Electronic Delivery Productivity Tools

Florida Department of Transportation
Engineering CADD/Systems Office
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Authority: CADD Manual & Production Criteria Handbook

State of Florida
Department of Transportation

CADD MANUAL

Engineering / CADD Systems Office

TOPIC NUMBER: 625-050-001

Effective January 16, 2003

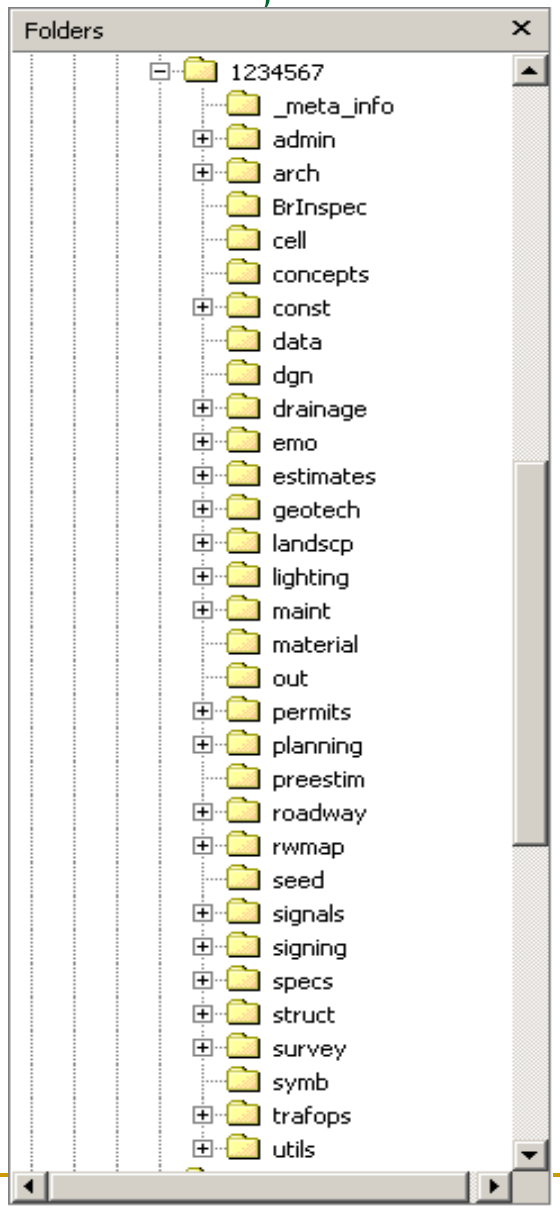
State of Florida
Department of Transportation

CADD PRODUCTION CRITERIA HANDBOOK

Engineering / CADD Systems Office

Effective: May 1, 2003

FDOT Project Directory Structure



Note on file naming: Don't create file names with special characters in the name, such as "~!@#$%^&\,:;" Keep file names short, and avoid using spaces in the names where possible (substitute "_" for space).

Every discipline has a standard place to put their data

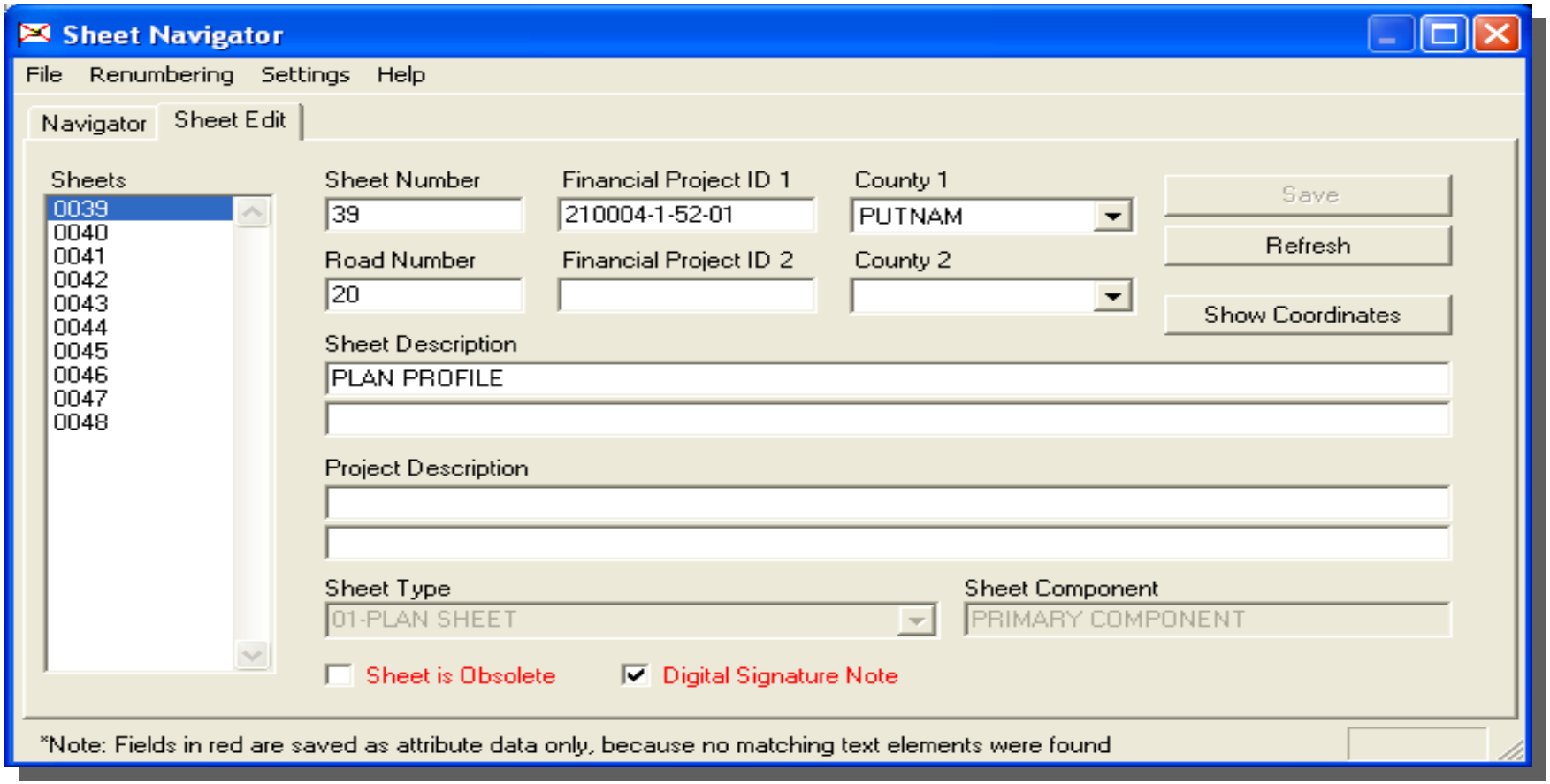
SheetInfo and SheetNavigator

Sheet Info/Sheet Navigator

- Foundation program for all subsequent Electronic Delivery processes
- This software extracts the data from the sheet borders (Sheet type, Sheet number, Description, County, FPID number, Coordinates, etc).
- You must follow CADD standards (symbology must be right for sheets)
- Should be run from MicroStation on every design file that has sheets in it (and checked that the data is being extracted / edited properly)
- SheetInfo is run “silently” by the Electronic Delivery Indexer and FDOT Batch plotting programs (so it is important that the third bullet (above) performs correctly

Sheet Navigator Overview

- The old functions of SheetInfo & Navigator have been implemented as one tool. Sheet Navigator.

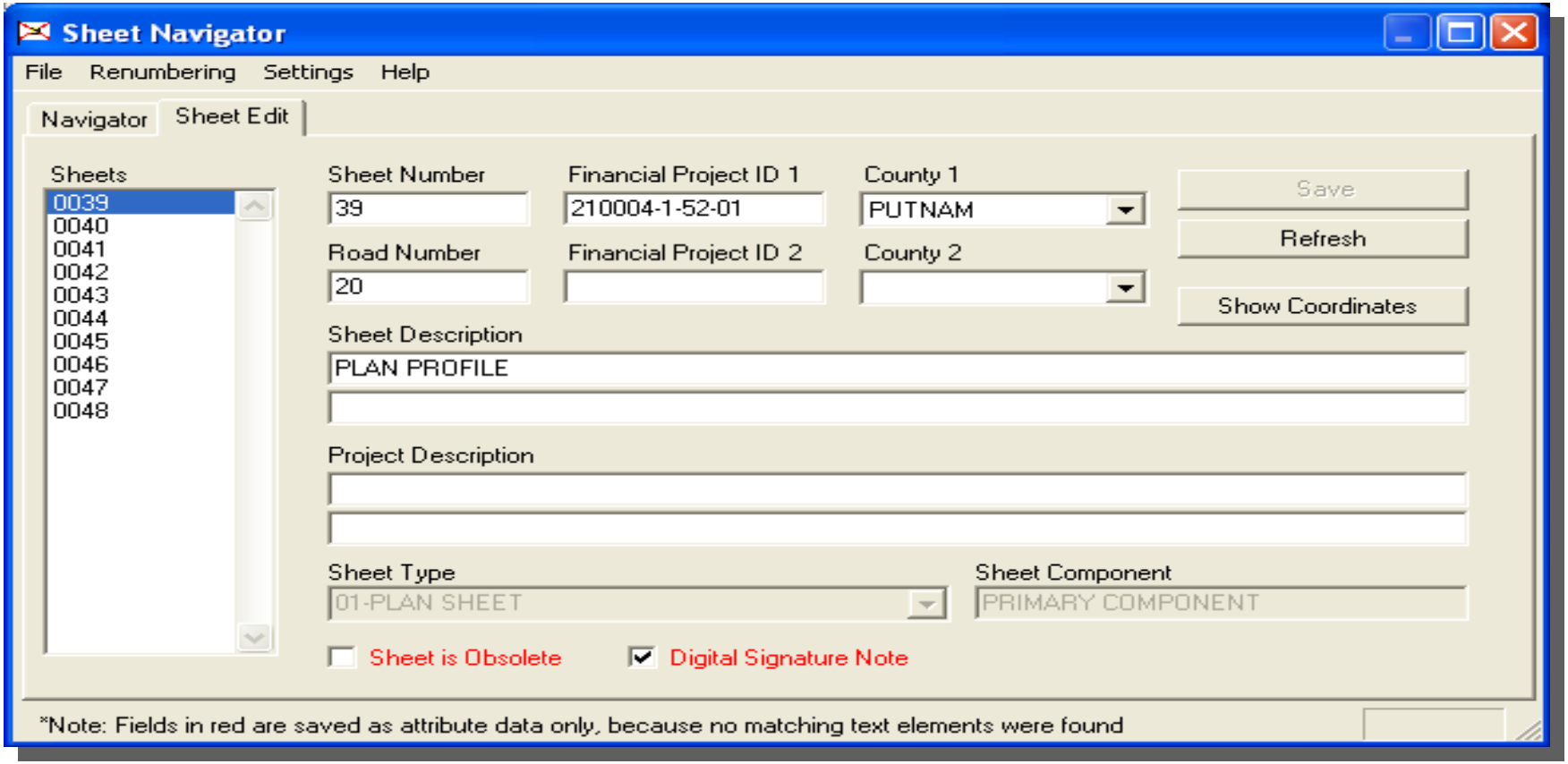


Sheet Navigator Overview

- The dialog is divided into two tabs. Sheet Edit and Navigator.
- The Menu Bar contains four pull down menus; File, Renumbering, Settings, and Help.

Sheet Edit Tab

- The Sheet Edit tab is very similar to, and performs the same function as the previous SheetInfo tool.



Sheet Edit Tab

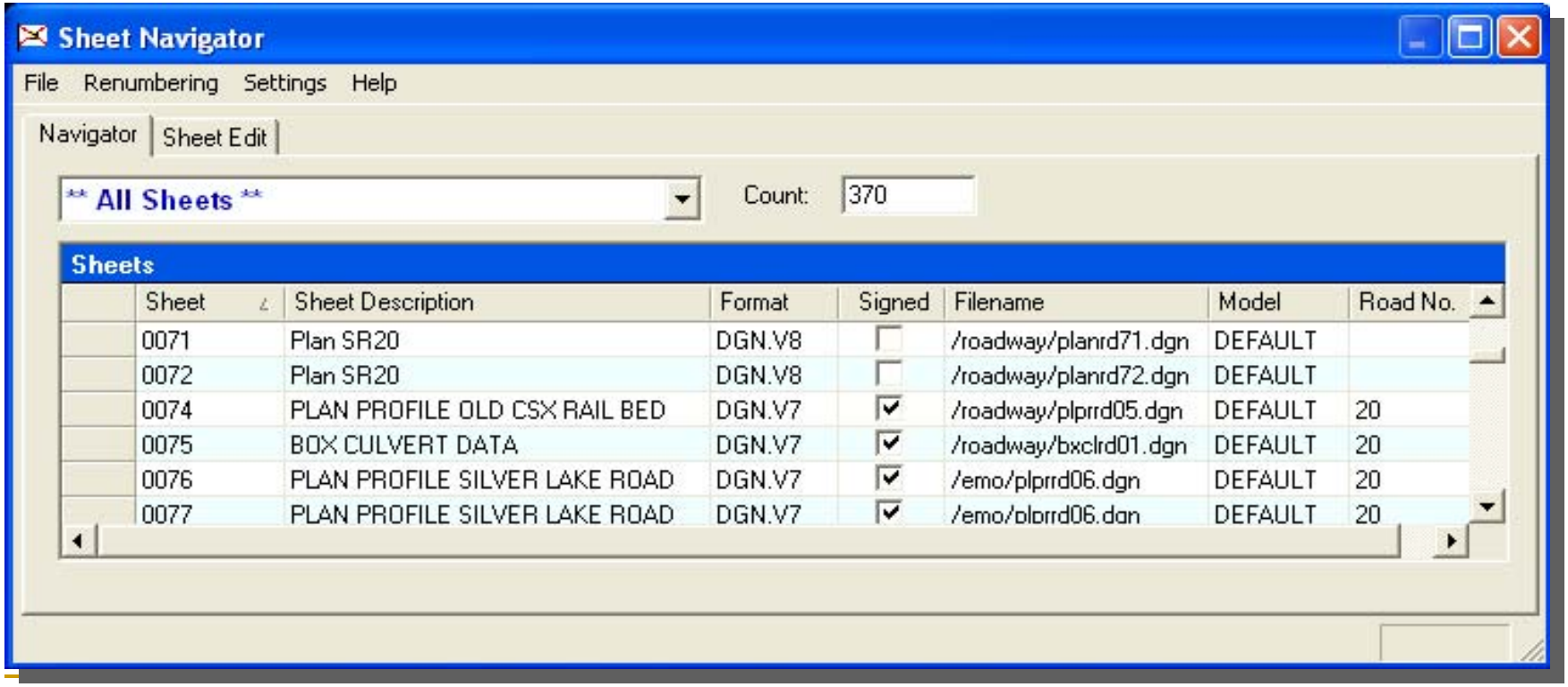
- Locates all sheets displayed in a .dgn file without regard to file location. (i.e. Sheets can be in a reference file.)
- Text fields on the dialog correspond with information fields on the sheet cell. Data entered in the dialog will be placed on the sheet in Enter Data Fields.
- Relevant Sheet information is tagged to the sheet for later retrieval during the Electronic Delivery process.

Sheet Edit Tab

- Allows for marking unused sheets as “Obsolete”. A large red X will be placed over obsolete sheets, and these sheets will not be indexed or plotted.
- Automatically places the Electronic Plan Note required on electronically signed & sealed plan sets.
- A “Show Coordinates” button displays either the physical file’s location coordinates, or the State Plane Coordinates, of the sheet boundary.
- Selecting a sheet in the dialog will highlight the sheet border. Double clicking will center the sheet in the active view.

Navigator Tab

- The Navigator creates and reads an XML file to display an interactive index of sheets.



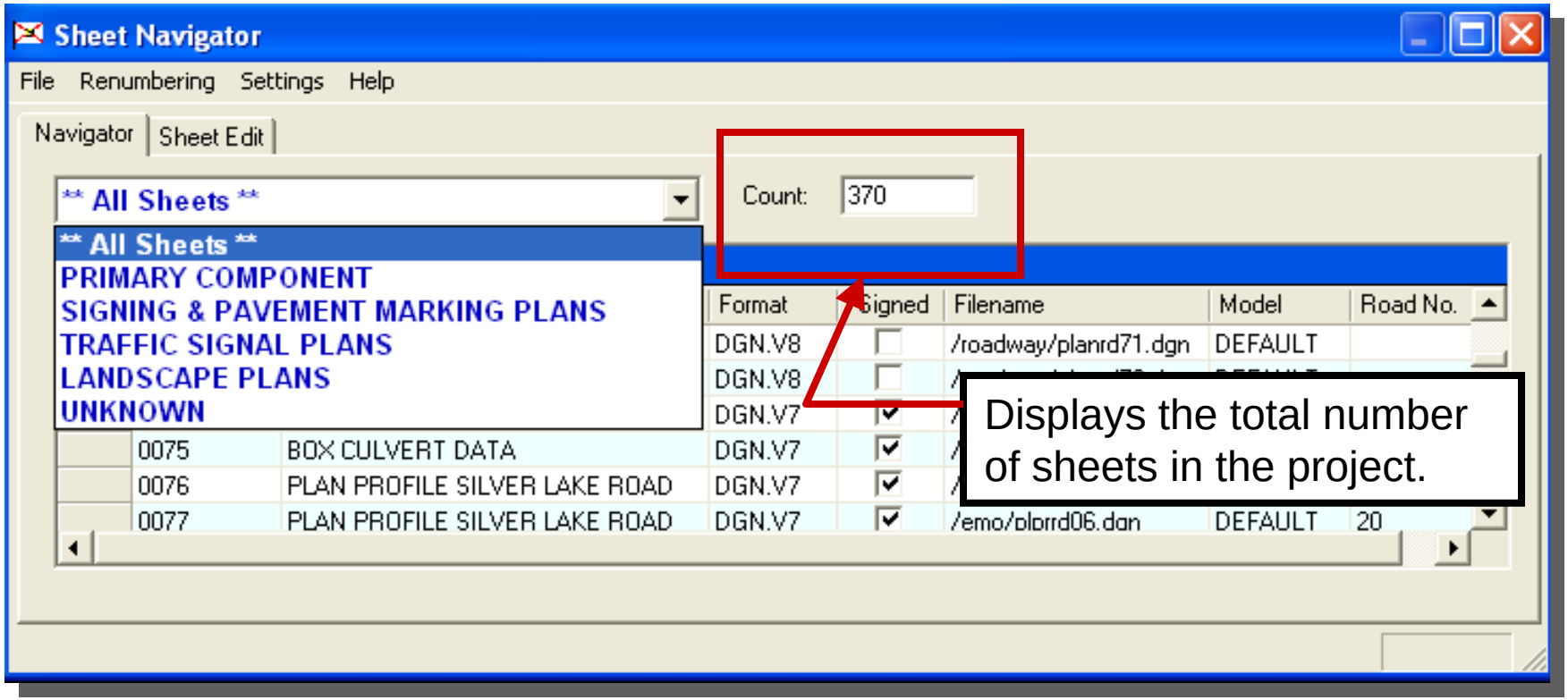
Sheet	Sheet Description	Format	Signed	Filename	Model	Road No.
0071	Plan SR20	DGN.V8	☐	/roadway/planrd71.dgn	DEFAULT	
0072	Plan SR20	DGN.V8	☐	/roadway/planrd72.dgn	DEFAULT	
0074	PLAN PROFILE OLD CSX RAIL BED	DGN.V7	☑	/roadway/plprrd05.dgn	DEFAULT	20
0075	BOX CULVERT DATA	DGN.V7	☑	/roadway/bxclrd01.dgn	DEFAULT	20
0076	PLAN PROFILE SILVER LAKE ROAD	DGN.V7	☑	/emo/plprrd06.dgn	DEFAULT	20
0077	PLAN PROFILE SILVER LAKE ROAD	DGN.V7	☑	/emo/plprrd06.dgn	DEFAULT	20

Navigator Tab

- The Navigator index displays the Sheet number, Sheet Description, DGN Format (V7 or V8), Filename, Model, and Road Number. The Signed check box indicates if the sheet contains the Electronic Plan Note.
- The index can be sorted by clicking on any of the category titles.

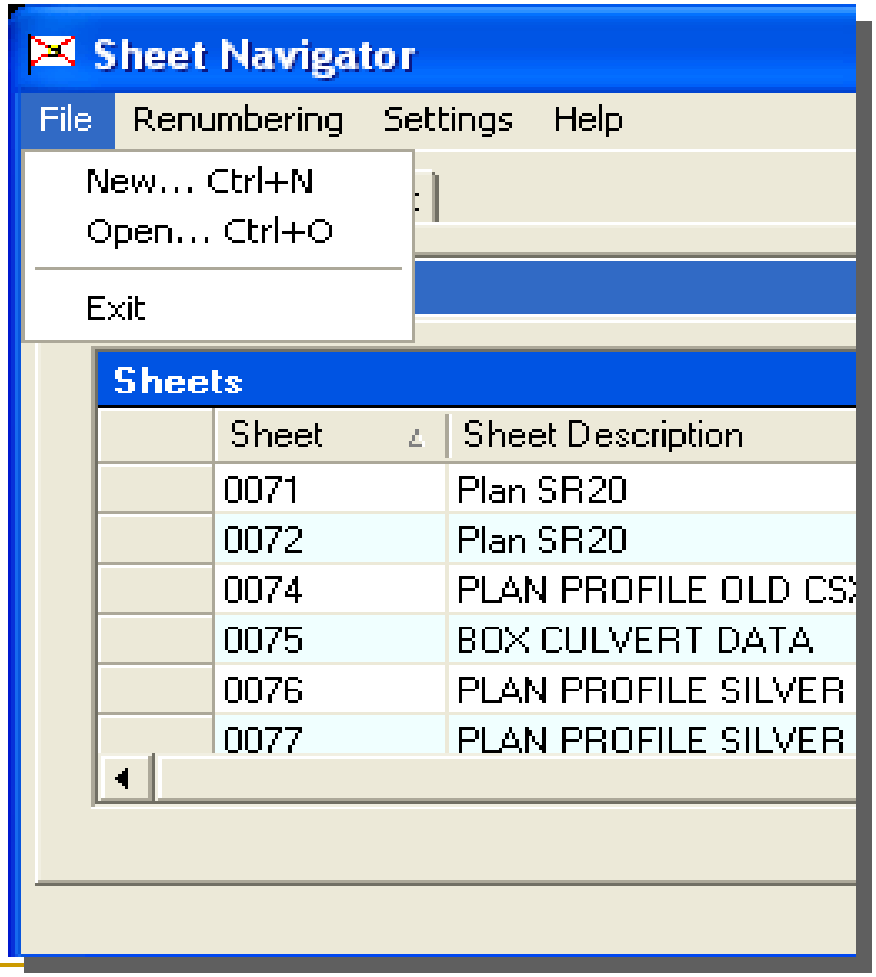
Navigator Tab

- Sheets can be filtered by Key Sheet Component using the drop down menu.



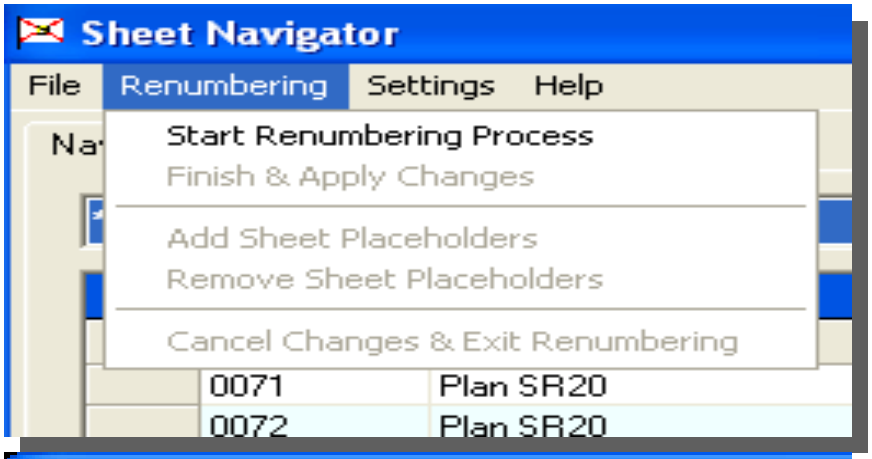
File Menu

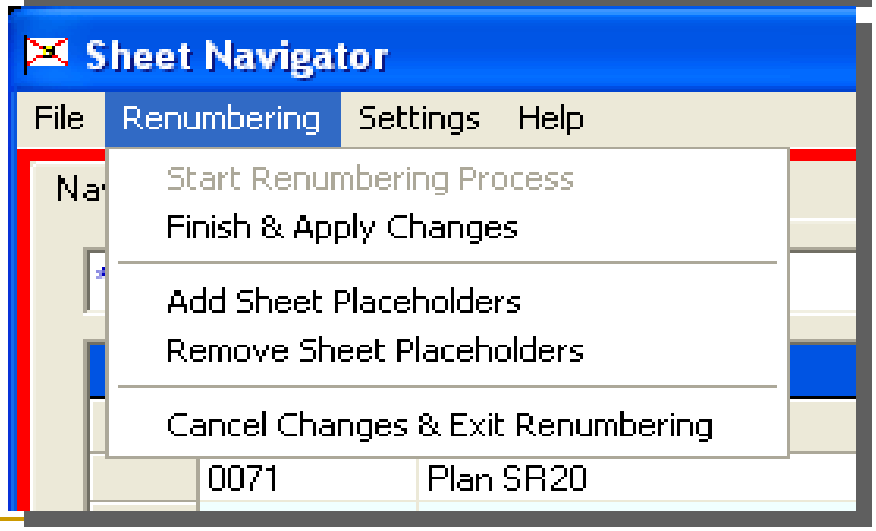
- **New**…Creates an new XML index for the Navigator tab. Creating a new XML file may take several minutes.
- **Open**…Opens an existing XML index, displaying the contents in the Navigator view.
- **Exit**…Closes the tool.



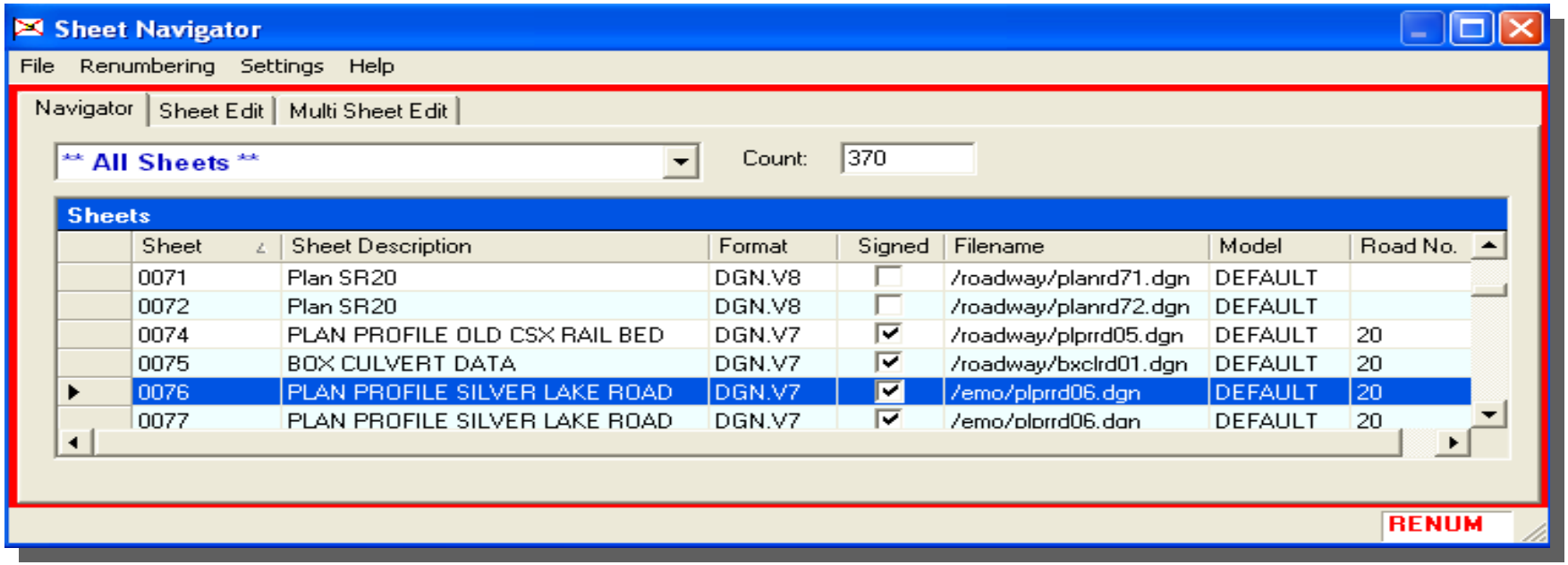
Renumbering Menu

- **Start Renumbering Process**…Places Sheet Navigator into Renumbering Mode and un-ghosts the other selections on the Renumbering Menu.
- Renumbering Mode is denoted by a red box around the tab area, and the addition of a Multi Sheet Edit tab.



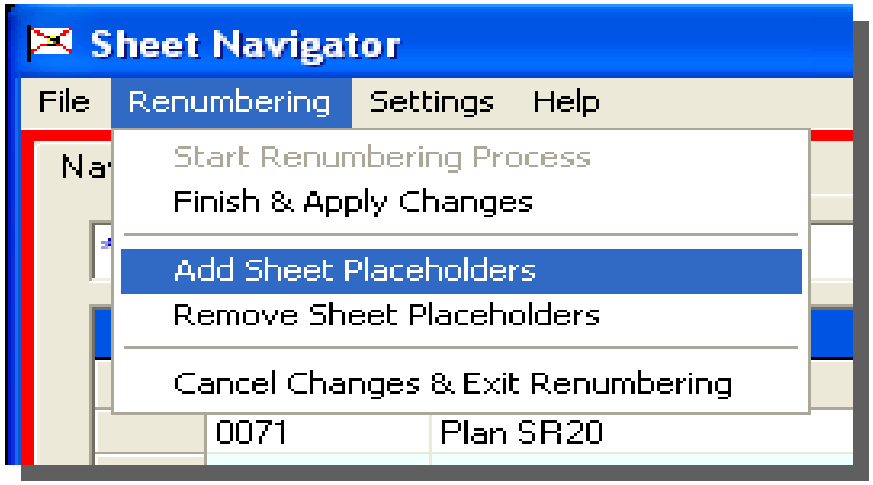


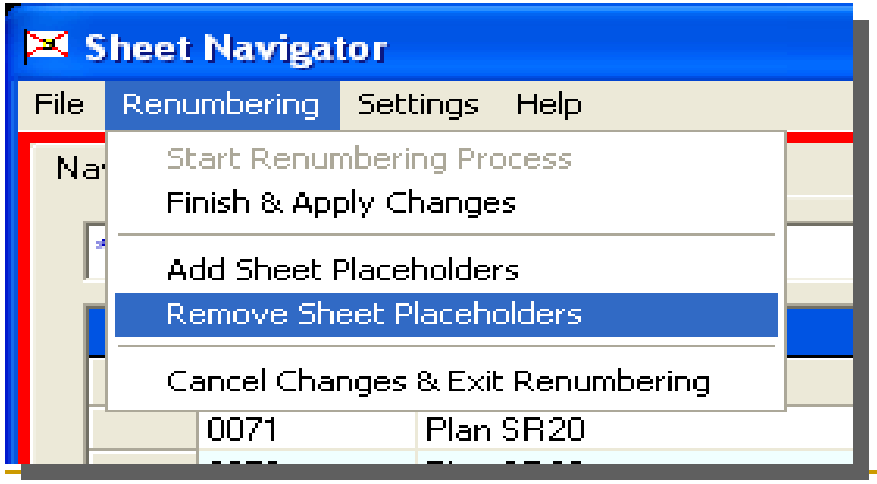
Renumbering Mode



- Renumbering Mode allows for automatic mass renumbering of a range of sheets. The user can also add or change any information on a sheet, or sheets, that is available on the Sheet Edit tab. For example, the Road No. can be changed or added on every sheet in the project without ever leaving the current design file.

Renumbering Mode

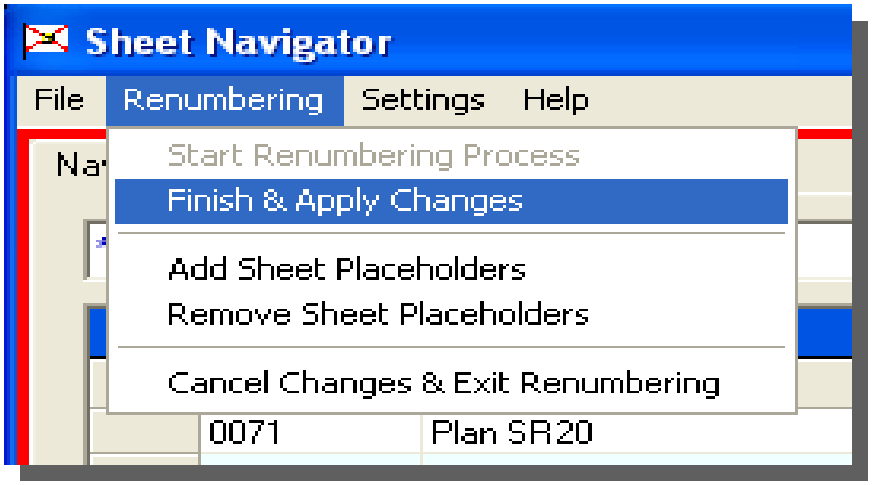


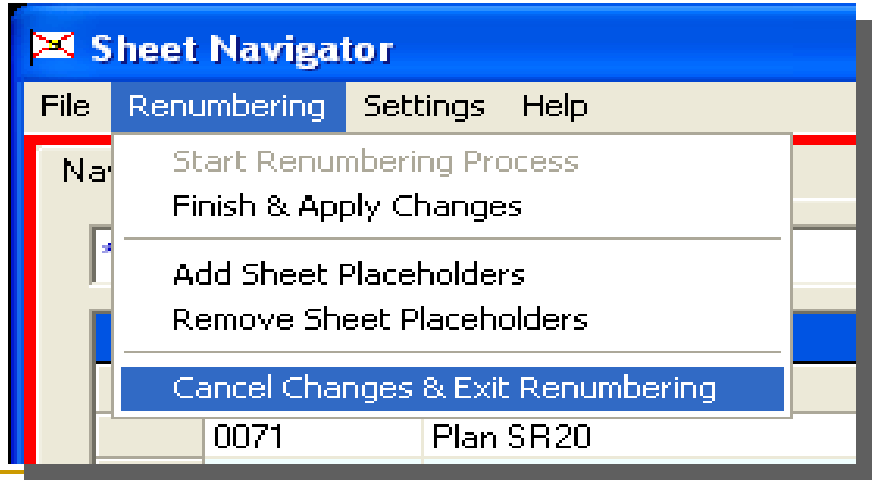


- **Add Sheet Placeholders**…Used to increment sheet numbers to make room for inserting additional sheets.
- **Remove Sheet Placeholders**…Automatically renumbers sheets removing gaps in numbers.

Renumbering Mode

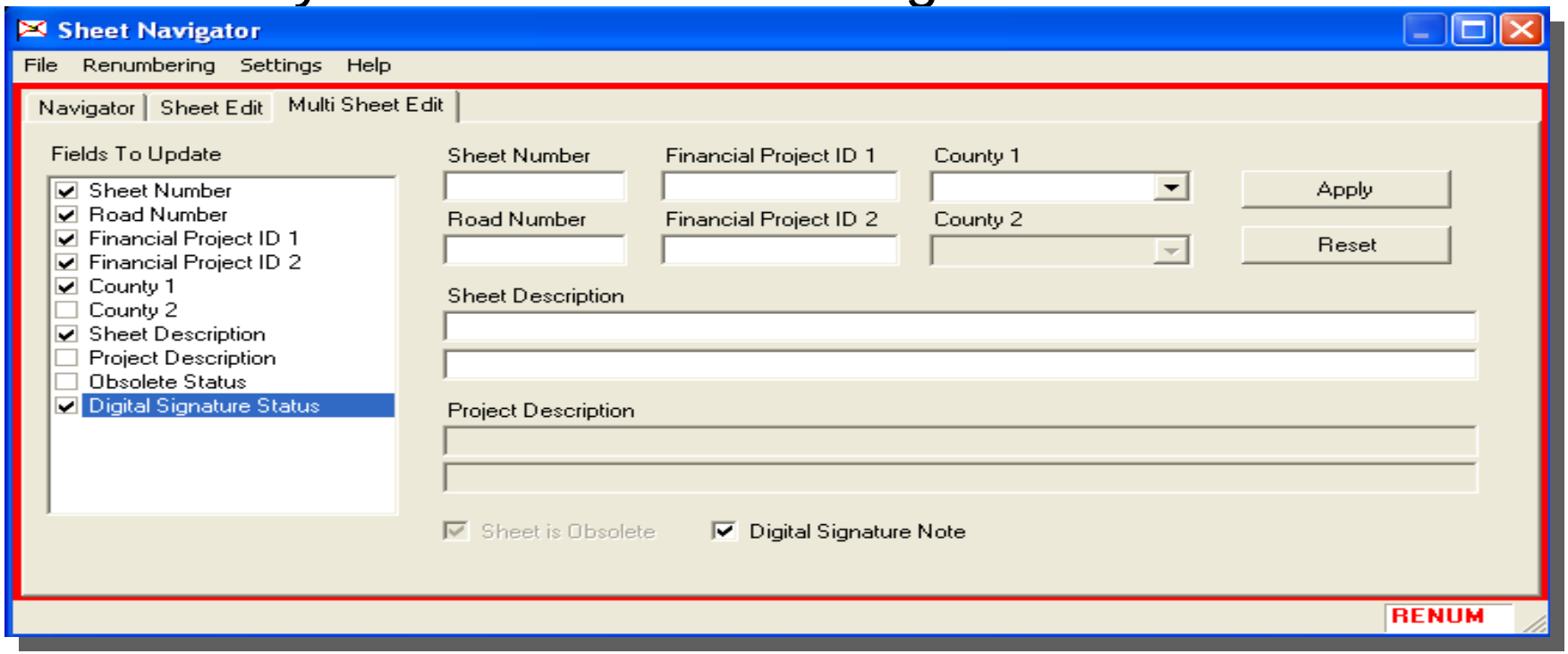
- **Finish & Apply Changes**…Exits Renumbering Mode and applies changes made in Sheet Navigator to the actual sheet files.
- **Cancel Changes & Exit Renumbering**… Exits Renumbering Mode without making any changes to sheets.





Renumbering Mode Multi Sheet Edit

- The Multi Sheet Edit tab works similar to the Sheet Edit tab but requires that the check box for the desired fields be selected.
- Any changes made are applied to all sheets that are currently selected on the Navigator Tab.

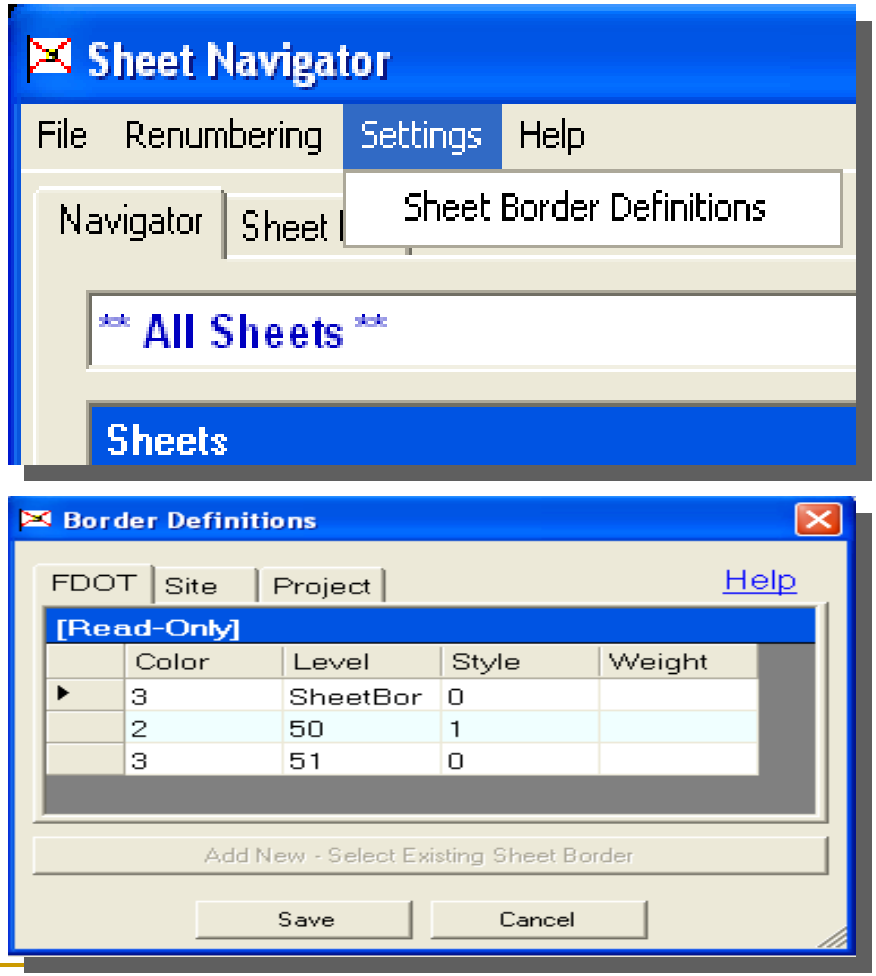


Notes About Renumbering Mode

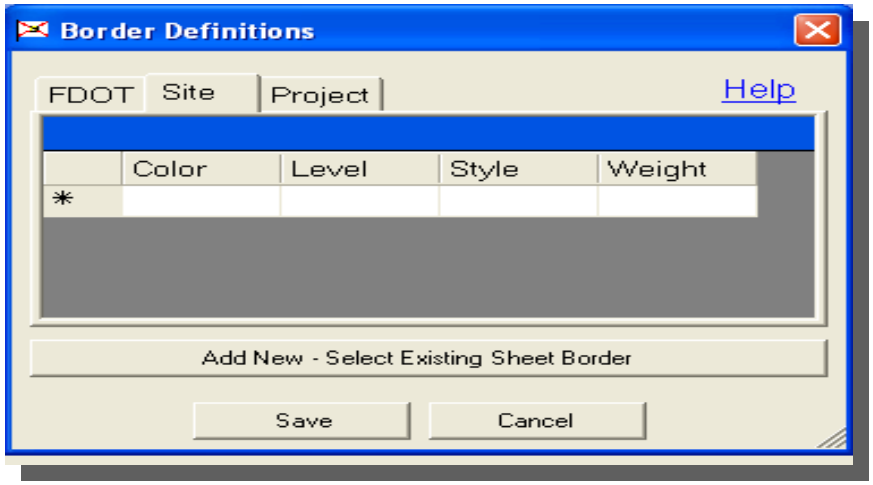
- Once applied changes are made in the sheet files. The user must have write access to all effected files.
- More than one change can be made in a renumbering session. For example, sheets can be renumbered and the Sheet Description can be modified at the same time.
- Make sure that the XML index is current.
- A new XML index is created when Renumbering changes are applied.

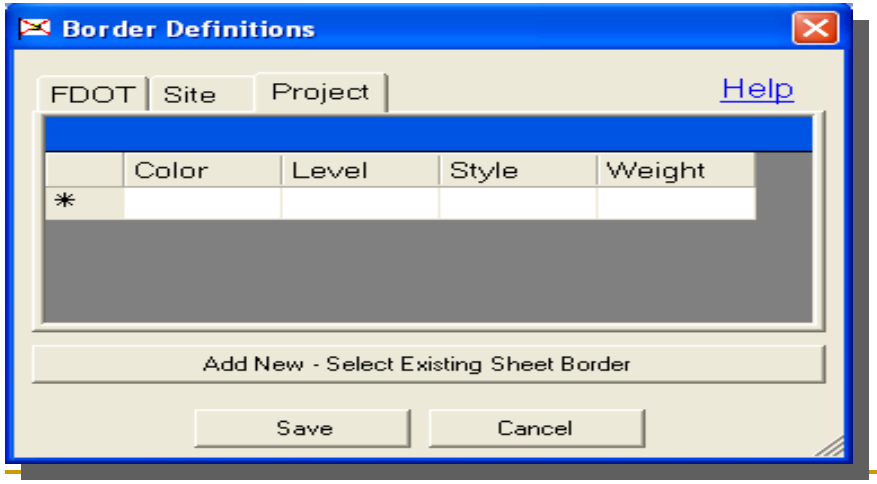
Settings Menu

- **Sheet Border Definitions**…Opens the Border Definitions dialog box.
- The Border Definitions dialog has three tabs, FDOT, Site, and Project. The FDOT tab displays the symbology which defines a standard FDOT sheet border. This information cannot be modified.



Border Definitions





- The Site and Project tabs are used to define the symbology used for non FDOT sheet borders so that they will be recognized by the Sheet Navigator tools.
- Selecting the Add New – Select Existing Sheet Border button, then identifying the border shape will fill in the required information. The symbology may also be manually keyed in.

Notes on Border Definitions

- Border Definitions on the Site tab will be searched for on all projects. This tab is for use when the same non FDOT border is used on multiple projects.
- The Project Border Definitions apply only to the current project. An example of when project definitions would be used is in the case of when work is being done for a County that has their own sheets, or when using sheet from a utility company.

Other Notable Enhancements

- Text placed from GEOPAK Plan & Profile Sheets is recognized by Sheet Navigator and will be included in the index.

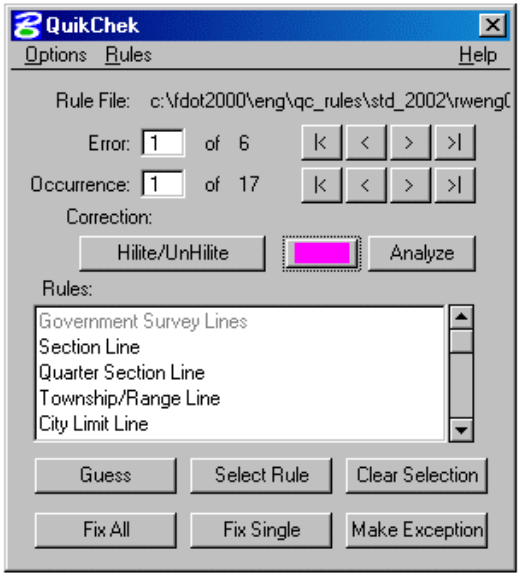
QC Software & QC Reports

Quality Control Software

- Basic Symbologies Checked
  - Weight
  - Color
  - Level
  - Text (Font/Size)
  - Cells
  - Element Types
  - File Types

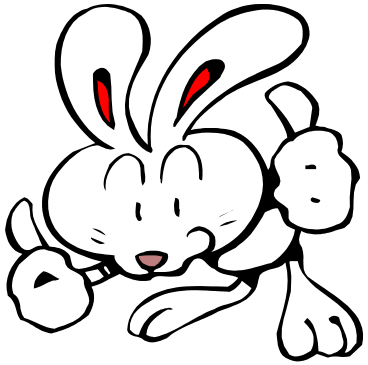
Quick Check

- **Quick Check** gives the user the ability to do a complete quality assurance review on the currently active design file.
- When activated the program checks the elements in the design file against the selected rule file to find non-standard elements.
- The program finds errors (non-standard elements) and displays them for possible correction by the user.



OverVuQC

- OverVuQC assist the user in maintaining compliance to symbology standards on a daily bases.
- OverVuQC has NO interface.
- When active, OverVuQC will run Quick Check in a special "silent mode" whenever a design file is closed, or when MicroStation is exited, using the rule file specified in the QCfileList.txt.
- At close/exit of the design file OverVuQC will display an OK dialog stating the percentage of compliance.



Exceptions

- **Make Exception** - When you are using Quick Check, and come upon an element that is not an FDOT standard and the element in question has been documented as being approved by the project manager, you can define an Exception.
- A temporary addition to the standards.
- Elements matching this exception are not counted as being an error.
- Allows the user to achieve the required percentage of compliance. These exceptions will appear in the QC Report.
- **At this time FDOT is allowing ten(10) exceptions for each rule file only.**

Creating -Exceptions

- The **QA/QC Report File** will contain information for each Exception created during project development.

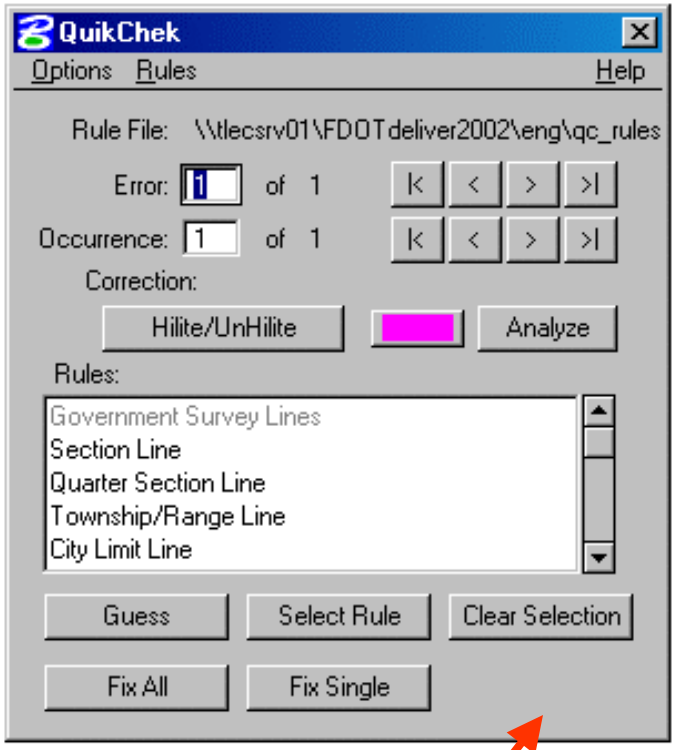
qcreportlo3.txt - Notepad

File Edit Format Help

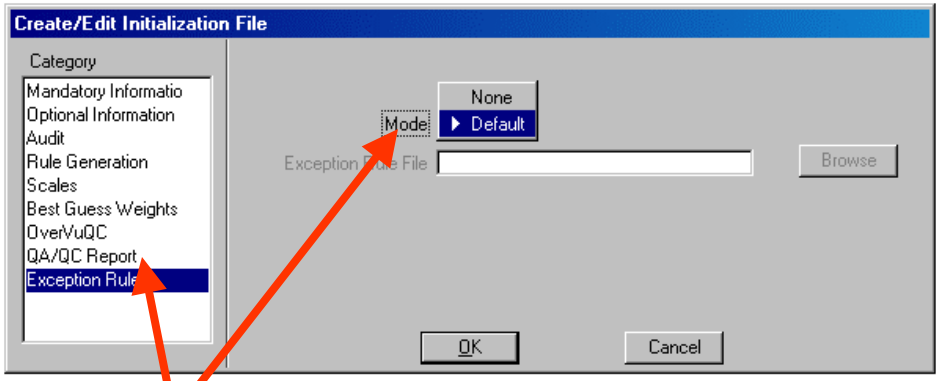
```
GDM Software QC Summary Status Report    Date: 2002:06:18:18:16

Design file name
     Process      Date              Compliance  Checks  Added since  Rule file
c:\rwmap\rwdetl01.dgn
     Spot_Fix     2002:06:18:09:51     N/A         0        4.91%  rweng02.rul
     QuikChek     2002:06:18:17:14  100.00%      N/A        3.62%  eng/qc_rules/std_20
Exceptions
        Property Line Proj. 1234561              Occurences:1
                Approved property line for Project 1234561
```

Creating - Exceptions



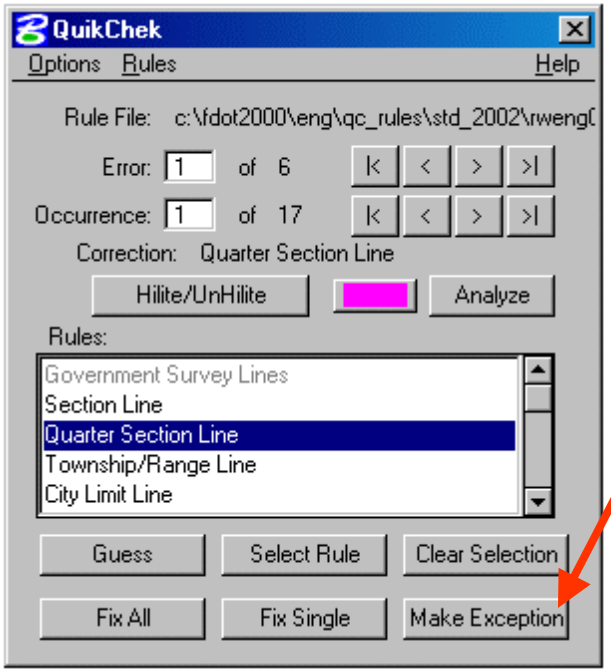
Resymbol – Edit > Preferences



From Category select - Exception Rules and set Mode: Default

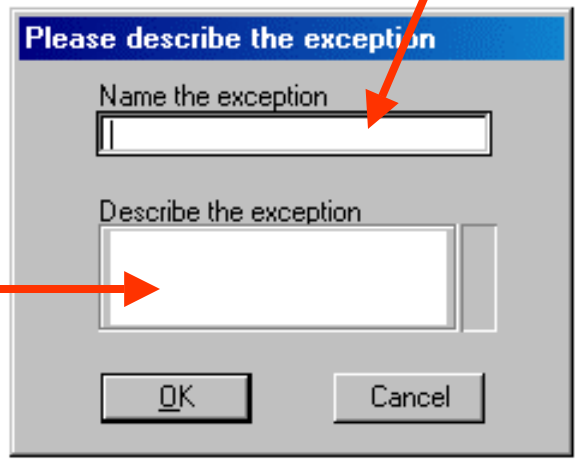
NO EXCEPTION BUTTON ?

Creating -Exceptions



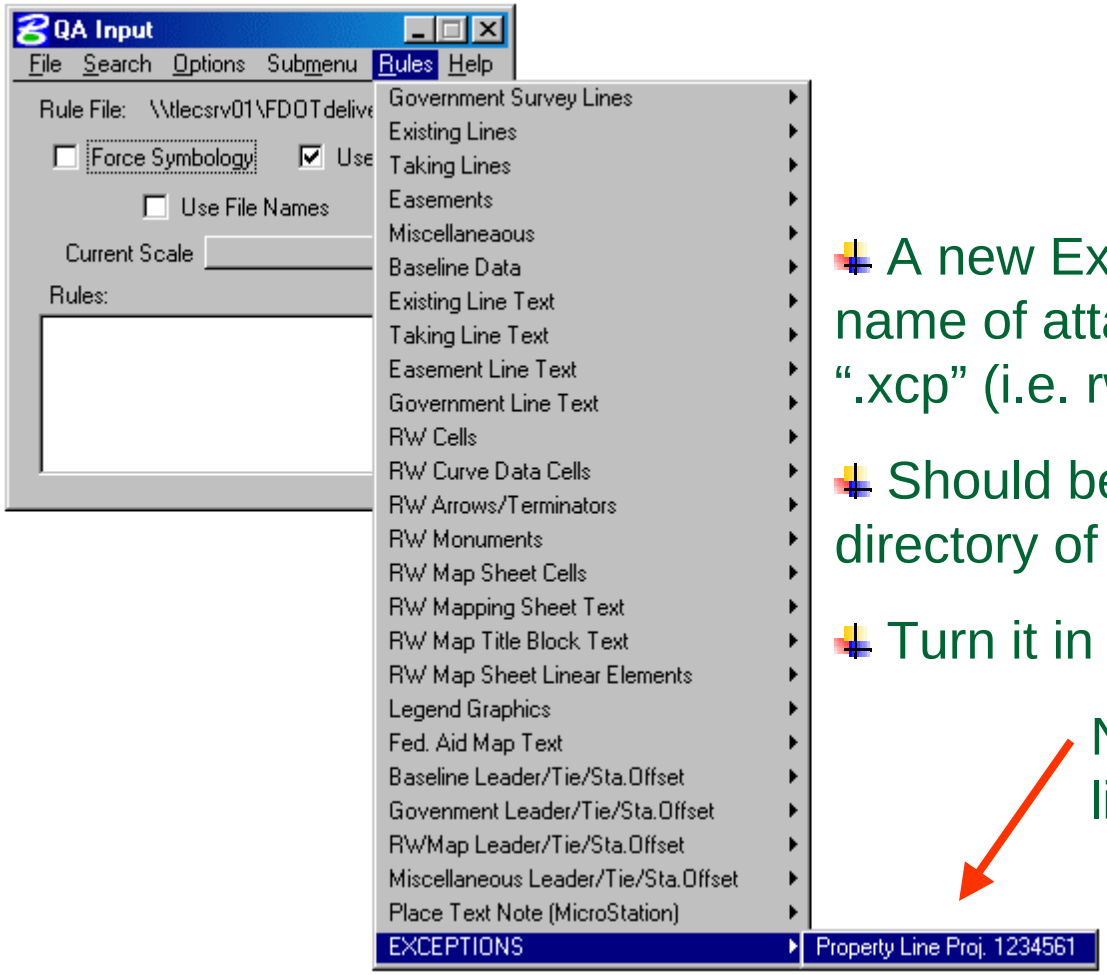
From QuikChek select the Make Exception button.

Name the Exception – (Must be 12 Characters minimum)



Describe the Exception – (Must be 25 Characters minimum)

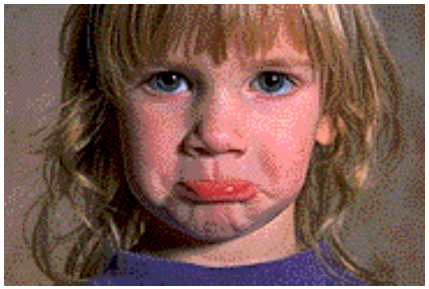
Creating -Exceptions



- A new Exception file is created with name of attached rule file with extension ".xcp" (i.e. rweng02.xcp).
- Should be placed in \eng_data sub-directory of the directory design file is in
- Turn it in with your project delivery.

New category created listing Exceptions.

QA/QC Reports



Get Over It!

- **FDOT CADD Production Criteria Handbook -**
- Each design file shall meet the threshold of compliance as defined in the producers' approved CADD quality control plan, or have a written variance from the FDOT project manager and documentation included in the project Journal.
- This report file is a critical indicator of the quality of the symbology found in the MicroStation files, which will affect downstream use of the data and archiving processes.
- The compliance report also documents whether or not the proper procedures and standards are being met, and shall be submitted as part of the electronic deliverables.

Why do I have to do QA/QC Reports ?

qcrepor5.txt - Notepad

File Edit Format Help

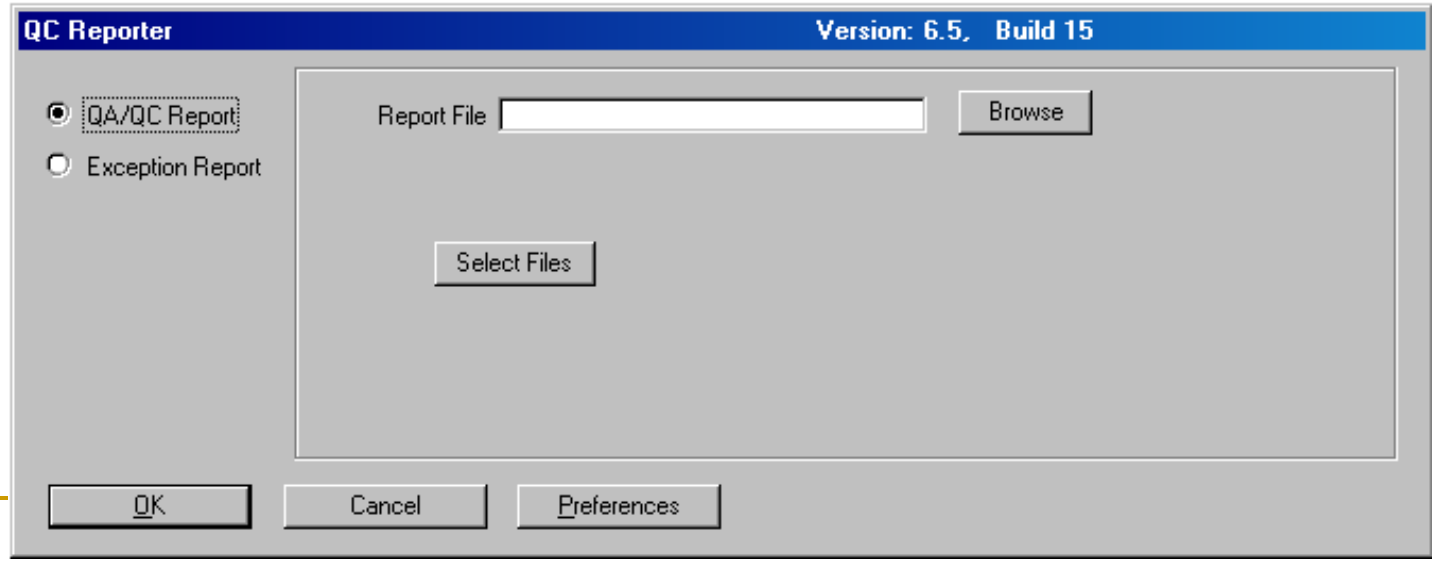
```
GDM Software QC Summary Status Report    Date: 2002:05:23:15:19

Design file name
     Process     Date            Compliance  Checks  Added since  Rule file
c:\rwmap\work.dgn
     Spot_Fix    2002:04:22:13:46     N/A        0       86.61%  rweng02.rul
     QuikChek    2002:05:23:15:14   86.47%     N/A        1.05%  rweng02.rul
Exceptions
        Bearing District 5              Occurences:17
                Bearing weight change excepted for this project.
        Existing RW District 5          Occurences:2
                Existing RW weight change excepted for this project.
```

- **FDOT CADD Manual -**
- **3.8.6 QC Reports -** Compliance reports shall be produced in accordance with the **FDOT CADD Production Criteria Handbook** and will be delivered with the project.

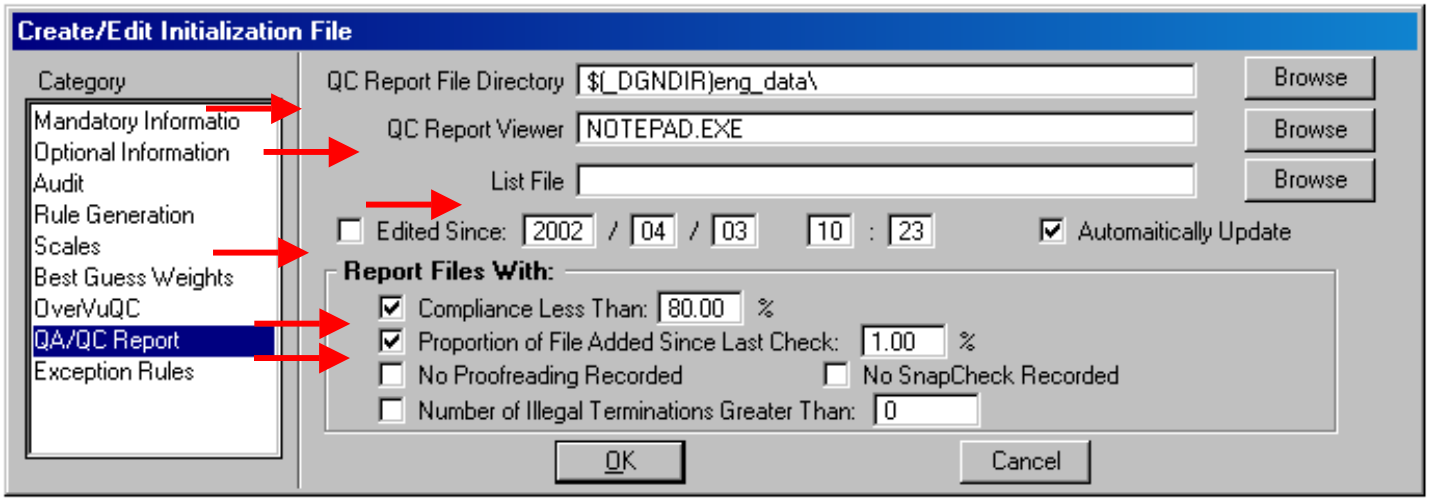
QC Reporter – The easy way!

- QC Reporter was created to provide quicker access and the need to run Resymbol to create QA/QC Report.
- QC Reporter has three functions:
  1. The production of QC Reports
  2. The production of Exception Reports
  3. Access to the .ini file which controls some of the functions of the QA/QC tool set, including RESYMBOL.



QA/QC Report Preferences

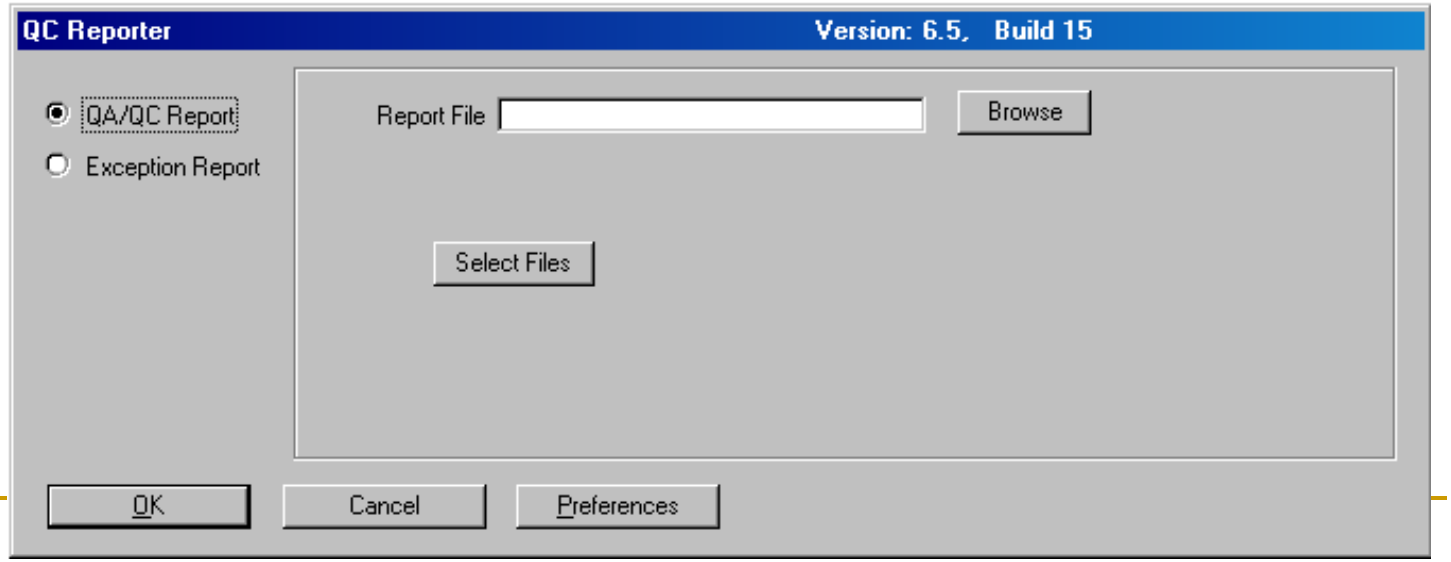
- Set where QC report is created/saved
- Set QC editor to be used
- Select “List File” containing DGN filenames to process
- Set “Edited Since” date to report only files after this date
- Set “Compliance Less” to report only files less than percentage
- Set “Proportion Added” to assure files are being checked when data is added



QA/QC Report ?
Exception Report ?

- What are the differences…
  - QA/QC Report – Reports ALL selected files regardless of preferences
  - Exception Report – reports only non-compliant files of the selected file set according to preferences set for …

    Since Date, Compliance %, Proportion Added, Proofreading and Snap Check

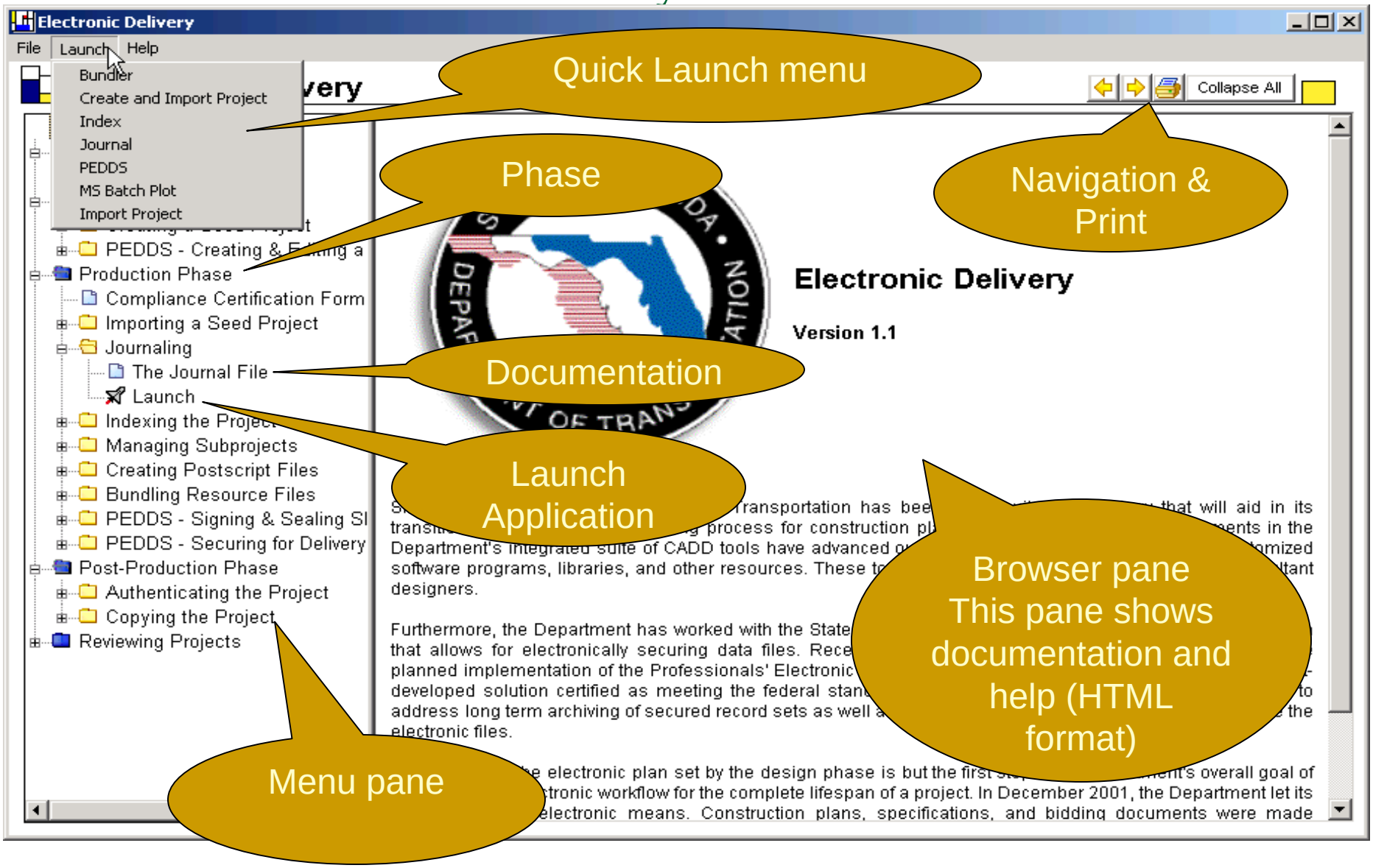


QA/QC Reports

REMEMBER !!

- All electronic deliverables require a QA/QC report for all MicroStation design files.
- One of the QC tools, Resymbol, QA_input or Quick Check, had to be ran prior to running the QA/QC report.
- The QA/QC reports for each discipline should be in the eng_data directory.

Electronic Delivery Interface

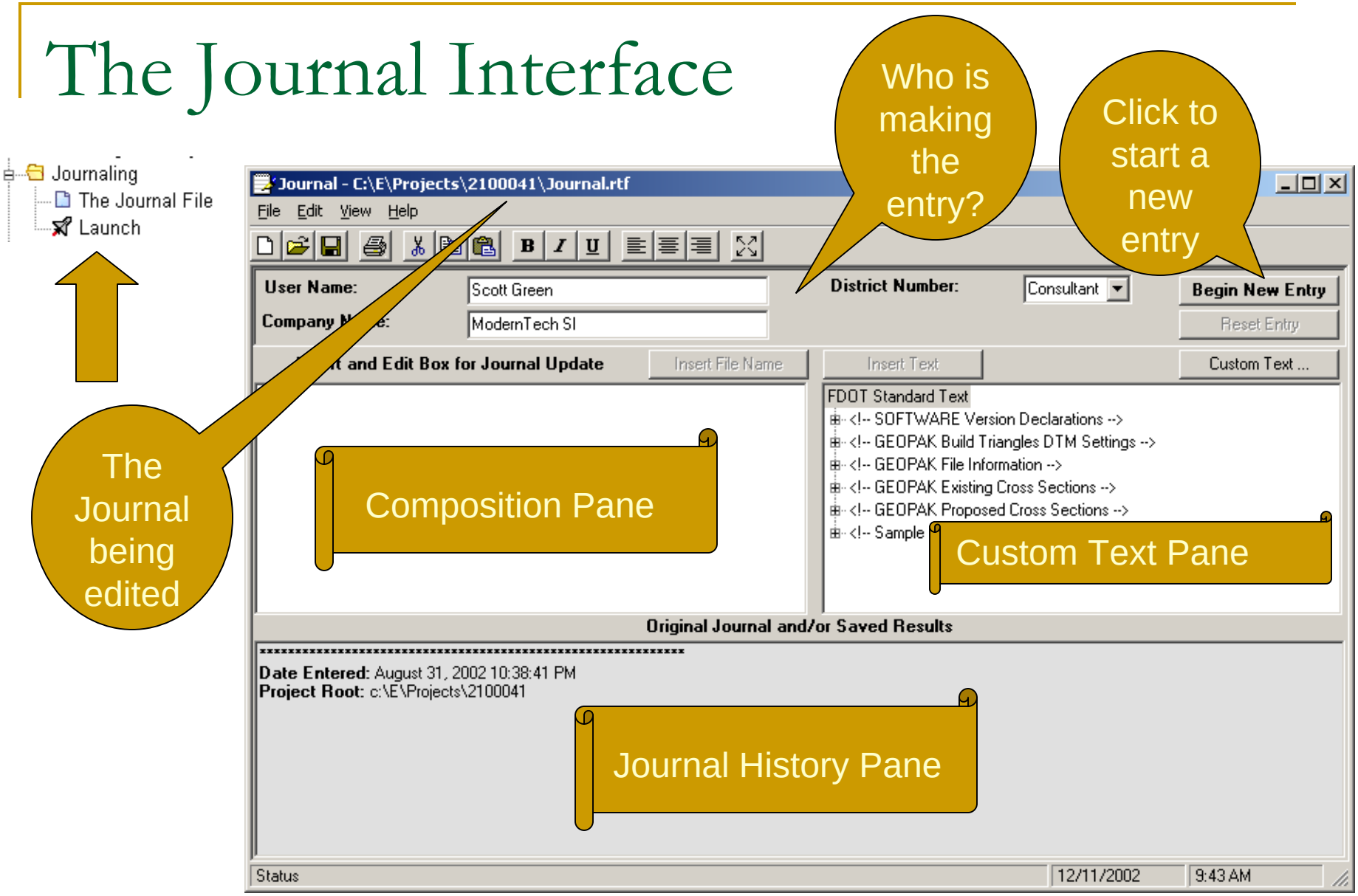


Electronic Delivery Journaling

Journaling

- The Journaling program provides a means to enter and store information about the methods and other information used to develop the project. The Journal is a diary. Project journaling is required by the FDOT CADD Manual. The program also provides such features as
  - standardized insertable text
  - customizable insertable text
  - pick lists
  - automatic date stamping

The Journal Interface



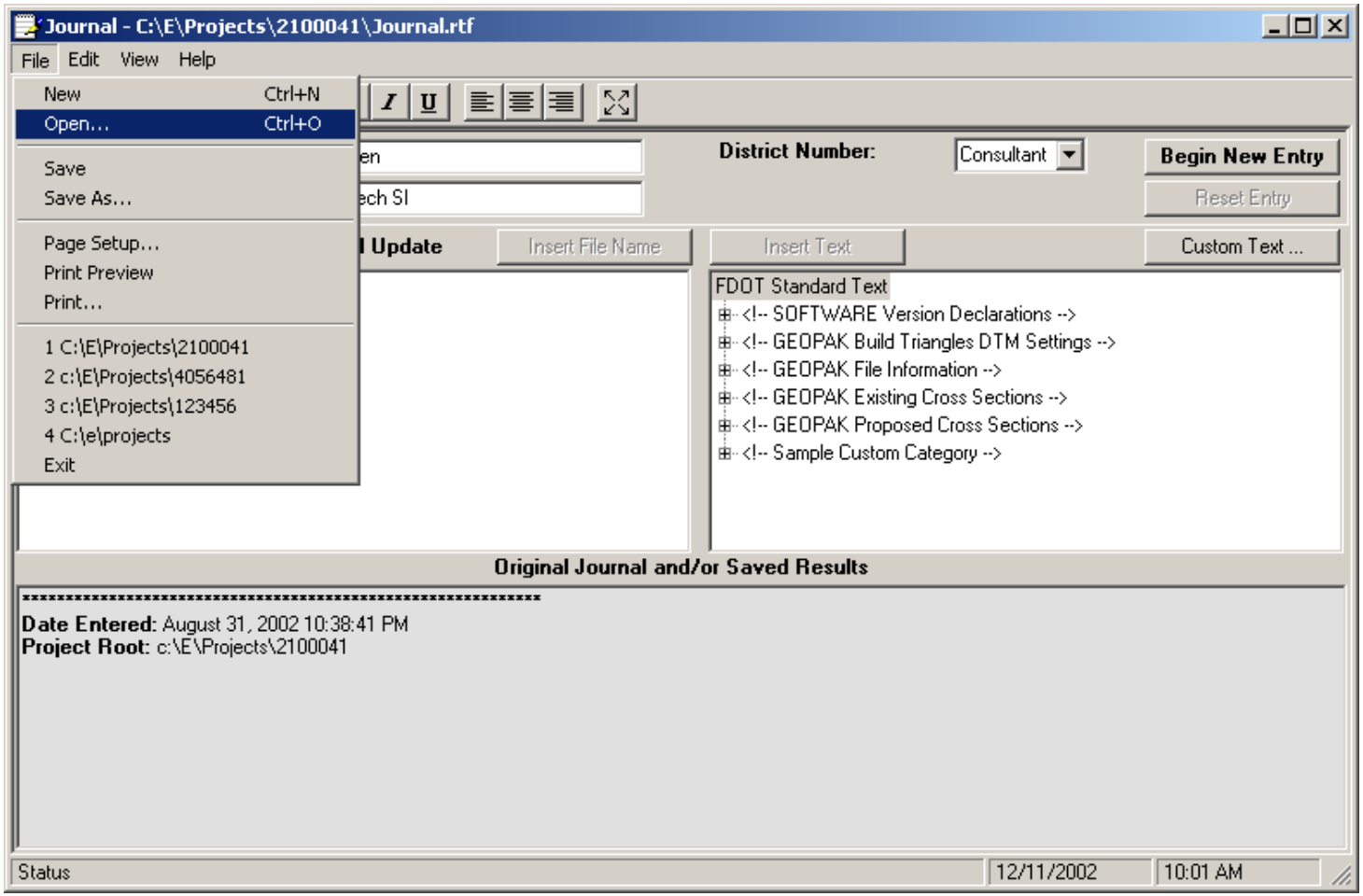
The Journal application edits Rich Text format files (*.RTF).

Opening an existing Journal file

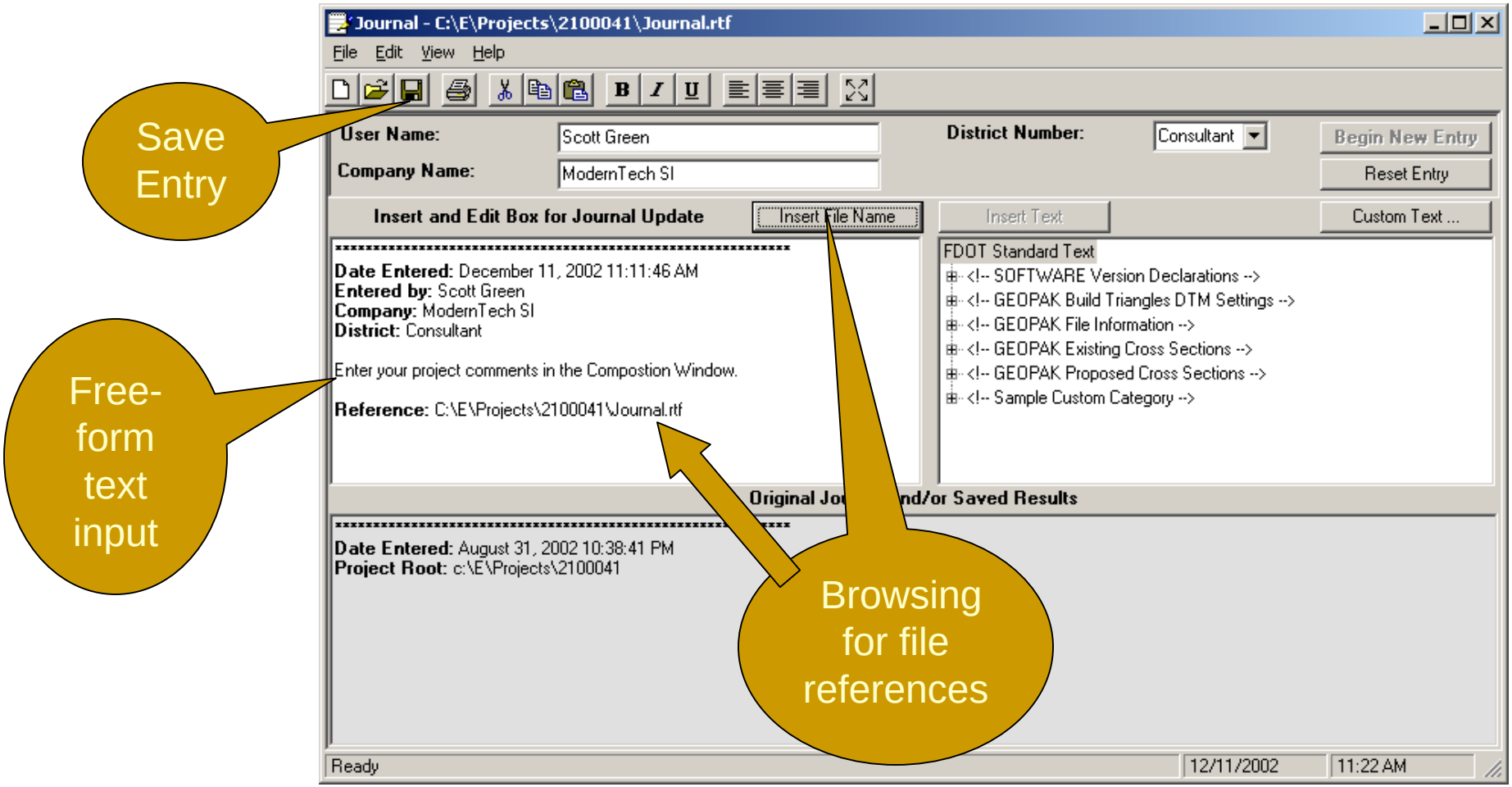
On the File menu, click Open – or – click the Open button on the toolbar.

Journal entries are Rich text Format files.

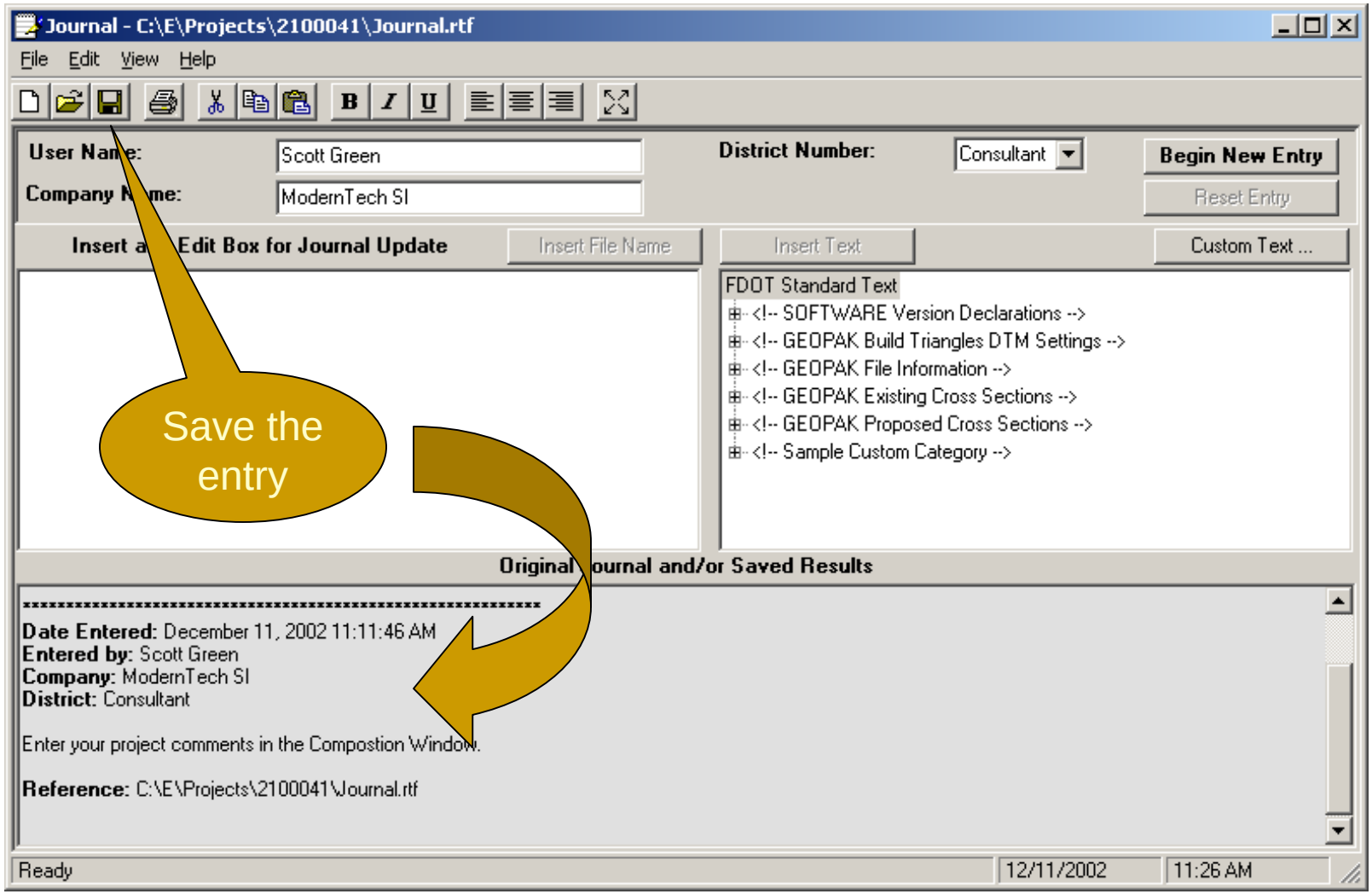
Seed journal entries are usually found in each discipline directory.



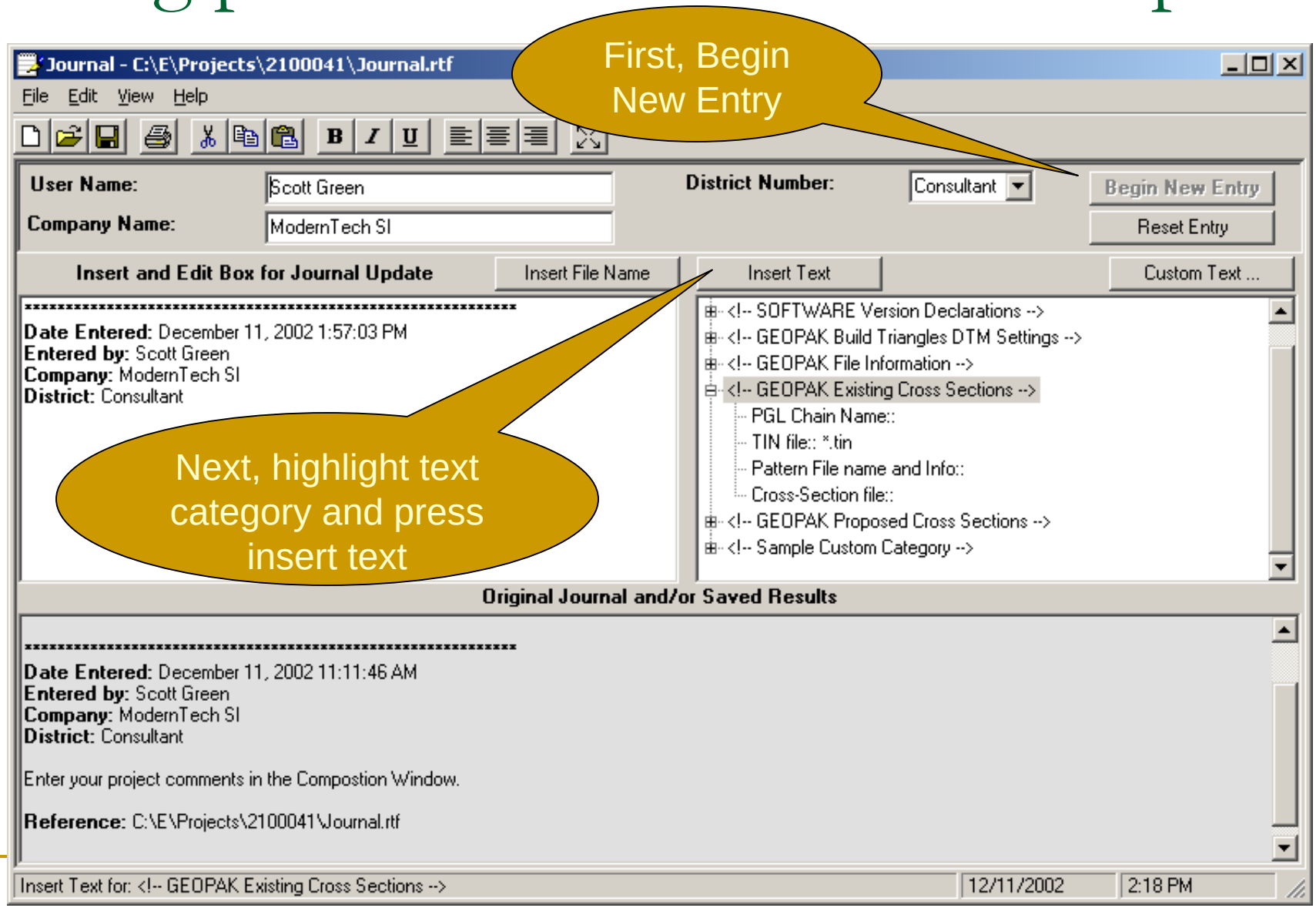
A completed Journal entry ready to be saved



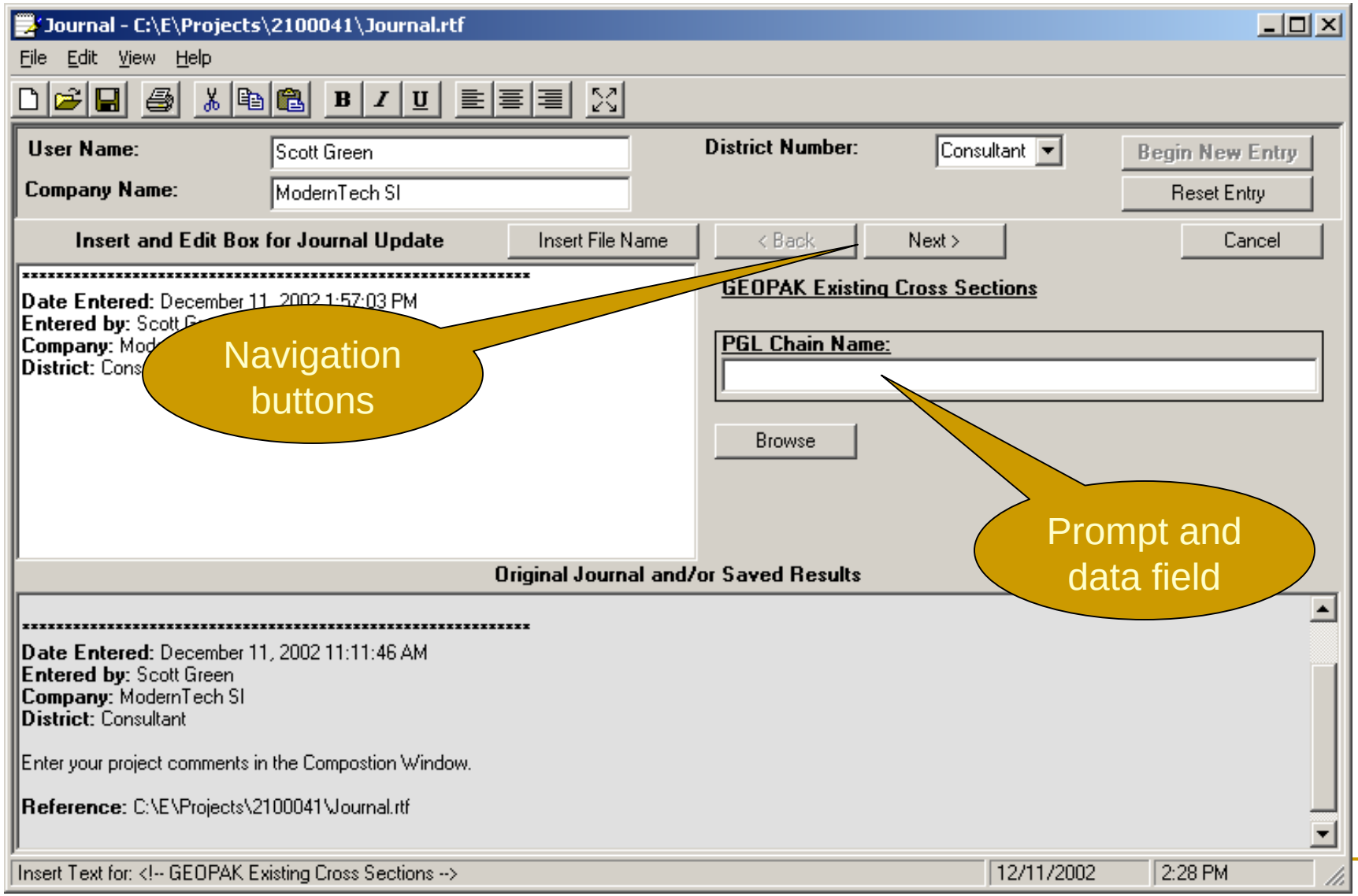
The results of saving an entry



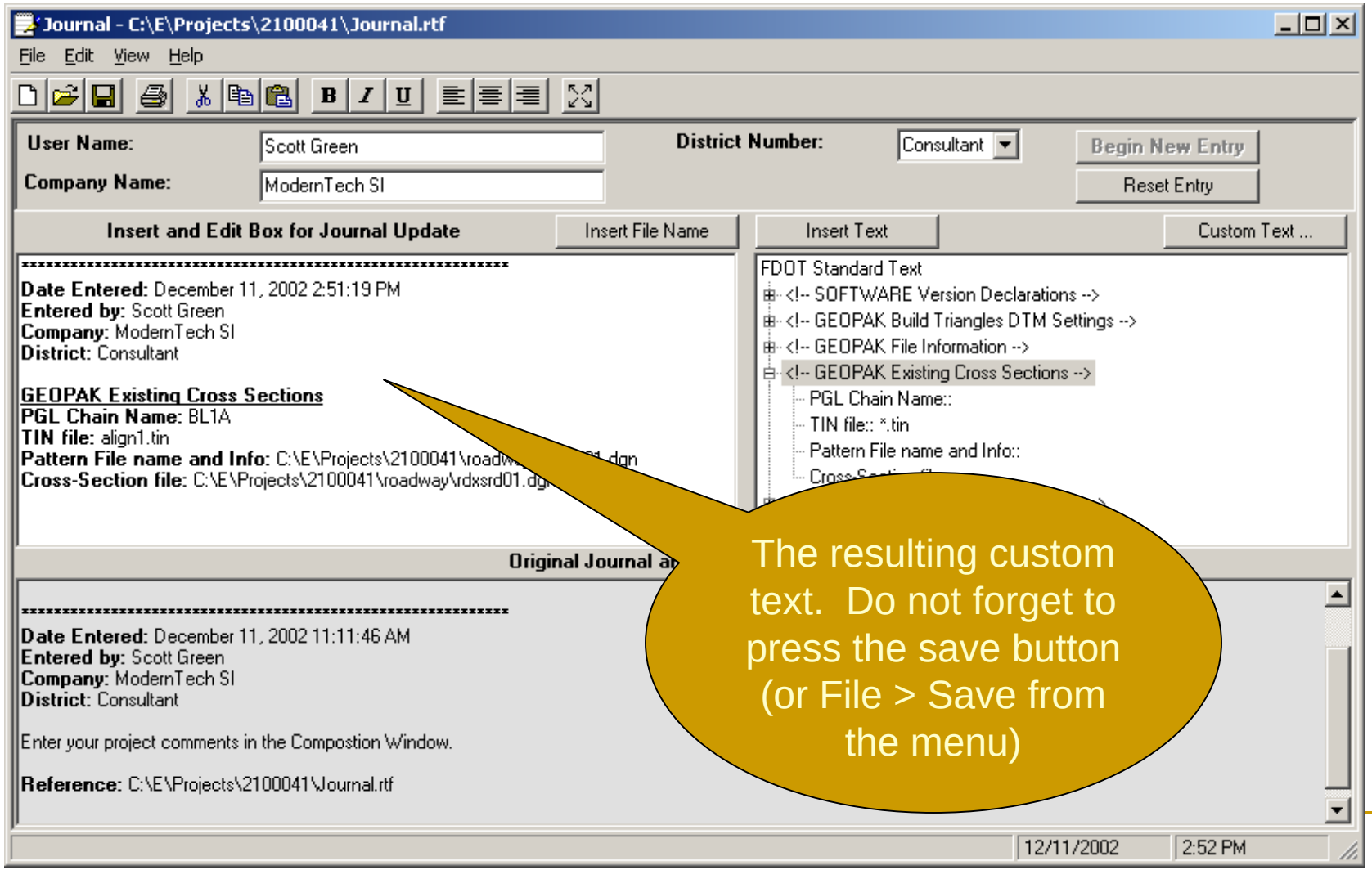
Using pre-defined custom text scripts



The custom text script is running…



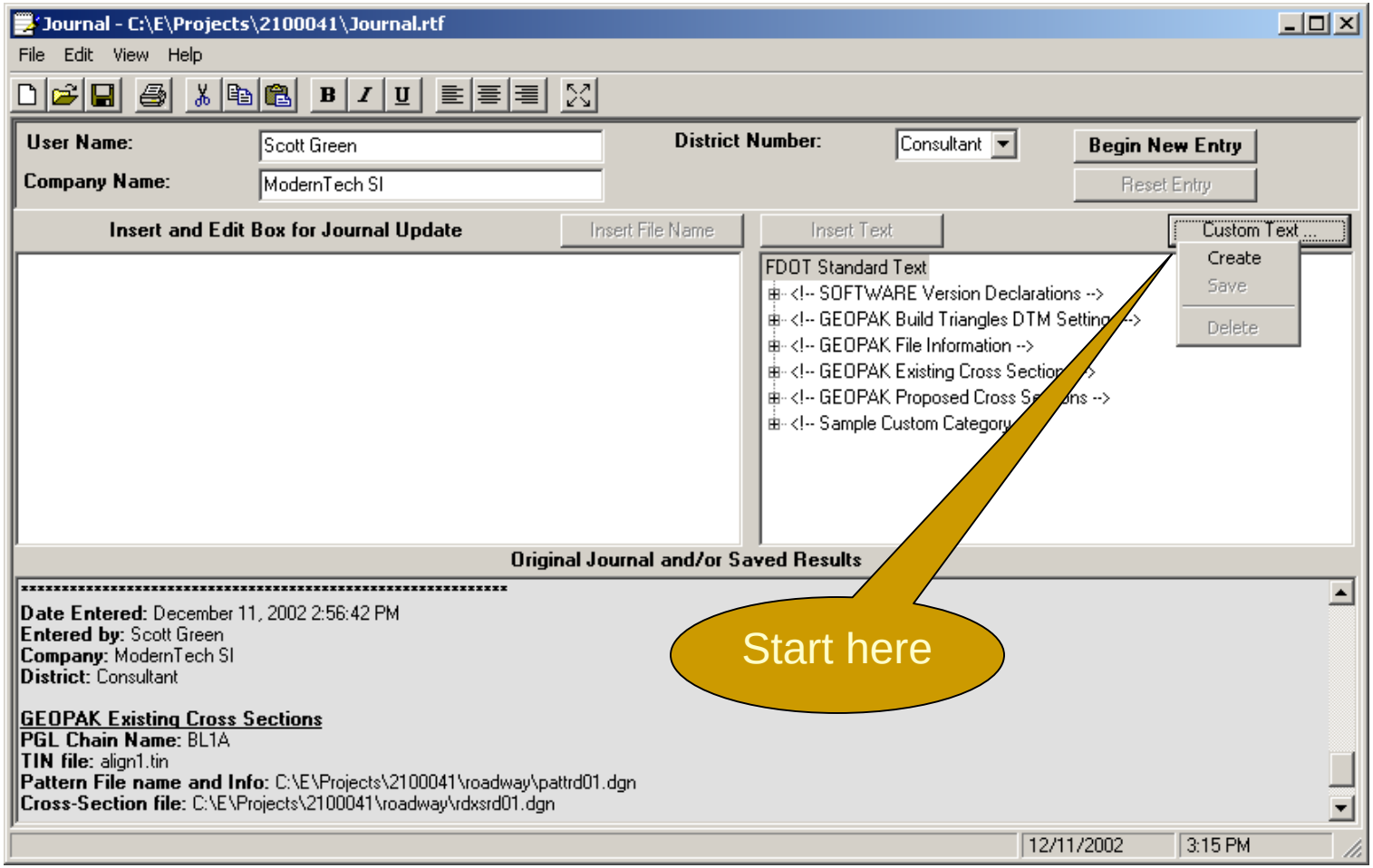
After all prompts are completed and Finished…



The resulting custom text. Do not forget to press the save button (or File > Save from the menu)

Creating your own Custom Text scripts

Click Custom Text, and then Create



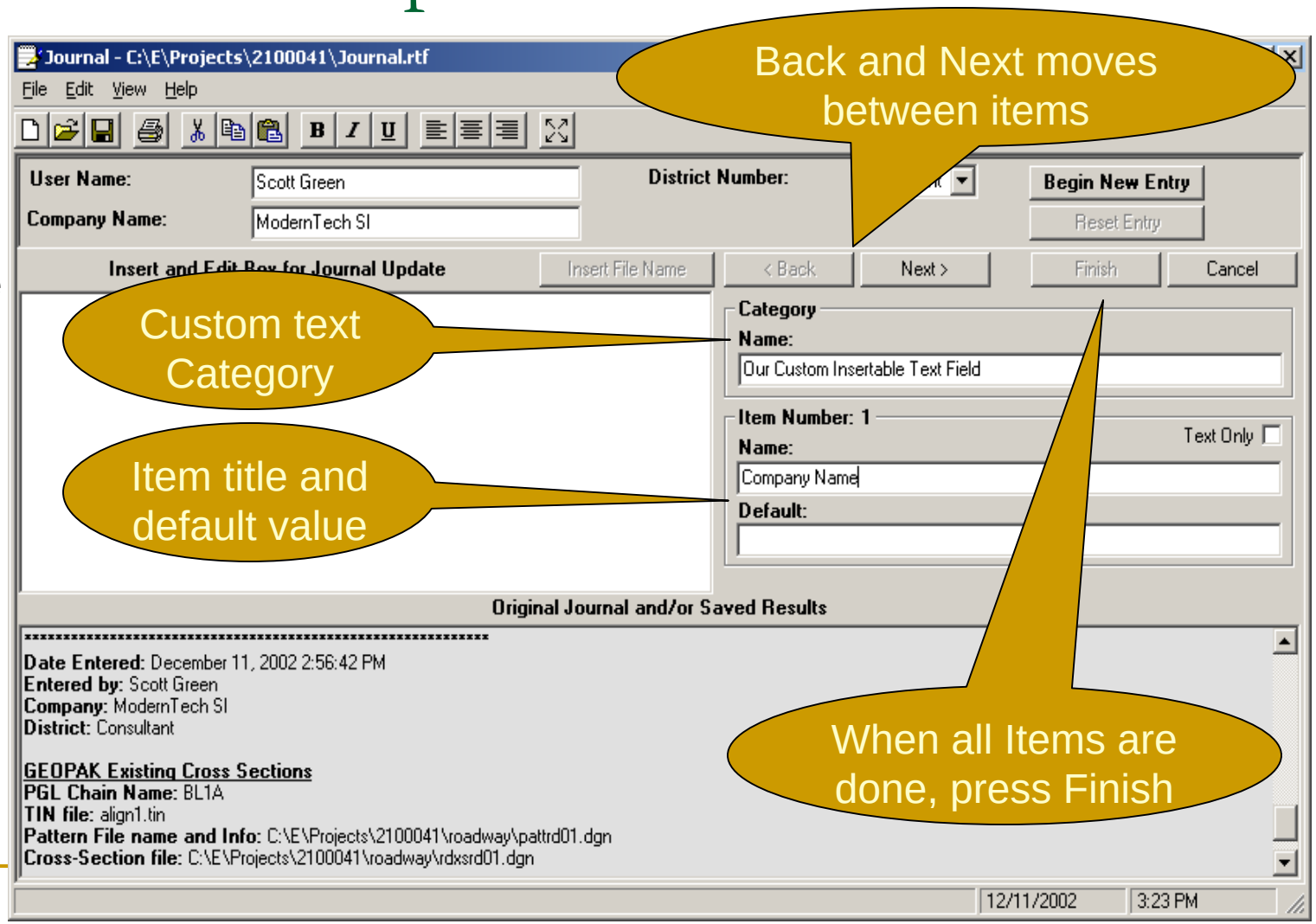
Define the Custom Text Category, and create Items and option Default entries

Under Category, type the Name of the Custom Text Field

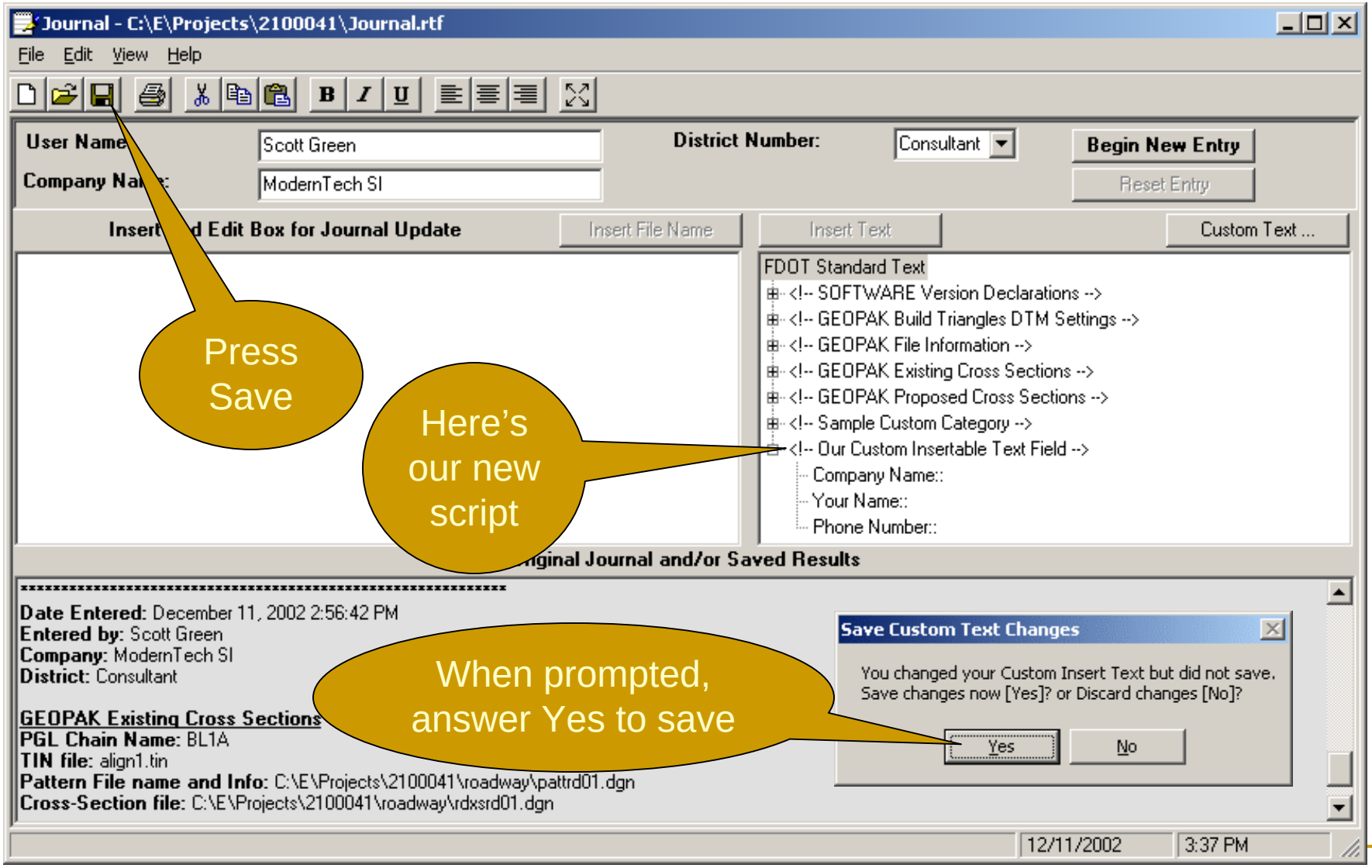
Type the Name of the first item

Click Next. Continue this process until you have name all the necessary Items

Tip: Click Back or Next to move through the boxes



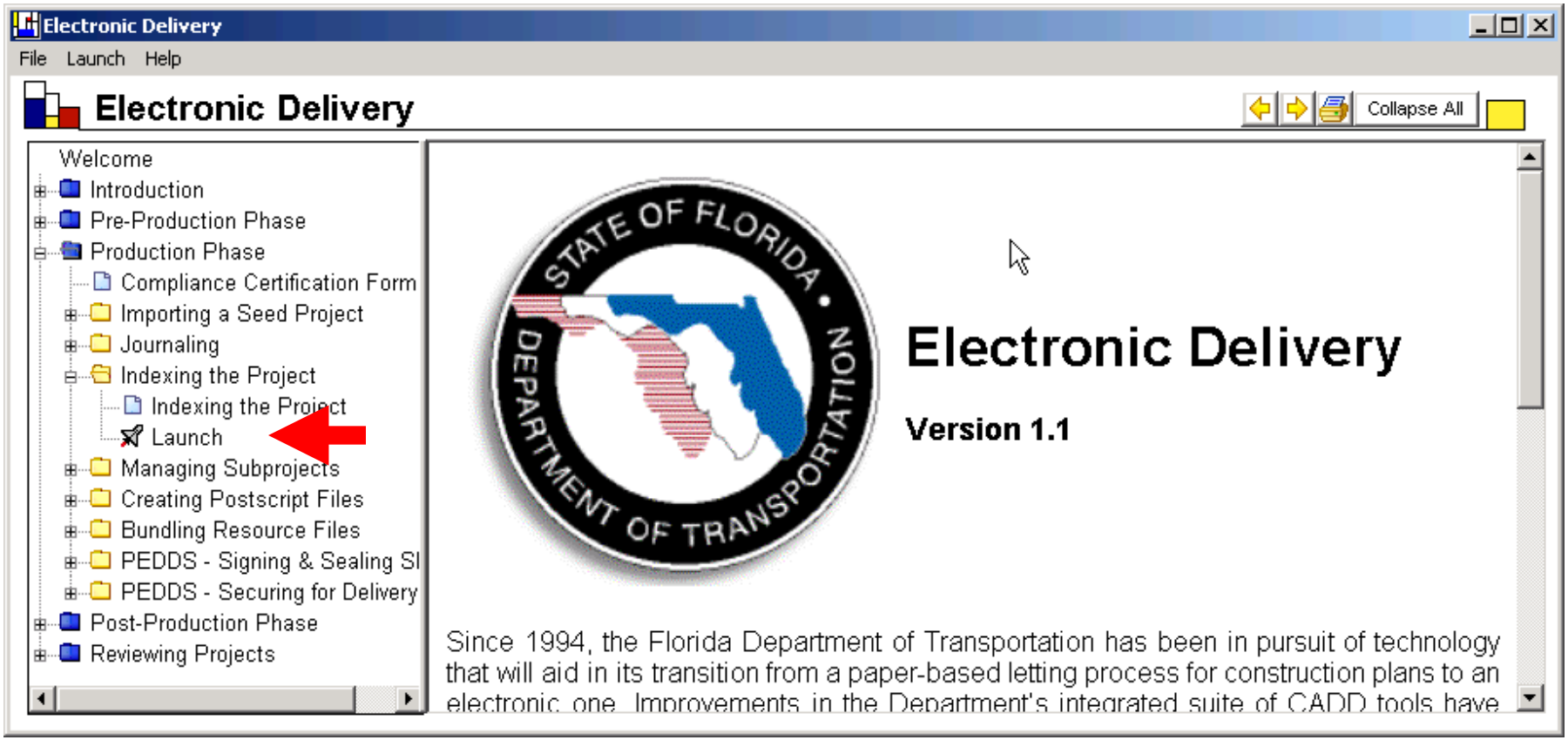
Save the Custom Text Script



Custom text scripts save time and standardize input on repetitive journaling tasks

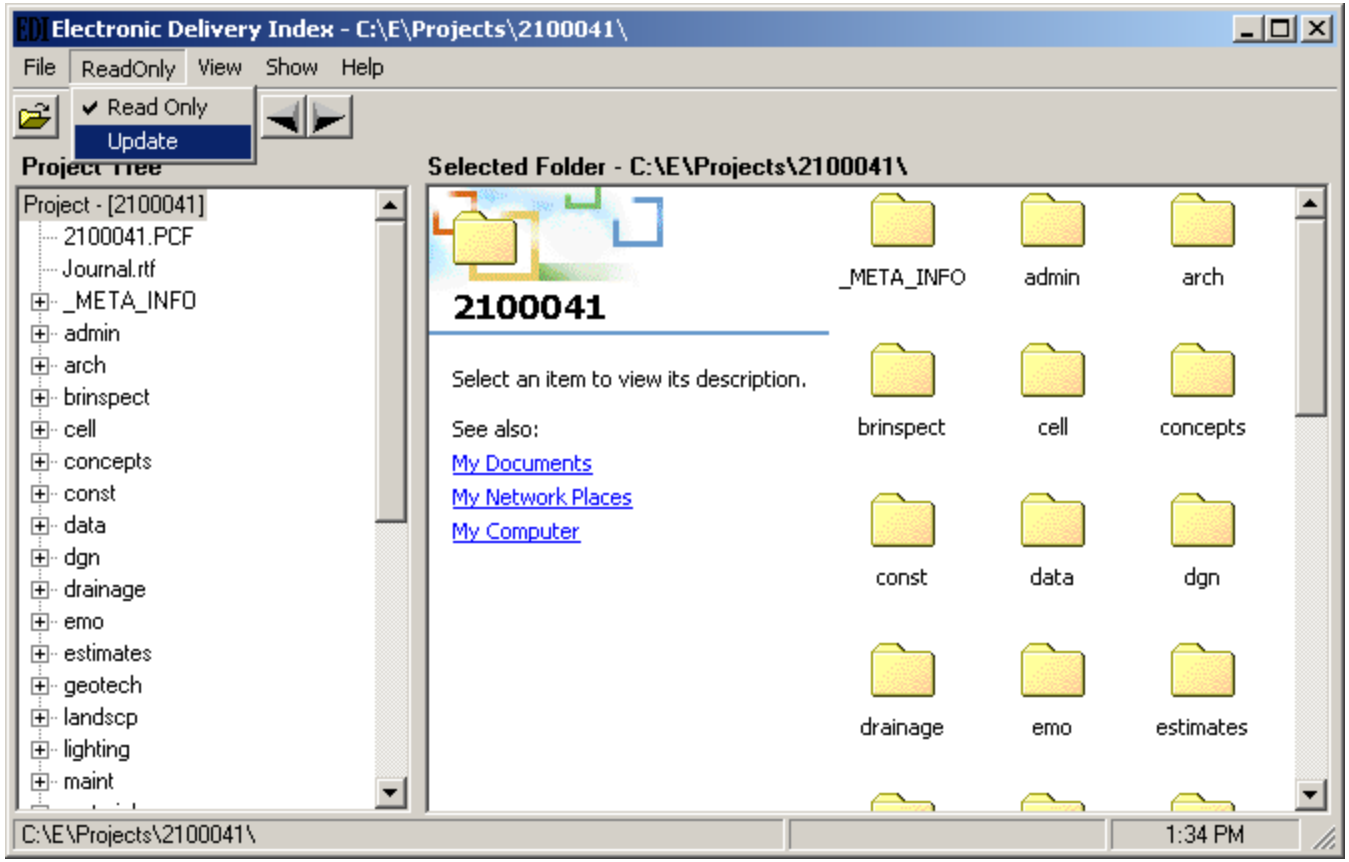
Electronic Delivery Indexer (EDI)

Launch the Indexer from the Electronic Delivery Interface

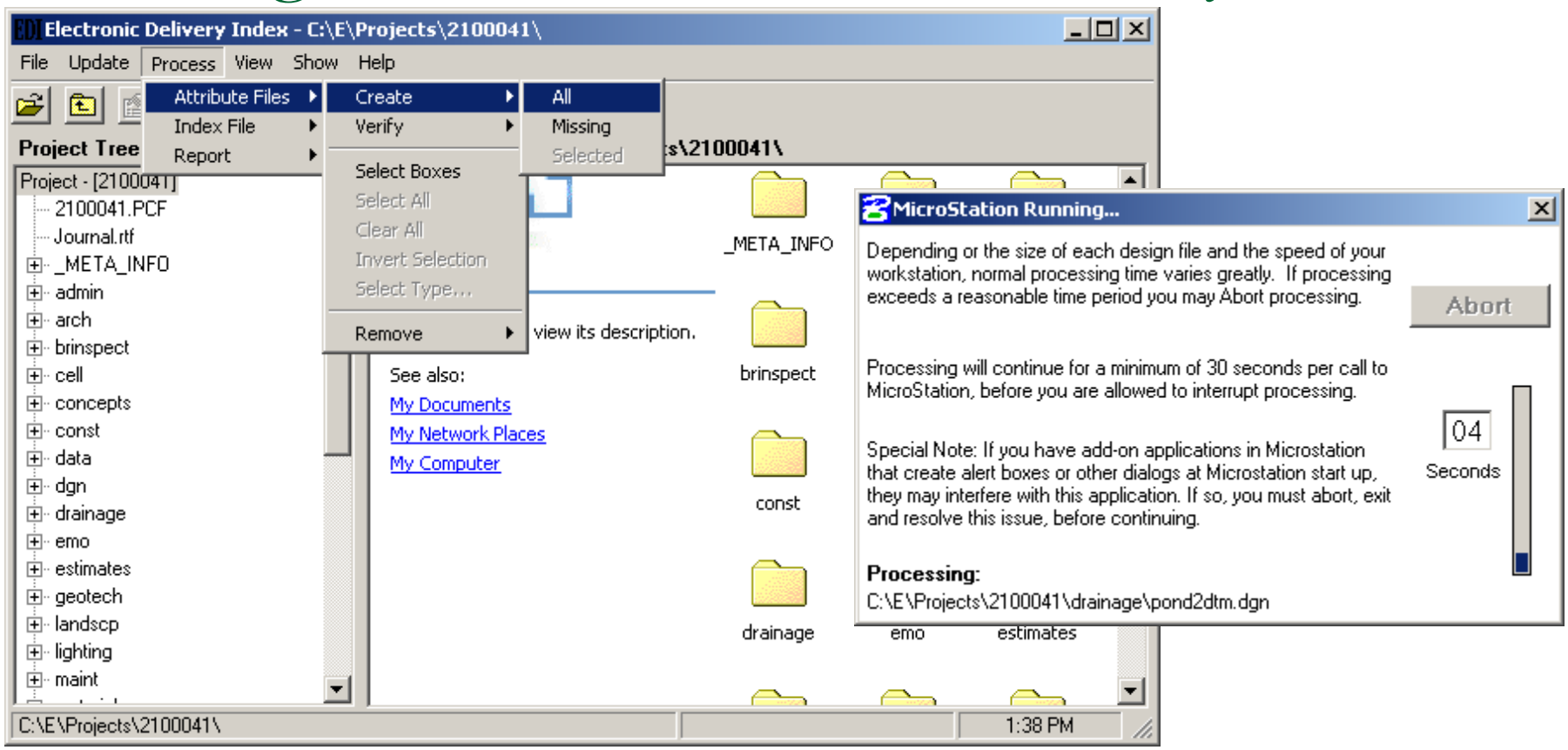


Opening a project…

- Navigate to the project directory with ***File >Open Project***.
- Indexer will scan the project directory each time it is opened
- Set the Indexer to "Update" mode (allows data to be edited)

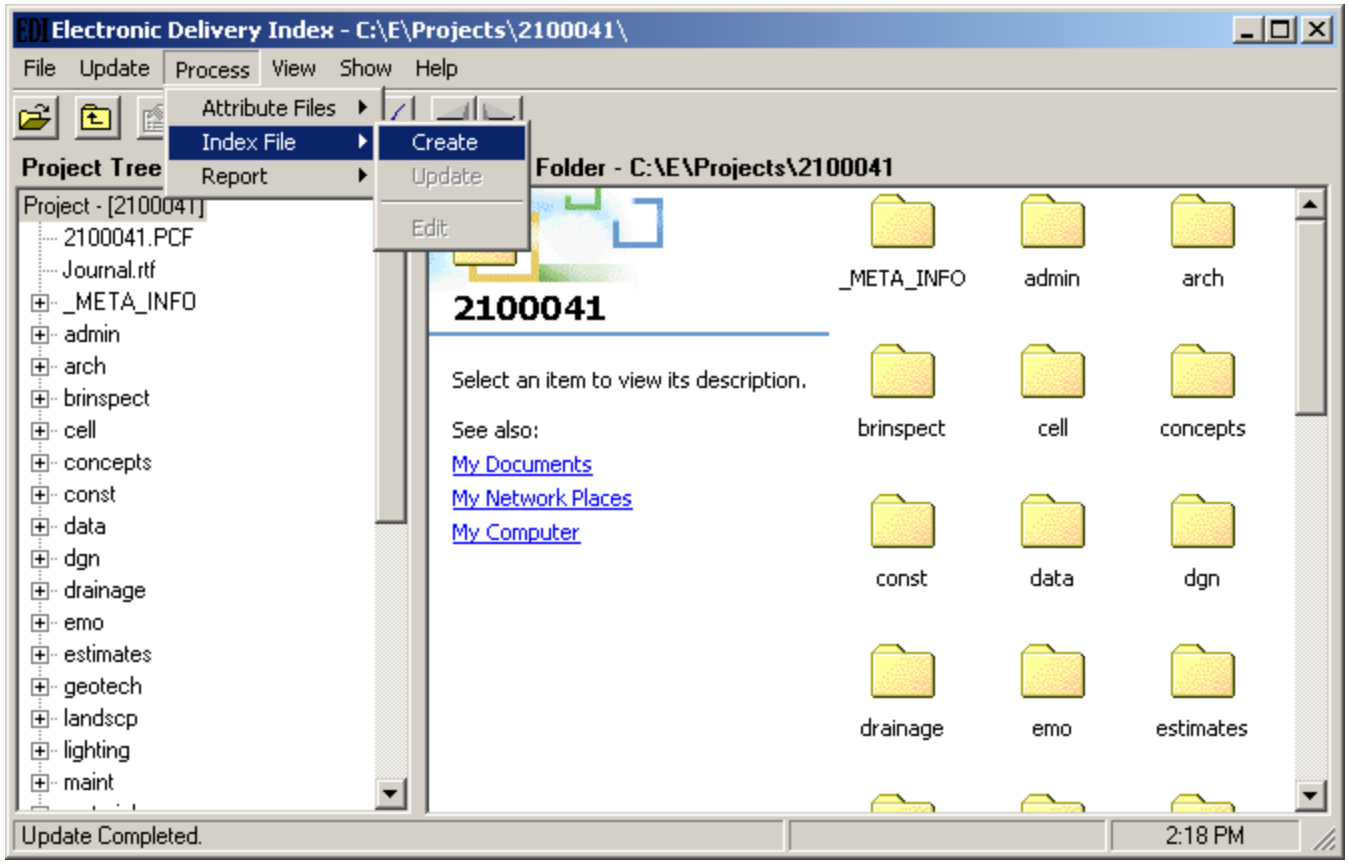


Creating Attribute data for files in your



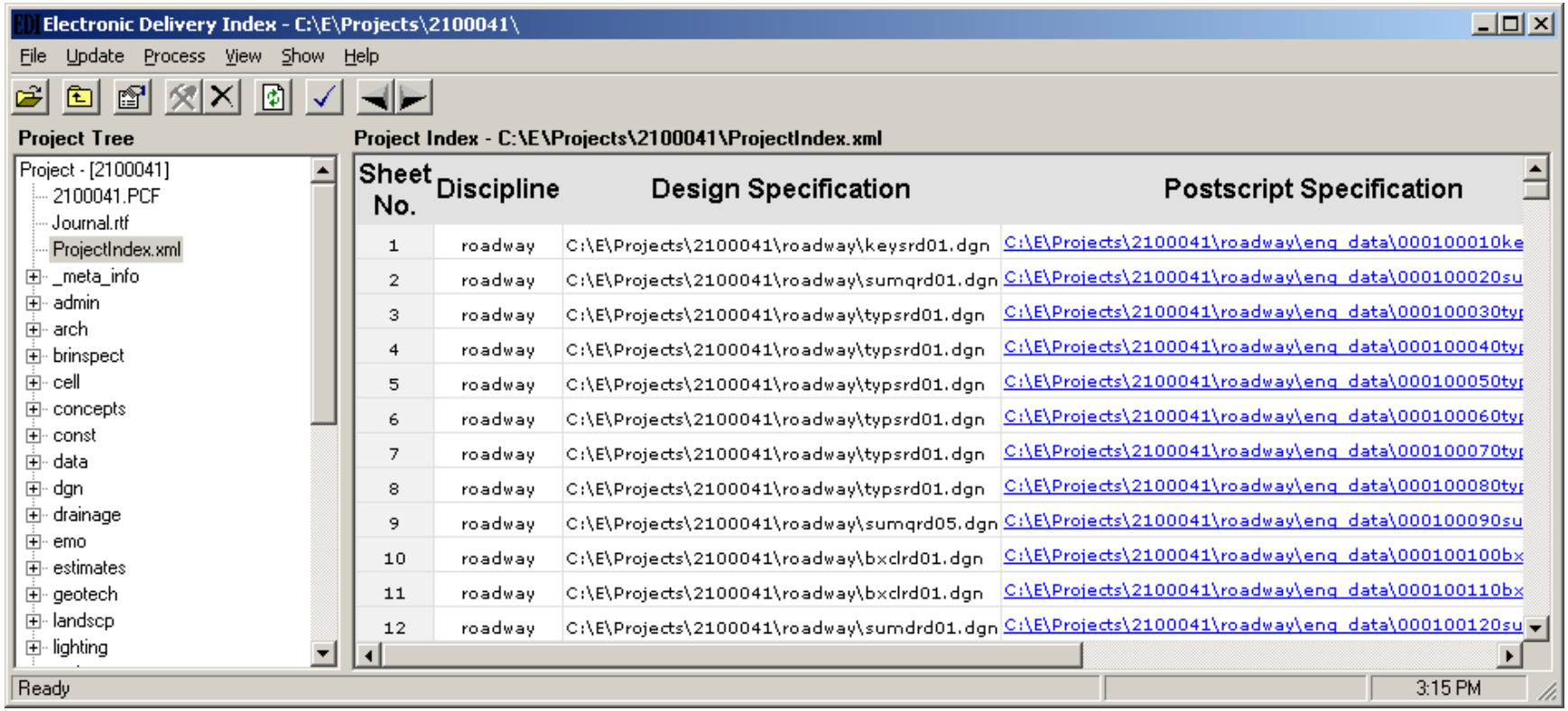
Attribute data is “metadata” or documentation about the files in your project. Attribute files are .XML files that contain the attribute data, one attribute file for each file in the project. The **SheetInfo** program is used to mine .DGN files for sheet data. Maintain the attribute files while you are adding data to the project.

Creating the Index (ProjectIndex.XML)



Once the Attribute files have been created, you can create the index (ProjectIndex.XML) as shown above. ProjectIndex.XML contains special data about plan sheets, and should be given special attention.

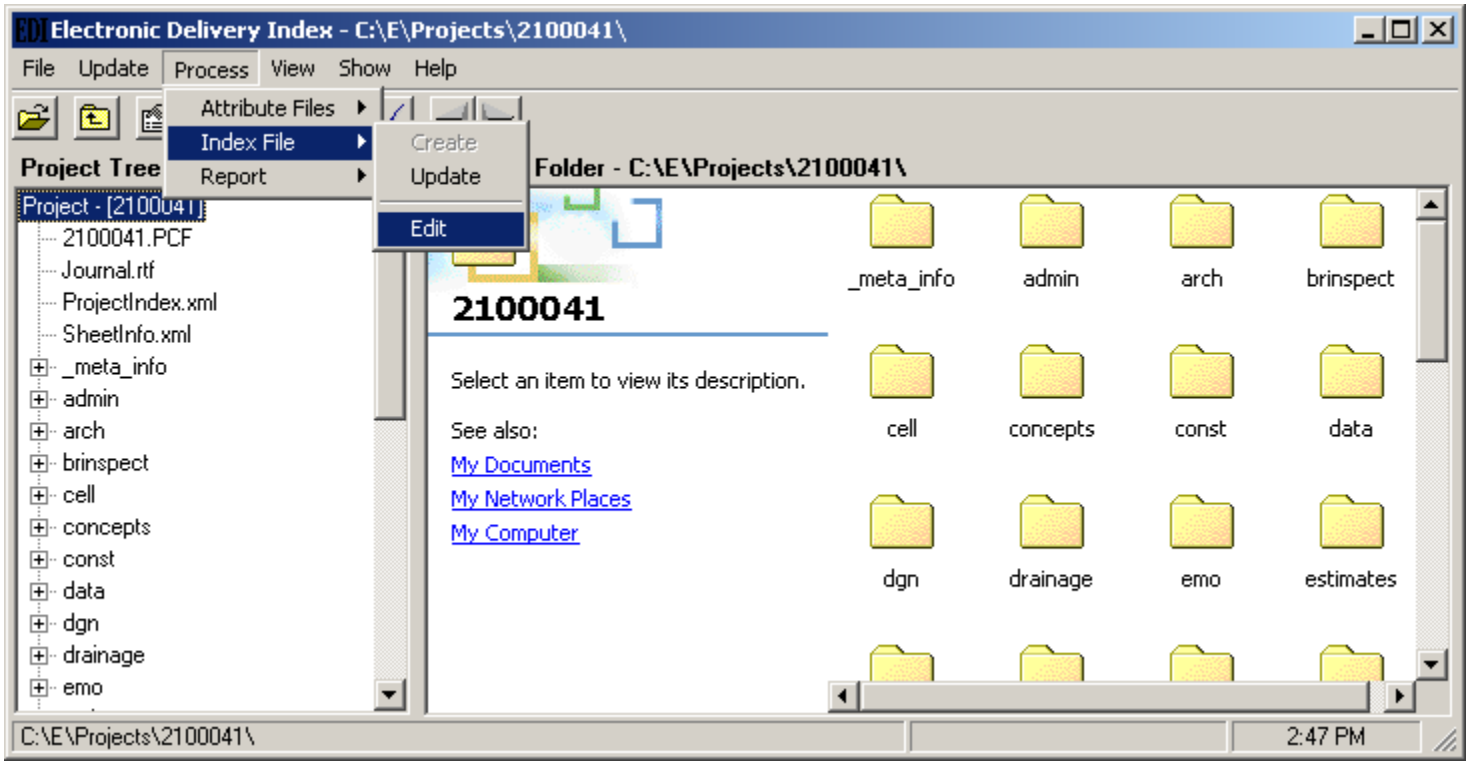
Web view of ProjectIndex.XML



Sheet No.	Discipline	Design Specification	Postscript Specification
1	roadway	C:\E\Projects\2100041\roadway\keysrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100010ke
2	roadway	C:\E\Projects\2100041\roadway\sumqrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100020su
3	roadway	C:\E\Projects\2100041\roadway\typsrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100030typ
4	roadway	C:\E\Projects\2100041\roadway\typsrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100040typ
5	roadway	C:\E\Projects\2100041\roadway\typsrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100050typ
6	roadway	C:\E\Projects\2100041\roadway\typsrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100060typ
7	roadway	C:\E\Projects\2100041\roadway\typsrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100070typ
8	roadway	C:\E\Projects\2100041\roadway\typsrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100080typ
9	roadway	C:\E\Projects\2100041\roadway\sumqrd05.dgn	C:\E\Projects\2100041\roadway\eng_data\000100090su
10	roadway	C:\E\Projects\2100041\roadway\bxclrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100100bx
11	roadway	C:\E\Projects\2100041\roadway\bxclrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100110bx
12	roadway	C:\E\Projects\2100041\roadway\sumdrd01.dgn	C:\E\Projects\2100041\roadway\eng_data\000100120su

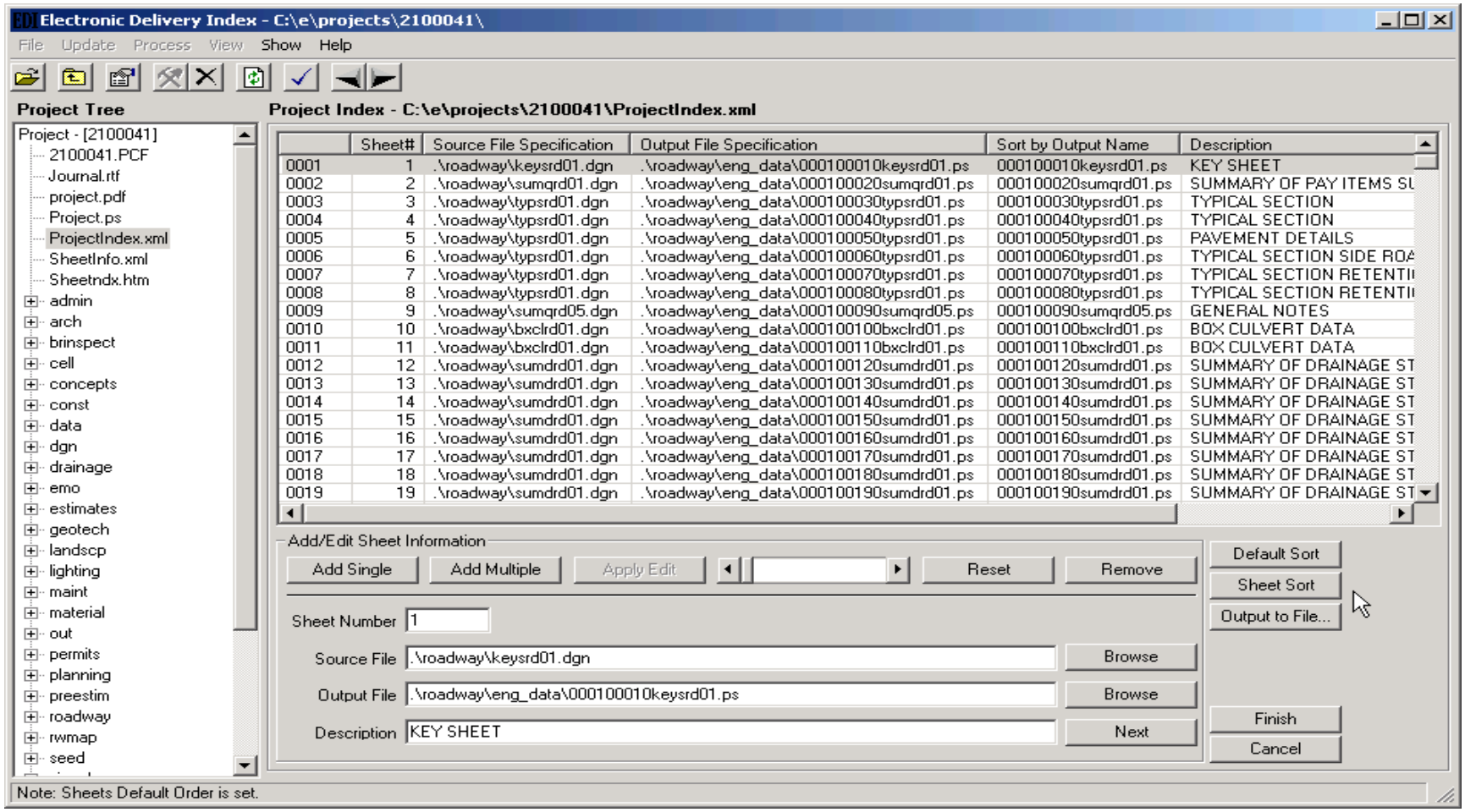
This screenshot is ProjectIndex.XML with a “style sheet” applied. Looks pretty, but looks can be deceiving. You need to edit the index to make sure everything is OK.

Opening the Index editor



The index editor gets to the basic information contained in the index with respect to sheets. You should <u>always</u> edit the index manually to check for missing sheets, erroneous information, etc.

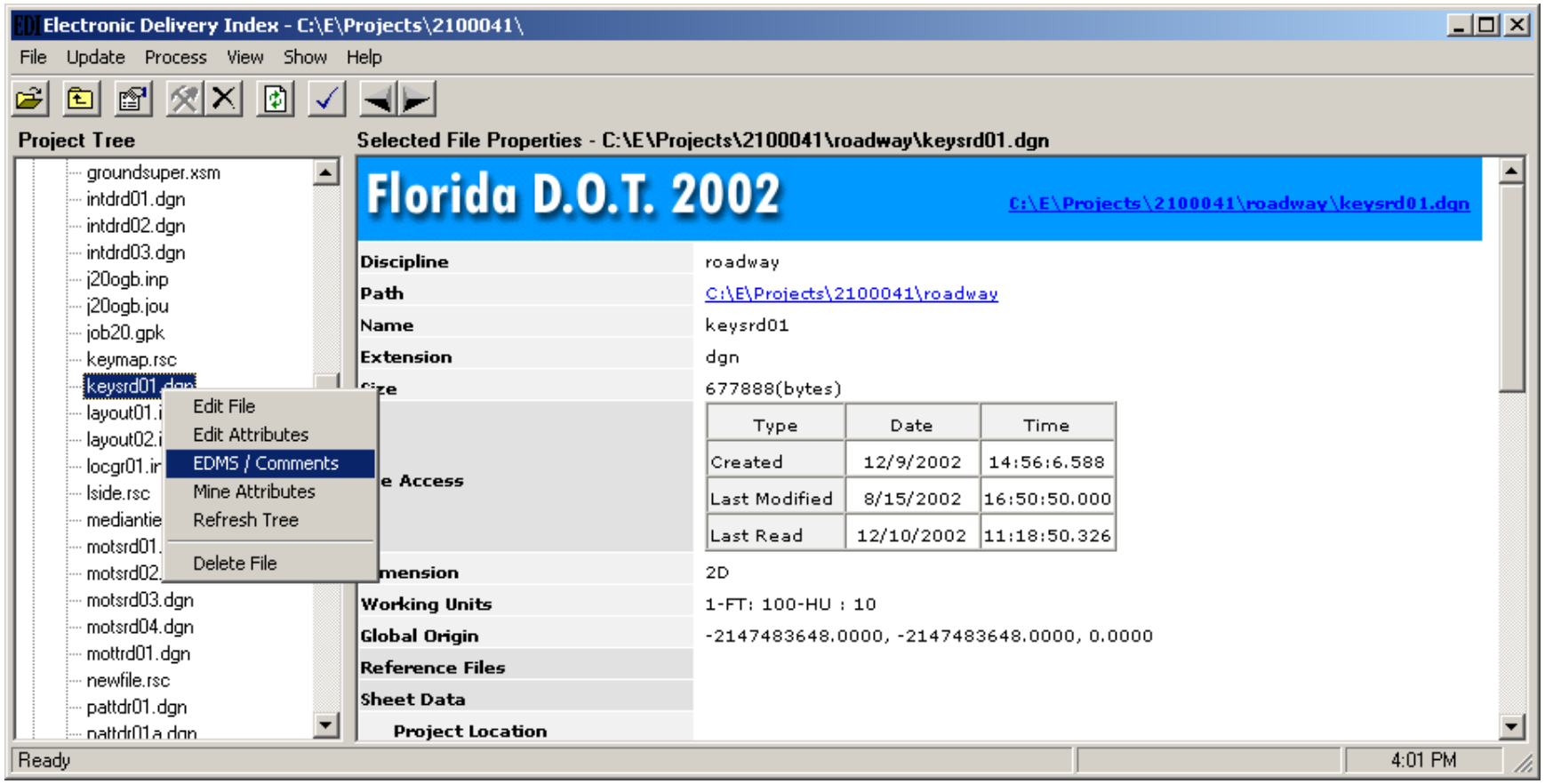
The Index editor…It is a spreadsheet…



Sort by sheet number (Sheet Sort), then check <u>everything</u> in the spreadsheet

Index data can be edited, added, or deleted in edit fields shown.

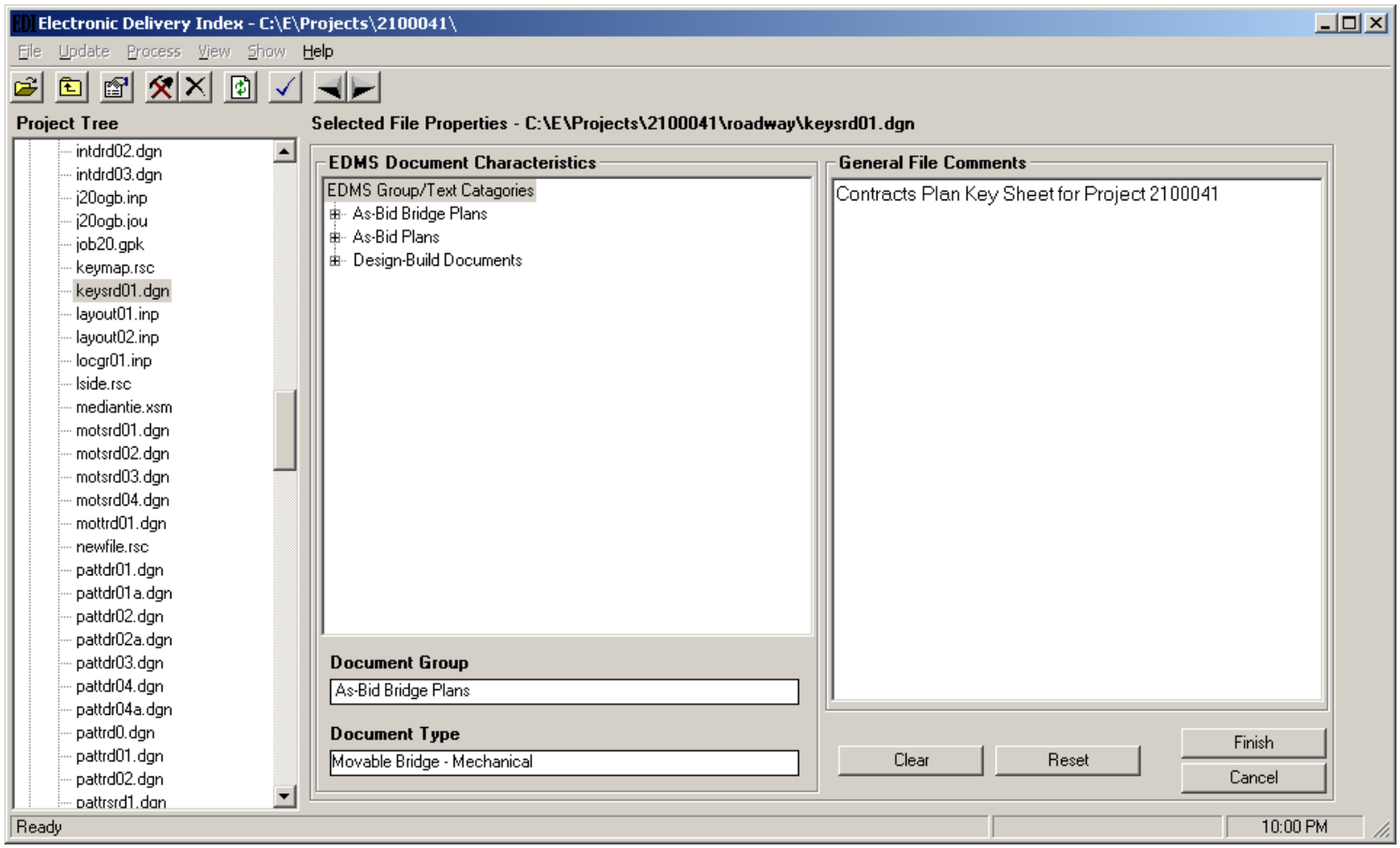
Adding Additional documentation about files – EDMS / Comments



Right-click on a file name to add “EDMS/Comment” data about files.

This is additional documentation you add manually.

The EDMS / Comment editor



EDMS data comes from pull-down list to add document Group and Type to files

General comments are “free-form,” describe files sufficiently for end-users.

Results of editing EDMS / Comments

Electronic Delivery Index - C:\E\Projects\2100041\

File Update Process View Show Help

Project Tree

- intdrd02.dgn
- intdrd03.dgn
- j20ogb.inp
- j20ogb.jou
- job20.gpk
- keymap.rsc
- keysrd01.dgn
- layout01.inp
- layout02.inp
- locgr01.inp
- lside.rsc
- mediantie.xsm
- motsrd01.dgn
- motsrd02.dgn
- motsrd03.dgn
- motsrd04.dgn
- mottrd01.dgn
- newfile.rsc
- pattdr01.dgn
- pattdr01a.dgn
- pattdr02.dgn
- pattdr02a.dgn
- pattdr03.dgn
- pattdr04.dgn
- pattdr04a.dgn
- pattrd0.dgn
- pattrd01.dgn
- pattrd02.dgn
- pattrsrd1.dgn

Selected File Properties - C:\E\Projects\2100041\roadway\keysrd01.dgn

Florida D.O.T. 2002 C:\E\Projects\2100041\roadway\keysrd01.dgn

Discipline	roadway
Path	C:\E\Projects\2100041\roadway
Name	keysrd01
Extension	dgn
Size	677888(bytes)
Extended Attributes	
Comments	Contracts Plan Key Sheet for Project 2100041
EDMS Data	
Group	Design-Build Documents
Type	Technical Proposal
File Access	

Type	Date	Time
Created	12/9/2002	14:56:6.588
Last Modified	8/15/2002	16:50:50.000
Last Read	12/10/2002	11:18:50.326

Dimension	2D
Working Units	1-FT: 100-HU : 10
Global Origin	-2147483648.0000, -2147483648.0000, 0.0000
Reference Files	
Sheet Data	
Project Location	
County Name	PUTNAM

Ready 10:06 PM

Create a Index report of all files in the project…

Electronic Delivery Index - C:\HEEP\1972812\

File Update Process View Show Help

Attribute Files
Index File
Report All Files ▸ Create

Project Tree

dex - C:\HEEP\1972812\ProjectIndex.xml

Project - [1972812]
- Journal.rtf
- Project.ps
- ProjectIndex.xml
- SheetInfo.xml
- Sheetndx.htm
- Sheetndx_Enhanced.htm
- admin
- arch
- cell
- const
- data
- drainage
- emo
- estimates
- fdot_std
- geotech
- landscp
- lighting
- maint
- out
- permits
- planning

Sheet No.	Discipline	Source Specification	Output Specification	D
1	roadway	.\roadway\keysrd01.dgn	.\roadway\eng_data\000100010keysrd01.ps	
2	roadway	.\roadway\sumgrd01.dgn	.\roadway\eng_data\000100020sumgrd01.ps	GE
3	roadway	.\roadway\typsrd01.dgn	.\roadway\eng_data\000100030typsrd01.ps	TYP
4	roadway	.\roadway\typsrd01.dgn	.\roadway\eng_data\000100040typsrd01.ps	TYP
5	roadway	.\roadway\sumgrd01.dgn	.\roadway\eng_data\000100050sumgrd01.ps	SUMMAF
6	roadway	.\roadway\sumgrd01.dgn	.\roadway\eng_data\000100060sumgrd01.ps	SUMMAF
7	roadway	.\roadway\playrd01.dgn	.\roadway\eng_data\000100070playrd01.ps	REFE
8	roadway	.\roadway\planrd01.dgn	.\roadway\eng_data\000100080planrd01.ps	F
9	roadway	.\roadway\planrd01.dgn	.\roadway\eng_data\000100090planrd01.ps	F
10	roadway	.\roadway\planrd01.dgn	.\roadway\eng_data\000100100planrd01.ps	F
11	roadway	.\roadway\planrd01.dgn	.\roadway\eng_data\000100110planrd01.ps	F
12	roadway	.\roadway\planrd01.dgn	.\roadway\eng_data\000100120planrd01.ps	F
13	roadway	.\roadway\planrd01.dgn	.\roadway\eng_data\000100130planrd01.ps	F
14	roadway	.\roadway\planrd01.dgn	.\roadway\eng_data\000100140planrd01.ps	F
15	roadway	.\roadway\planrd01.dgn	.\roadway\eng_data\000100150planrd01.ps	F

Note: Sheets Default Order is set. 8:37 AM

Why all this indexing?

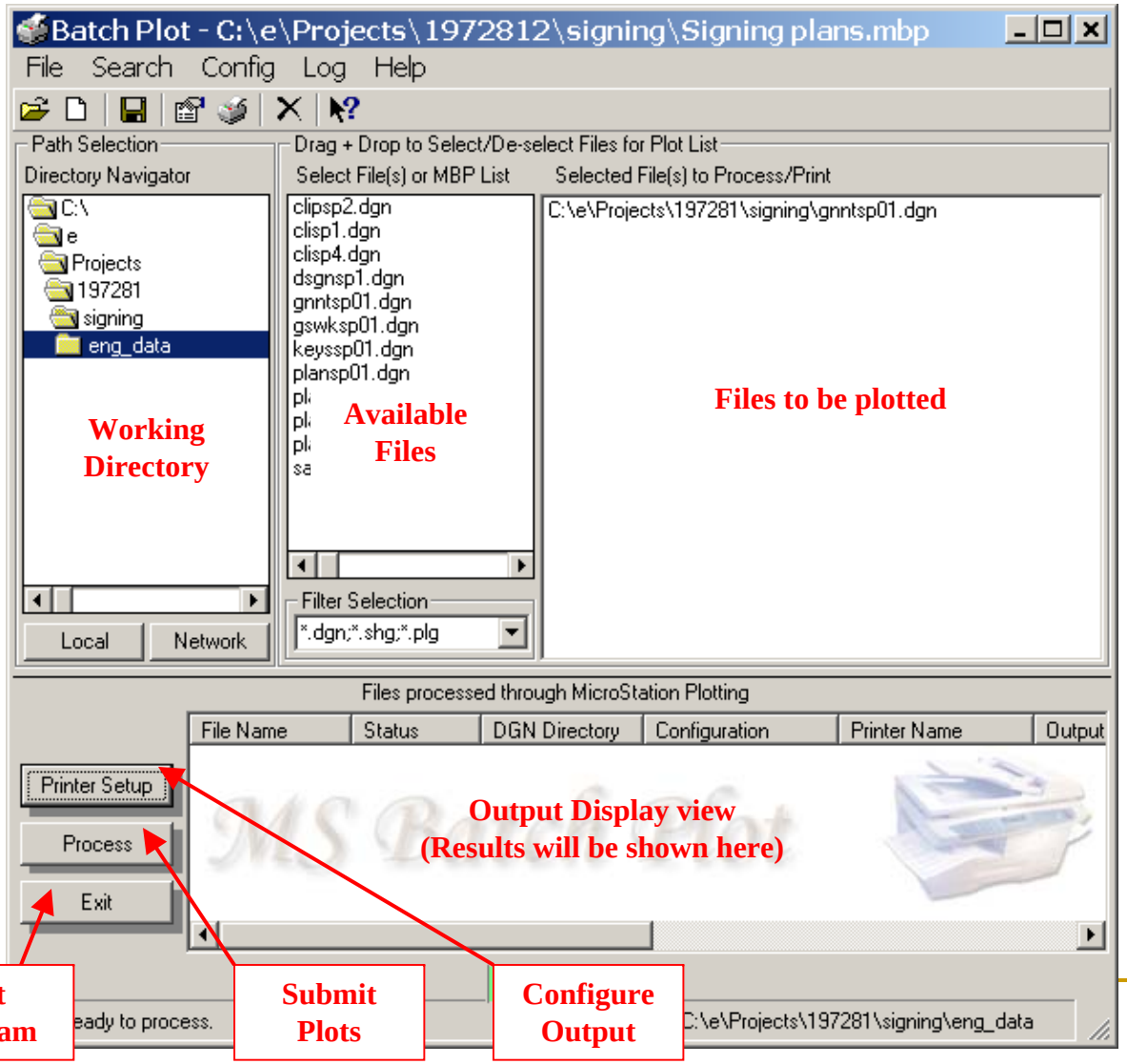
- The indexes will be used later for several processes
- The index referred to image files in the “Output File Specification” column while in Edit mode, and some said “missing”?
  - The Indexer predicts the names of the output that FDOT Batch Plotter will use for the sheet files. This is what is referred to as EDI compliant naming.
- After you Batch Plot (next segment) you should re-open the indexer in Edit mode to see If EDI sees all of the output files (none are “missing”).

Reminders…

- Create Attribute files as you create the files you will Index (don't wait until the end).
- Attribute files may be created individually for selected files or in smaller groups by selecting groups of files or directories.
- Document EDMS / Comments as you create the Attribute files
- Create and maintain the index. Use the Index editor frequently. Watch for problems with sheet errors in your design files
- If you discover EDI is having problems getting sheet Index data, go back to MicroStation and use SheetInfo and SheetNavigator to find and fix the problems.
- Follow CADD Standards, use the resources and tools provided…
- Follow FDOT CADD Standards
- Follow FDOT CADD Standards

MS Batch Plotting

MSBP Layout


Batch Plot - C:\e\Projects\1972812\signing\Signing plans.mbp
File Search Config Log Help
Path Selection
Directory Navigator
C:\
e
Projects
197281
signing
eng_data
Working Directory
Local
Network
Drag + Drop to Select/De-select Files for Plot List
Select File(s) or MBP List
clipsp2.dgn
clisp1.dgn
clisp4.dgn
dsgnsp1.dgn
gnntsp01.dgn
gswksp01.dgn
keyssp01.dgn
plansp01.dgn
Available Files
Filter Selection
.dgn;.shg;*.plg
Selected File(s) to Process/Print
C:\e\Projects\197281\signing\gnntsp01.dgn
Files to be plotted
Files processed through MicroStation Plotting
File Name
Status
DGN Directory
Configuration
Printer Name
Output
Printer Setup
Process
Exit
Output Display view
(Results will be shown here)
Exit Program
Submit Plots
Configure Output
eady to process.
C:\e\Projects\197281\signing\eng_data

MSBP - Fast Facts

- MS Batch Plot (MSBP) uses MicroStation plotting to produce hardcopy and Image files (PostScript)
- Integrated with Electronic Delivery Indexer
- EDI Indexing compliant proper PostScript naming. (Remember the Indexer?)
- Produces PostScript images, 11”x17”, and 24”x36” plots.
- Settings can saved (in .MBP files) for easy re-plotting

EDI Integration

MSBP is part of the FDOT's Electronic Delivery software. To access the program expand the **"Production Phase**", expand **"Creating Postscript Files**" and then click on the **Launch icon.**

Note

You can create a shortcut directly to MSBP. The program is located in the FDOT2002\win32\MSBP\ directory.

EDI Integration

SheetInfo, MSBP and EDI (Electronic Delivery Index) work together to tie the delivery together.

- SheetInfo labels the sheets and tags the label information to the borders
- MSBP scans the file, embeds the discipline and sheet number into the PostScript file name
- EDI associates the DGN with its PostScript file

Postscript Naming

- Discipline Code is based on component order defined in the FDOT Plans Preparation Manual.
- Sheet Number comes from Adhoc Attributes
- Sheet file name with PS extension.

Sheet Number

Discipline Code

File Name ← From the source design file

0001 – Roadway Plans

0002 – Signing and Pavement marking Plans

0003 – Signalization Plans, etc.

Sheet 1 shown here. Supports suffixes like 1A, 23C, etc.

MSBP Process (New Job)

1. Start MSBP
2. Browse to working directory
3. Create MBP file *(File > New) [MBP file saves your settings for the next time you run MSBP]*
4. Configure MSBP if necessary *(Search Criteria)*
5. Define printer setup
6. Process / Print

Executing the Program

- Navigate to your project directory
- Create a New project with File>New
  - This creates an .MBP for this session
- Select the files to process

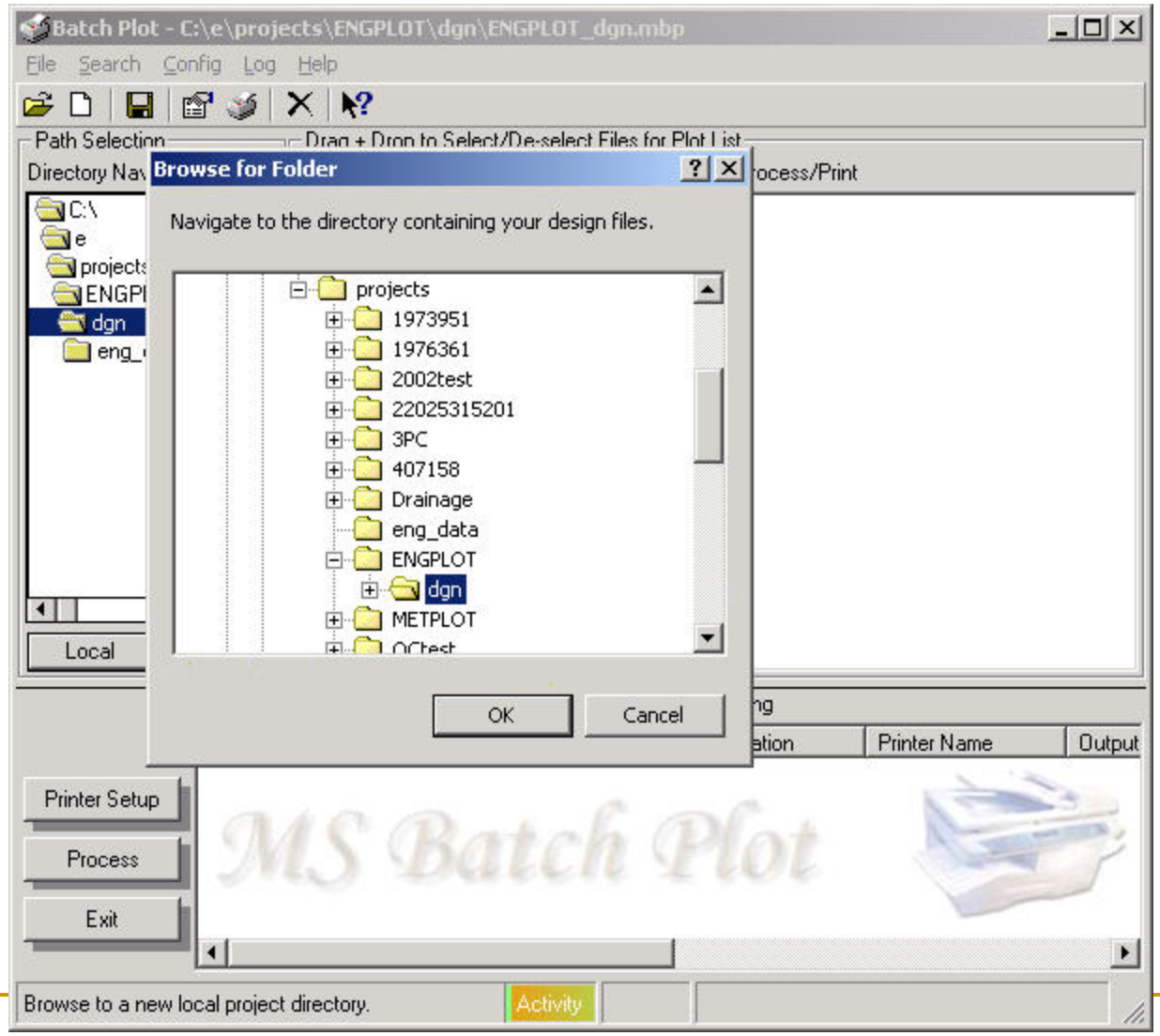
MBP File

This file stores the settings defined in

- Setting defined on the *Printer Setup* dialog
- Working directory,
- List of files to be processed

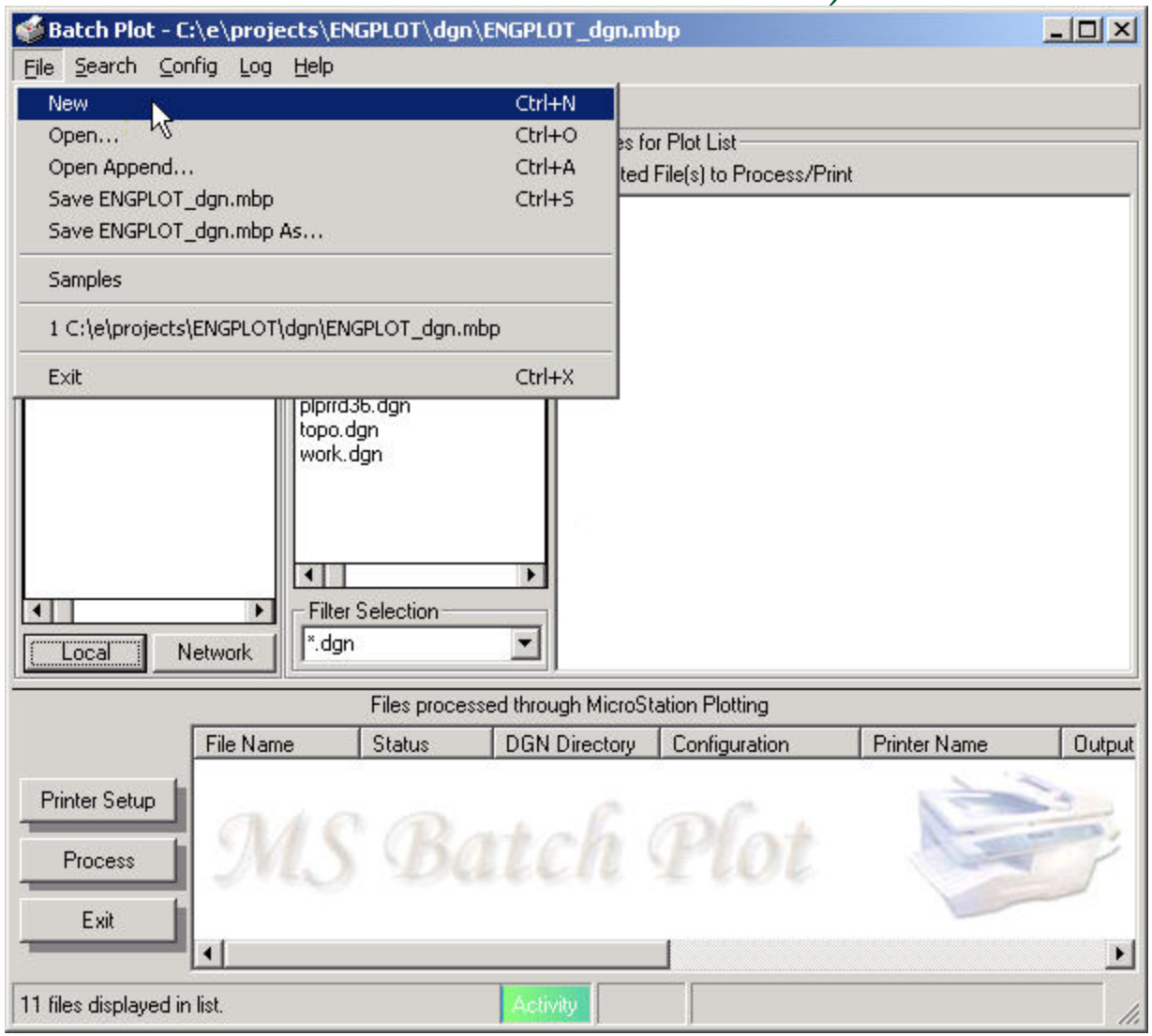
This allows users to save the settings for a group of files and quickly reproduce the plots in the future

Navigate to Designs directory

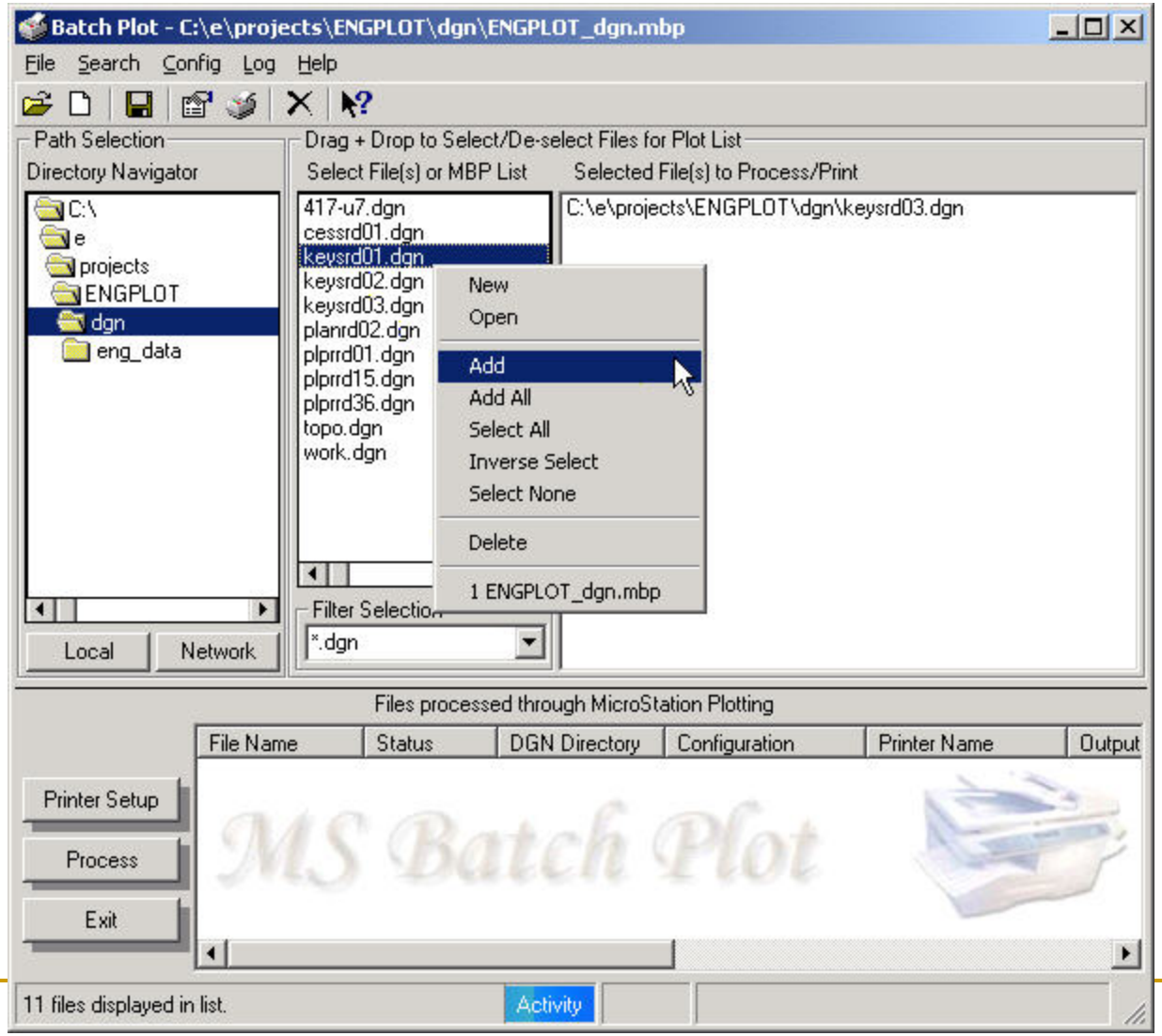


Click on either the Local or Network button to activate the Browse window.

Create a New MSBP Project



Select Files



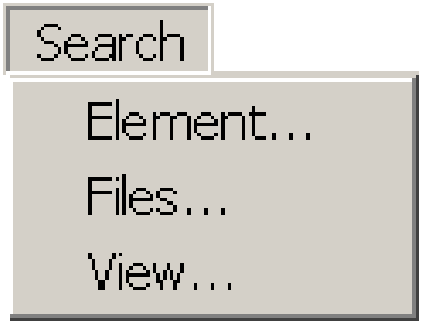
Right click, double click or drag and drop files

Search Criteria

Search Criteria defines criteria required to define plot area and inherited attributes.

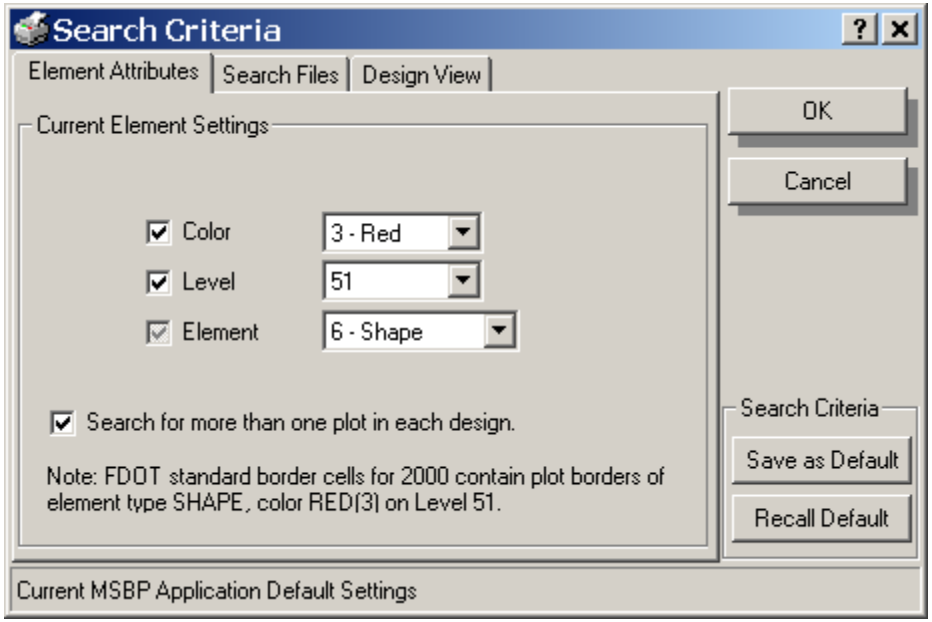
- Element Attributes
- Search Files
- Design View

To define search criteria select options from the Search menu.



Plotting Element

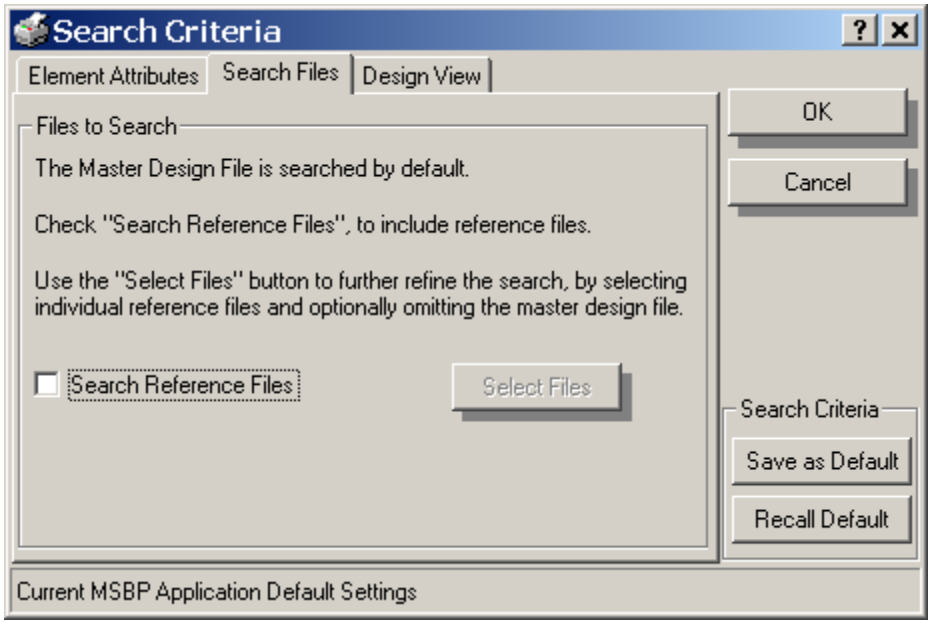
MSBP searches a design file for an element of selected symbology and prints everything within the limits of the element



To access this dialog select Search > Element from the menu

Searched Files

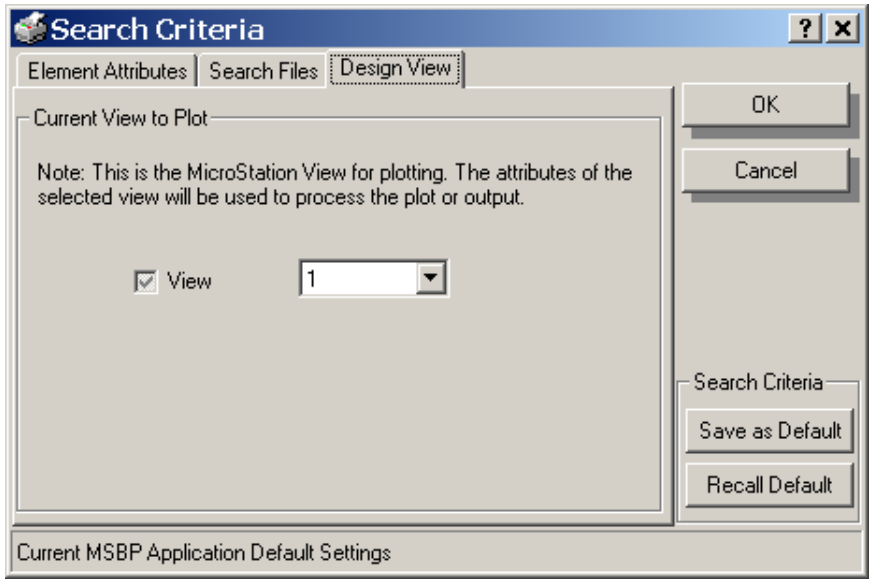
By default MSBP searches only the master file, but it can be configured to search references for the plotting border.

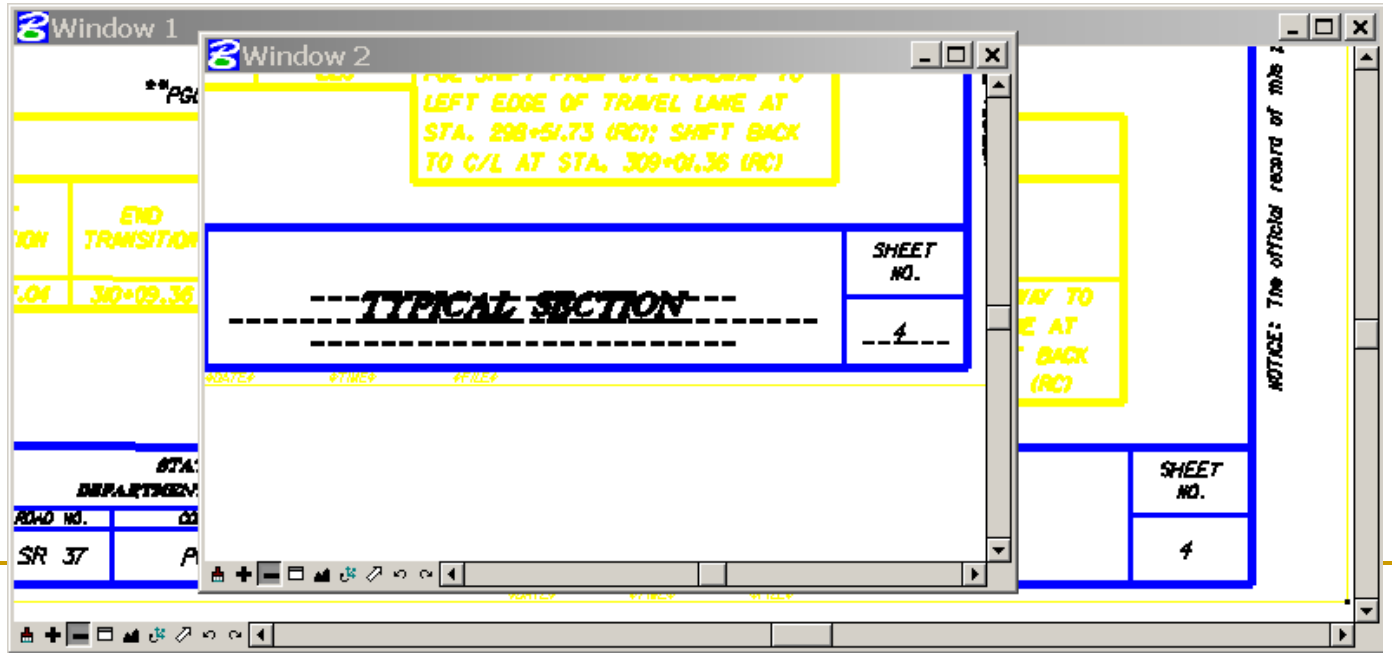


To access this dialog select Search > Files from the menu

Design View

The "*View Attributes*" of a selected view can be applied to the output





Printer Setup

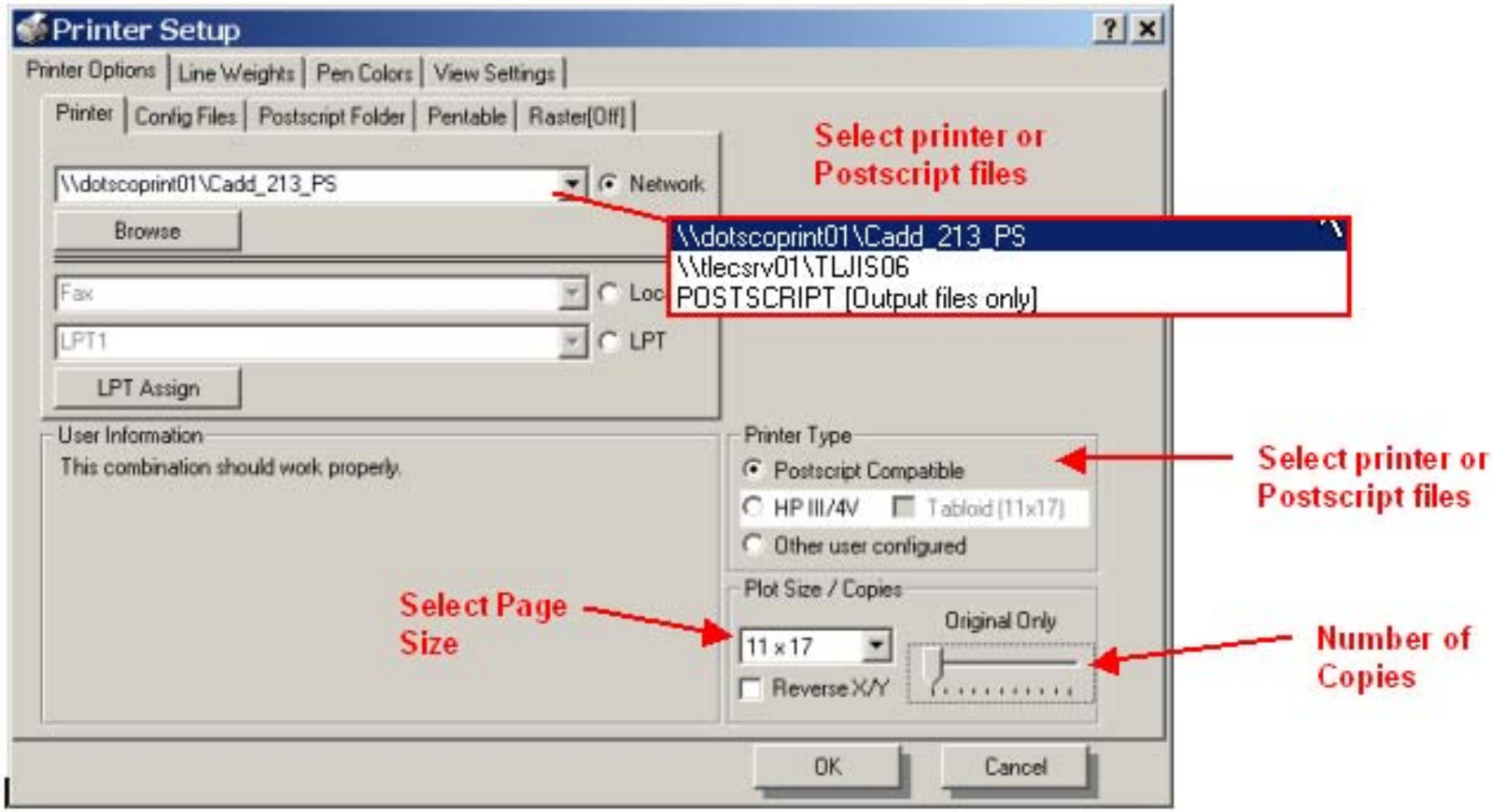
- Network, Local or LPT output (Printer tab)
- Print Driver type (Config Files tab)
- Design Units – Metric, English or User defined (Config Files tab)
- Enable Raster Plotting (Raster tab)
- Other settings

Printer Selection

You can choose one of four options:

- Local Printer connected directly to your computer
- Any network printers defined on your workstation or browse for network printer
- A LPT port mapped to a network printer
- Create a PostScript image file

Printer Selection



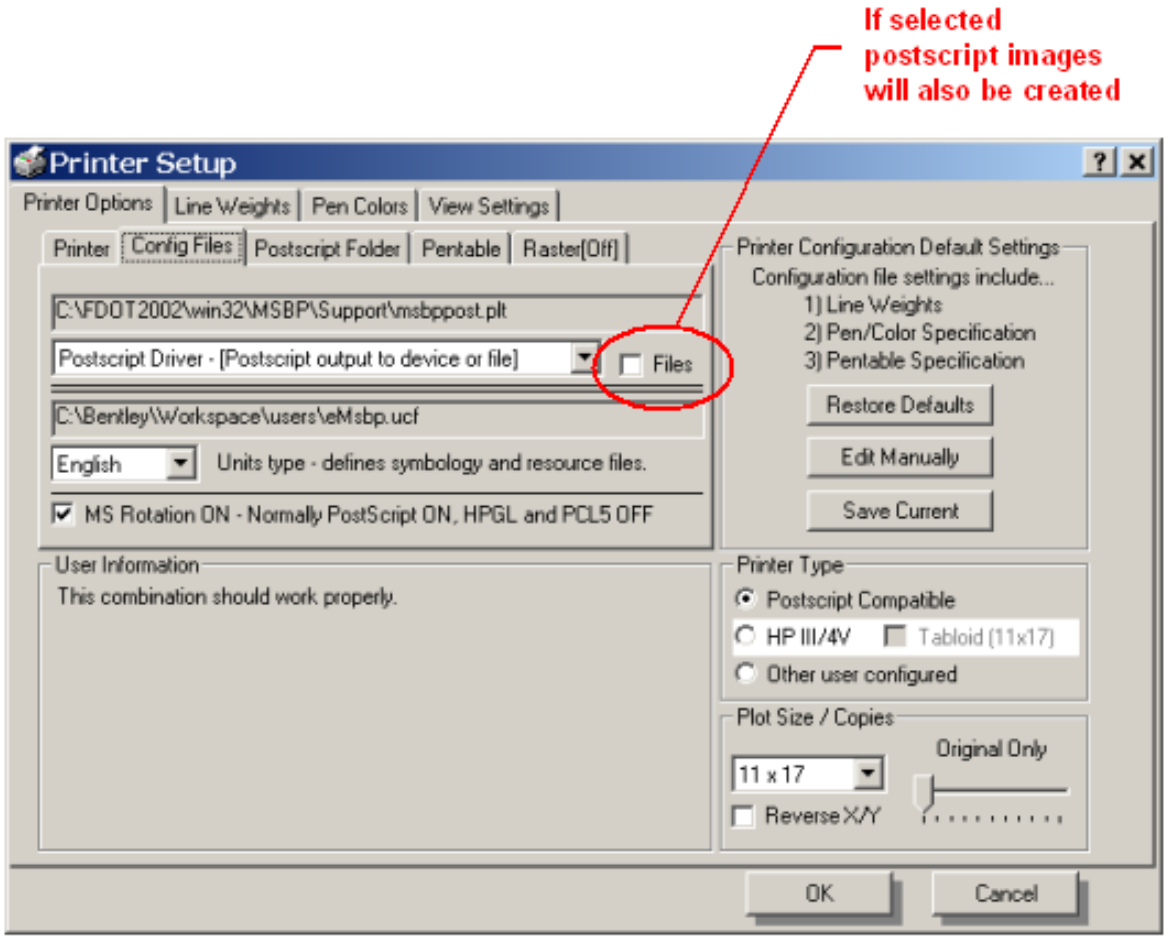
To access this menu click on the Printer Setup button

Configuration Files

There are four plot driver configurations:

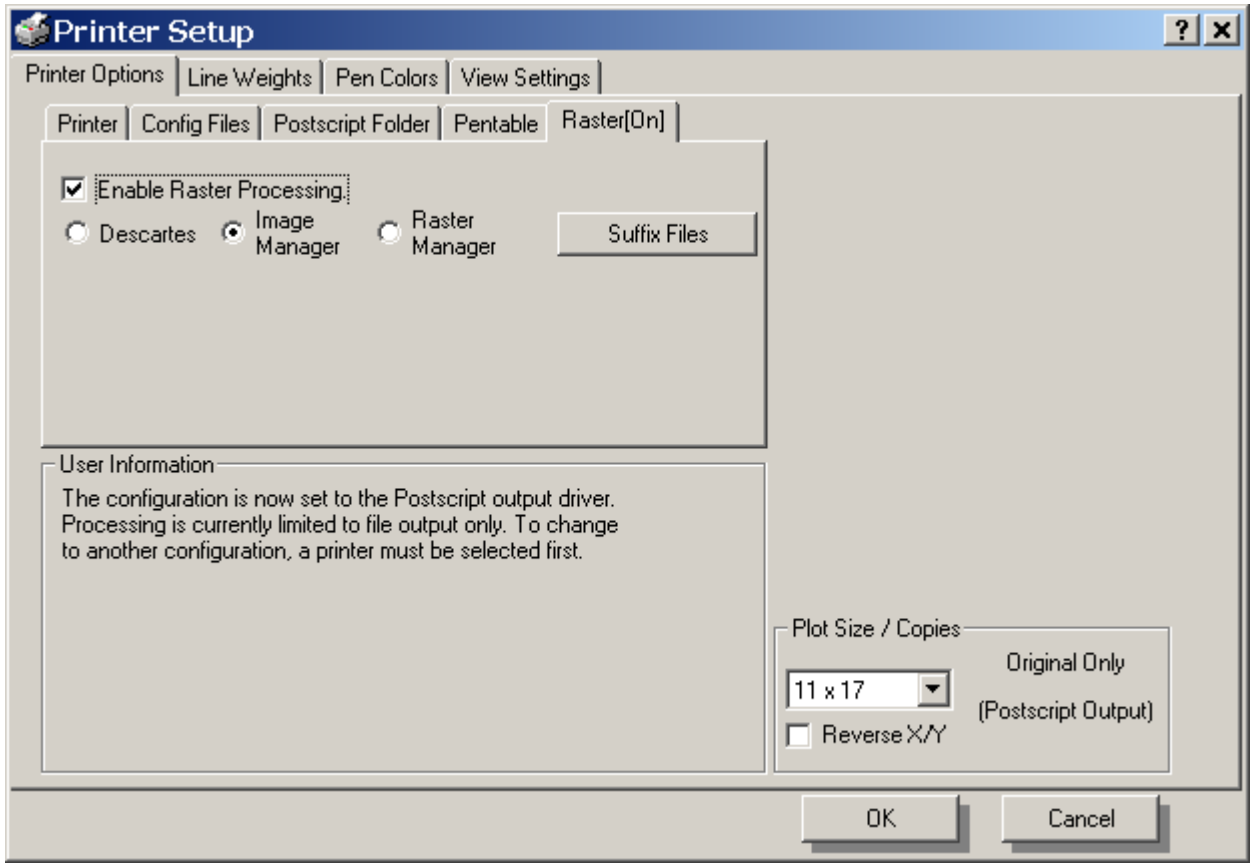
1. Postscript - suitable for Postscript capable printers such as the Xerox N series, HP PostScript printers.
2. HPGL - suitable for the HP LaserJet series (w/ HPGL)
3. PCL5 - works with PCL capable printers.
4. System Printer - the Windows system printer driver can be designated.

Configuration Files



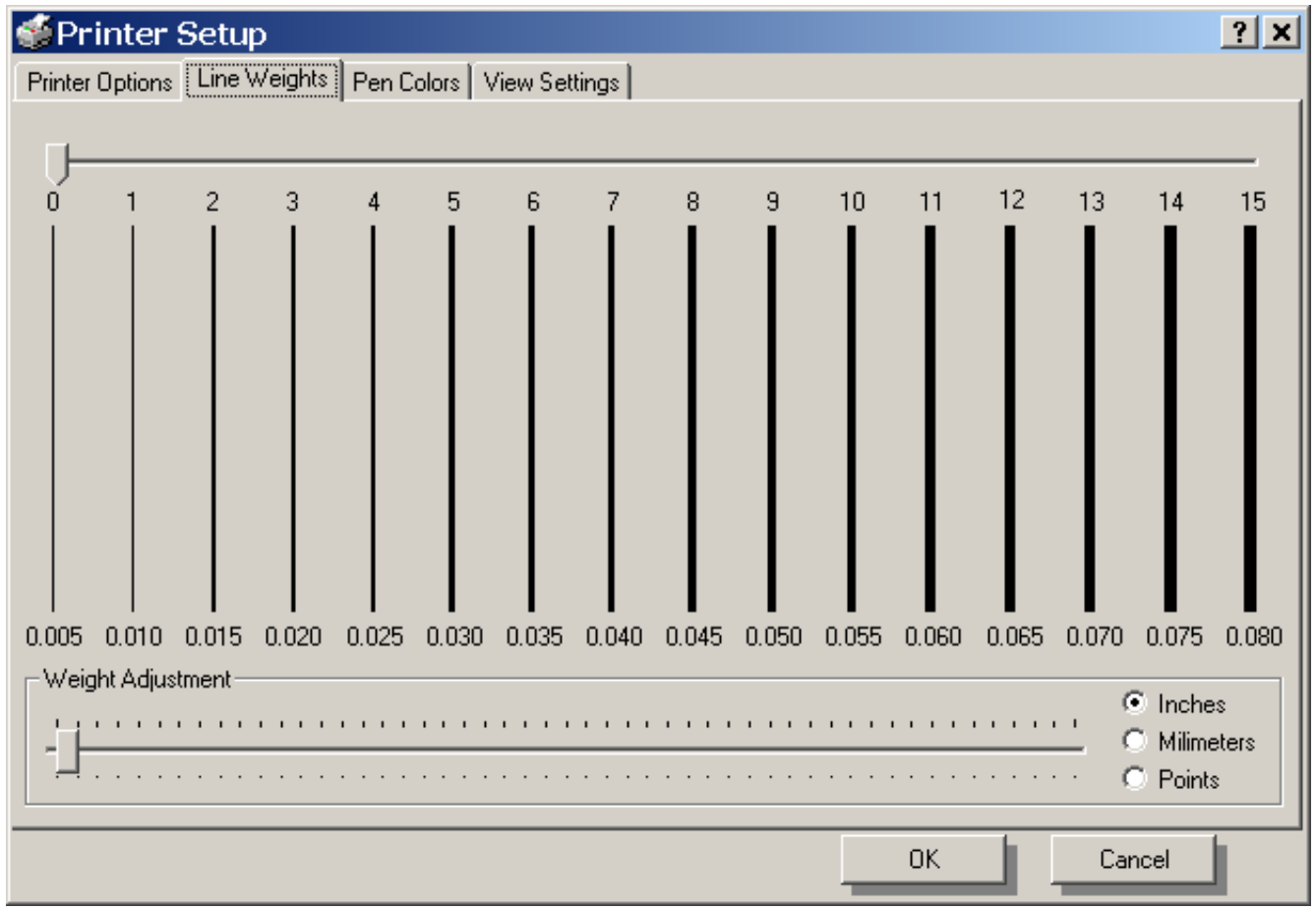
To access this menu click on the Printer Setup button

Raster Files

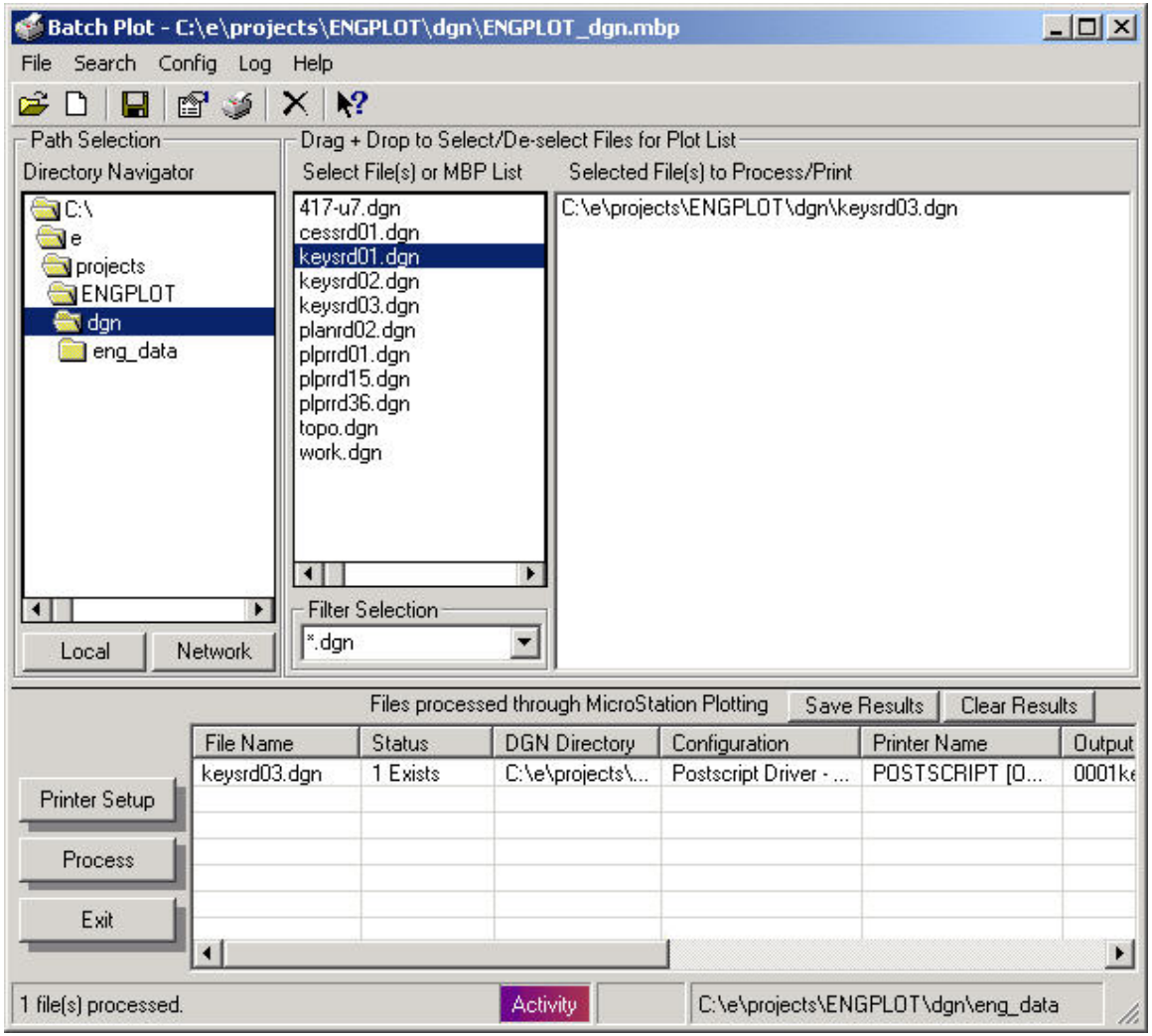


To access this menu click on the Printer Setup button

Line Weight Adjustments



The Process or Print Button



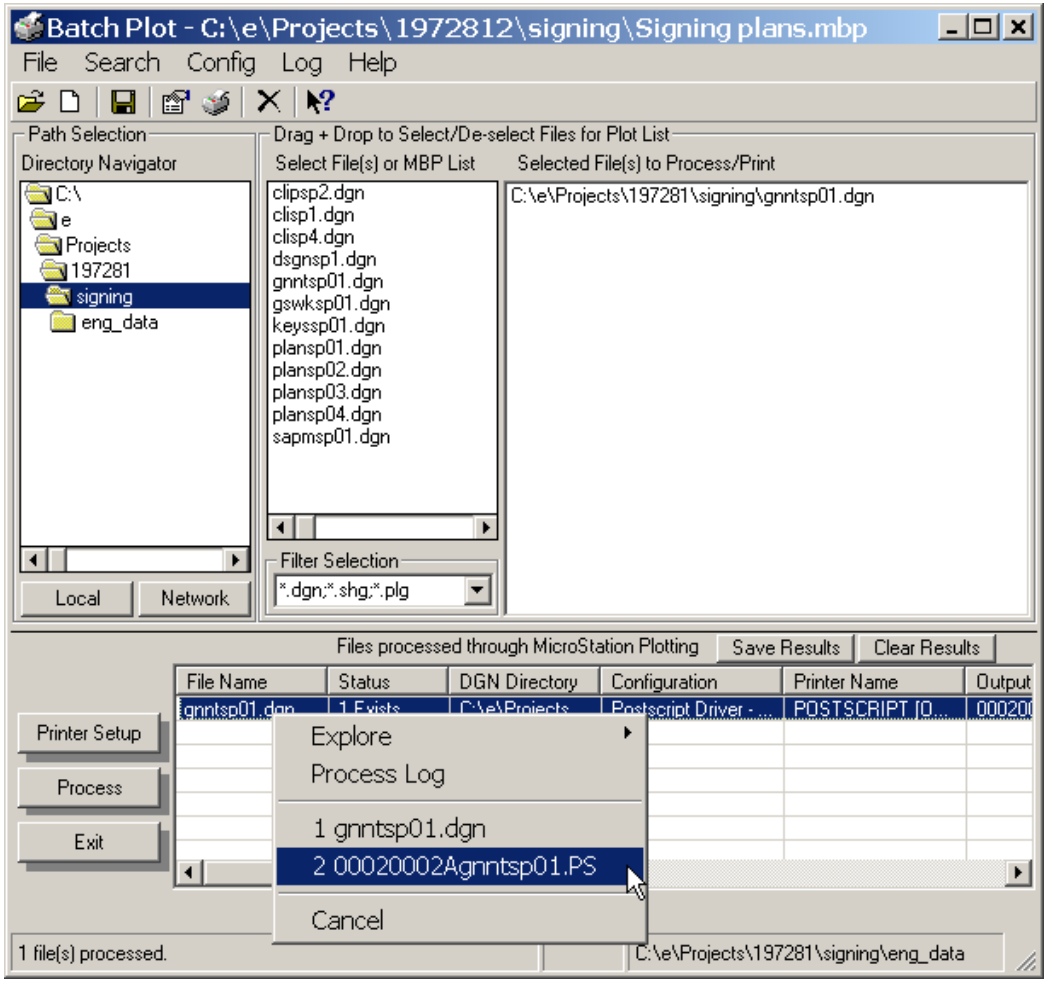
Process button when creating image files.

Print button when submitting to a printer.

The results

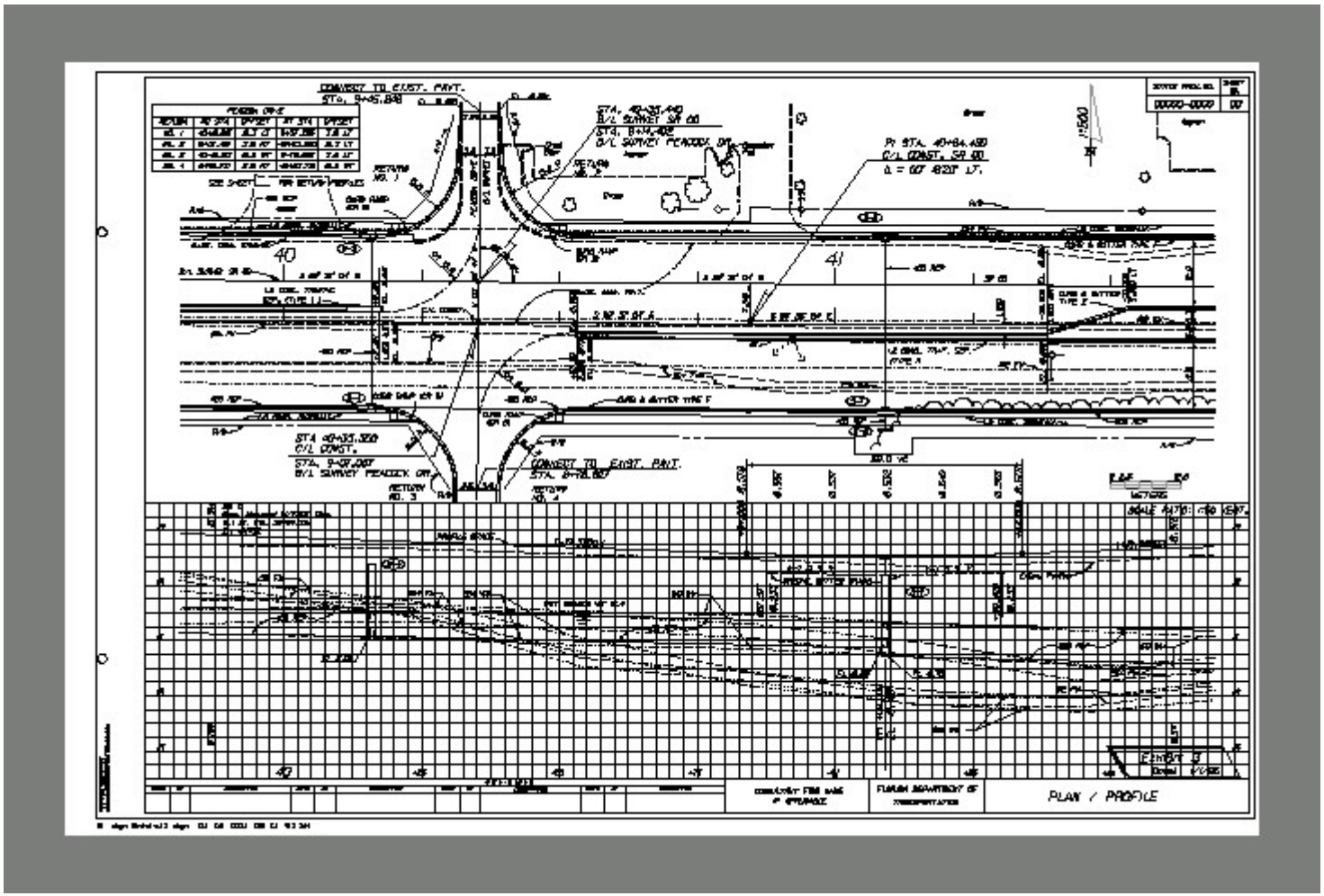
- 11”x17” plots are submitted to your local or network printer
- Electronic Postscript files are directed to the \Eng_data\ sub-directory beneath the discipline directory with the DGN file being plotted
- A log of the results is displayed in the window on the main dialog.

Accessing the Results



Right-Click on file to see context menu shown above

Example PostScript File



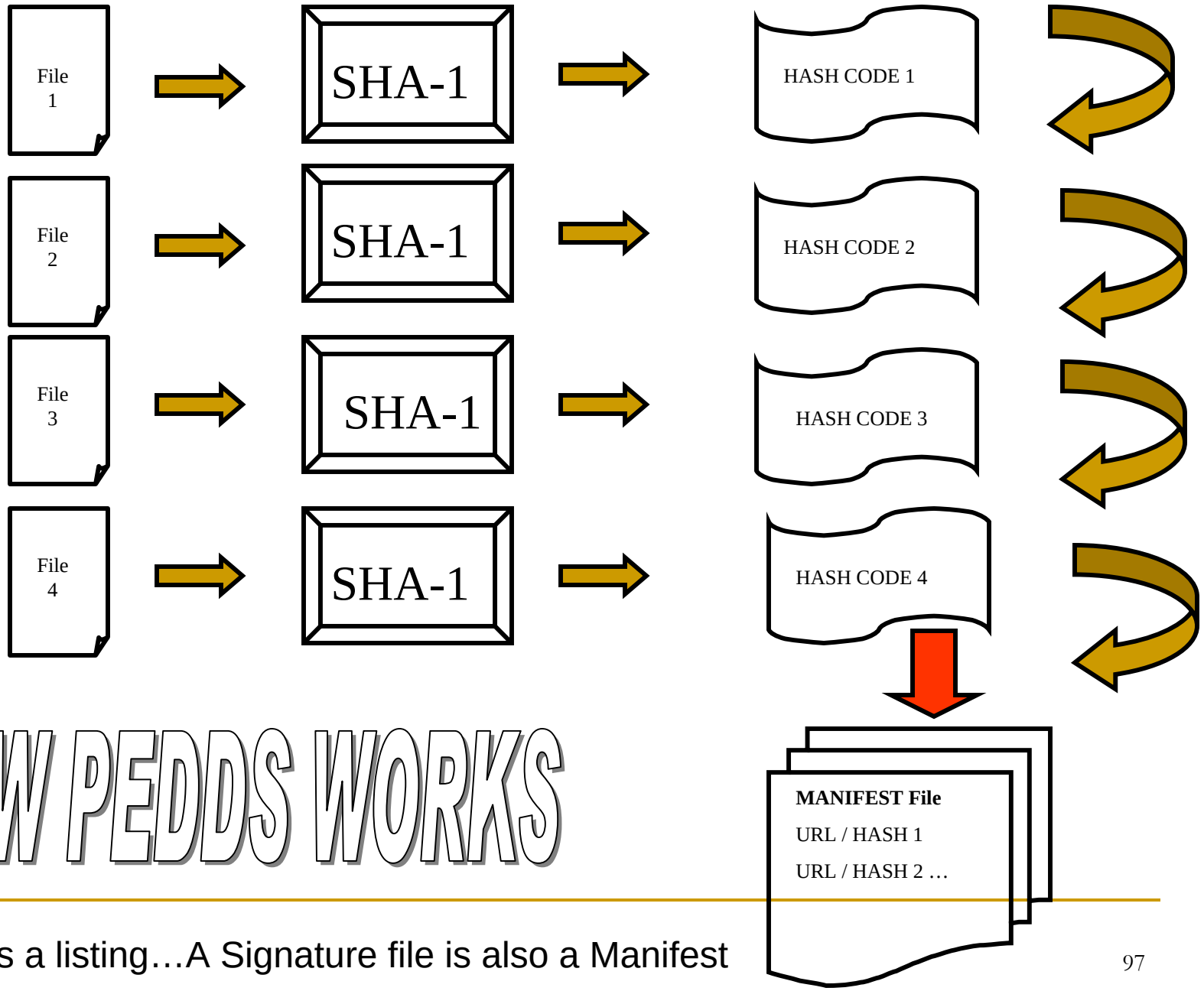
Don’t Forget to Review in the Indexer!

- After you have completed your batch plotting, re-open the Indexer (EDI) in Edit mode to make sure it sees all of your sheet files.
- With the Index Editor, you can add sheets to the Index that you didn’t plot with MS Batch Plot, but you must browse to these manually.

PEDDS

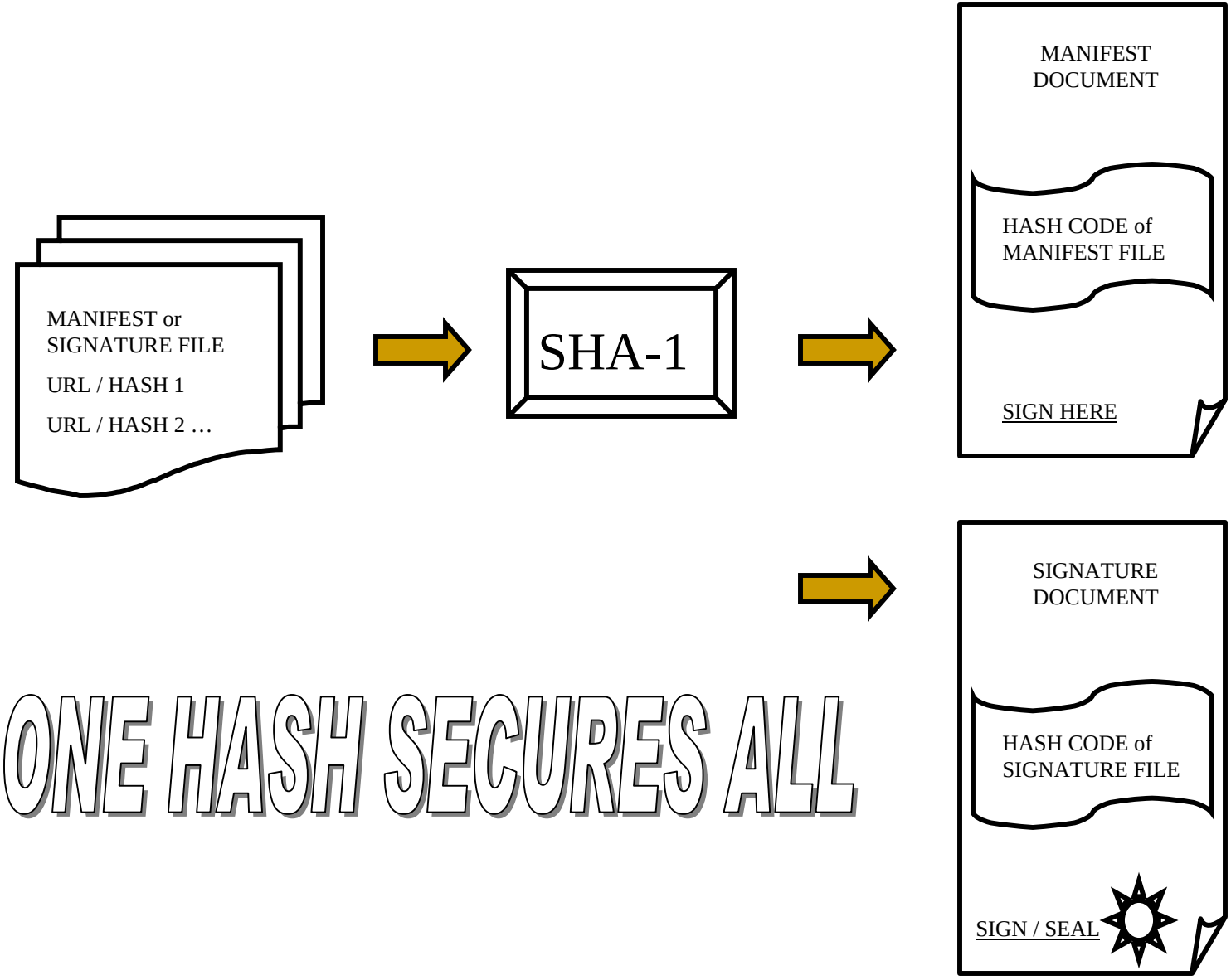
Professional's Electronic Data Delivery System (PEDDS)

- PEDDS is used to Secure Project Data, and Sign & Seal files selected by a Signatory.
- PEDDS uses the Fed's SHA-1 algorithm, to compute a Hash code (think of fingerprint) for each file selected.
- The Hash codes can be printed on paper, when added a manual signature (and seal) constitutes an "electronic signature" which meets both Florida Statutes and Board rules.



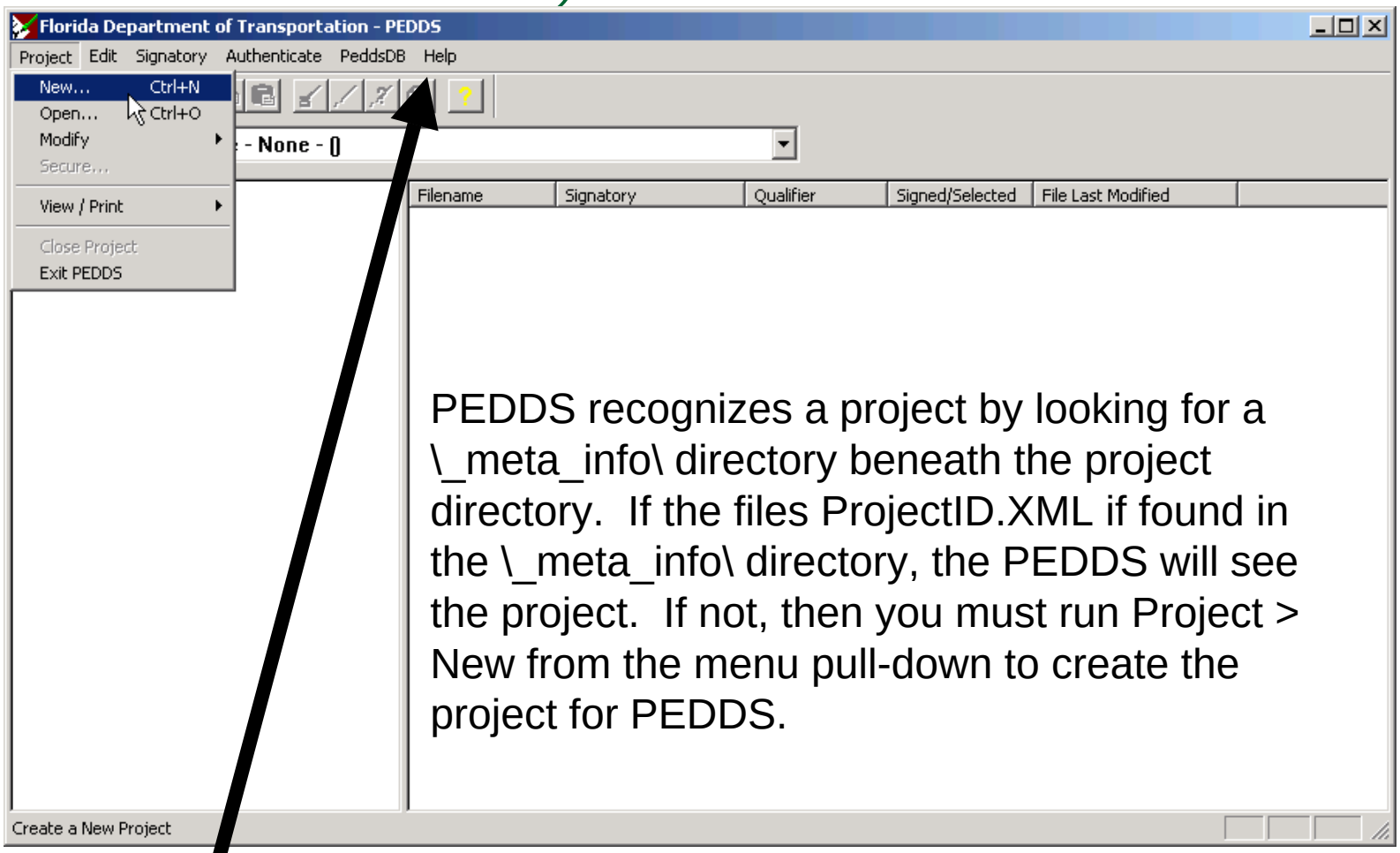
HOW PEDDS WORKS

A Manifest is a listing…A Signature file is also a Manifest



ONE HASH SECURES ALL

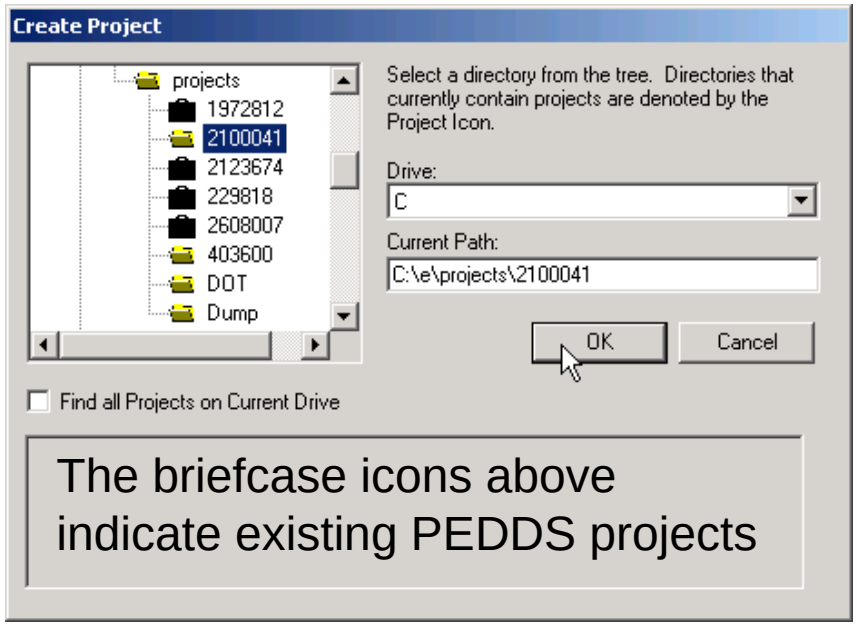
Creating a PEDDS Project (If it has not been done before)



PEDDS recognizes a project by looking for a _meta_info\ directory beneath the project directory. If the files ProjectID.XML if found in the _meta_info\ directory, the PEDDS will see the project. If not, then you must run Project > New from the menu pull-down to create the project for PEDDS.

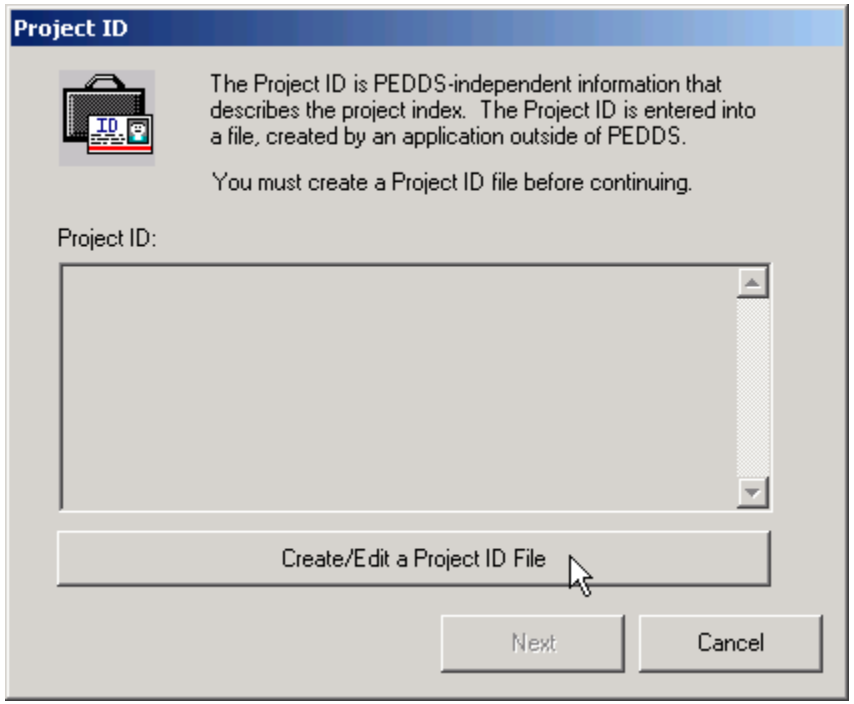
HINT: Use the Help in PEDDS ! Explains how to do most things (almost).

Creating the Project and project Identification Information



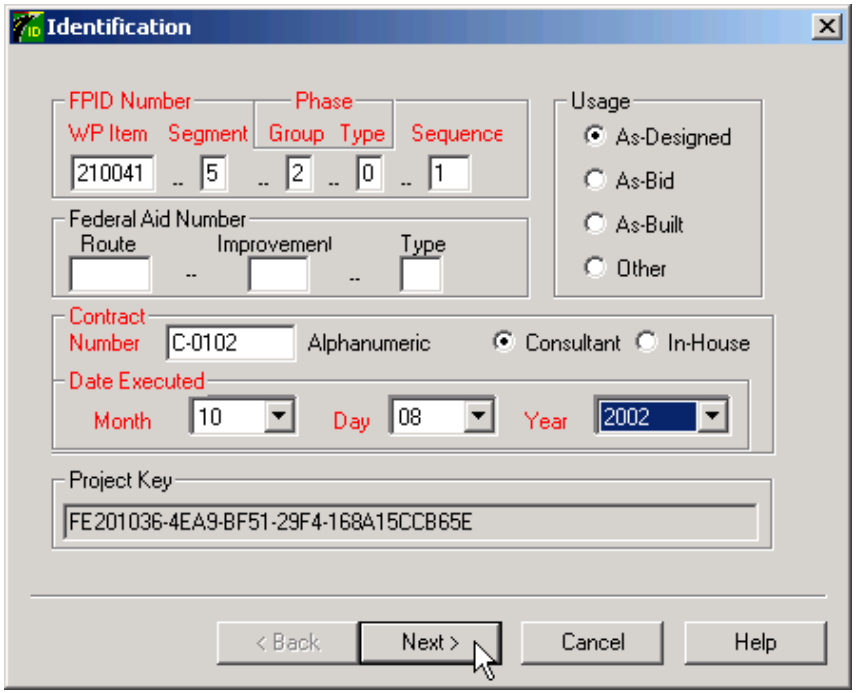
The briefcase icons above indicate existing PEDDS projects

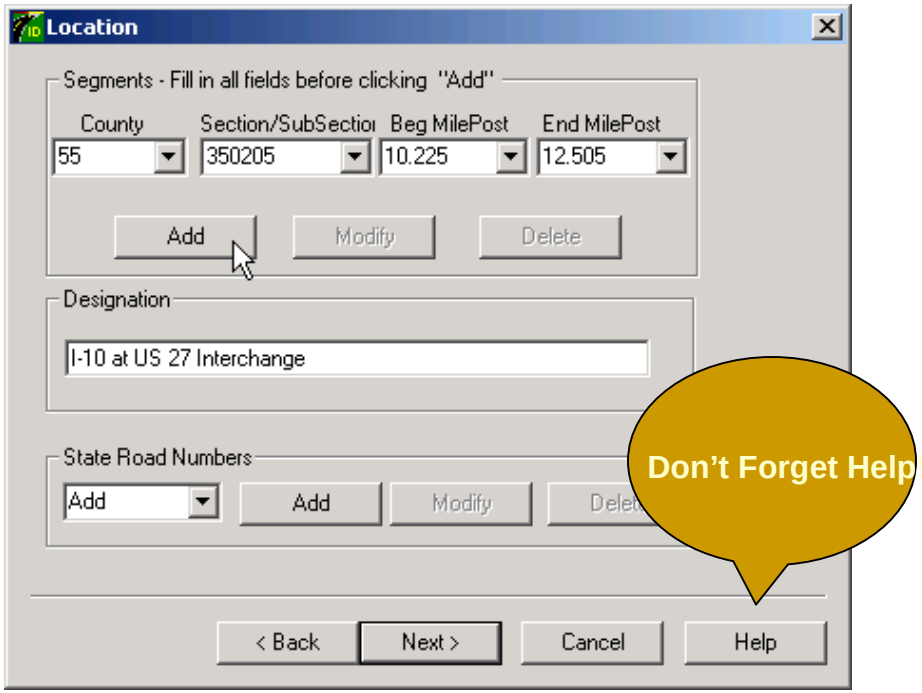
As shown, were about to “create” the PEDDS project for “2100041”



Next, we need to create Project identification information (the ProjectID.XML file).

Project Identification and Location

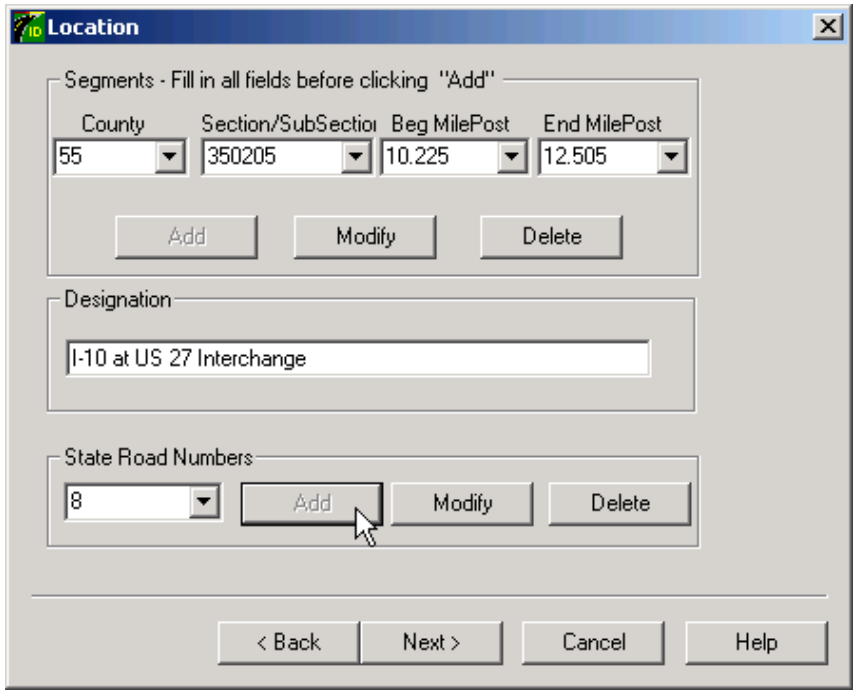


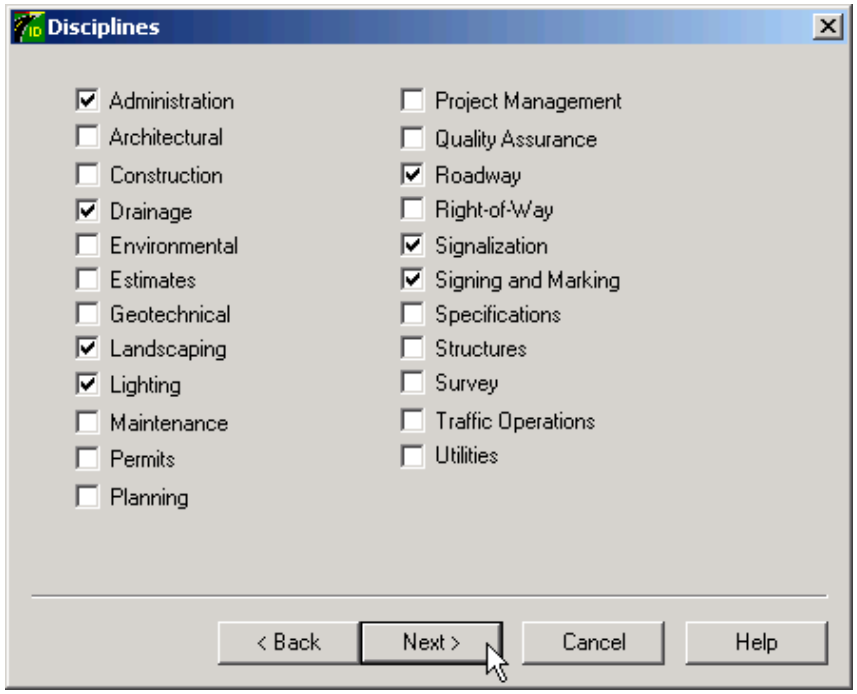


It is very important that this information be entered as accurately as possible.

On the Location screen, some field are multi-entry, combination fields (Segment and State Road Number). To use these, Fill the data entries in the field(s), then press the Add button. You can afterward enter another set of values and then press Add.

More Project Identification data

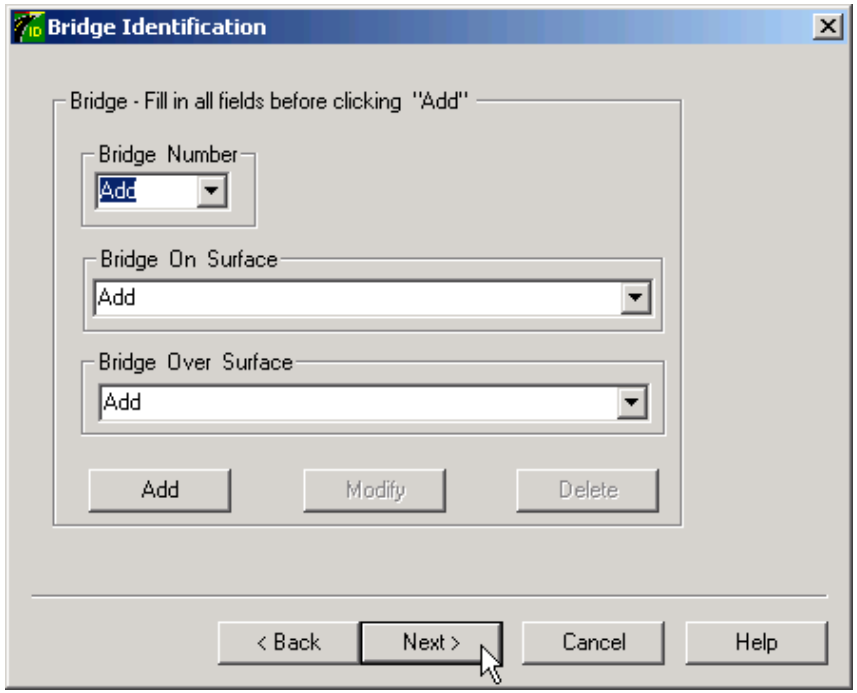


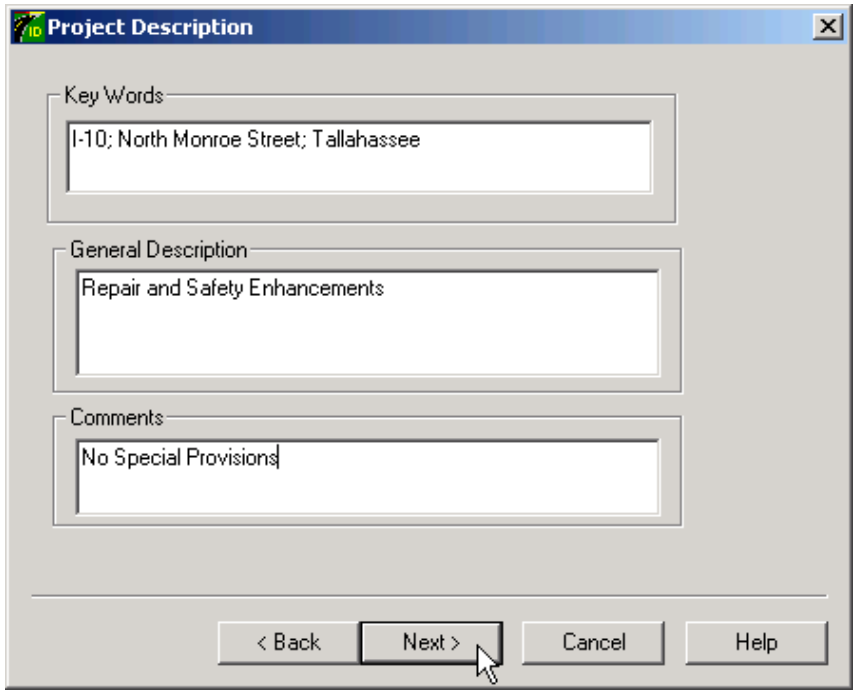


The State Road number is also a multi-entry, combination field. On the Disciplines dialog, check the options that are anticipated to be part of the data on this project.

Note: the data in ProjectID can be updated later as the project progresses.

More Project Identification data

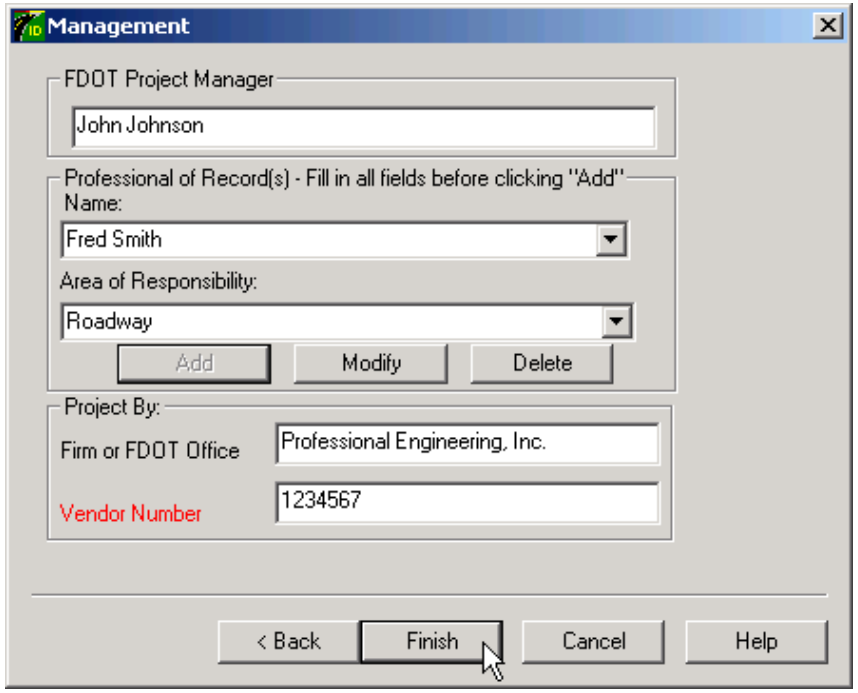


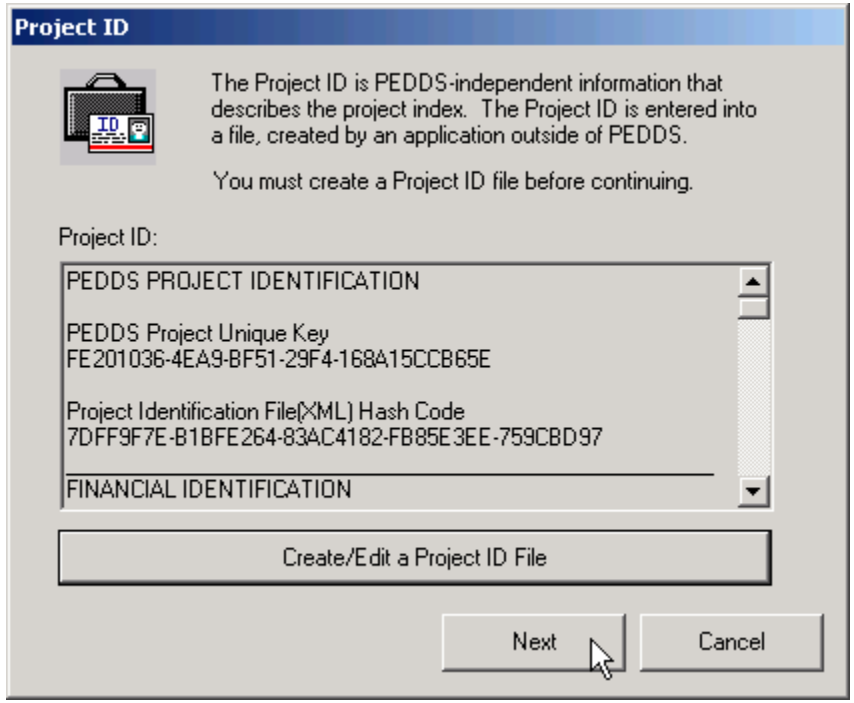


The entire Bridge Identification dialog is a multi-entry, combination fields.

The Key Words are used for the future when people are searching for this project using ad-hock searches. The General Description and Comments can be used as search keys too. Be verbose and describe carefully.

More Project Identification Data

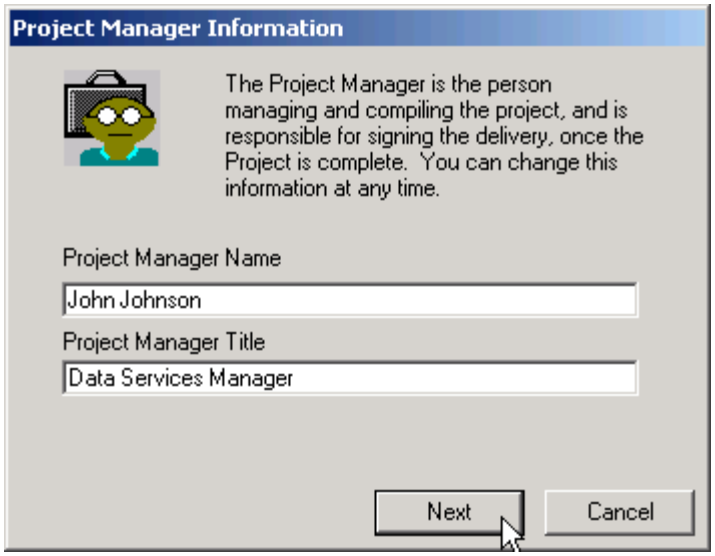


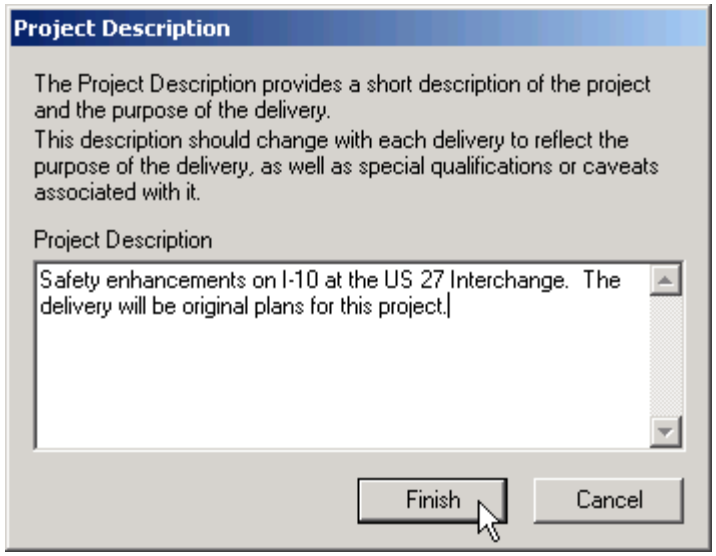


Enter the FDOT project manager and anticipated professional's of record and their area of responsibility. Again, note the multi-entry, combination fields. Remember, the Project ID data can but updated at and time before the project is secured in the end.

The project ID data is finished and the right dialog appears. Pressing "next"…

Additional description information

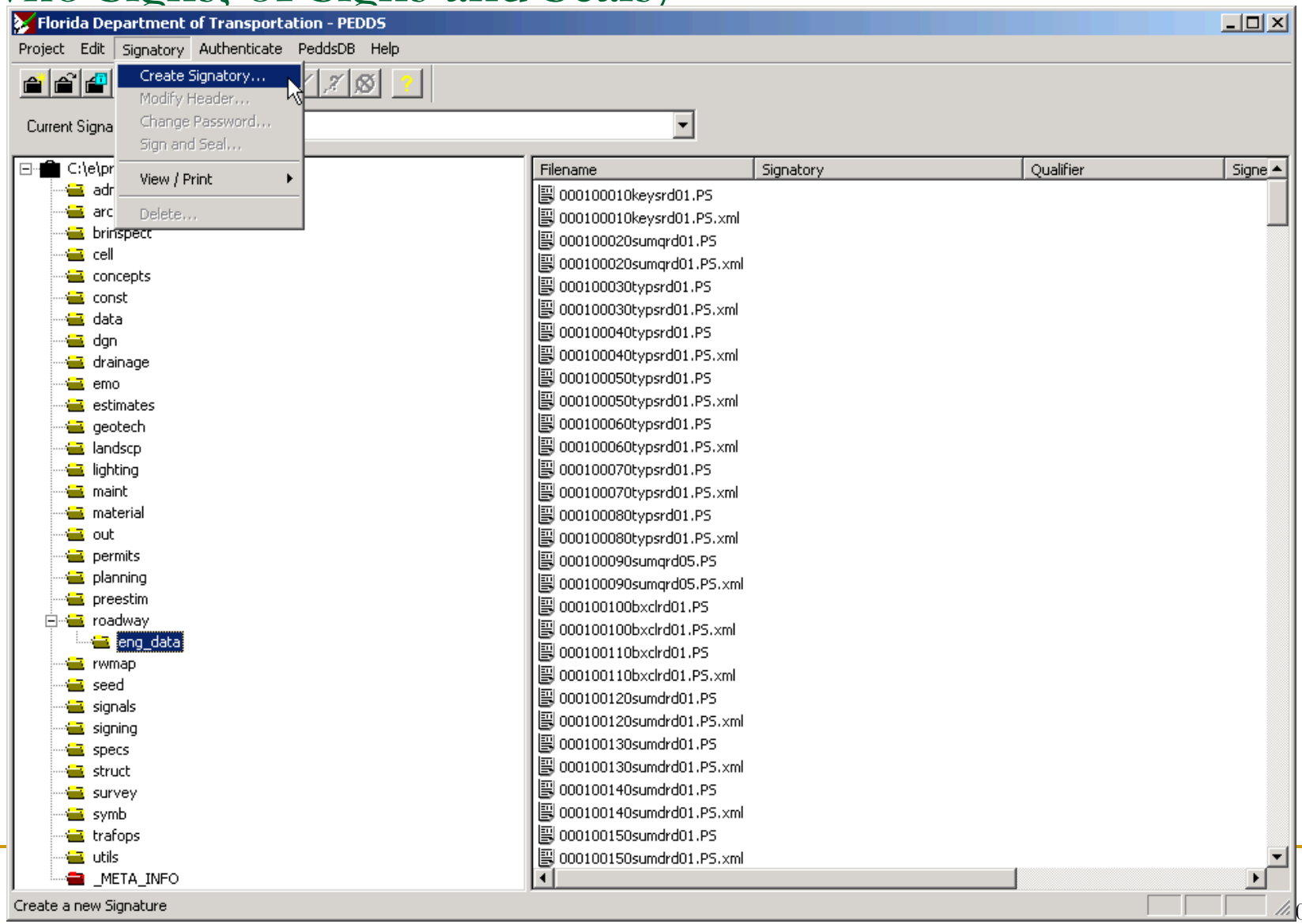




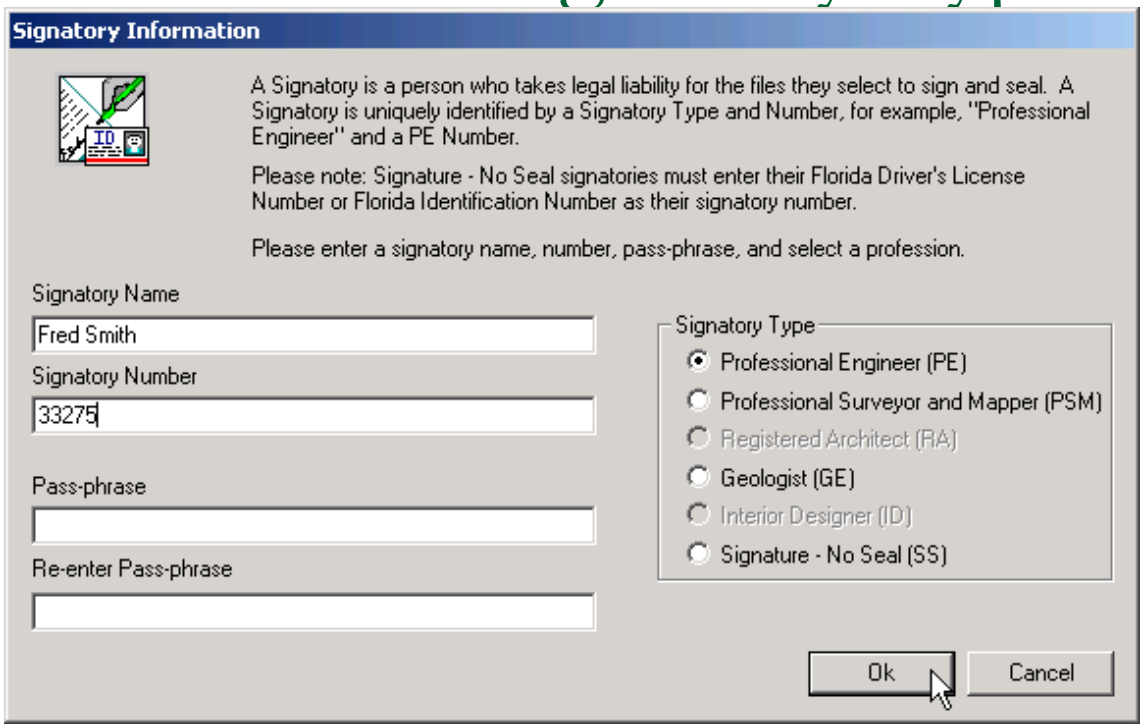
Note the Project manager dialog above. This is used to enter the identy of the person managing the **data** for the delivery (not the **P**roject **M**anager).

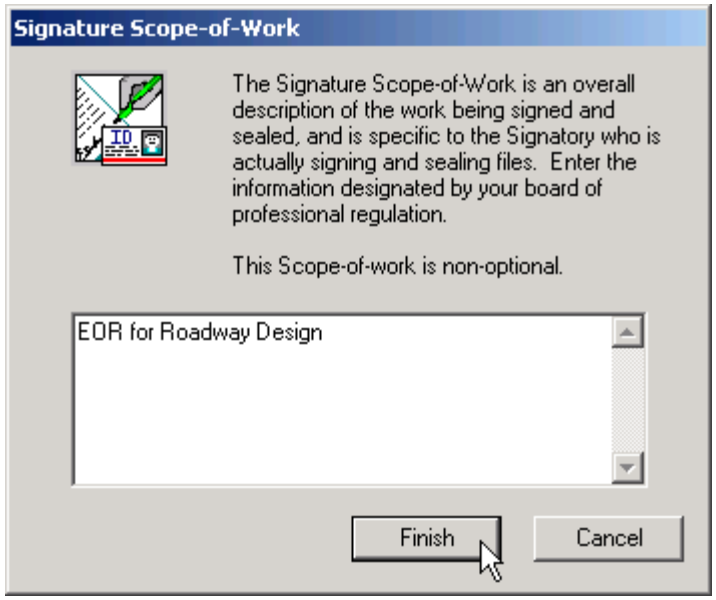
The Description is explained on the dialog…

The Main PEDDS Dialog – Let's create a Signatory (one who Signs, or Signs and Seals)



Enter the Name, Signatory Number and check the Signatory Type



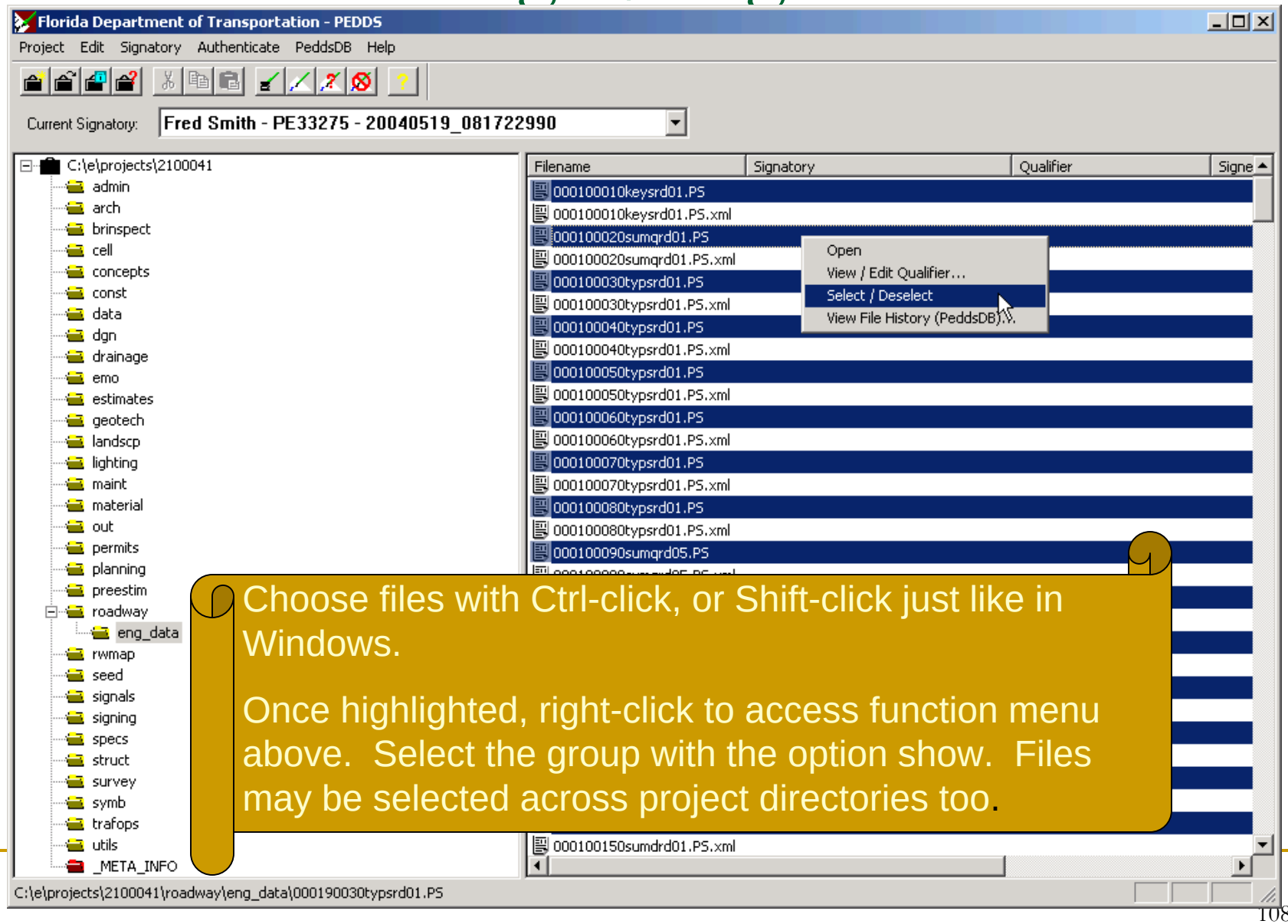


Signatory files can be secured with a Pass-phrase, although in most cases it is not necessary to do so. Security is still vested with the ink Signature and Seal !

You can create multiple Signatories for a single individual (see Scope of Work)

Create “lay” signatories (Signature – No Seal) to sign only. Use FL Drivers license (which is your Official State ID by Statute) as the Signatory Number

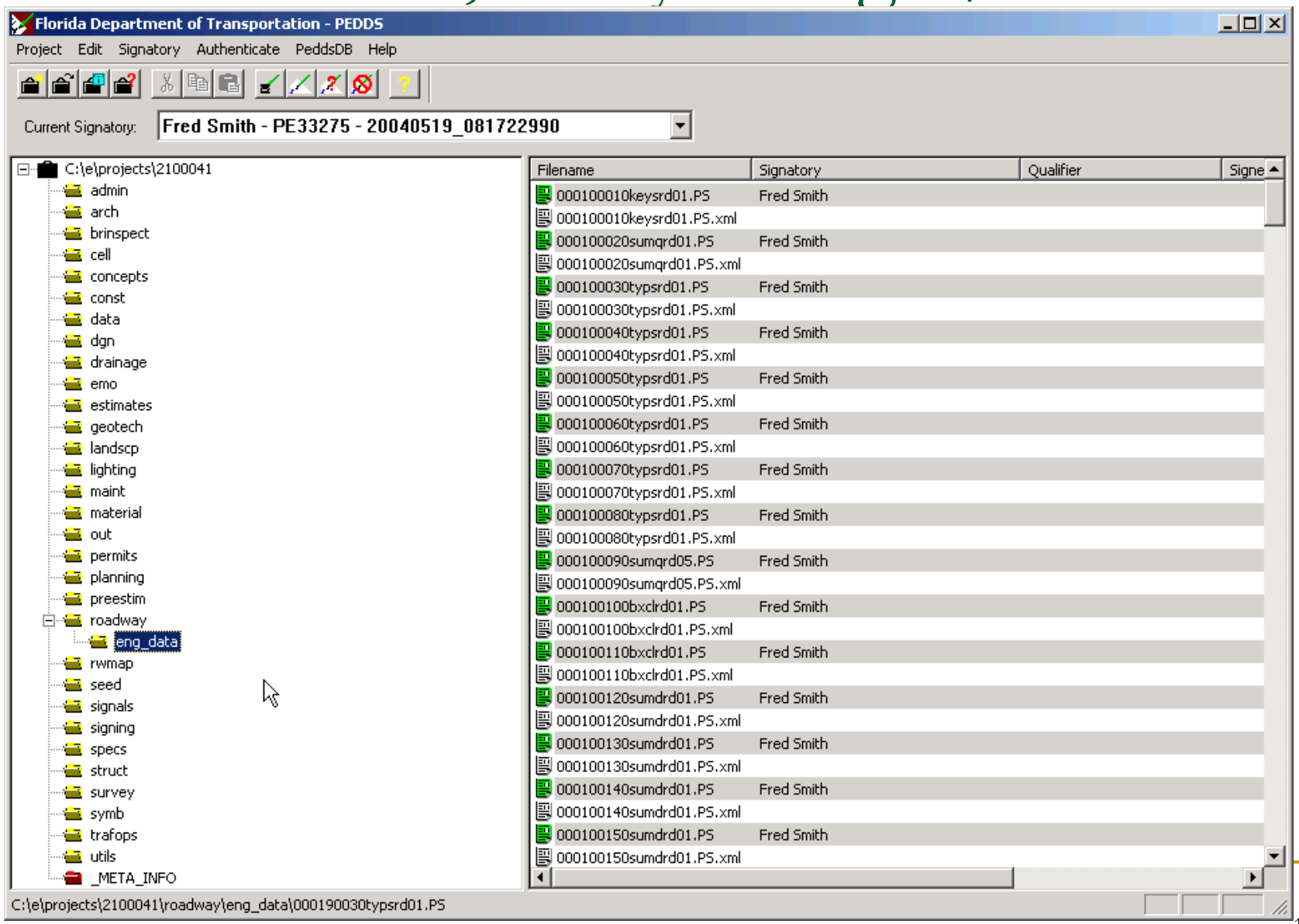
Select files to Sign / Sign and Seal



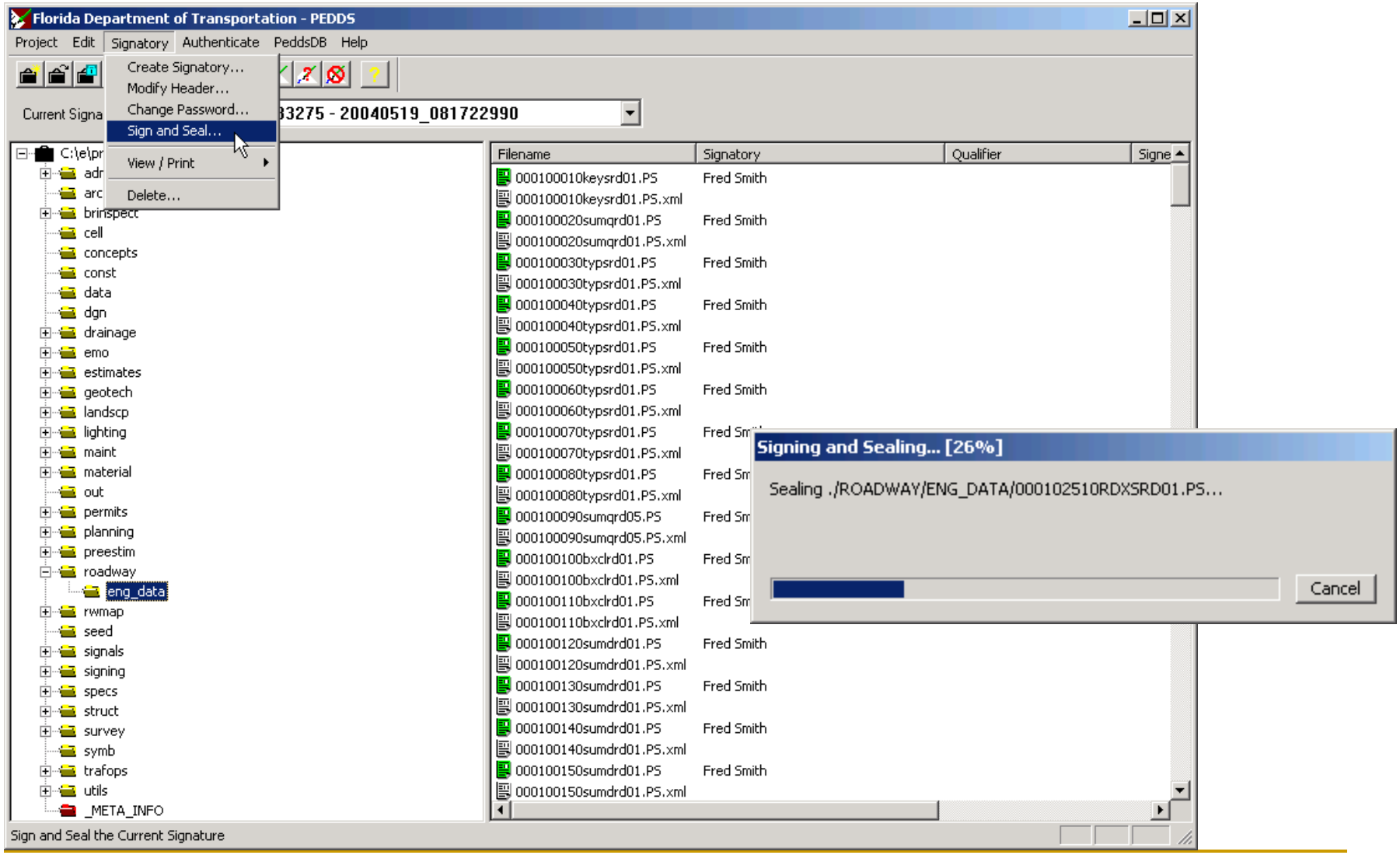
Choose files with Ctrl-click, or Shift-click just like in Windows.

Once highlighted, right-click to access function menu above. Select the group with the option show. Files may be selected across project directories too.

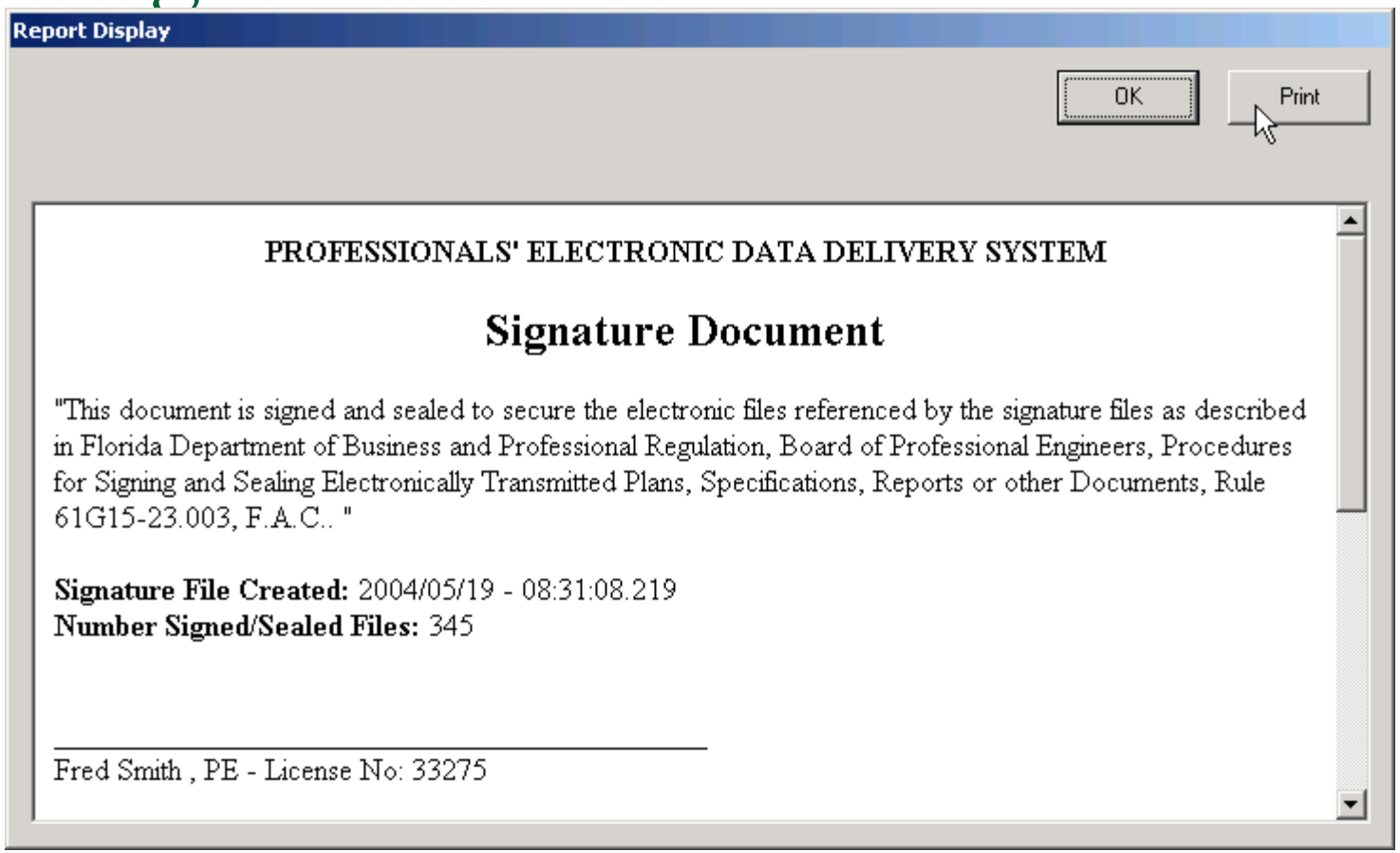
Files selected, ready to Sign / Seal



Sign / Seal selected files…



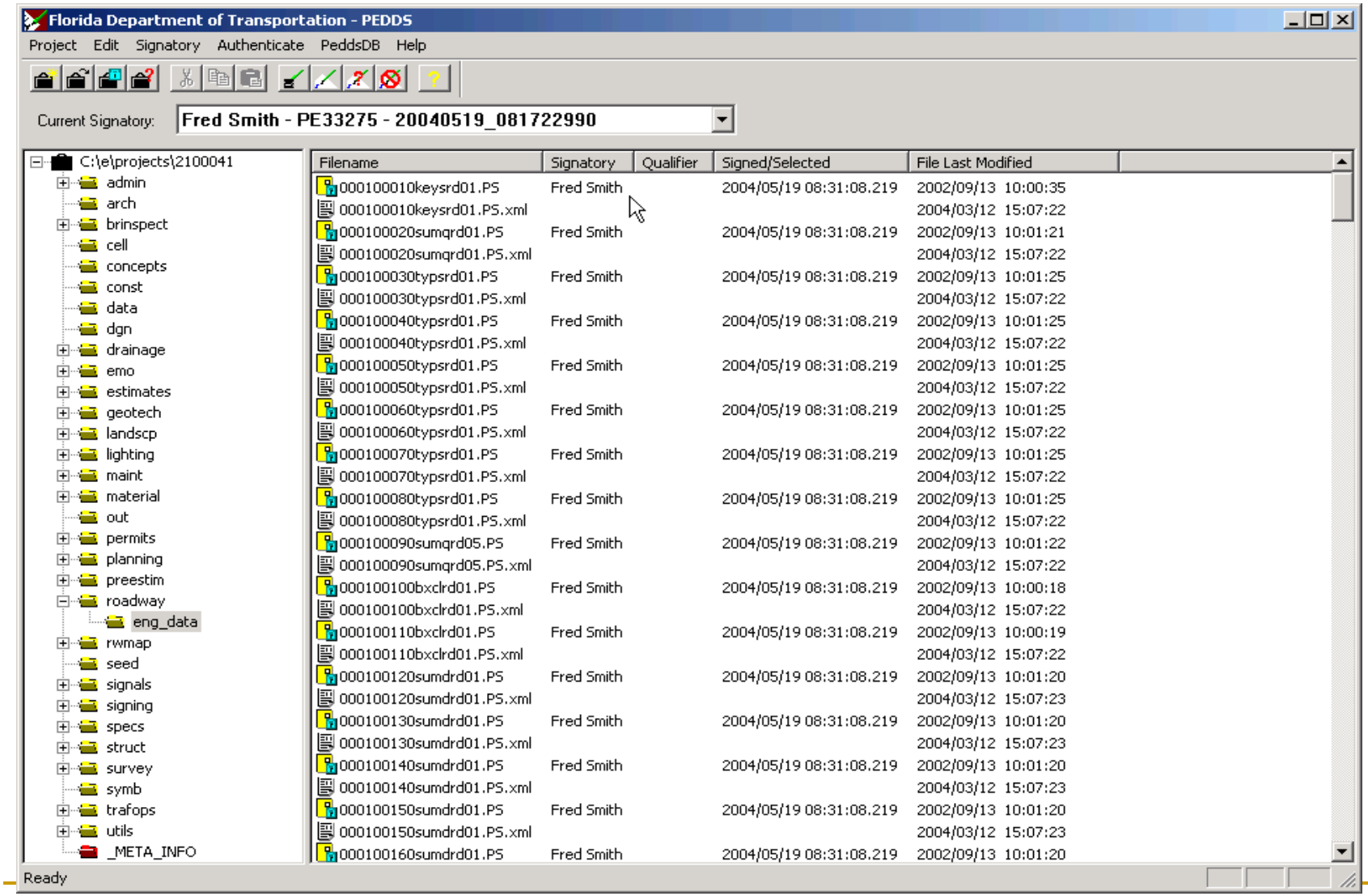
The Signature Document



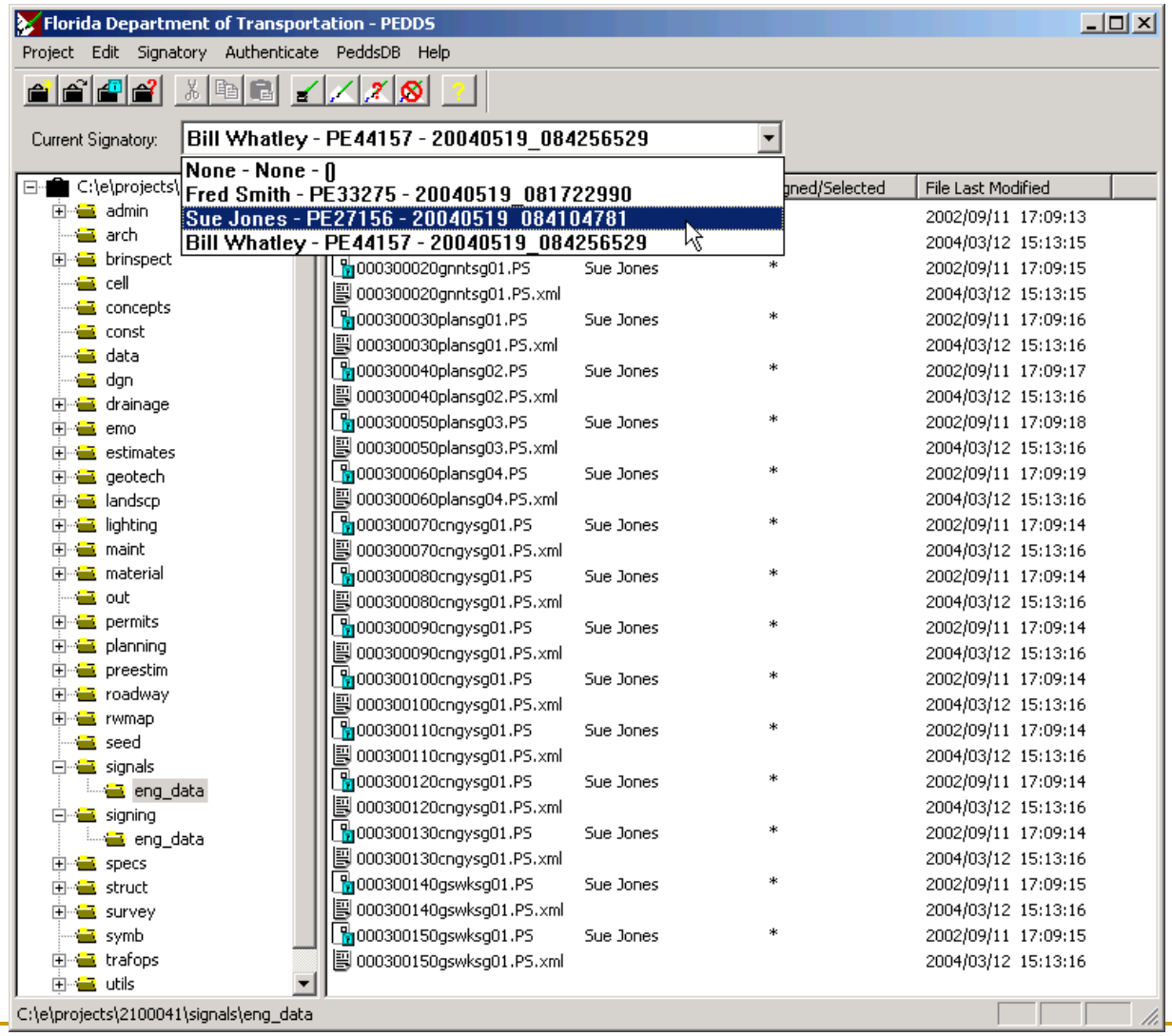
The Signature Document should printed, Signed / Sealed by the Signatory. This document secures the files selected, and bears the SHA-1 Hash code of the Signatory file (which stores the listing of the files secured and their SHA-1 Hashes.

Note: Data cannot be later authenticated without a copy of the Signature Document. The security is still the ink signature and impression seal !

The aftermath of Signing / Sealing

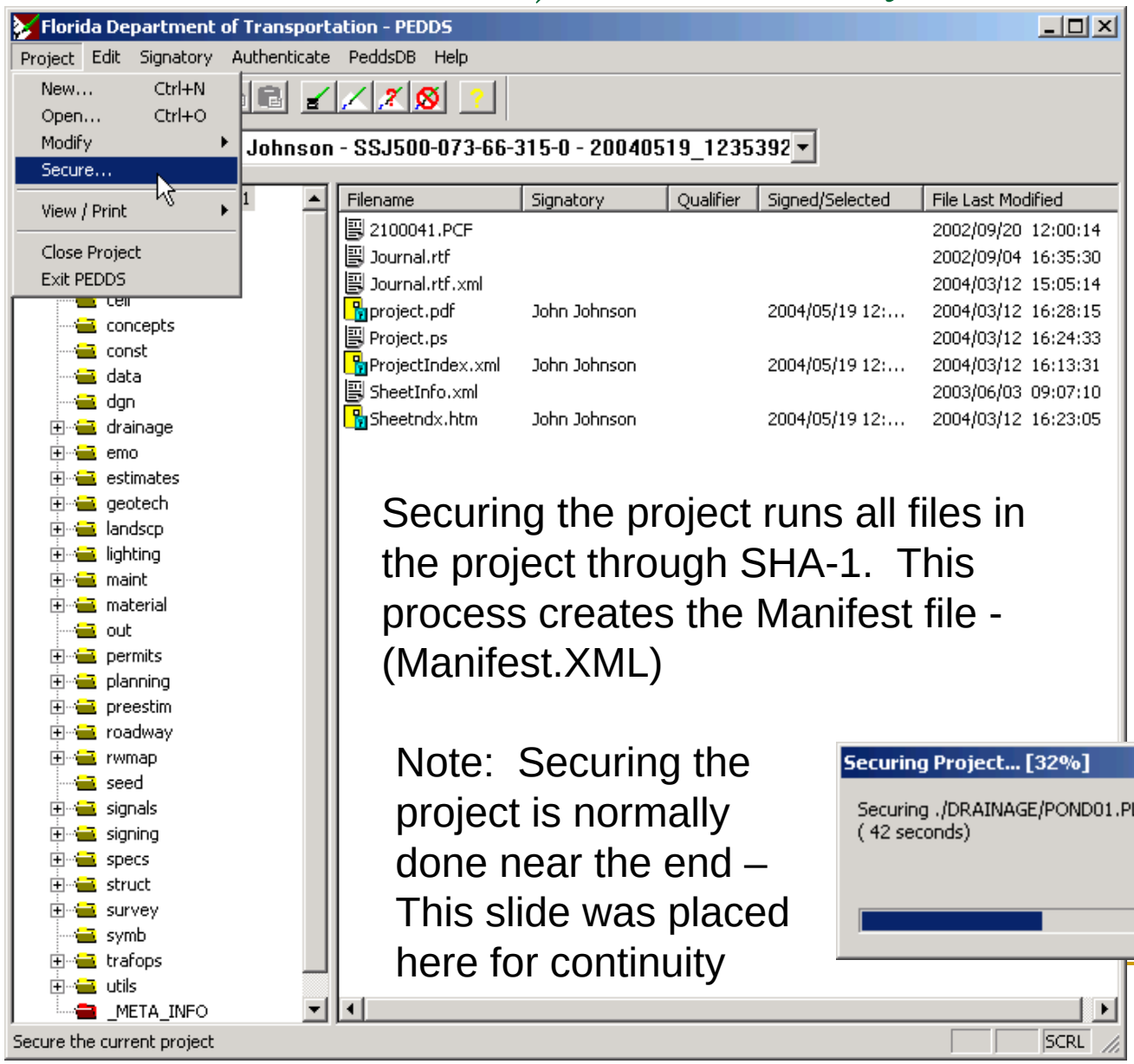


Create or Select additional Signatories



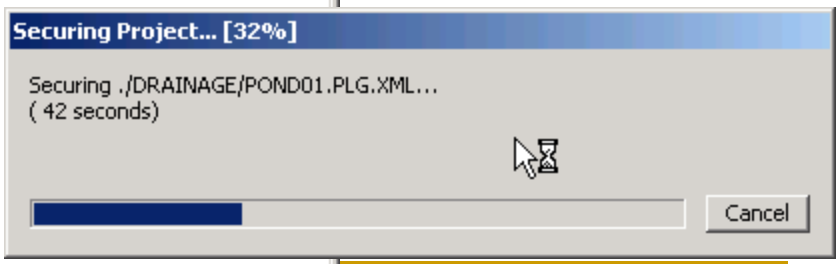
The active Signatory is selected from the pull-down list shown above

Secure the Project when you are finished

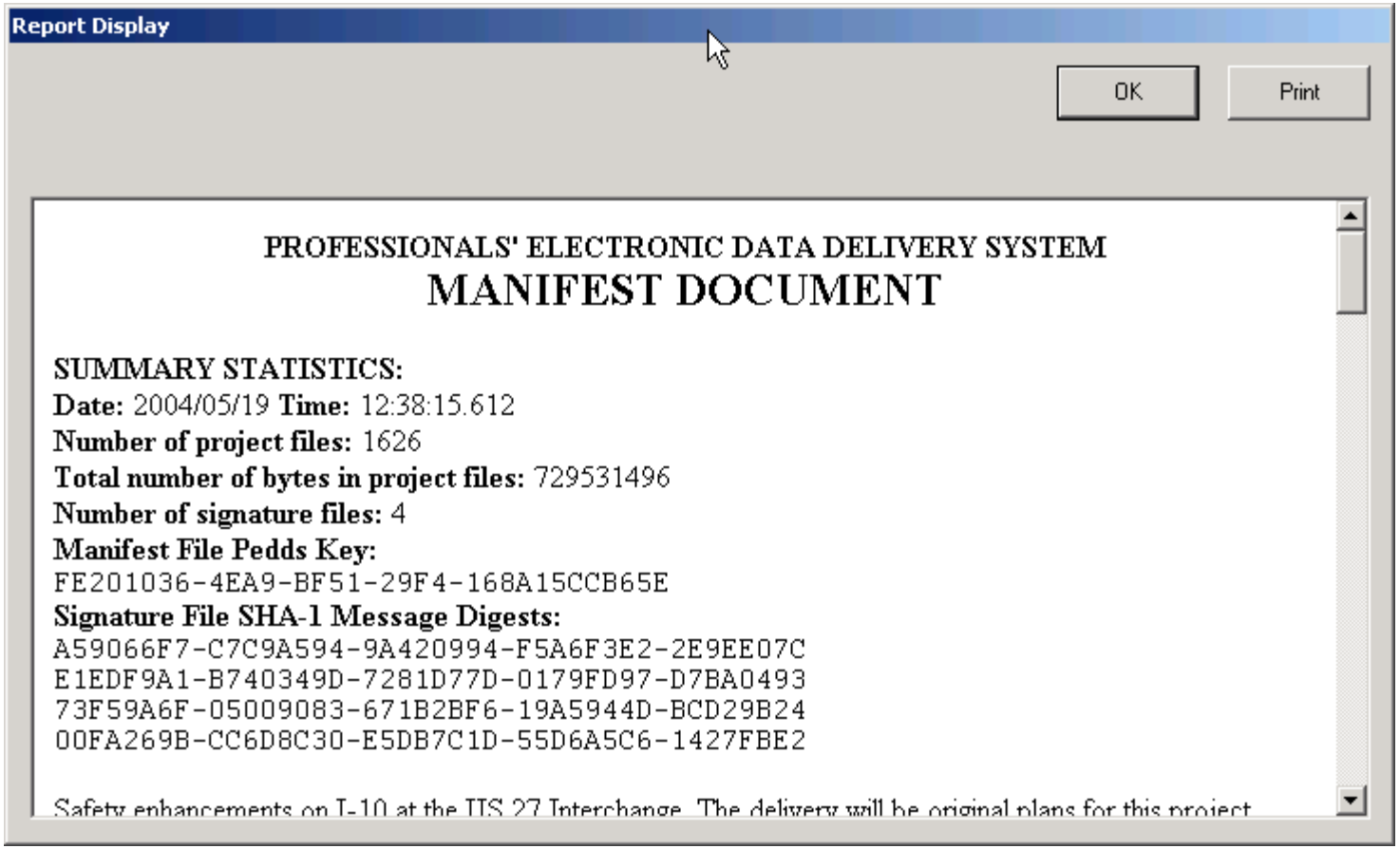


Securing the project runs all files in the project through SHA-1. This process creates the Manifest file - (Manifest.XML)

Note: Securing the project is normally done near the end – This slide was placed here for continuity



The Manifest Document



The Manifest Document bears the Hash codes for the Manifest File (Manifest.XML) which secures the entire project. Print and sign too !

Note: Projects may be re-secured at any time, even if there are no Signatories

Project Browser

ProjectBrowser is a general purpose browsing tool, but does more…

- Validates that Signed / Sealed, Indexed, and on-disk files are present and accounted for
- Creates the browser viewable index:
  - Creates Sheetndx.htm – the index viewable with an internet browser and forwarded to the letting
- Creates a Composite Plans Set
  - Creates a Composite (multi-page) PostScript file called Project.PS in the root Project Directory encapsulating the plan sheet image files into a single, ordered document.
  - Now creates the composite .PDF of Plans set (Project.PDF)
  - Handles more indexed sheet file formats, including TIF and JPG files of plans sheets (including existing .PDF – as long as the source .PDF contains **no** encryption).

Project Browser – Creating Composite PDF file

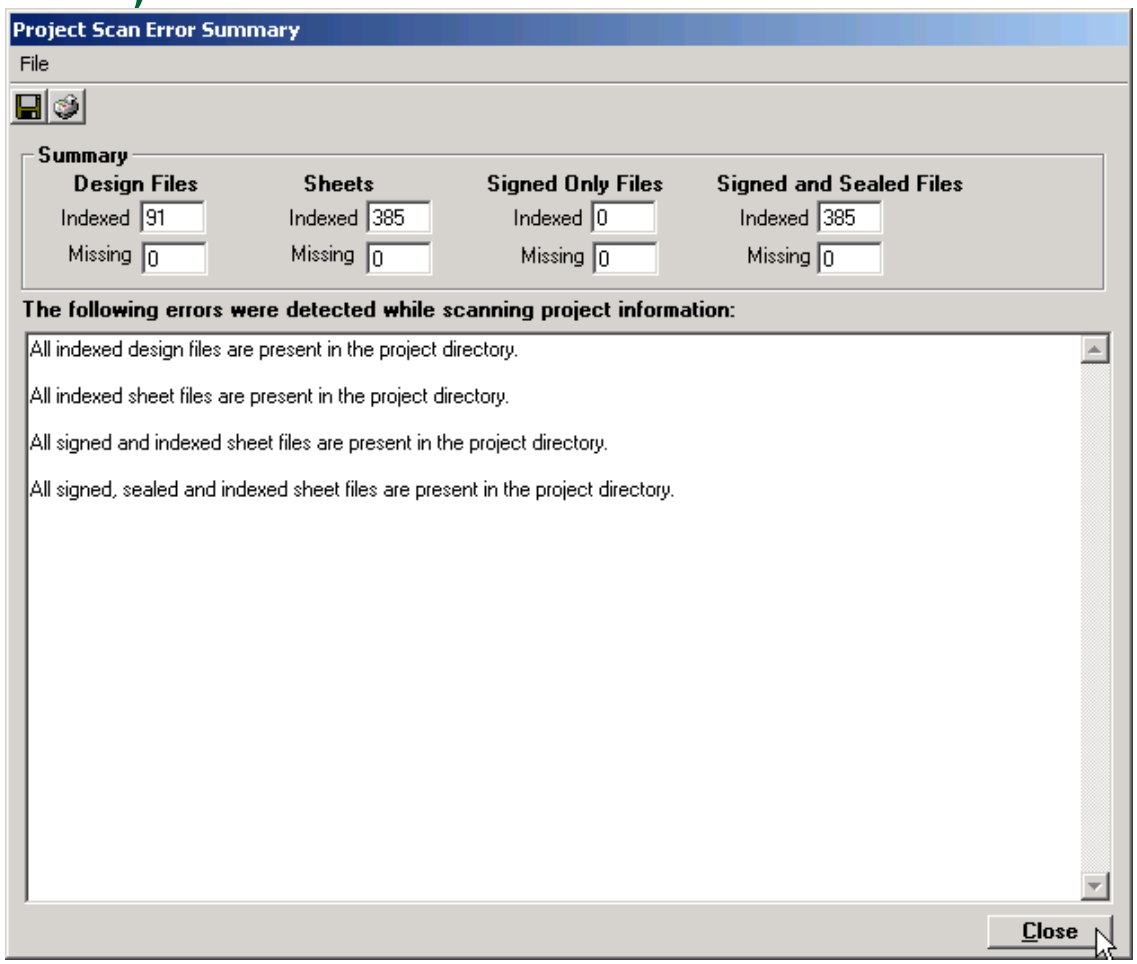
- Project browser has been modified to create a composite PDF of Plans – how it works:
  - Uses the Index (ProjectIndex.xml)
  - Uses the Image files of the indexed plans sheets
    - PostScript, *Non-encrypted* Acrobat PDF, JPG, TIF, etc.
  - Before concatenation, all formats converted to PS
    - PDF ➔ PS using GhostScript
    - BMP, TIF, etc. ➔ JPG ➔ PS using new internal utilities
  - Concatenation done as composite PS
    - Composite PS ➔ PDF using GhostScript

Project Browser – Creating Composite PDF file

- Not a “perfect” solution
  - No control over original:
    - Size (output sheet dimensions same as originals)
    - Rotation (be careful of non- MS Batchplot created PostScript)
    - Pixel density (resolution) Cannot make a $1 out of 35¢
  - Preserves what is there in the data source
  - Be conscience of the target paper sizes (Tabloid & Ledger)
  - No control of page numbering in the final PDF
    - Orientation, page size can be issues depending on data sources
  - Still a need for Acrobat to clean up *Project.PDF* – just far less clean-up required

Open a Project Index (ProjectIndex.XML)

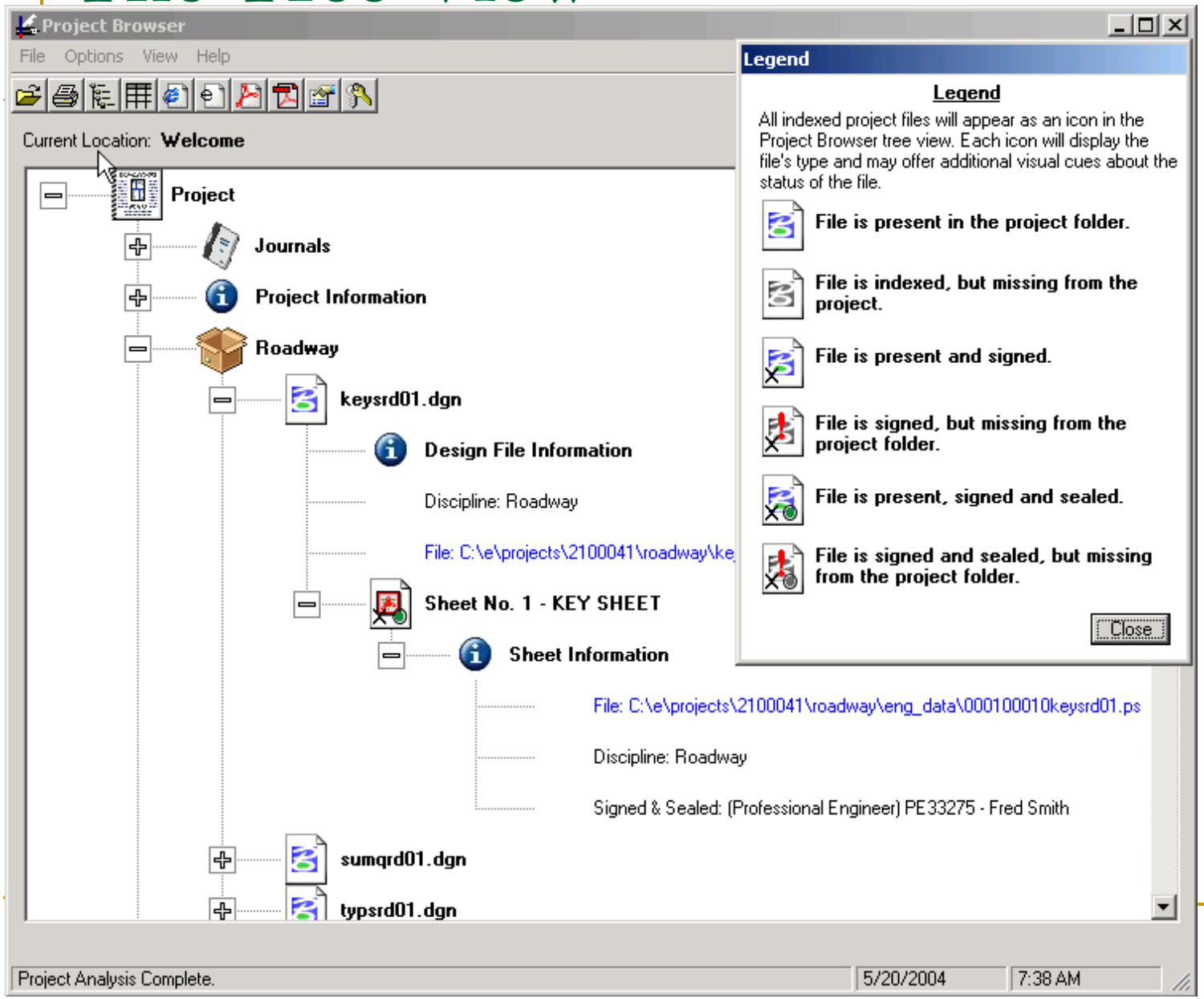
The Project Browser validates data



The Project Index File (ProjectIndex.XML) is validated against the files actually on-disk. Also, The PEDDS Signature files are validated against the files on-disk. What is being checked is that the files are present.

Note: Unless all files are present and accounted for, Project Browser will not continue

The Tree View



The Tree view is accessible from the button to the left of the Print Button. This view displays project data by component. You expand [+] and contract [-] nodes just like with other Windows tree controls. The blue text are hyperlinks and will launch the file shown with the associated application. An Icon legend is shown, that may be evoked with the keys button.

Detailed Project ID information and all the project-wide Journals are also accessible.

Grid view of the Index Data

Project Browser

File Options View Help

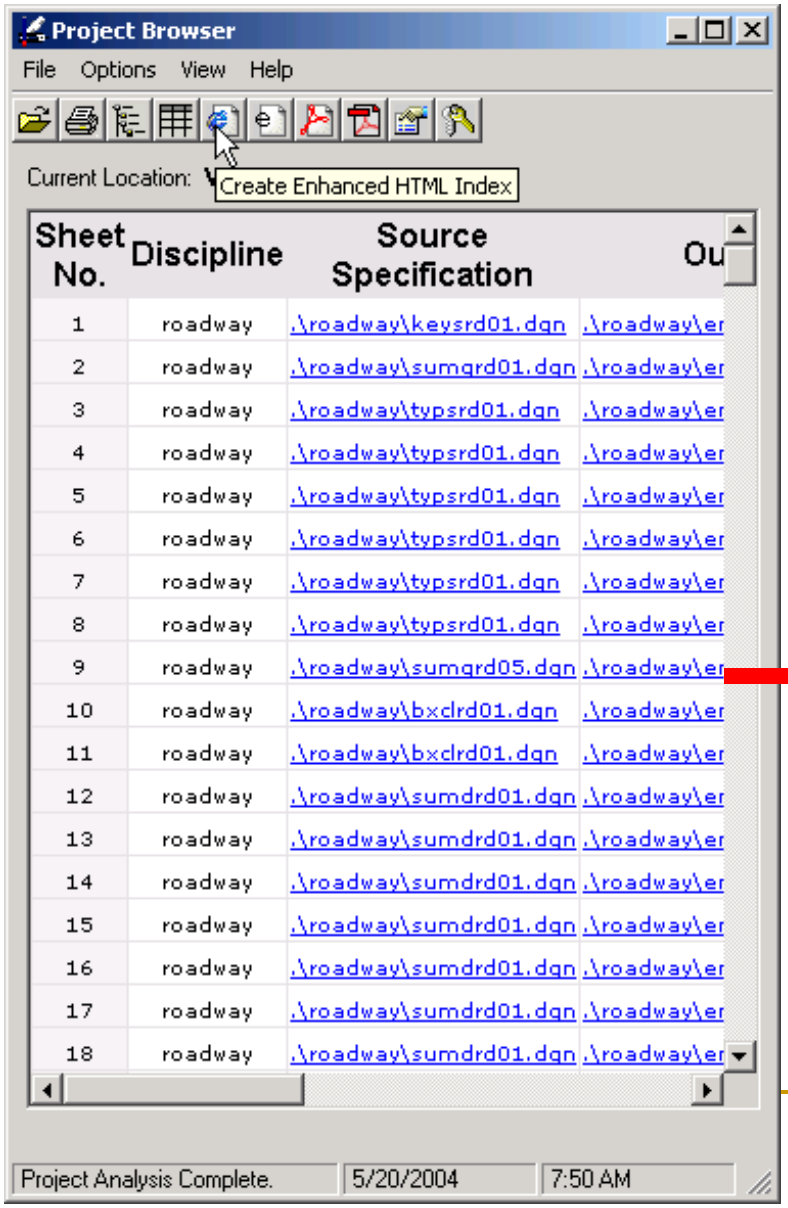
Current Location: Welcome

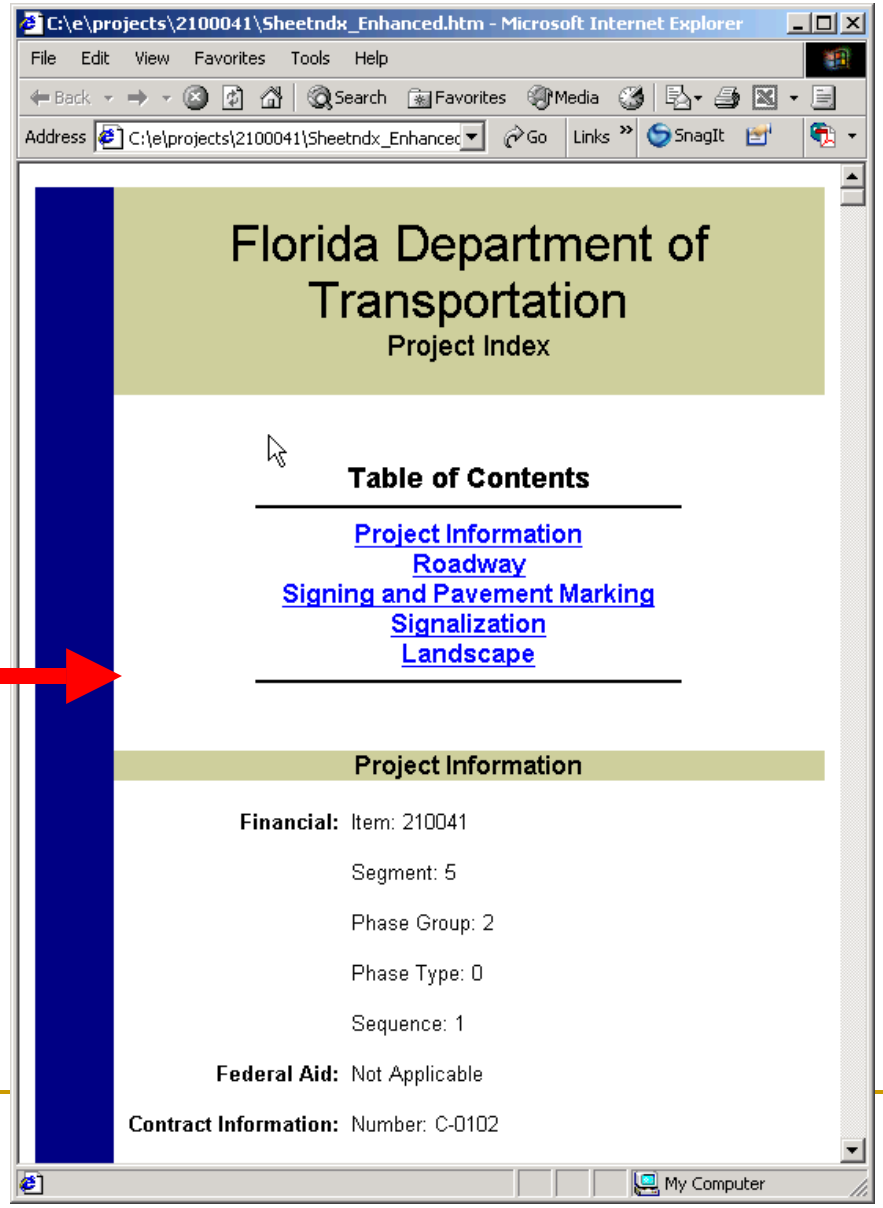
Grid View

Sheet No.	Discipline	Source Specification	Output Specification	Description
1	roadway	.\roadway\keysrd01.dgn	.\roadway\eng_data\000100010keysrd01.ps	KEY SHEET
2	roadway	.\roadway\sumqrd01.dgn	.\roadway\eng_data\000100020sumqrd01.ps	SUMMARY OF PAY ITEMS SUMMARY OF QUANTITIES
3	roadway	.\roadway\typsrd01.dgn	.\roadway\eng_data\000100030typsrd01.ps	TYPICAL SECTION
4	roadway	.\roadway\typsrd01.dgn	.\roadway\eng_data\000100040typsrd01.ps	TYPICAL SECTION
5	roadway	.\roadway\typsrd01.dgn	.\roadway\eng_data\000100050typsrd01.ps	PAVEMENT DETAILS
6	roadway	.\roadway\typsrd01.dgn	.\roadway\eng_data\000100060typsrd01.ps	TYPICAL SECTION SIDE ROAD
7	roadway	.\roadway\typsrd01.dgn	.\roadway\eng_data\000100070typsrd01.ps	TYPICAL SECTION RETENTION BASIN
8	roadway	.\roadway\typsrd01.dgn	.\roadway\eng_data\000100080typsrd01.ps	TYPICAL SECTION RETENTION BASIN
9	roadway	.\roadway\sumqrd05.dgn	.\roadway\eng_data\000100090sumqrd05.ps	GENERAL NOTES
10	roadway	.\roadway\bxclrd01.dgn	.\roadway\eng_data\000100100bxclrd01.ps	BOX CULVERT DATA
11	roadway	.\roadway\bxclrd01.dgn	.\roadway\eng_data\000100110bxclrd01.ps	BOX CULVERT DATA
12	roadway	.\roadway\sumdrd01.dgn	.\roadway\eng_data\000100120sumdrd01.ps	SUMMARY OF DRAINAGE STRUCTURES
13	roadway	.\roadway\sumdrd01.dgn	.\roadway\eng_data\000100130sumdrd01.ps	SUMMARY OF DRAINAGE STRUCTURES
14	roadway	.\roadway\sumdrd01.dgn	.\roadway\eng_data\000100140sumdrd01.ps	SUMMARY OF DRAINAGE STRUCTURES
15	roadway	.\roadway\sumdrd01.dgn	.\roadway\eng_data\000100150sumdrd01.ps	SUMMARY OF DRAINAGE STRUCTURES
16	roadway	.\roadway\sumdrd01.dgn	.\roadway\eng_data\000100160sumdrd01.ps	SUMMARY OF DRAINAGE STRUCTURES
17	roadway	.\roadway\sumdrd01.dgn	.\roadway\eng_data\000100170sumdrd01.ps	SUMMARY OF DRAINAGE STRUCTURES
18	roadway	.\roadway\sumdrd01.dgn	.\roadway\eng_data\000100180sumdrd01.ps	SUMMARY OF DRAINAGE STRUCTURES
19	roadway	.\roadway\sumdrd01.dgn	.\roadway\eng_data\000100190sumdrd01.ps	SUMMARY OF DRAINAGE STRUCTURES
20	roadway	.\roadway\sumdrd01.dgn	.\roadway\eng_data\000100200sumdrd01.ps	SUMMARY OF DRAINAGE STRUCTURES

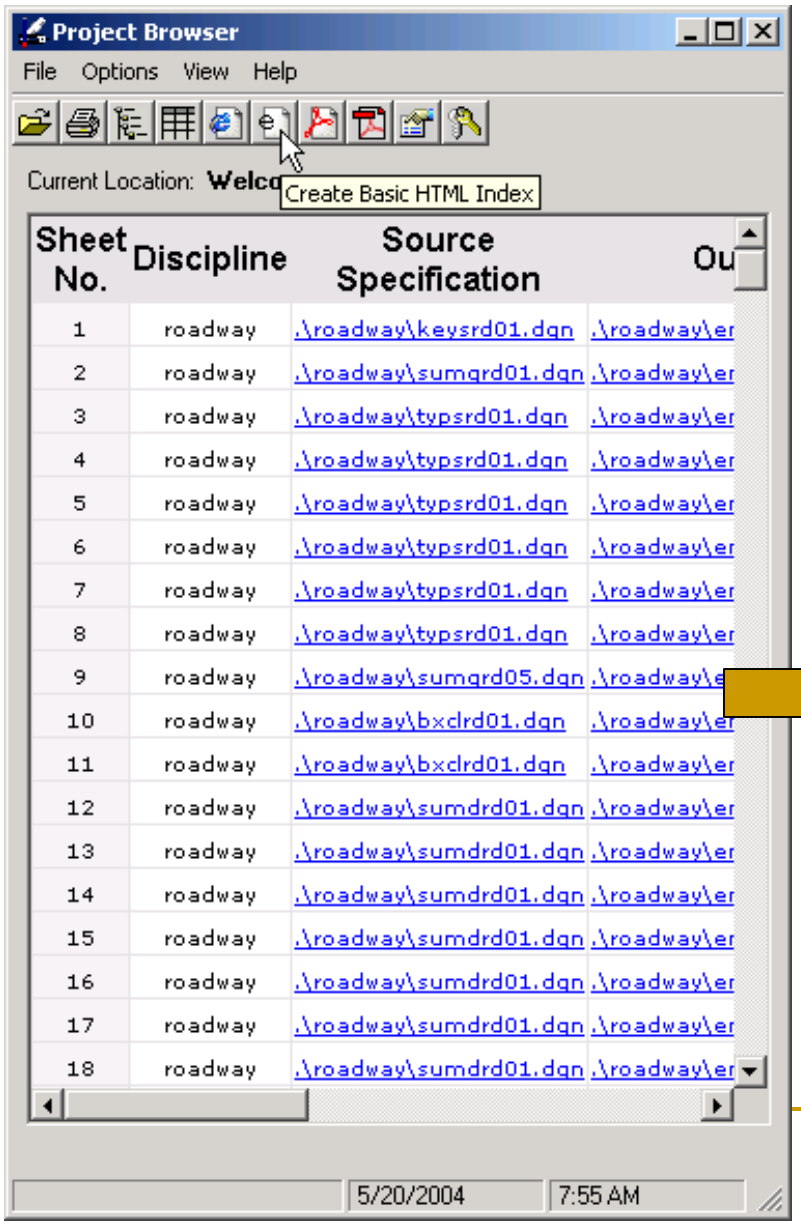
Project Analysis Complete. 5/20/2004 7:49 AM

Enhanced HTML creation

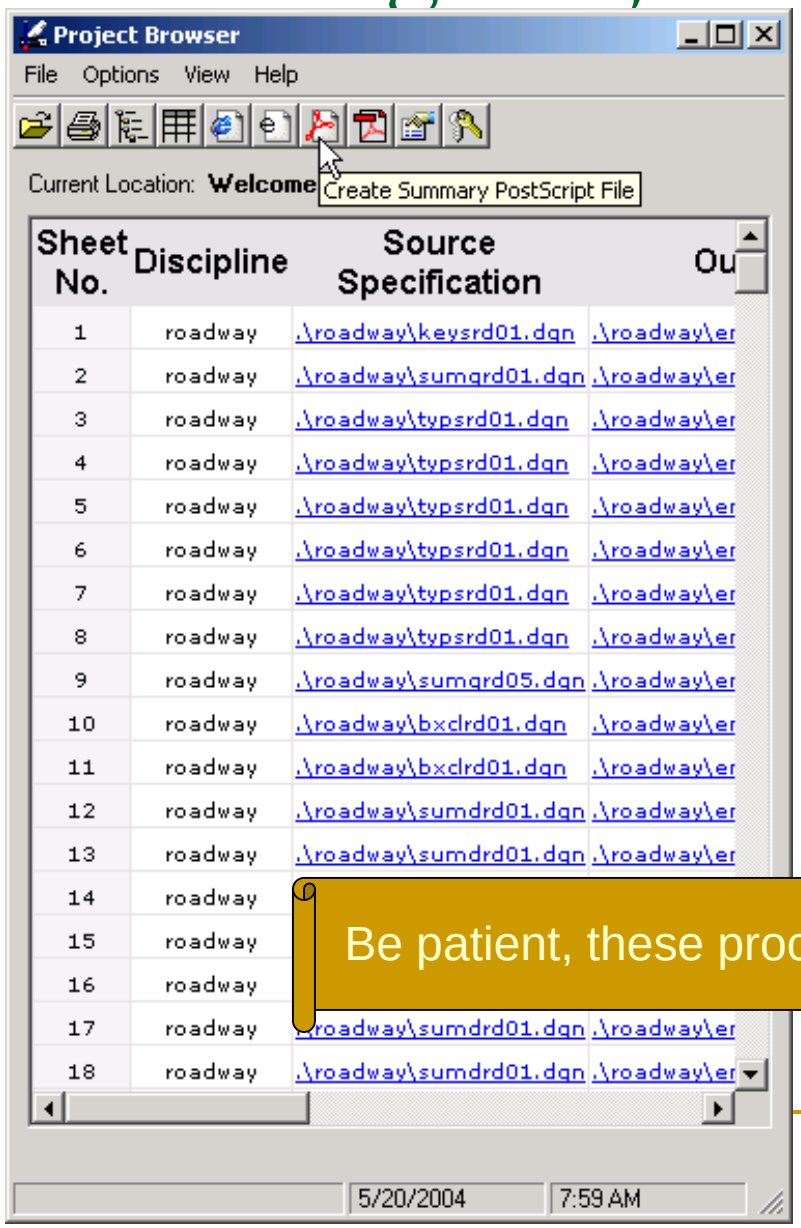


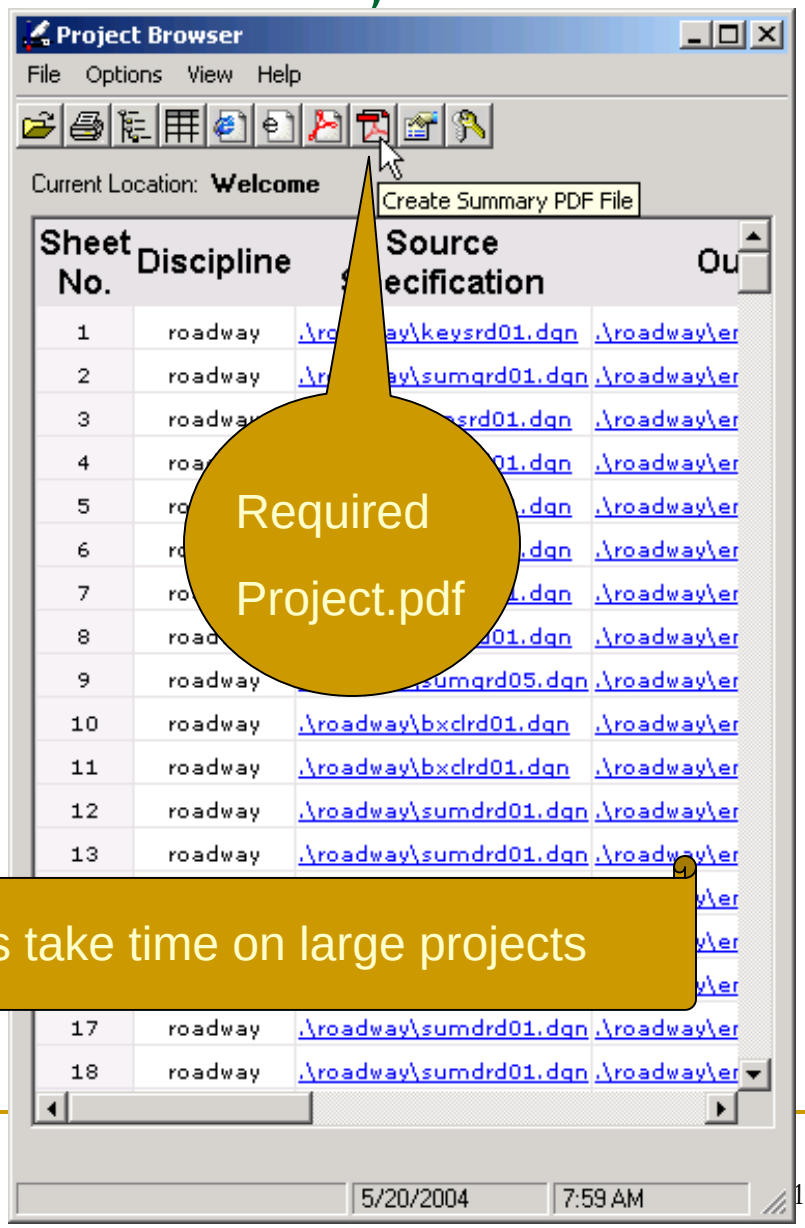


Sheetndx.HTM file creation (required)



Creating Project.PS and Project.PDF





Required Project.pdf

Be patient, these processes take time on large projects

What's next?

- When all the files for the project have been created and checked, return to PEDDS:
  - Signatories should Sign / Seal any remaining files
    - A signatory should sign** ProjectIndex.XML, Sheetndx.HTM, and Project.PDF
  - Authenticate each signatory to ensure no file previously signed / sealed has been modified or deleted
  - Secure the entire project. This data set is know as the Project data set, and should be written to the "Project CD". Label that CD per the CPCH.

**Some districts are requiring signature and seal for some of these files

Now we need to make the data set for advertisement and letting…

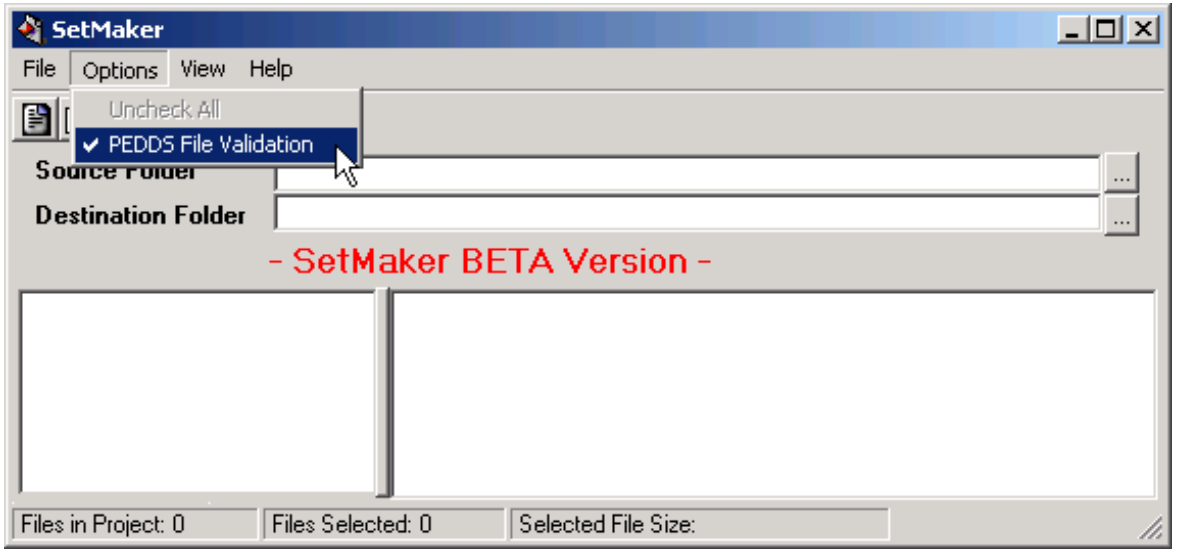
- The data that will be advertised for contract and letting is an sub-set of the Project data set
- The project data set must be secured in PEDDS and must be able to Authenticate before the sub-set can be created
- The sub-set is called the “Plans and Specs” data set
- The Plans and Specs data set is only the signed and sealed plans sheets, specs, and the ProjectIndex.XML, Sheetndx.HTM, and Project.PDF
- A tool called “SetMaker” helps build this

SetMaker

How does SetMaker work

- New application on the interface called “SetMaker”
  - Designed to help make a sub-set of the project suitable for electronic advertisement (Plans and Specs)
  - Automated file selection by
    - Signed and Sealed
    - Secured
    - presence in Indexes(ProjectIndex.XML and/or Sheetnxd.htm)
    - Plans Component (Roadway, Signalization, etc.)
    - Custom rules (inclusion /exclusion by directory and wildcard)
  - Selected files get copied to new location, are automatically Secured (without needing to return to PEDDS) and burned to CR-ROM

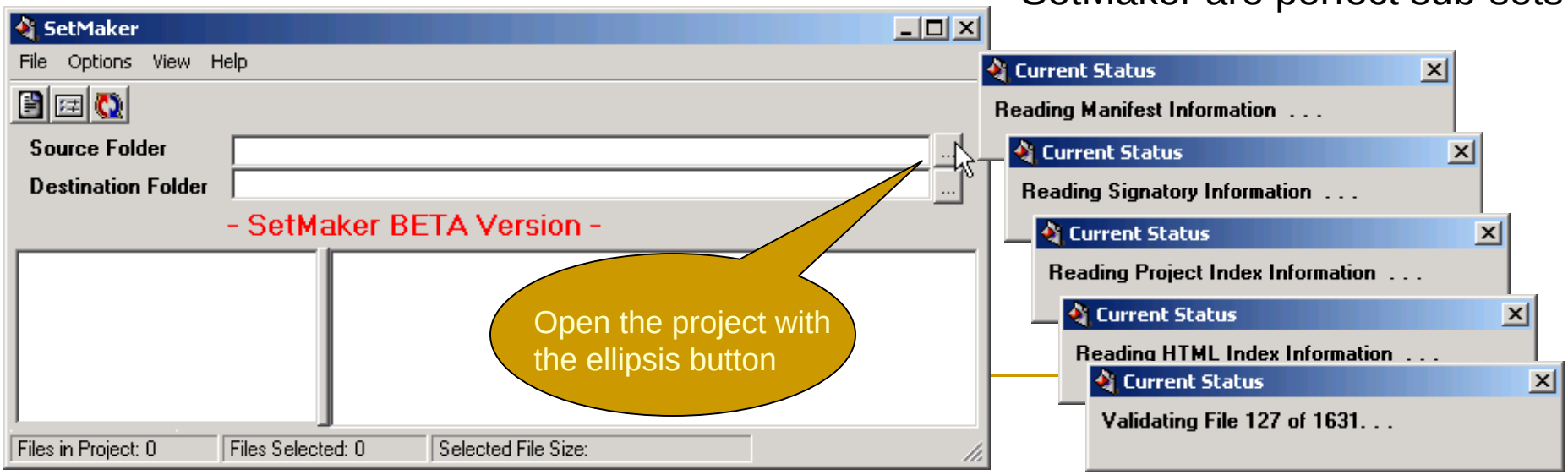
Open a Project in SetMaker



Turn on PEDDS File Validation – this will cause SetMaker to cross-validate Manifest and Signatory files with on-disk files (full Authentication)

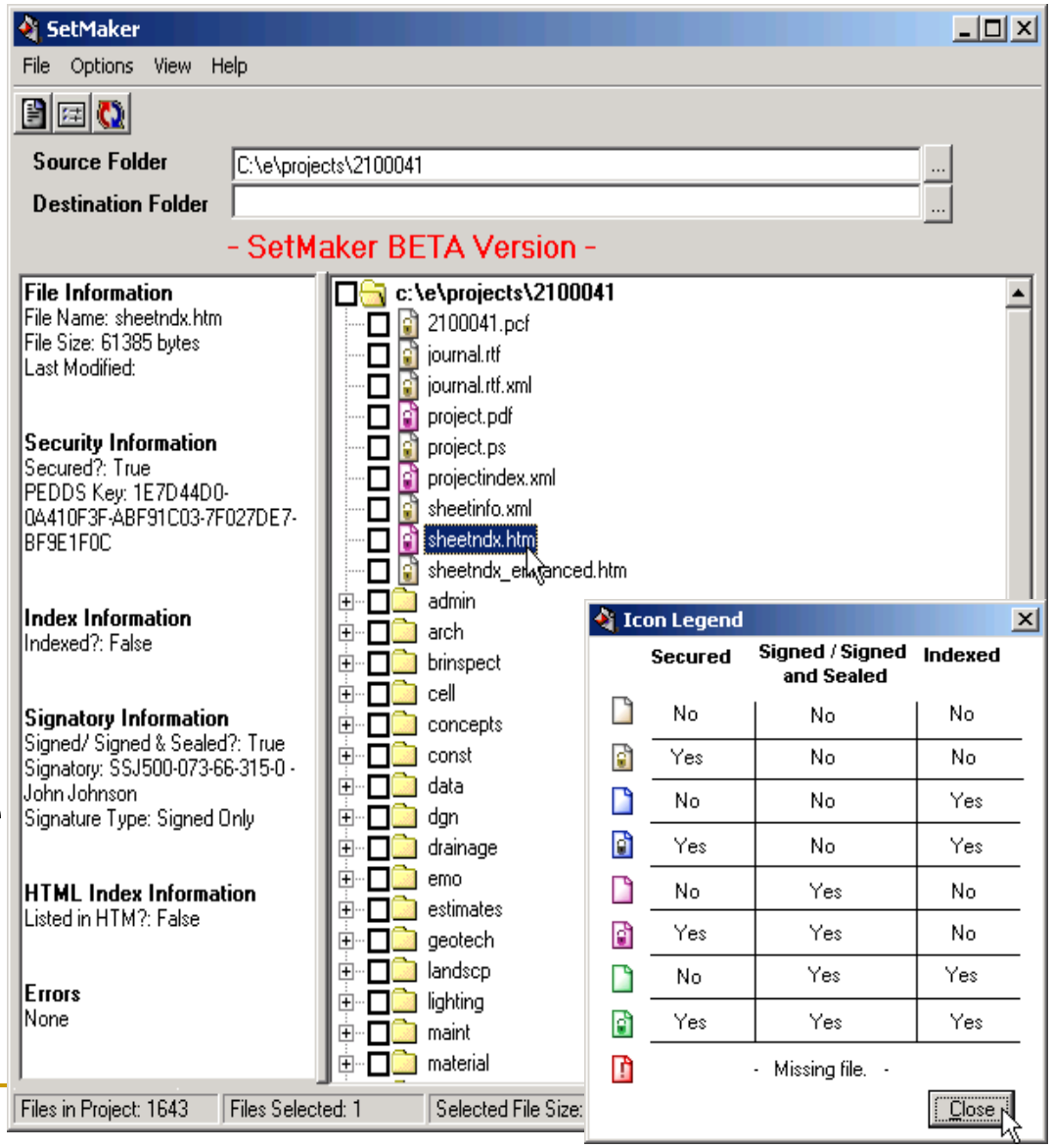
SetMaker will always validate indexes against on-disk files

Validation is very important so sub-sets created from SetMaker are perfect sub-sets

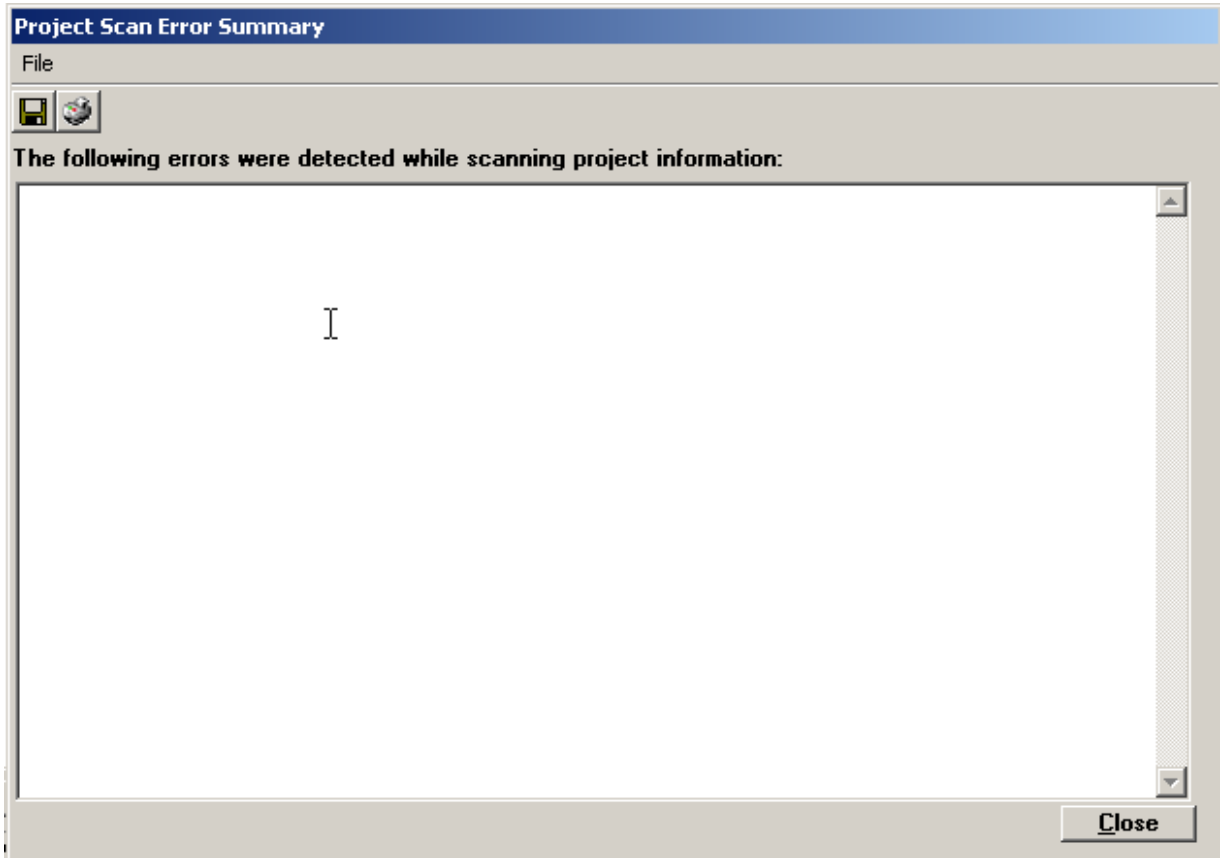


SetMaker Interface

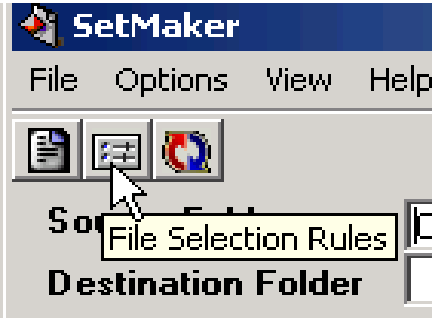
- Files are displayed in a tree control with selector boxes which can be used to manually select files to be included in the sub-set
- If a file is highlighted, file properties are displayed in the left-hand pane
- An Icon legend is available under the view menu
- An error report is also available under the view menu (if errors were detected when opening the project)

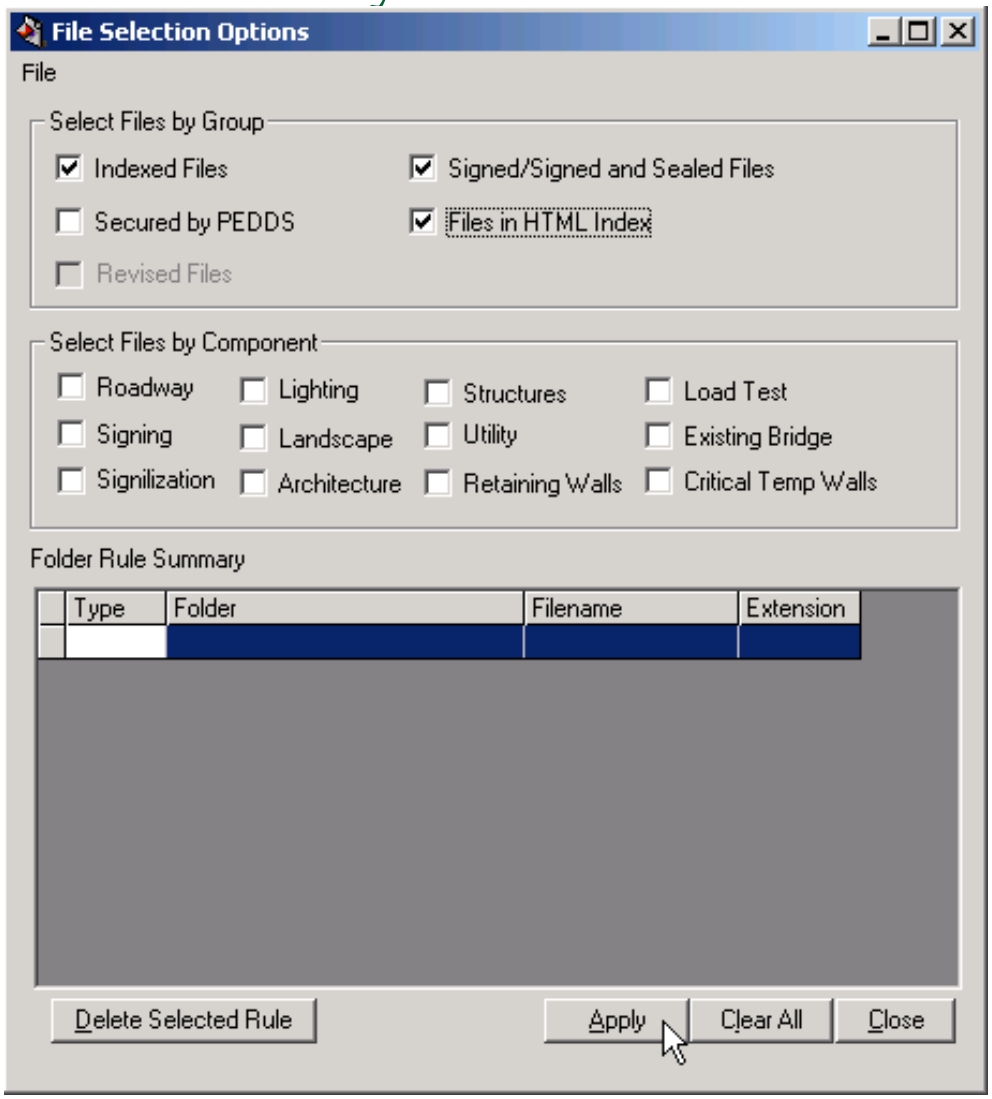


What about errors in the source folder?



Choose files automatically





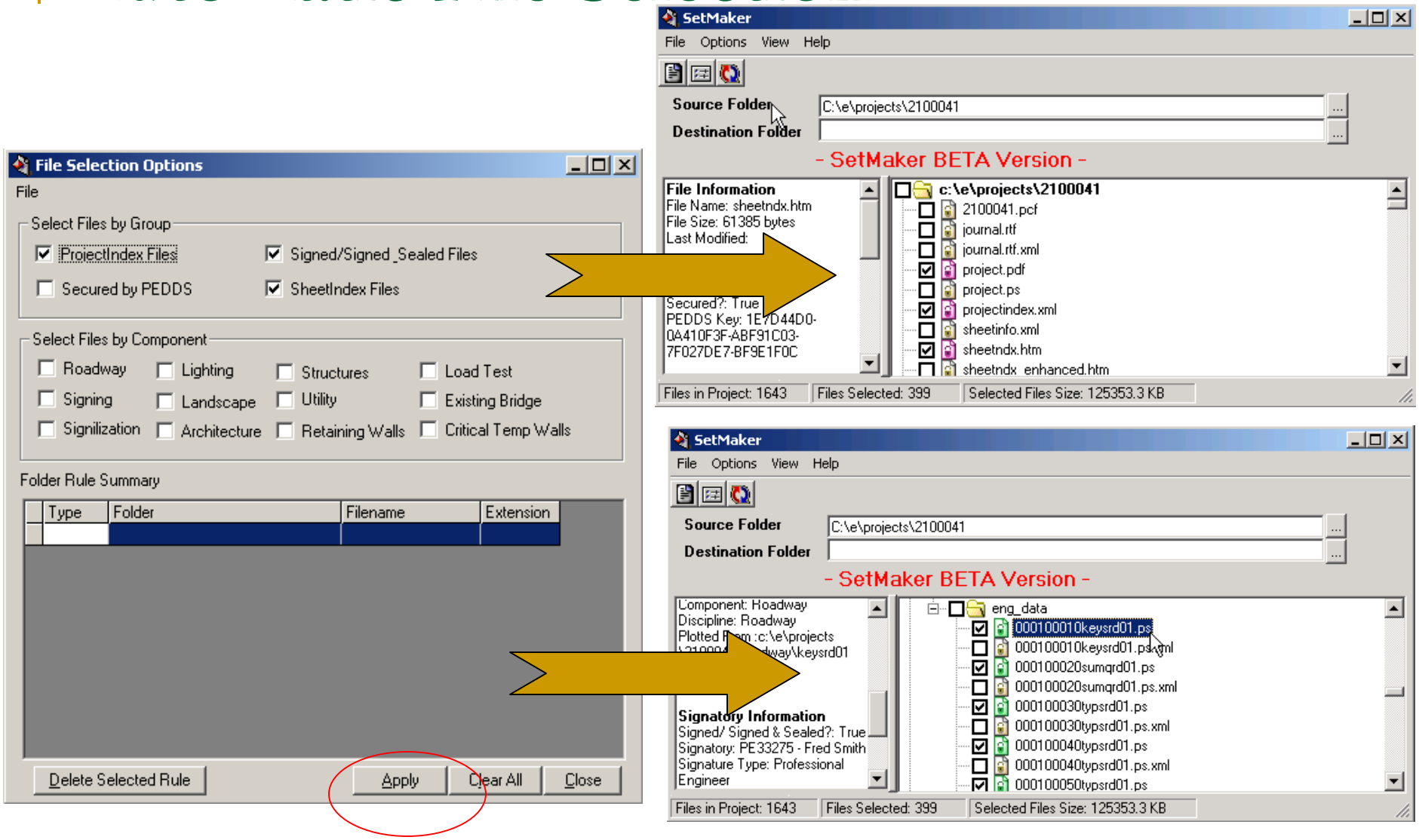
Files may be selected automatically using file selection rules. In the group section, the setting typically used to make the Plans & Specs dataset are shown.

Other rules may be chosen as needed, and folder rules that support wildcard selection or exclusion may be selected.

Select the Apply button once the rules are decided upon

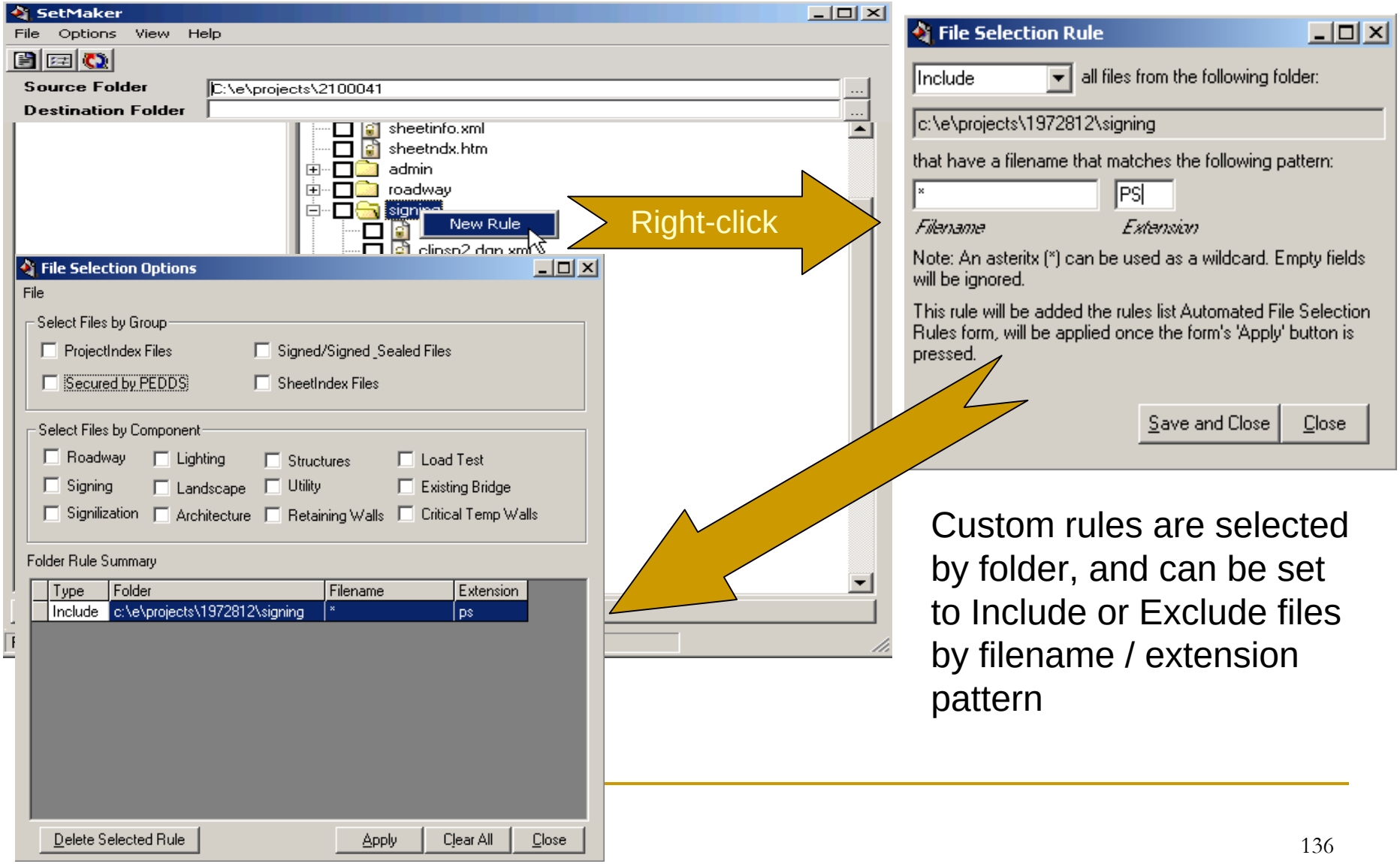
Select the file rules, then press the apply button and the files will automatically be checked ☑

Automatic File Selection



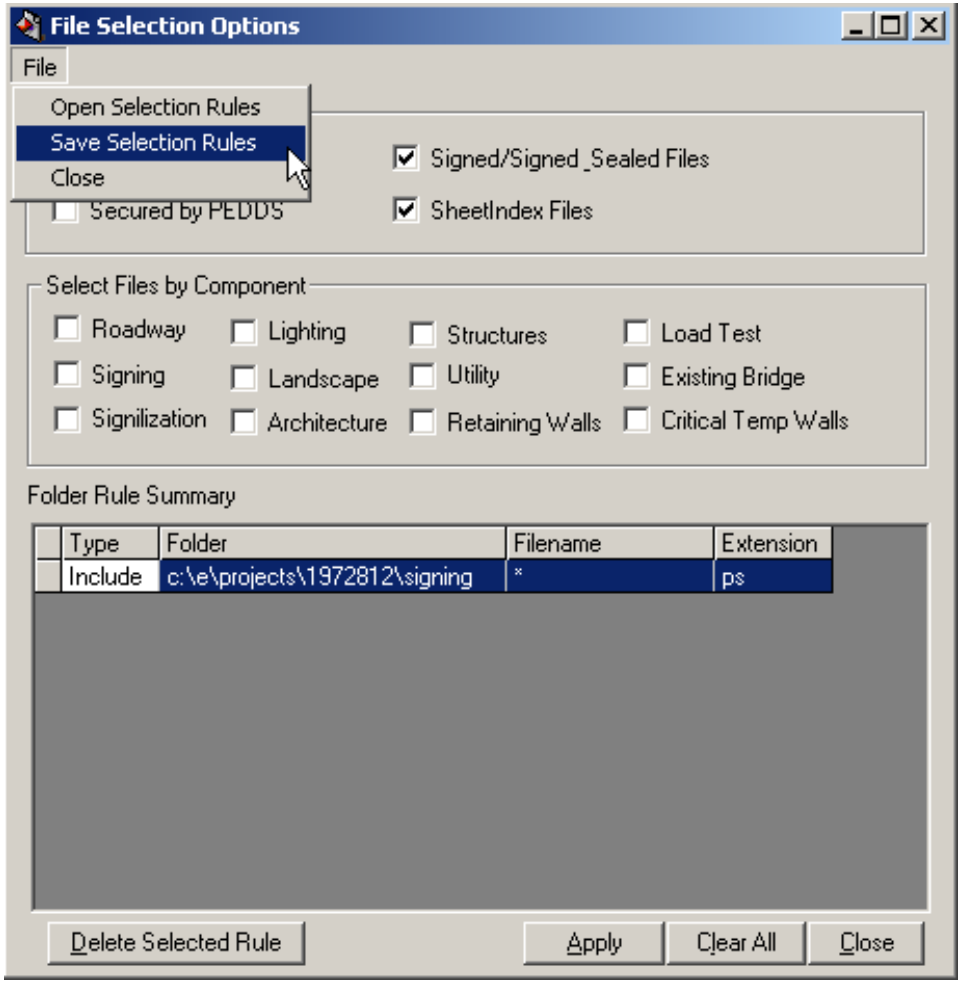
Select the file rules, then press the apply button and the files will automatically be checked ☑

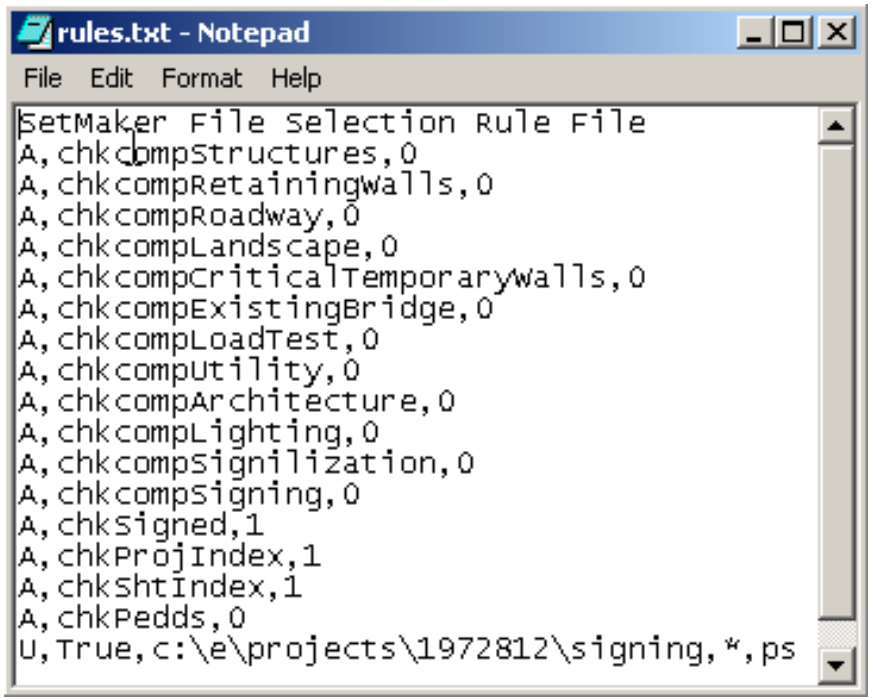
Adding Custom Rules



Custom rules are selected by folder, and can be set to Include or Exclude files by filename / extension pattern

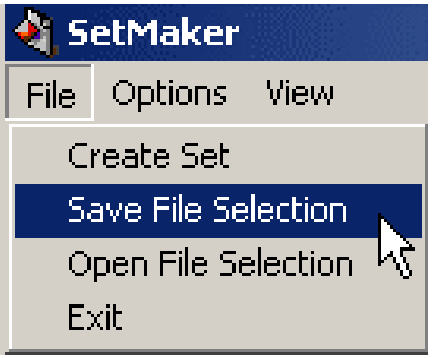
Saving Selection Rules

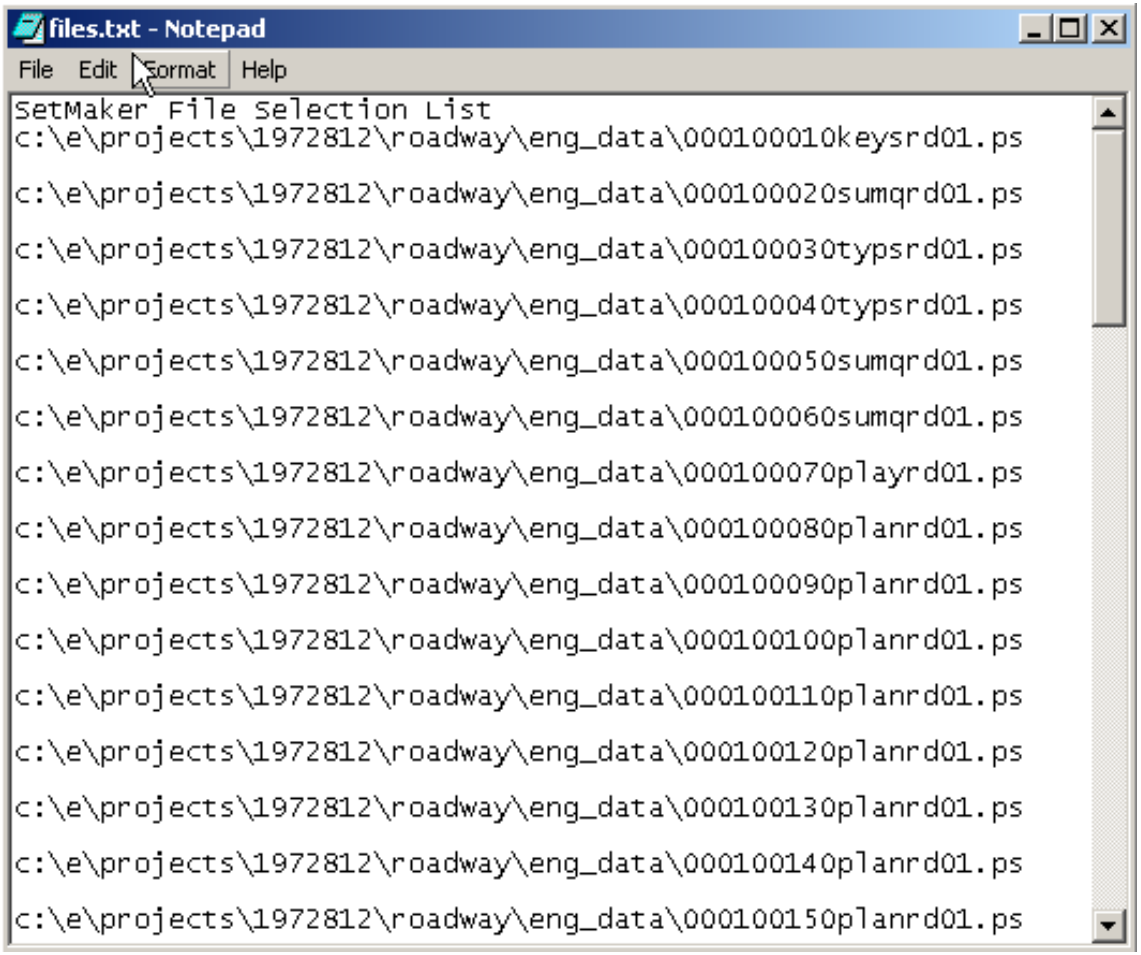




Selection Rules can be opened in other projects, and used to select the files for the next set to be created.

Saving the Selection Set

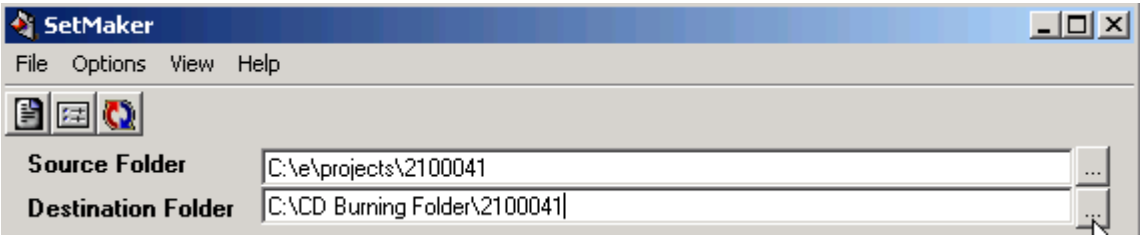




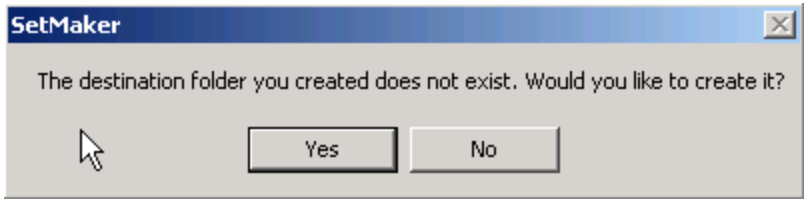
The selection set are those specific files selected for the subset.

The selection set is project / environment specific as it contains local file-path information for each file.

Set the destination directory for the subset



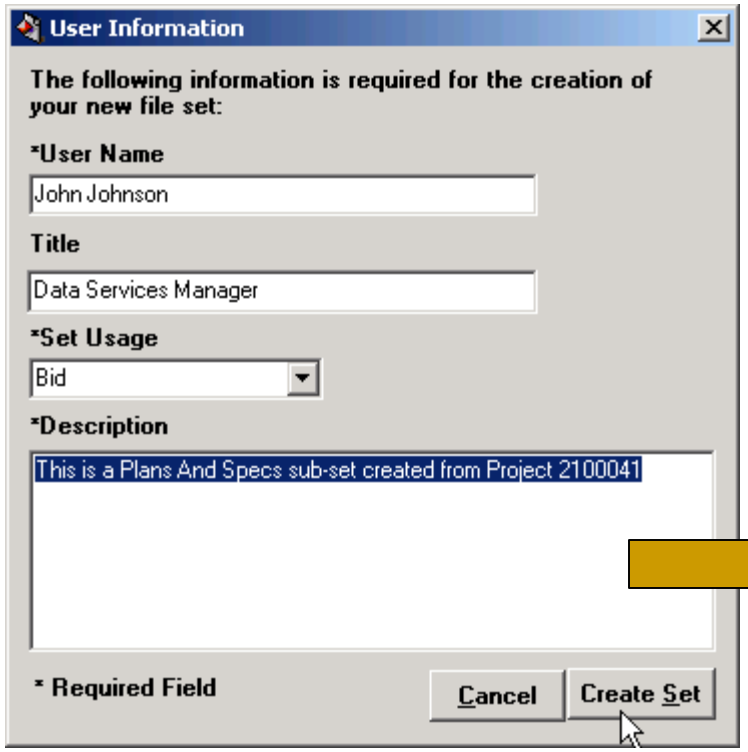
- The destination folder for the sub-set is set by pressing the ellipsis button to browse a folder, and/or may be keyed-in.
- You can edit the Destination Folder field to make corrections, add additional path, etc.
- Press the Create Set button (or select File > Create Set from the Menu)

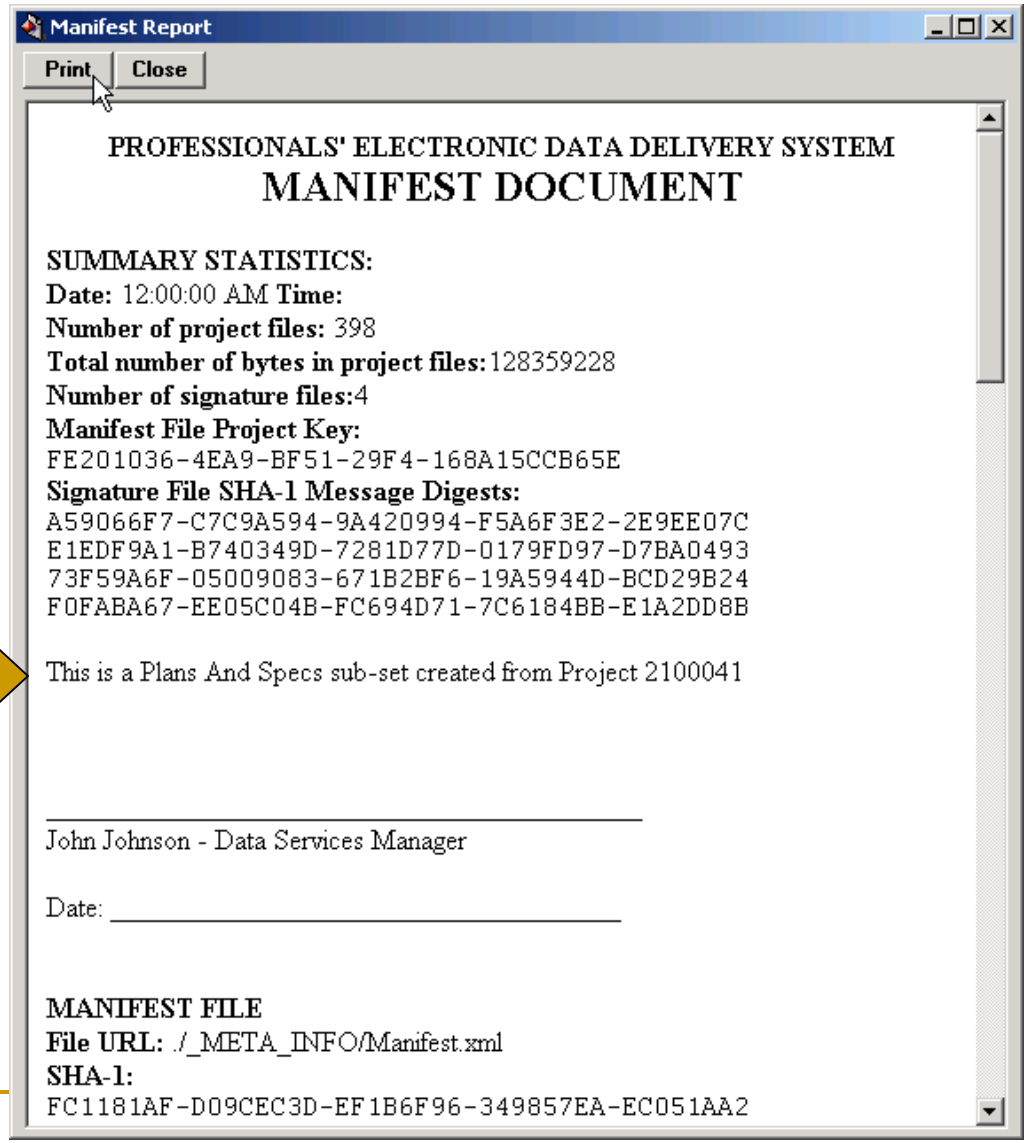


Creating the Set

- Press the Create Set Button, or select Create Set from the File menu:
  - The selected files are copied to the destination folder (directories without selected files and empty directories are not copied)
  - If Signed/Sealed rule is selected, <u>Signatories will not be broken</u> (to ensure all signatories can be authenticated in the sub-set). This means ALL files secured by ALL Signatories will be copied.
  - Once the sub-set has been created, SetMaker automatically Secures the new set (Like PEDDS does) and creates a Manifest report for the new set.

User information is entered for the reason for the sub-set





This data becomes part of the Manifest file. SetMaker automatically secures the project after creating the sub-set

Print the Manifest report and sign-it

Now what?

- The Original project directory data represents the data that should be burned onto the “Project” CD-ROM.
- The sub-set just created should be burned onto the “Plans and Specs” CD-ROM
- Sometimes it takes more than one CD-ROM or DVD-ROM to hold a large project. In that case split it between multiples (make sure the label reads “1 of …”, “2 of …”
- All CD-ROM labels should also include the expected letting date (as of 5/19/2004) in addition to the label requirement in the CPCH