp	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	itssp	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
X	itssp	5510	Delineator	Delineators (All Types)	4	0	1
X	itssp	8011	Detector	Detector Cabinet, Button and Misc Assemblies	3	0	2
X	itssp	8012	DetectorVeh	Detector Vehicle Assemblies (All Types)	3	0	1
	itssp	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	itssp	7502	DirArrowsPavt	Pavement Marking Directional Arrows	0	0	1
X	itssp	5027	EaseLicLine	License Agreement Line	5	6	0
X	itssp	7007	ElectPS	Electrical Power Service Miscellaneous	3	0	1
X	itssp	7008	ElectPSB	Electrical (Buried)	3	be	2
X	itssp	7009	ElectPSO	Electrical Outlet	3	0	1
X	itssp	7010	ElectServWire	Electrical Service Wire	3	0	2
X	itssp	8013	Fiber01Blue	Fiber Optic Buffer Tube, Blue	25	0	2
X	itssp	8014	Fiber02Orange	Fiber Optic Buffer Tube, Orange	30	0	2
X	itssp	8015	Fiber03Green	Fiber Optic Buffer Tube, Green	154	0	2
X	itssp	8016	Fiber04Brown	Fiber Optic Buffer Tube, Brown	150	0	2
X	itssp	8017	Fiber05Slate	Fiber Optic Buffer Tube, Slate	152	0	2
X	itssp	8018	Fiber06White	Fiber Optic Buffer Tube, White	152	0	2
X	itssp	8019	Fiber07Red	Fiber Optic Buffer Tube, Red	27	0	2
X	itssp	8020	Fiber08Black	Fiber Optic Buffer Tube, Black	0	0	2
X	itssp	8021	Fiber09Yellow	Fiber Optic Buffer Tube, Yellow	28	0	2
X	itssp	8022	Fiber10Purple	Fiber Optic Buffer Tube, Purple	157	0	2
X	itssp	8023	Fiber11Rose	Fiber Optic Buffer Tube, Rose	12	0	2
X	itssp	8024	Fiber12Aqua	Fiber Optic Buffer Tube, Aqua	55	0	2
X	itssp	8025	FiberSheath	Fiber Optic Sheath	0	0	2
X	itssp	8026	FiberSpliceCap	Fiber Optic Splice Cap	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	itssp	8027	FiberStripe	Fiber Optic Buffer Tube, Stripe	0	0	2
X	itssp	7013	FOCBur	Fiber Optics Cable (Buried)	6	bfo	1
X	itssp	7018	Generator	Emergency Generator	0	0	2
	itssp	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	itssp	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	itssp	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	itssp	7503	GSBWFill	GuidSign Black and White Fill Level for GuidSign Cells	0	0	1
	itssp	7504	GSColorFill	GuidSign Color Fill Level for GuidSign Cells	2	0	1
	itssp	7505	GSDims	GuidSign Dimensions	0	0	1
	itssp	7506	GSOutline	GuidSign Outline Level for GuidSign Cells	0	0	2
	itssp	7507	GSSign	GuidSign Panel and Tag	7	0	0
X	itssp	7019	GuyWire	Guy Wire	3	0	0
X	itssp	8028	HAR	Highway Advisory Radio Unit	3	0	2
X	itssp	8029	HubEthernet	Ethernet Hub	1	0	1
X	itssp	8030	HubWireless	Wireless Receiver and Transmitter	3	0	1
	itssp	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	itssp	8031	Insulator	Insulator, Fiberglass	3	0	4
X	itssp	8032	InterconCable	Cable Interconnect	1	intcon1	1
X	itssp	8033	InterconCable_ep	Interconnect Cable (Existing)	1	intcon2	0
	itssp	8034	ITSDetail00	ITS Details	0	0	0
	itssp	8035	ITSDetail01	ITS Details	0	0	1
	itssp	8036	ITSDetail02	ITS Details	0	0	2
	itssp	8037	ITSDetail10	ITS Details	1	0	0
	itssp	8038	ITSDetail11	ITS Details	1	0	1
	itssp	8039	ITSDetail12	ITS Details	1	0	2
	itssp	8040	ITSDetail20	ITS Details	2	0	0
	itssp	8041	ITSDetail21	ITS Details	2	0	1
	itssp	8042	ITSDetail22	ITS Details	2	0	2
	itssp	8043	ITSDetail30	ITS Details	3	0	0
	itssp	8044	ITSDetail31	ITS Details	3	0	1
	itssp	8045	ITSDetail32	ITS Details	3	0	2
X	itssp	8046	ITSEquip00	ITS Equipment Racks	0	0	0
X	itssp	8047	ITSEquip01	ITS Equipment Racks	0	0	1
X	itssp	8048	ITSEquip02	ITS Equipment Racks	0	0	2
X	itssp	8049	JunctBoxA	Junction Boxes (Aerial)	3	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	itssp	8050	JunctBoxA_ep	Junction Boxes (Aerial) (Existing)	3	1	0
X	itssp	8051	Kiosk	Kiosk	2	0	1
	itssp	9517	LaneDirArrow	Lane Directional Arrow	0	0	1
	itssp	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	itssp	8511	LightingMisc	Lighting Miscellaneous Items	4	0	2
X	itssp	8512	LightingSP	Lighting Service Points	0	0	1
X	itssp	8513	LoadCenter	Load Center	2	0	1
X	itssp	8514	LoadCenter_ep	Load Center (Existing)	2	5	0
	itssp	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	itssp	8052	LoopLI	Loop Lead-In	3	0	1
X	itssp	8053	LoopLI_ep	Loop Lead-In (Existing)	3	2	0
X	itssp	8054	Loops	Loop Assembly (All Types)	2	0	2
X	itssp	8055	Loops_ep	Loop Assembly (All Types) (Existing)	2	2	2
X	itssp	9022	Luminaire	Luminaires (Decorative - All Types)	2	0	1
X	itssp	8056	MessengerWire	Messenger Wire	3	0	1
X	itssp	7508	MetalButtons	Metal Buttons	0	0	2
	itssp	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	itssp	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	itssp	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	itssp	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	itssp	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	itssp	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	itssp	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	itssp	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	itssp	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	itssp	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	itssp	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	itssp	215	NorthArw_dp	North Arrows	0	0	2
X	itssp	7509	ObjectMarker	Object and Reflective Markers	3	0	1
X	itssp	7510	OverheadSign	Overhead Sign Panels	0	0	2
X	itssp	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	itssp	7512	OverheadStr	Mast Arm, Truss Assemblies, Signal Arms and Supports	0	0	2
X	itssp	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
	itssp	1081	Pavemk_ep	Pavement Markings (all)	0	2	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	itssp	7514	PavtMessage	Pavement Message (All types)	0	0	1
X	itssp	7515	PavtMessage_ep	Pavement Message (Existing - All types)	0	2	0
	itssp	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	itssp	8057	PedDetector	Pedestrian Detector	0	0	2
X	itssp	8058	Pedestal	Pedestal	1	0	1
X	itssp	8059	Pedestal_ep	Pedestal (Existing)	1	2	1
X	itssp	8060	PedHead	Pedestrian Head (All Types)	1	0	1
X	itssp	8061	PedHead_ep	Pedestrian Head (All Types) (Existing)	0	2	1
X	itssp	216	PlotBorder_dp	Plot Border	3	0	0
X	itssp	7516	PMCeramic	Pavement Markers Ceramic	0	0	1
	itssp	7517	PMMisc	Pavement Marking Miscellaneous Items	0	0	2
X	itssp	7519	PMStripe12B	Pavement Marking Traffic Stripe 12in Black	3	stripe12	4
X	itssp	7520	PMStripe12W	Pavement Marking Traffic Stripe 12in White	0	stripe12	4
X	itssp	7521	PMStripe12Y	Pavement Marking Traffic Stripe 12in Yellow	4	stripe12	4
X	itssp	7522	PMStripe16B	Pavement Marking Traffic Stripe 16in Black	3	stripe16	5
X	itssp	7523	PMStripe16W	Pavement Marking Traffic Stripe 16in White	0	stripe16	5
X	itssp	7524	PMStripe16Y	Pavement Marking Traffic Stripe 16in Yellow	4	stripe16	5
X	itssp	7525	PMStripe18B	Pavement Marking Traffic Stripe 18in Black	3	stripe18	6
X	itssp	7526	PMStripe18W	Pavement Marking Traffic Stripe 18in White	0	stripe18	6
X	itssp	7527	PMStripe18Y	Pavement Marking Traffic Stripe 18in Yellow	4	stripe18	6
X	itssp	7528	PMStripe24W	Pavement Marking Traffic Stripe 24in White	0	stripe24	7
X	itssp	7529	PMStripe24Y	Pavement Marking Traffic Stripe 24in Yellow	4	stripe24	7
X	itssp	7530	PMStripe6B	Pavement Marking Traffic Stripe 6in Black	3	stripe06	2
X	itssp	7531	PMStripe6B(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Black	3	stripe06	2
X	itssp	7532	PMStripe6Bl	Pavement Marking Traffic Stripe 6in Blue	1	stripe06	2
X	itssp	7533	PMStripe6DY	Pavement Marking Traffic Stripe 6in Double Yellow	4	dbl_line	2
X	itssp	7534	PMStripe6W	Pavement Marking Traffic Stripe 6in White	0	stripe06	2
X	itssp	7535	PMStripe6W(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in White	0	stripe06	2
X	itssp	7536	PMStripe6W(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in White	0	stripe06	2
X	itssp	7537	PMStripe6W(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in White	0	stripe06	2
X	itssp	7538	PMStripe6Y	Pavement Marking Traffic Stripe 6in Yellow	4	stripe06	2
X	itssp	7539	PMStripe6Y(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	itssp	7540	PMStripe6Y(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	itssp	7541	PMStripe6Y(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	itssp	7542	PMStripe8B	Pavement Marking Traffic Stripe 8in Black	3	stripe06	3

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	itssp	7543	PMStripe8W	Pavement Marking Traffic Stripe 8in White	0	stripe08	3
X	itssp	7544	PMStripe8W(3-9)	Pavement Marking 3/9 Skip Traffic Stripe 8in White	0	stripe08	2
X	itssp	7545	PMStripe8Y	Pavement Marking Traffic Stripe 8in Yellow	4	stripe08	3
X	itssp	7577	PMStripeVibeW	Pavement Marking Auditory and Vibratory 6in White	0	Vibratory	2
X	itssp	7578	PMStripeVibeY	Pavement Marking Auditory and Vibratory 6in Yellow	4	Vibratory	2
	itssp	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	itssp	8062	PoleConc	Concrete Strain Pole	0	0	2
X	itssp	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	itssp	8515	PoleFound	Pole Foundation	0	0	2
X	itssp	8516	PoleLight	Light Pole	2	0	1
X	itssp	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	itssp	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	itssp	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	itssp	8520	PoleLightID	Light Pole Location / ID	4	0	1
X	itssp	7029	PolePower	Power Pole w/ Transformer	3	0	2
X	itssp	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	itssp	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	itssp	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	itssp	7033	PoleTel	Telephone Pole	6	0	2
X	itssp	7034	PoleUtil	Utility Pole	0	0	2
X	itssp	7035	PoleWoodStrain	Wood Strain Pole	0	0	2
X	itssp	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
X	itssp	8521	PullBox	Pull Boxes (All Types)	3	0	1
	itssp	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	itssp	7547	ReflPaintWht	Reflective Paint - Island Nose (White)	0	0	3
X	itssp	7548	ReflPaintYel	Reflective Paint - Island Nose (Yellow)	4	0	3
X	itssp	7549	RPM_ep	Reflective Pavement Markers (Existing)	2	2	1
X	itssp	7550	RPM1	Raised Pavement Markers, White	0	0	2
X	itssp	7551	RPM2	Raised Pavement Markers, White - Red	3	0	2
X	itssp	7552	RPM3	Raised Pavement Markers, Yellow	4	0	2
X	itssp	7553	RPM4	Raised Pavement Markers, Yellow - Yellow	9	0	2
X	itssp	7554	RPM5	Raised Pavement Markers, Yellow - Red	6	0	2
X	itssp	7555	RPM6	Raised Pavement Markers, Blue	1	0	2
X	itssp	8064	SawCuts	Saw Cuts	3	conduit1	0
	itssp	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	itssp	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	itssp	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	itssp	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	itssp	223	SheetBorder_dp	Sheet Border	1	0	4
	itssp	224	SheetLines_dp	Sheet Lines	1	0	2
	itssp	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	itssp	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	itssp	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	itssp	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	itssp	8065	SignalCable	Signal Cable	3	signal_cable	1
X	itssp	8066	SignalCableAccs	Signal Cable Accessories	0	0	2
X	itssp	8067	SignalDetail	Signal Details	0	0	1
	itssp	8068	SignalHead	Signal Head Section Details	2	0	1
X	itssp	8069	SignalHead_ep	Signal Head Section Details (Existing)	2	2	0
	itssp	8070	SignalMisc	Signal Miscellaneous Equipment	3	0	1
X	itssp	8071	SignalSOP	S.O.P. Box and Movements	0	0	2
X	itssp	8072	SignalSym	Signal Head Symbols	0	0	1
X	itssp	8073	SignalSym_ep	Signal Head Symbols (Existing)	3	2	0
X	itssp	7556	SignCantilever	Sign Symbol Cantilever	0	0	1
X	itssp	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	itssp	7558	SignDetail	Sign Details	0	0	2
	itssp	7559	SignLettersAZ	Alphabet Cell Library Letter A-Z Numbers 0-9	0	0	0
	itssp	7560	SignMisc	Miscellaneous Sign Symbols	1	0	2
	itssp	7561	SignMisc_ep	Miscellaneous Sign Symbols (Existing)	1	1	1
X	itssp	7562	SignPanel	Sign Panels - Regulatory	0	0	2
X	itssp	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
X	itssp	7564	SignPanelBorder	Sign Panel Border on Sign Details	0	0	1
X	itssp	7565	SignPanelC	Sign Panels - Civil	1	0	2
X	itssp	7566	SignPanelDetRed	Sign Panel Details in Red	3	0	2
X	itssp	7567	SignPanelG	Sign Panels - Guide	2	0	2
X	itssp	7568	SignPanelI	Sign Panels - Special Interest	9	0	2
X	itssp	7569	SignPanelT	Sign Panels - Construction	6	0	2
X	itssp	7570	SignPanelW	Sign Panels - Warning	4	0	2
X	itssp	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	itssp	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	itssp	7573	SignSpecial	Special Signs / Guide Signs	2	0	2
X	itssp	7574	SignSupport	Ground Mounted Sign Support Symbol (All Types)	1	0	1
X	itssp	6066	SignSymbol_px	Sign Structure and Foundation on Cross Sections	4	0	2
X	itssp	7575	SignTruss	Sign Symbol Truss	3	0	1
X	itssp	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
	itssp	5101	SpecialDetails	Special Details	6	0	1
X	itssp	8075	SpliceBox	Fiber Optic Splice Box	3	0	1
	itssp	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	itssp	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
	itssp	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	itssp	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	itssp	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	itssp	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	itssp	303	TextConstEle	Text - Construction Element	0	0	1
	itssp	304	TextCurveData	Text - Curve Data Note	0	0	2
	itssp	305	TextDetails	Text - Detail Notes	4	0	2
	itssp	1146	TextElevLabel	Elevation Labels	4	0	0
	itssp	307	TextLabel	Text - Label	0	0	2
	itssp	319	TextLandscape	Text - Landscape Labels	0	0	1
	itssp	308	TextMajor	Text - Major	0	0	5
	itssp	309	TextMinor	Text - Minor	0	0	0
	itssp	320	TextMisc	Text - Miscellaneous	0	0	1
	itssp	310	TextNotes	Text - Notes	4	0	1
	itssp	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	itssp	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	itssp	1147	TextPtLabel	Point Labels	4	0	0
	itssp	313	TextShtNo	Text - Sheet Number	0	0	2
	itssp	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	itssp	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	itssp	315	TextTitle	Text - Title	0	0	3
	itssp	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	itssp	8076	TMC	Traffic Management Center	1	0	1
X	itssp	8077	TollReader	Electronic Toll Reader	3	0	1
	itssp	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.20 Key Sheets - KEYSHT.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	keysht	200	ActivePointCell_dp	Active Point Cell	4	0	10
	keysht	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	keysht	202	BaselineSurvey	Baseline Survey	0	0	2
X	keysht	6503	BoxCulvert	Box Culvert	10	0	2
	keysht	234	CLConst_dp	Center Line of Construction	0	0	2
	keysht	203	ClipBorder_dp	CLIP Border	3	0	0
	keysht	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	keysht	205	Cloud_dp	Construction Cloud	7	0	2
	keysht	206	COGO_dp	COGO Information	3	0	1
	keysht	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	keysht	9508	ConstLimits	Construction Limits	3	LOC	2
	keysht	9509	ConstLines	Construction Lines and References	1	0	0
	keysht	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	keysht	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	keysht	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	keysht	6545	DrainStruct_pr	Drainage Structures (All Types)	10	0	2
X	keysht	5027	EaseLicLine	License Agreement Line	5	6	0
X	keysht	6547	Endwall	Endwall (All Types)	10	0	2
X	keysht	6548	FES	Flared End Sections	10	0	2
X	keysht	5512	Flag	Orange Flag and / or Flagman	6	0	1
	keysht	101	FLMap1	Florida Map items - weight of 1	1	0	1
	keysht	102	FLMap2	Florida Map items - weight of 2	3	0	2
	keysht	103	FLMap3	Florida Map items - weight of 3	2	0	3
	keysht	104	FLMap4	Florida Map items - color 11 (Interstate)	11	0	3
	keysht	105	FLMap5	Florida Map items - style 7, wt. 5 (state line)	3	7	5
	keysht	6550	FlowArrow_dp	Flow Arrow	10	0	2
X	keysht	5046	GovTwpRgeLine_ep	Township / Range Lines	10	TWPRGE	2
	keysht	5047	GradeLine_er	Grade Line Profile (Existing)	2	2	1
	keysht	5048	GradeLine_pr	Grade Line Profile	5	0	2
	keysht	5049	GradeLineCtr_dp	Grade Line Profile Center (shown in plan view)	5	0	0
	keysht	5050	GradeLineCtr_pr	Grade Line Profile Center	5	0	2
	keysht	5051	GradeLineLt_dp	Grade Line Profile Left (shown in plan view)	1	0	0
	keysht	5052	GradeLineLt_er	Grade Line Profile Left (Existing)	1	2	1
	keysht	5053	GradeLineLt_pr	Grade Line Profile Left	1	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	keysht	5054	GradeLineRt_dp	Grade Line Profile Right (shown in plan view)	4	0	0
	keysht	5055	GradeLineRt_er	Grade Line Profile Right (Existing)	4	2	1
	keysht	5056	GradeLineRt_pr	Grade Line Profile Right	4	0	2
	keysht	5057	GradeSecPat	Grade Section Patterns	0	0	0
	keysht	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	keysht	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	keysht	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	keysht	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	keysht	6561	InletBottomJ	Inlet Bottom Type J	10	0	1
X	keysht	6562	InletBottomP	Inlet Bottom Type P	10	0	1
X	keysht	6563	InletClosedFlume	Closed Flume Inlet	10	0	2
X	keysht	6564	InletCurb	Curb Inlet (All Types)	10	0	2
X	keysht	6565	InletDBI	Ditch Bottom Inlet (All Types)	10	0	2
X	keysht	6566	InletGutter	Gutter Inlet (All Types)	10	0	2
X	keysht	6567	InletMedian	Median Barrier Inlet	10	0	2
	keysht	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
	keysht	9517	LaneDirArrow	Lane Directional Arrow	0	0	1
	keysht	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	keysht	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	keysht	6568	Manhole	Manhole (Drainage and unknown)	10	0	2
	keysht	212	MapOutline_dp	Outline for key maps	0	0	5
	keysht	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
X	keysht	6569	MES	Mitered End Section	10	0	2
	keysht	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	keysht	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	keysht	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	keysht	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	keysht	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	keysht	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	keysht	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	keysht	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	keysht	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	keysht	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	keysht	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	keysht	215	NorthArw_dp	North Arrows	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	keysht	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	keysht	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2
	keysht	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
	keysht	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	keysht	216	PlotBorder_dp	Plot Border	3	0	0
	keysht	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	keysht	5073	RailroadDetails	Railroad Crossing Details	3	0	2
	keysht	5074	RailroadXing	Railroad Crossing Elements	11	0	0
	keysht	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	keysht	5078	RoadwayMisc	Roadway Miscellaneous Items	4	0	2
	keysht	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	keysht	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	keysht	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	keysht	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	keysht	223	SheetBorder_dp	Sheet Border	1	0	4
	keysht	224	SheetLines_dp	Sheet Lines	1	0	2
	keysht	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	keysht	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	keysht	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	keysht	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
	keysht	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	keysht	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
	keysht	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	keysht	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	keysht	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	keysht	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	keysht	303	TextConstEle	Text - Construction Element	0	0	1
	keysht	304	TextCurveData	Text - Curve Data Note	0	0	2
	keysht	305	TextDetails	Text - Detail Notes	4	0	2
	keysht	1146	TextElevLabel	Elevation Labels	4	0	0
	keysht	307	TextLabel	Text - Label	0	0	2
	keysht	319	TextLandscape	Text - Landscape Labels	0	0	1
	keysht	308	TextMajor	Text - Major	0	0	5

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	keysht	309	TextMinor	Text - Minor	0	0	0
	keysht	320	TextMisc	Text - Miscellaneous	0	0	1
	keysht	310	TextNotes	Text - Notes	4	0	1
	keysht	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	keysht	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	keysht	1147	TextPtLabel	Point Labels	4	0	0
	keysht	313	TextShtNo	Text - Sheet Number	0	0	2
	keysht	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	keysht	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	keysht	315	TextTitle	Text - Title	0	0	3
	keysht	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	keysht	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.21 Mast Arm Details - MRARSP.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	msarsp	200	ActivePointCell_dp	Active Point Cell	4	0	10
	msarsp	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	msarsp	206	COGO_dp	COGO Information	3	0	1
X	msarsp	8500	ConduitBG	Conduit In Box Girder	5	lite_cond5	1
X	msarsp	8501	ConduitBG_ep	Conduit In Box Girder (Existing)	5	exlite_cond5	0
X	msarsp	8502	ConduitC	Conduit Lead-in Cable	3	0	0
X	msarsp	8503	ConduitJ	Conduit Jacked Underpavement	1	lite_cond3	1
X	msarsp	8504	ConduitJ_ep	Conduit Jacked (Existing)	1	exlite_cond3	0
X	msarsp	8505	ConduitSM	Conduit Surface Mounted	4	lite_cond4	1
X	msarsp	8506	ConduitSM_ep	Conduit Surface Mounted (Existing)	4	exlite_cond4	0
X	msarsp	8507	ConduitUG	Conduit Underground	3	lite_cond1	1
X	msarsp	8508	ConduitUG_ep	Conduit Underground (Existing)	3	exlite_cond1	0
X	msarsp	8509	ConduitUP	Conduit Underpavement	2	lite_cond2	1
X	msarsp	8510	ConduitUP_ep	Conduit Underpavement (Existing)	2	exlite_cond2	0
X	msarsp	8004	Controller	Controller and Accessories	0	0	2
X	msarsp	8005	Controller_ep	Controller and Accessories (Existing)	0	2	1
X	msarsp	8006	ControllerAcess	Controller Accessories	0	0	1
X	msarsp	8007	ControllerB	Controller - Base Mounted	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	msarsp	8008	ControllerB_ep	Controller - Base Mounted (Existing)	0	2	1
X	msarsp	8009	ControllerP	Controller Pole Mount	0	0	2
X	msarsp	8010	ControllerP_ep	Controller Pole Mount (Existing)	0	2	1
X	msarsp	8011	Detector	Detector Cabinet, Button and Misc Assemblies	3	0	2
X	msarsp	8012	DetectorVeh	Detector Vehicle Assemblies (All Types)	3	0	1
	msarsp	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	msarsp	5027	EaseLicLine	License Agreement Line	5	6	0
X	msarsp	7007	ElectPS	Electrical Power Service Miscellaneous	3	0	1
X	msarsp	7008	ElectPSB	Electrical (Buried)	3	be	2
X	msarsp	7009	ElectPSO	Electrical Outlet	3	0	1
X	msarsp	7010	ElectServWire	Electrical Service Wire	3	0	2
X	msarsp	7013	FOCBur	Fiber Optics Cable (Buried)	6	bfo	1
X	msarsp	7018	Generator	Emergency Generator	0	0	2
	msarsp	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	msarsp	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	msarsp	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
X	msarsp	7019	GuyWire	Guy Wire	3	0	0
	mrarsp	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	msarsp	8031	Insulator	Insulator, Fiberglass	3	0	4
X	msarsp	8032	InterconCable	Cable Interconnect	1	intcon1	1
X	msarsp	8033	InterconCable_ep	Interconnect Cable (Existing)	1	intcon2	0
X	msarsp	8049	JunctBoxA	Junction Boxes (Aerial)	3	0	1
X	msarsp	8050	JunctBoxA_ep	Junction Boxes (Aerial) (Existing)	3	1	0
	msarsp	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
X	msarsp	8513	LoadCenter	Load Center	2	0	1
X	msarsp	8514	LoadCenter_ep	Load Center (Existing)	2	5	0
X	msarsp	8052	LoopLI	Loop Lead-In	3	0	1
X	msarsp	8053	LoopLI_ep	Loop Lead-In (Existing)	3	2	0
X	msarsp	8054	Loops	Loop Assembly (All Types)	2	0	2
X	msarsp	8055	Loops_ep	Loop Assembly (All Types) (Existing)	2	2	2
X	msarsp	8056	MessengerWire	Messenger Wire	3	0	1
	msarsp	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	msarsp	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	msarsp	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	msarsp	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	msarsp	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	msarsp	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	msarsp	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	msarsp	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	msarsp	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	msarsp	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	msarsp	214	NonPlottingEle_dp	Non plotting items (construction elements and type 66 elements)	4	0	0
	msarsp	215	NorthArw_dp	North Arrows	0	0	2
X	msarsp	7509	ObjectMarker	Object and Reflective Markers	3	0	1
X	msarsp	7510	OverheadSign	Overhead Sign Panels	0	0	2
X	msarsp	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	msarsp	7512	OverheadStr	Mast Arm, Truss Assemblies, Signal Arms and Supports	0	0	2
X	msarsp	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
	msarsp	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	msarsp	8057	PedDetector	Pedestrian Detector	0	0	2
X	msarsp	8058	Pedestal	Pedestal	1	0	1
X	msarsp	8059	Pedestal_ep	Pedestal (Existing)	1	2	1
X	msarsp	8060	PedHead	Pedestrian Head (All Types)	1	0	1
X	msarsp	8061	PedHead_ep	Pedestrian Head (All Types) (Existing)	0	2	1
X	msarsp	216	PlotBorder_dp	Plot Border	3	0	0
	msarsp	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	msarsp	8062	PoleConc	Concrete Strain Pole	0	0	2
X	msarsp	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	msarsp	8515	PoleFound	Pole Foundation	0	0	2
X	msarsp	8516	PoleLight	Light Pole	2	0	1
X	msarsp	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	msarsp	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	msarsp	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	msarsp	8520	PoleLightID	Light Pole Location / ID	4	0	1
X	msarsp	7029	PolePower	Power Pole w/ Transformer	3	0	2
X	msarsp	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	msarsp	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	msarsp	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	msarsp	7033	PoleTel	Telephone Pole	6	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	msarsp	7034	PoleUtil	Utility Pole	0	0	2
X	msarsp	7035	PoleWoodStrain	Wood Strain Pole	0	0	2
X	msarsp	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
X	msarsp	8521	PullBox	Pull Boxes (All Types)	3	0	1
	msarsp	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	msarsp	8064	SawCuts	Saw Cuts	3	conduit1	0
	msarsp	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	msarsp	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	msarsp	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	msarsp	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	msarsp	223	SheetBorder_dp	Sheet Border	1	0	4
	msarsp	224	SheetLines_dp	Sheet Lines	1	0	2
	msarsp	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	msarsp	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	msarsp	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	msarsp	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	msarsp	8065	SignalCable	Signal Cable	3	signal_cable	1
X	msarsp	8066	SignalCableAccs	Signal Cable Accessories	0	0	2
X	msarsp	8067	SignalDetail	Signal Details	0	0	1
	msarsp	8068	SignalHead	Signal Head Section Details	2	0	1
X	msarsp	8069	SignalHead_ep	Signal Head Section Details (Existing)	2	2	0
	msarsp	8070	SignalMisc	Signal Miscellaneous Equipment	3	0	1
X	msarsp	8071	SignalSOP	S.O.P. Box and Movements	0	0	2
X	msarsp	8072	SignalSym	Signal Head Symbols	0	0	1
X	msarsp	8073	SignalSym_ep	Signal Head Symbols (Existing)	3	2	0
X	msarsp	7556	SignCantilever	Sign Symbol Cantilever	0	0	1
X	msarsp	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	msarsp	7558	SignDetail	Sign Details	0	0	2
	msarsp	7559	SignLettersAZ	Alphabet Cell Library Letter A-Z Numbers 0-9	0	0	0
	msarsp	7560	SignMisc	Miscellaneous Sign Symbols	1	0	2
	msarsp	7561	SignMisc_ep	Miscellaneous Sign Symbols (Existing)	1	1	1
X	msarsp	7562	SignPanel	Sign Panels - Regulatory	0	0	2
X	msarsp	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
X	msarsp	7564	SignPanelBorder	Sign Panel Border on Sign Details	0	0	1
X	msarsp	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	msarsp	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
X	msarsp	7573	SignSpecial	Special Signs / Guide Signs	2	0	2
X	msarsp	7574	SignSupport	Ground Mounted Sign Support Symbol (All Types)	1	0	1
X	msarsp	6066	SignSymbol_px	Sign Structure and Foundation on Cross Sections	4	0	2
X	msarsp	7575	SignTruss	Sign Symbol Truss	3	0	1
X	msarsp	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
	msarsp	5101	SpecialDetails	Special Details	6	0	1
	msarsp	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	msarsp	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	msarsp	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	msarsp	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	msarsp	303	TextConstEle	Text - Construction Element	0	0	1
	msarsp	304	TextCurveData	Text - Curve Data Note	0	0	2
	msarsp	305	TextDetails	Text - Detail Notes	4	0	2
	msarsp	1146	TextElevLabel	Elevation Labels	4	0	0
	msarsp	307	TextLabel	Text - Label	0	0	2
	msarsp	319	TextLandscape	Text - Landscape Labels	0	0	1
	msarsp	308	TextMajor	Text - Major	0	0	5
	msarsp	309	TextMinor	Text - Minor	0	0	0
	msarsp	320	TextMisc	Text - Miscellaneous	0	0	1
	msarsp	310	TextNotes	Text - Notes	4	0	1
	msarsp	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	msarsp	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	msarsp	1147	TextPtLabel	Point Labels	4	0	0
	msarsp	313	TextShtNo	Text - Sheet Number	0	0	2
	msarsp	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	msarsp	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	msarsp	315	TextTitle	Text - Title	0	0	3
	msarsp	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	msarsp	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.22 *Pond Cross Section - PDXSRD.rul*

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	pdxsrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	pdxsrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	pdxsrd	5002	AsphaltConc	Asphaltic Concrete Quantity Shapes	6	0	3
X	pdxsrd	6000	AsphaltMilling_px	Asphalt Milling Lines on Cross Sections	7	0	2
X	pdxsrd	6226	AsphaltMisc_px	Miscellaneous Pavement on Cross Sections	1	0	2
X	pdxsrd	6001	BarrierWall_ex	Barrier Wall for Cross Section (Existing)	6	3	1
X	pdxsrd	6002	BarrierWall_px	Barrier Wall for Cross Section	6	0	2
X	pdxsrd	6003	Base_ex	Base Material for Cross Sections (All Types) (Existing)	3	3	1
X	pdxsrd	6004	Base_px	Base Material for Cross Sections (All Types)	3	0	2
	pdxsrd	202	BaselineSurvey	Baseline Survey	0	0	2
X	pdxsrd	6005	Berm_px	Berm (Top, Front, or Back) for Cross Sections	10	0	2
X	pdxsrd	6006	CandG_ex	Curb and Gutter for Cross Sections (All Types) (Existing)	4	2	1
X	pdxsrd	6007	CandG_px	Curb and Gutter for Cross Sections (All Types)	4	0	2
X	pdxsrd	6008	CandGBase_px	Curb and Gutter Base on Cross Sections	3	0	1
X	pdxsrd	6009	CATVBur_ex	Cable TV and Miscellaneous on Cross Sections (Existing)	6	2	1
X	pdxsrd	6010	CATVBur_px	Cable TV and Miscellaneous on Cross Sections	6	0	1
	pdxsrd	234	CLConst_dp	Center Line of Construction	0	0	2
	pdxsrd	205	Cloud_dp	Construction Cloud	7	0	2
	pdxsrd	206	COGO_dp	COGO Information	3	0	1
	pdxsrd	6011	Concrete_px	Concrete Boundary Lines on Cross Sections	3	0	1
X	pdxsrd	6012	Conduit_ex	Conduit and Encasements on Cross Sections (Existing)	3	2	1
X	pdxsrd	6013	Conduit_px	Conduit and Encasements on Cross Sections	3	0	1
	pdxsrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	pdxsrd	9508	ConstLimits	Construction Limits	3	LOC	2
	pdxsrd	9509	ConstLines	Construction Lines and References	1	0	0
	pdxsrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	pdxsrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	pdxsrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	pdxsrd	6014	Ditch_px	Ditch Top for Cross Sections	7	0	2
X	pdxsrd	6015	DitchBot_px	Ditch Bottom for Cross Sections	10	0	2
X	pdxsrd	6016	DitchPavt_px	Ditch Pavement for Cross Sections	3	0	3
	pdxsrd	6017	DrainAlert_px	Alert Symbology for Structural Elements	3	0	2
	pdxsrd	6018	DrainMisc_ex	All types of miscellaneous drainage elements (Existing)	10	3	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	pdxsrd	6019	DrainStruct_ex	All Drainage Structures for Cross Sections (Existing)	10	3	1
X	pdxsrd	6020	DrainStruct_px	Misc Drainage Structures and Elements for XSections	10	0	2
X	pdxsrd	6107	Driveway_ex	Driveway Lines on Cross Sections - Existing	7	1	2
X	pdxsrd	6021	Driveway_px	Driveway Lines on Cross Sections	7	0	2
X	pdxsrd	6092	DrivewayBase_px	Proposed Driveway Subgrade	3	0	2
	pdxsrd	6022	Earthwork1_px	Earthwork (color 0)	0	0	1
	pdxsrd	6023	Earthwork2_px	Earthwork (color 1)	1	0	1
	pdxsrd	6024	Earthwork3_px	Earthwork (color 2)	2	0	1
	pdxsrd	6025	Earthwork4_px	Earthwork (color 3)	3	0	1
	pdxsrd	6026	Earthwork5_px	Earthwork (color 4)	4	0	1
X	pdxsrd	5027	EaseLicLine	License Agreement Line	5	6	0
	pdxsrd	5028	EaseLine_ep	Easement:Easement Line (Existing)	1	PESMT	1
	pdxsrd	6027	EasePerpLine_px	Perpetual Easement Lines on Cross Sections	4	PESMT	1
	pdxsrd	6028	EaseTempLine_px	Temporary Easement Lines on Cross Sections	6	TEMPE	0
X	pdxsrd	6029	Endwall_px	Endwall for Cross Sections	10	0	2
	pdxsrd	9512	ExcavationLimits_dp	Excavation Limits on Cross Sections	0	0	1
	pdxsrd	6099	Fence_ex	Fence Lines on Cross Sections (Existing)	6	3	1
X	pdxsrd	6030	Fence_px	Fence Lines on Cross Sections	6	Fence1	2
X	pdxsrd	6031	FES_px	Flared End Sections for Cross Sections	10	0	2
	pdxsrd	6550	FlowArrow_dp	Flow Arrow	10	0	2
X	pdxsrd	6032	FOCBur_ex	Fiber Optics Cable (Buried) for XSections (Existing)	6	2	1
X	pdxsrd	6033	FOCBur_px	Fiber Optics Cable (Buried) for XSections	6	0	1
X	pdxsrd	6034	Gas_ex	Gas Pipe and Fittings, Misc for Xsections (Existing)	4	2	1
X	pdxsrd	6035	Gas_px	Gas Pipe and Fittings, Misc for Xsections	4	0	1
	pdxsrd	5750	GeotechFillPatt1	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	pdxsrd	5751	GeotechFillPatt1_px	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	pdxsrd	5752	GeotechFillPatt2	Geotechnical Fill Pattern - clay, sand	0	1	0
	pdxsrd	5753	GeotechFillPatt2_px	Geotechnical Fill Pattern - clay, sand	0	1	0
	pdxsrd	5754	GeotechFillPatt3	Geotechnical Fill Pattern - shell	3	1	0
	pdxsrd	5755	GeotechFillPatt3_px	Geotechnical Fill Pattern - shell	3	1	0
	pdxsrd	5756	GeotechFillPatt4	Geotechnical Fill Pattern - sand	4	0	0
	pdxsrd	5757	GeotechFillPatt4_px	Geotechnical Fill Pattern - sand	4	0	0
	pdxsrd	5758	GeotechFillPatt5	Geotechnical Fill Pattern - coquina	1	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	pdxsrd	5759	GeotechFillPatt5_px	Geotechnical Fill Pattern - coquina	1	0	1
	pdxsrd	5760	GeotechFillPatt6	Geotechnical Fill Pattern - limestone	2	0	0
	pdxsrd	5761	GeotechFillPatt6_px	Geotechnical Fill Pattern - limestone	2	0	0
	pdxsrd	5762	GeotechFillPatt7	Geotechnical Fill Pattern - gravel	6	0	0
	pdxsrd	5763	GeotechFillPatt7_px	Geotechnical Fill Pattern - gravel	6	0	0
	pdxsrd	5764	GeotechMisc	Miscellaneous Geotechnical Elements	0	0	1
	pdxsrd	6554	GPKDrBack_dp	Back Point on Drainage Cells	2	2	2
	pdxsrd	6555	GPKDrBottom_dp	Bottom Point on Drainage Cells	3	3	2
	pdxsrd	6556	GPKDrCellIns_dp	Cell Insertion Point on Drainage Cells	4	4	2
	pdxsrd	6557	GPKDrCentroid_dp	Point on Centroid for Drainage	7	7	2
	pdxsrd	106	GPKDrElv	Location point for drainage cells	5	5	2
	pdxsrd	6558	GPKDrFront_dp	Front Point on Drainage Cells	1	1	2
	pdxsrd	6559	GPKDrPipe_dp	Point on Drainage Pipe	6	6	2
	pdxsrd	6560	GPKDrPipeCir_dp	Point on Pipe Circular	6	6	0
X	pdxsrd	6036	GravityWall_px	Gravity Wall for Cross Sections	11	0	2
X	pdxsrd	6092	GravWallBase_px	Proposed Gravity Wall Subgrade	3	0	2
	pdxsrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	pdxsrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	pdxsrd	9515	GridMinG_dp	Grid Lines Minor Sub 2 in Cross Section Sheets	20	0	0
	pdxsrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
X	pdxsrd	6108	Guardrail_ex	Guardrail Lines on Cross Sections - Existing	0	1	2
X	pdxsrd	6037	Guardrail_px	Guardrail	0	0	1
X	pdxsrd	6038	Handrail_px	Handrail Lines on Cross Sections	9	0	1
	pdxsrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	pdxsrd	6039	Inlet_px	Inlets on Cross Sections	10	0	2
X	pdxsrd	6040	InletBottom_px	Inlet Bottom on Cross Sections (All Types)	10	0	1
	pdxsrd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
X	pdxsrd	6041	LARWLine_ex	Limited Access Right of Way on XSections (Existing)	4	EXLA	1
X	pdxsrd	6042	LARWLine_px	Limited Access ROW Lines on Cross Sections	4	LA	2
X	pdxsrd	6043	LateralLimits_px	Lateral Limits for Cross Sections	6	0	2
	pdxsrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	pdxsrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	pdxsrd	6044	Manhole_px	Manhole on Cross Sections	10	0	2
X	pdxsrd	6045	MES_px	Mitered End Section on Cross Sections	10	0	2
X	pdxsrd	6093	MedianWallBase_px	Proposed Median Wall Subgrade	3	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	pdxsrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	pdxsrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	pdxsrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	pdxsrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	pdxsrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	pdxsrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	pdxsrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	pdxsrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	pdxsrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	pdxsrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	pdxsrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
X	pdxsrd	6046	Overbuild_px	Overbuild Areas on Cross Sections	4	0	2
X	pdxsrd	6094	Overbuild1_px	Proposed Overbuild Binder Symbology (No Longer Used)	7	0	2
X	pdxsrd	6095	Overbuild2_px	Proposed Overbuild Base Symbology (No Longer Used)	7	0	2
X	pdxsrd	6096	Overlay_px	Proposed Overlay Layer for Cross Sections	1	0	2
X	pdxsrd	6097	Overlay1_px	Proposed Overlay Layer for Cross Sections	14	0	2
X	pdxsrd	6098	Overlay2_px	Proposed Overlay Layer for Cross Sections	7	0	2
	pdxsrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	pdxsrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	pdxsrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2
	pdxsrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
X	pdxsrd	6100	PavedMedianBase_px	Proposed Paved Median Subgrade	3	0	2
	pdxsrd	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1
	pdxsrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	pdxsrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	pdxsrd	6048	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	pdxsrd	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	pdxsrd	216	PlotBorder_dp	Plot Border	3	0	0
	pdxsrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	pdxsrd	6109	Pond_px	Pond Lines on Cross Sections	2	0	2
X	pdxsrd	6050	Power_ex	Power on Cross Sections (Existing)	3	2	1
X	pdxsrd	6052	Power_px	Power on Cross Sections	3	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	pdxsrd	5072	PropertyLine_ep	Property Lines	3	0	0
	pdxsrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	pdxsrd	236	RegionBdry_dp	Boundary Line for Regions in Corridor Design (Autodesk)	0	0	0
X	pdxsrd	6053	RetainWall_px	Retaining Walls on Cross Sections	6	0	1
X	pdxsrd	6054	RipRap_px	Rip Rap, Rubble on Cross Sections	4	1	2
X	pdxsrd	5083	RumbleStrip1	Rumble Strips Continuous Array	0	rumble_cont	2
X	pdxsrd	5084	RumbleStrip2	Rumble Strips Skip Array	0	rumble_skip	2
X	pdxsrd	5085	RWLine	Right of Way Lines	4	RW	2
X	pdxsrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
X	pdxsrd	6055	RWLine_ex	ROW Lines on Cross Sections (Existing)	3	RW	1
X	pdxsrd	6056	RWLine_px	ROW Lines on Cross Sections	4	RW	2
X	pdxsrd	6057	SanitaryFM_ex	Force Main Lines on Cross Sections (Existing)	2	2	1
X	pdxsrd	6058	SanitaryFM_px	Force Main Lines on Cross Sections	2	0	1
X	pdxsrd	6059	SanitarySewer_ex	Sanitary Sewer Lines on Cross Sections (Existing)	10	2	0
X	pdxsrd	6060	SanitarySewer_px	Sanitary Sewer Lines on Cross Sections	2	0	1
X	pdxsrd	6061	SanitarySewerEff_px	Sanitary Effluent for Cross Sections	9	0	0
	pdxsrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	pdxsrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	pdxsrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	pdxsrd	223	SheetBorder_dp	Sheet Border	1	0	4
	pdxsrd	224	SheetLines_dp	Sheet Lines	1	0	2
	pdxsrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	pdxsrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	pdxsrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	pdxsrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	pdxsrd	6101	ShldrBase_px	Bottom of Proposed Paved Shoulder Base	3	0	2
X	pdxsrd	6102	ShldrBaseTop_px	Top of Proposed Paved Shoulder Base	3	0	2
X	pdxsrd	6062	ShldrPaved_px	Paved Shoulder Lines on Cross Sections	1	0	2
X	pdxsrd	6063	ShldrUnpaved_px	Grass Shoulder Lines on Cross Sections	2	0	2
X	pdxsrd	6103	ShldrWallBase_px	Proposed Shoulder Wall Subgrade	3	0	2
X	pdxsrd	6064	Sidewalk_ex	Sidewalk Elements in Cross Sections (Existing)	0	2	1
X	pdxsrd	6065	Sidewalk_px	Sidewalk Elements in Cross Sections	0	0	2
	pdxsrd	5093	SidewalkBack_er	Back of Sidewalk Line Profile (Existing)	2	2	1
	pdxsrd	5094	SidewalkBack_pr	Back of Sidewalk Line Profile	5	0	2
X	pdxsrd	6104	SidewalkBase_px	Proposed Sidewalk Subgrade	3	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	pdxsrd	6067	Slopes_px	Slope Lines on Cross Sections	9	0	2
X	pdxsrd	6068	SoilBoxes_px	Soil Boxes and Borings for Cross Sections	4	0	1
	pdxsrd	6069	SpecialDetails_px	Special Details_XS	6	0	1
X	pdxsrd	6070	Stabilization_px	Stabilization for Cross Sections	5	2	2
	pdxsrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	pdxsrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	pdxsrd	6071	StreetLights_px	Street Lights for Cross Sections	3	0	1
	pdxsrd	6072	Structure_px	Signal and Sign Structures on Cross Sections	0	0	2
X	pdxsrd	6073	SubDsgn_px	Sub Design for Cross Sections including subbase	4	0	1
X	pdxsrd	6074	Subsoil_px	Subsoil Or Undercut for Cross Sections	4	0	2
X	pdxsrd	6075	SubsoilFinal_px	Subsoil Final for Multiline	18	0	1
X	pdxsrd	6076	SubsoilProp_px	Subsoil Proposed for Multiline	8	0	1
	pdxsrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	pdxsrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	pdxsrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
X	pdxsrd	6077	TeleBur_ex	Telephone for Cross Sections (Buried - Miscellaneous - Existing)	6	2	1
X	pdxsrd	6078	TeleBur_px	Telephone for Cross Sections (Buried) (Miscellaneous)	6	0	
X	pdxsrd	6079	TemplateBottom_px	Bottom of Template for Multiline	6	0	1
X	pdxsrd	6080	TemplateFinal_px	Final Template for Multiline	2	0	1
X	pdxsrd	6081	TemplateTop_px	Top of Template for Multiline	7	0	1
X	pdxsrd	6082	TerrainLine_ex	Existing Ground Line for Multiline	5	0	1
	pdxsrd	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	pdxsrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	pdxsrd	303	TextConstEle	Text - Construction Element	0	0	1
	pdxsrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	pdxsrd	305	TextDetails	Text - Detail Notes	4	0	2
	pdxsrd	1146	TextElevLabel	Elevation Labels	4	0	0
	pdxsrd	306	TextGeotech	Text for soil borings and labels	0	0	2
	pdxsrd	307	TextLabel	Text - Label	0	0	2
	pdxsrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	pdxsrd	308	TextMajor	Text - Major	0	0	5
	pdxsrd	309	TextMinor	Text - Minor	0	0	0
	pdxsrd	320	TextMisc	Text - Miscellaneous	0	0	1
	pdxsrd	310	TextNotes	Text - Notes	4	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	pdxsrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	pdxsrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	pdxsrd	1147	TextPtLabel	Point Labels	4	0	0
	pdxsrd	313	TextShtNo	Text - Sheet Number	0	0	2
	pdxsrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	pdxsrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	pdxsrd	315	TextTitle	Text - Title	0	0	3
	pdxsrd	321	TextXSBL_dp	Cross Section Baseline Labels	0	0	2
	pdxsrd	322	TextXSDrain_ex	Existing Drainage Labels	10	0	2
	pdxsrd	323	TextXSDrain_px	Proposed Drainage Labels	10	0	2
	pdxsrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	pdxsrd	317	TextXSElev_ex	Existing cross section elevations	2	0	1
	pdxsrd	318	TextXSElev_px	Proposed cross section elevations	0	0	1
	pdxsrd	324	TextXSGPKPts_dp	Used by criteria to label points	4	0	0
	pdxsrd	325	TextXSNotes_dp	Cross Section Notes	0	0	2
	pdxsrd	326	TextXSSlope_dp	Cross Section Slope Labels (rise:run format)	0	0	2
	pdxsrd	327	TextXSSlopePvt_dp	Cross Section Pavement Slope Labels	0	0	2
X	pdxsrd	6083	TrafSeparator_ex	Traffic Separator (All Types) on Cross Sections (Existing)	6	2	1
X	pdxsrd	6084	TrafSeparator_px	Traffic Separator (All Types) on Cross Sections	6	0	2
X	pdxsrd	6105	TrafSeparatorBase_px	Proposed Traffic Separator Subgrade	3	0	2
	pdxsrd	9534	TypicalMisc	Typical Miscellaneous Items	0	0	2
	pdxsrd	7056	Utility_er	Existing Utilities in Profile View	3	2	1
	pdxsrd	7057	Utility_pr	Proposed Utilities in Profile View	3	0	2
	pdxsrd	6085	UtilsMisc_ex	Miscellaneous Utility Items on Cross Sections (Existing)	8	2	1
	pdxsrd	6086	UtilsMisc_px	Miscellaneous Utility Items on Cross Sections	8	0	1
	pdxsrd	9535	Vehicle	Vehicle for Calculating Turning Radius	7	0	2
	pdxsrd	6087	VoidArea_dx	Void Area_XS	1	0	0
X	pdxsrd	6088	Water_ex	Water for Cross Sections (Existing)	1	2	1
X	pdxsrd	6089	Water_px	Water for Cross Sections	1	0	1
X	pdxsrd	6090	WaterNP_px	Raw Water Pipes for Cross Sections	1	0	1
	pdxsrd	1182	WetlandEdge_ep	Edge of Mangrove, Wetlands (Marsh or Swamp)	2	wetland	0
X	pdxsrd	6190	XSBaseTop_px	Top of Proposed Base	3	0	2
	pdxsrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	pdxsrd	6200	XSExtendGrdLine_ex	Extend Ground Lines for Cross Sections (Existing)	21	2	1
X	pdxsrd	6201	XSGrdLine_ex	Ground Lines for Cross Sections (Existing)	2	2	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	pdxsrd	6202	XSGrdLine_px	Roadway Ground Lines on Cross Sections	1	0	2
	pdxsrd	6203	XSMisc_ex	Roadway Miscellaneous Items on Cross Sections (Existing)	4	3	1
	pdxsrd	6204	XSMisc_px	Cross Section Miscellaneous Items	0	0	2
	pdxsrd	1185	XSPt_ep	Cross Section Point, Station	2	1	0
	pdxsrd	6205	XSShapeDep01_dp	Cross Section Shape Dependent	11	0	2
	pdxsrd	6206	XSShapeDep02_dp	Cross Section Shape Dependent	12	0	2
	pdxsrd	6207	XSShapeDep03_dp	Cross Section Shape Dependent	13	0	2
	pdxsrd	6208	XSShapeDep04_dp	Cross Section Shape Dependent	14	0	2
	pdxsrd	6209	XSShapeDep05_dp	Cross Section Shape Dependent	15	0	2
	pdxsrd	6210	XSShapeDep06_dp	Cross Section Shape Dependent	16	0	2
	pdxsrd	6211	XSShapeDep07_dp	Cross Section Shape Dependent	17	0	2
	pdxsrd	6212	XSShapeDep08_dp	Cross Section Shape Dependent	18	0	2
	pdxsrd	6213	XSShapeDep09_dp	Cross Section Shape Dependent	19	0	2
	pdxsrd	6214	XSShapeDep10_dp	Cross Section Shape Dependent	20	0	2
	pdxsrd	6215	XSShapeIndep01_dp	Cross Section Shape Independent	1	0	2
	pdxsrd	6216	XSShapeIndep02_dp	Cross Section Shape Independent	2	0	2
	pdxsrd	6217	XSShapeIndep03_dp	Cross Section Shape Independent	3	0	2
	pdxsrd	6218	XSShapeIndep04_dp	Cross Section Shape Independent	4	0	2
	pdxsrd	6219	XSShapeIndep05_dp	Cross Section Shape Independent	5	0	2
	pdxsrd	6220	XSShapeIndep06_dp	Cross Section Shape Independent	6	0	2
	pdxsrd	6221	XSShapeIndep07_dp	Cross Section Shape Independent	7	0	2
	pdxsrd	6222	XSShapeIndep08_dp	Cross Section Shape Independent	8	0	2
	pdxsrd	6223	XSShapeIndep09_dp	Cross Section Shape Independent	9	0	2
	pdxsrd	6224	XSShapeIndep10_dp	Cross Section Shape Independent	10	0	2
X	pdxsrd	6225	XSTypical_px	Roadway Pavement Typical on Cross Sections	1	0	2

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Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	planrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	planrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	planrd	202	BaselineSurvey	Baseline Survey	0	0	2
	planrd	234	CLConst_dp	Center Line of Construction	0	0	2
	planrd	203	ClipBorder_dp	CLIP Border	3	0	0
	planrd	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	planrd	205	Cloud_dp	Construction Cloud	7	0	2
	planrd	206	COGO_dp	COGO Information	3	0	1
	planrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	planrd	9508	ConstLimits	Construction Limits	3	LOC	2
	planrd	9509	ConstLines	Construction Lines and References	1	0	0
	planrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	planrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	planrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	planrd	5027	EaseLicLine	License Agreement Line	5	6	0
	planrd	101	FLMap1	Florida Map items - weight of 1	1	0	1
	planrd	102	FLMap2	Florida Map items - weight of 2	3	0	2
	planrd	103	FLMap3	Florida Map items - weight of 3	2	0	3
	planrd	104	FLMap4	Florida Map items - color 11 (Interstate)	11	0	3
	planrd	105	FLMap5	Florida Map items - style 7, wt. 5 (state line)	3	7	5
	planrd	5047	GradeLine_er	Grade Line Profile (Existing)	2	2	1
	planrd	5048	GradeLine_pr	Grade Line Profile	5	0	2
	planrd	5049	GradeLineCtr_dp	Grade Line Profile Center (shown in plan view)	5	0	0
	planrd	5050	GradeLineCtr_pr	Grade Line Profile Center	5	0	2
	planrd	5051	GradeLineLt_dp	Grade Line Profile Left (shown in plan view)	1	0	0
	planrd	5052	GradeLineLt_er	Grade Line Profile Left (Existing)	1	2	1
	planrd	5053	GradeLineLt_pr	Grade Line Profile Left	1	0	2
	planrd	5054	GradeLineRt_dp	Grade Line Profile Right (shown in plan view)	4	0	0
	planrd	5055	GradeLineRt_er	Grade Line Profile Right (Existing)	4	2	1
	planrd	5056	GradeLineRt_pr	Grade Line Profile Right	4	0	2
	planrd	5057	GradeSecPat	Grade Section Patterns	0	0	0
	planrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	planrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	planrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	planrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	planrd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
	planrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	planrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
	planrd	235	MatchLineMask_dp	Mask Area for Match Line Overlap Areas (Autodesk)	0	0	0
	planrd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
	planrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	planrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	planrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	planrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	planrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	planrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	planrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	planrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	planrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	planrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	planrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	planrd	215	NorthArw_dp	North Arrows	0	0	2
	planrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	planrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	planrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2
	planrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
	planrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	planrd	216	PlotBorder_dp	Plot Border	3	0	0
	planrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	planrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	planrd	217	RefPtAngleTie	Annotation:Leader:Survey Reference Point / Detail	0	Angle	1
	planrd	219	RefPtLine	Miscellaneous:Survey Reference Point Line / Detail	0	0	1
	planrd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	planrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	planrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	planrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	planrd	223	SheetBorder_dp	Sheet Border	1	0	4
	planrd	224	SheetLines_dp	Sheet Lines	1	0	2
	planrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	planrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	planrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	planrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
	planrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	planrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
	planrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	planrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	planrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	planrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	planrd	303	TextConstEle	Text - Construction Element	0	0	1
	planrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	planrd	305	TextDetails	Text - Detail Notes	4	0	2
	planrd	1146	TextElevLabel	Elevation Labels	4	0	0
	planrd	307	TextLabel	Text - Label	0	0	2
	planrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	planrd	308	TextMajor	Text - Major	0	0	5
	planrd	309	TextMinor	Text - Minor	0	0	0
	planrd	320	TextMisc	Text - Miscellaneous	0	0	1
	planrd	310	TextNotes	Text - Notes	4	0	1
	planrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	planrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	planrd	1147	TextPtLabel	Point Labels	4	0	0
	planrd	313	TextShtNo	Text - Sheet Number	0	0	2
	planrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	planrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	planrd	315	TextTitle	Text - Title	0	0	3
	planrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	planrd	6599	Wetland	Wetland Boundary	2	wetland	1
	planrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

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Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	plprrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	plprrd	6003	Base_ex	Base Material for Cross Sections (All Types) (Existing)	3	3	1
X	plprrd	6004	Base_px	Base Material for Cross Sections (All Types)	3	0	2
	plprrd	202	BaselineSurvey	Baseline Survey	0	0	2
	plprrd	1004	Beacons_ep	Beacons and Path Illumination	0	0	0
X	plprrd	6005	Berm_px	Berm (Top, Front, or Back) for Cross Sections	10	0	2
X	plprrd	6006	CandG_ex	Curb and Gutter for Cross Sections (All Types) (Existing)	4	2	1
X	plprrd	6007	CandG_px	Curb and Gutter for Cross Sections (All Types)	4	0	2
X	plprrd	6008	CandGBase_px	Curb and Gutter Base on Cross Sections	3	0	1
X	plprrd	7000	Capacitor	Capacitors (All Types)	3	0	1
	plprrd	1014	CATV_ep	Cable TV Line (Aerial)	6	e-otv	0
X	plprrd	7001	CATVAer	Cable TV Line (Aerial)	6	otv	1
X	plprrd	7002	CATVBur	Cable TV Line (Buried)	6	btv	1
	plprrd	1015	CATVBur_ep	Cable TV Line (Buried)	6	e-btv	1
X	plprrd	6009	CATVBur_ex	Cable TV and Miscellaneous on Cross Sections (Existing)	6	2	1
X	plprrd	6010	CATVBur_px	Cable TV and Miscellaneous on Cross Sections	6	0	1
X	plprrd	7003	CATVCond	Cable TV Conduit System	6	conduit1	1
	plprrd	1016	CATVCond_ep	Cable TV Conduit System	6	0	1
	plprrd	7004	CATVMisc	Cable TV Service Box	6	0	1
	plprrd	1017	CATVMisc_ep	Cable TV Service Box, Pole	6	2	0
	plprrd	234	CLConst_dp	Center Line of Construction	0	0	2
	plprrd	203	ClipBorder_dp	CLIP Border	3	0	0
	plprrd	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	plprrd	205	Cloud_dp	Construction Cloud	7	0	2
	plprrd	206	COGO_dp	COGO Information	3	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	plprrd	7005	Conduit	Conduit for Utilities and Encasements	3	conduit1	1
	plprrd	1024	Conduit_ep	Utility Conduit & Encasements	3	e-cas	0
X	plprrd	6012	Conduit_ex	Conduit and Encasements on Cross Sections (Existing)	3	2	1
X	plprrd	6013	Conduit_px	Conduit and Encasements on Cross Sections	3	0	1
X	plprrd	8500	ConduitBG	Conduit In Box Girder	5	lite_cond5	1
X	plprrd	8501	ConduitBG_ep	Conduit In Box Girder (Existing)	5	exlite_cond5	0
X	plprrd	8502	ConduitC	Conduit Lead-in Cable	3	0	0
X	plprrd	8503	ConduitJ	Conduit Jacked Underpavement	1	lite_cond3	1
X	plprrd	8504	ConduitJ_ep	Conduit Jacked (Existing)	1	exlite_cond3	0
X	plprrd	8505	ConduitSM	Conduit Surface Mounted	4	lite_cond4	1
X	plprrd	8506	ConduitSM_ep	Conduit Surface Mounted (Existing)	4	exlite_cond4	0
X	plprrd	8507	ConduitUG	Conduit Underground	3	lite_cond1	1
X	plprrd	8508	ConduitUG_ep	Conduit Underground (Existing)	3	exlite_cond1	0
X	plprrd	8509	ConduitUP	Conduit Underpavement	2	lite_cond2	1
X	plprrd	8510	ConduitUP_ep	Conduit Underpavement (Existing)	2	exlite_cond2	0
	plprrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	plprrd	9508	ConstLimits	Construction Limits	3	LOC	2
	plprrd	9509	ConstLines	Construction Lines and References	1	0	0
X	plprrd	8005	Controller_ep	Controller and Accessories (Existing)	0	2	1
X	plprrd	8008	ControllerB_ep	Controller - Base Mounted (Existing)	0	2	1
X	plprrd	8010	ControllerP_ep	Controller Pole Mount (Existing)	0	2	1
	plprrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	plprrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	plprrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	plprrd	6014	Ditch_px	Ditch Top for Cross Sections	7	0	2
X	plprrd	6015	DitchBot_px	Ditch Bottom for Cross Sections	10	0	2
X	plprrd	6016	DitchPavt_px	Ditch Pavement for Cross Sections	3	0	3

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	6517	DitchProfLt_er	Ditch Profile Left (Existing)	8	3	1
	plprrd	6518	DitchProfLt_pr	Ditch Profile Left	8	0	1
	plprrd	6519	DitchProfMdn_er	Ditch Profile Median (Existing)	10	3	1
	plprrd	6520	DitchProfMdn_pr	Ditch Profile Median	10	0	1
	plprrd	6521	DitchProfRt_er	Ditch Profile Right (Existing)	9	3	1
	plprrd	6522	DitchProfRt_pr	Ditch Profile Right	9	0	1
	plprrd	6017	DrainAlert_px	Alert Symbology for Structural Elements	3	0	2
	plprrd	6524	DrainDivides00	Drainage Divides	10	2	4
	plprrd	6525	DrainDivides00_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6526	DrainDivides01	Drainage Divides	10	2	4
	plprrd	6527	DrainDivides01_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6528	DrainDivides02	Drainage Divides	10	2	4
	plprrd	6529	DrainDivides02_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6530	DrainDivides03	Drainage Divides	10	2	4
	plprrd	6531	DrainDivides03_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6532	DrainDivides04	Drainage Divides	10	2	4
	plprrd	6533	DrainDivides04_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6534	DrainDivides05	Drainage Divides	10	2	4
	plprrd	6535	DrainDivides05_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6536	DrainDivides06	Drainage Divides	10	2	4
	plprrd	6537	DrainDivides06_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6538	DrainDivides07	Drainage Divides	10	2	4
	plprrd	6539	DrainDivides07_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6540	DrainDivides08	Drainage Divides	10	2	4
	plprrd	6541	DrainDivides08_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6542	DrainDivides09	Drainage Divides	10	2	4
	plprrd	6543	DrainDivides09_ep	Drainage Divides (Existing)	9	2	4
	plprrd	6544	DrainMisc	Miscellaneous Drainage Items	10	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	1033	DrainMisc_ep	Drainage Miscellaneous (Existing)	10	3	1
	plprrd	6018	DrainMisc_ex	All types of miscellaneous drainage elements (Existing)	10	3	1
X	plprrd	6019	DrainStruct_ex	All Drainage Structures for Cross Sections (Existing)	10	3	1
X	plprrd	6545	DrainStruct_pr	Drainage Structures (All Types)	10	0	2
X	plprrd	6020	DrainStruct_px	Misc Drainage Structures and Elements for XSections	10	0	2
X	plprrd	6091	DrivewayBase_px	Proposed Driveway Subgrade	3	0	2
	plprrd	1035	DummyChains_ep	Dummy Chains	0	0	1
X	plprrd	5027	EaseLicLine	License Agreement Line	5	6	0
X	plprrd	7006	ElecMeter	Meter (Electric)	3	0	1
X	plprrd	7007	ElectPS	Electrical Power Service Miscellaneous	3	0	1
X	plprrd	7008	ElectPSB	Electrical (Buried)	3	be	2
X	plprrd	7009	ElectPSO	Electrical Outlet	3	0	1
X	plprrd	7010	ElectServWire	Electrical Service Wire	3	0	2
X	plprrd	6029	Endwall_px	Endwall for Cross Sections	10	0	2
X	plprrd	6031	FES_px	Flared End Sections for Cross Sections	10	0	2
X	plprrd	7011	FireHydrant	Fire Hydrant	1	0	1
	plprrd	1038	FireHydrant_ep	Fire Hydrant	1	2	0
	plprrd	101	FLMap1	Florida Map items - weight of 1	1	0	1
	plprrd	102	FLMap2	Florida Map items - weight of 2	3	0	2
	plprrd	103	FLMap3	Florida Map items - weight of 3	2	0	3
	plprrd	104	FLMap4	Florida Map items - color 11 (Interstate)	11	0	3
	plprrd	105	FLMap5	Florida Map items - style 7, wt. 5 (state line)	3	7	5
	plprrd	1039	FloodLight_ep	Flood Light	3	2	0
	plprrd	6550	FlowArrow_dp	Flow Arrow	10	0	2
	plprrd	6552	FlowLine_pr	Flow Line (Roadway Profile View)	0	0	2
X	plprrd	7013	FOCBur	Fiber Optics Cable (Buried)	6	bfo	1
X	plprrd	6032	FOCBur_ex	Fiber Optics Cable (Buried) for XSections (Existing)	6	2	1
X	plprrd	6033	FOCBur_px	Fiber Optics Cable (Buried) for XSections	6	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	plprrd	7014	Gas	Gas Pipe and Fittings	4	g	1
	plprrd	1043	Gas_ep	Gas Line (all sizes)	4	e-g	1
X	plprrd	6034	Gas_ex	Gas Pipe and Fittings, Misc for Xsections (Existing)	4	2	1
X	plprrd	6035	Gas_px	Gas Pipe and Fittings, Misc for Xsections	4	0	1
X	plprrd	7015	GasMeter	Meter (Gas)	4	0	1
	plprrd	7016	GasMisc	Gas Regulator and Miscellaneous Items	4	0	0
	plprrd	1044	GasReg_ep	Gas Regulator	4	1	0
X	plprrd	7017	Gauges	Gauges	0	0	1
	plprrd	1046	Gauges_ep	Gauges	0	0	0
X	plprrd	7018	Generator	Emergency Generator	0	0	2
	plprrd	5750	GeotechFillPatt1	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	plprrd	5751	GeotechFillPatt1_px	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	plprrd	5752	GeotechFillPatt2	Geotechnical Fill Pattern - clay, sand	0	1	0
	plprrd	5753	GeotechFillPatt2_px	Geotechnical Fill Pattern - clay, sand	0	1	0
	plprrd	5754	GeotechFillPatt3	Geotechnical Fill Pattern - shell	3	1	0
	plprrd	5755	GeotechFillPatt3_px	Geotechnical Fill Pattern - shell	3	1	0
	plprrd	5756	GeotechFillPatt4	Geotechnical Fill Pattern - sand	4	0	0
	plprrd	5757	GeotechFillPatt4_px	Geotechnical Fill Pattern - sand	4	0	0
	plprrd	5758	GeotechFillPatt5	Geotechnical Fill Pattern - coquina	1	0	1
	plprrd	5759	GeotechFillPatt5_px	Geotechnical Fill Pattern - coquina	1	0	1
	plprrd	5760	GeotechFillPatt6	Geotechnical Fill Pattern - limestone	2	0	0
	plprrd	5761	GeotechFillPatt6_px	Geotechnical Fill Pattern - limestone	2	0	0
	plprrd	5762	GeotechFillPatt7	Geotechnical Fill Pattern - gravel	6	0	0
	plprrd	5763	GeotechFillPatt7_px	Geotechnical Fill Pattern - gravel	6	0	0
	plprrd	5764	GeotechMisc	Miscellaneous Geotechnical Elements	0	0	1
	plprrd	6554	GPKDrBack_dp	Back Point on Drainage Cells	2	2	2
	plprrd	6555	GPKDrBottom_dp	Bottom Point on Drainage Cells	3	3	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	6556	GPKDrCellIns_dp	Cell Insertion Point on Drainage Cells	4	4	2
	plprrd	6557	GPKDrCentroid_dp	Point on Centroid for Drainage	7	7	2
	plprrd	6558	GPKDrFront_dp	Front Point on Drainage Cells	1	1	2
	plprrd	6559	GPKDrPipe_dp	Point on Drainage Pipe	6	6	2
	plprrd	6560	GPKDrPipeCir_dp	Point on Pipe Circular	6	6	0
	plprrd	5047	GradeLine_er	Grade Line Profile (Existing)	2	2	1
	plprrd	5048	GradeLine_pr	Grade Line Profile	5	0	2
	plprrd	5049	GradeLineCtr_dp	Grade Line Profile Center (shown in plan view)	5	0	0
	plprrd	5050	GradeLineCtr_pr	Grade Line Profile Center	5	0	2
	plprrd	5051	GradeLineLt_dp	Grade Line Profile Left (shown in plan view)	1	0	0
	plprrd	5052	GradeLineLt_er	Grade Line Profile Left (Existing)	1	2	1
	plprrd	5053	GradeLineLt_pr	Grade Line Profile Left	1	0	2
	plprrd	5054	GradeLineRt_dp	Grade Line Profile Right (shown in plan view)	4	0	0
	plprrd	5055	GradeLineRt_er	Grade Line Profile Right (Existing)	4	2	1
	plprrd	5056	GradeLineRt_pr	Grade Line Profile Right	4	0	2
	plprrd	5057	GradeSecPat	Grade Section Patterns	0	0	0
X	plprrd	6092	GravWallBase_px	Proposed Gravity Wall Subgrade	3	0	2
	plprrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	plprrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	plprrd	9515	GridMinG_dp	Grid Lines Minor Sub 2 in Cross Section Sheets	20	0	0
	plprrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	plprrd	1051	Guys_ep	Guy Anchor, Guy pole, Span Guys	3	1	0
X	plprrd	7019	GuyWire	Guy Wire	3	0	0
	plprrd	600	ImageAttachment _dp	Image Attachmentst	0	0	0
X	plprrd	6039	Inlet_px	Inlets on Cross Sections	10	0	2
X	plprrd	6040	InletBottom_px	Inlet Bottom on Cross Sections (All Types)	10	0	1
X	plprrd	8033	InterconCable_ep	Interconnect Cable (Existing)	1	intcon2	0
X	plprrd	7020	JunctBox	Junction Boxes, Service Cabinet Elec / Tel	3	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	1058	JunctBox_ep	Junct. Box / Service Cabinet (Elec/Tel)	3	1	0
X	plprrd	8049	JunctBoxA	Junction Boxes (Aerial)	3	0	1
X	plprrd	8050	JunctBoxA_ep	Junction Boxes (Aerial) (Existing)	3	1	0
	plprrd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
	plprrd	9517	LaneDirArrow	Lane Directional Arrow	0	0	1
	plprrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	plprrd	1060	LiteCond_ep	Street Lighting Conductors	3	exlite_cond1	0
X	plprrd	8513	LoadCenter	Load Center	2	0	1
X	plprrd	8514	LoadCenter_ep	Load Center (Existing)	2	5	0
	plprrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	plprrd	8053	LoopLI_ep	Loop Lead-In (Existing)	3	2	0
X	plprrd	8055	Loops_ep	Loop Assembly (All Types) (Existing)	2	2	2
X	plprrd	9022	Luminaire	Luminaires (Decorative - All Types)	2	0	1
	plprrd	1061	Luminaire_ep	Street Light / Pole	3	2	0
X	plprrd	6044	Manhole_px	Manhole on Cross Sections	10	0	2
	plprrd	1063	ManholeCover_ep	Manhole Cover (Cable TV)	6	1	0
	plprrd	1064	ManholeCovUnk_ep	Manhole Cover, Unknown	0	1	0
	plprrd	1065	ManholeCovW_ep	Manhole Cover (Water)	1	1	0
X	plprrd	7022	ManholeElec	Manhole (Electric)	3	0	1
	plprrd	1066	ManholeElec_ep	Manhole (Electric)	3	1	0
X	plprrd	7023	ManholeGas	Manhole (Gas)	4	0	1
	plprrd	1067	ManholeGas_ep	Manhole (Gas)	4	1	0
X	plprrd	7024	ManholeSS	Manhole (Sanitary Sewer)	2	0	1
	plprrd	1068	ManholeSS_ep	Manhole (Sanitary Sewer)	2	1	0
X	plprrd	7025	ManholeSW	Manhole (Storm Water)	10	0	1
	plprrd	1069	ManholeSW_ep	Manhole (Storm Water)	10	1	0
X	plprrd	7026	ManholeTel	Manhole (Telephone)	6	0	1
	plprrd	1070	ManholeTel_ep	Manhole (Telephone)	6	1	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	235	MatchLineMask_dp	Mask Area for Match Line Overlap Areas (Autodesk)	0	0	0
	plprrd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
X	plprrd	6093	MedianWallBase_px	Proposed Median Wall Subgrade	3	0	2
X	plprrd	6045	MES_px	Mitered End Section on Cross Sections	10	0	2
	plprrd	1071	MeterElec_ep	Meter (Electric)	3	1	0
	plprrd	1072	MeterElecUG_ep	Meter (Electric) (Underground)	3	1	1
	plprrd	1073	MeterGas_ep	Meter (Gas)	4	1	0
	plprrd	7027	MeterUnk	Meter (Unknown) PROPOSED UNKNOWN ELEMENT	0	0	0
	plprrd	1074	MeterUnk_ep	Meter (unknown)	0	1	0
	plprrd	1075	MeterWater_ep	Meter (Water)	1	1	0
	plprrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	plprrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	plprrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	plprrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	plprrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	plprrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	plprrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	plprrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	plprrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	plprrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	plprrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	plprrd	215	NorthArw_dp	North Arrows	0	0	2
X	plprrd	7028	Oil	Oil Pipeline, Petroleum	4	pet	2
X	plprrd	6094	Overbuild1_px	Proposed Overbuild Binder Symbology (No Longer Used)	7	0	2
X	plprrd	6095	Overbuild2_px	Proposed Overbuild Base Symbolog y (No Longer Used)	7	0	2
X	plprrd	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	plprrd	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
X	plprrd	6097	Overlay1_px	Proposed Overlay for Cross Sections (No Longer Used)	14	0	2
X	plprrd	6098	Overlay2_px	Proposed Overlay for Cross Secions (No Longer Used)	7	0	2
	plprrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	plprrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	plprrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2
	plprrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
X	plprrd	6100	PavedMedianBase_px	Proposed Paved Median Subgrade	3	0	2
	plprrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	plprrd	8059	Pedestal_ep	Pedestal (Existing)	1	2	1
X	plprrd	8061	PedHead_ep	Pedestrian Head (All Types) (Existing)	0	2	1
	plprrd	1089	PedSignal_ep	Pedestrian Signal Unit, Signage	0	2	0
	plprrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	plprrd	6573	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	plprrd	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	plprrd	216	PlotBorder_dp	Plot Border	3	0	0
	plprrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	plprrd	8062	PoleConc	Concrete Strain Pole	0	0	2
X	plprrd	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	plprrd	8515	PoleFound	Pole Foundation	0	0	2
X	plprrd	8516	PoleLight	Light Pole	2	0	1
X	plprrd	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	plprrd	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	plprrd	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	plprrd	8520	PoleLightID	Light Pole Location / ID	4	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	plprrd	7029	PolePower	Power Pole w/ Transformer	3	0	2
	plprrd	1094	PolePower_ep	Power Pole with or without Transformer, shared pole	3	1	0
X	plprrd	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	plprrd	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	plprrd	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	plprrd	7033	PoleTel	Telephone Pole	6	0	2
	plprrd	1095	PoleTel_ep	Telephone Pole	6	1	0
X	plprrd	7034	PoleUtil	Utility Pole	0	0	2
X	plprrd	7035	PoleWoodStrain	Wood Strain Pole	0	0	2
X	plprrd	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
	plprrd	1097	Power_ep	Existing Overhead Electric Power Conductors (Distribution & Transmission)	3	e-oe	0
X	plprrd	6050	Power_ex	Power on Cross Sections (Existing)	3	2	1
X	plprrd	6052	Power_px	Power on Cross Sections	3	0	1
	plprrd	1098	PowerBur_ep	Existing Buried Electric Power Conductors (Distribution & Transmission)	3	e-be	1
	plprrd	1099	PowerBurCond_ep	Secondary Conductor Buried	3	e-be	0
	plprrd	1100	PowerCapcUG_ep	Capacitors (Underground)	3	1	1
	plprrd	1101	PowerCond_ep	Conductors (primary distribution)	3	e-oe	1
	plprrd	1102	PowerElecOut_ep	Electrical Outlet	3	1	1
	plprrd	7037	PowerMisc	Fuses, Reclosures, Regulator, Sectionalizers	3	0	0
	plprrd	1103	PowerMisc_ep	Capacitors (Above Ground), Switchgear, Transformer, Electrical Service Box	3	1	0
X	plprrd	5072	PropertyLine_ep	Property Lines	3	0	0
X	plprrd	8521	PullBox	Pull Boxes (All Types)	3	0	1
	plprrd	1104	PullBox_ep	Wiring Pull Box	3	1	1
X	plprrd	7038	PumpNonPet	Pump (Non Petroleum)	1	0	0
	plprrd	1106	PumpNonPet_ep	Pump (Non Petroleum)	1	3	1
	plprrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	plprrd	5076	RetainWall_pr	Retaining Wall Profile	9	0	2
X	plprrd	6054	RipRap_px	Rip Rap, Rubble on Cross Sections	4	1	2
	plprrd	5078	RoadwayMisc	Roadway Miscellaneous Items	4	0	2
X	plprrd	5085	RWLine	Right of Way Lines	4	RW	2
X	plprrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
	plprrd	1111	Sanitary_ep	Sanitary Sewer (all sizes)	2	e-s	1
	plprrd	1112	SanitaryDumpSta_ep	Dump Station (SS)	2	2	0
X	plprrd	7039	SanitaryFM	Force Main	2	s	1
	plprrd	1113	SanitaryFM_ep	Force Main (all sizes)	2	e-s	1
X	plprrd	6057	SanitaryFM_ex	Force Main Lines on Cross Sections (Existing)	2	2	1
X	plprrd	6058	SanitaryFM_px	Force Main Lines on Cross Sections	2	0	1
	plprrd	1114	SanitaryMisc_ep	Cleanout, Sanitary Effluent (Open channel)	2	1	0
X	plprrd	7040	SanitarySewer	Sanitary Sewer	2	s	1
X	plprrd	6059	SanitarySewer_ex	Sanitary Sewer Lines on Cross Sections (Existing)	10	2	0
X	plprrd	6060	SanitarySewer_px	Sanitary Sewer Lines on Cross Sections	2	0	1
X	plprrd	7041	SanitarySewerDSta	Sewer Dump Station	2	0	0
X	plprrd	7042	SanitarySewerEff	Sanitary Sewer Effluent NPW	5	npw	0
X	plprrd	6061	SanitarySewerEff_px	Sanitary Effluent for Cross Sections	9	0	0
	plprrd	7043	SanitarySewerMisc	Sewer Miscellaneous Items	2	0	0
	plprrd	1115	SateDish_ep	Sattelite Dish Antenna	6	4	0
	plprrd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	plprrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	plprrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	plprrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	plprrd	223	SheetBorder_dp	Sheet Border	1	0	4
	plprrd	224	SheetLines_dp	Sheet Lines	1	0	2
	plprrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	plprrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	plprrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	plprrd	6101	ShldrBase_px	Bottom of Proposed Paved Shoulder Base	3	0	2
X	plprrd	6102	ShldrBaseTop_px	Top of Proposed Paved Shoulder Base	3	0	2
X	plprrd	6103	ShldrWallBase_px	Proposed Shoulder Wall Subgrade	3	0	2
	plprrd	5093	SidewalkBack_er	Back of Sidewalk Line Profile (Existing)	2	2	1
	plprrd	5094	SidewalkBack_pr	Back of Sidewalk Line Profile	5	0	2
X	plprrd	6104	SidewalkBase_px	Proposed Sidewalk Subgrade	3	0	2
	plprrd	1124	Signal_ep	Signal Head, Signal on Pedestal	3	2	0
X	plprrd	8069	SignalHead_ep	Signal Head Section Details (Existing)	2	2	0
	plprrd	1125	SignalLoop_ep	Traffic Detector Loops	7	1	2
	plprrd	1126	SignalMisc_ep	Miscellaneous Signal Equipment Existing including control unit	3	2	0
	plprrd	1127	SignalSupport_ep	Signal Supports including Mast Arm	3	2	0
X	plprrd	8073	SignalSym_ep	Signal Head Symbols (Existing)	3	2	0
X	plprrd	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	plprrd	1128	SignMulti_ep	Multi-column Sign (Large Sign)	0	3	1
X	plprrd	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
	plprrd	1129	SignSingle_ep	Sign (Single Support)	3	2	0
X	plprrd	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	plprrd	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
	plprrd	1130	SignSupport_ep	Trusses and Cantilevers for Overhead Signs	0	3	1
X	plprrd	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
X	plprrd	6067	Slopes_px	Slope Lines on Cross Sections	9	0	2
X	plprrd	6068	SoilBoxes_px	Soil Boxes and Borings for Cross Sections	4	0	1
	plprrd	1133	SpanWire_ep	Signal / Span Wire Pole	3	0	0
	plprrd	6069	SpecialDetails_px	Special Details_XS	6	0	1
	plprrd	1134	Sprinkler_ep	Sprinkler Head	1	0	0
X	plprrd	6070	Stabilization_px	Stabilization for Cross Sections	5	2	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	plprrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	plprrd	7045	SteamPipe	Steam Pipes	1	stm	1
X	plprrd	9036	StreetLights	Street Lights	2	0	1
X	plprrd	6071	StreetLights_px	Street Lights for Cross Sections	3	0	1
X	plprrd	6073	SubDsgn_px	Sub Design for Cross Sections including subbase	4	0	1
X	plprrd	6074	Subsoil_px	Subsoil Or Undercut for Cross Sections	4	0	2
	plprrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	plprrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	plprrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
X	plprrd	7046	Switchgear	Switchgear and Appurtenances	3	0	0
	plprrd	1143	Tele_ep	Telephone Line (aerial)	6	e-ot	0
X	plprrd	7047	TeleAer	Telephone Line (Aerial)	6	ot	1
X	plprrd	7048	TeleBur	Telephone (Buried)	6	bt	1
	plprrd	1144	TeleBur_ep	Telephone (all sizes Buried), Duct, Toll	6	e-bt	1
X	plprrd	6077	TeleBur_ex	Telephone for Cross Sections (Buried - Miscellaneous - Existing)	6	2	1
X	plprrd	6078	TeleBur_px	Telephone for Cross Sections (Buried) (Miscellaneous)	6	0	
	plprrd	7049	TeleMisc	Telephone Service Box, Booth or Pedestal	6	0	0
	plprrd	1145	TeleMisc_ep	Telephone Service Box, Booth or Pedestal	6	2	0
	plprrd	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	plprrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	plprrd	303	TextConstEle	Text - Construction Element	0	0	1
	plprrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	plprrd	305	TextDetails	Text - Detail Notes	4	0	2
	plprrd	1146	TextElevLabel	Elevation Labels	4	0	0
	plprrd	306	TextGeotech	Text for soil borings and labels	0	0	2
	plprrd	307	TextLabel	Text - Label	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	plprrd	308	TextMajor	Text - Major	0	0	5
	plprrd	309	TextMinor	Text - Minor	0	0	0
	plprrd	320	TextMisc	Text - Miscellaneous	0	0	1
	plprrd	310	TextNotes	Text - Notes	4	0	1
	plprrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	plprrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	plprrd	1147	TextPtLabel	Point Labels	4	0	0
	plprrd	313	TextShtNo	Text - Sheet Number	0	0	2
	plprrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	plprrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	plprrd	315	TextTitle	Text - Title	0	0	3
	plprrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	plprrd	1149	TopoMisc_ep	Miscellaneous Topo	0	3	1
	plprrd	1150	Tower_ep	High Mast Light Poles or Towers, Transmission Tower, Antenna	3	1	0
X	plprrd	6105	TrafSeparatorBase_px	Proposed Traffic Separator Subgrade	3	0	2
X	plprrd	7051	TransformerAer	Transformer Unit (Above Ground)	3	0	0
X	plprrd	7052	TransformerBur	Transformer (Underground)	3	0	1
X	plprrd	7053	TransmissionAer	Proposed Overhead Electric Power Conductors (Distribution & Transmission)	3	oe	0
X	plprrd	7054	TransmissionBur	Proposed Buried Electric Power Conductors (Distribution & Transmission)	3	be	1
X	plprrd	7055	TransmissionT	Transmission Tower Single	3	0	0
	plprrd	7056	Utility_er	Existing Utilities in Profile View	3	2	1
	plprrd	7057	Utility_pr	Proposed Utilities in Profile View	3	0	2
	plprrd	1159	UtilMisc_ep	Miscellaneous Utilities	0	0	0
	plprrd	7060	UtilsMisc	Miscellaneous Utility Items	8	0	1
	plprrd	6085	UtilsMisc_ex	Miscellaneous Utility Items on Cross Sections (Existing)	8	2	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	plprrd	6086	UtilsMisc_px	Miscellaneous Utility Items on Cross Sections	8	0	1
X	plprrd	7062	Valve	Valve, Valve Box (Unknown) PROPOSED UNKNOW VALVE	0	0	1
	plprrd	1160	Valve_ep	Valve, Valve Box	0	2	0
X	plprrd	7063	ValveCover	Valve Cover (Unknown) PROPOSED UNKNOW VALVE	0	0	1
	plprrd	1161	ValveCover_ep	Valve Cover	0	2	0
X	plprrd	7064	ValveCvrEff	Valve Cover (Effluent)	5	0	1
	plprrd	1162	ValveCvrEff_ep	Valve Cover (Effluent)	5	2	0
X	plprrd	7065	ValveCvrGas	Valve Cover (Gas)	4	0	1
	plprrd	1163	ValveCvrGas_ep	Valve Cover (Gas)	4	2	0
X	plprrd	7066	ValveCvrSewer	Valve Cover (Sewer)	2	0	1
	plprrd	1164	ValveCvrSewer_ep	Valve Cover (Sewer)	2	2	0
X	plprrd	7067	ValveCvrWater	Valve Cover (Water)	1	0	1
	plprrd	1165	ValveCvrWater_ep	Valve Cover (Water)	1	2	0
	plprrd	1166	ValveCvrWaterNP_ep	Valve Cover (Non-potable Water)	5	2	0
X	plprrd	7069	ValveGas	Valve, Valve Box (Gas)	4	0	1
	plprrd	1167	ValveGas_ep	Valve (Gas), Valve Box	4	2	0
X	plprrd	7070	ValveSewer	Valve, Valve Box (Sewer)	2	0	1
	plprrd	1168	ValveSewer_ep	Valve (Sewer), Valve Box	2	2	0
X	plprrd	7071	ValveWater	Valve, Valve Box (Water)	1	0	1
	plprrd	1169	ValveWater_ep	Valve (Water), Valve Box	1	2	0
X	plprrd	7072	ValveWaterNP	Water Line Non Potable	5	0	0
	plprrd	1170	ValveWaterNP_ep	Valve (Non-potable Water), Valve Box	8	2	0
	plprrd	1171	Vault_ep	Vaults Above Grade and Below Grade	3	1	0
	plprrd	7073	Vaults	Vaults Above Grade and Below Grade	3	0	0
X	plprrd	7074	VaultsRW	Vaults (Raw Water)	1	0	0
	plprrd	7075	Vent	Vent (Unknown) PROPOSED UNKNOW VENT	0	0	0
	plprrd	1172	Vent_ep	Vent	0	1	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	plprrd	7076	VentGas	Vent (Gas)	4	0	0
	plprrd	1173	VentGas_ep	Vent (Gas)	4	1	0
X	plprrd	7077	VentSewer	Vent (Sewer)	2	0	0
	plprrd	1174	VentSewer_ep	Vent (Sewer)	2	1	0
	plprrd	6087	VoidArea_dx	Void Area_XS	1	0	0
X	plprrd	7078	Water	Water Line	1	w	2
	plprrd	1176	Water_ep	Water Line (all sizes)	1	e-w	1
X	plprrd	6088	Water_ex	Water for Cross Sections (Existing)	1	2	1
X	plprrd	6089	Water_px	Water for Cross Sections	1	0	1
X	plprrd	7079	WaterFct	Standpipe and Water Faucet	1	0	0
X	plprrd	7080	WaterFilter	Water Filter	5	0	2
X	plprrd	7081	WaterMeter	Water Meter	1	0	2
	plprrd	1178	WaterMisc_ep	Faucet, Standpipe, Well	1	1	0
X	plprrd	7082	WaterNP	Water Line Non Potable	5	npw	2
X	plprrd	6090	WaterNP_px	Raw Water Pipes for Cross Sections	1	0	1
X	plprrd	7083	Well	Well	1	1	1
X	plprrd	7084	WellMon	Well Monitoring	1	0	1
	plprrd	1180	Wells_ep	Monitoring Well, Taps	1	1	0
X	plprrd	6190	XSBaseTop_px	Top of Proposed Base	3	0	2
	plprrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	plprrd	6200	XSExtendGrdLine_ex	Extend Ground Lines for Cross Sections (Existing)	21	2	1
X	plprrd	6201	XSGrdLine_ex	Ground Lines for Cross Sections (Existing)	2	2	1
X	plprrd	6202	XSGrdLine_px	Roadway Ground Lines on Cross Sections	1	0	2
	plprrd	1185	XSPt_ep	Cross Section Point, Station	2	1	0

3.9.1.25 Quantity Computation - QTDSRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	qtdsrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	qtdsrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	qtdsrd	5500	AdvWarnPanel	Advance Warning Arrow Panels	4	0	2
X	qtdsrd	5000	Aggregate	Aggregate	8	0	1
X	qtdsrd	5001	ArtificialCovering	Artificial Coverings	10	0	2
X	qtdsrd	5002	AsphaltConc	Asphaltic Concrete Quantity Shapes	6	0	3
X	qtdsrd	5003	AsphaltMilling	Asphalt Milling Quantity Shapes	7	0	2
	qtdsrd	5004	AsphaltMisc	Asphalt Miscellaneous Material	1	0	1
X	qtdsrd	5501	Attenuator	Attenuation Systems	6	attenuator	1
X	qtdsrd	5502	AttenuatorTM	Attenuator Truck Mount	6	0	2
X	qtdsrd	5503	Barricade	Barricade	0	0	1
X	qtdsrd	5504	Barricade1	Barricade Symbol Type 1 or 2 at 15' spacing	0	barricade1	1
X	qtdsrd	5505	Barricade2	Barricade Symbol Type 1 or 2 at 30' spacing	0	barricade2	1
X	qtdsrd	5506	Barricade3	Barricade Symbol Type 1 or 2 at 50' spacing	0	barricade3	1
X	qtdsrd	5507	Barricade4	Barricade Symbol Type 1 or 2 at 100' spacing	0	barricade4	1
X	qtdsrd	5005	BarrierWall	Barrier Wall All Types	6	0	2
X	qtdsrd	5006	Base	Base Material (All Types)	3	0	2
X	qtdsrd	6006	CandG_ex	Curb and Gutter for Cross Sections (All Types) (Existing)	4	2	1
X	qtdsrd	6007	CandG_px	Curb and Gutter for Cross Sections (All Types)	4	0	2
X	qtdsrd	6008	CandGBase_px	Curb and Gutter Base on Cross Sections	3	0	1
	qtdsrd	234	CLConst_dp	Center Line of Construction	0	0	2
X	qtdsrd	5012	ClearingGrubbing	Clearing and Grubbing Limits and Quantity Items	4	0	1
	qtdsrd	203	ClipBorder_dp	CLIP Border	3	0	0
	qtdsrd	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	qtdsrd	205	Cloud_dp	Construction Cloud	7	0	2
X	qtdsrd	5508	CmpFlashbrdRiser	Cmp Flashboard Riser	10	0	2
	qtdsrd	206	COGO_dp	COGO Information	3	0	1
X	qtdsrd	5013	ConcPavt	Concrete Pavement Edges	10	0	2
X	qtdsrd	5014	ConcPvtSC	Concrete Surface Coloring	9	0	1
X	qtdsrd	5015	Concrete	Concrete Areas (All Types plus miscellaneous)	0	0	2
X	qtdsrd	5016	ConcSlabs	Concrete Slabs	0	0	2
X	qtdsrd	5509	Cone	Cone and Tubular Marker	6	0	2
	qtdsrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	qtdsrd	9508	ConstLimits	Construction Limits	3	LOC	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	qtdsrd	9509	ConstLines	Construction Lines and References	1	0	0
X	qtdsrd	5018	CurbBack	Back of Curb	4	0	1
X	qtdsrd	5019	CurbFace	Curb and Gutter (Face)	4	0	1
X	qtdsrd	5020	CurbRamp	Curb Cut Ramp	8	0	1
	qtdsrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	qtdsrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	qtdsrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	qtdsrd	5021	DitchPavt	Ditch Pavement Including Quantity Shapes	3	0	1
X	qtdsrd	5022	Driveway	Driveway (Drive, Lane, Turnouts)	7	0	2
X	qtdsrd	5027	EaseLicLine	License Agreement Line	5	6	0
X	qtdsrd	5513	FlashingLight	Flashing Lights (All Types)	0	0	1
X	qtdsrd	5038	FlowPaths	Time of Concentration Flow Paths	10	1	1
X	qtdsrd	5039	FrictionCourse	Asphalt Concrete Friction Course	4	0	2
X	qtdsrd	5040	Gabions	Gabion Baskets or Mats	10	0	2
X	qtdsrd	5041	Gabions_ep	Gabion Baskets or Mats (Existing)	10	1	2
X	qtdsrd	5058	Grass	Grass, Seeding and Mulching Areas	2	1	2
X	qtdsrd	5059	GravityWall	Gravity Wall	11	0	1
X	qtdsrd	5060	Guardrail	Guardrail	0	0	2
X	qtdsrd	6037	Guardrail_px	Guardrail	0	0	1
X	qtdsrd	5061	GuardrailDbl	Guardrail Double Face	0	grdbl	1
X	qtdsrd	5062	GuardrailEndAch	Guardrail End Anchorage	0	0	1
X	qtdsrd	5063	GuardrailLt	Guardrail Left	0	grail1	1
X	qtdsrd	5064	GuardrailRt	Guardrail Right	0	grail2	1
X	qtdsrd	5065	Handrail	Handrails	9	0	1
	qtdsrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	qtdsrd	5110	InletProt	Rock Bags and Sand Bagging	10	0	2
	qtdsrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
X	qtdsrd	5068	Mailbox	Mailboxes	8	0	1
	qtdsrd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
	qtdsrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	qtdsrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	qtdsrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	qtdsrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	qtdsrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	qtdsrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	qtdsrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	qtdsrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	qtdsrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	qtdsrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
X	qtdsrd	9025	MowingAreaLarge	Mowing and Maintenance Areas for Large Machine	2	0	2
X	qtdsrd	9026	MowingAreaSmall	Mowing and Maintenance Areas	68	0	1
X	qtdsrd	9027	Mulch	Mulch Area	10	0	1
	qtdsrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
X	qtdsrd	7509	ObjectMarker	Object and Reflective Markers	3	0	1
X	qtdsrd	7510	OverheadSign	Overhead Sign Panels	0	0	2
X	qtdsrd	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	qtdsrd	7512	OverheadStr	Mast Arm, Truss Assemblies, Signal Arms and Supports	0	0	2
X	qtdsrd	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
	qtdsrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	qtdsrd	9030	Pavers	Pavers - Brick and Block	5	0	1
	qtdsrd	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1
	qtdsrd	1083	PavtConc_ep	Concrete Pavement (Edges)	0	3	1
X	qtdsrd	7514	PavtMessage	Pavement Message (All types)	0	0	1
X	qtdsrd	7515	PavtMessage_ep	Pavement Message (Existing - All types)	0	2	0
	qtdsrd	5070	PavtMiscMat	Miscellaneous Pavement Quantity Items (Bituminous Material, Cover Material, Mesh, etc.)	11	0	1
	qtdsrd	1088	PavtXover_ep	Crossovers and Detours (Temporary)	0	3	0
	qtdsrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	qtdsrd	6570	Permit1	Permit 1 Wetlands, Mitigation Sites, Planting Areas	1	0	1
	qtdsrd	6571	Permit2	Permit 2 Wetlands, Mitigation Sites, Planting Areas	2	0	1
	qtdsrd	6572	Permit3	Permit 3 Wetlands, Mitigation Sites, Planting Areas	4	0	1
X	qtdsrd	7516	PMCeramic	Pavement Markers Ceramic	0	0	1
	qtdsrd	7517	PMMisc	Pavement Marking Miscellaneous Items	0	0	2
X	qtdsrd	7519	PMStripe12B	Pavement Marking Traffic Stripe 12in Black	3	stripe12	4
X	qtdsrd	7520	PMStripe12W	Pavement Marking Traffic Stripe 12in White	0	stripe12	4
X	qtdsrd	7521	PMStripe12Y	Pavement Marking Traffic Stripe 12in Yellow	4	stripe12	4
X	qtdsrd	7522	PMStripe16B	Pavement Marking Traffic Stripe 16in Black	3	stripe16	5
X	qtdsrd	7523	PMStripe16W	Pavement Marking Traffic Stripe 16in White	0	stripe16	5
X	qtdsrd	7524	PMStripe16Y	Pavement Marking Traffic Stripe 16in Yellow	4	stripe16	5

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	qtdsrd	7525	PMStripe18B	Pavement Marking Traffic Stripe 18in Black	3	stripe18	6
X	qtdsrd	7526	PMStripe18W	Pavement Marking Traffic Stripe 18in White	0	stripe18	6
X	qtdsrd	7527	PMStripe18Y	Pavement Marking Traffic Stripe 18in Yellow	4	stripe18	6
X	qtdsrd	7528	PMStripe24W	Pavement Marking Traffic Stripe 24in White	0	stripe24	7
X	qtdsrd	7529	PMStripe24Y	Pavement Marking Traffic Stripe 24in Yellow	4	stripe24	7
X	qtdsrd	7530	PMStripe6B	Pavement Marking Traffic Stripe 6in Black	3	stripe06	2
X	qtdsrd	7531	PMStripe6B(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Black	3	stripe06	2
X	qtdsrd	7532	PMStripe6Bl	Pavement Marking Traffic Stripe 6in Blue	1	stripe06	2
X	qtdsrd	7533	PMStripe6DY	Pavement Marking Traffic Stripe 6in Double Yellow	4	dbl_line	2
X	qtdsrd	7534	PMStripe6W	Pavement Marking Traffic Stripe 6in White	0	stripe06	2
X	qtdsrd	7535	PMStripe6W(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in White	0	stripe06	2
X	qtdsrd	7536	PMStripe6W(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in White	0	stripe06	2
X	qtdsrd	7537	PMStripe6W(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in White	0	stripe06	2
X	qtdsrd	7538	PMStripe6Y	Pavement Marking Traffic Stripe 6in Yellow	4	stripe06	2
X	qtdsrd	7539	PMStripe6Y(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	qtdsrd	7540	PMStripe6Y(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	qtdsrd	7541	PMStripe6Y(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	qtdsrd	7542	PMStripe8B	Pavement Marking Traffic Stripe 8in Black	3	stripe06	3
X	qtdsrd	7543	PMStripe8W	Pavement Marking Traffic Stripe 8in White	0	stripe08	3
X	qtdsrd	7544	PMStripe8W(3-9)	Pavement Marking 3/9 Skip Traffic Stripe 8in White	0	stripe08	2
X	qtdsrd	7545	PMStripe8Y	Pavement Marking Traffic Stripe 8in Yellow	4	stripe08	3
X	qtdsrd	7577	PMStripeVibeW	Pavement Marking Auditory and Vibratory 6in White	0	Vibratory	2
X	qtdsrd	7578	PMStripeVibeY	Pavement Marking Auditory and Vibratory 6in Yellow	4	Vibratory	2
	qtdsrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	qtdsrd	6578	PondSideSlope	Pond Side Slope	0	0	2
	qtdsrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	qtdsrd	7547	ReflPaintWht	Reflective Paint - Island Nose (White)	0	0	3
X	qtdsrd	7548	ReflPaintYel	Reflective Paint - Island Nose (Yellow)	4	0	3
X	qtdsrd	6579	RetentionArea	Retention Area	2	0	2
	qtdsrd	5078	RoadwayMisc	Roadway Miscellaneous Items	4	0	2
X	qtdsrd	5081	RockGravelStone	Rock, Gravel, Stone, Boulders, Etc.	1	0	2
X	qtdsrd	7549	RPM_ep	Reflective Pavement Markers (Existing)	2	2	1
X	qtdsrd	7550	RPM1	Raised Pavement Markers, White	0	0	2
X	qtdsrd	7551	RPM2	Raised Pavement Markers, White - Red	3	0	2
X	qtdsrd	7552	RPM3	Raised Pavement Markers, Yellow	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	qtdsrd	7553	RPM4	Raised Pavement Markers, Yellow - Yellow	9	0	2
X	qtdsrd	7554	RPM5	Raised Pavement Markers, Yellow - Red	6	0	2
X	qtdsrd	7555	RPM6	Raised Pavement Markers, Blue	1	0	2
X	qtdsrd	5083	RumbleStrip1	Rumble Strips Continuous Array	0	rumble_cont	2
X	qtdsrd	5084	RumbleStrip2	Rumble Strips Skip Array	0	rumble_skip	2
	qtdsrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	qtdsrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	qtdsrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
X	qtdsrd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	hay_bales	2
X	qtdsrd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	silt_fence	2
X	qtdsrd	6580	SedimentBasin	Sediment Basin Index 101	10	0	2
X	qtdsrd	6581	SedimentBasin_ep	Sediment Basin Index 101 (Existing)	10	3	1
	qtdsrd	5089	ShldrHatch	Paved Shoulder Hatch Pattern	1	0	1
X	qtdsrd	5090	ShldrPaved	Paved Shoulder Line	1	0	1
X	qtdsrd	5091	ShldrUnpaved	Unpaved Shoulder Line	0	0	0
X	qtdsrd	5092	SidewalkBack	Sidewalk Back	2	0	1
X	qtdsrd	5095	SidewalkConc	Sidewalk Concrete Shape	0	0	2
X	qtdsrd	5096	SidewalkFront	Sidewalk Front	1	0	1
X	qtdsrd	7556	SignCantilever	Sign Symbol Cantilever	0	0	1
X	qtdsrd	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	qtdsrd	7558	SignDetail	Sign Details	0	0	2
	qtdsrd	7559	SignLettersAZ	Alphabet Cell Library Letter A-Z Numbers 0-9	0	0	0
	qtdsrd	7560	SignMisc	Miscellaneous Sign Symbols	1	0	2
	qtdsrd	7561	SignMisc_ep	Miscellaneous Sign Symbols (Existing)	1	1	1
X	qtdsrd	7562	SignPanel	Sign Panels - Regulatory	0	0	2
X	qtdsrd	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
X	qtdsrd	7564	SignPanelBorder	Sign Panel Border on Sign Details	0	0	1
X	qtdsrd	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	qtdsrd	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
X	qtdsrd	7573	SignSpecial	Special Signs / Guide Signs	2	0	2
X	qtdsrd	7574	SignSupport	Ground Mounted Sign Support Symbol (All Types)	1	0	1
	qtdsrd	1130	SignSupport_ep	Trusses and Cantilevers for Overhead Signs	0	3	1
X	qtdsrd	6066	SignSymbol_px	Sign Structure and Foundation on Cross Sections	4	0	2
X	qtdsrd	7575	SignTruss	Sign Symbol Truss	3	0	1
X	qtdsrd	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	qtdsrd	5097	Sod	Performance Sod	2	0	2
X	qtdsrd	5102	Stabilization	Stabilization Material Lines and Shapes	9	0	2
	qtdsrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	qtdsrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
	qtdsrd	5106	SuperPave	Asphaltic Concrete Super Pavement	6	0	2
X	qtdsrd	5517	TCZSign	Traffic Control Sign Symbol	6	0	2
X	qtdsrd	5518	TCZSign1	Traffic Control Sign Symbol at 200' Spacing	6	sign3	2
X	qtdsrd	5519	TCZSign2	Traffic Control Sign Symbol at 400' Spacing	6	sign2	2
X	qtdsrd	5520	TCZSign3	Traffic Control Sign Symbol at 500' Spacing	6	sign1	2
	qtdsrd	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	qtdsrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	qtdsrd	303	TextConstEle	Text - Construction Element	0	0	1
	qtdsrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	qtdsrd	305	TextDetails	Text - Detail Notes	4	0	2
	qtdsrd	1146	TextElevLabel	Elevation Labels	4	0	0
	qtdsrd	307	TextLabel	Text - Label	0	0	2
	qtdsrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	qtdsrd	308	TextMajor	Text - Major	0	0	5
	qtdsrd	309	TextMinor	Text - Minor	0	0	0
	qtdsrd	320	TextMisc	Text - Miscellaneous	0	0	1
	qtdsrd	310	TextNotes	Text - Notes	4	0	1
	qtdsrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	qtdsrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	qtdsrd	1147	TextPtLabel	Point Labels	4	0	0
	qtdsrd	313	TextShtNo	Text - Sheet Number	0	0	2
	qtdsrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	qtdsrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	qtdsrd	315	TextTitle	Text - Title	0	0	3
	qtdsrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	qtdsrd	5107	TrafSeparator	Traffic Separator (All Types)	6	0	1
X	qtdsrd	6593	TurbidityBarrier1	Turbidity Barrier 1 (floating)	10	barrier1	2
X	qtdsrd	6595	TurbidityBarrier2	Turbidity Barrier 2 (staked)	10	barrier2	2
	qtdsrd	6596	TurbidityBarrier2_ep	Turbidty Barrier (Staked) (Existing)	10	1	2
	qtdsrd	6594	TurbidtiyBarrier1_ep	Turbidty Barrier (Floating) (Existing)	10	1	2
X	qtdsrd	5112	Turf	Performance Truf	100	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	qtdsrd	6599	Wetland	Wetland Boundary	2	wetland	1
	qtdsrd	5109	Widening	Widening Patterns and Miscellaneous Elements	1	0	1
	qtdsrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
	qtdsrd	1185	XSPt_ep	Cross Section Point, Station	2	1	0

3.9.1.26 Roadway Cross Section - RDXSRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxsrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	rdxsrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	rdxsrd	5002	AsphaltConc	Asphaltic Concrete Quantity Shapes	6	0	3
X	rdxsrd	6000	AsphaltMilling_px	Asphalt Milling Lines on Cross Sections	7	0	2
X	rdxsrd	6226	AsphaltMisc_px	Miscellaneous Pavement on Cross Sections	1	0	2
X	rdxsrd	6001	BarrierWall_ex	Barrier Wall for Cross Section (Existing)	6	3	1
X	rdxsrd	6002	BarrierWall_px	Barrier Wall for Cross Section	6	0	2
X	rdxsrd	6003	Base_ex	Base Material for Cross Sections (All Types) (Existing)	3	3	1
X	rdxsrd	6004	Base_px	Base Material for Cross Sections (All Types)	3	0	2
	rdxsrd	202	BaselineSurvey	Baseline Survey	0	0	2
X	rdxsrd	6005	Berm_px	Berm (Top, Front, or Back) for Cross Sections	10	0	2
X	rdxsrd	6106	CableBarrier_px	Cable Barrier for Cross Sections	0	0	2
X	rdxsrd	6006	CandG_ex	Curb and Gutter for Cross Sections (All Types) (Existing)	4	2	1
X	rdxsrd	6007	CandG_px	Curb and Gutter for Cross Sections (All Types)	4	0	2
X	rdxsrd	6008	CandGBase_px	Curb and Gutter Base on Cross Sections	3	0	1
X	rdxsrd	6009	CATVBur_ex	Cable TV and Miscellaneous on Cross Sections (Existing)	6	2	1
X	rdxsrd	6010	CATVBur_px	Cable TV and Miscellaneous on Cross Sections	6	0	1
	rdxsrd	234	CLConst_dp	Center Line of Construction	0	0	2
	rdxsrd	205	Cloud_dp	Construction Cloud	7	0	2
	rdxsrd	206	COGO_dp	COGO Information	3	0	1
X	rdxsrd	6011	Concrete_px	Concrete Boundary Lines on Cross Sections	0	0	2
X	rdxsrd	6012	Conduit_ex	Conduit and Encasements on Cross Sections (Existing)	3	2	1
X	rdxsrd	6013	Conduit_px	Conduit and Encasements on Cross Sections	3	0	1
	rdxsrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	rdxsrd	9508	ConstLimits	Construction Limits	3	LOC	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxsrd	9509	ConstLines	Construction Lines and References	1	0	0
	rdxsrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	rdxsrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	rdxsrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	rdxsrd	6014	Ditch_px	Ditch Top for Cross Sections	7	0	2
X	rdxsrd	6015	DitchBot_px	Ditch Bottom for Cross Sections	10	0	2
X	rdxsrd	6016	DitchPavt_px	Ditch Pavement for Cross Sections	3	0	3
	rdxsrd	6017	DrainAlert_px	Alert Symbology for Structural Elements	3	0	2
	rdxsrd	6018	DrainMisc_ex	All types of miscellaneous drainage elements (Existing)	10	3	1
X	rdxsrd	6019	DrainStruct_ex	All Drainage Structures for Cross Sections (Existing)	10	3	1
X	rdxsrd	6020	DrainStruct_px	Misc Drainage Structures and Elements for XSections	10	0	2
X	rdxssp	6107	Driveway_ex	Driveway Lines on Cross Sections - Existing	7	1	2
X	rdxsrd	6021	Driveway_px	Driveway Lines on Cross Sections	7	0	2
X	rdxsrd	6092	DrivewayBase_px	Proposed Driveway Subgrade	3	0	2
	rdxsrd	6022	Earthwork1_px	Earthwork (color 0)	0	0	1
	rdxsrd	6023	Earthwork2_px	Earthwork (color 1)	1	0	1
	rdxsrd	6024	Earthwork3_px	Earthwork (color 2)	2	0	1
	rdxsrd	6025	Earthwork4_px	Earthwork (color 3)	3	0	1
	rdxsrd	6026	Earthwork5_px	Earthwork (color 4)	4	0	1
X	rdxsrd	5027	EaseLicLine	License Agreement Line	5	6	0
	rdxsrd	5028	EaseLine_ep	Easement:Easement Line (Existing)	1	PESMT	1
	rdxsrd	6027	EasePerpLine_px	Perpetual Easement Lines on Cross Sections	4	PESMT	1
	rdxsrd	6028	EaseTempLine_px	Temporary Easement Lines on Cross Sections	6	TEMPE	0
X	rdxsrd	6029	Endwall_px	Endwall for Cross Sections	10	0	2
	rdxsrd	9512	ExcavationLimits_dp	Excavation Limits on Cross Sections	0	0	1
	rdxsrd	6099	Fence_ex	Fence Lines on Cross Sections (Existing)	6	3	1
X	rdxsrd	6030	Fence_px	Fence Lines on Cross Sections	6	Fence1	2
X	rdxsrd	6031	FES_px	Flared End Sections for Cross Sections	10	0	2
	rdxsrd	6550	FlowArrow_dp	Flow Arrow	10	0	2
X	rdxsrd	6032	FOCBur_ex	Fiber Optics Cable (Buried) for XSections (Existing)	6	2	1
X	rdxsrd	6033	FOCBur_px	Fiber Optics Cable (Buried) for XSections	6	0	1
X	rdxsrd	6034	Gas_ex	Gas Pipe and Fittings, Misc for Xsections (Existing)	4	2	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	rdxsrd	6035	Gas_px	Gas Pipe and Fittings, Misc for Xsections	4	0	1
	rdxsrd	5750	GeotechFillPatt1	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	rdxsrd	5751	GeotechFillPatt1_px	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	rdxsrd	5752	GeotechFillPatt2	Geotechnical Fill Pattern - clay, sand	0	1	0
	rdxsrd	5753	GeotechFillPatt2_px	Geotechnical Fill Pattern - clay, sand	0	1	0
	rdxsrd	5754	GeotechFillPatt3	Geotechnical Fill Pattern - shell	3	1	0
	rdxsrd	5755	GeotechFillPatt3_px	Geotechnical Fill Pattern - shell	3	1	0
	rdxsrd	5756	GeotechFillPatt4	Geotechnical Fill Pattern - sand	4	0	0
	rdxsrd	5757	GeotechFillPatt4_px	Geotechnical Fill Pattern - sand	4	0	0
	rdxsrd	5758	GeotechFillPatt5	Geotechnical Fill Pattern - coquina	1	0	1
	rdxsrd	5759	GeotechFillPatt5_px	Geotechnical Fill Pattern - coquina	1	0	1
	rdxsrd	5760	GeotechFillPatt6	Geotechnical Fill Pattern - limestone	2	0	0
	rdxsrd	5761	GeotechFillPatt6_px	Geotechnical Fill Pattern - limestone	2	0	0
	rdxsrd	5762	GeotechFillPatt7	Geotechnical Fill Pattern - gravel	6	0	0
	rdxsrd	5763	GeotechFillPatt7_px	Geotechnical Fill Pattern - gravel	6	0	0
	rdxsrd	5764	GeotechMisc	Miscellaneous Geotechnical Elements	0	0	1
	rdxsrd	6554	GPKDrBack_dp	Back Point on Drainage Cells	2	2	2
	rdxsrd	6555	GPKDrBottom_dp	Bottom Point on Drainage Cells	3	3	2
	rdxsrd	6556	GPKDrCellIns_dp	Cell Insertion Point on Drainage Cells	4	4	2
	rdxsrd	6557	GPKDrCentroid_dp	Point on Centroid for Drainage	7	7	2
	rdxsrd	106	GPKDrElv	Location point for drainage cells	5	5	2
	rdxsrd	6558	GPKDrFront_dp	Front Point on Drainage Cells	1	1	2
	rdxsrd	6559	GPKDrPipe_dp	Point on Drainage Pipe	6	6	2
	rdxsrd	6560	GPKDrPipeCir_dp	Point on Pipe Circular	6	6	0
X	rdxsrd	6036	GravityWall_px	Gravity Wall for Cross Sections	11	0	2
X	rdxsrd	6092	GravWallBase_px	Proposed Gravity Wall Subgrade	3	0	2
	rdxsrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	rdxsrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	rdxsrd	9515	GridMinG_dp	Grid Lines Minor Sub 2 in Cross Section Sheets	20	0	0
	rdxsrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
X	rdxsrd	6108	Guardrail_ex	Guardrail Lines on Cross Sections - Existing	0	1	2
X	rdxsrd	6037	Guardrail_px	Guardrail	0	0	1
X	rdxsrd	6038	Handrail_px	Handrail Lines on Cross Sections	9	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxsrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	rdxsrd	6039	Inlet_px	Inlets on Cross Sections	10	0	2
X	rdxsrd	6040	InletBottom_px	Inlet Bottom on Cross Sections (All Types)	10	0	1
	rdxsrd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
X	rdxsrd	6041	LARWLine_ex	Limited Access Right of Way on XSections (Existing)	4	EXLA	1
X	rdxsrd	6042	LARWLine_px	Limited Access ROW Lines on Cross Sections	4	LA	2
X	rdxsrd	6043	LateralLimits_px	Lateral Limits for Cross Sections	6	0	2
	rdxsrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	rdxsrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	rdxsrd	6044	Manhole_px	Manhole on Cross Sections	10	0	2
X	rdxsrd	6044	Manhole_px	Manhole on Cross Sections	10	0	2
	rdxsrd	235	MatchLineMask_dp	Mask Area for Match Line Overlap Areas (Autodesk)	0	0	0
X	rdxsrd	6093	MedianWallBase_px	Proposed Median Wall Subgrade	3	0	2
X	rdxsrd	6045	MES_px	Mitered End Section on Cross Sections	10	0	2
	rdxsrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	rdxsrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	rdxsrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	rdxsrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	rdxsrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	rdxsrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	rdxsrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	rdxsrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	rdxsrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	rdxsrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	rdxsrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
X	rdxsrd	6046	Overbuild_px	Overbuild Areas on Cross Sections	4	0	2
X	rdxsrd	6094	Overbuild1_px	Proposed Overbuild Binder Symbology (No Longer Used)	7	0	2
X	rdxsrd	6095	Overbuild2_px	Proposed Overbuild Base Symbology (No Longer Used)	7	0	2
X	rdxsrd	6047	Overlay_px	Proposed Overlay Layer for Cross Sections	1	0	2
X	rdxsrd	6098	Overlay1_px	Proposed Overlay Layer for Cross Sections	14	0	2
X	rdxsrd	6099	Overlay2_px	Proposed Overlay Layer for Cross Sections	7	0	2
	rdxsrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	rdxsrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxsrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2
	rdxsrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
X	rdxsrd	6100	PavedMedianBase_px	Proposed Paved Median Subgrade	3	0	2
	rdxsrd	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1
	rdxsrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	rdxstrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	rdxsrd	6573	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	rdxsrd	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	rdxsrd	216	PlotBorder_dp	Plot Border	3	0	0
	rdxsrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	rdxsrd	6109	Pond_px	Pond Lines on Cross Sections	2	0	2
X	rdxsrd	6050	Power_ex	Power on Cross Sections (Existing)	3	2	1
X	rdxsrd	6052	Power_px	Power on Cross Sections	3	0	1
X	rdxsrd	5072	PropertyLine_ep	Property Lines	3	0	0
	rdxsrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	rdxsrd	236	RegionBdry_dp	Boundary Line for Regions in Corridor Design (Autodesk)	0	0	0
X	rdxsrd	6053	RetainWall_px	Retaining Walls on Cross Sections	6	0	1
X	rdxsrd	6054	RipRap_px	Rip Rap, Rubble on Cross Sections	4	1	2
X	rdxsrd	5083	RumbleStrip1	Rumble Strips Continuous Array	0	rumble_cont	2
X	rdxsrd	5084	RumbleStrip2	Rumble Strips Skip Array	0	rumble_skip	2
X	rdxsrd	5085	RWLine	Right of Way Lines	4	RW	2
X	rdxsrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
X	rdxsrd	6055	RWLine_ex	ROW Lines on Cross Sections (Existing)	3	RW	1
X	rdxsrd	6056	RWLine_px	ROW Lines on Cross Sections	4	RW	2
X	rdxsrd	6057	SanitaryFM_ex	Force Main Lines on Cross Sections (Existing)	2	2	1
X	rdxsrd	6058	SanitaryFM_px	Force Main Lines on Cross Sections	2	0	1
X	rdxsrd	6059	SanitarySewer_ex	Sanitary Sewer Lines on Cross Sections (Existing)	10	2	0
X	rdxsrd	6060	SanitarySewer_px	Sanitary Sewer Lines on Cross Sections	2	0	1
X	rdxsrd	6061	SanitarySewerEff_px	Sanitary Effluent for Cross Sections	9	0	0
	rdxsrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	rdxsrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxsrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	rdxsrd	223	SheetBorder_dp	Sheet Border	1	0	4
	rdxsrd	224	SheetLines_dp	Sheet Lines	1	0	2
	rdxsrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	rdxsrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	rdxsrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	rdxsrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	rdxsrd	6101	ShldrBase_px	Bottom of Proposed Paved Shoulder Base	3	0	2
X	rdxsrd	6102	ShldrBaseTop_px	Top of Proposed Paved Shoulder Base	3	0	2
X	rdxsrd	6062	ShldrPaved_px	Paved Shoulder Lines on Cross Sections	1	0	2
X	rdxsrd	6063	ShldrUnpaved_px	Grass Shoulder Lines on Cross Sections	2	0	2
X	rdxsrd	6103	ShldrWallBase_px	Proposed Shoulder Wall Subgrade	3	0	2
X	rdxsrd	6064	Sidewalk_ex	Sidewalk Elements in Cross Sections (Existing)	0	2	1
X	rdxsrd	6065	Sidewalk_px	Sidewalk Elements in Cross Sections	0	0	2
	rdxsrd	5093	SidewalkBack_er	Back of Sidewalk Line Profile (Existing)	2	2	1
	rdxsrd	5094	SidewalkBack_pr	Back of Sidewalk Line Profile	5	0	2
X	rdxsrd	6104	SidewalkBase_px	Proposed Sidewalk Subgrade	3	0	2
X	rdxsrd	6067	Slopes_px	Slope Lines on Cross Sections	9	0	2
X	rdxsrd	6068	SoilBoxes_px	Soil Boxes and Borings for Cross Sections	4	0	1
	rdxsrd	6069	SpecialDetails_px	Special Details_XS	6	0	1
X	rdxsrd	6070	Stabilization_px	Stabilization for Cross Sections	5	2	2
	rdxsrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	rdxsrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	rdxsrd	6071	StreetLights_px	Street Lights for Cross Sections	3	0	1
	rdxsrd	6072	Structure_px	Signal and Sign Structures on Cross Sections	0	0	2
X	rdxsrd	6073	SubDsgn_px	Sub Design for Cross Sections including subbase	4	0	1
X	rdxsrd	6074	Subsoil_px	Subsoil Or Undercut for Cross Sections	4	0	2
X	rdxsrd	6075	SubsoilFinal_px	Subsoil Final for Multiline	18	0	1
X	rdxsrd	6076	SubsoilProp_px	Subsoil Proposed for Multiline	8	0	1
	rdxsrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	rdxsrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	rdxsrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	rdxsrd	6077	TeleBur_ex	Telephone for Cross Sections (Buried - Miscellaneous - Existing)	6	2	1
X	rdxsrd	6078	TeleBur_px	Telephone for Cross Sections (Buried) (Miscellaneous)	6	0	
X	rdxsrd	6079	TemplateBottom_px	Bottom of Template for Multiline	6	0	1
X	rdxsrd	6080	TemplateFinal_px	Final Template for Multiline	2	0	1
X	rdxsrd	6081	TemplateTop_px	Top of Template for Multiline	7	0	1
X	rdxsrd	6082	TerrainLine_ex	Existing Ground Line for Multiline	5	0	1
	rdxsrd	301	TextAlert	Text - An Alert Label to Highlight a Problem	3	0	2
	rdxsrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	rdxsrd	303	TextConstEle	Text - Construction Element	0	0	1
	rdxsrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	rdxsrd	305	TextDetails	Text - Detail Notes	4	0	2
	rdxsrd	1146	TextElevLabel	Elevation Labels	4	0	0
	rdxsrd	306	TextGeotech	Text for soil borings and labels	0	0	2
	rdxsrd	307	TextLabel	Text - Label	0	0	2
	rdxsrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	rdxsrd	308	TextMajor	Text - Major	0	0	5
	rdxsrd	309	TextMinor	Text - Minor	0	0	0
	rdxsrd	320	TextMisc	Text - Miscellaneous	0	0	1
	rdxsrd	310	TextNotes	Text - Notes	4	0	1
	rdxsrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	rdxsrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	rdxsrd	1147	TextPtLabel	Point Labels	4	0	0
	rdxsrd	313	TextShtNo	Text - Sheet Number	0	0	2
	rdxsrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	rdxsrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	rdxsrd	315	TextTitle	Text - Title	0	0	3
	rdxsrd	321	TextXSBL_dp	Cross Section Baseline Labels	0	0	2
	rdxsrd	322	TextXSDrain_ex	Existing Drainage Labels	10	0	2
	rdxsrd	323	TextXSDrain_px	Proposed Drainage Labels	10	0	2
	rdxsrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	rdxsrd	317	TextXSElev_ex	Existing cross section elevations	2	0	1
	rdxsrd	318	TextXSElev_px	Proposed cross section elevations	0	0	1
	rdxsrd	324	TextXSGPKPts_dp	Used by criteria to label points	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxsrd	325	TextXSNotes_dp	Cross Section Notes	0	0	2
	rdxsrd	326	TextXSSlope_dp	Cross Section Slope Labels (rise:run format)	0	0	2
	rdxsrd	327	TextXSSlopePvt_dp	Cross Section Pavement Slope Labels	0	0	2
X	rdxsrd	6083	TrafSeparator_ex	Traffic Separator (All Types) on Cross Sections (Existing)	6	2	1
X	rdxsrd	6084	TrafSeparator_px	Traffic Separator (All Types) on Cross Sections	6	0	2
X	rdxsrd	6105	TrafSeparatorBase_px	Proposed Traffic Separator Subgrade	3	0	2
	rdxsrd	9534	TypicalMisc	Typical Miscellaneous Items	0	0	2
	rdxsrd	7056	Utility_er	Existing Utilities in Profile View	3	2	1
	rdxsrd	7057	Utility_pr	Proposed Utilities in Profile View	3	0	2
	rdxsrd	6085	UtilsMisc_ex	Miscellaneous Utility Items on Cross Sections (Existing)	8	2	1
	rdxsrd	6086	UtilsMisc_px	Miscellaneous Utility Items on Cross Sections	8	0	1
	rdxsrd	9535	Vehicle	Vehicle for Calculating Turning Radius	7	0	2
	rdxsrd	6087	VoidArea_dx	Void Area_XS	1	0	0
X	rdxsrd	6088	Water_ex	Water for Cross Sections (Existing)	1	2	1
X	rdxsrd	6089	Water_px	Water for Cross Sections	1	0	1
X	rdxsrd	6090	WaterNP_px	Raw Water Pipes for Cross Sections	1	0	1
	rdxsrd	1182	WetlandEdge_ep	Edge of Mangrove, Wetlands (Marsh or Swamp)	2	wetland	0
X	rdxsrd	6190	XSBaseTop_px	Top of Proposed Base	3	0	2
	rdxsrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	rdxsrd	6200	XSExtendGrdLine_ex	Extend Ground Lines for Cross Sections (Existing)	21	2	1
X	rdxsrd	6201	XSGrdLine_ex	Ground Lines for Cross Sections (Existing)	2	2	1
X	rdxsrd	6202	XSGrdLine_px	Roadway Ground Lines on Cross Sections	1	0	2
	rdxsrd	6203	XSMisc_ex	Roadway Miscellaneous Items on Cross Sections (Existing)	4	3	1
	rdxsrd	6204	XSMisc_px	Cross Section Miscellaneous Items	0	0	2
	rdxsrd	1185	XSPt_ep	Cross Section Point, Station	2	1	0
	rdxsrd	6205	XSShapeDep01_dp	Cross Section Shape Dependent	11	0	2
	rdxsrd	6206	XSShapeDep02_dp	Cross Section Shape Dependent	12	0	2
	rdxsrd	6207	XSShapeDep03_dp	Cross Section Shape Dependent	13	0	2
	rdxsrd	6208	XSShapeDep04_dp	Cross Section Shape Dependent	14	0	2
	rdxsrd	6209	XSShapeDep05_dp	Cross Section Shape Dependent	15	0	2
	rdxsrd	6210	XSShapeDep06_dp	Cross Section Shape Dependent	16	0	2
	rdxsrd	6211	XSShapeDep07_dp	Cross Section Shape Dependent	17	0	2
	rdxsrd	6212	XSShapeDep08_dp	Cross Section Shape Dependent	18	0	2
	rdxsrd	6213	XSShapeDep09_dp	Cross Section Shape Dependent	19	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxsrd	6214	XSShapeDep10_dp	Cross Section Shape Dependent	20	0	2
	rdxsrd	6215	XSShapeIndep01_dp	Cross Section Shape Independent	1	0	2
	rdxsrd	6216	XSShapeIndep02_dp	Cross Section Shape Independent	2	0	2
	rdxsrd	6217	XSShapeIndep03_dp	Cross Section Shape Independent	3	0	2
	rdxsrd	6218	XSShapeIndep04_dp	Cross Section Shape Independent	4	0	2
	rdxsrd	6219	XSShapeIndep05_dp	Cross Section Shape Independent	5	0	2
	rdxsrd	6220	XSShapeIndep06_dp	Cross Section Shape Independent	6	0	2
	rdxsrd	6221	XSShapeIndep07_dp	Cross Section Shape Independent	7	0	2
	rdxsrd	6222	XSShapeIndep08_dp	Cross Section Shape Independent	8	0	2
	rdxsrd	6223	XSShapeIndep09_dp	Cross Section Shape Independent	9	0	2
	rdxsrd	6224	XSShapeIndep10_dp	Cross Section Shape Independent	10	0	2
X	rdxsrd	6225	XSTypical_px	Roadway Pavement Typical on Cross Sections	1	0	2

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Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxssp	200	ActivePointCell_dp	Active Point Cell	4	0	10
	rdxssp	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	rdxssp	5002	AsphaltConc	Asphaltic Concrete Quantity Shapes	6	0	3
X	rdxssp	6000	AsphaltMilling_px	Asphalt Milling Lines on Cross Sections	7	0	2
X	rdxssp	6226	AsphaltMisc_px	Miscellaneous Pavement on Cross Sections	1	0	2
X	rdxssp	6001	BarrierWall_ex	Barrier Wall for Cross Section (Existing)	6	3	1
X	rdxssp	6002	BarrierWall_px	Barrier Wall for Cross Section	6	0	2
X	rdxssp	6003	Base_ex	Base Material for Cross Sections (All Types) (Existing)	3	3	1
X	rdxssp	6004	Base_px	Base Material for Cross Sections (All Types)	3	0	2
	rdxssp	202	BaselineSurvey	Baseline Survey	0	0	2
X	rdxssp	6005	Berm_px	Berm (Top, Front, or Back) for Cross Sections	10	0	2
X	rdxssp	6006	CandG_ex	Curb and Gutter for Cross Sections (All Types) (Existing)	4	2	1
X	rdxssp	6007	CandG_px	Curb and Gutter for Cross Sections (All Types)	4	0	2
X	rdxssp	6008	CandGBase_px	Curb and Gutter Base on Cross Sections	3	0	1
X	rdxssp	6009	CATVBur_ex	Cable TV and Miscellaneous on Cross Sections (Existing)	6	2	1
X	rdxssp	6010	CATVBur_px	Cable TV and Miscellaneous on Cross Sections	6	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxssp	234	CLConst_dp	Center Line of Construction	0	0	2
	rdxssp	205	Cloud_dp	Construction Cloud	7	0	2
	rdxssp	206	COGO_dp	COGO Information	3	0	1
X	rdxssp	6011	Concrete_px	Concrete Boundary Lines on Cross Sections	0	0	2
X	rdxssp	6012	Conduit_ex	Conduit and Encasements on Cross Sections (Existing)	3	2	1
X	rdxssp	6013	Conduit_px	Conduit and Encasements on Cross Sections	3	0	1
X	rdxssp	8500	ConduitBG	Conduit In Box Girder	5	lite_cond5	1
X	rdxssp	8501	ConduitBG_ep	Conduit In Box Girder (Existing)	5	exlite_cond5	0
X	rdxssp	8502	ConduitC	Conduit Lead-in Cable	3	0	0
X	rdxssp	8503	ConduitJ	Conduit Jacked Underpavement	1	lite_cond3	1
X	rdxssp	8504	ConduitJ_ep	Conduit Jacked (Existing)	1	exlite_cond3	0
X	rdxssp	8505	ConduitSM	Conduit Surface Mounted	4	lite_cond4	1
X	rdxssp	8506	ConduitSM_ep	Conduit Surface Mounted (Existing)	4	exlite_cond4	0
X	rdxssp	8507	ConduitUG	Conduit Underground	3	lite_cond1	1
X	rdxssp	8508	ConduitUG_ep	Conduit Underground (Existing)	3	exlite_cond1	0
X	rdxssp	8509	ConduitUP	Conduit Underpavement	2	lite_cond2	1
X	rdxssp	8510	ConduitUP_ep	Conduit Underpavement (Existing)	2	exlite_cond2	0
	rdxssp	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	rdxssp	9508	ConstLimits	Construction Limits	3	LOC	2
	rdxssp	9509	ConstLines	Construction Lines and References	1	0	0
X	rdxssp	7500	CrossWalk1	Emphasis Crosswalk 6ft High	0	crosswalk1	4
X	rdxssp	7501	CrossWalk2	Emphasis Crosswalk 10ft High	0	crosswalk2	4
	rdxssp	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	rdxssp	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
X	rdxssp	5510	Delineator	Delineators (All Types)	4	0	1
	rdxssp	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	rdxssp	7502	DirArrowsPavt	Pavement Marking Directional Arrows	0	0	1
X	rdxssp	6014	Ditch_px	Ditch Top for Cross Sections	7	0	2
X	rdxssp	6015	DitchBot_px	Ditch Bottom for Cross Sections	10	0	2
X	rdxssp	6016	DitchPavt_px	Ditch Pavement for Cross Sections	3	0	3
	rdxssp	6017	DrainAlert_px	Alert Symbology for Structural Elements	3	0	2
	rdxssp	6018	DrainMisc_ex	All types of miscellaneous drainage elements (Existing)	10	3	1
X	rdxssp	6019	DrainStruct_ex	All Drainage Structures for Cross Sections (Existing)	10	3	1
X	rdxssp	6020	DrainStruct_px	Misc Drainage Structures and Elements for XSections	10	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	rdxssp	6107	Driveway_ex	Driveway Lines on Cross Sections - Existing	7	1	2
X	rdxssp	6021	Driveway_px	Driveway Lines on Cross Sections	7	0	2
X	rdxssp	6091	DrivewayBase_px	Proposed Driveway Subgrade	3	0	2
	rdxssp	6022	Earthwork1_px	Earthwork (color 0)	0	0	1
	rdxssp	6023	Earthwork2_px	Earthwork (color 1)	1	0	1
	rdxssp	6024	Earthwork3_px	Earthwork (color 2)	2	0	1
	rdxssp	6025	Earthwork4_px	Earthwork (color 3)	3	0	1
	rdxssp	6026	Earthwork5_px	Earthwork (color 4)	4	0	1
X	rdxssp	5027	EaseLicLine	License Agreement Line	5	6	0
	rdxssp	5028	EaseLine_ep	Easement:Easement Line (Existing)	1	PESMT	1
	rdxssp	6027	EasePerpLine_px	Perpetual Easement Lines on Cross Sections	4	PESMT	1
	rdxssp	6028	EaseTempLine_px	Temporary Easement Lines on Cross Sections	6	TEMPE	0
X	rdxssp	6029	Endwall_px	Endwall for Cross Sections	10	0	2
	rdxssp	9512	ExcavationLimits_dp	Excavation Limits on Cross Sections	0	0	1
	rdxssp	6099	Fence_ex	Fence Lines on Cross Sections (Existing)	6	3	1
X	rdxssp	6030	Fence_px	Fence Lines on Cross Sections	6	Fence1	2
X	rdxssp	6031	FES_px	Flared End Sections for Cross Sections	10	0	2
	rdxssp	6550	FlowArrow_dp	Flow Arrow	10	0	2
X	rdxssp	6032	FOCBur_ex	Fiber Optics Cable (Buried) for XSections (Existing)	6	2	1
X	rdxssp	6033	FOCBur_px	Fiber Optics Cable (Buried) for XSections	6	0	1
X	rdxssp	6034	Gas_ex	Gas Pipe and Fittings, Misc for Xsections (Existing)	4	2	1
X	rdxssp	6035	Gas_px	Gas Pipe and Fittings, Misc for Xsections	4	0	1
	rdxssp	5750	GeotechFillPatt1	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	rdxssp	5751	GeotechFillPatt1_px	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	rdxssp	5752	GeotechFillPatt2	Geotechnical Fill Pattern - clay, sand	0	1	0
	rdxssp	5753	GeotechFillPatt2_px	Geotechnical Fill Pattern - clay, sand	0	1	0
	rdxssp	5754	GeotechFillPatt3	Geotechnical Fill Pattern - shell	3	1	0
	rdxssp	5755	GeotechFillPatt3_px	Geotechnical Fill Pattern - shell	3	1	0
	rdxssp	5756	GeotechFillPatt4	Geotechnical Fill Pattern - sand	4	0	0
	rdxssp	5757	GeotechFillPatt4_px	Geotechnical Fill Pattern - sand	4	0	0
	rdxssp	5758	GeotechFillPatt5	Geotechnical Fill Pattern - coquina	1	0	1
	rdxssp	5759	GeotechFillPatt5_px	Geotechnical Fill Pattern - coquina	1	0	1
	rdxssp	5760	GeotechFillPatt6	Geotechnical Fill Pattern - limestone	2	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxssp	5761	GeotechFillPatt6_px	Geotechnical Fill Pattern - limestone	2	0	0
	rdxssp	5762	GeotechFillPatt7	Geotechnical Fill Pattern - gravel	6	0	0
	rdxssp	5763	GeotechFillPatt7_px	Geotechnical Fill Pattern - gravel	6	0	0
	rdxssp	5764	GeotechMisc	Miscellaneous Geotechnical Elements	0	0	1
X	rdxssp	6036	GravityWall_px	Gravity Wall for Cross Sections	11	0	2
X	rdxssp	6092	GravWallBase_px	Proposed Gravity Wall Subgrade	3	0	2
	rdxssp	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	rdxssp	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	rdxssp	9515	GridMinG_dp	Grid Lines Minor Sub 2 in Cross Section Sheets	20	0	0
	rdxssp	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	rdxssp	7503	GSBWFill	GuidSign Black and White Fill Level for GuidSign Cells	0	0	1
	rdxssp	7504	GSColorFill	GuidSign Color Fill Level for GuidSign Cells	2	0	1
	rdxssp	7505	GSDims	GuidSign Dimensions	0	0	1
	rdxssp	7506	GSOutline	GuidSign Outline Level for GuidSign Cells	0	0	2
	rdxssp	7507	GSSign	GuidSign Panel and Tag	7	0	0
X	rdxssp	6108	Guardrail_ex	Guardrail Lines on Cross Sections - Existing	0	1	2
X	rdxssp	6037	Guardrail_px	Guardrail	0	0	1
X	rdxssp	6038	Handrail_px	Handrail Lines on Cross Sections	9	0	1
	rdxssp	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	rdxssp	6039	Inlet_px	Inlets on Cross Sections	10	0	2
X	rdxssp	6040	InletBottom_px	Inlet Bottom on Cross Sections (All Types)	10	0	1
X	rdxssp	8032	InterconCable	Cable Interconnect	1	intcon1	1
X	rdxssp	8033	InterconCable_ep	Interconnect Cable (Existing)	1	intcon2	0
X	rdxssp	8049	JunctBoxA	Junction Boxes (Aerial)	3	0	1
X	rdxssp	8050	JunctBoxA_ep	Junction Boxes (Aerial) (Existing)	3	1	0
	rdxssp	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
	rdxssp	9517	LaneDirArrow	Lane Directional Arrow	0	0	1
X	rdxssp	6041	LARWLine_ex	Limited Access Right of Way on XSections (Existing)	4	EXLA	1
X	rdxssp	6042	LARWLine_px	Limited Access ROW Lines on Cross Sections	4	LA	2
X	rdxssp	6043	LateralLimits_px	Lateral Limits for Cross Sections	6	0	2
	rdxssp	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	rdxssp	8511	LightingMisc	Lighting Miscellaneous Items	4	0	2
X	rdxssp	8512	LightingSP	Lighting Service Points	0	0	1
X	rdxssp	8513	LoadCenter	Load Center	2	0	1
X	rdxssp	8514	LoadCenter_ep	Load Center (Existing)	2	5	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxssp	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	rdxssp	9022	Luminaire	Luminaires (Decorative - All Types)	2	0	1
X	rdxssp	6044	Manhole_px	Manhole on Cross Sections	10	0	2
X	rdxssp	6093	MedianWallBase_px	Proposed Median Wall Subgrade	3	0	2
X	rdxssp	6045	MES_px	Mitered End Section on Cross Sections	10	0	2
X	rdxssp	7508	MetalButtons	Metal Buttons	0	0	2
	rdxssp	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	rdxssp	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	rdxssp	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	rdxssp	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	rdxssp	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	rdxssp	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	rdxssp	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	rdxssp	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	rdxssp	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	rdxssp	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	rdxssp	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	rdxssp	215	NorthArw_dp	North Arrows	0	0	2
X	rdxssp	7509	ObjectMarker	Object and Reflective Markers	3	0	1
X	rdxssp	6046	Overbuild_px	Overbuild Areas on Cross Sections	4	0	2
X	rdxssp	6094	Overbuild1_px	Proposed Overbuild Binder Symbology (No Longer Used)	7	0	2
X	rdxssp	6095	Overbuild2_px	Proposed Overbuild Base Symbology (No Longer Used)	7	0	2
X	rdxssp	7510	OverheadSign	Overhead Sign Panels	0	0	2
X	rdxssp	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	rdxssp	7512	OverheadStr	Mast Arm, Truss Assemblies, Signal Arms and Supports	0	0	2
X	rdxssp	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
X	rdxssp	6047	Overlay_px	Proposed Overlay Layer for Cross Section	1	0	2
X	rdxssp	6098	Overlay1_px	Proposed Overlay Layer for Cross Section	14	0	2
X	rdxssp	6099	Overlay2_px	Proposed Overlay Layer for Cross Section	7	0	2
	rdxssp	1080	Patternlines_ep	Cross Section Chain	2	1	0
	rdxssp	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	rdxssp	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxssp	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
X	rdxssp	6100	PavedMedianBase_px	Proposed Paved Median Subgrade	3	0	2
	rdxssp	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1
X	rdxssp	7514	PavtMessage	Pavement Message (All types)	0	0	1
X	rdxssp	7515	PavtMessage_ep	Pavement Message (Existing - All types)	0	2	0
	rdxssp	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	rdxssp	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	rdxssp	6573	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	rdxssp	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	rdxssp	216	PlotBorder_dp	Plot Border	3	0	0
X	rdxssp	7516	PMCeramic	Pavement Markers Ceramic	0	0	1
	rdxssp	7517	PMMisc	Pavement Marking Miscellaneous Items	0	0	2
X	rdxssp	7518	PMStripe(10-10-20)	Pavement Marking 10/10/20 Skip Traffic Stripe 6in Contrast	0	skip10/10/20contrast	2
X	rdxssp	7519	PMStripe12B	Pavement Marking Traffic Stripe 12in Black	3	stripe12	4
X	rdxssp	7520	PMStripe12W	Pavement Marking Traffic Stripe 12in White	0	stripe12	4
X	rdxssp	7521	PMStripe12Y	Pavement Marking Traffic Stripe 12in Yellow	4	stripe12	4
X	rdxssp	7522	PMStripe16B	Pavement Marking Traffic Stripe 16in Black	3	stripe16	5
X	rdxssp	7523	PMStripe16W	Pavement Marking Traffic Stripe 16in White	0	stripe16	5
X	rdxssp	7524	PMStripe16Y	Pavement Marking Traffic Stripe 16in Yellow	4	stripe16	5
X	rdxssp	7525	PMStripe18B	Pavement Marking Traffic Stripe 18in Black	3	stripe18	6
X	rdxssp	7526	PMStripe18W	Pavement Marking Traffic Stripe 18in White	0	stripe18	6
X	rdxssp	7527	PMStripe18Y	Pavement Marking Traffic Stripe 18in Yellow	4	stripe18	6
X	rdxssp	7528	PMStripe24W	Pavement Marking Traffic Stripe 24in White	0	stripe24	7
X	rdxssp	7529	PMStripe24Y	Pavement Marking Traffic Stripe 24in Yellow	4	stripe24	7
X	rdxssp	7530	PMStripe6B	Pavement Marking Traffic Stripe 6in Black	3	stripe06	2
X	rdxssp	7531	PMStripe6B(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Black	3	stripe06	2
X	rdxssp	7532	PMStripe6Bl	Pavement Marking Traffic Stripe 6in Blue	1	stripe06	2
X	rdxssp	7533	PMStripe6DY	Pavement Marking Traffic Stripe 6in Double Yellow	4	dbl_line	2
X	rdxssp	7534	PMStripe6W	Pavement Marking Traffic Stripe 6in White	0	stripe06	2
X	rdxssp	7535	PMStripe6W(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in White	0	stripe06	2
X	rdxssp	7536	PMStripe6W(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in White	0	stripe06	2
X	rdxssp	7537	PMStripe6W(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in White	0	stripe06	2
X	rdxssp	7538	PMStripe6Y	Pavement Marking Traffic Stripe 6in Yellow	4	stripe06	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	rdxssp	7539	PMStripe6Y(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	rdxssp	7540	PMStripe6Y(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	rdxssp	7541	PMStripe6Y(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	rdxssp	7542	PMStripe8B	Pavement Marking Traffic Stripe 8in Black	3	stripe06	3
X	rdxssp	7543	PMStripe8W	Pavement Marking Traffic Stripe 8in White	0	stripe08	3
X	rdxssp	7544	PMStripe8W(3-9)	Pavement Marking 3/9 Skip Traffic Stripe 8in White	0	stripe08	2
X	rdxssp	7545	PMStripe8Y	Pavement Marking Traffic Stripe 8in Yellow	4	stripe08	3
X	rdxssp	7546	PMStripe9C(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 9in Contrast	0	skip 10/30 contrast	2
X	rdxssp	7577	PMStripeVibeW	Pavement Marking Auditory and Vibratory 6in White	0	Vibratory	2
X	rdxssp	7578	PMStripeVibeY	Pavement Marking Auditory and Vibratory 6in Yellow	4	Vibratory	2
	rdxssp	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	rdxssp	8062	PoleConc	Concrete Strain Pole	0	0	2
X	rdxssp	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	rdxssp	8515	PoleFound	Pole Foundation	0	0	2
X	rdxssp	8516	PoleLight	Light Pole	2	0	1
X	rdxssp	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	rdxssp	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	rdxssp	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	rdxssp	8520	PoleLightID	Light Pole Location / ID	4	0	1
X	rdxssp	7029	PolePower	Power Pole w/ Transformer	3	0	2
X	rdxssp	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	rdxssp	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	rdxssp	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	rdxssp	7033	PoleTel	Telephone Pole	6	0	2
X	rdxssp	7034	PoleUtil	Utility Pole	0	0	2
X	rdxssp	7035	PoleWoodStrain	Wood Strain Pole	0	0	2
X	rdxssp	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
X	rdxssp	6109	Pond_px	Pond Lines on Cross Sections	2	0	2
X	rdxssp	6050	Power_ex	Power on Cross Sections (Existing)	3	2	1
X	rdxssp	6052	Power_px	Power on Cross Sections	3	0	1
X	rdxssp	5072	PropertyLine_ep	Property Lines	3	0	0
X	rdxssp	8521	PullBox	Pull Boxes (All Types)	3	0	1
	rdxssp	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	rdxssp	7547	ReflPaintWht	Reflective Paint - Island Nose (White)	0	0	3
X	rdxssp	7548	ReflPaintYel	Reflective Paint - Island Nose (Yellow)	4	0	3
	rdxssp	236	RegionBdry_dp	Boundary Line for Regions in Corridor Design (Autodesk)	0	0	0
X	rdxssp	6053	RetainWall_px	Retaining Walls on Cross Sections	6	0	1
X	rdxssp	6054	RipRap_px	Rip Rap, Rubble on Cross Sections	4	1	2
X	rdxssp	7549	RPM_ep	Reflective Pavement Markers (Existing)	2	2	1
X	rdxssp	7550	RPM1	Raised Pavement Markers, White	0	0	2
X	rdxssp	7551	RPM2	Raised Pavement Markers, White - Red	3	0	2
X	rdxssp	7552	RPM3	Raised Pavement Markers, Yellow	4	0	2
X	rdxssp	7553	RPM4	Raised Pavement Markers, Yellow - Yellow	9	0	2
X	rdxssp	7554	RPM5	Raised Pavement Markers, Yellow - Red	6	0	2
X	rdxssp	7555	RPM6	Raised Pavement Markers, Blue	1	0	2
X	rdxssp	5083	RumbleStrip1	Rumble Strips Continuous Array	0	rumble_cont	2
X	rdxssp	5084	RumbleStrip2	Rumble Strips Skip Array	0	rumble_skip	2
X	rdxssp	5085	RWLine	Right of Way Lines	4	RW	2
X	rdxssp	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
X	rdxssp	6055	RWLine_ex	ROW Lines on Cross Sections (Existing)	3	RW	1
X	rdxssp	6056	RWLine_px	ROW Lines on Cross Sections	4	RW	2
X	rdxssp	6057	SanitaryFM_ex	Force Main Lines on Cross Sections (Existing)	2	2	1
X	rdxssp	6058	SanitaryFM_px	Force Main Lines on Cross Sections	2	0	1
X	rdxssp	6059	SanitarySewer_ex	Sanitary Sewer Lines on Cross Sections (Existing)	10	2	0
X	rdxssp	6060	SanitarySewer_px	Sanitary Sewer Lines on Cross Sections	2	0	1
X	rdxssp	6061	SanitarySewerEff_px	Sanitary Effluent for Cross Sections	9	0	0
X	rdxssp	8064	SawCuts	Saw Cuts	3	conduit1	0
	rdxssp	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	rdxssp	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	rdxssp	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	rdxssp	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. These Elements Do Not Plot	3	0	0
	rdxssp	223	SheetBorder_dp	Sheet Border	1	0	4
	rdxssp	224	SheetLines_dp	Sheet Lines	1	0	2
	rdxssp	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	rdxssp	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	rdxssp	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	rdxssp	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	rdxssp	6101	ShldrBase_px	Bottom of Proposed Paved Shoulder Base	3	0	2
X	rdxssp	6102	ShldrBaseTop_px	Top of Proposed Paved Shoulder Base	3	0	2
X	rdxssp	6062	ShldrPaved_px	Paved Shoulder Lines on Cross Sections	1	0	2
X	rdxssp	6063	ShldrUnpaved_px	Grass Shoulder Lines on Cross Sections	2	0	2
X	rdxssp	6103	ShldrWallBase_px	Proposed Shoulder Wall Subgrade	3	0	2
X	rdxssp	6064	Sidewalk_ex	Sidewalk Elements in Cross Sections (Existing)	0	2	1
X	rdxssp	6065	Sidewalk_px	Sidewalk Elements in Cross Sections	0	0	2
	rdxssp	5093	SidewalkBack_er	Back of Sidewalk Line Profile (Existing)	2	2	1
	rdxssp	5094	SidewalkBack_pr	Back of Sidewalk Line Profile	5	0	2
X	rdxssp	6104	SidewalkBase_px	Proposed Sidewalk Subgrade	3	0	2
X	rdxssp	7556	SignCantilever	Sign Symbol Cantilever	0	0	1
X	rdxssp	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	rdxssp	7558	SignDetail	Sign Details	0	0	2
	rdxssp	7559	SignLettersAZ	Alphabet Cell Library Letter A-Z Numbers 0-9	0	0	0
	rdxssp	7560	SignMisc	Miscellaneous Sign Symbols	1	0	2
	rdxssp	7561	SignMisc_ep	Miscellaneous Sign Symbols (Existing)	1	1	1
X	rdxssp	7562	SignPanel	Sign Panels - Regulatory	0	0	2
X	rdxssp	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
X	rdxssp	7564	SignPanelBorder	Sign Panel Border on Sign Details	0	0	1
X	rdxssp	7565	SignPanelC	Sign Panels - Civil	1	0	2
X	rdxssp	7566	SignPanelDetRed	Sign Panel Details in Red	3	0	2
X	rdxssp	7567	SignPanelG	Sign Panels - Guide	2	0	2
X	rdxssp	7568	SignPanelI	Sign Panels - Special Interest	9	0	2
X	rdxssp	7569	SignPanelT	Sign Panels - Construction	6	0	2
X	rdxssp	7570	SignPanelW	Sign Panels - Warning	4	0	2
X	rdxssp	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	rdxssp	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
X	rdxssp	7573	SignSpecial	Special Signs / Guide Signs	2	0	2
X	rdxssp	7574	SignSupport	Ground Mounted Sign Support Symbol (All Types)	1	0	1
X	rdxssp	6066	SignSymbol_px	Sign Structure and Foundation on Cross Sections	4	0	2
X	rdxssp	7575	SignTruss	Sign Symbol Truss	3	0	1
X	rdxssp	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
X	rdxssp	6067	Slopes_px	Slope Lines on Cross Sections	9	0	2
X	rdxssp	6068	SoilBoxes_px	Soil Boxes and Borings for Cross Sections	4	0	1
	rdxssp	6069	SpecialDetails_px	Special Details_XS	6	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	rdxssp	6070	Stabilization_px	Stabilization for Cross Sections	5	2	2
	rdxssp	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	rdxssp	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	rdxssp	6071	StreetLights_px	Street Lights for Cross Sections	3	0	1
	rdxssp	6072	Structure_px	Signal and Sign Structures on Cross Sections	0	0	2
X	rdxssp	6073	SubDsgn_px	Sub Design for Cross Sections	4	0	1
X	rdxssp	6074	Subsoil_px	Subsoil Or Undercut for Cross Sections	4	0	2
X	rdxssp	6075	SubsoilFinal_px	Subsoil Final for Multiline	18	0	1
X	rdxssp	6076	SubsoilProp_px	Subsoil Proposed for Multiline	8	0	1
	rdxssp	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	rdxssp	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	rdxssp	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
X	rdxssp	6077	TeleBur_ex	Telephone for Cross Sections (Buried - Miscellaneous - Existing)	6	2	1
X	rdxssp	6078	TeleBur_px	Telephone for Cross Sections (Buried) (Miscellaneous)	6	0	
X	rdxssp	6079	TemplateBottom_px	Bottom of Template for Multiline	6	0	1
X	rdxssp	6080	TemplateFinal_px	Final Template for Multiline	2	0	1
X	rdxssp	6081	TemplateTop_px	Top of Template for Multiline	7	0	1
X	rdxssp	6082	TerrainLine_ex	Existing Ground Line for Multiline	5	0	1
	rdxssp	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	rdxssp	303	TextConstEle	Text - Construction Element	0	0	1
	rdxssp	304	TextCurveData	Text - Curve Data Note	0	0	2
	rdxssp	305	TextDetails	Text - Detail Notes	4	0	2
	rdxssp	1146	TextElevLabel	Elevation Labels	4	0	0
	rdxssp	306	TextGeotech	Text for soil borings and labels	0	0	2
	rdxssp	307	TextLabel	Text - Label	0	0	2
	rdxssp	319	TextLandscape	Text - Landscape Labels	0	0	1
	rdxssp	308	TextMajor	Text - Major	0	0	5
	rdxssp	309	TextMinor	Text - Minor	0	0	0
	rdxssp	320	TextMisc	Text - Miscellaneous	0	0	1
	rdxssp	310	TextNotes	Text - Notes	4	0	1
	rdxssp	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	rdxssp	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	rdxssp	1147	TextPtLabel	Point Labels	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxssp	313	TextShtNo	Text - Sheet Number	0	0	2
	rdxssp	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	rdxssp	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	rdxssp	315	TextTitle	Text - Title	0	0	3
	rdxssp	321	TextXSBL_dp	Cross Section Baseline Labels	0	0	2
	rdxssp	322	TextXSDrain_ex	Existing Drainage Labels	10	0	2
	rdxssp	323	TextXSDrain_px	Proposed Drainage Labels	10	0	2
	rdxssp	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	rdxssp	317	TextXSElev_ex	Existing cross section elevations	2	0	1
	rdxssp	318	TextXSElev_px	Proposed cross section elevations	0	0	1
	rdxssp	324	TextXSGPKPts_dp	Used by criteria to label points	4	0	0
	rdxssp	325	TextXSNotes_dp	Cross Section Notes	0	0	2
	rdxssp	326	TextXSSlope_dp	Cross Section Slope Labels (rise:run format)	0	0	2
	rdxssp	327	TextXSSlopePvt_dp	Cross Section Pavement Slope Labels	0	0	2
X	rdxssp	6083	TrafSeparator_ex	Traffic Separator (All Types) on Cross Sections (Existing)	6	2	1
X	rdxssp	6084	TrafSeparator_px	Traffic Separator (All Types) on Cross Sections	6	0	2
X	rdxssp	6105	TrafSeparatorBase_px	Proposed Traffic Separator Subgrade	3	0	2
	rdxssp	9534	TypicalMisc	Typical Miscellaneous Items	0	0	2
	rdxssp	7056	Utility_er	Existing Utilities in Profile View	3	2	1
	rdxssp	7057	Utility_pr	Proposed Utilities in Profile View	3	0	2
	rdxssp	6085	UtilsMisc_ex	Miscellaneous Utility Items on Cross Sections (Existing)	8	2	1
	rdxssp	6086	UtilsMisc_px	Miscellaneous Utility Items on Cross Sections	8	0	1
	rdxssp	9535	Vehicle	Vehicle for Calculating Turning Radius	7	0	2
	rdxssp	6087	VoidArea_dx	Void Area_XS	1	0	0
X	rdxssp	6088	Water_ex	Water for Cross Sections (Existing)	1	2	1
X	rdxssp	6089	Water_px	Water for Cross Sections	1	0	1
X	rdxssp	6090	WaterNP_px	Raw Water Pipes for Cross Sections	1	0	1
	rdxssp	1182	WetlandEdge_ep	Edge of Mangrove, Wetlands (Marsh or Swamp)	2	wetland	0
X	rdxssp	6190	XSBaseTop_px	Top of Proposed Base	3	0	2
	rdxssp	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	rdxssp	6200	XSExtendGrdLine_ex	Extend Ground Lines for Cross Sections (Existing)	21	2	1
X	rdxssp	6201	XSGrdLine_ex	Ground Lines for Cross Sections (Existing)	2	2	1
X	rdxssp	6202	XSGrdLine_px	Roadway Ground Lines on Cross Sections	1	0	2
	rdxssp	6203	XSMisc_ex	Roadway Miscellaneous Items on Cross Sections (Existing)	4	3	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rdxssp	6204	XSMisc_px	Cross Section Miscellaneous Items	0	0	2
	rdxssp	1185	XSPt_ep	Cross Section Point, Station	2	1	0
	rdxssp	6205	XSShapeDep01_dp	Cross Section Shape Dependent	11	0	2
	rdxssp	6206	XSShapeDep02_dp	Cross Section Shape Dependent	12	0	2
	rdxssp	6207	XSShapeDep03_dp	Cross Section Shape Dependent	13	0	2
	rdxssp	6208	XSShapeDep04_dp	Cross Section Shape Dependent	14	0	2
	rdxssp	6209	XSShapeDep05_dp	Cross Section Shape Dependent	15	0	2
	rdxssp	6210	XSShapeDep06_dp	Cross Section Shape Dependent	16	0	2
	rdxssp	6211	XSShapeDep07_dp	Cross Section Shape Dependent	17	0	2
	rdxssp	6212	XSShapeDep08_dp	Cross Section Shape Dependent	18	0	2
	rdxssp	6213	XSShapeDep09_dp	Cross Section Shape Dependent	19	0	2
	rdxssp	6214	XSShapeDep10_dp	Cross Section Shape Dependent	20	0	2
	rdxssp	6215	XSShapeIndep01_dp	Cross Section Shape Independent	1	0	2
	rdxssp	6216	XSShapeIndep02_dp	Cross Section Shape Independent	2	0	2
	rdxssp	6217	XSShapeIndep03_dp	Cross Section Shape Independent	3	0	2
	rdxssp	6218	XSShapeIndep04_dp	Cross Section Shape Independent	4	0	2
	rdxssp	6219	XSShapeIndep05_dp	Cross Section Shape Independent	5	0	2
	rdxssp	6220	XSShapeIndep06_dp	Cross Section Shape Independent	6	0	2
	rdxssp	6221	XSShapeIndep07_dp	Cross Section Shape Independent	7	0	2
	rdxssp	6222	XSShapeIndep08_dp	Cross Section Shape Independent	8	0	2
	rdxssp	6223	XSShapeIndep09_dp	Cross Section Shape Independent	9	0	2
	rdxssp	6224	XSShapeIndep10_dp	Cross Section Shape Independent	10	0	2
X	rdxssp	6225	XSTypical_px	Roadway Pavement Typical on Cross Sections	1	0	2

3.9.1.28 Right of Way Detail for Roadway – RWDTRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rwdtrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	rwdtrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	rwdtrd	202	BaselineSurvey	Baseline Survey	0	0	2
	rwdtrd	234	CLConst_dp	Center Line of Construction	0	0	2
	rwdtrd	206	COGO_dp	COGO Information	3	0	1
	rwdtrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	rwdtrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	rwdtrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	rwdtrd	5027	EaseLicLine	License Agreement Line	5	6	0
X	rwdtrd	1532	EaseLine_ep	Easement:Easement Line (Existing)	1	2	0
X	rwdtrd	1543	EasePerpLine	Easement:Perpetual Easement Line (Proposed)	4	PESMT	2
X	rwdtrd	1548	EaseTempLine	Easement:Temporary Easement Line (Proposed)	6	TEMPE	1
	rwdtrd	5031	EaseTempLine_ep	Easement:Temporary Easement Line (Existing)	6	TEMPE	1
	rwdtrd	1556	GovCityLimitLine_ep	Government:City Limit Line	3	CLIMIT	0
	rwdtrd	1557	GovCountyLine_ep	Government:County Line	3	COLINE	3
	rwdtrd	1569	GovQuarterLine_ep	Government:Quarter Section Line	3	QSEC	1
	rwdtrd	1575	GovSectionLine_ep	Government:Section Line	3	SECLIN	2
	rwdtrd	1576	GovStateLine_ep	Government:State Line	2	STL	3
	rwdtrd	1577	GovTwpRgeLine_ep	Government:Township and Range Government Survey Line	2	TWPRGE	3
	rwdtrd	600	ImageAttachment_dp	Image Attachments	0	0	0
X	rwdtrd	1578	LARWLine	Proposed:Limited Access Right of Way Line	4	LA	3
X	rwdtrd	1579	LARWLine_ep	Existing:Limited Access Right of Way Line	7	EXLA	0
	rwdtrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	rwdtrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	rwdtrd	215	NorthArw_dp	North Arrows	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rwdtrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	rwdtrd	1093	PointLocator_ep	Geopak Point Locator for Cogo SMD database	4	0	0
X	rwdtrd	1612	PropertyLine_ep	Existing:Property Line	7	0	0
	rwdtrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	rwdtrd	217	RefPtAngleTie	Annotation:Angle Tie:Survey Reference Point / Detail	0	Angle	1
X	rwdtrd	218	RefPtLeader	Annotation:Leader:Survey Reference Point / Detail	0	ArrowPoint	1
X	rwdtrd	219	RefPtLine	Miscellaneous:Survey Reference Point Line / Detail	0	0	1
X	rwdtrd	220	RefPtStaTie	Annotation:Station Tie:Survey Reference Point / Detail	0	ArrowTie	0
X	rwdtrd	300	RefPtText	Annotation:Miscellaneous:Text: Survey Data Reference Point	0	0	1
X	rwdtrd	1619	RRBaseline	Baseline:Rail Road Centerline	0	RR	0
X	rwdtrd	1626	RWLine	Proposed:Right of Way Line	4	RW	3
X	rwdtrd	1627	RWLine_ep	Existing:RW Line	7	RW	0
	rwdtrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	rwdtrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	rwdtrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	rwdtrd	1648	SubDivLine	Existing:Subdivision Line	5	0	0
	rwdtrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	rwdtrd	303	TextConstEle	Text - Construction Element	0	0	1
	rwdtrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	rwdtrd	305	TextDetails	Text - Detail Notes	4	0	2
	rwdtrd	1146	TextElevLabel	Elevation Labels	4	0	0
	rwdtrd	307	TextLabel	Text - Label	0	0	2
	rwdtrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	rwdtrd	308	TextMajor	Text - Major	0	0	5
	rwdtrd	309	TextMinor	Text - Minor	0	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	rwdtrd	320	TextMisc	Text - Miscellaneous	0	0	1
	rwdtrd	310	TextNotes	Text - Notes	4	0	1
	rwdtrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	rwdtrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	rwdtrd	1147	TextPtLabel	Point Labels	4	0	0
	rwdtrd	313	TextShtNo	Text - Sheet Number	0	0	2
	rwdtrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	rwdtrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	rwdtrd	315	TextTitle	Text - Title	0	0	3
	rwdtrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	rwdtrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.29 Special Detail - SPDTRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	spdtrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	spdtrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	spdtrd	202	BaselineSurvey	Baseline Survey	0	0	2
	spdtrd	234	CLConst_dp	Center Line of Construction	0	0	2
	spdtrd	203	ClipBorder_dp	CLIP Border	3	0	0
	spdtrd	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	spdtrd	205	Cloud_dp	Construction Cloud	7	0	2
	spdtrd	206	COGO_dp	COGO Information	3	0	1
	spdtrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	spdtrd	9508	ConstLimits	Construction Limits	3	LOC	2
	spdtrd	9509	ConstLines	Construction Lines and References	1	0	0
	spdtrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	spdtrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	spdtrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	spdtrd	5027	EaseLicLine	License Agreement Line	5	6	0
	spdtrd	101	FLMap1	Florida Map items - weight of 1	1	0	1
	spdtrd	102	FLMap2	Florida Map items - weight of 2	3	0	2
	spdtrd	103	FLMap3	Florida Map items - weight of 3	2	0	3
	spdtrd	104	FLMap4	Florida Map items - color 11 (Interstate)	11	0	3
	spdtrd	105	FLMap5	Florida Map items - style 7, wt. 5 (state line)	3	7	5
	spdtrd	5047	GradeLine_er	Grade Line Profile (Existing)	2	2	1
	spdtrd	5048	GradeLine_pr	Grade Line Profile	5	0	2
	spdtrd	5049	GradeLineCtr_dp	Grade Line Profile Center (shown in plan view)	5	0	0
	spdtrd	5050	GradeLineCtr_pr	Grade Line Profile Center	5	0	2
	spdtrd	5051	GradeLineLt_dp	Grade Line Profile Left (shown in plan view)	1	0	0
	spdtrd	5052	GradeLineLt_er	Grade Line Profile Left (Existing)	1	2	1
	spdtrd	5053	GradeLineLt_pr	Grade Line Profile Left	1	0	2
	spdtrd	5054	GradeLineRt_dp	Grade Line Profile Right (shown in plan view)	4	0	0
	spdtrd	5055	GradeLineRt_er	Grade Line Profile Right (Existing)	4	2	1
	spdtrd	5056	GradeLineRt_pr	Grade Line Profile Right	4	0	2
	spdtrd	5057	GradeSecPat	Grade Section Patterns	0	0	0
	spdtrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	spdtrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	spdtrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	spdtrd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
	spdtrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
	spdtrd	9517	LaneDirArrow	Lane Directional Arrow	0	0	1
	spdtrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	spdtrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
	spdtrd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
	spdtrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	spdtrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	spdtrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	spdtrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	spdtrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	spdtrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	spdtrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	spdtrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	spdtrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	spdtrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	spdtrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	spdtrd	215	NorthArw_dp	North Arrows	0	0	2
	spdtrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	spdtrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	spdtrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2
	spdtrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
	spdtrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	spdtrd	216	PlotBorder_dp	Plot Border	3	0	0
	spdtrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
	spdtrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	spdtrd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	spdtrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	spdtrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	spdtrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	spdtrd	223	SheetBorder_dp	Sheet Border	1	0	4
	spdtrd	224	SheetLines_dp	Sheet Lines	1	0	2
	spdtrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	spdtrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	spdtrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	spdtrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
	spdtrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	spdtrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
	spdtrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	spdtrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	spdtrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	spdtrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	spdtrd	303	TextConstEle	Text - Construction Element	0	0	1
	spdtrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	spdtrd	305	TextDetails	Text - Detail Notes	4	0	2
	spdtrd	1146	TextElevLabel	Elevation Labels	4	0	0
	spdtrd	307	TextLabel	Text - Label	0	0	2
	spdtrd	319	TextLandscape	Text - Landscape Labels	0	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	spdtrd	308	TextMajor	Text - Major	0	0	5
	spdtrd	309	TextMinor	Text - Minor	0	0	0
	spdtrd	320	TextMisc	Text - Miscellaneous	0	0	1
	spdtrd	310	TextNotes	Text - Notes	4	0	1
	spdtrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	spdtrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	spdtrd	1147	TextPtLabel	Point Labels	4	0	0
	spdtrd	313	TextShtNo	Text - Sheet Number	0	0	2
	spdtrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	spdtrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	spdtrd	315	TextTitle	Text - Title	0	0	3
	spdtrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	spdtrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
	spdtrd	1185	XSPt_ep	Cross Section Point, Station	2	1	0

3.9.1.30 Traffic Control - TCDSRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	tcdsrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	tcdsrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	tcdsrd	5500	AdvWarnPanel	Advance Warning Arrow Panels	4	0	2
X	tcdsrd	5000	Aggregate	Aggregate	8	0	1
X	tcdsrd	5001	ArtificialCovering	Artificial Coverings	10	0	2
X	tcdsrd	5002	AsphaltConc	Asphaltic Concrete Quantity Shapes	6	0	3
X	tcdsrd	5003	AsphaltMilling	Asphalt Milling Quantity Shapes	7	0	2
	tcdsrd	5004	AsphaltMisc	Asphalt Miscellaneous Material	1	0	1
X	tcdsrd	5501	Attenuator	Attenuation Systems	6	attenuator	1
X	tcdsrd	5502	AttenuatorTM	Attenuator Truck Mount	6	0	2
X	tcdsrd	5503	Barricade	Barricade	0	0	1
X	tcdsrd	5504	Barricade1	Barricade Symbol Type 1 or 2 at 15' spacing	0	barricade1	1
X	tcdsrd	5505	Barricade2	Barricade Symbol Type 1 or 2 at 30' spacing	0	barricade2	1
X	tcdsrd	5506	Barricade3	Barricade Symbol Type 1 or 2 at 50' spacing	0	barricade3	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	tcdsrd	5507	Barricade4	Barricade Symbol Type 1 or 2 at 100' spacing	0	barricade4	1
X	tcdsrd	5005	BarrierWall	Barrier Wall All Types	6	0	2
X	tcdsrd	5006	Base	Base Material (All Types)	3	0	2
	tcdsrd	202	BaselineSurvey	Baseline Survey	0	0	2
X	tcdsrd	5008	Bridge	Bridge	0	0	2
X	tcdsrd	6006	CandG_ex	Curb and Gutter for Cross Sections (All Types) (Existing)	4	2	1
X	tcdsrd	6007	CandG_px	Curb and Gutter for Cross Sections (All Types)	4	0	2
X	tcdsrd	6008	CandGBase_px	Curb and Gutter Base on Cross Sections	3	0	1
	tcdsrd	234	CLConst_dp	Center Line of Construction	0	0	2
	tcdsrd	203	ClipBorder_dp	CLIP Border	3	0	0
	tcdsrd	204	ClipDrawingBound_dp	CLIP Drawing Boundary	3	3	0
	tcdsrd	205	Cloud_dp	Construction Cloud	7	0	2
X	tcdsrd	5508	CmpFlashbrdRiser	Cmp Flashboard Riser	10	0	2
	tcdsrd	206	COGO_dp	COGO Information	3	0	1
X	tcdsrd	5014	ConcPvtSC	Concrete Surface Coloring	9	0	1
X	tcdsrd	5015	Concrete	Concrete Areas (All Types plus miscellaneous)	0	0	2
X	tcdsrd	5016	ConcSlabs	Concrete Slabs	0	0	2
X	tcdsrd	5509	Cone	Cone and Tubular Marker	6	0	2
	tcdsrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	tcdsrd	9508	ConstLimits	Construction Limits	3	LOC	2
	tcdsrd	9509	ConstLines	Construction Lines and References	1	0	0
X	tcdsrd	7500	CrossWalk1	Emphasis Crosswalk 6ft High	0	crosswalk1	4
X	tcdsrd	7501	CrossWalk2	Emphasis Crosswalk 10ft High	0	crosswalk2	4
X	tcdsrd	5018	CurbBack	Back of Curb	4	0	1
X	tcdsrd	5019	CurbFace	Curb and Gutter (Face)	4	0	1
X	tcdsrd	5020	CurbRamp	Curb Cut Ramp	8	0	1
	tcdsrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	tcdsrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
X	tcdsrd	5510	Delineator	Delineators (All Types)	4	0	1
	tcdsrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	tcdsrd	7502	DirArrowsPavt	Pavement Marking Directional Arrows	0	0	1
X	tcdsrd	6515	Ditch	Ditch Top	7	6	1
X	tcdsrd	6516	DitchBot	Ditch Bottom	10	0	2
X	tcdsrd	5021	DitchPavt	Ditch Pavement Including Quantity Shapes	3	0	1
	tcdsrd	6517	DitchProfLt_er	Ditch Profile Left (Existing)	8	3	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	tcdsrd	6518	DitchProfLt_pr	Ditch Profile Left	8	0	1
	tcdsrd	6519	DitchProfMdn_er	Ditch Profile Median (Existing)	10	3	1
	tcdsrd	6520	DitchProfMdn_pr	Ditch Profile Median	10	0	1
	tcdsrd	6521	DitchProfRt_er	Ditch Profile Right (Existing)	9	3	1
	tcdsrd	6522	DitchProfRt_pr	Ditch Profile Right	9	0	1
	tcdsrd	6523	DrainDivideArw	Drainage Divide Arrow	0	0	1
	tcdsrd	6524	DrainDivides00	Drainage Divides	10	2	4
	tcdsrd	6525	DrainDivides00_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6526	DrainDivides01	Drainage Divides	10	2	4
	tcdsrd	6527	DrainDivides01_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6528	DrainDivides02	Drainage Divides	10	2	4
	tcdsrd	6529	DrainDivides02_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6530	DrainDivides03	Drainage Divides	10	2	4
	tcdsrd	6531	DrainDivides03_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6532	DrainDivides04	Drainage Divides	10	2	4
	tcdsrd	6533	DrainDivides04_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6534	DrainDivides05	Drainage Divides	10	2	4
	tcdsrd	6535	DrainDivides05_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6536	DrainDivides06	Drainage Divides	10	2	4
	tcdsrd	6537	DrainDivides06_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6538	DrainDivides07	Drainage Divides	10	2	4
	tcdsrd	6539	DrainDivides07_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6540	DrainDivides08	Drainage Divides	10	2	4
	tcdsrd	6541	DrainDivides08_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6542	DrainDivides09	Drainage Divides	10	2	4
	tcdsrd	6543	DrainDivides09_ep	Drainage Divides (Existing)	9	2	4
	tcdsrd	6544	DrainMisc	Miscellaneous Drainage Items	10	0	2
X	tcdsrd	6545	DrainStruct_pr	Drainage Structures (All Types)	10	0	2
X	tcdsrd	6020	DrainStruct_px	Misc Drainage Structures and Elements for XSections	10	0	2
	tcdsrd	5511	Drum	Drum	6	0	1
X	tcdsrd	5027	EaseLicLine	License Agreement Line	5	6	0
	tcdsrd	5029	EasePerpLine	Easement Lines Perpetual	4	PESMT	1
	tcdsrd	5030	EaseTempLine	Easement Lines Temporary	6	TEMPE	0
X	tcdsrd	5033	Fence	Fence, Sand Fence	6	Fence1	1
X	tcdsrd	5035	FenceLt	Fence Limited Access Left	6	laflt	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	tcdsrd	5036	FenceRt	Fence Limited Access Right	6	lafrt	1
X	tcdsrd	5512	Flag	Orange Flag and / or Flagman	6	0	1
X	tcdsrd	5513	FlashingLight	Flashing Lights (All Types)	0	0	1
X	tcdsrd	5038	FlowPaths	Time of Concentration Flow Paths	10	1	1
X	tcdsrd	5040	Gabions	Gabion Baskets or Mats	10	0	2
X	tcdsrd	5041	Gabions_ep	Gabion Baskets or Mats (Existing)	10	1	2
X	tcdsrd	5046	GovTwpRgeLine_ep	Township / Range Lines	10	TWPRGE	2
X	tcdsrd	5058	Grass	Grass, Seeding and Mulching Areas	2	1	2
	tcdsrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	tcdsrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	tcdsrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
X	tcdsrd	5060	Guardrail	Guardrail	0	0	2
X	tcdsrd	6037	Guardrail_px	Guardrail	0	0	1
X	tcdsrd	5061	GuardrailDbl	Guardrail Double Face	0	grdbl	1
X	tcdsrd	5062	GuardrailEndAch	Guardrail End Anchorage	0	0	1
X	tcdsrd	5063	GuardrailLt	Guardrail Left	0	grail1	1
X	tcdsrd	5064	GuardrailRt	Guardrail Right	0	grail2	1
X	tcdsrd	7019	GuyWire	Guy Wire	3	0	0
	tcdsrd	9011	HardscapeDetails	Paving Details, Fence Railing, Stamped Asphalt	4	0	2
	tcdsrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	tcdsrd	5110	InletProt	Rock Bags and Sand Bagging	10	0	2
	tcdsrd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
X	tcdsrd	5066	LARWLine	Limited Access Right of Way	4	LA	2
X	tcdsrd	5067	LARWLine_ep	Limited Access Right of Way (Existing)	4	EXLA	1
	tcdsrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	tcdsrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
	tcdsrd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
	tcdsrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	tcdsrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	tcdsrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	tcdsrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	tcdsrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	tcdsrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	tcdsrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	tcdsrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	tcdsrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	tcdsrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	tcdsrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	tcdsrd	215	NorthArw_dp	North Arrows	0	0	2
X	tcdsrd	7509	ObjectMarker	Object and Reflective Markers	3	0	1
X	tcdsrd	7510	OverheadSign	Overhead Sign Panels	0	0	2
X	tcdsrd	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	tcdsrd	7512	OverheadStr	Mast Arm, Truss Assemblies, Signal Arms and Supports	0	0	2
X	tcdsrd	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
X	tcdsrd	7514	PavtMessage	Pavement Message (All types)	0	0	1
X	tcdsrd	7515	PavtMessage_ep	Pavement Message (Existing - All types)	0	2	0
	tcdsrd	5070	PavtMiscMat	Miscellaneous Pavement Quantity Items (Bituminous Material, Cover Material, Mesh, etc.)	11	0	1
	tcdsrd	1088	PavtXover_ep	Crossovers and Detours (Temporary)	0	3	0
	tcdsrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	tcdsrd	8057	PedDetector	Pedestrian Detector	0	0	2
X	tcdsrd	8058	Pedestal	Pedestal	1	0	1
X	tcdsrd	8059	Pedestal_ep	Pedestal (Existing)	1	2	1
X	tcdsrd	8060	PedHead	Pedestrian Head (All Types)	1	0	1
X	tcdsrd	8061	PedHead_ep	Pedestrian Head (All Types) (Existing)	0	2	1
X	tcdsrd	216	PlotBorder_dp	Plot Border	3	0	0
X	tcdsrd	7516	PMCeramic	Pavement Markers Ceramic	0	0	1
	tcdsrd	7517	PMMisc	Pavement Marking Miscellaneous Items	0	0	2
X	tcdsrd	7518	PMStripe(10-10-20)	Pavement Marking 10/10/20 Skip Traffic Stripe 6in Contrast	0	skip10/10/20contrast	2
X	tcdsrd	7519	PMStripe12B	Pavement Marking Traffic Stripe 12in Black	3	stripe12	4
X	tcdsrd	7520	PMStripe12W	Pavement Marking Traffic Stripe 12in White	0	stripe12	4
X	tcdsrd	7521	PMStripe12Y	Pavement Marking Traffic Stripe 12in Yellow	4	stripe12	4
X	tcdsrd	7522	PMStripe16B	Pavement Marking Traffic Stripe 16in Black	3	stripe16	5
X	tcdsrd	7523	PMStripe16W	Pavement Marking Traffic Stripe 16in White	0	stripe16	5
X	tcdsrd	7524	PMStripe16Y	Pavement Marking Traffic Stripe 16in Yellow	4	stripe16	5
X	tcdsrd	7525	PMStripe18B	Pavement Marking Traffic Stripe 18in Black	3	stripe18	6
X	tcdsrd	7526	PMStripe18W	Pavement Marking Traffic Stripe 18in White	0	stripe18	6
X	tcdsrd	7527	PMStripe18Y	Pavement Marking Traffic Stripe 18in Yellow	4	stripe18	6
X	tcdsrd	7528	PMStripe24W	Pavement Marking Traffic Stripe 24in White	0	stripe24	7

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	tcdsrd	7529	PMStripe24Y	Pavement Marking Traffic Stripe 24in Yellow	4	stripe24	7
X	tcdsrd	7530	PMStripe6B	Pavement Marking Traffic Stripe 6in Black	3	stripe06	2
X	tcdsrd	7531	PMStripe6B(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Black	3	stripe06	2
X	tcdsrd	7532	PMStripe6Bl	Pavement Marking Traffic Stripe 6in Blue	1	stripe06	2
X	tcdsrd	7533	PMStripe6DY	Pavement Marking Traffic Stripe 6in Double Yellow	4	dbl_line	2
X	tcdsrd	7534	PMStripe6W	Pavement Marking Traffic Stripe 6in White	0	stripe06	2
X	tcdsrd	7535	PMStripe6W(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in White	0	stripe06	2
X	tcdsrd	7536	PMStripe6W(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in White	0	stripe06	2
X	tcdsrd	7537	PMStripe6W(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in White	0	stripe06	2
X	tcdsrd	7538	PMStripe6Y	Pavement Marking Traffic Stripe 6in Yellow	4	stripe06	2
X	tcdsrd	7539	PMStripe6Y(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	tcdsrd	7540	PMStripe6Y(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	tcdsrd	7541	PMStripe6Y(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	tcdsrd	7542	PMStripe8B	Pavement Marking Traffic Stripe 8in Black	3	stripe06	3
X	tcdsrd	7543	PMStripe8W	Pavement Marking Traffic Stripe 8in White	0	stripe08	3
X	tcdsrd	7544	PMStripe8W(3-9)	Pavement Marking 3/9 Skip Traffic Stripe 8in White	0	stripe08	2
X	tcdsrd	7545	PMStripe8Y	Pavement Marking Traffic Stripe 8in Yellow	4	stripe08	3
X	tcdsrd	7546	PMStripe9C(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 9in Contrast	0	skip 10/30 contrast	2
X	tcdsrd	7577	PMStripeVibeW	Pavement Marking Auditory and Vibratory 6in White	0	Vibratory	2
X	tcdsrd	7578	PMStripeVibeY	Pavement Marking Auditory and Vibratory 6in Yellow	4	Vibratory	2
	tcdsrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	tcdsrd	7029	PolePower	Power Pole w/ Transformer	3	0	2
X	tcdsrd	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	tcdsrd	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	tcdsrd	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	tcdsrd	7033	PoleTel	Telephone Pole	6	0	2
X	tcdsrd	7034	PoleUtil	Utility Pole	0	0	2
X	tcdsrd	7035	PoleWoodStrain	Wood Strain Pole	0	0	2
X	tcdsrd	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
X	tcdsrd	5072	PropertyLine_ep	Property Lines	3	0	0
	tcdsrd	1107	RailroadMisc_ep	RR Switch, Warning Sign, Milepost	11	0	0
	tcdsrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	tcdsrd	5081	RockGravelStone	Rock, Gravel, Stone, Boulders, Etc.	1	0	2
X	tcdsrd	7549	RPM_ep	Reflective Pavement Markers (Existing)	2	2	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	tcdsrd	7550	RPM1	Raised Pavement Markers, White	0	0	2
X	tcdsrd	7551	RPM2	Raised Pavement Markers, White - Red	3	0	2
X	tcdsrd	7552	RPM3	Raised Pavement Markers, Yellow	4	0	2
X	tcdsrd	7553	RPM4	Raised Pavement Markers, Yellow - Yellow	9	0	2
X	tcdsrd	7554	RPM5	Raised Pavement Markers, Yellow - Red	6	0	2
X	tcdsrd	7555	RPM6	Raised Pavement Markers, Blue	1	0	2
X	tcdsrd	5085	RWLine	Right of Way Lines	4	RW	2
X	tcdsrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
	tcdsrd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	tcdsrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	tcdsrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	tcdsrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
X	tcdsrd		SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	hay_bales	2
X	tcdtrd	6601	SedimentBarrier	Synthetic Bales and Staked Silt Fences	10	silt_fence	2
	tcdsrd	223	SheetBorder_dp	Sheet Border	1	0	4
	tcdsrd	224	SheetLines_dp	Sheet Lines	1	0	2
	tcdsrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	tcdsrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	tcdsrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	tcdsrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
	tcdsrd	5089	ShldrHatch	Paved Shoulder Hatch Pattern	1	0	1
X	tcdsrd	5090	ShldrPaved	Paved Shoulder Line	1	0	1
	tcdsrd	1119	ShldrPaved_ep	Shoulder Edge, Paved	1	3	0
X	tcdsrd	5095	SidewalkConc	Sidewalk Concrete Shape	0	0	2
X	tcdsrd	8065	SignalCable	Signal Cable	3	signal_cable	1
X	tcdsrd	8066	SignalCableAccs	Signal Cable Accessories	0	0	2
X	tcdsrd	8067	SignalDetail	Signal Details	0	0	1
	tcdsrd	8068	SignalHead	Signal Head Section Details	2	0	1
X	tcdsrd	8069	SignalHead_ep	Signal Head Section Details (Existing)	2	2	0
	tcdsrd	8070	SignalMisc	Signal Miscellaneous Equipment	3	0	1
X	tcdsrd	8071	SignalSOP	S.O.P. Box and Movements	0	0	2
X	tcdsrd	8072	SignalSym	Signal Head Symbols	0	0	1
X	tcdsrd	8073	SignalSym_ep	Signal Head Symbols (Existing)	3	2	0
X	tcdsrd	7556	SignCantilever	Sign Symbol Cantilever	0	0	1
X	tcdsrd	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	tcdsrd	7558	SignDetail	Sign Details	0	0	2
	tcdsrd	7559	SignLettersAZ	Alphabet Cell Library Letter A-Z Numbers 0-9	0	0	0
	tcdsrd	7560	SignMisc	Miscellaneous Sign Symbols	1	0	2
	tcdsrd	7561	SignMisc_ep	Miscellaneous Sign Symbols (Existing)	1	1	1
X	tcdsrd	7562	SignPanel	Sign Panels - Regulatory	0	0	2
X	tcdsrd	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
X	tcdsrd	7564	SignPanelBorder	Sign Panel Border on Sign Details	0	0	1
X	tcdsrd	7565	SignPanelC	Sign Panels - Civil	1	0	2
X	tcdsrd	7566	SignPanelDetRed	Sign Panel Details in Red	3	0	2
X	tcdsrd	7567	SignPanelG	Sign Panels - Guide	2	0	2
X	tcdsrd	7568	SignPanelI	Sign Panels - Special Interest	9	0	2
X	tcdsrd	7569	SignPanelT	Sign Panels - Construction	6	0	2
X	tcdsrd	7570	SignPanelW	Sign Panels - Warning	4	0	2
X	tcdsrd	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	tcdsrd	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
X	tcdsrd	7573	SignSpecial	Special Signs / Guide Signs	2	0	2
X	tcdsrd	7574	SignSupport	Ground Mounted Sign Support Symbol (All Types)	1	0	0
X	tcdsrd	6066	SignSymbol_px	Sign Structure and Foundation on Cross Sections	4	0	2
X	tcdsrd	7575	SignTruss	Sign Symbol Truss	3	0	1
X	tcdsrd	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
X	tcdsrd	5097	Sod	Performance Sod	2	0	2
	tcdsrd	5101	SpecialDetails	Special Details	6	0	1
X	tcdsrd	5102	Stabilization	Stabilization Material Lines and Shapes	9	0	2
	tcdsrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	tcdsrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
	tcdsrd	5104	Structure	Structures	0	0	2
	tcdsrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	tcdsrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	tcdsrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
	tcdsrd	5516	TCZMisc	Traffic Control Miscellaneous Items	3	0	1
X	tcdsrd	5517	TCZSign	Traffic Control Sign Symbol	6	0	2
X	tcdsrd	5518	TCZSign1	Traffic Control Sign Symbol at 200' Spacing	6	sign3	2
X	tcdsrd	5519	TCZSign2	Traffic Control Sign Symbol at 400' Spacing	6	sign2	2
X	tcdsrd	5520	TCZSign3	Traffic Control Sign Symbol at 500' Spacing	6	sign1	2
X	tcdsrd	5521	TempBarrierWall	Barrier Wall (Temporary)	6	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	tcdsrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	tcdsrd	303	TextConstEle	Text - Construction Element	0	0	1
	tcdsrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	tcdsrd	305	TextDetails	Text - Detail Notes	4	0	2
	tcdsrd	1146	TextElevLabel	Elevation Labels	4	0	0
	tcdsrd	307	TextLabel	Text - Label	0	0	2
	tcdsrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	tcdsrd	308	TextMajor	Text - Major	0	0	5
	tcdsrd	309	TextMinor	Text - Minor	0	0	0
	tcdsrd	320	TextMisc	Text - Miscellaneous	0	0	1
	tcdsrd	310	TextNotes	Text - Notes	4	0	1
	tcdsrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	tcdsrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	tcdsrd	1147	TextPtLabel	Point Labels	4	0	0
	tcdsrd	313	TextShtNo	Text - Sheet Number	0	0	2
	tcdsrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	tcdsrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	tcdsrd	315	TextTitle	Text - Title	0	0	3
	tcdsrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	tcdsrd	5107	TrafSeparator	Traffic Separator (All Types)	6	0	1
X	tcdsrd	6084	TrafSeparator_px	Traffic Separator (All Types) on Cross Sections	6	0	2
X	tcdsrd	6593	TurbidityBarrier1	Turbidity Barrier 1 (floating)	10	barrier1	2
X	tcdsrd	6595	TurbidityBarrier2	Turbidity Barrier 2 (staked)	10	barrier2	2
	tcdsrd	6596	TurbidityBarrier2_ep	Turbidty Barrier (Staked) (Existing)	10	1	2
	tcdsrd	6594	TurbidtiyBarrier1_ep	Turbidty Barrier (Floating) (Existing)	10	1	2
X	tcdsrd	5112	Turf	Performance Truf	10 0	0	2
	tcdsrd	9534	TypicalMisc	Typical Miscellaneous Items	0	0	2
	tcdsrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	tcdsrd	6225	XSTypical_px	Roadway Pavement Typical on Cross Sections	1	0	2

3.9.1.31 Existing Topography for Roadway - TOPORD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	topord	1000	ArchSite_ep	Archeological Site	2	0	1	L	ARST
	topord	1001	Attenuator_ep	Attenuator Systems	0	0	1	L	ATTN
	topord	202	BaselineSurvey	Baseline Survey	0	0	2		
	topord	1002	BankMent_ep	Embankment (Manmade, Top or Bottom)	9	3	0	L	BNK
	topord	1003	BarrierWall_ep	Barrier Wall All Types	6	3	0	L	BARW
	topord	1003	BarrierWall_ep	Barrier Wall – Precast (Temp)	6	3	0	L	TMPW
	topord	1004	Beacons_ep	Beacons and Path Illumination	0	0	0	P	BN
	topord	1005	BLSurveyCntrl_ep	Baseline Survey Control	0	0	2	L	BLC
	topord	1006	BLSurveyField_ep	Baseline Field Survey	0	0	2	L	BL
	topord	1009	Bridge_ep	Bridge	0	3	1	L	APRS
	topord	1010	BridgeEle_ep	Bridge Elements	0	1	0	L	BRDG
	topord	1011	Building_ep	Buildings	1	0	0	L	BLDG
	topord	1012	BusStop_ep	Bench, Bus Stop	8	3	0	P	BNCH
	topord	1186	CableBarrier_ep	Cable Barrier	0	cable_barrier	2	L	CBR
	topord	1013	Canal_ep	Canal, Lock	7	3	0	L	CAN
	topord	1018	CGBack_ep	Curb and Gutter (Back)	4	3	0	L	CGB
	topord	1019	CGep_ep	Curb / Curb and Gutter (at EP & FL)	0	3	0	L	CG
	topord	1020	CGFace_ep	Face of Curb and Gutter	4	3	0	L	CGF
	topord	1023	ConcSlabs_ep	Concrete Slabs	0	1	1	L	CSL
	topord	1025	Core_ep	Core Sample or Test Hole	9	0	0	P	CSH
	topord	1027	CurbRamp_ep	Curb Cut Ramp	2	3	0	L	CCR
	topord	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2		
	topord	1028	Deck_ep	Deck / Porch	7	1	0	L	DECK
	topord	1029	DelineatorPost_ep	Delineator Post, Existg Metal & Flexible	4	1	1	P	DLP
	topord	1030	Ditch_ep	Ditch (Top, Bottom and Flow Lines)	7	6	0	L	DTCH
	topord	1031	DitchPavt_ep	Ditch Pavement	0	1	0	L	DTCHP
	topord	1032	Docks_ep	Docks and Wharfs	0	1	0	L	DOCK
	topord	1034	Driveway_ep	Driveway (Drive, Lane, Turnouts)	7	3	0	L	DWY
	topord	1035	DummyChains_ep	Dummy Chains	0	0	1	L	DUMB
	topord	5200	EnvImpact_ep	Locations for Portential Environmental Concerns	3	0	1		
	topord	1037	Fence_ep	Fence (All)	6	Fence1	0	L	FNC
	topord	1039	FloodLight_ep	Flood Light	3	2	0	P	FLD
	topord	1042	Furnace_ep	Incinerator, Boiler, or Furnace	8	1	0	P	INCN

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	topord	1045	Gates_ep	Cattle Guard	7	3	0	P	CGD
	topord	1045	Gates_ep	Gates	7	3	0	L	GT
	topord	1047	GlareScrn_ep	Glare Screen & Blinds	0	{ Curtain }	0	L	GS
	topord	1048	GuardrailDbl_ep	Guardrail Double Face	0	grdbl	0	L	GRDBL
	topord	1049	GuardrailLt_ep	Guardrail Left	0	grail1	0	L	GRL
	topord	1050	GuardrailRt_ep	Guardrail Right	0	grail2	0	L	GRR
	topord	1052	Handrail_ep	Handrails	9	3	0	L	HNDRL
	topord	1053	Hole_ep	Hole	8	3	0	P	HOLE
	topord	600	ImageAttachment_dp	Image Attachmentst	0	0	0		algnrd
	topord	1059	LaneLine_ep	Lane Lines	0	LaneLine_exist	1	L	LL
	topord	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1		
	topord	1062	Mailbox_ep	Mailbox(s)	8	2	0	P	MBX
	topord	1076	MiscEquip_ep	Flag Pole	8	0	0	P	FP
	topord	1076	MiscEquip_ep	Parking Meter	8	0	0	P	PKGM
	topord	1077	Monument_ep	Monuments - Aerial Targets	4	0	0	P	AT
	topord	1077	Monument_ep	Monuments - Concrete (Cast)	4	0	0	P	CMON
	topord	1077	Monument_ep	Monuments - Drill Hole, Plug (Control Monumentation)	4	0	0	P	DH
	topord	1077	Monument_ep	Monuments - Deep Rod Mark	4	0	0	P	DRM
	topord	1077	Monument_ep	Monuments - 5/8 Rod and Cap	4	0	0	P	IRC
	topord	1077	Monument_ep	Monuments - Nail, Spike, Pin (Control Monumentation)	4	0	0	P	NL
	topord	1077	Monument_ep	Monuments - Other Marker? (Control Monumentation)	4	0	0	P	OM
	topord	1077	Monument_ep	Monuments - Metal Pipe, Rod, Bar (Control)	4	0	0	P	PIP
	topord	1077	Monument_ep	Monuments - Concrete Monument (Poured)	4	0	0	P	PMON
	topord	1077	Monument_ep	Monuments - Post, Stake, Staub (Control Monumentation)	4	0	0	P	PST
	topord	1077	Monument_ep	Monuments - Hub and Tac	4	0	0	P	SAT
	topord	1077	Monument_ep	Monuments - Stamped Disk	4	0	0	P	STMD
	topord	1077	Monument_ep	Monuments - Stamped Plate	4	0	0	P	STMP
	topord	1079	ParkEquip_ep	Campstove, Grill, Firepit, BBQ	9	2	0	P	CMPST
	topord	1079	ParkEquip_ep	Playground Equipment	9	2	0	P	PLEQ
	topord	1080	Patternlines_ep	Cross Section Chain	2	1	0	L	XSC
	topord	1081	Pavemk_ep	Handicap Pavement Marking	0	2	0	P	HNDC

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	topord	1081	Pavemk_ep	Pavement Markings (Other)	0	2	0	L	PMRK
	topord	1081	Pavemk_ep	Straight Direction Arrow	0	2	0	P	STAROW
	topord	1081	Pavemk_ep	Straight and Turn Arrow	0	2	0	P	STATRN
	topord	1081	Pavemk_ep	Turn Arrow	0	2	0	P	TA
	topord	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1	L	AP
	topord	1083	PavtConc_ep	Concrete Pavement (Edges)	0	3	1	L	CPVT
	topord	1084	PavtConcJoints_ep	Concrete Pavement (Joints)	1	5	1	L	CPVJ
	topord	1085	PavtCrown_ep	Asphalt Pavement (Crown)	0	4	1	L	AC
	topord	1085	PavtCrown_ep	Concrete Pavement (Crown)	0	4	1	L	CPVC
	topord	1086	PavtMisc_ep	Pavement Parking Lot/Guardrail/Misc Pavement	7	3	0	L	MP
	topord	1087	PavtTractorXing_ep	Tractor Crossings	0	3	1	L	TX
	topord	1088	PavtXover_ep	Crossovers and Detours (Temporary)	0	3	0	L	XO
	topord	1089	PedSignal_ep	Pedestrian Signal Unit, Signage	0	2	0	P	PS
	topord	1090	Piling_ep	Piling, Piers, or Column	8	3	0	P	PIL
	topord	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0	P	N/A (GEOPAK only)
	topord	1105	Pump_ep	Pump Island, Pump (Petroleum / Fuel), Pump Station	7	3	1	L	PMPIS
	topord	1107	RailroadMisc_ep	RR Milepost	11	0	0	P	RRMP
	topord	1107	RailroadMisc_ep	RR Switch	11	0	0	P	RRS
	topord	1107	RailroadMisc_ep	RR Warning Sign	11	0	0	P	RRWS
	topord	1107	RailroadMisc_ep	RR Signal with Gate	11	0	0	P	SWG
	topord	5082	RRBaseline	Baseline: Rail Road Centerline	4	0	2	L	RRCL
	topord	1108	RailroadTracks_ep	Railroad Tracks (Rail, Bed)	4	3	0	L	RR
	topord	1109	RailroadXing_ep	RR Crossing (Roadway Platforms), RR Signal w/ Gate	11	3	0	L	RRX
	topord	219	RefPtLine	Miscellaneous:Survey Reference Point Line / Detail	0	0	1	L	REFL
	topord	300	RefPtText	Annotation:Miscellaneous:Text: Survey Data Reference Point	0	0	1		
	topord	1110	RipRap_ep	Rip Rap, Rubble	4	3	1	L	RIP
	topord	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0		
	topord	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0		

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	topord	1118	SeaWalls_ep	Sea Walls	0	1	3	L	SEAW
	topord	1119	ShldrPaved_ep	Shoulder Edge, Paved	1	3	0	L	SHLDR
	topord	1120	ShldrUnpaved_ep	Unpaved Shoulders	0	3	0	L	UNPS
	topord	1121	Shrub_ep	Shrubs (all), Shrub Boundary, Ornamental Plants	2	0	0	L	HED
	topord	1121	Shrub_ep	Hedges and Shrubs (Boundary)	2	0	0	P	OP
	topord	1121	Shrub_ep	Ornamental Plant	2	0	0	P	SHR
	topord	1121	Shrub_ep	Shrub, Bush	2	0	0	P	SHRC
	topord	1121	Shrub_ep	Coniferous Shrub	2	0	0	P	SHRD
	topord	1122	SidewalkBack_ep	Sidewalk (Backs)	2	3	0	L	SWKB
	topord	1123	SidewalkFront_ep	Sidewalk (Fronts)	1	3	0	L	SWK
	topord	1124	Signal_ep	Signal Head	3	2	0	P	SIG
	topord	1124	Signal_ep	Signal on Pedestal	3	2	0	P	SIGP
	topord	1125	SignalLoop_ep	Traffic Detector Loops	7	1	2	L	TFD
	topord	1126	SignalMisc_ep	Miscellaneous Signal Equipment Existing including control unit	3	2	0	P	SIGC
	topord	1127	SignalSupport_ep	Signal Supports including Mast Arm	3	2	0	P	SMA
	topord	1128	SignMulti_ep	Multi-column Sign (Large Sign)	0	3	1	L	MS
	topord	1128	SignMulti_ep	Multi-column Sign (Small Sign)	0	3	1	P	SMS
	topord	1129	SignSingle_ep	Sign (Single Support)	3	2	0	P	SSS
	topord	1130	SignSupport_ep	Trusses and Cantilevers for Overhead Signs	0	3	1	L	SGNT
	topord	1131	Silo_ep	Silo	11	2	0	P	SILO
	topord	1132	Slopes_ep	Levees, Dikes, or Dams,	9	3	0	L	LV
	topord	1132	Slopes_ep	Natural Slopes (Top or Bottom)	9	3	0	L	SLP
	topord	1133	SpanWire_ep	Signal / Span Wire Pole	3	0	0	P	SSP
	topord	1135	Stairs_ep	Stairways, Steps	0	3	1	L	STP
	topord	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2		
	topord	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2		
	topord	1138	Stream_ep	Stream Edge	1	3	0	L	STRM
	topord	1138	Stream_ep	Stream Center	1	3	0	L	STRMC
	topord	1139	StreamMisc_ep	Buoy	7	0	0	P	BUOY
	topord	1139	StreamMisc_ep	Dolphins and Fenders	7	0	0	P	DF
	topord	1139	StreamMisc_ep	Stream or Tide Gauge	7	0	0	P	TG
	topord	1140	Stump_ep	Stump	2	0	0	P	STM
	topord	1141	TankStor_ep	Storage Tank	11	3	0	P	STTK

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	topord	1142	TankUG_ep	Fill Cap (Underground Tank)	3	0	0	P	FC
	topord	302	TextBLStation	Text - B/L Station and Tics	0	0	2		
	topord	304	TextCurveData	Text - Curve Data Note	0	0	2		
	topord	1146	TextElevLabel	Elevation Labels	4	0	0		
	topord	307	TextLabel	Text - Label	0	0	2		
	topord	320	TextMisc	Text - Miscellaneous	0	0	1		
	topord	310	TextNotes	Text - Notes	4	0	1		
	topord	1147	TextPtLabel	Point Labels	4	0	0		
	topord	1148	TextSurveyLabel	Survey Text Labels (Misc)	0	0	0	P	NOTE
	topord	1148	TextSurveyLabel	Survey Text Labels (Misc)	0	0	0	P	MISC
	topord	1149	TopoMisc_ep	Miscellaneous Topo	0	3	1	L	MISC
	topord	1151	TrafSeparator_ep	Traffic Separator	6	3	0	L	TFSP
	topord	1152	Trail_ep	Roadway, Trail (Unpaved)	9	3	1	L	RD
	topord	1153	Trash_ep	Dumpster, Trash Disposal	9	0	0	P	DMP
	topord	1154	Treadle_ep	Treadle	7	1	5	L	TRD
	topord	1155	Tree_ep	Trees	2	0	0	P	TREE
	topord	1155	Tree_ep	Coniferous Tree	2	0	0	P	TREEC
	topord	1155	Tree_ep	Citrus Tree	2	0	0	P	TREECI
	topord	1155	Tree_ep	Cypress Tree	2	0	0	P	TREEC Y
	topord	1155	Tree_ep	Deciduous Tree	2	0	0	P	TREED
	topord	1155	Tree_ep	Oak Tree	2	0	0	P	TREEO A
	topord	1155	Tree_ep	Palm Tree	2	0	0	P	TREEP A
	topord	1155	Tree_ep	Palm Tree Cluster	2	0	0	P	TREEP C
	topord	1155	Tree_ep	Pine Tree	2	0	0	P	TREEPI
	topord	1156	TreeLine_ep	Groves & Orchards (Boundary)	2	woodline	0	L	GRV
	topord	1156	TreeLine_ep	Scattered Trees (Boundary)	2	woodline	0	L	SCT
	topord	1156	TreeLine_ep	Woods Line	2	woodline	0	L	WDL
	topord	1157	Tributary_ep	Spring (Water Source)	1	0	0	P	SPR
	topord	1175	Walls_ep	Walls	9	3	1	L	WALL
	topord	1177	WaterEdge_ep	Edge of Water	7	3	0	L	WEDG
	topord	1181	Wetland_ep	W.M.D. & D.E.P. Wetlands	1	wetland	0	L	DEP
	topord	1182	WetlandEdge_ep	CORPS Wetlands (Marsh or Swamp)	2	wetland	0	L	COE

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	topord	1182	WetlandEdge_ep	Edge of Mangrove	2	wetland	0	L	EM
	topord	1182	WetlandEdge_ep	Edge of Wetlands (Marsh or Swamp)	2	wetland	0	L	MAR
	topord	1183	WetlandSym_ep	Marsh Symbol, Wetland Point	2	0	0	P	MAR
	topord	1183	WetlandSym_ep	Marsh Symbol, Wetland Point	2	0	0	P	WLPT
	topord	1184	WindMill_ep	Wind Mill	1	1	0	P	WIM
	topord	1185	XSPt_ep	Cross Section Point, Station	2	1	0	P	XS

3.9.1.32 Existing Topography for Right of Way – TOPORW.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	toporw	1003	BarrierWall_ep	Barrier Wall All Types	6	3	0	L	BARW
	toporw	1009	Bridge_ep	Bridge	0	3	1	L	APRS
	toporw	1010	BridgeEle_ep	Bridge Elements	0	1	0	L	BRDG
	toporw	1011	Building_ep	Buildings	1	0	0	L	BLDG
	toporw	1023	ConcSlabs_ep	Concrete Slabs	0	1	1	L	CSL
	toporw	1028	Deck_ep	Deck / Porch	7	1	0	L	DECK
	toporw	1031	DitchPavt_ep	Ditch Pavement	0	1	0	L	DTCH P
	toporw	1032	Docks_ep	Docks and Wharfs	0	1	0	L	DOCK
	toporw	1033	DrainMisc_ep	Drainage Miscellaneous	10	3	1	L	BAS
	toporw	1034	Driveway_ep	Driveway (Drive, Lane, Turnouts)	7	3	0	L	DWY
	toporw	1035	DummyChains_ep	Dummy Chains	0	0	1	L	DUMB
	toporw	1037	Fence_ep	Fence (All)	6	Fence1	0	L	FNC
	toporw	1045	Gates_ep	Cattle Guard, Gates	7	3	0	L	GT
	toporw	600	ImageAttachment_dp	Image Attachmentst	0	0	0		algnrd
	toporw	1056	InletDBI_ep	Ditch Bottom Inlet	10	3	1	L	DTCHI
	toporw	1058	JunctBox_ep	Junct. Box / Service Cabinet (Elec/Tel)	3	1	0	P	SRVC
	toporw	1061	Luminaire_ep	Street Light / Pole	3	2	0	P	LP
	toporw	1076	MiscEquip_ep	Parking Meter, Flag Pole	8	0	0	P	FP
	toporw	1090	Piling_ep	Piling, Piers, or Column	8	3	0	P	PIL
	toporw	1097	Power_ep	Existing Overhead Electric Power Conductors (Distribution & Transmission)	3	e-oe	0		HVL
	toporw	1105	Pump_ep	Pump Island, Pump (Petroleum / Fuel), Pump Station	7	3	1	L	PMPIS

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	toporw	1107	RailroadMisc_ep	RR Switch, Warning Sign, Milepost	11	0	0	P	RRMP
	toporw	1619	RRBaseline	Baseline: Rail Road Centerline	0	RR	0	L	RRCL
	toporw	1115	SateDish_ep	Sattelite Dish Antenna	6	4	0	P	SATD
	toporw	1118	SeaWalls_ep	Sea Walls	0	1	3	L	SEAW
	toporw	1122	SidewalkBack_ep	Sidewalk (Backs)	2	3	0	L	SWKB
	toporw	1123	SidewalkFront_ep	Sidewalk (Fronts)	1	3	0	L	SWK
	toporw	1128	SignMulti_ep	Multi-column Sign (Large Sign)	0	3	1	L	MS
	toporw	1129	SignSingle_ep	Sign (Single Support)	3	2	0	P	SSS
	toporw	1130	SignSupport_ep	Trusses and Cantilevers for Overhead Signs	0	3	1	L	SGNT
	toporw	1131	Silo_ep	Silo	11	2	0	P	SILO
	toporw	1135	Stairs_ep	Stairways, Steps	0	3	1	L	STP
	toporw	1138	Stream_ep	Stream Edge	1	3	0	L	STRM
	toporw	1138	Stream_ep	Stream Center	1	3	0	L	STRM C
	toporw	1141	TankStor_ep	Storage Tank	11	3	0	P	STTK
	toporw	1142	TankUG_ep	Fill Cap (Underground Tank)	3	0	0	P	FC
	toporw	1146	TextElevLabel	Elevations Labels	4	0	0		
	toporw	320	TextMisc	Text - Miscellaneous	0	0	1		
	toporw	1147	TextPtLabel	Point Labels	4	0	0		
	toporw	1148	TextSurveyLabel	Survey Text Labels (Misc)	0	0	0	P	NOTE
	toporw	1148	TextSurveyLabel	Survey Text Labels (Misc)	0	0	0	P	MISC
	toporw	1149	TopoMisc_ep	Miscellaneous Topo	0	3	1	L	MISC
	toporw	1150	Tower_ep	Antenna	3	1	0	P	ANT
	toporw	1150	Tower_ep	Transmission Tower (Single C)	3	1	0	P	CLMT
	toporw	1152	Trail_ep	Roadway, Trail (Unpaved)	9	3	1	L	RD
	toporw	1175	Walls_ep	Walls	9	3	1	L	WALL
	toporw	1177	WaterEdge_ep	Edge of Water	7	3	0	L	WEDG
	toporw	1178	WaterMisc_ep	Faucet, Standpipe, Well	1	1	0	P	WELL
	toporw	1180	Wells_ep	Monitoring Well, Taps	1	1	0	P	MONW
	toporw	1182	WetlandEdge_ep	Edge of Wetland (Marsh of Swamp)	2	wetland	0	L	MAR
	toporw	1183	WetlandSym_ep	Wetland Point	2	0	0	P	WLPT

3.9.1.33 *Typical Section Data – TYPDRD.rul*

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typdrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	typdrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	typdrd	5500	AdvWarnPanel	Advance Warning Arrow Panels	4	0	2
X	typdrd	5002	AsphaltConc	Asphaltic Concrete Quantity Shapes	6	0	3
X	typdrd	5003	AsphaltMilling	Asphalt Milling Quantity Shapes	7	0	2
X	typdrd	6000	AsphaltMilling_px	Asphalt Milling Lines on Cross Sections	7	0	2
	typdrd	5004	AsphaltMisc	Asphalt Miscellaneous Material	1	0	1
X	typdrd	6226	AsphaltMisc_px	Miscellaneous Pavement on Cross Sections	1	0	2
X	typdrd	5501	Attenuator	Attenuation Systems	6	attenuator	1
X	typdrd	5502	AttenuatorTM	Attenuator Truck Mount	6	0	2
X	typdrd	5503	Barricade	Barricade	0	0	1
X	typdrd	5504	Barricade1	Barricade Symbol Type 1 or 2 at 15' spacing	0	barricade1	1
X	typdrd	5505	Barricade2	Barricade Symbol Type 1 or 2 at 30' spacing	0	barricade2	1
X	typdrd	5506	Barricade3	Barricade Symbol Type 1 or 2 at 50' spacing	0	barricade3	1
X	typdrd	5507	Barricade4	Barricade Symbol Type 1 or 2 at 100' spacing	0	barricade4	1
X	typdrd	5005	BarrierWall	Barrier Wall All Types	6	0	2
X	typdrd	6001	BarrierWall_ex	Barrier Wall for Cross Section (Existing)	6	3	1
X	typdrd	6002	BarrierWall_px	Barrier Wall for Cross Section	6	0	2
X	typdrd	5006	Base	Base Material (All Types)	3	0	2
X	typdrd	6003	Base_ex	Base Material for Cross Sections (All Types) (Existing)	3	3	1
X	typdrd	6004	Base_px	Base Material for Cross Sections (All Types)	3	0	2
	typdrd	202	BaselineSurvey	Baseline Survey	0	0	2
X	typdrd	6005	Berm_px	Berm (Top, Front, or Back) for Cross Sections	10	0	2
X	typdrd	6503	BoxCulvert	Box Culvert	10	0	2
X	typdrd	6006	CandG_ex	Curb and Gutter for Cross Sections (All Types) (Existing)	4	2	1
X	typdrd	6007	CandG_px	Curb and Gutter for Cross Sections (All Types)	4	0	2
X	typdrd	6008	CandGBase_px	Curb and Gutter Base on Cross Sections	3	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typdrd	234	CLConst_dp	Center Line of Construction	0	0	2
	typdrd	205	Cloud_dp	Construction Cloud	7	0	2
	typdrd	206	COGO_dp	COGO Information	3	0	1
X	typdrd	5013	ConcPavt	Concrete Pavement Edges	10	0	2
X	typdrd	5014	ConcPvtSC	Concrete Surface Coloring	9	0	1
X	typdrd	5015	Concrete	Concrete Areas (All Types plus miscellaneous)	0	0	2
X	typdrd	5016	ConcSlabs	Concrete Slabs	0	0	2
X	typdrd	6013	Conduit_px	Conduit and Encasements on Cross Sections	3	0	1
X	typdrd	5509	Cone	Cone and Tubular Marker	6	0	2
	typdrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	typdrd	9508	ConstLimits	Construction Limits	3	LOC	2
	typdrd	9509	ConstLines	Construction Lines and References	1	0	0
X	typdrd	5018	CurbBack	Back of Curb	4	0	1
X	typdrd	5019	CurbFace	Curb and Gutter (Face)	4	0	1
X	typdrd	5020	CurbRamp	Curb Cut Ramp	8	0	1
	typdrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	typdrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	typdrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	typdrd	7502	DirArrowsPavt	Pavement Marking Directional Arrows	0	0	1
X	typdrd	6515	Ditch	Ditch Top	7	6	1
X	typdrd	6014	Ditch_px	Ditch Top for Cross Sections	7	0	2
X	typdrd	6516	DitchBot	Ditch Bottom	10	0	2
X	typdrd	6015	DitchBot_px	Ditch Bottom for Cross Sections	10	0	2
X	typdrd	5021	DitchPavt	Ditch Pavement Including Quantity Shapes	3	0	1
X	typdrd	6016	DitchPavt_px	Ditch Pavement for Cross Sections	3	0	3
	typdrd	6517	DitchProfLt_er	Ditch Profile Left (Existing)	8	3	1
	typdrd	6518	DitchProfLt_pr	Ditch Profile Left	8	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typdrd	6519	DitchProfMdn_er	Ditch Profile Median (Existing)	10	3	1
	typdrd	6520	DitchProfMdn_pr	Ditch Profile Median	10	0	1
	typdrd	6521	DitchProfRt_er	Ditch Profile Right (Existing)	9	3	1
	typdrd	6522	DitchProfRt_pr	Ditch Profile Right	9	0	1
X	typdrd	6545	DrainStruct_pr	Drainage Structures (All Types)	10	0	2
X	typdrd	6020	DrainStruct_px	Misc Drainage Structures and Elements for XSections	10	0	2
X	typdrd	6021	Driveway_px	Driveway Lines on Cross Sections	7	0	2
X	typdrd	6091	DrivewayBase_px	Proposed Driveway Subgraee	3	0	2
	typdrd	5511	Drum	Drum	6	0	1
	typdrd	6022	Earthwork1_px	Earthwork (color 0)	0	0	1
	typdrd	6023	Earthwork2_px	Earthwork (color 1)	1	0	1
	typdrd	6024	Earthwork3_px	Earthwork (color 2)	2	0	1
	typdrd	6025	Earthwork4_px	Earthwork (color 3)	3	0	1
	typdrd	6026	Earthwork5_px	Earthwork (color 4)	4	0	1
X	typdrd	5027	EaseLicLine	License Agreement Line	5	6	0
	typdrd	5029	EasePerpLine	Easement Lines Perpetual	4	PESMT	1
	typdrd	6027	EasePerpLine_px	Perpetual Easement Lines on Cross Sections	4	PESMT	1
	typdrd	5030	EaseTempLine	Easement Lines Temporary	6	TEMPE	0
	typdrd	6028	EaseTempLine_px	Temporary Easement Lines on Cross Sections	6	TEMPE	0
X	typdrd	6547	Endwall	Endwall (All Types)	10	0	2
X	typdrd	6029	Endwall_px	Endwall for Cross Sections	10	0	2
X	typdrd	5032	EOP	Edge of Pavement	0	0	2
	typdrd	9512	ExcavationLimits_dp	Excavation Limits on Cross Sections	0	0	1
X	typdrd	5033	Fence	Fence, Sand Fence	6	Fence1	1
	typdrd	6099	Fence_ex	Fence Lines on Cross Sections (Existing)	6	3	1
X	typdrd	6030	Fence_px	Fence Lines on Cross Sections	6	Fence1	2
X	typdrd	5035	FenceLt	Fence Limited Access Left	6	laflt	1
X	typdrd	5036	FenceRt	Fence Limited Access Right	6	lafrt	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typdrd	6548	FES	Flared End Sections	10	0	2
X	typdrd	6031	FES_px	Flared End Sections for Cross Sections	10	0	2
X	typdrd	5513	FlashingLight	Flashing Lights (All Types)	0	0	1
X	typdrd	6033	FOCBur_px	Fiber Optics Cable (Buried) for XSections	6	0	1
X	typdrd	6035	Gas_px	Gas Pipe and Fittings, Misc for Xsections	4	0	1
	typdrd	5750	GeotechFillPatt1	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	typdrd	5751	GeotechFillPatt1_px	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	typdrd	5752	GeotechFillPatt2	Geotechnical Fill Pattern - clay, sand	0	1	0
	typdrd	5753	GeotechFillPatt2_px	Geotechnical Fill Pattern - clay, sand	0	1	0
	typdrd	5754	GeotechFillPatt3	Geotechnical Fill Pattern - shell	3	1	0
	typdrd	5755	GeotechFillPatt3_px	Geotechnical Fill Pattern - shell	3	1	0
	typdrd	5756	GeotechFillPatt4	Geotechnical Fill Pattern - sand	4	0	0
	typdrd	5757	GeotechFillPatt4_px	Geotechnical Fill Pattern - sand	4	0	0
	typdrd	5758	GeotechFillPatt5	Geotechnical Fill Pattern - coquina	1	0	1
	typdrd	5759	GeotechFillPatt5_px	Geotechnical Fill Pattern - coquina	1	0	1
	typdrd	5760	GeotechFillPatt6	Geotechnical Fill Pattern - limestone	2	0	0
	typdrd	5761	GeotechFillPatt6_px	Geotechnical Fill Pattern - limestone	2	0	0
	typdrd	5762	GeotechFillPatt7	Geotechnical Fill Pattern - gravel	6	0	0
	typdrd	5763	GeotechFillPatt7_px	Geotechnical Fill Pattern - gravel	6	0	0
	typdrd	5764	GeotechMisc	Miscellaneous Geotechnical Elements	0	0	1
X	typdrd	5046	GovTwpRgeLine_ep	Township / Range Lines	10	TWPRGE	2
	typdrd	6554	GPKDrBack_dp	Back Point on Drainage Cells	2	2	2
	typdrd	6555	GPKDrBottom_dp	Bottom Point on Drainage Cells	3	3	2
	typdrd	6556	GPKDrCellIns_dp	Cell Insertion Point on Drainage Cells	4	4	2
	typdrd	6557	GPKDrCentroid_dp	Point on Centroid for Drainage	7	7	2
	typdrd	6558	GPKDrFront_dp	Front Point on Drainage Cells	1	1	2
	typdrd	6559	GPKDrPipe_dp	Point on Drainage Pipe	6	6	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typdrd	6560	GPKDrPipeCir_dp	Point on Pipe Circular	6	6	0
X	typdrd	5058	Grass	Grass, Seeding and Mulching Areas	2	1	2
X	typdrd	5059	GravityWall	Gravity Wall	11	0	1
X	typdrd	5059	GravityWall	Gravity Wall	11	0	1
X	typdrd	6036	GravityWall_px	Gravity Wall for Cross Sections	11	0	2
X	typdrd	6092	GravWallBase_px	Proposed Gravity Wall Subgrade	3	0	2
	typdrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	typdrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	typdrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	typdrd	9008	GroundCover	Groundcover Edge Symbol	2	0	1
	typdrd	9009	GroundCoverHatch	Groundcover Hatch Pattern	2	0	0
X	typdrd	5060	Guardrail	Guardrail	0	0	2
X	typdrd	6037	Guardrail_px	Guardrail	0	0	1
X	typdrd	5061	GuardrailDbl	Guardrail Double Face	0	grdbl	1
X	typdrd	5062	GuardrailEndAch	Guardrail End Anchorage	0	0	1
X	typdrd	5063	GuardrailLt	Guardrail Left	0	grail1	1
X	typdrd	5064	GuardrailRt	Guardrail Right	0	grail2	1
X	typdrd	5065	Handrail	Handrails	9	0	1
X	typdrd	6038	Handrail_px	Handrail Lines on Cross Sections	9	0	1
	typdrd	9011	HardscapeDetails	Paving Details, Fence Railing, Stamped Asphalt	4	0	2
	typdrd	600	ImageAttachment _dp	Image Attachmentst	0	0	0
X	typdrd	6039	Inlet_px	Inlets on Cross Sections	10	0	2
X	typdrd	6040	InletBottom_px	Inlet Bottom on Cross Sections (All Types)	10	0	1
X	typdrd	6561	InletBottomJ	Inlet Bottom Type J	10	0	1
X	typdrd	6562	InletBottomP	Inlet Bottom Type P	10	0	1
X	typdrd	6564	InletCurb	Curb Inlet (All Types)	10	0	2
X	typdrd	6565	InletDBI	Ditch Bottom Inlet (All Types)	10	0	2
X	typdrd	6566	InletGutter	Gutter Inlet (All Types)	10	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typdrd	6567	InletMedian	Median Barrier Inlet	10	0	2
	typdrd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
	typdrd	9517	LaneDirArrow	Lane Directional Arrow	0	0	1
X	typdrd	5066	LARWLine	Limited Access Right of Way	4	LA	2
X	typdrd	5067	LARWLine_ep	Limited Access Right of Way (Existing)	4	EXLA	1
X	typdrd	6041	LARWLine_ex	Limited Access Right of Way on XSections (Existing)	4	EXLA	1
X	typdrd	6042	LARWLine_px	Limited Access ROW Lines on Cross Sections	4	LA	2
X	typdrd	6043	LateralLimits_px	Lateral Limits for Cross Sections	6	0	2
	typdrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	typdrd	8511	LightingMisc	Lighting Miscellaneous Items	4	0	2
X	typdrd	8512	LightingSP	Lighting Service Points	0	0	1
	typdrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	typdrd	9022	Luminaire	Luminaires (Decorative - All Types)	2	0	1
X	typdrd	6568	Manhole	Manhole (Drainage and unknown)	10	0	2
X	typdrd	6044	Manhole_px	Manhole on Cross Sections	10	0	2
X	typdrd	6093	MedianWallBase_px	Proposed Median Wall Subgrade	3	0	2
X	typdrd	6569	MES	Mitered End Section	10	0	2
X	typdrd	6045	MES_px	Mitered End Section on Cross Sections	10	0	2
	typdrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	typdrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	typdrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	typdrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	typdrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	typdrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	typdrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	typdrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	typdrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	typdrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typdrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
X	typdrd	6046	Overbuild_px	Overbuild Areas on Cross Sections	4	0	2
X	typdrd	6094	Overbuild1_px	Proposed Overbuild Binder Symbology (No Longer Used)	7	0	2
X	typdrd	6095	Overbuild2_px	Proposed Overbuild Base Symbology (No Longer Used)	7	0	2
X	typdrd	6096	Overlay_px	Proposed Overlay for Cross Sections	1	0	2
X	typdrd	6097	Overlay1_px	Proposed Overlay for Cross Sections	14	0	2
X	typdrd	6098	Overlay2_px	Proposed Overlay for Cross Sections	7	0	2
	typdrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	typdrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2
	typdrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
X	typdrd	6100	PavedMedianBase_px	Proposed Paved Median Subgrade	3	0	2
	typdrd	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1
	typdrd	9529	PavtCrown	Pavement Crown	16	0	2
X	typdrd	7514	PavtMessage	Pavement Message (All types)	0	0	1
X	typdrd	7515	PavtMessage_ep	Pavement Message (Existing - All types)	0	2	0
	typdrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	typdrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	typdrd	6573	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	typdrd	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	typdrd	216	PlotBorder_dp	Plot Border	3	0	0
	typdrd	7517	PMMisc	Pavement Marking Miscellaneous Items	0	0	2
X	typdrd	7519	PMStripe12B	Pavement Marking Traffic Stripe 12in Black	3	stripe12	4
X	typdrd	7520	PMStripe12W	Pavement Marking Traffic Stripe 12in White	0	stripe12	4
X	typdrd	7521	PMStripe12Y	Pavement Marking Traffic Stripe 12in Yellow	4	stripe12	4
X	typdrd	7522	PMStripe16B	Pavement Marking Traffic Stripe 16in Black	3	stripe16	5
X	typdrd	7523	PMStripe16W	Pavement Marking Traffic Stripe 16in White	0	stripe16	5

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typdrd	7524	PMStripe16Y	Pavement Marking Traffic Stripe 16in Yellow	4	stripe16	5
X	typdrd	7525	PMStripe18B	Pavement Marking Traffic Stripe 18in Black	3	stripe18	6
X	typdrd	7526	PMStripe18W	Pavement Marking Traffic Stripe 18in White	0	stripe18	6
X	typdrd	7527	PMStripe18Y	Pavement Marking Traffic Stripe 18in Yellow	4	stripe18	6
X	typdrd	7528	PMStripe24W	Pavement Marking Traffic Stripe 24in White	0	stripe24	7
X	typdrd	7529	PMStripe24Y	Pavement Marking Traffic Stripe 24in Yellow	4	stripe24	7
X	typdrd	7530	PMStripe6B	Pavement Marking Traffic Stripe 6in Black	3	stripe06	2
X	typdrd	7531	PMStripe6B(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Black	3	stripe06	2
X	typdrd	7532	PMStripe6Bl	Pavement Marking Traffic Stripe 6in Blue	1	stripe06	2
X	typdrd	7533	PMStripe6DY	Pavement Marking Traffic Stripe 6in Double Yellow	4	dbl_line	2
X	typdrd	7534	PMStripe6W	Pavement Marking Traffic Stripe 6in White	0	stripe06	2
X	typdrd	7535	PMStripe6W(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in White	0	stripe06	2
X	typdrd	7536	PMStripe6W(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in White	0	stripe06	2
X	typdrd	7537	PMStripe6W(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in White	0	stripe06	2
X	typdrd	7538	PMStripe6Y	Pavement Marking Traffic Stripe 6in Yellow	4	stripe06	2
X	typdrd	7539	PMStripe6Y(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	typdrd	7540	PMStripe6Y(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	typdrd	7541	PMStripe6Y(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	typdrd	7542	PMStripe8B	Pavement Marking Traffic Stripe 8in Black	3	stripe06	3
X	typdrd	7543	PMStripe8W	Pavement Marking Traffic Stripe 8in White	0	stripe08	3
X	typdrd	7544	PMStripe8W(3-9)	Pavement Marking 3/9 Skip Traffic Stripe 8in White	0	stripe08	2
X	typdrd	7545	PMStripe8Y	Pavement Marking Traffic Stripe 8in Yellow	4	stripe08	3
X	typdrd	7577	PMStripeVibeW	Pavement Marking Auditory and Vibratory 6in White	0	Vibratory	2
X	typdrd	7578	PMStripeVibeY	Pavement Marking Auditory and Vibratory 6in Yellow	4	Vibratory	2
	typdrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	typdrd	8062	PoleConc	Concrete Strain Pole	0	0	2
X	typdrd	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	typdrd	8515	PoleFound	Pole Foundation	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typdrd	8516	PoleLight	Light Pole	2	0	1
X	typdrd	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	typdrd	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	typdrd	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	typdrd	8520	PoleLightID	Light Pole Location / ID	4	0	1
X	typdrd	7029	PolePower	Power Pole w/ Transformer	3	0	2
X	typdrd	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	typdrd	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	typdrd	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	typdrd	7033	PoleTel	Telephone Pole	6	0	2
X	typdrd	7034	PoleUtil	Utility Pole	0	0	2
X	typdrd	7035	PoleWoodStrain	Wood Strain Pole	0	0	2
X	typdrd	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
X	typdrd	6109	Pond_px	Pond Lines on Cross Sections	2	0	2
X	typdrd	6052	Power_px	Power on Cross Sections	3	0	1
X	typdrd	5072	PropertyLine_ep	Property Lines	3	0	0
	typdrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	typdrd	5075	RetainWall	Retaining Wall System	6	0	1
X	typdrd	5076	RetainWall_pr	Retaining Wall Profile	9	0	2
X	typdrd	6053	RetainWall_px	Retaining Walls on Cross Sections	6	0	1
X	typdrd	6054	RipRap_px	Rip Rap, Rubble on Cross Sections	4	1	2
X	typdrd	5085	RWLine	Right of Way Lines	4	RW	2
X	typdrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
X	typdrd	6055	RWLine_ex	ROW Lines on Cross Sections (Existing)	3	RW	1
X	typdrd	6056	RWLine_px	ROW Lines on Cross Sections	4	RW	2
X	typdrd	6058	SanitaryFM_px	Force Main Lines on Cross Sections	2	0	1
X	typdrd	6059	SanitarySewer_ex	Sanitary Sewer Lines on Cross Sections (Existing)	10	2	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typdrd	6060	SanitarySewer_px	Sanitary Sewer Lines on Cross Sections	2	0	1
	typdrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	typdrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	typdrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	typdrd	223	SheetBorder_dp	Sheet Border	1	0	4
	typdrd	224	SheetLines_dp	Sheet Lines	1	0	2
	typdrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	typdrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	typdrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	typdrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	typdrd	6101	ShldrBase_px	Bottom of Proposed Paved Shoulder Base	3	0	2
X	typdrd	6102	ShldrBaseTop_px	Top of Proposed Paved Shoulder Base	3	0	2
	typdrd	5089	ShldrHatch	Paved Shoulder Hatch Pattern	1	0	1
X	typdrd	5090	ShldrPaved	Paved Shoulder Line	1	0	1
X	typdrd	6062	ShldrPaved_px	Paved Shoulder Lines on Cross Sections	1	0	2
X	typdrd	5091	ShldrUnpaved	Unpaved Shoulder Line	0	0	0
X	typdrd	6063	ShldrUnpaved_px	Grass Shoulder Lines on Cross Sections	2	0	2
X	typdrd	6103	ShldrWallBase_px	Proposed Shoulder Wall Subgrade	3	0	2
X	typdrd	9032	Shrub	Shrubs	2	0	1
X	typdrd	6064	Sidewalk_ex	Sidewalk Elements in Cross Sections (Existing)	0	2	1
X	typdrd	6065	Sidewalk_px	Sidewalk Elements in Cross Sections	0	0	2
X	typdrd	5092	SidewalkBack	Sidewalk Back	2	0	1
X	typdrd	6104	SidewalkBase_px	Proposed Sidewalk Subgrade	3	0	2
X	typdrd	5095	SidewalkConc	Sidewalk Concrete Shape	0	0	2
X	typdrd	5096	SidewalkFront	Sidewalk Front	1	0	1
X	typdrd	6585	Slopes	Slopes (Top, Bottom)	9	3	0
X	typdrd	6067	Slopes_px	Slope Lines on Cross Sections	9	0	2
X	typdrd	5097	Sod	Performance Sod	2	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typdrd	6068	SoilBoxes_px	Soil Boxes and Borings for Cross Sections	4	0	1
	typdrd	6069	SpecialDetails_px	Special Details_XS	6	0	1
X	typdrd	5102	Stabilization	Stabilization Material Lines and Shapes	9	0	2
X	typdrd	6070	Stabilization_px	Stabilization for Cross Sections	5	2	2
	typdrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	typdrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	typdrd	9036	StreetLights	Street Lights	2	0	1
X	typdrd	6071	StreetLights_px	Street Lights for Cross Sections	3	0	1
	typdrd	6072	Structure_px	Signal and Sign Structures on Cross Sections	0	0	2
X	typdrd	6073	SubDsgn_px	Sub Design for Cross Sections including subbase	4	0	1
X	typdrd	6074	Subsoil_px	Subsoil Or Undercut for Cross Sections	4	0	2
X	typdrd	6075	SubsoilFinal_px	Subsoil Final for Multiline	18	0	1
X	typdrd	6076	SubsoilProp_px	Subsoil Proposed for Multiline	8	0	1
	typdrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	typdrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	typdrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
X	typdrd	6079	TemplateBottom_px	Bottom of Template for Multiline	6	0	1
X	typdrd	6080	TemplateFinal_px	Final Template for Multiline	2	0	1
X	typdrd	6081	TemplateTop_px	Top of Template for Multiline	7	0	1
X	typdrd	6082	TerrainLine_ex	Existing Ground Line for Multiline	5	0	1
	typdrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	typdrd	303	TextConstEle	Text - Construction Element	0	0	1
	typdrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	typdrd	305	TextDetails	Text - Detail Notes	4	0	2
	typdrd	1146	TextElevLabel	Elevation Labels	4	0	0
	typdrd	306	TextGeotech	Text for soil borings and labels	0	0	2
	typdrd	307	TextLabel	Text - Label	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typdrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	typdrd	308	TextMajor	Text - Major	0	0	5
	typdrd	309	TextMinor	Text - Minor	0	0	0
	typdrd	320	TextMisc	Text - Miscellaneous	0	0	1
	typdrd	310	TextNotes	Text - Notes	4	0	1
	typdrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	typdrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	typdrd	1147	TextPtLabel	Point Labels	4	0	0
	typdrd	313	TextShtNo	Text - Sheet Number	0	0	2
	typdrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	typdrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	typdrd	315	TextTitle	Text - Title	0	0	3
	typdrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	typdrd	5107	TrafSeparator	Traffic Separator (All Types)	6	0	1
X	typdrd	6084	TrafSeparator_px	Traffic Separator (All Types) on Cross Sections	6	0	2
X	typdrd	6105	TrafSeparatorBase_px	Proposed Traffic Separator Subgrade	3	0	2
X	typdrd	9038	Tree	Trees, Tree Line Pattern	2	0	1
X	typdrd	9040	TreeGrate	Tree Grate	5	0	1
X	typdrd	9042	TreeProtection	Tree Protection Symbol	5	0	2
X	typdrd	5112	Turf	Performance Truf	100	0	2
	typdrd	9534	TypicalMisc	Typical Miscellaneous Items	0	0	2
X	typdrd	6597	UnderDrain	Underdrains (All Types)	10	0	2
	typdrd	7056	Utility_er	Existing Utilities in Profile View	3	2	1
	typdrd	7057	Utility_pr	Proposed Utilities in Profile View	3	0	2
	typdrd	6086	UtilsMisc_px	Miscellaneous Utility Items on Cross Sections	8	0	1
	typdrd	9535	Vehicle	Vehicle for Calculating Turning Radius	7	0	2
	typdrd	6087	VoidArea_dx	Void Area_XS	1	0	0
X	typdrd	7078	Water	Water Line	1	w	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typdrd	1176	Water_ep	Water Line (all sizes)	1	e-w	1
X	typdrd	6088	Water_ex	Water for Cross Sections (Existing)	1	2	1
X	typdrd	6089	Water_px	Water for Cross Sections	1	0	1
X	typdrd	6190	XSBaseTop_px	Top of Proposed Base	3	0	2
	typdrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	typdrd	6200	XSExtendGrdLine_ex	Extend Ground Lines for Cross Sections (Existing)	21	2	1
X	typdrd	6201	XSGrdLine_ex	Ground Lines for Cross Sections (Existing)	2	2	1
X	typdrd	6202	XSGrdLine_px	Roadway Ground Lines on Cross Sections	1	0	2
	typdrd	6204	XSMisc_px	Cross Section Miscellaneous Items	0	0	2
	typdrd	6205	XSShapeDep01_dp	Cross Section Shape Dependent	11	0	2
	typdrd	6206	XSShapeDep02_dp	Cross Section Shape Dependent	12	0	2
	typdrd	6207	XSShapeDep03_dp	Cross Section Shape Dependent	13	0	2
	typdrd	6208	XSShapeDep04_dp	Cross Section Shape Dependent	14	0	2
	typdrd	6209	XSShapeDep05_dp	Cross Section Shape Dependent	15	0	2
	typdrd	6210	XSShapeDep06_dp	Cross Section Shape Dependent	16	0	2
	typdrd	6211	XSShapeDep07_dp	Cross Section Shape Dependent	17	0	2
	typdrd	6212	XSShapeDep08_dp	Cross Section Shape Dependent	18	0	2
	typdrd	6213	XSShapeDep09_dp	Cross Section Shape Dependent	19	0	2
	typdrd	6214	XSShapeDep10_dp	Cross Section Shape Dependent	20	0	2
	typdrd	6215	XSShapeIndep01_dp	Cross Section Shape Independent	1	0	2
	typdrd	6216	XSShapeIndep02_dp	Cross Section Shape Independent	2	0	2
	typdrd	6217	XSShapeIndep03_dp	Cross Section Shape Independent	3	0	2
	typdrd	6218	XSShapeIndep04_dp	Cross Section Shape Independent	4	0	2
	typdrd	6219	XSShapeIndep05_dp	Cross Section Shape Independent	5	0	2
	typdrd	6220	XSShapeIndep06_dp	Cross Section Shape Independent	6	0	2
	typdrd	6221	XSShapeIndep07_dp	Cross Section Shape Independent	7	0	2
	typdrd	6222	XSShapeIndep08_dp	Cross Section Shape Independent	8	0	2
	typdrd	6223	XSShapeIndep09_dp	Cross Section Shape Independent	9	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typdrd	6224	XSShapeIndep10_dp	Cross Section Shape Independent	10	0	2
X	typdrd	6225	XSTypical_px	Roadway Pavement Typical on Cross Sections	1	0	2

3.9.1.34 Typical Section Sheets - TYPSRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typsrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	typsrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
X	typsrd	5500	AdvWarnPanel	Advance Warning Arrow Panels	4	0	2
X	typsrd	5002	AsphaltConc	Asphaltic Concrete Quantity Shapes	6	0	3
X	typsrd	5003	AsphaltMilling	Asphalt Milling Quantity Shapes	7	0	2
X	typsrd	6000	AsphaltMilling_px	Asphalt Milling Lines on Cross Sections	7	0	2
	typsrd	5004	AsphaltMisc	Asphalt Miscellaneous Material	1	0	1
X	typsrd	6226	AsphaltMisc_px	Miscellaneous Pavement on Cross Sections	1	0	2
X	typsrd	5501	Attenuator	Attenuation Systems	6	attenuator	1
X	typsrd	5502	AttenuatorTM	Attenuator Truck Mount	6	0	2
X	typsrd	5503	Barricade	Barricade	0	0	1
X	typsrd	5504	Barricade1	Barricade Symbol Type 1 or 2 at 15' spacing	0	barricade1	1
X	typsrd	5505	Barricade2	Barricade Symbol Type 1 or 2 at 30' spacing	0	barricade2	1
X	typsrd	5506	Barricade3	Barricade Symbol Type 1 or 2 at 50' spacing	0	barricade3	1
X	typsrd	5507	Barricade4	Barricade Symbol Type 1 or 2 at 100' spacing	0	barricade4	1
X	typsrd	5005	BarrierWall	Barrier Wall All Types	6	0	2
X	typsrd	6002	BarrierWall_px	Barrier Wall for Cross Section	6	0	2
X	typsrd	5006	Base	Base Material (All Types)	3	0	2
X	typsrd	6003	Base_ex	Base Material for Cross Sections (All Types) (Existing)	3	3	1
X	typsrd	6004	Base_px	Base Material for Cross Sections (All Types)	3	0	2
	typsrd	202	BaselineSurvey	Baseline Survey	0	0	2
X	typsrd	6005	Berm_px	Berm (Top, Front, or Back) for Cross Sections	10	0	2
X	typsrd	6503	BoxCulvert	Box Culvert	10	0	2
X	typsrd	6006	CandG_ex	Curb and Gutter for Cross Sections (All Types) (Existing)	4	2	1
X	typsrd	6007	CandG_px	Curb and Gutter for Cross Sections (All Types)	4	0	2
X	typsrd	6008	CandGBase_px	Curb and Gutter Base on Cross Sections	3	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typsrd	234	CLConst_dp	Center Line of Construction	0	0	2
	typsrd	205	Cloud_dp	Construction Cloud	7	0	2
	typsrd	206	COGO_dp	COGO Information	3	0	1
X	typsrd	5013	ConcPavt	Concrete Pavement Edges	10	0	2
X	typsrd	5014	ConcPvtSC	Concrete Surface Coloring	9	0	1
X	typsrd	5015	Concrete	Concrete Areas (All Types plus miscellaneous)	0	0	2
X	typsrd	5016	ConcSlabs	Concrete Slabs	0	0	2
X	typsrd	6013	Conduit_px	Conduit and Encasements on Cross Sections	3	0	1
X	typsrd	5509	Cone	Cone and Tubular Marker	6	0	2
	typsrd	9507	ConstArea_dp	Construction Area Crosshatch	0	0	1
	typsrd	9508	ConstLimits	Construction Limits	3	LOC	2
	typsrd	9509	ConstLines	Construction Lines and References	1	0	0
X	typsrd	5018	CurbBack	Back of Curb	4	0	1
X	typsrd	5019	CurbFace	Curb and Gutter (Face)	4	0	1
X	typsrd	5020	CurbRamp	Curb Cut Ramp	8	0	1
	typsrd	207	CurveData_dp	Curve & Coordinate Data Elements incl PC, PT, PI symbols	4	0	2
	typsrd	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2
	typsrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
X	typsrd	7502	DirArrowsPavt	Pavement Marking Directional Arrows	0	0	1
X	typsrd	6515	Ditch	Ditch Top	7	6	1
X	typsrd	6014	Ditch_px	Ditch Top for Cross Sections	7	0	2
X	typsrd	6516	DitchBot	Ditch Bottom	10	0	2
X	typsrd	6015	DitchBot_px	Ditch Bottom for Cross Sections	10	0	2
X	typsrd	5021	DitchPavt	Ditch Pavement Including Quantity Shapes	3	0	1
X	typsrd	6016	DitchPavt_px	Ditch Pavement for Cross Sections	3	0	3
	typsrd	6517	DitchProfLt_er	Ditch Profile Left (Existing)	8	3	1
	typsrd	6518	DitchProfLt_pr	Ditch Profile Left	8	0	1
	typsrd	6519	DitchProfMdn_er	Ditch Profile Median (Existing)	10	3	1
	typsrd	6520	DitchProfMdn_pr	Ditch Profile Median	10	0	1
	typsrd	6521	DitchProfRt_er	Ditch Profile Right (Existing)	9	3	1
	typsrd	6522	DitchProfRt_pr	Ditch Profile Right	9	0	1
X	typsrd	6545	DrainStruct_pr	Drainage Structures (All Types)	10	0	2
X	typsrd	6020	DrainStruct_px	Drainage Structures for Cross Sections	10	0	2
X	typsrd	6021	Driveway_px	Driveway Lines on Cross Sections	7	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typsrd	6091	DrivewayBase_px	Proposed Driveway Subgrade	3	0	2
	typsrd	5511	Drum	Drum	6	0	1
	typsrd	6022	Earthwork1_px	Earthwork (color 0)	0	0	1
	typsrd	6023	Earthwork2_px	Earthwork (color 1)	1	0	1
	typsrd	6024	Earthwork3_px	Earthwork (color 2)	2	0	1
	typsrd	6025	Earthwork4_px	Earthwork (color 3)	3	0	1
	typsrd	6026	Earthwork5_px	Earthwork (color 4)	4	0	1
X	typsrd	5027	EaseLicLine	License Agreement Line	5	6	0
	typsrd	5029	EasePerpLine	Easement Lines Perpetual	4	PESMT	1
	typsrd	6027	EasePerpLine_px	Perpetual Easement Lines on Cross Sections	4	PESMT	1
	typsrd	5030	EaseTempLine	Easement Lines Temporary	6	TEMPE	0
	typsrd	6028	EaseTempLine_px	Temporary Easement Lines on Cross Sections	6	TEMPE	0
X	typsrd	6547	Endwall	Endwall (All Types)	10	0	2
X	typsrd	6029	Endwall_px	Endwall for Cross Sections	10	0	2
X	typsrd	5032	EOP	Edge of Pavement	0	0	2
	typsrd	9512	ExcavationLimits_dp	Excavation Limits on Cross Sections	0	0	1
X	typsrd	5033	Fence	Fence, Sand Fence	6	Fence1	1
	typdrd	6099	Fence_ex	Fence Lines on Cross Sections (Existing)	6	3	1
X	typsrd	6030	Fence_px	Fence Lines on Cross Sections	6	Fence1	2
X	typsrd	5035	FenceLt	Fence Limited Access Left	6	laflt	1
X	typsrd	5036	FenceRt	Fence Limited Access Right	6	lafrt	1
X	typsrd	6548	FES	Flared End Sections	10	0	2
X	typsrd	6031	FES_px	Flared End Sections for Cross Sections	10	0	2
X	typsrd	5513	FlashingLight	Flashing Lights (All Types)	0	0	1
X	typsrd	6033	FOCBur_px	Fiber Optics Cable (Buried) for XSections	6	0	1
X	typsrd	6035	Gas_px	Gas Pipe and Fittings, Misc for Xsections	4	0	1
	typsrd	5750	GeotechFillPatt1	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	typsrd	5751	GeotechFillPatt1_px	Geotechnical Fill Pattern - (earth, wood, muck, concrete, rock, riprap) as defined in project	3	0	0
	typsrd	5752	GeotechFillPatt2	Geotechnical Fill Pattern - clay, sand	0	1	0
	typsrd	5753	GeotechFillPatt2_px	Geotechnical Fill Pattern - clay, sand	0	1	0
	typsrd	5754	GeotechFillPatt3	Geotechnical Fill Pattern - shell	3	1	0
	typsrd	5755	GeotechFillPatt3_px	Geotechnical Fill Pattern - shell	3	1	0
	typsrd	5756	GeotechFillPatt4	Geotechnical Fill Pattern - sand	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typsrd	5757	GeotechFillPatt4_px	Geotechnical Fill Pattern - sand	4	0	0
	typsrd	5758	GeotechFillPatt5	Geotechnical Fill Pattern - coquina	1	0	1
	typsrd	5759	GeotechFillPatt5_px	Geotechnical Fill Pattern - coquina	1	0	1
	typsrd	5760	GeotechFillPatt6	Geotechnical Fill Pattern - limestone	2	0	0
	typsrd	5761	GeotechFillPatt6_px	Geotechnical Fill Pattern - limestone	2	0	0
	typsrd	5762	GeotechFillPatt7	Geotechnical Fill Pattern - gravel	6	0	0
	typsrd	5763	GeotechFillPatt7_px	Geotechnical Fill Pattern - gravel	6	0	0
	typsrd	5764	GeotechMisc	Miscellaneous Geotechnical Elements	0	0	1
X	typsrd	5046	GovTwpRgeLine_ep	Township / Range Lines	10	TWPRGE	2
	typsrd	6554	GPKDrBack_dp	Back Point on Drainage Cells	2	2	2
	typsrd	6555	GPKDrBottom_dp	Bottom Point on Drainage Cells	3	3	2
	typsrd	6556	GPKDrCellIns_dp	Cell Insertion Point on Drainage Cells	4	4	2
	typsrd	6557	GPKDrCentroid_dp	Point on Centroid for Drainage	7	7	2
	typsrd	6558	GPKDrFront_dp	Front Point on Drainage Cells	1	1	2
	typsrd	6559	GPKDrPipe_dp	Point on Drainage Pipe	6	6	2
	typsrd	6560	GPKDrPipeCir_dp	Point on Pipe Circular	6	6	0
X	typsrd	5058	Grass	Grass, Seeding and Mulching Areas	2	1	2
X	typsrd	5059	GravityWall	Gravity Wall	11	0	1
X	typsrd	6036	GravityWall_px	Gravity Wall for Cross Sections	11	0	2
X	typsrd	6092	GravWallBase_px	Proposed Gravity Wall Subgrade	3	0	2
	typsrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	typsrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	typsrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	typsrd	9008	GroundCover	Groundcover Edge Symbol	2	0	1
	typsrd	9009	GroundCoverHatch	Groundcover Hatch Pattern	2	0	0
X	typsrd	5060	Guardrail	Guardrail	0	0	2
X	typsrd	6037	Guardrail_px	Guardrail	0	0	1
X	typsrd	5061	GuardrailDbl	Guardrail Double Face	0	grdbl	1
X	typsrd	5062	GuardrailEndAch	Guardrail End Anchorage	0	0	1
X	typsrd	5063	GuardrailLt	Guardrail Left	0	grail1	1
X	typsrd	5064	GuardrailRt	Guardrail Right	0	grail2	1
X	typsrd	5065	Handrail	Handrails	9	0	1
X	typsrd	6038	Handrail_px	Handrail Lines on Cross Sections	9	0	1
	typsrd	9011	HardscapeDetails	Paving Details, Fence Railing, Stamped Asphalt	4	0	2
	typsrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typsrd	6039	Inlet_px	Inlets on Cross Sections	10	0	2
X	typsrd	6040	InletBottom_px	Inlet Bottom on Cross Sections (All Types)	10	0	1
X	typsrd	6561	InletBottomJ	Inlet Bottom Type J	10	0	1
X	typsrd	6562	InletBottomP	Inlet Bottom Type P	10	0	1
X	typsrd	6564	InletCurb	Curb Inlet (All Types)	10	0	2
X	typsrd	6565	InletDBI	Ditch Bottom Inlet (All Types)	10	0	2
X	typsrd	6566	InletGutter	Gutter Inlet (All Types)	10	0	2
X	typsrd	6567	InletMedian	Median Barrier Inlet	10	0	2
	typsrd	107	KeyShtMisc	Key sheet Miscellaneous Items	0	0	2
	typsrd	9517	LaneDirArrow	Lane Directional Arrow	0	0	1
X	typsrd	5066	LARWLine	Limited Access Right of Way	4	LA	2
X	typsrd	5067	LARWLine_ep	Limited Access Right of Way (Existing)	4	EXLA	1
X	typsrd	6041	LARWLine_ex	Limited Access Right of Way on XSections (Existing)	4	EXLA	1
X	typsrd	6042	LARWLine_px	Limited Access ROW Lines on Cross Sections	4	LA	2
X	typsrd	6043	LateralLimits_px	Lateral Limits for Cross Sections	6	0	2
	typsrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	typsrd	8511	LightingMisc	Lighting Miscellaneous Items	4	0	2
X	typsrd	8512	LightingSP	Lighting Service Points	0	0	1
	typsrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	typsrd	9022	Luminaire	Luminaires (Decorative - All Types)	2	0	1
X	typsrd	6568	Manhole	Manhole (Drainage and unknown)	10	0	2
X	typsrd	6044	Manhole_px	Manhole on Cross Sections	10	0	2
X	typsrd	6093	MedianWallBase_px	Proposed Median Wall Subgrade	3	0	2
X	typsrd	6569	MES	Mitered End Section	10	0	2
X	typsrd	6045	MES_px	Mitered End Section on Cross Sections	10	0	2
	typsrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	typsrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	typsrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	typsrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	typsrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	typsrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	typsrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	typsrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	typsrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	typsrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typsrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
X	typsrd	6046	Overbuild_px	Overbuild Areas on Cross Sections	4	0	2
X	typsrd	6094	Overbuild1_px	Proposed Overbuild Binder Symbology (No Longer Used)	7	0	2
X	typsrd	6095	Overbuild2_px	Proposed Overbuild Base Symbology (No Longer Used)	7	0	2
X	typsrd	6096	Overlay_px	Proposed Overbuild for Cross Sections	1	0	2
X	typsrd	6097	Overlay1_px	Proposed Overbuild for Cross Sections	14	0	2
X	typsrd	6098	Overlay2_px	Proposed Overbuild for Cross Sections	7	0	2
	typsrd	6047	PatternLines1_dp	Pattern Lines for Cross Sections	3	0	2
	typsrd	6049	PatternLines2_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	4	0	2
	typsrd	6051	PatternLines3_dp	Pattern Lines for XSections alternate for side streets, critical xsections or drainage structures	5	0	2
X	typsrd	6100	PavedMedianBase_px	Proposed Paved Median Subgrade	3	0	2
	typsrd	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1
	typsrd	9529	PavtCrown	Pavement Crown	16	0	2
X	typsrd	7514	PavtMessage	Pavement Message (All types)	0	0	1
X	typsrd	7515	PavtMessage_ep	Pavement Message (Existing - All types)	0	2	0
	typsrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
	typsrd	1091	PipeCulvert_ep	Pipe Culvert	10	3	1
X	typsrd	6573	PipeCulvert_pr	Pipe Culvert in Profile	3	0	2
X	typsrd	6048	PipeCulvert_px	Pipe Culvert for Cross Section View	10	0	2
X	typsrd	216	PlotBorder_dp	Plot Border	3	0	0
	typsrd	7517	PMMisc	Pavement Marking Miscellaneous Items	0	0	2
X	typsrd	7519	PMStripe12B	Pavement Marking Traffic Stripe 12in Black	3	stripe12	4
X	typsrd	7520	PMStripe12W	Pavement Marking Traffic Stripe 12in White	0	stripe12	4
X	typsrd	7521	PMStripe12Y	Pavement Marking Traffic Stripe 12in Yellow	4	stripe12	4
X	typsrd	7522	PMStripe16B	Pavement Marking Traffic Stripe 16in Black	3	stripe16	5
X	typsrd	7523	PMStripe16W	Pavement Marking Traffic Stripe 16in White	0	stripe16	5
X	typsrd	7524	PMStripe16Y	Pavement Marking Traffic Stripe 16in Yellow	4	stripe16	5
X	typsrd	7525	PMStripe18B	Pavement Marking Traffic Stripe 18in Black	3	stripe18	6
X	typsrd	7526	PMStripe18W	Pavement Marking Traffic Stripe 18in White	0	stripe18	6
X	typsrd	7527	PMStripe18Y	Pavement Marking Traffic Stripe 18in Yellow	4	stripe18	6
X	typsrd	7528	PMStripe24W	Pavement Marking Traffic Stripe 24in White	0	stripe24	7
X	typsrd	7529	PMStripe24Y	Pavement Marking Traffic Stripe 24in Yellow	4	stripe24	7

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typsrd	7530	PMStripe6B	Pavement Marking Traffic Stripe 6in Black	3	stripe06	2
X	typsrd	7531	PMStripe6B(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Black	3	stripe06	2
X	typsrd	7532	PMStripe6Bl	Pavement Marking Traffic Stripe 6in Blue	1	stripe06	2
X	typsrd	7533	PMStripe6DY	Pavement Marking Traffic Stripe 6in Double Yellow	4	dbl_line	2
X	typsrd	7534	PMStripe6W	Pavement Marking Traffic Stripe 6in White	0	stripe06	2
X	typsrd	7535	PMStripe6W(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in White	0	stripe06	2
X	typsrd	7536	PMStripe6W(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in White	0	stripe06	2
X	typsrd	7537	PMStripe6W(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in White	0	stripe06	2
X	typsrd	7538	PMStripe6Y	Pavement Marking Traffic Stripe 6in Yellow	4	stripe06	2
X	typsrd	7539	PMStripe6Y(10-30)	Pavement Marking 10/30 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	typsrd	7540	PMStripe6Y(2-4)	Pavement Marking 2/4 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	typsrd	7541	PMStripe6Y(6-10)	Pavement Marking 6/10 Skip Traffic Stripe 6in Yellow	4	stripe06	2
X	typsrd	7542	PMStripe8B	Pavement Marking Traffic Stripe 8in Black	3	stripe06	3
X	typsrd	7543	PMStripe8W	Pavement Marking Traffic Stripe 8in White	0	stripe08	3
X	typsrd	7544	PMStripe8W(3-9)	Pavement Marking 3/9 Skip Traffic Stripe 8in White	0	stripe08	2
X	typsrd	7545	PMStripe8Y	Pavement Marking Traffic Stripe 8in Yellow	4	stripe08	3
X	typsrd	7577	PMStripeVibeW	Pavement Marking Auditory and Vibratory 6in White	0	Vibratory	2
X	typsrd	7578	PMStripeVibeY	Pavement Marking Auditory and Vibratory 6in Yellow	4	Vibratory	2
	typsrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0
X	typsrd	8062	PoleConc	Concrete Strain Pole	0	0	2
X	typsrd	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	typsrd	8515	PoleFound	Pole Foundation	0	0	2
X	typsrd	8516	PoleLight	Light Pole	2	0	1
X	typsrd	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	typsrd	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	typsrd	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	typsrd	8520	PoleLightID	Light Pole Location / ID	4	0	1
X	typsrd	7029	PolePower	Power Pole w/ Transformer	3	0	2
X	typsrd	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	typsrd	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	typsrd	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	typsrd	7033	PoleTel	Telephone Pole	6	0	2
X	typsrd	7034	PoleUtil	Utility Pole	0	0	2
X	typsrd	7035	PoleWoodStrain	Wood Strain Pole	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typsrd	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
X	typdrd	6109	Pond_px	Pond Lines on Cross Sections	2	0	2
X	typsrd	6052	Power_px	Power on Cross Sections	3	0	1
X	typsrd	5072	PropertyLine_ep	Property Lines	3	0	0
	typsrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
X	typsrd	5075	RetainWall	Retaining Wall System	6	0	1
X	typsrd	5076	RetainWall_pr	Retaining Wall Profile	9	0	2
X	typsrd	6053	RetainWall_px	Retaining Walls on Cross Sections	6	0	1
X	typsrd	6054	RipRap_px	Rip Rap, Rubble on Cross Sections	4	1	2
X	typsrd	5085	RWLine	Right of Way Lines	4	RW	2
X	typsrd	5086	RWLine_ep	Right of Way Lines (Existing)	3	RW	1
X	typsrd	6055	RWLine_ex	ROW Lines on Cross Sections (Existing)	3	RW	1
X	typsrd	6056	RWLine_px	ROW Lines on Cross Sections	4	RW	2
X	typsrd	6058	SanitaryFM_px	Force Main Lines on Cross Sections	2	0	1
X	typsrd	6059	SanitarySewer_ex	Sanitary Sewer Lines on Cross Sections (Existing)	10	2	0
X	typsrd	6060	SanitarySewer_px	Sanitary Sewer Lines on Cross Sections	2	0	1
	typsrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	typsrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	typsrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. These Elements Do Not Plot	3	0	0
	typsrd	223	SheetBorder_dp	Sheet Border	1	0	4
	typsrd	224	SheetLines_dp	Sheet Lines	1	0	2
	typsrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	typsrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2
	typsrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	typsrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
X	typsrd	6101	ShldrBase_px	Bottom of Proposed Paved Shoulder Base	3	0	2
X	typsrd	6102	ShldrBaseTop_px	Top of Proposed Paved Shoulder Base	3	0	2
	typsrd	5089	ShldrHatch	Paved Shoulder Hatch Pattern	1	0	1
X	typsrd	5090	ShldrPaved	Paved Shoulder Line	1	0	1
X	typsrd	6062	ShldrPaved_px	Paved Shoulder Lines on Cross Sections	1	0	2
X	typsrd	5091	ShldrUnpaved	Unpaved Shoulder Line	0	0	0
X	typsrd	6063	ShldrUnpaved_px	Grass Shoulder Lines on Cross Sections	2	0	2
X	typsrd	6103	ShldrWallBase_px	Proposed Shoulder Wall Subgrade	3	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	typsrd	9032	Shrub	Shrubs	2	0	1
X	typsrd	6064	Sidewalk_ex	Sidewalk Elements in Cross Sections (Existing)	0	2	1
X	typsrd	6065	Sidewalk_px	Sidewalk Elements in Cross Sections	0	0	2
X	typsrd	5092	SidewalkBack	Sidewalk Back	2	0	1
X	typsrd	6104	SidewalkBase_px	Proposed Sidewalk Subgrade	3	0	2
X	typsrd	5095	SidewalkConc	Sidewalk Concrete Shape	0	0	2
X	typsrd	5096	SidewalkFront	Sidewalk Front	1	0	1
X	typsrd	6585	Slopes	Slopes (Top, Bottom)	9	3	0
X	typsrd	6067	Slopes_px	Slope Lines on Cross Sections	9	0	2
X	typsrd	5097	Sod	Performance Sod	2	0	2
X	typsrd	6068	SoilBoxes_px	Soil Boxes and Borings for Cross Sections	4	0	1
	typsrd	6069	SpecialDetails_px	Special Details_XS	6	0	1
X	typsrd	5102	Stabilization	Stabilization Material Lines and Shapes	9	0	2
X	typsrd	6070	Stabilization_px	Stabilization for Cross Sections	5	2	2
	typsrd	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2
	typsrd	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2
X	typsrd	9036	StreetLights	Street Lights	2	0	1
X	typsrd	6071	StreetLights_px	Street Lights for Cross Sections	3	0	1
	typsrd	6072	Structure_px	Signal and Sign Structures on Cross Sections	0	0	2
X	typsrd	6073	SubDsgn_px	Sub Design for Cross Sections including subbase	4	0	1
X	typsrd	6074	Subsoil_px	Subsoil Or Undercut for Cross Sections	4	0	2
X	typsrd	6075	SubsoilFinal_px	Subsoil Final for Multiline	18	0	1
X	typsrd	6076	SubsoilProp_px	Subsoil Proposed for Multiline	8	0	1
	typsrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	typsrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	typsrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
X	typsrd	6079	TemplateBottom_px	Bottom of Template for Multiline	6	0	1
X	typsrd	6080	TemplateFinal_px	Final Template for Multiline	2	0	1
X	typsrd	6081	TemplateTop_px	Top of Template for Multiline	7	0	1
X	typsrd	6082	TerrainLine_ex	Existing Ground Line for Multiline	5	0	1
	typsrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	typsrd	303	TextConstEle	Text - Construction Element	0	0	1
	typsrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	typsrd	305	TextDetails	Text - Detail Notes	4	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typsrd	1146	TextElevLabel	Elevation Labels	4	0	0
	typsrd	306	TextGeotech	Text for soil borings and labels	0	0	2
	typsrd	307	TextLabel	Text - Label	0	0	2
	typsrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	typsrd	308	TextMajor	Text - Major	0	0	5
	typsrd	309	TextMinor	Text - Minor	0	0	0
	typsrd	320	TextMisc	Text - Miscellaneous	0	0	1
	typsrd	310	TextNotes	Text - Notes	4	0	1
	typsrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	typsrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	typsrd	1147	TextPtLabel	Point Labels	4	0	0
	typsrd	313	TextShtNo	Text - Sheet Number	0	0	2
	typsrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	typsrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	typsrd	315	TextTitle	Text - Title	0	0	3
	typsrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
X	typsrd	5107	TrafSeparator	Traffic Separator (All Types)	6	0	1
X	typsrd	6084	TrafSeparator_px	Traffic Separator (All Types) on Cross Sections	6	0	2
X	typsrd	6105	TrafSeparatorBase_px	Proposed Traffic Separator Subgrade	3	0	2
X	typsrd	9038	Tree	Trees, Tree Line Pattern	2	0	1
X	typsrd	9040	TreeGrate	Tree Grate	5	0	1
X	typsrd	9042	TreeProtection	Tree Protection Symbol	5	0	2
X	typsrd	5112	Turf	Performance Truf	100	0	2
	typsrd	9534	TypicalMisc	Typical Miscellaneous Items	0	0	2
X	typsrd	6597	UnderDrain	Underdrains (All Types)	10	0	2
	typsrd	7056	Utility_er	Existing Utilities in Profile View	3	2	1
	typsrd	7057	Utility_pr	Proposed Utilities in Profile View	3	0	2
	typsrd	6086	UtilsMisc_px	Miscellaneous Utility Items on Cross Sections	8	0	1
	typsrd	9535	Vehicle	Vehicle for Calculating Turning Radius	7	0	2
	typsrd	6087	VoidArea_dx	Void Area_XS	1	0	0
X	typsrd	7078	Water	Water Line	1	w	2
	typsrd	1176	Water_ep	Water Line (all sizes)	1	e-w	1
X	typsrd	6088	Water_ex	Water for Cross Sections (Existing)	1	2	1
X	typsrd	6089	Water_px	Water for Cross Sections	1	0	1
X	typsrd	6190	XSBaseTop_px	Top of Proposed Base	3	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	typsrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1
X	typsrd	6200	XSExtendGrdLine_ex	Extend Ground Lines for Cross Sections (Existing)	21	2	1
X	typsrd	6201	XSGrdLine_ex	Ground Lines for Cross Sections (Existing)	2	2	1
X	typsrd	6202	XSGrdLine_px	Roadway Ground Lines on Cross Sections	1	0	2
	typsrd	6204	XSMisc_px	Cross Section Miscellaneous Items	0	0	2
	typsrd	6205	XSShapeDep01_dp	Cross Section Shape Dependent	11	0	2
	typsrd	6206	XSShapeDep02_dp	Cross Section Shape Dependent	12	0	2
	typsrd	6207	XSShapeDep03_dp	Cross Section Shape Dependent	13	0	2
	typsrd	6208	XSShapeDep04_dp	Cross Section Shape Dependent	14	0	2
	typsrd	6209	XSShapeDep05_dp	Cross Section Shape Dependent	15	0	2
	typsrd	6210	XSShapeDep06_dp	Cross Section Shape Dependent	16	0	2
	typsrd	6211	XSShapeDep07_dp	Cross Section Shape Dependent	17	0	2
	typsrd	6212	XSShapeDep08_dp	Cross Section Shape Dependent	18	0	2
	typsrd	6213	XSShapeDep09_dp	Cross Section Shape Dependent	19	0	2
	typsrd	6214	XSShapeDep10_dp	Cross Section Shape Dependent	20	0	2
	typsrd	6215	XSShapeIndep01_dp	Cross Section Shape Independent	1	0	2
	typsrd	6216	XSShapeIndep02_dp	Cross Section Shape Independent	2	0	2
	typsrd	6217	XSShapeIndep03_dp	Cross Section Shape Independent	3	0	2
	typsrd	6218	XSShapeIndep04_dp	Cross Section Shape Independent	4	0	2
	typsrd	6219	XSShapeIndep05_dp	Cross Section Shape Independent	5	0	2
	typsrd	6220	XSShapeIndep06_dp	Cross Section Shape Independent	6	0	2
	typsrd	6221	XSShapeIndep07_dp	Cross Section Shape Independent	7	0	2
	typsrd	6222	XSShapeIndep08_dp	Cross Section Shape Independent	8	0	2
	typsrd	6223	XSShapeIndep09_dp	Cross Section Shape Independent	9	0	2
	typsrd	6224	XSShapeIndep10_dp	Cross Section Shape Independent	10	0	2
X	typsrd	6225	XSTypical_px	Roadway Pavement Typical on Cross Sections	1	0	2

3.9.1.35 Utilities Adjustment - UTADRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	utadrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	utadrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	utadrd	1004	Beacons_ep	Beacons and Path Illumination	0	0	0
X	utadrd	7000	Capacitor	Capacitors (All Types)	3	0	1
	utadrd	1014	CATV_ep	Cable TV Line (Aerial)	6	e-otv	0
X	utadrd	7001	CATVAer	Cable TV Line (Aerial)	6	otv	1
X	utadrd	7002	CATVBur	Cable TV Line (Buried)	6	btv	1
	utadrd	1015	CATVBur_ep	Cable TV Line (Buried)	6	e-btv	1
X	utadrd	6010	CATVBur_px	Cable TV and Miscellaneous on Cross Sections	6	0	1
X	utadrd	7003	CATVCond	Cable TV Conduit System	6	conduit1	1
	utadrd	1016	CATVCond_ep	Cable TV Conduit System	6	0	1
	utadrd	7004	CATVMisc	Cable TV Service Box	6	0	1
	utadrd	1017	CATVMisc_ep	Cable TV Service Box, Pole	6	2	0
	utadrd	206	COGO_dp	COGO Information	3	0	1
X	utadrd	7005	Conduit	Conduit for Utilities and Encasements	3	conduit1	1
	utadrd	1024	Conduit_ep	Utility Conduit & Encasements	3	e-cas	0
X	utadrd	8500	ConduitBG	Conduit In Box Girder	5	lite_cond5	1
X	utadrd	8501	ConduitBG_ep	Conduit In Box Girder (Existing)	5	exlite_cond5	0
X	utadrd	8502	ConduitC	Conduit Lead-in Cable	3	0	0
X	utadrd	8503	ConduitJ	Conduit Jacked Underpavement	1	lite_cond3	1
X	utadrd	8504	ConduitJ_ep	Conduit Jacked (Existing)	1	exlite_cond3	0
X	utadrd	8505	ConduitSM	Conduit Surface Mounted	4	lite_cond4	1
X	utadrd	8506	ConduitSM_ep	Conduit Surface Mounted (Existing)	4	exlite_cond4	0
X	utadrd	8507	ConduitUG	Conduit Underground	3	lite_cond1	1
X	utadrd	8508	ConduitUG_ep	Conduit Underground (Existing)	3	exlite_cond1	0
X	utadrd	8509	ConduitUP	Conduit Underpavement	2	lite_cond2	1
X	utadrd	8510	ConduitUP_ep	Conduit Underpavement (Existing)	2	exlite_cond2	0
X	utadrd	8005	Controller_ep	Controller and Accessories (Existing)	0	2	1
X	utadrd	8008	ControllerB_ep	Controller - Base Mounted (Existing)	0	2	1
X	utadrd	8010	ControllerP_ep	Controller Pole Mount (Existing)	0	2	1
	utadrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
	utadrd	1035	DummyChains_ep	Dummy Chains	0	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	utadrd	5027	EaseLicLine	License Agreement Line	5	6	0
X	utadrd	7006	ElecMeter	Meter (Electric)	3	0	1
X	utadrd	7007	ElectPS	Electrical Power Service Miscellaneous	3	0	1
X	utadrd	7008	ElectPSB	Electrical (Buried)	3	be	2
X	utadrd	7009	ElectPSO	Electrical Outlet	3	0	1
X	utadrd	7010	ElectServWire	Electrical Service Wire	3	0	2
X	utadrd	7011	FireHydrant	Fire Hydrant	1	0	1
	utadrd	1038	FireHydrant_ep	Fire Hydrant	1	2	0
	utadrd	1039	FloodLight_ep	Flood Light	3	2	0
	utadrd	1041	FOBur_ep	Fiber Optics Cable (Underground)	6	e-bfo	0
X	utadrd	7012	FOCAer	Fiber Optics Cable (Aerial)	6	ofo	1
X	utadrd	7013	FOCBur	Fiber Optics Cable (Buried)	6	bfo	1
X	utadrd	7014	Gas	Gas Pipe and Fittings	4	g	1
	utadrd	1043	Gas_ep	Gas Line (all sizes)	4	e-g	1
X	utadrd	7015	GasMeter	Meter (Gas)	4	0	1
	utadrd	7016	GasMisc	Gas Regulator and Miscellaneous Items	4	0	0
	utadrd	1044	GasReg_ep	Gas Regulator	4	1	0
X	utadrd	7017	Gauges	Gauges	0	0	1
	utadrd	1046	Gauges_ep	Gauges	0	0	0
X	utadrd	7018	Generator	Emergency Generator	0	0	2
	utadrd	9513	GridMaj_dp	Grid Lines Major in Profile and Cross Section	3	0	1
	utadrd	9514	GridMin_dp	Grid Lines Minor in Profile and Cross Section	0	0	0
	utadrd	9516	GridMinSub_dp	Grid Lines Minor Sub in Cross Section Sheets	20	0	0
	utadrd	1051	Guys_ep	Guy Anchor, Guy pole, Span Guys	3	1	0
X	utadrd	7019	GuyWire	Guy Wire	3	0	0
	utadrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	utadrd	8033	InterconCable_ep	Interconnect Cable (Existing)	1	intcon2	0
X	utadrd	7020	JunctBox	Junction Boxes, Service Cabinet (Elec/Tel)	3	0	1
	utadrd	1058	JunctBox_ep	Junct. Box / Service Cabinet (Elec/Tel)	3	1	0
X	utadrd	8049	JunctBoxA	Junction Boxes (Aerial)	3	0	1
X	utadrd	8050	JunctBoxA_ep	Junction Boxes (Aerial) (Existing)	3	1	0
	utadrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	utadrd	1060	LiteCond_ep	Street Lighting Conductors	3	exlite_cond1	0
X	utadrd	8513	LoadCenter	Load Center	2	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	utadrd	8514	LoadCenter_ep	Load Center (Existing)	2	5	0
	utadrd	211	Logo_dp	Consultant Engineer of Record Logo	0	0	1
X	utadrd	8053	LoopLI_ep	Loop Lead-In (Existing)	3	2	0
X	utadrd	8055	Loops_ep	Loop Assembly (All Types) (Existing)	2	2	2
X	utadrd	9022	Luminaire	Luminaires (Decorative - All Types)	2	0	1
	utadrd	1061	Luminaire_ep	Street Light / Pole	3	2	0
	utadrd	1063	ManholeCover_ep	Manhole Cover (Cable TV)	6	1	0
	utadrd	1064	ManholeCovUnk_ep	Manhole Cover, Unknown	0	1	0
	utadrd	1065	ManholeCovW_ep	Manhole Cover (Water)	1	1	0
X	utadrd	7021	ManholeCvrUnk	Water Line Non Potable	0	0	0
X	utadrd	7022	ManholeElec	Manhole (Electric)	3	0	1
	utadrd	1066	ManholeElec_ep	Manhole (Electric)	3	1	0
X	utadrd	7023	ManholeGas	Manhole (Gas)	4	0	1
	utadrd	1067	ManholeGas_ep	Manhole (Gas)	4	1	0
X	utadrd	7024	ManholeSS	Manhole (Sanitary Sewer)	2	0	1
	utadrd	1068	ManholeSS_ep	Manhole (Sanitary Sewer)	2	1	0
X	utadrd	7025	ManholeSW	Manhole (Storm Water)	10	0	1
	utadrd	1069	ManholeSW_ep	Manhole (Storm Water)	10	1	0
X	utadrd	7026	ManholeTel	Manhole (Telephone)	6	0	1
	utadrd	1070	ManholeTel_ep	Manhole (Telephone)	6	1	0
	utadrd	213	MatchLines_dp	Match Lines with Text, Arrows for Station Notations	1	0	2
	utadrd	1071	MeterElec_ep	Meter (Electric)	3	1	0
	utadrd	1072	MeterElecUG_ep	Meter (Electric) (Underground)	3	1	1
	utadrd	1073	MeterGas_ep	Meter (Gas)	4	1	0
	utadrd	7027	MeterUnk	Meter (Unknown) PROPOSED UNKNOWN ELEMENT	0	0	0
	utadrd	1074	MeterUnk_ep	Meter (unknown)	0	1	0
	utadrd	1075	MeterWater_ep	Meter (Water)	1	1	0
	utadrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	utadrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	utadrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	utadrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	utadrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	utadrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	utadrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	utadrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	utadrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	utadrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	utadrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
	utadrd	215	NorthArw_dp	North Arrows	0	0	2
X	utadrd	7028	Oil	Oil Pipeline, Petroleum	4	pet	2
X	utadrd	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	utadrd	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
	utadrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	utadrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	utadrd	8059	Pedestal_ep	Pedestal (Existing)	1	2	1
X	utadrd	8061	PedHead_ep	Pedestrian Head (All Types) (Existing)	0	2	1
	utadrd	1089	PedSignal_ep	Pedestrian Signal Unit, Signage	0	2	0
X	utadrd	216	PlotBorder_dp	Plot Border	3	0	0
	utadrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD Database	4	0	0
X	utadrd	8062	PoleConc	Concrete Strain Pole	0	0	2
X	utadrd	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	utadrd	8515	PoleFound	Pole Foundation	0	0	2
X	utadrd	8516	PoleLight	Light Pole	2	0	1
X	utadrd	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	utadrd	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	utadrd	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	utadrd	8520	PoleLightID	Light Pole Location / ID	4	0	1
X	utadrd	7029	PolePower	Power Pole w/ Transformer	3	0	2
	utadrd	1094	PolePower_ep	Power Pole with or without Transformer, shared pole	3	1	0
X	utadrd	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	utadrd	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	utadrd	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	utadrd	7033	PoleTel	Telephone Pole	6	0	2
	utadrd	1095	PoleTel_ep	Telephone Pole	6	1	0
X	utadrd	7034	PoleUtil	Utility Pole	0	0	2
X	utadrd	7035	PoleWoodStrain	Wood Strain Pole	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	utadrd	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
	utadrd	1097	Power_ep	Existing Overhead Electric Power Conductors (Distribution & Transmission)	3	e-oe	0
	utadrd	1098	PowerBur_ep	Existing Buried Electric Power Conductors (Distribution & Transmission)	3	e-be	1
	utadrd	1099	PowerBurCond_ep	Secondary Conductor Buried	3	e-be	0
	utadrd	1100	PowerCapcUG_ep	Capacitors (Underground)	3	1	1
	utadrd	1101	PowerCond_ep	Conductors (primary distribution)	3	e-oe	1
	utadrd	1102	PowerElecOut_ep	Electrical Outlet	3	1	1
	utadrd	7037	PowerMisc	Fuses, Reclosures, Regulator, Sectionalizers	3	0	0
	utadrd	1103	PowerMisc_ep	Capacitors (Above Ground), Switchgear, Transformer, Electrical Service Box	3	1	0
X	utadrd	8521	PullBox	Pull Boxes (All Types)	3	0	1
	utadrd	1104	PullBox_ep	Wiring Pull Box	3	1	1
X	utadrd	7038	PumpNonPet	Pump (Non Petroleum)	1	0	0
	utadrd	1106	PumpNonPet_ep	Pump (Non Petroleum)	1	3	1
	utadrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	utadrd	1111	Sanitary_ep	Sanitary Sewer (all sizes)	2	e-s	1
X	utadrd	7039	SanitaryFM	Force Main	2	s	1
	utadrd	1113	SanitaryFM_ep	Force Main (all sizes)	2	e-s	1
	utadrd	1114	SanitaryMisc_ep	Cleanout, Sanitary Effluent (Open channel)	2	1	0
X	utadrd	7040	SanitarySewer	Sanitary Sewer	2	s	1
X	utadrd	7042	SanitarySewerEff	Sanitary Sewer Effluent NPW	5	npw	0
X	utadrd	6061	SanitarySewerEff_px	Sanitary Effluent for Cross Sections	9	0	0
	utadrd	7043	SanitarySewerMisc	Sewer Miscellaneous Items	2	0	0
	utadrd	1115	SateDish_ep	Sattelite Dish Antenna	6	4	0
	utadrd	221	Scale_dp	Bar Scale, Scale Label Elements	0	0	2
	utadrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	utadrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	utadrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. Do Not Plot	3	0	0
	utadrd	223	SheetBorder_dp	Sheet Border	1	0	4
	utadrd	224	SheetLines_dp	Sheet Lines	1	0	2
	utadrd	225	SheetLinesMisc1_dp	Sheet Lines	1	0	0
	utadrd	226	SheetLinesMisc2_dp	Sheet Lines	2	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	utadrd	227	SheetLinesMisc3_dp	Sheet Lines	3	0	2
	utadrd	228	SheetLinesMisc4_dp	Sheet Lines	4	0	2
	utadrd	1124	Signal_ep	Signal Head, Signal on Pedestal	3	2	0
X	utadrd	8069	SignalHead_ep	Signal Head Section Details (Existing)	2	2	0
	utadrd	1125	SignalLoop_ep	Traffic Detector Loops	7	1	2
	utadrd	1126	SignalMisc_ep	Miscellaneous Signal Equipment Existing including control unit	3	2	0
	utadrd	1127	SignalSupport_ep	Signal Supports including Mast Arm	3	2	0
X	utadrd	8073	SignalSym_ep	Signal Head Symbols (Existing)	3	2	0
X	utadrd	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	utadrd	1128	SignMulti_ep	Multi-column Sign (Large Sign)	0	3	1
X	utadrd	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
	utadrd	1129	SignSingle_ep	Sign (Single Support)	3	2	0
X	utadrd	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	utadrd	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
	utadrd	1130	SignSupport_ep	Trusses and Cantilevers for Overhead Signs	0	3	1
X	utadrd	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
	utadrd	1133	SpanWire_ep	Signal / Span Wire Pole	3	0	0
X	utadrd	7044	Sprinkler	Sprinkler Head	1	0	1
	utadrd	1134	Sprinkler_ep	Sprinkler Head	1	0	0
X	utadrd	7045	SteamPipe	Steam Pipes	1	stm	1
X	utadrd	9036	StreetLights	Street Lights	2	0	1
	utadrd	231	SumBoxBorder_dp	Summary Boxes Borders	4	0	3
	utadrd	232	SumBoxLines_dp	Summary Boxes Lines and Miscellaneous Items	4	0	1
	utadrd	233	SumBoxLinesMin_dp	Summary Boxes Lines Minor Line and Miscellaneous Items	4	0	0
X	utadrd	7046	Switchgear	Switchgear and Appurtenances	3	0	0
	utadrd	1143	Tele_ep	Telephone Line (aerial)	6	e-ot	0
X	utadrd	7047	TeleAer	Telephone Line (Aerial)	6	ot	1
X	utadrd	7048	TeleBur	Telephone (Buried)	6	bt	1
	utadrd	1144	TeleBur_ep	Telephone (all sizes Buried), Duct, Toll	6	e-bt	1
X	utadrd	6078	TeleBur_px	Telephone for Cross Sections (Buried) (Miscellaneous)	6	0	
	utadrd	7049	TeleMisc	Telephone Service Box, Booth or Pedestal	6	0	0
	utadrd	1145	TeleMisc_ep	Telephone Service Box, Booth or Pedestal	6	2	0
	utadrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	utadrd	303	TextConstEle	Text - Construction Element	0	0	1
	utadrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	utadrd	305	TextDetails	Text - Detail Notes	4	0	2
	utadrd	1146	TextElevLabel	Elevation Labels	4	0	0
	utadrd	307	TextLabel	Text - Label	0	0	2
	utadrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	utadrd	308	TextMajor	Text - Major	0	0	5
	utadrd	309	TextMinor	Text - Minor	0	0	0
	utadrd	320	TextMisc	Text - Miscellaneous	0	0	1
	utadrd	310	TextNotes	Text - Notes	4	0	1
	utadrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	utadrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	utadrd	1147	TextPtLabel	Point Labels	4	0	0
	utadrd	313	TextShtNo	Text - Sheet Number	0	0	2
	utadrd	1148	TextSurveyLabel	Survey Text Labels	0	0	0
	utadrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	utadrd	315	TextTitle	Text - Title	0	0	3
	utadrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	utadrd	1149	TopoMisc_ep	Miscellaneous Topo	0	3	1
X	utadrd	7050	Tower	High Mast Light Poles or Towers, Transmission Tower, Antenna	3	0	1
	utadrd	1150	Tower_ep	High Mast Light Poles or Towers, Transmission Tower, Antenna	3	1	0
X	utadrd	7051	TransformerAer	Transformer Unit (Above Ground)	3	0	0
X	utadrd	7052	TransformerBur	Transformer (Underground)	3	0	1
X	utadrd	7053	TransmissionAer	Proposed Overhead Electric Power Conductors (Distribution & Transmission)	3	oe	0
X	utadrd	7054	TransmissionBur	Proposed Buried Electric Power Conductors (Distribution & Transmission)	3	be	1
X	utadrd	7055	TransmissionT	Transmission Tower Single	3	0	0
	utadrd	1159	UtilMisc_ep	Miscellaneous Utilities	0	0	0
	utadrd	7060	UtilsMisc	Miscellaneous Utility Items	8	0	1
X	utadrd	7061	UtilsProposed	Proposed Facilities/Utilities as shown in Utility Adjustments	9	0	1
X	utadrd	7062	Valve	Valve, Valve Box (Unknown) PROPOSED UNKNOW VALVE	0	0	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	utadrd	1160	Valve_ep	Valve, Valve Box	0	2	0
X	utadrd	7063	ValveCover	Valve Cover (Unknown) PROPOSED UNKNOW VALVE	0	0	1
	utadrd	1161	ValveCover_ep	Valve Cover	0	2	0
X	utadrd	7064	ValveCvrEff	Valve Cover (Effluent)	5	0	1
	utadrd	1162	ValveCvrEff_ep	Valve Cover (Effluent)	5	2	0
X	utadrd	7065	ValveCvrGas	Valve Cover (Gas)	4	0	1
	utadrd	1163	ValveCvrGas_ep	Valve Cover (Gas)	4	2	0
X	utadrd	7066	ValveCvrSewer	Valve Cover (Sewer)	2	0	1
	utadrd	1164	ValveCvrSewer_ep	Valve Cover (Sewer)	2	2	0
X	utadrd	7067	ValveCvrWater	Valve Cover (Water)	1	0	1
	utadrd	1165	ValveCvrWater_ep	Valve Cover (Water)	1	2	0
X	utadrd	7068	ValveCvrWaterNP	Water Line Non Potable	5	0	0
	utadrd	1166	ValveCvrWaterNP_ep	Valve Cover (Non-potable Water)	5	2	0
X	utadrd	7069	ValveGas	Valve, Valve Box (Gas)	4	0	1
	utadrd	1167	ValveGas_ep	Valve (Gas), Valve Box	4	2	0
X	utadrd	7070	ValveSewer	Valve, Valve Box (Sewer)	2	0	1
	utadrd	1168	ValveSewer_ep	Valve (Sewer), Valve Box	2	2	0
X	utadrd	7071	ValveWater	Valve, Valve Box (Water)	1	0	1
	utadrd	1169	ValveWater_ep	Valve (Water), Valve Box	1	2	0
	utadrd	1170	ValveWaterNP_ep	Valve (Non-potable Water), Valve Box	8	2	0
	utadrd	1171	Vault_ep	Vaults Above Grade and Below Grade	3	1	0
X	utadrd	7073	Vaults	Vaults Above Grade and Below Grade	3	0	0
X	utadrd	7074	VaultsRW	Vaults (Raw Water)	1	0	0
	utadrd	7075	Vent	Vent (Unknown) PROPOSED UNKNOW VENT	0	0	0
	utadrd	1172	Vent_ep	Vent	0	1	0
X	utadrd	7076	VentGas	Vent (Gas)	4	0	0
	utadrd	1173	VentGas_ep	Vent (Gas)	4	1	0
X	utadrd	7077	VentSewer	Vent (Sewer)	2	0	0
	utadrd	1174	VentSewer_ep	Vent (Sewer)	2	1	0
X	utadrd	7078	Water	Water Line	1	w	2
	utadrd	1176	Water_ep	Water Line (all sizes)	1	e-w	1
X	utadrd	7079	WaterFct	Standpipe and Water Faucet	1	0	0
X	utadrd	7080	WaterFilter	Water Filter	5	0	2
X	utadrd	7081	WaterMeter	Water Meter	1	0	2

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	utadrd	1178	WaterMisc_ep	Faucet, Standpipe, Well	1	1	0
X	utadrd	6090	WaterNP_px	Raw Water Pipes for Cross Sections	1	0	1
X	utadrd	7083	Well	Well	1	1	1
X	utadrd	7084	WellMon	Well Monitoring	1	0	1
	utadrd	1180	Wells_ep	Monitoring Well, Taps	1	1	0
	utadrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

3.9.1.36 Utilities Existing - UTEXRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	utexrd	1004	Beacons_ep	Beacons and Path Illumination	0	0	0	P	BN
	utexrd	1014	CATV_ep	Cable TV Line (Aerial)	6	e-otv	0	L	CATV
	utexrd	1015	CATVBur_ep	Cable TV Line (Buried)	6	e-btv	1	L	BCATV
	utexrd	1016	CATVCond_ep	Cable TV Conduit System	6	0	1	L	CATVC
	utexrd	1017	CATVMisc_ep	Cable TV Service Box, Pole	6	2	0	P	CATVS
	utexrd	1024	Conduit_ep	Utility Conduit & Encasements	3	e-cas	0	L	DUCT
	utexrd	1025	Core_ep	Utility VVH - Core Sample or Test Hole	9	0	0		
	utexrd	1038	FireHydrant_ep	Fire Hydrant	1	2	0	P	FH
	utexrd	1039	FloodLight_ep	Flood Light	3	2	0	P	FLD
	utexrd	1040	FOAer_ep	Fiber Optics Cable (Overhead)	6	e-ofo	0	L	FOC
	utexrd	1041	FOBur_ep	Fiber Optics Telephone (Size Unknown)	6	e-bfo	0	L	FO
	utexrd	1041	FOBur_ep	Fiber Optics Cable (Underground)	6	e-bfo	0	L	FOCU
	utexrd	1041	FOBur_ep	Fiber Optics Power (Size Unknown)	6	e-bfo	0	L	FOP
	utexrd	1041	FOBur_ep	Fiber Optics Power (Underground)	6	e-bfo	0	L	FOPU
	utexrd	1041	FOBur_ep	Fiber Optics Telephone (Underground)	6	e-bfo	0	L	FOU
	utexrd	1043	Gas_ep	Gas Line (Size Unknown)	4	e-g	1	L	GAS
	utexrd	1043	Gas_ep	Gas Test & Miscellaneous	4	e-g	1	L	GTM
	utexrd	1044	GasReg_ep	Gas Regulator	4	1	0	P	RG
	utexrd	1046	Gauges_ep	Gauges	0	0	0	P	GA
	utexrd	1051	Guys_ep	Guy Anchor	3	1	0	P	GYA
	utexrd	1051	Guys_ep	Guy Pole (Deadman)	3	1	0	P	GYP
	utexrd	1051	Guys_ep	Span Guys	3	1	0	L	GYS

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	utexrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0		algnrd
	utexrd	1058	JunctBox_ep	Junct. Box / Service Cabinet (Elec/Tel)	3	1	0	P	SRVC
	utexrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1		
	utexrd	1060	LiteCond_ep	Street Lighting Conductors	3	exlite_cond1	0	L	SLC
	utexrd	1061	Luminaire_ep	Street Light / Pole	3	2	0	P	LP
	utexrd	1063	ManholeCover_ep	Manhole Cover (Cable TV)	6	1	0	P	MHCATV
	utexrd	1064	ManholeCovUnk_ep	Manhole Cover, Unknown	0	1	0	P	MH
	utexrd	1065	ManholeCovW_ep	Manhole Cover (Water)	1	1	0	P	MHW
	utexrd	1066	ManholeElec_ep	Manhole (Electric)	3	1	0	P	MHE
	utexrd	1067	ManholeGas_ep	Manhole (Gas)	4	1	0	P	MHG
	utexrd	1068	ManholeSS_ep	Manhole (Sanitary Sewer)	2	1	0	P	MHS
	utexrd	1069	ManholeSW_ep	Manhole (Storm Water)	10	1	0	P	MHD
	utexrd	1070	ManholeTel_ep	Manhole (Telephone)	6	1	0	P	MHT
	utexrd	1071	MeterElec_ep	Meter (Electric)	3	1	0	P	ME
	utexrd	1072	MeterElecUG_ep	Meter (Electric) (Underground)	3	1	1	P	MEU
	utexrd	1073	MeterGas_ep	Meter (Gas)	4	1	0	P	MG
	utexrd	1074	MeterUnk_ep	Meter (unknown)	0	1	0	P	M
	utexrd	1075	MeterWater_ep	Meter (Water)	1	1	0	P	MW
	utexrd	1078	Oil_ep	Oil Line (all sizes)	4	e-pet	1	L	PETRO
	utexrd	1092	PipeEncase_ep	Pipe Encasements	0	e-cas	1	L	PIPEN
	utexrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0		
	utexrd	1094	PolePower_ep	Power Pole	3	1	0	P	PP
	utexrd	1094	PolePower_ep	Power Pole with Transformer	3	1	0	P	PPT
	utexrd	1094	PolePower_ep	Shared Pole	3	1	0	P	SHP
	utexrd	1094	PolePower_ep	Shared Pole with Transformer	3	1	0	P	SHPT
	utexrd	1095	PoleTel_ep	Telephone Pole	6	1	0	P	TELP
	utexrd	1097	Power_ep	Existing Overhead Electric Power Conductors (Distribution & Transmission)	3	e-oe	0	L	HVL
	utexrd	1097	Power_ep	Existing Overhead Electric Power Conductors (Distribution & Transmission)	3	e-oe	0	L	PWR
	utexrd	1098	PowerBur_ep	Existing Buried Electric Power Conductors (Distribution & Transmission)	3	e-be	1	L	BPWR
	utexrd	1098	PowerBur_ep	Existing Buried Electric Power Conductors (Distribution & Transmission)	3	e-be	1	L	TRANS
	utexrd	1099	PowerBurCond_ep	Secondary Conductor Buried	3	e-be	0	L	BSEC
	utexrd	1099	PowerBurCond_ep	Secondary Conductor Buried	3	e-be	0	L	SEC
	utexrd	1100	PowerCapcUG_ep	Capacitors (Underground)	3	1	1	L	CAPB

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	utexrd	1101	PowerCond_ep	Conductors (primary distribution)	3	e-oe	1	L	PRI
	utexrd	1102	PowerElecOut_ep	Electrical Outlet	3	1	1	P	ELEO
	utexrd	1103	PowerMisc_ep	Capacitors (Above Ground)	3	1	0	L	CAPA
	utexrd	1103	PowerMisc_ep	Electric Service Box (Large)	3	1	0	L	ELECS
	utexrd	1103	PowerMisc_ep	Fuses (Existing)	3	1	0	L	FUSE
	utexrd	1103	PowerMisc_ep	Switchgear & Appurtenances	3	1	0	L	SW
	utexrd	1103	PowerMisc_ep	Transformer	3	1	0	P	TRNF
	utexrd	1104	PullBox_ep	Wiring Pull Box	3	1	1	P	WPB
	utexrd	1105	Pump_ep	Pump (Petroleum / Fuel),	7	3	1	P	PMPF
	utexrd	1105	Pump_ep	Pump Station	7	3	1	P	PMPST
	utexrd	1106	PumpNonPet_ep	Pump (Non Petroleum)	1	3	1	P	PMP
	utexrd	1111	Sanitary_ep	Sanitary Sewer (all sizes)	2	e-s	1	L	SS
	utexrd	1112	SanitaryDumpSta_ep	Dump Station (SS)	2	2	0	P	DMPS
	utexrd	1113	SanitaryFM_ep	Force Main (all sizes)	2	e-s	1	L	FM
	utexrd	1114	SanitaryMisc_ep	Cleanout	2	1	0	P	CLNO
	utexrd	1114	SanitaryMisc_ep	Sanitary Effluent (Open channel)	2	1	0	L	SE
	utexrd	1115	SateDish_ep	Satellite Dish Antenna	6	4	0	P	SATD
	utexrd	1134	Sprinkler_ep	Sprinkler Head	1	0	0	P	SPH
	utexrd	1136	Steam_ep	Steam	4	e-stm	1	L	STEAM
	utexrd	1143	Tele_ep	Telephone Line (aerial)	6	e-ot	0	L	TEL
	utexrd	1144	TeleBur_ep	Telephone (all sizes Buried), Duct, Toll	6	e-bt	1	L	BT
	utexrd	1144	TeleBur_ep	Telephone (all sizes Buried), Duct, Toll	6	e-bt	1	L	BTD
	utexrd	1144	TeleBur_ep	Telephone (all sizes Buried), Duct, Toll	6	e-bt	1	L	BTT
	utexrd	1145	TeleMisc_ep	Telephone Service Box, Booth or Pedestal	6	2	0	P	TB
	utexrd	1145	TeleMisc_ep	Telephone Service Box, Booth or Pedestal	6	2	0	L	TELS
	utexrd	1145	TeleMisc_ep	Telephone Service Box, Booth or Pedestal	6	2	0	P	TPD
	utexrd	1146	TextElevLabel	Text - Elevation Labels	4	0	0		
	utexrd	320	TextMisc	Text - Miscellaneous	0	0	1		
	utexrd	310	TextNotes	Text - Notes	4	0	1		
	utexrd	1147	TextPtLabel	Text - Point Labels	4	0	0		
	utexrd	1148	TextSurveyLabel	Text - Survey Text Labels	0	0	0		
	utexrd	1150	Tower_ep	Antenna	3	1	0	P	ANT
	utexrd	1150	Tower_ep	Transmission Tower (Single C)	3	1	0	P	CLMT
	utexrd	1150	Tower_ep	High Mast Lighting Poles or	3	1	0	P	HML
	utexrd	1159	UtilMisc_ep	Miscellaneous Utilities	0	0	0	L	N/A

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point / Line	Feature
	utexrd	1160	Valve_ep	Valve Box (Size Unknown)	0	2	0	P	VB
	utexrd	1160	Valve_ep	Valve (Size Unknown)	0	2	0	P	VLV
	utexrd	1161	ValveCover_ep	Valve Cover	0	2	0	P	VC
	utexrd	1162	ValveCvrEff_ep	Valve Cover (Effluent)	5	2	0	P	VCEF
	utexrd	1163	ValveCvrGas_ep	Valve Cover (Gas)	4	2	0	P	VCG
	utexrd	1164	ValveCvrSewer_ep	Valve Cover (Sewer)	2	2	0	P	VCS
	utexrd	1165	ValveCvrWater_ep	Valve Cover (Water)	1	2	0	P	VCW
	utexrd	1165	ValveCvrWater_ep	Valve Cover (Raw Water)	1	2	0	P	VCRW
	utexrd	1166	ValveCvrWaterNP_ep	Valve Cover (Non-potable Water)	5	2	0	P	VCNPW
	utexrd	1167	ValveGas_ep	Valve (Gas), Valve Box	4	2	0	P	VBG
	utexrd	1167	ValveGas_ep	Valve (Gas), Valve Box	4	2	0	P	VLVG
	utexrd	1168	ValveSewer_ep	Valve (Sewer), Valve Box	2	2	0	P	VBS
	utexrd	1168	ValveSewer_ep	Valve (Sewer), Valve Box	2	2	0	P	VLVS
	utexrd	1169	ValveWater_ep	Valve (Water), Valve Box	1	2	0	P	VBW
	utexrd	1169	ValveWater_ep	Valve (Water), Valve Box	1	2	0	P	VLVW
	utexrd	1170	ValveWaterNP_ep	Valve (Non-potable Water), Valve Box	8	2	0	P	VBNPW
	utexrd	1170	ValveWaterNP_ep	Valve (Non-potable Water), Valve Box	8	2	0	P	VLVNPW
	utexrd	1171	Vault_ep	Vaults Above Grade and Below Grade	3	1	0	L	AGV
	utexrd	1171	Vault_ep	Vaults Above Grade and Below Grade	3	1	0	L	BGV
	utexrd	1172	Vent_ep	Vent	0	1	0	P	VNT
	utexrd	1173	VentGas_ep	Vent (Gas)	4	1	0	P	VNTG
	utexrd	1174	VentSewer_ep	Vent (Sewer)	2	1	0	P	VNTS
	utexrd	1176	Water_ep	Water Line (all sizes)	1	e-w	1	L	WL
	utexrd	1178	WaterMisc_ep	Faucet, Standpipe, Well	1	1	0	P	FAU
	utexrd	1178	WaterMisc_ep	Faucet, Standpipe, Well	1	1	0	P	SP
	utexrd	1178	WaterMisc_ep	Faucet, Standpipe, Well	1	1	0	P	WELL
	utexrd	1179	WaterNP_ep	Non-potable Water Line (all sizes)	5	e-npw	1	L	NPWL
	utexrd	1180	Wells_ep	Monitoring Well, Taps	1	1	0	P	MONW

3.9.1.37 Utilities Proposed - UTPRRD.rul

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	utprrd	200	ActivePointCell_dp	Active Point Cell	4	0	10
	utprrd	201	AdhocPoint_dp	Adhoc Points Placed by SheetInfo	0	4	0
	utprrd	1004	Beacons_ep	Beacons and Path Illumination	0	0	0
X	utprrd	7000	Capacitor	Capacitors (All Types)	3	0	1
	utprrd	1014	CATV_ep	Cable TV Line (Aerial)	6	e-otv	0
X	utprrd	7001	CATVAer	Cable TV Line (Aerial)	6	otv	1
X	utprrd	7002	CATVBur	Cable TV Line (Buried)	6	btv	1
	utprrd	1015	CATVBur_ep	Cable TV Line (Buried)	6	e-btv	1
X	utprrd	6010	CATVBur_px	Cable TV and Miscellaneous on Cross Sections	6	0	1
X	utprrd	7003	CATVCond	Cable TV Conduit System	6	conduit1	1
	utprrd	1016	CATVCond_ep	Cable TV Conduit System	6	0	1
	utprrd	7004	CATVMisc	Cable TV Service Box	6	0	1
	utprrd	1017	CATVMisc_ep	Cable TV Service Box, Pole	6	2	0
	utprrd	206	COGO_dp	COGO Information	3	0	1
X	utprrd	7005	Conduit	Conduit for Utilities and Encasements	3	conduit1	1
	utprrd	1024	Conduit_ep	Utility Conduit & Encasements	3	e-cas	0
X	utprrd	8500	ConduitBG	Conduit In Box Girder	5	lite_cond5	1
X	utprrd	8501	ConduitBG_ep	Conduit In Box Girder (Existing)	5	exlite_cond5	0
X	utprrd	8502	ConduitC	Conduit Lead-in Cable	3	0	0
X	utprrd	8503	ConduitJ	Conduit Jacked Underpavement	1	lite_cond3	1
X	utprrd	8504	ConduitJ_ep	Conduit Jacked (Existing)	1	exlite_cond3	0
X	utprrd	8505	ConduitSM	Conduit Surface Mounted	4	lite_cond4	1
X	utprrd	8506	ConduitSM_ep	Conduit Surface Mounted (Existing)	4	exlite_cond4	0
X	utprrd	8507	ConduitUG	Conduit Underground	3	lite_cond1	1
X	utprrd	8508	ConduitUG_ep	Conduit Underground (Existing)	3	exlite_cond1	0
X	utprrd	8509	ConduitUP	Conduit Underpavement	2	lite_cond2	1
X	utprrd	8510	ConduitUP_ep	Conduit Underpavement (Existing)	2	exlite_cond2	0
X	utprrd	8005	Controller_ep	Controller and Accessories (Existing)	0	2	1
X	utprrd	8008	ControllerB_ep	Controller - Base Mounted (Existing)	0	2	1
X	utprrd	8010	ControllerP_ep	Controller Pole Mount (Existing)	0	2	1
	utprrd	209	DimLines_dp	Dimension Lines, Corresponding Terminators, Equation Lines	0	0	1
	utprrd	1035	DummyChains_ep	Dummy Chains	0	0	1
X	utprrd	5027	EaseLicLine	License Agreement Line	5	6	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	utprrd	7006	ElecMeter	Meter (Electric)	3	0	1
X	utprrd	7007	ElectPS	Electrical Power Service Miscellaneous	3	0	1
X	utprrd	7008	ElectPSB	Electrical (Buried)	3	be	2
X	utprrd	7009	ElectPSO	Electrical Outlet	3	0	1
X	utprrd	7010	ElectServWire	Electrical Service Wire	3	0	2
X	utprrd	7011	FireHydrant	Fire Hydrant	1	0	1
	utprrd	1038	FireHydrant_ep	Fire Hydrant	1	2	0
	utprrd	1039	FloodLight_ep	Flood Light	10	0	2
	utprrd	1041	FOBur_ep	Fiber Optics Cable (Underground)	6	e-bfo	0
X	utprrd	7012	FOCAer	Fiber Optics Cable (Aerial)	6	ofo	1
X	utprrd	7013	FOCBur	Fiber Optics Cable (Buried)	6	bfo	1
X	utprrd	7015	GasMeter	Meter (Gas)	4	0	1
X	utprrd	7017	Gauges	Gauges	0	0	1
	utprrd	1046	Gauges_ep	Gauges	0	0	0
X	utprrd	7018	Generator	Emergency Generator	0	0	2
	utprrd	1051	Guys_ep	Guy Anchor, Guy pole, Span Guys	3	1	0
X	utprrd	7019	GuyWire	Guy Wire	3	0	0
	utprrd	600	ImageAttachment_dp	Image Attachmentst	0	0	0
X	utprrd	8033	InterconCable_ep	Interconnect Cable (Existing)	1	intcon2	0
X	utprrd	7020	JunctBox	Junction Boxes, Service Cabinet (Elec/Tel)	3	0	1
	utprrd	1058	JunctBox_ep	Junct. Box / Service Cabinet (Elec/Tel)	3	1	0
X	utprrd	8049	JunctBoxA	Junction Boxes (Aerial)	3	0	1
X	utprrd	8050	JunctBoxA_ep	Junction Boxes (Aerial) (Existing)	3	1	0
	utprrd	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1
	utprrd	1060	LiteCond_ep	Street Lighting Conductors Existing	3	exlite_cond1	0
X	utprrd	8513	LoadCenter	Load Center	2	0	1
X	utprrd	8514	LoadCenter_ep	Load Center (Existing)	2	5	0
X	utprrd	8053	LoopLI_ep	Loop Lead-In (Existing)	3	2	0
X	utprrd	8055	Loops_ep	Loop Assembly (All Types) (Existing)	2	2	2
X	utprrd	9022	Luminaire	Luminaires (Decorative - All Types)	2	0	1
	utprrd	1061	Luminaire_ep	Street Light / Pole	3	2	0
	utprrd	1063	ManholeCover_ep	Manhole Cover (Cable TV)	6	1	0
	utprrd	1064	ManholeCovUnk_ep	Manhole Cover, Unknown	0	1	0
	utprrd	1065	ManholeCovW_ep	Manhole Cover (Water)	1	1	0
X	utprrd	7021	ManholeCvrUnk	Water Line Non Potable	0	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	utprrd	7022	ManholeElec	Manhole (Electric)	3	0	1
	utprrd	1066	ManholeElec_ep	Manhole (Electric)	3	1	0
X	utprrd	7023	ManholeGas	Manhole (Gas)	4	0	1
	utprrd	1067	ManholeGas_ep	Manhole (Gas)	4	1	0
X	utprrd	7024	ManholeSS	Manhole (Sanitary Sewer)	2	0	1
	utprrd	1068	ManholeSS_ep	Manhole (Sanitary Sewer)	2	1	0
X	utprrd	7025	ManholeSW	Manhole (Storm Water)	10	0	1
	utprrd	1069	ManholeSW_ep	Manhole (Storm Water)	10	1	0
X	utprrd	7026	ManholeTel	Manhole (Telephone)	6	0	1
	utprrd	1070	ManholeTel_ep	Manhole (Telephone)	6	1	0
	utprrd	1071	MeterElec_ep	Meter (Electric)	3	1	0
	utprrd	1072	MeterElecUG_ep	Meter (Electric) (Underground)	3	1	1
	utprrd	1073	MeterGas_ep	Meter (Gas)	4	1	0
	utprrd	7027	MeterUnk	Meter (Unknown) PROPOSED UNKNOWN ELEMENT	0	0	0
	utprrd	1074	MeterUnk_ep	Meter (unknown)	0	1	0
	utprrd	1075	MeterWater_ep	Meter (Water)	1	1	0
	utprrd	9519	Miscellaneous0	Undefined proposed item - co blue wt 0	1	0	0
	utprrd	9520	Miscellaneous1	Undefined proposed item - co blue wt 1	1	0	1
	utprrd	9521	Miscellaneous2	Undefined proposed item - co blue wt 2	1	0	2
	utprrd	9522	Miscellaneous3	Undefined proposed item - co green wt 0	2	0	0
	utprrd	9523	Miscellaneous4	Undefined proposed item - co green wt 1	2	0	1
	utprrd	9524	Miscellaneous5	Undefined proposed item - co green wt 2	2	0	2
	utprrd	9525	Miscellaneous6	Undefined proposed item - co red wt 0	3	0	0
	utprrd	9526	Miscellaneous7	Undefined proposed item - co red wt 1	3	0	1
	utprrd	9527	Miscellaneous8	Undefined proposed item - co red wt 2	3	0	2
	utprrd	9528	Miscellaneous9	Undefined proposed item - co teal wt 3	5	0	3
	utprrd	214	NonPlottingEle_dp	Non plotting items such as construction elements and type 66 elements	4	0	0
X	utprrd	7028	Oil	Oil Pipeline, Petroleum	4	pet	2
X	utprrd	7511	OverheadSign_ep	Overhead Sign Panels (Existing)	0	3	1
X	utprrd	7513	OverheadStr_ep	Mast Arm, Truss Assemblies, Signal Arms and Supports (Existing)	0	3	1
	utprrd	1080	Patternlines_ep	Cross Section Chain	2	1	0
	utprrd	9530	PayItem_dp	Pay Item Number Label Elements	4	0	2
X	utprrd	8059	Pedestal_ep	Pedestal (Existing)	1	2	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	utprrd	8061	PedHead_ep	Pedestrian Head (All Types) (Existing)	0	2	1
	utprrd	1089	PedSignal_ep	Pedestrian Signal Unit, Signage	0	2	0
	utprrd	1093	PointLocator_ep	Geopak Point Locator for COGO SMD Database	4	0	0
X	utprrd	8062	PoleConc	Concrete Strain Pole	0	0	2
X	utprrd	8063	PoleConc_ep	Concrete Strain Pole (Existing)	0	2	1
X	utprrd	8515	PoleFound	Pole Foundation	0	0	2
X	utprrd	8516	PoleLight	Light Pole	2	0	1
X	utprrd	8517	PoleLight_ep	Light Pole (Existing)	2	2	1
X	utprrd	8518	PoleLightHM	High Mast Light Pole	3	0	1
X	utprrd	8519	PoleLightHM_ep	High Mast Light Pole (Existing)	2	2	1
	utprrd	8520	PoleLightID	Light Pole Location / ID	4	0	1
X	utprrd	7029	PolePower	Power Pole w/ Transformer	3	0	2
	utprrd	1094	PolePower_ep	Power Pole with or without Transformer, shared pole	3	1	0
X	utprrd	7030	PoleShared	Power Pole Electric (Above Ground) Shared w/ Transformer	3	0	2
X	utprrd	7031	PoleSteelStrain	Steel Strain Pole	0	0	2
X	utprrd	7032	PoleSteelStrain_ep	Steel Strain Pole (Existing)	0	2	1
X	utprrd	7033	PoleTel	Telephone Pole	6	0	2
	utprrd	1095	PoleTel_ep	Telephone Pole	6	1	0
X	utprrd	7034	PoleUtil	Utility Pole	0	0	2
X	utprrd	7035	PoleWoodStrain	Wood Strain Pole	0	0	2
X	utprrd	7036	PoleWoodStrain_ep	Wood Strain Pole (Existing)	0	2	1
	utprrd	1097	Power_ep	Existing Overhead Electric Power Conductors (Distribution & Transmission)	3	e-oe	0
	utprrd	1098	PowerBur_ep	Existing Buried Electric Power Conductors (Distribution & Transmission)	3	e-be	1
	utprrd	1099	PowerBurCond_ep	Secondary Conductor Buried	3	e-be	0
	utprrd	1100	PowerCapcUG_ep	Capacitors (Underground)	3	1	1
	utprrd	1101	PowerCond_ep	Conductors (primary distribution)	3	e-oe	1
	utprrd	1102	PowerElecOut_ep	Electrical Outlet	3	1	1
	utprrd	7037	PowerMisc	Fuses, Reclosures, Regulator, Sectionalizers	3	0	0
	utprrd	1103	PowerMisc_ep	Capacitors (Above Ground), Switchgear, Transformer, Electrical Service Box	3	1	0
X	utprrd	8521	PullBox	Pull Boxes (All Types)	3	0	1
	utprrd	1104	PullBox_ep	Wiring Pull Box	3	1	1
	utprrd	1106	PumpNonPet_ep	Pump (Non Petroleum)	1	3	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	utprrd	9531	ReferencePt_dp	Survey and Construction Reference Point Details and Elements	4	0	2
	utprrd	1111	Sanitary_ep	Sanitary Sewer (all sizes)	2	e-s	1
	utprrd	1112	SanitaryDumpSta_ep	Dump Station (SS)	2	2	0
X	utprrd	7039	SanitaryFM	Force Main	2	s	1
	utprrd	1113	SanitaryFM_ep	Force Main (all sizes)	2	e-s	1
	utprrd	1114	SanitaryMisc_ep	Cleanout, Sanitary Effluent (Open channel)	2	1	0
X	utprrd	7040	SanitarySewer	Sanitary Sewer	2	s	1
X	utprrd	7041	SanitarySewerDSta	Sewer Dump Station	2	0	0
X	utprrd	7042	SanitarySewerEff	Sanitary Sewer Effluent NPW	5	npw	0
X	utprrd	6061	SanitarySewerEff_px	Sanitary Effluent for Cross Sections	9	0	0
	utprrd	7043	SanitarySewerMisc	Sewer Miscellaneous Items	2	0	0
	utprrd	1115	SateDish_ep	Sattelite Dish Antenna	6	4	0
	utprrd	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0
	utprrd	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0
	utprrd	222	ScratchEle_dp	Level for Draft Elements, Temporary Elements, Etc. These Elements Do Not Plot	3	0	0
	utprrd	1124	Signal_ep	Signal Head, Signal on Pedestal	3	2	0
X	utprrd	8069	SignalHead_ep	Signal Head Section Details (Existing)	2	2	0
	utprrd	1125	SignalLoop_ep	Traffic Detector Loops	7	1	2
	utprrd	1126	SignalMisc_ep	Miscellaneous Signal Equipment Existing including control unit	3	2	0
	utprrd	1127	SignalSupport_ep	Signal Supports including Mast Arm	3	2	0
X	utprrd	8073	SignalSym_ep	Signal Head Symbols (Existing)	3	2	0
X	utprrd	7557	SignCantilever_ep	Sign Symbol Cantilever (Existing)	0	2	0
	utprrd	1128	SignMulti_ep	Multi-column Sign (Large Sign)	0	3	1
X	utprrd	7563	SignPanel_ep	Sign Panel Elements (Existing)	0	2	1
	utprrd	1129	SignSingle_ep	Sign (Single Support)	3	2	0
X	utprrd	7571	SignSpanwire	Span Wire Signing Assembly	2	0	1
X	utprrd	7572	SignSpanwire_ep	Span Wire Signing Assembly (Existing)	2	2	1
	utprrd	1130	SignSupport_ep	Trusses and Cantilevers for Overhead Signs	0	3	1
X	utprrd	7576	SignTruss_ep	Sign Symbol Truss (Existing)	3	2	1
	utprrd	1133	SpanWire_ep	Signal / Span Wire Pole	3	0	0
X	utprrd	7044	Sprinkler	Sprinkler Head	1	0	1
	utprrd	1134	Sprinkler_ep	Sprinkler Head	1	0	0
X	utprrd	7045	SteamPipe	Steam Pipes	1	stm	1

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
X	utprrd	9036	StreetLights	Street Lights	2	0	1
X	utprrd	7046	Switchgear	Switchgear and Appurtenances	3	0	0
	utprrd	1143	Tele_ep	Telephone Line (aerial)	6	e-ot	0
X	utprrd	7047	TeleAer	Telephone Line (Aerial)	6	ot	1
X	utprrd	7048	TeleBur	Telephone (Buried)	6	bt	1
	utprrd	1144	TeleBur_ep	Telephone (all sizes Buried), Duct, Toll	6	e-bt	1
X	utprrd	6078	TeleBur_px	Telephone for Cross Sections (Buried) (Miscellaneous)	6	0	
	utprrd	7049	TeleMisc	Telephone Service Box, Booth or Pedestal	6	0	0
	utprrd	1145	TeleMisc_ep	Telephone Service Box, Booth or Pedestal	6	2	0
	utprrd	302	TextBLStation	Text - B/L Station and Tics	0	0	2
	utprrd	303	TextConstEle	Text - Construction Element	0	0	1
	utprrd	304	TextCurveData	Text - Curve Data Note	0	0	2
	utprrd	305	TextDetails	Text - Detail Notes	4	0	2
	utprrd	1146	TextElevLabel	Text - Elevation Labels	4	0	0
	utprrd	307	TextLabel	Text - Label	0	0	2
	utprrd	319	TextLandscape	Text - Landscape Labels	0	0	1
	utprrd	308	TextMajor	Text - Major	0	0	5
	utprrd	309	TextMinor	Text - Minor	0	0	0
	utprrd	320	TextMisc	Text - Miscellaneous	0	0	1
	utprrd	310	TextNotes	Text - Notes	4	0	1
	utprrd	311	TextProfLabel	Text - Profile, Horizontal and Vertical Axis Labels	0	0	2
	utprrd	312	TextProjLabel	Text - Begin and End Project label with leader lines	1	0	2
	utprrd	1147	TextPtLabel	Text - Point Labels	4	0	0
	utprrd	313	TextShtNo	Text - Sheet Number	0	0	2
	utprrd	1148	TextSurveyLabel	Text - Survey Text Labels	0	0	0
	utprrd	314	TextTables	Text - Keysheet Indexes and Table Data	4	0	2
	utprrd	315	TextTitle	Text - Title	0	0	3
	utprrd	316	TextXSElev	Text - Cross Section Elevations	2	0	1
	utprrd	1149	TopoMisc_ep	Miscellaneous Topo	0	3	1
X	utprrd	7050	Tower	High Mast Light Poles or Towers, Transmission Tower, Antenna	3	0	1
	utprrd	1150	Tower_ep	High Mast Light Poles or Towers, Transmission Tower, Antenna	3	1	0
X	utprrd	7051	TransformerAer	Transformer Unit (Above Ground)	3	0	0
X	utprrd	7052	TransformerBur	Transformer (Underground)	3	0	1
X	utprrd	7053	TransmissionAer	Proposed Overhead Electric Power Conductors (Distribution &	3	oe	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
				Transmission)			
X	utprrd	7054	TransmissionBur	Proposed Buried Electric Power Conductors (Distribution & Transmission)	3	be	1
X	utprrd	7055	TransmissionT	Transmission Tower Single	3	0	0
	utprrd	1159	UtilMisc_ep	Miscellaneous Utilities	0	0	0
	utprrd	7060	UtilsMisc	Miscellaneous Utility Items	8	0	1
X	utprrd	7061	UtilsProposed	Proposed Facilities/Utilities as shown in Utility Adjustments	9	0	1
X	utprrd	7062	Valve	Valve, Valve Box (Unknown) PROPOSED UNKNOW VALVE	0	0	1
	utprrd	1160	Valve_ep	Valve, Valve Box	0	2	0
X	utprrd	7063	ValveCover	Valve Cover (Unknown) PROPOSED UNKNOW VALVE	0	0	1
	utprrd	1161	ValveCover_ep	Valve Cover	0	2	0
X	utprrd	7064	ValveCvrEff	Valve Cover (Effluent)	5	0	1
	utprrd	1162	ValveCvrEff_ep	Valve Cover (Effluent)	5	2	0
X	utprrd	7065	ValveCvrGas	Valve Cover (Gas)	4	0	1
	utprrd	1163	ValveCvrGas_ep	Valve Cover (Gas)	4	2	0
X	utprrd	7066	ValveCvrSewer	Valve Cover (Sewer)	2	0	1
	utprrd	1164	ValveCvrSewer_ep	Valve Cover (Sewer)	2	2	0
X	utprrd	7067	ValveCvrWater	Valve Cover (Water)	1	0	1
	utprrd	1165	ValveCvrWater_ep	Valve Cover (Water)	1	2	0
X	utprrd	7068	ValveCvrWaterNP	Water Line Non Potable	5	0	0
	utprrd	1166	ValveCvrWaterNP_ep	Valve Cover (Non-potable Water)	5	2	0
X	utprrd	7069	ValveGas	Valve, Valve Box (Gas)	4	0	1
	utprrd	1167	ValveGas_ep	Valve (Gas), Valve Box	4	2	0
X	utprrd	7070	ValveSewer	Valve, Valve Box (Sewer)	2	0	1
	utprrd	1168	ValveSewer_ep	Valve (Sewer), Valve Box	2	2	0
X	utprrd	7071	ValveWater	Valve, Valve Box (Water)	1	0	1
	utprrd	1169	ValveWater_ep	Valve (Water), Valve Box	1	2	0
	utprrd	1170	ValveWaterNP_ep	Valve (Non-potable Water), Valve Box	8	2	0
	utprrd	1171	Vault_ep	Vaults Above Grade and Below Grade	3	1	0
X	utprrd	7073	Vaults	Vaults Above Grade and Below Grade	3	0	0
X	utprrd	7074	VaultsRW	Vaults (Raw Water)	1	0	0
	utprrd	7075	Vent	Vent (Unknown) PROPOSED UNKNOW VENT	0	0	0
	utprrd	1172	Vent_ep	Vent	0	1	0
X	utprrd	7076	VentGas	Vent (Gas)	4	0	0

Critical Level	Rule File	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight
	utprrd	1173	VentGas_ep	Vent (Gas)	4	1	0
X	utprrd	7077	VentSewer	Vent (Sewer)	2	0	0
	utprrd	1174	VentSewer_ep	Vent (Sewer)	2	1	0
X	utprrd	7078	Water	Water Line	1	w	2
	utprrd	1176	Water_ep	Water Line (all sizes)	1	e-w	1
X	utprrd	7079	WaterFct	Standpipe and Water Faucet	1	0	0
X	utprrd	7080	WaterFilter	Water Filter	5	0	2
X	utprrd	7081	WaterMeter	Water Meter	1	0	2
	utprrd	1178	WaterMisc_ep	Faucet, Standpipe, Well	1	1	0
X	utprrd	7082	WaterNP	Water Line Non Potable	5	npw	2
X	utprrd	6090	WaterNP_px	Raw Water Pipes for Cross Sections	1	0	1
X	utprrd	7083	Well	Well	1	1	1
X	utprrd	7084	WellMon	Well Monitoring	1	0	1
	utprrd	1180	Wells_ep	Monitoring Well, Taps	1	1	0
	utprrd	63	XSCell	GEOPAK Cross Section Cell and Profile Cell	8	0	1

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Chapter 4 - PROJECT DIRECTORY STRUCTURE

CADD Production Criteria Handbook

4.1 STANDARD PROJECT DIRECTORY

The data for each Florida Department of Transportation (FDOT) Project shall be organized and delivered using a standard directory structure as described later in this chapter. In order to ensure the uniqueness of the Project directory name, the project directory folder will be named the FDOT Financial Project Identification Number (FPID), using a minimum of all eleven digits. The FPID is available from FDOT Project Management. New (seed) projects should be created using tools developed and provided by the Engineering/CADD Systems Office (ECSO), and delivered with the FDOT CADD Software. FDOT provides an application called **FileChecker** to help confirm directory structures and file names.

4.1.1 CREATE PROJECT PROCEDURE

The “Create Project” procedure, included in Electronic Delivery Indexer (EDI) application, creates the seed project directory structure and prompts the user for additional project specific information. This information can be entered or modified at any time using Professional’s Electronic Data Delivery System (PEDDS) application. A seed project is a copy of the FDOT standard directory structure created under the project directory (FPID) name as defined in this chapter.

The project directory structure tree is a list of the required directories. These directories are required in the hierarchy as shown and none are to be deleted. Even when a directory is not used in a specific project, the directory shall remain. The project directory contains standard sub-directories for defined disciplines, PEDDS data, along with support and resource files specific to the project.

For example, a cell library developed for a specific project has a holding subdirectory, *cell*. The *_META_INFO* subdirectory contains the files created and used by PEDDS and used by the FDOT MicroStation workspace to establish the top level of the project directory structure. Therefore only one *_META_INFO* subdirectory should exist in a project directory structure from the initial creation of the project.

Users must use common sense when deciding where to locate working files within the project. If an impasse is reached deciding where data should be placed, the appropriate Project Management staff should be contacted for advice or referral. Deviation from standard practice should always be documented in the project’s Journal file.

4.1.2 DISCIPLINE SUBDIRECTORIES

The discipline subdirectories are defined for the division of work by file ownership, not necessarily the type of work. As files are developed by the various disciplines, those files should generally be placed into the project subdirectories corresponding to the creator of the work. Roadway designers would typically place their files (the files they create and own) under the \Roadway subdirectory, Surveyors under the \Survey subdirectory, and so forth. In some cases, disciplines may have work that overlaps with other components of a design.

For example, if a roadway designer develops the drainage sheets, the files produced would, by the above convention, go in the \Roadway directory, rather than the *Drainage* directory, as the "roadway" designer is the owner of the work.

However, if so desired, the files could be put in the *Drainage* subdirectory, but file permissions and electronic signing and sealing must be taken into consideration, which leads to questions such as: Does the "roadway" designer have permission to write to the \Drainage subdirectory? Or could problems be encountered merging files across multiple disciplines, i.e., multiple copies of the files?

4.1.3 DUPLICATE FILES

There shall be no duplicate graphical file names (of any file type) within a project directory structure to avoid ambiguity and problems downstream in the projects development**.** FDOT delivers the ***FileChecker*** application that can be used to find duplicate filenames (different or same content) across different sub-directories of the project, or files of the same content but different filenames (even in the same folder).

In MicroStation, to have proper attachments of reference files within a project, **a subdirectory** named "_meta_info" must be listed under the root of the project. The MicroStation FDOT workspace configuration is set up such that, when attaching a reference file, the software looks for the _meta_info directory, then goes up one folder level (the root directory of the project) and scans down the entire project directory structure, listing all directories below that level in the reference file path for MicroStation. The first occurrence of the file name is used as the reference file, if no relative path was used to attach the reference file.

Under no circumstances should absolute path be used when attaching reference files. All reference files for the project must reside within the project directory structure. For this reason, there should be no duplicate graphical file names within a project.

4.1.4 CUSTOM DIRECTORIES

Custom directories can be created under the standard discipline directory folders, but are not to be created under the root directory for the project. If a custom directory is needed, it is to be created under one of the project sub-directories that comprise the standard project directory template mentioned earlier.

Certain characters are not readable by some programs for directory structure names. Alphanumeric characters, dashes (-) and underscores (_) are the only allowable characters. Spaces are never to be used in any directory or file names and directory names must not exceed 16 characters.

In MicroStation, reference file path lengths are limited to 255 characters total. This must be taken into account when creating directory names (for overall path length) and limit the number of directory levels below the project level.

Note For more information on the project directory format, see Section 4.1.9 of this handbook.

4.1.5 ENGINEERING DATA DIRECTORY

Each discipline sub-directory will contain an additional sub-directory named *eng_data*. These sub-directories were designated to contain the sheet image files of the plan sheets for that discipline, the Quality Control (QC) reports (produced by the QC tools), and the ASCII Engineering Data output files. More information on the files that go in the *eng_data* sub-directories can be found in Chapter 3 of the FDOT ***CADD Manual*** and an extensive description of the Engineering Data requirements are defined in Chapter 8 of this handbook. Some disciplines may require additional Engineering Data information which are specific to that discipline, in which case those supplementary requirements will be listed in that discipline's chapter of this handbook.

4.1.6 SUB-DIRECTORIES UNDER THE DISCIPLINE DIRECTORIES

In some cases, it is advantageous to create "non-standard" directories for additional segregation of work. This is common when multiple parties work on a single discipline design and the data must be managed and merged. These additional directories can be created under the discipline specific sub-directories to accommodate these circumstances. **These custom sub-directories shall adhere to the restrictions for directories as defined in Section 4.1 of this handbook.** It is the responsibility of data producers to manage their data which includes the merging of data without conflict. Therefore, it is advised that persons managing multiple sub-producers plan accordingly, and coordinate the creation of subdirectories under the disciplines, taking into account file naming conventions and other considerations.

4.1.7 FILE SHARING AND MERGING

Data for each discipline will be maintained in its sub-directory, thus ensuring the ability to merge data from different providers or disciplines. **If a discipline requires information from another discipline or shares files with multiple disciplines, the needed files should be referenced from the original directory in place and not copied (if possible).**

In MicroStation, for example, the Signing and Pavement marking design file will reference the Roadway design file and the Topography file. These files should not be copied into the Signing and Pavement Marking discipline directory unless absolutely necessary.

Note If there is a specific justification to copy a file into another directory, the filename shall be modified to reflect the discipline file name usage. For example, topord01.dgn would become toposp01.dgn, if copied, or as a minimum the sequence number would change to ensure that there is no doubt the copied file differs from the original file.

The data producer holds the responsibility for ensuring that up-to-date content of the original file is always reflected in their copied design file, and for this reason making copies of design files to different locations is strongly discouraged. This deviation from standards shall be documented in the journal along with the justification. To avoid the need by other disciplines to copy and modify shared files, such as the topography file, each discipline shall provide their electronic files in the standard format in accordance with the defined FDOT standard symbology for that file. This ensures the proper use of data and eliminates the possible errors introduced through the cavalier duplication of files.

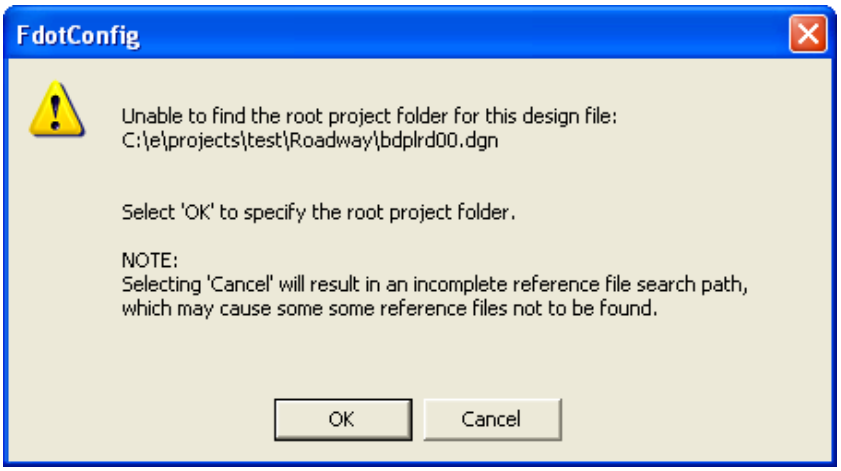
4.1.8 REFERENCE FILES

A reference file can be a MicroStation design file, an AutoCAD design file (permitted use is only for Architectural design files or utility files) or a raster image file. A reference file is attached as a background file to an active design file, thus allowing multiple users to share the same information without the need to copy the file(s) into the active design file directory, or copy the referenced file's content into the active design file.

In order to allow a project to be moved to a different drive without the loss of reference file attachments, specifically at the time of delivery to FDOT, **the reference files must be attached such that MicroStation can resolve the reference file attachments regardless of the project directory location.** Reference files shall be attached using the file name only, without the full path. Thus the option to "Save Full Path" when attaching reference files shall not be used. Always attach using relative path to the project root folder, allowing the project to be moved from drive to drive without losing the reference file attachments when accessed through the FDOT workspace. If one is certain of the uniqueness of file names, an attachment using no path can be used.

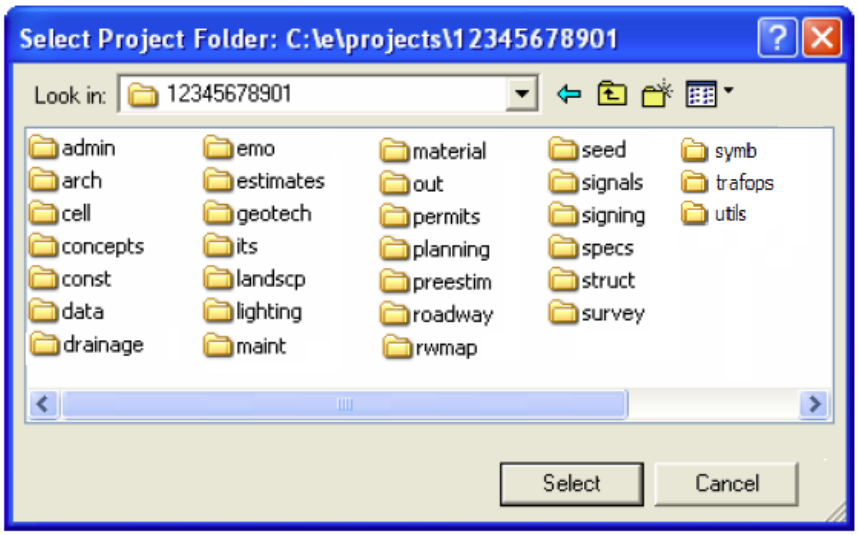
This capability is managed by an application (FDOTCONFIG) that is run at startup of any MicroStation file opened in the FDOT workspaces. This application looks for the _meta_info folder and then moves up one folder to set the parent directory of the project. It then dynamically sets the MicroStation configuration variable, MS_RFDIR, to search downward from the parent directory through all the found subdirectories to identify any reference files. Therefore all design files for a project must reside in the standard FDOT directory structure or its subdirectories in order to be located as a reference file. If it is necessary to reference a file that is external to the project, it must be done through the FDOTCONFIG application. FDOTConfig will manage the path to the file for referencing purposes. This capability is available from the FDOT Menu option ***Actions > Reference File Utilities > Attach Project External Reference Files***. The configuration variable that initiates this application is preset in the FDOT workspace in the *sitefdot.txt* file.

When a file is opened in MicroStation in an FDOT workspace, if the _meta_info does not exist, the user will be prompted to define the parent folder of the project, so that the application can set the search path for reference files. See the image below.



If Cancel is selected any reference to the models of files located in different subdirectories will not be displayed because the MS_RFDIR variable could not be populated automatically.

If OK is selected the user will be given the opportunity to define the root of the project. The user can then navigate to the root of the project, named for the Financial Project Identification Number. In the example below notice the directory shown in the title bar of the dialog. A _meta_info folder will be created directly under the directory shown in the title bar.



Important: If duplicate file names exist in the sub-directories of the project, MicroStation will attach the first matching filename it finds in the path. Therefore, duplicate file names are not allowed. For additional information on reference file limitations, please see Section 4.1

4.1.9 STANDARD PROJECT DIRECTORY FORMAT

The FDOT standard project directory structure and file naming conventions are based on the normal workflow of FDOT projects and the separation of workgroups. This allows permissions to be set so that the individual disciplines can manage their own files, including maintaining discipline specific project index information, creating PostScript Image Files for plan sheets, creating ASCII engineering data output, and doing electronic signing and sealing. Thus ensuring the entire project is packaged together for delivery without assimilation problems.

The standard directory structure with a description of each directory's purpose and a screen shot of Windows Explorer, showing the directory structure are shown below.

Folder Names		Folder Descriptions and/or Purpose
Project Name (FPID)		
	_meta_info	PEDDS files
	admin	Administration documents
		eng_data
	arch	Architectural design files
		eng_data
	brinspect	Bridge Inspection files
		eng_data
	cell	Project specific cell libraries
	concepts	Various preliminary concepts
		eng_data
	const	Construction files for "As-builts"
		eng_data
	data	Project data files, for example material backgrounds for rendering
		eng_data
	drainage	Drainage calculation files and design files
		eng_data
	emo	Environmental Management files
		eng_data

	estimates		Estimates files
		eng_data	
	geotech		Geotechnical data
		eng_data	
	ITS		Intelligent Transportation Systems
		eng_data	
	landscp		Landscape design files
		eng_data	
	lighting		Lighting design files
		eng_data	
	maint		Maintenance division (This is not Maintenance of Traffic).
		eng_data	
	material		Material Specification files.
		eng_data	
	out		Output files created by MicroStation
	permits		Permits for various items, ponds, etc.
		eng_data	
	planning		Planning department
		eng_data	
	preestim		Preliminary estimates
		eng_data	
	roadway		Roadway files
		eng_data	
	rwmap		Right of Way files
		eng_data	
	seed		Project specific seed files
	signals		Signalization files
		eng_data	
	signing		Signing and Pavement Marking files
		eng_data	
	specs		Specification package
		eng_data	
	struct		Structure calculations and files
		eng_data	
	survey		Survey database and files
		eng_data	
	symb		Project specific resource files for fonts and custom line styles
	trafops		Traffic Operations data
		eng_data	
	utils		Utility files
		eng_data	

The image to the right is a screen shot of Windows Explorer displaying the directory structure.

4.2 STANDARD FILE NAMES

The following file naming conventions shall be used for all design files, standard input files and criteria files. In the event a particular file type that is needed for the project is not addressed by this document, use the file naming convention as a template for selecting an appropriate name, or consult with either the Project Manager or the District CADD Manager to determine the proper file name.

Document all files, both standard and project specific, in the Project Index file. File names should only include alphanumeric characters and the dash (-) or underscore (_), no spaces or special characters.

In MicroStation, models within a design file should follow the same file naming conventions as the standard file names. For additional information on the use of models per discipline and the standard names see the specific discipline chapter.

FDOT identifies all standard file names as Critical or Non-critical. Critical files are used in downstream applications, shared across disciplines and used in quantifying pay items. These critical files must meet a minimum compliancy threshold for CADD Level-Symbology as detailed in Chapter 7 of this document. Standard file names are discipline specific and are listed in whole within the respective discipline chapters of this document.

4.2.1 STANDARD FILE NAMING CONVENTION

FDOT utilizes standard naming conventions for all of its files within both MicroStation and AutoCAD. The standard file names for each discipline are listed in the respective discipline chapters.Some of the automation implemented in various tools provided by FDOT depend 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 (a padded integer, i.e. “00”, “01”, “02” … “99”),

ext = File extension indicating the type of file as shown in section 4.2.1.

Example: The first roadway cross section file created would be named – **rdxsrd01.dgn**

Large projects might necessitate the need to exceed two digit sequence numbers; otherwise the sequence should be limited to two digits. If it is necessary to add additional descriptive information in the filename, this descriptive information should be inserted after the discipline denotation “BB” and preceding the sequence number “##”. However, this should not be the norm and the additional descriptor should be kept to a minimum. Example: rdxsrdrmpa01.dgn, indicating this cross section sheet includes ramp A.

4.2.2 POSTSCRIPT NAMING CONVENTION

In MicroStation, ***Sheet Navigator*** is an interactive application that is also ran in the background by **Electronic Delivery Indexer (EDI)** to extract the sheet labels from design files that contain sheets and to define the components of the project. ***Sheet Navigator*** uses the SheetInfo.xml control file to provide the component order for sheets according to their location in the project directory structure in conjunction with the sheet prefix. The Sheetinfo.xml control file defines the standard search criteria to identify sheets in a project and is located in the *\FDOT_2008\mdlapps* folder.

4.2.2.1 Sheet Numbers

Sheet numbers used in plans can be composed of multiple parts using the format: **AAA-####A.**

AAA Represents the Project Component, using multiple alpha characters as placeholders.

####(A) Defines the numeric order of the sheets within the Project Component. The (A) allows for the insertion of appended sheets after the project has started. A single alpha character, A-Z, is added for each subsequent sheet inserted.

(Examples: S-001A; PNC-01; A-15; A-16; T-1; T-2; and of course 1, 2, 3, etc).

Structures and Architecture disciplines have extended the sheet numbering schema and the respective discipline manuals should be consulted for guidance. These manuals are found at:

- FDOT Structures Manual
- CADD Production Criteria Handbook (CPCH) Chapter 23

The following shows how ***Sheet Navigator*** and ***EDI*** will interpret sheet numbers to attempt to discern what plans component each sheet belongs to:

Prefix	Component
No prefix	Roadway Plans *(Typically - only an integer is used for sheet number)*
CTL	Roadway Plans
GR	Roadway Plans
PNC	Roadway Plans
PTM	Signalization Plans
TR	Roadway Plans
UTV	Roadway Plans
S	Signing and Pavement Marking Plans
GS	Signing and Pavement Marking Plans
T	Signalization Plans
GT	Signalization Plans
IT	Intelligent Transportation System (ITS) Plans
GI	Intelligent Transportation System (ITS) Plans
L	Lighting Plans
GL	Lighting Plans
LD	Landscape Plans
BG	Structures Plans
A	Architectural Plans
Begins with “B”	Structures Plans
Begins with "U"	Utility Joint Participation Agreement Plans
Begins with "A"	Architectural Plans

Roadway plans is typically the primary component of a FDOT Project plans set containing multiple plans components and can have non-prefixed sheet numbers (1,2,3,… etc.). Other disciplines can be the primary plans component only in the absence of a Roadway plan component. For example: a Lighting only project may omit the plans component prefix, and use the numbering format of 1,2 3, etc, although this practice is strongly discouraged.

4.2.2.2 Postscript File Naming Format

EDI implements an output file naming scheme for Postscript files that removes ambiguity about which sheet the file represents (regardless of the sheet-numbering scheme used in the design file) and supports the more complex sheet numbering now be expected by some disciplines. The format file naming convention will be:

EX: 01_BB1-1A_keysrd01.PS

Plans Component Code | Sheet # | File Name

Plans Component Code [01] The first two numbers represent the Plans Component with zero (0) used as place holder (for sorting purposes).

The FDOT Statndard Plans Component codes are as follows:

01 – Roadway Plans

02 – Signing and Pavement Marking Plans

03 – Signalization Plans

04 – Intelligent Transportation System (ITS) Plans

05 – Lighting Plans

06 – Landscaping Plans

07 – Architectural Plans

08 – Structures Plans

09 – Utility Joint Participation Agreement Plans

10 – Right of Way Maps

99 – Unknown

Sheet # (BB1-1A) After the Plans Component Code, an underscore (_) is inserted followed by the actual sheet number.

File Name (keysrd01) After the Sheet #, an underscore (_) is inserted followed by the name of the source design files. The last two integers are used to assign unique sequential numbering.

4.2.3 STANDARD FILE NAME EXTENSIONS

File Name	Extension	Saved-in Folder
3 Port Criteria files	.3pc	Most appropriate discipline folder
Adobe Acrobat files	.pdf	Most appropriate discipline folder
Cell Count Report	.ccp	Most appropriate discipline folder
Comma Separated Values	.csv	Most appropriate discipline folder
Coordinate Geometry Database files	.gpk	Most appropriate discipline folder
Cross Section Sheet Design files	.shg	Most appropriate discipline folder
Cross Section Sheet Layout files	.plg	Most appropriate discipline folder
Crystal Reports	.rpt	Most appropriate discipline folder
Descartes Raster Image files	.hmr	Most appropriate discipline folder
Electronic Delivery Index Settings files	.edi	Project Root folder
GDM QC Rule files	.rul	Most appropriate discipline folder
GEOPAK Criteria files	.x	Most appropriate discipline folder
GEOPAK D&C Manager Database files	.ddb	Most appropriate discipline folder
GEOPAK Input files	.inp	Most appropriate discipline folder
Microsoft Excel Spreadsheets	.xls	Most appropriate discipline folder
Microsoft Word Documents	.doc	Most appropriate discipline folder
MicroStation & GEOPAK resource files	.rsc	\eng_data subfolder for discipline
MicroStation Batch Plot Job files	.job	\eng_data subfolder for discipline
MicroStation Cell Libraries	.cel	Cell Folder
MicroStation Design files	.dgn	Most appropriate discipline folder
MicroStation Pen Tables	.tbl	\eng_data subfolder for discipline
MicroStation Plot Drivers	.plt	\eng_data subfolder for discipline
Postscript Sheet Image Files	.ps	\eng_data subfolder for discipline
QC Exception files	.xcp	\eng_data subfolder for discipline
QC Reports, QC”folder name”	.rpt, .txt	\eng_data subfolder for discipline
Web Pages	.htm	Project Root folder and \data subfolder
Web Pages	.html	Project Root folder and \data subfolder
XML files	.xml	Project Root folder and \data subfolder

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Chapter 5 - PROJECT INDEXING & JOURNALING

CADD Production Criteria Handbook

5.1 INDEX GUIDELINES AND FORMAT

Florida Department of Transportation (FDOT) Project Index files will be produced and delivered in accordance with the FDOT CADD Manual. The purpose of the indexes is to document delivered project files, so a user of the data might reasonably understand the purpose and content of the files delivered, including those representing the electronic plans set.

FDOT provides the software tool, Electronic Delivery Indexer (EDI) to produce FDOT Project Indexes in the required formats. Since the index files are text based, a user could conceivably produce these by other means, albeit with difficulty.

Indexes are crucial to the successful use of the electronic data by downstream customers. They should be updated and reviewed as the work progresses. These indexes may be maintained by software in the Electronic Delivery software suite and are defined in XML formats.

The indexes noted above include:

Index.XML This is a comprehensive index of file attribute meta-data produced by the Electronic Delivery Indexer which contains all indexed data and mined or user input attribute data for the files of the project. This file is placed in the root directory of the project.

ProjectIndex.XML This is the Index of all plan sheets and their associated files produced by the Electronic Delivery Indexer (EDI) application (any version). From this index, an HTML report can be produced (Sheetndx.htm) by the EDI application that is used as an interface to the plans image files by persons who do not have the FDOT Electronic Delivery software loaded, such as contractors, the public, etc. This file is also found in the root directory of the project.

ProjectFiles.HTM This is a report of project files (documentation) and their “EDMS” comments included in the delivery, produced by EDI. It differs from Index.XML in that for files of a standard name, EDI will look up what that file type represents and include that in the documentation for that file present in the delivery. If the data producer added EDMS comments to any given file using EDI, those comments will be represented in the output ProjectFiles.HTM. This file may also be found in the root directory of the project.

EDI also does the following:

- Mines the attribute data from design files being indexed, which includes properties, such as global origin, working units, attached reference files, etc. Design files containing plan sheets have additional sheet index information, such as sheet number, title, etc. SheetNavigator application is called to pass this sheet index data to EDI.

Note The indexer relies upon data produced by Sheet Navigator, an FDOT software process running in the MicroStation environment which tags sheets in the MicroStation DGN file. If SheetNavigator has not been executed, the sheets within the design file have not been tagged. Though a manual method is provided in EDI to enter/edit sheet information, the manual method for building the index is significantly more time consuming, and therefore not recommended. The main purpose of the manual edit function is to provide additional or corrective data that will add intelligence about a file or sheet.

- Provides the interface to the Journals, which are Rich Text Format (RTF) files, (changed from XML format in previous EDI releases).Allows users to manually record comment data to the attribute index files using EDI as the interface.
- Produces the index of plans sheets (Sheetndx.htm) used in the advertisement for letting, which also uses ProjectIndex.XML as input.
- Produces an index of files (ProjectFiles.XML) with the option to save a report in HTML format (ProjectFiles.htm).
- Produces a single file (Project.PDF), containing all indexed sheets in the project found in the project root folder.
- Provides for batch plotting of sheets to specified formats.

5.2 JOURNAL GUIDELINES AND FORMAT

Journal files are to be delivered in accordance with the FDOT CADD Manual. The purpose of the Journal files is to detail design aspects and decisions made during the life of the project, documenting processes used during the course of design that would be communicated to a down-stream user of the project data.

The Project Journal files will be delivered with the project. Journal files may be created to document the activities of a given professional discipline, or may be created to document a particular design activity (i.e. creating cross sections), or be the personal journal of a user/designer. Journal file entries should document methods employed, procedures used, decisions made, problems encountered, fixes included or other issues encountered during the design process.

For example: If custom line styles were created, the justification for the custom line style and the resource file name containing the custom line style should be documented in the Journal. Any information that would help in the regeneration of CADD files and/or plots should be recorded. The geometry information, database, controlling alignment, profile names, relevant survey and cross section information and the methodology used to obtain the final geometric controls in the CADD product should be recorded.

The FDOT CADD Software, Electronic Delivery Indexer (EDI) includes the functionality to create and maintain Journals. Rich Text Format (RTF) Journals are created. Create additional Journals in the RTF format as needed. Beginning with the use of FDOT2004 on projects, Journal files are stored in the **\data** sub-folder of projects and are maintained as RTF files.

The Journal tool currently provided by FDOT has the following properties:

- Creates / edits a journal file through a dialog box. The journal file can be viewed with a standard editor or by the journal tool.
- Provides for automated text entry.
- Allows pre-loaded text inserts (a type of pick list), with user and company information. Each journal entry is date stamped.
- Provides for adding custom (reusable) text inserts.
- Allows for the storage and viewing of images attached to Journals.

The indexing tools mentioned in this chapter are documented in the Electronic Delivery software interface and in the applications themselves. Short videos have been created to document the operation of these tools and can be found on the FDOT website at:

http://www.dot.state.fl.us/ecso/downloads/clips/

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Chapter 6 - PLOTTING & POSTSCRIPT IMAGE FILES

CADD Production Criteria Handbook

6.1 PLOTS

The FDOT CADD Manual requires all Postscript images used as electronic plans sheets to be generated from the native MicroStation design files. To assist users in producing paper plots of the images, FDOT developed utilities that complement MicroStation plotting and are included with the FDOT CADD software (The Electronic Delivery Indexer). This utility supports the production of the required PostScript images. In addition, it facilitates the creation of the plot files in accordance with the file name standards.

All sheet images produced shall be to scale. Standard FDOT sheet borders, as defined for each discipline, along with sample plot drivers, are provided to generate “drawn to scale” sheet images. In addition, the Postscript sheet images shall reflect, at the side of the sheet image, the file name, directory path and the date and time of the plot. These standard sheet borders comply with the FDOT sheet formats as defined in the Plans Preparation Manual and other controlling documents. Documents such as the Design Standard Indexes, Plans Preparation Manual, and the Right-of-Way Mapping CADD Handbook are just some of the references that apply.

6.2 PLOT BORDERS

The FDOT standard sheets have a plot border embedded in the each sheet cell. The plot border symbology and element type differ in the cells according to the discipline and the software version. The FDOT Standard plot drivers, Sheet Navigator program and Electronic Delivery software, are predefined to search for these various border definitions and sizes. The FDOT predefined search criteria is illustrated in the table below.

Note **PlotBorder_dp** and **ShtPlotBorder_c** are the current plot border level symbologies used in the FDOT2004 Software.

	Border 1	Border 2	Border 3	Border 4	Border 5
Type	Shape	Shape			Shape
Level	PlotBorder_dp	PlotBorderSht	PlotShape	ShtPlotBorder_c	51
Color	3	3	BYLEVEL	BYLEVEL	3

English plot border size for 11x17: 16.5” x 10.6”

6.3 POSTSCRIPT IMAGE FILES

The Department's policy states that all construction plans prepared by and for the Department, either by in-house staff or by consultants, shall be totally prepared utilizing CADD techniques. This involves the delivery of an "image" of the plan sheet in electronic format.

PostScript was selected as the format for the electronic version of the plan sheet image. Postscript is the most widely used, open standard in the publishing and reprographics industry. In addition, MicroStation, at no additional cost, does an excellent job of producing a PostScript file to scale, with grayscales, halftones and color. The PostScript plan sheet images can be plotted at any scale while maintaining adequate resolution.

There are "freeware" PostScript file viewers available. GSView, a free postscript viewer, is available for download from Engineering CADD Systems Office (ECSO) website. The PostScript image files for the plan sheets are produced the same way a paper plot is generated, except a MicroStation PostScript plot driver is used. See also section 6.4 below. If the Engineer of Record signs and seals these files with the Professional's Electronic Data Delivery System (PEDDS), then those files will be the official record document and any paper plots (if desired) will be considered only copies of the official legal record.

For those sheets that are electronically signed and sealed by a Professional Engineer, the following note shall be placed legibly on the sheet. See the Plans Preparation Manual, Volume 1, Chapter 19, section 19.2.2, for further information.

"NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C." *

Note The Rule number referenced is determined by the discipline of the professional that is signing and sealing (i.e. for Architects, this Rule is 61G1-16.005, F.A.C.; for Geologists, this Rule is 61G16-2.005, F.A.C.; for Landscape Architects the Rule is 61G10-11.011, F.A.C.; and for Surveyors, this Rule is 5J-17.062, F.A.C.).

6.4 INCLUSION OF SCANNED PLAN SHEETS ELECTRONICALLY

In some cases, users have no choice but to scan hardcopy plan sheets to create electronic sheet files.

For example: Some plan sheets may already exist as hardcopies, and signed & sealed traditionally. This can occur when either pre-existing plans are incorporated into the electronic delivery, or a professional discipline does not have legal authority to sign and seal their plans electronically. In such cases, those plans should be scanned at a 300 DPI resolution (or higher if warranted), to Postscript, PDF, or Group-4 TIFF format.

If a PDF is produced, the user must ensure that no encryption or other PDF security is embedded in the PDF. Each sheet should be scanned to its own single file that is one sheet per file, however some Districts prefer scanned documents included as a multi-page PDF or Postscript (multiple sheets per scanned file), so check with your Project Manager.

File naming of the scanned sheet files are also alphanumeric, and shall contain no spaces or special characters, with the exception of the underscore "_" or dash "-" characters.

If scanning hardcopy plans that bear a raised seal, then the raised seal should be shaded with a pencil or by other means before scanning so the seal appears clearly in the scanned image. Scanned existing plan sheets that are already signed and sealed on paper will not be also signed and sealed electronically, however they may be signed-only (not sealed) electronically by a responsible party to take accountability for their inclusion in the electronic plans set.

The user must also ensure that the result of the scan bears a legible image when viewed on the computer screen, and that the image can be re-printed to a legible print hardcopy.

6.5 FDOT MICROSTATION PLOT DRIVERS

The plot drivers and the sheet cells provided with the FDOT software are used to generate plots to scale. All plot drivers now have raster plotting enabled. These drivers are called “examples,” due to the various site-specific configurations and types of plotters that may be encountered. The plot drivers have been tested and work with the plotters for which they were developed. Each printer/plotter has its own “printable” area defined for a paper size and it may differ slightly.

See the CPCH Chapter 3, Section 3.5, Plot Driver Descriptions, for a list of the FDOT delivered plot drivers.

6.5.1 Half-Toning

The color 20 is used to define half-toning in the plot driver files supplied by FDOT. Half-toning of the minor grid lines on the cross section sheets, the profile portion of the plan/profile sheet and the profile sheet has been approved by FDOT as shown in the *Plans Preparation Manual, Volume II* exhibits. The FDOT Project Manager must approve half-toning of any other element in the design file.

Some districts have specified the half-toning of certain reference files from one discipline to another. For example, the topography file could be half-toned when referenced to the proposed design. This must be approved on a per district basis.

A pen table can be set up to equate any referenced file to color 20, thus half-toning the entire reference file at plot time.

6.5.2 Quality and Reproduction

Printed output from the design files and postscript image files must be legible and of a quality to be reproducible on 2nd generation copies. Line Weights as defined in CPCH Chapter 3.4 are default settings in the Plot drivers, but may need to be adjusted, depending on hardware, to product the required quality of printed documents.

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Chapter 7 - CADD QUALITY ASSURANCE / QUALITY CONTROL

CADD Production Criteria Handbook

7.1 GENERAL

Offices under the direction of the Chief Engineer are responsible for determining the critical Quality Assurance (QA) requirements for their functional areas and have developed plans to monitor those requirements. The Engineering Computer Aided Design & Drafting Systems Office (ECSO) has defined the critical Quality requirements for electronic deliverables in the CADD Manual and the CADD Production Criteria Handbook (CPCH). These include standard file formats and components for data delivery, adherence to a standard project directory structure, file naming conventions and standard graphic symbology for electronic plans as defined herein. The ECSO has established a QA monitoring plan for CADD in Florida Department of Transportation (FDOT) to facilitate compliance with these electronic deliverable requirements.

FDOT standards recommend that all critical design files, shared across disciplines and used in quantity calculations for pay items or used in automation by downstream applications, shall meet a minimum 95% threshold of compliance for level-symbology. If submitted critical files do not meet these requirements, a written variance from the FDOT Project Manager with supporting documentation shall be included within the project Journal. A minimum 80% threshold of compliance for level-symbology is recommended for non-critical design files. Every design file shall meet the threshold of compliance as defined in any CADD Quality Control plan and scope approved by the Districts. Within these compliance thresholds requirements, FDOT provides an allowance of 10 Exceptions per standard per Discipline.

Effective utilization of the automated quality monitoring tools, as part of the quality control plan of the designer, will ensure: the delivery of data that can be effectively used by others in automated routines during later project phases, an acceptable compliance rating, and keep projects on schedule by diminishing the incidents of product rejection by those responsible for monitoring the data.

7.2 PRESERVATION OF THE PROFESSIONAL OF RECORD

Whether it be product or management practice, what must occur is to have a sound, uninterrupted legal record of the project data. Therefore it is important that both the data producer and the Department make a sensible effort to ensure the documents supporting the signing and sealing of files electronically by a professional signatory and the securing of the electronic delivery be preserved in a manner consistent with those responsibilities under the rules of the Boards of Professional Regulation in Florida.

Districts should emphasize all the practices implied by the rules of the Florida Boards of Professional Regulation and implemented in the Professional's Electronic Data Delivery System (PEDDS) software. For example: Signature Documents - they are as important as the data, since without them, the data is not considered signed and sealed electronically under Board rules and without these documents, the data and the Signatory's seal cannot be authenticated. The Project CD and the Signature Documents should be looked at in concept as one entity. Likewise, the Manifest Document speaks to the integrity of the entire delivery, and should also receive attention and care for its preservation as part of the delivery of data.

For these reasons, some data producers have begun the practice of scanning the final signed paper version of Manifest Document, and the paper signed and sealed Signature Documents into PDF format, and including them in the _meta_info folder of the project before delivery to the Department. Since the _meta_info folder is treated differently during the securing and authentication process by PEDDS, it is possible to place files into the _meta_info folder after a project data set has been secured without violating the security paradigm PEDDS uses. The person doing so should take special care not to overwrite PEDDS files managed in this _meta_info folder, including adding files without file extensions, zero-byte files, or files whose file name might conflict with the operation of PEDDS.

The practice mentioned above does not excuse the data producer or the Department from their responsibility to preserve the paper records of the Signatory Documents or Manifest Documents for a project. The Department shall maintain the paper copies of these documents until it is determined how these records may be preserved in other media that meets the requirements of the Florida Boards of Professional Regulation.

7.3 PROCESS MANAGEMENT

Each district is responsible for having a management plan for quality control of the electronic delivery. Realizing that each district has a slightly different workflow, it is expected that district management plans follow the CADD Manual, accepted practice for electronic delivery and the process chart published by the State Roadway Design Office.

7.4 QUALITY ASSURANCE (QA) – CENTRAL OFFICE ROLE

The Central Office role in the Quality Assurance Plan is to monitor the districts' individual Quality Control Plans for electronic files in accordance with the ***CADD Manual***. This involves establishing procedures and standards for electronic deliverables and reviewing district compliance with these items. QA also encourages continuous improvement through sharing both ideas and improved technology advances.

Note *Districts will be expected to ensure that their own Process Management Plan is in place for Electronic Delivery and that projects comply with that process.*

7.4.1 CADD design/delivery components monitored for compliance:

- Project Directory Structure
- File Naming Conventions (Graphic, Input, Criteria & Geometry, etc)
- Seed File Settings (Working Units & Global Origin)
- DGN Format of graphics files
- Symbology (Fonts, Levels, Colors, Line Style & Weight, Cells) of graphics files
- Plan Sheet Formats
- PostScript / PDF Plot Images
- Certain ASCII Data Files
- CADD Project Journal File
- Project Index(es)
- Compliance Reports for Quality Control
- PEDDS Manifest Document
- Signatory Reports from all professionals responsible for any legal set portions of the project data

7.4.2 QA Reports

The CADD Quality Assurance reviews of the districts' will be conducted according to the Department procedure and will be based on the published CADD QA monitoring plans of both the districts and ECSO. Reports are distributed to the district Secretaries and other affected offices.

7.5 QUALITY ASSURANCE (QA) – DISTRICT OFFICE ROLE

Through product quality assessments, each district monitors adherence to established electronic file creation and management procedures, standards and guidelines. Each district shall maintain an established review process to determine and report the quality and compliance levels of project data as it relates to CADD. This process includes review of elements to ensure that sound project data management practices are being followed.

FDOT provides tools to help ensure the creation of the standard project directory structure, standard file names and the standard symbology of all MicroStation design files, in accordance with the specifications, as defined in this CPCH document. In addition, Quality Control (QC) software is also provided to check a design file's adherence to the FDOT level-symbology standards at any time during the production phase of the project, particularly and importantly, just prior to delivery of the project. The main tools are listed below with further detailed explanation in the sections to follow.

- ***FileChecker*** The ***FileChecker*** program is a tool designed to assist with the Quality Control of Electronic Delivery projects. It is used to examine projects both during development and ready for submission, in order to provide reporting that certain portions of the project follow standards and business rules for the Electronic Delivery.
- ***QC Software*** The CADD ***QC Software*** components are tools designed to assist the CADD user with the checking, correction and reporting of compliancy of drawing files to FDOT CADD level-symbology standards. The QC Software includes the following components:

  - *OverVuQC* – Automated QC process that automatically performs a Compliance Check upon the closing of an active design file. The compliance percentage displays in a dialog box and is written to the design file for reporting purposes with the QC Reporter process described later.
  - *QCCompliance* - User initiated QC process that performs a Compliance Check at any time during an active design session. The compliance percentage displays in a dialog box and is written to the active design file for reporting purposes with the QC Reporter process described later.
  - *QuikChek* – User initiated QC Checking and Correcting process that compares the elements in an active design file to the level-symbology standards, identifies all non-standard elements, allows for correction of the non-standard elements and performs a Compliance Check on the active design file upon closing of the process. The compliance percentage displays in a dialog box and is written to the active design file for reporting purposes with the QC Reporter process described later.
  - *QCReporter* – User initiated automated QC Reporting process that reads each design file of a user selected group of design files and creates and saves a QC report on the compliance percentage and monitored component status written in each selected design file. The QC report produced by this tool is a delivery requirement and is read by the FileChecker program.
  - *Batch QC* – The Batch QC program is a user initiated FDOT batch tool designed that performs a Compliance Check of a user selected group of design files and writes the compliance percentage in each of that selected group of design files for reporting purposes with the QC Reporter process described earlier.

- *QCChecker* – User initiated automated Batch QC and QC Reporting process on a user selected group of design files that performs a Compliance Check, writes compliance percentage within each selected design file, and initiates the QCReporter to produce and record an updated QC report on that user selected group of design files.

7.5.1 FDOT Filechecker

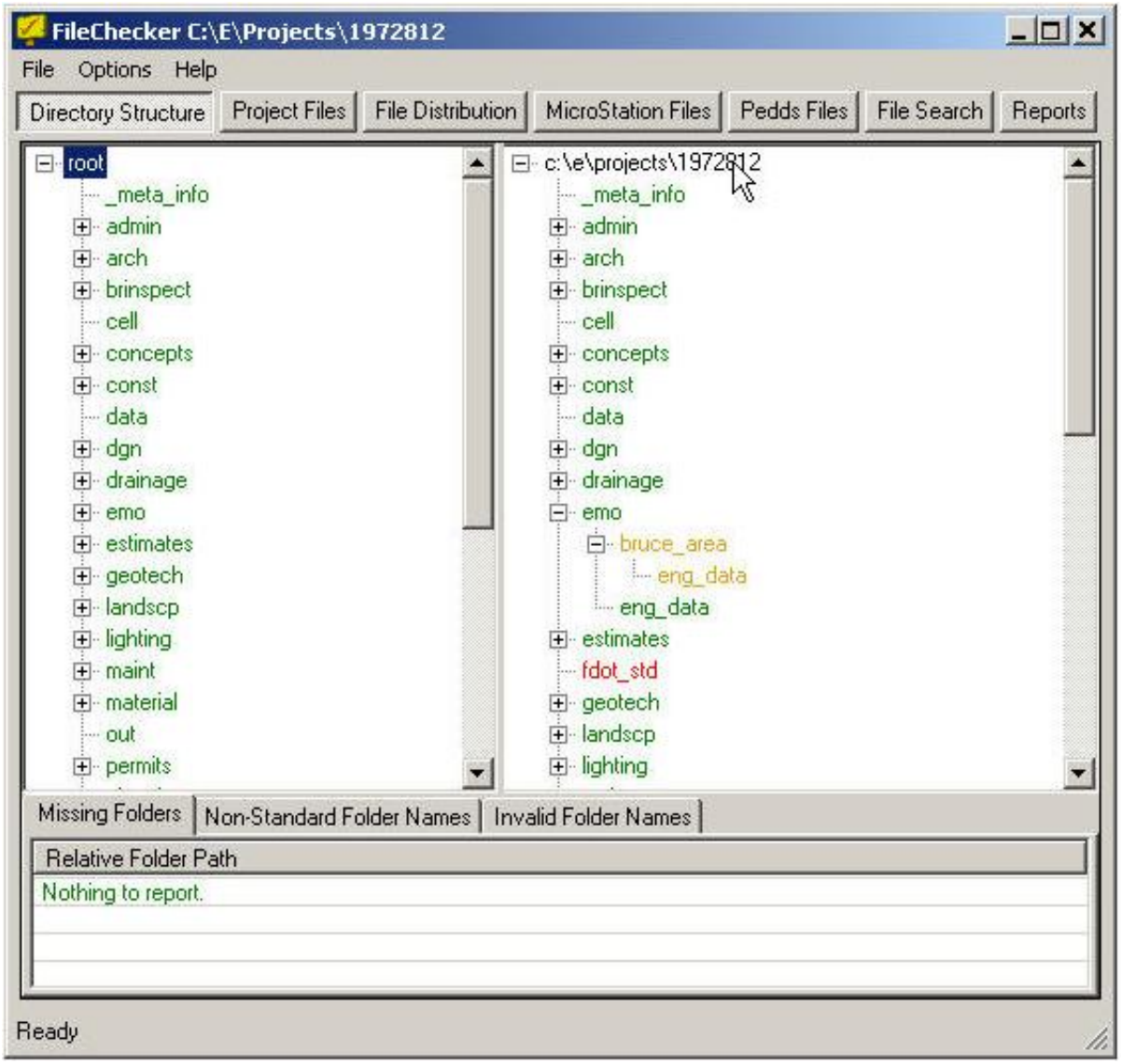
FileChecker uses data already present in the project to provide broad reporting, such as pre-existing QC reports (*.txt) from CADD QA/QC software (see previous section), and attribute data mined during SheetNavigator runs. The program performs a variety of checks in the project, related to Electronic Delivery, and presents those in color coded reports to the user. The program also provides a powerful search utility

The following list is only a few of the items checked by FileChecker:

- FDOT directory structure (directories added / deleted / and non-standard directories)
- Reports directories greater than 16 chars, containing spaces, multiple consecutive spaces, or special characters in their names
- Full paths to files are 255 characters or less
- Reports file names with spaces, multiple consecutive spaces, long file names, and containing special characters
- Looks for same file names, found in different paths, with same or different file content noted
- Looks same file content, but with different file paths / file names
- Looks for large files (could indicate a problem file?)
- MicroStation files that do not meet FDOT file naming conventions
- Looks for Sheet files that have been signed / sealed, but are not included in the index
- Looks for Indexed sheets that are not signed / sealed
- Determines presence of key ED component files (SheetNDX.htm, ProjectIndex.XML, Project.pdf, Projectfiles.xml)
- Checks that the Indexes validate, and that the Indexes validate against PEDDS data, and against data on-disk
- Searches for QC reports, extracts data into sortable tables, including QC reporting of Critical files

Important: FileChecker is only a tool to assist in the examination and reporting of potential issues in projects for the items it checks. This tool does NOT check everything! One should not consider FileChecker a "black box" that will uncover all potential problems. Likewise, the responsible party should always read the reports carefully to determine if items reported are indeed problematic for the project.

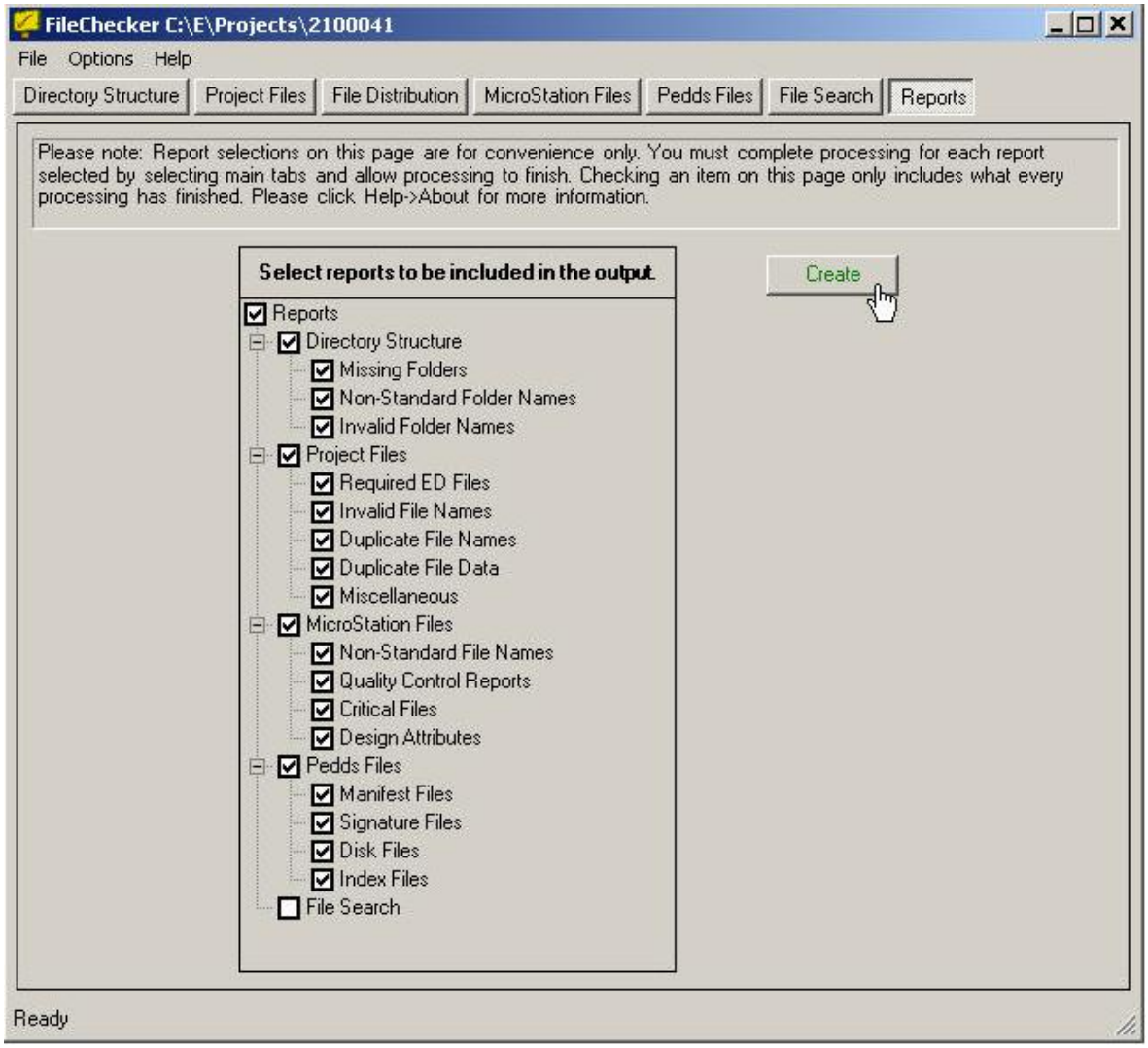
FileChecker's Interface



FileChecker Reports

FileChecker has a series of task buttons running across the top of the interface as seen in the image above. These represent the major reporting tasks performed by FileChecker. Beneath each major task, tabbed windows appear that generally offer a view of the data being reported. Each Task button and Tabbed report should be opened and examined for all project. FileChecker also has a powerful search tool that can search for text strings, including multiple occurrences, within files.

Once all of the screens have been opened and viewed, a report may be saved to disk (in HTML format) for later access from the following screen:



Note *The report screens have additional controls to sort data in columns (by clicking in the column header) and some have pull-down lists to access additional data. Different components of the screens viewed may be omitted from reporting. Any report produced by FileChecker contains the following text in the header:*

This report flags suspected inconsistencies in an Electronic Delivery project, but does not replace a thorough technical review by a qualified professional or eliminate the responsibility of the user. A report with few or no status errors is a good sign, but does not guarantee an error free project. Likewise a report with many status warning or errors cannot be assumed to indicate an invalid project. The user or reviewer of this report must carefully consider the standards applicable to the project at the time of development.

7.5.2 Quality Control (QC) Software

The QC Software currently requires MicroStation to run and includes several components which support automated and manual checking of design files for compliancy to the FDOT level-symbology standards. The QC Processes records this compliance information within the MicroStation design file and uses it for reporting compliancy in the FDOT Electronic Delivery process. The compliance of the design file is recorded with respect to the FDOT level-symbology standards, as specified in the corresponding "Rule" files established for each of the FDOT Standard Filename. Each QC Component application is described more completely in the sections to follow.

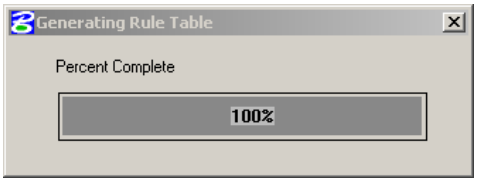
Note *For detailed listing of the current FDOT Standard Files and corresponding FDOT Standard Rule File information, see Chapter 3.10 of this document.*

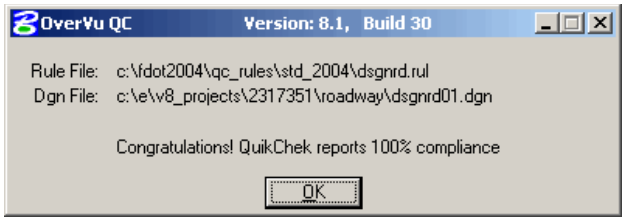
For a more in-depth instructional document on the FDOT QC Software, go to the ECSO Website:

http://www.dot.state.fl.us/ecso/main/fdotcaddtraining.shtm

7.5.2.1 OverVuQC

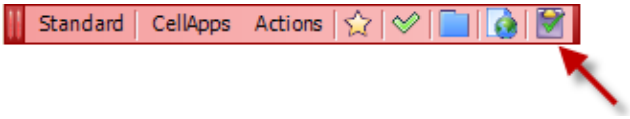
OverVuQC is an automated tool developed to monitor and report adherence of a design file to the FDOT level-symbology standards and keep the compliance information up to date within the design file for later QC reporting purposes required by the Electronic Delivery process. It has no user interface, but is automatically run upon the closing of a design file within the FDOT workspace of a MicroStation session, providing a compliancy check of the active model, writing of compliance information into the design file and then displaying the Standards Compliance Percentage for the user.





7.5.2.2 QCCompliance

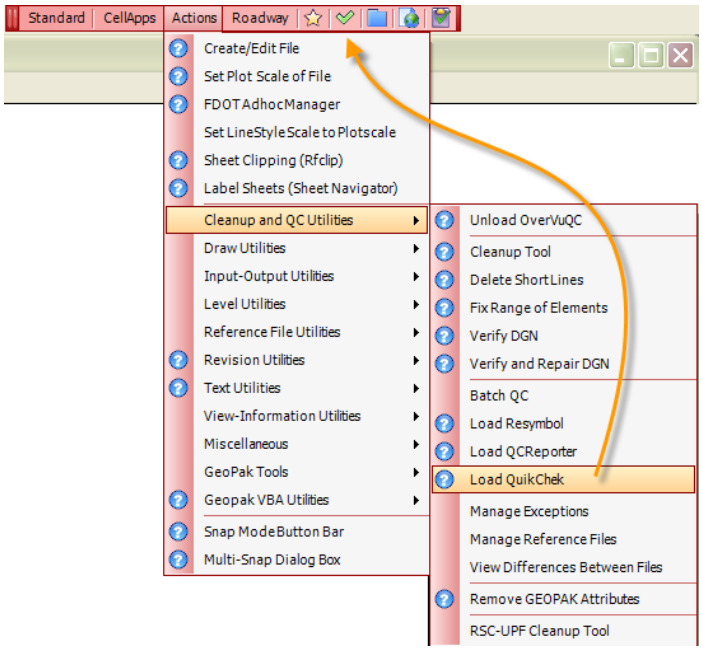
QCCompliance is a tool used to monitor and report adherence of a design file to the FDOT level-symbology standards by checking the compliance of a design file at any time during a MicroStation session and then displaying the Standards Compliance Percentage in the same dialog box manner as OverVuQC. It can be initiated at any time by the user through the FDOT Menu icon within the FDOT workspace of a MicroStation session:

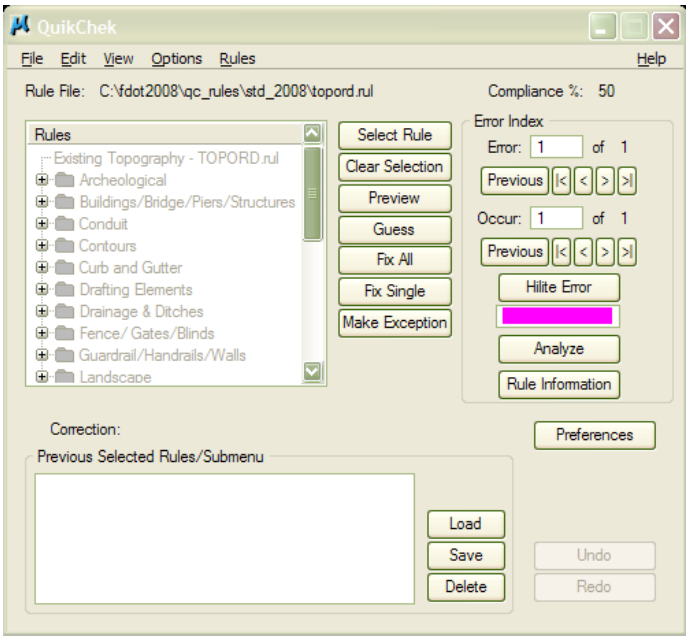


7.5.2.3 QuikChek

QuikChek is a checking and correction tool used to maintain adherence of active models of design files to the FDOT level-symbology standards by identifying non-standard elements, allowing for corrections and exceptions, writing the compliance information to the design file for QC reporting purposes and then displaying the Standards Compliance Percentage for the user in the same dialog box manner as OverVuQC. It can be initiated at any time by the user through the FDOT Menu within the FDOT workspace of a MicroStation session:

(Drop-down: ***Actions / Cleanup and Utilities / Load Quikchek*** or icon)

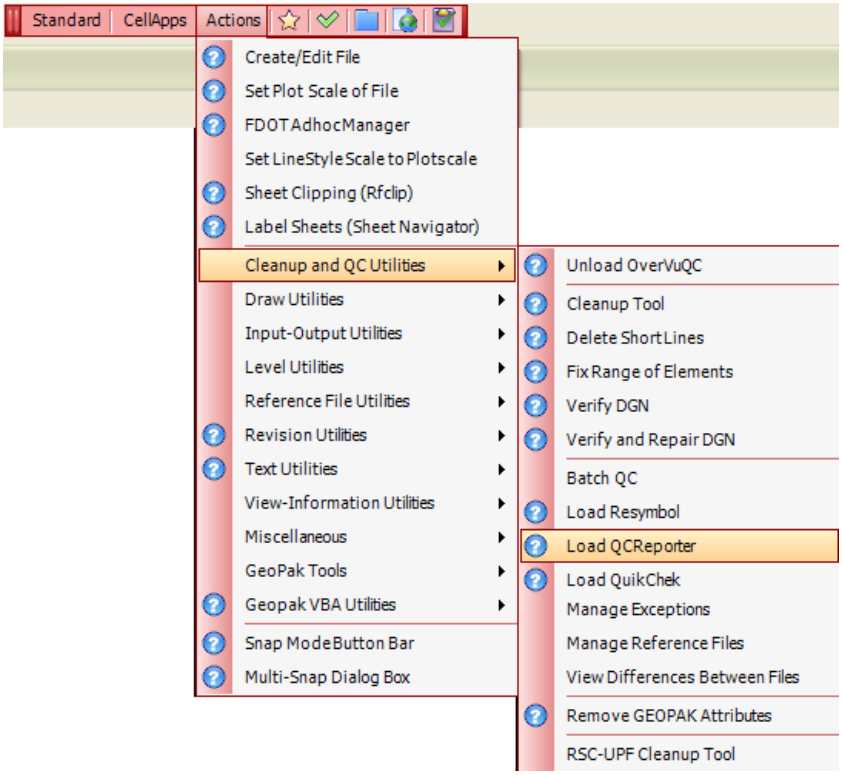


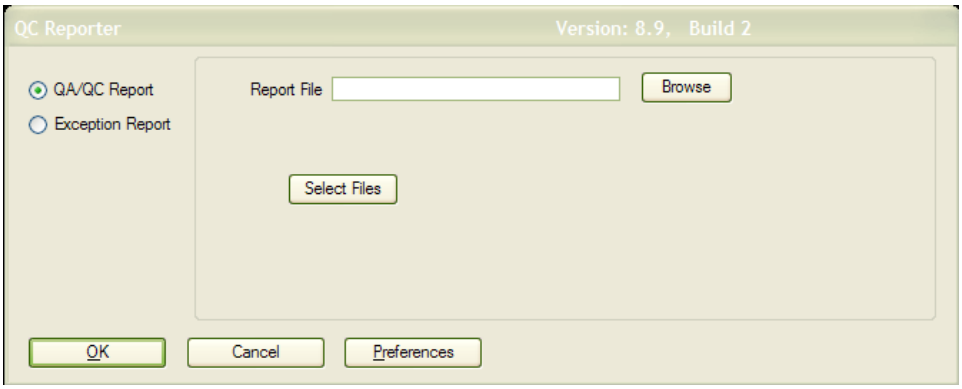


7.5.2.4 QCReporter

QCReporter is a reporting tool used to create, save and display a QC Report of the compliance information stored within design files by the QC processes Quikchek, OverVuQC, QCCompliance and QCChecker. It can be initiated at any time by the user through the FDOT Menu within the FDOT workspace of a MicroStation session:

(drop-down: ***Actions / Cleanup and QC Utilities / Load QCReporter***):





The QC Report is a required submittal component of the FDOT Electronic Delivery process, read specifically by the FDOT Filechecker application. It is created in the form of an ASCII text (.txt) file located in the *\<Project>\<discipline>\eng_data* directory and performed on a user selected group of design files in various directories. The QC Report is a critical indicator of the quality of the level-symbology found in design files. It is not a definitive means to judge the compliancy of the design file, but a tool to gauge whether or not proper procedures and standards have been met. Final compliancy approval lies with the appropriate authorities of each project.

The QCReporter does NOT perform a QC compliancy check on the selected design files, but ONLY reports the compliance information recorded within the design file by the various QC processes previously run. This makes reporting fast and efficient and steps can be taken to ensure that the information is current.

The QC Report includes information on all models within the selection set of design files, whether or not any QC process has been performed or the file has no graphical elements or exceptions created and reported under the headings described below:

Design File Name – includes location path and Model name.

Process – QC Processes performed (or No Process Performed) on Model.

Date – Date QC Process was last performed.

Compliance – Percentage to which the design files adhere to FDOT level-symbology standard at the time of the last QC Process.

Added Since – Percentage of change since the last QC Process was performed. A percentage is entered here when the design file is closed without a QC process run or the automated OverVuQC is turned off.

Rule File – FDOT level-symbology standard associated with a specific FDOT standard filename.

User – User ID of the last user to perform the QC Process.

Global Origin; and ***Working Units.***

qcreportrdwy.txt - Notepad

File Edit Format View Help

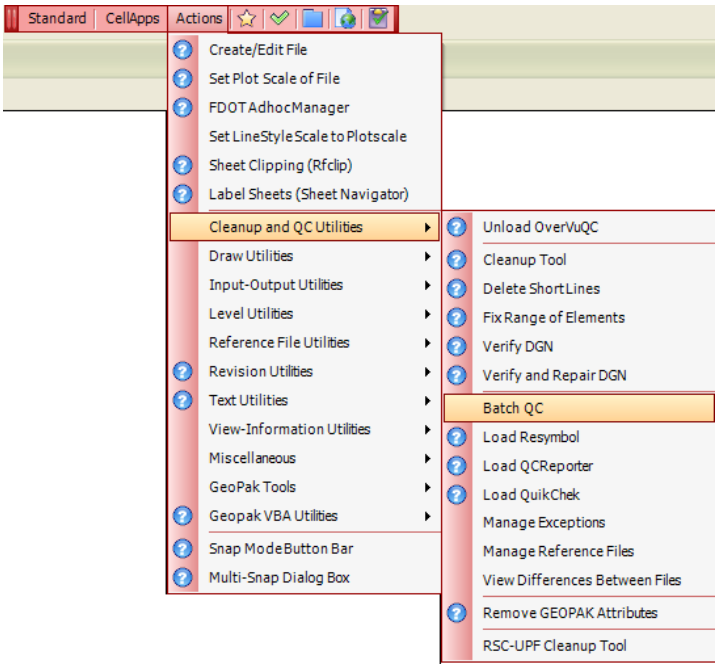
```
GDM Software QC Summary Status Report    Date: 2007:12:20:19:49

Design file name
c:\e\projects\12345678901\roadway\algnrd01.dgn, Default
     Process     Date           Compliance  Checks  Added since  Rule file      User
     QuikChek    2007:12:20:18:04  100.00%     N/A        0.00%  algnrd.rul   xyzabcde
     Global Origin:     x:7045.55     y:7045.55     z:7045.55      OK
   Working Units: Survey Feet/"      Resolution:  304800     Status: OK
     2D/3D:        OK

c:\e\projects\12345678901\roadway\bdxsrd01.dgn, Pattrd
     QuikChek    2007:12:20:18:04  100.00%     N/A        0.00%  rdxsrd.rul   xyzabcde
***** No Graphical Elements Found
     Global Origin:     x:7045.55     y:7045.55     z:7045.55      OK
   Working Units: Survey Feet/"      Resolution:  304800     Status: OK
     2D/3D:        OK

c:\e\projects\12345678901\signals\dsgnsg01.dgn, Default
     This file has not been processed.

c:\e\projects\12345678901\signing\pdplrd01.dgn, Default
     Process     Date           Compliance  Checks  Added since  Rule file      User
     QuikChek    2009:02:09:11:41   13.00%     N/A        0.00%  drprrd.rul   knasdsm
***** Exceptions
        ExceptionForTesting1            Occurences:2
                ExceptionForTesting1 - description for testing 1
        ExceptionForTesting2            Occurences:3
                ExceptionForTesting2 - description for testing 2
        ExceptionForTesting3            Occurences:3
                ExceptionForTesting1 - description for testing 3
     Global Origin:     x:7045.55     y:7045.55     z:7045.55      OK
     Working Units:      Master:12(')      Sub:25400(")      OK
     2D/3D:        OK
```

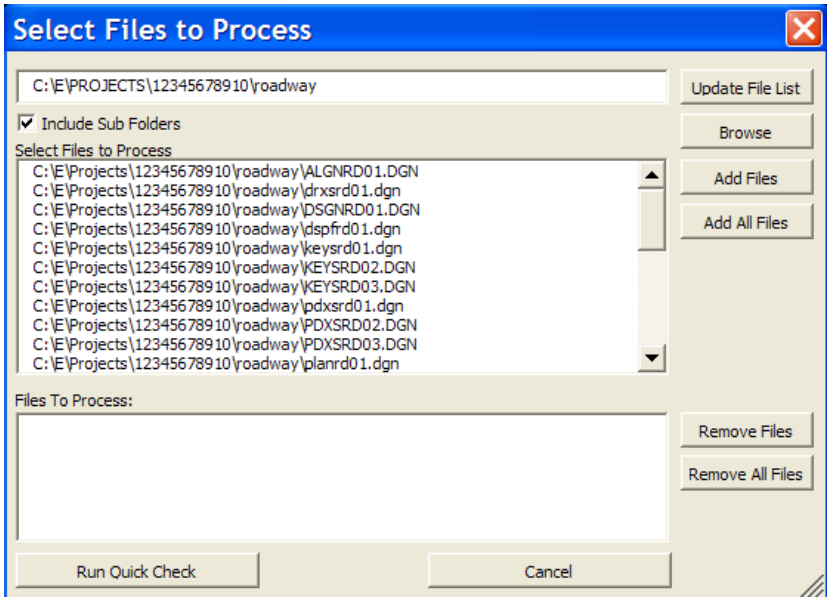
7.5.2.5 Batch QC

The Batch QC is a batch tool used to monitor adherence of design files to the FDOT level-symbology standards by running a compliancy check (only) on a selected group of design files in various directories. It is designed to run within the FDOT workspace in a MicroStation session, executing the QuikChek application on each selected design file, including all models within each design file. This application can be initiated at any time by the user through the FDOT Menu within the FDOT workspace of a MicroStation session:

(Drop-down: ***Actions / Cleanup and Utilities / Load Batch QC***)

Note *This is an alternative batch option (compliance check only) to the QCChecker application. See Section 7.5.2.4 QCChecker of this document.*



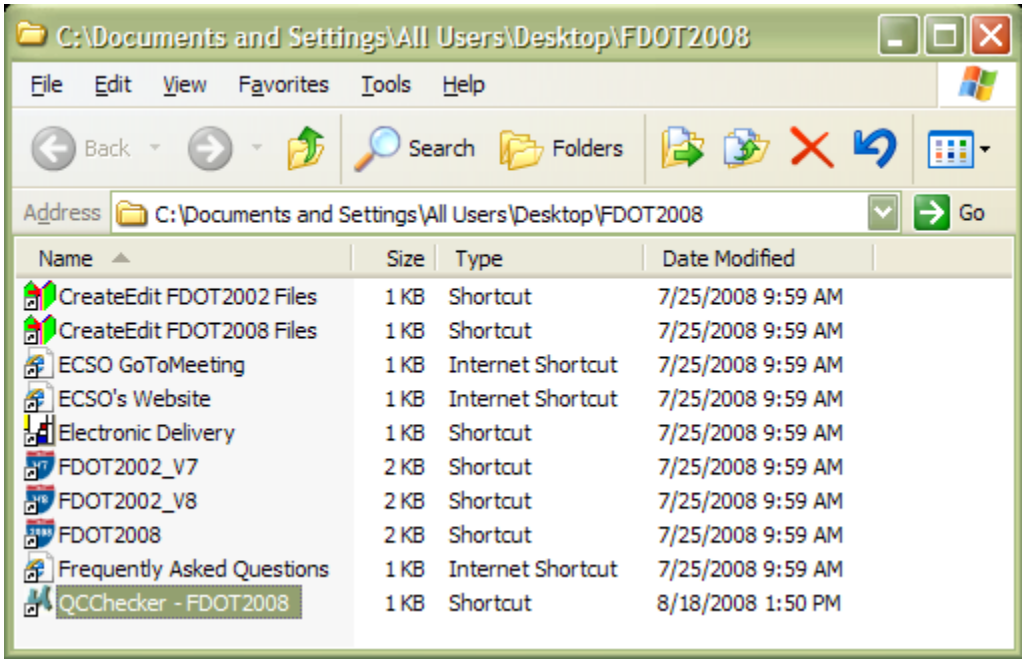


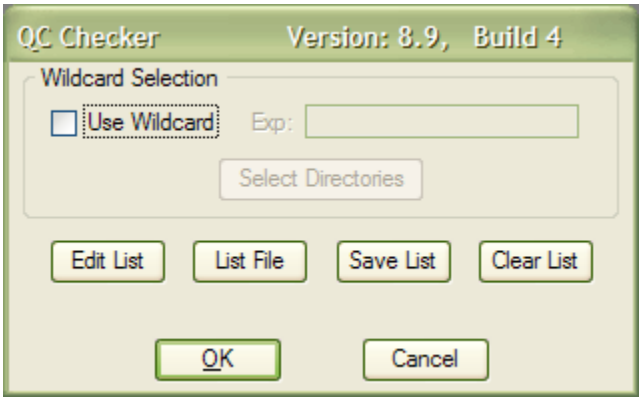
7.5.2.6 QCChecker

QCChecker is a batch tool used to monitor and report adherence of design files to the FDOT level-symbology standards and create a QC Report of a selected group of design files in one or multiple directories. It is designed to work outside of MicroStation, executing the QuikChek application to perform a compliancy check for each design file of the selection group, then executing the QCReporter to create, save and display a QC Report required by the FDOT Electronic Delivery process.

Note *FDOT provides an alternative batch option (compliance check only) through the FDOT Menu option within the FDOT workspace of a MicroStation session. See Section 7.5.3 Batch QC of this document.*

QCChecker can be initiated by the use through the FDOT2008 desktop folder icon:





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Chapter 8 - ELECTRONIC DELIVERY PROCEDURE

CADD Production Criteria Handbook

8.1 GENERAL

The delivery of an electronic plan set is a first step in the Department's goal of achieving a total electronic workflow for the life of a project. Processes manifested in software have been developed, herein referred to as “Electronic Delivery”, to help accomplish that goal. Software is available from the Engineering / CADD Systems Office called the FDOT2010 CADD software and subsequent updates distributed on the FDOT Engineering / CADD Systems website (Note: For reasons associated with proprietary licensing of certain software products, distribution of updates inside FDOT may vary from distribution methods used outside FDOT). The software addresses the challenges in three phases: Pre-Production, Production and Post-Production operations.

The timeline of electronic delivery tasks performed on a project cannot be identified as linear - It is difficult to describe the electronic delivery process as an itemized list of sequential tasks. Some tasks, such as creating a seed project, will only be performed once during the lifespan of the project. Other tasks, such as journaling, signing and sealing files, or maintaining a project index work best when performed throughout the project’s lifespan.

The electronic delivery process is centered on the preparation and use of secured project deliveries. The delivery preparation process of a project's lifecycle, differentiated by the type of work performed, can be divided into three phases:

- **Preproduction**

The first phase of the project is by far the shortest and only performed once. All tasks performed during this phase center around preparing the folders and files needed for electronic delivery. The FDOT 2008 suite contains tools needed to create a seed project which will provide the files necessary to begin production.

- **Production**

The second phase of the electronic delivery process centers on the tasks involved in producing the delivery and a secure file set to the FDOT. This phase not only includes the production of design work for the project, but a number of maintenance tasks that assist in electronic delivery, such as preparing a project journal, indexing sheets, preparing reports, signing and sealing sheets, and other non-design related activities. The FDOT2008 suite includes a number of tools that help to facilitate these tasks.

- **Postproduction**

Once the design of a project has been completed, packaged, secured and delivered to the Department, certain activities will be done by the Department to authenticate the data, preserve, and advance the project to letting. An important aspect of postproduction is to consider the maintenance of file security. Once a delivery is secured by PEDDS, the files may not be altered in any way. Once again, the FDOT2010 suite offers a toolset to perform the tasks needed during this phase.

8.2 GLOSSARY

The following terms are used throughout the Electronic Delivery documentation:

Authentication — The process of comparing the PEDDS generated message digests (SHA-1 Hash Codes) of the Manifest file and Signature files for an on-hand delivery to those appearing on a PEDDS generated, signed Manifest Document (paper) for a specific delivery. This process is similar to validation, but extends the process to the signed paper Manifest Document.

Bid Set — A file set consisting of a data sub-set derived from the project data set (Project CD) containing only those items needed to prepare a project for advertisement and letting. The file set may also be stored or transmitted electronically. Note that the files needed for this set remain in the folders where they were located in the project data set. All remaining empty folders are deleted for the Bid Set. The SetMaker application is typically used to create the Bid Set from the project data set.

Change Report — An HTML report that is created by the Project 'Delta' application. It contains information about sheet-specific differences between a secured, delivered file set and a new, corrected file set. This report is named and placed anywhere by the user. It is a comparison between the indexes (ProjectIndex.XML) of an earlier delivery of a project, and a contemporary delivery of a project. Also see Revision Report. (See Section on Revisions in regards to file naming convention; however the name of the report is DeltandxN.htm, where N is the revision number.)

Compliance Certification Worksheet — A document that contains the data producers' certification that all items required by the FDOT CADD Manual and this Handbook are included in the project.

Composite PDF — A single document which contains all plan sheet images in index order. This file must be in Adobe Portable Document Format, reside in the project's root directory, and is generally titled 'Project.pdf' for an original delivery. During the revision process, PDF files are created called ProjectN.pdf that contains the state of the plans at the time during a specific revision N. This revised PDF file is named 'ProjectRevN.PDF,' where N is the number of the revision.

In addition, a second PDF is produced for the courtesy of the contractor called RevisionN.pdf which is a subset of ProjectN.pdf and only contains those sheets which were revised for the revision numbered N.

Component — A categorization of design plans as defined in Chapters 2 & 3 of the FDOT Plans Preparation Manual, Vol. 2. The list of plans components for electronic delivery is comprised of the following:

1. Roadway Plans
2. Signing and Pavement Marking Plans
3. Signalization Plans
4. Intelligent Transportation System (ITS) Plans
5. Lighting Plans
6. Landscape Plans
7. Architectural Plans
8. Structures Plans
9. Utility Joint Participation Agreement Plans

As such, all applications in the electronic delivery suite of tools can only recognize the components listed above. The components do not directly correspond to the project directory structure. For example, Drainage files have a \drainage folder at the root level of the project, but are to be included as part of the Roadway Plans component.

Delivery — A set of electronic files—generally corresponding to a Department work-project—secured by the PEDDS process, plus additional project metadata.

Delivery Key — A unique message digest (SHA-1 hash code) used to reference the delivery. The delivery key is the message digest (hash code) of the delivery's Manifest file.

Electronic Delivery Indexer (EDI) — Electronic Delivery Indexer, or EDI, has been developed to provide users with the ability to quickly build an index for a set of plans. It is designed to work in conjunction with the Department's core CADD platforms and the FDOT workspaces and associated applications. EDI also helps develop the project Journals, and helps produce plotted image files of the plans sheets.

Hash Code — See Message Digest.

File Checker An application to assist with the verification of QC compliance for adhering to certain Electronic Delivery standards, such as directory structure, file naming, etcetera.

Index An XML file created by the Electronic Delivery Indexer that contains metadata concerning all files that have been identified as sheets in a project directory. Indexed metadata is contained in 'Index.XML' and the plans index extracted from that is titled 'ProjectIndex.XML' (regardless of revision number). These files must reside at the root of the project. These are the only files that the Electronic Delivery suite of tools recognizes as official indexes.

Journal Documentation that is included with a project, detailing the decisions made, methods used, and actions taken on the project as they occur. This is maintained in the form of electronic documentation, comprising all the journal files for the project. The Professional of Record is responsible for the overall journal for the project. In the FDOT2004 software suite, Journal files are .XML format files maintained by the Electronic Delivery Indexer (EDI) in the projects \data sub-folder. For post-FDOT2004 projects, Journals can be Rich Text Format (RTF) files.

Letting The process of advertising, selection, and award of a contract for the construction of a project.

Manifest Document A signed paper document used to secure a Manifest file, and to reference the Signature files in a project delivery corresponding to the manifest. By signing the Manifest document, one has associated their name to the Manifest file that corresponds to the hash code appearing on the paper document. The Manifest file lists the project files by their relative URL and the files' SHA-1 hash-codes, thus the signatory has signed the files listed in the manifest.

Manifest File The XML file, created and maintained by PEDDS to define and secure the entire contents of a project delivery. This file is titled 'Manifest.XML' and will always reside in the project's _meta_info sub-directory.

Message Digest An alphanumeric string that is generated by a one-way cryptographic hashing algorithm and used by PEDDS to process and identify the contents of a file. This is often referred to as a hash code. Every electronic file has its own unique hash code based on the files' content.

PEDDS The Professionals' Electronic Data Delivery System (PEDDS) is an application used to simplify the tasks involved with file and project security. PEDDS allows users to sign electronic files, ensuring that users can easily test to determine if a project has been changed, corrupted or tampered with.

Project An entity, corresponding to a Department work-project, that uniquely identifies a delivery or collection of deliveries containing electronic files made during the creation of the work-project. Multiple deliveries can occur for a single project, each representing the status of the project at the time of delivery. Projects are identified by the Department through the Financial Project Identification Number and related project identification information.

Project CD A CD containing all data associated with a project, including all files on the Plans & Specs CD, all design files, all reference files, project journals, etc. Though the term refers to a CD, the file set may be stored or transmitted electronically.

Project Delta 'Project Delta' is a report generating application used to simplify the job of keeping track of file changes after revisions and corrections. Users can quickly identify and report on any indexed differences between two deliveries of the same project. Project Delta creates the Revision Report (DeltandxN.htm) and Change Report, where N is the revision number (See Section on Revisions in regards to file naming convention.)

Project Key An alphanumeric character string (a Global Unique Identifier or GUID), generated at the time of project creation (by PEDDS or EDI) that uniquely identifies a project. This number is unique across all projects that are secured using PEDDS and identifies one project and one project only.

Project Root Directory The file system directory that contains all project files and folders. The project root directory should not contain files that do not pertain to the project, nor should files that are part of the project reside outside of the project root directory or one of its sub-folders.

The FDOT project folder structure is defined in chapter 4 of the CADD Production Criteria Handbook.

qSheet 'qSheet' is a printing application which offers a means to print all or part of an indexed project sheet set. qSheet uses the Project Index (ProjectIndex.XML) and Revision Reports (DeltandxN.htm) as input for the user to select files to be printed. (See Section on Revisions in regards to file naming convention.)

Quality Control Reports Reports that must be included with the final project delivery: the Compliance Certification Worksheet and all reports listed therein.

Revision Report An HTML report that is created by the Project 'Delta' application. It contains information about sheet-specific differences between a secured, delivered file set and a new, corrected file set. This report is named 'DeltandxN.htm', where N is the revision number, and is placed in the root folder of the project. It is a comparison between the indexes (ProjectIndex.XML) of an earlier delivery of a project, and a contemporary delivery of a project. Also see Change Report.

(See Section on Revisions in regards to file naming convention.)

Revision Set The set of files that denote changes from one delivery to the next, as well as the Revision Report (DeltandxN.htm) that helps define them. Because Revision Sets are managed as independent entities (and have their own Delivery Keys, but Same Project Key) they must be authenticated and unique signatories must be created and used for each revision set during the project revision process.

(See Section on Revisions in regards to file naming convention.)

Securing Files The act of creating and storing a SHA-1 message digests for a specific file or file set. Message digests and relative file paths are kept in the project's Manifest.XML file, which in turn will allow PEDDS to validate secured files.

Seed Project A seed project is a template folder set that contains all folders as listed in Chapter 4 of the FDOT CADD Production Criteria Handbook, as well as the project configuration files. Once a seed project is created, it is ready for the Production phase.

SetMaker 'SetMaker' is an application to assist in the validation of Projects and provide for the generation of the various types of electronic project file subsets that are required during the lifespan of a project.

SHA-1 Hash Standard US Secure Hash Algorithm 1 (SHA1) is a secure hash standard which produces a condensed representation of a "message" or data file. The SHA-1 is called secure because it is computationally infeasible to find two different files which produce the same message digest (SHA-1 hash codes).

Sheet Electronic Delivery applications recognize a sheet as a discreet image file representing a page in the plans that is listed in the project index. It must belong to a plans component and also be found in a defined discipline sub-folder of the project.

Sheet Index See Index

Sheet Index Report An HTML report which is derived from the project's Index (the 'ProjectIndex.XML' file). The report file must be titled 'SheetndxN.HTM', where N is the revision number, and must reside in the project's root directory. (See Section on Revisions in regards to file naming convention.). Like Project.pdf, the original delivery file name is Sheetndx.htm (omitting the N revision number).

Sheet Navigator The 'Sheet Navigator' is an application which runs inside MicroStation, allowing users to easily browse and open MicroStation files containing sheets for verification or editing. Its purpose is to 'tag' sheets with data that supports later Electronic Delivery Indexing and Plotting. It is a foundation utility for subsequent Electronic Delivery processes and should be run against every MicroStation design file in the project that has sheets, checking sheet data is both extracted and edited properly.

Signatory File A file that defines the project files that a signatory is going to sign, or sign-and-seal. All signatory files are created by PEDDS and reside in the project's _meta_info sub-directory. The signatory file lists each selected file by its relative URL in the project, the SHA-1 hash code of the each selected file, and any qualifiers the Signatory may have placed on his/her signature for a given file.

Signature Document A physically signed or signed-and-sealed paper document used to secure a signatory file. Florida and Federal law accept the association of a physical signature with an electronic document. The Florida Boards of Professional Regulation have adopted rules whereby professionals can electronically sign and seal electronic documents in accordance with these laws. Therefore, by signing the Signature Document, the signatory is, by proxy, signing and sealing all files that are listed in the signature file.

A professional may have multiple signatories in a project, as needed, and as such, may have multiple Signature Documents (and signatory files) associated with a project. The Signature Document for a legal record set must never be lost or separated from the data; otherwise, the data representing the legal record can never be truly authenticated.

Signing Acts of securing a set of files under a signature file without the benefit of signing-and-sealing under Florida Boards of Professional Regulation rules. This implies that the signatory is a lay person and not a professional. Signing a file adds file information to the signatory's signature file.

Signing and Sealing The act of securing a set of files based on the rules defined by the Florida Boards of Professional Regulation governing signing-and-sealing of electronic files. These rules provide for:

- a signature file that defines the type of professional that is signing and sealing (i.e., engineer, surveyor, geologist, landscape architect, etc.)
- the professional's name, license number, and scope of work for the signature
- the list of files— each file in that list defined by the relative URL to the project and the SHA-1 hash-code for each file—that are to be signed and sealed
- any qualifiers the Signatory has placed on the scope of responsibility, usability, or reliability for any of the files

Signing and Sealing can only be done by a professional. Signing and Sealing a file adds file information to the signatory's signatory file.

Strung Project Two or more projects let in the same contract. For electronic delivery, Bid Set CD datasets may be assembled into a directory structure representing the Strung Project. An application called Strung Project is provided to help perform this function. Note that Project CD data sets are never merged for stringing – only Bid Set subsets extracted from Project CD data sets.

Sub-consultant A consultant, separate from the primary consultant, who performs work for a project under the hire of a prime consultant.

Sub-delivery A delivery of files made by a sub-consultant to a consultant, prime consultant or project manager. Sub-deliveries are normally only a portion of the overall project.

Sub-project A complete project that is let with other projects as part of a strung project. One of multiple projects that constitute a strung project. These are referred in the vernacular as 'Lead' and 'Goes-with' projects.

Subset A set of files that is entirely derived from a secure delivery file set. Electronic Delivery contains a tool called 'SetMaker' whose main function is to create subsets from Project data sets.

Validation The automated comparison of file message digests (SHA-1 codes) and signatory security information in the project's Manifest file against information that is calculated from a delivery that is on hand. Whereas Authentication compares the calculated results with those on the printed Manifest Document, validation tests to determine if the project file set was altered since the project was secured.

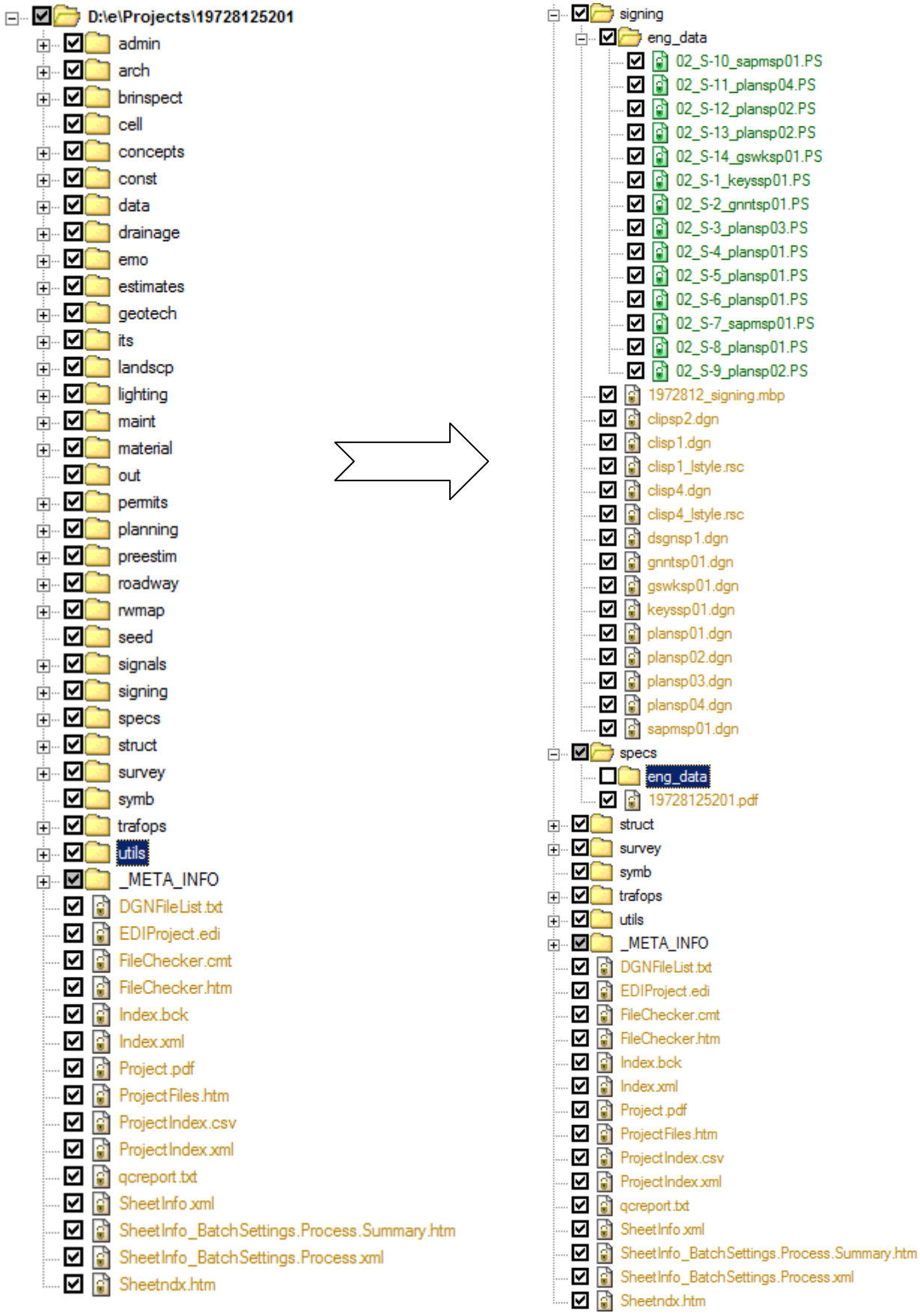
8.3 PROJECT DATA SET CONTRASTED TO THE BID SET

As described in the CADD Manual, the Project Data Set is all the files used or produced during the course of production and delivered in the defined Electronic Delivery folder structure. This differs from the Bid Set used to advertise the project for letting. The Bid Set is a subset of the Project Data Set files that are necessary to advertise the project. This set typically includes an Acrobat PDF file of the plans, an Acrobat PDF file of the Specifications, Signed and Sealed files representing the plan sheets, and so forth. The Bid Set does not normally contain graphics design files, or other native files to the CADD systems used to produce the plans.

A tool called SetMaker is provided and is normally used to create this Bid Set from the Project Data Set. When produced, the Bid Set retains the same folder structure as the Project Data Set for those folders containing files (all empty folders are removed).

On the following page, a project data set directory structure is shown. The second screen capture expands the directory structure to show many of the files that would be delivered in the project data set delivery.

The last screen capture shows the result from the ***SetMaker*** application as it chooses those files (boxes checked) that are to be included in the Bid Set. As you can see, many files are not necessary for the advertisement and folders that do not contain data for the Bid Set are not included.


D:\e\Projects\19728125201
admin
arch
brinspect
cell
concepts
const
data
drainage
emo
estimates
geotech
its
landscp
lighting
maint
material
out
permits
planning
preestim
roadway
rwmap
seed
signals
signing
specs
struct
survey
symb
trafops
utils
_META_INFO
DGNFileList.txt
EDIProject.edi
FileChecker.cmt
FileChecker.htm
Index.bck
Index.xml
Project.pdf
ProjectFiles.htm
ProjectIndex.csv
ProjectIndex.xml
qcreport.txt
SheetInfo.xml
SheetInfo_BatchSettings.Process.Summary.htm
SheetInfo_BatchSettings.Process.xml
Sheetndx.htm
signing
eng_data
02_S-10_sapmsp01.PS
02_S-11_plansp04.PS
02_S-12_plansp02.PS
02_S-13_plansp02.PS
02_S-14_gswksp01.PS
02_S-1_keyssp01.PS
02_S-2_gnntsp01.PS
02_S-3_plansp03.PS
02_S-4_plansp01.PS
02_S-5_plansp01.PS
02_S-6_plansp01.PS
02_S-7_sapmsp01.PS
02_S-8_plansp01.PS
02_S-9_plansp02.PS
1972812_signing.mbp
clipsp2.dgn
clisp1.dgn
clisp1_lstyle.rsc
clisp4.dgn
clisp4_lstyle.rsc
dsgnsp1.dgn
gnntsp01.dgn
gswksp01.dgn
keyssp01.dgn
plansp01.dgn
plansp02.dgn
plansp03.dgn
plansp04.dgn
sapmsp01.dgn
specs
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survey
symb
trafops
utils
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EDIProject.edi
FileChecker.cmt
FileChecker.htm
Index.bck
Index.xml
Project.pdf
ProjectFiles.htm
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ProjectIndex.xml
qcreport.txt
SheetInfo.xml
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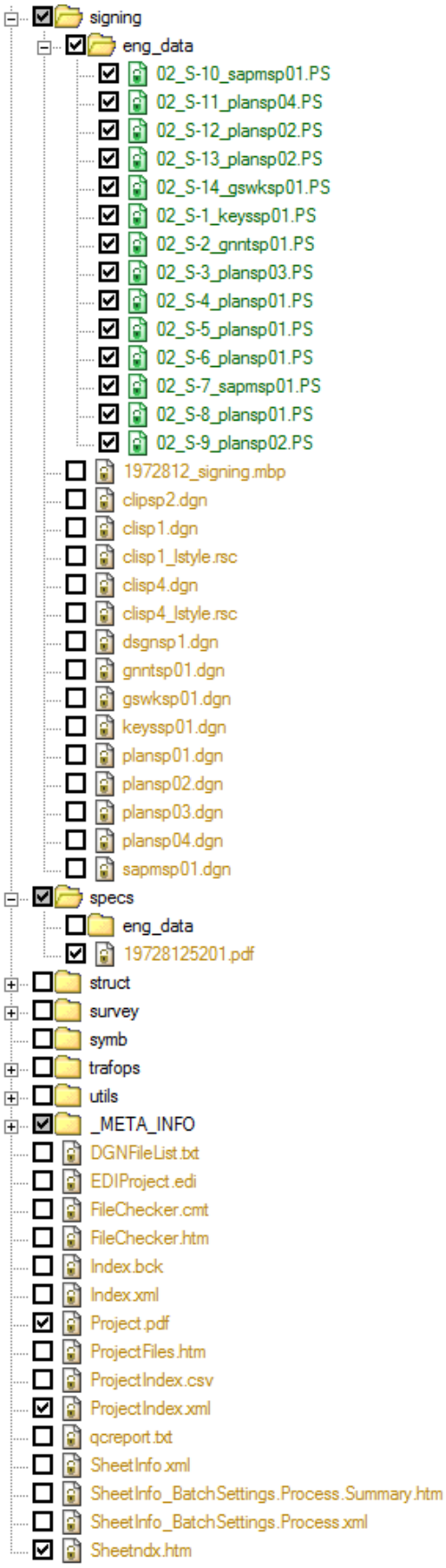
SheetInfo_BatchSettings.Process.xml
Sheetndx.htm


signing
eng_data
02_S-10_sapmsp01.PS
02_S-11_plansp04.PS
02_S-12_plansp02.PS
02_S-13_plansp02.PS
02_S-14_gswksp01.PS
02_S-1_keyssp01.PS
02_S-2_gnntsp01.PS
02_S-3_plansp03.PS
02_S-4_plansp01.PS
02_S-5_plansp01.PS
02_S-6_plansp01.PS
02_S-7_sapmsp01.PS
02_S-8_plansp01.PS
02_S-9_plansp02.PS
1972812_signing.mbp
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clisp1.dgn
clisp1_lstyle.rsc
clisp4.dgn
clisp4_lstyle.rsc
dsgnsp1.dgn
gnntsp01.dgn
gswksp01.dgn
keyssp01.dgn
plansp01.dgn
plansp02.dgn
plansp03.dgn
plansp04.dgn
sapmsp01.dgn
specs
eng_data
19728125201.pdf
struct
survey
symb
trafops
utils
_META_INFO
DGNFileList.txt
EDIProject.edi
FileChecker.cmt
FileChecker.htm
Index.bck
Index.xml
Project.pdf
ProjectFiles.htm
ProjectIndex.csv
ProjectIndex.xml
qcreport.txt
SheetInfo.xml
SheetInfo_BatchSettings.Process.Summary.htm
SheetInfo_BatchSettings.Process.xml
Sheetndx.htm

8.4 REVISION FILE NAME CONVENTIONS FOR ELECTRONIC DELIVERY

The following illustrated the file names used for Electronic deliver in each successive revision.

Revision sequence and naming or the following files (circa FDOT2008 software release, January 2009):

Original Delivery	***Revision 1***	***Revision 2***	***Revision 3***
ProjectIndex.XML	ProjectIndex.XML	ProjectIndex.XML	ProjectIndex.XML
Project.PDF	Project***1***.PDF	Project***2***.PDF	Project***3***.PDF
Sheetndx.HTM	Sheetndx***1***.HTM	Sheetndx***2***.HTM	Sheetndx***3***.HTM
	Deltandx***1***.HTM	Deltandx***2***.HTM	Deltandx***3***.HTM
	Revison***1***.PDF	Revision***2***.PDF	Revision***3***.PDF
ProjectFiles.htm	ProjectFiles.htm	ProjectFiles.htm	ProjectFiles.htm

8.5 PRE-PRODUCTION

8.5.1 PURPOSE

The “Pre-Production Phase” involves creation of a “seed” project electronically, to provide an environment for meeting CADD standards as defined in the CADD Manual and this document. Functions include the specification of the project directory structure, creating a project information file and providing the opportunity to include applicable administrative documents. To ensure a successful environment for the production phase later, it is essential that the project begin correctly so that compliance to FDOT standards for electronic delivery can be met.

8.5.2 OVERVIEW

The Electronic Delivery software contains several tools to create a project directory structure with the appropriate project information file. It also allows the user to provide additional administrative files to be added to the project for delivery to the design team. This newly generated project, referred to as the “seed project,” should be made available to the prime consultant, or the prime consultant could create his own “seed project” with the appropriate information and tools provided. If the prime consultant subcontracts parts of the project, it is the prime’s responsibility to provide to his subcontractors the seed project with the appropriate electronic files. The Electronic Delivery software provides tools to help perform these tasks.

Note *In-house projects are managed through the TIMS project management software, and the district will define the method by which they will initialize in-house projects.*

The software application called *Professionals Electronic Data Delivery System (PEDDS)* has a module that is used to enter key financial, administrative and location data into the project as project identification information. This project identification information is contained in an XML file format (ProjectID.xml). It is the Department’s responsibility to provide much of this information to the consultant. PEDDS should also be used to secure the seed project prior to handoff to the prime consultant or from the prime to his sub-consultant.

Note *It is the recommendation of the Engineering / CADD Systems Office that the “seed project” be created by FDOT and delivered to the consultant via a CD-ROM or other electronic media. Though the initial creation of the project may be accomplished using the Department’s document management system for in-house projects, the production phase requirements for electronic delivery are the same for both in-house and consultants.*

One must not confuse a “PEDDS project” and a “seed project”. The use of “seed” implies growth. A seed project is merely a directory structure with a root directory named with a valid FDOT project ID number. It is a template of directories to be filled with project data during the production phase. A “PEDDS project” means that the seed project directory structure created in the Pre-Production phase must also be introduced to the PEDDS program and made ready for PEDDS processing. Once PEDDS has “done its thing” with the seed directory structure, the directory structure is not only a seed project, but also a PEDDS project. In other words, PEDDS knows about the seed project. Once a given directory structure becomes a PEDDS project, the directory structure can be secured, authenticated, professional signatories can be defined, files can be signed/sealed, etc.

8.6 PRODUCTION

8.6.1 PURPOSE

Successful electronic delivery and future utilization of project data requires both compliance with standards and documentation of the methods and decisions used to produce the CADD deliverable. The “Production Phase” incorporates several functions to be accomplished, including the creation of files to FDOT standards, the documentation of those files, and the electronic securing and packaging of them. There are also output specifications called for in the CADD Manual and documented in this Chapter. FDOT provides the necessary tools in the Electronic Delivery Software to perform many of the tasks as set forth in this Handbook and to achieve the requirements for electronic delivery as defined in the CADD Manual.

8.6.2 OVERVIEW

If the seed project was secured with PEDDS, the recipient of the project should also authenticate the project files with PEDDS prior to beginning work on the project. This authentication process, while not absolutely required, will familiarize the user with PEDDS and will provide an instance of actual review of the hash codes from the signatory reports provided by the Department with those generated by PEDDS during the authentication process. This process is true authentication of data. If the hash codes generated by PEDDS do not match those on the paper reports, something has changed in the seed project data provided by the Department since the time it was packaged and delivered to the designer. Though the seed project at this point is not a legal record set, in concept this exercise will help strengthen the emphasis we have placed on physically securing the paper signatory reports and show their importance in maintaining a legal record set of the final secured data sets delivered to the Department.

During the production phase of the project, the designer should create and maintain the project index and journal files. At the end of the production phase, several tasks must be performed prior to the creation of a CD-ROM meeting FDOT electronic delivery requirements specified here and in the CADD Manual. Prior approval should be obtained for any other media, such as DVD, to be used for electronic delivery.

A summary listing of these tasks and required output include:

- Understand and follow the directory structure and file naming requirements for electronic delivery
- Draw CADD files to FDOT Standards as defined in this Handbook, using the workspaces and resources provided. Deliver any non-standard user created CADD resources, such as cell libraries, etc.
- Use the Sheet Navigator application in MicroStation to test that each design file containing sheets is properly identified and tagged with the sheet administrative data. Every sheet should be accounted for by this application, unless the source of the sheet is external to MicroStation (i.e. a scanned file).
- Document all approved deviations from FDOT standards in the project journal file(s).

- Document important methods used and decisions made during design in the project journal file(s), including deviation from Department standards.
- Create required engineering data and quantity output files for each discipline (also defined in this Handbook).
- Generate Quality Control (QC) Reports for all design files using the CADD QC tools provided. These reports indicate compliance to file naming and CADD element symbology standards.
- Merge any external project files into the project directory structure, including all files from sub-consultants, external reference files, scanned images for sheets (if any) and specifications documents.
- Create final Postscript (or PDF) images from MicroStation design files containing the sheets.
- Bundle any non-standard MicroStation dependent resource files into the project sub-directory **\symb** (to also include user created fonts and/or line styles)
- **\cell** (to include project specific / user created cell libraries).
- Check for any duplication of files and resolve (documenting reasons for duplications, if any). Remove non-essential file duplication.
- Using the Electronic Deliver Indexer (EDI), create the indexes of plan sheets and files. EDI is also used to batch plot sheets to Postscript image files.
- Using EDI, create final versions of the Index reports, including an HTML format version for use in the letting.
- If a revision, create the Revision Report (Deltandx***N***.htm) using the ProjectDelta application.
- Subsequently using EDI, create the composite Acrobat file (Project***N***.Pdf) of all the plan sheets. Likewise, if the project represents a revision, create the revision PDF (Revision***N***.pdf) containing those sheets that were revised.
- Electronically sign and/or sign and seal files (plan sheets and specifications files, engineering reports, etc.), as required, using PEDDS.
- Review the project for completeness and accuracy. The application FileChecker is provided to help assist with this task.
- Secure the entire project dataset with PEDDS for electronic delivery to FDOT.
- Create the Secured Project CD (or DVD) with the appropriate labels and the required checklist and PEDDS documents.
- If required by the District, create the Bid Set dataset using the SetMaker application, which contains the data used for advertising the project for letting, or for distributing revisions with the appropriate label and PEDDS documents.
- If the project is a Strung Project, use the Strung Project application to create the data set from Bid Set data sets created in the previous step. Secure the Strung Project delivery with PEDDS.
- Create Bid Set CD with the appropriate labels and PEDDS documents.
- Authenticate hardcopy media (CD-ROM, DVD-ROM, etc) with PEDDS to ensure the data is readable and represents the secured project delivery.

8.6.3 ENGINEERING DATA

In addition to the delivery of all files used or produced during the course of the project, the **FDOT CADD Manual** requires the inclusion of *engineering data files* for critical geometrics in the design of the transportation facility. These include the alignments, profiles, cross sections, and quantity details. Critical geometric items like the centerline and profile of the proposed mainline roadway, side streets, special ditches, utilities, etc., should be included. The geometric files delivered must contain sufficient data for the Department, or any customer to reconstruct these critical geometrics in any design package in the future. The engineering data files delivered with the project will comply with the standards defined herein. This is applicable for all CADD projects produced by and for the Department, regardless of the software packages used to develop the project.

- **Syntax for Standard Electronic Engineering Data**

The following provides the required syntax for the engineering ASCII files transmitted to FDOT for a project as part of the electronic data delivery requirements. The syntax covers basic route geometry element types, and is readable by FDOT software systems. FDOT has standardized the a more universally supported format, namely the LandXML. Specific information about the LandXML formats can be found at http://www.landxml.org, and defines a data exchange format for:

Point data	Profiles
Curve data (circular arcs)	Cross Sections
Spiral data	Terrain Models
Chains (with station equations)	Hydrology and Hydraulics

- **Cross Sections**

Although LandXML also defines a specification for the exchange of cross section data, the Department has legacy systems (Multiline) that do not support LandXML cross sections. The designer shall also create and deliver the cross sections in an alternate ASCII text file format (GEN file) as defined herein, ensuring that each set of delivered cross sections for the project has a matching ASCII text file. These include existing ground terrain, bottom of the proposed template, undercut lines, muck lines, limits of construction, etc. as defined in FDOT Design Standards Indexes 500, 505 and 506.

The cross section ASCII text file format (*filename*.GEN) referred to as the *Multi-Line General File format*, can represent cross sections, alignment station equations, horizontal offsets and limits. Deliver GEN file cross section data in a separate file from the alignment geometry (which is LandXML). The ASCII text file format is documented in the following pages.

- **Comments Section**

This section of the surface definition contains records that are comment in nature. The information that should be included in these comments is:

  - Definition of what each Limits Table represents
  - Definition of what the surface or surface feature code represents
  - Definition of the Alignment and Profile (if applicable) that is referenced by the Cross Section data. The geometry of the alignment is not contained in the .GEN file, so adequate description needs to be documented so an end-user of the data can establish the proper relationships.

- **Station Equation Section**

If station equations are present in the cross sections, an **EQUATIONS table** must be present defining the region over which those equations apply. A new station equation region is started when a station equation is introduced into the alignment, where the ahead stationing differs from the back stationing at the given cross section where the equation is introduced.

- **Limits Table Section**

If the project has lateral limits represented in the cross sections (such as excavation limits, construction limits, R/W, etc.), these limits will be represented in a **LIMITS table**. The **LIMITS** table represents a pair of offsets at a particular cross section where a limit or pair of limits exists. A new **LIMITS** table will be included for each set of limits produced for a particular cross section or set of cross sections.

- **Cross Section Data**

The cross section for each surface represented is introduced with the command **GROUND** followed by the surface definition. For each type of surface (i.e. Existing Ground, Proposed Template, Subsoil Excavation, etc.), a **GROUND** section will appear in the format covering the station range for which that surface applies.

Standard Surface Descriptions	Line type
Roadway Sub_Design Template	A
Original Borrow Terrain	B
Tolerance Line	C
Original Channel Terrain	D
Extra Depth Subsoil	E
Final Roadway	F
Final Subsoil	G
High	H
Final Borrow	J
Final Channel	K
Low	L
Channel Template	O
Pre_Construction Roadway Terrain	P
Roadway Template Bottom of Base	R
Roadway Template Top of Surface	S
Original Roadway Terrain	T
Unassigned	I, M, N, Q, U, V, W, X , Y

For a given station on a particular surface, the station, the region that the station falls in and the points on the cross section (represented by offset elevation pairs) are entered on a line.

- The points are ordered left-most offset to right-most offset as you read left to right along the line.
- White space separates the offset and elevation and the adjacent offset/elevation pairs (other points on the cross section).
- Offsets left of centerline are indicated by a minus sign "-" in front of the offset. Offsets right of centerline are unsigned.
- A zero offset point (centerline) is not necessary, but is highly recommended, as that would leave no confusion concerning how to interpolate the centerline elevation.
- The maximum line-length is 132 characters, so multiple lines may be used to include all of the points necessary for a given surface on a particular cross section.
- Each surface definition must be provided in the complete format as shown. Only station equations and limits tables' sections may be omitted from a surface definition if they do not exist for the given cross sections.

- **Example of Comments section:**

  $ These are cross sections for Centerline US9A

  $ This data is in ENGLISH units

  $ Limits Table A is Federal Aid Participation limits

  $ Surface EXIST is Pre-Construction Existing Ground

  $ Horizontal Alignment is CHAIN SR9A1

  $ Feature of Surface EXIST is feature code EXIST

  Notes on the format above:

  - Keyword "$" precedes any remarks needed
  - Description of any included Limits Tables
  - Description of any surfaces included (i.e. Surface EXIST)
  - Alignment referenced by the cross section data
  - Feature code assignments
  - Other comments as necessary

- **Example of Equations section:**

  EQUATIONS

  EQ R1 23+50.000 23+10.000

  EQ R2 24+76.000 24+90.000

  EQ R3 53+22.000 53+55.250

  END EQUATIONS

  Notes on the format above:

  - Keyword "**EQUATIONS**" to start station equation section
  - 1st station equation region "1" begins at station 23+50 back, 23+10 ahead
  - 2nd station equation region "2" begins at station 24+76 back, 24+90 ahead
  - 3rd station equation region "3" begins at station 53+33 back, 53+55 ahead
  - Keyword "**END EQUATIONS**" to end station equation section

- **Example of Limits section:**

  LIMITS TABLE A

  LI 23+00.000 -42.000 39.000

  LI 24+00.000 R1 -46.000 34.000

  LI 25+00.000 R2 -46.000 34.000

  LI 54+00.000 R3 -50.000 30.000

  END LIMITS

  Notes on the format above:

  - Keyword "**LIMITS TABLE**" to indicate offset limits
  - Limits are defined with keyword "**LI**" followed by **station** and **region**. The leftmost offset is first (negative if left of centerline, positive if right) and rightmost is next. If more than one set of limits are needed per station, a second limits table (In this case "LIMITS TABLE B") may be required.
  - Keyword "**END LIMITS**" indicates the end of the end of limits table.

- **Example of Cross Section Data (in this case existing Ground sections):**

  GROUND EXISTING GROUND SURFACE

  XS 23+00.000 -60.000 21.300 .000 18.300 50.000 16.700

  XS 24+00.000 R1 -50.000 17.000 .000 16.300 30.000 14.000

  XS 25+00.000 R2 -50.000 17.000 .000 15.800 30.000 14.300

  XS 26+00.000 R2 -50.000 17.000 .000 15.600 30.000 14.600

  XS 27+00.000 R2 -50.000 17.000 .000 15.900 30.000 14.800

  XS 28+00.000 R2 -50.000 17.000 .000 16.300 30.000 15.100

  XS 28+50.000 R2 -50.000 17.000 .000 16.500 30.000 15.400

  XS 29+00.000 R2 -50.000 17.000 .000 16.800 30.000 14.800

  XS 30+00.000 R2 -50.000 17.000 .000 16.300 30.000 14.500

  XS 31+00.000 R2 -50.000 17.000 .000 16.100 30.000 14.300

  XS 32+00.000 R2 -50.000 17.000 .000 15.800 30.000 14.700

  XS 33+00.000 R2 -50.000 17.000 .000 15.600 30.000 14.300

  END GROUND

  Notes on the format above:

  - Each surface defined in the cross section will have its own set of data given in the format as shown.
  - Keyword "**GROUND"** shall be followed by comments identifying the surface.
  - Keyword "**XS**" followed by station, region, and offset, elevation pairs (up to 132 characters per line)
  - Keyword "**END GROUND**" indicating end of cross sections

Other **GROUND** sections should be included for the finish surface of the proposed roadway, as well as the bottom of the base, sub grade, and any other soil layers that must be excavated (A4, A6, A8, etc).

Other Ground Sections might start like the following, indicating the surface being represented by the data:

GROUND MULTILINE DATA LINE TYPE R ← Roadway Template Bottom of Base

GROUND MULTILINE DATA LINE TYPE T ← Original Terrain

For a step by step demonstration of importing an ASCII text file in Multi-Line Earthwork, go to the ECSO Training website: *http://www.dot.state.fl.us/ecso/main/fdotcaddtraining.shtm*

- **Quantity ASCII Text Files**

Engineering data supporting quantity calculations will be retained according to the guidelines and formats defined by Final Estimates in the Computation Methods for Design, Construction and Final Estimates Handbook.

8.6.4 MERGING EXTERNAL PROJECT FILES

Two groups of files must be merged into the main project directory structure prior to securing the project for delivery. These include MicroStation dependency files and files provided from outside sources, such as those produced by sub-consultants.

- **MicroStation Dependency Files**

Certain MicroStation files that are used, or referenced might reside external to the project directory during the production phase. Before delivery to FDOT, these files must be placed in the appropriate locations within the FDOT project directory structure. It is highly recommended that these files be included early on in the project, and verified that the referencing systems used by MicroStation function properly with the files located in the required delivery locations. Reference files must also be located without the “save full path” option, and should be located by MicroStation by their relative paths from the root project directory.

For plotting purposes, any user created MicroStation custom line style, font resource, and cell library files used for the project must be packaged with the project in the sub-directory **\symb**. In addition, any external design files that are referenced, such as sheet border files, must be copied to the project directory. This will allow future customers of the data to be able to view, or recreate MicroStation plots matching those that were part of the original delivery.

- **Files from Outside Sources**

Files that come from an outside source include files produced by a sub-consultant. Files from sub-consultants shall be delivered to the primary consultant, or the in-house designer, following the same requirements for electronic delivery. The sub-consultant shall return to the prime only those files for which he is responsible. These files must be merged into appropriate discipline directories prior to delivery to FDOT. Tools are available in FDOT’s Electronic Delivery software suite to assist the user with these operations.

8.6.5 REVIEWING THE PROJECT

After all project files have been merged into the FDOT project directory structure, and prior to securing the project with PEDDS, the files to be submitted should be thoroughly reviewed. The checklist found in the Electronic Delivery software should be employed to help the user consider critical milestones in this important review. There are several tools available in the Electronic Delivery software to help with the review. One tool available is the FileChecker utility. Consult the available documentation for the ED software and training materials that are available on the use and operation of the software tools.

The SheetNavigator is used in MicroStation to ensure that all sheets are accounted for and have the proper sheet numbers, descriptions, County name and Financial Project ID numbers, etc.

- Take particular care to look for missing sheets, gaps in the numbering scheme, or more than one sheet with the same sheet number.
- Make certain the Electronic Plan Note appears on all plan sheets indicating the source of the official record (SheetNavigator can assist with the placement of this note).
- If SheetNavigator indicates all sheets are accounted for, the project should be further reviewed with the Electronic Delivery Indexer (EDI).
- Also, ascertain whether an image file (.PS, .PDF, or .TIF format) is available for each sheet in the electronic plans.
- It is also important to review the Electronic Document Management System (EDMS)/ Comments about particular files using the Electronic Delivery Indexer. These comments should supplement the documentation in your project Journal(s).
- Double-check that the Journal(s) for the project is complete and accurate.

FileChecker can be used to find multiple files in the project directory structure with the same file name, but different content. Likewise, it can find files with the same content, but different filenames. These tools should be used to find and resolve potential file naming problems.

Once the user is certain all components of the project are accurate, correct and complete, PEDDS will be used for Signing and Sealing. PEDDS will also be used to secure the project before delivery to FDOT. Upon receipt of the delivery, FDOT will authenticate the data delivered using PEDDS and the manually signed/sealed paper signatory reports. See PEDDS software help for detailed instructions on usage.

8.6.6 SIGN AND SEAL PROJECT FILES

The requirements for sealing information stored in electronic files have been defined by the Board of Professional Engineers in Rule 61G15-23.003, F.A.C.(see other Boards of Professional Regulation rules for Surveyors, Geologists, Registered Architects, and Landscape Architects) and Volume I, Chapter 19 of the FDOT Plans Preparation Manual. For each professional in responsible charge who is signing and sealing files in a project, the PEDDS program generates:

- A Signature file, which defines the files that are being signed and sealed (this is an XML format file found in the *_meta_info* directory of the project). The signature file identifies files signed by the professional Signatory - including the file's SHA-1 hash code, and any qualifiers (conditions) the signatory placed on the signing of a particular file.
- A Signature Document (a report to be printed) that is signed, dated, and sealed by the professional Signatory with an impression seal.

Note *Finished sheets that will imminently become Signed and Sealed electronically should bear the electronic signature note as shown in the FDOT Plans Preparation Manual exhibits. During the early course of plans preparation, the note should not be applied to sheets to minimize the potential for confusion by a recipient that a sheet may be signed and sealed (the eventual intention), but at the time is not.*

- **Signature Document**

The Signature document is a report generated by PEDDS after a signatory elects to sign and seal selected files. This document is printed, signed, dated, and sealed with a metal impression seal by the professional in responsible charge of the work. This document secures the files signed and sealed by the professional, using the SHA-1 hash code computed for the signature file itself. If a non-licensed signatory selects files to sign (typically using his/her driver's license number), then the signature document is printed, signed and dated, but is not sealed with an impression seal.

Important: The signature document must be preserved and protected and must never be lost or separated from the data it is associated with. Without this document the associated data cannot be truly authenticated and thus, cannot be considered a legal record.

- **Securing the Project for Delivery**

PEDDS includes a process to secure the complete project directory, including all contained files for delivery. This process is similar to signing and sealing, however all files in the project directory structure a re "secured." This securing process is run after all the project files are finished, and all the signature files have been created, printed, and the Signature Documents are signed, dated, and sealed. The process of securing a project for delivery creates a Manifest Document containing the computed hash code of the Manifest File (Manifest.XML - which lists all files in the project with their individual hashes), thus securing ALL the files in the project directory. The Manifest Document is printed, signed, and dated (but is not sealed), by a project manager (or data manager), and delivered to FDOT along with the media containing the complete project submittal.

- **Authentication a Delivery**

PEDDS and the PEDDS paper reports received with the project will be used by FDOT to authenticate a project. The Authentication Report generated by the authentication process in PEDDS will be compared against the documents submitted with the delivery, including the Signature Documents provided and the Manifest Document. If the project submitted is found to generate the same hash codes, the delivery will be considered authenticated.

8.6.7 MEDIA REQUIREMENTS FOR DELIVERY

All electronic projects submitted to FDOT will be on CD-ROM or DVD-ROM unless otherwise approved by the FDOT Project Manager. If the project is too large to fit on one CD-ROM, then the process for delivery to the Department must be reviewed with the FDOT Project Manager before splitting the project on multiple CD-ROMS or choosing an alternate media. All Project CD's must be labeled with the required project identification information shown. Media not labeled with this information are generally not acceptable.

Project Identification Label:

Financial Project ID Number of Project:

Project Description (including County and State Road numbers, local road designation):

Firm doing the work (if done with consultant services) or District

Name of FDOT and Consultant Project Managers

Creation Date of the Media

Disk (#) of (total #)

Delivery type label (Project CD, Bid Set CD, etc.)

Anticipated Letting Date for the project

Note *After burning project data to a CD, or other media for delivery to the Department, that media should be authenticated with PEDDS by the data producer to ensure no changes were introduced during the media production process prior to submission to the Department.*

8.6.8 COMPLIANCE CERTIFICATION

All electronic data submittals are to be delivered to the FDOT Project Manager, unless an alternate agreement is reached. A Compliance Certification (a similar one is presented in the Electronic Delivery software) containing items that should be checked before a final submittal. Although this checklist is not completely comprehensive of all work ensuring a quality electronic delivery, it does represent a minimum assurance to the Department that care was exercised in preparing the delivery. A copy of this or a similar form should accompany the documents in the delivery and be given to the Project Manager. (See example on the following page and provided in the Electronic Delivery software). Note that Districts may use a more comprehensive form in their Quality Assurance processes that the one shown.

The Electronic Delivery suite also includes an application called FileChecker, which is also used to review certain portions of ongoing project both during development and at submission for adherence of FDOT standards and business rules for the Electronic Delivery. It produces an HTML formatted report of the results which may be required by the local Districts. (See Chapter 7.4 for more information). FileChecker is only a tool, and is not a substitute for a thorough and comprehensive check by the data producer and the persons responsible for receiving and accepting an electronic delivery. Every report created by FileChecker bears this admonition at the top of the report:

This report flags suspected inconsistencies in an Electronic Delivery project, but does not replace a thorough technical review by a qualified professional or eliminate the responsibility of the user. A report with few or no status errors is a good sign, but does not guarantee an error free project. Likewise a report with many status warning or errors cannot be assumed to indicate an invalid project. The user or reviewer of this report must carefully consider the standards applicable to the pr*oject at the time of development.*

Compliance Certification Checklist Report

All electronic data submittals are to be transmitted to the FDOT Project Manager. The following questions shall be answered before submittal, and given to the Project Manager along with the submittal.

Note *Not all of the items above may apply to scopes entered prior to July 2000.*

- ☐ 1. Have project journals been created containing all necessary project information?
- ☐ 2. Is the listing of the software packages and versions used to create all delivered files included in the journal?
- ☐ 3. Are all the native files generated by the CADD/Design software in checklist item 2 included in the delivery package?
- ☐ 4. Are design graphics files in MicroStation format, and are they compliant with the FDOT CADD standards for directory structure, file naming, and element symbology?
- ☐ 5. Does the submittal include all user-created MicroStation resource files (line styles, fonts) that may have been used with the project?
- ☐ 6. Has the GDM QC program been run against the MicroStation design files specified in the CPCH? Are the resultant reports of compliance included in the delivery submittal?
- ☐ 7. Have the project's corresponding engineering data files supporting the design been generated?
- ☐ 8. Have the prescribed ASCII Engineering data files been created and submitted for the alignments, profiles, and quantities in the formats described in the CADD Production Criteria Handbook? Is this information stored in the appropriate directories?
- ☐ 9. Have ASCII Multi-line general file format files been created and included for the surfaces represented in the cross sections?
- ☐ 10. Are project raster images for Photogrammetry work submitted in Descartes HMR format?
- ☐ 11. Have Postscript image files for all sheets been created, checked and included for all sheets in the plan set? If not Postscript, are the files in PDF?
- ☐ 12. If the project is intended for electronic advertisement and letting (the official record will be electronic), are the files representing the plans, referenced by Chapter 19 of the FDOT Plans Processing Manual, signed and sealed with PEDDS? Is the Electronic Plan Note on each sheet?
- ☐ 13. Has the entire delivery been secured with PEDDS? Has the resulting Manifest Document been signed? Have all Signatory sections been checked and initialed?
- ☐ 14. Are hardcopy reports of the PEDDS documents included, printed and signed? This includes the signed and initialed Manifest Documents and all signed Signatory Documents.
- ☐ 15. Has the final media for submission been properly labeled and re-checked to make sure the data is readable and can be authenticated with PEDDS?
- ☐ 16. Has a Project.PDF file been included that contains all sheets that are defined by the delivery's index?
- ☐ 17. Has an index report SheetNDX.htm file been included that links all sheets that are defined by the delivery's index for the plans?

FPN: _____

Date of Scope: _____

Certified by EOR: _____

8.7 POST-PRODUCTION

8.7.1 PURPOSE

The "Post-Production Phase" involves the review and acceptance of an electronic delivery, and making that delivery available to FDOT internal services for posting. Functions include the receipt and authentication of the delivery media, and placement of the project data into systems designed for general access to the data.

8.7.2 OVERVIEW

Upon receipt of the secured electronic delivery package and the accompanying documents, it will be authenticated using PEDDS by the Department's designated representative for accepting project data. The electronic submittal checklist will also be reviewed for completion. See Chapters 8.4.6 and 7.2 regarding: the handling of Signature Documents and Manifest Documents.

8.7.3 ACCEPTANCE

The CADD Manual defers to this handbook on technical issues regarding the content and formatting of the electronic delivery. Following the requirements in this Handbook does not guarantee an acceptable work product, as this Handbook does not address the quality of the engineering or survey work performed – it only attempts to address presentation in electronic form. Therefore, following the guidelines and requirements herein does not absolve the professional from providing a professional work product, meeting the standards of practice established in rule and law.

Once the electronic submittal is accepted, the electronic project will be imported into FDOT file management systems for subsequent use. Copies of the submittal media may be distributed among various stakeholders, such as Construction and Maintenance.

8.7.4 INTERNAL FDOT USAGE

The processes for Post-Production activities utilizing the electronic delivery are continually being refined as the Department receives electronic submittal projects with scopes developed after July 1, 2000. The Engineering/CADD Systems Office is charged with working closely with the production offices in the Districts and Central Offices to help develop processes for handling electronic deliveries for the intended uses. The following tasks should be accomplished by the Department:

- Provide receipts of electronic delivery to the data producer
- Log receipt of an electronic delivery into a tracking system
- Secure all paper documentation associated with the delivery of the electronic project media
- The designated persons responsible for putting the data into Department file management systems (such as TIMS or PEDDS-DB) will do so, and document completion of that task in a tracking system
- The designated persons responsible for handling delivery media will catalog and store the media, including making any copies necessary. This activity will be documented in a tracking system. It is extremely important that the paper signatory (signature) reports with raised seal be handled and managed properly. They must not be separated from the data or lost. Without them the data cannot be considered a legal record set.
- Copies of the media will be forwarded to the appropriate persons

8.8 REVISIONS USING THE FDOT ELECTRONIC DELIVERY SUITE

Revisions are an often confused function for novices of Electronic Delivery, however by reading this section carefully, file management for revisions are handled in a consistent and automated manner. When processing revisions in the context of Electronic Delivery (ED), it is important to recognize the need to protect legacy data previously delivered. The methods described in this section are the recommendation for revising plan sheets using current software in the Electronic Delivery suite of tools.

The processes described include operations to do revisions as part of the overall contemporary (revised) version of the project. The project is brought up-to-date; a revised project data delivery is created.

1. **Back up your original delivery** (make assurances you have a secured version available of your earlier delivery). Make all edits on a "copy" of the original. **The software depends upon you having the original delivery still available!**

Note *Make certain that you have removed any "read-only" attributes on the project's file copies you will be revising including the Index file(s) (ProjectIndex.xml), Sheetndx.htm, Project.pdf, and the _meta_info\ folder, etc.*

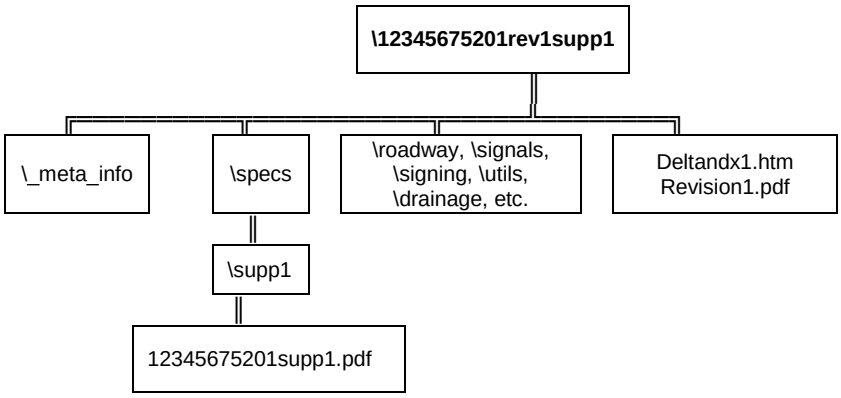
Delivered directory structure for project Revisions / Supplements submissions:
(revised "Bid Set CD" only):

Central Office, or District plans processing units working outside of a managed environment (such as TIMS or PEDDS-DB) require the revised "Bid Set" data submittal (contrasted with the "Project CD" submittal) on their servers to use a specific directory naming convention for revisions and / or supplements. This convention can be created with the SetMaker tool, but the user must be aware of the conventions (it's not automatic).

Note *Project root folder renaming does not apply for the "Project CD" submissions (that directory name NEVER changes, regardless of which revision); only the subsets created for revisions and/or supplements ("Bid Set CD") have their root folders renamed.*

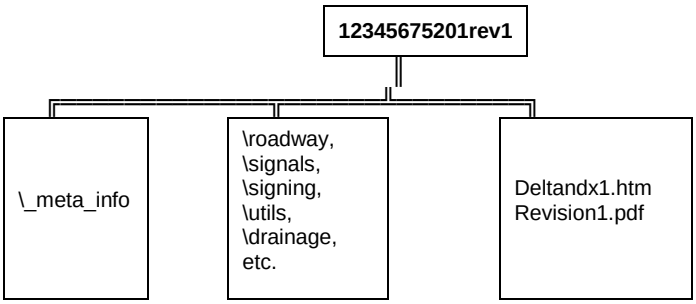
Some Districts do not require the consultant to process a "Bid Set" subset for delivered "Project CDs

When both a **plans revision** and **specifications changes** (called a supplement) are needed, the directory structure (and content) for the "Bid Set" subset for the revision 1 and supplement 1 is shown below:

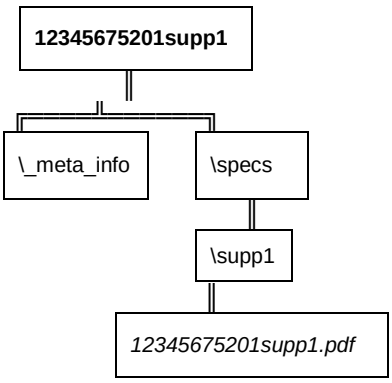


Note *A complete "Project CD" deliverable, named the original project name, is usually required to be submitted with each contemporary revision to the project. The directory naming conventions shown in these diagrams apply only to "Bid Set" subsets extracted from those revised "Project CD" submissions.*

If there are **plans revisions only**, the following directory structure would be used:



If there are specifications supplements only, the following directory structure would be used:



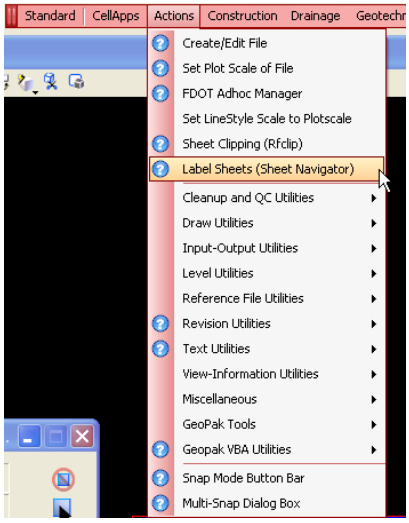
The *root directory name* for "Bid Set CD" data sets created for a revision and/or supplement are then:

	Project CD	**Plans & Specs (Revision) CD**
Original Delivery	12345675201	12345675201
After Revision 1	12345675201	12345675201rev1
After Supplement 1	12345675201	12345675201supp1
After Supplement 2	12345675201	12345675201supp2
After Revision 2	12345675201	12345675201rev2
After Revision 2, Supplement 2	12345675201	12345675201rev2supp2

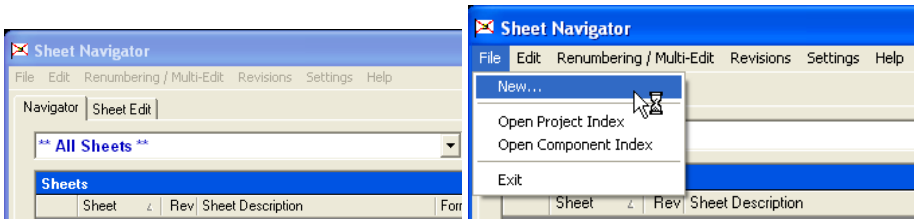
Now that this concept has been introduced, let's discuss the remaining steps necessary to create a revision.

Important: When preparing the revision, the user should preserve data in the original delivery's DGNs, and any plots made from them, because these may be signed & sealed by a signatory in the earlier delivery. Do not over plot any signed and sealed file from an earlier delivery – doing so will make the Signatory of those files not Authenticate in PEDDS.

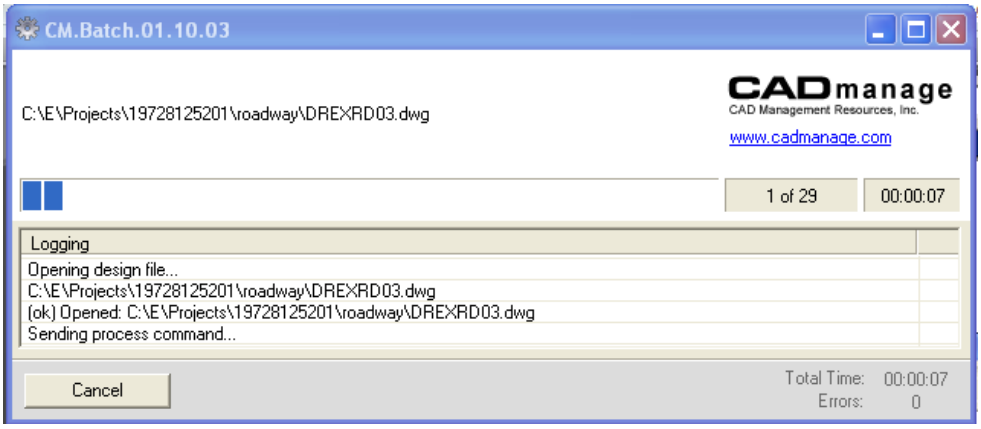
2. In MicroStation, from the FDOT Menu interface, select Actions -> Label Sheets to select the Sheet Navigator application. Sheet Navigator can now help you manage revisions to sheets.



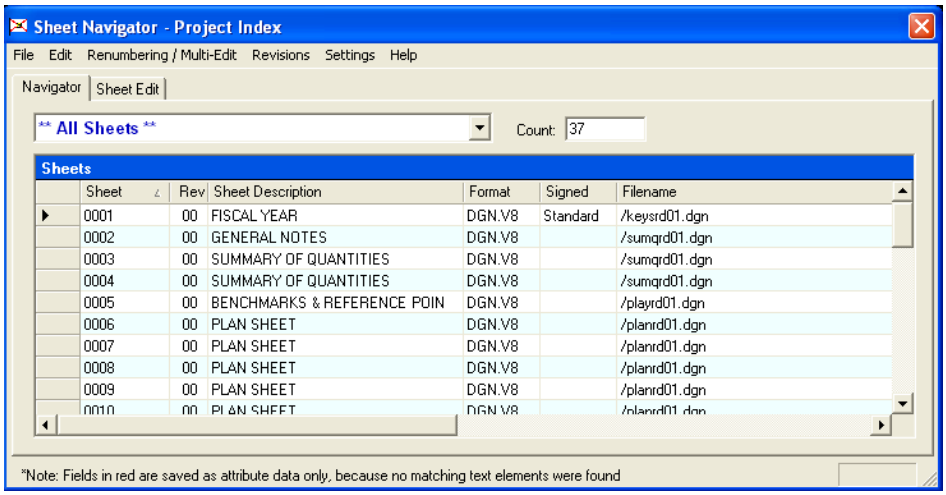
3. First, go into Navigator mode (making certain the Navigator tab has focus) and from the File pull down, select the "New" option to create a new *SheetInfo.xml* file, unless you have one already and it is completely up to date (In which case you would Open the Project Index (SheetInfo.xml).



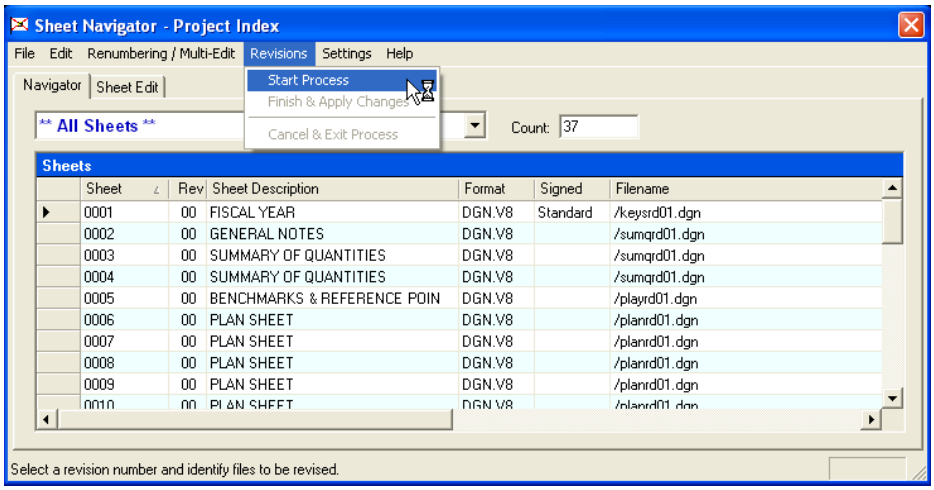
SheetNavigator will process each design file in the project directory structure looking for design file that have properly formatted sheet border cells if a new SheetIfo.xml file is being created.



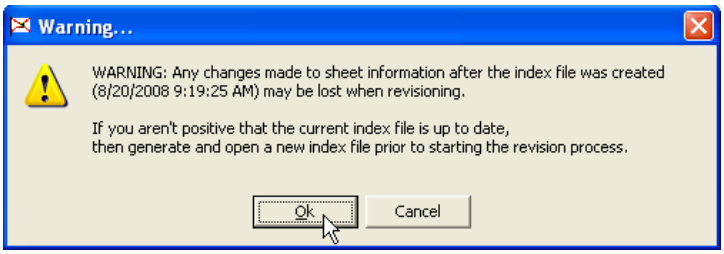
When SheetNavigator has finished, the Navigator dialog is displayed showing the current active sheets in the project. Always inspect for missing sheets, extra sheets, incorrect sheet descriptions (see the first entry for the Key Sheet in the capture below as an example), etc.:

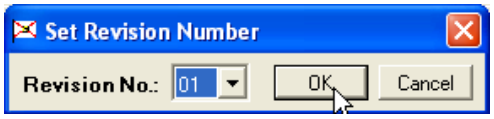


4. To begin the revision process, choose Revisions -> Start Revision Process option from the pull-down menu.

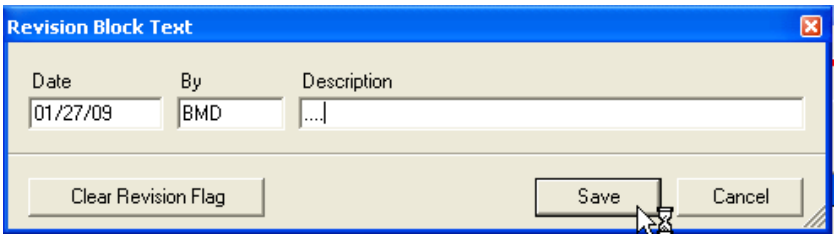


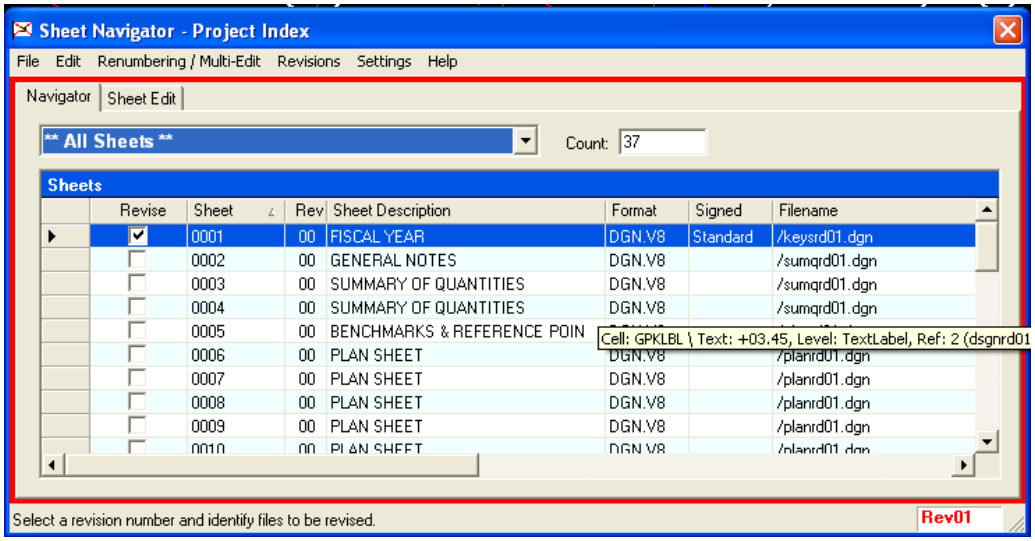
Note *The warning shown below. Select the revision number and continue with the [OK] button.*

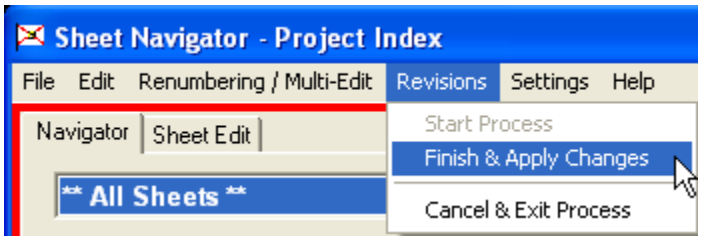


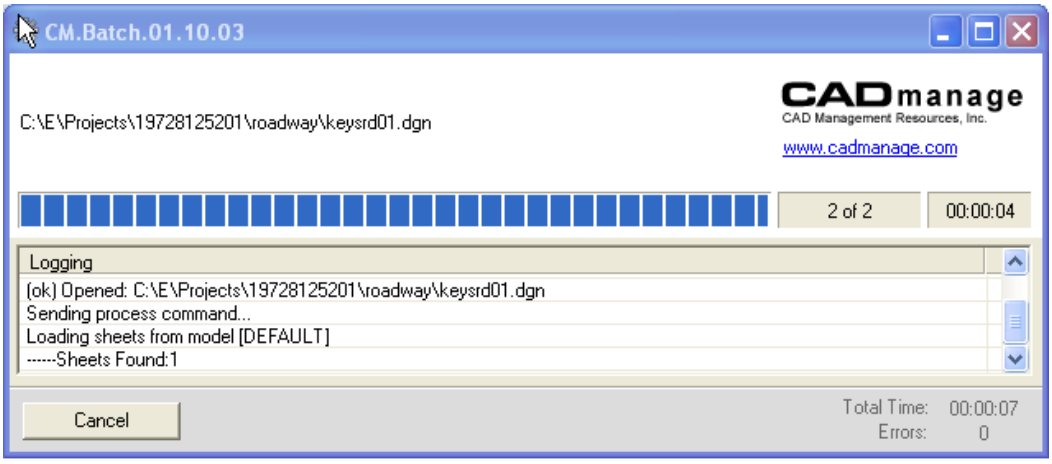


5. Select the revision number for the revision. Note you should choose the "official" revision number that will appear in the revision blocks and Key sheet. You must also choose which sheets to revise with the check boxes below. Enter the information to appear in the Revision Block on the Sheet, and Press the [OK] button and SheetNavigator will process the highlighted sheets.









6. The SheetNavigator dialog will return in appearance to what it looked like prior to step 4, showing the Revision Number in the column for those sheets to be revised. When SheetNavigator was processing the revision, it was making changes to the revised sheets and doing other file manipulation behind the scenes.
   - The design file being revised is copied so it may be preserved. In this case, PLANRD01.DGN is copied to PLANRD01_2009-01-27.OLD (notice the date in the name of the backup file, this is the current date the revision is being processed on)
   - In PLANRD01.DGN, the sheets that are not revised will have the "allow plot" attribute removed. This way, only the sheets to be plotted later for the revision will be allowed to do so from the batch plotting process in the Electronic Delivery Indexer.
7. In ***PLANRD01.DGN*** (or the design files containing the sheets needed to be revised) complete the necessary revisions and complete appropriate tagging and notations with Sheet Navigator.
8. Plot the revised sheets by plotting the effected design files in their own plotting session in EDI. **DO NOT re-plot any design files containing existing unchanged sheets, otherwise you risk overwrite existing signed and sealed files, and invalidate existing PEDDS signature files – Be very careful here!**

Note *EDI will warn if you are about to over plot a signed and sealed file – **Don't Do it!***

9. Update the Project Index (Project.XML), and edit and save a sheet index (ProjectIndex.XML) with ***Electronic Delivery Indexer (EDI)*** to reflect the newly revised sheets in the plans.
10. Create **NEW Signatory(s)** in PEDDS (even if it is the same physical person signing / sealing a revision as the original delivery) to sign / seal the newly revised sheet image files you plotted. **DO NOT use the old Signatory files - leave the files signed with old Signatories and Signatory file intact.** Also create a new (different) Signatory to sign any specifications supplements. ***PEDDS*** allows for multiple signatory files for any given professional of record. **Sign and Seal the revised sheet Postscript files with the NEW Signatories. This is a very important step!**

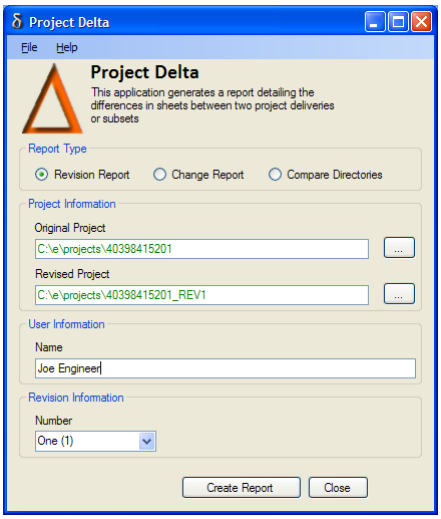
Note *Up to this point, all steps have been defined in terms of producing the Revised Project CD deliverable to reflect the updated state of the project with the revisions. In the remaining steps, certain actions are needed to also produce the Bid Set Revision CD used in the letting process. Some Districts reserve this process in-house.*

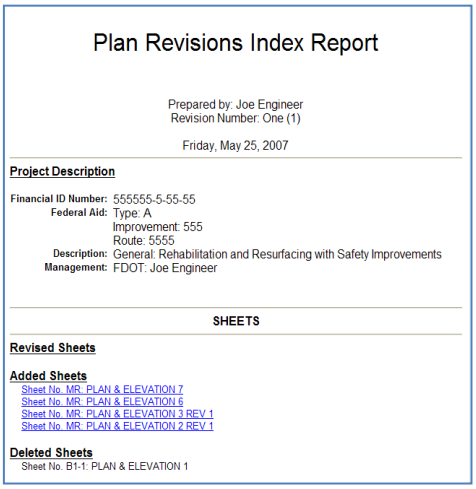
11. Create the Plan Revisions Index Report using the *ProjectDelta* application, comparing the original project delivery to the revised (contemporary) version of the project.

    ProjectDelta will no longer output a file simply named DeltaNDX.htm, but it will append the revision number selected to the end of the file in the format of Deltandx***N***.htm (***N*** being the revision number).

    The report (***DeltandxN.htm***) is placed in the root directory of the revised project and only displays information about indexed sheets and their impacted files that have been added, removed, or revised.

Note *Other non-indexed files that may have changed are not reported. This action is needed for producing the Bid Set Revision CD deliverable required for the letting process.*



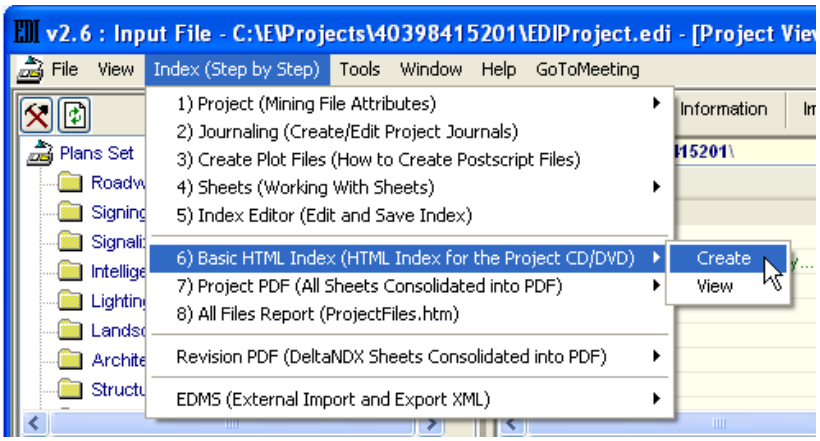


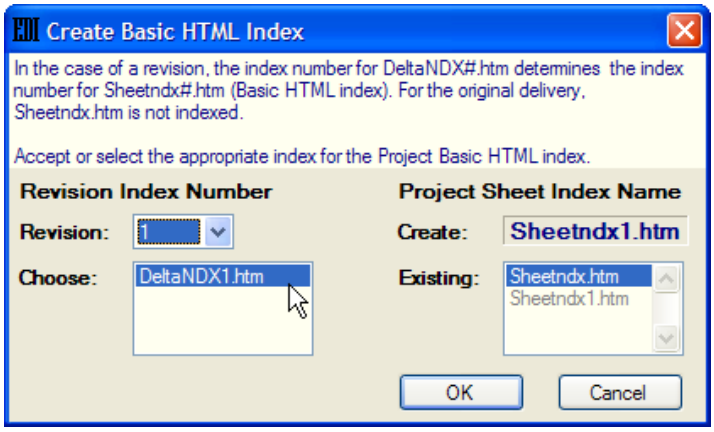
Note *Both the Revision and Change options produce the changes between two sets of project data.*

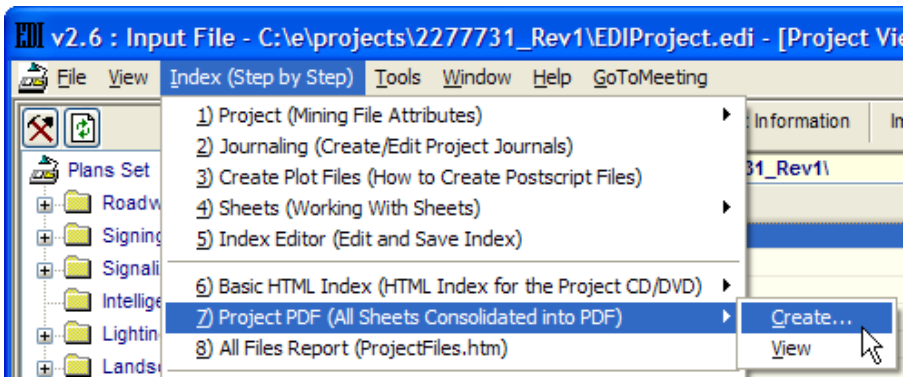
- The **Revision Report** option is used in producing the Bid Set Revision CD deliverable and creates the necessary file Deltandx***N*.htm.**
- The Change Report option produces a report of th***e differences*** between the Index of an earlier delivery and the contemporary (revised) projects index. It does not produce any intelligent hyperlinked reports (but the output can be saved). It is merely a tool to assist when one desires to compare two sets of data to know what has changed between them.
- The Compare Directories option creates a report of the actual file differences between the Original and Revised project directories; no type of actual project information is validated. This option gives the user some reporting options and uses the *CSDIFF* application to compare the original and revised project directories.

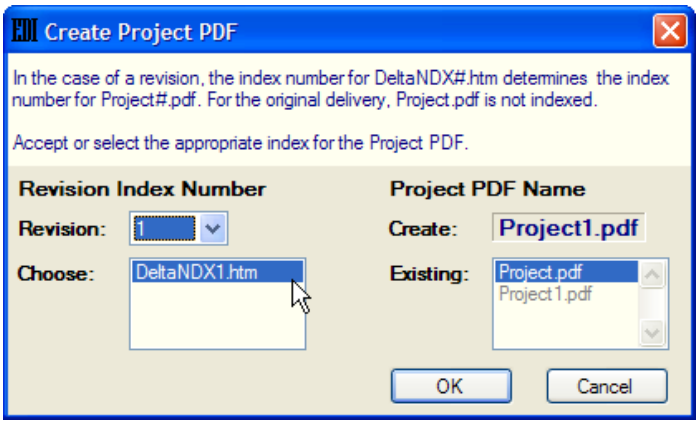
12. Update the Sheet Index Report (***SheetndxN.htm***) and project composite PDF (***ProjectN.PDF***) using ***EDI***.

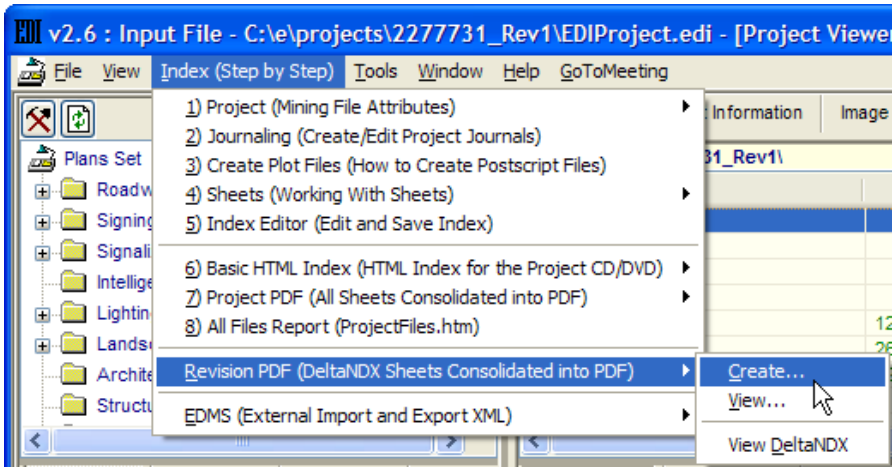
Note *These actions in Step 12 are necessary for defining the state of the project as will be reflected in the Revised Project CD deliverable. The new SheetndxN.htm file and ProjectN.pdf file will make reference to all sheets currently active in the project following the revision. However, as shown below, the updated project sheets are assembled into a composite RevisionN.pdf as needed for the Bid Set Revision CD deliverable used in the letting process.*

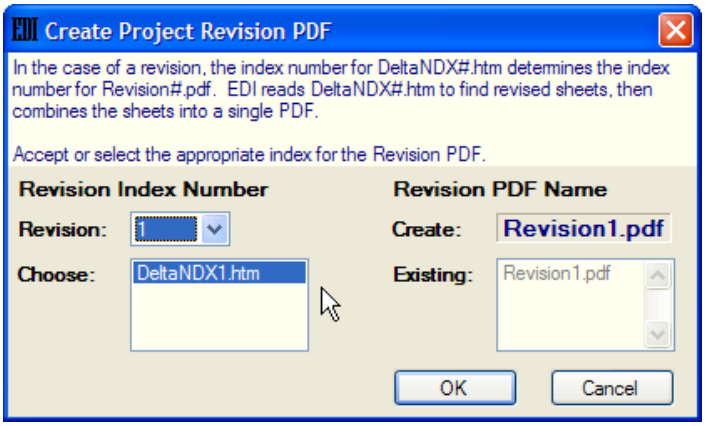



Create Basic HTML Index
In the case of a revision, the index number for DeltaNDX#.htm determines the index number for Sheetndx#.htm (Basic HTML index). For the original delivery, Sheetndx.htm is not indexed.
Accept or select the appropriate index for the Project Basic HTML index.
Revision Index Number
Project Sheet Index Name
Revision:
Create:
Sheetndx1.htm
Choose:
DeltaNDX1.htm
Existing:
Sheetndx.htm
Sheetndx1.htm
OK
Cancel


v2.6 : Input File - C:\e\projects\2277731_Rev1\EDIProject.edi - [Project Vi
File View Index (Step by Step) Tools Window Help GoToMeeting
1) Project (Mining File Attributes)
2) Journaling (Create/Edit Project Journals)
3) Create Plot Files (How to Create Postscript Files)
4) Sheets (Working With Sheets)
5) Index Editor (Edit and Save Index)
6) Basic HTML Index (HTML Index for the Project CD/DVD)
7) Project PDF (All Sheets Consolidated into PDF)
8) All Files Report (ProjectFiles.htm)
Create...
View
Plans Set


Create Project PDF
In the case of a revision, the index number for DeltaNDX#.htm determines the index number for Project#.pdf. For the original delivery, Project.pdf is not indexed.
Accept or select the appropriate index for the Project PDF.
Revision Index Number
Project PDF Name
Revision:
Create:
Project1.pdf
Choose:
DeltaNDX1.htm
Existing:
Project.pdf
Project1.pdf
OK
Cancel


v2.6 : Input File - C:\e\projects\2277731_Rev1\EDIProject.edi - [Project Viewe
File View Index (Step by Step) Tools Window Help GoToMeeting
1) Project (Mining File Attributes)
2) Journaling (Create/Edit Project Journals)
3) Create Plot Files (How to Create Postscript Files)
4) Sheets (Working With Sheets)
5) Index Editor (Edit and Save Index)
6) Basic HTML Index (HTML Index for the Project CD/DVD)
7) Project PDF (All Sheets Consolidated into PDF)
8) All Files Report (ProjectFiles.htm)
Revision PDF (DeltaNDX Sheets Consolidated into PDF)
EDMS (External Import and Export XML)
Create...
View...
View DeltaNDX
Plans Set

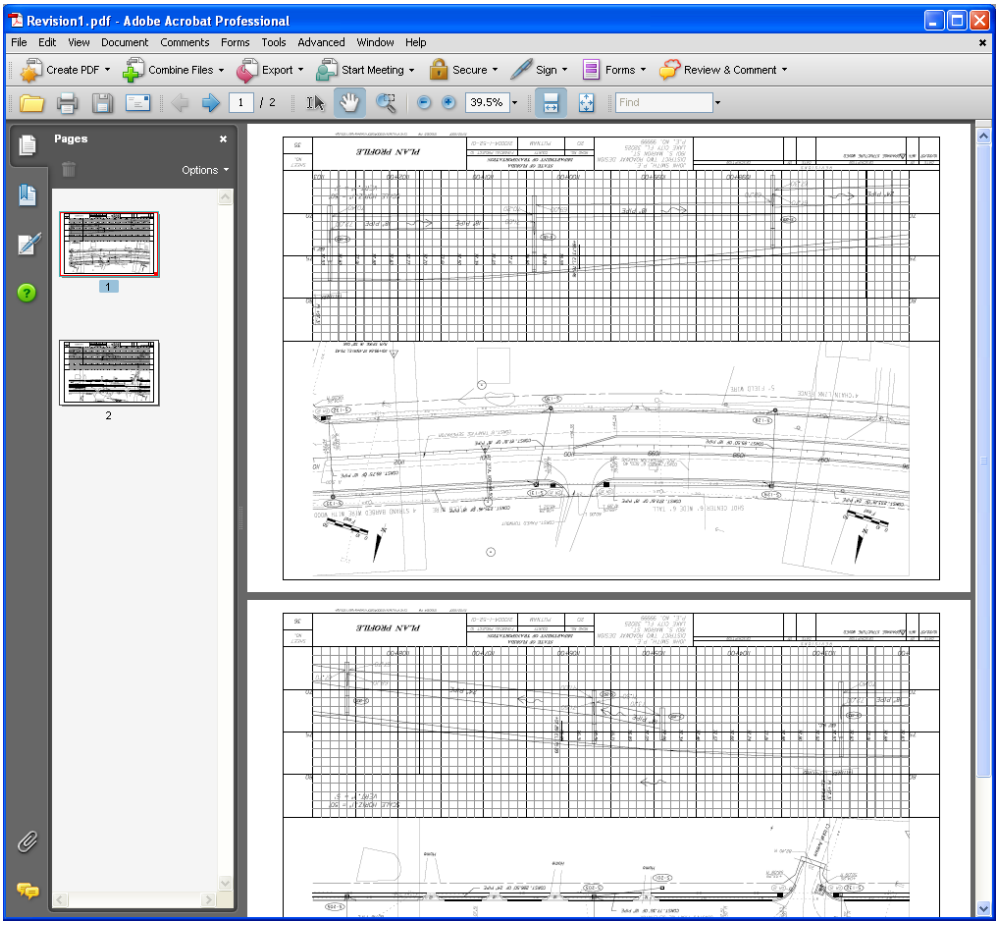


13. Create the composite Project***N***.pdf with EDI. This file contains all sheets currently part of the project. Select the appropriate index as defined by Deltandx***N***.htm for each revision.

14. Create the Sheetndx#.htm, which is the index for all sheets in the project. Select the appropriate index as defined by Deltandx***N***.htm for each revision

15. Additionally create the composite Revision***N***.pdf by selecting the appropriate Deltandx***N***.htm, from the project root folder. EDI will automatically prompt for and then reads the data from Deltandx***N***.htm to create Revision***N***.pdf. Only revised sheets are included in the revision PDF, as found in the Deltandx***N***.htm index.

    This action is necessary to produce a PDF file of the revised sheets to be included in the Bid Set Revision CD deliverable. An example of a Revision1.PDF is shown below:



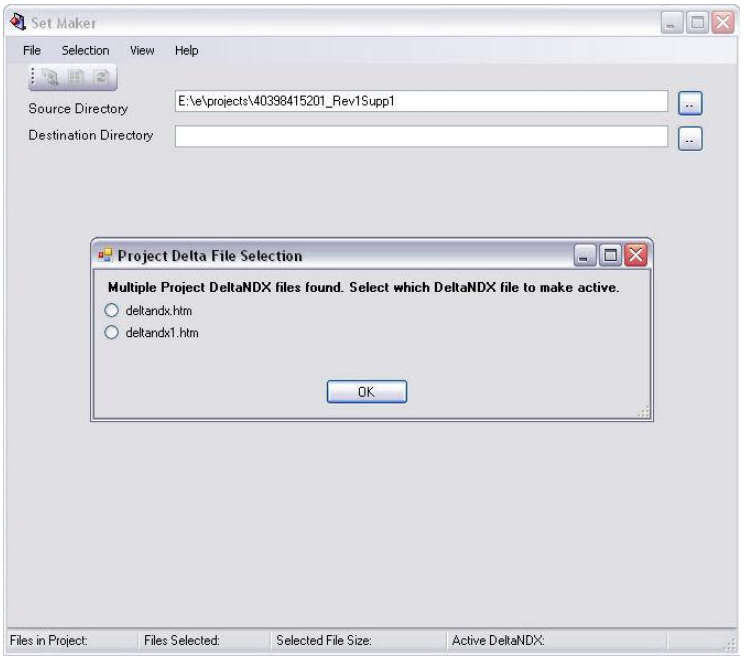
16. Secure the new project delivery with *PEDDS*. The "Revised Project CD" (now containing revisions) can be prepared and burned for delivery.

Note *Remember the revision is developed within the complete contemporary project that is brought up-to-date, making a "Revised Project CD" delivery.*

Label the Revised Project CD carefully, distinguishing the label with the Revision or Supplement number, as well as the other required text on the CD label. After the CD had been burned, always authenticate the CD (the physical media) using *PEDDS*, to make sure the CD burning process went smoothly.

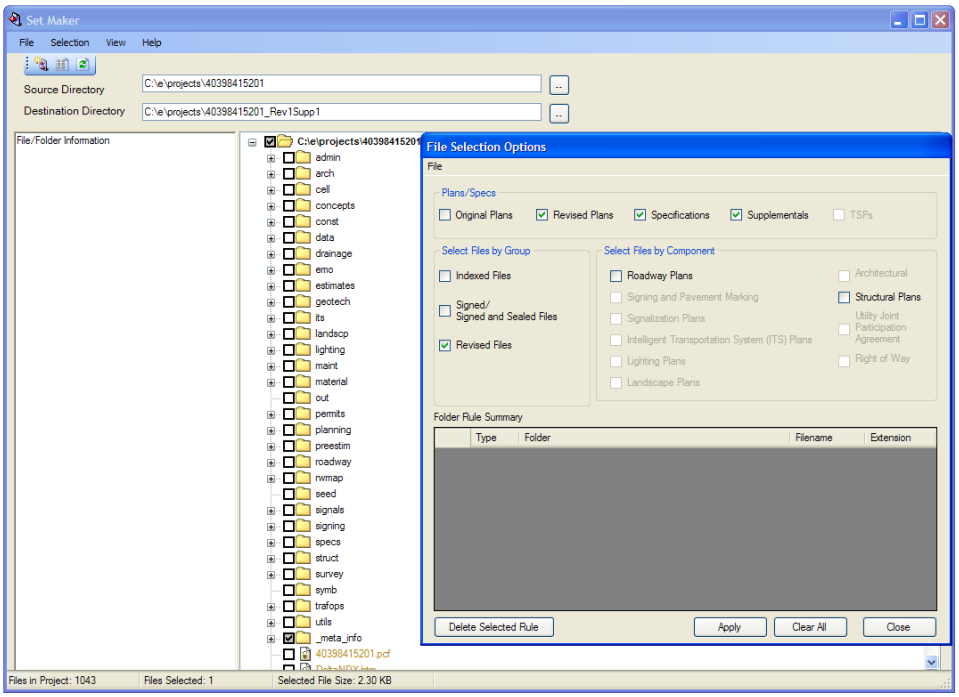
17. Create a sub-set using *SetMaker* for the "Bid Set Revision CD" for the revised project. The *Destination Folder* field should contain the directory name using the Naming Structure discussed after Step 1 earlier.

In SetMaker, if the Source Directory folder contains more than one deltandx.htm file, the user will be given the option to select which deltandxN file will be the active one as shown below.



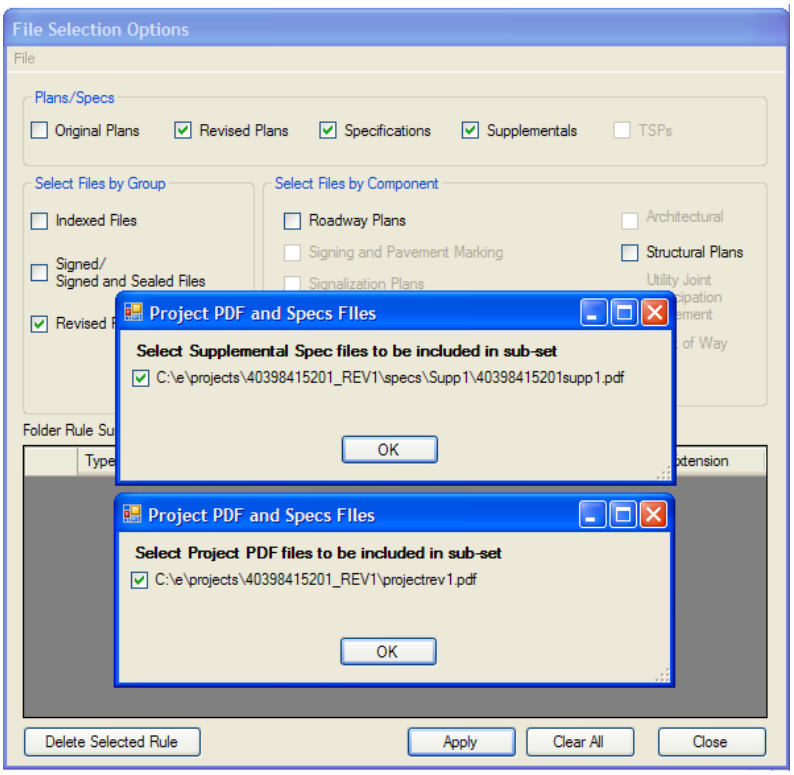
File selection settings in *SetMaker* are shown to create the updated project subset representing the "Bid Set Revision" CD. Note that the specifications supplement has been selected using the Supplemental File Selection rule as shown below:

Note *Selecting the "Revised Plans" rule in the "Plans/Spec" rule group will automatically select the "Revised Files" in the "Select Files by Group" rule group. The difference is that the "Revised Plans" rule also selects the revised project.pdf file and the project revision report (DeltaNDX.htm).*

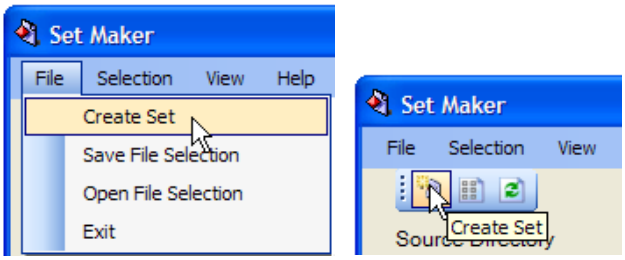


Note *Seek guidance from the State Specifications Office for the required sub-directory structures and file naming conventions for specifications supplements.*

Once the Apply button has been pressed, *SetMaker* will present a list of all Project***N***.pdf and Supplemental.pdf files that are detected. The latest file of each type will automatically be selected; the user at this point has the option of selecting/de-selecting any file at this point.



Once the file selection rules are complete, the "Bid Set Revision" set is ready to be created by either selecting the File>Create Set menu item or pressing the Create Set button from the button bar.



SetMaker copies the selected files, along with the minimum necessary directory structure to the *Destination Folder* and automatically Secures the Subset of the project it creates.

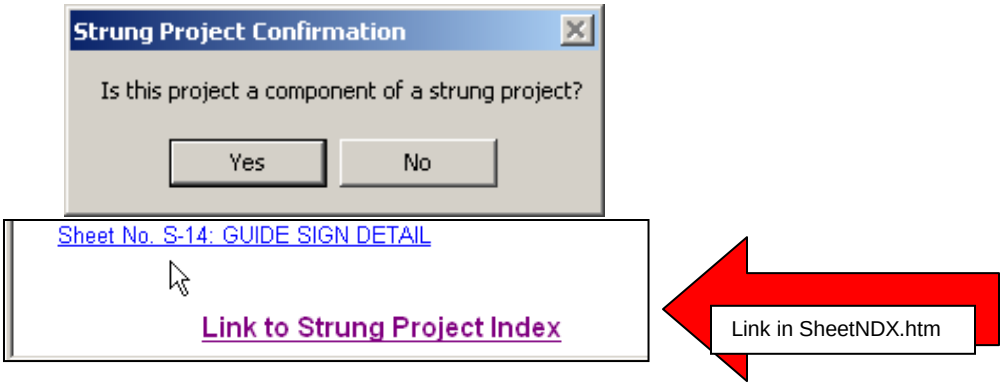
18. Make sure to print the *Manifest Report* generated by *SetMaker***,** and burn your "Bid Set Revision CD."

Note *Always Authenticate the physical CD-ROM after burning your CDs to ensure a secure delivery set for submission to FDOT.*

8.9 STANDARDS ON HOW TO PREPARE STRUNG PROJECTS FOR ELECTRONIC DELIVERY

Electronic Delivery of "strung projects" involves the act of combining two or more independent and secured project data sub-sets together. Stringing projects involves combining the data in a way that the end-user of the data (typically a contractor) can reasonably navigate "lead" and "goes-with" sub-project data comprising the strung project using a simple Internet Browser. The reader should already be familiar with the process of creating "Bid Set" data sub-sets from "Project" data sets that should be created prior to operations necessary for project stringing. The following steps will familiarize the user with the basic operations necessary, which should be applied when preparing a Plans & Specs delivery of a strung project.

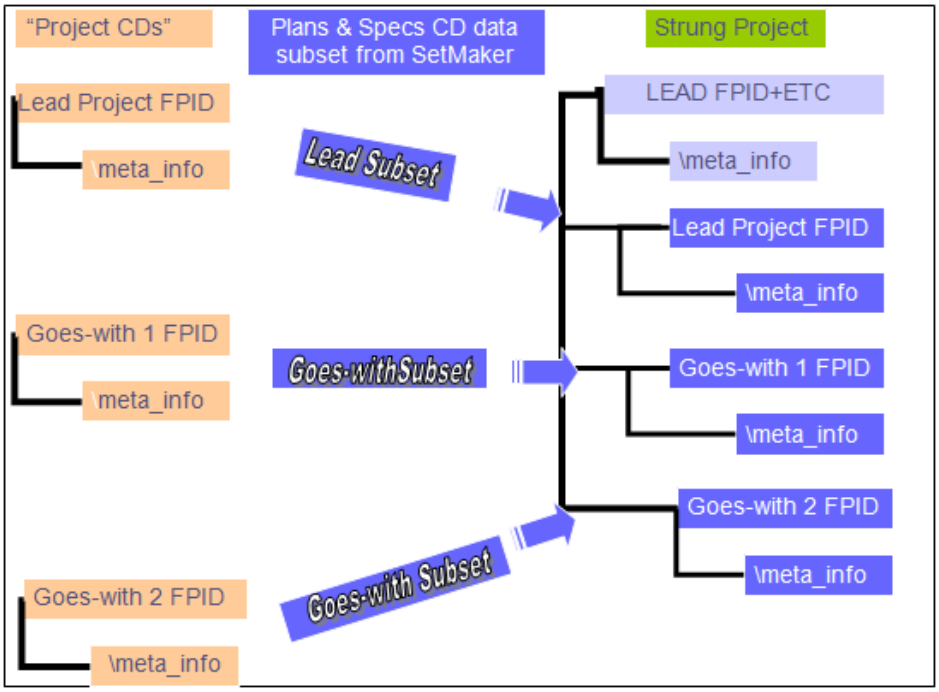
1. The first step - choose which two, or more projects will be strung together. Each project delivery contains an index (ProjectIndex.xml), and a modified version of the basic HTML Index report (Sheetndx.htm) that will contain a navigational hyperlink to the strung project parent folder. Navigation is permanent in each Lead and Goes-with *Sheetndx.htm* file as it is created by EDI. The user is prompted at the time of creating the Sheet Index Report (*Sheetndx.htm*) if this project is a component of a strung project or not?



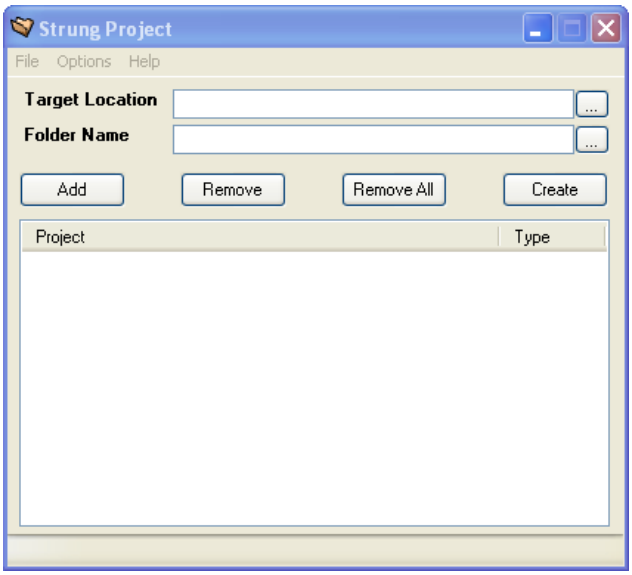
2. Strung projects combine data from "Plans & Specs" **sub-sets** extracted from full project deliveries. *SetMaker* is the tool used to make the extraction of the Bid Set subset from each full Project delivery.

3. Always make a backup of the original data - In case of a user error, the software crashes, or whatever the mishap, the backup is a good starting point for recovery.

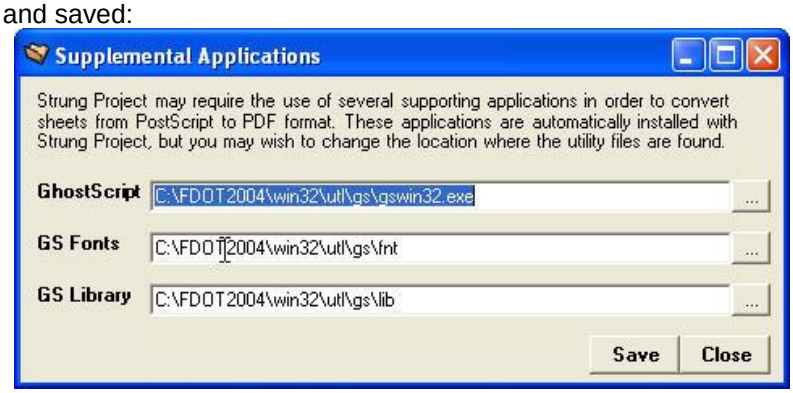
4. Decide which project is the "lead project", and the remainder projects are "goes-with." The following diagram below shows the structure of the strung project, the source data coming from the "Bid Set" data subsets of each component project. The top level directory of the strung project is the Lead project's 11-digit FPID number, with "ETC" appended (i.e. 12345678901ETC).



5. To create the strung project, run the *StrungProject* application from the Electronic Delivery interface.



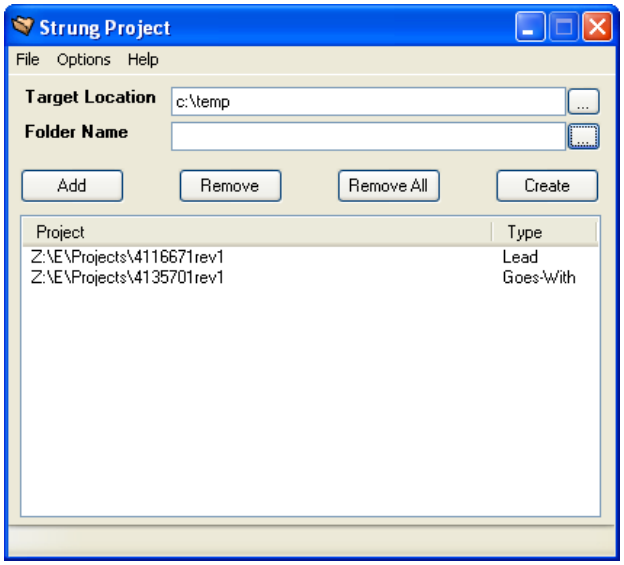
6. In order for *StrungProjec*t to create a composite 'Project.PDF' for all of the Lead and Goes-with projects (to be placed in the root directory of the strung project structure), the operation requires the paths to the *GhostScript* utility be set in the “Options” Menu pull down as shown below and saved:



7. From the “File Name” field shown in the StrungProject interface, navigate to the ‘Lead Bid Set’ data sub-set by pressing the ellipsis button […] at the right of the 'File Name' field. Optionally, you can key-in the full path to the Lead, and press the [Add] button. The first ‘Bid Set’ data sub-set select will always be considered the ‘Lead’ by StrungProject.

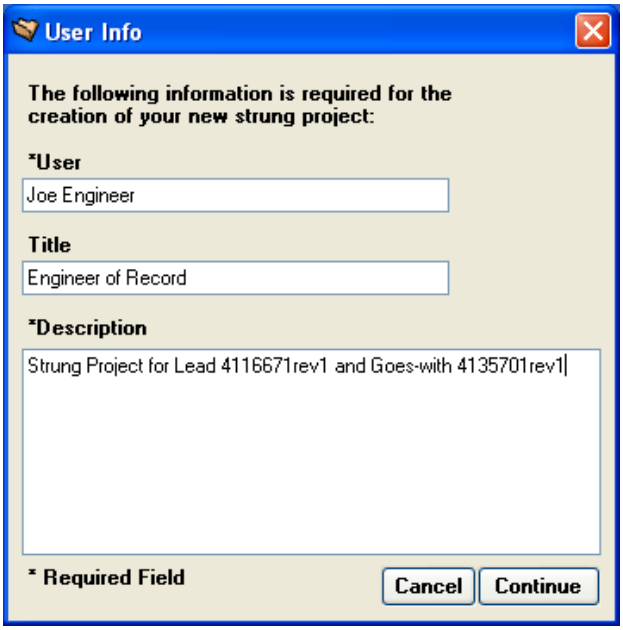
   StrungProject will validate the Lead, and if no errors are found, it will add the Lead to the composition window at the bottom of the dialog. If the Lead was selected by mistake, it can be removed from the composition window by highlighting the entry, then pressing the [Remove] button.

   When you are satisfied the Lead project was selected properly, select a Goes-with project. Follow the same procedure as described above. As each Goes-with is selected, they too will be validated prior to populating the composition window. If needed, Goes-with projects can also be removed from the composition window by highlighting the entry and pressing the [Remove] button.



When the Lead, and all Goes-with projects have been selected correctly, you should enter the path to the destination folder where the resulting strung project will be written. Here too, you can navigate to an existing directory, or key-in a new directory, etcetera. *StrungProject* will create the strung project folder structure, under the directory entered in the 'Target Location' field. The folder name of the strung project will be called \12345678901ETC in our example.

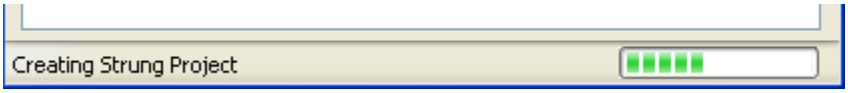
8. Press the [Create] button. *StrungProject* will ask for some identification information to create a Project Identification file (ProjectID.xml) in the _meta_info folder of the root strung project structure. This Project ID file is copied from the Lead project, and modified slightly by Strung Project so that *PEDDS* will recognize the strung project as a unique project (a new *PEDDS* Project key is created). Likewise, a "seed" Manifest file (Manifest.xml) is also created in the _meta_info folder; however it does not contain any file listing data (URLs or Hash codes).

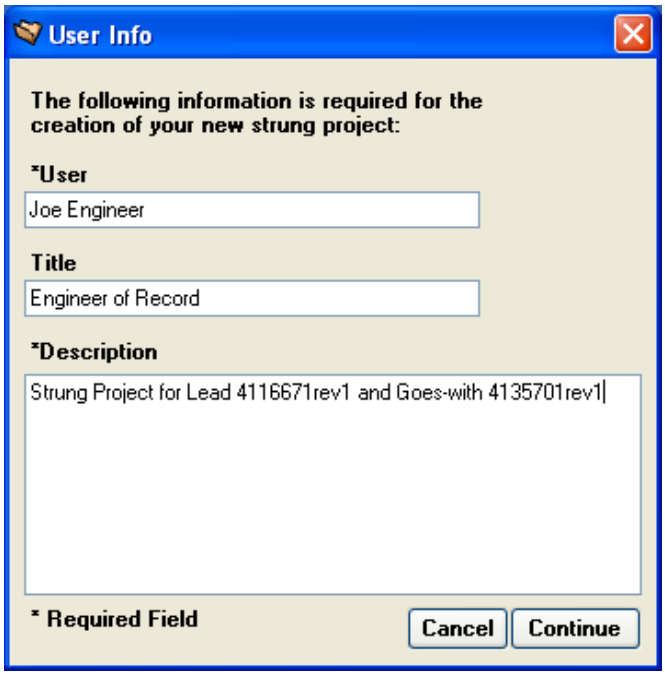


9. On the User Info dialog, press the [Cancel] button to return to the main *StrungProject* Screen,

   (OR) press the [Continue] button and *StrungProject* will begin creating and completing the appropriate strung project directory structure. Each of the component 'Lead' and 'Goes-with' sub-projects will be copied into the strung project structure. As copying takes place, Strung project displays a progress bar, and descriptive text about what is being processed.

Note *As described previously StrungProject will also create the ProjectID.xml and Manifest.xml files at this point.*

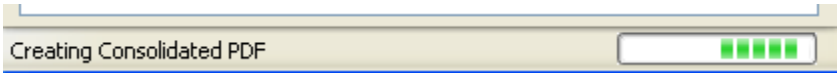




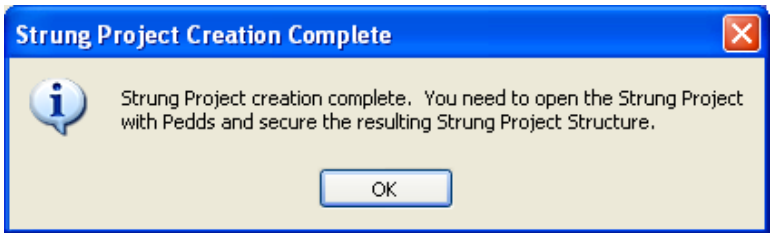
Note *The strung project directory structure is not secured by StrungProject – use PEDDS to do all securing.*

Once *StrungProject* has created the directory structure and all appropriate files, *StrungProject* will append any "Project.pdf" files found in the Lead and Goes-with project(s) and place the appended composite (also called Project.pdf) in the root directory of the strung project.

GhostScript runs once, with no user interface, for each Project.pdf file found in the component projects(s), and builds the composite Project.pdf file in the root directory of the strung project. *StrungProject* displays a progress bar and descriptive text as all the PDFs are being un-distilled to PostScript, concatenated, and re-distilled back to PDF, which is a very computer intensive operation, so be patient please.



When StrungProject has finished its work, it prompts the user with a message box to open the strung project directory structure with PEDDS.



PEDDS is used to modify the Project identification data (ProjectID.xml) for the strung project, as required, or Project Header data (stored in Manifest.xml). Once the user is ready to secure the strung project structure for delivery, he/she would do so by the ordinary procedure in *PEDDS.*

10. Test all Sheet Index File Reports from an Internet Browser to make certain they are functional for navigation, and hyperlinks to plan sheets.

11. Prior to delivery, secure the entire strung project structure (from the top strung project directory) prior to delivery using *PEDDS*.

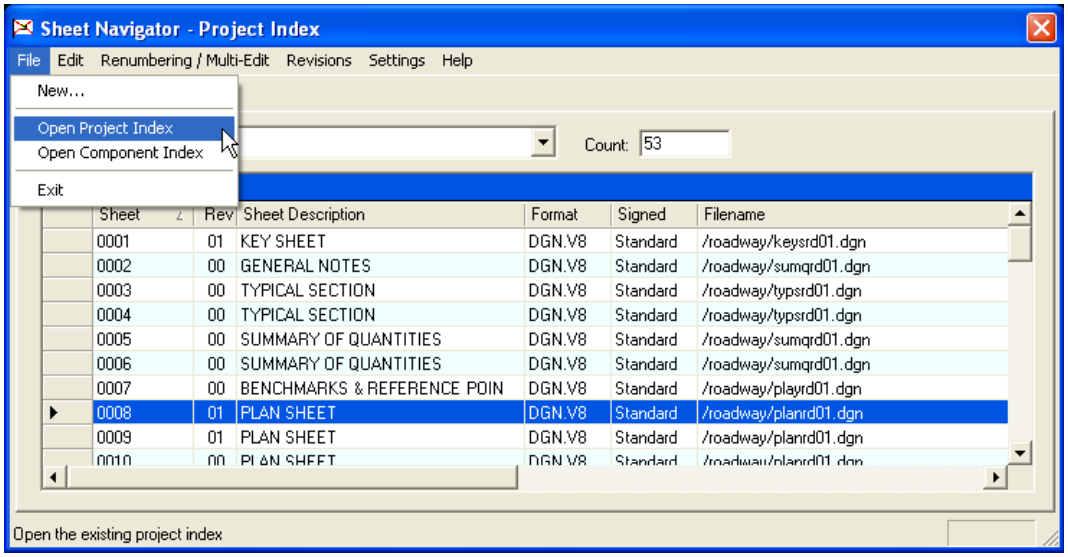
When doing revisions when projects have been strung for letting, the user is reminded of the following concepts:

- Individual Revised Project CDs are created separately for each project in the string to be revised. The Revised Project CDs should be created using the concepts, instructions and guidelines provided in section 8.6.
- Revised Bid Set CDs are to be created from the Revised Project CDs using *SetMaker*.
- The Revised Bid Set CDs are strung together using the *StrungProject* application.
- Just like Project CDs, Revised Project CDs are never strung together; rather, it is the Revised Bid Set subsets created by *SetMaker*, i.e. Revised Bid Set CDs, that get processed by the *StrungProject* application to create the revision package for the string.
- If only one of the member projects of the strung project is revised, do not include the other unrevised member projects when submitting the revision. Only the revised project data needs to be submitted.

8.10 RE-LET PROJECTS AND ROLLING BACK REVISIONS

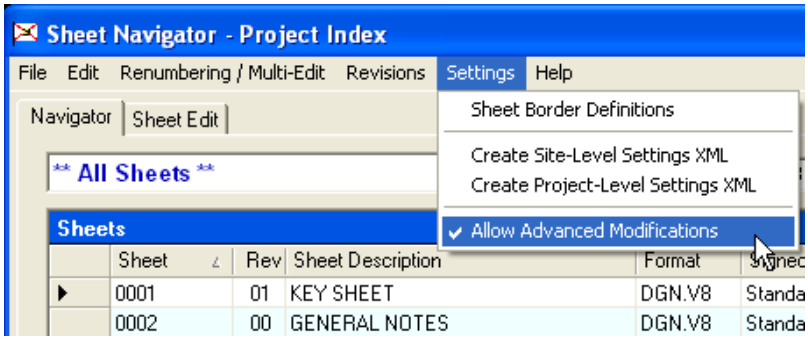
In seldom cases, projects must be re-let. If no revisions have occurred to the project that must be re-let, FDOT will simply re-advertise and let the project with the submitted Project CD or Bid Set CD data. However if a revision has been applied to the project to be re-let, then the revision is no longer germane and the re-let project is essentially an original letting all over again. In this case, the data producer may be asked to roll back the revision indexing as if the delivery was an original delivery. This could involve updating the plan sheets to remove the revision enumerations - potentially removing the notations a revision has even occurred (Note: the changes to plans that were once identified as a revision are now considered simply a plan change).

1. To update the index, open the SheetNavigator Project index file (SheetInfo.xml) in SheetNavigator.



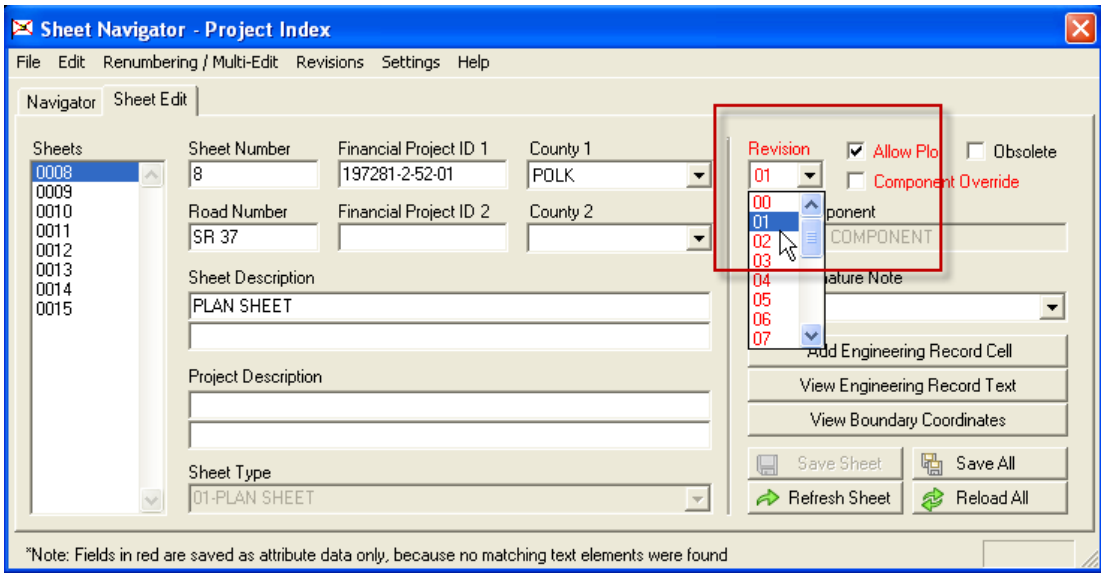
Note *Notice the revision numbers (in this case Rev 01) for the revised sheets.*

2. In the Settings menu, make sure SheetNavigator is set to allow advanced modifications.



3. Select each revised sheet by double-clicking in the data grid view. SheetNavigator will open the design file containing that sheet. In the Sheet Edit dialog, navigate to the sheet that contains the revision.

   You should notice that the setting for the Revision field is now Red and enabled, so the revision number may be modified. If the project is being re-let and the revisions are reverting back to an original delivery, then the revision number to each sheet can be set back to zero. To do so, simply select the drop down list and select the appropriate number (00 for an original delivery).

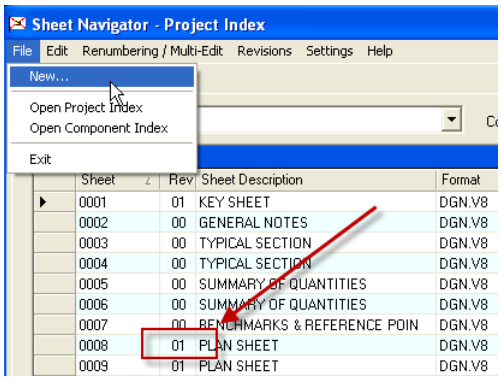


4. You must also manually edit the revision text found in the title block of each sheet. SheetNavigator will not remove that text automatically.

Note *Automatic revisioning process using SheetNavigator described Section 8.7 can not be used to roll a revision number backward. Each sheet must be visited as described above.*

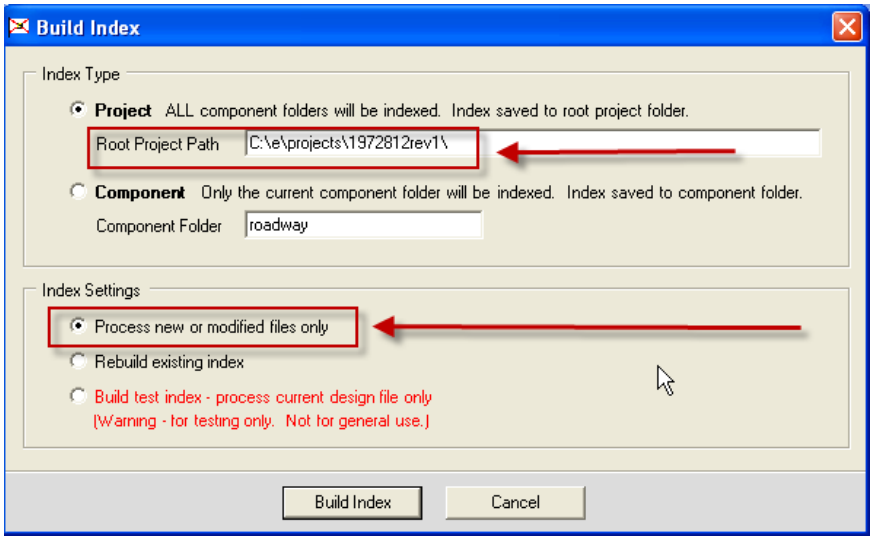
5. Once all the sheets have their revision number updated, the SheetInfo.XML Index must be regenerated so it is up to date.

6. Switch back to the Navigator tab, and select File > New from the menu.

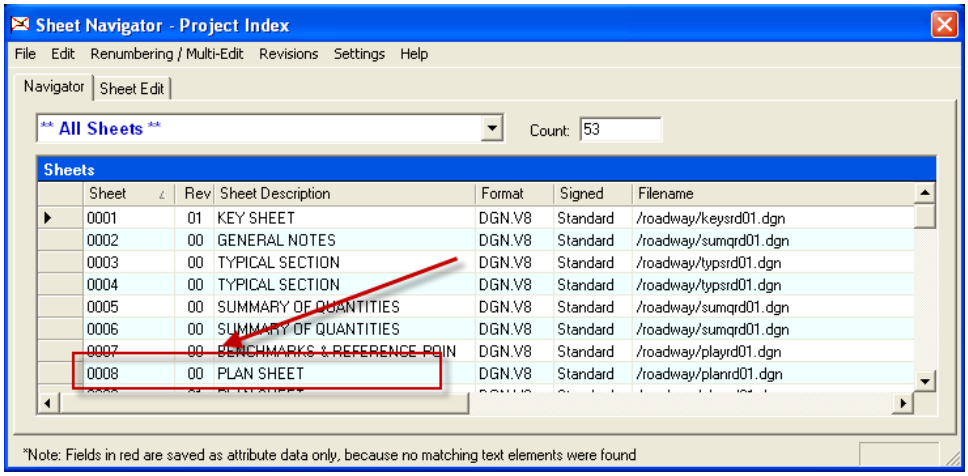


7. Rebuild the index by allowing SheetNavigator to modify the effected files that were updated during the revision roll-back process described above. Press the [Rebuild Index] button to process the files.

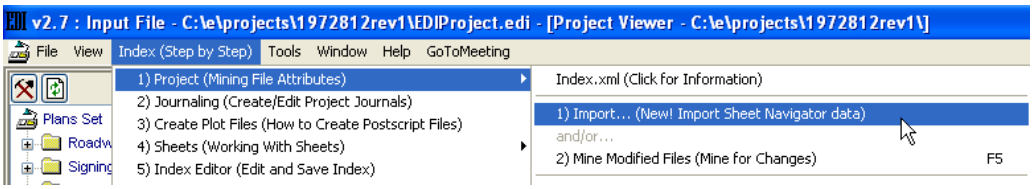
8. Note also that root project directory may also contain the wrong folder name if rolling back. Just remember to rename the folder back at some point prior to securing the project. Take caution that there may already be a folder in your data without the Revx extension.



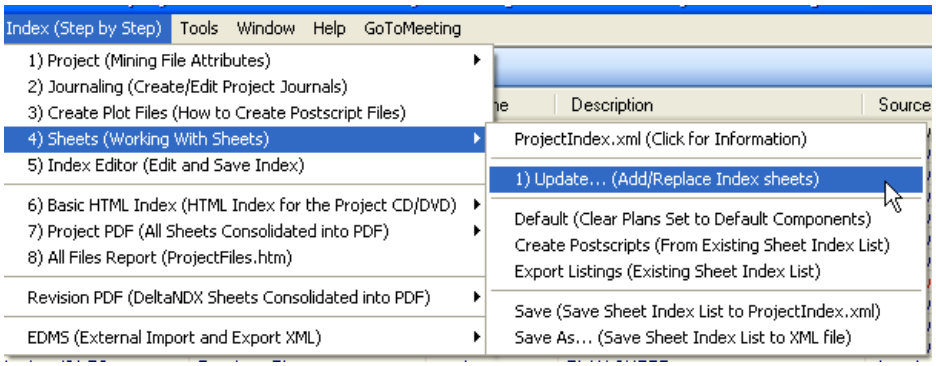
9. The CM Batch process will execute, and the Index will be rolled back to the original revision level.



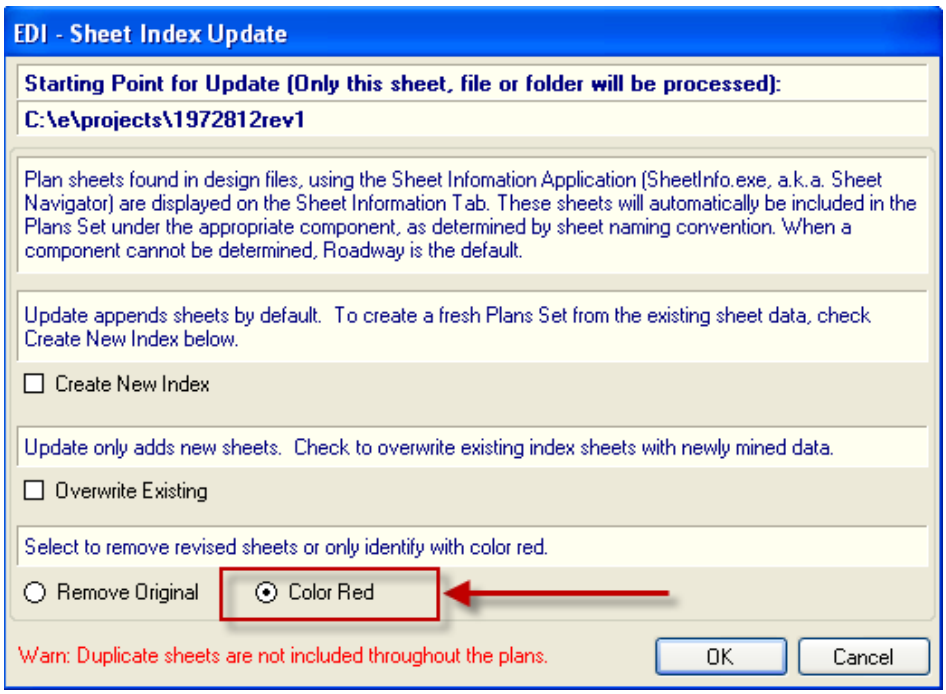
10. Reopen the project in EDI, and reimport the SheetNavigator Index data.



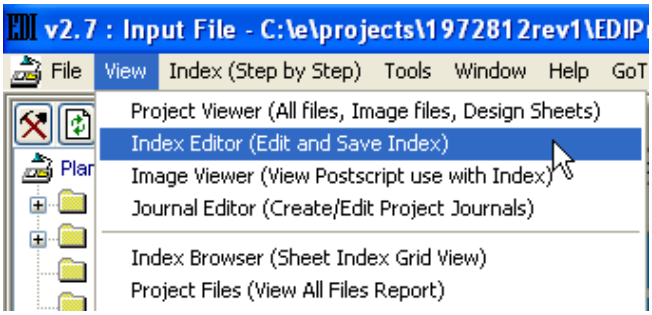
11. Update EDI's awareness of sheet changes (do this even if no sheets were added or removed).



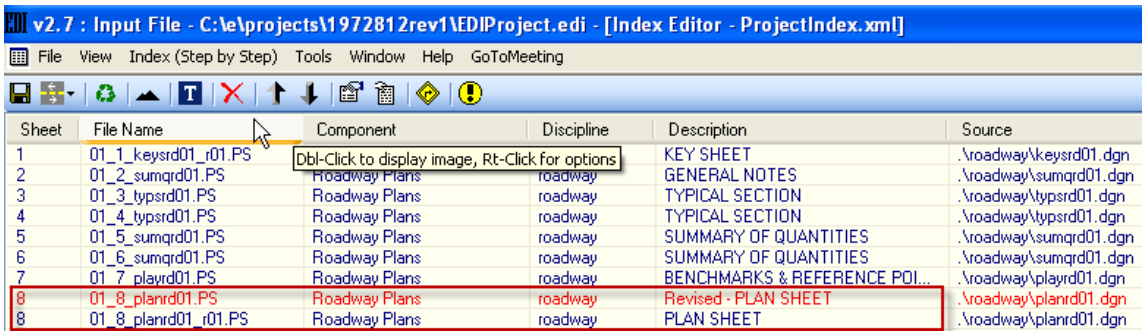
12. Select to color the changed sheets red in the existing index.



13. Press OK, then review the resulting update to the Index to ensure EDI picked up all the changes. This will indicate which sheets will be replotted because they have changed. To review the index, select the Index editor view.



14. Now we see both the revised sheet back to revision 00 and the redacted revision 01 sheet.



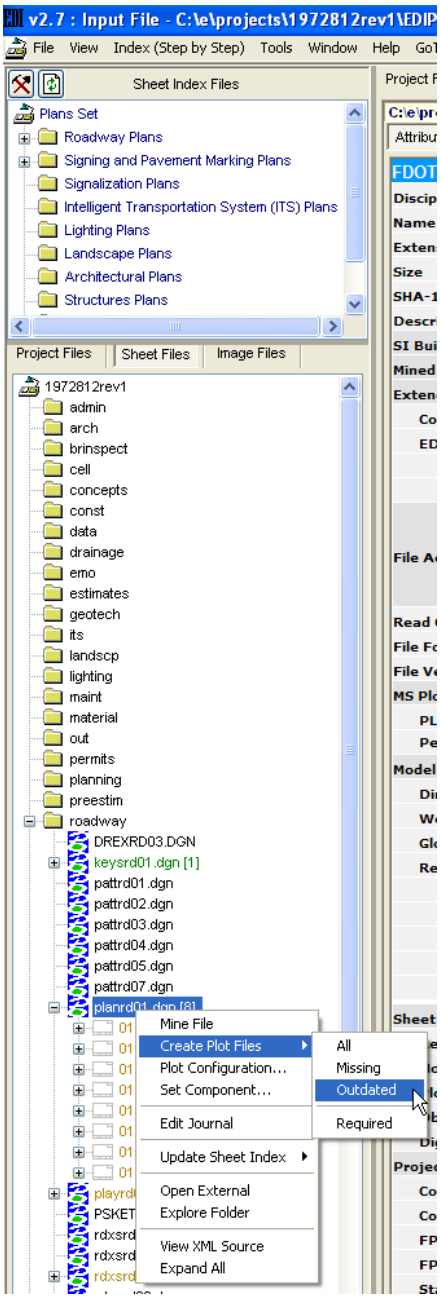
Sheet	File Name	Component	Discipline	Description	Source
1	01_1_keysrd01_r01.PS	Roadway Plans	roadway	KEY SHEET	.\roadway\keysrd01.dgn
2	01_2_sumqrd01.PS	Roadway Plans	roadway	GENERAL NOTES	.\roadway\sumqrd01.dgn
3	01_3_typsrd01.PS	Roadway Plans	roadway	TYPICAL SECTION	.\roadway\typsrd01.dgn
4	01_4_typsrd01.PS	Roadway Plans	roadway	TYPICAL SECTION	.\roadway\typsrd01.dgn
5	01_5_sumqrd01.PS	Roadway Plans	roadway	SUMMARY OF QUANTITIES	.\roadway\sumqrd01.dgn
6	01_6_sumqrd01.PS	Roadway Plans	roadway	SUMMARY OF QUANTITIES	.\roadway\sumqrd01.dgn
7	01_7_playrd01.PS	Roadway Plans	roadway	BENCHMARKS & REFERENCE POI...	.\roadway\playrd01.dgn
8	01_8_planrd01.PS	Roadway Plans	roadway	Revised - PLAN SHEET	.\roadway\planrd01.dgn
8	01_8_planrd01_r01.PS	Roadway Plans	roadway	PLAN SHEET	.\roadway\planrd01.dgn

15. Once we are sure all of our revisions are accounted for and rolled back, each of the prior revised sheets can be deleted from the index. For example, the last line for Sheet 8 can be deleted and the Index resaved. The line for sheet 8 above, colored red, indicates the plot is still out of date, and must be re-plotted.

    Re-plotting of the rolled back sheets is done in a similar manner as described previously from the Project view of EDI. Here is where great care must be taken, and though about the impacts to previously signed and sealed files that might bear the same plot file names.

16. You must consider the impact of those sheets for the original signatory who signed the revision 00, especially if the sheets are being rolled back from revision1. The normal revision process rolling forward was to create a new Signatory and use that to sign revised sheets. For the case rolling back, we INTEND to overwrite sheets previously signed and sealed. Doing so invalidates the Sign used to sign and seal those sheets originally. The recommended solution is to delete those original Signatory's using PEDDS, and re-sign and seal those that were affected by the roll back of the revision.

17. Once you have accounted for the impacts noted above, you are ready to process the remainder of the delivery as if it were an original delivery.



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Chapter 9 - RIGHT OF WAY MAPPING CADD

CADD Production Criteria Handbook

9.1 RIGHT OF WAY MAPPING CADD STANDARDS

9.1.1 FILE NAMING CONVENTION

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.

9.1.2 STANDARD FILE NAMES

Standard file names should follow this format: **AABBBB##.ex*t***
Where **AA** = *abbreviated group description*; **BBBB** = *Sheet type*; ## =*Sequence number.*

Note *Please see CPCH Chapter 4 for more information for file extensions.*

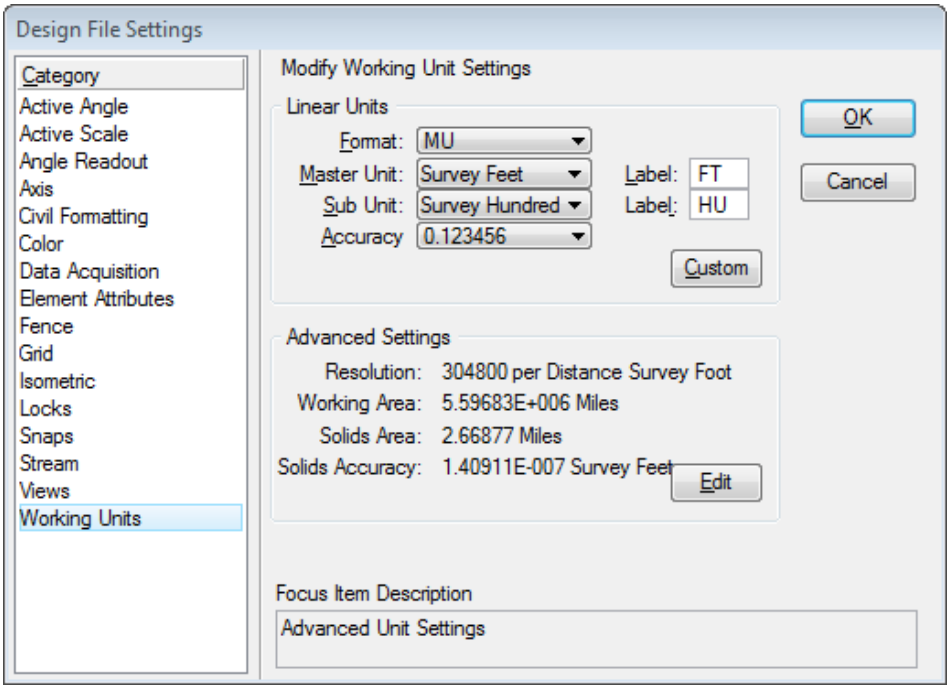
The following table defines the Right of Way Mapping File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequence numbering. The standard map naming convention shall be a maximum of an eight character prefix and a .dgn suffix. The prefix shall be a two letter group name with a four letter file name and two-digits for the sheet number Example: RWDETL01.DGN: Where **RW** = Right of Way Mapping Group; **DETL** = Detail Sheet File; and **01** = Sheet Number 1

File Name	Description	Critical File
CS(F.P. No.)	Control Survey Master Design File (Enter 7 digit Financial Project No.)	
CSCOVR.DGN	Control Survey Cover Sheet	X
CSDETL.DGN	Control Survey Detail Sheet	X
CSKEYM.DGN	Control Survey Key Map Sheet	X
MM(F.P. No.)	Maintenance Map Master Design File (Enter 7 digit Financial Project No.)	
MMCOVR.DGN	Maintenance Map Cover Sheet	X
MMDETL.DGN	Maintenance Map Detail Sheet	X
MMKEYM.DGN	Maintenance Map Key Map Sheet	X
RW(F.P. No.)	R/W Master Detail Design File (Enter 7 digit Financial Project No.)	
RWCOVR.DGN	R/W Cover Sheet	X
RWDETL.DGN	R/W Detail Sheet	X
RWFACS.DGN	R/W Cover Sheet FA Project	X
RWKEYM.DGN	R/W Key Map Sheet	X
RWPNCTAB.DGN	R/W Project Network Control Tabulation Sheet	X
RWPR.DGN	R/W Parcel Sketch Sheet (11”x17” Landscape)	X
RWPS.DGN	R/W Parcel Sketch Sheet (8.5”x11” Portrait)	X
RWSPS.DGN	R/W Specific Purpose Survey Sheet	X
RWTAB.DGN	R/W Tabulation Sheet	X
RWTABENG.PLT	R/W Tabulation Sheet Data (ENGLISH)	X

9.1.3 SEED FILE SETTINGS

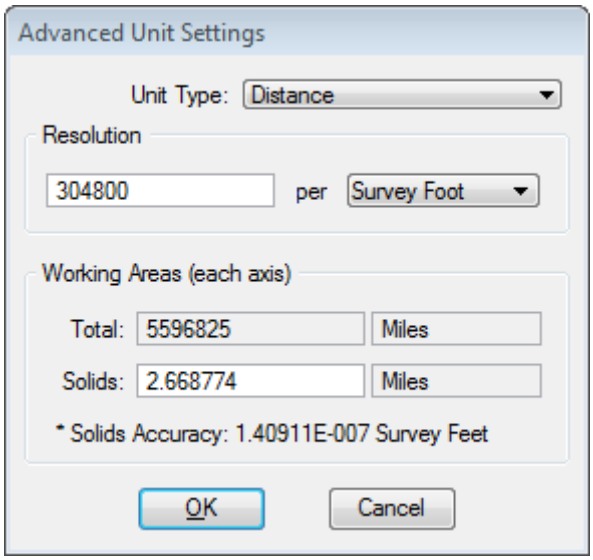
- **English Seed File Settings (Non-Survey Inch)**

English Working Units for MicroStation V8 are set to “US Survey Foot” standard (1 Survey Foot = 1200/3937m >> 0.30480061). The seed file for Right of Way Mapping is “RWSEED2D.DGN”. The design file global origin shall be center of the design plane 7400, 7400.



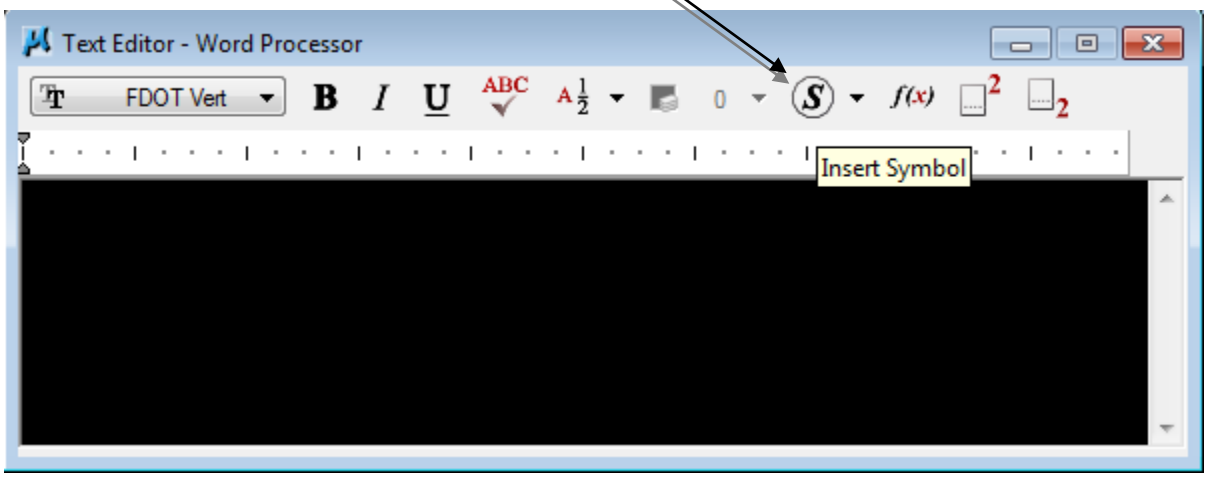
- **Advanced Working Unit Settings**

The Edit button opens the Advanced Unit Settings dialog box. These settings define two items. The first establishes the size of a grid (similar to the design plane in MicroStation/J) that overlays the drawing area. This grid is used for backward compatibility with older versions of MicroStation. The Advanced Unit Settings should appear as shown here.

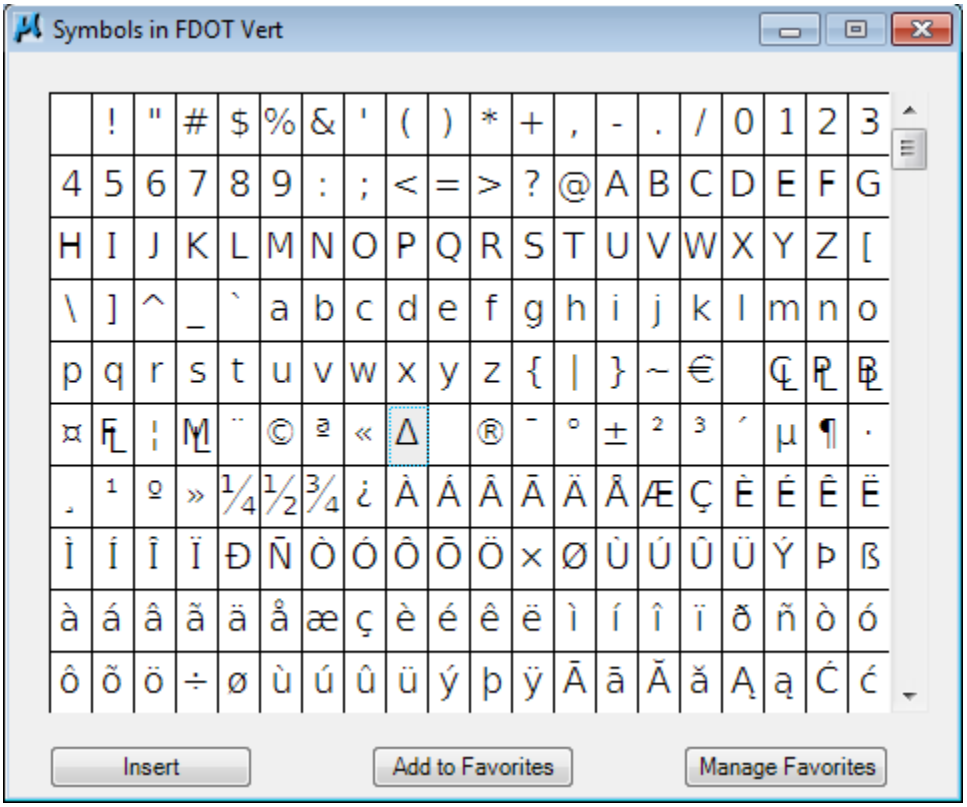


9.1.4 STANDARD TEXT FONTS

For the FDOT2010 workspace MicroStation uses special, custom fonts in its drawings and CADD programs; specifically, FDOT Vert and FDOT Vert Mono true type fonts (ttf). There are also bold versions of both fonts; FDOT Vert Bold and FDOT Vert Mono Bold. These fonts are stored in the FDOTVert.ttf, FDOTVertBold.ttf, FDOTVertMono.ttf and FDOTVertMonoBold.ttf files supplied with the FDOT CADD software. Special symbol characters are provided in the delivered FDOT true type font files. These characters may be accessed via the Insert Symbol tool provided in the MicroStation word processor dialog.



These characters include but are not limited to: fractions, mathematical symbols, survey symbols, boring symbols, Greek letters, and Super/Sub Scripts.



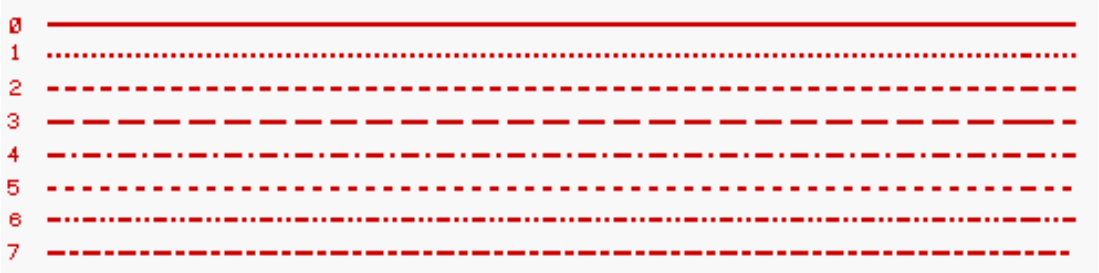
9.1.5 STANDARD TEXT SIZE

The following tables of text sizes are to be used as a guide for the recommended text sizes for all right of way mapping projects at a given scale. **Readability** of text data should be considered as priority; however no text should be smaller than 3.2' on a 1" = 40' scale (0.08" actual plotted size).

- Recommended Base Text Sizes for (English) R/W Mapping
- D-SIZE (24"x36")

SCALE	RECOMMENDED TEXT SIZES
1" = 5'	0.5'
1" = 10'	1.0'
1" = 20'	2.0'
1" = 30'	3.0'
1" = 40'	4.0'
1" = 50'	5.0'
1" = 100'	10.0'
1" = 200'	20.0'
1" = 400'	40.0'

9.1.6 LINE STYLES



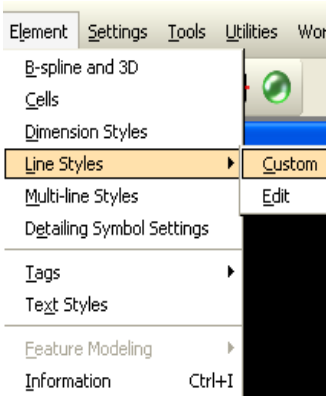
- **Custom Line Styles**

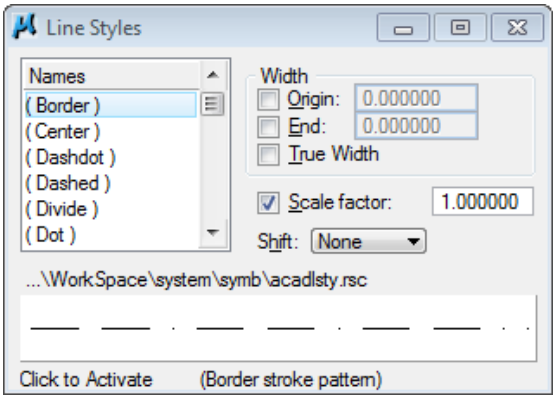
MicroStation provides for the creation of "Custom Line Styles". Custom Line Styles have the same characteristics as standard MicroStation line codes and can be set as the active line style using "LC=" key in. For English units, "**RWLINENG.RSC**" was created at a 1:1 scale. Standard MicroStation line styles are based on output device coordinates, and therefore are not truly WYSIWYG, as are custom line styles, see above. It is recommended that you use custom line styles instead of standard line styles with patterned lines. When using Right of Way Mapping custom line styles with MicroStation it is important to set the correct active custom line style scale. For example: to place an English custom line styles simply set the scale the same as the drawing scale.

Note *Only FDOT resource ".RSC" files should be used.*

➢ ***To set custom line style scale:***

Select the MicroStation menu option: **Element > Line Styles > Custom**.





- **Right of Way Mapping Custom Line Styles**

English custom line styles are created at a scale of 1” = 1’

Note *Symbols in tables are not displayed at their required weights/thickness.*

NAME	SYMBOL
ANGLE – Angle Delineator	
ARROW2 – R/W Width	
ARROWPOINT	
ARROWTIE	
CLIMIT - City Limit	
CLIMIT2 – City Limit(Hash Only)	
COLINE – County Line	
EECL – Existing Easement Centerline	
EXLA – Existing L/A RW	
EXRW – Existing State Road R/W	
GRTL - Grant Line	
LA - Proposed L/A RW	
LEADERLT – Leader Left	
LEADERRT – Leader Right	
LICENSE – License	
LOC - Limits of Construction	

NAME	SYMBOL
NONVH - Non-Vehicular Access Line	
NSPF - Nat./State Park/Forest	
NSPF2 – Nat./State Park/Forest (Hash Only)	
PESMT - Perpetual Ease.	
QSEC - ¼ Section Line	
RR - Railroad	
SECLIN - Section Line	
STL - State Line	
SUBDIV – Subdivision Arrow	
SUBDIV2 – Arrows2	
SUBDIV2LT – Arrows 2 LT.	
SUBDIV2LTOnly – Arrows 2 LT.	
SUBDIV2RT – Arrows 2 RT.	
SUBDIV2RTOnly – Arrows 2 RT. Only	
SUBDIVLT	
SUBDIVRT	
TEMPE – Temporary Easement	
TIITF – Murphy Reservation Line	
TWPRGE – Township/Range	
WaterMapBoundary	

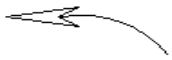
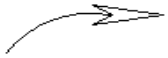
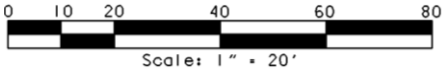
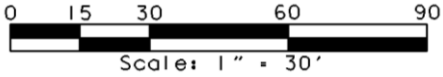
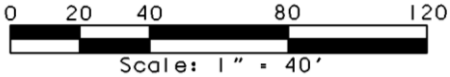
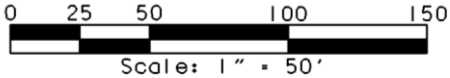
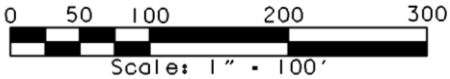
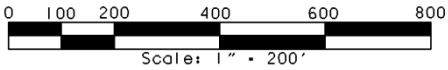
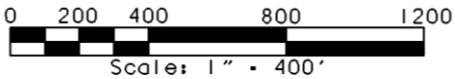
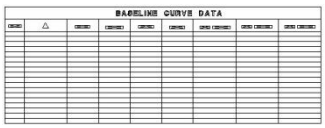
9.1.7 R/W MAPPING CELL LIBRARY

Cells are created in cell library ROW.CEL At 1” = 1’

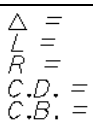
Important: *RW Cells must be placed with the True Scale toggle “ON”.*

- CELL TABLE

Cells in the following tables are not displayed at required weights/thickness. See Symbology Index for Cell symbology.

ELEMENT	TYPE	SYMBOL	Macro
ARROW TERMINATOR LEFT (Place on ByLevel of Text Element Relative Toggle “ON”)	C = ARRWLG		**Place Delineator**
ARROW TERMINATOR RIGHT (Place on ByLevel of Text Element Relative Toggle “ON”)	C = ARRWRG		**Place Delineator**
LINE TERMINATOR@POINT G = Graphic type cell	C =ARRLT		**Place Delineator**
LINE TERMINATOR@POINT G = Graphic type cell	C =ARRRT		**Place Delineator**
BAR SCALE 1” = 20’	C = BS20		**Place Bar Scale**
BAR SCALE 1” = 30’	C = BS30		**Place Bar Scale**
BAR SCALE 1” = 40’	C = BS40		**Place Bar Scale**
BAR SCALE 1” = 50’	C = BS50		**Place Bar Scale**
BAR SCALE 1” = 100’	C = BS100		**Place Bar Scale**
BAR SCALE 1” = 200’	C = BS200		**Place Bar Scale**
BAR SCALE 1” = 400’	C = BS400		**Place Bar Scale**
BASELINE CURVE DATA BOX (Used with Geopak Table Tutorial)	C = BLBOX		

ELEMENT	TYPE	SYMBOL	Macro
BASELINE SYMBOL	C = BL		
CENTERLINE SYMBOL	C = CL		
CONCRETE MONUMENT OPEN	C = MONSQ		
CONCRETE MONUMENT SOLID	C = MONSQS		
CONCRETE R/W MONUMENT (R/W MONUMENTATION MAP)	C = MON		
COORDINATE DATA BOX (Used with Geopak Table Tutorial)	C = COORD		
CURVE DATA BOX (Used with Geopak Table Tutorial)	C = CURBOX	CURVE DATA Δ	
CURVE DATA (English) (Used with Geopak Table Tutorial)	C = CDATA	P.I.STA. Δ = D = T = L = R = P.C.STA. P.T.STA.	
NORTH ARROW	C = NOARR		
PARCEL BUBBLE 100	C = PB100	---	
PARCEL BUBBLE 700	C = PB700	---	
PARCEL BUBBLE 800	C = PB800	---	
PARCEL BUBBLE 900	C = PB900	---	

ELEMENT	TYPE	SYMBOL	Macro
PERMANENT R/W MONUMENT (R/W MONUMENTATION MAP)	C = PRWM		
PROPERTY LINE HOOK	C= PLHOOK		
PROPERTY LINE HOOK	C= PLHTOP		
PROPERTY LINE HOOK	C =PLHBOT		
PROPERTY LINE SYMBOL	C = PL		
ROD MONUMENT OPEN	C = MONRD		
ROD MONUMENT SOLID	C = MONRDS		
SEGMENTED CURVE CHORD DIST./BEARING (Used with Geopak Table Tutorial)	C = SEGCUR		
SPRING LINE (Place on Symbology of Assoc. Element)	C=SPRING		**Place SpringLine**

9.1.8 STANDARD SYMBOLOGY TABLES

Refer to the Symbology tables below for the listing of right of way elements and their symbologies. The list of elements shown may not contain **all** of the elements that appear within a right of way map, as this list would be extensive. The elements shown are those that are required for specific types of right of way maps and which may appear within all of the design file types.

When other files are referenced the element symbology of those files will be adhered to. If elements that are not required of a file are placed within that file, the element symbology of the file they normally reside in will be adhered to. All R/W level symbologies are created as MicroStation V8 ByLevel elements.

Important: *Readability of text data should be considered as priority.*

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
BaselineCurveData	1500	Cell:Baseline Curve Data	0	0	2
BaselineFlagLT	1501	Annotation:Begin End Baseline Flag Left	0	LEADERLT	2
BaselineFlagRT	1502	Annotation:Begin End Baseline Flag Right	0	LEADERRT	2
BaselineLeaderWt0	1503	Annotation:Leader:Baseline Survey (weight = 0)	0	ArrowPoint	0
BaselineLeaderWt1	1504	Annotation:Leader:Baseline Survey (weight = 1)	0	ArrowPoint	1
BaselineLeaderWt2	1505	Annotation:Leader:Baseline Survey (weight = 2)	0	ArrowPoint	2
BaselineSideStreet	1506	Baseline:Baseline Side Street	0	0	0
BaselineStaTie	1507	Annotation:Station Tie:Baseline Station Tie	0	ArrowTie	0
BaselineTangentLine	1509	Miscellaneous:Baseline Curve Tangent (PC-PI-PT)	0	2	0
BaselineTextWt0	1510	Annotation:Text:Baseline (weight = 0)	0	0	0
BaselineTextWt1	1511	Annotation:Text:Baseline (weight = 1)	0	0	1
BaselineTextWt2	1512	Annotation:Text:Baseline (weight = 2)	0	0	2
BuildingLeader	1513	Annotation:Leader:Building	0	ArrowPoint	0
BuildingStaTie	1514	Annotation:Station Tie:Building	0	ArrowTie	0
BuildingText	1515	Annotation:Text:Buildings	0	0	0
ClipBorder	1516	Cell:Miscellaneous:R/W Clip Border	4	2	0
ClipBorderLine	1517	Cell:Miscellaneous:R/W Clip Border	4	0	4
ClipBorderOutside	1518	Cell:Miscellaneous:R/W Clip Border	3	0	0
Closing-SameLine	1519	Miscellaneous:Closing Line, Same Point, or Same Line	0	ArrowTie	0
Closing-SameLineText	1520	Miscellaneous:Text:Closing Line, Same Point, or Same Line	0	0	0
ConstLimits	1521	Proposed:Limits of Construction Line	3	LOC	0
ConstLimitsLeader	1522	Annotation:Leader:Limits of Construction (Proposed)	3	ArrowPoint	0

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
ConstLimitsStaTie	1523	Annotation:Station Tie:Limits of Construction (Proposed)	3	ArrowTie	0
ConstLimitsText	1524	Annotation:Text: Limits of Construction (Proposed)	3	0	0
CoordPtText	1525	Annotation:Text:Miscellaneous:Coordinate Geometry Points	4	0	0
DataBoxWt0	1526	Cell:Miscellaneous:Data Table Wt0 For Text and Linear Elements	0	0	0
DataBoxWt1	1527	Cell:Miscellaneous:Data Table Wt1 For Text and Linear Elements	0	0	1
DataBoxWt2	1528	Cell:Miscellaneous:Data Table Wt2 For Text and Linear Elements	0	0	2
DataBoxWt3	1529	Cell:Miscellaneous:Data Table Wt3 For Text and Linear Elements	0	0	3
DataBoxWt4	1530	Cell:Miscellaneous:Data Table Wt4 For Text and Linear Elements	0	0	4
DetailBorder	1531	Miscellaneous: Border for Mapping Detail	0	3	3
EaseLine_ep	1532	Easement:Easement Line (Existing)	1	2	0
EaseLineLeader_ep	1533	Annotation:Leader:Easement (Existing)	1	ArrowPoint	0
EaseLineStaTie_ep	1534	Annotation:Station Tie:Easement (Existing)	1	ArrowTie	0
EaseLineText_ep	1535	Annotation:Text:Easement Lines (Existing)	1	0	0
EaseLineWidthArrow_ep	1536	Annotation:Arrow:Easement Width (Existing)	1	ARROW2	0
EaseLineCenterline_ep	1537	Baseline:Centerline:Easement (Existing)	1	EECL	0
EaseLicLine	1538	Easement:License (Proposed)	0	LICENSE	1
EaseLicLeader	1539	Annotation:Leader:License (Proposed)	0	ArrowPoint	0
EaseLicStaTie	1540	Annotation:Station Tie:License (Proposed)	0	ArrowTie	0
EaseLicText	1541	Annotation:Text:Easement Lines, License (Proposed)	0	0	1
EaseLicWidthArrow	1542	Annotation:Arrow:License Width (Proposed)	0	ARROW2	0
EasePerpLine	1543	Easement:Perpetual Easement Line (Proposed)	4	PESMT	2
EasePerpLeader	1544	Annotation:Leader:Easement Perpetual (Proposed)	4	ArrowPoint	1
EasePerpStaTie	1545	Annotation:Station Tie:Easement Perpetual (Proposed)	4	ArrowTie	0
EasePerpText	1546	Annotation:Text:Easement Lines, Perpetual (Proposed)	4	0	1
EasePerpWidthArrow	1547	Annotation:Arrow:Easement Perpetual Width (Proposed)	4	ARROW2	0
EaseTempLine	1548	Easement:Temporary Easement Line (Proposed)	6	TEMPE	1
EaseTempLeader	1549	Annotation:Leader:Easement Temporary (Proposed)	6	ArrowPoint	1
EaseTempStaTie	1550	Annotation:Station Tie:Easement Temporary (Proposed)	6	ArrowTie	0
EaseTempText	1551	Annotation:Text:Easement Lines, Temporary (Proposed)	6	0	1

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
EaseTempWidthArrow	1552	Annotation:Arrow:Easement Temporary Width (Proposed)	6	ARROW2	0
GenNotesLeader	1553	Annotation:Leader:Miscellaneous:General Notes	0	ArrowPoint	2
GenNotesText	1554	Annotation:Miscellaneous:Text: General Notes	0	0	2
GovCityLimitHLine_ep	1555	Government:City Limit Line (Hash Only)	3	Climit2	0
GovCityLimitLine_ep	1556	Government:City Limit Line	3	CLIMIT	0
GovCountyLine_ep	1557	Government:County Line	3	COLINE	3
GovGrantLine_ep	1558	Government:Grant Line	3	GRTL	2
GovGreenLeaderWt0_ep	1559	Annotation:Leader:Government (color = green)(weight = 0)	2	ArrowPoint	0
GovGreenLeaderWt2_ep	1560	Annotation:Leader:Government (color = green)(weight = 2)	2	ArrowPoint	2
GovGreenStaTie_ep	1561	Annotation:Station Tie:Government (color = green)	2	ArrowTie	0
GovGreenTextWt0_ep	1562	Annotation:Government Text Green Weight of 0	2	0	0
GovGreenTextWt2_ep	1563	Annotation:Government Text Green Weight of 2	2	0	2
GovLotLine_ep	1564	Government:Lot Line	3	0	1
GovMeanderLine_ep	1565	Government:Meander Line	3	3	1
GovParkHLine_ep	1566	Government:National or State Park or Forest Line (Hash Only)	2	NSPF2	0
GovParkLine_ep	1567	Government:National or State Park or Forest Line	2	NSPF	0
GovQtrQtrLine_ep	1568	Government:Quarter / Quarter Section Line	3	QSEC	0
GovQuarterLine_ep	1569	Government:Quarter Section Line	3	QSEC	1
GovRedLeaderWt0_ep	1570	Annotation:Leader:Government (color = red)(weight = 0)	3	ArrowPoint	0
GovRedLeaderWt2_ep	1571	Annotation:Leader:Government (color = red)(weight = 2)	3	ArrowPoint	2
GovRedStaTie_ep	1572	Annotation:Station Tie:Government (color = red)	3	ArrowTie	0
GovRedTextWt0_ep	1573	Annotation:Government Text Red Weight of 0	3	0	0
GovRedTextWt2_ep	1574	Annotation:Government Text Red Weight of 2	3	0	2
GovSectionLine_ep	1575	Government:Section Line	3	SECLIN	2
GovStateLine_ep	1576	Government:State Line	2	STL	3
GovTwpRgeLine_ep	1577	Government:Township and Range Government Survey Line	2	TWPRGE	3
ImageAttachment_dp	600	Image Attachments	0	0	0
LARWLine	1578	Proposed:Limited Access Right of Way Line	4	LA	3
LARWLine_ep	1579	Existing:Limited Access Right of Way Line	7	EXLA	0

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
MaintLeader	1580	Annotation:Leader:Maintenance	4	ArrowPoint	2
MaintLine	1581	Proposed:Maintenance Line	4	0	4
MaintStaTie	1582	Annotation:Station Tie:Maintenance	4	ArrowTie	0
MaintText	1583	Annotation:Text: Maintenance	4	0	2
MaintWidthArrow	1584	Annotation:Arrow:Maintenance Width (Proposed)	4	ARROW2	0
MapOutline_dp	212	Outline for key maps	0	0	5
MatchLineMask_cp	235	Mask Area for Match Line Overlap Area (Autodesk)	0	0	0
MHWL_TIITF_Leader	1585	Annotation:Leader:TIITF:Mean High Water Lines or Ordinary High Water Lines	7	ArrowPoint	2
MHWL_TIITF_StaTie	1587	Annotation:Station Tie:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	7	ArrowTie	2
MHWL_TIITF_Text	1588	Annotation:Text:TIITF:Mean High Water LInes or Ordinary High Water Lines	7	0	2
MHWL_TIITF_WidthArrow	1589	Annotation:Arrow:TIITF:Mean High Water LInes or Ordinary High Water Lines	7	ARROW2	2
MonConcOpen	1590	Cell:Monument,Concrete Open	4	0	1
MonConcSolid	1591	Cell:Monument, Concrete Solid	4	0	1
MonConRW	1592	Cell:Monument, Concrete RW	4	0	2
MonLeader	1593	Annotation:Leader:Found / Set Monuments (Not Government Corners)	4	ArrowPoint	0
MonPermRW	1594	Cell:Monument, RW Permanent (RW Survey Map)	4	0	2
MonRodOpen	1595	Cell:Monument, Rod Open	4	0	1
MonRodSolid	1596	Cell:Monument, Rod Solid	4	0	1
MonStaTie	1597	Annotation:Station Tie:Found / Set Monuments (Not Government Corners)	4	ArrowTie	0
MonText	1598	Annotation:Text:Found / Set Monuments (Not Government Corners)	4	0	0
Murphy_TIITF_Leader	1599	Annotation:Leader:TIITF:Murphy Reservations Lines	2	ArrowPoint	1
Murphy_TIITF_Line	1600	TIITF: Upland TIITF:Murphy Reservations Lines	2	TIITF	1
Murphy_TIITF_StaTIe	1601	Annotation:Station Tie:TIITF:Murphy Reservations Lines	2	ArrowTie	1
Murphy_TIITF_Text	1602	Annotation:Text:TIITF:Murphy Reservations Lines	2	0	1
Murphy_TIITF_WidthArrow	1603	Annotation:Arrow:TIITF:Murphy Reservations Lines	2	ARROW2	1
NonVehcLeader_ep	1604	Annotation:Leader:Non Vehicular Access	3	ArrowPoint	0
NonVehcLine_ep	1605	Existing:Non-Vehicular Access Line	3	NONVH	0
NonVehcStaTie_ep	1606	Annotation:Station Tie:Non Vehicular Access	3	ArrowTie	0
NonVehcText_ep	1607	Annotation:Text:Non-Vehicular Access (Existing)	3	0	0

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
ParcelBubble100	1608	Cell:Miscellaneous:Right of Way Parcel Bubble with Leader	3	0	2
ParcelBubble700	1609	Cell:Miscellaneous:Temporary Easement Parcel Bubble with Leader	6	0	2
ParcelBubble800	1610	Cell:Miscellaneous:Perpetual Easement Parcel Bubble with Leader	4	0	2
ParcelBubble900	1611	Cell:Miscellaneous:License Parcel Bubble with Leader	0	0	2
PropertyLine_ep	1612	Existing:Property Line	7	0	0
PropertyLineHook_ep	1613	Cell:Miscellaneous:Property Line Hook	4	0	0
PropertyLineLeader_ep	1614	Annotation:Leader:Property Line (Existing)	7	ArrowPoint	0
PropertyLineStaTie_ep	1615	Annotation:Station Tie:Property Line (Existing)	7	ArrowTie	0
PropertyLineSymbol	1616	Cell:Miscellaneous:Property Line Symbol	4	0	0
PropertyLineText_ep	1617	Annotation:Text:Property Line (Existing)	7	0	0
RFClipPoint	1618	Cell:Miscellaneous:Point (Point Cell for RFCLIP Program)	4	0	10
RRBaseline	1619	Baseline:Rail Road Centerline	0	RR	0
RRLeaderWt0	1620	Annotation:Leader:Railroad (weight = 0)	0	ArrowPoint	0
RRLeaderWt1	1621	Annotation:Leader:Railroad (weight = 1)	0	ArrowPoint	1
RRLeaderWt2	1622	Annotation:Leader:Railroad (weight = 2)	0	ArrowPoint	2
RRTextWt0	1623	Annotation:Text:Railroad (weight = 0)	0	0	0
RRTextWt1	1624	Annotation:Text:Railroad (weight = 1)	0	0	1
RRTextWt2	1625	Annotation:Text:Railroad (weight = 2)	0	0	2
RW_Line	1626	Proposed:Right of Way Line	4	RW	3
RW_Line_ep	1627	Existing:RW Line	7	RW	0
RWandLA_Leader	1628	Annotation:Leader:R/W & L/A (Proposed)	3	ArrowPoint	2
RWandLA_Leader_ep	1629	Annotation:Leader:R/W & L/A (Existing)	7	ArrowPoint	0
RWandLA_StaTie	1630	Annotation:Station Tie:R/W & L/A Lines (Proposed)	3	ArrowTie	0
RWandLA_StaTie_ep	1631	Annotation:Station Tie:R/W & L/A Lines (Existing)	7	ArrowTie	0
RWandLA_Text	1632	Annotation:Text:R/W & L/A Lines Taking Lines (Proposed)	3	0	2
RWandLA_Text_ep	1633	Annotation:Text:R/W & L/A Lines (Existing)	7	0	0
RWandLA_WidthArrow	1634	Annotation:Arrow:RW & LA Width (Proposed)	3	ARROW2	0
RWandLA_WidthArrow_ep	1635	Annotation:Arrow:RW & LA Width (Existing)	7	ARROW2	0
ScratchElements	1636	Scratch:None Plotting Level for Draft Elements, Temporary Elements, Etc.	3	0	0

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
ScratchLevel1	1637	Scratch:Level for Undefined Items - weight of 1	0	0	1
ScratchLevel2	1638	Scratch:Level for Undefined Items - weight of 2	0	0	2
ScratchLevel3	1639	Scratch:Level for Undefined Items - weight of 3	0	0	3
SegCurveData	1640	Cell:Miscellaneous:Segmented Curve Data (Place on Text Symbology of Assoc. Element)	0	0	0
SideStLeaderWt1	1641	Annotation:Leader:Side Street (weight = 1)	0	ArrowPoint	1
SideStLeaderWt2	1642	Annotation:Leader:Side Street (weight = 2)	0	ArrowPoint	2
SideStStaTie	1643	Annotation:Station Tie:Side Street	0	ArrowTie	0
SideStTextWt1	1644	Annotation:Text:Side Street Curve Data, Curve & Coordinate Box Text	0	0	1
SideStTextWt2	1645	Annotation:Text:Side Street Data:Stations,Names,Leader Lines&Circles for (PC,PT,PI,POT)	0	0	2
SubBlockNumberText	1646	Cell:Miscellaneous:Subdivision:Text:Block Number Enter Data Field	5	0	2
SubDivDelineator	1647	Annotation:Subdivision Delineator Line for Subdivision Terminator	5	0	1
SubDivLine	1648	Existing:Subdivision Line	5	0	0
SubDivLineText	1649	Annotation:Text:Subdivision: Lines & Vacated / Original Lot Lines (Existing)	5	0	0
SubDivNameText	1650	Annotation:Text:Subdivision: Plat Name (Existing)	5	0	2
SubDivRW_WidthArrow	1651	Annotation:Arrow:Subdivision	5	ARROW2	0
SubDoubleArrow	1652	Annotation:Subdivision: Boundary Arrows Double <<---->>	5	SUBDIV2	1
SubLotNumberText	1653	Annotation:Text:Subdivision: Lot Numbers	5	0	1
SubSingleArrow	1654	Annotation:Subdivision: Boundary Arrows <---->	5	SUBDIV	1
SubSingleLTArrow	1655	Annotation:Subdivision: Boundary Arrows Single Left <----	5	SUBDIVLT	1
SubSingleRTArrow	1656	Annotation:Subdivision: Boundary Arrows Single Right ---->	5	SUBDIVRT	1
SubTwoLTArrow	1657	Annotation:Subdivision: Boundary Arrows Two Left <<---->	5	SUBDIV2LT	1
SubTwoLTOnlyArrow	1658	Annotation:Subdivision: Boundary Arrows Two Left Only <<----	5	SUBDIV2LTOnly	1
SubTwoRTArrow	1659	Annotation:Subdivision: Boundary Arrows Two Right <---->>	5	SUBDIV2RT	1
SubTwoRTOnlyArrow	1660	Annotation:Subdivision: Boundary Arrows Two Right Only ---->>	5	SUBDIV2RTOnly	1
SubVacOrigLotLeader	1661	Annotation:Leader:Subvivision: Lines & Vacated / Original Lot Lines (Existing)	5	ArrowPoint	0
SubVacOrigLotLine	1662	Existing:Subdivision Vacated or Original Lot Line	5	5	0
SubVacOrigLotStaTie	1663	Annotation:Station Tie:Subdivision Vacated & Original Lot	5	ArrowTie	0
SUEL_TIITF_Leader	1664	Annotation:Leader:DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	2	ArrowPoint	2
SUEL_TIITF_Line	1665	DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines established by DEP methodology	2	PESMT	3

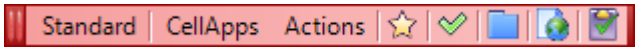
Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
SUEL_TIITF_StaTie	1666	Annotation:Station Tie:DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	2	ArrowTie	2
SUEL_TIITF_Text	1667	Annotation:Text:DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	2	0	2
SUEL_TIITF_WidthArrow	1668	Annotation:Arrow:DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	2	ARROW2	2
TabOwnshpText	1669	Annotation:Text:Miscellaneous: Table of Ownerships	0	0	1
TextShtNo	313	Text - Sheet Number	0	0	2
TopoText_ep	1670	Annotation:Text:Miscellaneous: All Other Topograhic Element Labels (Reference Files)	0	0	0
WaterEdge_ep	1671	Annotation:Mapping Boundary for Rivers, Streams, or Lakes	7	WaterMapBoundary	0

9.2 Right of Way FDOT Menu

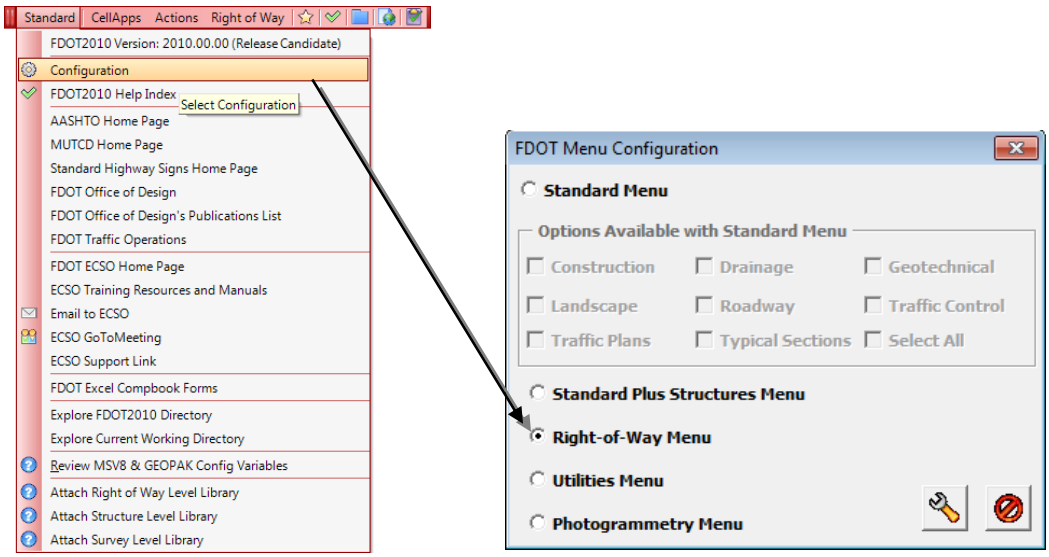
9.2.1 OVERVIEW

Right of Way FDOT Menu was designed with the user in mind. It is a package that facilitates right of way mapping plans preparation incorporating the R/W Mapping CADD Standards, Cell Libraries, Custom Line Styles and Notes etc. The FDOT Menu provided on the FDOT2010 software is a C++ executable program called FDOT Menu.

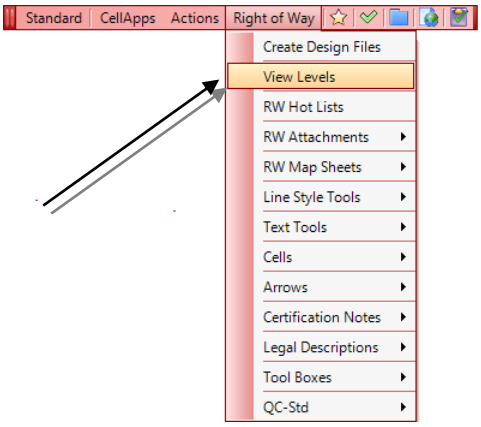
The Standard FDOT Menu is made available by setting the File Open dialogue box Workspace to "**FDOT2010**" for English unit projects and displays upon opening a design file.



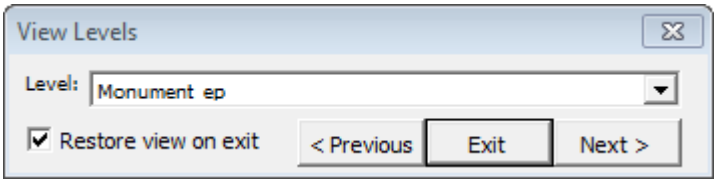
The User may select from the Standard pull down option (see below) to configure the FDOT Menu bar to include the R/W FDOT Menu and other Discipline specific FDOT Menu's. When selected, the FDOT Menu Configuration dialog (see below) displays in which the user can select the desired discipline menu(s). All of FDOT's MicroStation applications have been included in the FDOT Menu's plus some useful tools from MicroStation's Vault CD. These applications are maintained within the FDOT Menu selections CellApps, and Actions.



9.2.2 VIEW LEVELS



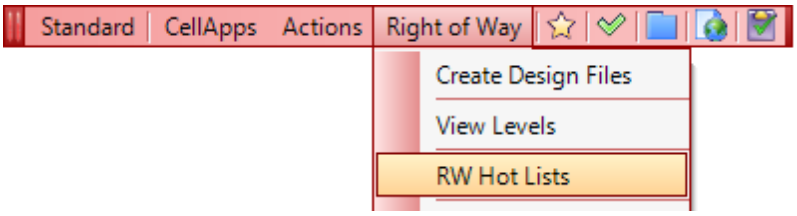
This is a VBA macro that allows you to display used levels individually in a slide-show type of manner. If you tend to crawl up and down your levels a lot, you may find this much faster than traditional methods.



- **Levels** Displays a list of level names that currently exist in the design file.
- **Restore View on Exit** When selected (on) all levels in list will be displayed when macro is exited. When not selected (off) the current active will be the only level displayed when the macro is exited.
- **Previous** Moves to the level previously selected in the list.
- **Next** Moves to the next level in the list.
- **Exit** Exits the program.

9.2.3 RW HOT LISTS

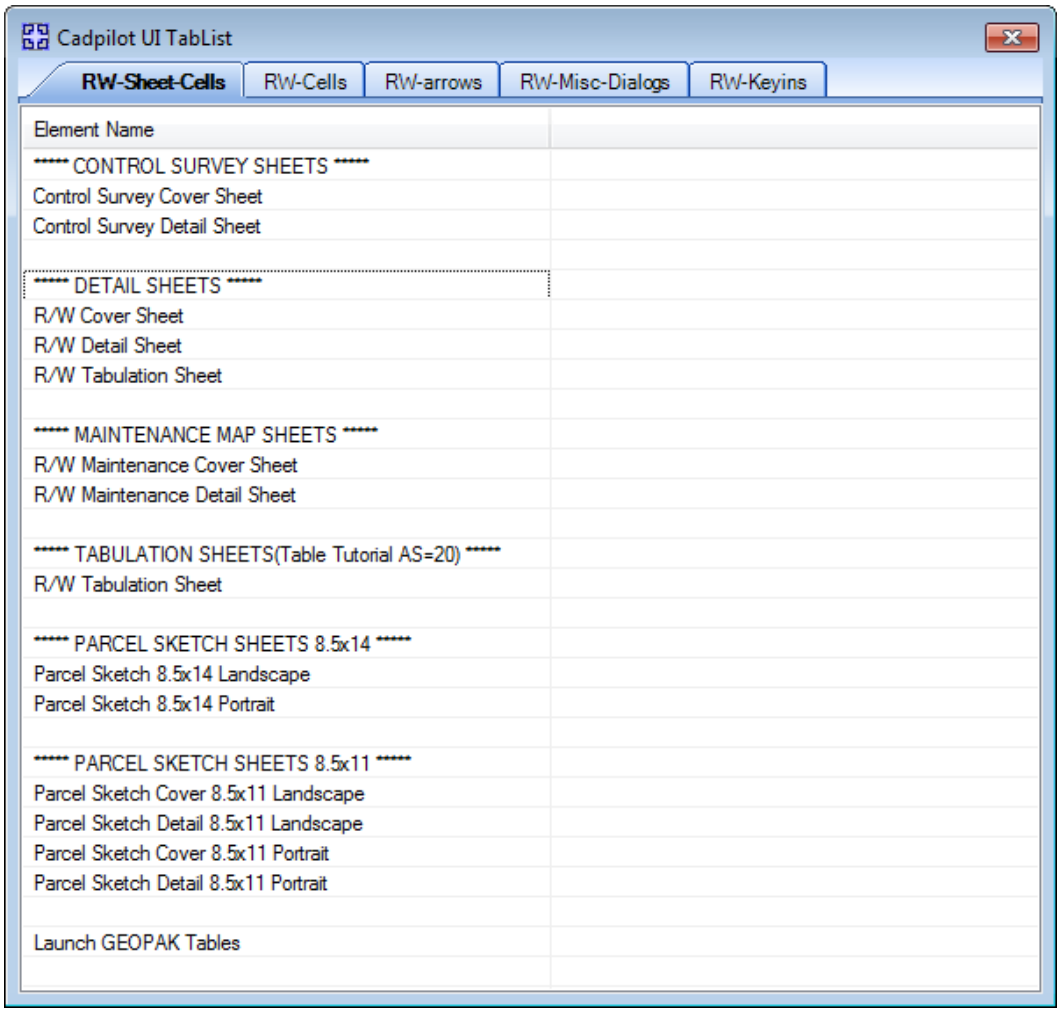
The R/W Mapping FDOT Menu **Hot List** dialog provides the user with quick access to many of the categories and items located on the FDOT Menu pull downs. The Hot List dialog can be activated by selecting **Right of Way > RW Hot Lists:**



The **RW Hot Lists** dialog box contains the following tab selections:

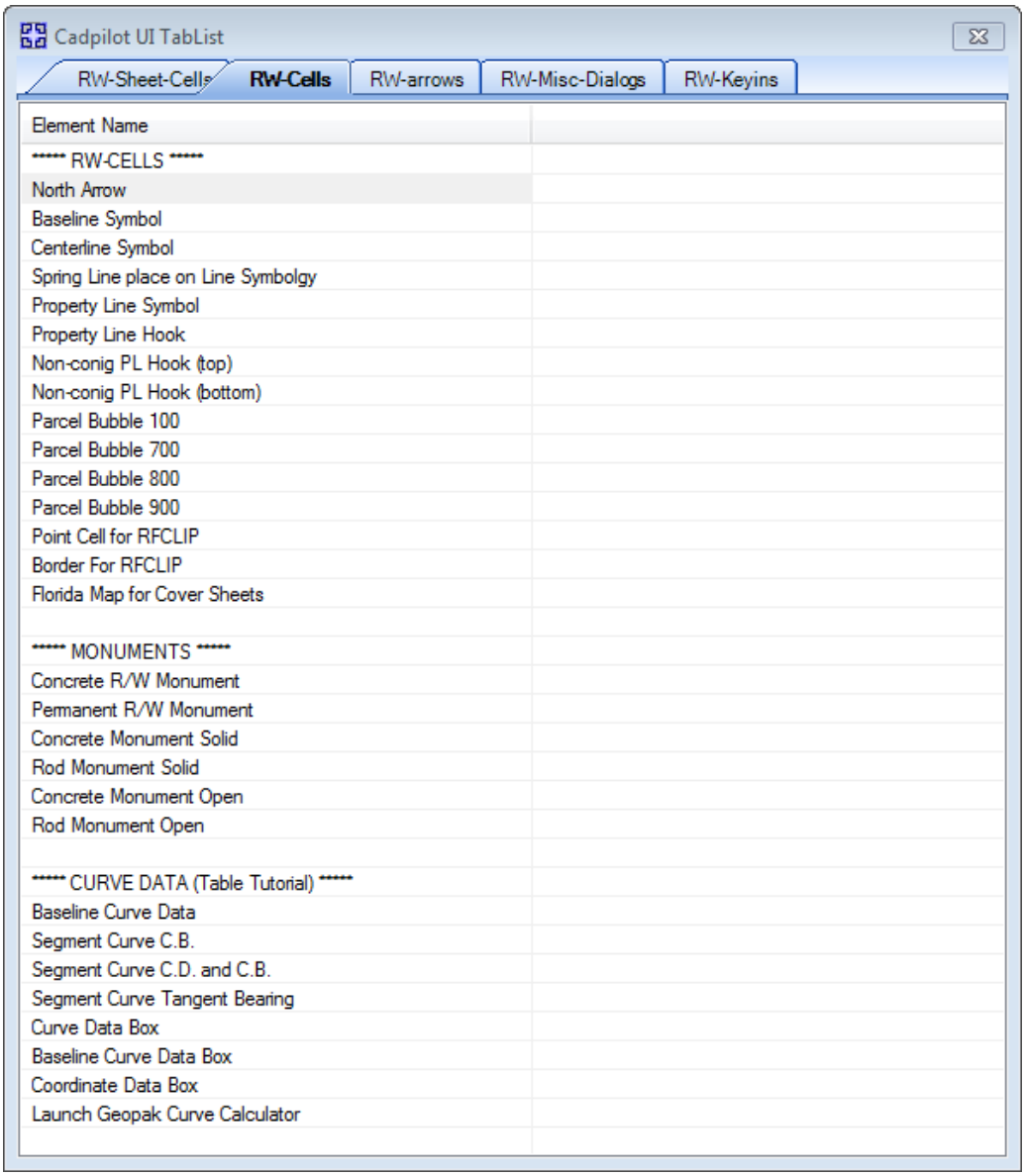
- **RW-Sheet-Cells Tab**

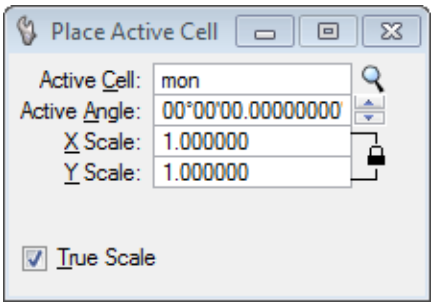
The RW-Sheet-Cells tab provides a listing of the Mapping sheet cells for placement into the MicroStation design file. The same process is used for placement of sheet cells as described under RW-Cells shown previously.



- **RW-Cells Tab**

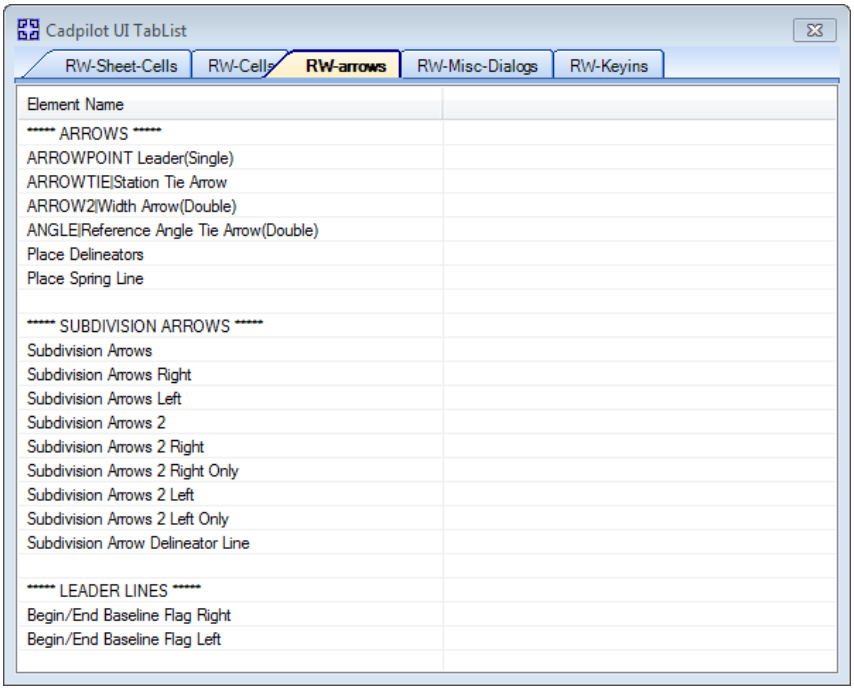
The RW-Cells tab provides quick access to R/W Mapping cells for placement into a MicroStation design file. Simply select the desired cell name and double click. The cell placement command will execute and the cell will be attached to the MicroStation cursor for placement. The Place Active Cell dialog (also shown) will be activated for adjustment of scale prior to the data point to place the cell.





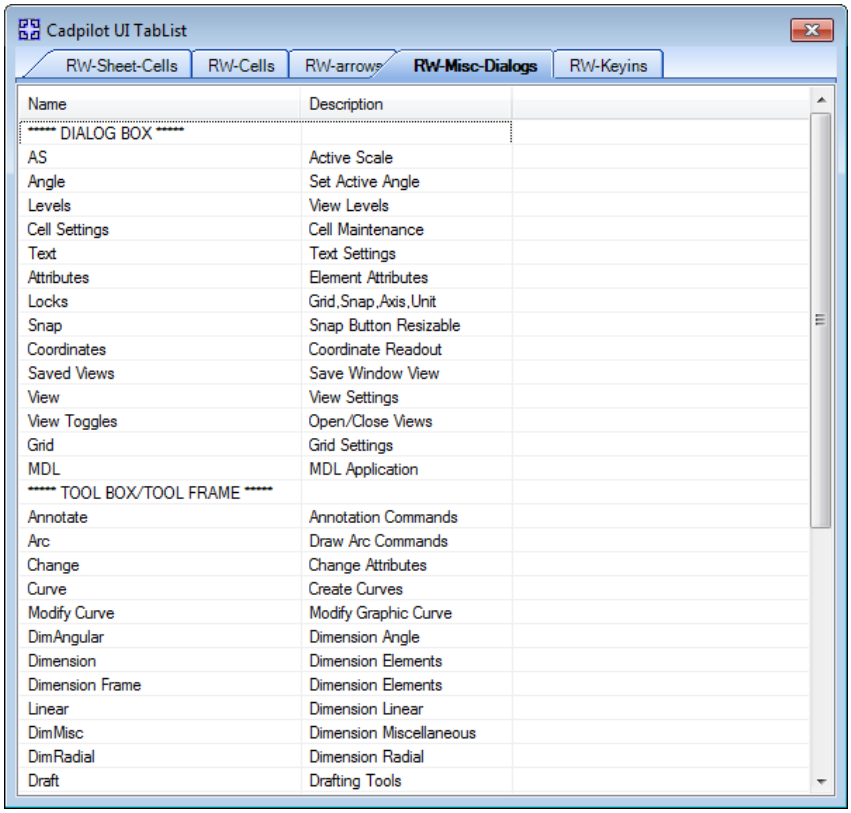
- **RW-Arrows Tab**

The RW-Arrows tab provides access to all R/W Mapping Arrows, Delineators and other annotation applications as located on the R/W Mapping FDOT Menu.

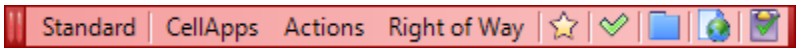


- **RW-Misc-Dialogs Tab**

The RW-Misc-Dialogs tab provides quick access to various MicroStation command dialogs.

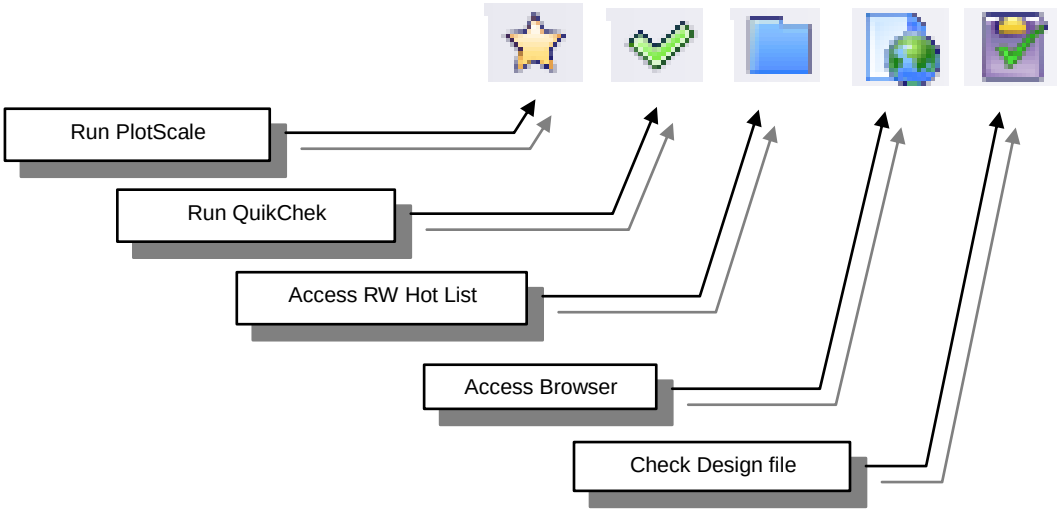


9.2.4 R/W HOT BOXES



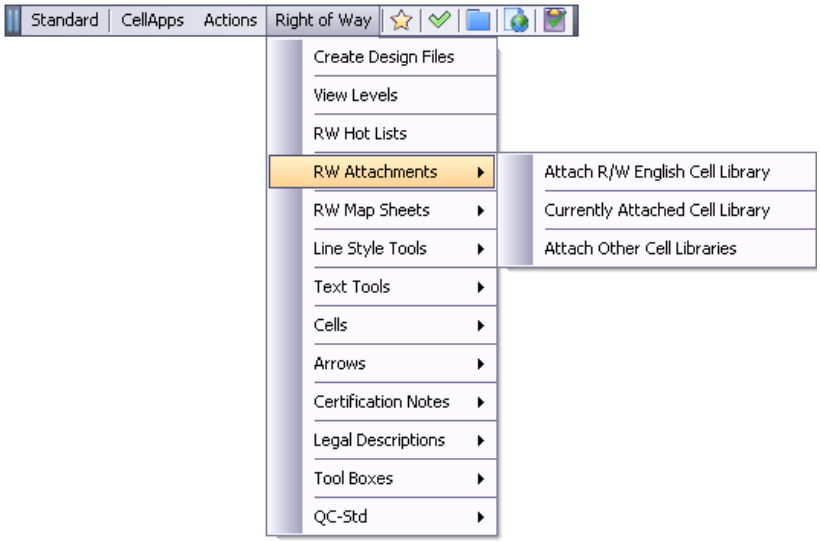
The R/W Mapping FDOT Menu also provides a means of quick access to Hot List dialog and browser windows by using Hot Box icons. After the FDOT2010 software has been installed and the Right of Way Mapping discipline selected from the FDOT Menu Standard>Select Configuration as shown previously, the FDOT Menu should appear as shown below with five icons located to the right of the menu bar.

These icons provide quick access to Run PlotScale, Quick Check, R/W Hot Lists, Browser and QC Compliance by simply passing the cursor over the desired icon. This can be very useful in such cases where the user has selected a FDOT Menu Help icon which opens the information in the browser. To dismiss the browser the user must simply place a data point or reset within the MicroStation design file. To bring back the browser the user would simply pass the cursor over the blue icon and the browser will be reopened at the previously selected site or help file location.



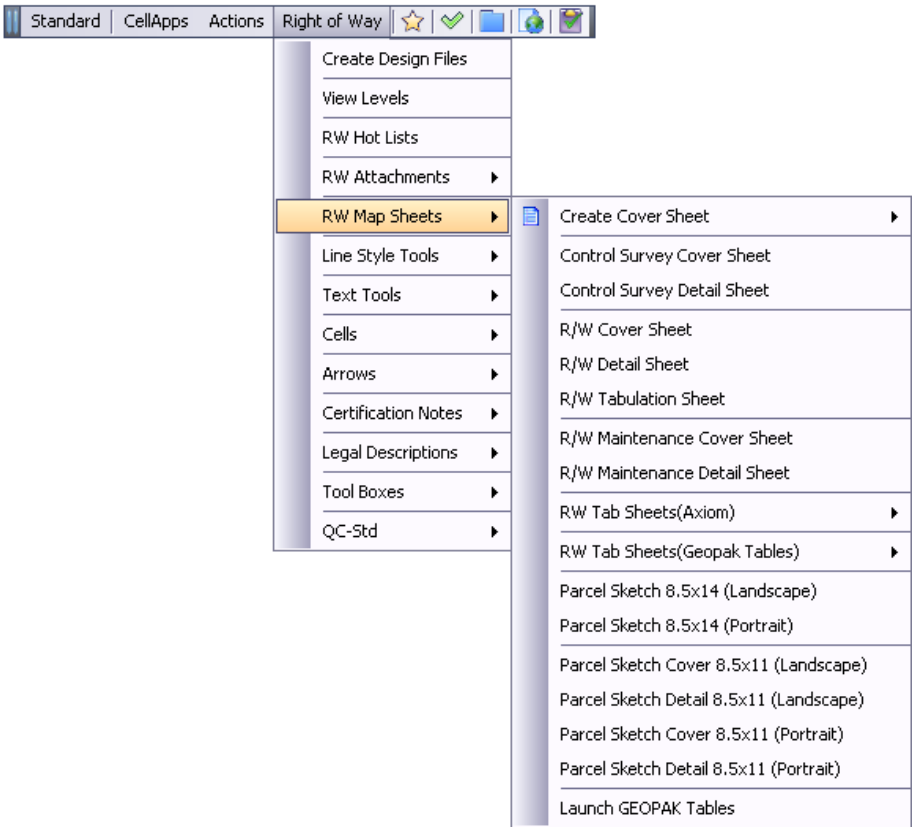
9.2.5 R/W ATTACHMENTS

The **R/W Attachments** selection provides options for attaching the Right of Way Mapping cell libraries for English (row.cel) projects, determining the “Currently Attached Cell Library” which displays results in the MicroStation message window, “Attach Other Cell Libraries” which displays the MicroStation Cell Utility dialog.

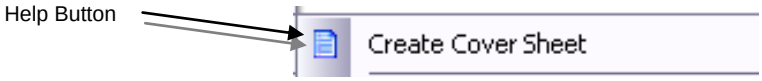


9.2.6 R/W MAP SHEETS

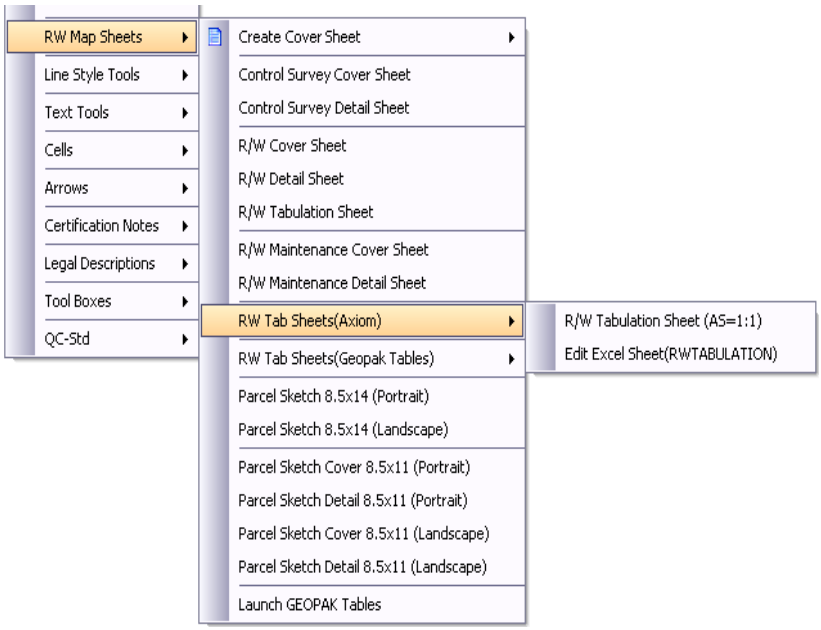
This option places various R/W Map sheet cells of the user's choice in the active design file. The user simply selects the type of sheet cell, and places it in the file. When the R/W Tabulation Sheets (Geopak Tables) is selected, the tabulation sheet will be placed in the design file at the scale of 1"=20'. This accommodates the use of Geopak Table Tutorial text placement. When selected, the Launch Geopak Tables provides a short cut to launch the Geopak Table Tutorial dialog.



Note *A **Help** button is located to the left of the category name containing help information on that menu selection.*

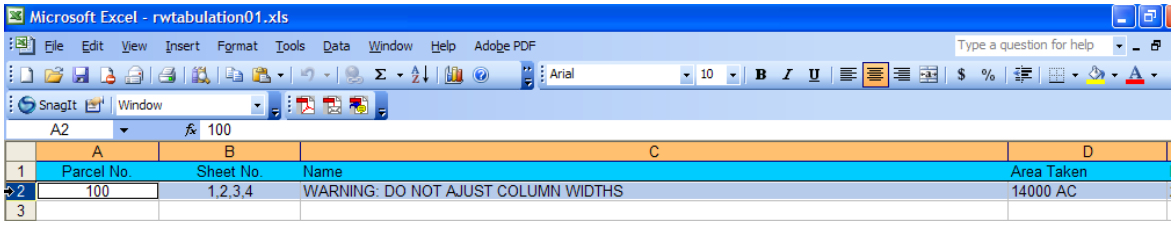


9.2.6.1 RW TAB SHEET (AXIOM)



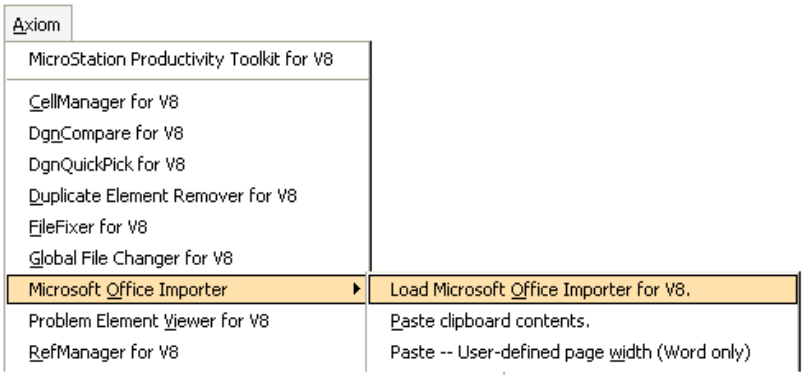
- **R/W Tabulation Sheet (AS = 1:1)** Places a R/W Tabulation sheet into the current design file at a 1:1 scale. The user should have previously created a RWTAB__.DGN standard design file for tabulation data.
- **Edit Excel Sheet (RWTABULATION)** Creates an Excel spreadsheet entitled "rwtabulation01.xls" into the user's current dgn directory.

  Warning! Do not adjust column widths on spreadsheet or data will not be placed correctly on tabulation sheet.

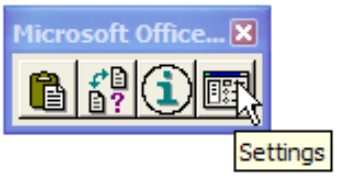


This spreadsheet is specifically designed to work with Axiom's "Microsoft Office Importer for V8". **Consultants can contact Axiom, Inc to purchase the program.**

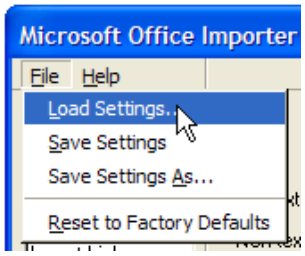
The Office Importer requires the use of an "ini" file for specific settings. For R/W this file is called **office.ini** and is located in the **C:\fdot2010\resources\data** directory. The user should check that this file is attached by first opening the Office Importer dialog as shown:



Once selected, the Office Importer dialog box should appear and the user should select the Settings button as shown:



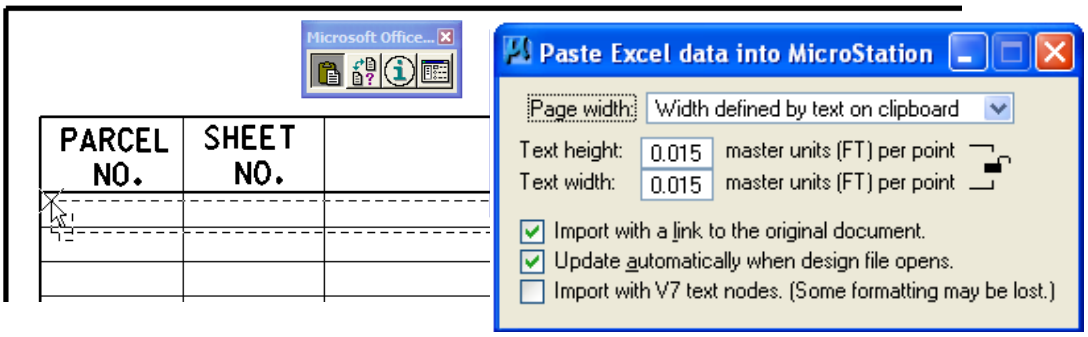
The Settings dialog should display the required file attached. If the required office.ini is not attached then the correct file can be accessed by selecting:



Warning: Do not make any adjustments to the current settings in the office.ini file or the program will not work correctly.

The Excel spreadsheet can be edited for additional data by placing the required information in each column and saving the file. Once data has been saved, the rows that are to be added to the tabulation sheet can be highlighted by standard window operations and then selection Edit>Copy. Excel will display a highlighted border around the selected data. To place this data onto the tabulation sheet select the **Paste** button.

After the Office Importer **Paste** button has been selected, the data will be attached to the dgn cursor with a border displayed surrounding the copied information.



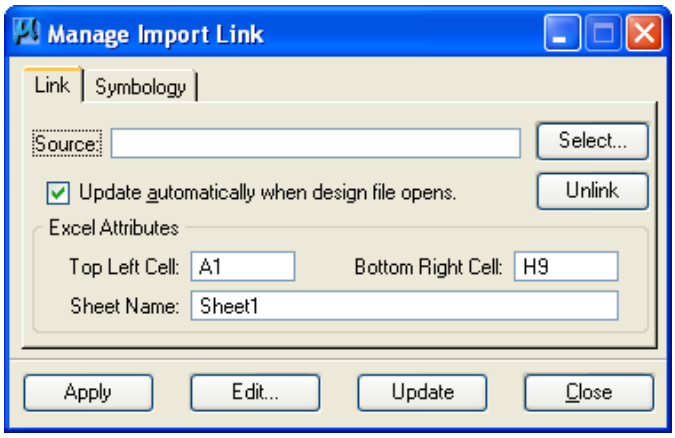
The data can be placed on any line within the tabulation sheet by placing a tentative button at the upper left corner of the desired line and then accepted by a data point.

Changes to the existing data can be accomplished by selecting the **Manage** button. The "Manage" tool on the main dialog box allows you to update linked information manually, edit the source document or change the status of the links.

After the **Manage** button has been selected the user will be prompted:

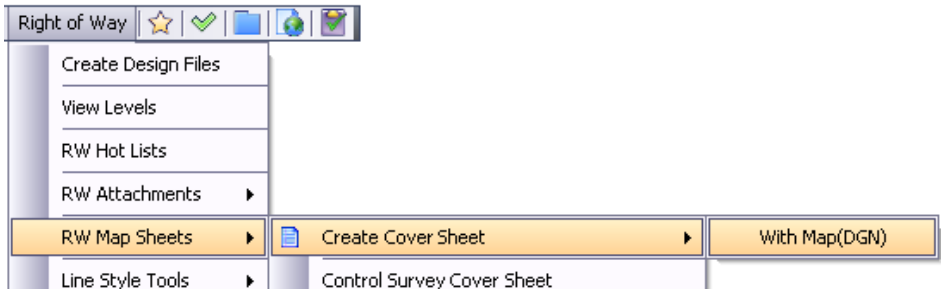
Manage Import Link > Identify element

Click any portion of the part of the linked data that you want to update, and the "Manage Import Link" dialogue box will appear.

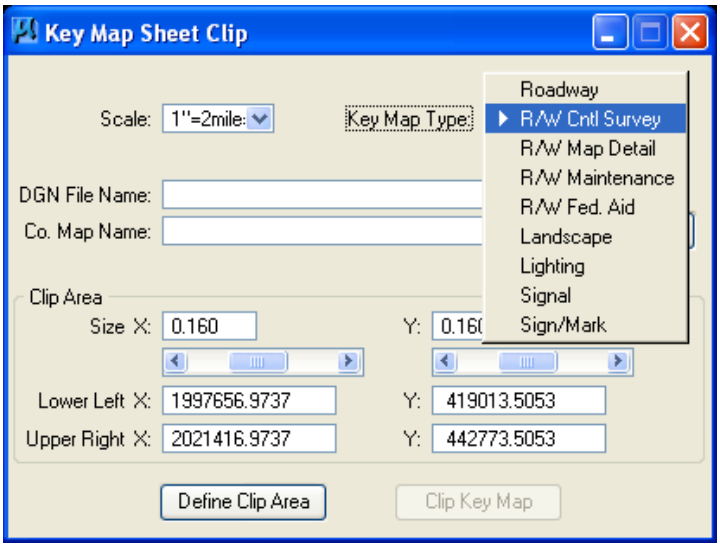


The **Update** button must be selected for data to be changed. Office Importer will also update linked data that has been changed in the current spreadsheet each time the linked design file is opened. For additional information refer to the Office Importer Help selection.

9.2.6.2 CREATE COVER SHEET > WITH MAP(DGN)

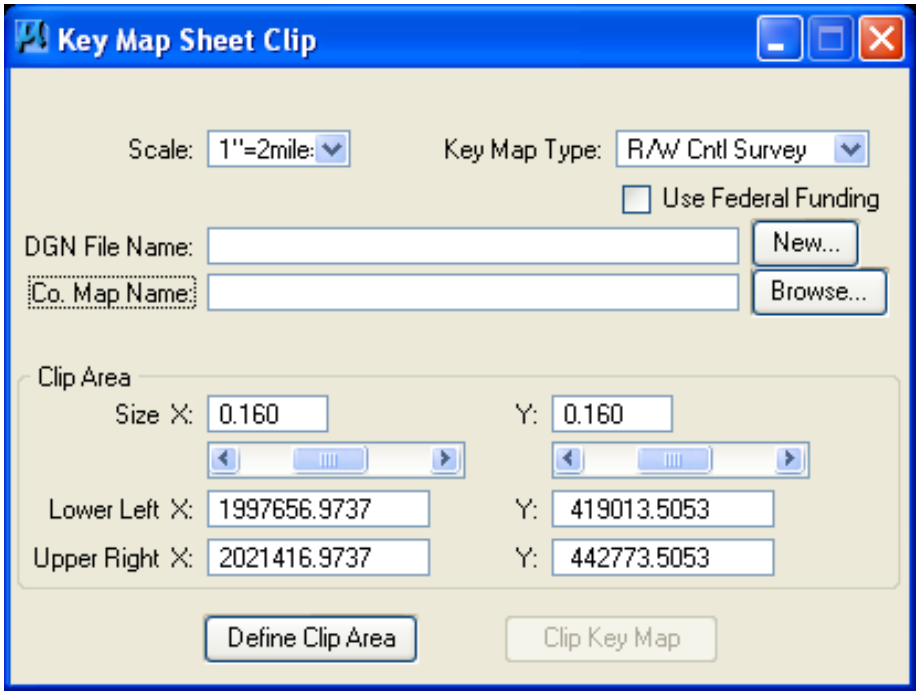


This option automates the creation of the various right of way map cover sheets for “Control Survey”, “Right of Way Map”, and “Maintenance Map”.

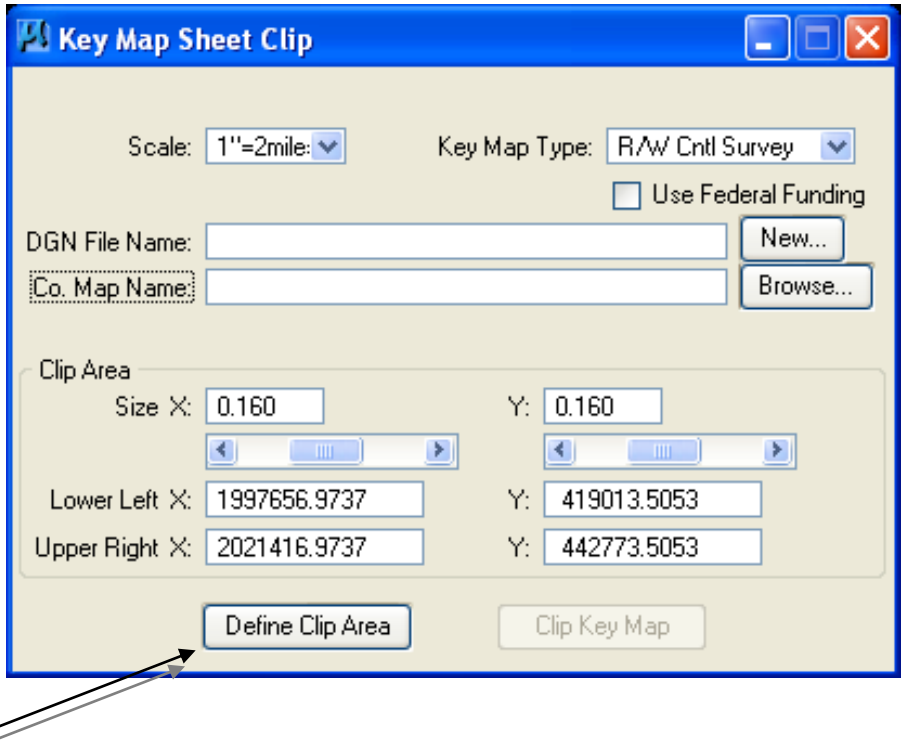


- **Key Map Type** Gives a choice of three different R/W Cover Map Sheet Types for Right of Way Mapping:

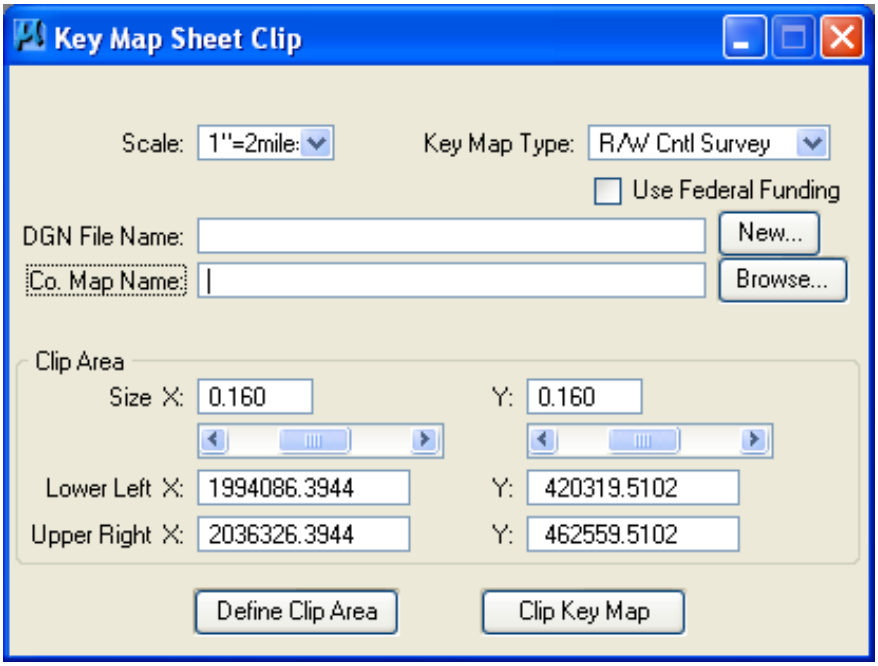
Selection	Cover Sheet
Control Survey	Control Survey Cover Sheet
R/W Map	Right of Way Map Cover Sheet
Maintenance	Maintenance Map Cover Sheet



- **DGN FILE Name** The name of the design file that the Cover Sheet is drawn in. The Cover Sheet will be placed at the center of the Design Plane. The DGN file will have the proper naming convention (rwcovr01.dgn). Unlike 'Create File' this option will not increment the file name (rwcovr01..02..03). The New button when selected displays the file location dialog for selecting a new/different design file name or location.
- **Co. Map Name** The name of the County Map that the clip area will be taken from. The Map can be local on the workstation or remote via a NFS mount on the Server. The Browse button when selected displays the file location dialog for selecting a new/different county map design file name or location.
- **Clip Area Size X: and Clip Area Size Y** This value is used to adjust the size of the clip area (within limits). The default size of the clip area for the metric version is 0.085 meters on each side (@ 1:1 scale). The values can be adjusted up and down, within limits, independently in the X and Y. The Slider Bar below each one will adjust the values or they can be keyed-in.
- **Lower Left X: Y: and the Upper Right X: Y** This entry defines the clipping coordinates. The coordinates are generally for information only, since the coordinates are normally set with the Define Clip Area Button. But if the user knows the clipping coordinates, they can be manually typed into these fields.

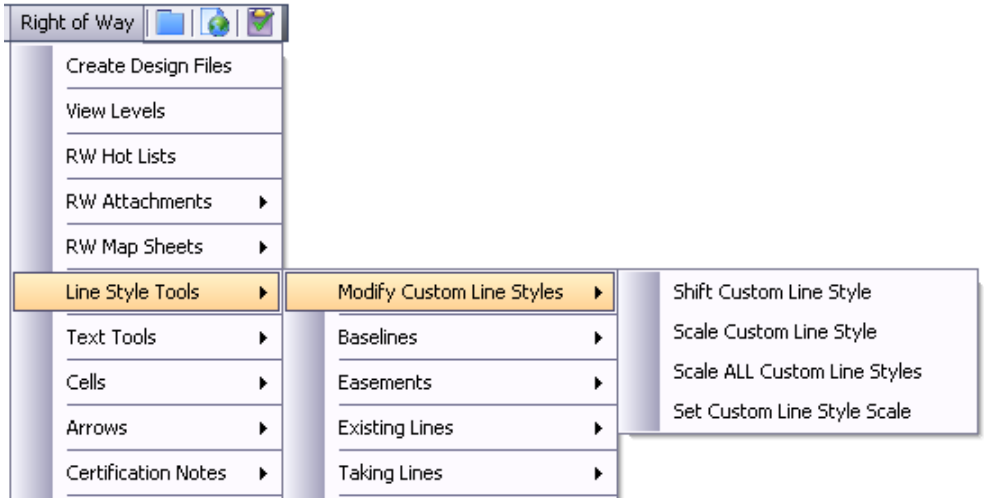


- **Define Clip Area** This button will retrieve the county map design file that is to be clipped. A rectangle that represents the clipping area will be attached to the cursor. The rectangle defines the area that will be clipped out and moved to the Cover Sheet. The placement of the rectangle can be manipulated by MicroStation commands to position the project location map as desired. Select the area to clip with a data point. The lower left and upper right coordinates will be displayed in the coordinate fields of the dialog box (Lower Left X: Y:, Upper Right X: Y:).

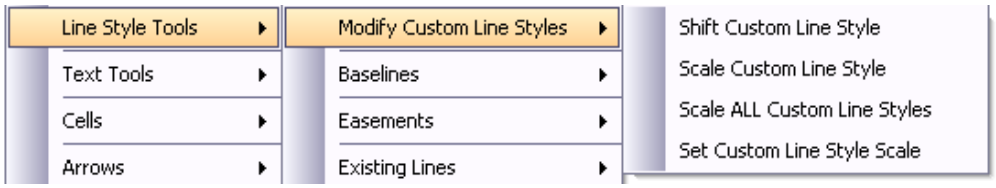


- **Clip Key Map** This button will attach the County Map File as a reference file and clip the area designated as the project location map into the Output Design File. The Clipped Area will be scaled accordingly English or Metric Units. During processing, if the Cells needed to create the cover sheet cannot be located (no library or wrong library attached), then the application will pop up a message informing the user of this problem and prompt the user to select OK to attach the correct Cell Library or CANCEL to Stop Processing. If OK is selected, the Cell Library Open dialog box will appear. If the MX_LIBDIR variable is set to the correct location (Metric or English), then the user will be presented with a list of cell libraries to attach. If it is not set, then the user must navigate to the correct location of the cell library. When the drawing is complete, the application will do a FIT command and SAVE DESIGN.

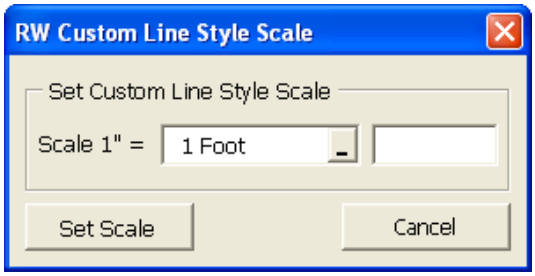
9.2.7 LINE STYLE TOOLS



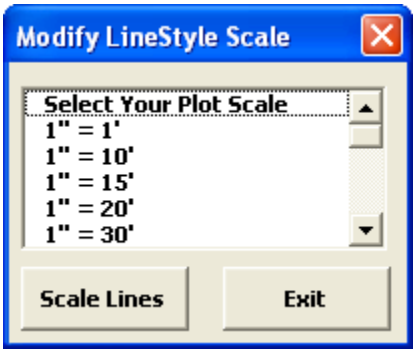
9.2.7.1 MODIFY CUSTOM LINE STYLES



- **Shift Custom Line Style** Dynamically shifts the custom line style pattern when the line style is selected by a data point and the cursor is then moved parallel to the line. When the line style is shifted to the desired position/appearance another data point will accept the change.
- **Scale Custom Line Style** Dynamically scales the custom line style pattern when the line style is selected by a data point and the cursor is then moved parallel to the line. When the line style is scaled to the desired amount another data point will accept the change.

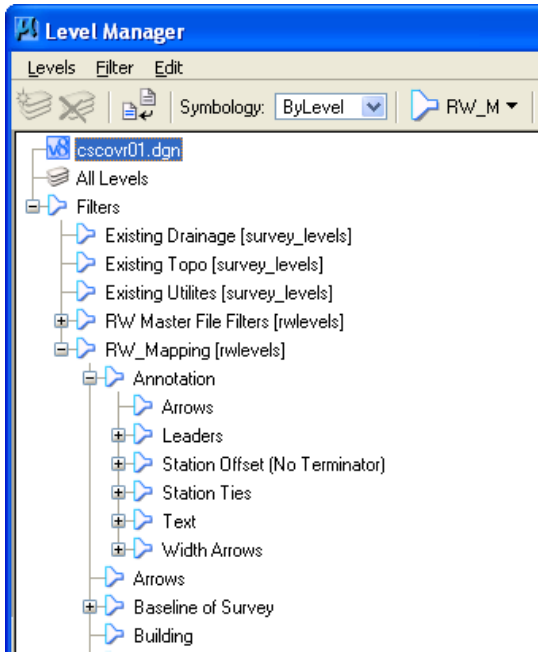


- **Scale All Custom Line Styles** When selected the dialog shown below should appear. Select the desired custom line style scale and then click on the Scale Lines button ALL custom line styles in the current design file will be scaled.

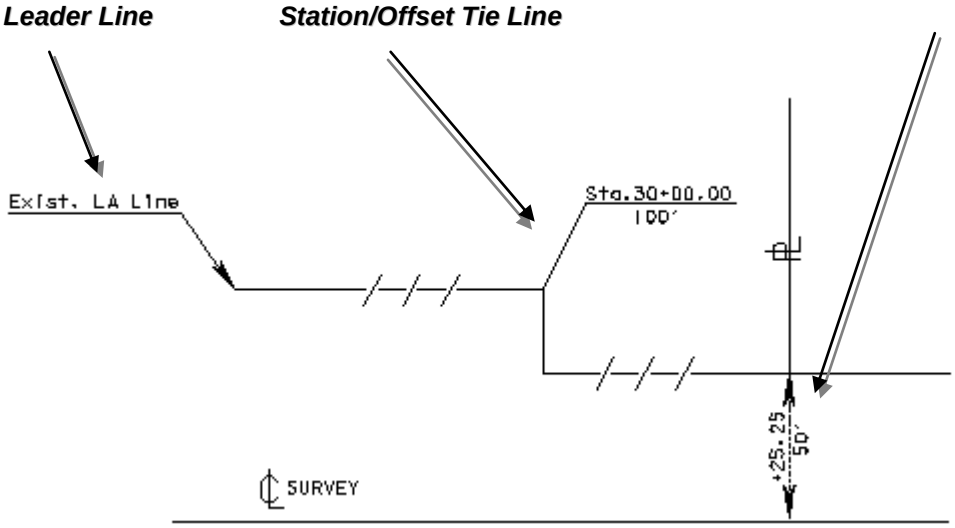


- **Set Custom Line Style Scale** The custom line styles scale can be changed for other plot scales by selecting Set Custom Line Style Scale option shown above. This will open the R/W Custom Line Style Scale dialog box. (shown below) The user may then select from the Scale 1" = pull down list for standard mapping scales or select from the pull down Keyin Scale = and type in the desired scale in the text window. Opening the MicroStation Line Styles dialog box from the main menu, and toggling on Show Details can check this. This dialog must be reopened each time the scale is changed from the FDOT Menu if the user desires to check the current scale factor, as the dialog is not dynamic. (See the MicroStation Help files for instructions on Line Styles).

9.2.7.2 LEADER LINES, TIE LINES AND STATION/OFFSET LINES

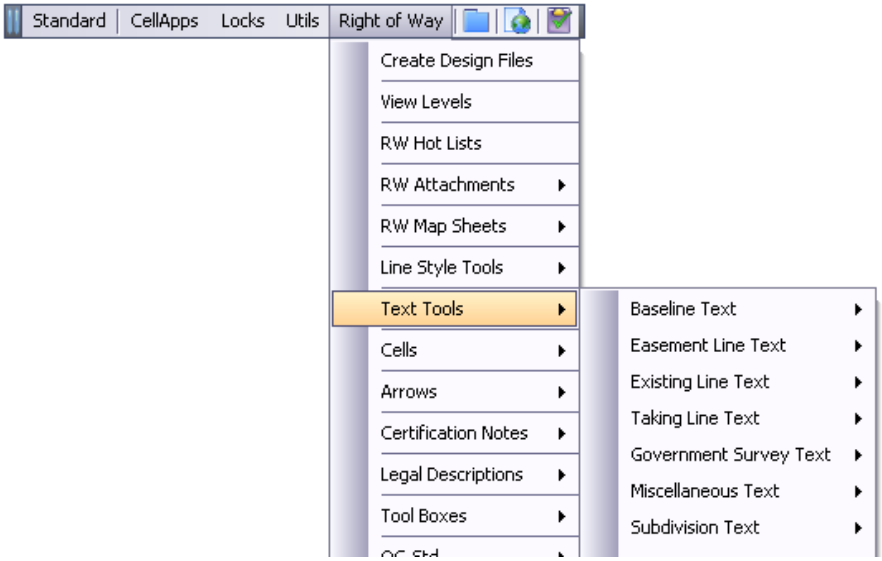


These three categories, which can be found and set through the MicroStation V8 Level Manager, contain the same list of items for setting the symbologies of each line type listed in the Line Style Tools menu. The symbologies for **Leader Lines** and **Tie Lines** have required symbology standards. **Station-Offset Lines** will be placed on the corresponding Text ByLevel. A diagram of each category and their typical use is shown below:



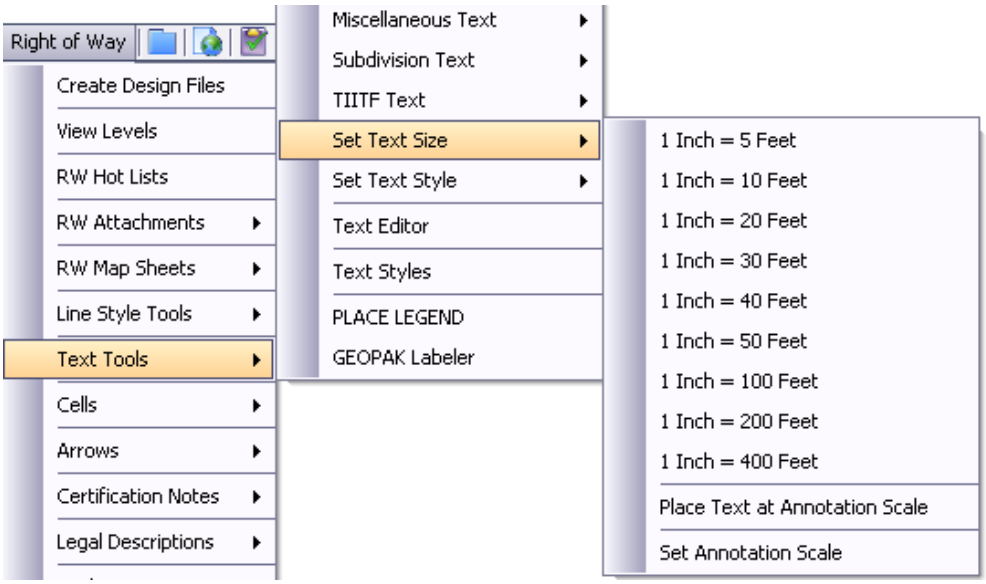
9.2.8 TEXT TOOLS

The **Text Tools** menu selection provides the user with various tools for placing, editing and modifying text for annotating Right of Way Mapping design files.



- **Set Text Size**

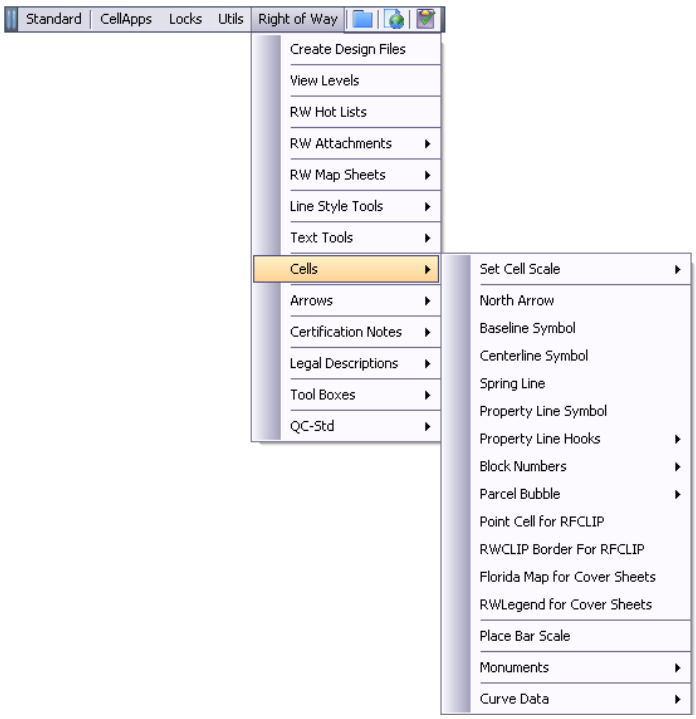
This option sets the standard default text size for the selected design file scale. For example, if the user selects “1 Inch = 100 Feet” the default standard text size will be set to TH = 10’, TW = 10’. The user should not attempt to use one text size for all text placed in the design file.



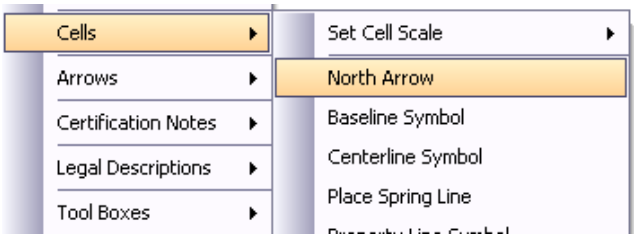
As stated, **Readability** of text data should be considered as priority, however no text should be smaller than 3.2’ on a 1” = 40’ scale (0.08” actual plotted size).

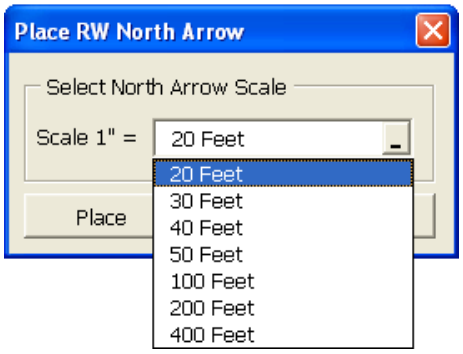
9.2.9 CELLS

This option lists the R/W Mapping CADD Standard cells for placement into design files. Active scale can be set by selecting **Set Cell Scale**. All other MicroStation settings should be considered prior to cell placement. The user should assure that the required cell library has been attached for the appropriate workspace.

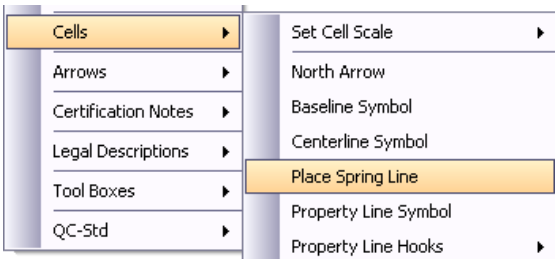


- **North Arrow** This command automates the process of placing a north arrow. The English cell library row.cel must be attached to the current design file. The program will prompt the user if it cannot find the required cell library.



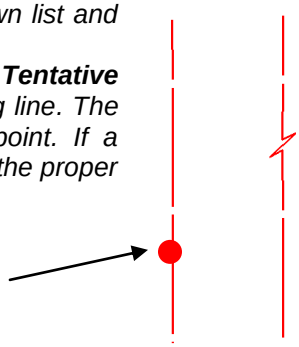


- **Place Spring Line**



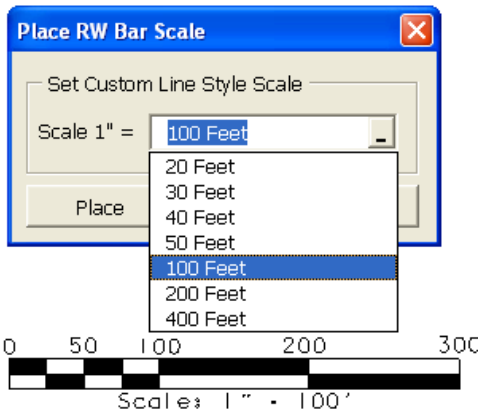
The R/W Mapping Spring Line command automates the process of placing a spring line for lines that are partially deleted in order to fit mapping area limits. The English cell library row.cel must be attached to the current design file. The program will prompt the user if it cannot find the required cell library.

- *<u>Match Line Symbology</u>* *R/W Mapping standards require that spring lines be placed using the same line symbology for the line type being used. The button will prompt the user to select the associated line and will set the required symbology in MicroStation.*
- *<u>Scale 1"</u>* *Sets the required scale for R/W Mapping standards for placement of the spring line.*
- *<u>Keyin</u>* *setting can also be selected from the pull down list and a non-standard scale keyed into the text window.*
- *<u>OK</u>* *After selecting, the program will prompt for a* ***Tentative Data Point*** *on the line and at the point to place the spring line. The program will prompt the user to accept or reject the point. If a second data point is given the spring line will be placed at the proper angle and location as shown below.*



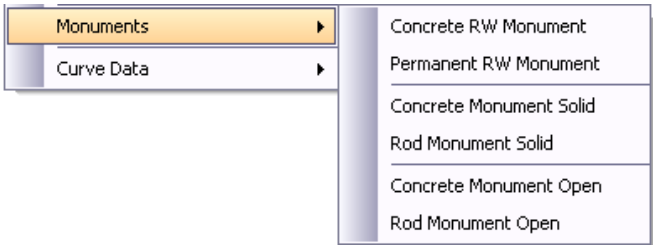
- **Place Bar Scale**

This command opens the R/W Mapping English Bar Scale dialog which displays the list of available standard Bar Scales for various mapping scales. Once the desired Bar Scale is selected and the Place button is pressed the bar scale cell will be attached to the cursor for placement.



- **Monuments**

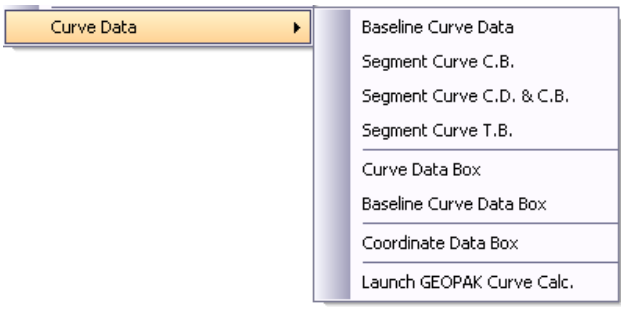
Provides access to all monument cells created in the English libraries. Monument cells that are described as **Solid** are area filled and require the MicroStation **Settings > View Attributes** "Fill" selection be turned on for proper display.



- **Curve Data**

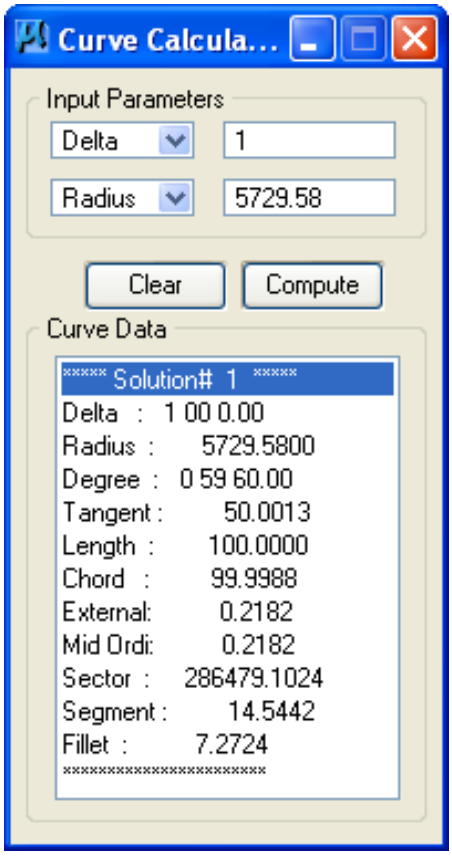
Contains all cells used for creating full curve data layout or segment curve data. Baseline Curve Data, Segment Curve C.B. (C.B. = Chord Bearing),

Segment Curve C.D. &C.B. (C.D. &C.B. = Chord Distance and Chord Bearing) and Segment Curve T.B. (T.B. = Tangent Bearing) are the basic curve data information required for R/W Mapping.



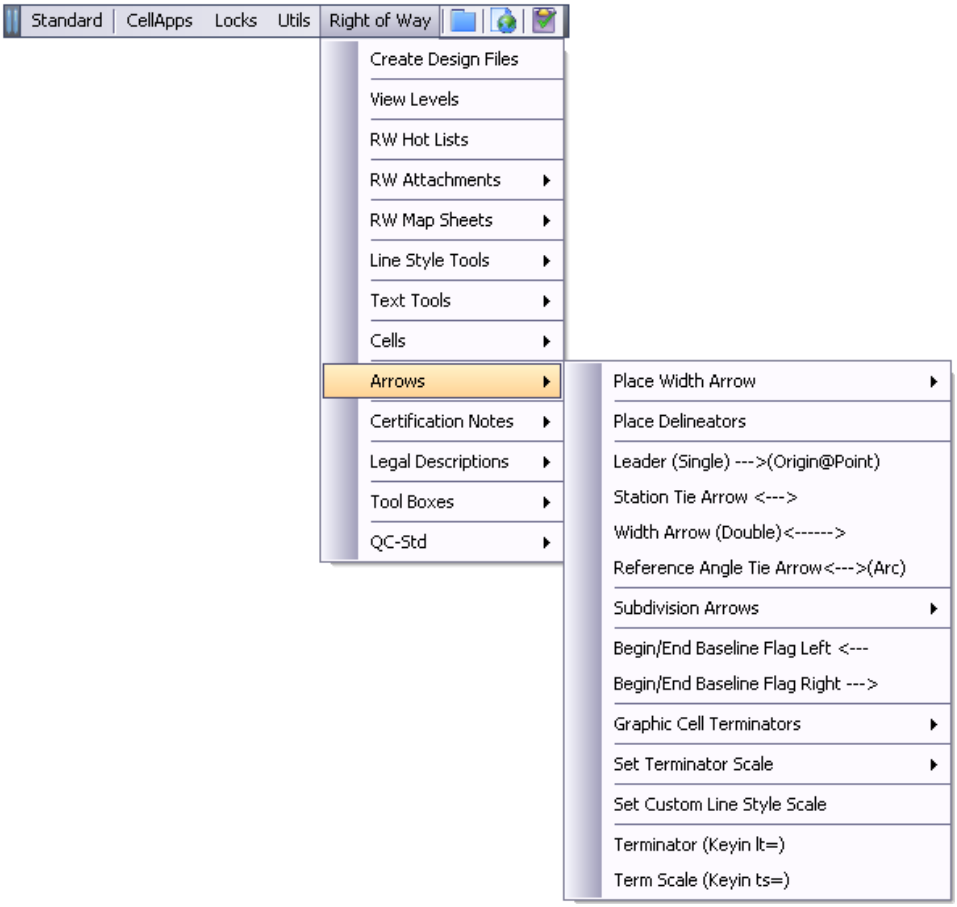
Each of these cells is used in association with the Geopak Table-Tutorial program including the Curve Data Box, Baseline Curve Data Box and Coordinate Data Box.

- *<u>Launch Geopak Curve Calc</u> It's the Geopak curve data application that provides quick curve data calculations for reviewing curve data information. The program requires at least two curve elements for computing the curve data as provided in the two pull down selection lists. The program will also maintain each Computed solution (Solution#1, Solution#2 …) until the Clear button is selected. This curve data is for informational review only and cannot be placed into the design file.*

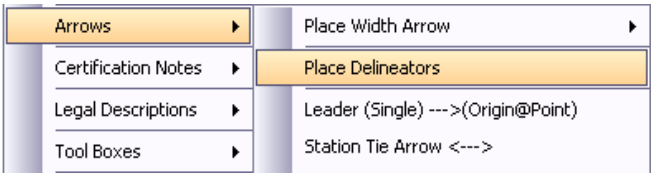


9.2.10 ARROWS

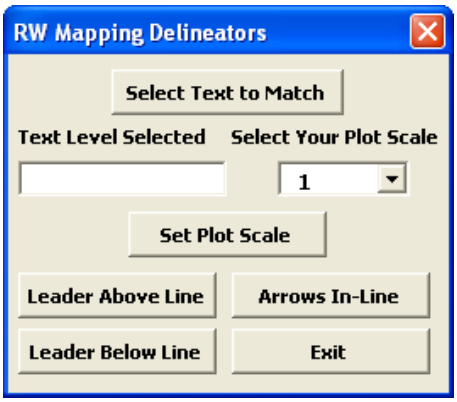
The **Arrows** menu selection provides several delimiter types and terminators for use in the R/W Mapping procedures. Most of the delimiters are built using custom line styles and many contain filled areas and therefore the **Fill Attribute** setting should be turned on as previously mentioned.



- **Place Delineators**



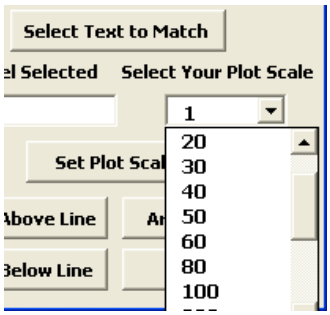
The *R/W Mapping Delineators* command automates the process of placing delineator arrows for bearing and distance or other delineated line segmented data. After selecting the program you will need to select the text element using the Element Selection tool that the delineators are to be placed on then press the *Select Text to Match* button, choose the scale that you would like the delineators place at from the pull down and then press the *Set Plot Scale* button. Then choose the line that the delineators need to be placed on and the program will find the beginning and ending points of the line segment, and then choose how you want the delineator placed. Delineators will then be placed at the beginning and end point of the line segment.



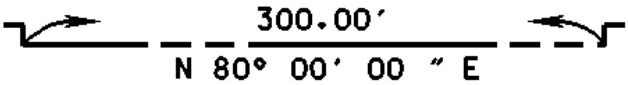
- ***Select Text to Match*** *R/W Mapping standards require that delineator arrows be placed using the associated text symbology for the line type being used.*

Use the element selection tool to select the associated text then press the Select Text to Match button and the required symbology will be set in *Text Level Selected* box.

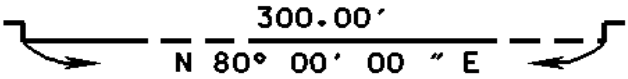
- *Select Your Plot Scale* *Sets the required scale for R/W Mapping standards for placement of the delineator arrows. Multiple scales are place in the pull down.*



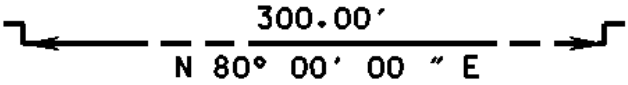
- ***Leader Above Line*** *This option will place delineators with an arc and terminator arrow as shown below depending on the direction the line was original drawn in.*



- ***Leader Below Line*** *This option will place delineators with an arc and terminator arrow as shown below depending on the direction the line was original drawn in.*

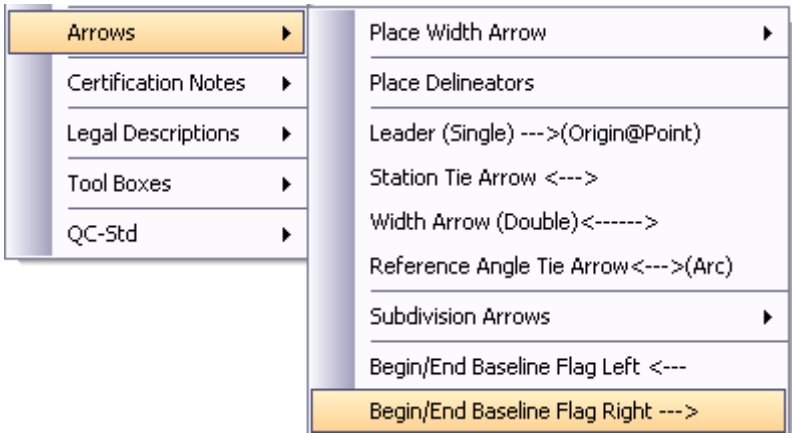


- ***Arrows In-Line*** *This option places delineator arrows at the end of the line segment as shown below.*

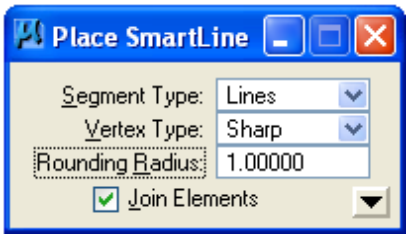


- **Begin/End Baseline Flag Right/Left**

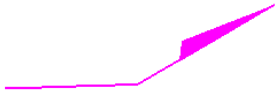
This selection provides access to custom line styles used in delineating Begin/End of projects, R/W acquisitions and similar graphic elements.



When placing these custom line styles, the MicroStation "Place SmartLine" command should be used with the "Join Elements" turned **ON** as shown below. This setting will eliminate additional arrow delineators if multiple line segments are placed.



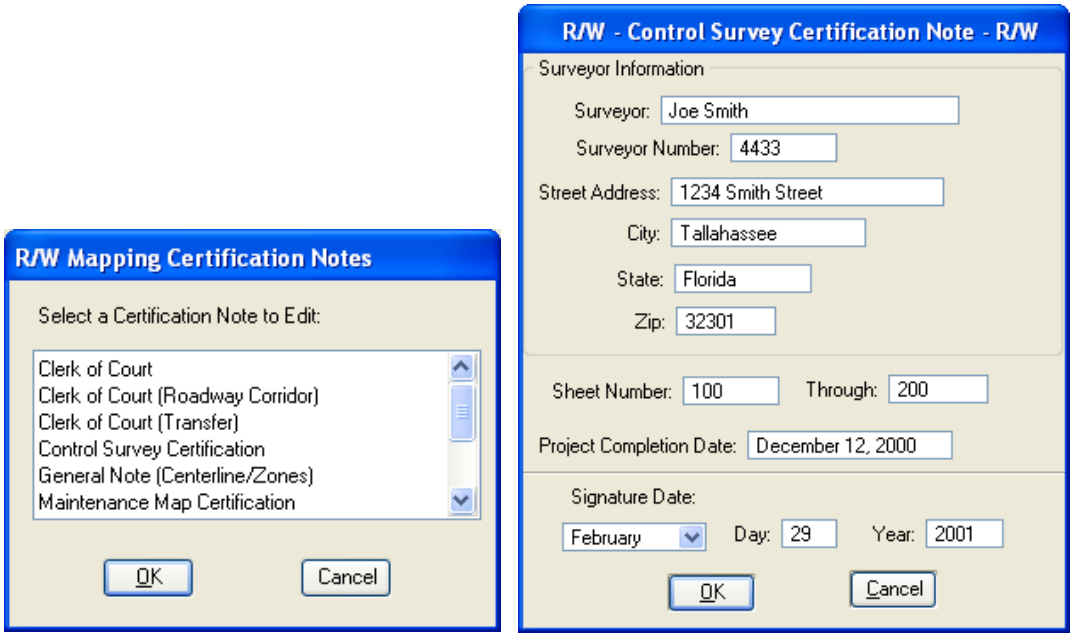
Join Element Off



Join Element On

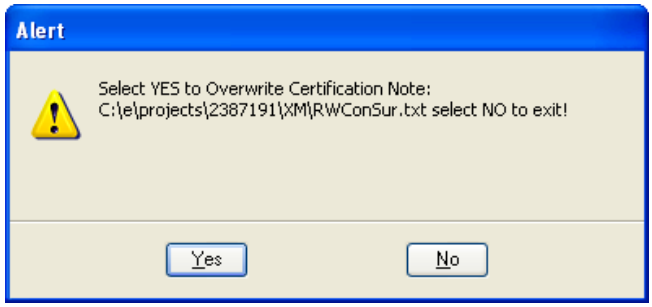
9.2.11 CERTIFICATION NOTES

The **Certification Notes** menu item provides the user with a list of all the standard certification notes used in various R/W maps. The first selection **Text Import Settings** will set the standard text requirements for TX= (text size), LS= (line spacing) and LL = (line length) for the given scale. After selecting **New Certification Notes** the user is presented with the **R/W Mapping Certification Notes** dialog shown below. This dialog contains the list of certification notes by which the user may scroll up or down, select the desired note and then select the OK button. The selected certification note, such as **Control Survey Certification**, shown as selected in the dialog below will then open a MicroStation Basic macro dialog box containing areas for information input that are required for the selected certification note.

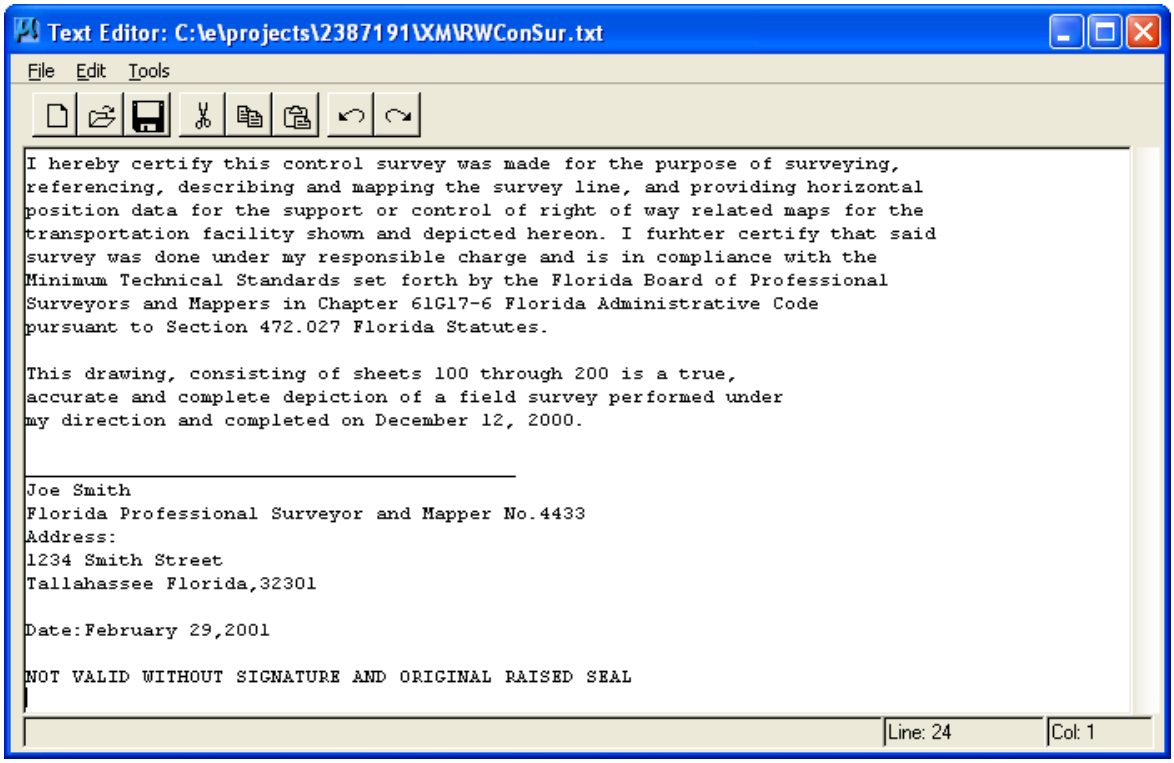


Once all required information has been input into the corresponding dialog for the certification note the user then selects OK. The program will search the certification notes directory for the required note and copy the note to the users working directory. An Alert dialog will display the directory path in which the note has been copied and prompt the user to continue or exit by selecting No.

Note *Each certification note is created with a unique name and should not be changed by the user.*

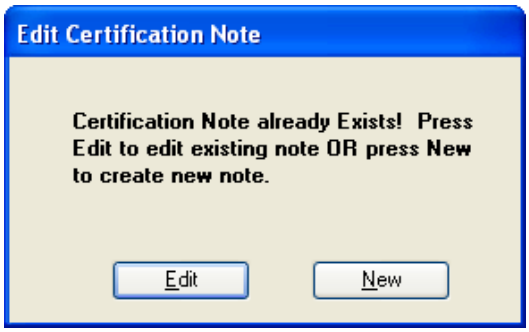


If the user selects **Yes,** the note will then be overwritten and all information previously supplied by the user will be placed into the required locations within the note. The note will then be placed into a text editor dialog as shown below for any additional editing.

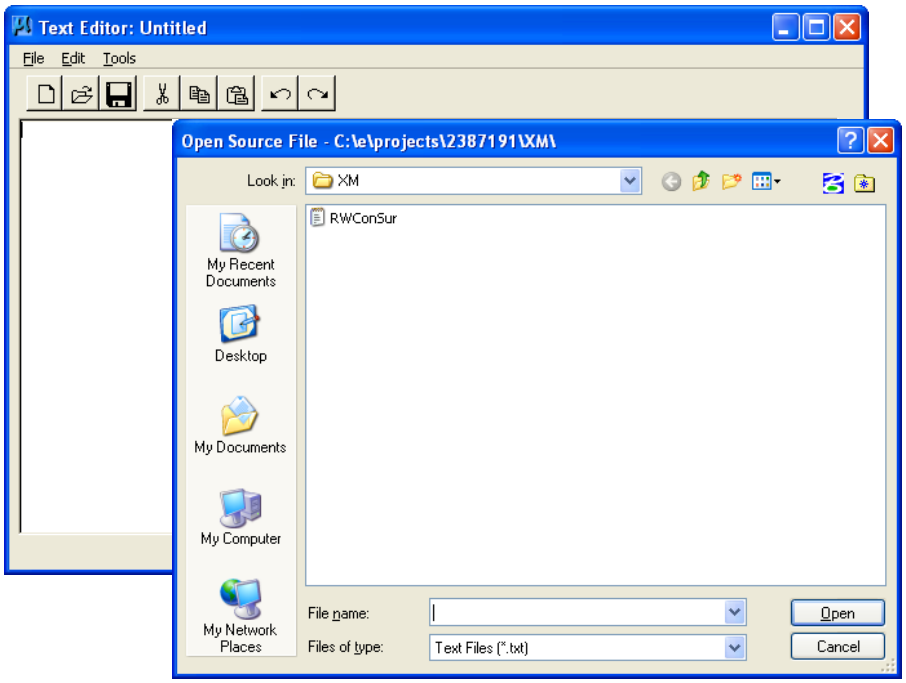


If additional changes to the note are made the user should save these changes by selecting **Save>File**. **Selecting Tools>Import Text** from the editor dialog and then place the certification note into the design file. The certification note will be attached to the MicroStation cursor for placement by a data point into the design file.

There are two methods for editing an existing certification note. In the first method the user should be located in the required working directory for the program to find the existing note. By selecting **Certification Notes > New Certification Notes**, which will again display the **R/W Mapping Certification Notes** dialog, the user can then select the name of an existing note previously created in that directory. The dialog shown below will prompt the user to edit the existing note by selecting Edit and the note will then be placed into a text editor, or create a new note by selecting New in which the corresponding input dialog for that note will be displayed.



The second method is to select **Certification Notes >Edit Certification Note**, which will open the text editor and **Open Source File** dialog allowing the user to navigate to the desired certification note for editing.



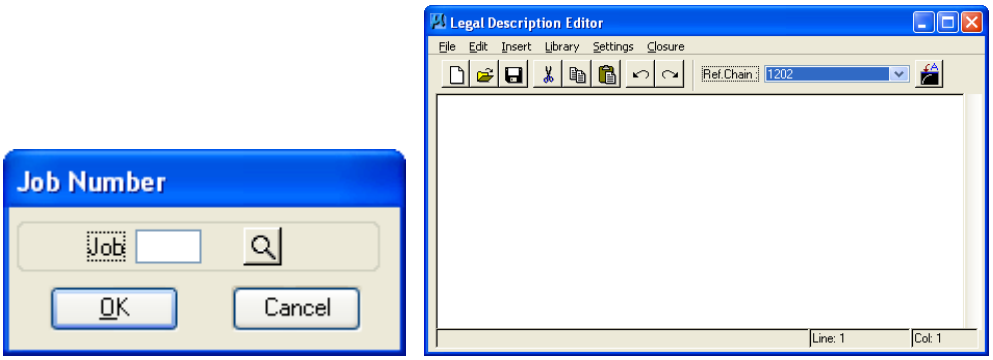
9.2.12 LEGAL DESCRIPTIONS

The **Legal Descriptions** menu selection provides the user with the ability to create two standard parcel legal description types commonly used by FDOT R/W Mapping offices. This program works in combination with Geopak's **Legal Description Editor** and therefore derives coordinate data, curve data and distance and bearing input directly from Geopak's **Coordinate Geometry** program**.**

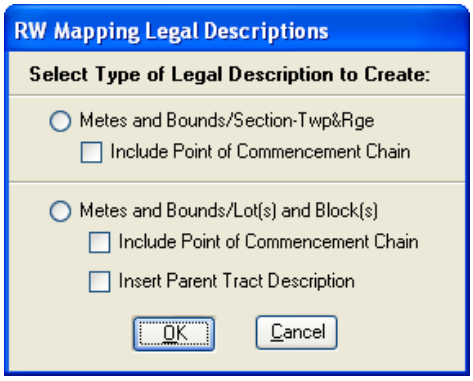
Because of the many diverse ways to compose legal descriptions it is not possible to cover all types of legal description styles within this program. But with these basic templates and the Legal Description Editor the user can compose the desired description without the possibility of transposition errors. Once the description is complete the file can be saved from the editor to an ASCII (.txt) text file and then imported to a word processor, such as Microsoft Word for any additional editing.

To begin the composition the user should first select from the FDOT Menu **Legal Description > Geopak Legal Description Editor**. Geopak will prompt for a coordinate geometry database Job number. If the Job number is not known the Select button can be used to select from a list of Job numbers in the current project directory (defined in Geopak Preferences). Once the Job number is selected the OK button will open the Legal Description Editor as shown below.

The instructions for using Geopak's Legal Description Editor are too extensive to describe within this document. The user should consult Geopak's manuals or Geopak's' Help files for complete instructions.

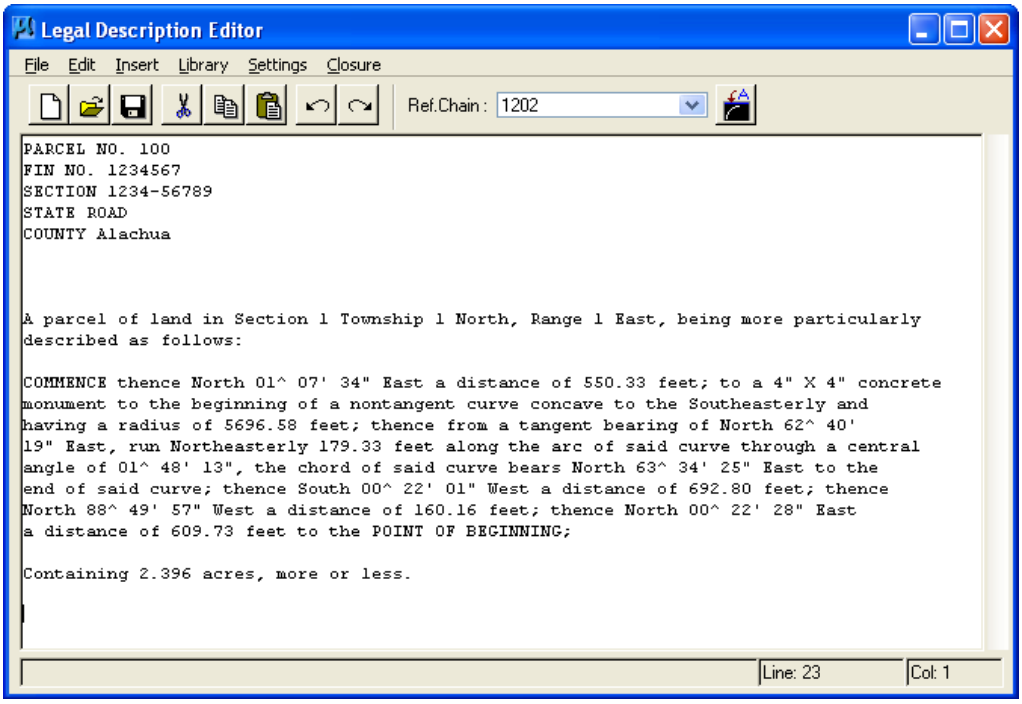


Select from the FDOT Menu **Legal Descriptions > RW Mapping Legal Descriptions**, this will open the program dialog shown below **<u>GEOPAK</u> <u>Legal</u> <u>Description</u> <u>Editor</u> must be running** for this application to work.



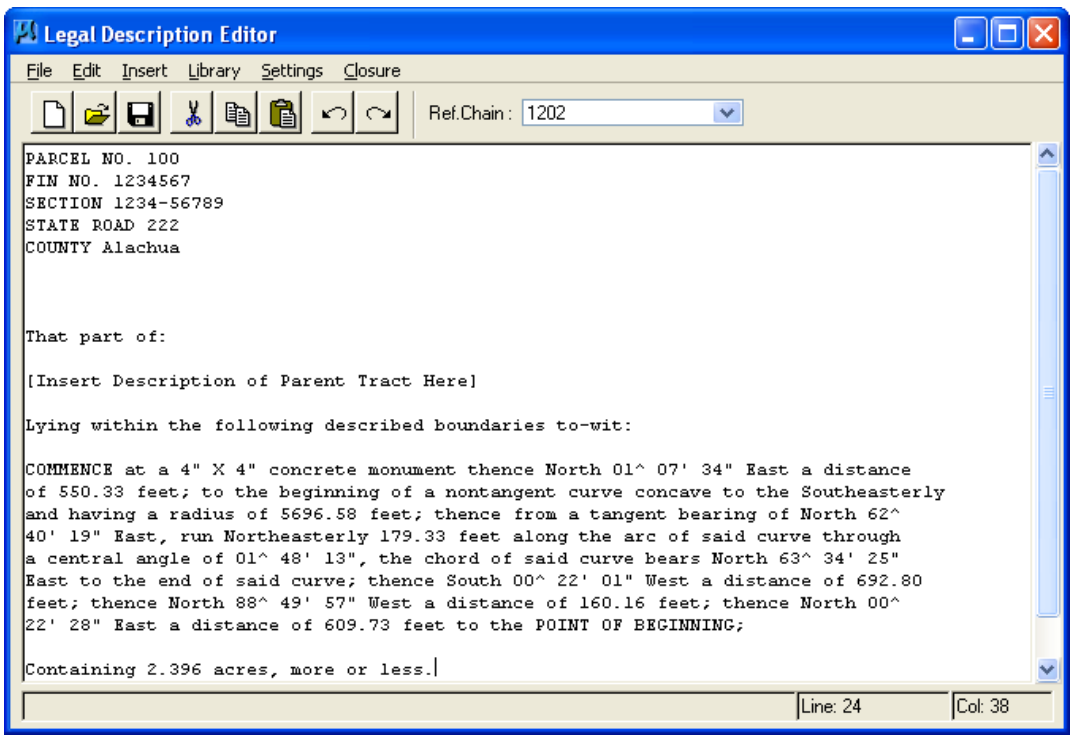
There are two description options to select from:

- **Metes and Bounds/Section–Twp&Rge** This selection will create a standard metes and bounds legal description contained within a defined section, township and range. The program will prompt the user for all required information to complete the legal description.

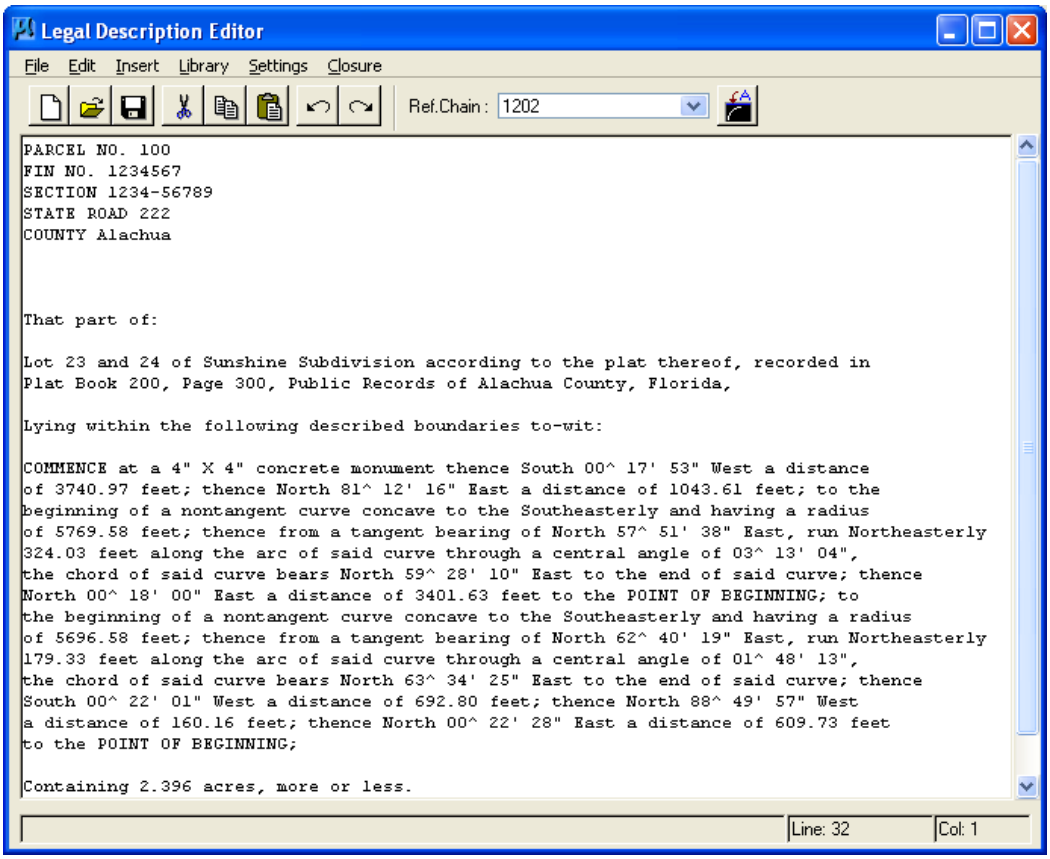


- *Include Point of Commencement Chain* *If this option is selected the program will prompt the user for a previously stored geometry chain name to describe the traverse from the point of commencement to the point of beginning. It is suggested the commencement chain name be described to associate the chain with the corresponding parcel, such as "100C". The resulting description will be similar to the one shown below.*

- **Metes and Bounds/Lot(s) and Block(s)** This selection will create a standard metes and bounds legal description for Lot(s) and Block(s) or for inserting a parent tract description.
  - *Include Point of Commencement Chain* *If this option is selected the program will prompt the user for a previously stored geometry chain name to describe the traverse from the point of commencement to the point of beginning. It is suggested the commencement chain name be described to associate the chain with the corresponding parcel, such as "100C".*
  - *Insert Parent Tract Description* *If this option is used, the program will create at the proper location a line stating "[Insert Parent Tract Description Here]". The user then has the option to manually type the tract description or cut and paste the description into the editor at the required location. The resulting description will be similar to the one shown below.*

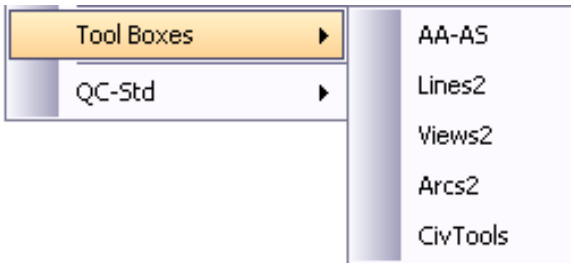


- *<u>Insert Parent Tract Description</u>* *If this option is not used, the program will prompt the user to input the Lot number(s) in place of the parent tract description. The resulting description will be similar to the one shown here.*

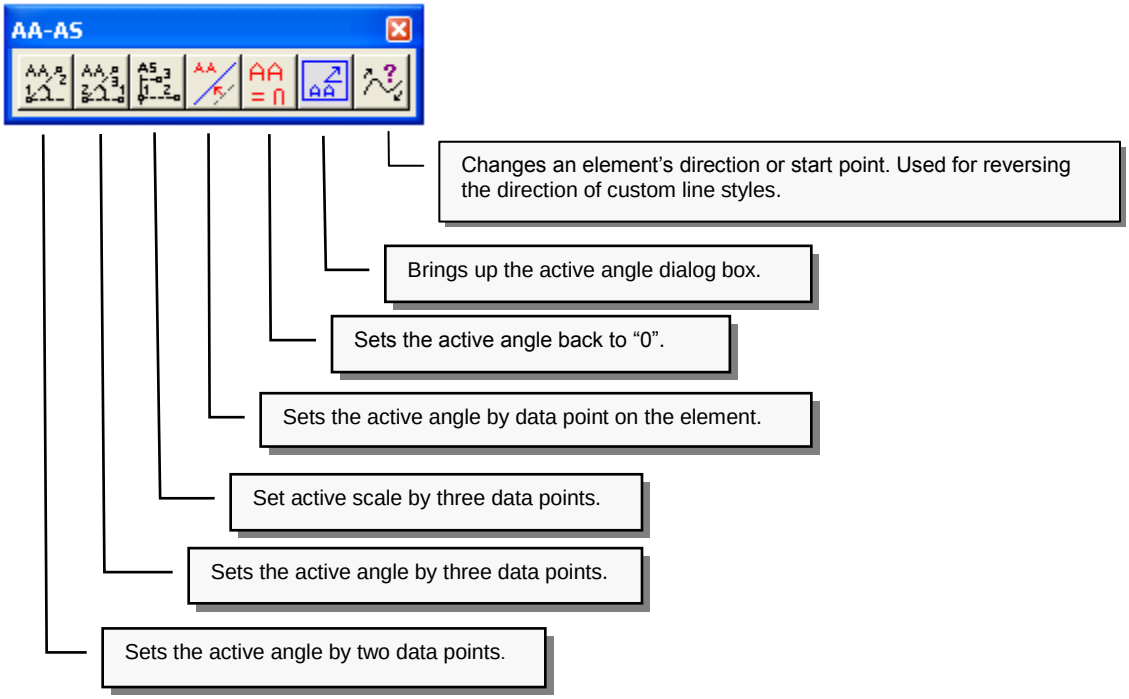


9.2.13 TOOL BOXES

The **Tool Boxes** provides a variety of tools for drafting purposes. Brief descriptions of some of these tools are described below. The user should practice use of these various tools to determine which tools best fit their needs during mapping production.



- **AA-AS**

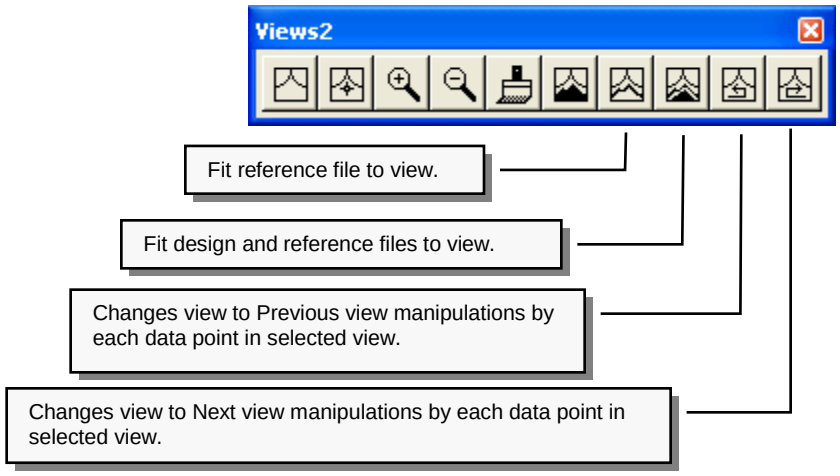


- **Lines2**

The **Lines2** dialog combines most MicroStation 4.0 and 5.0 line construction tools no longer located on later versions into a single dialog box for easy access by the user. This dialog box is dockable on any border of the working area.

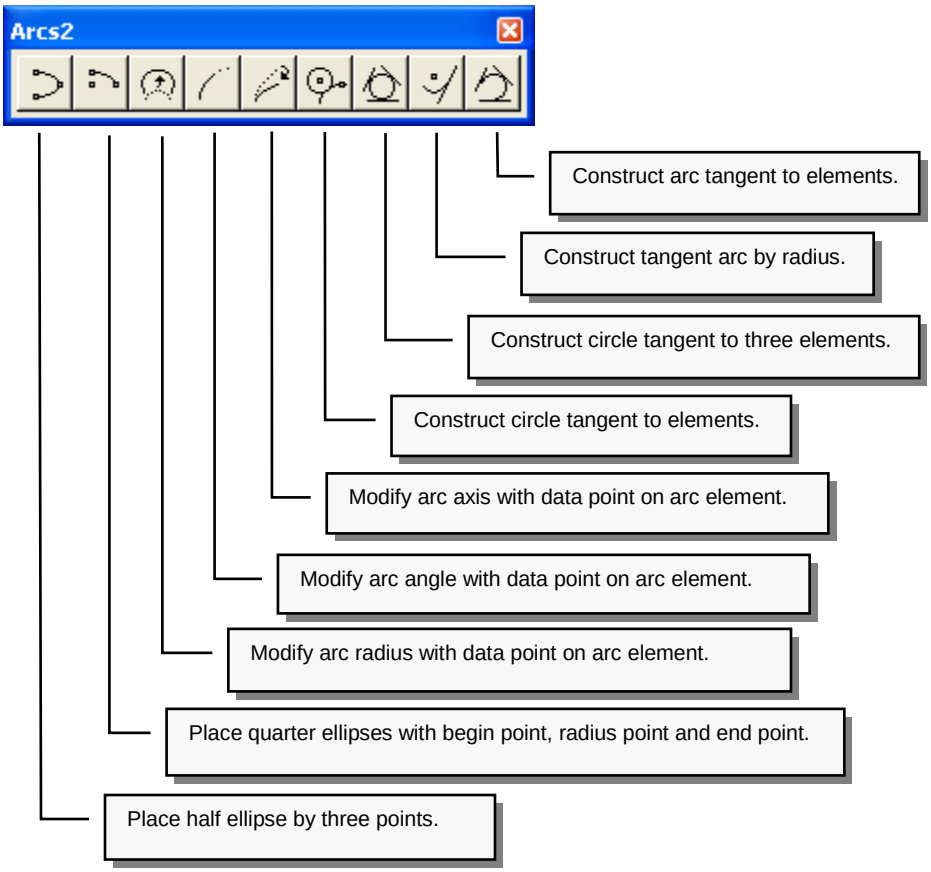
- **Views2**

The **Views2** dialog combines some of the original view manipulation tools (the first six selections) with additional windowing tools.

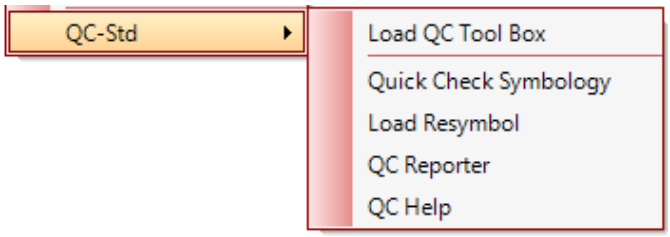


- **Arcs2**

The **Arcs2** dialog contains tools for the creating of curves and ellipses by various methods and tools for modifying these elements. Some of these tools will display additional dialogs for precise user input.



9.2.14 QC-STD



The following topics contain a brief description on using the QC tools, for in-depth instructions use the online help documentation that can be accessed from the FDOT Menu at QC Help.

This option provides the user with the ability to complete a "Quality Control" review of all mapping project types produced by Right of Way Mapping. This is accomplished through the use of four “QC” tools and their related “Rule” files. These rule files have the extension of .**rul** and contain the standard symbology requirements for elements placed in a right of way design file project. For right of way mapping the rule file name for 2010 English is **rweng10.rul**. The directory location for this file is **fdot2010\RESOURCES\QC_Rules\std_2010**. These are binary files and cannot be changed or modified by the user.

These QC tools will process each element in a file sequentially comparing each element found against the selected rule file. As each element is processed, all rules are evaluated to see which one most closely matches the element. Only one rule is used to process an element. An element will not be processed by any rule unless the element meets all the selection criteria in that rule.

For an example consider three rules with these selection criteria:

a) Level

b) Level, color

c) Level, color, weight

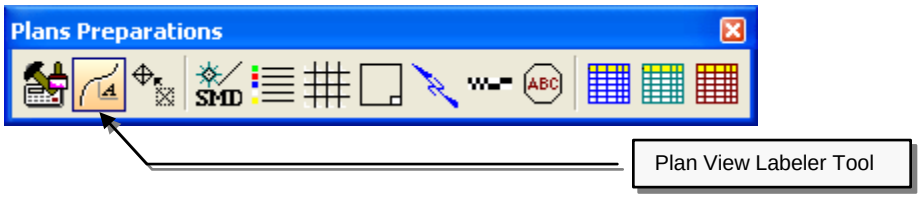
Rule (c) is most specific, and applied to all elements that match on all three criteria: level, color, and weight. All elements matching (c) also match (a) and (b) but (c) will score the higher value and will therefore be used. Similarly, rule (b) will be used for all elements that have level 3 and color 2 (and not weight 4). Any elements that are level 3 (and not color 2) will be processed by rule (a).

The user may select each QC tool from the pull down menu on the FDOT Menu or by selecting **Load QC Tool Box**. The user can then access each QC tool via the dialog box shown below:

Note *The QC Tools dialog box is a dockable menu.*

9.3 GEOPAK'S PLAN VIEW LABELER

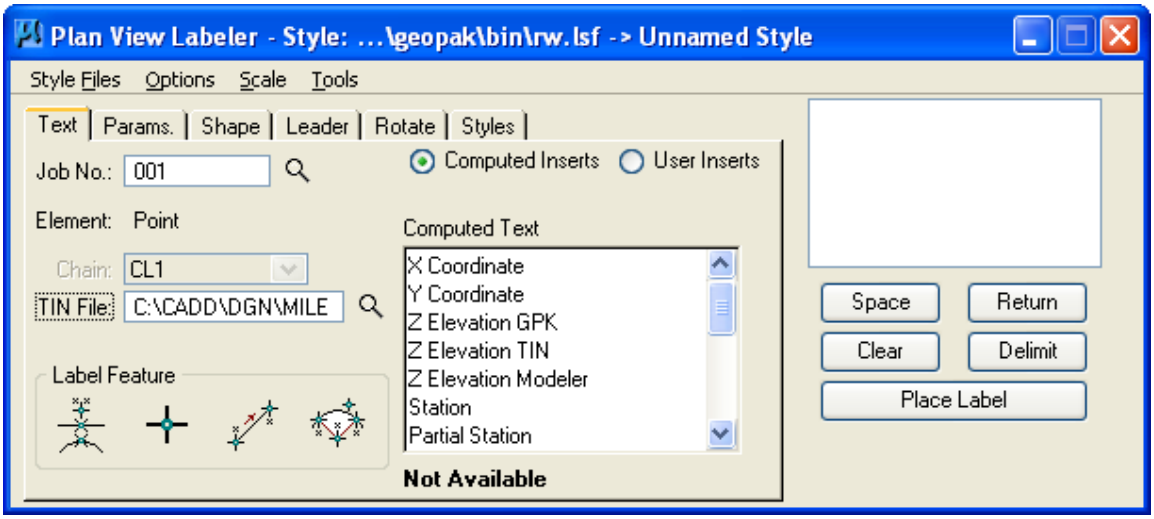
The **Plan View Labeler** tool provides the user with numerous methods to create annotation for design file project data. This annotation can include user type data supplied by the user or computed data created from Geopak and MicroStation elements. The labeling tool can be accessed by selecting **Application>Geopak Roads** or **Geopak Survey>Plans Preparations>Plan View Labeling**. The labeling tool can also be accessed from the **Geopak Survey Tools** menu or **Geopak Road Tools** menu as shown below:



When selected, the **Plan View Labeler** dialog will be displayed as shown below:

Note *The use of this dialog is to extensive to allow for detailed instructions within this document. The user should refer to the Geopak Help for complete detailed instructions.*

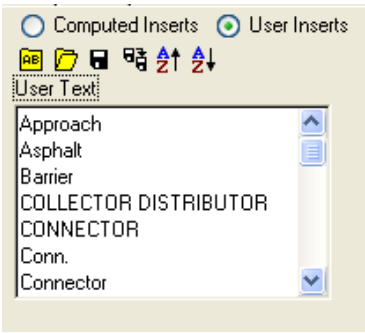
One of the main uses for this labeling tool is the creation of labeling styles that can be saved for future use. A Right of Way Mapping style file has been created called **RW.LSF,** which contains useful annotation styles for placement of required mapping data. These styles are listed under the category **RW-Labels**. The user may add additional styles to this category for specific labeling used at their site. It is, however, recommended that the file be saved as a different name than the original in order to prevent the edited version from being written over during future updates of the CADD software. The currently attached style file can be determined by viewing the information banner at the top of the dialog.



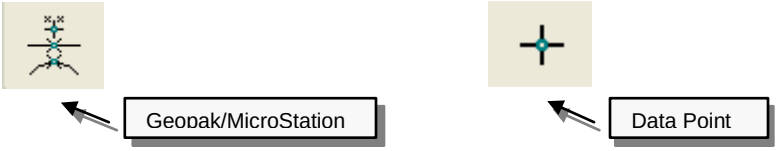
9.3.1 TEXT TAB

This tab contains specific items that will need to be set and selection inputs in order for the labeler to work with the current design file and Geopak geometry data.

- **Job No**. The Geopak job number for the current design file must be input. The Select button can be used and Geopak will display a dialog listing the .gpk geometry database files in the current Geopak project.
- **Chain** Select the geometry chain name that will be used to compute data such as station and offsets.
- **Computed Inserts** When selected the Computed Text insert list is made available for use as shown above. The element type selected in the design file determines the type of computed text inserts displayed linear or curved.
- **User Inserts** When selected the item selection window changes to the User Text and displays text provided from the rwlabels.ins file located in the FDOT2010\Geopak\-\bin directory. Text items can be added to this file by inserting each text item on a single line.

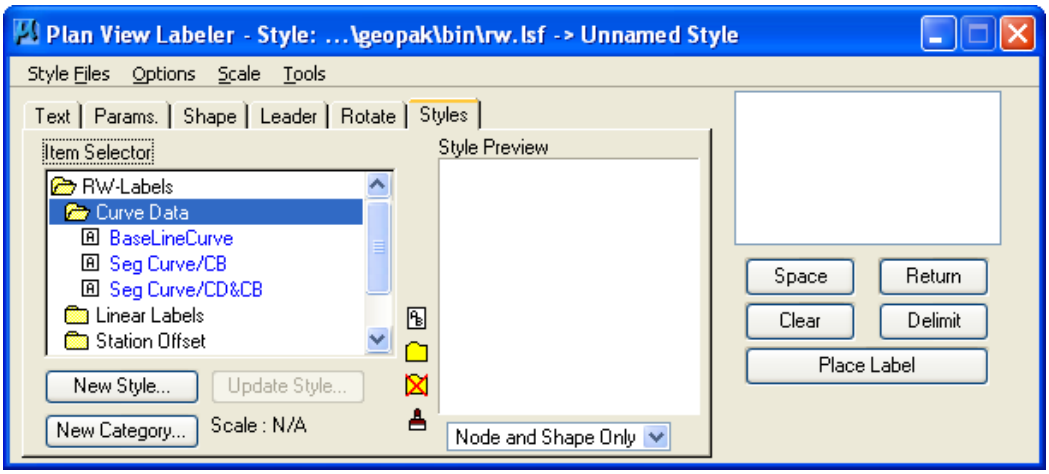


- **Label Feature** There are two selections that the user should select here for most all of the R/W Mapping labels. Press the Geopak/MicroStation Element button, and then select a GEOPAK or MicroStation element to utilize within computed text inserts. Press the Data Point button, then issue a data point on the screen. Functions include locating the text placement point, identifying a point for calculation of the computer text inserts, ect.



9.3.2 STYLES TAB

This tab provides access to label styles previously created or for creating additional labels. The label style can be selected by double clicking the style name in the Item Selector window. The following is a brief description of the labels currently available in the rw.lsf file:



- **BaseLineCurve** Places the standard R/W Mapping baseline curve data format. The user should select the Geopak/MicroStation button located on the Text tab and then select by data point the desired baseline curve element previously plotted into the design file. The curve element will be highlighted and then accepted with the second data point. The curve data will then be attached to the cursor for location placement by data point.

```
CURVE 1
P.I.STA.5+02.06
Δ = 20° 00' 00"
D = 5° 00' 00"
T = 202.06'
L = 400.00'
R = 1145.92'
P.C.STA.3+00.00
P.T.STA.7+00.00
```

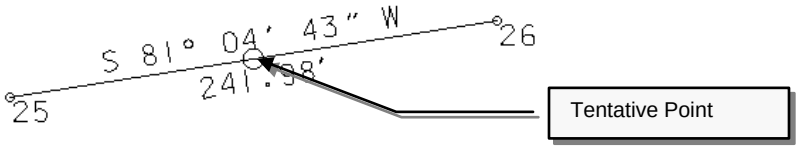
- **SegCur/CB** Places the standard R/W Mapping segmented curve data with Chord Bearing. The user should select the Geopak/MicroStation button located on the Text tab and then select by data point the desired baseline curve element previously plotted into the design file. The curve element will be highlighted and then accepted with the second data point. The curve data will then be attached to the cursor for location placement by data point.

```
Δ = 19° 38' 36"
L = 410.01'
R = 1195.92'
C.B. = N 86° 00' 00" E
```

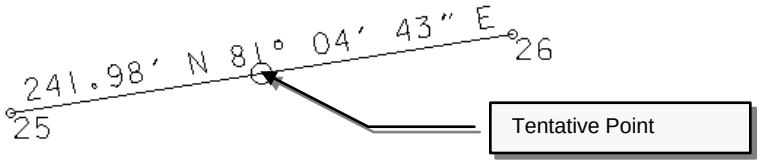
- **SegCur/CB&CD** Places the standard R/W Mapping segmented curve data with Chord Bearing and Chord Distance. The user should select the Geopak/MicroStation button located on the Text tab and then select by data point the desired baseline curve element previously plotted into the design file. The curve element will be highlighted and then accepted with the second data point. The curve data will then be attached to the cursor for location placement by data point.

```
Δ = 4° 00' 00"
L = 396.51'
R = 5679.58'
C.D. = 396.43'
C.B. = S 87° 00' 00" W
```

- **Bear/Dist. and Bear.00/Dist**. Places the standard R/W Mapping bearing and distance format for linear elements stored in the design file. The Bear.00/Dist format places a bearing with seconds to two decimal places. The user should select the Geopak/MicroStation button located on the Text tab and then select by data point the linear element to be labeled. The linear element will be highlighted and then accepted by a second data point. The distance and bearing will then be attached to the cursor for location and placement. The text justification for the label is set to center/center; this allows the label to be placed with the desired spacing by a tentative point on the linear element.



- **Dist-Bear and Dist-Bear.00** - These styles are basically the same as the previous styles except the label places the distance and bearing of the linear element on a single text line as shown below:

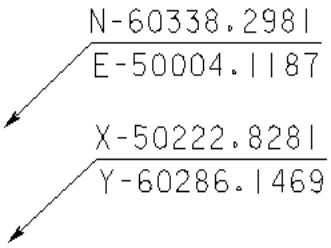


- **NECoords. and XYCoords.** – These two styles place coordinate data information (four decimal places) associated with a stored Geopak point or any data point location in the design file. The user should select the Data Point button located on the Text tab. Associated with these label styles is a leader line as shown on the Leader tab below. The leader line settings are automatically set as part of the saved label style. These defined settings for the leader line are, under Leader Type as a One Point Leader and under Terminator as an AT or current Active Terminator.

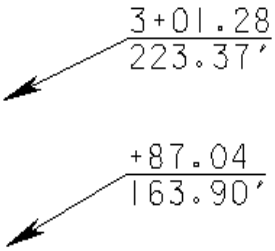
  Other AT terminators can be selected by using the MicroStation key-in "AT =" or can be selected from the R/W Mapping FDOT Menu under the ARROWS menu item. The AT terminator scale can also be set at ARROWS>Set Terminator Scale> on the FDOT Menu.

Note *It is suggested that the user select the* ***graphic*** *type terminator cells provided on the Right of Way FDOT Menu. Geopak will place these as special Geopak cells in the associated symbology. This will eliminate the problem of non-rotating point cells if the design file is rotated.*

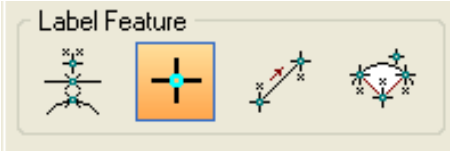
Once a data point in the design file has been selected the associated coordinate values for that point will be displayed in the Labeler dialog. Select the Place Label button to attach the coordinate labels to the cursor for placement. The next data point defines the location of the label from the selected point. The user is then given the option to place the leader line to the right or left side of the label by moving the cursor right or left of the label. Once this has been determined a data point will place the terminator line with the terminator at the location of the selected point.



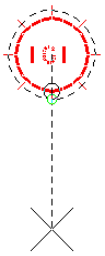
- **Full Station/Offset and Part. Station/Offset** These two label styles allow the user to place station and offset data associated with a Geopak point or any data point location in the design file. The Full Station/Offset label places the whole station value while the Part. Station/Offset label places only the plus station value. The desired stationed Geopak chain that will be used to compute the station and offset values should be selected in the Text tab Chain window. The Data Point button should also be selected in the Text tab dialog. The leader line associated with this label style and procedures for placing these labels are the same as described in the previous label style.



- **Parcel Bubble** – This label style was created to assist the user in quickly placing standard parcel bubbles with the required parcel number and leader line. The Parcel Bubble is created with a circle shape selected on the Shape tab dialog. Also a leader line has been associated as previously described but with the Terminator selection being No Terminator. The required R/W symbologies have been set for this label style as there is only one symbology standard used with parcel bubbles. The user should use the Data Point Location button located on the Text tab dialog for placement of the parcel bubble.



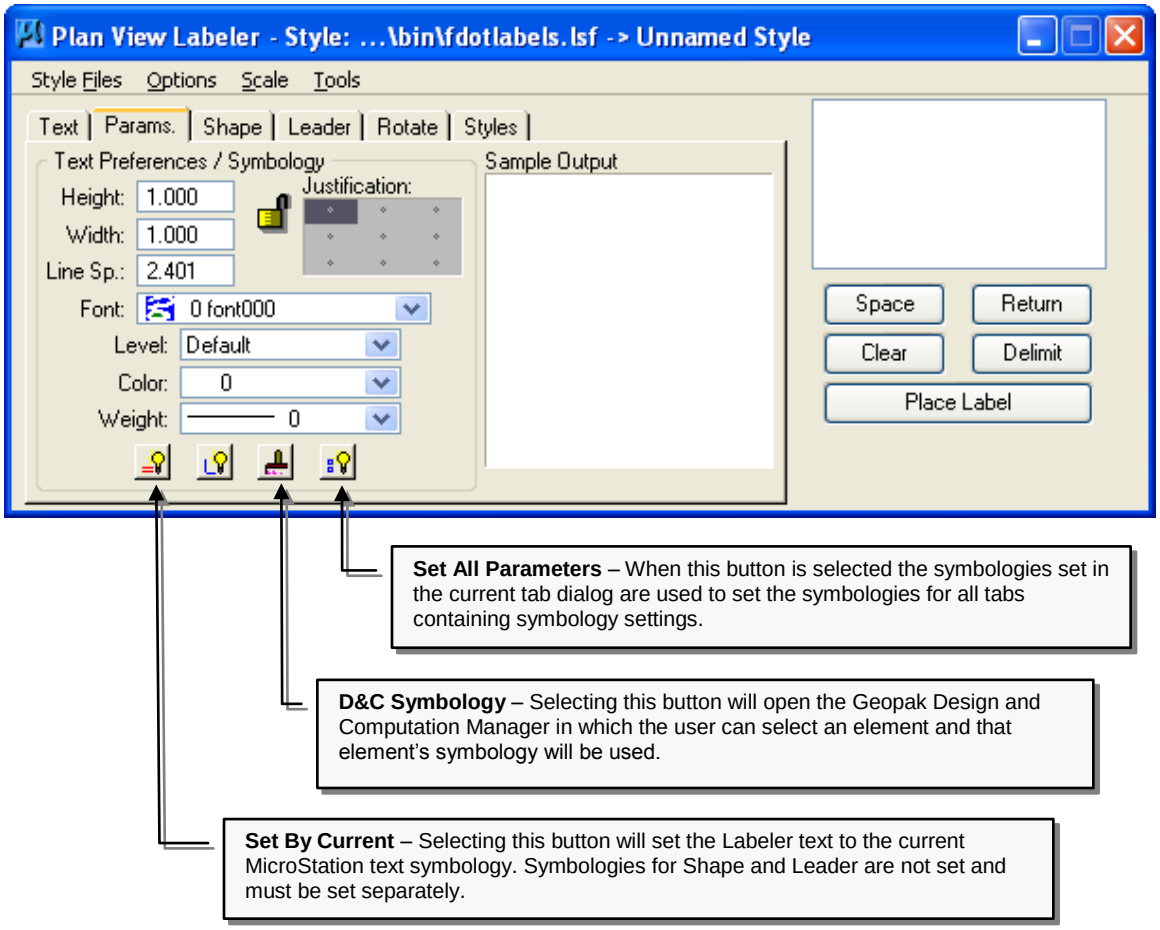
Editing the number displayed in the Labeler text window will change the parcel number. For best results, once the Parcel Bubble style has been selected the user should open **the Te**xt tab dialog and select the Data Point button for placement of each parcel bubble. The next step is to select the **Pl**ace Label button and the parcel bubble will then be attached to the cursor for placement. The second data point will place the parcel bubble at the desired location an**d a graduated circl**e will be displayed to **assi**st in placing the leader line as shown. The next data point will define the location of the beginning of the leader line from the parcel bubble with the leader line attached to the cursor.



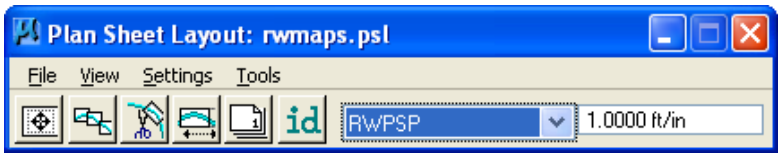
The last data point will determine the direction and terminus point of the leader line as shown below. To continue placing parcel bubbles do not reset, but simply change the parcel number in the text label window and the parcel number will be updated automatically.

9.3.3 PARAMS TAB

When using the Plan View Labeler it is important to set the required R/W Mapping CADD symbologies for that label. The quickest way to set these required symbologies is to use the R/W Mapping FDOT Menu in combination with the labeler. This can be accomplished, for example, by using the Right of Way FDOT Menu to set symbologies for text at the Text Symb>RW Text Symbologies menu item and then selecting the desired text element. This will set symbologies for level, color and weight. From the same menu location the text size can be set at Text Symb>Set Text Size. Once all required symbologies are set in MicroStation these settings can be transferred to the Labeler using the following methods located on the Params. tab dialog shown below:



9.4 PLAN SHEET LAYOUT



The **FDOT CADD Software** also provides a standard Sheet Library file for R/W Mapping called **RWMAPS.PSL** to be used with the **Plan Sheet Layout** program. This version of Geopak's Plan/Profile sheet clipping program contains, in most part, the same procedures as the Classic version previously described, with some additional enhancements.

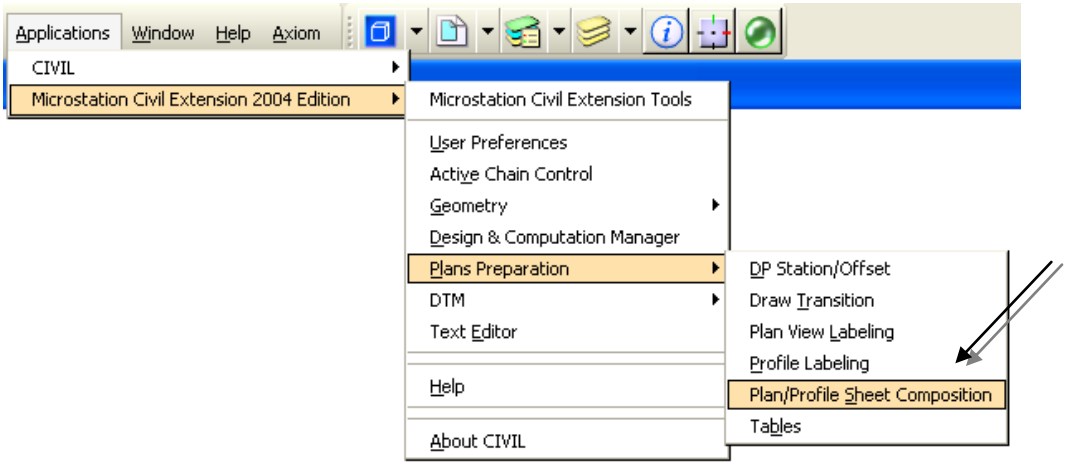
In the **Plan Sheet Layout** program all sheet layouts for R/W are contained in this single library file rwmaps.psl.

The following table lists the available R/W Sheet Layouts:

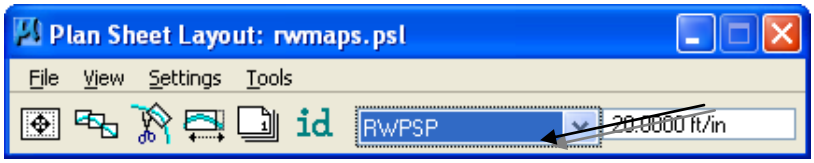
Sheet Name	Description	Scale	Sheet Type
CSDETL	Control Survey Detail	Any Scale	Plan (Port1)
CSKEYM	Control Survey Keymap	Any Scale	Plan (Port1)
MMDETL	Maintenance Detail Sheet	Any Scale	Plan (Port1)
MMKEYM	Maintenance Keymap	Any Scale	Plan (Port1)
RWDETL	Right of Way Detail	Any Scale	Plan (Port1)
RWKEYM	Right of Way Keymap	Any Scale	Plan (Port1)
RWPSL	Right of Way Parcel Sketch (Landscape)	Any Scale	Plan (8.5" x 14") (Port1)
RWPSP	Right of Way Parcel Sketch (Portrait)	Any Scale	Plan (8.5" x 14") (Port1)
RWMAPS	Used for ALL R/W Sheet Types w/ Auto - Title Block Annotation	Any Scale	Plan (Port1)

9.4.1 CREATING R/W PLAN SHEETS

From the **MicroStation Civil Extension** select the Plan/Profile icon.



Before beginning the clipping process make sure the correct sheet layout library is attached. The currently attached library name is displayed at the top of the Sheet Layout dialog as shown:



Select the R/W sheet name from the pull down list and input the desired plot scale in the text window to be used during the clipping process.

Note *For complete detailed instructions see Geopak documentation.*

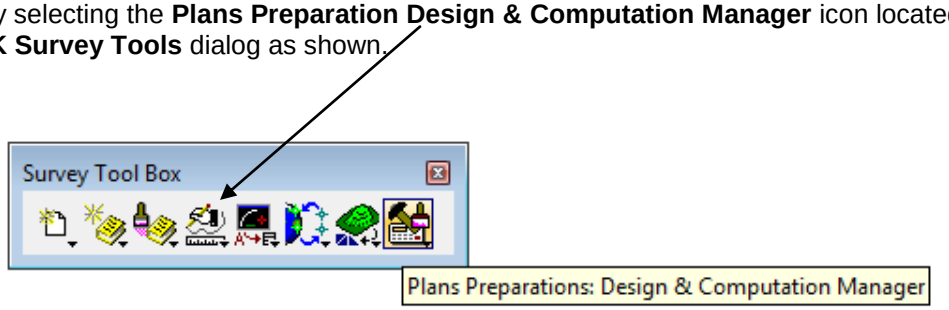
9.5 DESIGN AND COMPUTATION (D&C) MANAGER

9.5.1 SELECTION OF R/W DATABASE (ENGLISH)

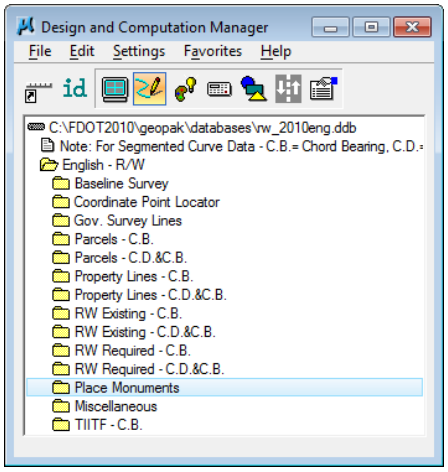
The Right of Way Mapping database file is entitled **RW_2010ENG.DDB.** The file can be accessed through the MicroStation main menu by selecting:

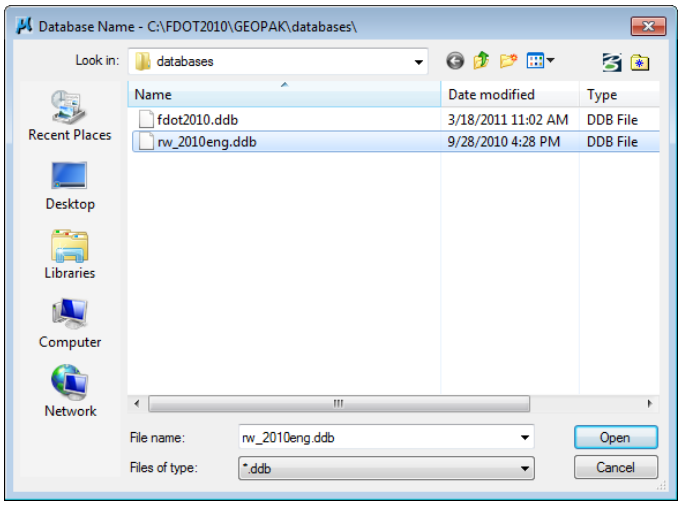
Applications > GEOPAK > SITE > Design & Computation Manager

<OR> by selecting the **Plans Preparation Design & Computation Manager** icon located on the **GEOPAK Survey Tools** dialog as shown.



This database contains one main category, for plotting elements in English units. When the D&C Manager is accessed for the first time after installing the FDOT2010 CADD software the user may need to select from the Design and Computation Manager File > Open. Then from the file listing select rw_2010eng.ddb as shown:

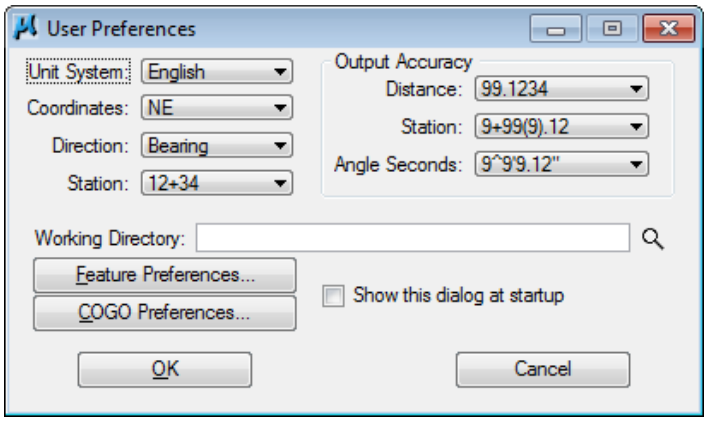


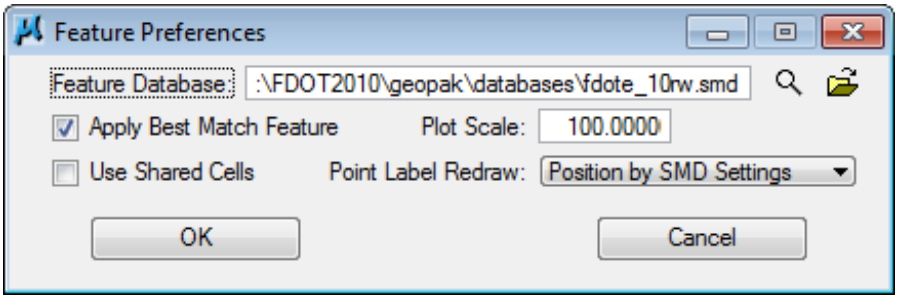


9.6 GEOPAK FEATURE PREFERENCE

Geopak COGO has the ability to plot design file elements which contain drawing parameters including element symbology, attribute drawing options and DTM controls. These Feature attributes are defined in a Survey Database with a file extension of .SMD. The FDOT2010 software contains the database fdote_10rw.smd. This database should be automatically attached as the default when using the FDOT2010 software which is defined by the Geopak configuration variable GPK_SURVMNGR_SMDFILE.

The user can verify which database is being used or change to another database from the Geopak User Pre**ferences** dialog. This dialog can be accessed by selecting form the Applications menu **Geopak>Road/Site/Survey>Preferences**. Select the **Feature Preference…** button to display the **Feature Preference** dialog shown below.





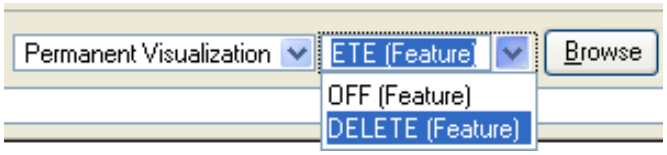
The **Feature Preference** dialog contains the following items:

- **SMD File** Displays the current working database. A different working database can be located and attached by the Select… button.
- **Edit SMD** This button will bring up the Survey Preference dialog for editing the database much in the same method as the Design and Computation Manager.
- **Apply Best Match Feature** When this toggle is active, the best match feature from the feature survey preference database is utilized. In the fdote_10rw.smd database the Default Feature category will be used if the active feature does not match a feature item in the current database category.
- **Plot Scale** Defines the scale at which linear elements such as custom line styles and cells will be plotted. It is important that the user set this prior to plotting elements into the design file project from the Coordinate Geometry dialog.

There are three **Visualization** settings on the Coordinate Geometry dialog used to control plotting of feature elements into the design file:

- **Disable Visualization** When active no elements are visualized during the COGO session.
- **Temporary Visualization** When active elements utilizing the feature symbology (or default symbology if no feature is present) are displayed during the COGO session.
- **Permanent Visualization** When active elements utilizing the feature symbology (or default symbology if no feature is present) are displayed during the COGO session. Upon exiting the COGO session the elements remain in the design file.

There are two **Feature** settings on the Coordinate Geometry dialog used to control plotting of feature elements into the design file:



- **OFF (Feature)** When the Off option is set, any element subsequently stored does not have a Feature attached.
- **Delete (Feature)** The Delete Feature deletes any feature on subsequent commands, or does not attach features to newly stored elements.

9.7 CONVERTING R/W DESIGN FILES TO MICROSTATION V8

Prior to converting Right of Way Mapping project/design files to V8 format the user should consider the following:

- It is important that all design files that are to be converted should adhere to the CADD Standards the project was created in.
- The design files must be QC compliant to FDOT CADD Standards (file names and graphical symbology).
- The design files must be free of errors related to file integrity. This can be done with tools such as Axiom's FileFixer.
- If an entire project is to be converted to V8, all disciplines working on that project must be migrated at the same time (No exceptions).
- If the design file to be converted is a V7 design file use the FDOT script files provided. If the design file is to convert format only, simply open in MicroStation V8 and accept the option to convert to V8 file format.
- After the conversion convert any support file such as Geopak input files. Check Global Origin, Working Units, Level Names and Reference Attachments.

Important: *Always work on a COPY of files to be converted.*

To convert V7 design files to MicroStation V8 the following procedure is recommended:

A R/W conversion script file is provided with the FDOT2010 CADD software and is located in the following directory:

C:\FDOT2010\RESOUCES\Conversion**rwv7toMR3.csv**

C:\FDOT2010\RESOUCES\Conversion**V8MR3toXM.csv**

This file is an Excel spreadsheet and contains required column data for converting V7 design files to V8 Right of Way Mapping CADD Standards.

During the conversion process this file is used to search for existing elements symbologies within the V7 design file and selects those elements that match the description within the table and converts these to V8 symbology elements in the output design file.

rwv7tov8.csv

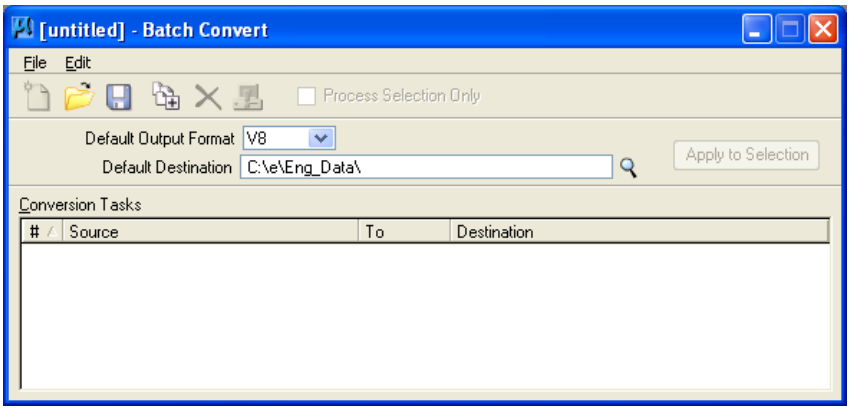
	A	B	C	D	E	F	G	H	I	J
1	%section	Levels								
2	Level	Color	LineStyle	Weight	Cell	ElementType	V8OutPutLevel	ByLevelColor	ByLevelStyle	ByLevelWeight
3	%%32	0	LEADERLT	2			ArrowLeaderLT_Term	0	LEADERLT	2
4	%%32	0	LEADERRT	2			ArrowLeaderRT_Term	0	LEADERRT	2
5	%%32	0	ARROW2	0			ArrowRWWidth	0	ARROW2	0
6	%%47	5	SUBDIV2	1			ArrowSubDouble	5	SUBDIV2	1
7	%%47	5	SUBDIV	1			ArrowSubSingle	5	SUBDIV	1
8	%%47	5	SUBDIVLT	1			ArrowSubSingleLT	5	SUBDIVLT	1
9	%%47	5	SUBDIVRT	1			ArrowSubSingleRT	5	SUBDIVRT	1
10	%%47	5	SUBDIV2LT	1			ArrowSubTwoLT	5	SUBDIV2LT	1
11	%%47	5	SUBDIV2LTOnly	1			ArrowSubTwoLTOnly	5	SUBDIV2LTOnly	1
12	%%47	5	SUBDIV2RT	1			ArrowSubTwoRT	5	SUBDIV2RT	1
13	%%47	5	SUBDIV2RTOnly	1			ArrowSubTwoRTOnly	5	SUBDIV2RTOnly	1

MicroStation V8 provides several methods for converting design files to V8. Only one method is described here and is the recommended procedure for R/W CADD users. This procedure uses the MicroStation:

9.7.1 BATCH CONVERTER

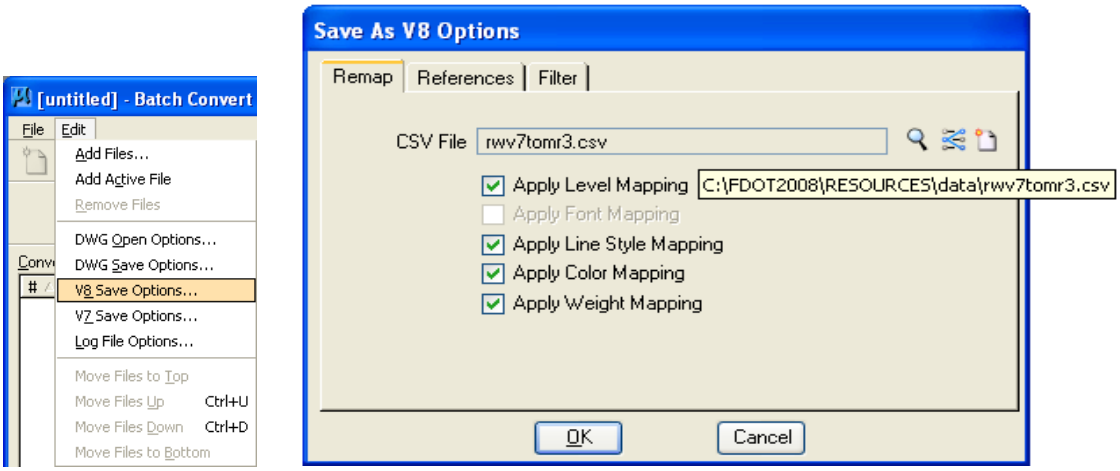
The Batch Converter utility can convert a single design file or multiple files across different directories and apply different conversion format types to selected design files. For full instructions on the use of this utility the user should refer to MicroStation Help files.

To begin the conversion process on a single V7 design file open the Batch Converter by selecting from the Main Menu **Utility>Batch Converter**:

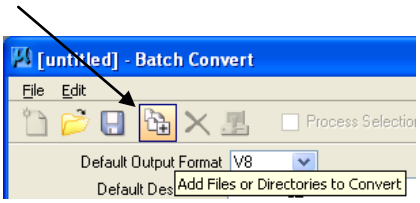


- **Default Output Format** Set the output format to V8
- **Default Destination** Set the directory location for the output file. The small magnifying glass can be selected to browse to the desired location. It should be noted that the Batch Converter program will not overwrite an existing design file in the output directory with the same name. However the program does not prompt the user that a file already exists with the same name but will state in the conversion dialog that the file is up to date.
- **Select Edit >V8 Options** Sets the conversion file name (rwv7toMR3.csv and what element symbology types to convert.)

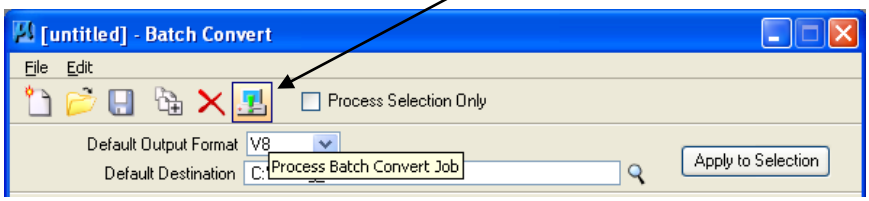
In the **Save V8 Options** dialog box set the CSV file name to **rwv7toMR3.csv** or by selecting the magnifying glass the user can browse to the desired location. Make sure each element symbology type to be converted is selected. Note that the **Apply Font Mapping** is grayed out, as this conversion file contains no data for converting font types. Select the OK button when complete.



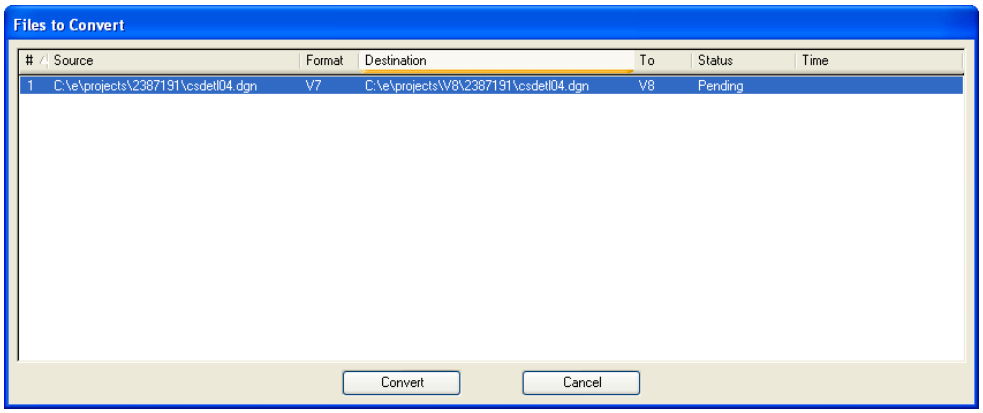
Select the **Add Files or Directories to Convert** button to open the directory and file selection dialog. As stated, multiple files or directories can be added to the file list as needed.



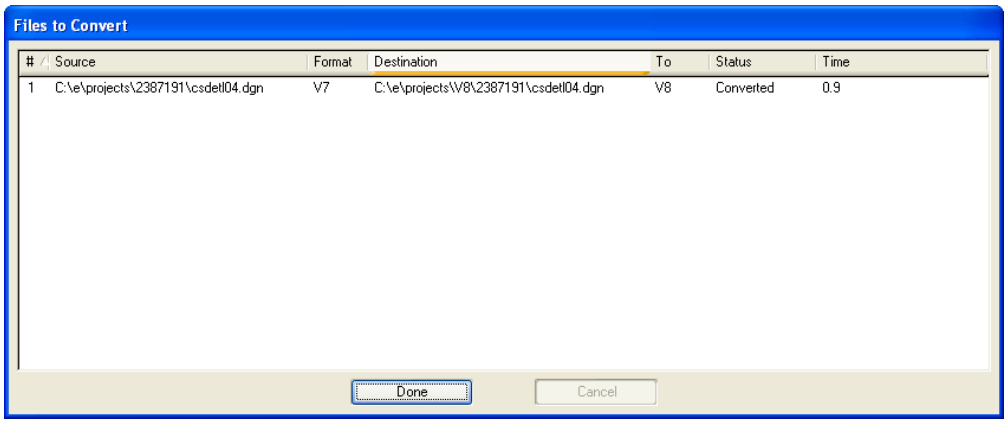
After all files to be converted are added to the list, select the **Process Batch Convert Job** button to begin processing.



The **Files to Convert** dialog displays the file path and name of the file to be converted, the destination file name and path along with the Status: **Pending** or **Up to Date**. As stated, if the Status is up to date a file with the same name already exists at that directory location and the converter will not processes that file name.



Select the **Convert** button and all files will be converted to V8 format with standard R/W V7 elements converted to standard FDOT2010 R/W V8 symbologies. After conversion, the above dialog should appear as shown below, with the Convert button changed to Done and the Status column changed to Converted.



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Chapter 10 - ENVIRONMENTAL MANAGEMENT STANDARDS

CADD Production Criteria Handbook

10.1 GENERAL

The Environmental Management Office (EMO) has complete responsibility for the project development phase. The intent of this is to give latitude and discretion in performing project analysis, project development, engineering, public involvement and environmental required tasks while maintaining the necessary level of Florida Department of Transportation (FDOT) Computer Aided Design and Drafting (CADD) standards for the products of EMO.

The Project Development & Environmental Clearance process is oriented toward presenting the project to the permitting & regulatory agencies, politicians & the general public in a format which is clear & easy to understand. Production plans do not become important until after Location & Design Concept Acceptance is obtained. Our goal is to create a presentation as useful to the plans development process as possible, but public presentation is the primary concern.

10.2 STANDARD FILE NAMES

FDOT utilizes standard naming conventions for all of its files. Automation implemented in various tools provided by FDOT in the CADD Software delivery is dependent on this naming convention being met. More importantly, the naming convention confers data information to the downstream customer.
Standard file names should follow this format: AAAABB##.ex***t***

Where **AAAA** = *abbreviated file description*, **BB** = *Discipline Denotation, ## =Sequence number.*

Note *Please see CADD Production Criteria Handbook (CPCH) Chapter 3 for more information.*

The following table defines the EMO File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequential numbering. Standard Model names are also provided in the following table.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Borders & Sheets	BDBREM.dgn	Default	Border Sheet Reference File for Bridge Hydraulics Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	BDPLEM.dgn	Default	Border Sheet Reference File for Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	BDPPEM.dgn	Default	Border Sheet Reference File for Plan & Profile Sheet	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	BDPREM.dgn	Default	Border Sheet Reference File for Profile Sheet	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	BDXSEM.dgn	Default	Border Sheet Reference File for Cross-Section Sheet	rdxsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	GNNTEM.dgn	Default	General Notes	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	LDPREM.dgn	Default	Lateral Ditch Plan / Profile Sheet	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Borders & Sheets	PLANEM.dgn	Default	Plan Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLAYEM.dgn	Default	Project Layout Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLPREM.dgn	Default	Plan and Profile Sheets	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PRDSEM.dgn	Default	Project Profile Layout	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PROFEM.dgn	Default	Profile Sheets	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clip Borders	CLIPEM.dgn	Default	Clip Borders	cliprd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clip Borders	MTPLEM.dgn	Default	Motif file for plan sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clip Borders	MTPREM.dgn	Default	Motif file for profile sheets	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Cross Sections	LDXSEM.dgn	Rdxsrd	Lateral Ditch Cross-Sections	rdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
		Pattrd	Lateral Ditch Pattern Lines			
		Xsshrd	Lateral Ditch Shapes			
		Rdxsrd_shg	Lateral Ditch Cross Section Sheets			
Cross Sections	PDXSEM.dgn	Rdxsrd	Pond Cross-Sections	pdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
		Pattrd	Pond Pattern Lines			
		Xsshrd	Pond Shapes			
		Rdxsrd_shg	Pond Cross Section Sheets			
Cross Sections	RDXSEM.dgn	Rdxsrd	Roadway Cross-Sections	rdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
		Pattrd	Roadway Pattern Lines			
		Xsshrd	Roadway Shapes			
		Rdxsrd_shg	Roadway Cross Section Sheets			
Existing Topography	TOPOEM.dgn	Default	Topography - Existing (Utilities or Drainage not included)	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Key Sheets	KEYSEM.dgn	Default	Key Sheet	keysht.rul	$(MX_SEEDIR)fdotseedkeymap.dgn	
Project Network Control	PNCSEM.dgn	Default	Survey Project Network Control Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Proposed Design	ALGNEM.dgn	Algnrd	Alignment Layout	algnrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	BKSWEM.dgn	Default	Back of Sidewalk Profiles	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	CURCEM.dgn	Default	Curve or Coordinate Data Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	DSGNEM.dgn	Default	Proposed Design	dsgnrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	DSPFEM.dgn	Default	Proposed Profile	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	GCTREM.dgn	Default	Contours 2D	dtmrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	GDTMEM.dgn	Default	Digital Terrain Model / TIN Model - 3D	dtmrd.rul	$(MX_SEEDIR)fdotseed3d.dgn	
Proposed Design	INTDEM.dgn	Default	Intersection / Interchange Details	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	INTPEM.dgn	Default	Intersection / Interchange Profiles	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	MITGEM.dgn	Default	Mitigation Areas	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	PDPLEM.dgn	Default	Pond Design	drprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	QTDSEM.dgn	Default	Quantity Computation Shapes / Calculations	qtdsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	QUANEM.dgn	Default	Quantity Computation Details	qtdsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	RWDTEM.dgn	Default	Right of Way Details for Roadway	rwdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	SCGREM.dgn	Default	Selective Clearing and Grubbing Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	SWPPEM.dgn	Default	Storm Water Pollution Prevention Plan	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	TEXTEM.dgn	Default	Text Labels & Miscellaneous Descriptions	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	WETLEM.dgn	Default	Wetlands Delineation Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SPDTEM.dgn	Default	Special Details Sheet	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes /	BRHYEM.dgn	Default	Bridge Hydraulics Recommendation Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Tables						
Summary Boxes / Tables	BXCLEM.dgn	Default	Box Culvert Wing Wall Design and Special Details	drdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes / Tables	CESSEM.dgn	Default	Summary of Pay Item Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes / Tables	SUMQEM.dgn	Default	Summary of Quantities Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Traffic Control	TCDSEM.dgn	Default	Traffic Control Design	tcdsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Traffic Control	TCDTEM.dgn	Default	Traffic Control Detail Sheet	tcdsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Traffic Control	TCGNEM.dgn	Default	Traffic Control General Note Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Traffic Control	TCPLEM.dgn	Default	Traffic Control Plan Sheets	tcdsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Typical Sections	TCTYEM.dgn	Default	Traffic Control Typical Section Sheets	tcdsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Typical Sections	TYPDEM.dgn	Default	Typical Data Sheet	typdrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Typical Sections	TYPSEM.dgn	Default	Typical Section Sheets and Details	typsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Utilities	UTADEM.dgn	Default	Utility Adjustment Sheet	utadrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Utilities	UTEXEM.dgn	Default	Utilities - Existing	utexrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Utilities	UTPREM.dgn	Default	Utilities - Proposed	utprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Verified Utilities	SBVHEM.dgn	Default	Summary of Verified Utilities (2D)	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

10.3 RESOURCE FILES

Engineering/CADD Systems Office (ECSO) provides standard resource files with the FDOT CADD software. 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.

10.4 PROFESSIONAL'S ELECTRONIC DATA DELIVERY SYSTEM (PEDDS)

PROFESSIONAL'S ELECTRONIC DATA DELIVERY SYSTEM (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.

10.5 SYMBOLOGY STANDARDS

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the EMO discipline with associated Rule Files are found in Section 10.2 of this chapter.

Note *Refer to Chapter 3 Resource and Support File) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.*

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Chapter 11 - SURVEY STANDARDS

CADD Production Criteria Handbook

11.1 GENERAL

This chapter will describe the minimum CADD requirements for survey operations.

11.2 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 Survey File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequence numbering. MicroStation design files are typically produced representing the existing objects located during survey operations and for County Mapping operations.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Project Network Control	CTLSRD.dgn	Default	Survey Project Control Sheet	ctlsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Existing Drainage	DREXRD.dgn	Default	Graphics design file containing existing drainage features	drexrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Existing DTM	GDTMRD.dgn	Default	Graphics files of ground surface digital terrain models	dtmrd.rul	$(MX_SEEDIR)fdotseed3d.dgn	
Existing Topography	TREERD.dgn	Default	Tree Survey Sheet	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Existing Topography	TOPORD.dgn	Default	Graphics design file containing existing topographic features	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Existing Topography for R/W Maps	TOPORW.dgn	Default	Right of Way Mapping file containing existing Topography for mapping purposes only	toporw.rul	$(MX_SEEDIR)rwseed2d.dgn	
Existing Utilities	UTEXRD.dgn	Default	Graphics design file containing existing utility features	utexrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Verified Utilities	UTVHRD.dgn	Default	Survey of Verified Utilities (3D Version of UTEXRD.dgn)	utexrd.rul	$(MX_SEEDIR)fdotseed3d.dgn	

Additional geometry input files may also be created for delivery to design. (Example: files of existing profiles, chains, points, etc.) All data delivered to the Department, including necessary directories and survey files, should be placed under the Survey discipline folder, which the FDOT standard directory structure includes for this purpose. Additional sub-directories may be created under the \Survey discipline folder to segregate and organize data. (Example: the case where a CAiCE project is placed within the project directory structure under the \Survey discipline folder for delivery.)

Note *See Chapter 4 for requirements in creating additional sub-folders.*

11.3 RESOURCE FILES

CAiCE and GEOPAK are the two principal applications used for processing survey data into MicroStation graphics files for FDOT. Each of these programs is feature driven for surveying operations. A feature table is utilized to look-up appropriate element symbology for given objects found in the survey.

The feature table provides the current standards data for Roadway Design and is loaded automatically to a default directory named ***x:\CAiCE\FTB\,*** where "***x***" is the workstation drive letter where CAiCE is installed, when the FDOT2010 & FDOT Menu options are installed from the FDOT2010 Software Delivery CD. The naming convention for this table includes "E" for English and "10" for the 2010 standards.

11.3.1 CAiCE FEATURE TABLE

The Department provides the CAiCE feature table called ***FDOTE_10.ftb*** that is required to implement the level numbers (200+ through 9xxx) for the levels corresponding to the MicroStation DGN library file. This table is placed in the \CAiCE\FTB\ directory.

Note *Earlier year's standards may also be installed.*

A corresponding feature table called ***FDOTE_10.ftm*** is also loaded to the x:\CAiCE\FTB\ directory to control symbology on alignment chains (Geometry Chains with stationing). This table is used by the *Settings > Object Display >Geometry Chains* command in CAiCE to control the proper symbology of alignment stationing, station tics, and station labels based upon scale.

Note *The name of the **.ftm** feature table must match the name of the active **.ftb** feature table in use during a CAiCE session.*

11.3.1.1 LIST FILES

Feature List files, ***FDOTTOPO.lis*****,** ***FDOTDran.lis*****, and** ***FDOTUtil.lis*****,** are also installed into the x:\CAiCE\FTB\ directory to assist the user in creating the CAiCE screen graphics containing the appropriate data for producing the three typical graphics files supplied to design, ***TOPORD00.dgn*****,** ***DREXRD00.dgn*****, and** ***UTEXRD00.dgn*****.** These List files are listings of the feature codes that belong in the respective design files. Consult your CAiCE documentation on the use of List files.

11.3.2 CAiCE CELL LIBRARY

MicroStation Cell libraries cannot be used or attached by CAiCE directly. (CAiCE could attach a V7 cell Library). The MicroStation cell library was translated to CAiCE's own version of a cell library (*.CCL versus *.CEL, hence **SYENG10.ccl** and **SURVEY10.ccl**). Note the differences in 11.3 for ROW Mapping.

When creating a CTLSRD.dgn file, three MicroStation cells, ***CTLDAT, CTLDETL, and CTLTAB,*** have been provided to aid in the insertion of project control data if needed. All three cells can be found in the Right of Way cell library (row.cel).

11.3.3 TRANSLATION TABLE

A Translation Table, ***Edgntype.tbl***, is another resource file provided for CAiCE that maps CAiCE line styles to MicroStation custom line styles. This table is loaded automatically by the FDOT2010 Software Install routine into the x:\CAiCE\DGN\ subdirectory and is automatically called by CAiCE when screen graphics are saved to MicroStation graphics.

Note *To have compatibility with MicroStation's long name cells and levels, two files, DGNCell.TBL and DGNLevel.tbl, were introduced and must reside under your \CAiCE\DGN\V8 directory.*

11.3.4 ADDITIONAL CAICE TABLES AND CELL LIBRARIES

Additional CAiCE feature tables and cell libraries are also provided for existing topography files, created for Right-of-Way mapping purposes. Mapping uses additional consolidation of certain monument symbols and has other symbolization requirements. The tables and cell libraries included are:

- **FDOTE_10RW.FTB**

  Feature table containing the topography features used in ROW Mapping

- **FDOTE_10RW.FTM**

  Corresponding table for controlling alignment / chain symbology and bearing / distance chain labeling (attaches automatically when FDOTE_80RW.FTB is attached)

- **Survey10.CCL**

  CAiCE format of the cell library for use in ROW mapping

- **Survey10.CEL**

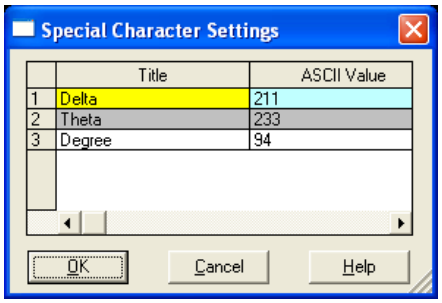
  MicroStation format of the topo cell library for use in ROW mapping

11.3.5 CAICE SPECIAL CHARACTERS

Note *The MicroStation CDG2V8 Macro Utility described in 11.5 does not support True Type Fonts.*

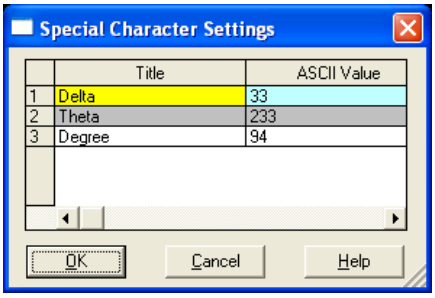
- **FDOT's font library 48 in MicroStation (roadway font)**

  This does not use the standard ASCII table for all special characters. In particular, the degree symbol " ° " for MicroStation requires that CAiCE place the hat symbol " ^ " in text strings so MicroStation will look correct when data is translated to MicroStation graphics. To force CAiCE to substitute the " ^ " for " ° ", CAiCE needs to be set by selecting the menu options: *Settings* > *Special Characters* and set the ASCII value of 94 to represent degrees as shown in the figure to the right.



- **Right of Way project font 58 in MicroStation.**

  If exporting to a Right of Way map, CAiCE needs to be set by selecting the menu items: *Settings* > *Special Characters* and set the ASCII value 33 to the Delta symbol as shown in the figure to the right.

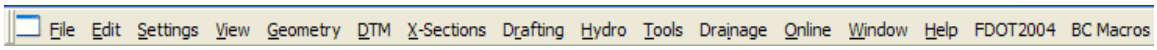


11.4 USING THEME VIEWER TO CREATE GRAPHICS

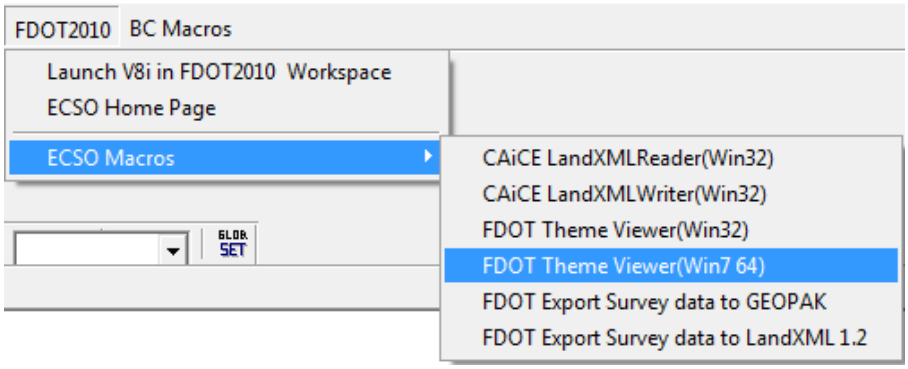
FDOT provides CAiCE VBA Macros that are accessible from the Menu Bar in CAiCE. When the FDOT2010 software is loaded, a folder \FDOT2010\CAiCE is created. The contents of this folder and all subdirectories should be copied to the root of the drive that contains the \CAiCE folder where the application is loaded. This is pointed to by Windows environment variable "KCDIR".

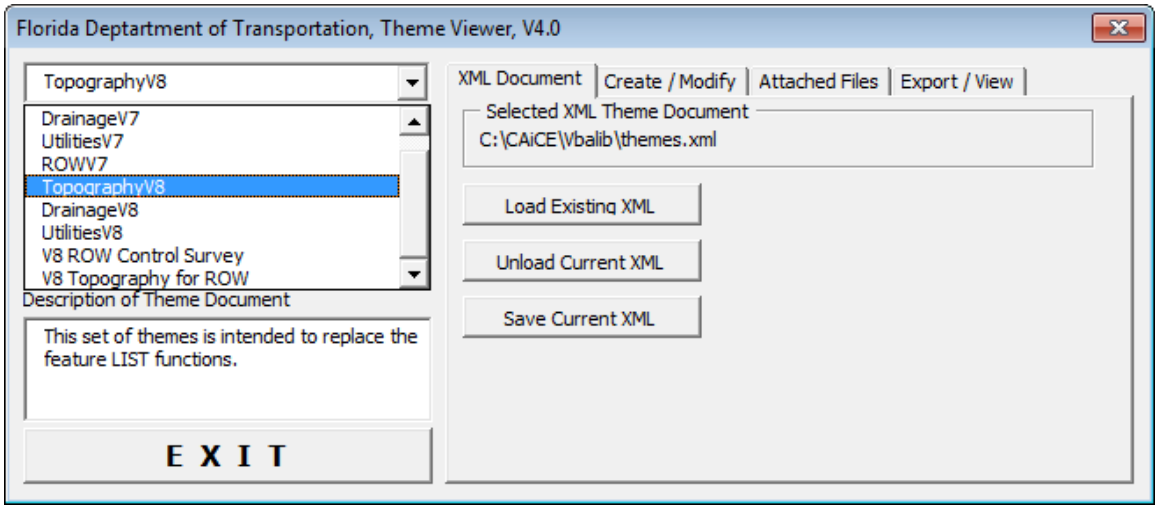
Once done, a custom FDOT2010 menu is added to the CAiCE Menu bar shown below:

Note *This is functional only for CAiCE Visual Transportation 10, Service Pack 6 and higher.*



Select the ***FDOT2010 > ECSO Macros > Theme Viewer*** **Macro** as shown below:

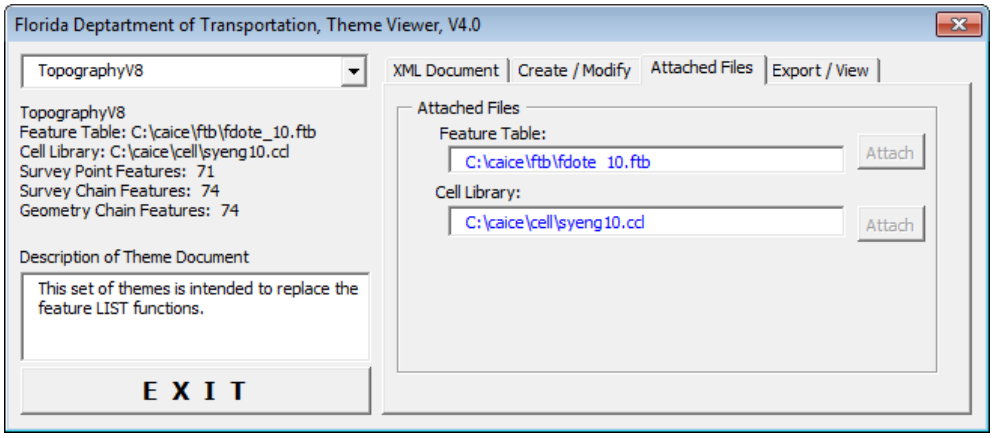




The Theme Viewer application starts, ready to select a Theme (a series of view commands for Points, Survey Chains, and Geometry Chains to place on the Graphics screen BY Feature Code) from pane at the upper-left.

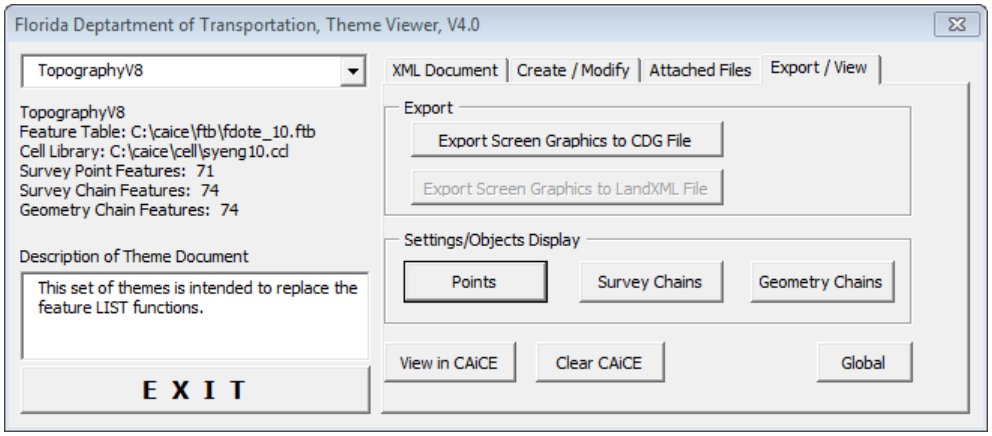
- **Attached Files Tab**

  The ***Attached Files*** Tab sets the proper feature table and cell files for attachment. If CAiCE can find the files, they will be shown with blue text like shown below. If the files are shown in red text, you may need to select the [Attach] button to locate them, or the ellipses button […] to navigate and attach the proper files.

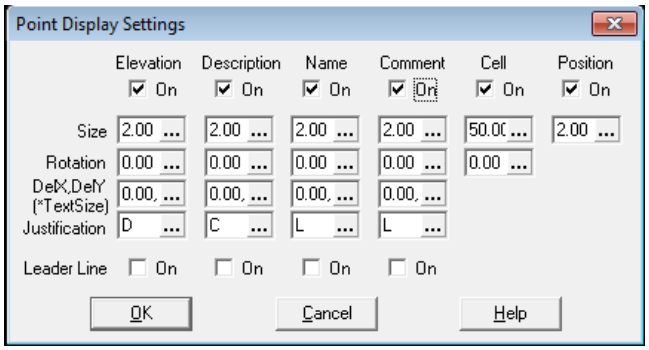


- **Export / View Tab**

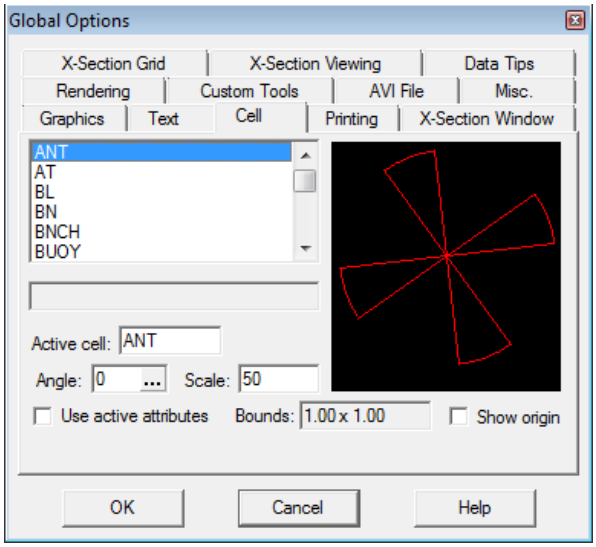
  The Export / View Tab sets the Global Options for viewing and Object Display settings for Points, Survey Chains, and Geometry Chains. These settings control how those objects will appear and what additional graphics will be drawn when the theme is executed.

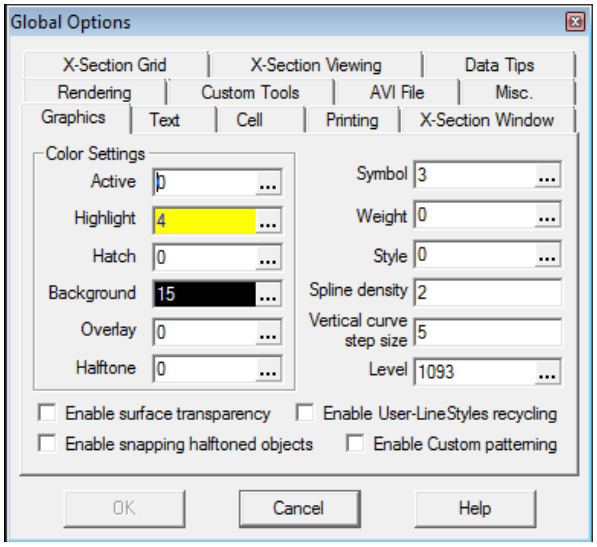


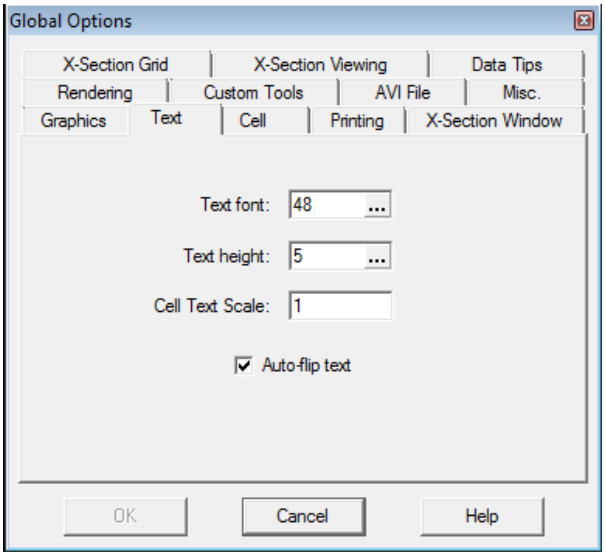
Note *With the FDOTE_10.ftb; if the point elevation, description, name, comment, cell and position boxes are checked on, these elements will be placed on their own corresponding bylevel when imported into MicroStation using the CDG2V8 Macro Utility described in 11.5. This gives the user the ability to maintain these features in MicroStation or turn each off individually using the MicroStation level display manager.*



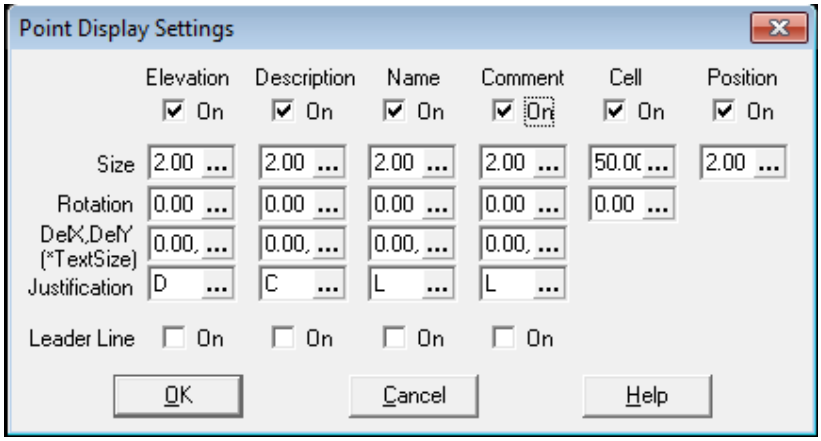
- *Global Options* The Theme Viewer interface has the option to set CAiCE Global viewing options with the [Global] button. The following are typically set:

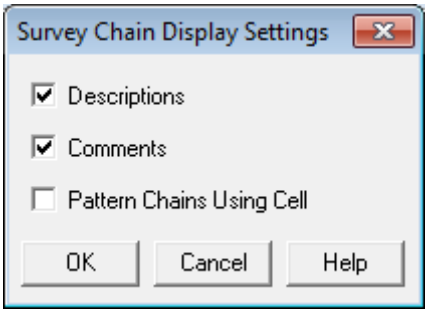






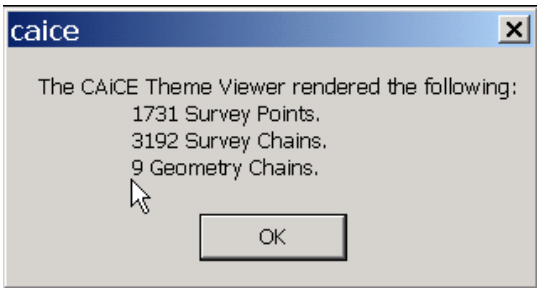
- *Point Display Settings / Object Display* buttons are also available to set graphics defaults for Points, Survey Chains and Geometry Chains:





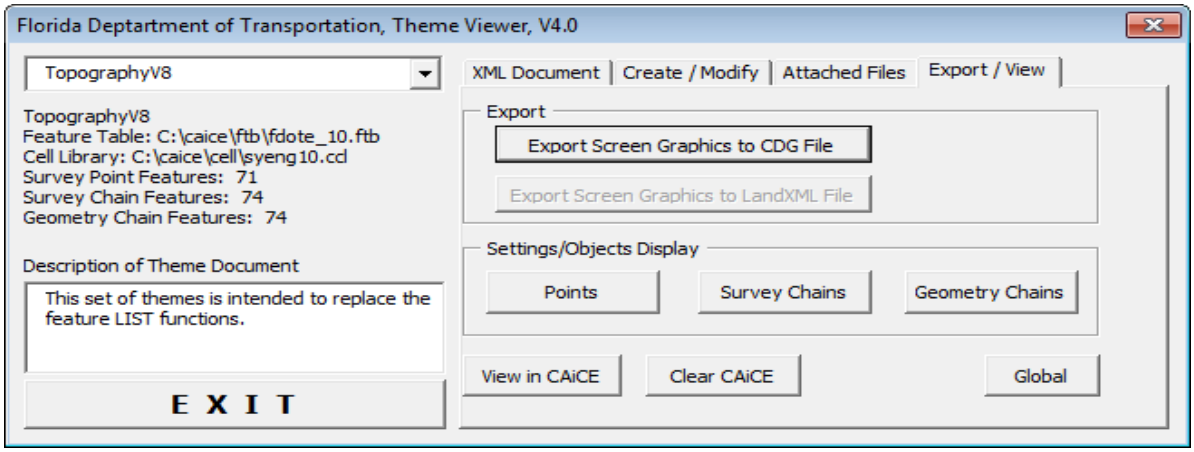
Note *The Size values are set to "-1" in the Point Display Settings dialog.*

- *View in CAiCE* button will display the graphics of the loaded theme. CAiCE will draw those objects at the sizes specified in the Global Options dialog Text tab shown previously, and cells at the scale specified by the scale at the Global Options dialog Cell tab. To change those settings to an absolute height each time you create views, change those "-1" values to override the defaults in Global Options. At any time, settings may be saved from the CAiCE Settings menu, for work in later CAiCE sessions. When CAiCE finishes drawing the objects to the screen, summary statistics are displayed:



- *Clear CAiCE* button clears and expunges the graphics in the CAiCE display window, if the results of the graphic content inside CAiCE are not what was intended. Adjustments can be made to the display settings for Global Options or the element display settings, and the [View in CAiCE] button selected again to redraw the graphics using the new settings.

- *Export Screen Graphics to CDG File* button exports and saves the graphics displayed on CAiCE's screen to a CAiCE Design Graphics (**.cdg)** file for the themes provided to draw existing topography, existing drainage, existing utilities which correspond to the files needed to create the design files: TOPORD00.dgn, DREXRD00.dgn, and UTEXRD00.dgn. The CDG file is an ASCII file which contains the commands to redraw the elements in CAiCE, and may also be read by a Macro running the FDOT2010 Menu to draw those same elements in MicroStation.
- In the example, once the topo is drawn, the graphics are ready to export by selecting the [Export Screen Graphics to CDG File] button and saving the file name for the topography as TOPORD00.CDG. Clear the graphics, select the next theme (Utilities, Drainage, etc.) as described before and repeat the steps until you have separate CDG files for each theme.



11.5 USING CDG2V8 MACRO UTILITY

Translation to MicroStation files from CAiCE requires the user to save a CAiCE Design Graphics (CDG) file of the graphics displayed on CAiCE's screen using methods described earlier. The CDG file is an ASCII file that contains the primitive points, lines, arcs, text, cell references, etc. that can be converted to MicroStation file format using a utility provided in the FDOT2010 Menu.

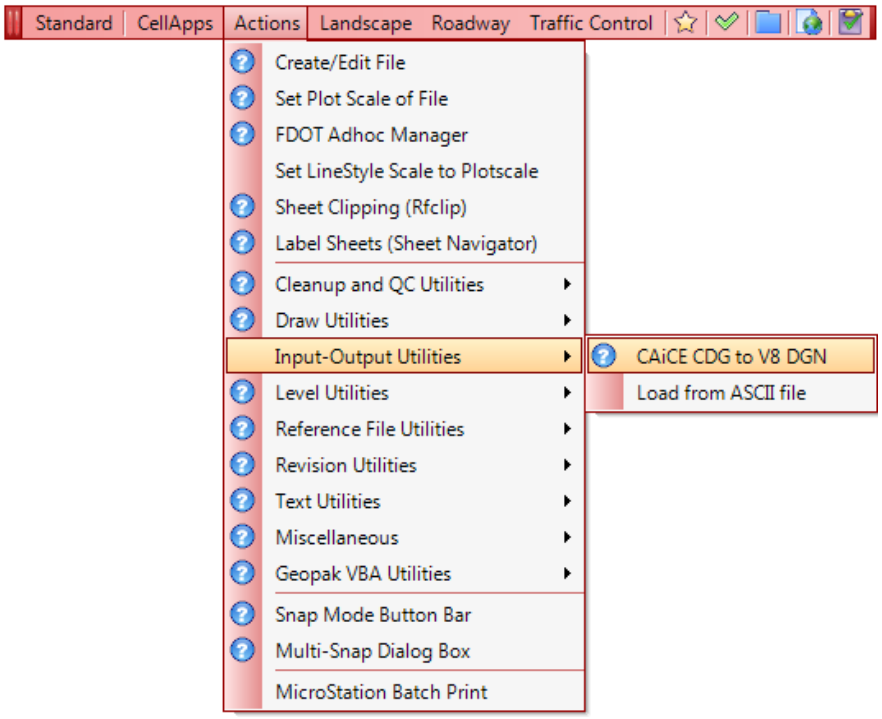
Once the CDG files are created, a design file is opened with MicroStation inside the FDOT2010 workspace for the graphics file you want translated. If the design file does not exist, it can be created from either MicroStation Manager (be certain to use the correct seed file for the type of DGN you are creating, that is a Roadway seed or a Right of Way Seed) or you may use the Create / Edit FDOT2010 Files application.

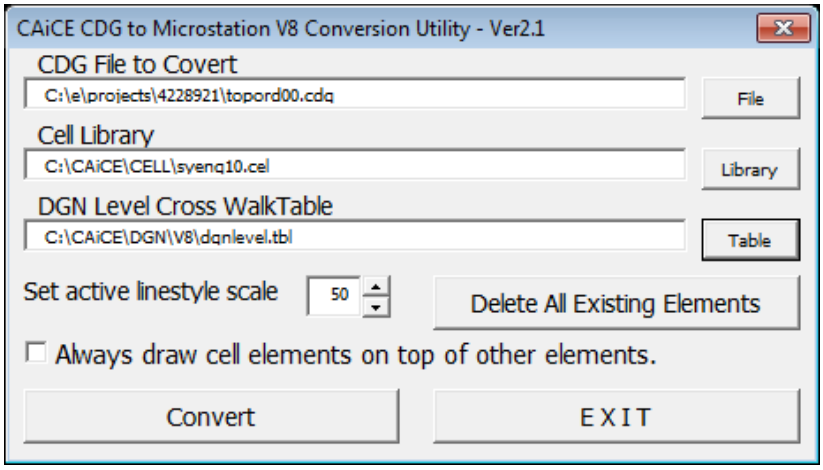
Note *The user should pay attention to the MicroStation working environment in which the design file is opened. The user may select an appropriate environment from the FDOT2010 Menu pull down: Standard > Configuration.*

Example: a TOPORD00.DGN has been opened created from the *fdotseed2d.dgn* seed file since the TOPORD00.DGN is intended for design. (MicroStation was configured to use the Standard Roadway Menu.)

The Utility is run from selecting the FDOT Menu pull down:

Actions > Input-Output Utilities > CAiCE CDG to V8 DGN as shown below:





- **CDG File to Convert**

  The CDG you wish to import

- **Cell Library**

  The MicroStation cell library used:

  \FDOT2010\RESOURCES\cell*SYENG.CEL* –or– \CAiCE\CELL*SYENG10.CEL*

  For the Right-of-Way themes use:

  \FDOT2010\RESOURCES\cell*SURVEY.CEL* –or– \CAiCE\CELL*SURVEY10.CEL*

- **DGN Level Cross Walk Table**

  The Level mapping table: \CAiCE\dgn\V8\DGNLEVEL.TBL

- **Set active line style scale**

  The Scale for custom line styles

- **Convert button**

  The Macro will read the CDG and begin using MicroStation to draw the elements in the CDG (If the conversion gives a VBA error the user needs to uncheck the box "Always draw elements on top of other elements").

- **Delete All Existing Elements**

  This tool deletes all elements in the open DGN file and must be used with caution.

  This tool currently works with ordinary CDG files for graphics like lines, arcs, text, etc. IF you are creating a DGN of a TIN model from CAiCE, the triangles are placed as individual shapes in MicroStation. Remember to create a different DGN.

11.6 GEOPAK SURVEY

For GEOPAK, the Survey application uses a feature table called *FDOTE_10.smd.* This feature table is installed into the x:\FDOT2010\geopak\databases\ directory by the FDOT2010 Software Install routine (x is the drive letter where the FDOT2010 software is installed). The *FDOTE_10.smd can be used when importing CAiCE KCP files or processing OBS files.* The *FDOTE_10RW.smd* feature table is used to display the TOPORW.dgn file after importing CAiCE KCP data (see below). Note that older versions of this feature table may also be installed for legacy project compatibility (i.e. *FDOT2004.smd)*

Both GEOPAK and CAiCE use the same cell libraries for survey graphics. The cell library should be referenced from the x:\FDOT2010\RESOURCES\Cell directory and is also called *SYENG.cel*.

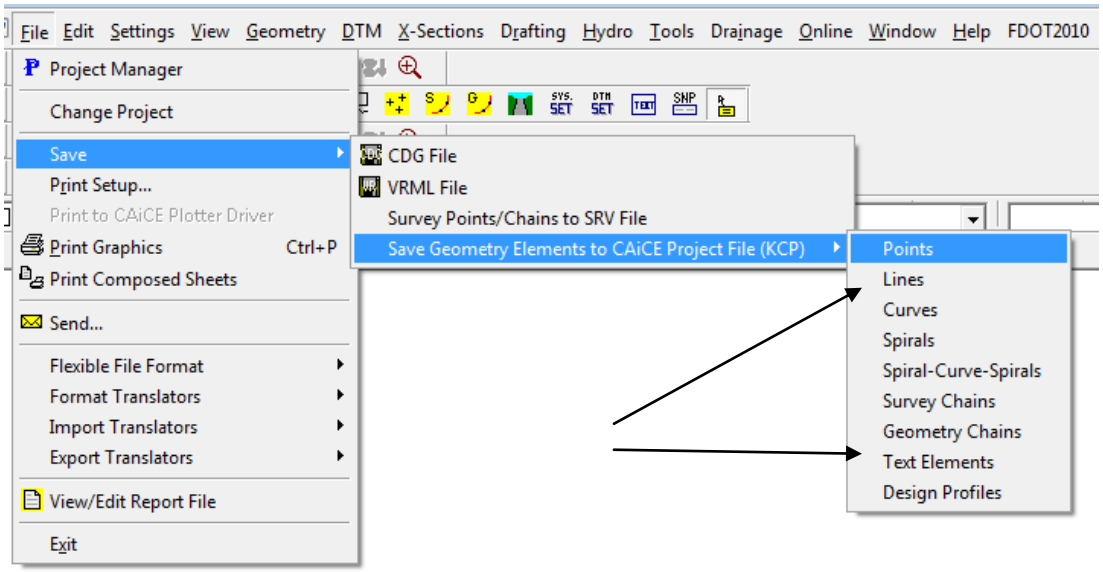
11.7 IMPORTING CAiCE into GEOPAK SURVEY

GEOPAK Survey can be used to import CAiCE points and survey chains directly into a GEOPAK coordinate job file (GPK file) using a CAiCE Project File (KCP). Importing KCP files from CAiCE will preserve the point and survey chain attributes such as features, descriptions and comments while maintaining scale and level structure. The *FDOTE_10.smd* can be used to "visualize" individual features or groups of features such as topography, utilities and drainage. These visualized features can be exported to create compliant deliverables, TOPORD, UTEXRD and DREXRD files, for design.

Note *At this time, GEOPAK Survey will not import "geometry chains" from a KCP file into a GEOPAK coordinate geometry file (GPK). Only points and survey chains can be imported from a KCP file using GEOPAK Survey. A GEOPAK* ***"INPUT"*** *file must be used to create geometry chains from CAiCE data.*

11.7.1 CREATING KCP POINTS AND SURVEY CHAINS

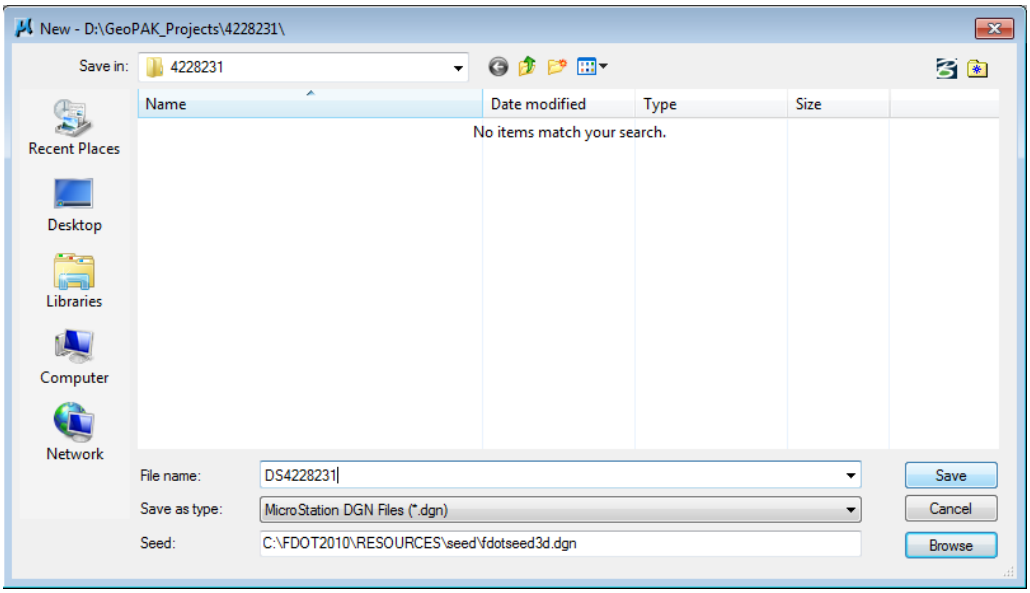
CAiCE will save a KCP file from the menu bar by selecting **File>Save>Save Geometry Elements to CAiCE Project File (KCP)**. Two separate KCP files should be saved for importing into GEOPAK Survey. One containing **"Points"**, the other containing "**Survey Chains"**



11.7.2 CREATING A GEOPAK PROJECT

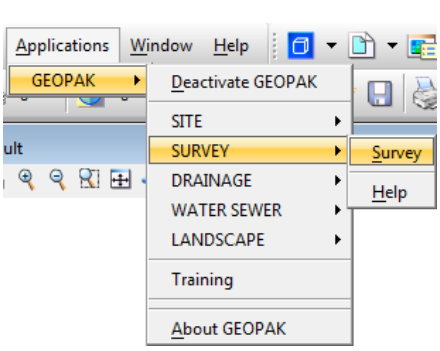
The first step in creating a GEOPAK Project is to create a folder structure (ie. c:\GEOPAK_PROJECTS\1234567). It is important to note that no spaces should be used in the folder structure. This will affect the GEOPAK editor.

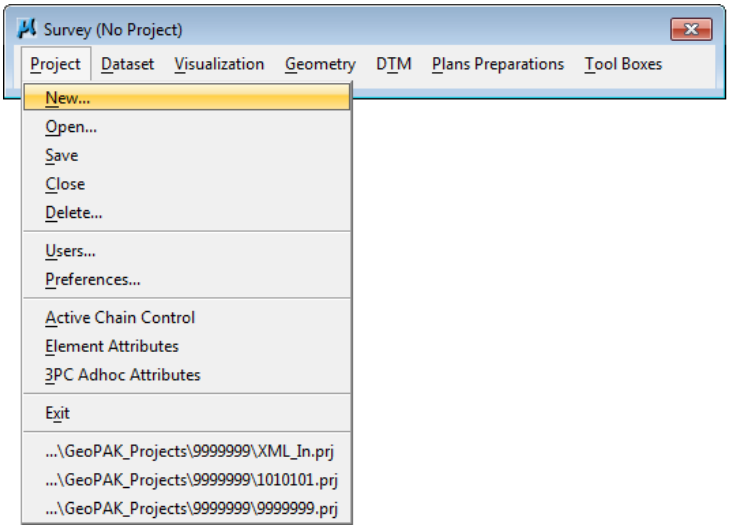
Once a folder is created a 3D MicroStation design file should be created in the project folder as a master survey design file. Use the fdotseed3d.dgn seed file to create the master design survey file. This needs to be a 3D MicroStation file to build a surface DTM from the survey data.



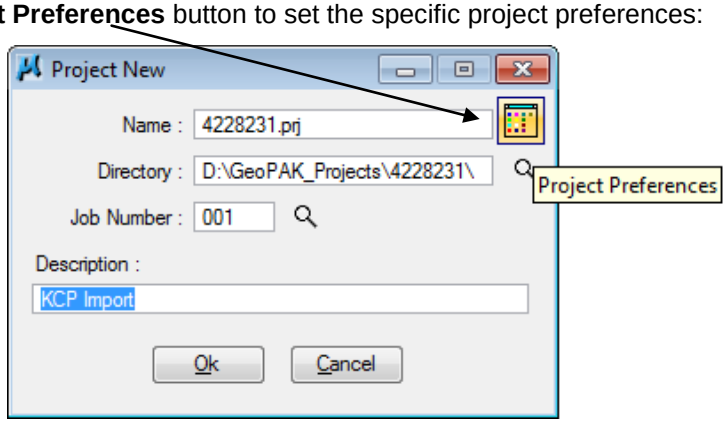
To Create a GEOPAK project, open the MicroStation master survey design file and select from the menu **Applications>GEOPAK>SURVEY>Survey** to open the GEOPAK Survey Menu Bar.

From the Survey Menu Bar select **Project>New…** this will open the Project New dialogue box. It is important to set the preferences for the project before pressing the Ok button.

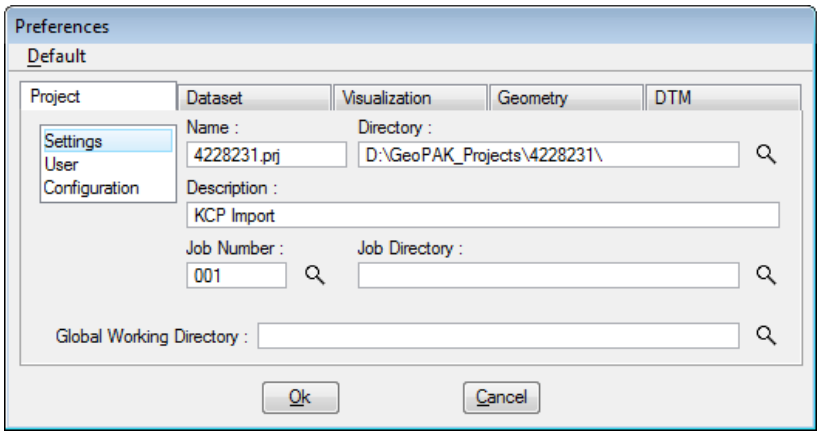




Select the **Project Preferences** button to set the specific project preferences:

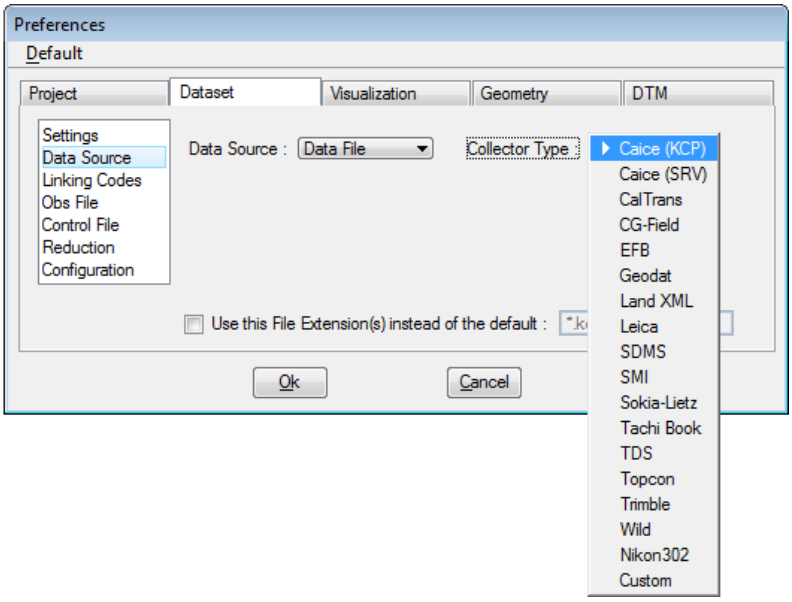


In the Preferences dialogue box under the **Project tab >Settings**, give the project a name, set the working directory and create a GEOPAK coordinate geometry Job Number. Specific user settings can be set under the **Project tab > User** selection:

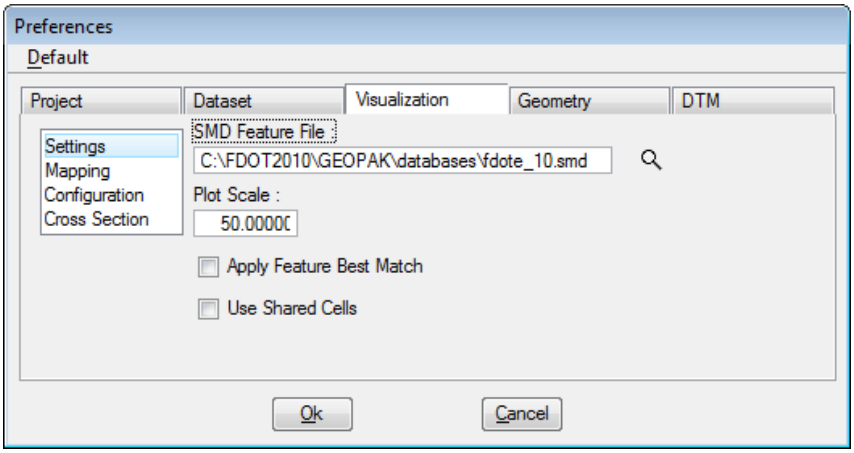


In the Peferences dialogue box x under the **Dataset tab >Settings**, the default data set name and description can be set however, these also can be set when the data set is created.

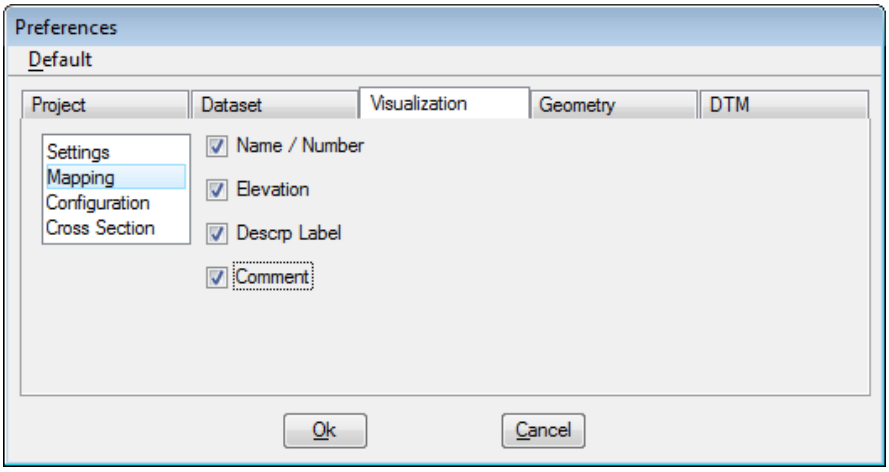
In the Peferences dialog under the Dataset tab **> Data Source**, set the Data Source to “Data File” and the Collector Type to “Caice (KCP)”:



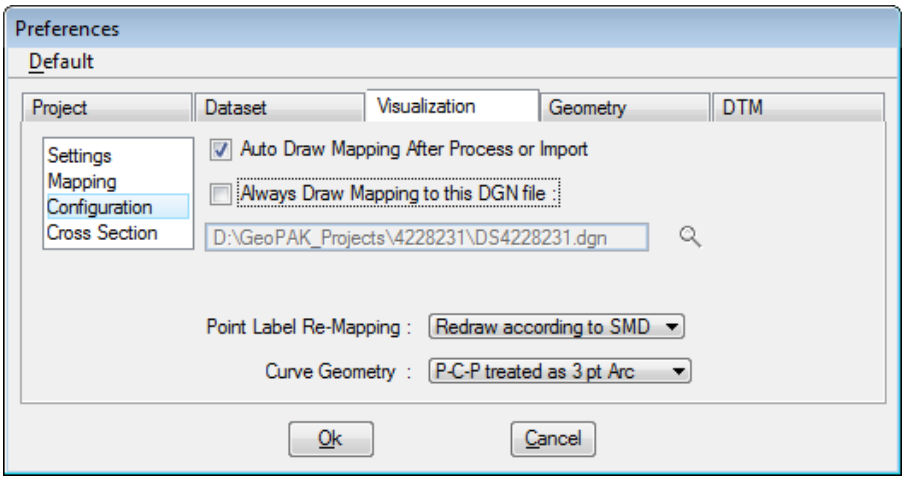
In the Peferences dialogue box under the **Visualization Tab > Settings**, set the SMD Feature File to …\FDOT2010\GEOPAK\databases***fdote_10.smd***. Also the Plot Scale of the features to be visualized in the drawing can be set at this time:



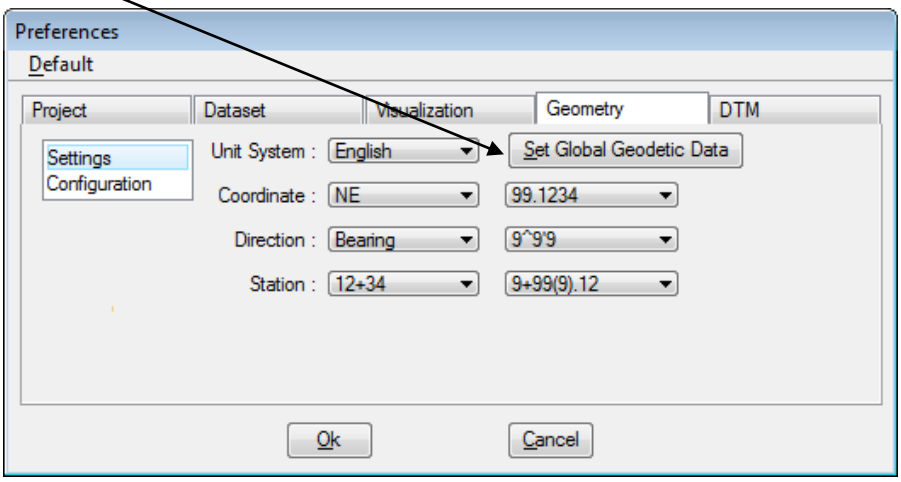
In the Peferences dialogue box under the **Visualization Tab > Mapping**, choose the point attributes that you wish to visualize into the drawing.



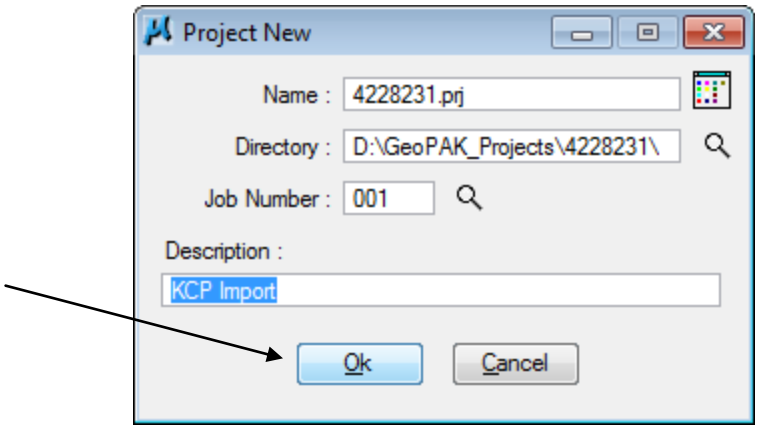
In the Peferences dialogue box under the **Visualization Tab > Configuration**, various settings are available including what file is to be used to visualize the data. If no file is choosen the data will be drawn into the active drawing. Put a check in the Auto Draw Mapping After Process or Import box to automatically visualize elements during import.



In the Peferences dialogue box under the **Geometry Tab > Settings**, select the "Set Global Geodetic Data" button to set the State Plane projection of the project. Also the significant digits shown for the project can be set under the Geometry tab.

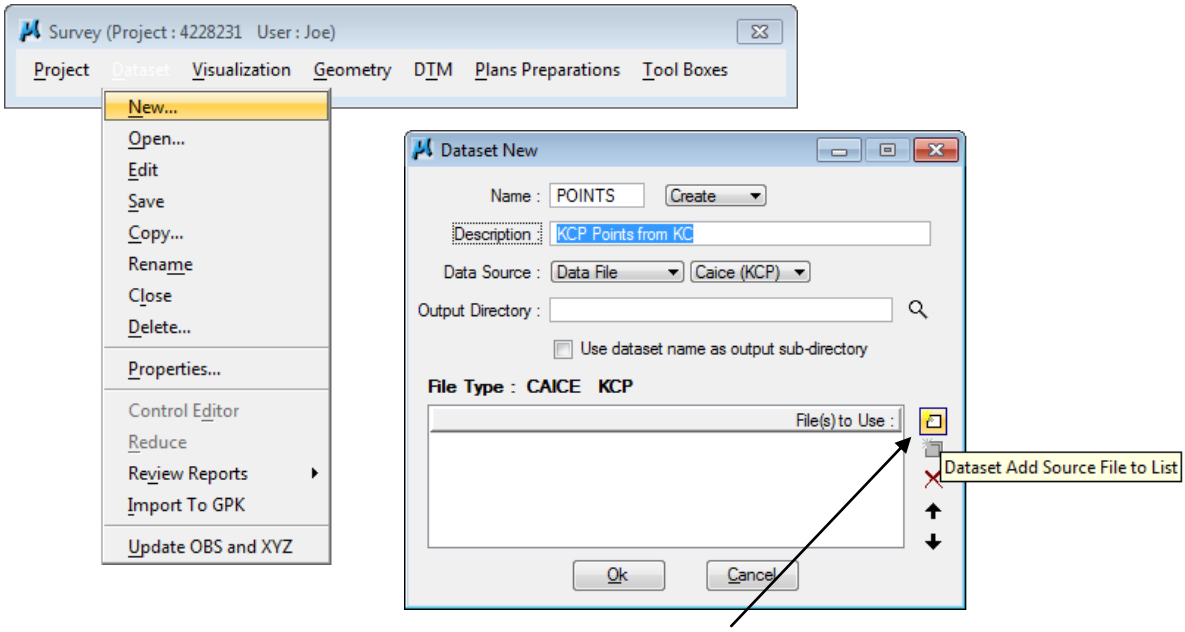


After the preferences are set in the Preferences dialogue box select the Ok button to accept these preferences. In the Project New dialogue box select **Ok** to create the project.

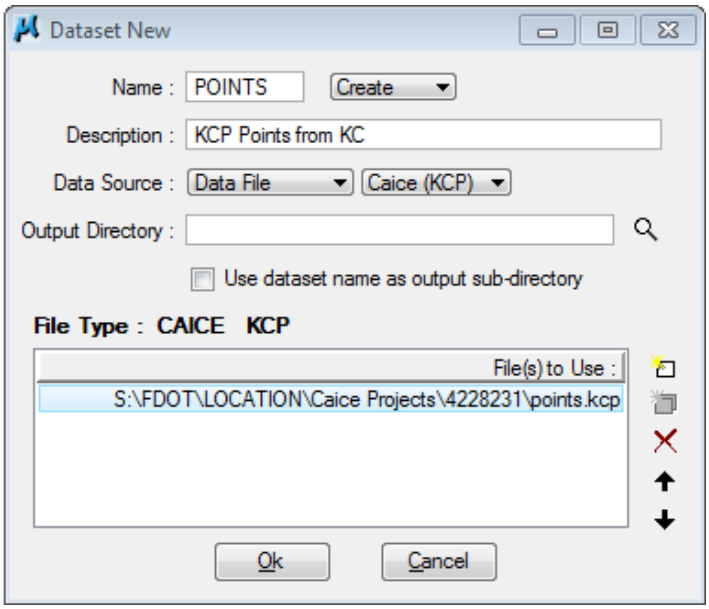


11.7.3 IMPORTING A DATASET INTO GEOPAK

On the Survey Menu Bar select **Dataset>New** to open the Dataset New dialogue box.

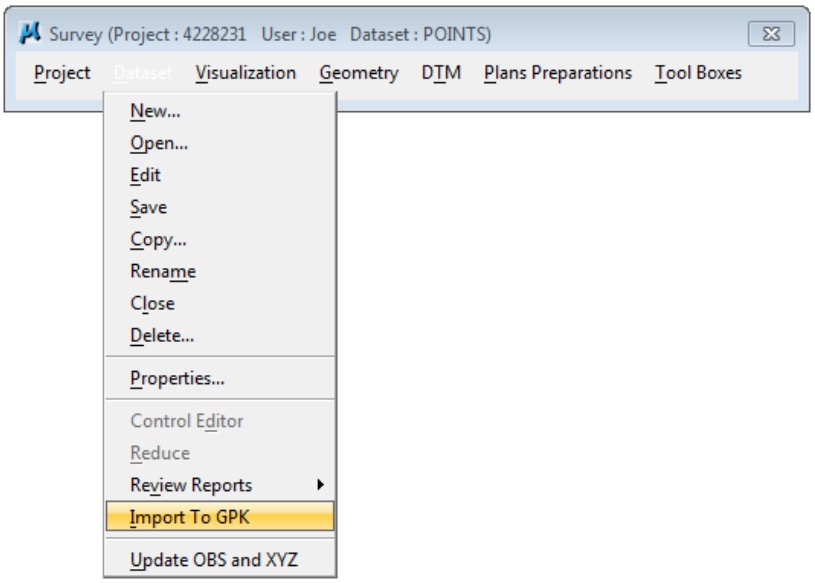


In the Dataset New dialogue box, give the dataset a name. Points should be brought in before the chains. Select the **Dataset Add Source File to List** button and choose the points KCP file saved from CAiCE. The path and file will be added to the Dataset New dialogue box window.

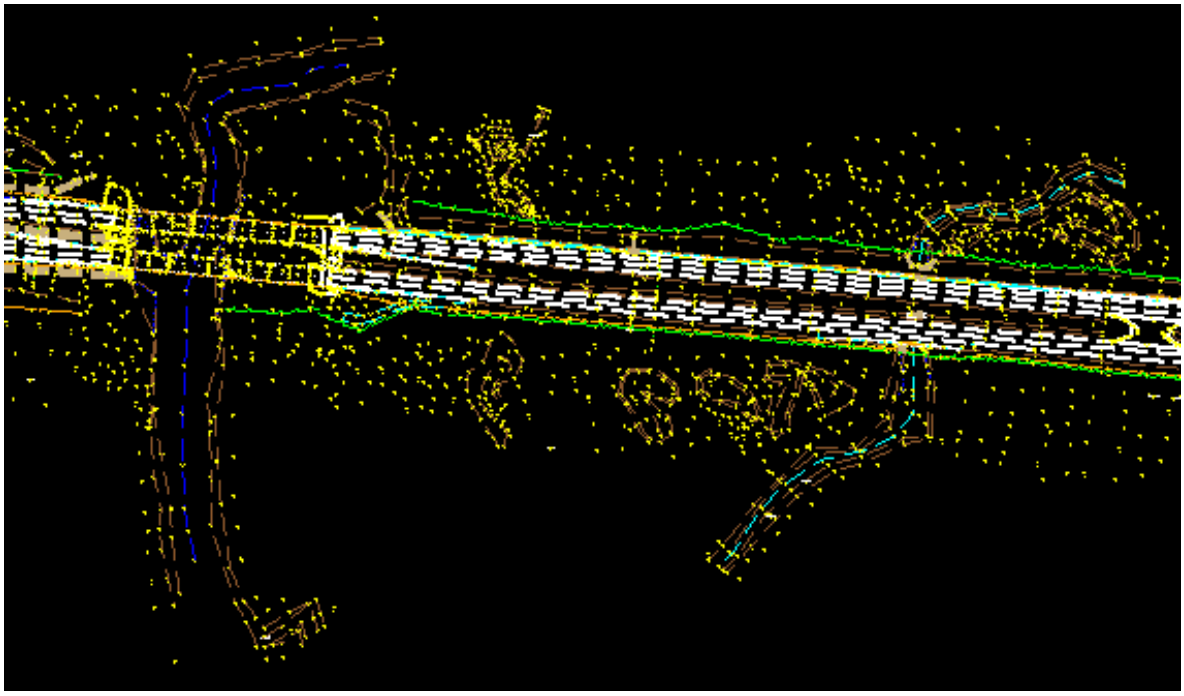


Press **Ok** to create the new dataset. Once the data set is created it can be viewed with the survey editor by selecting **Dataset > Edit** from the Survey Menu Bar.

From the Survey Menu Bar select **Dataset>Import to GPK** to import the points into the Job file created with the project. If the Auto Draw Mapping After Process or Import box is checked then the points will have automatically been drawn into MicroStation during import.



Repeat the IMPORT A DATASET INTO GEOPAK process for the chains KCP file saved from CAiCE. Again, the chains should have automatically been drawn into MicorStation during the import. Also points and chains should be correctly scaled. Once the dataset is imported it can be closed.

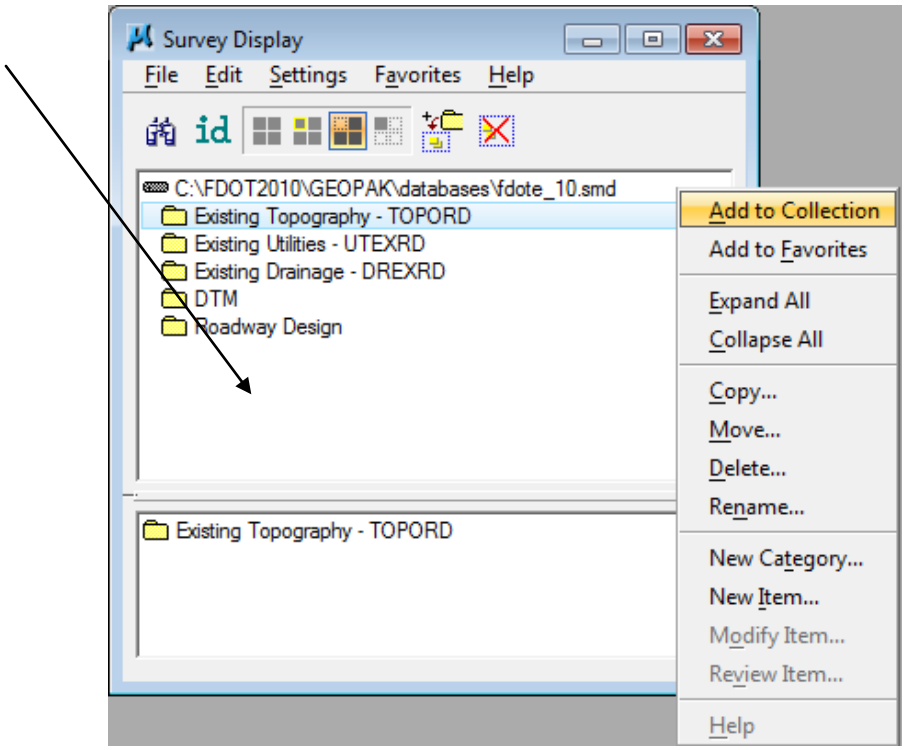


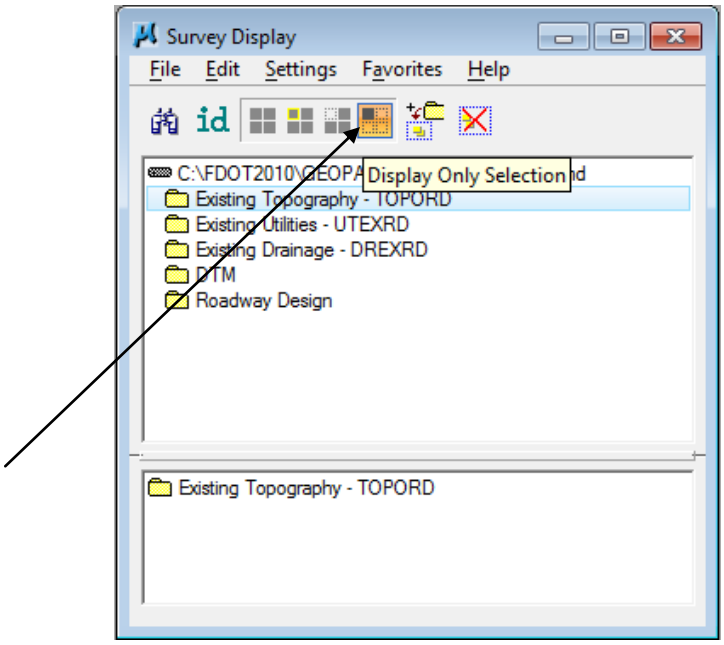
11.7.4 DISPLAY BY FEATURE

Displaying or visualizing the points and survey chains by feature is important for creating the 2D MicorStation deliverables, TOPORD, UTEXRD and DREXRD dgn files. From the GEOPAK Survey Menu Bar select **Visualize>Display>By Feature** to bring up the Survey Display dialogue box. The *fdote_10.smd* feature file should be open and active. The four checker board buttons across the front are the active display modes. The Normal Display shows all features regardless of selection. The Highlight Selection button highlights the current feature selection. The Hide Selection button turns off or "hides" the current feature selection. The Display Only Selection button displays the current selection and turns off all other features

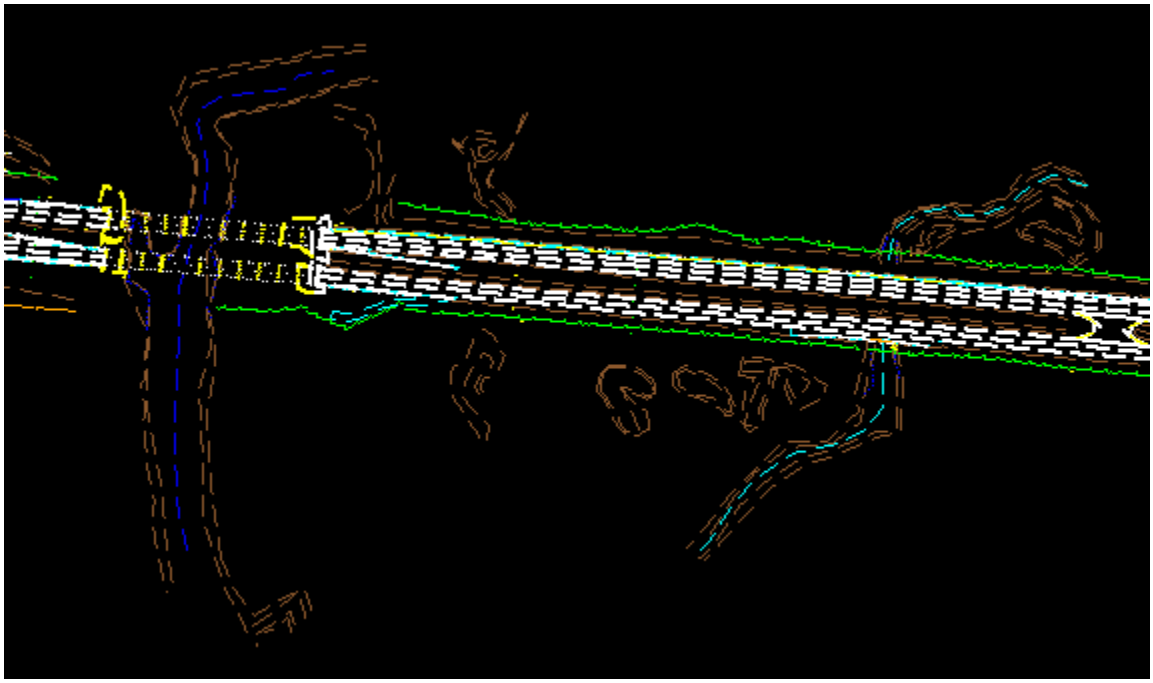
To select a feature or feature group simply highlight the desired folder or open the folder and highlight the desired feature. Another way to select a feature or features from various groups is to right click on a folder or feature and select the **Add to Collection** command. This will add the desired selection to the bottom pane of the Survey Display dialogue box.

Note *When the collection pane is populated at the bottom of the Survey Display dialogue box, it overrides all other highlighted folders or features in the above feature list. Only features in the collection pane are "selected" for display purposes.*



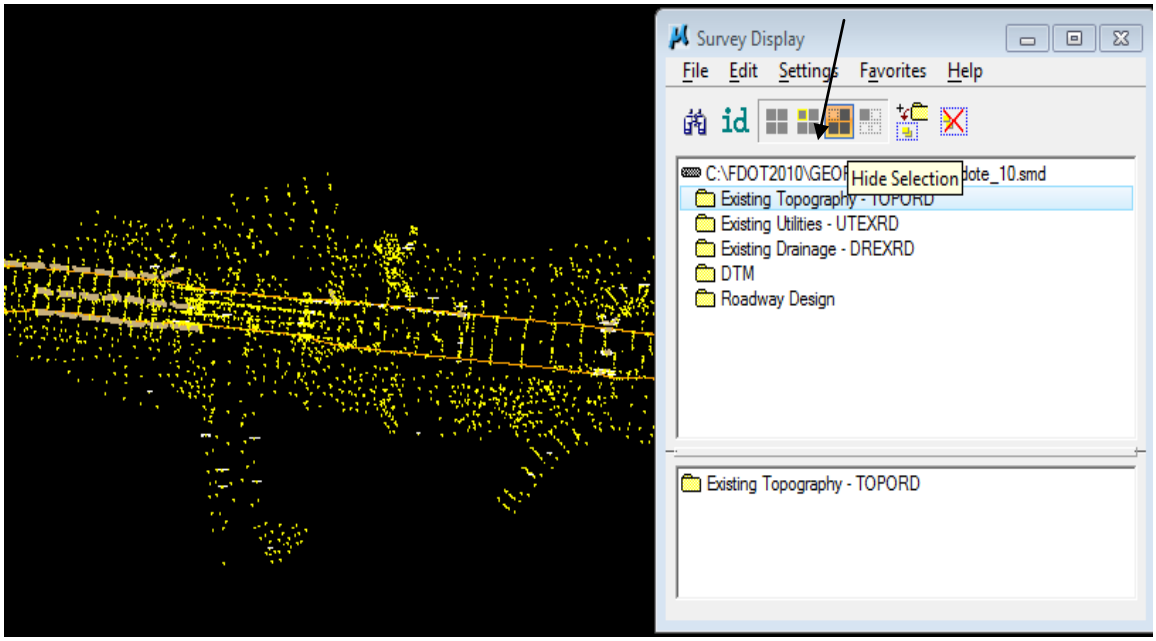


To display only the existing topography as would be shown in the TOPORD.dgn file, highlight the Existing Topography – TOPORD folder and right click to add to the collection pane. Once the Existing Topography is in the collection pane, click on the **Display Only Selection** button to visualize only the selection.

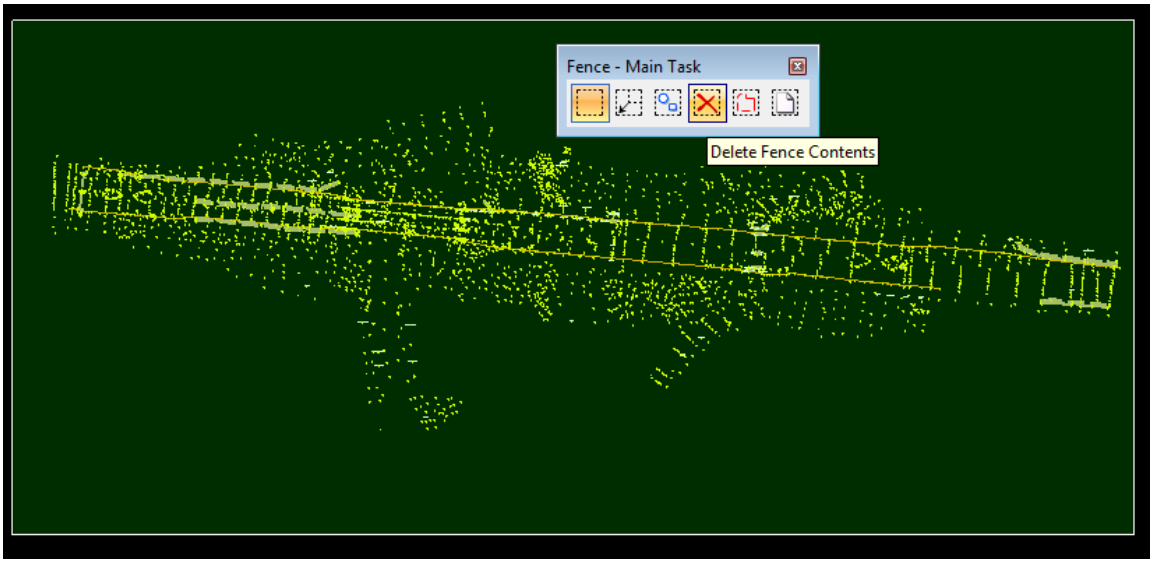


11.7.5 EXPORTING SELECTION TO 2D DELIVERABLE

To create a 2D deliverable, such as the *TOPORD.dgn,* the selection set must be hidden using the **Hide Selection** button on the Survey Display dialogue box. This will show all features except the selection.

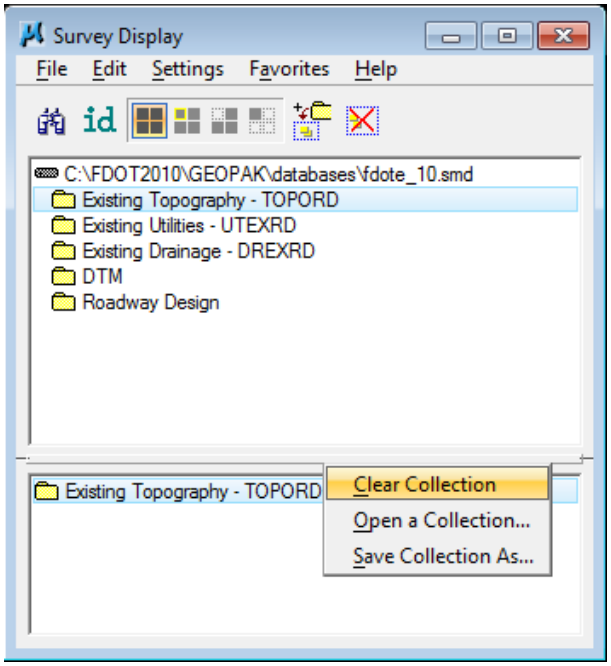


Once the selection set is hidden all other features can be removed from the drawing except for the selection set by fencing and deleting.



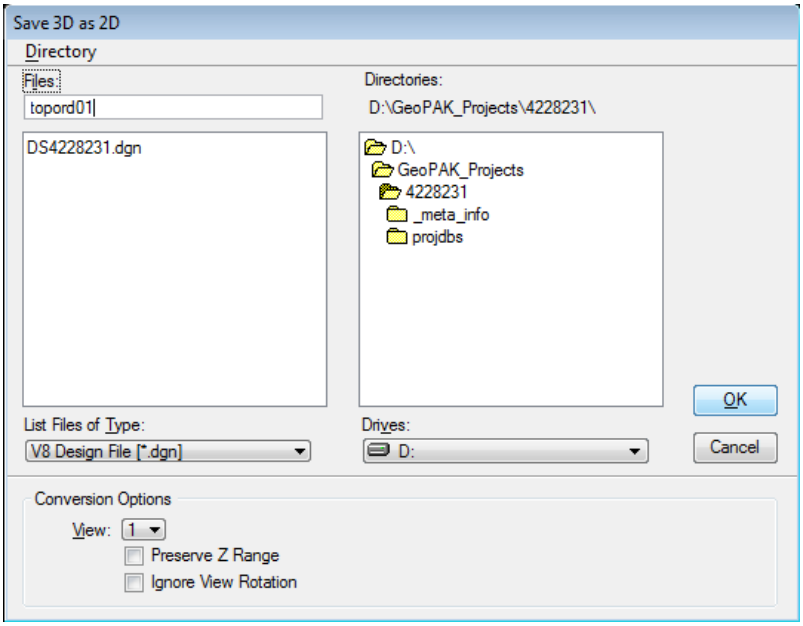
Note *Deleteing the features only removes the graphic elements from the drawing. All points and chains are in the GEOPAK Job file (GPK) and can be visualized into the drawing again using the GEOPAK Coordinate Geometry (cogo) Navigator.*

To Save a collection at the bottom of the Survey Display dialogue box, right click in the pane and click on **Save Collection As…** To clear the collection pane righ click and click on **Clear Collection.**

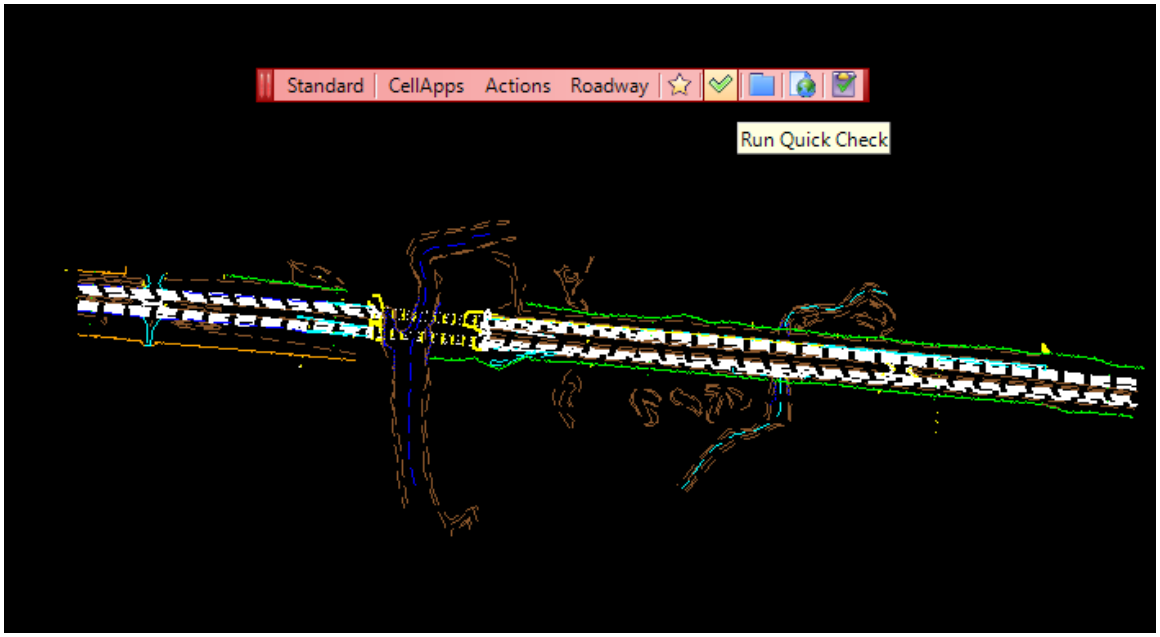


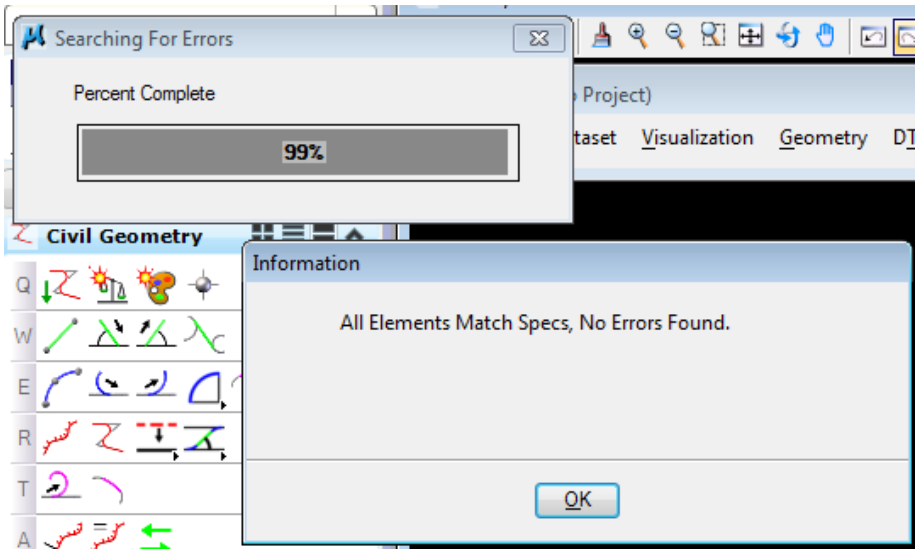
Selecting the **Normal Display** button should show only what is left after deleting all other elements. This would be the original selection that was hidden before the delete. At this point the entire MicroStation file can be exported to a 2D design file as a deliverable.

To export features to a 2D design file, on the MicroStation menu bar select **File > Export > 2D**:



Once the 2D file has been created with the correct naming convention, it can be opened and checked for compliancy.

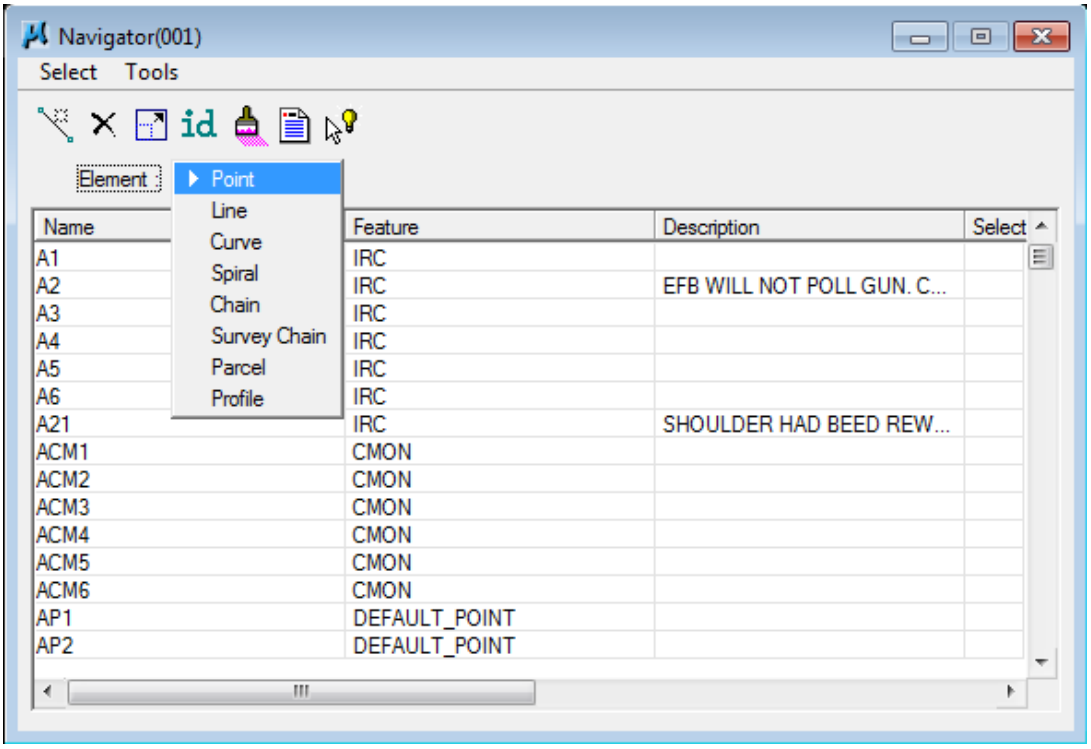




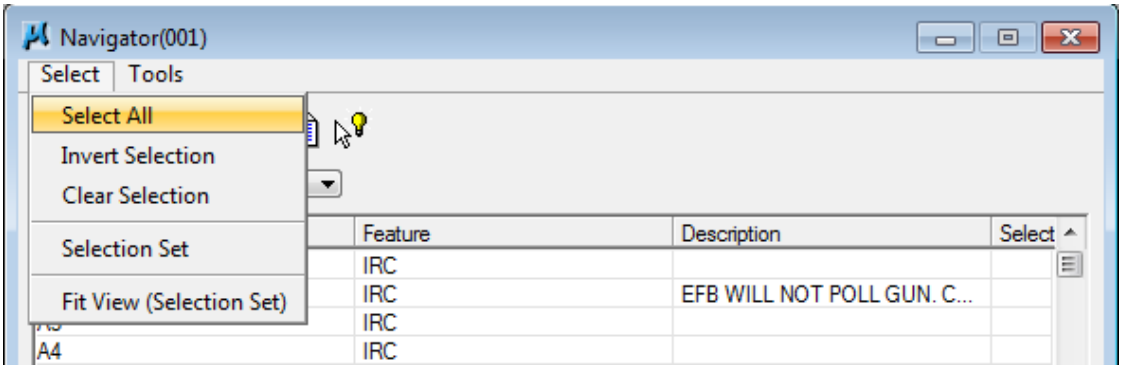
The same process can be used to create the UTEXRD.dgn and the DREXRD.dgn files however, first the features will need to be redrawn or visualized into the original 3D master survey design file using the *GEOPAK Coordinate Geometry (cogo) Navigator.*

11.7.6 VISUALIZING FEATURE ELEMENTS WITH NAVIGATOR

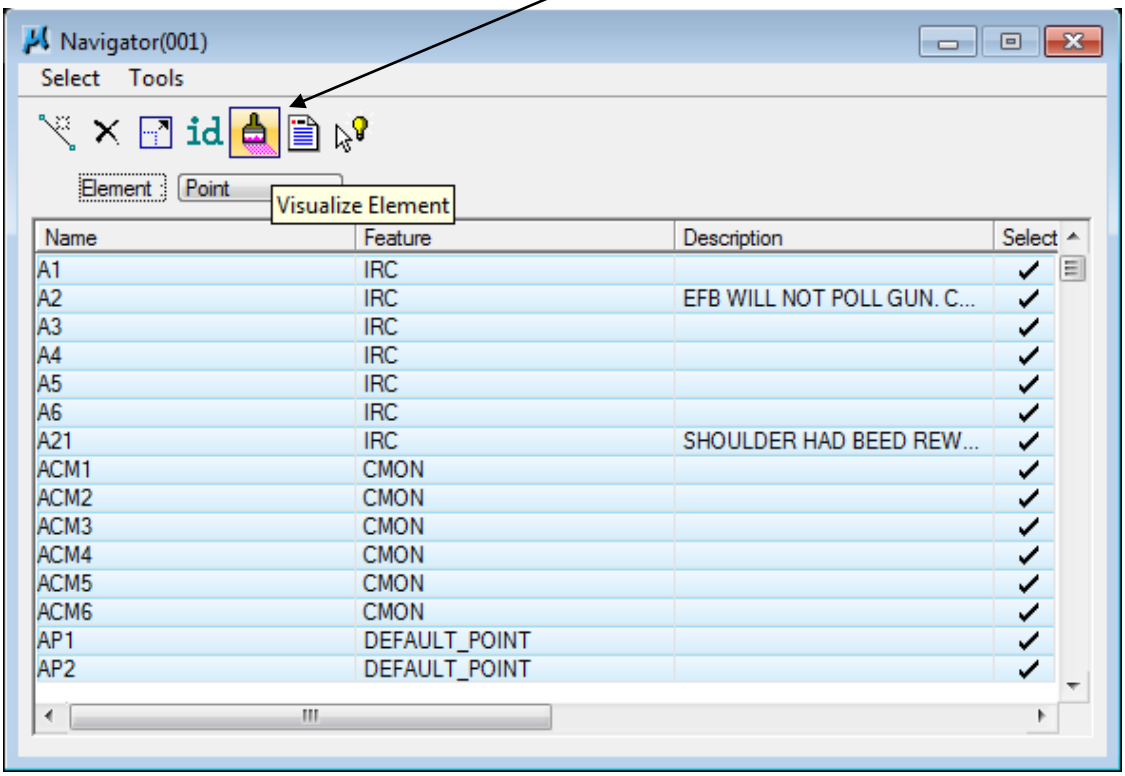
To visualize or draw elements into a MicroStation drawing using Navigator, on the GEOPAK Survey Menu Bar select **Geometry>Navigator**. This will open both Classic Cogo and the associated Navigator dialogue box. Make sure the feature preference in Cogo is set to "**Permanent Visualization"**. To redraw the feature elements into MicroStation set the **Element** selection in the Navigator dialogue box to **"Point"** or **"Survey Chain"** depending on which element to be visualized.



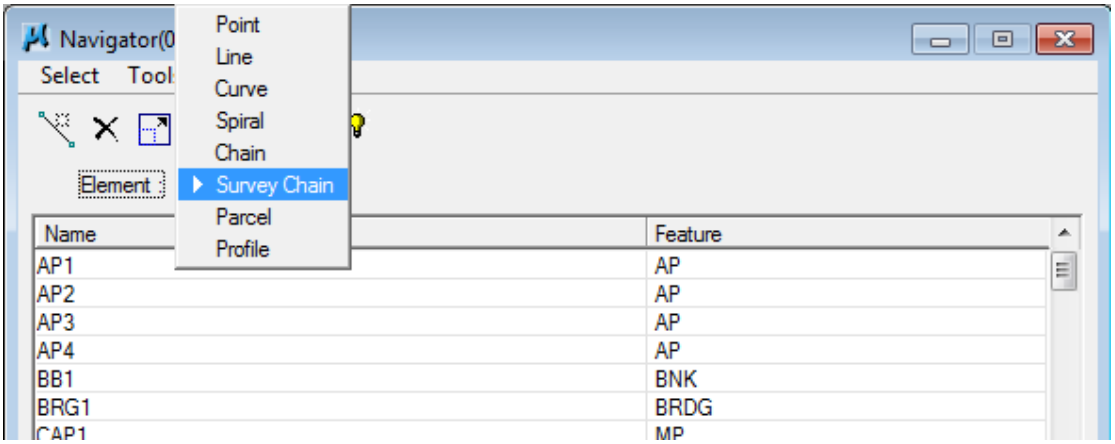
Hit the **Select>Select All** from the menu bar in the Navigator dialogue box. This will select all points in the Job file.



Once the elements are selected, click on the **Visualize Element** button that looks like a paint brush to visualize the features into the MicroStation design file.



The same process can be used to visualize points or survey chains into the design file. Other elements such as lines, curves, geometry chains (chains), parcels and profiles can be visualized also however; they cannot be imported from a KCP file from CAiCE. These elements would need to be created with GEOPAK cogo.



11.8 SURVEYING DATA

The FDOT Surveying Procedure, Topic 550-030-101A and the Surveying Handbook governs the requirements for survey procedure and data deliverables to the Department. The Surveying Handbook is available at:

http://www.dot.state.fl.us/surveyingandmapping/Manuals/surveyhandbook.pdf

11.9 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.

11.10 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 11.2 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.*

- **Existing Drainage - DREXRD**

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
DREXRD	1008	BoxCulvert_ep	Box Culvert	10	3	1	L	BXC
DREXRD	1026	CrossDrain_ep	Under drains and Cross drains	10	3	1	L	UD
DREXRD	1030	Ditch_ep	Ditch (Top, Bottom and Flow Lines)	7	6	0	L	DTCH
DREXRD	1031	DitchPavt_ep	Ditch Pavement	0	1	0	L	DTCHP
DREXRD	1033	DrainMisc_ep	Catch Basins	10	3	1	L	CB
DREXRD	1033	DrainMisc_ep	Drain Junction Box, Yard/Catch Sp	10	3	1	L	BAS
DREXRD	1033	DrainMisc_ep	Drainage Junction Box	10	3	1	L	JB
DREXRD	1033	DrainMisc_ep	Drainage Pipes and Spouts	10	3	1	L	DRNP
DREXRD	1033	DrainMisc_ep	Special Drainage Feature (Describe)	10	3	1	L	SPD
DREXRD	1033	DrainMisc_ep	Spillways, Flumes or Scuppers	10	3	1	L	SPL
DREXRD	1033	DrainMisc_ep	Yard Drain	10	3	1	L	YD
DREXRD	1036	EndTreat_ep	Flared End Section	10	3	1	L	FES
DREXRD	1036	EndTreat_ep	Mitered End Section	10	3	1	L	MES
DREXRD	1036	EndTreat_ep	Special Endwall	10	3	1	L	SPEW
DREXRD	1036	EndTreat_ep	Straight Endwall	10	3	1	L	SEW
DREXRD	1036	EndTreat_ep	U-Type Endwall	10	3	1	L	UEW
DREXRD	1036	EndTreat_ep	Winged End wall	10	3	1	L	WEW
DREXRD	600	ImageAttachment_dp	Image Attachments	0	0	0		
DREXRD	1054	InletBottom_ep	Drainage Structure Bottoms	10	3	1	L	DRNB

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
DREXRD	1055	InletCurb_ep	Curb Inlets	10	3	1	L	CINL
DREXRD	1055	InletCurb_ep	Median Inlets	10	3	1	L	MEDI
DREXRD	1056	InletDBI_ep	Ditch Bottom Inlet	10	3	1	L	DTCHI
DREXRD	1057	InletGutter_ep	Gutter Inlets (All Types)	10	3	1	L	GI
DREXRD	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1		
DREXRD	1064	ManholeCovUnk_ep	Manhole Cover, Unknown	0	1	0	P	MH
DREXRD	1069	ManholeSW_ep	Manhole (Storm Water)	10	1	0	P	MHD
DREXRD	1091	PipeCulvert_ep	Pipe Culvert	10	3	1	L	PCULV
DREXRD	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0		
DREXRD	1137	StormSewer_ep	Storm Sewer (size?)	10	3	1	L	STS
DREXRD	1146	TextElevLabel	Elevation Labels	4	0	0		
DREXRD	320	TextMisc	Text - Miscellaneous	0	0	1		
DREXRD	310	TextNotes	Text - Notes	4	0	1		
DREXRD	1147	TextPtLabel	Point Labels	4	0	0		
DREXRD	1148	TextSurveyLabel	Survey Text Labels	0	0	0		
DREXRD	1158	UnderDrain_ep	Under Drain Box	10	3	0	P	UDBX

- **Digital Terrain - DTMRD**

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
DTMRD	1008	DTMTriangles_ep	DTM Triangles (existing ground)	2	0	1		EXIST

- **Existing Topography for Roadway - TOPORD**

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
TOPORD	1000	ArchSite_ep	Archeological Site	2	0	1	L	ARST
TOPORD	1001	Attenuator_ep	Attenuation Systems	0	0	1	L	ATTN
TOPORD	202	BaselineSurvey	Baseline Survey	0	0	2		
TOPORD	1002	BankMent_ep	Embankment (Manmade, Top or Bottom)	9	3	0	L	BNK
TOPORD	1003	BarrierWall_ep	Barrier Wall All Types	6	3	0	L	BARW
TOPORD	1003	BarrierWall_ep	Precast Barrier Wall (Temp)	6	3	0	L	TMPW
TOPORD	1004	Beacons_ep	Beacons and Path Illumination	0	0	0	P	BN
TOPORD	1005	BLSurveyCntrl_ep	Baseline Survey Control	0	0	2	L	BLC

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
TOPORD	1006	BLSurveyField_ep	Baseline Survey (calculated from BLC)	0	0	2	L	BL
TOPORD	1009	Bridge_ep	Bridge Approaches and Slabs	0	3	1	L	APRS
TOPORD	1010	BridgeEle_ep	Bridge Elements	0	1	0	L	BRDG
TOPORD	1011	Building_ep	Buildings	1	0	0	L	BLDG
TOPORD	1012	BusStop_ep	Bench, Bus Stop	8	3	0	P	BNCH
TOPORD	1186	CableBarrier_ep	Cable Barrier	0	cable_barrier	2	L	CBR
TOPORD	1013	Canal_ep	Canal, Lock	7	3	0	L	CAN
TOPORD	1018	CGBack_ep	Curb and Gutter (Back)	4	3	0	L	CGB
TOPORD	1019	CGep_ep	Curb / Curb and Gutter (at EP & FL)	0	3	0	L	CG
TOPORD	1019	CGFace_ep	Face of Curb and Gutter	4	3	0	L	CGF
TOPORD	1023	ConcSlabs_ep	Concrete Slabs	0	1	1	L	CSL
TOPORD	1025	Core_ep	Core Sample or Test Hole	9	0	0	P	CSH
TOPORD	1027	CurbRamp_ep	Curb Cut Ramp	2	3	0	L	CCR
TOPORD	208	CurveDataLabel_dp	Curve Data Labels PC,PI, PT	0	0	2		
TOPORD	1028	Deck_ep	Deck / Porch	7	1	0	L	DECK
TOPORD	1029	DelineatorPost_ep	Delineator Post, Flexible and Metal	4	1	1	P	DLP
TOPORD	1030	Ditch_ep	Ditch (Top, Bottom and Flow Lines)	7	6	0	L	DTCH
TOPORD	1031	DitchPavt_ep	Ditch Pavement	0	1	0	L	DTCHP
TOPORD	1032	Docks_ep	Docks and Wharfs	0	1	0	L	DOCK
TOPORD	1034	Driveway_ep	Driveway (Drive, Lane, Turnouts)	7	3	0	L	DWY
TOPORD	1035	DummyChains_ep	Dummy Chains	0	0	1	L	DUMB
TOPORD	1037	Fence_ep	Fence (generic)	6	Fence1	0	L	FNC
TOPORD	1039	FloodLight_ep	Flood Light	3	2	0	P	FLD
TOPORD	1042	Furnace_ep	Incinerator, Boiler, or Furnace	8	1	0	P	INCN
TOPORD	1045	Gates_ep	Cattle Guard	7	3	0	p	CGD
TOPORD	1045	Gates_ep	Gates	7	3	0	L	GT
TOPORD	1047	GlareScrn_ep	Glare Screen & Blinds	0	{Curtain }	0	L	GS
TOPORD	1048	GuardrailDbl_ep	Guardrail Double Face	0	grdbl	0	L	GRDBL
TOPORD	1049	GuardrailLt_ep	Guardrail Left	0	grail1	0	L	GRL
TOPORD	1050	GuardrailRt_ep	Guardrail Right	0	grail2	0	L	GRR
TOPORD	1052	Handrail_ep	Handrails	9	3	0	L	HNDRL
TOPORD	1053	Hole_ep	Hole	8	3	0	P	HOLE
TOPORD	600	ImageAttachment_dp	Image Attachments	0	0	0		
TOPORD	1059	LaneLine_ep	Lane Lines (Paint or Thermoplastic)	0	LaneLine_exist	1	L	LL
TOPORD	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1		
TOPORD	1062	Mailbox_ep	Mailbox(s)	8	2	0	P	MBX
TOPORD	1076	MiscEquip_ep	Flag Pole	8	0	0	P	FP

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
TOPORD	1076	MiscEquip_ep	Parking Meter	8	0	0	P	PKGM
TOPORD	1077	Monument_ep	Aerial Targets	4	0	0	P	AT
TOPORD	1077	Monument_ep	Concrete Monument (Cast)	4	0	0	P	CMON
TOPORD	1077	Monument_ep	Drill Hole, Plug (Control Monumentation)	4	0	0	P	DH
TOPORD	1077	Monument_ep	Deep Rod Mark	4	0	0	P	DRM
TOPORD	1077	Monument_ep	5/8 Rod and Cap	4	0	0	P	IRC
TOPORD	1077	Monument_ep	Nail, Spike, Pin (Control Monumentation)	4	0	0	P	NL
TOPORD	1077	Monument_ep	Other Marker? (Control Monumentation)	4	0	0	P	OM
TOPORD	1077	Monument_ep	Metal Pipe, Rod, Bar (Control)	4	0	0	P	PIP
TOPORD	1077	Monument_ep	Concrete Monument (Poured)	4	0	0	P	PMON
TOPORD	1077	Monument_ep	Post, Stake, Staub (Control Monumentation)	4	0	0	P	PST
TOPORD	1077	Monument_ep	Hub and Tac	4	0	0	P	SAT
TOPORD	1077	Monument_ep	Stamped Disk	4	0	0	P	STMD
TOPORD	1077	Monument_ep	Stamped Plate	4	0	0	P	STMP
TOPORD	1079	ParkEquip_ep	Camp stove, Grill, Firepit, BBQ	9	2	0	P	CMPST
TOPORD	1079	ParkEquip_ep	Playground Equipment	9	2	0	P	PLEQ
TOPORD	1080	Patternlines_ep	Cross Section Chain	2	1	0	L	XSC
TOPORD	1081	Pavemk_ep	Handicap Pavement Marking	0	2	0	P	HNDC
TOPORD	1081	Pavemk_ep	Pavement Markings (Other)	0	2	0	L	PMRK
TOPORD	1081	Pavemk_ep	Straight Direction Arrow	0	2	0	P	STAROW
TOPORD	1081	Pavemk_ep	Straight and Turn Arrow	0	2	0	P	STATRN
TOPORD	1081	Pavemk_ep	Turn Arrow	0	2	0	P	TA
TOPORD	1082	PavtAsph_ep	Asphalt Pavement Edge	0	3	1	L	AP
TOPORD	1083	PavtConc_ep	Concrete Pavement (Edges)	0	3	1	L	CPVT
TOPORD	1084	PavtConcJoints_ep	Concrete Pavement (Joints)	1	5	1	L	CPVJ
TOPORD	1085	PavtCrown_ep	Asphalt Pavement (Crown)	0	4	1	L	AC
TOPORD	1085	PavtCrown_ep	Concrete Pavement (Crown)	0	4	1	L	CPVC
TOPORD	1086	PavtMisc_ep	Parking Lot, Guardrail Pavement, Misc Pavement	7	3	0	L	MP
TOPORD	1087	PavtTractorXing_ep	Tractor Crossings	0	3	1	L	TX
TOPORD	1088	PavtXover_ep	Crossovers and Detours (Temporary)	0	3	0	L	XO
TOPORD	1089	PedSignal_ep	Pedestrian Signal Unit, Signage	0	2	0	P	PS
TOPORD	1090	Piling_ep	Piling, Piers, or Column	8	3	0	P	PIL
TOPORD	1093	PointLocator_ep	Geopak Point Locator for Cogo SMD database	4	0	0	P	N/A (GEOPAK only)
TOPORD	1105	Pump_ep	Pump Island	7	3	1	L	PMPIS
TOPORD	1107	RailroadMisc_ep	RR Milepost	11	0	0	P	RRMP
TOPORD	1107	RailroadMisc_ep	RR Switch	11	0	0	P	RRS

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
TOPORD	1107	RailroadMisc_ep	RR Warning Sign	11	0	0	P	RRWS
TOPORD	1107	RailroadMisc_ep	RR Signal with Gate	11	0	0	P	SWG
TOPORD	1108	RailroadTracks_ep	Railroad Tracks (Rail, Bed)	4	3	0	L	RR
TOPORD	5082	RRBaseline	Baseline:Rail Road Centerline	4	0	2	L	RRCL
TOPORD	1109	RailroadXing_ep	RR Crossing (Roadway Platforms)	11	3	0	L	RRX
TOPORD	219	RefPtLine	Miscellaneous:Survey Reference Point Line / Detail	0	0	1	L	REFL
TOPORD	300	RefPtText	Annotation:Miscellaneous:Text: Survey Data Reference Point	0	0	1		
TOPORD	1110	RipRap_ep	Rip Rap, Rubble	4	3	1	L	RIP
TOPORD	1116	Scratch1_dp	A scratch level for temporary or informational items	4	0	0		
TOPORD	1117	Scratch2_dp	A scratch level for temporary or informational items	5	0	0		
TOPORD	1118	SeaWalls_ep	Sea Walls	0	1	3	L	SEAW
TOPORD	1119	ShldrPaved_ep	Shoulder Edge, Paved	1	3	0	L	SHLDR
TOPORD	1120	ShldrUnpaved_ep	Unpaved Shoulders	0	3	0	L	UNPS
TOPORD	1121	Shrub_ep	Hedges and Shrubs (Boundary)	2	0	0	L	HED
TOPORD	1121	Shrub_ep	Ornamental Plant	2	0	0	P	OP
TOPORD	1121	Shrub_ep	Shrub, Bush	2	0	0	P	SHR
TOPORD	1121	Shrub_ep	Coniferous Shrub	2	0	0	P	SHRC
TOPORD	1121	Shrub_ep	Deciduous Shrub	2	0	0	P	SHRD
TOPORD	1122	SidewalkBack_ep	Sidewalk (Backs)	2	3	0	L	SWKB
TOPORD	1123	SidewalkFront_ep	Sidewalk (Fronts)	1	3	0	L	SWK
TOPORD	1124	Signal_ep	Signal Head	3	2	0	P	SIG
TOPORD	1124	Signal_ep	Signal on Pedestal	3	2	0	P	SIGP
TOPORD	1125	SignalLoop_ep	Traffic Detector Loops	7	1	2	L	TFD
TOPORD	1126	SignalMisc_ep	Signal Controller	3	2	0	P	SIGC
TOPORD	1127	SignalSupport_ep	Signal Supports including Mast Arm	3	2	0	P	SMA
TOPORD	1128	SignMulti_ep	Multi-column Sign (Large Sign)	0	3	1	L	MS
TOPORD	1128	SignMulti_ep	Multicolumn Sign (Small)	0	3	1	P	SMS
TOPORD	1129	SignSingle_ep	Sign (Single Support)	3	2	0	P	SSS
TOPORD	1130	SignSupport_ep	Trusses and Cantilevers for Overhead Signs	0	3	1	L	SGNT
TOPORD	1131	Silo_ep	Silo	11	2	0	P	SILO
TOPORD	1132	Slopes_ep	Levees, Dikes, or Dams	9	3	0	L	LV
TOPORD	1132	Slopes_ep	Natural Slopes (Top or Bottom)	9	3	0	L	SLP
TOPORD	1133	SpanWire_ep	Signal / Span Wire Pole	3	0	0	P	SSP
TOPORD	1135	Stairs_ep	Stairways, Steps	0	3	1	L	STP

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
TOPORD	229	StationTicL_dp	Station Tic Marks (Large) and Text	0	0	2		
TOPORD	230	StationTicS_dp	Station Tic Marks (Small) and Text	0	0	2		
TOPORD	1138	Stream_ep	Stream Edge	1	3	0	L	STRM
TOPORD	1138	Stream_ep	Stream Center	1	3	0	L	STRMC
TOPORD	1139	StreamMisc_ep	Buoy	7	0	0	P	BUOY
TOPORD	1139	StreamMisc_ep	Dolphins and Fenders	7	0	0	P	DF
TOPORD	1139	StreamMisc_ep	Stream or Tide Gauge	7	0	0	P	TG
TOPORD	1140	Stump_ep	Stump	2	0	0	P	STM
TOPORD	1141	TankStor_ep	Storage Tank	11	3	0	P	STTK
TOPORD	1142	TankUG_ep	Fill Cap (Underground Tank)	3	0	0	P	FC
TOPORD	302	TextBLStation	Text - B/L Station and Tics	0	0	2		
TOPORD	304	TextCurveData	Text - Curve Data Note	0	0	2		
TOPORD	1146	TextElevLabel	Elevation Labels	4	0	0		
TOPORD	307	TextLabel	Text - Label	0	0	2		
TOPORD	320	TextMisc	Text - Miscellaneous	0	0	1		
TOPORD	310	TextNotes	Text - Notes	4	0	1		
TOPORD	1147	TextPtLabel	Point Labels	4	0	0		
TOPORD	1148	TextSurveyLabel	Survey Text Labels (Misc)	0	0	0	P	MISC
TOPORD	1148	TextSurveyLabel	Survey Text Labels (Misc)	0	0	0	P	NOTE
TOPORD	1149	TopoMisc_ep	Miscellaneous Topography	0	3	1	L	MISC
TOPORD	1151	TrafSeparator_ep	Traffic Separator	6	3	0	L	TFSP
TOPORD	1152	Trail_ep	Roadway, Trail (Unpaved)	9	3	1	L	RD
TOPORD	1153	Trash_ep	Dumpster, Trash Bin	9	0	0	P	DMP
TOPORD	1154	Treadle_ep	Treadle	7	1	5	L	TRD
TOPORD	1155	Tree_ep	Tree	2	0	0	P	TREE
TOPORD	1155	Tree_ep	Coniferous Tree	2	0	0	P	TREEC
TOPORD	1155	Tree_ep	Citrus Tree	2	0	0	P	TREECI
TOPORD	1155	Tree_ep	Cypress Tree	2	0	0	P	TREECY
TOPORD	1155	Tree_ep	Deciduous Tree	2	0	0	P	TREED
TOPORD	1155	Tree_ep	Oak Tree	2	0	0	P	TREEOA
TOPORD	1155	Tree_ep	Palm Tree	2	0	0	P	TREEPA
TOPORD	1155	Tree_ep	Palm Tree Cluster	2	0	0	P	TREEPC
TOPORD	1155	Tree_ep	Pine Tree	2	0	0	P	TREEPI
TOPORD	1156	TreeLine_ep	Groves & Orchards (Boundary)	2	woodline	0	L	GRV
TOPORD	1156	TreeLine_ep	Scattered Trees (Boundary)	2	woodline	0	L	SCT
TOPORD	1156	TreeLine_ep	Woods Line	2	woodline	0	L	WDL
TOPORD	1157	Tributary_ep	Spring	1	0	0	P	SPR
TOPORD	1175	Walls_ep	Walls	9	3	1	L	WALL

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
TOPORD	1177	WaterEdge_ep	Edge of Water	7	3	0	L	WEDG
TOPORD	1181	Wetland_ep	W.M.D & D.E.P. Wetlands	1	wetland	0	L	DEP
TOPORD	1182	WetlandEdge_ep	CORPS Wetlands (Marsh or Swamp)	2	wetland	0	L	COE
TOPORD	1182	WetlandEdge_ep	Edge of Mangrove	2	wetland	0	L	EM
TOPORD	1182	WetlandEdge_ep	Edge of Wetlands (Marsh or Swamp)	2	wetland	0	L	MAR
TOPORD	1183	WetlandSym_ep	Marsh Symbol, Wetland Point	2	0	0	P	MAR
TOPORD	1183	WetlandSym_ep	Marsh Symbol, Wetland Point	2	0	0	P	WLPT
TOPORD	1184	WindMill_ep	Wind Mill	1	1	0	P	WIM
TOPORD	1185	XSPt_ep	Cross Section Point, Station	2	1	0	P	XS

- **Existing Topography for Right of Way - TOPORW**

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point/Line	Feature
TOPORW	1003	BarrierWall_ep	Barrier Wall All Types	6	3	0	L	BARW
TOPORW	1009	Bridge_ep	Bridge Approaches and Slabs	0	3	1	L	APRS
TOPORW	1010	BridgeEle_ep	Bridge Elements	0	1	0	L	BRDG
TOPORW	1011	Building_ep	Buildings	1	0	0	L	BLDG
TOPORW	1023	ConcSlabs_ep	Concrete Slabs	0	1	1	L	CSL
TOPORW	1028	Deck_ep	Deck / Porch	7	1	0	L	DECK
TOPORW	1031	DitchPavt_ep	Ditch Pavement	0	1	0	L	DTCHP
TOPORW	1032	Docks_ep	Docks and Wharfs	0	1	0	L	DOCK
TOPORW	1033	DrainMisc_ep	Drain Junction Box, Yard/Catch Sp	10	3	1	L	BAS
TOPORW	1034	Driveway_ep	Driveway (Drive, Lane, Turnouts)	7	3	0	L	DWY
TOPORW	1035	DummyChains_ep	Dummy Chains	0	0	1	L	DUMB
TOPORW	1037	Fence_ep	Fence (generic)	6	Fence1	0	L	FNC
TOPORW	1045	Gates_ep	Gates	7	3	0	L	GT
TOPORW	600	ImageAttachment_dp	Image Attachments	0	0	0		
TOPORW	1056	InletDBI_ep	Ditch Bottom Inlet	10	3	1	L	DTCHI
TOPORW	1058	JunctBox_ep	Junct. Box / Service Cabinet (Elec/Tel)	3	1	0	P	SRVC
TOPORW	1061	Luminaire_ep	Street Light / Pole	3	2	0	P	LP
TOPORW	1076	MiscEquip_ep	Flag Pole	8	0	0	P	FP
TOPORW	1090	Piling_ep	Piling, Piers, or Column	8	3	0	P	PIL
TOPORW	1097	Power_ep	High Voltage Transmission Line	3	e-oe	0	L	HVL
TOPORW	1105	Pump_ep	Pump Island	7	3	1	L	PMPIS
TOPORW	1107	RailroadMisc_ep	RR Milepost	11	0	0	P	RRMP

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	Bylevel Weight	Point/Line	Feature
TOPORW	1619	RRBaseline	Baseline:Rail Road Centerline	0	RR	0	L	RRCL
TOPORW	1115	SateDish_ep	Satellite Dish Antenna	6	4	0	P	SATD
TOPORW	1118	SeaWalls_ep	Sea Walls	0	1	3	L	SEAW
TOPORW	1122	SidewalkBack_ep	Sidewalk (Backs)	2	3	0	L	SWKB
TOPORW	1123	SidewalkFront_ep	Sidewalk (Fronts)	1	3	0	L	SWK
TOPORW	1128	SignMulti_ep	Multi-column Sign (Large Sign)	0	3	1	L	MS
TOPORW	1129	SignSingle_ep	Sign (Single Support)	3	2	0	P	SSS
TOPORW	1130	SignSupport_ep	Trusses and Cantilevers for Overhead Signs	0	3	1	L	SGNT
TOPORW	1131	Silo_ep	Silo	11	2	0	P	SILO
TOPORW	1135	Stairs_ep	Stairways, Steps	0	3	1	L	STP
TOPORW	1138	Stream_ep	Stream Edge	1	3	0	L	STRM
TOPORW	1138	Stream_ep	Stream Center	1	3	0	L	STRMC
TOPORW	1141	TankStor_ep	Storage Tank	11	3	0	P	STTK
TOPORW	1142	TankUG_ep	Fill Cap (Underground Tank)	3	0	0	P	FC
TOPORW	1146	TextElevLabel	Elevations Labels	4	0	0		
TOPORW	320	TextMisc	Text - Miscellaneous	0	0	1		
TOPORW	1147	TextPtLabel	Point Labels	4	0	0		
TOPORW	1148	TextSurveyLabel	Survey Text Labels (Misc)	0	0	0	P	MISC
TOPORW	1148	TextSurveyLabel	Survey Text Labels (Misc)	0	0	0	P	NOTE
TOPORW	1149	TopoMisc_ep	Miscellaneous Topography	0	3	1	L	MISC
TOPORW	1150	Tower_ep	Antenna	3	1	0	P	ANT
TOPORW	1150	Tower_ep	Transmission Tower (Single C)	3	1	0	P	CLMT
TOPORW	1152	Trail_ep	Roadway, Trail (Unpaved)	9	3	1	L	RD
TOPORW	1175	Walls_ep	Walls	9	3	1	L	WALL
TOPORW	1177	WaterEdge_ep	Edge of Water	7	3	0	L	WEDG
TOPORW	1178	WaterMisc_ep	Well (Size Unknown)	1	1	0	P	WELL
TOPORW	1180	Wells_ep	Well Monitoring, Taps	1	1	0	P	MONW
TOPORW	1182	WetlandEdge_ep	Edge of Wetland (Marsh or Swamp)	2	wetland	0	L	MAR
TOPORW	1183	WetlandSym_ep	Marsh Symbol, Wetland Point	2	0	0	P	WLPT

- **Existing Utilities - UTEXRD**

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
UTEXRD	1004	Beacons_ep	Beacons and Path Illumination.	0	0	0	P	BN
UTEXRD	1014	CATV_ep	Cable TV Line (Aerial)	6	e-otv	0	L	CATV
UTEXRD	1015	CATVBur_ep	Cable TV Line (Buried)	6	e-btv	1	L	BCATV
UTEXRD	1016	CATVCond_ep	Cable TV Conduit System	6	0	1	L	CATVC
UTEXRD	1017	CATVMisc_ep	Cable TV Service Box	6	2	0	P	CATVS
UTEXRD	1024	Conduit_ep	Utility Conduit & Encasements	3	e-cas	0	L	DUCT
UTEXRD	1038	FireHydrant_ep	Fire Hydrant	1	2	0	P	FH
UTEXRD	1039	FloodLight_ep	Flood Light	3	2	0	P	FLD
UTEXRD	1040	FOAer_ep	Fiber Optics Cable Overhead (Size Unknown)	6	e-ofo	0	L	FOC
UTEXRD	1041	FOBur_ep	Fiber Optics Telephone (Size Unknown)	6	e-bfo	0	L	FO
UTEXRD	1041	FOBur_ep	Fiber Optics Cable (Underground)	6	e-bfo	0	L	FOCU
UTEXRD	1041	FOBur_ep	Fiber Optics Power (Size Unknown)	3	e-bfo	0	L	FOP
UTEXRD	1041	FOBur_ep	Fiber Optics Power (Underground)	3	e-bfo	0	L	FOPU
UTEXRD	1041	FOBur_ep	Fiber Optics Telephone (Underground)	6	e-bfo	0	L	FOU
UTEXRD	1043	Gas_ep	Gas Line, (Size Unknown)	4	e-g	1	L	GAS
UTEXRD	1043	Gas_ep	Gas Test & Miscellaneous	4	e-g	1	L	GTM
UTEXRD	1044	GasReg_ep	Gas Regulator	4	1	0	P	RG
UTEXRD	1046	Gauges_ep	Gauges	0	0	0	P	GA
UTEXRD	1051	Guys_ep	Guy Anchor	3	1	0	P	GYA
UTEXRD	1051	Guys_ep	Guy Pole (Deadman)	3	1	0	P	GYP
UTEXRD	1051	Guys_ep	Span Guys	3	1	0	L	GYS
UTEXRD	600	ImageAttachment_dp	Image Attachments	0	0	0		
UTEXRD	1058	JunctBox_ep	Junct. Box / Service Cabinet (Elec/Tel)	3	1	0	P	SRVC
UTEXRD	210	LeaderLine_dp	Leader Line and terminator with Text	0	0	1		
UTEXRD	1060	LiteCond_ep	Street Lighting Conductors	3	exlite_cond1	0	L	SLC
UTEXRD	1061	Luminaire_ep	Street Light / Pole	3	2	0	P	LP
UTEXRD	1063	ManholeCover_ep	Manhole Cover (Cable TV)	6	1	0	P	MHCATV
UTEXRD	1064	ManholeCovUnk_ep	Manhole Cover, Unknown	0	1	0	P	MH
UTEXRD	1065	ManholeCovW_ep	Manhole Cover (Water)	1	1	0	P	MHW
UTEXRD	1066	ManholeElec_ep	Manhole (Electric)	3	1	0	P	MHE

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
UTEXRD	1067	ManholeGas_ep	Manhole (Gas)	4	1	0	P	MHG
UTEXRD	1068	ManholeSS_ep	Manhole (Sanitary Sewer)	2	1	0	P	MHS
UTEXRD	1069	ManholeSW_ep	Manhole (Storm Water)	10	1	0	P	MHD
UTEXRD	1070	ManholeTel_ep	Manhole (Telephone)	6	1	0	P	MHT
UTEXRD	1071	MeterElec_ep	Meter (Electric)	3	1	0	P	ME
UTEXRD	1072	MeterElecUG_ep	Meter (Electric) (Underground)	3	1	1	P	MEU
UTEXRD	1073	MeterGas_ep	Meter (Gas)	4	1	0	P	MG
UTEXRD	1074	MeterUnk_ep	Meter (Size Unknown)	0	1	0	P	M
UTEXRD	1075	MeterWater_ep	Meter (Water)	1	1	0	P	MW
UTEXRD	1078	Oil_ep	Oil Line (all sizes)	4	e-pet	1	L	PETRO
UTEXRD	1092	PipeEncase_ep	Pipe Encasements	0	e-cas	1	L	PIPEN
UTEXRD	1093	PointLocator_ep	Geopak Point Locator for COGO SMD database	4	0	0		
UTEXRD	1094	PolePower_ep	Power Pole	3	1	0	P	PP
UTEXRD	1094	PolePower_ep	Power Pole with Transformer	3	1	0	P	PPT
UTEXRD	1094	PolePower_ep	Shared Pole	3	1	0	P	SHP
UTEXRD	1094	PolePower_ep	Shared Pole with Transformer	3	1	0	P	SHPT
UTEXRD	1095	PoleTel_ep	Telephone Pole	6	1	0	P	TELP
UTEXRD	1097	Power_ep	High Voltage Transmission Lines	3	e-oe	0	L	HVL
UTEXRD	1097	Power_ep	Power Lines (Aerial)	3	e-oe	0	L	PWR
UTEXRD	1098	PowerBur_ep	Buried Power (Unknown Size)	3	e-be	1	L	BPWR
UTEXRD	1098	PowerBur_ep	Buried Conductors (Transmission)	3	e-be	1	L	TRANS
UTEXRD	1099	PowerBurCond_ep	Secondary Conductor Buried	3	e-be	0	L	BSEC
UTEXRD	1099	PowerBurCond_ep	Secondary Conductor Buried	3	e-be	0	L	SEC
UTEXRD	1100	PowerCapcUG_ep	Capacitors (Underground)	3	1	1	L	CAPB
UTEXRD	1101	PowerCond_ep	Conductors (Primary Distribution)	3	e-oe	1	L	PRI
UTEXRD	1102	PowerElecOut_ep	Electrical Outlet	3	1	1	P	ELEO
UTEXRD	1103	PowerMisc_ep	Capacitors (Above Ground)	3	1	0	L	CAPA
UTEXRD	1103	PowerMisc_ep	Electric Service Box (Large)	3	1	0	L	ELECS
UTEXRD	1103	PowerMisc_ep	Fuses (Existing)	3	1	0	L	FUSE
UTEXRD	1103	PowerMisc_ep	Switchgear & Appurtenances	3	1	0	L	SW
UTEXRD	1103	PowerMisc_ep	Transformer	3	1	0	P	TRNF
UTEXRD	1104	PullBox_ep	Wiring Pull Box	3	1	1	P	WPB

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
UTEXRD	1105	Pump_ep	Pump (Petroleum)	7	3	1	P	PMPF
UTEXRD	1105	Pump_ep	Pump Station	7	3	1	P	PMPST
UTEXRD	1106	PumpNonPet_ep	Pump (Non Petroleum)	1	3	1	P	PMP
UTEXRD	1111	Sanitary_ep	Sanitary Sewer (Size Unknown)	2	e-s	1	L	SS
UTEXRD	1112	SanitaryDumpSta_ep	Dump Station (SS)	2	2	0	P	DMPS
UTEXRD	1113	SanitaryFM_ep	Force Main (Size Unknown)	2	e-s	1	L	FM
UTEXRD	1114	SanitaryMisc_ep	Cleanout	2	1	0	P	CLNO
UTEXRD	1114	SanitaryMisc_ep	Sanitary Effluent (Open Channel)	2	1	0	L	SE
UTEXRD	1115	SateDish_ep	Satellite Dish Antenna	6	4	0	P	SATD
UTEXRD	1134	Sprinkler_ep	Sprinkler Head	1	0	0	P	SPH
UTEXRD	1136	Steam_ep	Steam	4	e-stm	1	L	STEAM
UTEXRD	1143	Tele_ep	Telephone Line (Aerial)	6	e-ot	0	L	TEL
UTEXRD	1144	TeleBur_ep	Buried Telephone , Size Unknown)	6	e-bt	1	L	BT
UTEXRD	1144	TeleBur_ep	Buried Telephone, DUCT	6	e-bt	1	L	BTD
UTEXRD	1144	TeleBur_ep	Buried Telephone, TOLL	6	e-bt	1	L	BTT
UTEXRD	1145	TeleMisc_ep	Telephone Booth	6	2	0	P	TB
UTEXRD	1145	TeleMisc_ep	Telephone Service Box (Large)	6	2	0	L	TELS
UTEXRD	1145	TeleMisc_ep	Telephone Pedestal / Service	6	2	0	P	TPD
UTEXRD	1146	TextElevLabel	Text - Elevation Labels	4	0	0		
UTEXRD	320	TextMisc	Text - Miscellaneous	0	0	1		
UTEXRD	310	TextNotes	Text - Notes	4	0	1		
UTEXRD	1147	TextPtLabel	Text - Point Labels	4	0	0		
UTEXRD	1148	TextSurveyLabel	Text - Survey Text Labels	0	0	0		
UTEXRD	1150	Tower_ep	Antenna	3	1	0	P	ANT
UTEXRD	1150	Tower_ep	Transmission Tower (Single C)	3	1	0	P	CLMT
UTEXRD	1150	Tower_ep	High Mast Lighting Poles or	3	1	0	P	HML
UTEXRD	1159	UtilMisc_ep	Miscellaneous Utilities	0	0	0	L	N/A
UTEXRD	1160	Valve_ep	Valve Box (Size Unknown)	0	2	0	P	VB
UTEXRD	1160	Valve_ep	Valve (Size Unknown)	0	2	0	P	VLV
UTEXRD	1161	ValveCover_ep	Valve Cover (Size Unknown)	0	2	0	P	VC
UTEXRD	1162	ValveCvrEff_ep	Valve Cover (Effluent)	5	2	0	P	VCEF
UTEXRD	1163	ValveCvrGas_ep	Valve Cover (Gas)	4	2	0	P	VCG

File Type	Level No.	Level Name	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight	Point/Line	Feature
UTEXRD	1164	ValveCvrSewer_ep	Valve Cover (Sewer)	2	2	0	P	VCS
UTEXRD	1165	ValveCvrWater_ep	Valve Cover (Raw Water)	1	2	0	P	VCRW
UTEXRD	1165	ValveCvrWater_ep	Valve Cover (Water)	1	2	0	P	VCW
UTEXRD	1166	ValveCvrWaterNP_ ep	Valve Cover (Non Potable Water)	5	2	0	P	VCNP W
UTEXRD	1167	ValveGas_ep	Valve Box (Gas)	4	2	0	P	VBG
UTEXRD	1167	ValveGas_ep	Valve (Gas)	4	2	0	P	VLVG
UTEXRD	1168	ValveSewer_ep	Valve Box (Sewer)	2	2	0	P	VBS
UTEXRD	1168	ValveSewer_ep	Valve (Sewer)	2	2	0	P	VLVS
UTEXRD	1169	ValveWater_ep	Valve Box (Water)	1	2	0	P	VBW
UTEXRD	1169	ValveWater_ep	Valve (Water)	1	2	0	P	VLVW
UTEXRD	1170	ValveWaterNP_ep	Valve Box (Non-Potable Water)	5	2	0	P	VBNPW
UTEXRD	1170	ValveWaterNP_ep	Valve (Non-Potable Water)	5	2	0	P	VLVNP W
UTEXRD	1171	Vault_ep	Vaults Above Grade	3	1	0	L	AGV
UTEXRD	1171	Vault_ep	Vaults Below Grade	3	1	0	L	BGV
UTEXRD	1172	Vent_ep	Vent	0	1	0	P	VNT
UTEXRD	1173	VentGas_ep	Vent (Gas)	4	1	0	P	VNTG
UTEXRD	1174	VentSewer_ep	Vent (Sewer)	2	1	0	P	VNTS
UTEXRD	1176	Water_ep	Water Line, (Size Unknown)	1	e-w	1	L	WL
UTEXRD	1178	WaterMisc_ep	Faucet	1	1	0	P	FAU
UTEXRD	1178	WaterMisc_ep	Standpipe	1	1	0	P	SP
UTEXRD	1178	WaterMisc_ep	Well (Size Unknown)	1	1	0	P	WELL
UTEXRD	1179	WaterNP_ep	Non-potable Water Line (all sizes)	5	e-npw	1	L	NPWL
UTEXRD	1180	Wells_ep	Well Monitoring, Taps	1	1	0	P	MONW

11.11 QUALITY CONTROL

Quality Control (QC) of graphics files required with the survey delivery is the responsibility of the data producer. FDOT supplies the QC Software as an aid to check for compliance with filename and level/symbology standards of the Department for graphic files. Other quality control standards for Survey data may be applied from the FDOT Survey Procedure, Topic 550-030-101 and Surveying Handbook by the scopes of work developed between the parties.

11.12 COUNTY MAPPING

The production of County Maps is an internal function of the FDOT Surveying and Mapping Office. This document refers to the graphical symbology standards used for the production of those maps for reference. For information regarding file naming conventions and other standards in use during the production of FDOT County maps, contact the Geographic Mapping Office in the FDOT Surveying and Mapping Office at (850) 245-1555.

Files Type	Description	Color	Line Style	Weight	Cell
All	Adjacent County and State Text				
All	Airport Names				
All	Airport Runways			6	
All	Airports Commercial				cscapt
All	Airports Commercial				cap
All	Airports Landing Strip or Private Airport				cslstp
All	Airports Landing Strip or Private Airport				ldarsp
All	Airports Military				csmfld
All	Airports Military				milffad
All	Backdrop	30			
All	Backdrop	60			
All	Bay				2
All	Bay Text				2
All	Bayou and Harbor etc				3
All	Bayou and Harbor etc Text				3
All	Boundary Section Lines (hidden)	31			
All	Bridges			0	
All	Bridges			1	
All	Bridges Interstate	1			
All	Bridges and Drawbridges County Highways	4			
All	Bridges and Drawbridges County Highways Text	8			
All	Bridges and Drawbridges Local Roads				
All	Bridges and Drawbridges Local Roads Text	18			
All	Bridges and Drawbridges State Highways	3			
All	Bridges and Drawbridges State Highways Text	7			
All	Bridges and Drawbridges Toll Roads	5			
All	Bridges and Drawbridges Toll Roads Text	5			
All	Bridges and Drawbridges US Highways	2			
All	Bridges and Drawbridges US Highways Text	6			
All	Bridges Interstate Text	4			
All	Cities Incorporated Area			0	
All	Cities Incorporated Linear Boundaries			1	
All	City Streets			1	
All	Coastal Waterway				csicw

Files Type	Description	Color	Line Style	Weight	Cell
All	Coastal Waterway Text				10
All	College or University	71			
All	College or University Text	30			8
All	Communities and Subdivisions Names without Post Office				3
All	Communities Names with Post Office				2
All	Connecting Roads			2	
All	Coordinate ticks Lat Longs				csotic
All	Coordinate ticks State Plane				csstic
All	County Boundary		7	6	
All	County Parks	70			
All	County Parks Text	148			10
All	County Roads Related Text				
All	County Route Divided Highway Outline and Fill				
All	County Routes Highway Center Lines			3	
All	County Routes Ramps			2	
All	County Seat				cscose
All	County Seat Names			4	
All	County Seat Names			6	
All	Culture			0	
All	Culture			1	
All	Culture			2	
All	Culture Text				1
All	Cut Border				
All	Extended Township Lines	43	3	2	
All	Forbes Purchase		3	3	
All	Forbes Purchase Section lines		3	0	
All	Forbes Purchase Township and Range Lines		3	2	
All	Geographic Features Text			1	
All	Heliports				csheli
All	Intermittent Ponds				1
All	Intermittent Ponds Text				8
All	Interstate Divided Highway Outline and Fill				
All	Interstate Highway Center Lines			3	
All	Interstate Ramps			2	
All	Interstates Related Text				
All	Islands				
All	Islands Text Coastal (Keys etc)			2	
All	Islands Text Inland (Hammocks and Ridges etc)				1
All	Lakes and Ponds				

Files Type	Description	Color	Line Style	Weight	Cell
All	Lakes and Ponds Text				9
All	Land Grant Boundaries		4	0	
All	Legend				
All	Local Roads Divided Highway Outline and Fill				
All	Local Roads Improved	11		1	
All	Local Roads Paved	11		2	
All	Local Roads Related Cells				cslgf0
All	Local Roads Related Cells				cslgf1
All	Local Roads Related Cells				cslgf2
All	Local Roads Related Cells				cslgf3
All	Local Roads Related Cells				cslgf4
All	Local Roads Related Cells				csp1
All	Local Roads Related Cells				csp2
All	Local Roads Related Cells				cspnf1
All	Local Roads Related Cells				cspnf2
All	Local Roads Related Cells				cspsf1
All	Local Roads Related Cells				cspsf2
All	Local Roads Related Text				
All	Local Roads Unimproved	10		1	
All	Mangroves				mg
All	Mangroves				csman1
All	Mangroves				smg
All	Map Border				
All	Map Border Text and Cells				
All	Map Information Text and Cells				
All	Map Information Text and Cells				
All	Masks for Road Features				
All	Masks for Text				
All	Military Bases	66			
All	Military Bases Text	146			7
All	Narrow Canals		5		
All	Narrow Canals		5		
All	Narrow Canals		5		
All	Narrow Canals Text				7
All	Narrow River Creek and Branch and Slough	12		1	
All	Narrow River Creek and Branch and Slough	12		1	
All	Narrow River Creek and Branch and Slough	12		1	
All	Narrow River Creek and Branch and Slough Text				6
All	National Forest	65			

Files Type	Description	Color	Line Style	Weight	Cell
All	National Forest Text	44			1
All	National Park	69			
All	National Park Text	44			2
All	National Wildlife Refuge and Preserve	75			
All	National Wildlife Refuge and Preserve Text	144			3
All	Ocean and Gulf				1
All	Ocean and Gulf Text				1
All	Other Incorporated Names			2	
All	Other Incorporated Names			3	
All	Other Survey Related Text				3
All	Planning Number Interstates				cssir1
All	Planning Number Interstates				cssir2
All	Planning Number Interstates				cssir3
All	Planning Number US Highways				cssus1
All	Planning Number US Highways				cssus2
All	Planning Number US Highways				cssus3
All	Planning Number US Highways				cssus1
All	Planning Number US Highways				cssus2
All	Planning Number US Highways				cssus3
All	Populations				1
All	Quad Borders				
All	Railroad Stations				csrsta
All	Railroads	3			
All	Railroads Text				
All	Road shields County Roads				cs1crs
All	Road shields County Roads				cs2crs
All	Road shields County Roads				cs3crs
All	Road shields County Roads				cs4crs
All	Road shields Interstates				cs1irs
All	Road shields Interstates				cs2irs
All	Road shields Interstates				cs3irs
All	Road shields State Highways				cs1srs
All	Road shields State Highways				cs2srs
All	Road shields State Highways				cs3srs
All	Road shields Toll roads				cs1trs
All	Road shields Toll roads				cs2trs
All	Road shields Toll roads				cs3trs
All	Road shields Toll roads				cstps
All	Road shields US Highways				cs1urs

Files Type	Description	Color	Line Style	Weight	Cell
All	Road shields US Highways				cs2urs
All	Road shields US Highways				cs3urs
All	Road shields US Highways Alternate				cs1usa
All	Road shields US Highways Alternate				cs2usa
All	Road shields US Highways Alternate				cs3usa
All	Road shields US Highways Business				cs1usb
All	Road shields US Highways Business				cs2usb
All	Road shields US Highways Business				cs3usb
All	Seaplane facility				csseap
All	Section Lines		0	0	
All	Section Numbers				1
All	State Boundary		6	6	
All	State Capital				cscptl
All	State Forest	67			
All	State Forest Text	145			4
All	State Park	14			
All	State Park Text	145			5
All	State Prisons	124			
All	State Prisons Text	124			9
All	State Roads Related Text				
All	State Route Divided Highway Outline and Fill				
All	State Routes Highway Center Lines			3	
All	State Routes Ramps			2	
All	State Survey Lines		1	1	
All	State Wildlife Refuge and Preserve	72			
All	State Wildlife Refuge and Preserve	74			
All	State Wildlife Refuge and Preserve Text	147			6
All	Street Related Text				
All	Strip Mining Area	117			
All	Survey by Others		2	1	
All	Survey Correction Text within map				4
All	Swamps				sw3
All	Swamps	15			
All	Swamps Text	45			
All	Toll Divided Highway Outline and Fill				
All	Toll Highway Center Lines			3	
All	Toll Ramps			2	
All	Toll roads Related Text				
All	Town Centers				cscctr

Files Type	Description	Color	Line Style	Weight	Cell
All	Township and Range lines		0	2	
All	Township and Range Tics				csttic
All	Township and Range Text				2
All	Triangulation Station				cstria
All	Triangulation Station				trista
All	Triangulation Station Text	97			2
All	Uninventoried Roads and Features				
All	US Highways Related Text				
All	US Route Divided Highway Outline and Fill				
All	US Routes Highway Center Lines			3	
All	US Routes Ramps			2	
All	Wide Rivers and Canals	12		1	4
All	Wide Rivers and Canals Text				5
All	Wildlife Management Area Text	94			11

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Chapter 12 - DRAINAGE STANDARDS

CADD Production Criteria Handbook

12.1 GENERAL

The purpose of this chapter is to clarify the development of a Computer Aided Design and Drafting (CADD) project generated by Roadway Design and Drainage Design. (See also Chapter 13) The intent is to provide electronic files that are shareable in a format that the Roadway and Drainage disciplines can use productively.

12.2 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 Drainage File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequential numbering. For other standard file names refer to the Roadway Chapter, Chapter 13. Since most Drainage files are shared with Roadway, the two groups must coordinate the creation and ownership of these files.

Standard Model names are also provided, however, it is not mandatory to use more than the default model, with the exception of those listed in this table.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Borders & Sheets	BDDMRD.dgn	Default	Border Sheet Reference File for Drainage Map Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Cross Sections	DRXSRD.dgn	Rdxsrd	Drainage Structure Cross Section	drxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
		Pattrd	Drainage Structure Pattern Lines			
		Xsshrd	Drainage Structure Shapes			
		Rdxsrd_ shg	Drainage Structure Cross Section Sheets			
Borders & Sheets	LDPRRD.dgn	Default	Lateral Ditch Plan / Profile Sheet	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Cross Sections	LDXSRD.dgn	Rdxsrd	Lateral Ditch Cross-Sections	rdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
		Pattrd	Lateral Ditch Pattern Lines			
		Xsshrd	Lateral Ditch Shapes			
		Rdxsrd_ shg	Lateral Ditch Cross Section Sheets			

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Cross Sections	PDXSRD.dgn	Rdxsrd	Pond Cross Sections	pdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
		Pattrd	Pond Pattern Lines			
		Xsshrd	Pond Shapes			
		Rdxsrd_shg	Pond Cross Section Sheets			
Existing Drainage	DREXRD.dgn	Default	Drainage Structures – Existing	drexrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Drainage	DRDTRD.dgn	Default	Drainage Details Sheet	drdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Drainage	DRFLRD.dgn	Default	Drainage Flood Data Form	drprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Drainage	DRMPRD.dgn	Default	Drainage Map	drmprd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Drainage	DROMRD.dgn	Default	Drainage Optional Materials Tabulation	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Drainage	DRPRRD.dgn	Default	Drainage Structures - Proposed	drprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	PDPLRD.dgn	Default	Pond Design	drprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	SWPPRD.dgn	Default	Storm Water Pollution Prevention Plan	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	TEXTDR.dgn	Default	Text Labels and Miscellaneous Descriptions	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	WETLRD.dgn	Default	Wetlands Delineation Survey for Drainage	planrd.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	SUMDRD.dgn	Default	Summary of Drainage Structures	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

12.2.1 FILE SHARING AND MERGING

Every project utilizes the 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 file(s) shall be referenced from the original directory, not copied**.

File sharing among the Roadway and Drainage groups shall be as noted in the table below.

	Roadway Files			**Drainage Files**		
	Read	**Write**	**Create**	**Read**	**Write**	**Create**
Roadway Designer	Y	Y	Y	Y	N	N
Drainage Designer	Y	N	N	Y	Y	Y

12.3 RESOURCE FILES

ECSO provides software resources for CADD Drainage Plans on CD, using MicroStation and GEOPAK for production of drainage plans. GEOPAK Drainage is delivered with the GEOPAK software and uses support files specific to GEOPAK Drainage developed by ECSO. Also, used by some districts for Drainage design, is ASAD (Automated Storm Sewer Analysis and Design). This software is purchased at the district level and is available from Hiteshew Engineering Systems, Inc. Both GEOPAK Drainage and ASAD produce drainage databases that should be delivered with the project upon completion. This information shall be delivered in accordance with Section 12.4.

12.4 ENGINEERING DATA

The Drainage discipline directory contains an additional sub-directory named **\eng_data.** This sub-directory was designated to contain the following:

- PostScript image files of the plan sheets for the drainage design
- Quality Control Reports
- ASCII Engineering Data output files
- Drainage Reports, including the drainage databases used in the development of the reports
- All computer input and output files (Postscript and Native File Formats) used in the structural design of culvert structures
- All supplemental hand calculations (scanned and saved in PDF and PostScript Formats)
- Other data pertinent to the overall drainage design

12.5 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.

12.6 SYMBOLOGY STANDARDS

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

Since Drainage design files meet two indicators that define critical files, files that are shared between disciplines and secondly the elements are used for quantity take-offs, close adherence to the symbology standard should be maintained.

In the event a special needs requirement for specific element symbology or criteria for an entire sheet in the project that is not addressed in the CPCH, the discipline specific Technical Advisory Committee (TAC) shall develop a table listing the critical elements their element symbology. The TAC will consult with ECSO to avoid conflicts with any existing symbology criteria.

The Standard File Names for the Drainage discipline with associated Rule Files are found in Section 12.2 of this chapter.

Note *Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.*

Symbology standards for Existing Drainage items are defined in the Survey Chapter, Chapter 11. The symbology standards for Drainage Structures in cross section view (Drainage Structure sheets) are defined in the Roadway Chapter, Chapter 13.

12.7 PACKAGING

Listed below are files created by Roadway that are to be treated as Drainage files:

- Drainage Detail Sheets (DRDTRD00.DGN)
- Drainage Existing Structures (DREXRD00.DGN)
- Flood Data Form (DRFLRD00.DGN)
- Drainage Map (DRMPRD00.DGN)

(This is not usually in a plan set, but kept on the server. The Drainage Map may be considered as optional to be included in the Final Plans submittal at the discretion of the individual Districts.)

- Drainage Proposed Structures (DRPRRD00.DGN)
- Drainage Structure Cross Sections (DRXSRD00.DGN)
- Summary of Drainage Structures (SUMDRD00.DGN)

Note *For further details on packaging plans, see Chapter 4, Section 4.1.*

12.8 ENGINEERING OF RECORD (E.O.R.)

The CPCH and the Plans Preparation Manual (PPM) provide critical guidelines to differentiate between the responsibilities of the Roadway E.O.R. and the Drainage E.O.R. Each E.O.R. must provide quality control for their discipline specific Production of Plans, CADD files and deliverables. The content and appearance of sheets shall follow all requirements as outlined in the PPM.

12.8.1 ROADWAY ENGINEER OF RECORD (E.O.R.):

This is the responsible engineer in charge of signing and sealing Roadway Plan and Roadway Plan-Profile sheets.

12.8.2 DRAINAGE ENGINEER OF RECORD (E.O.R.):

This is the responsible engineer in charge of signing and sealing:

- Drainage Map sheets
- Bridge Hydraulic Recommendation Sheet sheets.
- Summary of Drainage Structures sheets
- Optional Materials Tabulation sheets
- Drainage Structures sheets (although Roadway Design may do the CADD work)
- Lateral Ditch/Outfalls sheets
- Retention/Detention sheets
- Mitigation Areas sheets

12.9 DRAINAGE STRUCTURES & BOX CULVERTS

12.9.1 PLAN VIEW

Proposed cross drain pipes and box culverts shall be indicated in the plan by a symbol and identified by a drainage structure number. Cross drain pipe sizes and lengths shall be shown.

In accordance with the PPM, the proposed drainage system consists of showing the storm sewer pipes with a single line and drawing the outline of inlets, manholes and junction boxes. The pipe size and length between structures shall be given. Structure numbers shall be provided for inlets, manholes, junction boxes and special structures.

12.9.2 PROFILE VIEW

In accordance with the PPM, storm sewer pipe, inlets, manholes and junction boxes along the main line shall be shown. Pipes shall be noted by size. Proposed structures may be shown by structure number only. Flow line elevations shall be shown for all pipes entering and leaving the structure.

Proposed cross drain pipes and culverts shall be plotted. Cross drains shall be identified by structure number only.

12.9.3 DRAINAGE STRUCTURE CROSS SECTION

In accordance with the PPM, drainage structure sheets shall show the drainage structures, their location, cross section, flow lines elevations of all weirs or slots, top grates, culverts, top of manholes elevations, and similar data. Drainage structures sheets also show the vertical relationship of the entire drainage system. For each drainage structure, all necessary information shall be shown by note, including as appropriate; size, end treatment and flow lines, as well as structure , index, and stations number. Elevations shall be given for manholes tops. And ditch bottoms inlets grates and slots. Grate elevations for gutter inlets and edge of pavement elevations for curb and gutter inlet shall be shown.

Structures should be plotted as sections along the centerline of the structure. They should be shown on a standard cross section format with section spaced sufficiently apart to avoid overlapping of structures or notes. Offset shall be referenced from appropriate baseline or centerlines to the location reference point, which may vary by Index, as indicated in the Design Standards. Beginning at the bottom of the sheet, the section should be shown successively by station and should be numbered sequentially, from the beginning to the end of the project. The structure number and location station should be shown near the right border of the sheet.

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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 discipline's use; except when specifically stated in that discipline's chapter.

For Example: Signal plans also show the proposed edge of pavement. 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.

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 (PPM), 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. Automation implemented in various tools provided by FDOT depends on these naming conventions being met. More importantly, the naming convention confers data information to the downstream customer.

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. Each discipline chapter details their own Standard File Names.

Standard Model names are also provided, however, it is not mandatory to use more than the default model, with the exception of those listed in this table.

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	Default	Border Sheet Reference File for Cross-Section Sheet	rdxsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	GNNTRD.dgn	Default	General Notes	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLANRD.dgn	Default	Plan Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLAYRD.dgn	Default	Project Layout 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	
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	GKLNRD.dgn	Default	Geopak Lines for Existing Features	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Cross Sections	RDXSRD.dgn	Rdxsrd	Roadway Cross-Sections	rdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
		Pattrd	Roadway Pattern Lines			
		Xsshrd	Roadway Shapes			
		Rdxsrd_shg	Roadway Cross Section Sheets			
Existing Topography	TOPOEM.dgn	Default	Locations for Potential Environmental Concerns	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Key Sheets	KEYSRD.dgn	Default	Key Sheet	keysht.rul	$(MX_SEEDIR)fdotseedkeymap.dgn	
Project Network Control	CTLSRD.dgn	Default	Survey Project Network Control Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.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	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	RWDTRD.dgn	Default	Right of Way Details for Roadway	rwdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	SCGRRD.dgn	Default	Selective Clearing and Grubbing Sheet	planrd.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	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

[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
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	typdrd.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 and file name standards. Refer to Chapter 19 for the Utilities 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

ECSO provides standard resource files for CADD Roadway Plans, which use 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 **\eng_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

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the Roadway discipline with associated Rule Files are found in Section 13.2 of this chapter.

Note *Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.*

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.

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Chapter 14 - SIGNING & PAVEMENT MARKING STANDARDS

CADD Production Criteria Handbook

14.1 GENERAL

Signing and Pavement Marking Plans are usually a component set of plans (see Chapter 13, Section 13.1). However, if the Signing and Pavement Marking Plans are the lead plan set, then the standards set in Chapter 13, Roadway Standards, pertaining to elements that are specific to the lead plan set shall apply to the Signing and Pavement Marking plan set (i.e., Traffic Control files and elements, preliminary estimate sheets, etc.) Projects requiring minor signing and pavement marking construction work may include these features detailed on sheets in the Roadway Plans. If this is the case, the Signing and Pavement Markings element symbology standards within this chapter shall still apply. However, an exception to the QC rule files must be created and documented in the Roadway discipline journal file. When prepared as component plans, they shall be assembled as a separate plan set complete with a key sheet, tabulation of quantities and all other relevant signing and pavement marking sheets. The sheets shall be numbered consecutively, with sheet numbers prefixed by the letter “S”.

14.2 STANDARD FILE NAMES

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

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 Signing & Pavement Marking File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequential numbering. If the need arises to create a file type defined by another discipline, use the first 4 characters of the standard file name and append the signing and pavement marking filename designation (SP) as the fifth and sixth characters, followed by the file sequence numbers. An example is toposp01.dgn.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Borders and Sheets	BDPLSP.dgn	Default	Border for Plan Sheets when sheet is referenced	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders and Sheets	BDXSSP.dgn	rdxsrd	Border for Cross Section Sheet when sheet is referenced	rdxssp.rul	$(MX_SEEDIR)fdotseedxs.dgn	
Borders and Sheets	GNNTSP.dgn	Default	General Notes Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders and Sheets	PLANSP.dgn	Default	Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clip Borders	CLIPSP.dgn	Default	Clip Borders	cliprd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPLSP.dgn	Default	Motif file for plan sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPRSP.dgn	Default	Motif file for profile sheets	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Cross Sections	RDXSSP.dgn	rdxsrd	Cross-Sections	rdxssp.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
Existing Topography	TOPOSP.dgn	Default	Topography - Existing	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Key Sheets	KEYSSP.dgn	Default	Key Sheet	keysht.rul	$(MX_SEEDIR)fdotseedkeymap.dgn	
Proposed Design	AUTOSP.dgn	Default	AutoTurn Turning Radius Data	autosp.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	DSGNSP.dgn	Default	Proposed Design	dsgnsp.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	SAPMSP.dgn	Default	Layout as a Typical Design or Passing Zone	dsgnsp.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	TEXTSP.dgn	Default	Text Label and Miscellaneous Description	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	GSWKSP.dgn	Default	Guide Sign Work Sheet and details	gswksp.rul	$(MX_SEEDIR) fdotseed2d.dgn	
Special Details	MSARSP.dgn	Default	Mast Arm Detail for Signing	msarsp.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SPDTSP.dgn	Default	Special Details - Miscellaneous (foundation details, boring details, etc.)	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SPSGSP.dgn	Default	Special Sign Detail for Overhead	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes/ Tables	CESSSP.dgn	Default	Summary of Pay Items	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes/ Tables	TABQSP.dgn	Default	Tabulation Quantity Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

14.3 RESOURCE FILES

Engineering/CADD Systems Office (ECSO) provides standard resource files for Computer Aided Design and Drafting (CADD) Signing and Pavement Marking Plans, which use 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.

14.4 ENGINEERING DATA

The Signing and Pavement Marking discipline directory contains an additional sub-directory named **\eng_data**. This sub-directory is designated to contain the following:

- PostScript image files of the Signing and Pavement Marking plan sheets
- Quality Control Reports
- ASCII Engineering Data output files
- All computer input and output files (PostScript and Native File Formats) used for design of the signal structures
- All supplemental hand calculations (scanned and saved in PDF and PostScript Formats)
- Other data pertinent to the overall Signing and Pavement Marking design

14.5 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.

14.6 SYMBOLOGY STANDARDS

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the Signing and Pavement Marking discipline with associated Rule Files are found in Section 14.2 of this chapter.

Note *Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.*

14.7 SIGN DESIGN

The DrawSign Program is an application that draws sign panels and posts and determines the corresponding pay item of the assembly based on the wind load and post properties. The DrawSign application requires use of the GEOPAK and Geopak Computation Manager Database (FDOT2010.ddb) to provide automated pay item association.

14.8 GUIDSIGN

FDOT has adopted and recommends the GuidSIGN Program as the standard Sign Design software. However, using GuidSIGN is not required and other Sign Design Programs available in the industry may be used for Sign Design. Even if GuidSIGN is not used, FDOT Symbology Standards shall still be met to be compliant with QC Rule Files and Electronic Plans Delivery.

GuidSIGN is designed as a *tool* to create sign panels. Sign panels design and creation require two (2) separate files: GSWKSP*.dgn(DWG) for sign panel design and the worksheet and the DSGNSP*.dgn(DWG) file for sign panel placement on the project.. There is no limit to the number of sign panels that can be placed in a file. A particular effort was made to allow users to create sign panels with as little input as possible and with little or no knowledge of sign standards.

In addition to the GuidSIGN worksheet design file required for all non-standard sign designs by the Plans Preparation Manual, a DXF output of the sign, for use by a Sign Cutting Shop, shall be provided for creation of the sign panel.

14.9 AUTOTURN

FDOT has adopted and recommends the AutoTURN Program as the standard Turn Radius Design program. However, using AutoTURN is not required. Turn Radius Design Programs available in the industry may be used for designing the Turn Radius of road intersections. If AutoTURN is not used, FDOT Symbology Standards shall still be met to be compliant with QC Rule Files and Electronic Plans Delivery.

AutoTURN is a CADD based program that simulates low speed turning maneuvers for highway vehicles. AutoTURN operates in both AutoCAD and MicroStation environments. AutoTURN may be used to define vehicles and determine vehicle tire tracking and sweep paths. AutoTURN can be used in the design of road intersections, parking garages, loading ramps and the majority of vehicular facilities.

AutoTURN calculates the location and orientation of the vehicle as the user moves the mouse or “steers” the vehicle through a series of maneuvers, or follows a pre-drawn path. The path is that of the location of the center of the steering axle of the vehicle, which is either generated by AutoTURN or is pre-drawn in the CADD environment using a combination of arcs and tangents. Pre-drawn path segments can be combined into Polylines or Complex Chains.

With AutoTURN, users can create vehicles, vary vehicle dimensions and define turn limitations. The program output includes various combinations of tire, body and clearance envelopes, as well as, full motion animation.

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Chapter 15 - SIGNALS STANDARDS

CADD Production Criteria Handbook

15.1 GENERAL

Signalization Plans are usually a component set of plans (see Chapter 13, Section 13.1). However, if the Signalization Plans are the lead plan set, then the standards set in Chapter 13, Roadway Standards, pertaining to elements that are specific to the lead plan set shall apply to the Signalization plan set (i.e., Traffic Control files and elements, preliminary estimate sheets, etc.) Projects requiring minor signalization construction work may include these features detailed on sheets in the Roadway Plans. If this is the case, the Signalization element symbology standards within this chapter shall still apply. However, an exception to the QC rule files must be created and documented in the Roadway discipline journal file. When prepared as component plans, they shall be assembled as a separate plan set complete with a key sheet, tabulation of quantities and all other relevant signalization sheets. The sheets shall be numbered consecutively, with sheet numbers prefixed by the letter "T". The Signalization Plans show the construction details, signal phasing and other relevant data.

15.2 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,* **##** =S*equence number.*

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

The following table defines the Signals File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequential numbering. If the need arises to create a file type defined by another discipline, use the first 4 characters of the standard file name and append the Signals filename designation (SG) as the fifth and sixth characters, followed by the file sequence numbers. An example is toposg01.dgn.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Borders & Sheets	BDPLSG.dgn	Default	Border Sheet Reference file for Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	GNNTSG.dgn	Default	General Notes Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLANSG.dgn	Default	Plan Sheet	dsgnsg.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clip Borders	CLIPSG.dgn	Default	Clip Borders	cliprd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPLSG.dgn	Default	Motif file for plan sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPRSG.dgn	Default	Motif file for profile sheets	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Existing Topography	TOPOSG.dgn	Default	Topography - Existing	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Key Sheets	KEYSSG.dgn	Default	Key Sheet	keysht.rul	$(MX_SEEDIR)fdotseedkeymap.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Proposed Design	DSGNSG.dgn	Default	Proposed Design and Signal information	dsgnsg.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	TEXTSG.dgn	Default	Text Label and Miscellaneous Description	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	GSWKSG.dgn[1]	Default	Guide Sign Work Sheet and Details	gswksp.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SSDTSG.dgn	Default	Special Details for Sign and Miscellaneous Items	dsgnsg.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	VHLPSG.dgn	Default	Special Loop Details and Instructions	dsgnsg.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes / Tables	MSSGSG.dgn	Default	Mast Arm Detail and Tables	dsgnsg.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes / Tables	PLDTSG.dgn	Default	Pole Tabulation and Details for All Types	dsgnsg.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes / Tables	TABQSG.dgn	Default	Tabulation Quantity Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

[1] Symbology standards for guide signs, special signs and sign details as specified in Chapter 14 shall apply.

15.3 RESOURCE FILES

Engineering/CADD Systems Office (ECSO) provides standard resource files for Computer Aided Design and Drafting (CADD) Signalization Plans, which use 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.

15.4 ENGINEERING DATA

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

- PostScript image files of the Signalization plan sheets
- Quality Control Reports
- ASCII Engineering Data output files
- All computer input and output files (PostScript and Native File Formats) used for design of the signal structures
- All supplemental hand calculations (scanned and saved in PDF and PostScript Formats)
- Other data pertinent to the overall signalization design

15.5 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.

15.6 SYMBOLOGY STANDARDS

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the Signals discipline with associated Rule Files are found in Section 15.2 of this chapter.

Note Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.

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Chapter 16 - HIGHWAY LIGHTING STANDARDS

CADD Production Criteria Handbook

16.1 GENERAL

Highway Lighting Plans are usually a component set of plans (see CPCH Chapter 13, Section 13.1). However, if the Highway Lighting Plans are the lead plan set, then the standards set in Chapter 13, Roadway Standards, pertaining to elements that are specific to the lead plan set shall apply to the Highway Lighting plan set (i.e., Traffic Control files and elements, preliminary estimate sheets, etc.) When prepared as component plans, Highway Lighting Plans shall be assembled as a separate plan set complete with a key sheet, tabulation of quantities and all other relevant lighting sheets. The sheets shall be numbered consecutively, with sheet numbers prefixed by the letter “L”.

16.2 STANDARD FILE NAMES

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

Standard file names should follow this format: AAAABB##.ext

Where AAAA = *abbreviated file description*, BB = *Discipline Denotation,* ## =S*equence number.*

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

The following table defines the Lighting File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequential numbering. If the need arises to create a file type defined by another discipline, use the first 4 characters of the standard file name and append the Lighting filename designation (LT) as the fifth and sixth characters, followed by the file sequence numbers. An example is topolt01.dgn.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Borders & Sheets	BDPLLT.dgn	Default	Border Sheet Plan	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	GNNTLT.dgn	Default	General Notes Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLANLT.dgn	Default	Lighting Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clip Borders	CLIPLT.dgn	Default	Clip Borders	cliprd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPLLT.dgn	Default	Motif files for plan sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPRLT.dgn	Default	Motif files for profile sheets	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Existing Topography	TOPOLT.dgn	Default	Topography – Existing	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Key Sheets	KEYSLT.dgn	Default	Key Sheet	keysht.rul	$(MX_SEEDIR)fdotseedkeymap.dgn	
Proposed Design	DSGNLT.dgn	Default	Proposed Design	dsgnlt.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	TEXTLT.dgn	Default	Text Label and Misc Description	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Special Details	CNPLLT.dgn	Default	Special Pole Detail Sheets (All Types)	dsgnlt.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	JCDTLT.dgn	Default	Jacking Detail Sheet	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	LUDTLT.dgn	Default	Luminaire and Foundation Detail Sheet (All Types)	dsgnlt.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SRPTLT.dgn	Default	Service Point Detail Sheets	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes/Tables	CESSLT.dgn	Default	Summary of Pay Item Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes/Tables	PLDTLT.dgn	Default	Pole Data Sheets	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes/Tables	TABQLT.dgn	Default	Tabulation of Quantity Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

16.3 RESOURCE FILES

Engineering/CADD Systems Office (ECSO) provides standard resource files for Computer Aided Design and Drafting (CADD) Lighting Plans, which use 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.

16.4 ENGINEERING DATA

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

- PostScript image files of the Lighting plan sheets
- Quality Control Reports
- ASCII Engineering Data output files
- All computer input and output files (PostScript and Native File Formats) used for structural design of the lighting structures
- All supplemental hand calculations (scanned and saved in PDF and PostScript Formats)
- Other data pertinent to the overall lighting design

16.5 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.

16.6 SYMBOLOGY STANDARDS

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the Highway Lighting discipline with associated Rule Files are found in Section 16.2 of this chapter.

Note Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.

16.7 AGI32 LIGHTING SOFTWARE

FDOT has adopted and recommends the AGI32 Lighting Software as the standard Lighting Design software. However, using AGI32 is not required. Lighting Design Programs available in the industry may be used for FDOT Lighting Design. If AGI32 is not used, FDOT Symbology Standards shall still be met to be compliant with QC Rule Files and Electronic Plans Delivery.

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Chapter 17 - LANDSCAPE STANDARDS

CADD Production Criteria Handbook

17.1 GENERAL

"Landscape" or landscaping" means any vegetation, mulches, irrigation systems and any site amenities, such as, street furniture, decorative paving, fences and lighting (excluding public utility street and area lighting). Landscape plans may be a component set of plans (see CPCH Chapter 13, Section 13.1), or be prepared independently. Projects with minor landscaping may include these features on separate sheets in the roadway plans set or features may be detailed on the roadway plans sheets. When prepared as component plans, they shall be assembled as a separate plan set complete with a key sheet, tabulation of quantities and all other relevant landscape sheets. The sheets shall be numbered consecutively with the sheet numbers prefixed by the letters "LD".

A complete set of landscape plans can include the following:

1. Key Sheet
2. Tabulation of Quantities
3. Planting Sheets
4. Irrigation Layout
5. Details Sheet
6. Other relevant plan sheets as required Pay Items Notes, General Notes or Maintenance Notes and Schedules.

The components should be listed on the Roadway Key Sheet under the "Components of Contract Plan Sets" heading.

17.2 STANDARD FILE NAMES

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

Standard file names should follow this format: **AAAABB##.ex*t***

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 Landscaping File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequential numbering. 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 Landscape filename designation (LD), followed by file sequence numbers. An example is topold01.dgn.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Borders & Sheets	BDPLLD.dgn	Default	Border Sheet Reference File for Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	GNNTLD.dgn	Default	General Notes	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLANLD.dgn	Default	Plan Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLAYLD.dgn	Default	Project Layout Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clip Borders	CLIPLD.dgn	Default	Clipping Borders	cliprd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPLLD.dgn	Default	Motif File for Plan Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPRLD.dgn	Default	Motif File for Profile Sheets	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Existing Topography	TOPOLD.dgn	Default	Topography - Existing	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Key Sheets	KEYSLD.dgn	Default	Key Sheet	keysht.rul	$(MX_SEEDIR)fdotseedkeymap.dgn	
Proposed Design	DSGNLD.dgn	Default	Proposed Landscape Design (Planting)	dsgnld.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	HSDTLD.dgn[1]	Default	Hardscape details	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	IRRGLD.dgn	Default	Proposed Irrigation Design	irrgld.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	TMOTLD.dgn	Default	Technical Maintenance Plan	dsgnld.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Grading	GRDTLD.dgn	Default	Proposed Grading	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	DETLLD.dgn	Default	Details	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes/ Tables	CESSLD.dgn	Default	Summary of Pay Items	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Summary Boxes/ Tables	TABQLD.dgn	Default	Tabulation of Quantity Sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	

[1] **Hardscape Design files will use the same symbology standards as the Landscape Design file.**

17.3 RESOURCE FILES

Engineering/CADD Systems Office (ECSO) provides standard resource files for Computer Aided Design and Drafting (CADD) Landscape 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. These resources are found at the main ECSO website:

http://www.dot.state.fl.us/ecso/downloads/software/default.shtm

17.4 ENGINEERING DATA

Engineering Data to be delivered with each project should be located in the **…\eng_data** directory and include:

- ASCII files containing Q/C reports
- PostScript files of each sheet in the plan set.

The PostScript files are to be plotted from the MicroStation design files containing the sheets. The PostScript files located in the **…\eng_data** directory are the files to be Signed & Sealed.

17.5 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.

17.6 SYMBOLOGY STANDARDS

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the Landscape discipline with associated Rule Files are found in Section 17.2 of this chapter.

Note Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.

17.7 QUALITY CONTROL

Quality Control (QC) of the graphics files that are required with the project delivery is the responsibility of the data producer. FDOT supplies the QC Software as an aid to check for compliance of filenames and symbology standards with Department standards as defined in this chapter. The Registered Landscape Architect (RLA) must provide quality control of plans and electronic file deliverables, as outlined in the FDOT's CADD Manual, Topic No. 625-050-001 and the Plans Preparation Manual (PPM), Topic No 625-000-008. These resources, in conjunction with district and project scope requirements, shall form the basis for contract plans format and assembly.

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Chapter 18 - STRUCTURES STANDARDS

CADD Production Criteria Handbook

18.1 GENERAL

The use and generation of Computer Aided Design and Drafting (CADD) files by Structures shall be in accordance with the general standards for all disciplines, unless superseded by instructions contained within this chapter.

The following table defines the resource files and features used for the FDOT2010 Workspace.

File Format	V8
QC Rules	spst10.rul
Named Levels	Yes
Text/Dimensions Styles	StrLevels.dgnlib
Annotation Scale	Yes
Font Files	FDOT/FDOTMONO
Level Library	strlevels.dgnlib
Models Allowed	Yes
Seed File	StructuresSeed.dgn
Main Cell Library	TTF_V8Structures.cel
Color Table	Color.tbl

18.2 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 for Bridges should follow this format: ***B#AAAA…##.ext***

- B# = Bridge Plans Sequence Number,
- AAAA = abbreviated file description,
- ## =Sequence number.

Example: First EndBent sheet of Bridge 1 in a plan set would be named *B1EndBent01.dgn*

Note Please see Chapter 3 of the Structures Detailing Manual for more information.

Files created by the Structures Office for other disciplines shall remain in the **struct** discipline folder, the sheet numbers will be prefixed with the target disciplines sheet prefixes. See Chapter 4 of the Structures Detailing Manual (Volume 2 of the Structures Manual) for complete details on Electronic Delivery Compliant sheet numbering instructions.

Use the Structures Menu option Create File application to ensure files are named to FDOT Standards. The following pages display a table listing file names for reference purposes.

Files containing Data Table cells (previously semi-standards) should be named B#DataTable##.dgn and should be placed in the plans with the corresponding component detail sheet. Files marked as (Geotech) are listed to show the order of placement within the Structures plans component only. All Geotech files should be located in the Geotech discipline folder and should follow Geotech standards listed in Chapter 20.

Existing Bridge plan sheets will be in Portable Document Format (PDF) and manually inserted into the Electronic Index using sheet numbers as provided in the table below. Existing Bridge Plans should not be handled in DGN format.

The following table defines the Structures File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequence numbering. The Sheet Order is the default order, but may be modified to suit project specific requirements.

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
* - Optional ** - Lead or Component Key Sheet					
1	B#KeySheet.dgn	Bridge Key Sheet **	B-##	*	Key Sheet
2	B#Index.dgn	Index of Sheets	B-##	*	Gen. Notes, Index of Bridge Sheets, Pay Item Notes
3	B#TRNSPORTStructures.dgn (For Structures only projects)	Summary of Pay Items Sheet	B-##, …	*	Gen. Notes, Index of Bridge Sheets, Pay Item Notes
4	B#GeneralNotes.dgn	General Notes	B#-##	*	Gen. Notes, Index of Bridge Sheets, Pay Item Notes
5	B#PlanElev.dgn	Plan and Elevation	B1-##,B2-##, …	*	Plan and Elevation
6	B#VertCurveSuperEL.dgn	Profile Grade & Superelevation Transition	B1-##,B2-##, …	*	Plan and Elevation
7	B#BridgeHydro.dgn	Bridge Hydraulic Recommendations	B1-##,B2-##, …	*	Bridge Hydraulic Recommendation Sheet
8	B#ConstNotes.dgn	Construction Notes	B1-##,B2-##, …	*	Miscellaneous Details
9	B#ConstDet.dgn	Construction Details	B1-##,B2-##, …	*	Miscellaneous Details
10	B#ConstSeq.dgn	Construction Sequence	B1-##,B2-##, …	*	Miscellaneous Details
11	B#RemoveExist.dgn	Removal of Existing Structures	B1-##,B2-##, …	*	Miscellaneous Details
12	B#BridgeSection.dgn	Section Through Bridge	B1-##,B2-##, …	*	Miscellaneous Details
13	B#CPTGeo.dgn (Geotech)	CPT Soundings	B1-##,B2-##, …	*	Miscellaneous Details
14	B#Boring.dgn (Geotech)	Report of Core Borings	B1-##,B2-##, …	*	Report of Core Borings

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
15	B#FoundLay.dgn	Foundation Layout	B1-##,B2-##, …	*	Foundation Layout
16	B#PileData.dgn	Pile Data Table	B1-##,B2-##, …	*	Foundation Layout
17	B#PileDet.dgn	Pile Details	B1-##,B2-##, …	*	Foundation Layout
18	B#DrillShaft.dgn	Drilled Shaft Data Table	B1-##,B2-##, …	*	Foundation Layout
19	B#DrillShaftDeT.dgn	Drilled Shaft Details	B1-##,B2-##, …	*	Intermediate Bents or Piers
20	B#Footing.dgn	Footing	B1-##,B2-##, …	*	Intermediate Bents or Piers
21	B#FootingDet.dgn	Footing Details	B1-##,B2-##, …	*	Intermediate Bents or Piers
22	B#EndBent.dgn	End Bent	B1-##,B2-##, …	*	End Bents Details
23	B#EndBentDet.dgn	End Bent Details	B1-##,B2-##, …	*	End Bents Details
24	B#IntBent.dgn	Intermediate Bent	B1-##,B2-##, …	*	Intermediate Bents or Piers
25	B#IntBentDet.dgn	Intermediate Bent Details	B1-##,B2-##, …	*	Intermediate Bents or Piers
26	B#Pier.dgn	Pier	B1-##,B2-##, …	*	Intermediate Bents or Piers
27	B#PierDet.dgn	Pier Details	B1-##,B2-##, …	*	Intermediate Bents or Piers
28	B#BeamLay.dgn	Beam Layout	B1-##,B2-##, …	*	Superstructure Sheets
29	B#BeamLayAASHTO.dgn	AASHTO Beam Layout	B1-##,B2-##, …	*	Superstructure Sheets
30	B#BeamLayBulbT.dgn	Bulb-T Beam Layout	B1-##,B2-##, …	*	Superstructure Sheets
31	B#BeamLayFub.dgn	Florida U-Beam Layout	B1-##,B2-##, …	*	Superstructure Sheets

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
32	B#BeamLayInvT.dgn	Inverted T Beam Layout	B1-##,B2-##, …	*	Superstructure Sheets
33	B#BeamLayT.dgn	T Beam Layout	B1-##,B2-##, …	*	Superstructure Sheets
34	B#PrestSlab.dgn	Prestressed Slab Units	B1-##,B2-##, …	*	Superstructure Sheets
35	B#TypicalSection.dgn	Typical Section Through Bridge Deck	B1-##,B2-##, …	*	Superstructure Sheets
36	B#FinishGrEL.dgn	Finish Grade Elevations	B1-##,B2-##, …	*	Superstructure Sheets
37	B#Camber.dgn	Camber Diagrams	B1-##,B2-##, …	*	Superstructure Sheets
38	B#FramingPlan.dgn	Framing Plan	B1-##,B2-##, …	*	Superstructure Sheets
39	B#Superst.dgn	Superstructure	B1-##,B2-##, …	*	Superstructure Sheets
40	B#SuperstDet.dgn	Superstructure Details	B1-##,B2-##, …	*	Superstructure Sheets
41	B#ClosureJoint.dgn	Closure Joint Details	B1-##,B2-##, …	*	Beam Sheets
42	B#CrossFrameDet.dgn	Cross Frame Details	B1-##,B2-##, …	*	Beam Sheets
43	B#DiaphragmDet.dgn	Diaphragm Details	B1-##,B2-##, …	*	Beam Sheets
44	B#ErectSeq.dgn	Erection Sequence	B1-##,B2-##, …	*	Beam Sheets
45	B#ErectProced.dgn	Erection Procedure for Launching Girder	B1-##,B2-##, …	*	Beam Sheets
46	B#FieldSplice.dgn	Bolted Field Splice	B1-##,B2-##, …	*	Beam Sheets
47	B#FieldSpliceDet.dgn	Bolted Field Splice Details	B1-##,B2-##, …	*	Beam Sheets

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
48	B#FloorBeam.dgn	Floor Beams	B1-##,B2-##, …	*	Beam Sheets
49	B#SteelGirder.dgn	Steel Girder	B1-##,B2-##, …	*	Beam Sheets
50	B#SteelDet.dgn	Steel Girder Details	B1-##,B2-##, …	*	Beam Sheets
51	B#Stiffener.dgn	Stiffener Details	B1-##,B2-##, …	*	Beam Sheets
52	B#BearingDet.dgn	Bearing Details	B1-##,B2-##, …	*	Superstructure Sheets
53	B#PierPTDet.dgn	Precast Pier Post-Tensioning Details	B1-##,B2-##, …	*	Superstructure Sheets
54	B#SegDimCap.dgn	Pier Cap Segment Dimensions	B1-##,B2-##, …	*	Superstructure Sheets
55	B#TransPTPier.dgn	Pier Transverse Post-Tensioning	B1-##,B2-##, …	*	Superstructure Sheets
56	B#SegLayout.dgn	Segment Layout	B1-##,B2-##, …	*	Superstructure Sheets
57	B#JointCoord.dgn	Segment Joint Coordinates	B1-##,B2-##, …	*	Superstructure Sheets
58	B#SegDimBox.dgn	Segment Dimensions	B1-##,B2-##, …	*	Superstructure Sheets
59	B#ReinfSeg.dgn	Segment Reinforcing	B1-##,B2-##, …	*	Superstructure Sheets
60	B#SegDimDev.dgn	Deviation Segment Dimensions	B1-##,B2-##, …	*	Superstructure Sheets
61	B#ReinfDevSeg.dgn	Deviation Segment Reinforcing	B1-##,B2-##, …	*	Superstructure Sheets
62	B#SegDimPier.dgn	Pier Segment Dimensions	B1-##,B2-##, …	*	Superstructure Sheets

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
63	B#ReinfPierSeg.dgn	Pier Segment Reinforcing	B1-##,B2-##, …	*	Superstructure Sheets
64	B#SegDimAbut.dgn	Abutment Segment Dimensions	B1-##,B2-##, …	*	Superstructure Sheets
65	B#ReinfAbutSeg.dgn	Abutment Segment Reinforcing	B1-##,B2-##, …	*	Superstructure Sheets
66	B#ReinfClosureSeg.dgn	Closure Segment Reinforcing	B1-##,B2-##, …	*	Superstructure Sheets
67	B#BulkheadSeg.dgn	Bulkhead Segment Details	B1-##, B2-##, …	*	Superstructure Sheets
68	B#LongPT.dgn	Longitudinal Post-Tensioning Layout	B1-##,B2-##, …	*	Superstructure Sheets
69	B#ContinuityTend.dgn	Continuity Tendon Layout	B1-##,B2-##, …	*	Superstructure Sheets
70	B#FuturePTLay.dgn	Future Post-Tensioning Layout	B1-##,B2-##, …	*	Superstructure Sheets
71	B#PTDet.dgn	Post-Tensioning Details	B1-##,B2-##, …	*	Superstructure Sheets
72	B#PTQuantities.dgn	Post-Tensioning Quantities	B1-##,B2-##, …	*	Superstructure Sheets
73	B#TendonCurveDet.dgn	Tendon Curvature Details	B1-##,B2-##, …	*	Superstructure Sheets
74	B#TransPTAbut.dgn	Abutment Segment Transverse Post-Tensioning	B1-##,B2-##, …	*	Superstructure Sheets
75	B#TransTendonDet.dgn	Transverse Post-Tensioning Details	B1-##,B2-##, …	*	Superstructure Sheets
76	B#SegConstSeq.dgn	Construction Sequence (PT)	B1-##,B2-##, …	*	Superstructure Sheets

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
77	B#BearingPads.dgn	Neoprene Bearing Pads	B1-##,B2-##, …	*	Superstructure Sheets
78	B#BearingPlates.dgn	Beveled Bearing Plates	B1-##,B2-##, …	*	Superstructure Sheets
79	B#PotBearing.dgn	Pot Bearing Details	B1-##,B2-##, …	*	Superstructure Sheets
80	B#JackingDet.dgn	Jacking Details	B1-##,B2-##, …	*	Superstructure Sheets
81	B#ExpJointDet.dgn	Expansion Joint Details	B1-##,B2-##, …	*	Superstructure Sheets
82	B#SlidingPlate.dgn	Traffic / Pedestrian Railing Sliding Plate Assembly	B1-##,B2-##, …	*	Superstructure Sheets
83	B#ApproachSlab.dgn	Approach Slab	B1-##,B2-##, …	*	Miscellaneous Details
84	B#ConduitDet.dgn	Utility Conduit Details	B1-##,B2-##, …	*	Miscellaneous Details
85	B#JunctionBox.dgn	Junction Box	B1-##,B2-##, …	*	Miscellaneous Details
86	B#DrainDet.dgn	Drain Details	B1-##,B2-##, …	*	Miscellaneous Details
87	B#LadderDet.dgn	Ladder Details	B1-##,B2-##, …	*	Miscellaneous Details
88	B#MiscDet.dgn	Miscellaneous Details	B1-##,B2-##, …	*	Miscellaneous Details
89	B#SidewalkDet.dgn	Sidewalk Details	B1-##,B2-##, …	*	Miscellaneous Details
90	B#SurfaceFinish.dgn	Surface Finish Details	B1-##,B2-##, …	*	Miscellaneous Details
91	B#FenderSystem.dgn	Fender System	B1-##,B2-##, …	*	Miscellaneous Details
92	B#FenderDet.dgn	Fender Details	B1-##,B2-##, …	*	Miscellaneous Details
93	B#RiprapRubble.dgn	Rubble Riprap	B1-##,B2-##, …	*	Miscellaneous Details

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
94	B#SlopeProtectionConcrete.dgn	Concrete Slope Protection	B1-##,B2-##, …	*	Miscellaneous Details
95	B#ScourPlan.dgn	Plan View of Scour Protection	B1-##,B2-##, …	SP-##	Miscellaneous Details
96	B#BotContourMap.dgn	Bottom Contour Map	B1-##,B2-##, …	SP-##	Miscellaneous Details
97	B#ScourProf.dgn	Profile of Scour Protection	B1-##,B2-##, …	SP-##	Miscellaneous Details
98	B#ScourDetail.dgn	Scour Protection Details	B1-##,B2-##, …	SP-##	Miscellaneous Details
99	B#RiprapSand.dgn	Sand Cement Riprap	B1-##,B2-##, …	SP-##	Miscellaneous Details
100	B#MiscStrTempBridge.dgn	Temporary Bridge Details	B1-##,B2-##, …	*	Miscellaneous Details
101	B#AccessOpen.dgn	Access Opening	B1-##,B2-##, …	*	Miscellaneous Details
102	B#MaintLight.dgn	Maintenance Lighting Plan	B1-##,B2-##, …	*	Miscellaneous Details
103	B#MaintLightDet.dgn	Maintenance Lighting Details	B1-##,B2-##, …	*	Miscellaneous Details
104	B#Handrail.dgn	Handrail	B1-##,B2-##, …	*	Miscellaneous Details
105	B#CompTestSetup.dgn	Compression Test Setup	B1-##,B2-##, …	LT-##	Miscellaneous Details
106	B#DrillShaftLT123.dgn	Drilled Shaft Load Test Sites 1, 2 & 3	B1-##,B2-##, …	LT-##	Miscellaneous Details
107	B#LTSumDrillShaft.dgn	Drilled Shaft Load Test Program Summary	B1-##,B2-##, …	LT-##	Miscellaneous Details
108	B#InstruDet.dgn	Instrumentation Details	B1-##,B2-##, …	LT-##	Miscellaneous Details
109	B#LateralLT.dgn	Lateral Load Test Details	B1-##,B2-##, …	LT-##	Miscellaneous Details

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
110	B#LTFrame.dgn	Load Test Frame Configuration	B1-##,B2-##, …	LT-##	Miscellaneous Details
111	B#LTBraceDet.dgn	Load Test Reaction Girder Bracing Details	B1-##,B2-##, …	LT-##	Miscellaneous Details
112	B#LTGirderDet.dgn	Load Test Reaction Girder Details	B1-##,B2-##, …	LT-##	Miscellaneous Details
113	B#OsterbergCell.dgn	Osterberg Cell 3000 ton Load Testing Device	B1-##,B2-##, …	LT-##	Miscellaneous Details
114	B#LTSumPile.dgn	Pile Load Test Program Summary	B1-##,B2-##, …	LT-##	Miscellaneous Details
115	B#PlatformDet.dgn	Service Platform Deck and Frame Details	B1-##,B2-##, …	LT-##	Miscellaneous Details
116	B#StatnamicLT.dgn	Statnamic Load Test Details	B1-##,B2-##, …	LT-##	Miscellaneous Details
117	B#RebarList.dgn	Reinforcing Bar List	B1-##,B2-##, …		Reinforcing Bar List
118	B#BP-Notes.dgn	Bascule Pier Notes	B1-##,B2-##, …	BP-##	Movable Bridge - Structural
119	B#BP-Plan.dgn	Bascule Pier Plan	B1-##,B2-##, …	BP-##	Movable Bridge - Structural
120	B#BP-Elevations.dgn	Bascule Pier Elevations	B1-##,B2-##, …	BP-##	Movable Bridge - Structural
121	B#BP-Sections.dgn	Bascule Pier Sections	B1-##,B2-##, …	BP-##	Movable Bridge - Structural
122	B#BP-StlFraming.dgn	Bascule Pier Steel Framing	B1-##,B2-##, …	BP-##	Movable Bridge - Structural
123	B#BP-Details.dgn	Bascule Pier Details	B1-##,B2-##, …	BP-##	Movable Bridge - Structural
124	B#BP-Misc.dgn	Bascule Pier Miscellaneous	B1-##,B2-##, …	BP-##	Movable Bridge - Structural

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
125	B#BP-Quantities.dgn	Bascule Pier Quantities	B1-##,B2-##, …	BP-##	Movable Bridge - Structural
126	B#BP-Reinforcing.dgn	Bascule Pier Reinforcing	B1-##,B2-##, …	BP-##	Movable Bridge - Structural
127	B#BP-Barlist.dgn	Bascule Pier Bar Lists	B1-##,B2-##, …	BP-##	Movable Bridge - Structural
128	B#RP-Notes.dgn	Rest Pier Notes	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
129	B#RP-Plan.dgn	Rest Pier Plan	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
130	B#RP-Elevations.dgn	Rest Pier Elevations	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
131	B#RP-Sections.dgn	Rest Pier Sections	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
132	B#RP-StlFraming.dgn	Rest Pier Steel Framing	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
133	B#RP-Details.dgn	Rest Pier Details	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
134	B#RP-Misc.dgn	Rest Pier Miscellaneous	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
135	B#RP-Quantities.dgn	Rest Pier Quantities	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
136	B#RP-Reinforcing.dgn	Rest Pier Reinforcing	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
137	B#RP-Barlist.dgn	Rest Pier Bar Lists	B1-##,B2-##, …	RP-##	Movable Bridge - Structural
138	B#BL-Notes.dgn	Bascule Leaf Notes	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
139	B#BL-SpanLockDet.dgn	Bascule Leaf Span Lock Details	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
140	B#BL-SpanLockPlan.dgn	Bascule Leaf Span Lock Plan	B1-##,B2-##, …	BL-##	Movable Bridge - Structural

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
141	B#BL-Sections.dgn	Bascule Leaf Sections	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
142	B#BL-ClearDiagram.dgn	Bascule Leaf Clearance Diagram	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
143	B#BL-ForceDiagram.dgn	Bascule Leaf Force Diagram	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
144	B#BL-FramePlan.dgn	Bascule Leaf Framing Plan	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
145	B#BL-Girders.dgn	Bascule Leaf Main Girders	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
146	B#BL-FloorBeams.dgn	Bascule Leaf Floor Beams	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
147	B#BL-Strings.dgn	Bascule Leaf Stringers	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
148	B#BL-Bracing.dgn	Bascule Leaf Bracing	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
149	B#BL-CantBracket.dgn	Bascule Leaf Cantilever Bracket	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
150	B#BL-TrunGirder.dgn	Bascule Leaf Trunnion Girder	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
151	B#BL-CounterWeight.dgn	Bascule Leaf Counter Weight	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
152	B#BL-CntrWghtGirder.dgn	Bascule Leaf Counter Weight Girder	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
153	B#BL-Deck.dgn	Bascule Leaf Deck	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
154	B#BL-Details.dgn	Bascule Leaf Misc. Details	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
155	B#BL-JointAssembly.dgn	Bascule Leaf Joint Assemblies	B1-##,B2-##, …	BL-##	Movable Bridge - Structural

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
156	B#BL-SideWalk.dgn	Bascule Leaf Sidewalk	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
157	B#BL-TraffRail.dgn	Bascule Leaf Traffic Railing	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
158	B#BL-PedRail.dgn	Bascule Leaf Pedestrian Railing	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
159	B#BL-AccPlatforms.dgn	Bascule Leaf Access Platforms	B1-##,B2-##, …	BL-##	Movable Bridge - Structural
160	B#MechNotes.dgn	Mechanical Notes	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
161	B#MechPlan.dgn	Mechanical Plan	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
162	B#MechElev.dgn	Mechanical Elevation	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
163	B#MechDet.dgn	Mechanical Details	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
164	B#MechSect.dgn	Mechanical Sections	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
165	B#MiscMechDet.dgn	Miscellaneous Mechanical Details	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
166	B#PinionDet.dgn	Pinion Details	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
167	B#TrunAssem.dgn	Trunnion Assembly	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
168	B#TrunDet.dgn	Trunnion Details	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
169	B#DriveAssem.dgn	Drive Assembly	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
170	B#GateAssem.dgn	Gate Assembly	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
171	B#HydraNote.dgn	Hydraulic Notes	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
172	B#HydraCylDet.dgn	Hydraulic Cylinder Details	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
173	B#HydraSchem.dgn	Hydraulic Schematic	B1-##,B2-##, …	BM-##	Movable Bridge - Mechanical
174	B#ElecNotes.dgn	Electric Notes	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
175	B#CCTVDet.dgn	CCTV Details	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
176	B#CommLayout.dgn	Communications Layout	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
177	B#ConduitRiser.dgn	Conduit Riser	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
178	B#ControlDesk.dgn	Control Desk	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
179	B#DriveDiag.dgn	Drive Diagram	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
180	B#ElecFloorplan.dgn	Electrical Floor Plan	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
181	B#GeneratorDet.dgn	Generator Details	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
182	B#Grounding.dgn	Grounding and Lighting Protection	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
183	B#IOpoints.dgn	Input Output Points, PLC	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
184	B#LadderLogic.dgn	Ladder Logic, PLC	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
185	B#OpSeq.dgn	Operating Sequence Flowchart	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
186	B#PanelBoardSch.dgn	Panel Board Schedule	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
187	B#SingleLine.dgn	Single Line Diagram	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
188	B#SubCableDet.dgn	Submarine Cable Details	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
189	B#SurgeSup.dgn	Surge Suppression Details	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
190	B#ElecMachLayout.dgn	Electrical Machinery Layout	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
191	B#MiscElecDet.dgn	Miscellaneous Electrical Details	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
192	B#Legend.dgn	Symbol Legend	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
193	B#MCC.dgn	Motor Control Center	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
194	B#ThreeLineDiag.dgn	Three Line Diagram	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
195	B#TrafCtrlDet.dgn	Traffic Control Details	B1-##,B2-##, …	BE-##	Movable Bridge - Electrical
196	B#NaviLightDet.dgn	Navigation Lighting System Details	B1-##,B2-##, …	BE-##	Miscellaneous Details
197	B#TowerDet.dgn	Control Tower Details	B1-##,B2-##, …	BT-##	Miscellaneous Details
198	B#TowerLighting.dgn	Control Tower Lighting	B1-##,B2-##, …	BT-##	Miscellaneous Details
199	B#TowerLayout.dgn	Tower, Lighting and Pier Layout	B1-##,B2-##, …	BT-##	Miscellaneous Details
200	B#Plumbing.dgn	Plumbing	B1-##,B2-##, …	BT-##	Miscellaneous Details
201	B#WorkID.dgn	Work Identification Sheet	B1-##,B2-##, …	BT-##	Miscellaneous Details
202	B#SitePlan.dgn	Site Plan for Rest Area	B1-##,B2-##, …	BT-##	Miscellaneous Details
203	B#CatwalkDet.dgn	Catwalk Details	B1-##,B2-##, …	BT-##	Miscellaneous Details

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
204	B#WallControl.dgn	Wall Control Drawing	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
205	B#Bulkhead.dgn	Bulkhead	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
206	B#BulkheadDet.dgn	Bulkhead Details	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
207	B#CrashWall.dgn	Crash Wall	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
208	B#SheetPileWallAnch.dgn	Anchored Sheet Pile Wall	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
209	B#SheetPileWallCant.dgn	Cantilever Sheet Pile Wall	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
210	B#MSEwall.dgn	MSE Wall	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
211	B#RetainingWall.dgn	Retaining Wall	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
212	B#SheetPileWall.dgn	Sheet Pile Retaining Wall	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
213	B#SheetPileWallST.dgn	Steel Sheet Pile Retaining Wall	BW-##	W1-##,W2-##, …	Retaining Wall Sheets
214 /Rdwy	B#SheetPileWallConc.dgn	Concrete Sheet Pile Retaining Wall	BW-## / none	W1-##,W2-##, …	Retaining Wall Sheets
215 /Rdwy	B#SoundBarrier.dgn	Sound Barriers	BW#-## / none	SB1-##, SB2-##, ...	
216 /Rdwy	B#MiscStr.dgn B#MiscStrClvt.dgn B#MiscStrMastarm.dgn B#MiscStrHighMast.dgn B#MiscStrOHSign.dgn	Varies Culvert Mastarms High Mast Light Poles Overhead Sign Structures	B#-## / none		

Structures Plans Naming Convention and Numbering Convention					
Sheet Order	**File Name**	**Suggested Sheet Title**	**Sheet Prefix**	**Drawing Prefix ***	**As-Built Plans System - Structure Type**
217 /Rdwy	B#ExistingPlans.pdf	Existing Bridge Plans	BX#-##	BX-##	Existing Bridge Sheets
218	B#DataTableLoadRating.dgn	Load Rating Charts	B1-##,B2-##, …	*	Load Rating Charts
Varies	B#DataTable##.dgn	(Design Standards) Data Tables	B#-##	*	(Varies – See Section 18.2)
	B#Preliminary.dgn	Preliminary Plan and Elevation			
	StrBorder.dgn	Referencing Structures Borders			
	MiscStr.dgn	Varies			
	MiscStrClvt.dgn	Culvert			
	MiscStrMastarm.dgn	Mastarms			
	MiscStrHighMast.dgn	High Mast Light Poles			
	MiscStrOHSign.dgn	Overhead Sign Structures			

18.3 RESOURCE FILES

Files created for the Structures discipline shall use the resource files included with the FDOT CADD Software package. All files created for Structures Plans sheets shall be created from the supplied Structures seed files.

The Structures Seed file for the FDOT2010 workspace differs from other standard seed files in both working units and unit labeling.

The StrLevels.dgnlib library file contains the definitions for Levels, Text, & Dimension styles.

Note In V8 format files, working units DO NOT define design plane size, only the current method of measurement. Therefore, the design plane is the same size for all seed files.

18.4 ENGINEERING DATA

Engineering Data to be delivered with each project shall be located in the **…\eng_data** directory and include:

- ASCII files containing Q/C reports
- PostScript files of all Structures Plan sheets
- All computer input and output files used in the design (in native and PostScript file formats)
- All supplemental design hand calculations (scanned and saved in PDF or TIFF, and PostScript file formats)

Create separate sub-directories in the **...struct** directory for each bridge and/or structure in the project. Name these sub-directories using the sheet prefix and bridge numbers (when applicable). Locate the MicroStation design files for each bridge under the named sub-directory and create an **...eng_data** sub-directory in each, for the Engineering Data

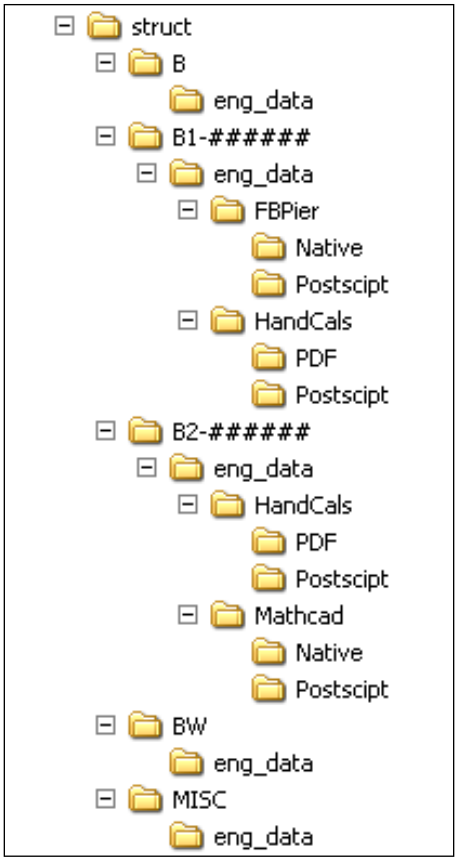
(e.g.**...struct\B\eng_data**, **struct\B1-######\eng_data**, etc.).

Plot the MicroStation PostScript files from the MicroStation design files. Print all other PostScript files from the design and/or analysis programs. If the project requires electronic plans submittal signed & sealed, all the PostScript files located in the **…\eng_data** directory shall be electronically signed & sealed.

Computer input and output files include files used for all aspects of bridge, retaining wall, and/or miscellaneous structures design. These include, but are not limited to, files generated from the following computer programs:

- FDOT Structural Software (listed in CADD Customer Support Guide)
- GTStrudl
- STADD
- RISA
- Mathcad Spreadsheets
- Excel Spreadsheets
- FBPier
- LEAP Software
- BD2
- MDX
- BC
- Adapt

Create a sub-directory in the **…struct\B#-#####\eng_data** directory for each bridge and/or structure in the project and then create a sub-directory for each program used, with two sub-directories, PostScript and Native. Place the appropriate input and output files in each sub-directory. Only sign and seal these PostScript files when required by Contract. Scan any supplemental hand calculations used in the design and save the files in either PDF or TIFF and PostScript formats. Create a sub-directory in the **…struct\B#-######\eng_data** directory called HandCals, with two sub-directories, PostScript and PDF (or TIFF), and place the appropriate files in each sub-directory. (See figure 18-1 below)



18.5 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 Structures should be secured and authenticated.

18.6 SYMBOLOGY STANDARDS

For the FDOT2010 workspace, element symbologies are defined in the StrLevels.dgnlib file and shall be selected from the MicroStation level picker. Each level contains a defined color, line weight, line style, and plot property. Color shall remain set to BYLEVEL (except as noted by ****** in the table below), line weight & line style may be modified as needed. User created levels ARE NOT allowed. If additional levels are needed, contact the Structures Design Office. The level named "Default" is not QC compliant and shall not be used for drawing elements. When updated, the StrLevels.dgnlib level library supersedes the symbology table below.

Table of Structures Symbologies for FDOT2010 Workspace

Level No.	Level	Description	ByLevel Color	ByLevel Style	ByLevel Weight	Plot ?
3997	ActivePts-ConstElements	Active Points & Drawing Construction Elements	99	0	0	No
901	AdhocPoint_dp	Adhoc Points Placed by Sheetinfo	0	4	0	
2400	AppSlabConc	Concrete	2	0	3	Yes
2401	AppSlabConc_h	Concrete Hidden	2	2	2	Yes
3600	ArchBlocks	Architectural Blocks	0	0	0	Yes
2004	BaseLineSurvey	Baseline Survey or Profile Grade Line	3	6	0	Yes
2110	BeamConc	Beams Concrete	2	0	3	Yes
2111	BeamConc_h	Beams Concrete Hidden	2	2	2	Yes
2451	Bearings	Pot, Rocker, Masonry Plates	6**	0	1	Yes
2147	Bolts	Miscellaneous Bolts for Details	6	0	0	Yes
2148	Bolts_h	Miscellaneous Bolts for Details - Hidden	6	1	0	Yes
2000	Border	Border Elements	0	0	1	Yes
3620	Casework	Casework	1	0	1	Yes
3621	Casework_h	Casework Hidden	1	3	0	Yes
3624	Ceiling	Ceiling	0	0	1	Yes
3625	Ceiling_h	Ceiling Hidden	0	3	0	Yes
2009	CLConst	Centerline Construction or Centerline Survey	3	7	0	Yes
2002	CL_Major	Centerline Major - Use as needed	3	7	0	Yes
2003	CL_Minor	Centerline Minor - Use as needed	0	4	0	Yes
3671	ConcArch_walls	Concrete Architectural Walls	1	0	2	Yes
3672	ConcArch_walls_h	Concrete Architectural Walls Hidden	1	3	1	Yes
3000	CounterWeight	CounterWeight	2	0	0	Yes
3001	CounterWeight_h	CounterWeight Hidden	2	2	2	Yes
3999	DDConstruction	Dimension Driven Cell Construction Lines	71	0	0	No

Level No.	Level	Description	ByLevel Color	ByLevel Style	ByLevel Weight	Plot ?
3998	DDDimensions	Dimension Driven Dimensions	71	0	0	No
2126	DeckSteel	Steel Grid Bridge Decking	6	0	1	Yes
2001	Dimension	Dimension Lines	0	0	0	Yes
3606	Doors	Doors	1	0	1	Yes
3607	Doors_h	Doors Hidden	1	3	0	Yes
2150	DrainDeck	Scuppers, Deck Inlets	3	0	1	Yes
2152	DrainMisc	Drain Miscellaneous Hardware	3	0	1	Yes
2151	DrainPipe	Drain Pipes PVC, Galvanized	3	0	1	Yes
2206	DrShaftConc	Drilled Shaft Concrete	2	0	3	Yes
2207	DrShaftConc_h	Drilled Shaft Concrete Hidden	2	2	2	Yes
2750	ElectricalConduit	Electrical Conduit	7	0	0	Yes
2724	ExistingMisc	Existing Misc.	3**	1	0	Yes
2723	ExistingRebar	Existing Reinforcing	84	1	0	Yes
2722	ExistingUtility	Existing Utilities Electrical; FOC, Telephone, CableTV etc.	86	1	0	Yes
2721	ExistSubStruct	Existing Bridge Substructure, Piers & Bents; Existing Piling	5	1	0	Yes
2720	ExistSuperStruct	Existing Bridge Superstructure: Existing Beams & Diaphragms	5	1	0	Yes
3657	Ext_Misc	Exterior Miscellaneous	3	0	0	Yes
3658	Ext_Misc_h	Exterior Miscellaneous Hidden	3	3	0	Yes
3655	Ext_Ornimental	Exterior Ornamentation	6	0	0	Yes
3656	Ext_Ornimental_h	Exterior Ornamentation Hidden	6	3	0	Yes
3639	Fascia	Fascia	4	0	1	Yes
3640	Fascia_h	Fascia Hidden	4	3	0	Yes
2149	FencePosts	Fence Posts for Details	6	0	1	Yes
2144	Fencing	Bridge Mounted Chain Link Fencing	6	0	1	Yes
3645	Fire_Equipment	Fire Equipment	1	0	1	Yes
3646	Fire_Equipment_h	Fire Equipment Hidden	1	3	0	Yes
3612	Floor	Floor	3	0	2	Yes
3613	Floor_h	Floor Hidden	3	3	1	Yes
3622	Furniture	Furniture	1	0	1	Yes
3623	Furniture_h	Furniture Hidden	1	3	0	Yes
3608	Glazing	Glazing	1	0	1	Yes
3609	Glazing_h	Glazing Hidden	1	3	0	Yes
2701	GroundLines	Proposed; Existing	2	0	1	Yes

Level No.	Level	Description	ByLevel Color	ByLevel Style	ByLevel Weight	Plot ?
2145	Guardrail	Guardrail & Post, Thrie & W Beam	1	0	1	Yes
2146	Guardrail_h	Guardrail & Post, Thrie & W Beam - Hidden	1	1	1	Yes
3667	Gypsum_board	Gypsum Board	1	0	1	Yes
3668	Gypsum_board_h	Gypsum Board Hidden	1	3	0	Yes
3630	HVAC_Equip	HVAC Equipment	5	0	2	Yes
3631	HVAC_Equip_h	HVAC Equipment Hidden	5	5	1	Yes
3632	HVAC_Misc	HVAC Miscellaneous	3	0	1	Yes
3633	HVAC_Misc_h	HVAC Miscellaneous Hidden	3	5	0	Yes
3628	HVAC_Return	HVAC Return	5	0	2	Yes
3629	HVAC_Return_h	HVAC Return Hidden	5	2	1	Yes
3626	HVAC_Supply	HVAC Supply	5	0	2	Yes
3627	HVAC_Supply_h	HVAC Supply Hidden	5	3	1	Yes
600	ImageAttachment_dp	Image Attachment	0	0	0	Yes
3614	Insulation	Insulation	3	0	1	Yes
3615	Insulation_h	Insulation Hidden	3	3	0	Yes
3654	Int_Mis_h	Interior Miscellaneous Hidden	3	3	0	Yes
3653	Int_Misc	Interior Miscellaneous	3	0	1	Yes
2006	Leader	Leader lines, Weld Symbols	0	0	0	Yes
3002	LeafSteel	Leaf Structural Steel	6	0	0	Yes
3003	LeafSteel_h	Leaf Structural Steel Hidden	6	2	2	Yes
2711	Lighting	Lighting Bridge/Sign Mounted	31	0	0	Yes
2712	Lighting_h	Lighting Bridge/Sign Mounted Hidden	31	2	0	Yes
3610	LightingArch	Lighting Architectural	0	0	0	Yes
3611	LightingArch_h	Lighting Architectural	0	0	2	Yes
3010	MachineCompFixed	Machinery Components Fixed	7	0	2	Yes
3011	MachineCompFixed_h	Machinery Components Fixed Hidden	7	2	1	Yes
3012	MachineCompMoving	Machinery Components Moving	3	0	2	Yes
3013	MachineCompMovng_h	Machinery Components Moving Hidden	3	2	1	Yes
3014	MachineWeldments	Machine Weldments	4	0	2	Yes
3015	MachineWeldments_h	Machine Weldments Hidden	4	2	1	Yes
3669	Masonry	Masonry	3	0	1	Yes
3670	Masonry_h	Masonry Hidden	3	3	0	Yes
3663	Metal Framing	Metal Framing	4	0	1	Yes

Level No.	Level	Description	ByLevel Color	ByLevel Style	ByLevel Weight	Plot ?
3664	Metal Framing_h	Metal Framing	4	3	0	Yes
2700	Miscellaneous	No defined symbology	3**	0	1	Yes
2709	NavLight	Navigational Lights	7	0	0	Yes
2710	NavLight_h	Navigational Lights Hidden	7	2	0	Yes
2450	PadMisc	Bearing/Misc Pads	1**	0	1	Yes
2141	ParapetConc	Parapet Concrete	2	0	3	Yes
2703	Patterning	All; any	3	0	1	Yes
1084	Patternlines_ep	Cross Section Chain	2	1	0	
9530	PayItem_dp	Pay Item Number Label Elements	4	0	2	
2142	PedRail	Pedestrian Rail, Bullet, Picket & Guardrail	3	0	1	Yes
2143	PedRailMisc	Handrail Hardware Bullet, Picket & Guardrail	3	0	1	Yes
2202	PileConc	Piles Concrete	2	0	3	Yes
2203	PileConc_h	Piles Concrete Hidden	2	2	2	Yes
2520	PilePlastic	Pile Plastic	1	0	1	Yes
2521	PilePlastic_h	Pile Plastic Hidden	1	2	2	Yes
2204	PileSteel	Piles Steel H-Piles & Pipe	6	0	1	Yes
2205	PileSteel_h	Piles Steel H-Piles & Pipe Hidden	6	2	1	Yes
2510	PileTimber	Pile Timber	142	0	1	Yes
2511	PileTimber_h	Pile Timber Hidden	142	2	1	Yes
3016	PipeHydraulic	Hydraulic Pipe	7	0	1	Yes
3017	PipeHydraulic_h	Hydraulic Pipe Hidden	7	2	0	Yes
920	PlotBorder_dp	Plot Border	3	0	0	No
3651	Plumbing_Fixtures	Plumbing Fixtures	1	0	2	Yes
3652	Plumbing_Fixtures_h	Plumbing Fixtures Hidden	1	5	1	Yes
3647	Plumbing_Supply	Plumbing Supply	1	0	2	Yes
3648	Plumbing_Supply_h	Plumbing Supply Hidden	1	3	1	Yes
3649	Plumbing_Waste	Plumbing Waste	1	0	2	Yes
3650	Plumbing_Waste_h	Plumbing Waste Hidden	1	2	1	Yes
1096	PointLocator_ep	Geopak Point Locator for COGO SMD Database	4	0	0	
2300	PostTension	Post-Tensioning Steel Strands & Bars	6	0	1	Yes
2301	PostTension_h	Post-Tensioning Steel Hidden Strands & Bars	6	2	1	Yes
2302	PostTension2	Post-Tensioning Steel Strands & Bars	46**	0	1	Yes

Level No.	Level	Description	ByLevel Color	ByLevel Style	ByLevel Weight	Plot ?
2303	PostTension2_h	Post-Tensioning Steel Strands & Bars	46**	0	1	Yes
2304	PostTension3	Post-Tensioning Steel Strands & Bars	46**	0	1	Yes
2305	PostTension3_h	Post-Tensioning Steel Strands & Bars	46**	0	1	Yes
2307	PostTensionDucts	Post Tension Ducts Plastic & Metal	1	0	1	Yes
2306	PostTensionGrout	Post Tension Grout	2	0	1	Yes
2308	PostTensionMisc	Post Tensioning Hardware, Trumpets, Vents & Misc. Items	1	0	1	Yes
2270	PrestressSteel	Prestressing Steel	36	0	1	Yes
2271	PrestressSteel_h	Prestressing Steel Hidden	36	2	1	Yes
3618	RailingArch	Railing Architectural	6	0	2	Yes
3619	RailingArch_h	Railing Architectural Hidden	6	3	1	Yes
2012	RRBaselin	Rail road	3	rr2	0	Yes
2250	Rebar	Reinforcing Major	4	0	1	Yes
2251	Rebar_h	Reinforcing Hidden	4**	2	1	Yes
2260	Rebar10	Auxiliary Rebar	4**	0	1	Yes
2261	Rebar11	Auxiliary Rebar	4**	0	1	Yes
2252	Rebar2	Auxiliary Rebar	4**	0	1	Yes
2253	Rebar3	Auxiliary Rebar	4**	0	1	Yes
2254	Rebar4	Auxiliary Rebar	4**	0	1	Yes
2255	Rebar5	Auxiliary Rebar	4**	0	1	Yes
2256	Rebar6	Auxiliary Rebar	4**	0	1	Yes
2257	Rebar7	Auxiliary Rebar	4**	0	1	Yes
2258	Rebar8	Auxiliary Rebar	4**	0	1	Yes
2259	Rebar9	Auxiliary Rebar	4**	0	1	Yes
9531	ReferencePt_dp	Survey Data Reference Point Details & El	4	0	2	
3643	Roof_Misc	Roof Miscellaneous	3	0	1	Yes
3644	Roof_Misc_h	Roof Miscellaneous Hidden	3	2	0	Yes
3634	Roof_Structure	Roof Structure	4	0	2	Yes
3635	Roof_Structure_h	Roof Structure Hidden	4	3	1	Yes
3637	Roofing	Roofing	4	0	1	Yes
3638	Roofing_h	Roofing Hidden	4	2	0	Yes
2011	RWLine_ep	Right of Way lines	3	{ Chain Double-Dash }	1	Yes
3500	SchemElectric	Electrical Schematic	7	0	1	Yes

Level No.	Level	Description	ByLevel Color	ByLevel Style	ByLevel Weight	Plot ?
3501	SchemElectricProp	Electrical Schematic Proposed	7	0	1	Yes
3502	SchemHydraulicAux	Hydraulic Schematic Auxiliary	4	0	1	Yes
3503	SchemHydraulicMain	Hydraulic Schematic Main	7	0	1	Yes
3504	SchemTextLine	Schematic Text Line	0	0	1	Yes
3505	SchemTextRung	Schematic Text Rung	4	0	1	Yes
2604	SheetPileConc	Wall Sheet Precast	2	0	3	Yes
2605	SheetPileConc_h	Wall Sheet Precast Hidden	2	2	2	Yes
2602	SheetPileSteel	Wall Sheet Pile Steel	6	0	1	Yes
2603	SheetPileSteel_h	Wall Sheet Pile Steel Hidden	6	2	2	Yes
2800	Signage	Bridge Mounted Signs & Cantilever Sign Structures	6	0	1	Yes
2801	Signage_h	Bridge Mounted Signs & Cantilever Sign Structures Hidden	6	2	1	Yes
3659	SignageArch	Signage Architectural	0	0	1	Yes
3660	SignageArch_h	Signage Architectural Hidden	0	3	0	Yes
2802	SignMisc	Sign Miscellaneous Plates & Hardware	3	0	1	Yes
2803	SignMisc_h	Sign Miscellaneous Plates & Hardware Hidden	3	2	1	Yes
2820	SlopeProtection	Sand Cement Riprap, Slope Pavement; Rubble Riprap	3	0	3	Yes
2821	SlopeProtection_h	Sand Cement Riprap, Slope Pavement; Rubble Riprap Hidden	3	0	3	Yes
3641	Soffit	Soffit	4	0	1	Yes
3642	Soffit_h	Soffit Hidden	4	3	0	Yes
3616	Stairs	Stairs	6	0	2	Yes
3617	Stairs_h	Stairs Hidden	6	3	1	Yes
3665	SteelArch_Misc	Steel Architectural Miscellaneous	4	0	1	Yes
3666	SteelArch_Misc_h	Steel Architectural Miscellaneous Hidden	4	3	0	Yes
2122	SteelDiapXFram	Steel Diaphragms & Cross Frames	6	0	1	Yes
2123	SteelDiapXFram_h	Steel Diaphragms & Cross Frames Hidden	6	2	0	Yes
2120	SteelGirder	Steel Girder, Stringers, Trusses	6	0	1	Yes
2121	SteelGirder_h	Steel Girder Stringers, Trusses Hidden,	6	2	0	Yes
2124	SteelMisc	Steel Miscellaneous Stiffeners, Plates, Bolts etc.	6	0	1	Yes

Level No.	Level	Description	ByLevel Color	ByLevel Style	ByLevel Weight	Plot ?
2125	SteelMisc_h	Steel Miscellaneous Hidden Stiffeners, Plates, Bolts etc.	6	2	0	Yes
2705	StrMisc	Structural Miscellaneous	3**	0	1	Yes
2706	StrMisc_h	Structural Miscellaneous Hidden	3**	2	1	Yes
2707	StrMiscConc	Structural Miscellaneous Concrete	2**	0	3	Yes
2708	StrMiscConc_h	Structural Miscellaneous Concrete Hidden	2**	2	2	Yes
3673	Stucco	Stucco	1	0	0	Yes
3674	Stucco_h	Stucco Hidden	1	3	0	Yes
2200	SubStrConc	Substructure Concrete	2	0	3	Yes
2201	SubStrConc_h	Substructure Concrete Hidden	2	2	3	Yes
2210	SubStrConc2	Substructure Concrete Misc	2	0	3	Yes
2211	SubStrConc2_h	Substructure Concrete Misc Hidden	2	2	3	Yes
2100	SupstrConc	Concrete Deck, Segmental Box	2	0	3	Yes
2101	SupstrConc_h	Concrete Deck, Segmental Box Hidden	2	2	2	Yes
2102	SupstrConc2	Concrete Diaphragms, etc	2	0	3	Yes
2103	SupstrConc2_h	Concrete Diaphragms, etc Hidden	2	2	2	Yes
2704	Symbols	All Symbols not covered by Structures Site Menu	0	0	1	Yes
3506	SymbolsElectric	Electrical Symbols	0	0	1	Yes
2007	Tables	Data Tables	0	0	1	Yes
2014	TextNotes	Text Notes	0	0	0	
2015	TextRdwyInitials	Text - Roadway Initials	0	0	1	
2016	TextStructShtNo	Sheet Number for Structures border sheet numbers	0	0	0	
2010	TextStructures	Structures Text	0	0	1	Yes
2013	TextStructuresLabel	Used By Sheet Navigator	0	0	0	
2140	TrafBarrierConc	Traffic Barrier Concrete	2	0	3	Yes
2751	UtilityCableTV	Utility Cable TV	6	0	0	Yes
2752	UtilityFiberOptics	Utility Fiber Optics	6	0	0	Yes
2753	UtilityGasMain	Utility Gas Main	0	0	0	Yes
2754	UtilityPower	Utility Power	2	0	0	Yes
2755	UtilitySewer	Utility Sewer	3	0	0	Yes
2757	UtilityTelephone	Utility Telephone	6	0	0	Yes
2758	UtilityWater	Utility Water	7	0	0	Yes

Level No.	Level	Description	ByLevel Color	ByLevel Style	ByLevel Weight	Plot ?
2500	Walkways-Ladders	Steel Ladder & Walkway Components; Timber, Steel, Plastic Landings & Catwalks	6	0	1	Yes
2600	WallConc	Wall Coping Concrete	2	0	3	Yes
2601	WallConc_h	Wall Coping Concrete Hidden	2	2	2	Yes
2612	WallHardware	Wall Hardware	3	0	0	Yes
2606	WallMSEPanel	Wall MSE Panels	2	0	3	Yes
2607	WallMSEPanel_h	Wall MSE Panels Hidden	2	2	2	Yes
3602	WallsArch	Interior Walls	6	0	2	Yes
3603	WallsArch_h	Interior Walls Hidden	6	3	1	Yes
2610	WallSoundConc	Precast Soundwall Concrete	2	0	3	Yes
2611	WallSoundConc_h	Precast Soundwall Concrete Hidden	2	2	2	Yes
2608	WallTempCritical	Wall Temporary Critical	3	0	1	Yes
2609	WallTempCritical_h	Wall Temporary Critical Hidden	3	2	1	Yes
2702	WaterLines	Water Line, Symbol	15	0	1	Yes
2501	Whaler	Whalers, Timber, Plastic	142	0	1	Yes
3604	Windows	Windows	3	0	2	Yes
3605	Windows_h	Windows Hidden	3	3	1	Yes
3661	Wood	Wood	142	0	1	Yes
3662	Wood_h	Wood Hidden	142	3	0	Yes

18.6.1 BORDERS, SCALES, TEXT SIZES AND WEIGHTS

18.6.1.1. BORDERS

Draw all elements at "Full Size" completely before placing text or dimensions. After drawing all elements, determine the "Overall" Border scale required. Scale any details up or down as required at this time. Select the appropriate Border scale from the Structures Menu and place the Border Cell. Sheets that reside in the Structures Component of the plan set shall use the Structures Border cell “Sheet-Border”. Sheets requiring Structures design that reside within other discipline components of the plan set (Roadway, Lighting, etc.) shall use the Border Roadway w/Initials cell “Sheet-Rdwy”. For FDOT2010 files, once the border scale is set, the Annotation Scale should be set via Structures Menu at the matching scale.

Select the text style from the Structures Menu, then place text and Dimensions. It is helpful to show the scale of the drawing and related details inside the display area of the file, but outside of the Sheet Border area. This is helpful to all users who work on the file.

18.6.1.2. SCALES

The following chart is intended to aid the user in determining the appropriate scale for placing the border and text on a drawing based on the actual size of the drawing. Calculations are based on a 9.60" x 15.40 drawing area inside the border.

Architect’s Scales

Drawing Scale	Active Scale (AS)	Height (FT.)	Width (FT.)
1/16" = 1'	192	153.59	246.39
3/32" = 1'	128	102.40	164.26
1/8" = 1'	96	76.80	123.20
3/16" = 1'	64	51.20	82.13
1/4" = 1'	48	38.40	61.60
3/8" = 1'	32	25.60	41.07
½" = 1'	24	19.20	30.80
3/4" = 1'	16	12.80	20.53
1" = 1'	12	9.60	15.40
1 ½" = 1'	8	6.40	10.27
3" = 1'	4	3.20	5.13
6" = 1'	2	1.60	2.57
1 = 1	1	.80	1.28

Engineer's Scales

Drawing Scale	Active Scale (AS)	Height (FT.)	Width (FT.)
1" = 500'	6000	4799.81	7699.69
1" = 400'	4800	3839.85	6159.75
1" = 300'	3600	2879.88	4619.82
1" = 250'	3000	2399.90	3849.85
1" = 200'	2400	1919.92	3079.88
1" = 150'	1800	1439.94	2309.91
1" = 120'	1440	1161.95	1847.93
1" = 100'	1200	959.96	1539.94
1" = 80'	960	767.97	1231.95
1" = 60'	720	575.98	923.96
1" = 50'	600	479.98	769.97
1" = 40'	480	383.98	615.98
1" = 30'	360	287.99	461.98
1" = 20'	240	191.99	307.99
1" = 15'	180	143.99	230.99
1" = 10'	120	96.00	153.99

FORMULAS:

Architect's Scale:

AS = 12 / Drawing Scale,

Ex. 1/4" = .25 in., then 12 / .25 = 48, Therefore AS = 48.

W = Sheet Width (in.) / Drawing Scale

Ex. 1/4" = .25 in., then 15.36/ .25 = 61.44, Therefore W = 61.44.

H = Sheet Height (in.) / Drawing Scale

Ex. 1/4" = .25 in., then 9.72 / .25 = 38.88, Therefore H = 38.88.

Engineer's Scale:

AS = 12 x Drawing Scale,

Ex. 1"=500', then 12 x 500 = 6000, Therefore AS = 6000.

W = Sheet Width (in.) x Drawing Scale.

Ex. 1"=500', then 15.36 x 500 = 7680, Therefore W = 7680.

H = Sheet Height (in.) x Drawing Scale,

Ex. 1"=500', then 9.72 x 500 = 4860, Therefore H = 4860.

18.6.1.3. TEXT SIZES AND WEIGHTS

For FDOT2010 workspace:

Annotation = 0.0063 x (Annotation Scale). The use of annotation scale allows the text and dimensioning to be rescaled easily via the Scale>Annotation Scale Structures Menu items.

The SDO uses special, custom fonts in its drawings and CADD programs; specifically, the FDOT and FDOTMono true type fonts (ttf). These fonts are stored in the FDOT.ttf and FDOTMono.ttf files supplied with the FDOT CADD software.

The zDOTFont.rsc and StructuresFont.rsc resource files are delivered in the FDOT2010 software suite providing support for legacy MicroStation fonts 168, 169, 68, and 69. These fonts should not be used for new production work.

The Structures Menu provides all needed text sizes. The minimum Annotation text size after plotting shall be .0063'.

All standard text sizes may be selected from the Structures Menu.

TITLE	FONT	SIZE (Ft)
Revisions	FDOT	.0050
Initials	FDOT	.0058
Annotation/Table Data	FDOT	.0063
View/Sheet/Sect Titles	FDOTBold	.0080
Large	FDOTBold	.0084
Larger	FDOTBold	.0100

Note Sizes shown are at 1:1 ratio.

18.6.2 COLORS

Colors depend on the color table attached to the design file. Therefore, it is important that "color.tbl" provided by MicroStation is attached to all structures design files.

18.6.3 SPECIAL SYMBOLS

Special symbol characters are provided in the delivered FDOT true type font files. These characters may be accessed via the Insert Symbol tool provided in the MicroStation Word processor dialog.

These characters include but are not limited to: fractions, mathematical symbols, survey symbols, boring symbols, Greek letters, Super/Sub Scripts.

18.6.4 DIMENSION SETTINGS

Dimension styles are defined in the StructuresSeed.dgn. Styles are provided for Dimensioning and Notes for various terminators and leaders. Make every effort to use automatic dimensioning with element association enabled.

18.7 PROJECT PACKAGE – ELECTRONIC SUBMITTAL

Drawing files used to create a project should be submitted on CD. The CD shall have all files in a directory tree as described in Chapter 4, Project Directory Structure. The delivery CD is the "official" CD and should be kept in a safe place during the life of the project.

When the office responsible for the Structures project receives the CD, the contents of the CD shall be authenticated using PEDDS to ensure the data on the CD has not been modified.

The next step in the process is to create a project on the server or workstation that meets the FDOT directory structure standards. Using the Create Project Application provided with the FDOT CADD Software ensures adherence to this standard. See documentation on the Create Project Application for complete details.

Copy files from the delivered CD into the corresponding project directory created above.

18.8 QUALITY CONTROL

Refer to Chapter 7 for FDOT QC Requirements and instructions.

18.9 USE OF NON-STRUCTURES REFERENCE FILES

Information from other disciplines such as roadway, utilities, etc. should not be copied into Structures design files, as they will be flagged as invalid by the Quality Control Program and adversely affect the Quality Compliance Report.

When it is necessary to use or present this type of information, reference it into the Structures design file. Include Reference files with the Electronic Plans Submittal.

Structures design files for projects let after July 1, 2003 must comply with the Quality Control process and may not be claimed as an exception in the Quality Control Report.

The preferred method of referencing another discipline's file is a "direct reference" to the working design file. This assures the reference data is always current. If access to the reference file is restricted or the file is not usable in its current form (i.e. incorrect symbology), the user should make a copy of the other discipline's file, manipulate the elements within the file and then reference it into the structures design file.

The obvious drawback of the second method is that manipulations such as color and level changes, etc may have to be done numerous times during the course of the project to keep the design file's content current.

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Chapter 19 - UTILITIES STANDARDS

CADD Production Criteria Handbook

19.1 INTRODUCTION OF UTILITY COORDINATION OF CADD FILES

Although Florida Department of Transportation (FDOT) has standardized on the MicroStation design file format, many utilities and utility firms use AutoDesk's AutoCAD. Due to the inherent differences in the products, concerns were voiced over the distribution of Utility Computer Aided Design and Drafting (CADD) deliverables. Currently the FDOT has asked Utility companies to markup roadway construction plans at each design phase. The work is duplicated because those same markups are transferred to CADD files.

During the fall of 1995, the Florida Utilities Coordinating Committee (FUCC) met and determined that a dialog was needed to create a set of guidelines for the utility coordination within an electronic format. The recommendation of the appointed taskforce was that the CADD standards would be revised for utilities, including expanding levels from two (Levels 10 and 8) to a full 63 levels. Both the existing and proposed utilities would have their own files with 63 levels. The process in which these electronic files would be shared was determined and an alternative method of delivery was also defined, ASCII input files. The transfer of that data via FTP was also established as the standard means of data exchange.

In 2004 a new Utility Task Team was formed to develop CADD standards for the migration from MicroStation J V7 to MicroStation 2004 V8 and from AutoCAD 2000 to AutoCAD 2004.

The purpose of this chapter is to define FDOT2010 guidelines for the sharing of data between the District Offices and the Utility Agency/Owner (UAO) and the final file format required for electronic submittals. Utility conflicts shall be shown on the roadway profile using utility cross section by-level symbology and cells.

19.1.1 BENEFITS OF UTILITY COORDINATION OF CADD FILES

Coordinating the sharing of data between the Districts and the Utility companies is advantageous to both parties. Some of the benefits are:

- Increased accuracy (No longer a hand-drawn markup of construction drawings).
- Reduction in liability (The Utility owner is responsible for the placing of their facility, while the FDOT is responsible for its roadway construction documents).
- Reduction in work effort (No longer is redundant data being placed as markups on several sets of plans).
- Reduction in paper (Reproduction issue of phased construction sets).
- Provides UAO access to FDOT resources (cells, line styles, etc) so that both parties are using the same standard resources.
- Access to the FDOT graphic files. (This allows the UAO to use the project data as As-Builts for later design of new utilities).

19.2 FDOT COMMITMENT

The FDOT will provide tools, training and information to Utility Companies in several areas of electronic data usage and exchange. In an effort to improve the exchange of data between FDOT and Utility Companies, FDOT has:

- Revised the CADD FDOT2010 Standards for MicroStation.
- Provided information for migrating existing electronic files to the FDOT2010 standards.
- Created new FDOT programs and menus to assist the UAO or consultant in the production of Utility Plans in accordance with the FDOT2010 Standards.

19.3 UTILITY FILE COORDINATION OPTIONS

There are three options available for the UAO to share files with FDOT:

- Exchange of graphic files (DGN or DWG) – the preferred option
- Creation of ASCII files
- Import of Geographic Information System (GIS) data

19.3.1 SHARING OF GRAPHIC FILES

The sharing of files between the Districts and the UAO has two possible paths. If the UAO uses MicroStation, or AutoCAD the file is simply created to FDOT 2010 CADD Standards and returned to the District for review. The UAO will then use these files as XREF's in AutoCAD or MicroStation to create the existing or proposed utility files. These files (Existing or Proposed) would then be submitted back to the District. Since utility work is not part of a contract, it is the District's responsibility to come to an agreement with the Utility Company as to the obligation of graphic files or the second possible path ASCII files.

19.3.2 ASCII INPUT FILE

The second option is the ASCII input file that can be created from existing or proposed utilities. The ASCII file format will be either in Station/Offset or in Northing/Easting. It does not require the use of AutoCAD nor MicroStation. Both methods will contain information pertinent to the utility, as well as, the type of utility and where it is located in regards to the (survey baseline) alignment or state plane coordinates.

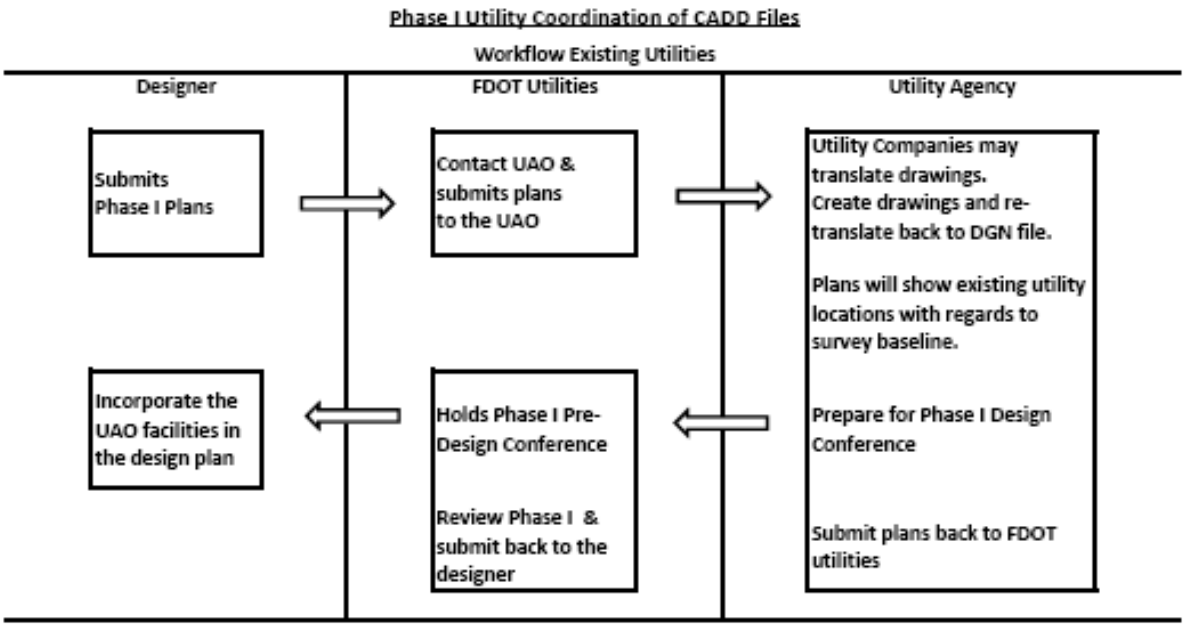
19.3.3 GEOGRAPHIC INFORMATION SYSTEM (GIS) FILE

In the event that a utility company maintains a GIS database of utility data and would make it available for use, this data can be imported into MicroStation or AutoCAD. MicroStation's and AutoCAD's geographic software allows the user to import GIS shape files into a DGN or DWG file. The imported elements maintain the database information allowing text annotation and re-symbolization by a specific query or criteria.

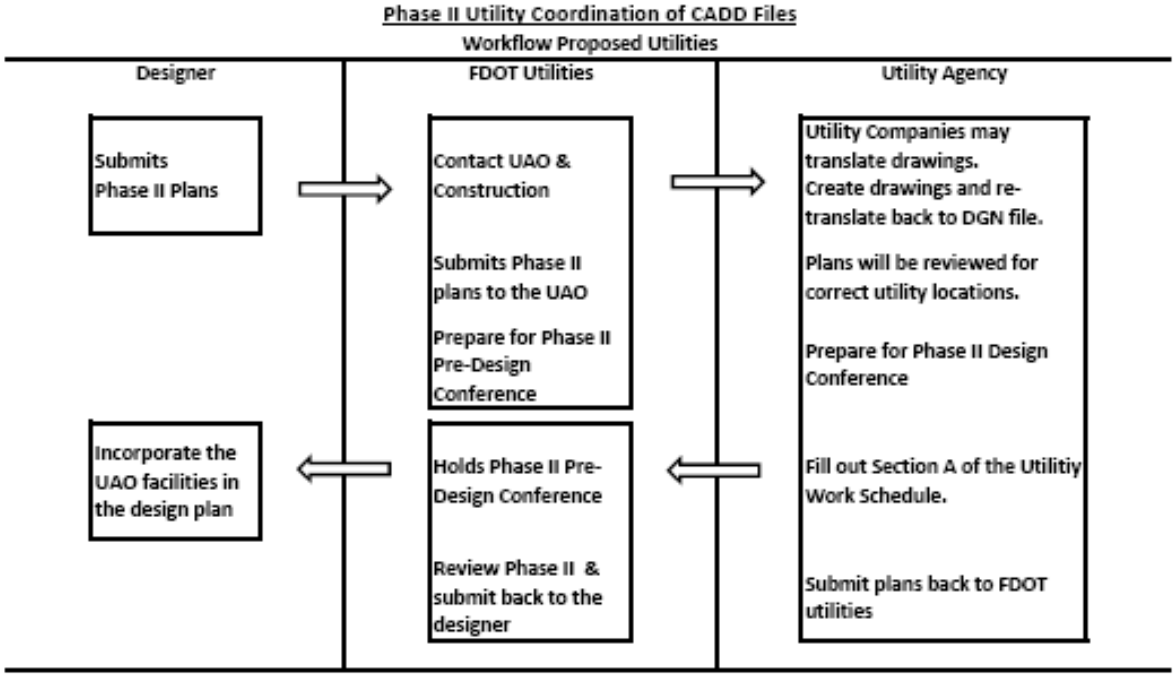
19.4 UTILITY COORDINATION WORKFLOW

Each workflow is shown as a flow chart from the Designer to the FDOT District Utilities Office, then to the Utility Agency and back to the FDOT District Utilities Office and finally to the Designer.

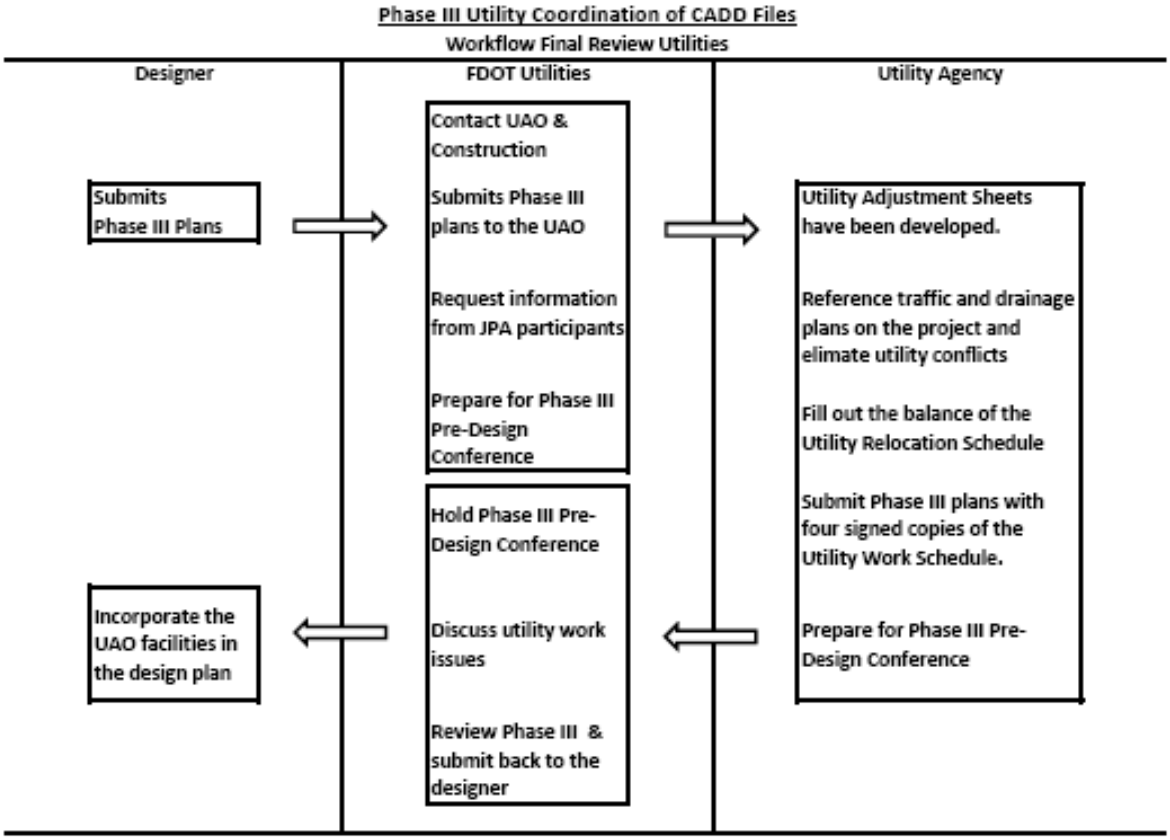
19.4.1 PHASE I UTILITY COORDINATION WORKFLOW



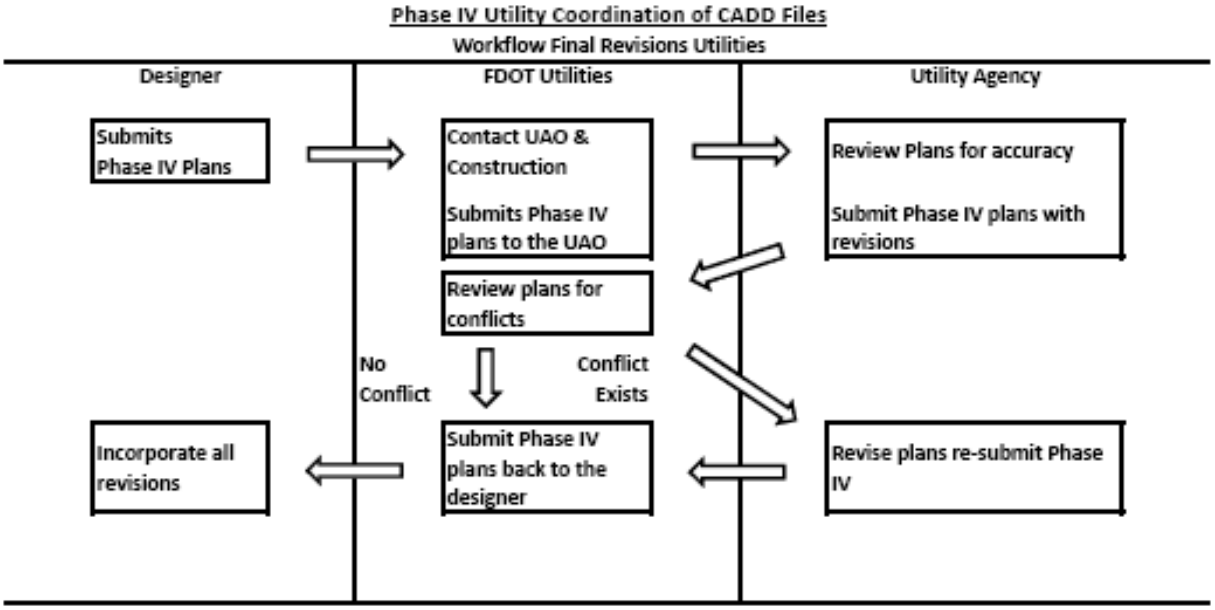
19.4.2 PHASE II UTILITY COORDINATION WORKFLOW



19.4.3 PHASE III UTILITY COORDINATION WORKFLOW



19.4.4 PHASE IV UTILITY COORDINATION WORKFLOW



19.5 PROCEDURE FOR EXCHANGE OF FILES

After the FDOT District Utilities Office (via Utility Coordinator) has received the current phase submittal from the Roadway Designer, they will contact the involved utilities and notify them of the phase submittal. The UAO will then receive the phase documents from FDOT that will contain the Roadway Plans, the necessary CADD files and any Utility Relocation Agreements and Schedules. The required electronic files include the proposed roadway design; the existing topography, the existing and proposed ROW and the existing utilities gathered from the survey and previously supplied data.

These files will be delivered in MicroStation DGN or AutoCAD DWG format only. The files will be used as a “backdrop” either as XREF’d file or as Reference models to the utility drawings.

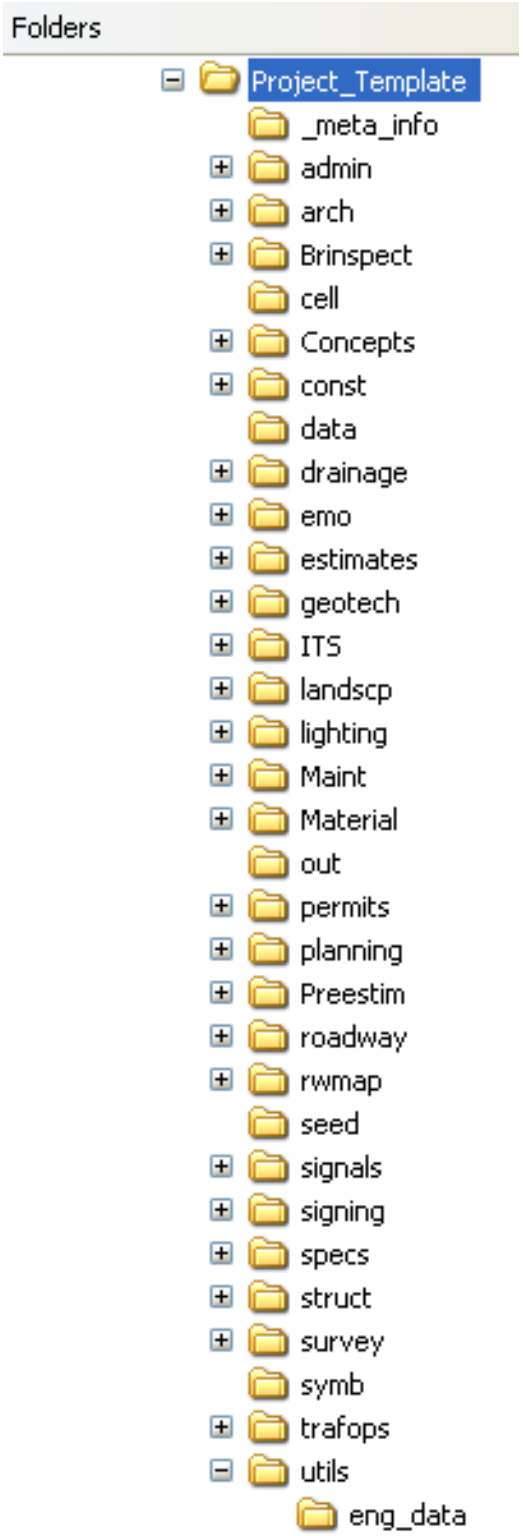
No editing of any files provided by FDOT is permitted. The UAO will be placing data into newly created files at all times. The UAO bears the full legal responsibility of any edits made to the topographic, design, drainage or existing utility file(s) provided by the FDOT. File naming standards should be maintained at all times. (See the CADD Production Criteria Handbook (CPCH) for the complete list.)

19.5.1 STANDARD ROADWAY FILES

The standard file names shall be used at all times. The standard file naming conventions are an eight (8)-digit prefix followed by a .dgn or .dwg suffix. The discipline files that are shared and referenced by utilities are in the Roadway Design Group. While a typical project may contain many files, the following files on the next page are the main ones used for sharing between Roadway Design and Utilities:

DSGNRD_.dgn	Roadway Proposed Design
KEYSRD_.dgn	Roadway Key Sheet
PLPRRD_.dgn	Roadway Plan and Profiles
PLANRD_.dgn	Roadway Plans
PROFRD_.dgn	Roadway Profiles
TOPORD_.dgn	Topography Existing
RW(7 digit FP ID).dgn	R/W Existing and Proposed
DREXRD_.dgn	Drainage Existing
DRPRRD_.dgn	Drainage Proposed
UTEXRD_.dgn	Utilities Existing
UTPRRD_.dgn	Utilities Proposed

19.5.2 FDOT 2010 PROJECT DIRECTORY



19.5.3 STANDARD FILE NAMES

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##.ex***t***

Where **AAAA** = *abbreviated file description*, **BB** = *Discipline Denotation*, ## =*Sequence number.*

Note Please see CPCH Chapter 4 for more information.

If the Utility work is accomplished by a Highway Contractor as a separate contract (UWHC plans), the discipline designation for the file name is "UW". For example a utility adjustment file name would be utaduw01.dgn. If the utility adjustments are included in the Roadway plan set the discipline designation for the file name is "RD". For example a utility adjustment file name would be utadrd01.dgn. See Chapter 13 for the standard Utility file names defined for use by Roadway Design.

The following table defines the Utilities File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequence numbering.

File Type	File Name	Model	File Description	Rule File	Seed File	Critical File
Borders & Sheets	BDPLUW.dgn	default	UWHC Border for Plan Sheets when sheet is referenced	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	GNNTUW.dgn	default	UWHC General Notes Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PLANUW.dgn	default	UWHC Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Borders & Sheets	PROFUW.dgn	default	UWHC Profile Sheet	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clip Borders	CLIPUW.dgn	default	UWHC Clip Borders	cliprd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPLUW.dgn	default	Motif files for plan sheets	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping	MTPRUW.dgn	default	Motif files for profile sheets	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Existing Topography	TOPOUW.dgn	default	UWHC Topography - Existing (Utilities or Drainage not included)	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Key Sheet	KEYSUW.dgn	default	UWHC Key Sheet	keysht.rul	$(MX_SEEDIR)fdotseedkeymap.dgn	
Proposed Design	TEXTUW.dgn	default	UWHC Text Labels and Miscellaneous Descriptions	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Utilities	UTADUW.dgn (UTADRD.dgn)	default	UWHC Utility Adjustment Sheet	utadrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Utilities	PLPRUW.dgn (PLPRRD.dgn)	default	UWHC Plan & Profile Sheet	plprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Utilities	UTDTUW.dgn	default	UWHC Special Details	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Utilities	UTEXUW.dgn (UTEXRD.dgn)	default	UWHC Utilities - Existing	utexrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Utilities	UTPRUW.dgn (UTPRRD.dgn)	default	UWHC Utilities - Proposed	utprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Verified Utilities	SBVHUW.dgn	default	UWHC Summary of Verified Utilities (2D)	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Verified Utilities	UTVHUW.dgn	default	UWHC Survey of Verified Utilities (3D version of UTEXRD.dgn)	utexrd.rul	$(MX_SEEDIR)fdotseed3d.dgn	X

19.6 UTILITY PLANS

The plans should be sufficiently detailed so a determination can be made that all indicated work is necessary, that the planned adjustment will meet with all design policy requirements of the Department and that such plans represent the most economical means of making the adjustment. For **REIMBURSABLE** work, the plans should be detailed so that the quantities of major items of materials can be correlated with like items and quantities as they appear in the estimate.

Major highway construction elements such as pavement areas, bridges, drainage structures, right of way, lane widths, control of access limits and highway-straight-line numbers should also appear on or in the plans. Construction plans prepared by your office in lieu of marked Department plans will be satisfactory, provided they meet all of the above mentioned requirements.

The plans should be marked with the following color code:

Green Line – for all existing facilities to remain in place

Red Line – for all existing facilities to be removed or abandoned

Brown Line – for all proposed new construction

One set of the completed plans should be returned to the Department with each copy of the Utility Agreement as part of the legal assembly.

19.7 RESOURCE FILES

FDOT has provided custom line styles for utility related linear repeating patterns. Also provided are utility related cells. The utility custom line styles are stored in a line style resource file located in *drive: \FDOT2010\Resources\symb\utilities.rsc* and the utility related cells are located in *drive: \FDOT2010\Resources\cell\syeng.cel* and *\FDOT2010|Resources\cell\uteng.cel*.

"*Drive*" is the hard drive on which the FDOT2010 software is installed. The path to the resource file and the cell libraries are set by the MicroStation configuration variables MS_SYMBRSC and MS_CELL. These are set during the installation of the FDOT2010 software.

Note Refer to Chapter 3 for a complete listing of the FDOT Custom Line Styles.

19.8 SYMBOLOGY STANDARDS

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the Utilities discipline with associated Rule Files are found in Section 19.5.3 of this chapter.

Note Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.

19.9 FDOT MENU

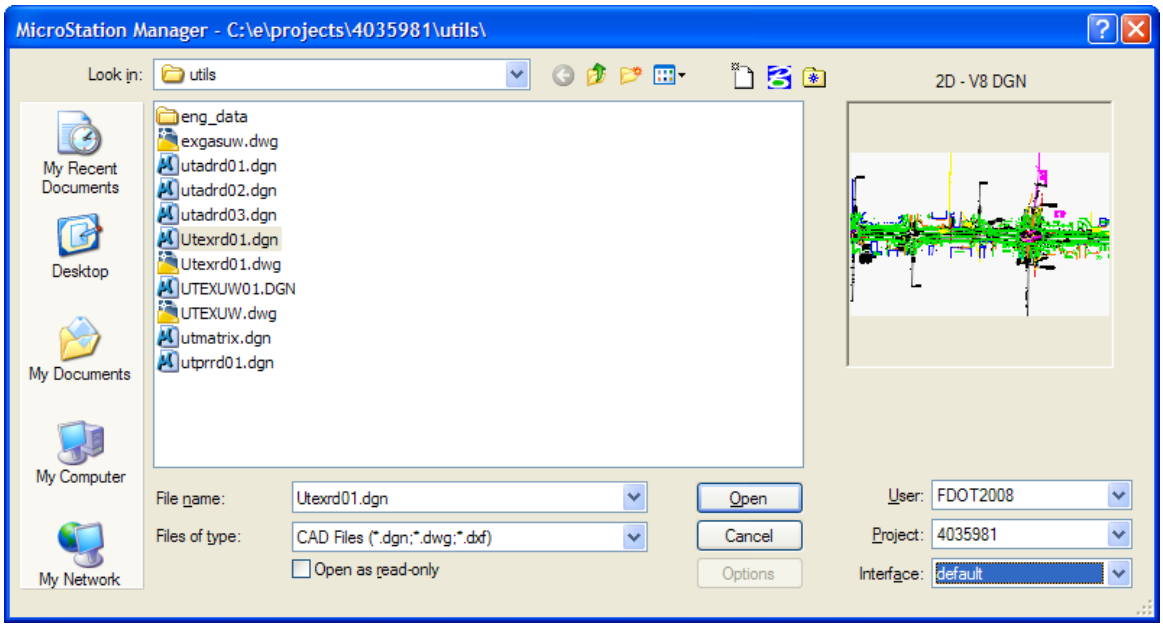
19.9.1 MICROSTATION ENVIRONMENT

FDOT uses a workspace to setup its MicroStation environment. A workspace is a customized MicroStation work environment that uses specific support files, defines configuration variables and sets paths. The FDOT2010 Workspace also defines the location of the projects and creates the standard project directory structure. Many of the FDOT2010 programs and supporting files are dependent on GEOPAK being activated.

The FDOT 2010 workspace is made up of two parts: the User Configuration and the Project Configuration.

By selecting the Workspace "FDOT2010", the configuration 'FDOT2010.ucf' is accessed. This file then "calls" two other files, 'sitefdot.txt' (which sets all of the standard variables) and utilities.txt (which sets the utility specific variables). These configuration files define the location of level libraries, cell libraries, conversion files, seed files and many other types of files.

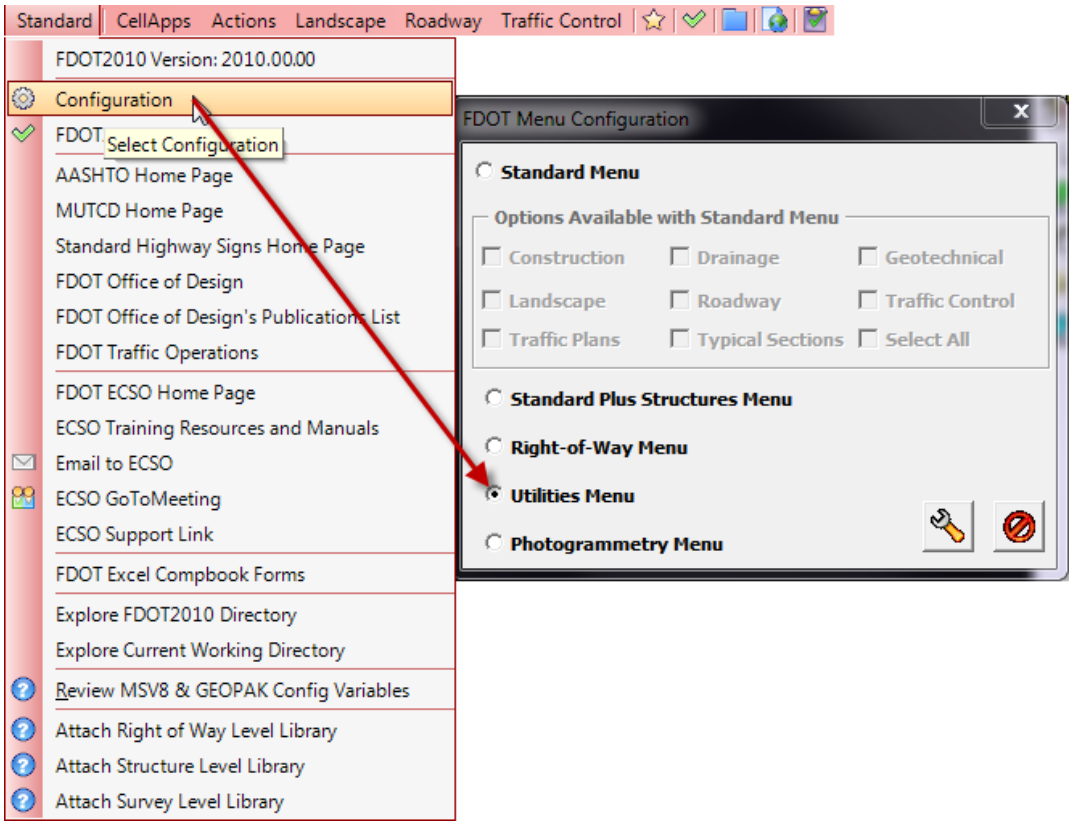
In addition to the User configuration file there is a Project configuration file. This file will define the Financial Project Identification Number and the location of the project files. To open in MicroStation, double click on the FDOT2010 MicroStation icon. Select the appropriate project or create a new one.



Note The MicroStation Resource Files are located in the \FDOT2010\Resources\ directory.

19.10 USING FDOT MENU

From the FDOT Menu option Standard, select *Configuration* to open the Utility Menus.

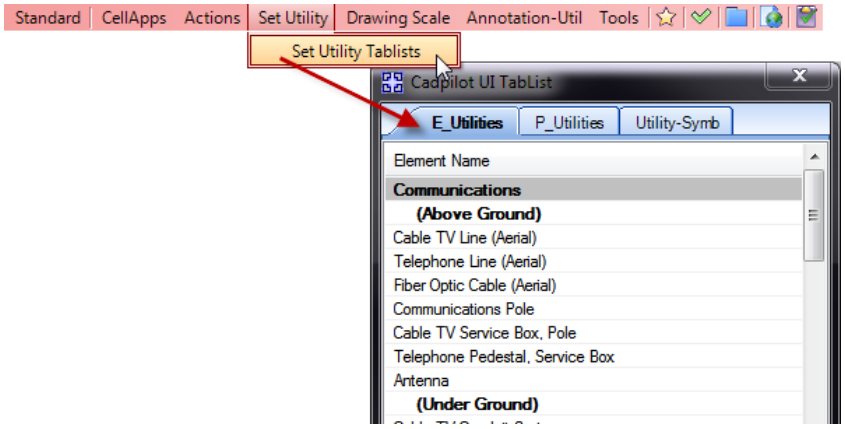


19.10.1 UTILITY MENU

FDOT Menu *bars* are used to send commands to MicroStation and AutoCAD. Menu bars provide a simple, low-profile interface designed to access ***hierarchical*** **menus and submenus** of CAD standards and design automation tools.

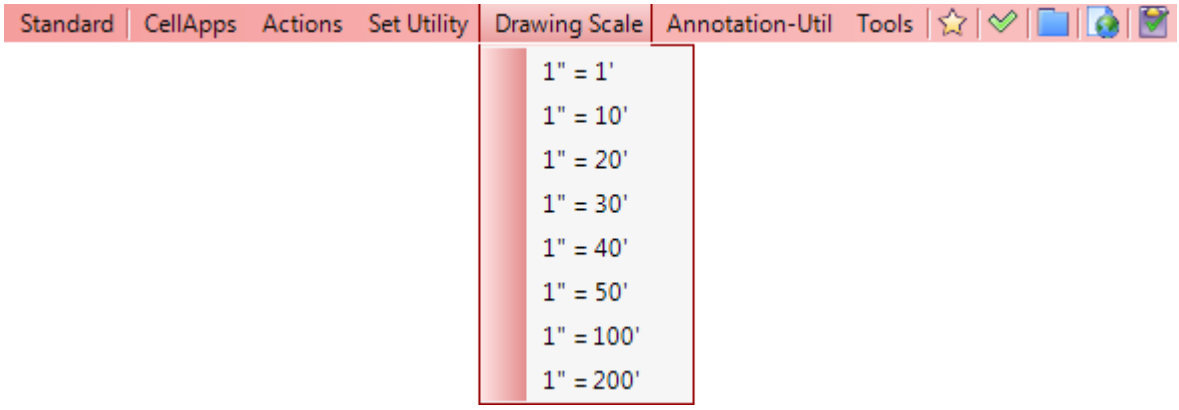
19.10.2 SET UTILITY

Set Utility option links to a TabList of all Existing and Proposed Utilities. Select the utility feature desired from the TabList to automate symbology.



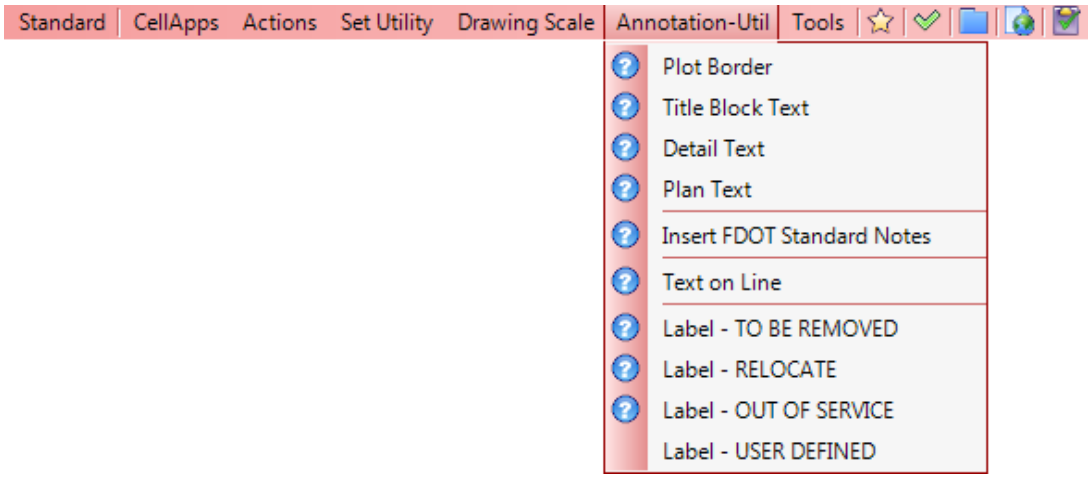
19.10.3 DRAWING SCALE

Drawing scale sets the active scale in the file for the placement of cells and text.



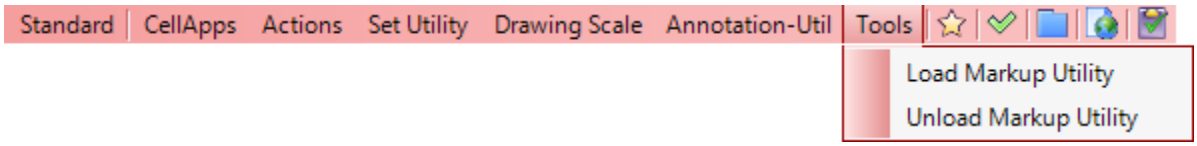
19.10.4 ANNOTATION

This option sets the commands for the placement of standard text labels.

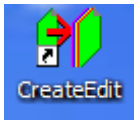


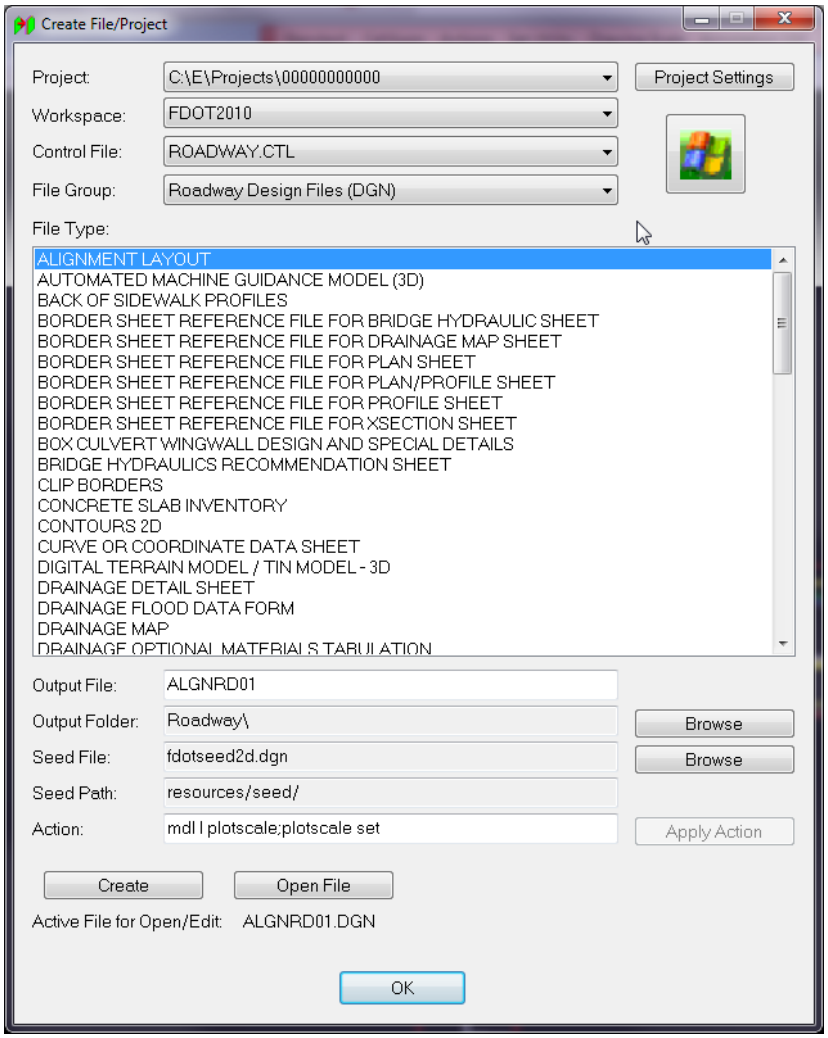
19.10.5 TOOLS

This option allows the Markup Utility VBA to load or unload.



19.11 CREATE / EDIT FILE

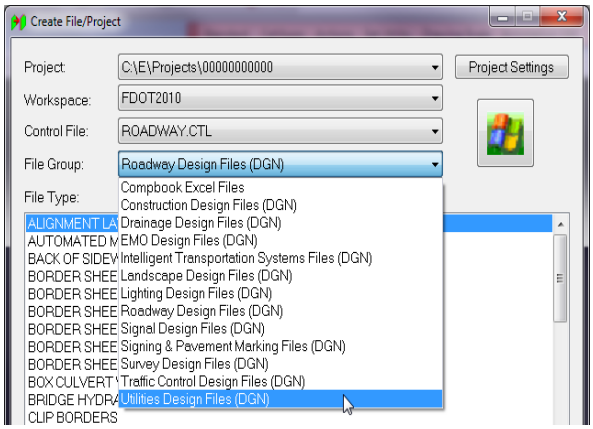




The Create/Edit File program is a Visual Basic program that runs external to MicroStation and AutoCAD and from within MicroStation and AutoCAD.

This application uses an ASCII file called a control file (*.ctl) to create, text files, MicroStation design files and AutoCAD drawing files. New files are created according to the standard file naming conventions and the correct seed files. The file is then placed into the current working directory. After a file is created the user has the option to open the file.

The File Group defines the standard file names for each discipline.

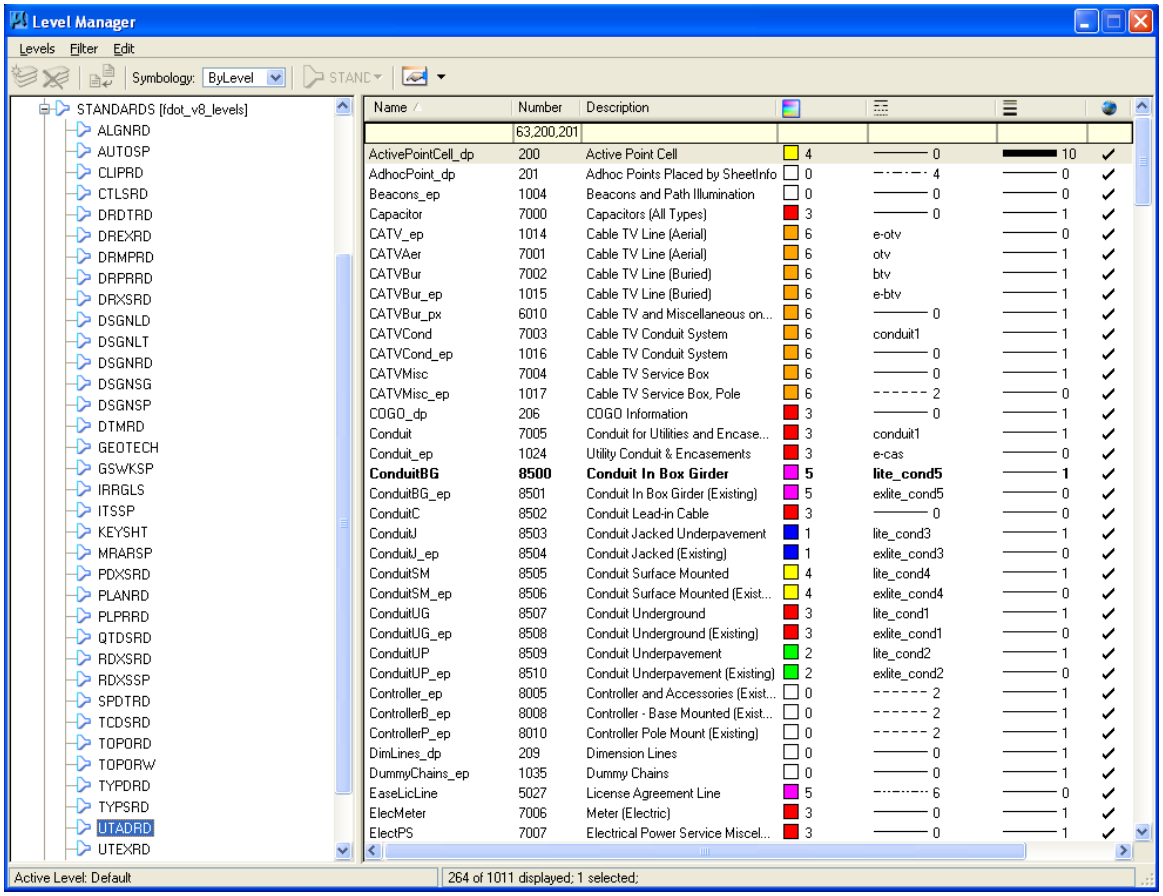


To use, select the Utilities Design Files (DGN) group or the Utilities Design (DWG) group from the File Group drop down.

Select a file from the File Type listing and then click **Create**. The file is created using the correct "seed" file.

Click on **Open DGN** to open the file and review the working units and resolution from the MicroStation menu *Settings* > *Design File* and then click on working units from the DGN File settings list.

Review FDOT standard levels for utilities from the MicroStation menu *Settings* > *Level* > *Manager* and then click on Filters and select Utilities.

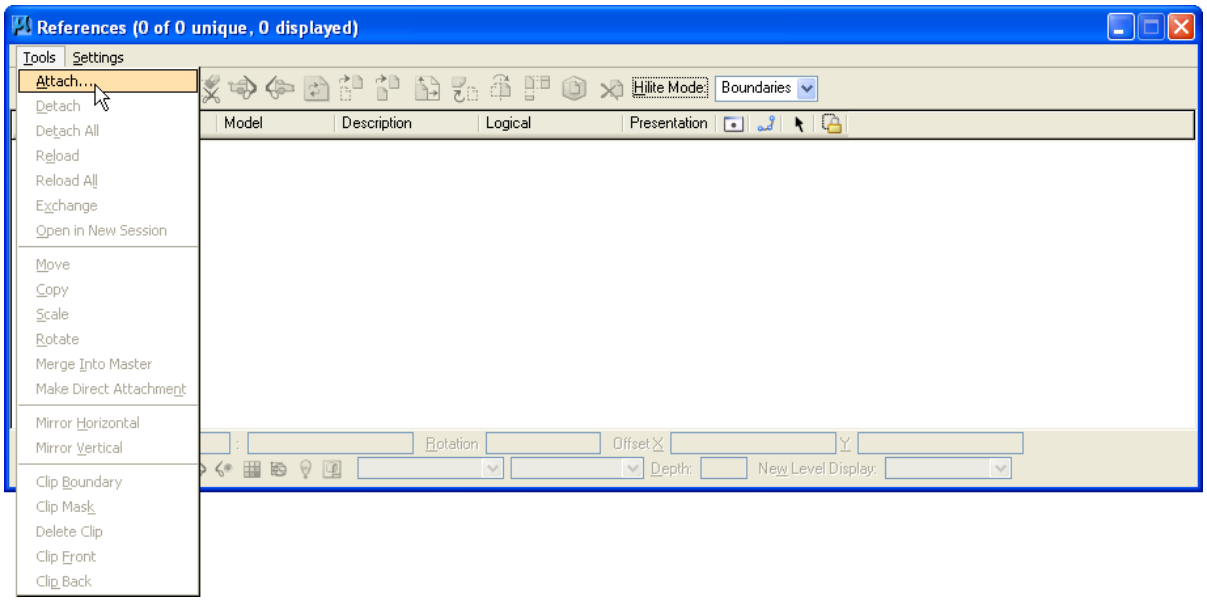


19.12 REFERENCING FDOT DESIGN FILES

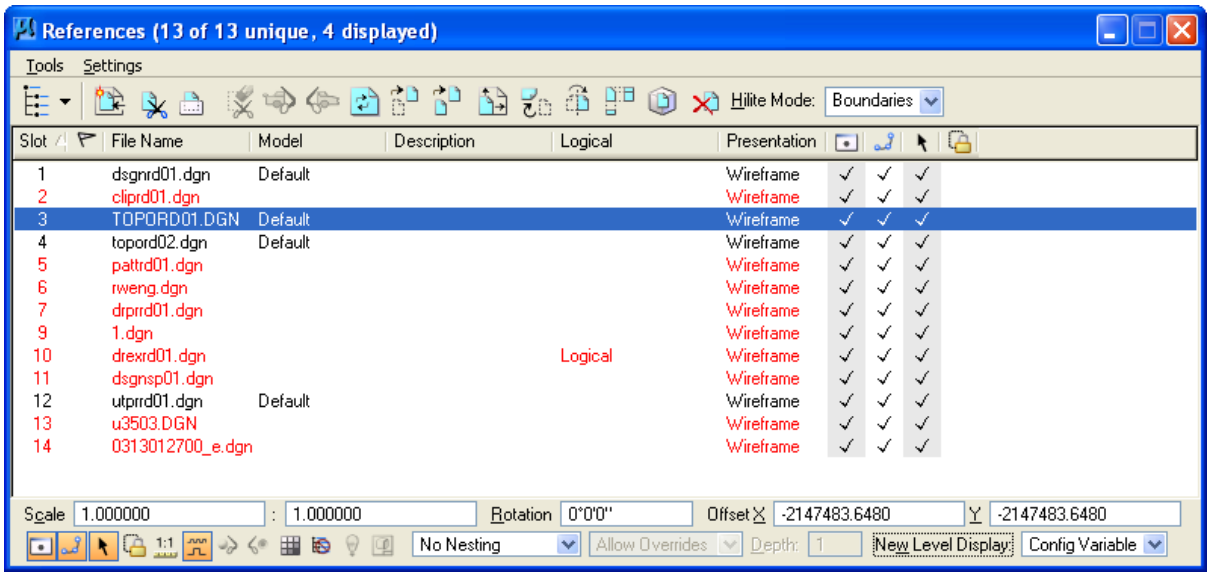
FDOT will supply to the utility company or their consultant, the survey topography file and the proposed design file in MicroStation DGN format. With the advent of MicroStation V8, the Roadway designer could possibly supply the same files in DWG format if this is agreed upon between the two parties.

After receiving the electronic Roadway files, the Utility designer will reference the Roadway files to the utility file. **The Roadway files should not be modified at all.**

To attach the Roadway design files, from the MicroStation menu select *File* > *Reference*. From the References dialog box, click on *Tools* > *Attach*.



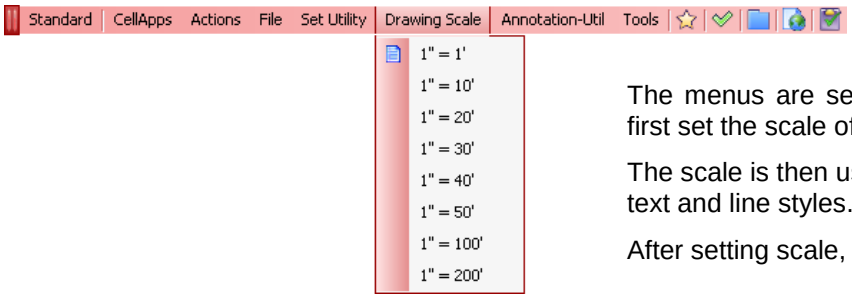
See the image below with the various design files attached.



19.13 DRAWING UTILITY LINES AND CELLS

The FDOT Menu provides tools to set the scale, place cells and labels and draw custom utility line styles. Setting Scales

19.13.1 SETTING SCALES



The menus are set up to allow the user to first set the scale of the file.

The scale is then used to place cells to scale text and line styles.

After setting scale, select the desired utility.

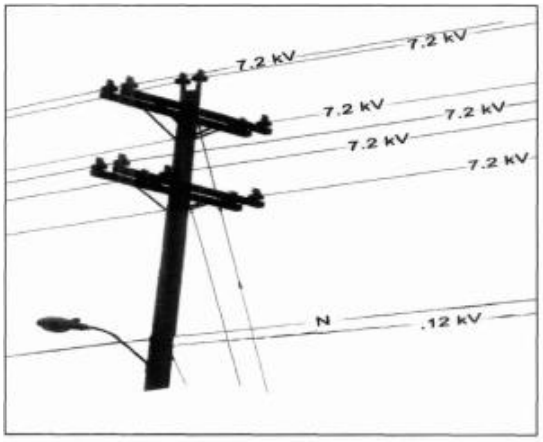
19.13.2 OSHA RULE 1926 OVERHEAD ELECTRICAL LINES CLEARANCES

FDOT issued Roadway Design Bulleting 11-03 stating that a new OSHA Rule (29 CFR Part 1926) Cranes and Derricks in Construction went into effect on November 8, 2010. The new regulations control equipment operations in the vicinity of overhead electrical facilities. Contractors performing work within the Departments right of way in the vicinity of overhead electric lines with voltages of 50 kV or greater may be impacted by the new regulations. The OSHA Rule has a 20 foot "trigger distance."

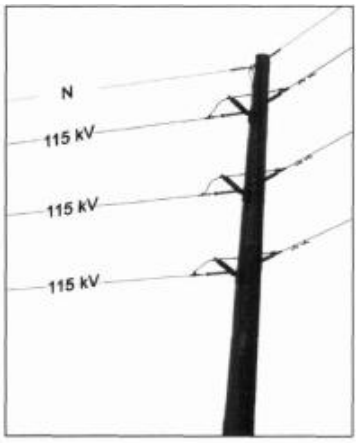
19.13.2.1. Design Implementation

It was determined that labeling of the voltage for overhead electric lines would provide the information necessary for the contractor to determine the operating clearance for his equipment to bid the project. Currently labeling of the line voltage of existing overhead electric lines may not be consistent. Design Index 002 shows labeling of the line voltage for overhead electric facilities. The most common practice, however, has been to use only the "OE" line style that is propagated using standard FDOT software.

For all projects with a letting date after July 1, 2011, all overhead electrical facilities shall be labeled with the line voltage. Utility owners will be required to furnish the line voltages at the coordination phase. Multiple lines with different voltages may be found on a common pole line. For labeling purposes only one line should be shown even if there are multiple lines with different voltages. For poles with multiple lines and multiple voltages which do not exceed the50kV threshold (see Example 1), the line should be shown in the plans as -----OE (< 50kV)-----.



Example 1



Example 2

For poles with multiple lines and multiple voltages which exceed the 50kV threshold (see Example 2), the line with the greatest vertical clearance will be labeled first, separated by a slash mark, and followed by the next voltage as you move down the pole. If multiple voltages exist at the same height, the highest voltage should be labeled. In Example 2, the line should be shown in the plans as --------OE (115kV/115kV/115kV)--------- or ---------OE (All lines 115kV)--------.

For projects with letting dates between now and June 30, 2011, where possible, the electrical facilities should be evaluated. After evaluating, if all the voltages are less than 50kV the voltages do not need to be labeled in the plans. In the special notes and requirements of the "Transmittal of Plans, Specifications, and Estimates Package" provide the following state meant for posting in the advertisement; "All of the overhead utilities shown in the plans are less than or equal to 50kV." However, if there are some voltages greater than 50kV, and there is in sufficient time to revise the plans, provide the following statement in the special notes and requirements for posting in the advertisement. "There are overhead utilities shown in the plans that exceed 50kV."

If you have any questions concerning design implementation, please contact Chester Henson at850-414-4117.

19.13.2.2. Construction Implementation

For all active contracts, require the contractor to comply with OSHA Rule 1926. The Department's policy is to use Option 3 of the rule, which is to determine the line voltage and provide clearance in accordance with Table A. Refer to Table A below to determine minimum clearance distances. For contracts let prior to July 2011, this may involve contacting the utility companies to determine the overhead electric facilities voltage. Coordinate any changes to the utility work schedule and any information requests from the utility companies with the District Utilities Office.

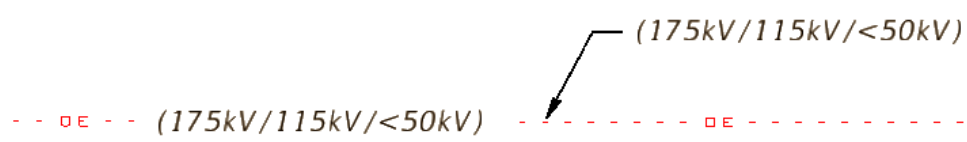
Table A -- Minimum Clearance Distances

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50 ……..	10
over 50 to 200 ……	15
over 200 to 350 ……	20
over 350 to 550 ……	25
over 500 to750 ……	35
over 750 to 1,000 ……	45
over 1,000 ……..……	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution)

Note The value that follows "to" is up to and includes that value. For example, over 50 to 200 means up to and including 200kV.

If you have any questions concerning construction implementation, please contact Stefanie Maxwell at 850-414-4314.

For determination of the minimum clearance, FDOT has adopted two types of labeling (in-line and leader) to be utilized to identify the voltage used in the design files, as shown below:



19.14 ASCII FILE TRANSFER - LOCATING EXIST / PROPOSED UTILS

19.14.1 PURPOSE OF THE ASCII FILE

The purpose of using ASCII files for the transfer of Utility location data is to offer another alternative to the UAO. The most useful platform would be to provide this location information by means of CADD drawings. However, some firms may provide this data via an ASCII file. The UAO can provide data that they may already have in a Coordinate Geometry format and simply translate it into a format that FDOT can accept. An example might be exporting a report from AutoDesk's Land Development Desktop, Eagle Point, Landcadd or any other coordinate based CADD product. This will also suffice for a Utility without any form of CADD software, relying on manual drawings showing either State Plane coordinates or Station Offset.

There are two methods available for transmitting this location data. The first is referred to as the Station/Offset Report and the second method is called the Northing/Easting Report. If possible, the Roadway designer should provide the utility company with an ASCII format file of the baseline geometrics so that they can provide utility location data relative to the baseline and not duplicate existing point numbers or chain names.

19.14.2 ASCII FILE NAME CONVENTIONS

The file naming convention for this input file will be utilex**.inp for existing utilities and utilpr**.inp for proposed utilities. The ** will be replaced by a sequencing number (01, 02, 03 etc.). Each electronic ASCII report file will be stored on media according to the FDOT CADD Deliverable Standards. This media will bear a label with the name of every input file, the utility owner's name, date, state project number and contact person's name and telephone number. When delivery is made, the ASCII report will be accompanied by a printed hardcopy. Provided are four examples of input files. Two examples are of Station/Offset and two are of Northing/Easting, each with and without explicit elevations or depth of cover.

19.14.3 ASCII HEADER CONVENTION

These files will follow a standard format and its header is described below:

1. "Name:" -- Utility owner's name.
2. "Date:" -- Month, Day, Year and optionally, the Time.
3. "Proj:" -- Project Financial Number
4. "Type:" -- Type of utility (Existing or proposed).
5. "File:" -- Filename
6. "Cont:" -- Utility owner's contact person responsible for creating the report.
7. "Note:" -- Any additional information that will describe the utility.

19.14.4 FORMAT OF STATION AND OFFSET ASCII FILE

The Station Offset Report method consists of generating a report, which will locate key utility points along a defined alignment. The report will store those points in the form of a utility chain.

Example of point location: LOC 10020 ON CHA blsr54 STA 18+89.760 OFF -8.534 $BT100

Format of the Command: LOCATE n ON CHAIN name STA station OFF offset $description

LOC	Initiates the locate command.
N	Determines the utility point number (begin with 10,000).
ON	Determines how to locate the utility point.
CHA	Initiates the read chain name command.
NAME	Describes the chain name, usually of the survey baseline, that is provided by FDOT.
STA	Initiates the find station command.
Station	Display's the utility point's station location.
OFF	Initiates the offset distance command.
Offset	The offset distance value, "+" for positive to the right and "-"for negative to the left, to the chain.
Description	The description has two options, the first showing the EL option with a defined elevation and the feature code. The second option shows the feature code and a defined depth of cover.

- **Example of Station Offset Option 1, Defined Elevation**

  LOC 10029 ON CHA blsr54 STA 19+79.818 OFF -8.530 $ EL 2.806000 BT100

The above statement locates point 10029 on chain blsr54 at station19+79.818 left 8.530 at elevation 2.80600 as a feature BT100 or Buried Telephone 100 pair.

- **Example of Station Offset Option 2, Fixed Depth of Cover**

  LOC 10020 ON CHA blsr54 STA 18+89.760 OFF -8.534 $ BT12

The above statement locates point 10020 on chain blsr54 at station 18+89.760 left 8.534 as a feature BT12 or Buried Telephone 12 pair. In the header of the file, there is a line that states the depth of cover. "All elevations assume a 0.750 meter depth of cover."

- **The Store Chain Command**

The store chain command will store a range of points as a utility chain. It provides the point range, the chain name and the feature that describe the utility chain. The format is shown below:

Command	STO CHA BT50A 10020 - 10023 $ BT50 list: BT1 - BT4
Format	STORE CHAIN name list $description
Store	Initiates the Store Chain Command.
Chain	Initiates the Read Chain Name Command.
Name	Names the Utility Chain (BT12 etc.).
Range	Defines a range of stores utility points.
$ Comment	Initiates a comment insertion.
Description	Describes the list of utility point numbers, which make the utility chain.

19.14.5 FORMAT OF NORTHING AND EASTING ASCII FILE

The Northing and Easting report method consists of generating a report which stores key utility points according to their relative State Plane Coordinates (X, Y, and Z) and stores this information in the form of a utility chain.

The store point command is shown below:

Command	S 10020 N 430059.370000 E 127421.085000 EL 2.513 $ BT100
Format	Store n N northing E easting EL elevation $description
S	Initiates the Store Point command.
n	Defines the utility point number (above 10,000).
N	Initiates the read Northing command.
Northing	Establishes the Y, horizontal coordinate.
E	Initializes the read Easting command.
Easting	Establishes the X, horizontal coordinate.
EL	Initiates either the read elevation command or uses a defined depth of cover.
Elevation	The Elevation argument has two options, the EL option with a defined read elevation. Second option is a defined depth of cover.
Description	This describes the utility feature code.

- **Example of Nothing Easting Option 1, Defined Elevation**

  S 10020 N 430059.370000 E 127421.085000 EL 2.513000 $ BT12

The above statement stores the point 10020 at 127421.085000/430059.370000 (X, Y) at elevation 2.513000 with a feature code of BT12 (Buried Telephone 12 pair).

- **Example of Northing Easting Option 2, Fixed Depth of Cover**

  S 10020 N 430059.370000 E 127421.085000 $ BT12

The above statement stores the point 10020 at 127421.085000/430059.370000 (X, Y) at a given depth of cover with a feature code of BT12 (Buried Telephone 12 pair).

- **The Store Chain Command**

The store chain command will store a range of points as a utility chain. It provides the point range, chain name and the feature that describes the utility chain. The format is shown below:

Command	STO CHA BT50A 10020 - 10023 $ BT50 list: BT1 - BT4
Format	STORE CHAIN name list $ description
Store	Initiates the Store Chain Command.
Chain	Initiates the Read Chain Name Command.
Name	Names the Utility Chain (BT12 etc.).
Range	Defines a range of stores utility points.
$ Comment	Initiates a comment insertion.
Description	Describes the list of utility point numbers, which make the utility chain.

19.14.6 ASCII INPUT FILE EXAMPLES

- **Northing Easting, no elevation**

```
$*********************************************************$
$************ Name: General Telephone Company *************$
$************ Date: Nov 5, 1999 08:00:00      *************$
$************ Proj: c:\proj\14570\1519        *************$
$************ Type: Existing Buried Telephone *************$
$************ File: utilex04.inp (Metric)     *************$
$************ Cont: Alex Bell (813) 975-6000  *************$
$ Note: All elevations assume a 0.750 meter depth of cover $
$*********************************************************$
S 10020 N 430059.370000  E 127421.085000  $ BT1
S 10021 N 430059.342000  E 127420.188000  $ BT2
S 10022 N 430058.733000  E 127420.235000  $ BT3
S 10023 N 430058.772000  E 127421.112000  $ BT4
S 10024 N 430025.015000  E 127425.677000  $ BT5
S 10025 N 430024.463000  E 127425.921000  $ BT6
S 10026 N 430024.120000  E 127425.150000  $ BT7
S 10027 N 430024.711000  E 127424.906000  $ BT8
S 10028 N 430010.203000  E 127442.371000  $ BT9
S 10029 N 430010.404000  E 127441.806000  $ BT10
S 10030 N 430009.593000  E 127441.488000  $ BT11
S 10031 N 430009.365000  E 127442.088000  $ BT12
S 10032 N 430011.003000  E 127472.172000  $ BT13
S 10033 N 430010.111000  E 127472.198000  $ BT14
S 10034 N 430010.091000  E 127471.575000  $ BT15
S 10035 N 430010.963000  E 127471.555000  $ BT16
S 10036 N 429939.130000  E 127431.218000  $ BT17
S 10037 N 429939.202000  E 127432.171000  $ BT18
S 10038 N 429940.582000  E 127432.122000  $ BT19
S 10039 N 429940.518000  E 127431.231000  $ BT20
S 10040 N 429974.677000  E 127481.061000  $ BT25
S 10041 N 429974.731000  E 127481.671000  $ BT26
S 10042 N 429973.882000  E 127481.730000  $ BT27
S 10043 N 429973.821000  E 127481.144000  $ BT28

$ BT50 list: BT1-BT4
STO CHA BT50A 10020-10023

$ BT75 list: BT17-BT20
STO CHA BT75A 10036-10039

$ BT100 list: BT5-BT8
STO CHA BT100A 10024-10027

$ BT200 list: BT9-BT12
STO CHA BT200A 10028-10031

$ BT300 list: BT13-BT16
STO CHA BT300A 10032-10035

$ BT400 list: BT25-BT28
STO CHA BT400A 10040-10043
```

- **Northing and Easting Example with Elevation**

```
$*********************************************************$
$************ Name: General Telephone Company ************$
$************ Date: Nov 5, 1999 08:00:00      ************$
$************ Proj: c:\proj\14570\1519        ************$
$************ Type: Existing Buried Telephone ************$
$************ File: utilex03.inp (Metric)     ************$
$************ Cont: Alex Bell (813) 975-6000  ************$
$*********************************************************$
S 10020 N 430059.370000  E 127421.085000  EL 2.513000  $ BT1
S 10021 N 430059.342000  E 127420.188000  EL 2.532000  $ BT2
S 10022 N 430058.733000  E 127420.235000  EL 2.533000  $ BT3
S 10023 N 430058.772000  E 127421.112000  EL 2.502000  $ BT4
S 10024 N 430025.015000  E 127425.677000  EL 2.483000  $ BT5
S 10025 N 430024.463000  E 127425.921000  EL 2.470000  $ BT6
S 10026 N 430024.120000  E 127425.150000  EL 2.517000  $ BT7
S 10027 N 430024.711000  E 127424.906000  EL 2.530000  $ BT8
S 10028 N 430010.203000  E 127442.371000  EL 2.793000  $ BT9
S 10029 N 430010.404000  E 127441.806000  EL 2.806000  $ BT10
S 10030 N 430009.593000  E 127441.488000  EL 2.800000  $ BT11
S 10031 N 430009.365000  E 127442.088000  EL 2.788000  $ BT12
S 10032 N 430011.003000  E 127472.172000  EL 2.564000  $ BT13
S 10033 N 430010.111000  E 127472.198000  EL 2.576000  $ BT14
S 10034 N 430010.091000  E 127471.575000  EL 2.563000  $ BT15
S 10035 N 430010.963000  E 127471.555000  EL 2.551000  $ BT16
S 10036 N 429939.130000  E 127431.218000  EL 2.310000  $ BT17
S 10037 N 429939.202000  E 127432.171000  EL 2.250000  $ BT18
S 10038 N 429940.582000  E 127432.122000  EL 2.286000  $ BT19
S 10039 N 429940.518000  E 127431.231000  EL 2.266000  $ BT20
S 10040 N 429974.677000  E 127481.061000  EL 2.671000  $ BT25
S 10041 N 429974.731000  E 127481.671000  EL 2.639000  $ BT26
S 10042 N 429973.882000  E 127481.730000  EL 2.698000  $ BT27
S 10043 N 429973.821000  E 127481.144000  EL 2.679000  $ BT28

$ BT50 list: BT1-BT4
STO CHA BT50A 10020-10023

$ BT75 list: BT17-BT20
STO CHA BT75A 10036-10039

$ BT100 list: BT5-BT8
STO CHA BT100A 10024-10027

$ BT200 list: BT9-BT12
STO CHA BT200A 10028-10031

$ BT300 list: BT13-BT16
STO CHA BT300A 10032-10035

$ BT400 list: BT25-BT28
STO CHA BT400A 10040-10043
```

- **Station Offset Example with Assumed Depth of Cover**

```
$*************************************************************$
$************ Name: General Telephone Company  ************$
$************ Date: Nov 5, 1999 08:00:00       ************$
$************ Proj: c:\proj\14570\1519         ************$
$************ Type: Existing Buried Telephone  ************$
$************ File: utilex02.inp (Metric)      ************$
$************ Cont: Alex Bell (813) 975-6000   ************$
$ Note: All elevations assume a 0.750 meter depth of cover $
$*************************************************************$
LOC 10020 ON CHA blsr54 STA 18+89.760 OFF -8.534  $ BT1
LOC 10021 ON CHA blsr54 STA 18+99.818 OFF -8.530  $ BT2
LOC 10022 ON CHA blsr54 STA 19+09.018 OFF -8.524  $ BT3
LOC 10023 ON CHA blsr54 STA 19+19.018 OFF -8.540  $ BT4
LOC 10024 ON CHA blsr54 STA 19+29.760 OFF -8.534  $ BT5
LOC 10025 ON CHA blsr54 STA 19+39.818 OFF -8.530  $ BT6
LOC 10026 ON CHA blsr54 STA 19+49.018 OFF -8.524  $ BT7
LOC 10027 ON CHA blsr54 STA 19+59.018 OFF -8.540  $ BT8
LOC 10028 ON CHA blsr54 STA 19+69.760 OFF -8.534  $ BT9
LOC 10029 ON CHA blsr54 STA 19+79.818 OFF -8.530  $ BT10
LOC 10030 ON CHA blsr54 STA 19+89.018 OFF -8.524  $ BT11
LOC 10031 ON CHA blsr54 STA 19+99.018 OFF -8.540  $ BT12
LOC 10032 ON CHA blsr54 STA 20+09.760 OFF -8.534  $ BT13
LOC 10033 ON CHA blsr54 STA 20+19.818 OFF -8.530  $ BT14
LOC 10034 ON CHA blsr54 STA 20+29.018 OFF -8.524  $ BT15
LOC 10035 ON CHA blsr54 STA 20+39.018 OFF -8.540  $ BT16
LOC 10036 ON CHA blsr54 STA 19+49.760 OFF +8.534  $ BT17
LOC 10037 ON CHA blsr54 STA 19+59.818 OFF +8.530  $ BT18
LOC 10038 ON CHA blsr54 STA 19+69.018 OFF +8.524  $ BT19
LOC 10039 ON CHA blsr54 STA 19+79.018 OFF +8.540  $ BT20
LOC 10040 ON CHA blsr54 STA 19+89.760 OFF +8.534  $ BT25
LOC 10041 ON CHA blsr54 STA 19+99.818 OFF +8.530  $ BT26
LOC 10042 ON CHA blsr54 STA 20+09.018 OFF +8.524  $ BT27
LOC 10043 ON CHA blsr54 STA 20+19.018 OFF +8.540  $ BT28

$ BT50 list: BT1-BT4
STO CHA BT50A 10020-10023

$ BT75 list: BT17-BT20
STO CHA BT75A 10036-10039

$ BT100 list: BT5-BT8
STO CHA BT100A 10024-10027

$ BT200 list: BT9-BT12
STO CHA BT200A 10028-10031

$ BT300 list: BT13-BT16
STO CHA BT300A 10032-10035

$ BT400 list: BT25-BT28
STO CHA BT400A 10040-10043
```

- **Station Offset Example with Elevation**

```
$*********************************************************$
$************ Name: General Telephone Company ************$
$************ Date: Nov 5, 1999 08:00:00      ************$
$************ Proj: c:\proj\14570\1519        ************$
$************ Type: Existing Buried Telephone ************$
$************ File: utilex01.inp (Metric)     ************$
$************ Cont: Alex Bell (813) 975-6000  ************$
$*********************************************************$
 LOC 10020 ON CHA blsr54 STA 18+89.760 OFF -8.534    $ EL 2.513000  BT1
LOC 10021 ON CHA blsr54 STA 18+99.818 OFF -8.530    $ EL 2.532000  BT2
LOC 10022 ON CHA blsr54 STA 19+09.018 OFF -8.524    $ EL 2.533000  BT3
LOC 10023 ON CHA blsr54 STA 19+19.018 OFF -8.540    $ EL 2.502000  BT4
LOC 10024 ON CHA blsr54 STA 19+29.760 OFF -8.534    $ EL 2.483000  BT5
LOC 10025 ON CHA blsr54 STA 19+39.818 OFF -8.530    $ EL 2.470000  BT6
LOC 10026 ON CHA blsr54 STA 19+49.018 OFF -8.524    $ EL 2.517000  BT7
LOC 10027 ON CHA blsr54 STA 19+59.018 OFF -8.540    $ EL 2.530000  BT8
LOC 10028 ON CHA blsr54 STA 19+69.760 OFF -8.534    $ EL 2.793000  BT9
LOC 10029 ON CHA blsr54 STA 19+79.818 OFF -8.530    $ EL 2.806000  BT10
LOC 10030 ON CHA blsr54 STA 19+89.018 OFF -8.524    $ EL 2.800000  BT11
LOC 10031 ON CHA blsr54 STA 19+99.018 OFF -8.540    $ EL 2.788000  BT12
LOC 10032 ON CHA blsr54 STA 20+09.760 OFF -8.534    $ EL 2.564000  BT13
LOC 10033 ON CHA blsr54 STA 20+19.818 OFF -8.530    $ EL 2.576000  BT14
LOC 10034 ON CHA blsr54 STA 20+29.018 OFF -8.524    $ EL 2.563000  BT15
LOC 10035 ON CHA blsr54 STA 20+39.018 OFF -8.540    $ EL 2.551000  BT16
LOC 10036 ON CHA blsr54 STA 19+49.760 OFF +8.534    $ EL 2.310000  BT17
LOC 10037 ON CHA blsr54 STA 19+59.818 OFF +8.530    $ EL 2.250000  BT18
LOC 10038 ON CHA blsr54 STA 19+69.018 OFF +8.524    $ EL 2.286000  BT19
LOC 10039 ON CHA blsr54 STA 19+79.018 OFF +8.540    $ EL 2.266000  BT20
LOC 10040 ON CHA blsr54 STA 19+89.760 OFF +8.534    $ EL 2.671000  BT25
LOC 10041 ON CHA blsr54 STA 19+99.818 OFF +8.530    $ EL 2.639000  BT26
LOC 10042 ON CHA blsr54 STA 20+09.018 OFF +8.524    $ EL 2.698000  BT27
LOC 10043 ON CHA blsr54 STA 20+19.018 OFF +8.540    $ EL 2.679000  BT28

$ EL 2.000000 BT50 list: BT1-BT4
STO CHA BT50A 10020-10023

$ EL 2.000000 BT75 list: BT17-BT20
STO CHA BT75A 10036-10039

$ EL 2.000000 BT100 list: BT5-BT8
STO CHA BT100A 10024-10027

$ EL 2.000000 BT200 list: BT9-BT12
STO CHA BT200A 10028-10031

$ EL 2.000000 BT300 list: BT13-BT16
STO CHA BT300A 10032-10035

$ EL 2.000000 BT400 list: BT25-BT28
STO CHA BT400A 10040-10043
```

19.15 PREPARATION OF UTILITY DRAWINGS BY THE UAO FOR USE IN AUTOCAD

19.15.1 TRANSLATING THE ROADWAY FILES TO AUTOCAD USING MICROSTATION

Sometimes there is no exact match, only a “best fit” translation. An example of “best fit” translation is MicroStation fonts to AutoCAD fonts. For example, font one in MicroStation has no exact match in AutoCAD so font one is mapped to the “txt” font in AutoCAD.

The MicroStation Roadway Design files that are translated for use as XREF’s to the UTEXRD or UTPRRD files are not translated back into MicroStation. The only files that will be translated from AutoCAD to MicroStation are the UTEXRD and UTPRRD. This should keep translations trouble free.

The designer should collect the relevant design files that will be provided to the UAO. The files provided to the UAO should include all available survey. This may include Right-of-Way, baseline, topographic features, existing utilities, and drainage. This information is referenced by the UAO for use when creating the existing or proposed utility information in a blank CADD file. To package the files, first determine the appropriate format and file naming convention. Since, the UAO will be returning this file along with other UAO’s owning similar facilities, it is recommended to add an under bar with the UAO’s name for easier identification.

Example: utexrd_PhoneCompanyName.dwg

Once the data files for the UAO are collected, the blank file for the UAO’s information can be created using the ‘Create/Edit Files’ program from the FDOT 2010 software. For utility files, the CADD file is available for creation in DGN or DWG format. The software dialog allows the user to edit the name of the pending file.

When DGN utility files are requested by the UAO in DWG format, they can be converted and packaged with the following process. Reference all DGN’s to be converted to a single DGN file. Perform a ‘Save As’ and change the file type to *.DWG. The default save options are set to convert the active DGN file and references to individual DWG files. Once complete, these files are packaged and delivered to the UAO.

19.16 FILE TRANSFER PROTOCOL

File Transfer Protocol or FTP is a method of transferring files from one computer to another on the Internet or other networks. The protocol, part of the Transmission Control Protocol/Internet Protocol (TCP/IP), is a set of rules that ensures a file or sets of files are transmitted properly to the receiving computer. A computer that stores files that can be retrieved using FTP is called an FTP site or FTP server.

19.16.1 HOW IT WILL BE USED

FTP will be used to transfer the current phase submittal MicroStation files to the Florida Department of Transportation District Office. These CADD files will be as follows: the UTPRRD01.DGN for the proposed utility relocations and the UTEXRD01.DGN, the existing facility information.

19.17 MERGING OF UTILITY DATA BY FDOT

The last step in the process is to merge or incorporate the UAO's changes into the project dataset. Since the utility data comes from different companies, all the existing utilities must be merged into the existing utility file and the proposed utilities into the proposed utility file. The MicroStation merge command can be used to accomplish this task. Each returned UAO file may be referenced into a UAO specific model that is created in the master utility file. The master utility file is maintained by the designer and submitted with the contract plans. Each UAO specific model is referenced to the default model in the master utility file (ex. UTEXRD01.dgn). Once each file provided by the UAO is referenced into the default model, all the data can be merged into the default model using the 'merge into master' command found in the reference file dialog box. This process merges the necessary data into one file and maintains the source files from the UAO for reference and quality control review.

19.18 UTILITY SCANNED IMAGES

If the utilities are handled through a joint utility agreement and electronic files are not provided to the District for the Utility plans, the paper plans must be scanned. The format must be a published format with a minimum resolution of 300DPI. The preferred formats are postscript and Group 4 TIFFS.

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Chapter 20 - GEOTECHNICAL STANDARDS

20.1 GENERAL

Geotechnical Plans are included in the Roadway Plan Set as Soil Survey, Soil Boring and Bridge Data Sheets. These sheets are produced by the Materials staff and given to the Roadway Designer for inclusion in the Roadway Plan Set. Soil surveys other than those for roadway plans are required for various plan components. Soil survey sheets generated for such components are generally located in the plans set with the other details and information for each component. 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.

20.2 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.

Files that are associated with specific bridges will be prepended with a B# prefix corresponding to the appropriate bridge number.

Note See CPCH Chapter 18 for bridge specific filenames & sheet numbering requirements.

The following table defines the Geotechnical File Name Standards in regards to FDOT Projects with the understanding the each file name will include sequence numbering.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Geotech	clvgeo.dgn	Default	Box Culvert Auger & SPT Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Geotech	ltgeo.dgn	Default	Lighting SPT Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Geotech	mtgeo.dgn	Default	Mitigation Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Geotech	pdgeo.dgn	Default	Pond Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Geotech	rdgeo.dgn	Default	Augers Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Geotech	rdssgeo.dgn	Default	Roadway Soil Survey Sheet	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Geotech	sggeo.dgn	Default	Signal SPT Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Geotech	sngeo.dgn	Default	Signs SPT Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Roadway	cptgeo.dgn	Default	CPT Soundings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Roadway	msewgeo.dgn	Default	MSE Wall SPT Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Roadway	nwgeo.dgn	Default	Noise Wall SPT Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Roadway	rtwgeo.dgn	Default	Retaining Wall SPT Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Roadway	spgeo.dgn	Default	Sheet Pile Wall SPT Borings	geotech.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Structures	B#BORING.DGN	Default	Report of Core Borings	geotech.rul	$(MX_SEEDIR)StructuresSeed.dgn	
Structures	B#CPTGEO.DGN	Default	CPT Soundings	geotech.rul	$(MX_SEEDIR)StructuresSeed.dgn	
Structures	B#MSEWGEO.DGN	Default	MSE Wall SPT Borings	geotech.rul	$(MX_SEEDIR)StructuresSeed.dgn	
Structures	B#NWGEO.DGN	Default	Noise Wall SPT Borings	geotech.rul	$(MX_SEEDIR)StructuresSeed.dgn	
Structures	B#RTWGEO.DGN	Default	Retaining Wall SPT Borings	geotech.rul	$(MX_SEEDIR)StructuresSeed.dgn	
Structures	B#SPGEO.DGN	Default	Sheet Pile Wall SPT Borings	geotech.rul	$(MX_SEEDIR)StructuresSeed.dgn	

20.3 RESOURCE FILES

FDOT Engineering/CADD Systems Office (ECSO) will provide on CD-ROM, software resources for Computer Aided Design and Drafting (CADD) Plans using MicroStation and GEOPAK for the production of 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.

20.4 ENGINEERING DATA

Engineering Data to be delivered with each project should be located in the …\eng_data directory and include:

- ASCII files containing Q/C reports
- PostScript files of each sheet in the plan set
- Soil boring data

The PostScript files are to be plotted from the MicroStation design files containing the sheets. If the project is electronically Signed & Sealed, the PostScript files located in the …\Eng_data directory are the files to be Signed & Sealed.

The following table is for the Geotechnical Utility in GEOPAK which indicates the criteria to draw the seasonal high water and design high water. The Geotechnical Utility has an import function supporting Borelog 32, Ancillary Imports (old v7 format Input Files, and imports from Comma Separated Values (*.csv) files. Imports for .csv files are for Borehole, Material and SPT (Standard Penetration Test) data.

After January 2006, Geotechnical information shall be delivered in CSV Format as shown in the examples below. FDOT has adopted the following standard file naming convention for CSV file imports for the Geotechnical Utility in Geopak:

Borehole *Boreholetpk.brh* - Borehole location data and seasonal high water and design high water data.

Material *Material.mtl* - Strata Data and Core data.

SPT boring information may be drawn using the FDOT2008 Report a Core Boring Tool.

Example: Boreholetpk.brh

borehole_name,chain_name,station,offset,water_elev_type,water_elev_0,water_elev_0_date,

water_elev_24,water_elev_24_date

Borehole-01,CLCON,78+00.00,15,DOC,3,8/9/2007,5,8/10/2007

Borehole-02,CLCON,80+00.00,3,DOC,2,8/20/2007,4,8/21/2007

Borehole-03,CLCON,83+00.00,3,DOC,3,8/23/2007,5,8/24/2007

Borehole-04,CLCON,85+00.00,4,DOC,2,8/24/2007,4,8/25/2007

Example: Material.mtl

borehole_name,material_name,doc_or_se,type_of_elev

Borehole-01,1,10,DOC

Borehole-02,1,5,DOC

Borehole-02,2,7,DOC

Borehole-02,3,9,DOC

Borehole-03,1,3,DOC

Borehole-03,2,6,DOC

Borehole-04,1,2,DOC

Borehole-04,2,5,DOC

Borehole-04,3,7,DOC

Borehole-04,4,10,DOC

20.5 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.

20.6 SYMBOLOGY STANDARDS

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the Geotechnical discipline with associated Rule Files are found in Section 20.2 of this chapter.

Note Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.

20.7 SOIL SURVEY

The plans will include the information about the soil classification on the soil survey sheet and by showing the boring data soil boxes on the cross section sheets.

20.8 SOIL BORING DATA

The soil boring data shall be provided to the Roadway designer in a format to facilitate the drawing of the data on the cross section sheets.

Note For help and instructions on specific functions and use of Geopak's Geotechnical Tool, please see the Geopak help file.

20.9 FILE SHARING AND MERGING

Every project utilizes the 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 certain discipline requires information from another discipline, the required file(s) shall not be copied, but the data referenced from the original directory.

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Chapter 21 - CONSTRUCTION STANDARDS

CADD Production Criteria Handbook

21.1 GENERAL

The use and generation of CADD files by Construction will be in accordance with the general standards applied to all disciplines.

21.2 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*, ## =S*equence number.*

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

The following table defines the Construction File Name Standards in regards to FDOT Projects with the understanding the each file name will include sequence numbering. The standard file names defined by the design disciplines will be applied except the portion defining the discipline will be "CN" instead of "RD".

Example: DSGN**RD**01.DGN will be DSGN**CN**01.DGN for Construction's use.

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Cross Sections	PDXSCN.dgn	rdxsrd	Pond Cross Sections	pdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
Cross Sections	RDXSCN.dgn	rdxsrd	Roadway Cross Sections	rdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
Drainage	DREXCN.dgn	default	Drainage Structures – Existing	drexrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Drainage	DRPRCN.dgn	default	Drainage Structures – Proposed	drprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Drainage	DRXSCN.dgn	rdxsrd	Drainage Structure Cross Sections	drxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
Existing Topography	TOPOCN.dgn	default	Topography - Existing	topord.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Proposed Design	DSGNCN.dgn	default	Proposed Design	dsgnrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	DSPFCN.dgn	default	Proposed Profile	plprd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Proposed Design	TEXTCN.dgn	default	Text Labels and Misc. Descriptions	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Traffic Control	TCDSCN.dgn	default	Traffic Control Design	tcdsrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Utilities	UTEXCN.dgn	default	Utilities - Existing	utexrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X
Utilities	UTPRCN.dgn	default	Utilities - Proposed	utprrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	X

21.3 RESOURCE FILES

Construction will use the resource files bundled with the Project.

21.4 ENGINEERING DATA

Engineering Data to be delivered with each project should be located in the …\eng_data directory and include:

- ASCII files containing alignment, profile and cross section information
- Q/C reports
- PostScript files of each sheet in the plan set

21.5 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.

21.6 SYMBOLOGY STANDARDS

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the Construction discipline with associated Rule Files are found in Section 21.2 of this chapter.

The symbology defined for respective disciplines shall be used for all revisions/changes made by Construction to the component plan sets. The only defined symbology specific to Construction is for revisions.

Note Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.

21.7 PROJECT PACKAGE – ELECTRONIC SUBMITTAL

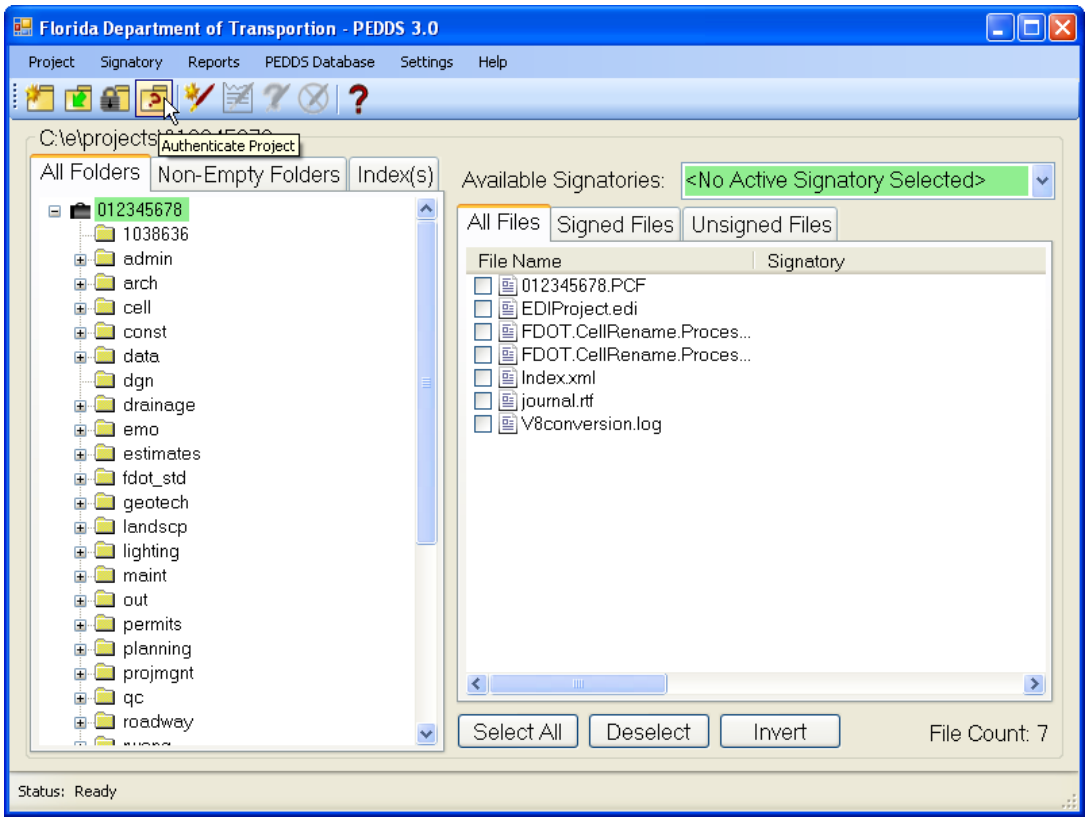
21.7.1 RECEIVING DATA

Each project should have a computation book and an electronic delivery CD. The CD should include all project files in a directory tree as described in chapter 4. The delivery CD is the "official" CD and should be kept in a safe place during the life of the project. The steps for using the data in Construction are defined below.

When the office responsible for the Construction project receives the CD, the contents must be verified as the official data by using the authentication feature of PEDDS.

21.7.2 CONSTRUCTION'S USE OF ELECTRONIC DATA:

1. Open the project in PEDDS, click the **Authenticate Project** icon ( ) and print the ***"Delivery Authentication Test"*** to begin the authentication process.



In a block titled ***"Delivery Manifest File Authentication"*** the following sentence should be found:

"All Project files have been successfully authenticated by comparing the file's SHA-1 hash code stored in this Manifest.XML file against a freshly computed SHA-1 hash code of the Project file itself to verify that no changes have occurred."

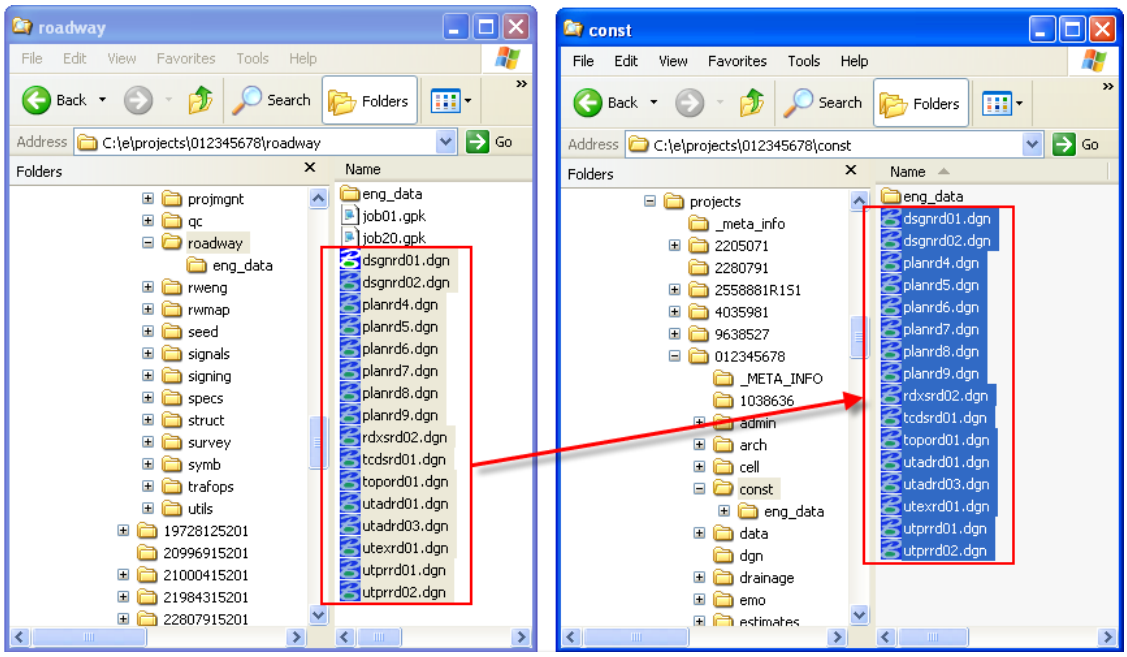
If this is found, then no changes have been made to the project files since it was last secured. If the project fails this test, then it has been altered since it was last secured and delivered. Obtain an original set before continuing.

With a valid project in hand, continue to authenticate the project by comparing the signatory documents with the "SIGNATURE BLOCK" found on the "Delivery Authentication Test" document. If they all match, sign and date the signature block on the authentication test. Having done this, you have successfully authenticated the project.

2. Copy the files from the delivery CD onto your server or workstation.

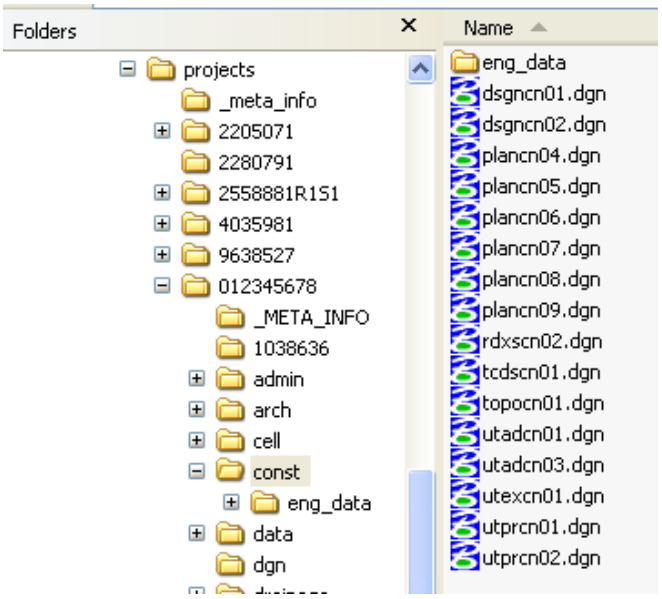
Note The files may be made accessible through TIMS since the workflow may differ in different districts. **If the electronic files are used for as-built plans, the following guidelines are recommended.**

3. Copy the design files from the *roadway* directory into the *const* directory.



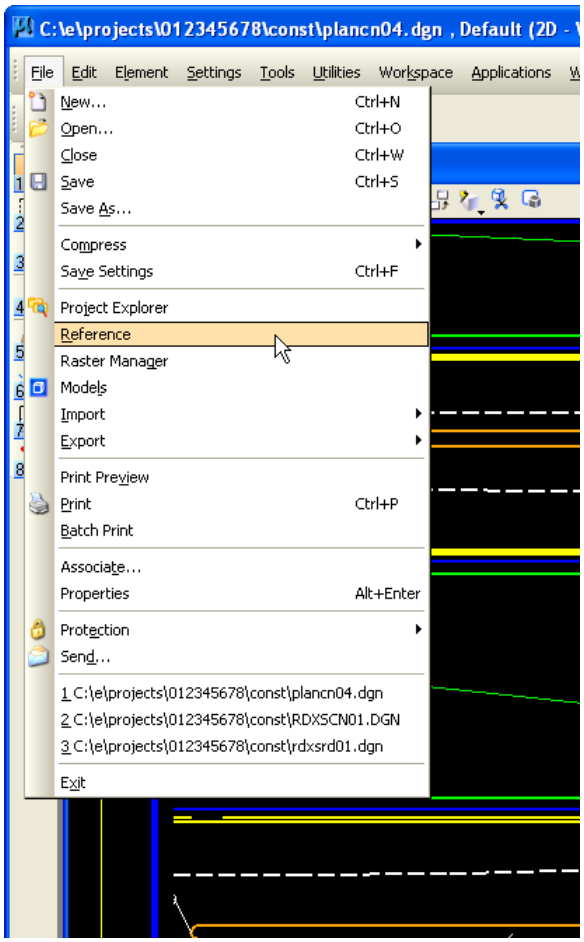
4. After the files have been copied to the *const* directory, rename the files by replacing the roadway denotation, “rd” in the file name to the construction denotation, “cn”.

   (Example: dsgnrd01.dgn becomes dsgncn01.dgn, plpprd04.dgn becomes plppcn04.dgn etc.)

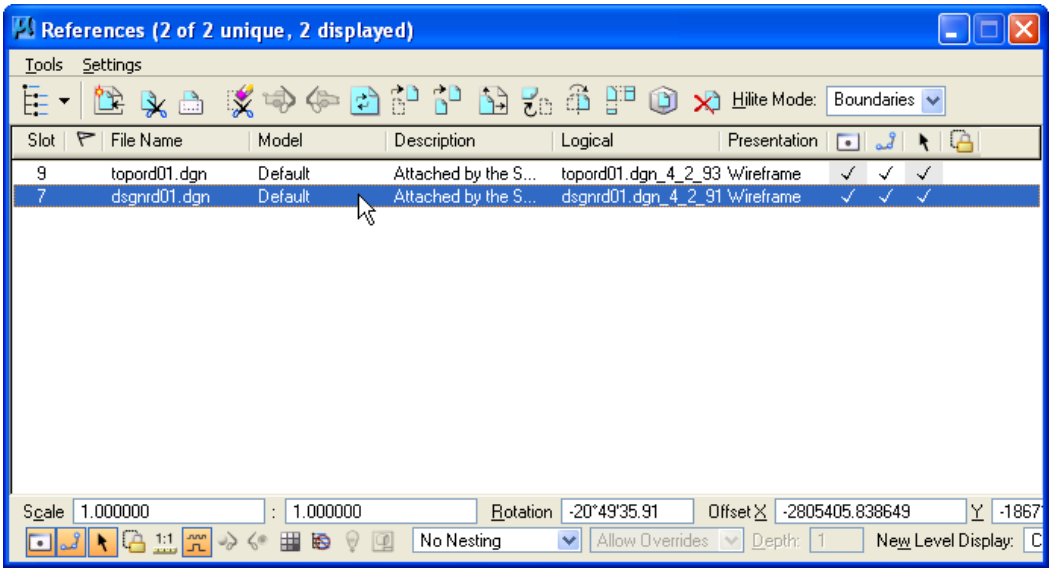


5. Open the MicroStation design file containing the plan sheets (*plancn01.dgn*) and add the *dsgncn01.dgn* to the list of reference files in order for the “as-built” plans to show up properly.

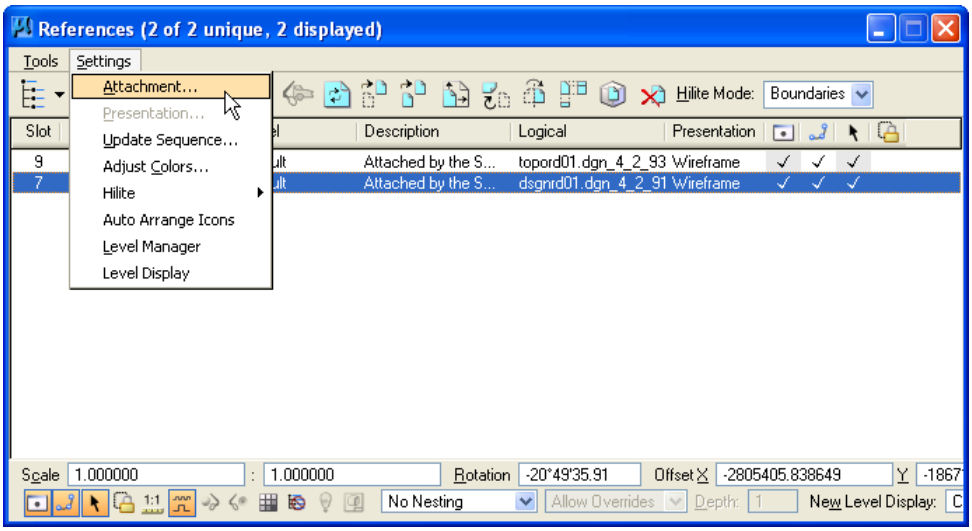
6. Select **File > Reference**.



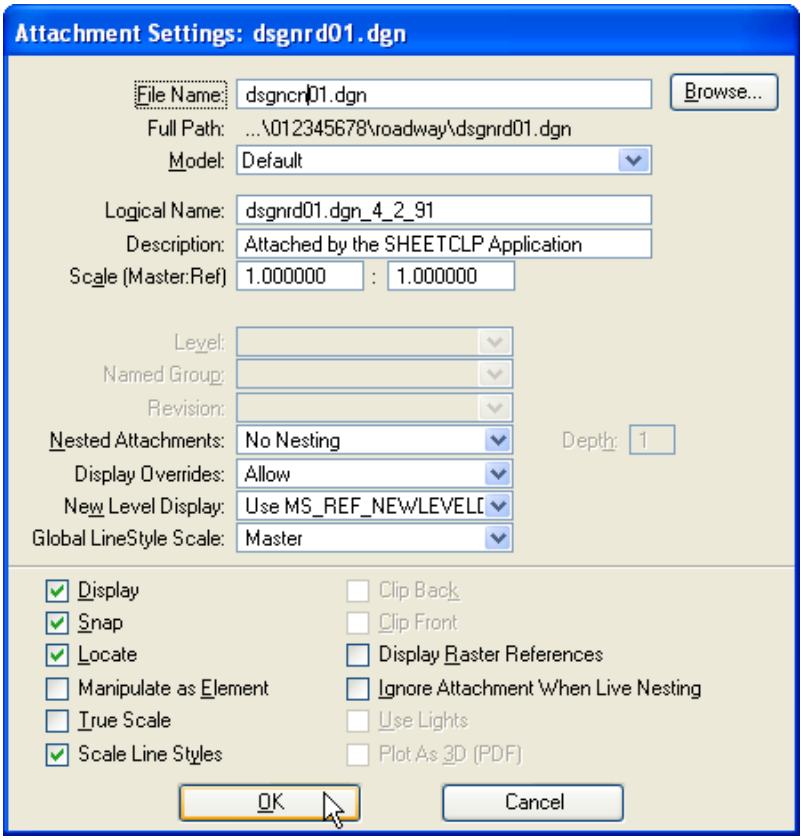
7. Select the “as-designed” master file (typically named *dsgnrd01.dgn*).



8. The file name will need to be changed. Select **Settings > Attachment**.



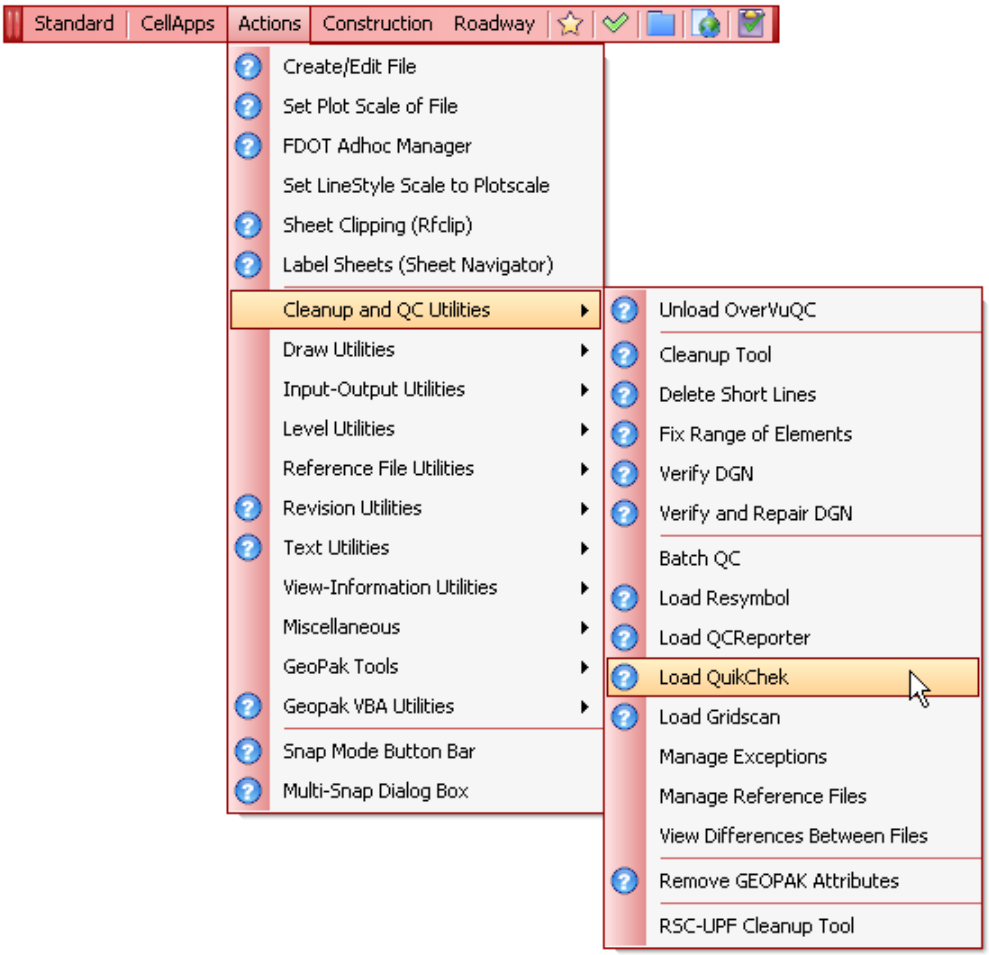
9. Change the name to the new construction "as-built" design file and click **OK**.



Note As changes are made in the "as-built" design file they will show up correctly in the Plan/Profile sheet.

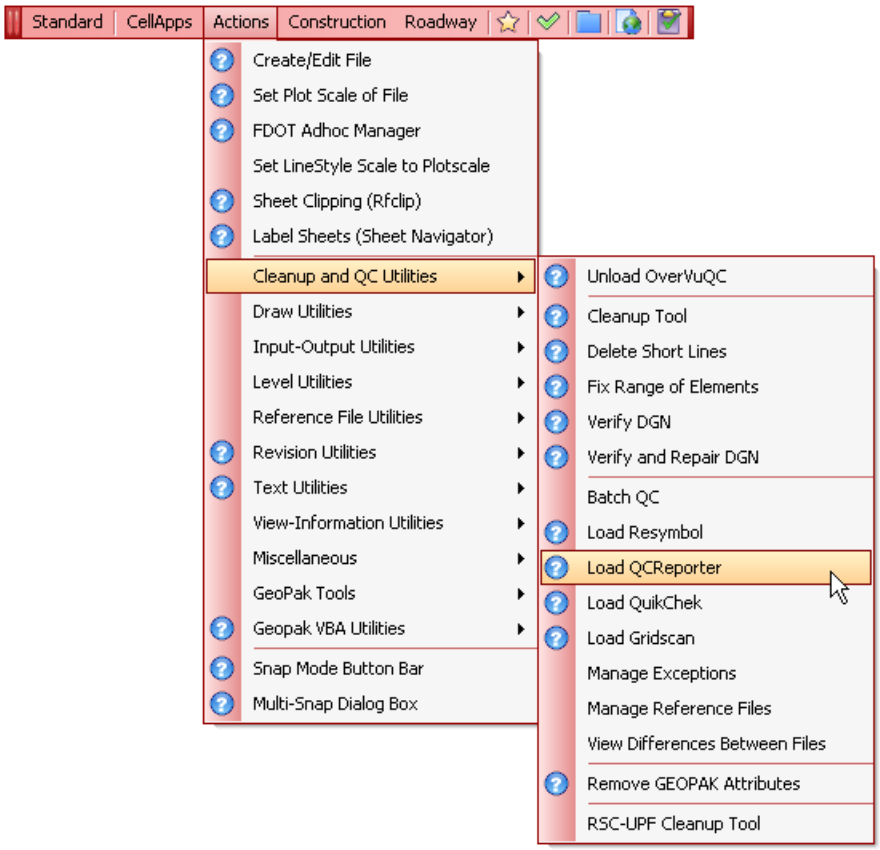
21.8 QUALITY CONTROL

Quality control for Construction should be done using the year of CADD standards that the project was developed under for per the QC reports. Every year that the standards are updated in the FDOT software delivery, the rule files are maintained in a directory with the year as the directory name. Example 1998 CADD standards are in …\fdot2008\qc_rules\std_98. The FDOT Menu Actions option contains Cleanup and QC Utilities. The Load QuikChek option loads a tool to ensure field changes are drawn according to the project year standards. Access this tool by selecting **Actions > Cleanup and QC Utilities > Load QuikChek**.



Note The figure shown above reflects the FDOT2008 CADD Software Actions Menu. When choosing QC-Std for standards from a previous year, the user may be prompted to click on the year of the standards so that an ASCII file will be placed in the project directory called standards.ini. This file contains a line of text that tells FDOT software what standards to use for the life of the project.

A QC Report must be generated by the QC software provided by FDOT. Access this tool by selecting **Actions > Cleanup and QC Utilities > Load QC Reporter**. Help for this utility can be accessed by selecting the help icon ( ) to the left of the Load QC Reporter Option.



The following is an example of the required QC Report.

```
GDM Software QC Summary Status Report    Date: 2008:12:24:11:15

Design file name
C:\e\projects\012345678\const\dsgncn01.dgn, Default
     Process      Date            Compliance  Checks  Added since  Rule file      User
     QuikChek     2007:04:16:15:51   50.00%     N/A        0.00%  dsgnrd.rul   knasdmr
     Global Origin:     x: 0.00     y: 0.00     z: 0.00      OK
   Working Units: Survey Fe/HU      Resolution:  1000     Status: OK
     2D/3D:        OK

C:\e\projects\012345678\const\dsgncn02.dgn, Default
     QuikChek     2007:04:16:15:51  100.00%     N/A        0.00%  dsgnrd.rul   knasdmr
     Global Origin:     x: 0.00     y: 0.00     z: 0.00      OK
   Working Units: Survey Fe/HU      Resolution:  1000     Status: OK
     2D/3D:        OK

C:\e\projects\012345678\const\plancn04.dgn, Default
     QuikChek     2008:12:24:11:03  100.00%     N/A        0.00%  planrd.rul   rd964lm
     Global Origin:     x: 0.00     y: 0.00     z: 0.00      OK
   Working Units: Survey Fe/HU      Resolution:  1000     Status: OK
     2D/3D:        OK

C:\e\projects\012345678\const\plancn05.dgn, Default
     QuikChek     2007:04:16:17:00  100.00%     N/A        0.00%  planrd.rul   knasdmr
     Global Origin:     x: 0.00     y: 0.00     z: 0.00      OK
   Working Units: Survey Fe/HU      Resolution:  1000     Status: OK
     2D/3D:        OK
```

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Chapter 22 - INTELLEGENT 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 standard file names 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 Plan	BDPLIT.dgn	default	Border Sheet Reference Model for Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Border Cross Section	BDXSIT.dgn	rdxsrd	Border Cross-Section Sheet when Referenced	rdxsrd.rul	$(MX_SEEDIR)fdotseedxs.dgn	
Summary of Pay Items	CESSIT.dgn	default	Summary of Pay Items	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Clipping Borders	CLIPIT.dgn	default	ITS Clipping Borders	cliprd.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
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
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	
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	

File Type	File Name	Model Name	File Description	Rule File	Seed File	Critical File
Plan Sheet	PLANIT.dgn	default	ITS Plan Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Plan Layout Sheet	PLAYIT.dgn	default	Plan Layout Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Pole Details	PLDTIT.dgn	default	Pole Tabulation & Details for All Types	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SGDTIT.dgn	default	Special Signal Details	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Soil Borings	SLBRIT.dgn	default	Soil Borings for Poles and Overhead Structures	geotech.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	
Special Sign Details	SPSGIT.dgn	default	DMS Detail for Overhead Signs	spdtrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Service Point Detail	SRPTIT.dgn	default	Service Point Detail Sheets	itssp.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Special Details	SSDTIT.dgn	Default	Special Sign Detail and Miscellaneous Detail	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Cross Section	SSXSIT.dgn	rdxsrd	Sign Support Cross-Sections	rdxssp.rul	$(MX_SEEDIR)fdotseedxs.dgn	X
Tabulation Sheet	TABQIT.dgn	default	ITS Tabulation Quantity Sheet	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Traffic Control Design	TCDTIT.dgn	default	Traffic Control Design Sheet	Itssp.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Text labels	TEXTIT.dgn	default	Text Labels and Misc. Details, Misc. Descriptions	planrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Utility Adjustment Sheets	UTADIT.dgn	default	Utility Adjustment Sheets	utadrd.rul	$(MX_SEEDIR)fdotseed2d.dgn	
Vehicle Detector 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

FDOT Standard Level Libraries define the FDOT CADD Symbology Standards for each Discipline with the associated ByLevel Color, ByLevel Line Style, and ByLevel Line Weight symbology. Designers are to use these standards to assign each element within FDOT CADD design files. These levels and symbology are grouped and translated into FDOT Standards Rule Files utilized for Quality Control to check compliancy of each FDOT standard design file to the FDOT CADD Standards.

The Standard File Names for the ITS discipline with associated Rule Files are found in Section 22.2 of this chapter.

Note Refer to Chapter 3 (Resource and Support Files) of this document for more details and complete listing of Rule Files with associated Levels/Symbology information.

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.

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Chapter 23 - ARCHITECTURAL STANDARDS

CADD Production Criteria Handbook

23.1 GENERAL

The set of plans depicting in detail the desired construction work is known as the “Contract Plans Set”. This set consists of all sheets pertaining to Architectural (Building) design, and component plans. The component plans may be comprised of any/all of:

General Plans

Hazard Material Plans

Survey Plans (Follow Survey CAD Standards)

Geotechnical Plans (Follow Geotechnical CAD Standards)

Civil Plans (Follow Roadway CAD Standards)

Landscape Plans (Follow landscape CAD Standards)

Structural Plans

Architectural Plans

Interior Plans

Fire Protection Plans

Plumbing Plans

Mechanical Plans

Electrical Plans

This example plan set represents a project where the building is the focal point of the project. Architectural (often referred to as “Building”) projects within the right of way typically do not include survey, civil, geotechnical, or landscape plans. These disciplines are normally included in the Roadway Plans. However, when present in the Architectural Plans, the Computer Aided Design and Drafting (CADD) standards of the appropriate discipline shall be used.

Bascule Control House architectural plans are to be prepared using the Structures CADD Standards.

23.2 ADOPTED CAD FILE FORMAT

The Florida Department of Transportation (FDOT) has adopted AutoCAD 2011 as the Standard CAD format for architectural projects. All CADD files for Architectural plan sets, including those disciplines within the building (i.e. plumbing, mechanical, electrical and structural) shall be submitted in AutoCAD (dwg) format. Plans outside the building envelope shall follow the standard CADD format, generally MicroStation (dgn) for their discipline as defined in their respective chapters herein.

23.3 ADOPTED CAD STANDARDS

The Department has adopted the National CAD Standards as the standard format for building projects. This chapter is a synopsis of the National CAD Standards. More information can be found at:

National CAD Standard
National Institute of Building Sciences
1090 Vermont Ave., NW, Suite 700
Washington, D.C. 20005-4905
202-289-1092
Website: **http://www.buildingsmartalliance.org/ncs**

National Cad Standard also includes chapters from the following organizations:

U.S.CADD/GIS Technology Center
US Army Engineer Research and Development Center
Attn: CEERD-ID (S. Spangler)
3909 Halls Ferry Road
Vicksburg, MS 39180-6199
Website: https://tsc.wes.army.mil/

CAD Layer Guidelines
American Institute of Architects (AIA)
1735 New York Ave, NW
Washington, D.C. 20006
Website: www.aia.org

Uniform Drawing System (UDS)
Construction Specifications Institute
601 Madison Street
Alexandria, Va. 22314-1791
800-689-2900
Website: http://www.csinet.org

23.4 ARCHITECTURAL PROJECTS

Architectural standards apply to the building and building related disciplines outlined in the following list of project types.

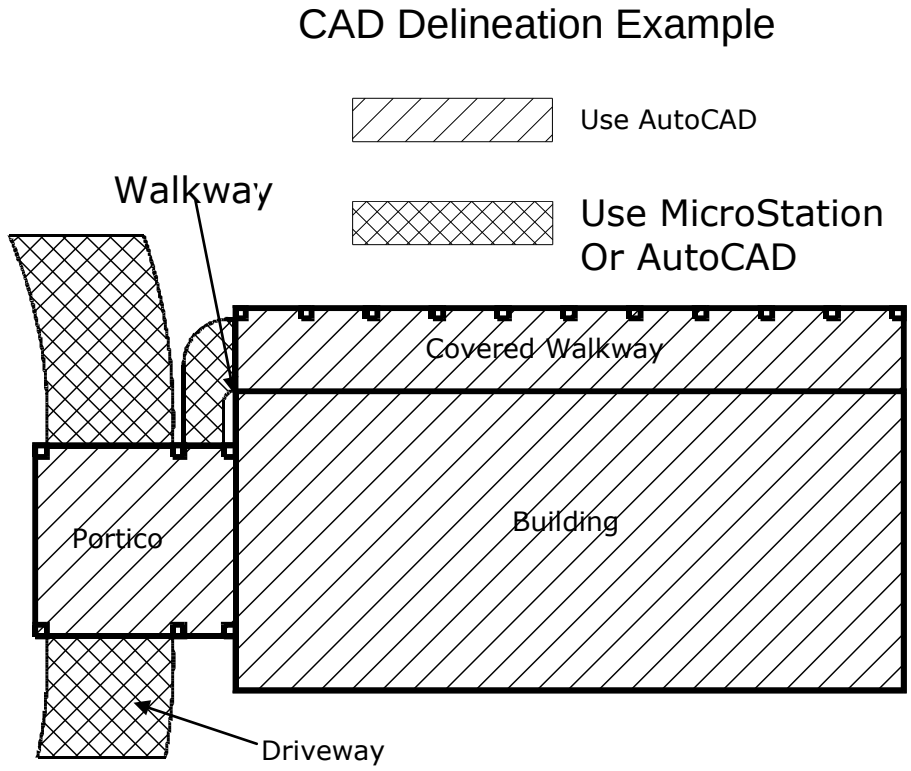
- **Building Projects**
  - Work Program Projects
    - *Rest Areas*
    - *Weigh Stations*
  - Fixed-Capital Outlay (FCO) Projects
    - *Office Buildings*
    - *Construction & Maintenance Facilities*
    - *Other 'Off Right Of Way (ROW)' Facilities*

23.5 DELINEATION BETWEEN ARCHITECTUAL & ENGINEERING PLANS

- **Delineation at 'foot print' of Building**
  - Face of Exterior Wall
  - Area enclosed by buildings Columns and/or Walls; i.e. Porticos, Carports, covered Walkways and Covered Patios
  - Roof and Building Overhangs

Use AutoCAD inside the Delineation Line and MicroStation outside the Delineation Line.

Items inside the Delineation Line Includes 'Building-Oriented' Facilities & Equipment that are typically designed by an Architect, including but not limited to, picnic shelters, planters which are part of the building and site furniture in covered areas.



Items outside the delineation or "foot print" of Building shall be produced and submitted following the CADD standards for their discipline as defined in their respective chapters herein, including but not limited to:

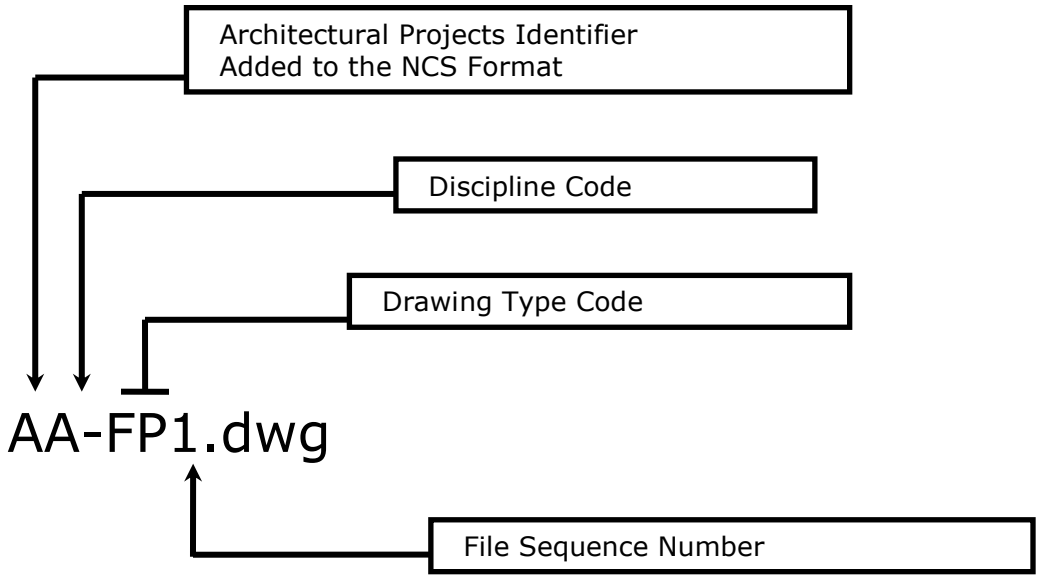
- **Pavement**
  - Driveways, Parking, Sidewalks
- **Landscape Plans**
- **Site Utilities**
  - Electrical, Water, Sanitary Sewer, Storm Sewer, Drainage
- **Site Fencing and Walls**

23.6 FILE NAMES

23.6.1 *STANDARD MODEL FILE NAMES*

Model files are 3D for large plans, elevations or sections that contain the physical building components (walls, doors, water piping, beams…). These files are drawn at full scale. These files are referenced in whole or part into sheet files where text and dimensions are added, then printed.

- **Naming components**
  - Architectural Projects Identifier
  - Discipline Codes
  - Drawing Type Codes (General and Discipline related)
  - File Sequence Number



Note Architectural Projects Identifier

A _-_ _ _.dwg

Add "A" before Discipline Code as published in National CAD Standards. This distinguishes Building drawings from Roadway and Structures Plans.

Examples: Project Identifiers, Codes and File Sequence Numbers. For more detailed information refer to National CAD Standards.

- **Architectural Project Identifier**

  A _-_ _ _.dwg ..... Architectural, this differentiates architectural building projects from bridges and roadway projects.

- **Discipline Code**

  _ E-_ _ _.dwg.....Electrical
  _ M-_ _ _.dwg ..... Mechanical
  _ P-_ _ _.dwg ..... Plumbing
  ETC.

- **Drawing Type Code (general and discipline related)**

  _ _-FP _.dwg ..... Floor Plan
  _ _-DP _.dwg ..... Dimension Plan
  _ _-XP _.dwg ..... Existing Plan
  ETC.

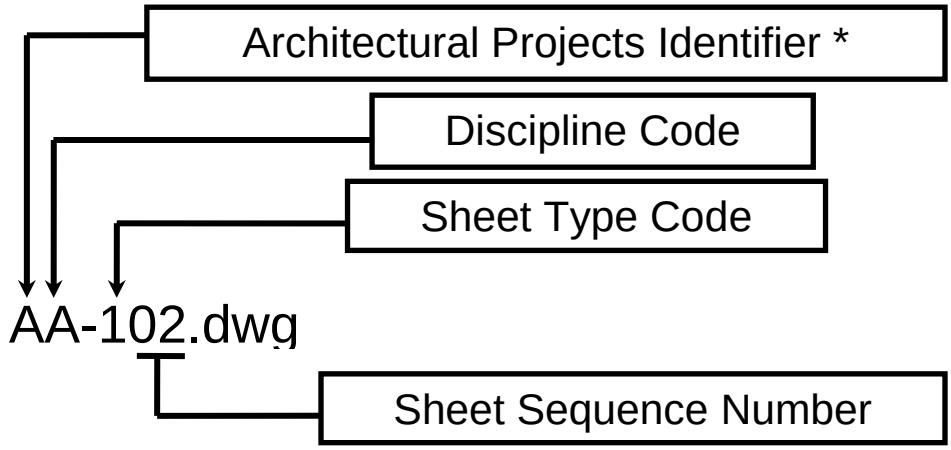
- **File Sequence Number**

  _ _-_ _ 1.dwg ..... 1st drawing file in sequence
  _ _-_ _ 2.dwg ..... 2nd drawing file in sequence
  _ _-_ _ 3.dwg ..... 3rd drawing file in sequence
  ETC.

23.6.2 *STANDARD SHEET FILE NAMES*

A sheet file is a border sheet with dimensions and/or text added to a portion of a referenced model file. Plotted sheet files make up the plans set.

- **Naming Components**
  - Architectural Projects Identifier
  - Discipline Code
  - Sheet Type Code
  - Sheet Sequence Number



* See Section 23.6 for Architectural Projects Identifier details.

Examples: Project Identifiers, Codes and Sheet File Sequence Numbers. For more detailed information refer to National CAD Standards.

- **Architectural Project Identifier**

  A _-_ _ _.dwg ..... Architectural, this differentiates architectural building projects from bridges and roadway projects.

- **Discipline Code**

  _ E-_ _ _.dwg ..... Electrical
  _ M-_ _ _.dwg ..... Mechanical
  _ P-_ _ _.dwg ..... Plumbing

- **Drawing Type Code (general and discipline related)**

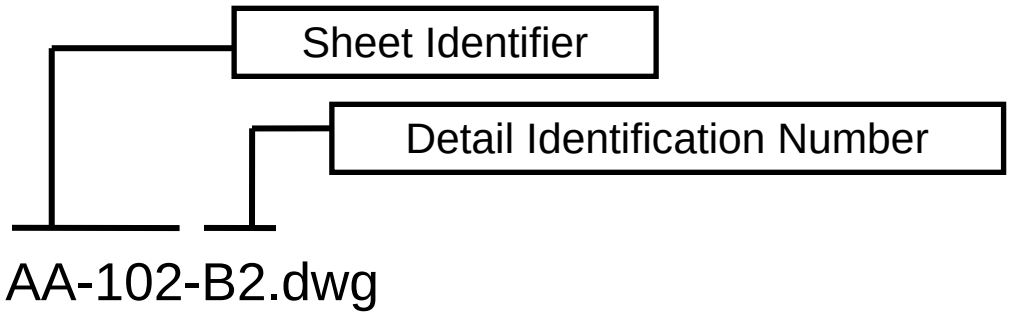
_ _-1 _ _.dwg ..... Floor Plan
_ _-2 _ _.dwg ..... Elevation
_ _-3 _ _.dwg ..... Sections

- **File Sequence Number**

_ _-_ 0 1.dwg ..... 1st sheet in sequence
_ _-_ 0 2.dwg ..... 2nd sheet in sequence
_ _-_ 0 3.dwg ..... 3rd sheet in sequence

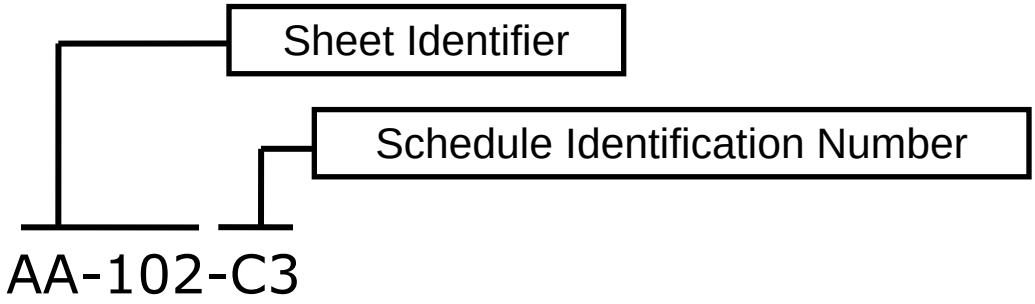
23.6.3 *DETAIL FILE NAME FORMAT*

The Detail File Name includes the sheet identifier and the detail identification number. Sheet Identifier is the sheet file that the detail is placed in. The detail identification number represents the location of the detail within the sheet file border.



23.6.4 *SCHEDULE FILE NAME FORMAT*

The Schedule File Name includes the sheet identifier and the schedule identification number. Sheet Identifier is the sheet file that the detail is placed in. The detail identification number represents the location of the schedule within the sheet file border.



23.7 ENGINEERING DATA

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

23.8 PROFESSIONALS' ELECTRONIC DATA DELIVERY SYSTEM (PEDDS)

PEDDS shall be used to Secure and Authenticate project data. When projects are received, FDOT authenticates the data on the delivered CD using the PEDDS software provided by FDOT. Each time data is transmitted to or received by FDOT the data shall be secured and authenticated. See PEDDS software help for instructions on usage.

For more information on PEDD's contact:

FDOT Engineering / CADD Systems Office
605 Suwannee Street, Mail Stop 69,
Tallahassee, Florida 32399
Telephone 850-245-1600

Helpful link: http://www.dot.state.fl.us/ecso/downloads/software/PEDDSSoftware.shtm

23.9 SYMBOLOGY STANDARDS

Refer to the National CAD Standards and Layer Symbology produced by the U.S.CADD/GIS Technology Center, US Army Engineer Research and Development Center for Symbology standards. These standards include model file names, sheet file names, detail file names, schedule file names, abbreviations, symbols, layers, line and line attributes, text and text attributes.

All drawings should be drawn at Full Scale. Large drawings (model files) are normally brought (whole or part) into sheet files where text and dimensions are added, then plotted. Sheet files are 1:1, the model files are scaled when referenced into the sheet file.

23.9.5 *Architectural Scale Chart*

The following chart is intended to aid the user in determining the appropriate scale for placing the border and text on a drawing based on the actual size of the drawing. Calculations are based on a 9 1/2" x 15 1/2" drawing area inside the border.

Drawing Scales for Sheets			
Note: Sheet files shall be assembled in paper space & plotted at 1:1			
Architectural Scales		**Engineering Scales**	
Drawing Scale	**Plot Scale**	**Drawing Scale**	**Plot Scale**
Full size	1	1″ = 5′	60
6″ = 1′-0″	2	1″ = 10′	120
3″ = 1′-0″	4	1″ = 20′	240
1 ½″ = 1′-0″	8	1″ = 30′	360
1″ = 1′-0″	12	1″ = 40′	480
¾″ = 1′-0″	16	1″ = 50′	600
½″ = 1′-0″	24	1″ = 100′	1200
3/8″ = 1′-0″	32	1″ = 200′	2400
¼″ = 1′-0″	48	1″ = 500′	6000
3/16" = 1'-0"	64	1″ = 1000′	12000
1/8″ = 1′-0″	96	1″ = 1250′	15000
3/32" = 1'-0"	128	1″ = 2500′	30000
1/16″ = 1′-0″	192	1″ = 5000′	60000

FORMULAS: AS = 12 x Drawing Scale, Ex. 1" = 10', then 12 x 10 = 120, Therefore AS = 120.

23.9.6 *Text Type, Size and Line Weight*

Use the following table to determine the appropriate line weight for each text height. Text line weights are applicable for text places in model and sheet files. Text heights in this chart are used for text in sheet files that are places in paper space.

Text Type	Line Weight (In) All Scales	Height (In) 1:1 Scale
Special Small/Revisions	0.18 mm/ 0.007 in	3/32″
Annotation	0.25 mm/ 0.010 in	1/8″
View/Sheet/Sect Titles	0.35 mm/ 0.014 in	5/32″
Large	0.50 mm/ 0.020 in	3/16″

Note Sizes shown are a 1:1 ratio.

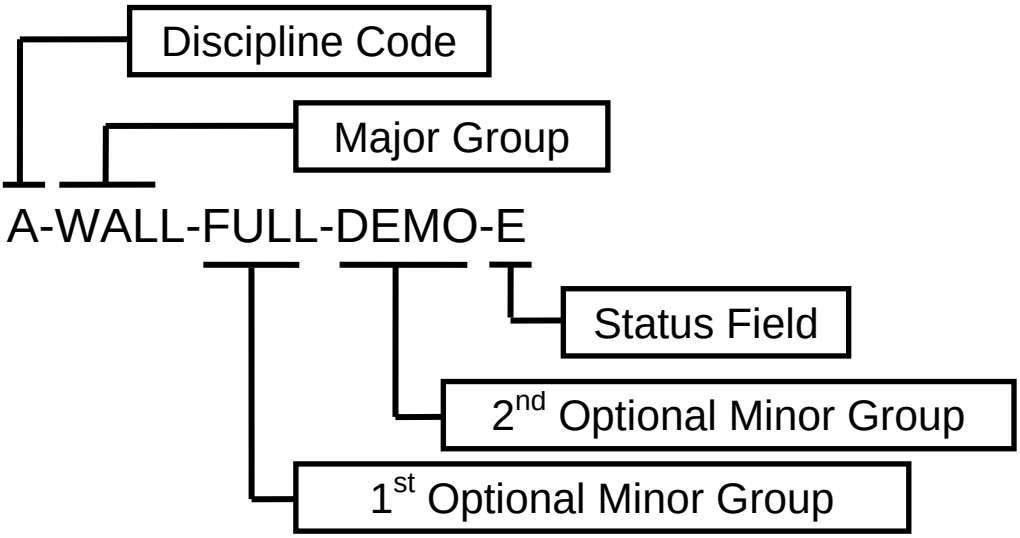
The following charts are intended to aid the user in determining the appropriate text size when placing common text in the Model File. Scale for placing the border and text on a drawing based on the actual size of the drawing. Calculations are based on a 9 1/2" x 15 1/2" drawing area inside the border.

Text Size for Sheets Using Architectural Scales				
Note: For text placed in model files, text in paper space at 1:1				
Drawing Scale	**Text Size**			
	3/32"	1/8"	5/32"	3/16"
Full size	3/32"	1/8"	5/32"	3/16"
6″ = 1′-0″	3/16"	1/4"	5/16"	3/8"
3″ = 1′-0″	3/8"	1/2"	5/8"	3/4"
1 ½″ = 1′-0″	3/4"	1"	1 1/4"	1 1/2"
1″ = 1′-0″	1 1/8"	1 1/2"	1 7/8"	2 1/4"
¾″ = 1′-0″	1 1/2"	2"	2 1/2"	3"
½″ = 1′-0″	2 1/4"	3"	3 3/4"	4 1/2"
3/8″ = 1′-0″	3"	4"	5"	6"
¼″ = 1′-0″	4 1/2"	6"	7 1/2"	9"
3/16" = 1'-0"	6"	8"	10"	1'
1/8″ = 1′-0″	9"	1'-0"	1-3"	1'-6"
3/32" = 1'-0"	1'	1-4"	1'-8"	2'
1/16″ = 1′-0″	1'-6"	2'	2'-6"	3'

Text Size for Sheets Using Engineering Scales				
Note: For text placed in model files, text in paper space at 1:1				
Drawing Scale	**Text Size**			
	3/32"	1/8"	5/32"	3/16"
1″ = 5′	5 5/8"	7 1/2"	9 3/8"	11 1/4"
1″ = 10′	11 1/4"	1'-3"	1'-6 3/4"	1'-10 1/2"
1″ = 20′	1'-10 1/2"	2'-6"	3'-1 1/2"	3'-9"
1″ = 30′	2'-9 3/4"	3'-9"	4'-8 1/4"	5'-7 1/2"
1″ = 40′	3'-9 1/2"	5'	6'-3"	7'-6"
1″ = 50′	4'-8 1/4"	6'-3"	7'-9 3/4"	9'-4 1/2"
1″ = 100′	9'-4 1/2"	12'-6"	15'-7 1/2"	18'-9"
1″ = 200′	18'-9"	25'	31'3"	37'-6"
1″ = 500′	46'-10 1/2"	62'-6"	78'-1 1/2"	93'-9"
1″ = 1000′	93'-9"	125'	156'-3"	187'-6"
1″ = 1250′	117'-2 1/4"	156'-3"	195'-3 3/4"	234'-4 1/2"
1″ = 2500′	234'-4 1/2"	306'-6"	390'-7 1/2"	468'-9"
1″ = 5000′	468'-9"	625'	781'-3"	937'-6"

23.10 LAYERING STANDARDS

All layer names shall follow the format detailed in the National CAD Standards. Below is a brief description of the layer naming convention.



Examples: Codes, Groups and Fields.

- **Discipline Code**

A-_ _ _ _-_ _ _ _-_	Architectural
E-_ _ _ _-_ _ _ _-_	Electrical
F-_ _ _ _-_ _ _ _-_	Fire Protection
M-_ _ _ _-_ _ _ _-_	Mechanical
ETC.	

- **Major Group**

-WALL- _ _ _-_	Walls
-DOOR- _ _ _-_	Doors
-LITE- _ _ _-_	Lighting fixtures
-COLS- _ _ _-_	Columns
ETC.	

- **1st Optional Minor Group**

_-_ _ _ _-FULL-_	Full height
_-_ _ _ _-DIMS-_	Dimension
ETC.	

- **2nd Optional Minor Group**

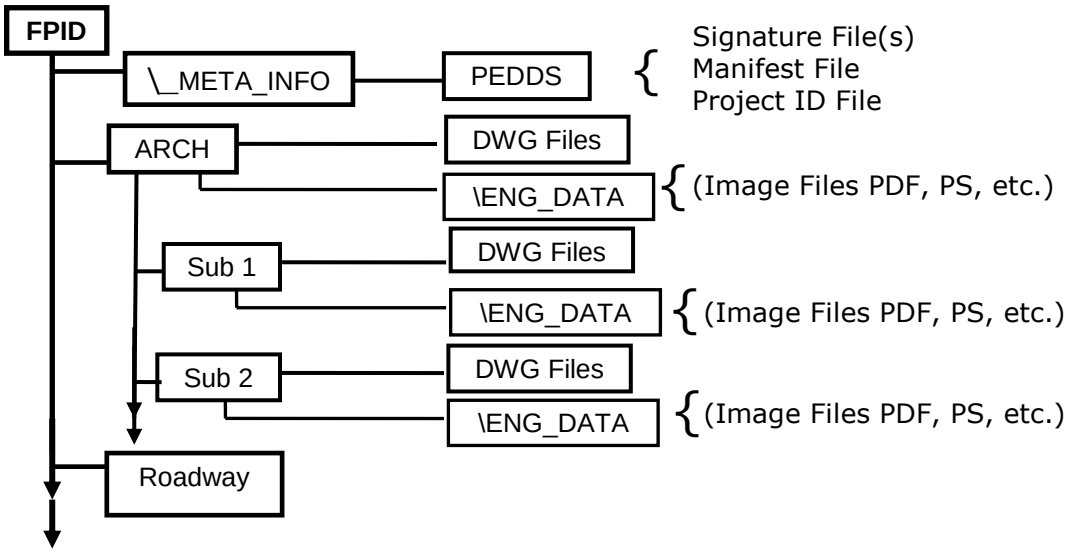
_-_ _ _ _-_ _ _ _-IDEN-_	Identification
_-_ _ _ _-_ _ _ _-PATT-_	Pattern
ETC.	

- **Status Field**

_-_ _ _ _-_ _ _ _-N	New work
_-_ _ _ _-_ _ _ _-D	Demolition
_-_ _ _ _-_ _ _ _-T	Temporary work
_-_ _ _ _-_ _ _ _-F	Future work
ETC.	

23.11 FILE STRUCTURE

The DOT uses a specific file structure for all electronic submittals. The following file structure shall be used for all architectural projects.



23.12 FILE SHARING AND MERGING

Every project shall use the standard directory structure regardless of the project requirements. **If a discipline requires information from another discipline, the needed file(s) shall be referenced from the original directory, not copied**.

23.13 ELECTRONIC SIGNING AND SEALING

The Florida Department of Business and Professional Regulation (BPR) has approved architects to electronically signing and sealing of plans and specifications. See 2010 Florida Statutes Part 1 ELECTRONIC SIGNATURES Chapters 668.001-668.006 for more information.

Helpful links:

Florida Department of Business and Professional Regulation

2010 Florida Statutes Part 1 ELECTRONIC SIGNATURES Chapters 668.001-668.006

23.14 ELECTRONIC SUBMITTAL

The Office of Design and Structures have defined the procedures for Structure As-built retention in a memorandum.

Drawing files used to create a project should be submitted on CD. The CD shall have all files in a directory tree as described Chapter 13, Roadway Standards. The delivery CD is the “official” CD and should be kept in a safe place during the life of the project.

When the office responsible for the Structures project receives the CD, the contents of the CD shall be authenticated using PEDDS to ensure the data on the CD has not been modified.

The next step in the process is to create a project on the server or workstation that meets the FDOT directory structure standards. Using the Create Project Application provided with the FDOT CADD Software ensures adherence to this standard. See documentation on the Create Project Application for complete details.

Copy files from the delivered CD into the corresponding project directory created above.

23.15 QUALITY CONTROL

Refer to the CPCH Chapter 7 for FDOT QC Requirements and instructions.

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Chapter 24 - SPECIFICATION STANDARDS

CADD Production Criteria Handbook

24.1 GENERAL

Specifications for a particular project shall be prepared in accordance with Specifications Package Preparation Procedure (Topic Number 630-010-005) and the Specifications Handbook coordinated through the District Specifications Offices and available on the Specifications website:

http://www.dot.state.fl.us/specificationsoffice/PackagePreparation/Default.shtm

24.2 STANDARD FILE NAMES

The Specification file naming convention for electronic delivery submittals is: 12345678900.pdf, where the full (11digit) financial project ID number is used.

The Supplements file naming convention for electronic delivery submittals is: 12345678900suppX.pdf, where the (full 11 digit) financial project ID number is used along with the identifier “supp” and “X” (the sequential numbering of the supplements: 1, 2, 3, etc).

24.3 RESOURCE FILES

Statewide implemented specifications files are distributed by the State Specifications Office through the District Specifications Offices.

24.4 PROFESSIONALS’ ELECTRONIC DATA DELIVERY (PEDDS)

Specifications Packages are created as a single file, electronically signed and sealed with PEDDS in accordance with Chapter 471, Florida Statutes and Rule 61G15-23.003, F.A.C.

https://www.flrules.org/gateway/ruleNo.asp?id=61G15-23.003

24.5 TECHNICAL SPECIAL PROVISIONS – SIGNING AND SEALING

When the use of a Technical Special Provision (TSP) is authorized by the District Specifications Office, it is individually signed and sealed (electronically or manually) and then incorporated into the project’s specifications package. For electronically signed and sealed TSPs, each TSP must be created with a separate signatory and electronically signed and sealed in PEDDs with the electronic statement included on the TSP cover page. When a TSP is manually signed and sealed, it must be scanned in grey scale for seal visibility and no electronic statement is needed.

24.6 ELECTRONIC FILE STRUCTURE

Specifications

Supplemental Specifications Package

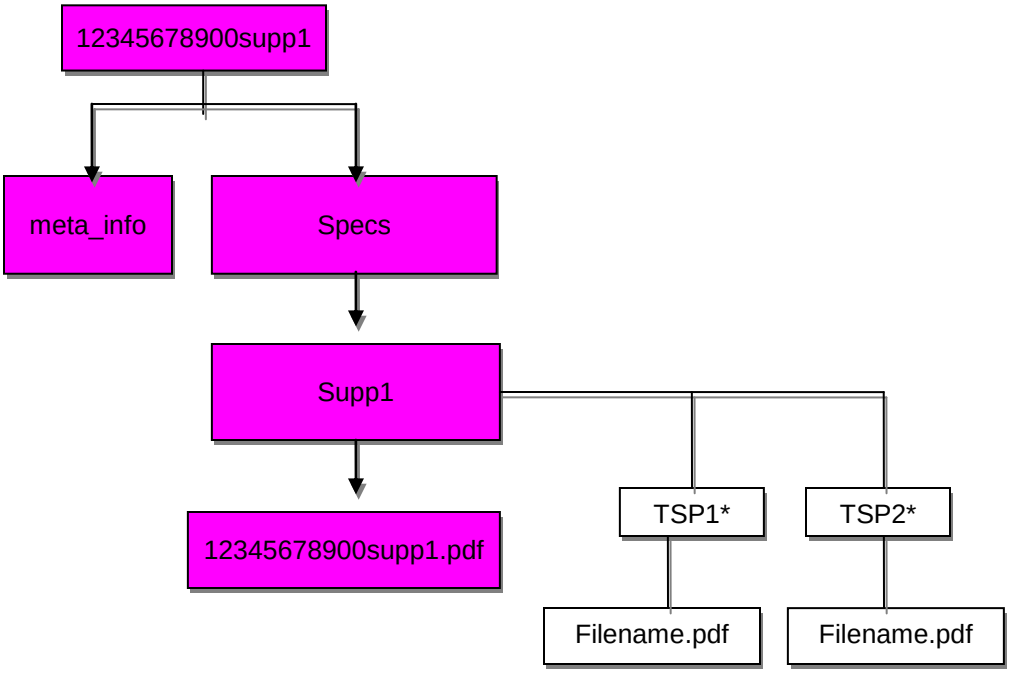
Technical Special Provisions (TSP)*

Note This folder is only included in the Project CD, not the Letting CD.

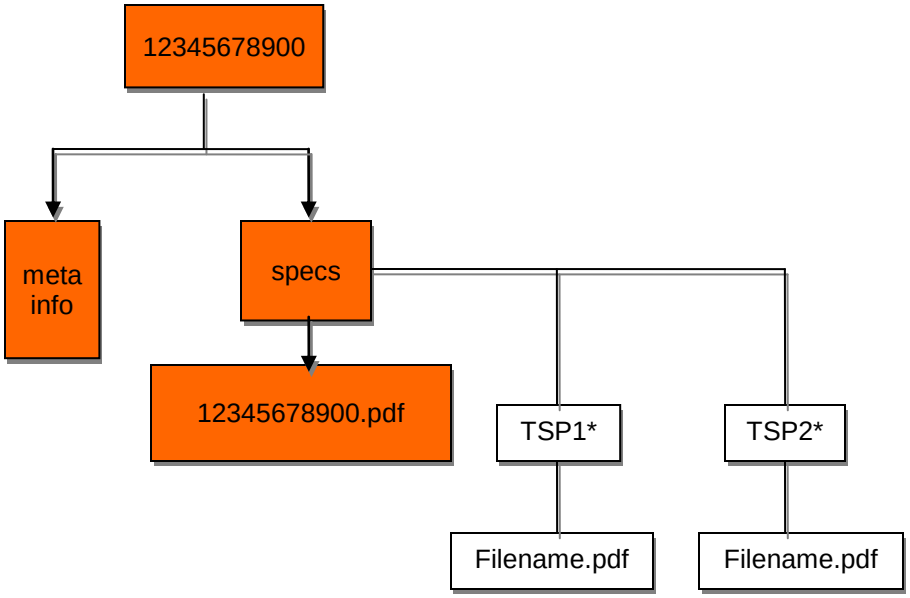
The following page contains figures, which are examples of the current electronic file structure.

Example of a

Supplemental Specifications Package



Example of a
Specifications Package
Electronic Supplement



24.7 FORMAT PROCEDURE FOR SPEC-PACKAGE SUBMITTAL ON CD

1. Create the project folder using all eleven digits of **FPID** No. (i.e., 12345678900).
2. Inside the created (project) **FPID** folder, create a **specs** subfolder. This is where the Specifications package file (12345678900.pdf) is placed.
3. Sign and seal Specifications package file (12345678900.pdf) in PEDDS. This places the **meta_info** subfolder into the **FPID** folder where the **specs** subfolder already resides.
4. For Supplements, continue to use the ORIGINAL **FPID** folder created in Step 1. Delete everything contained in the **specs** subfolder and all signatory files in the **meta_info** subfolder.
5. Create a **SuppX** subfolder inside the **specs** subfolder. This is where the Supplement package file (12345678900suppX.pdf) is placed.
6. Sign and Seal the Supplement package file (12345678900suppX.pdf) in PEDDS.

Note **DO NOT** send the entire Specification package again; it will not be accepted. All files on the CD should be in .pdf format and belong in the Specifications package.

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Chapter 25 - APPENDIX

CADD Production Criteria Handbook

25.1 GLOSSARY OF TERMS

accept Clicking the Data button to approve the placement of a data point at the location of a tentative point or to confirm the identification of an element to which a tentative point is snapped.

active angle The angle, in degrees, used with tools that require an angle specification. (AA=)

active cell The cell that is placed with the cell placement tools. (AC=)

active class The class (primary or construction) of an element upon placement. Design files are normally composed of primary elements. Construction elements are usually placed to help place primary elements and are usually not plotted.

active color The setting that determines the color of an element upon placement. (CT=)

active color table The set of up to 256 colors from which the active color table is modified, attached, and saved in the Color Palette setting box.

active command The command that has been activated from a palette, menu, or Command Window key-in.

active depth The depth within the view cube of the plane upon which data points are entered. The plane is perpendicular to the Z-axis of the view. There is an active depth associated with each view.

active design file The design file currently opened for viewing and/or manipulation.

active entity The row in the database table that is linked to a graphic element when a database attachment is executed.

active font The setting that determines the font of a text element upon placement. (FT=)

active level The setting that determines the level upon which an element is placed. (LV=)

active pattern angle The setting determines the angle at which the active pattern cell is placed by Pattern Element Area or Pattern Fence Area, the angle of the lines placed using Hatched Element Area, or two settings that determine the angle of the lines placed using Crosshatch Element Area. (PA=)

active pattern cell The setting that determines the cell that is used for patterning. (AP=)

active pattern scale The setting that determines the scale at which the active pattern cell is placed during area patterning and linear patterning. (PS=)

active pattern spacing The distance(s) between adjacent pattern cells placed using Pattern Element Area or Pattern Fence Area. The distance(s) between lines placed using Hatch Element Area or Crosshatch Element Area. (PD=)

active point The setting that determines whether a cell, symbol, or zero-length line is drawn by the point placement tools. (PT=)

active scale factor The setting that determines the amount of scaling applied to a cell when placed, to selected elements when using Scale Element, or to the fence contents when using Scale Fence Contents. The scale factors in the x, y, or z direction can be identical or each can be different. (AS=)

active symbology The setting that determines the color, line style, and line weight of a design element upon placement.

active line style The setting that determines the line style of an element upon placement. (LC=)

active text height The setting that determines the height of text upon placement. (TH=)

active text width The setting that determines the width of text upon placement. (TW=)

active line weight The setting that determines the line weight of an element upon placement. (WT=)

alphanumeric A string of characters that take the form of letters, numbers, and some symbols (e.g. @, $, and punctuation).

alternate key-in A short-cut for entering a key-in command**:** for example, AA= is an alternate key-in for ACTIVE ANGLE=.

arc Regularly curved open element that has a constant radius around a single center point.

area patterning Placement of the active pattern cell at the active pattern angle, scale, and spacing in an area bounded by a shape, ellipse, circle, fence, or complex shape. The cell is repeated in a rectangular array spacing as many times as necessary to fill the area.

aspect ratio Height divided by width.

associated dimensions Dimensions that update automatically as the element they dimension is modified.

attach To activate a paper, cursor button, or sidebar menu. To define a cell library, color table, or reference files for use with a design file.

authentication The process of comparing the Professionals' Electronic Data Delivery System (PEDDS) generated message digests (SHA-1 Hash Codes) of the manifest file and signature files for an on-hand delivery file set to those stored on a PEDDS generated, signed manifest document for a specific delivery. This process is similar to validation, but extends the process to the signed paper manifest document.

Authorization The event in which the project is certified as ready to be advertised for letting.

B-spline curve A free-form, parametrically defined curve in which each pole (vertex) has an influence over a defined range of the curve.

B-spline surface A free-form, parametrically defined surface in which each pole (vertex) has an influence over a defined range of the surface.

Baseline An accurately measured line from which the position of other points may be determined, or on which a survey may be based.

benchmark A relatively permanent object, natural or artificial, bearing a marked point whose elevation above or below an adopted datum is known.

Bid Set A file set containing a subset derived from the Project CD containing only those items needed to prepare a letting CD. Though the term refers to a CD, the file set may be stored or transmitted electronically. The 'Plans & Specs' data set is created from the 'Project' data set using the SETMAKER application.

bitmap Pixel oriented mode of saving data, usually from the screen. When saving data as bitmaps, the resolution, or fineness of detail, is determined by the resolution of the device the bitmap is save from.

block A rectangular shape.

Bi-level A term for Level Symbology.

CADD Computer Aided Design and Drafting.

cell A complex element composed of a group of other complex elements that is stored in a cell library for repeated replacement.

cell definition The graphical elements that make up a cell.

cell library A file that is used to store cells. To access cell in a cell library, the library must be attached.

cell library index file A binary file that contains the name of each cell in the attached cell library. MicroStation generates this file automatically.

cell origin The point, specified during cell creation, about which the cell is placed (corresponds to the data point when the cell is placed in the design).

Centerline The axis along the middle of a road or other facility from which features can be conveniently measured.

CES Cost Estimating System The Department's program for estimating construction cost for projects.

Change report An automatically generated HTML report that is created by the Project Delta application. It contains information about sheet-specific differences between a secured, delivered file set and a new, corrected file set

class An element attribute, usually primary or construction.

click To press or tap once on a cursor or mouse button. To select a 'Push' button or 'Check' button in a dialogue or settings box.

clip To divide an area, element, or portions of elements in a design from the rest for manipulation or display.

clipping boundary Boundary established with a fence or from a named view that separates the portion of a reference file that should be displayed from the portion that is not of interest. Reference files that are attached coincidentally cannot be clipped.

coincident reference file attachment A coincidentally attached reference file has a one-to-one correspondence between its design plane and the design plane of the active design file. If the 'working units' settings and the global origin are identical in the two files, the coordinates in working units are identical as well.

Color Palette Setting box that allows you to browse, modify, attach, and save the active color table.

command An instruction that tell MicroStation what to do. Commands are activated with tools in tool palettes; pull down menus; settings and dialogue boxes; Command Window key-ins; menu blocks; paper, cursor button or sidebar menus; and function keys. All commands can be activated with a key-in.

complex chain An open complex element that is formed from a series of open elements.

complex element An element created by combining several primitive elements.

complex shape A closed complex element formed from a series of open primitive elements.

compliance certification worksheet A document that contains the data producer's certification that all items required by the CADD manual are included in the project.

composite PDF A single document, that contains all plan sheet images in index order. This file must be in Adobe Portable Document Format, reside in the project's root directory, and be titled 'Project.PDF'. This report can be automatically generated by the Project Browser application.

component A categorization of design plans as defined in Chapters 2 & 3 of the FDOT Plans Preparation Manual, Vol. 2.

compress Reduce the size of a design file or cell library by permanently removing the elements or cells that have been marked for deletion.

cone An element composed of two circles on parallel planes with a surface connecting the two circles. A cone can be a solid (capped on both ends) or surface (not capped) element.

control net A rectangular array of vertices that (together with the B-spline order) define the shape of a B-spline surface.

control polygon Polygon whose vertices (together with the B-spline order) define the shape of a B-spline curve.

coordinate Location of a point in the design plane along the x (horizontal), y (vertical), and z (depth (3D only)) axes relative to the global origin.

correction **<**See *Plans Change*>

cross-section A view at the interior of an object as it is sliced along a plane.

crosshatch The process of constructing two sets of evenly spaced lines in a closed area bounded by a complex shape, closed elements, or fence at the active pattern angles and spacings.

Data button Button on a mouse or digitizing tablet cursor that is pressed to enter data points and identify elements for manipulation.

data point Input entered using the pointing device that designates a point in the design.

Datum A known or measured point, line or plane to which others may be referred for vertical or horizontal control.

delete Remove an element(s) from the design or cell(s) from a cell library. Deleted elements are not immediately purge from the design file, but are marked as deleted. To purge deleted elements, choose Compress Design from the File menu.

delivery A set of electronic files—generally corresponding to a Department work-project—secured by the PEDDS process, plus additional project metadata.

delivery key A unique message digest (SHA-1 hash code) used to reference the delivery. The delivery key is the message digest (hash code) of the delivery's manifest file.

design file MicroStation document file. The open (active) design file can be manipulated. Design files can be attached to the open design file as reference files for viewing and construction purposes.

design plane The area in which elements are created in a 2D design, except DTM and contours. The design plane size is dependent on the resolution. The standard V8 resolution of 304800 per Survey Foot creates a design plane of 5596825 miles. A working unit definition is applied to the design plane to assign real world coordinates to the design plane.

digitizing The process of coding graphic information from paper sources into a design file.

dimension Label in a design showing a distance or angle measurement.

dimension attributes Attributes for all components of dimension elements, including text (color, weight, font, height, and width), lines (color, style, weight, and alternates) and level.

dimension element An element that contains all of the lines, arcs, terminators, and text in a dimension.

dimension line terminators Symbols placed at the end of dimension lines that clarify the meaning of the dimensions.

dimension line The component of a dimension that is usually parallel to and the same length as the object being dimensioned.

dimension mark Symbols placed with dimension text that clarifies the meaning of the dimension text.

dithering Alternating two or more color pixel across the screen to seemingly create a third color not available in the color palette.

drop complex element Return the primitive elements composing a complex element to their primitive element status.

DXF A drawing interchange file format supported by most CAD packages. MicroStation design files can be saved in DXF format, and DXF files can be imported into MicroStation design files.

EDG The Edit Design Graphics utility, which lets you display, search, and modify a design file or cell library in a non-graphical, command line environment. Not used in MicroStation Version 8.

electronic data indexer (EDI) Electronic Delivery Index, or EDI, has been developed to provide designers with the ability to quickly build an index from a set of plans. It is designed to work in conjunction with the Department's required CADD package, Bentley MicroStation.

element One of the entities that make up a design file.

element symbology The color, line style, and line weight of an element.

enter data field One or more character placeholder that reserves space in a text element for future input.

EOF End Of File marker tell the software where to stop scanning a file, and where to append new elements.

extension Characters optionally separated from the main part of a filename by a period (".") character. Traditionally, these have been used to designate the type of file. For example, .dgn, .cel, .ucm are commonly used to represent a design file, a cell library, and a user command, respectively.

fence Grouping tool used to select multiple elements for simultaneous manipulation.

fillet An arc constructed between and tangent to two converging lines.

filter A filename pattern that limits filenames displayed in a list to those fitting the patter: for example, "\DGN*.DGN".

fit Viewing operation that expands the area seen within a view to include all elements on all levels turned on in the view.

font A style of lettering. Fonts are identified by both a number and a font name.

Font Library A file in which text characters styles, symbols, or patterns are stored. The font library then acts as input for software which displays and outputs characters, symbols, or patterns. Each font can have up to 256 characters, symbols, or patterns.

frame A palette that has sub-palettes.

function key menu A way to assign actions to the function keys on the keyboard.

global origin Location of the origin of the Cartesian coordinate system in the design plane coordinates (UORs). When design plane positions are specified or reported in working units, they are relative to the global origin.

graphic element A graphic component of the design referred to in user documentation as simply an "element".

graphic group A permanent grouping of elements (primitive or complex). An element can be a member of only one graphic group at a time.

hash code See *Message Digest*.

imagery Visible representation of characters, lines drawings and symbols.

index An XML file created by EDI that contains metadata concerning all files that have been identified as sheets in a project directory. This file is titled 'ProjectIndex.XML' and must reside at the root of the project. This is the only file that the Electronic Delivery suite of tools recognizes as an official index.

journal Documentation that is included with a project, detailing the decisions made, methods used, and actions taken on the project as they occur. This is maintained in the form of electronic documentation, comprising the all journal files for the project. Design variations and exceptions can be thoroughly documented as part of the journal. The Professional of Record is responsible for the overall journal for the project. Journals are created and maintained by EDI.

letting The process of advertising, selection, and award of a contract for the construction of a project.

letting CD The compact disk prepared for the letting process consisting of plans, specifications, and a front-end "kiosk" application that offers easy access to bidding documents.

level Data in the design file is segregated into drawing levels. Levels are similar to transparent overlays that can be put together to form a complete drawing. A level can be turned on and off independently in different views.

level symbology View setting that, when turned on, causes all elements on a particular level to be displayed with the same element symbology.

line string An open graphic element composed of up to 4000 line segments connected at the vertices.

line style Part of the symbology of an element: for example, whether a line is solid, continuous dashes, dots and dashes, and so on. In plotting, a line style is an index in the range 0 to 7 that designates a particular sequence of pen up/down pairs to be used when drawing or plotting a graphic element. Each element has its own line style.

line terminator A cell placed at the end of an open element, oriented in the direction of the element. A common line terminator is an arrowhead placed at the end of a line segment.

line weight An index in the range 0 to 31 that designates the weight or thickness of the lines used to draw or plot a graphic element. Each element has its own line weight.

linear patterning The repetitive placement of the active pattern cell along a line, line string, shape, arc, circle, ellipse, or curve element.

manifest document A signed paper document used to secure a manifest file and to reference the signature files in the project delivery corresponding to the manifest. By signing the manifest document, one has associated their name to the manifest file that corresponds to the hash code on the paper document. The manifest file lists the project files by URL and the project files' hash-codes, thus the signatory has signed the files listed in the manifest.

manifest file The XML file, created and maintained by PEDDS, used to define and secure the entire contents of a project delivery. This file is titled 'Manifest.XML' and will always reside in the project's _meta_info sub-directory.

message digest An alpha-numeric string which is generated by a one-way cryptographic algorithm and used by PEDDS to process and identify the contents of a file. This is often referred to as a *hash code*. Every electronic file has its own unique hash code based on its content.

manipulate Copy, move or modify an element or group of elements.

mask An area of a reference file that is not displayed.

master units The largest units in common use in a design.

matrix menus Paper (mounted on the surface of a digitizing tablet) menus that contain menu blocks of a fixed size organized in rows and columns.

menu One method for activating a MicroStation command, including pull-down menus, tool palettes, function key menus, and paper menus.

MicroStation Development Language (MDL) Allows programmers to execute "C" language code within MicroStation. MDL is dependent on the specific platform version. Programs, written in MDL, use MicroStation as a CAD engine.

monument point A known landmark point in the design plane. Monument points are used to orient reference files, and to set up mapping between a paper document and the design plane for digitizing.

multi-line element A set of two or more parallel lines treated as a single object, commonly used for drawing walls in a floor plans. A multi-line element can be defined to include up to 16 separate lines, each with its own symbology, level, and class.

non-coincidental reference file attachment A non-coincidentally attached reference file is offset, rotated, or scaled from the active design file.

noun-verb A manner of operating MicroStation: identifying an element in the design before choosing a tool to act upon it.

origin See cell origin or global origin.

orthogonal Constructed with right angles or perpendicular lines. An orthogonal shape contains only right

palette Floating, icon-based screen menu used for activating MicroStation commands.

panning Scrolling a view over the design plane.

parabola A plane curve generated by a point moving so that its distance from a fixed point is equal to its distance from a fixed line.

pattern element An element with a class attribute of pattern. It can be placed only with a patterning tool.

patterning See linear patterning or area patterning.

PC Station Point of Curvature Station at the beginning of a horizontal curve.

PEDDS The Professionals' Electronic Data Delivery System (PEDDS) is as application used to simplify the tasks involved with file security. PEDDS allows users to sign electronic files, ensuring that users can easily test to determine if a project has been changed, corrupted or tampered with.

perspective The distance, in working units, from the eye point to the front of the display cube for a view with perspective projection.

pI Station Station of the Point of Intersection of two tangents.

plans change ***(****Plans Preparation Manual Chapter 20 definition)* Modification to a set of plans, after the Estimates department has changed the Control Group, but before the plans are sent to the FDOT Central Office.

pixel "Picture element:" the smallest dot of light that a monitor can display.

point cell Cell with a single, snappable point. Point cells are commonly used for symbols and to establish monument points. The snappable point in a point cell is the cell origin. Point cells are always placed relative to the active level with the active symbology.

point element A special case of a line element; one that has no length.

point of intersection The point at which two non-parallel lines intersect, or would intersect if the lines were extended.

positional units Smallest resolution obtainable in the design plane. One unit of resolution is equal to a positional unit. See also **units of resolution (UOR)**.

precision input Entering data points at precise locations either by specifying the coordinates or by specifying the distance from the most recent data point or tentative point. Precision input can be entered from the precision Input setting box or by using key-ins in the Command Window.

primary elements Elements whose class attribute is primary (as opposed to construction.)

primitive elements Simplest type of element.

project An entity, corresponding to a Department work-project, that uniquely identifies a delivery or collection of deliveries containing electronic files made during the creation of the work-project. Multiple deliveries can exist for a single project, each representing the status of the project at the time of delivery. Work-projects are identified by the Department through the Financial Project Identification Number and related project identification, but the PEDDS and PEDDS DB systems use a generated, unique identifier—the project key—to identify the project. All deliveries corresponding to a particular project will share the same project key.

project browser Project Browser is an application that simplifies the tasks of quality assurance and report generation, while providing a graphical interface for project review. It allows users to view an overview of a project, including all components, design files, file sheets and project journals.

project CD A CD containing all data associated with a project, including all files on the Plans & Specs CD, all design files, all reference files, project journals, etc.. Though the term refers to a CD, the file set may be stored or transmitted electronically.

project delta Project Delta is a report generating application used to simplify the job of keeping track of file changes after revisions and corrections. Users can quickly identify and report on any indexed differences between two deliveries of the same project.

project key An alphanumeric character string, generated by PEDDS, that uniquely identifies a project. This number is unique across all projects that are secured using PEDDS and identifies one project and one project only.

project root directory The file system directory that contains all project files and folders. The project root directory should not contain files that do not pertain to the project, nor should files that are part of the project reside outside of the project root directory or one of its subfolders. The folder structure is defined in chapter 4 of the CADD Production Criteria Handbook.

PT Station The point of a Tangent Station at the termination of a horizontal curve and at the beginning of the tangent.

qSheet qSheet is an application in the FDOT 2002 Electronic Delivery suite of tools which offers designers and contractors an easy means to print all or part of an indexed project sheet set.

quality control reports Reports that must be included with the final project delivery: the Compliance Certification Checklist and all reports listed therein.

raster background A bitmapped picture that can be used as the backdrop for a rendering.

rectangular ACS The Auxiliary Coordinate System that uses the standard (Cartesian) axes.

reference file A design file that is attached to and viewed simultaneously with the active design file. Reference files can be used for constructions in the active design file, but cannot be modified. Elements can be copied from a reference file to a design file.

Reference Points One of several fixed objects for which measurements are made to enable a point to be accurately located.

resolution The number of addressable points across a given area. For example, plotter resolution is measured in lines per inch, while screen resolution is usually given with two numbers indicating the number of pixels across the width and height of the largest image that can be displayed.

revision Section 20.4 of the Plans Preparation Manual defines a revision as a modification to the Bid Set after it has been transmitted to Central Office but prior to bid opening.

revision report An automatically generated HTML report created by the Project Delta application. It contains information about differences between indexed items in a secured project delivery and indexed items in a new revised file set. In contrast with a Correction report, the Revision Report also contains embedded XML data that will allow the SetMaker application to generate a set of revised files. This report is generated prior to the securing of the revised project and should be included in the delivery for the revised project.

revision set The set of files that denote changes to indexed items from one delivery to the next, as well as the revision report that defines them. Because Revision Sets are managed as independent entities and must have authenticated, unique signatories created and used for each revision set during the project revision process.

scale Resize an element or elements by the active scale factors. In plotting, the ratio between distance in the design file master units and distance moved by the plotter pen.

securing files The act of creating and storing a SHA-1 message digests for a specific file or file set. Message digests and relative file paths are kept in the project's Manifest.XML file, which in turn will allow PEDDS to validate secured files.

seed file A template used to create a new design file or cell library. The new file has its settings identical to those of the seed file.

seed project A seed project is a folder set that contains all folders as listed in Chapter 4 of the FDOT CADD manual, as well as the project configuration file and various journal RTF files. Once a seed project is created, it is ready for the Production phase.

select To place a data point on and activate a tool.

set maker SetMaker is an application in the FDOT 2002 Electronic Delivery suite of tools. Its intent is to assist in the validation and generation of the various types of electronic project file subsets that are required during the lifespan of a project.

settings Values that determine how MicroStation displays a design or handles user inputs.

SHA-1 hash standard US Secure Hash Algorithm 1 (SHA1) is a secure hash standard which produces a condensed representation of a message or data file. The SHA-1 is called secure because it is computationally infeasible to find a message which corresponds to a given message digest, or to find two different messages which produce the same message digest.

shape Closed primitive element composed of up to 100 linear segments.

Shared cell A cell whose elements are stored once in the design file, regardless of how often the cell is placed. Any changes made to one instance of a shared cell, is reflected in all instances of that shared cell.

sheet Electronic Delivery applications recognize a sheet as a discreet image file that is listed in the project index. It must belong to a component and have a defined discipline. Sheet Index See index

sheet index report An HTML report which is derived from the project's Index (the 'ProjectIndex.XML' file). The report file must be titled 'SheetNDX.HTM' and must reside in the project's root directory.

sheet navigator The Sheet Navigator browser is an application that allows users to easily browse and open MicroStation files containing sheets for verification or editing. Its purpose is to 'tag' sheets with data that supports later Electronic Delivery Indexing and Plotting. Sheet Navigator is a foundation utility for subsequent Electronic Delivery processes, and should be run against every MicroStation design file in the project that has sheets in it and checked that the sheet data is both extracted and edited properly.

signatory The person or professional who secures files in a delivery using a signature file and document. If the signatory is a professional, signatures will be governed by rules defined by the Florida Boards of Professional Regulation. A professional may have multiple signatories in a project as needed by the revision process. See 'Revision Set' for more details.

signature document A physically signed or signed-and-sealed paper document used to secure a signature file. Florida and Federal law accept the association of a physical signature with an electronic document. The Florida Boards of Engineering and Surveying and Mapping have adopted rules whereby professionals can electronically sign and seal electronic documents in accordance with these laws. Therefore, by signing the signature document, the signatory is, by proxy, signing and sealing all files that are listed on the report. A professional may have multiple signatories in a project as needed by the revision process, and as such, may have multiple Signature Documents associated with a project. See 'Revision Set' for more details.

signatory file A file that defines the project files that a signatory is going to sign or sign-and-seal. All signatory files are created by PEDDS and resides in the project's _meta_info sub-directory.

signing The act of securing a set of files under a signature file without the benefit of signing-and-sealing under Florida Boards of Professional Regulation rules. This implies that the signatory is a lay person and not a professional. Signing a file adds file information to the signatory's signature file.

signing and sealing The act of securing a set of files based on the rules defined by the Florida Boards of Professional Regulation governing signing-and-sealing electronic files. These rules provide for:

- a signature file to define the type of professional that is signing and sealing (i.e., engineer or surveyor)
- the professional's name, number, and scope of work
- the list of files—defined by relative URL and hash-code—that are to be signed and sealed

Signing and sealing can only be done a by professional. Signing and Sealing a file adds file information to the signatory's signatory file.

snap Use of the tentative point to position a data point at an exact point on the target element. Tentative points snap to an element when Snap Lock is on.

solid A type of complex elements specific to 3D, along with surfaces and B-spline surfaces.

strung project Two or more projects that are let in the same contract. A strung project may be created from two or more 'Plans and Specs' data subsets created by the SetMaker application.

style A multi-line definition or set of dimensions attributes that can be saved in a style library for later recall.

style library A file containing styles for use by MicroStation.

sub consultant A consultant, separate from the primary consultant, who performs work for a project under the hire of a prime consultant

sub delivery A delivery of files made by a sub consultant to a consultant, prime consultant or project manager.

subproject A complete project that is let with multiple projects constituting a strung project.

subset A set of files that is entirely derived from a secure delivery file set.

sub-palette A subordinate palette.

sub-units Units that master units are divided into in the working unit definition. For example, if master units are feet, a convenient sub-units setting would be inches. The number of sub-units per master unit and a one or two character abbreviation for the sub-unit name is specified in the working unit definition.

surface A geometric construction that can partition space but cannot enclose a volume.

symbol A character placed from a MicroStation symbol font.

symbol font A font that contains special use geometric constructions rather than alphanumeric characters. A typical use is to hold symbols for dimension line terminators and dimension marks, and geometric tolerances.

symbol library MircoStation uses the term cell library to refer to what may be known as a symbol library in other applications.

symbology See element symbology or level symbology.

tentative point A graphical input that is used to preview the location of the next data point, define a point of reference, and/or create an association point.

Terminal Control Block (TCB) A global data area of memory in which MicroStation stores settings.

terminator See dimension line terminator or line terminator.

text attributes The color, weight, font, height and width of text.

text element MicroStation places text in design files as a distinct type of element.

text node Multiple text elements grouped in a complex element. MicroStation automatically forms a text node when multi-line text is placed.

tile Arrange views and palettes so that they do not overlap.

toggle A setting that has only two states, such as off and on. Used as a verb, to change the state of a toggle.

tool A drawing function or the screen icon used to represent that function in a palette for selection.

tool palette Floating, hierarchical screen menus from which tools are selected.

Unit Lock The setting that, when on, forces all graphically entered data points to the nearest point that is an integer multiple of the unit distance from the global origin in the x, y, and (in 3D files) z directions.

unit distance The setting that specifies the spacing between points that data point will be restricted to when Unit Lock is turned on.

units of resolution (UORs) The distance between adjacent points in MicroStation's design plan. There are a very large number of fixed discrete positions or UORs along each coordinate axis that are defined as real world coordinates by master units and sub-units (collectively, working units). This process is similar to setting up a piece of graph paper to represent data of a particular range.

update Redraw the contents of a view(s).

user command (UCM) A macro written in the user command language. UCMs are helpful in automating repetitious sequences.

user command index A file that assigns numbers to user commands, so that the user commands can be selected by these numbers from a paper menu.

utility A support program that executes a particular command or request.

validation The automated comparison of file message digests and signatory security information in the project's manifest file against information calculated from a delivery that is on hand. Whereas Authentication compares the results with those on the Manifest Document, validation merely tests to determine if the project file set has been altered in any way since the project was secured.

vertex The highest point or apex of a figure, the intersection of lines or curves, or the endpoint of an element.

view A window displaying a portion or all of the design file and its attached reference files.

void A mode of fence clipping that selects elements or parts of elements outside the fence, rather than within the fence.

window A bordered rectangular region on the screen displaying a tool palette, dialogue box, setting box, view, sidebar menu, tutorial, or Command Window.

window origin The position in the design plane of the lower-left corner of a view.

windowing A method of selecting new contents for a view.

working area Size, in working units square, of design plane.

working resolution Number of positional units, or units of resolution, per sub-unit.

working units The real-world units that the design plane is configured to.

zoom Decrease (zoom in) or increase (zoom out) the portion of the design displayed in a view.

25.2 ABBREVIATIONS

The abbreviations are listed in the FDOT Design Standards STANDARD ABBREVIATIONS Index No.001 for contract plans production. This list is not inclusive. Other Department accepted abbreviations may be used when deemed more appropriate. Where special abbreviations are used a descriptive tabulation may be necessary in the plans.

http://www.dot.state.fl.us/rddesign/DesignStandards/Standards.shtm

25.3 REFERENCED DOCUMENTS

Plans Preparation Manual *(Topic No. 625-000-007 Vol1 English) (Topic No. 625-000-008 Vol2)*

This manual provides engineering criteria and guidelines to be used in the development of roadway designs and plans preparation for roads on the State Highway System.

FDOT CADD Manual *(Topic No. 625-050-001)*

This manual provides guidance to engineers and technicians in **C**omputer **A**ided **D**rafting and **D**esign (CADD) techniques for the development of Contract CADD plans.

Design Standards *(Topic No. 625-010-003)*

These indexes provide standard drawings to support the various engineering obligations for designing, specifying, estimating, constructing, inspecting, testing, accepting, operating, maintaining and monitoring the roads on the State Highway System.

Structures Manual *(Volume 1) Design Guidelines (Topic No. 625-020-154)*

This document provides the structures personnel with guidelines for the development of uniform structural design and plans preparation.

Structures Manual *(Volume 2) Detailing (Topic No. 625-020-200)*

This manual provides the structures personnel with engineering standards and guidelines for structures detailing in the development of structural design and plans preparation.

Structures Standard Drawings *(Topic No. 625-020-300)*

Location Survey Manual *(Topic No. 550-030-100)*

These procedures are to be used as a guide, both by in-house and contractual personnel in performing field surveys for the Department.

Drainage Manual *(Topic No. 625-040-002)*

The Drainage Manual sets forth drainage design standards for the Florida Department of Transportation.

Utility Accommodation Manual *(Topic No. 710-020-001)*

This guide is to regulate the location, manner, installation and adjustment of utility facilities along, across or on any road under the jurisdiction of the Department of Transportation.