STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

FDOT Electronic Delivery
CE-11-010

Course Guide
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ENGINEERING / CADD SYSTEMS OFFICE
TALLAHASSEE, FLORIDA

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

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Using This Manual

This manual is written as closely as possible to Microsoft standards to standardize text for the user. Look at the sample and explanation of the formatting below.

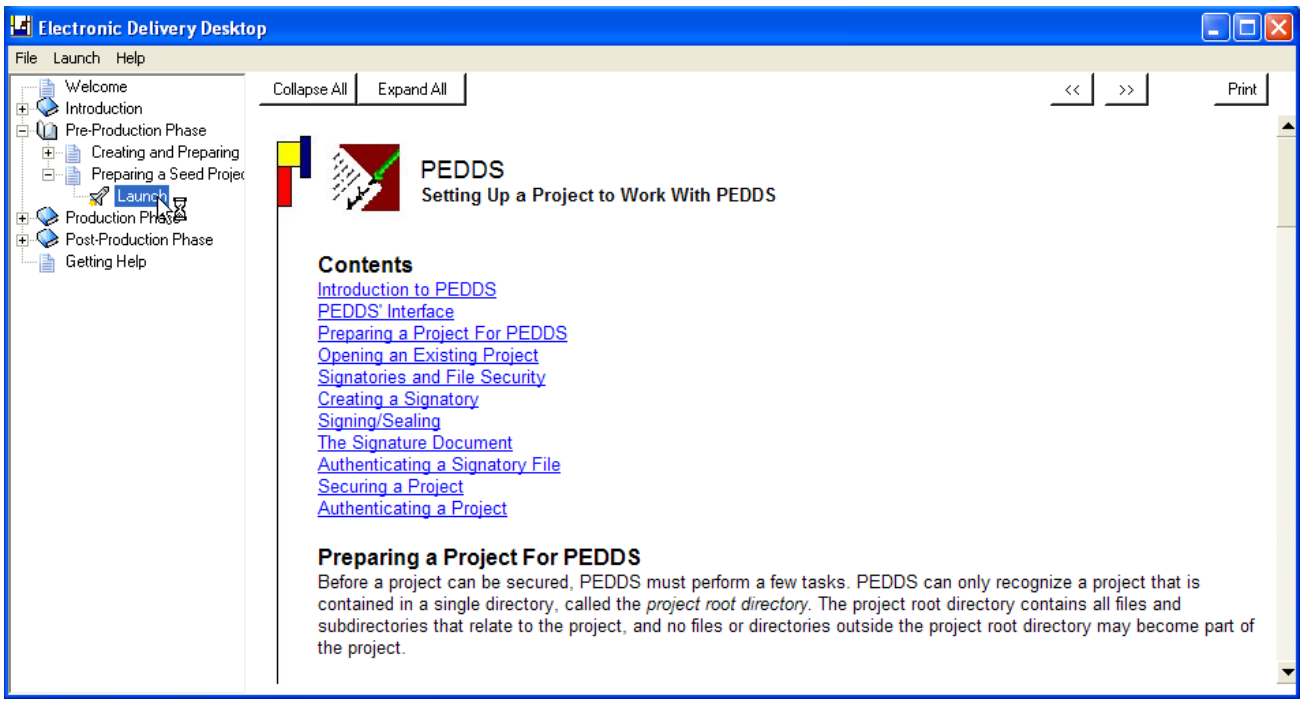
Each procedure is written in sequential steps. Words written in bold type also appear on your screen. Words in Arial font are the names of applications, windows, dialog boxes, or messages that open after you perform a step. These names are always located in the title bar at the top of the window or box in question.

Each procedure has a title statement beginning with the word “to”. Some exercises contain more than one procedure. When you are using this manual in class, you may not need the sort of detailed information in the procedures. However, the manual is meant to guide you after the course is over when you are attempting these procedures in your office. Remember, the project shown in the graphics is for the training class only.

Sample procedure

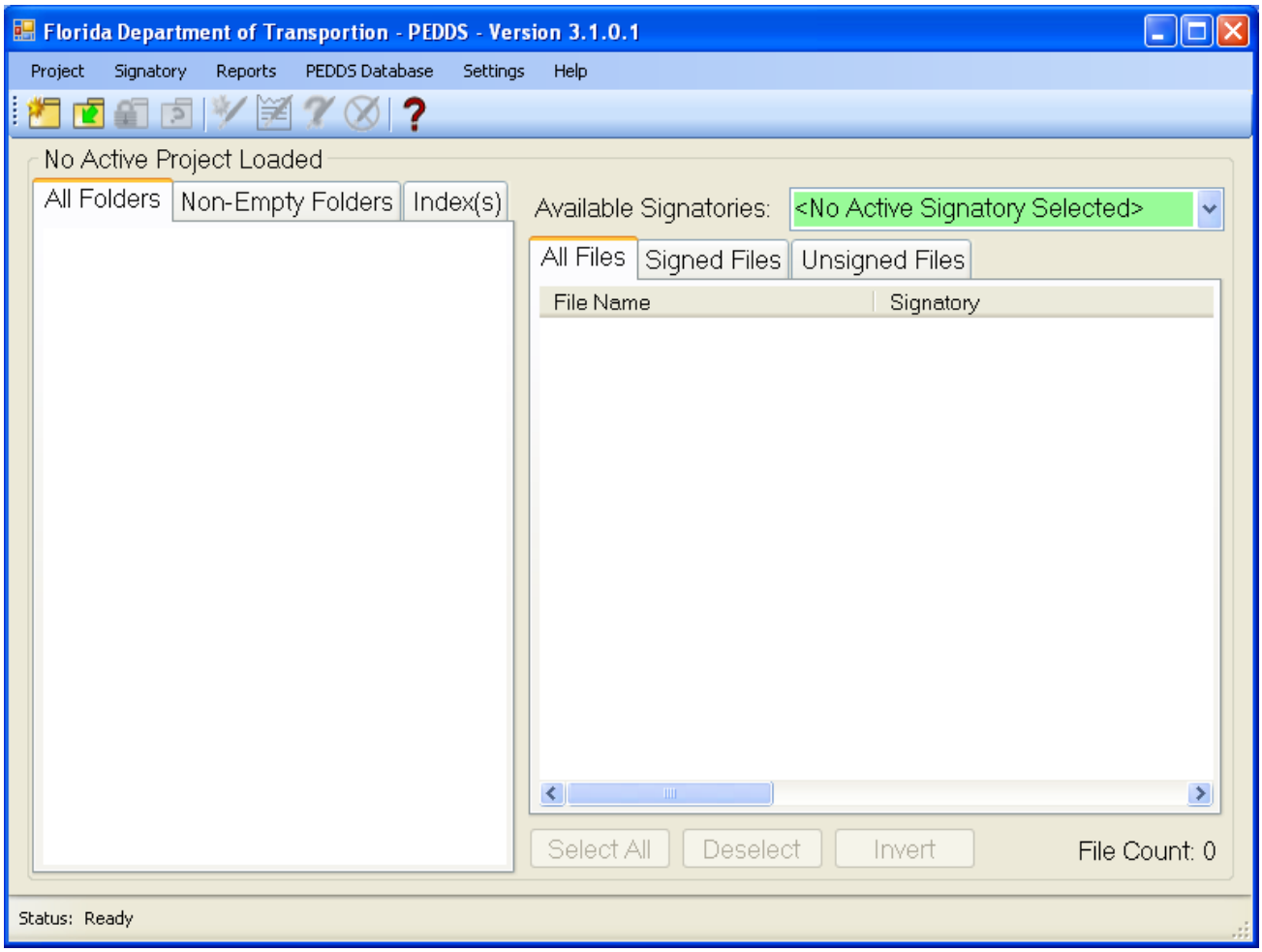
To prepare a project for PEDDS

1. In the **Preparing a Seed Project with PEDDS** folder, click **Launch**. Florida Department Of Transportation - PEDDS opens.



Launching PEDDS

Using This Manual



Florida Department of Transportation – PEDDS

Each procedure may be accompanied by notes, tips, or cautions, as applicable.

- A **note** is additional useful information that is not necessary for performing the procedure.
- An **important** note contains information that you need to perform a procedure.
- A **tip** contains actions that supplement what you do in the procedure, usually a different way to do something that you may prefer.
- A **caution** indicates an action that may irreparably damage your data if performed incorrectly. Be sure to look for cautions and read them carefully.
- A **warning** indicates an action that could hurt you or damage your hardware. This manual doesn't contain any warnings.

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Introduction
Forward to the FDOT Electronic Delivery Course

by Bruce Dana, P. E., FDOT State CADD Coordinator

We are pleased to bring you an updated version of the Electronic Delivery (ED) Software suite. These updates not only remedy reported bugs, but include process and productivity enhancements that many users have requested. Inside the FDOT2008 production suite itself you will see enhancements made to modules, such as Sheet Navigator, that, when coupled with the ED modules provide a more robust and automated means of producing and delivering a complete and fully indexed electronic set of plans and supporting data.

We have chosen to stay with our web-enabled interface that helps guide you through a systematic, three-phased approach to the electronic deliverable process. ED includes on-line help, which I encourage you to take advantage of.

For additional help, visit our web site at http://www.dot.state.fl.us/ecso/. On these sites you will find our ***Customer Support Guide,*** which has been developed to help the users developing plans for the FDOT obtain support. The guide explains how to get help, who to contact for help with a specific application, and what to expect.

You may wish also to check out the Quick Clips at http://www.dot.state.fl.us/ecso/downloads/clips/default.shtm which are recorded video segments covering many of the tools in the FDOT2008 software suite including many directly related to the ED process. They say a picture is worth 1000 words – so a video must be worth a million. Over time, we intend to add more of these which can be viewed by users at their desks.

As with any other technical process you find yourself doing, I encourage you to take advantage of the resources available and invest in learning the ED processes and applications. This course guide is just one of the many resources you have available. We have seen so often that some users wait until the 11th hour before attempting Electronic Delivery, or have not availed themselves of the training and other help materials available, which sets themselves up for failure. Also, Electronic Delivery relies upon following certain standards for data structure and content, and being cavalier about adhering to those standards is negligence that can also lead to failures. The staff at the FDOT Engineering / CADD Systems Office (ECSO) is available to assist when you simply cannot find the solution yourself.

As always, we hope you find your ED training experience an enriching one. It is our desire to provide quality training materials that will provide you the CADD-related information and instruction needed to produce and deliver your projects. Please use the links on our web sites to give us your questions, comments, and suggestions.

Thank you!

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Course Overview

Section 1 – Overview of Electronic Delivery – A 30-minute instructor-led class to introduce the FDOT2008 ED software. This session demonstrates how to launch the program, new tools and the program's capabilities. This section is intended for all course attendees, both Pre and Post-Production as well as Production.

Section 2 – Pre-Production Phase - A one-half day instructor-led class that teaches project managers the FDOT2008 ED software and the tools needed to create a "seed" project. This instruction ensures the creation of a successful environment for the production phase of the process and that FDOT standards for ED process are met. This section is intended for managers of projects. Personnel taking the Production Phase training will receive an overview of the Pre-Production Phase.

Section 3 – Production Phase - This two-day instructor-led class teaches production staff how to utilize the FDOT2008 ED software for securing and submitting electronic projects per FDOT standards. This course focuses on the tools needed to allow the building of an index and journal, electronic signing/sealing with PEDDS, creating postscript images of the project plans, and securing the electronic project with PEDDS for delivery to FDOT. These tasks meet FDOT standards as set forth in the ***FDOT CADD Production Criteria Handbook*** and the ***CADD Manual***, which are located in PDF format at:

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

This section is intended for production personnel. An overview of the Pre-Production and the Post-Production sections is included.

Section 4 – Post-Production Phase - A one-half day instructor-led class that teaches project managers the FDOT2008 ED software. Students learn the tools required to receive and accept delivery of electronic plan sets, as well as how to make them available to electronic services for posting. This section is intended for managers of projects.

Section 5 - Electronic Delivery - Handling Revisions - This section is part of the Production Phase class, which teaches the recommended workflow for handling plan sheet(s) revisions within the context of ED.

Section 6 - Electronic Delivery - Strung Projects - This section is part of the Production Phase class, which teaches the recommended workflow for handling Strung Projects within the context of ED.

Section 7 - Production Phase - Extras - This section contains additional reference material on Production Tools that can assist a user while preparing a project for electronic delivery, but may not always be a key component of an electronic delivery. If time permits at the end of the of the ED Production course, these exercises can be started.

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Resources

The ECSO offers various support options.

Online Support

ECSO maintains a website with the latest in news, software updates, and online help. Visit the ECSO site at:

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

Video Quick Clips

ECSO maintains a website with on-line recorded video for several FDOT2008 and ED Applications. Visit the ECSO Quick Clips site at:

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

Training

ECSO often offers scheduled classes and presentations on ED and its various subtopics. Contact your FDOT CADD Manager for details on events near you. Also check the ECSO Events page at:

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

Phone Support

You can contact ECSO for technical assistance by calling (850) 245-1600. Telephone support is available between 8 PM and 5 PM, Monday through Friday.

Where to Obtain the Latest FDOT Manuals

The latest version of the ***FDOT CADD Manual*** is located in PDF format at:

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

The latest version of the ***FDOT CADD Production Criteria Handbook*** is located in PDF format at:

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

Location of Electronic Delivery suite of tools:

The FDOT2008 ED software should be installed along with the latest FDOT2008 CADD software. ED requires resources that the FDOT2008 software installation provides.

Location →***device:\FDOT2008\APPS***. The ***device*** is the hard drive on which the FDOT software is installed.

Note Several of the **ED** tools write temporary files to the **local hard-drive's \FDOT2008\ folder**. This local folder requires **read/write permissions**. **Please verify this with your IT/IS staff**.

Location of ED Help Files:

Within the location of the ED software, Location→***device:\FDOT2008\APPS\EDelivery,*** where ***device*** is the hard drive the FDOT CADD software is installed, there are several subfolders. Many of these subfolders contain folders with help documents in HTML format for that application.

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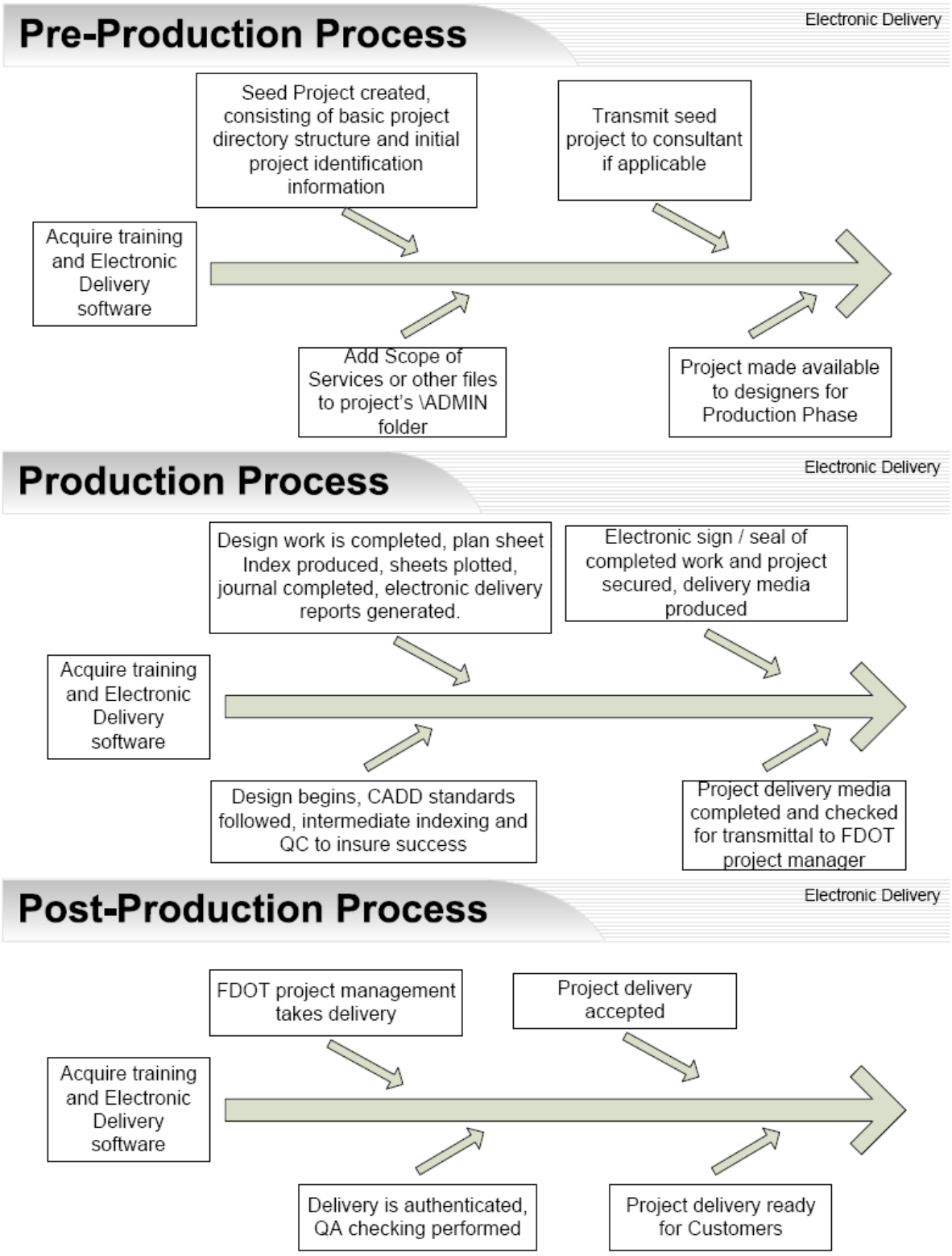


Figure Intro-1: Flow Chart of Electronic Delivery Process

1 Electronic Delivery Overview

The Overview of Electronic Delivery (ED) training section covers the details of launching the software and reviewing the interface.

- Launching Electronic Delivery Desktop
- Electronic Delivery Desktop Overview

Section 1.1 Launching Electronic Delivery Desktop

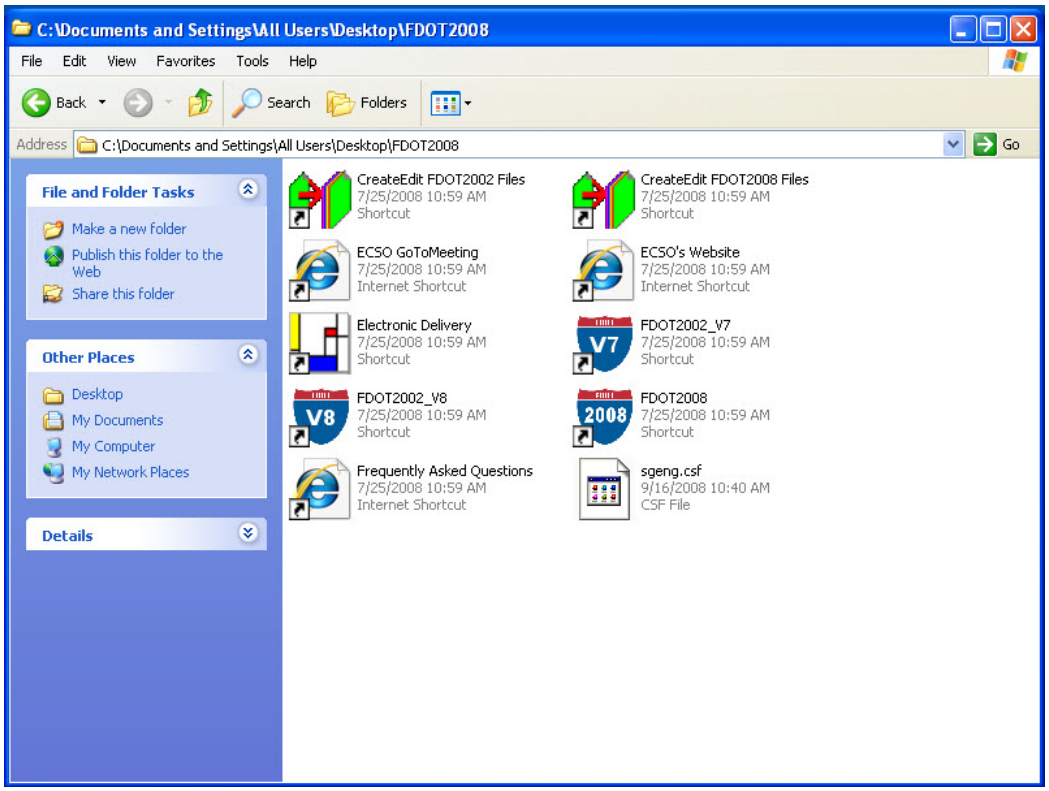
To launch the FDOT2008 ED software from the desktop icon

The FDOT2008 desktop folder is created during the installation process of the FDOT2008 software. This folder contains short cut links to most FDOT2008 tools, including the short cut to start ED Desktop. Shortcuts to start MicroStation V8 and other FDOT2008 applications are also included.

FDOT2008 Folder Icon

From the desktop, double-click the FDOT2008 **folder. FDOT2008 opens.**

- From FDOT2008, double-click the **Electronic Delivery** icon. Electronic Delivery Desktop opens.



FDOT2008 Desktop Folder

If the Electronic Delivery **icon is copied to the desktop, double-click it to start Electronic Delivery Desktop.**

FDOT2008 Desktop Folder

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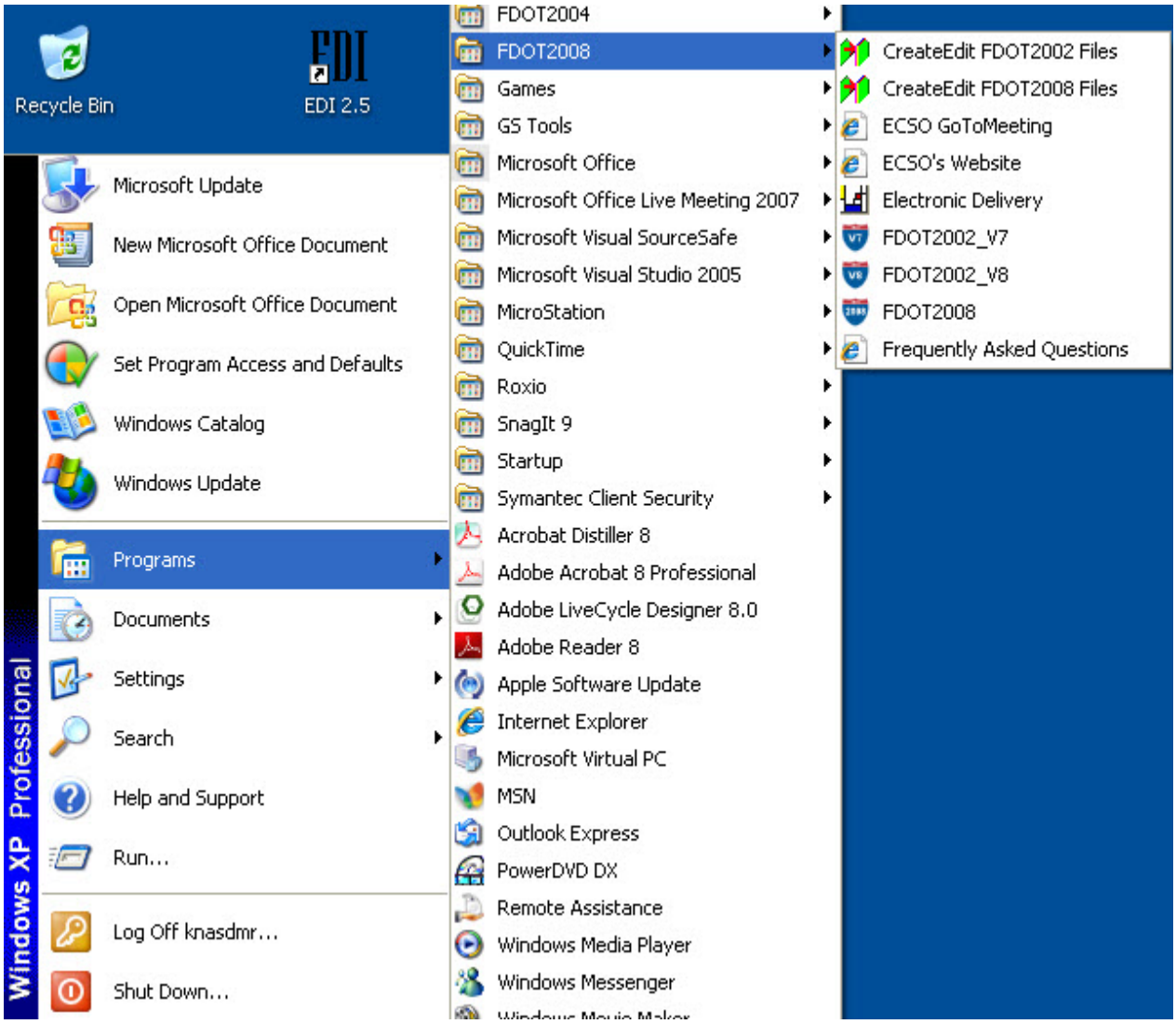
To launch the FDOT2008 ED Desktop software from the start menu

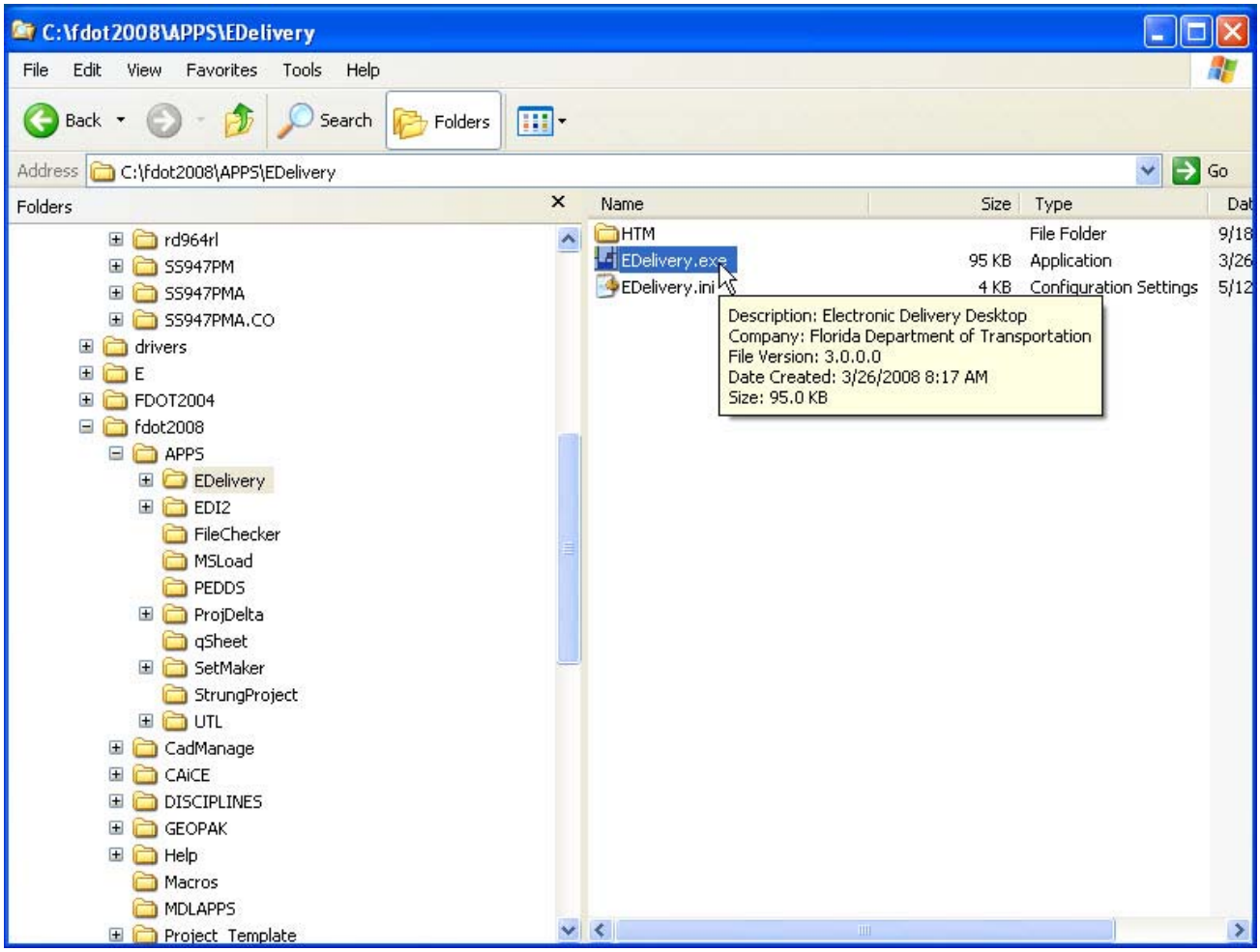
- From the desktop, click the **Start** button, point to **Programs**, point to **FDOT2008**, and then click **Electronic Delivery**. Electronic Delivery Desktop opens.



Windows Start Menu

To launch the FDOT2008 ED Desktop software from the Windows Explorer

- From Windows Explorer, navigate to the **C:\FDOT2008\APPS\EDelivery** directory.
- Double-click on the executable file named **EDelivery.exe**.



1Windows Explorer View of Electronic Delivery Folder

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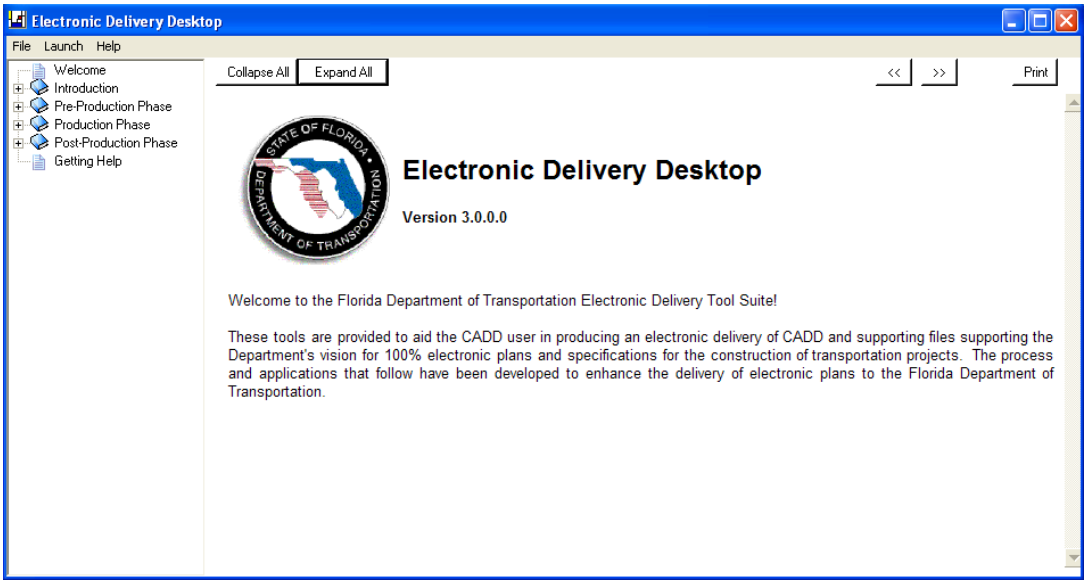
Section 1.2 Electronic Delivery Desktop

Electronic Delivery Desktop window appears and behaves like a web browser. Clicking or expanding items in the Task Pane (left side of window), results in instructional content being displayed in the Explanation Pane (right side of window). The Instructional text displayed in the Explanation Pane can be printed to a networked print device by clicking the **Print** button. The ED software applications can be launched from this window.



Electronic Delivery Desktop

Section 1.3 Electronic Delivery Desktop Hierarchy Overview

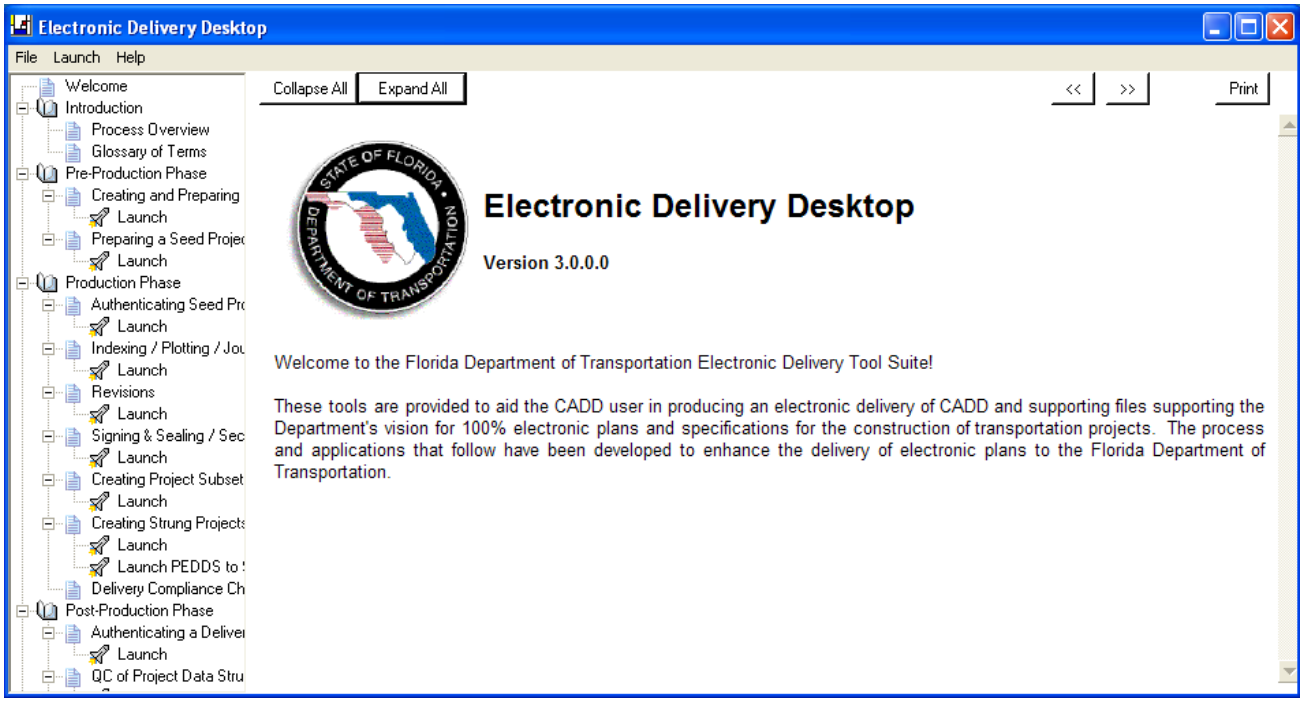
ED software has three major components which follow the Introduction folder in the Task Pane, as seen in the following figure. These components are Pre-Production Phase, Production Phase and Post-Production Phase. Each of these items can be expanded by clicking the '+' expander on the tree view within the Task Pane.

Clicking the Getting Help task displays a page where the user can find on-line help as well as phone numbers for technical help.

Within the Task Pane of the Electronic Delivery Desktop window, expanding the dark-shaded category folder icons ( ) results in the display of a sheet icon ( ) as shown in the image above.

Clicking any of the listed tasks in the Task Pane expands the display of associated text within the Explanation Pane of the Electronic Delivery Desktop window.

- Click the Folder icon ( ) to display a printable explanation of the associated Phase.
- Click the Sheet icon ( ) to activate the associated HTML help pages for the program.
- Click the Shuttle icon ( ) to launch the appropriate program associated with the process.



Expanded Task Pane with associated text in Explanation Pane

Note Icon colors described within the document refer to default screen colors. These may vary depending on individual windows default colors.

To reactivate a selected option

Move off the item and then re-select the item to activate it.

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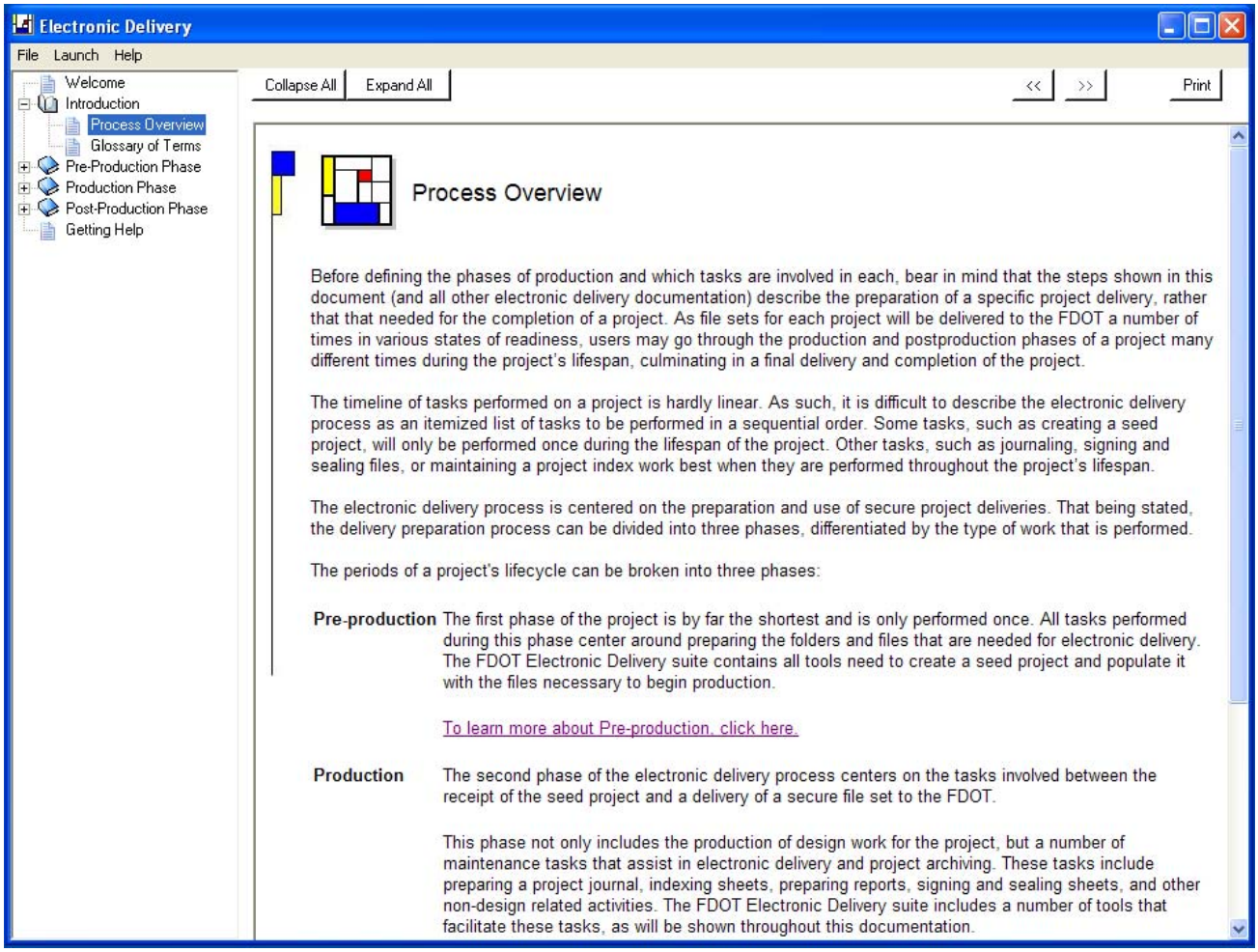
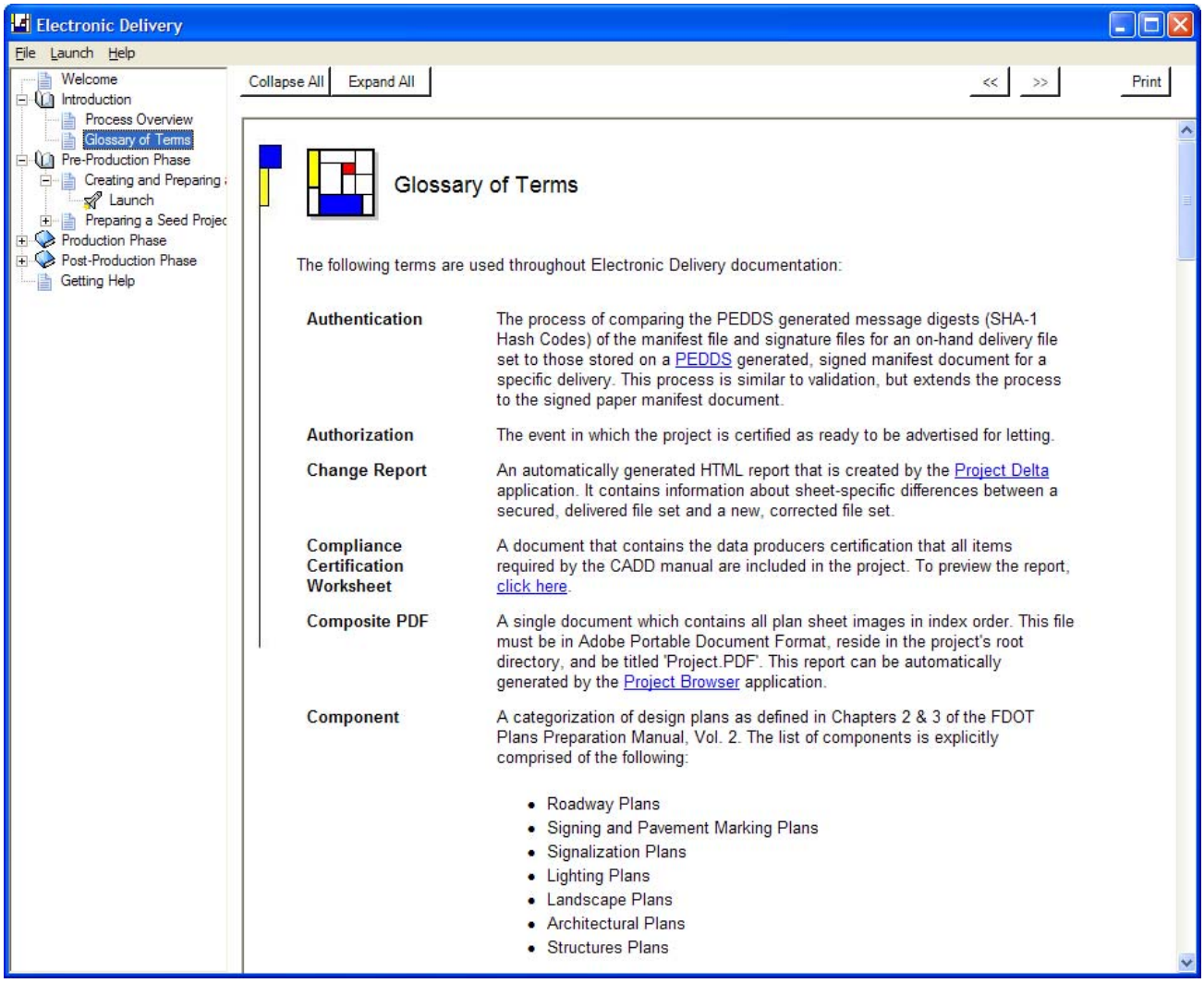
Section 1.4 Introduction

The **Introduction** of the Electronic Delivery Desktop interface gives access to valuable resource pages, **Process Overview** and **Glossary of Terms**, which can be printed for reference. The **Process Overview** provides a brief description of each of the phases of Electronic Delivery process.



Electronic Delivery Desktop - Process Overview

The **Glossary of Terms** defines commonly used terms within the ED process. An extended **Glossary of Terms** is also provided in this course to assist in the user's understanding and training.



Electronic Delivery Desktop - Glossary of Terms

Exercise 1.1 Overview of Electronic Delivery Desktop

This is an informal exercise. The user is encouraged to investigate the Electronic Delivery Desktop Interface by opening and closing several of the Electronic Delivery Tools.

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2 Pre-Production Phase

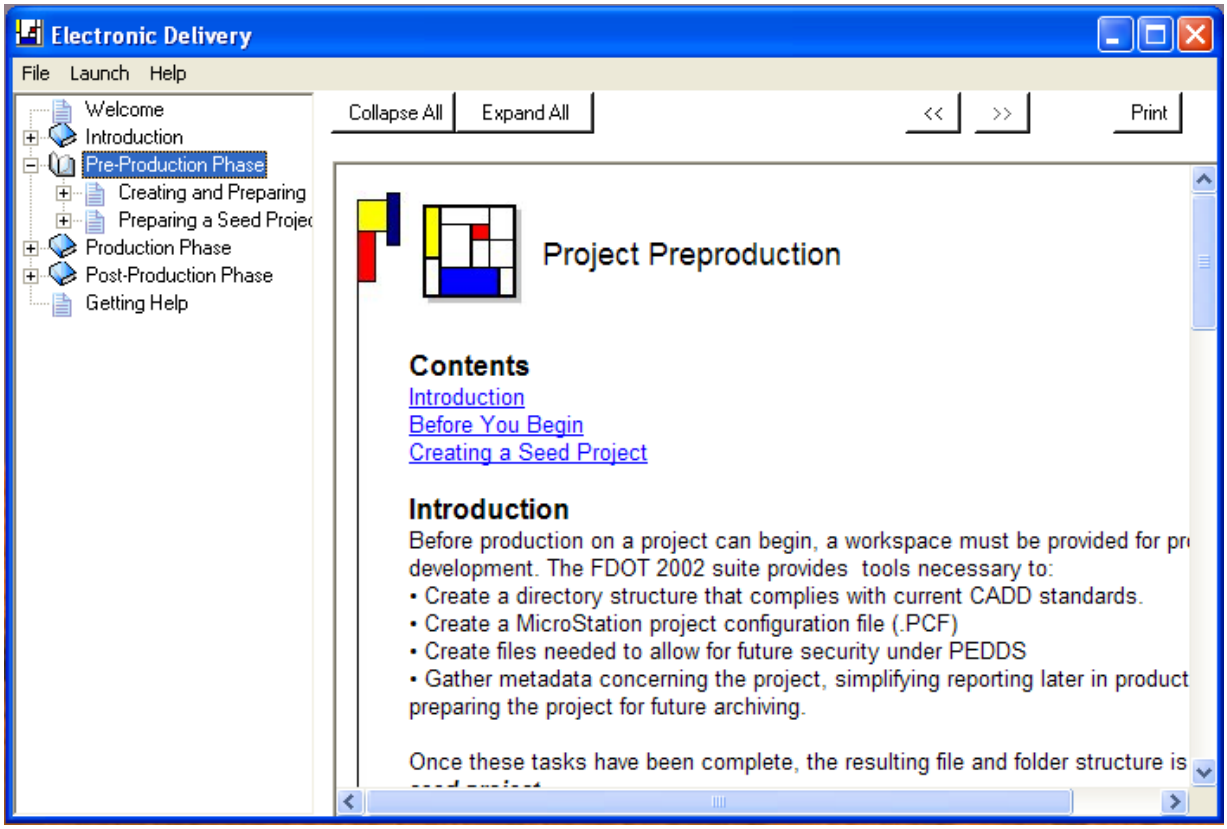
The Pre-Production Phase training section covers creating the Seed Project, creating the PEDDS Project ID, and securing the Seed Project for Delivery.

- Creating and Preparing a Seed Project
  - Creating a Seed Project using Electronic Delivery Indexer (EDI2)
  - Creating a Seed Project using Create Edit XM Files
  - Creating a Seed Project using MicroStation XM
- Preparing a Seed Project with PEDDS
- Creating a PEDDS Project ID file
- Creating a PEDDS Project Header
- Modifying a PEDDS Project ID file
- Modifying a PEDDS Project Header
- Checking the Project with File Checker
- Securing the Project for Delivery to Design Consultant
- Preparing the Delivery Media

Section 2.1 Introduction to Pre-Production Tools

Section 8.4 of the ***CADD Production Criteria Handbook*** (CPCH) describes the Pre-Production phase as the creation of a "seed" project electronically, to provide an environment for meeting CADD standards as defined in the ***CADD Manual*** and CPCH. 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 the Electronic Delivery process can be met.

The following figure shows the required tasks for the Pre-Production phase from the Electronic Delivery Desktop.



Expanded Pre-Production Phase

Before production on a project can begin, a workspace must be provided for project development. The FDOT2008 CADD Software suite provides the tools necessary to do the following:

- Create a directory structure that complies with current CADD standards.
- Create a MicroStation project configuration file (.PCF).
- Create files needed to allow for future security using the PEDDS application.
- Gather metadata (data describing the project), simplifying reporting later in production and preparing the project for future archiving.

Once these tasks are completed, the resulting file and folder structure is called a ***seed project***.

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Section 2.2 Creating and Preparing a Seed Project

The first step in Pre-Production is the creation of a seed project. A seed project is a folder set that contains all discipline folders as listed in Chapter 4 of the CPCH, as well as the MicroStation project configuration file (.PCF).

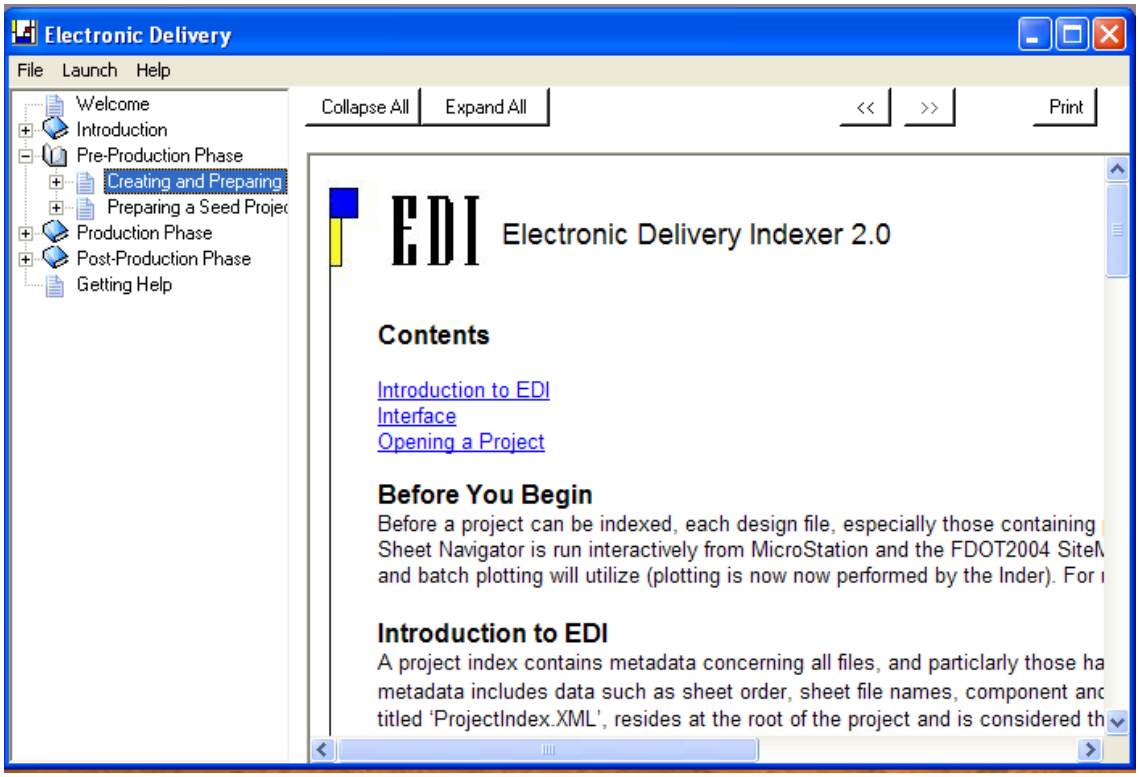
There are 3 ways to create a Seed Project.

- EDI2
- Create/Edit Project
- MicroStation XM Manager

The main exercise in this section concentrates on using EDI2 to create a seed project. Optional review exercises using the other tools to create a seed project are included at the end of this section.

The Pre-Production Phase provides the tools necessary to produce the following items, which are delivered to the Project Consultant.

- Project specific files such as Scope of Services documents, etc. may be copied into the newly created directory structure.
- A MicroStation Project Configuration File (.PCF) is created and placed in the project root directory during project creation. The PCF file can then be relocated to the appropriate location for MicroStation File Manager to recognize and point to the project directory.



Creating and Preparing a Seed Project

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Exercise 2.1 Creating and Preparing a Seed Project

The first time EDI2 executes, it configures itself. A few items need to be confirmed before starting. There are not installation steps required for installing the EDI2 software, but EDI2 needs to be configured for the PC's specific environment, including the installation of FDOT CADD software, correct MicroStation version and several other programs.

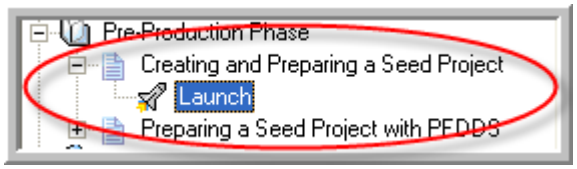
EDI2 is delivered with the FDOT2008 CADD Software installation. EDI2 is a Microsoft.NET application, and therefore requires Microsoft.NET Framework Version 2 or higher, available from Microsoft Downloads. This allows EDI2 to be installed with XCOPY simplicity and still provides a rich, informative user experience, with fewer installation issues.

More information about the configuration of EDI2 is available in the Production Phase of this manual.

Note Executable files are provided in the dataset for logical starting points throughout Section 2. For example the executable file EDSection2Exercise2.2Start.exe contains the files from Section 2 exercises up to Exercise 2.2. If you encounter errors while working through an exercise, select the executable with the nearest starting point and unzip the files as demonstrated above. The Unzip to folder will be set to the correct hard drive location.

To install Electronic Delivery Indexer

1. In the **Creating and Preparing a Seed Project** folder, click **Launch**. The Electronic Delivery Index splash screen displays and then EDI Configuration Information opens. Click **OK** to continue.

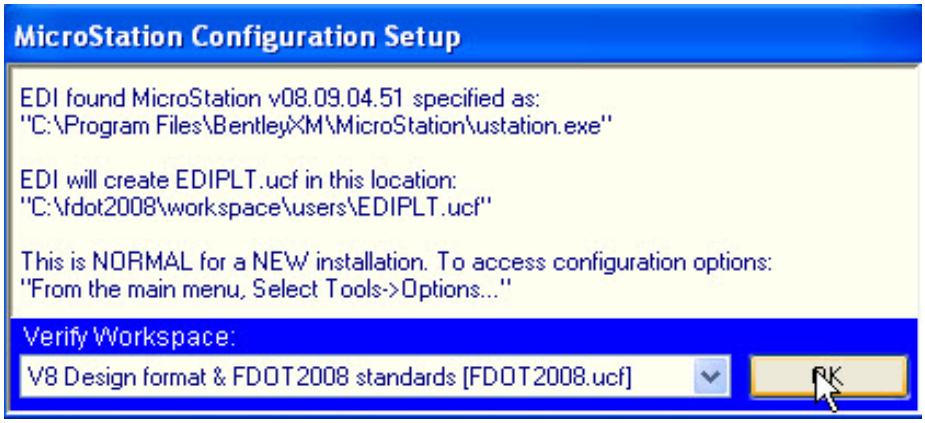


Launching Creating and Preparing a Seed Project

Electronic Delivery Index Splash Screen

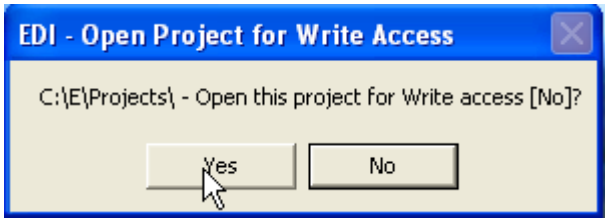
Important The following outlines the steps to complete the installation of EDI2. The directories listed in the dialog boxes may differ depending on the user that is installing it and the installation directories for the various other software used.

2. MicroStation Configuration Setup opens. Edit the settings as shown (program defaults are usually the correct choice) in the following figure and click the **OK** button**.**



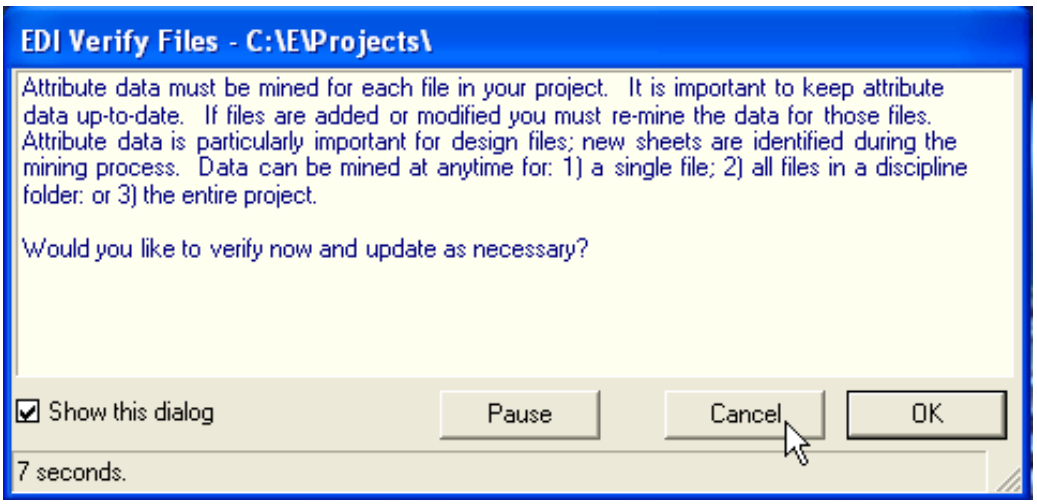
MicroStation Configuration Setup

3. DI - Open Project for Write Access opens**.** Click the **Yes** button.



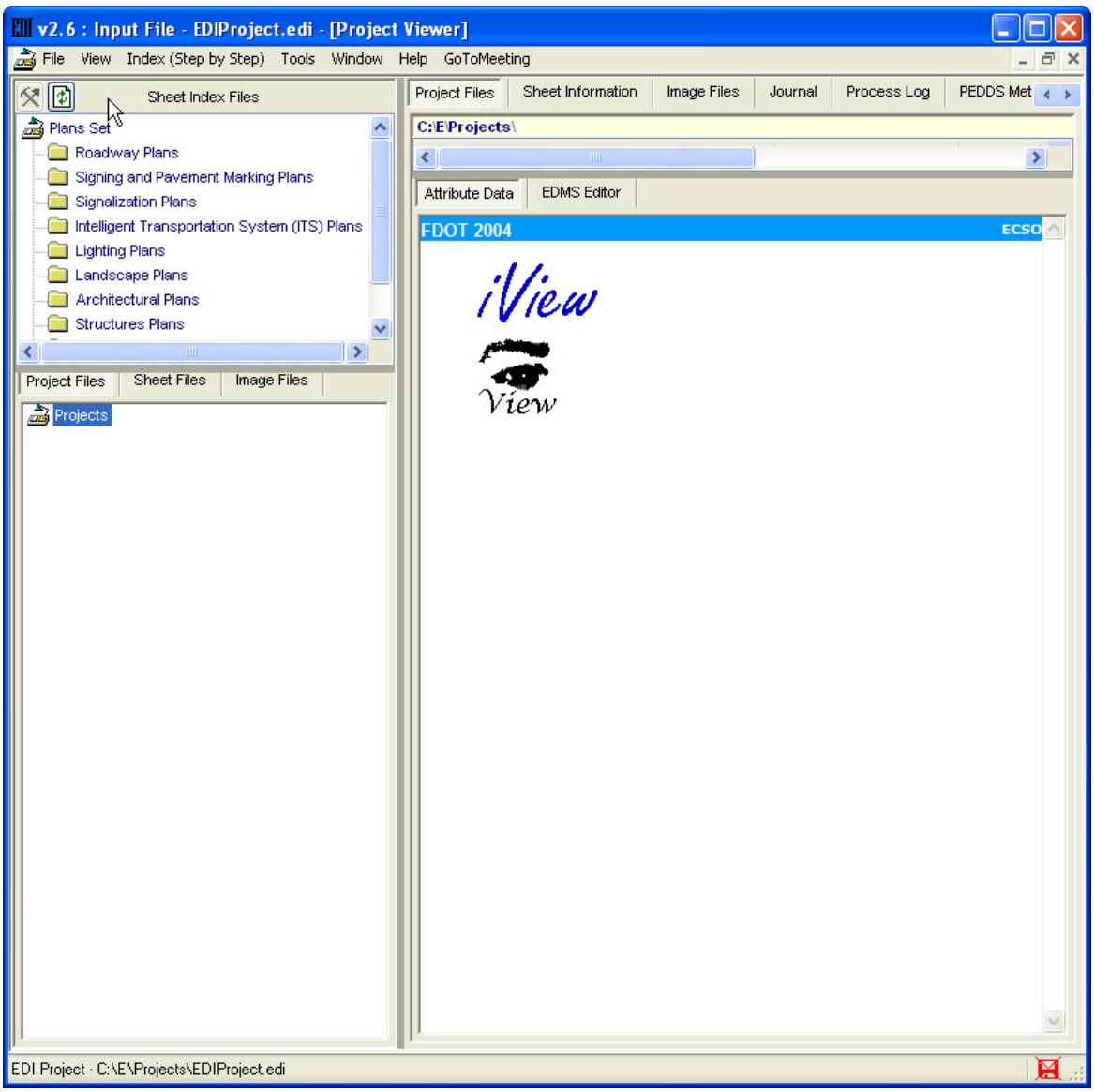
EDI - Open Project for Write Access

4. EDI Verify Files opens. Click the **Cancel** button to open EDI2 without mining files.



EDI Verify Files

5. EDI2 displays.



EDI2

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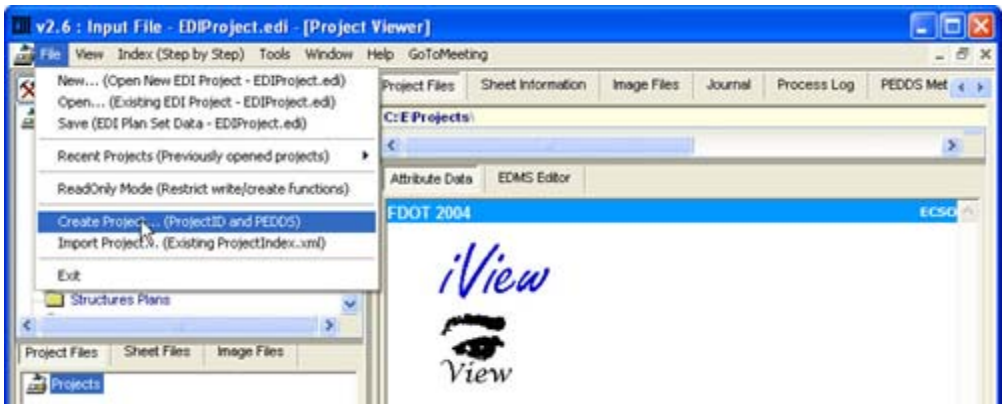
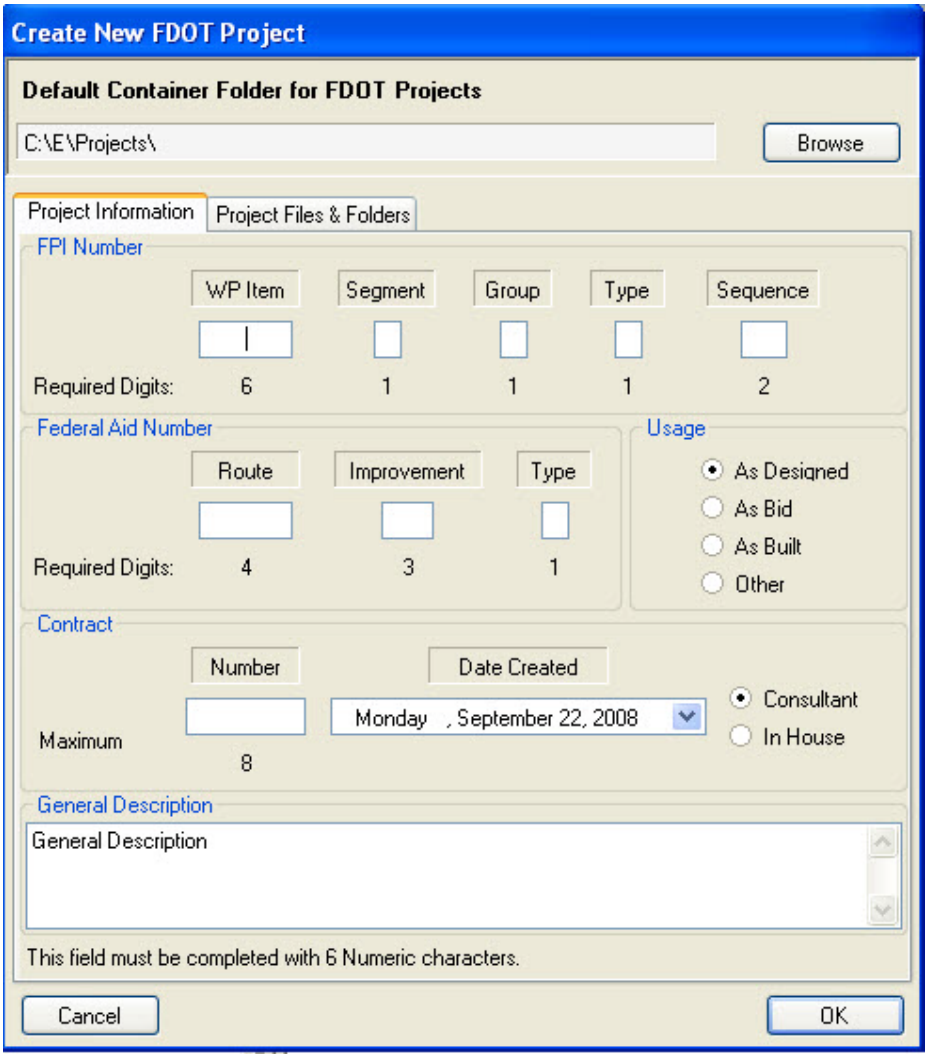
To Create a Seed Project using EDI

1. From the EDI2, select **File > Create Project... (ProjectID and PEDDS)**.



EDI2 - Create Project

2. Create New FDOT Project opens.



Create New FDOT Project

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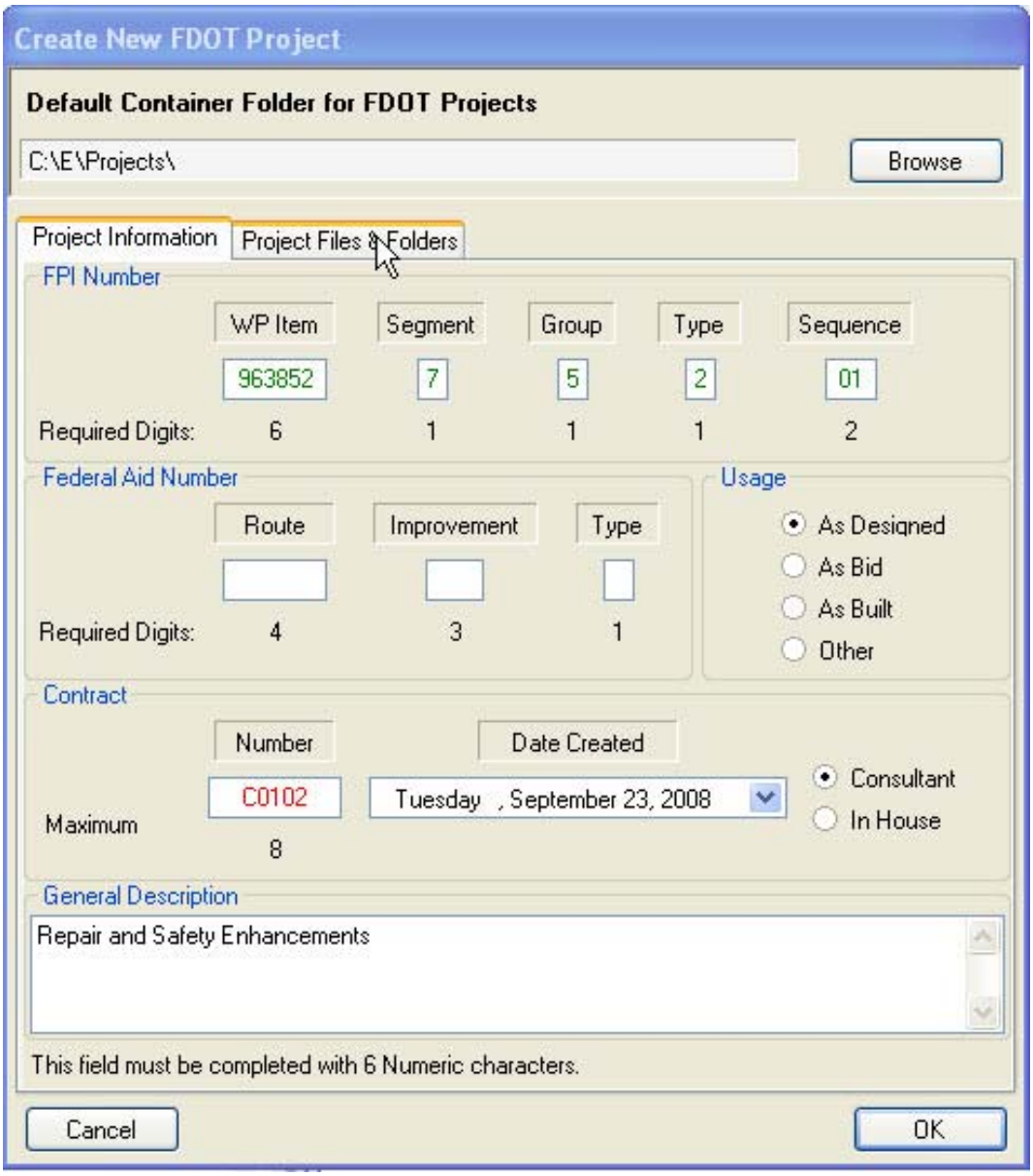
3. Edit Create New FDOT Project to match the following figure.

Note Pay attention to the default project location. If a location other than the default is needed, click the **Browse** button.



Create New FDOT Project

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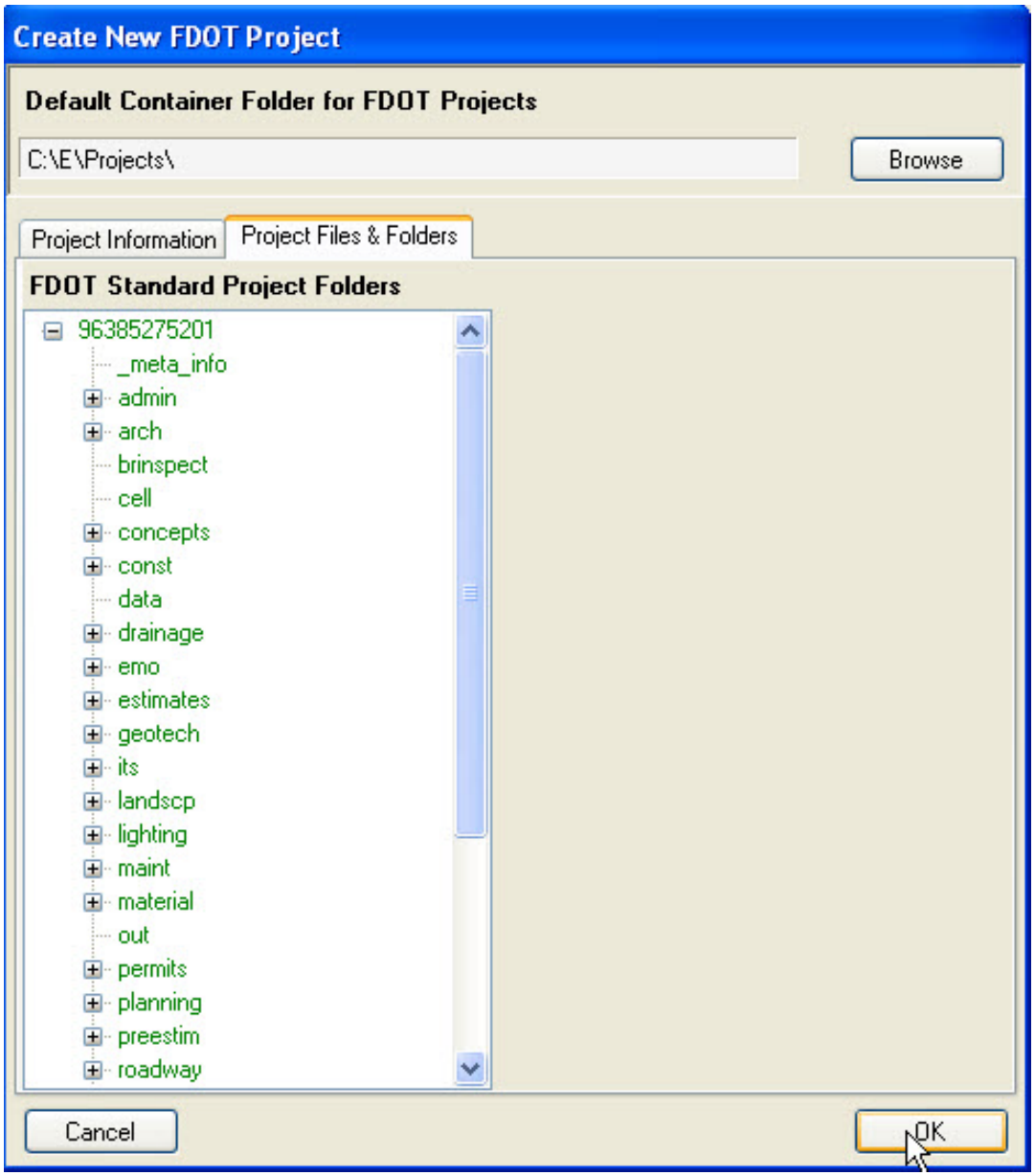
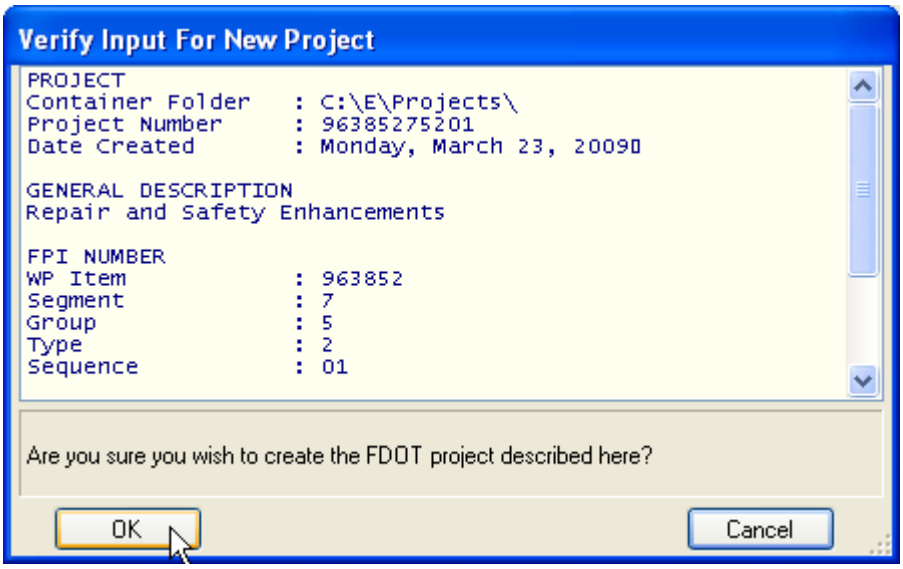
4. Click the **Project Files & Folders** tab to review the Seed Project folder structure. When finished click the **OK** button to display Verify Input for New Project.



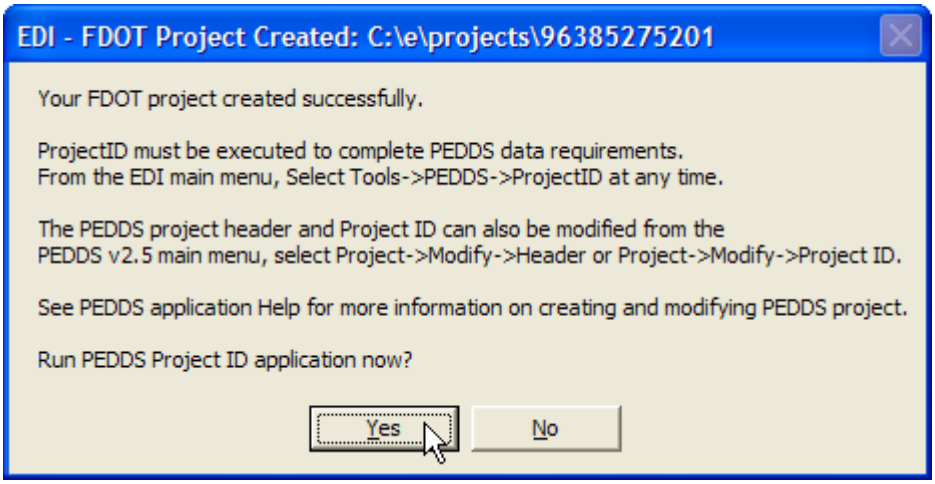
Create New FDOT Project - FDOT Standard Seed Project Folders

5. From Verify Input For New Project, scroll through the input information and then click the **OK** button.



Verify Input For New Project

6. EDI - FDOT Project Created opens. Click **Yes**. Project ID for PEDDS (Financial) opens and the FPID Number automatically fills in the **Financial Accounting Identification** text fields as shown in the figure on the following page.



EDI - FDOT Project Created

Note Although PEDDS has not opened, the information to identify a project in PEDDS activates. Section 2.3 contains an Introduction to PEDDS. This exercise continues with the creation of the PEDDS Project ID File.

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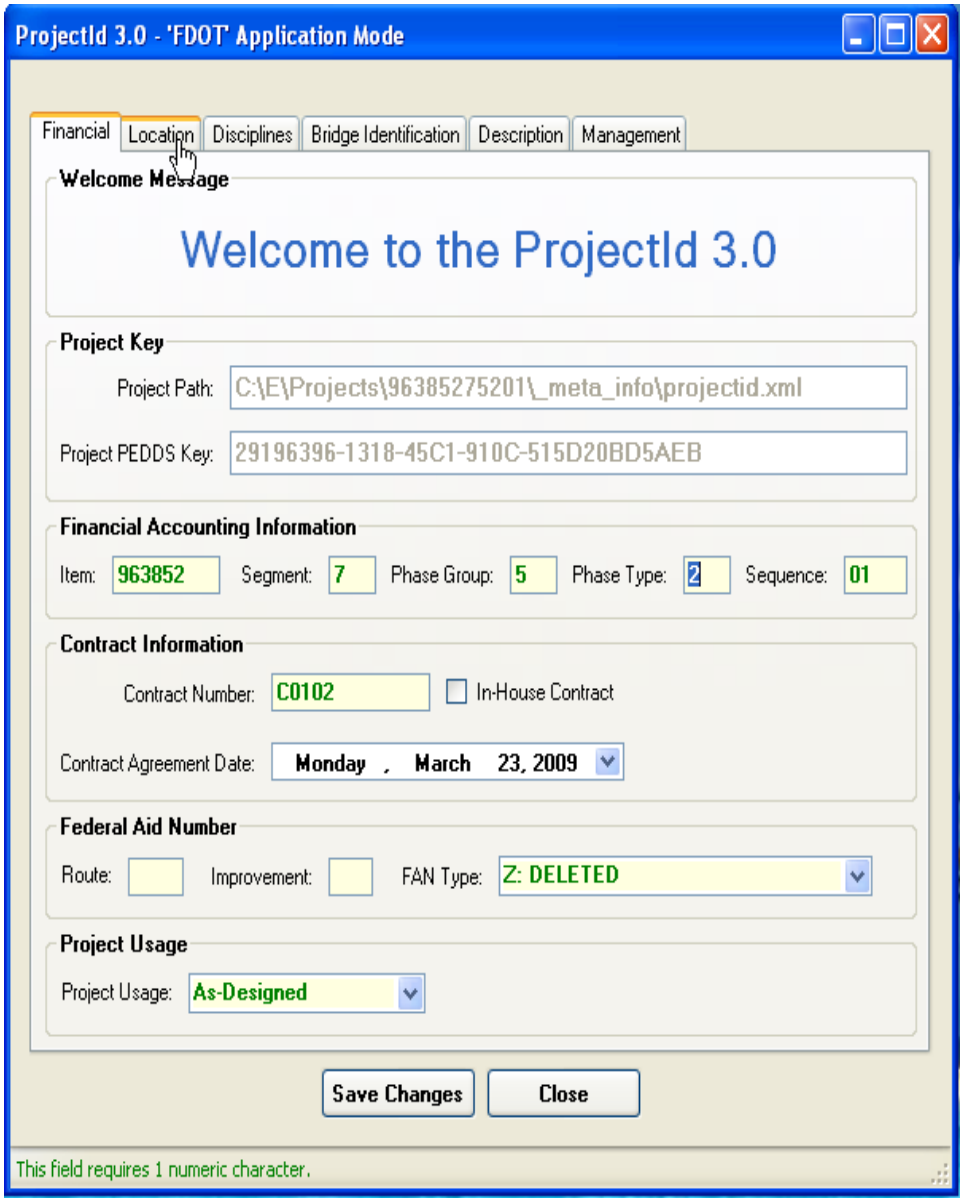


Project ID for PEDDS (Financial)

Note The Project Key is an alphanumeric character string called a Global Unique Identifier or GUID, generated by operating system that uniquely identifies a project (regardless of the project's root directory structure name or Financial Project Identification number changing). This number is unique across all projects secured using PEDDS and identifies one project and one project only. Multiple deliveries of the same project at various phases of completion, or after subsequent revisions always have the same Project Key.

7. If applicable, type in the **Federal Aid Number**.

Important All projects with Federal Funding have a **Federal Aid Number**. This number is not required to uniquely identify the project, <u>but this is the only data that links the project to Federal Funding</u>. The **Federal Aid Number** may contain alpha characters in addition to numeric characters.

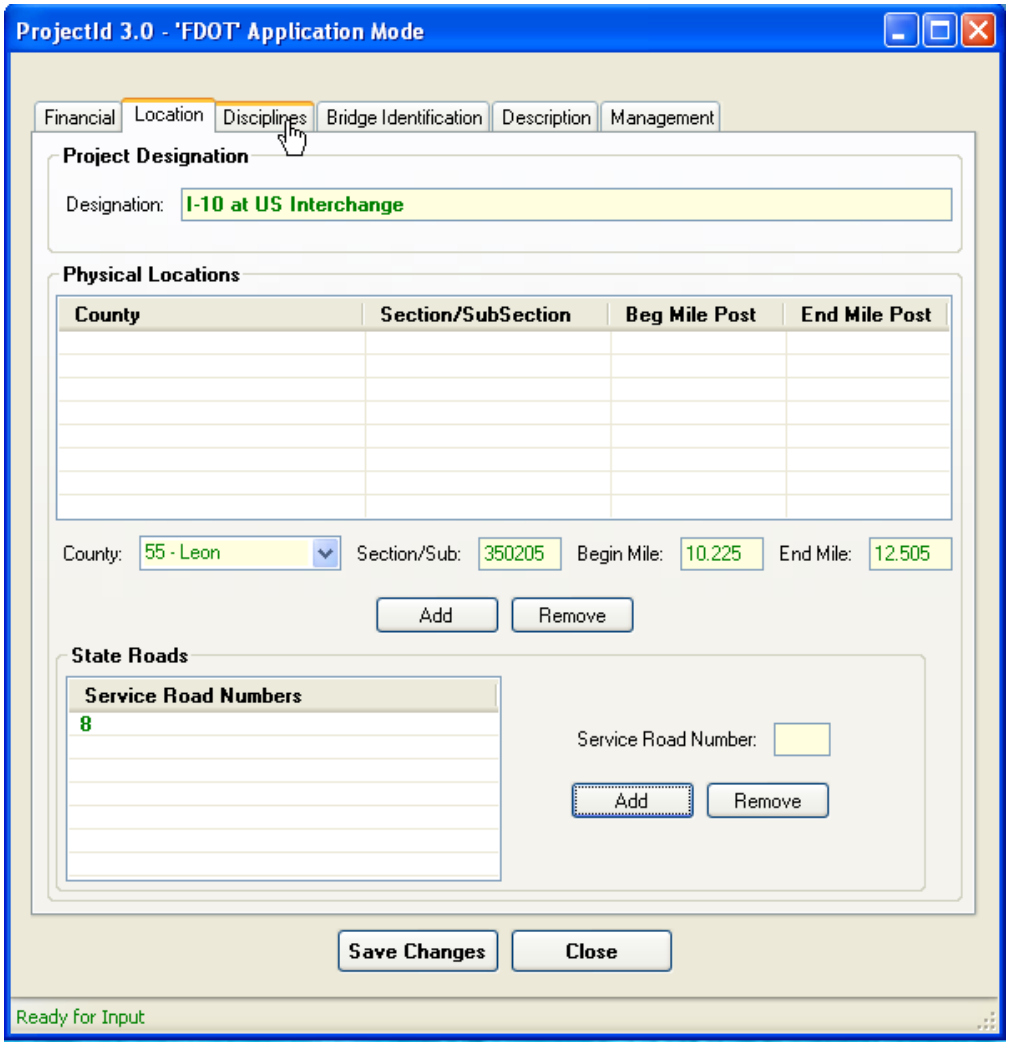
Note The Contract Agreement Date is automatically filled with the default date.

8. Verify or modify the **Contract Agreement Date**.
9. Verify the appropriate **Project Usage** option is set to **As-Designed**.

Note The following usage options are available:

- *As-Designed* are project deliveries secured with PEDDS used to create a finished design; including work produced by survey, right-of-way, or design.
- *As-Bid* are project deliveries secured with PEDDS used as the bid set of plans.
- *As-Built* are project deliveries secured with PEDDS used to represent finished construction.
- *Other files* are secured with PEDDS that do not fall into one of the above categories.

10. Click the **Next** button to continue. Project ID for PEDDS (Location) displays.



Project ID for PEDDS (Location)

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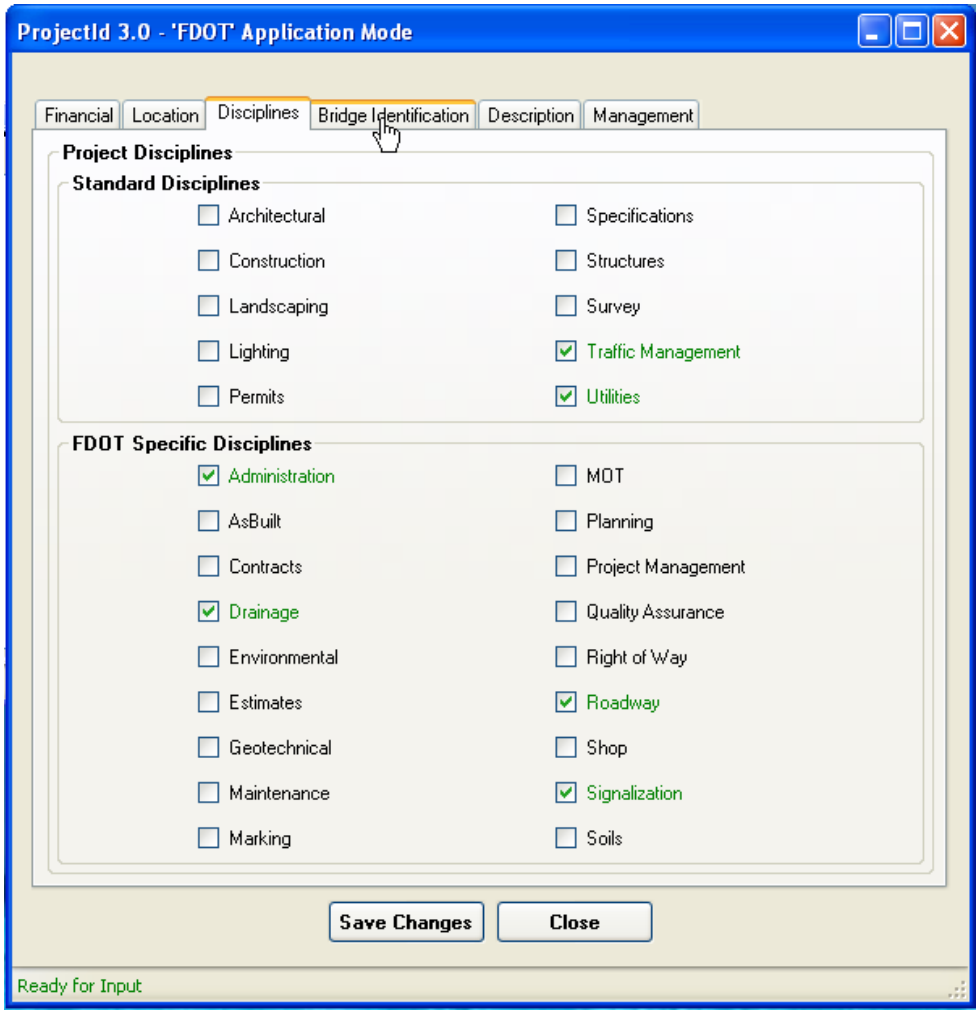
11. Type the **Designation** (which is the common reference to the facility).
12. The **Project Physical Location** is a multiple-entry grid control acting as a collection of the edit fields provided just below the grid control shown above. Enter the data in each of the **County**, **Section/Subsection**, **Beginning Mile Post**, etc.
13. After all values are entered, click the **Add** button, which enters the data entered into the grid above.
14. To make a correction to the values just entered, select the entry from the grid, type the new information in the edit fields, and then click the **Update** button.

Note Entries can be removed from the grid by selecting the entry from the grid, then clicking the **Remove** button.

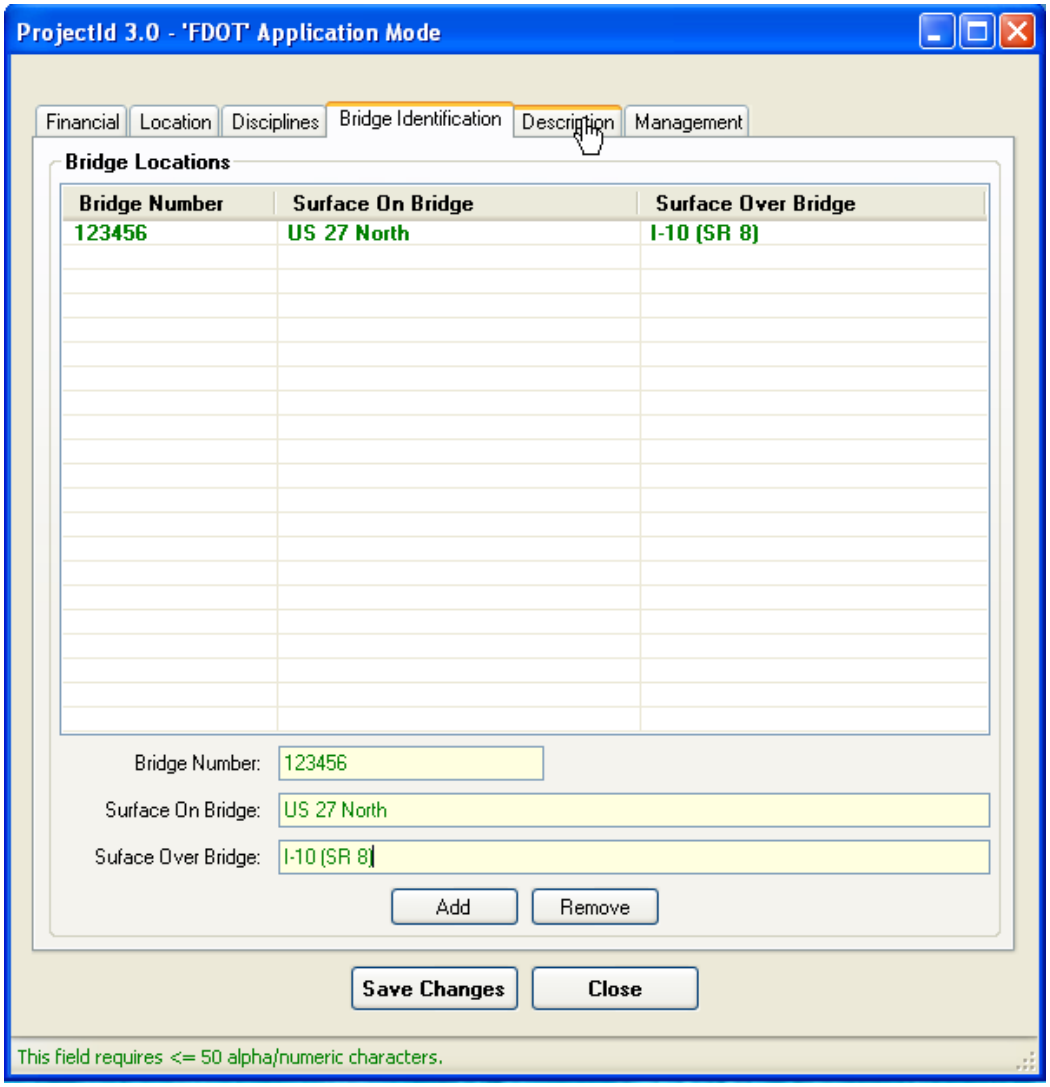
Important In Project ID for PEDDS, all values are added, modified or removed using the method just described.

15. Enter the **Service Road Number**, and then click the **Add** button.
16. Click the **Next** button. Project ID for PEDDS (Disciplines) displays.



Project ID for PEDDS (Disciplines) dialog

17. Select any check box of the disciplines that are known for the project. These can be used in the future for searches when many projects have been loaded into the electronic plans room software, knows as PEDDS DB, an archival repository of plans deliveries.
18. Click the **Next** button. Project ID for PEDDS (Bridge Identification) displays.



Project ID for PEDDS (Bridge Identification) dialog

19. Enter the 6-digit **Bridge Number** (as defined in the National Bridge Inventory) .

CAUTION If something other than 6 digits is entered and the Add button is clicked, this causes an error, known as an error trap. Enter only 6 digits.

20. Enter the **Surface On Bridge** description.

Note The surface descriptions are utilized to simplify identification of the bridge. For example, if the surface is a road, use the road's name or highway number. If the surface is a river, use the name of the river and any other information that helps locate the bridge.

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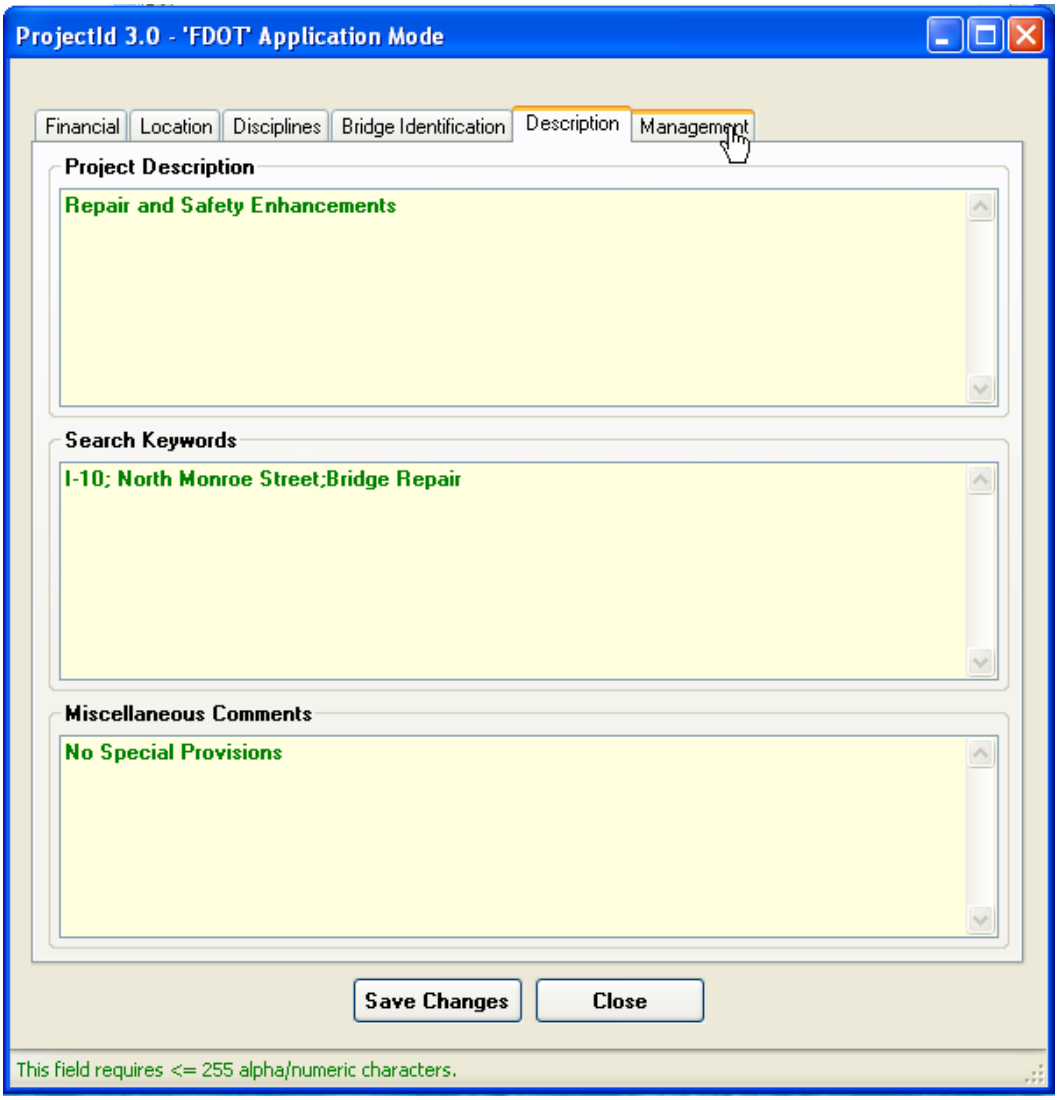
21. Enter the **Surface Over Bridge** information, and then click the **Add** button.
22. Click the **Next** button. Project ID for PEDDS (Description) opens.



Project ID for PEDDS (Description) dialog

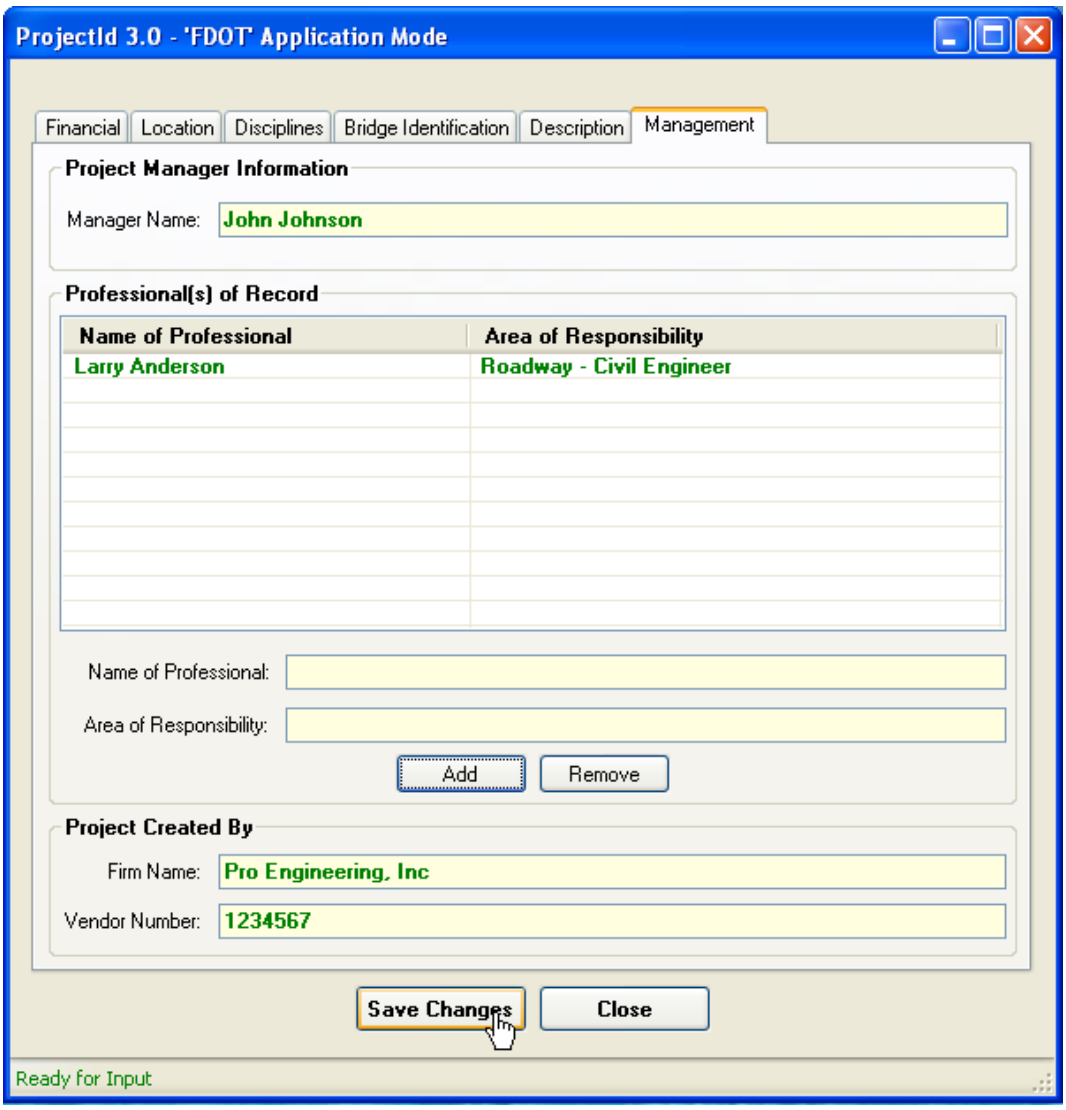
23. Type any **Keywords** about the project. Keywords are brief words or phrases a crawler might find to index those projects for a search engine (think of Google and searching previously indexed web sites).

Tip Navigate between sections by clicking the **TAB** key.

Important In Project Description, separate the Key words text phrases by semi-colons (;).

24. The Project Description text field is automatically populated with the description entered in EDI2 when the seed project was first created. It can be modified here if needed. The General Description does appear in later reports, so it is important to be both descriptive and concise.Type any **Miscellaneous Comments** about the project. **Comments** can be any text, and do not appear in later reports.

25. Click the **Next** button. Project ID for PEDDS (Management) opens.



Project ID for PEDDS (Manager) dialog

26. In the **Project Manager Information** box, enter the Manager Names of all FDOT Project Managers.

Important Separate each Project Manager's name by a semi-colon (;).

27. In the **Professional(s) of Record - Name of Professional** box, enter the name of a Professional of Record anticipated to participate on the project.
28. In the **Professional(s) of Record - Area of Responsibility** box, enter the type of work that the Professional of Record is responsible for.
29. Click the **Add** button.

Note To enter additional Professionals of Record, repeat steps 28-30 for each one.

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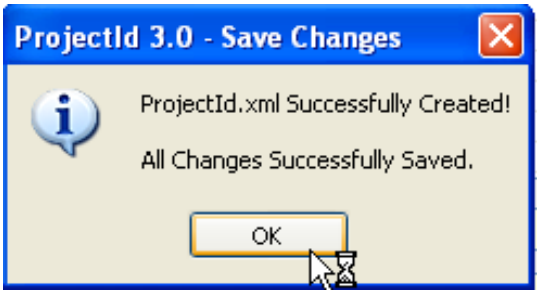
30. To make a correction to a **Professional of Record**, select the entry in the collection grid, correct the entry in the input fields, and click the **Modify** button.

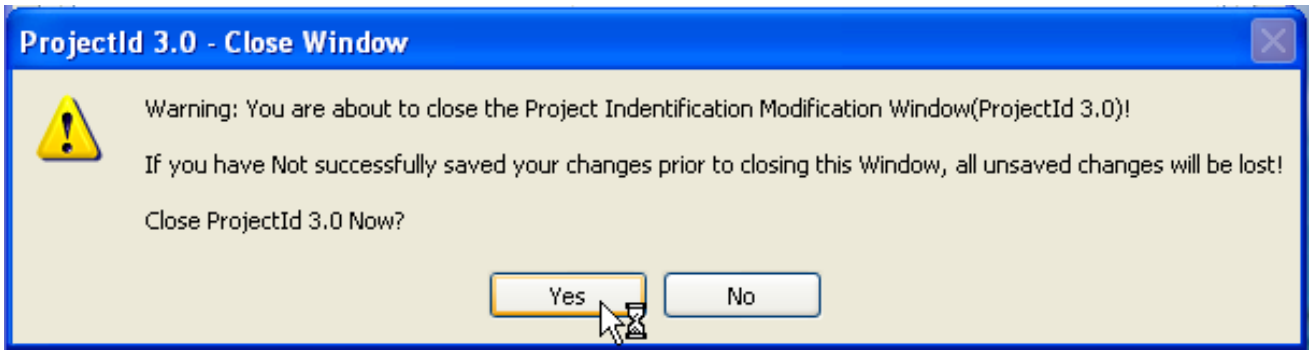
Note Professionals of Record may be removed by selecting the entry in the collections, and clicking the **Remove** button.

31. In the **Project Created By - Firm Name** box, type the name of the firm working on the project, or the FDOT district number (i.e. FDOT District 4).
32. In the **Project Created By - State Vendor Number** box, type the vendor number.
33. Click the **Save Changes** button. Save Changes message box opens to verify. Select **OK** to save all changes.



PEDDS ProjectId Save Changes confirmation

Note Clicking the **Close** button results in the following message box. Selecting **Yes** will result in all changes lost.



Project ID for PEDDS (Close) dialog

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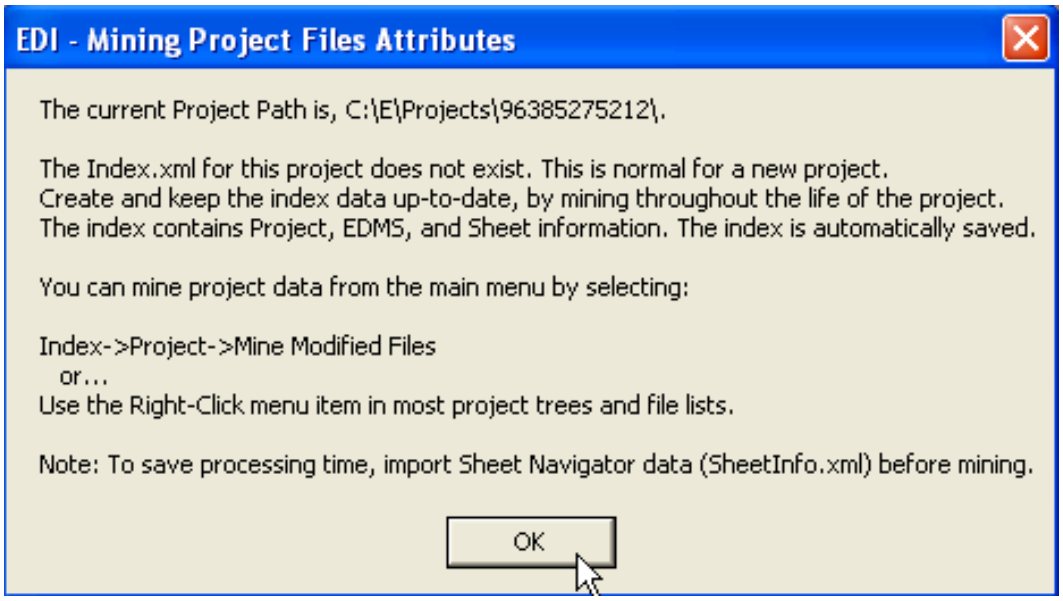
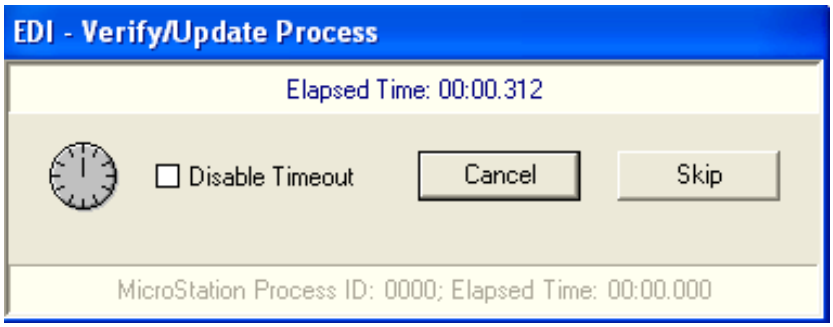
Important It is recommended to mine data at this point.

34. EDI - Mining Project Files Attributes opens. Click the **OK** button. EDI–Verify/Update Process opens.



Mining Project Files Attributes



EDI - SheetInfo Data Mining Processing

Note Mining (a term for gathering information about files in the project) begins. The data gathered is called "file attribute data." Upon completion of the data mining process, EDI2 re-appears with the newly created project active and mined. EDI2 has also created the file EDIProject.edi. This file and other information about EDI2 are discussed in the Production Section of this manual.

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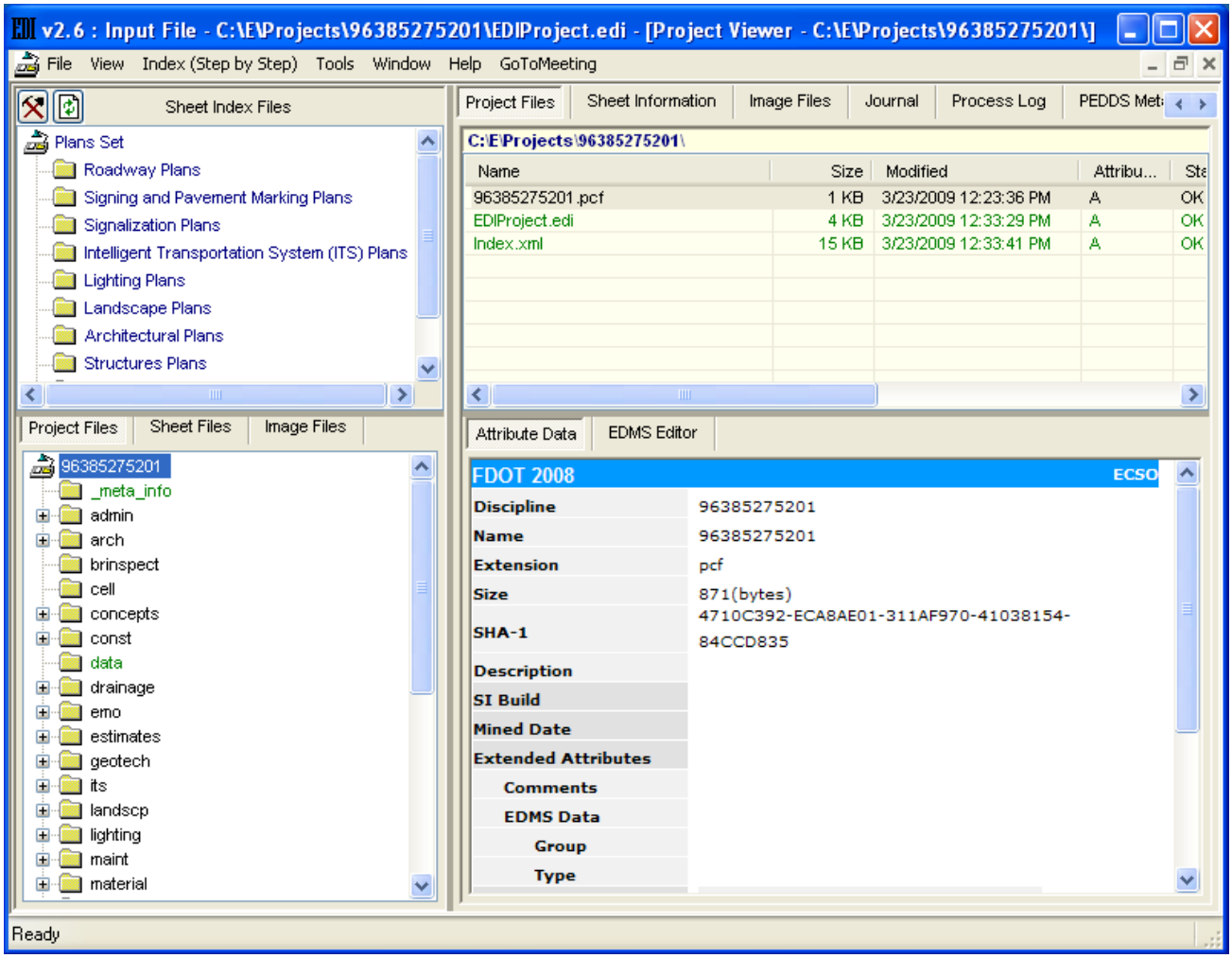
35. EDI2 has completed the creation process and now can be closed. The new Seed Project directory structure, PEDDS project identification file, **ProjectID.xml,** and Index file, **EDIProject.edi,** have all been created.



EDI2

Exercise 2.2 Creating a Seed Project Directory Structure

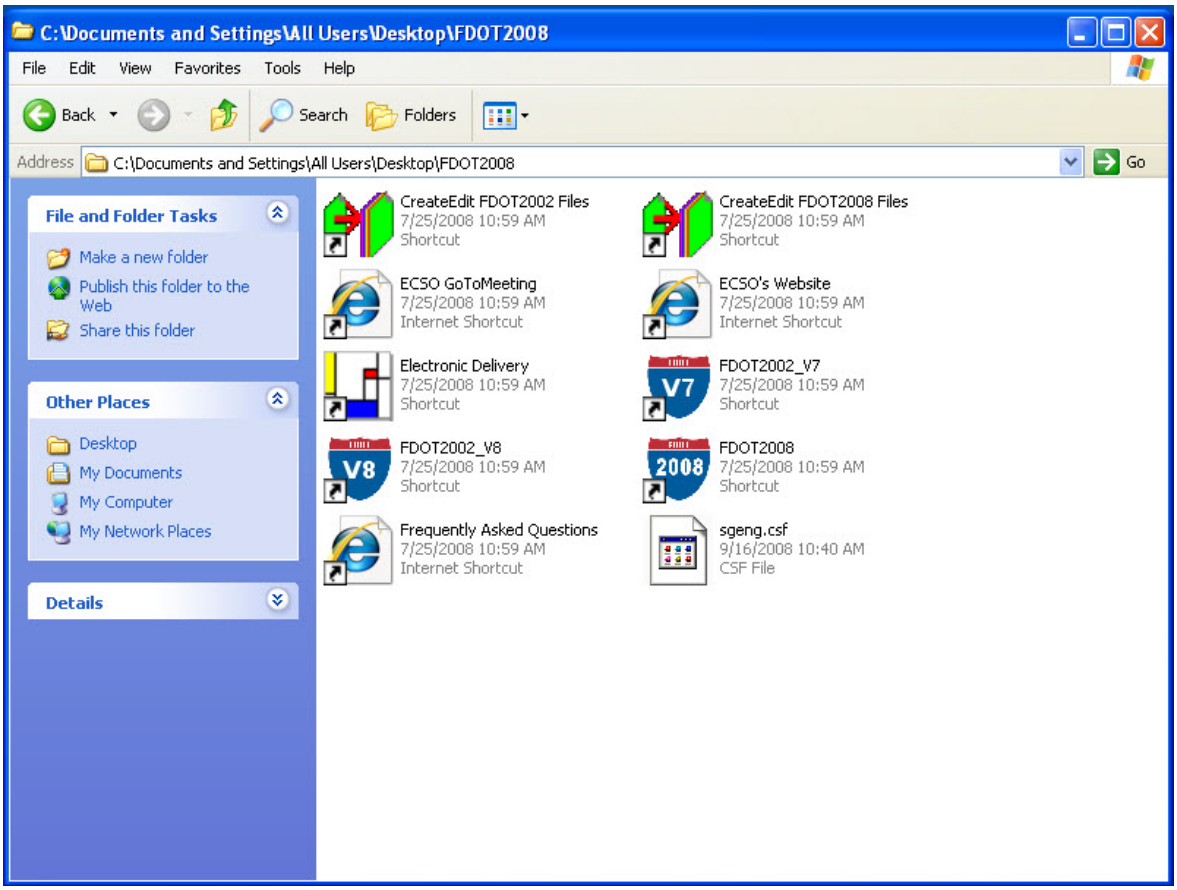
The **Create File/Project** tool is used primarily to create MicroStation design files, text files, etc, with standard FDOT file naming conventions. Create File/Project uses an ASCII file, called a control file (*.ctl), to perform this task. Able to run from CADPilot within MicroStation or as a stand-alone application, Create File/Project is used to create a new Seed Project directory structure in the following exercise.

To create a Seed Project directory structure using Create Edit FDOT2008 Files

1. From the desktop, double-click the **FDOT2008** folder. FDOT2008 opens.

FDOT2008 Folder Icon

2. From FDOT2008, double-click **Create Edit FDOT2008 Files** icon. Create File/Project opens.



Opened FDOT2008 Desktop Folder

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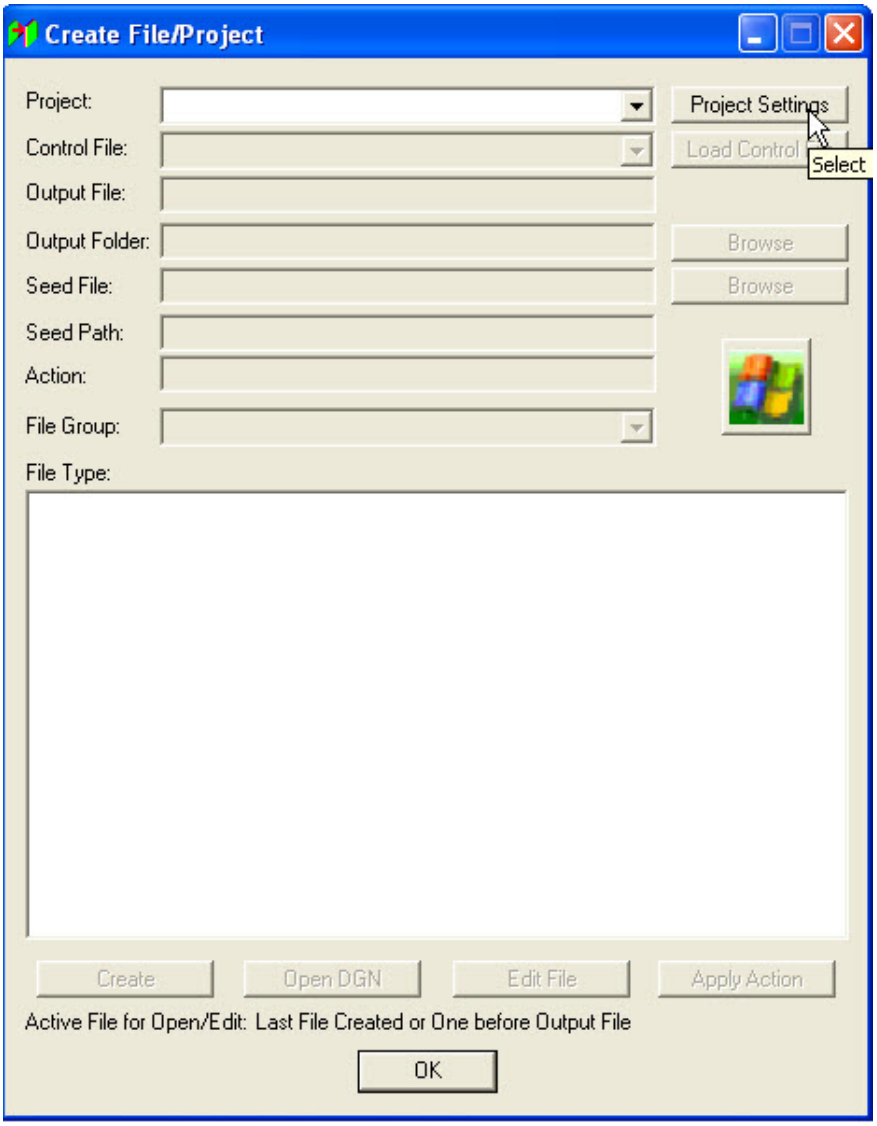
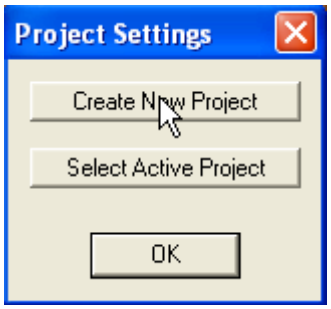


Create File/Project

Note Depending on tool usage, Create File/Project could be empty of a specific project, or it may contain information from a previously defined project.

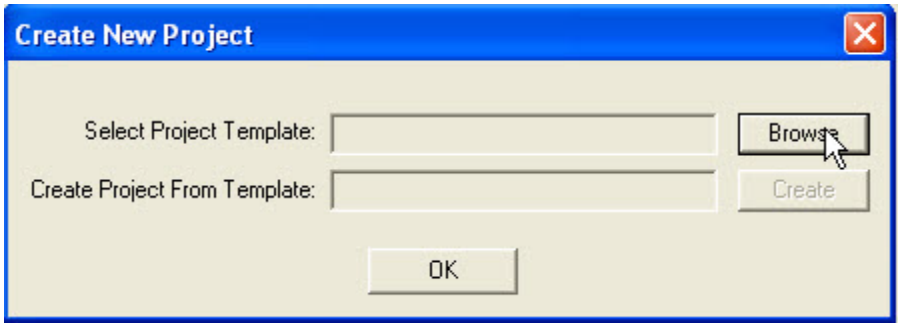
3. From Create File/Project, click the **Project Settings** button. Project Settings opens.



Project Settings

Note Project Settings allows the user to select an Active Project (a project that already exists). Once an active project is selected using this tool, the user can create files with FDOT standard naming conventions. The files are saved to that project's discipline directories.

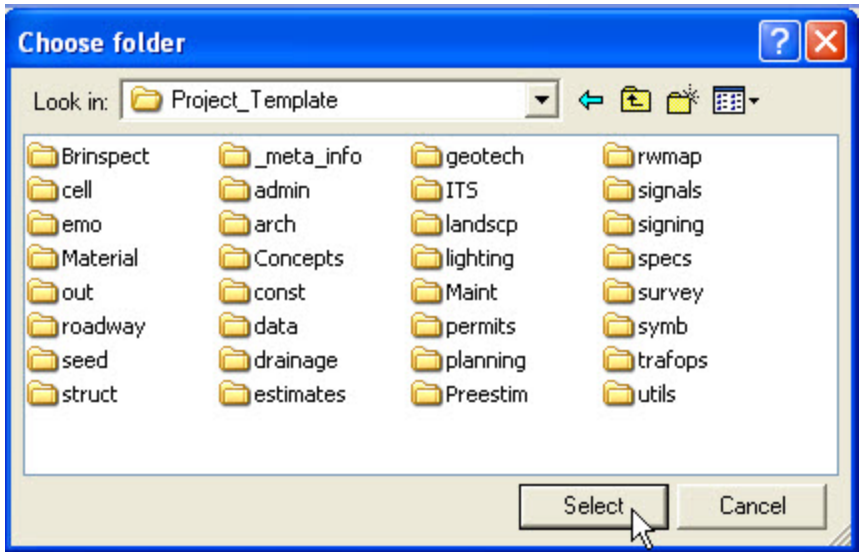
4. From Project Settings, click **Create New Project** button. Create New Project opens.
5. From Create New Project, click the **Browse** button. Choose folder opens.



Create New Project

6. From Choose folder, navigate to the **\FDOT2008** directory. Select the **Project_template** folder and click the **Select** button. Create New Project reappears.

Note This folder is located under the default directory of **\FDOT2008**, which could reside on the server depending on how your workstation software was configured.



Choose folder dialog box

Note The exercises and examples in this manual are using a default FDOT2008 installation to the local hard drive (C: Drive).

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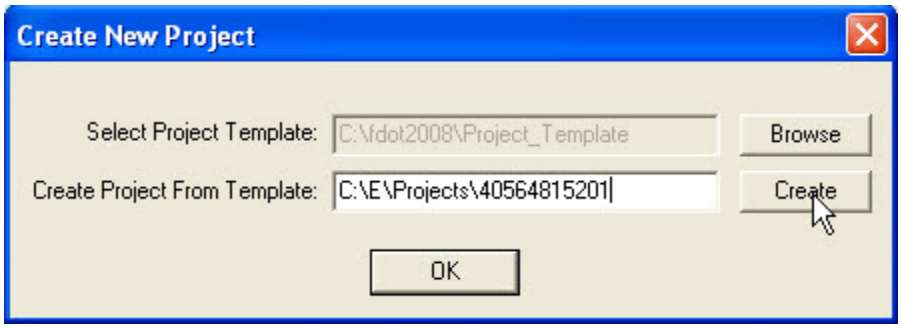
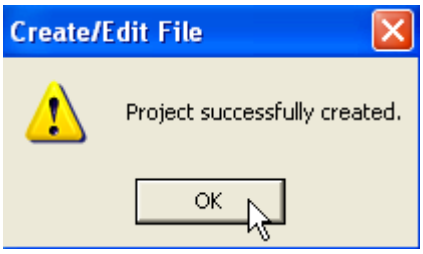


Create New Project

7. From Create New Project in the **Create Project from Template** box, type the default location for the project desired to be created.

Important For this exercise, the default location is **C:\E\Projects\40564815201** as shown in the figure above.

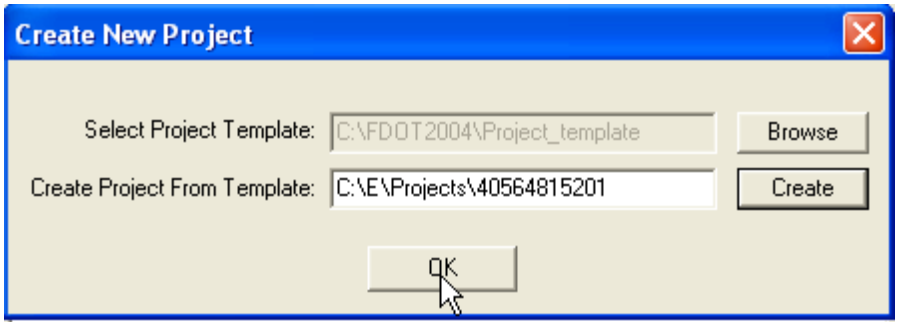
8. Click the **Create** button. Create/Edit File message opens displaying that the Project directory structure was successfully created (copied from the project template selected).



Create/Edit File

Note From Create/Edit File, click the OK button. Create New Project reappears.The user can create another new project directory structure, if desired.

9. From Create New Project, click the **OK** button. Project Settings opens.



Create New Project - New project has been created

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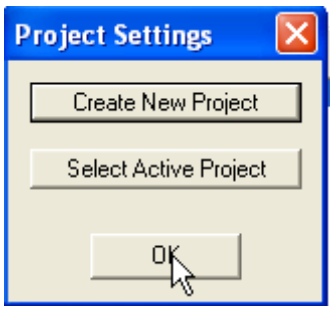
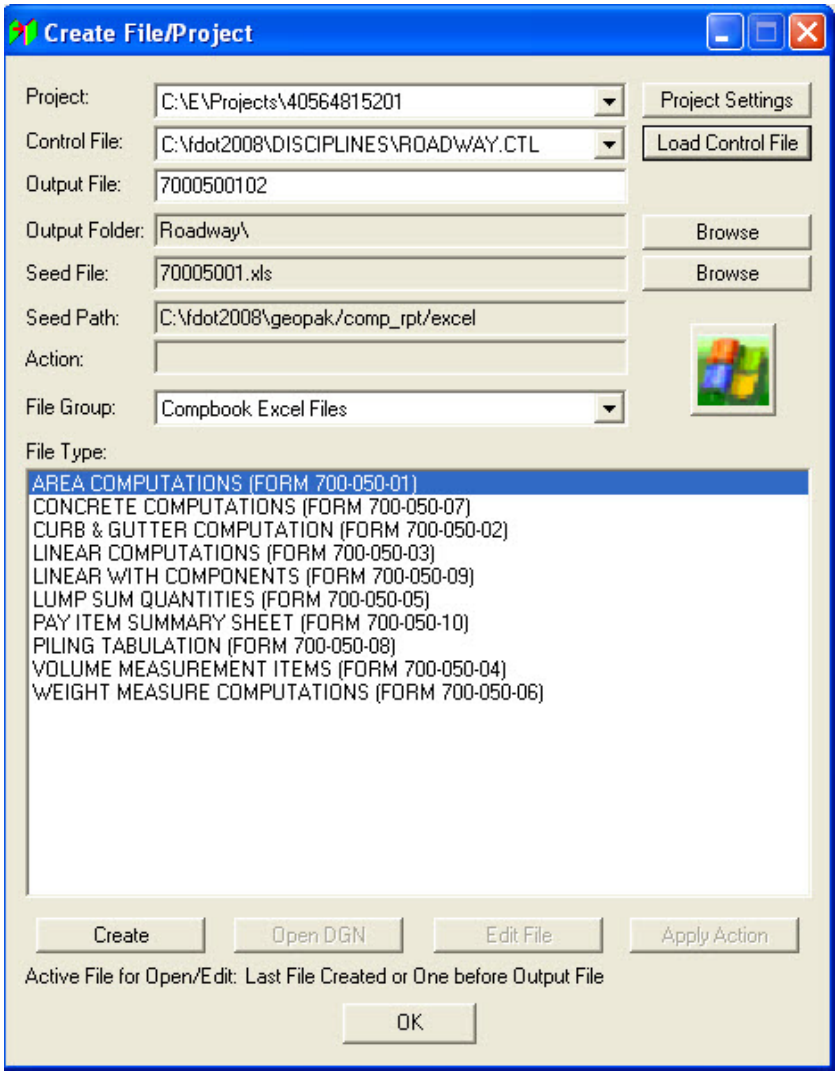
10. From Project Settings, click the **OK** button. If the project is new, Create File/Project reappears. If the Seed Project already exists, Create/Edit File opens with a warning that the Project already exists.



Project Settings



Create File/Project

Note It may be necessary to load the correct Control File upon the initial use of the application.

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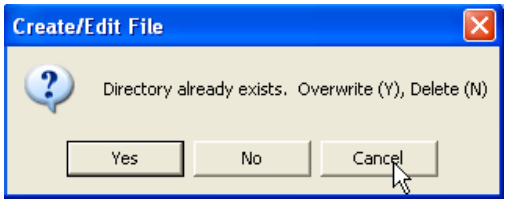


Create/Edit File

Note Upon completion of creating the Project directory structure, the user can also create design files to start production using Create File/Project.

Important Using Create File/Project to create a seed project does not create the MicroStation Project Configuration File (***.pcf**), nor the Project Identification File (**ProjectID.xml**) the way EDI2 does. This tool simply builds the FDOT standard project directory structure!

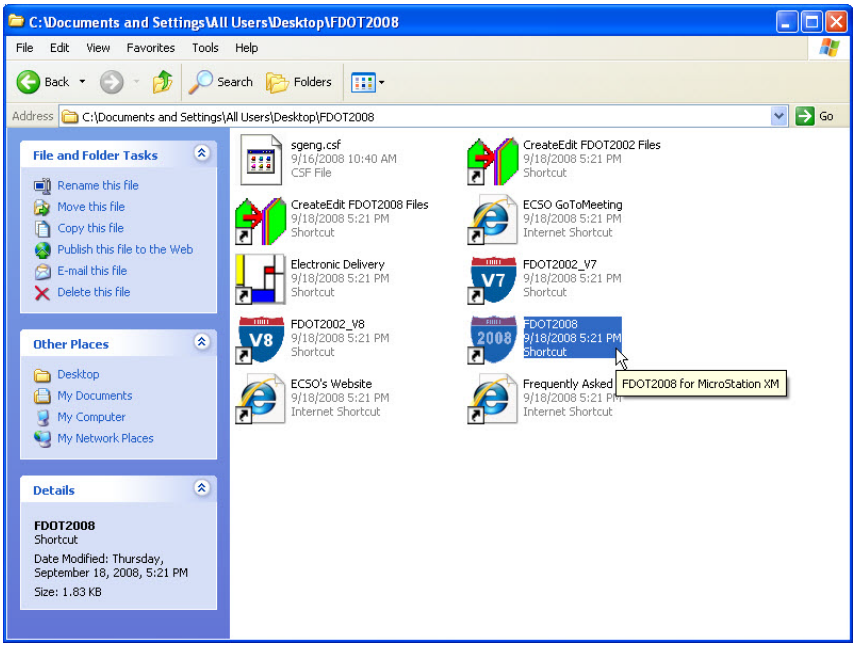
Important To create the Project Identification File (**ProjectID.xml**), run the ProjectID application from EDI2 (select **Tools** > **PEDDS (Execute PEDDS Operations and Applications** > **ProjectID... (Open the PEDDS Application**) or PEDDS (more on this later in the course).

Exercise 2.3 Creating a Seed Project Directory Structure (Optional Exercise)

An FDOT Seed Project directory structure can also be created using the MicroStation Manager. The following exercise demonstrates how to create a new Seed Project using the FDOT2008 workspace.

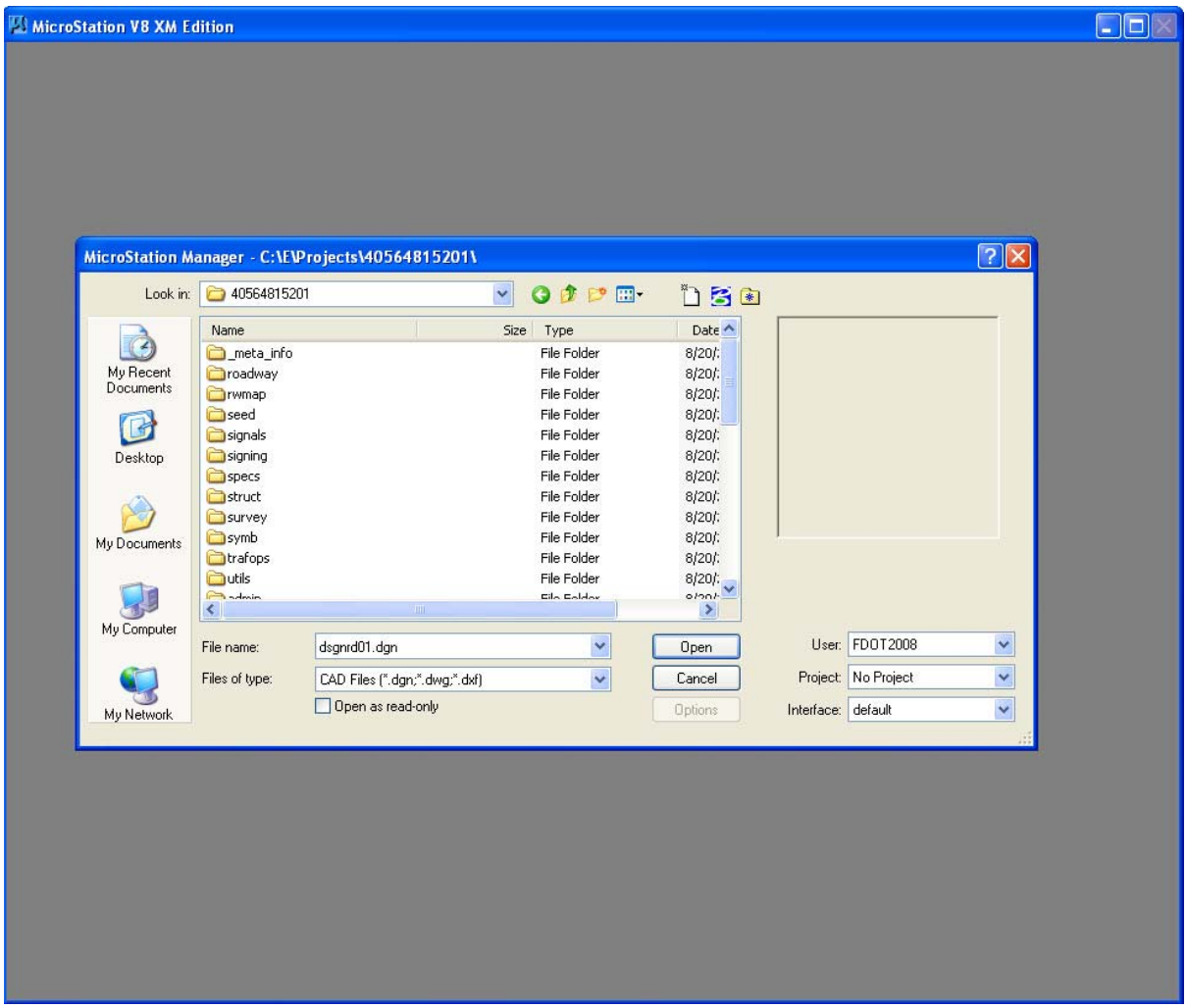
To create a new Seed Project directory structure using MicroStation XM

1. From FDOT2008, double-click **FDOT2008** icon.



Opened FDOT2008 Desktop Folder

2. MicroStation XM 2008 Edition and MicroStation Manager open.



MicroStation XM 2008 Edition - MicroStation Manager

Note When MicroStation XM 2008 Edition is started with the FDOT2008 short-cut, MicroStation XM starts using the proper FDOT2008 Workspace User and Interface. If a Project Configuration File (.pcf) exists, the Project area of the Workspace will have that project available. This .pcf file sets up reference information for the active FDOT project.

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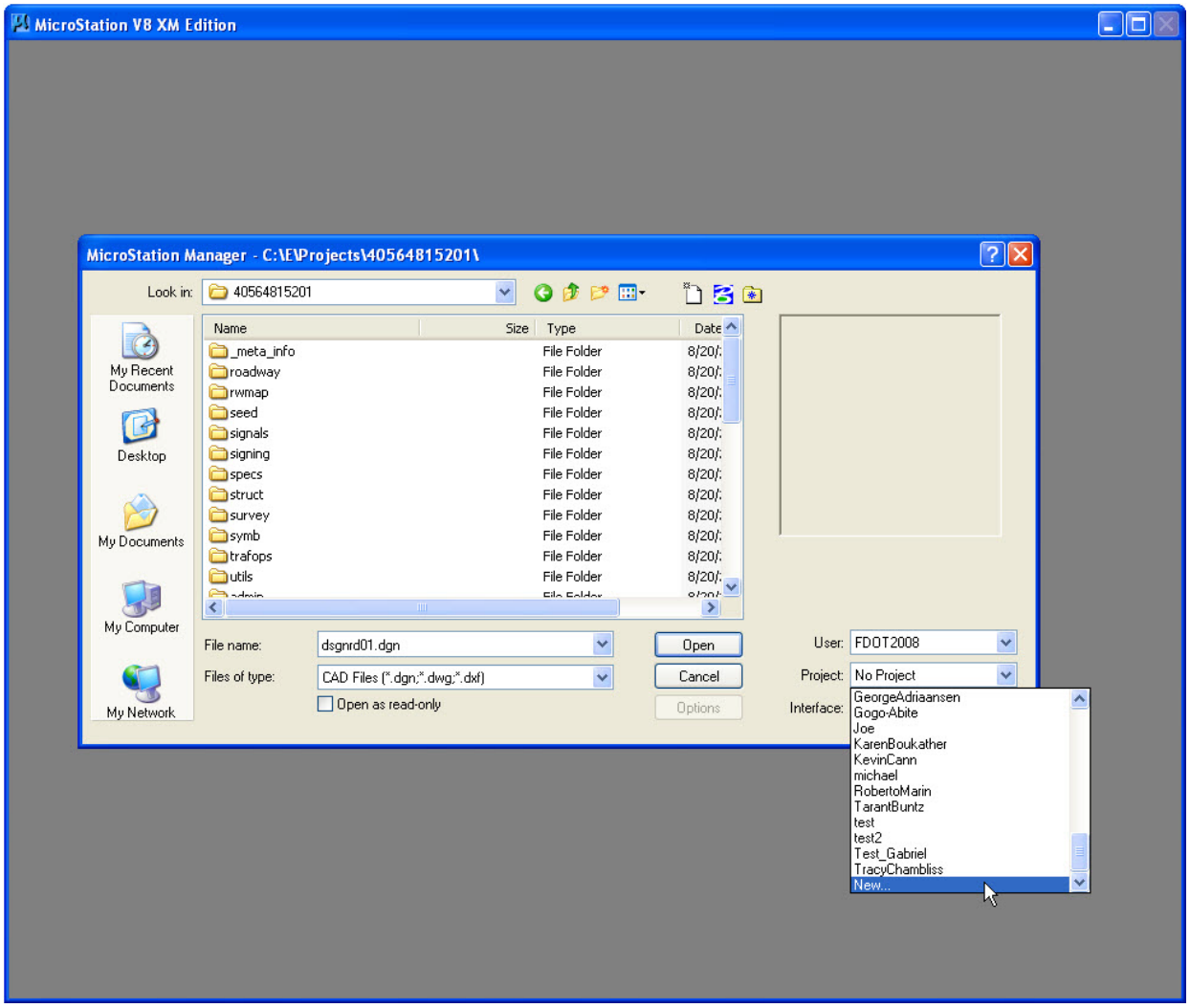
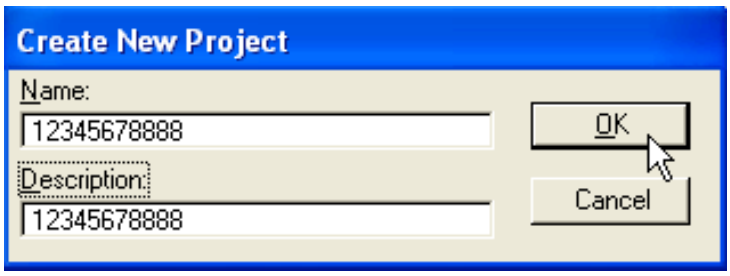
3. From **Project** list on MicroStation Manager**,** click the arrow and select **New**.

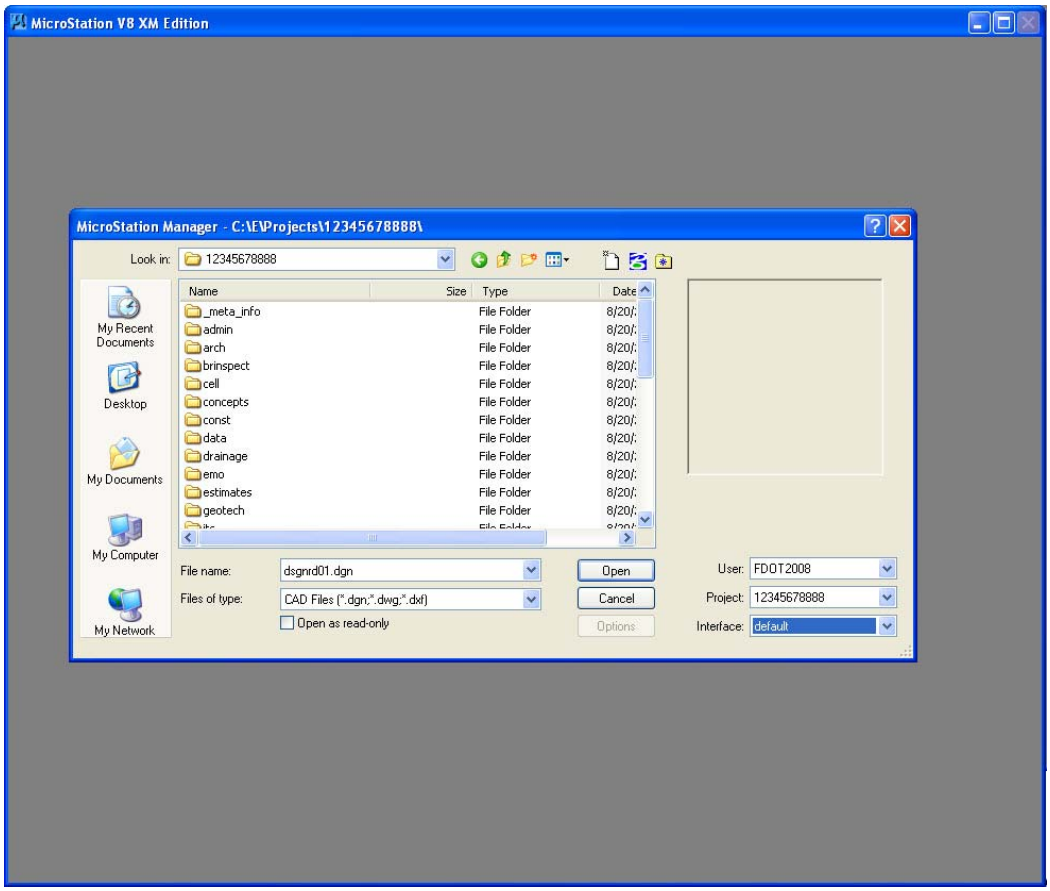


MicroStation Manager dialog

4. Create New Project displays. Type the 11-digit **Financial Identification Number (FIN)** in the **Name** box.
5. Type the same **FIN** In the **Description** box, as shown in the following figure.
6. Click the **OK** button. MicroStation Manager reappears with the newly created Project set as the active project.



Create New Project



MicroStation XM 2008 Edition - MicroStation Manager

Important If a user tries to create a Seed Project directory structure that already exists, MicroStation Manager does not re-create the Project; instead, the existing project is selected as the active project and no data is lost.

Tip Tip Upon completion of creating the Project directory structure, use Create File/Project to create design files to start production.

Note Using MicroStation XM 2008 Edition to create a seed project directory structure creates the MicroStation Project Configuration File (*.pcf), but does not create the PEDDS Project Identification File (ProjectID.xml). This tool only builds the FDOT directory structure.

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Section 2.3 An Introduction to PEDDS

by Elwin Broome, P.E., Former FDOT State CADD Coordinator

For the benefit of new Professional's Electronic Data Delivery System (PEDDS) users, this introduction restates some of the basic concepts about the PEDDS.

At the heart of the Electronic Delivery process is an application called the PEDDS. PEDDS was the first application developed in the Electronic Delivery software suite, and hence the "grandiose" name (the author of the software had very high hopes for what PEDDS might become). However, PEDDS is not a delivery system unto itself.

You will encounter the use of the PEDDS software early on in the Pre-Production phase of the Electronic Delivery process and training. The student must not become confused when mention is made of 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.

To speak of a "PEDDS project" means that the seed project directory structure created in the Pre-Production phase must also be introduced to the PEDDS application 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 a PEDDS project too. In other words, PEDDS now 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, re-securing can take place, re-authentication can take place, etc.

What actually happens when a directory structure becomes a PEDDS project? PEDDS needs a specific folder to store information. The _META_INFO sub-folder belongs to PEDDS. The EDI2, accessed via the Electronic Delivery Desktop, will create the _META_INFO directory (as will the other exercises in Section 2 previously.

When a directory structure is given to PEDDS to become a PEDDS project, the PEDDS software processes every single file in the complete directory structure that was defined to be the PEDDS project, and generates a "finger print" of each file (called a "hash code," or more formally, a "message digest") and a relative URL with which to know the path to the file from the project root directory. The hash code exists in the form of a strange looking series of digits 0-9 and letters A-F. PEDDS generates the number based solely on the content of the file (the name of the file or type of file does not matter). The number is referred to as a "hash" code because the algorithm used to generate the code is the Federal Department of Commerce's Secure Hashing Algorithm SHA-1 adopted in 1995.

Consider this:

The probability of two differing files (not the same content) having the same hash code value, i.e. the same "finger print", is, get ready for this, one over ten to the forty-eighth power! That's 1,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000! This is:

- The number of atoms in the Earth and Moon combined.
- **Greater than the number of nanoseconds in 4.5 billion years (the approximate age of the Earth), squared.**

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Example SHA-1 hash codes:

- ***E059A970 - E74332B9 - C88EFE6B - 07AEF50B - 8DAD3F1E***
- ***C67AA18D - BB796868 - 864D6012 - 20303B8B - 07CC4600***

Note These represent the hash code of a 200K MS Word document, #1 is the original, and #2 is the results of re-processing with PEDDS after adding only a single space!

Details regarding the PEDDS software and how it operates can be found later in this material. This brief introduction is provided to give the student awareness that a file or group of files can be processed with the PEDDS software, and if a single bit in any one of the files that has been made part of the PEDDS project, is altered, PEDDS will not authenticate the data. In other words the software will know the data has been changed.

PEDDS gives the Department, or consultant, a way to authenticate data given to a consultant. In case there are questions, both the Department and the consultant can run PEDDS to validate files that may be in question.

Likewise, when production is finished, the consultant can use the PEDDS software to process the final set of files with which he populated the directories of the seed project. The final processing allows the appropriate files to also be signed and sealed to meet all legal requirements, and the total set of files for the project is secured and can be authenticated later as needed.

It is important for the PEDDS user to understand the difference between data authentication and data validation. We tend to use the word authentication any time data is processed by PEDDS, when, in fact, true authentication only occurs when the hash codes produced by PEDDS for a given set of data are physically compared to, and agree with, the hash codes appearing on a printed sheet that is physically signed and sealed by the professional. PEDDS may process a set of data, and internally the hash codes may agree with those stored in the files for the data, yet the hash codes may not agree with the paper (data validates, but will not authenticate). So we must distinguish and understand the difference between data authentication and internal data validation.

Section 2.4 Preparing a Project for PEDDS

Before a project can be secured and sent to the design consultant, the project must first become known to PEDDS as a “PEDDS project. ”PEDDS is an application used to simplify tasks involved with file security. PEDDS allows professional users, known as “Signatories,” to electronically sign and seal electronic files. PEDDS is also used to secure data, ensuring that anyone can easily test to determine if a project has been changed, corrupted or tampered with.

Before PEDDS allows securing, a PEDDS Project ID and PEDDS Manifest file must be created. The Project ID file (ProjectID.XML) contains additional data (metadata) about the project including identities of key personnel, location information, etc., while the Project Manifest file (Manifest.XML) contains, amongst other information, the reasons why the project is being secured. PEDDS provides a means of creating a Project ID file through a separate application called ProjectID.EXE. Users may also use this tool to add or modify existing information in the Project ID file.

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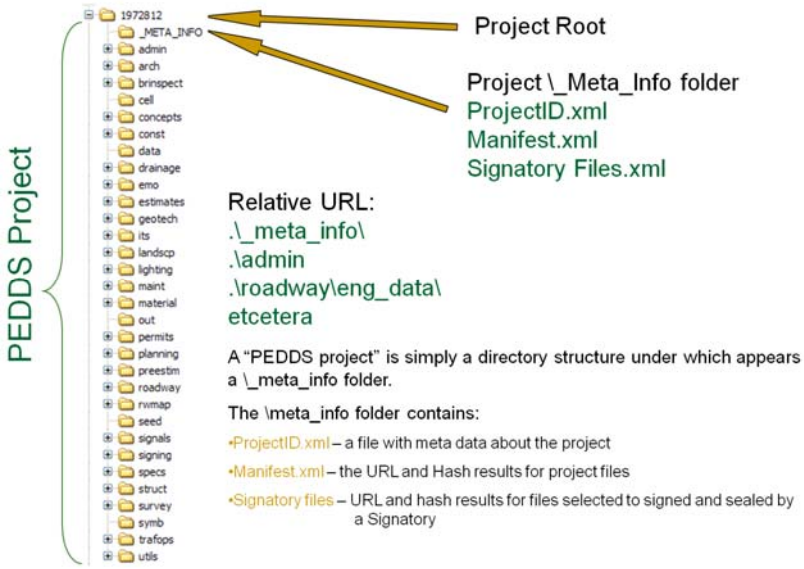
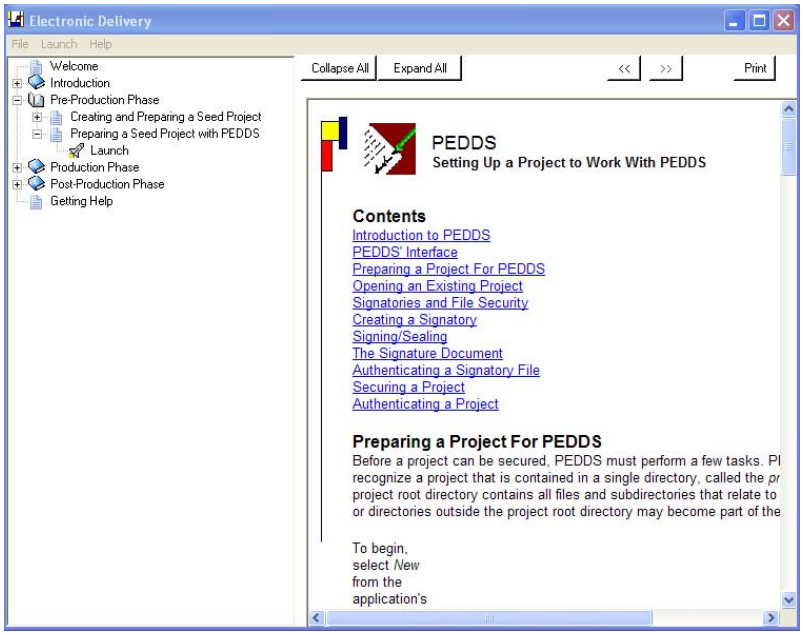
In addition to a _META_INFO directory (which stores the ProjectID.XML, Manifest.XML, and other files accessed by), a "PEDDS project" is defined by the set of directories and files existing in the directory structure beneath a parent directory (generally labeled with a valid FDOT project identification number), known as the project root directory. The project root directory is the directory created in Exercise 2.1. It contains all files and subdirectories related to the project, including the _META_INFO subdirectory used by PEDDS. No files or directories outside the project root Directory may become part of the PEDDS project. Before creating a new PEDDS project, the user must know which project directory structure PEDDS is to secure. Also note that all file operations (copy, move, etc.) are handled outside of PEDDS.



The following exercise details the steps to make an existing project directory PEDDS aware.



Preparing a Seed Project with PEDDS

Section 2.5 PEDDS Metadata

Due to the information needed to properly set up project metadata, FDOT strongly recommends that seed projects be prepared by the project manager in charge of the project or a responsible party charged with creating the project. This project metadata is created and stored in the PEDDS Project Identification file, ProjectID.xml.

Not all descriptive metadata about a project is required at project startup, but it is important to enter as much information as is known at the time to reduce errors, which need later correction. The information needed to completely set up project identification includes the following.

- Financial Project Identification Number (FIN No.), which becomes the project's folder name (11 characters as the default). **THIS IS REQUIRED.**
- Federal Aid Number, if applicable.
- Consultant Contact Number and Execution Date, if applicable.
- Project usage (As-designed, As-Built, As- Bid, or other).
- Location Information pertaining to the project, including County, Section/SubSection, Beginning Mile Post, and Ending Mile Post.
- Project Designation or local name (i.e., Veteran's Expressway).
- State Road Number(s) for the designated roadway.
- Disciplines that apply to the project.
- Bridge information, if applicable, including Bridge Number(s), Bridge On Surface designation, and Bridge Over Surface designation.
- A general project description (i.e., milling and resurfacing from A to B).
- A list of general key words pertaining to the project that can be searched for in the future.
- Any additional comments relative to the identification of the project.
- The name and title of the project’s FDOT Project Manager.
- The names and areas of responsibility for all Professionals of Record.
- The name of the Consulting firm or the FDOT District performing the work.
- The Consultant’s Vendor Number, if applicable.

If the Seed Project was created using EDI2, as in Exercise 2.1, most if not all of this information is already entered in the **Project Identification file**, ProjectID.xml. If any of the other tools were used to create a Seed Project, as in later exercises, **PEDDS** can be used to create the Project Identification File by selecting Project > Modify > Project ID.

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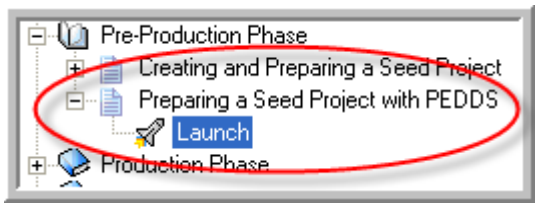
Exercise 2.4 Preparing a Seed Project with PEDDS

To prepare a project for PEDDS

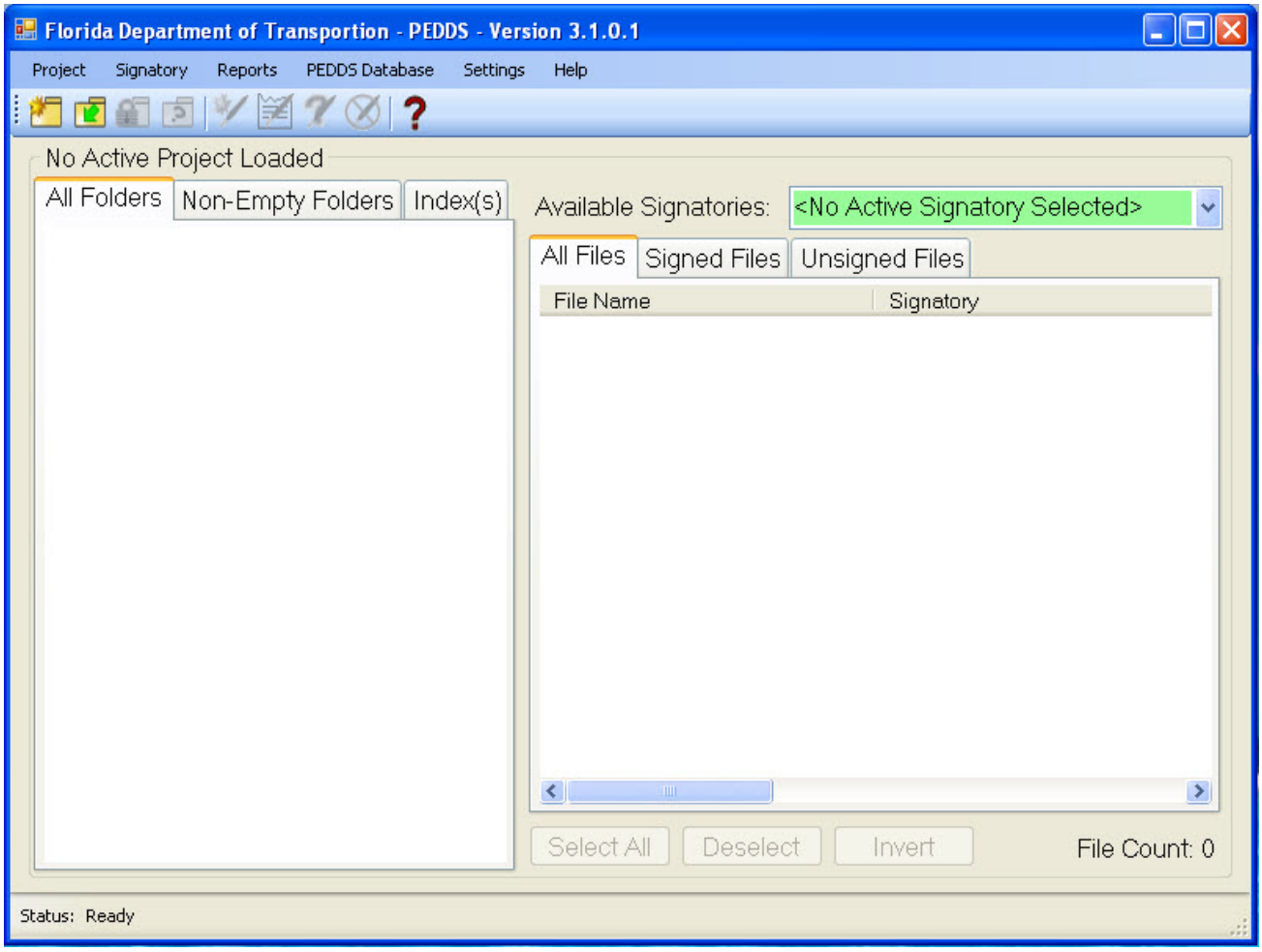
This exercise uses **Project 40564815201**, created in Exercise 2.2 using the Create File/Project application. Creating the Project Identification file is only needed, if EDI2 was not used to create the Seed Project.

1. In the **Preparing a Seed Project with PEDDS** folder, click **Launch**.



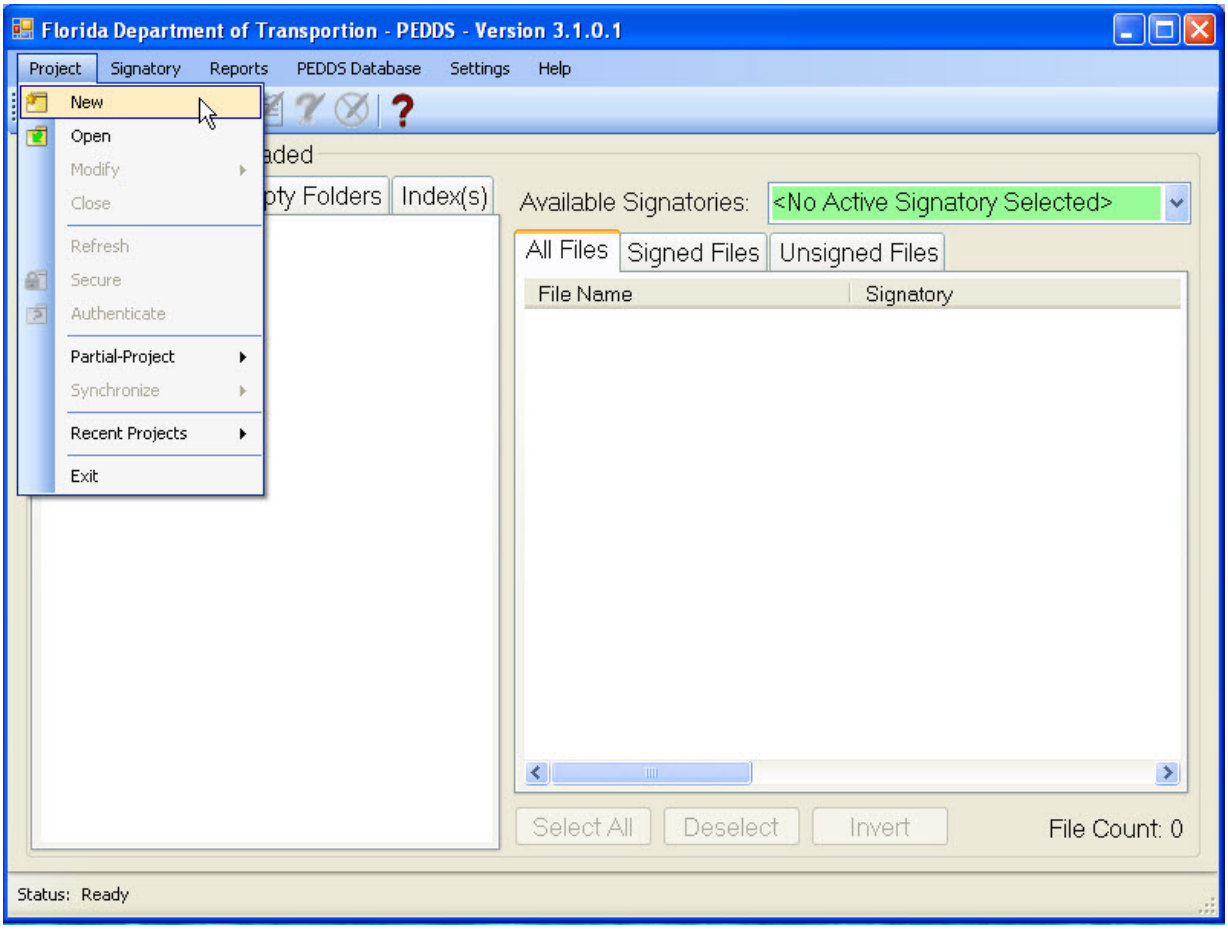
Launching Preparing a Seed Project with PEDDS

2. Florida Department Of Transportation - PEDDS opens.



Florida Department of Transportation – PEDDS 2.6 dialog

3. From the **Project** menu, select **New** --*or*-- click the **New Project** button in the toolbar.



Create a New PEDDS Project

Note Create a New Project appears several times during this process. Do not be confused. "New project" as it relates to PEDDS means making an existing project directory structure known to the PEDDS software, so PEDDS-related functions can be performed on the project directory structure. This process does not create any type of new physical directory or project structure; however, it does create a ProjectID.xml file in the project.

4. Create Project opens. Select the drive letter where projects reside.
5. Navigate through the project directory list and select the newly created seed project directory structure.

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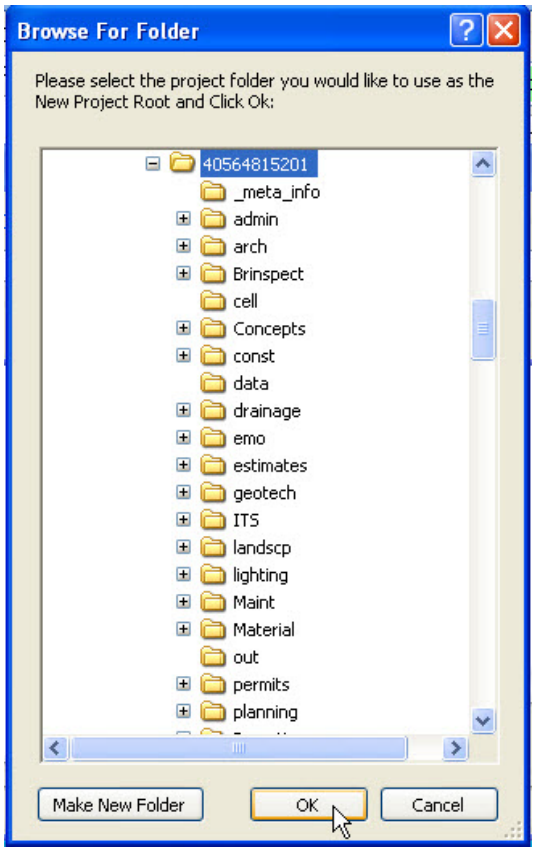
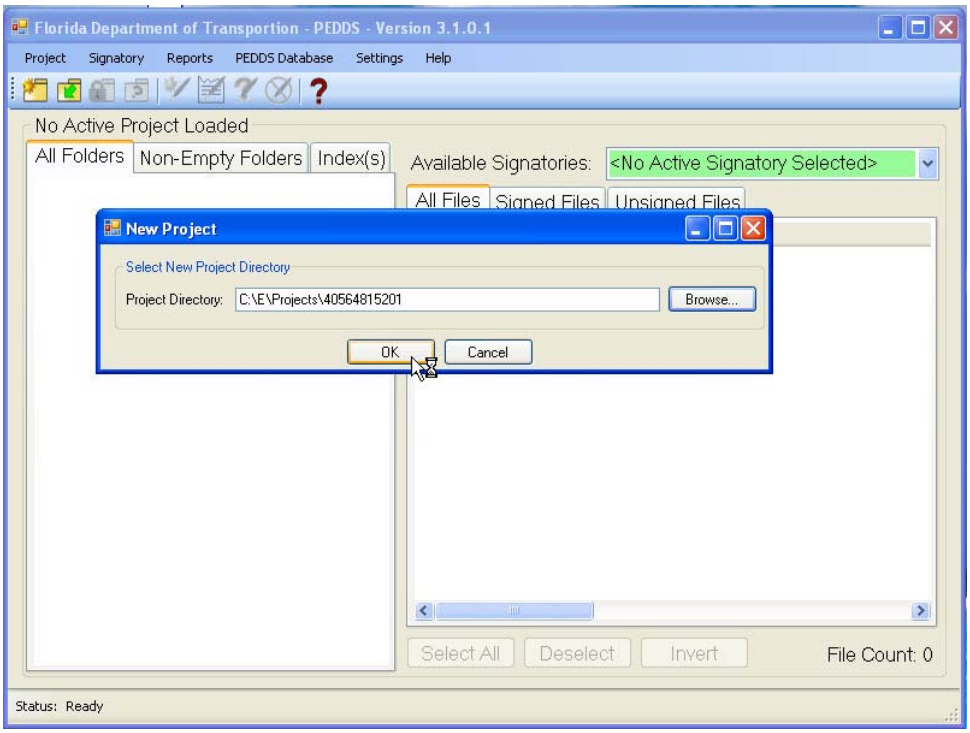
6. In **Current Path**, verify the selection of the project. Click the **OK** button to display Project ID.



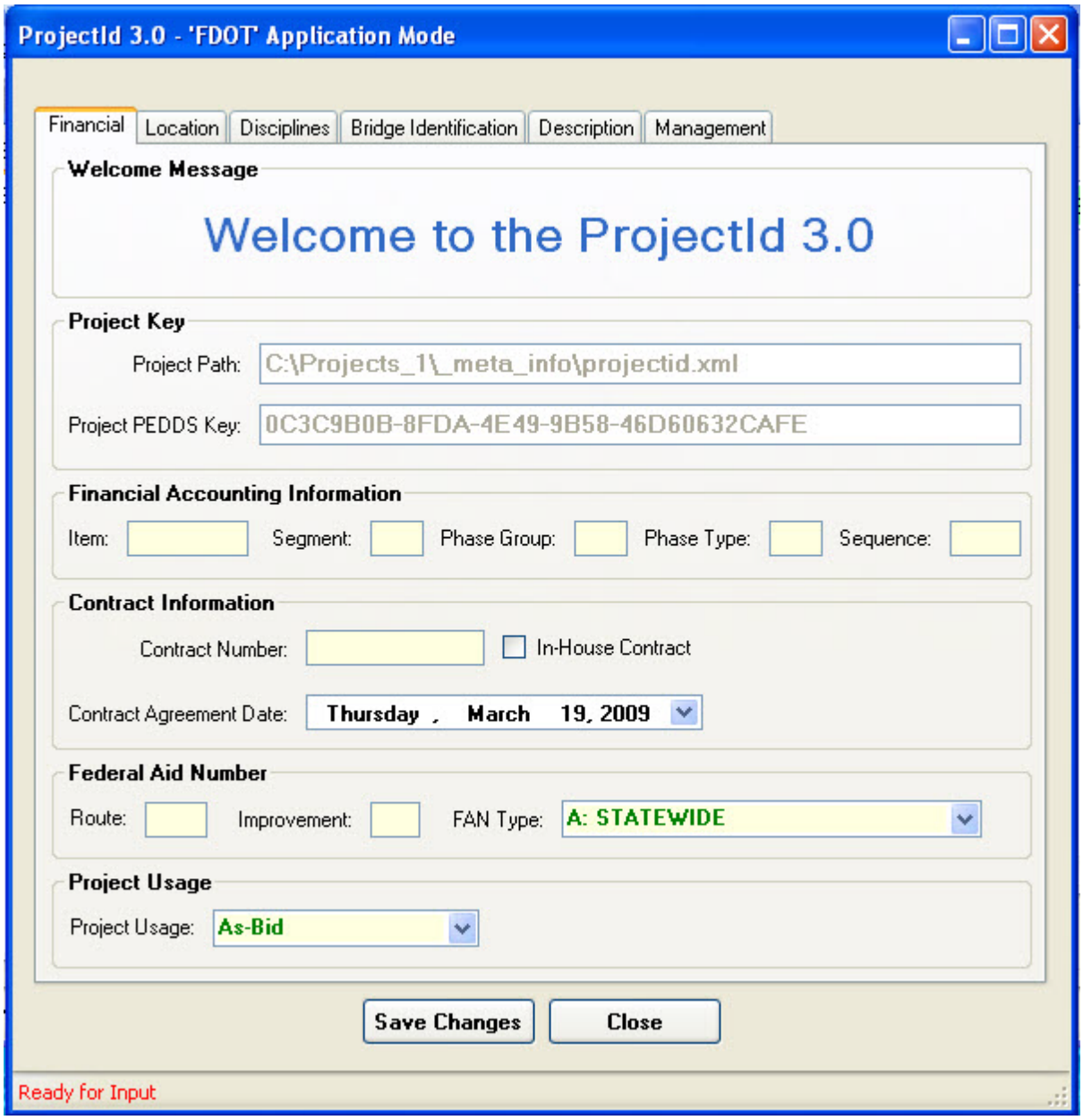
Browse for project in PEDDS



Create New PEDDS Project

Tip To scan the current drive for existing PEDDS projects, populate the **Find all Projects on Current Drive** checkbox.

Note Server drives must be mounted as a logical drive (A:, B:, C:, etc.), as PEDDS does not recognize UNC shares (i.e. \\servername\sharename\).



PEDDS - Project ID

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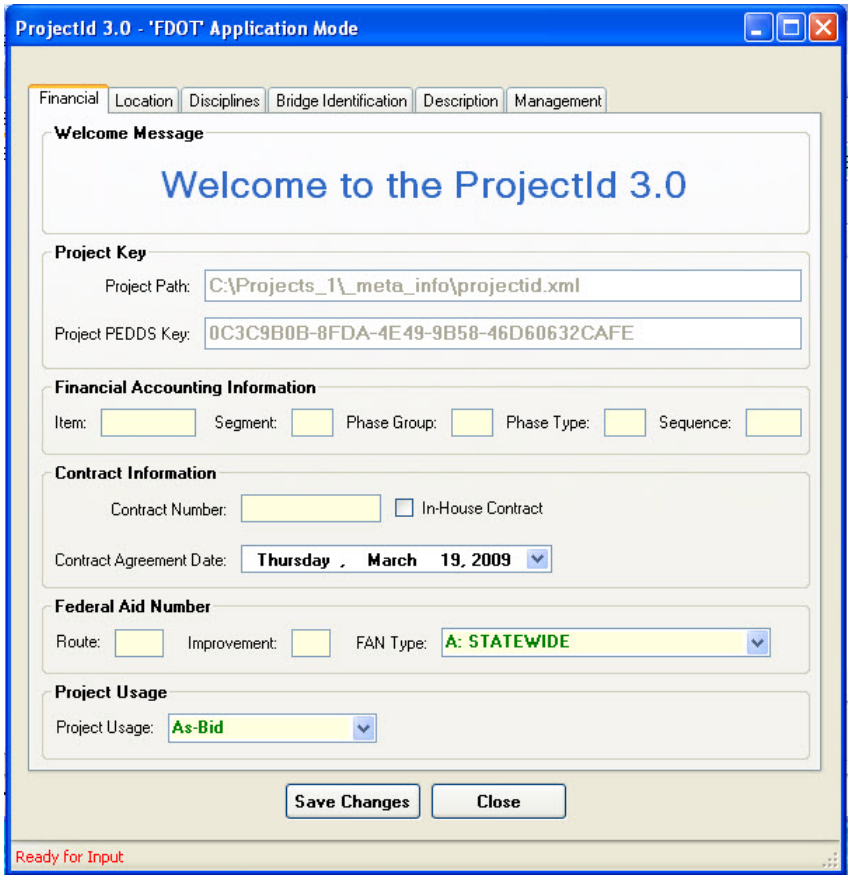
Exercise 2.5 Create a PEDDS Project ID File

To create a Project ID File

1. In Project ID, click the **Create/Edit a Project ID File** button to begin the process of creating or editing a PEDDS Project ID file. Project ID for PEDDS (Financial) displays.

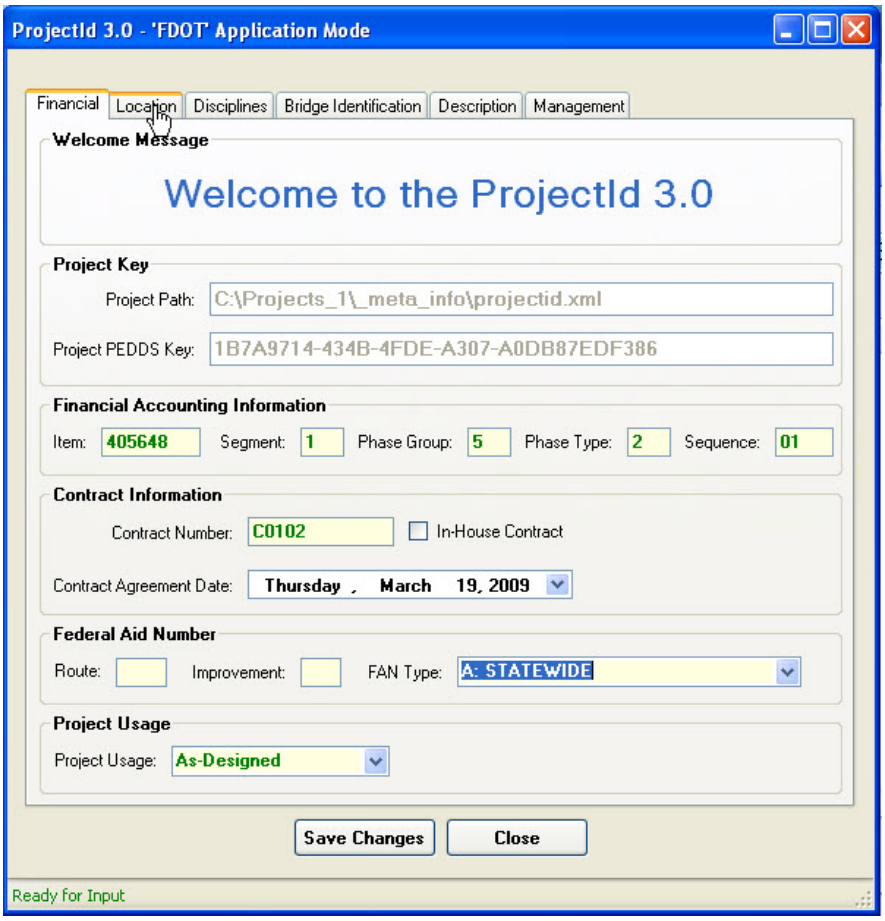


Project ID dialog

Note The information entered in the following steps can be updated at anytime using the same dialog boxes and sequence of steps. The purpose of these dialog boxes is to provide project specific identification variables to be used by subsequent software in the Electronic Delivery process to create reports, and allow search engines to locate projects by their identifying data (like finding a book in a library by looking up key data in a card catalog). These search engines are part of a server-side application called PEDDS/DB residing on FDOT servers to warehouse projects in an electronic form of a plans room.

All projects are identified uniquely by a Project Key, automatically generated by the system. The Project key is a Global Unique Identifier (or "GUID"), that never changes no matter how many deliveries of a project occur (including revisions). Even if projects root directory name changes, the Project Key should not change. The project key is stored in the Manifest.XML file, and the ProjectID.XML file and the Project key must match in both places.

2. Enter the **Financial Accounting Information**, (FIN), number used in the previous exercise (**405648-1-5-1-01**).
3. Enter the **Contract Number**. In house FDOT designed projects do not require a contract number. Populate the **In-House** checkbox for FDOT designed projects.
4. Verify the Contract **Agreement Date**.
5. Enter the **Federal Aid Number** (if applicable).
6. Designate the appropriate **Project Usage** option.



Project ID for PEDDS (Financial) dialog

7. Click the **Next** button to display Project ID for PEDDS (Location).
8. In each of the **Physical Location** fields found below the grid control, enter the appropriate value.
9. After all values are entered, click the **Add** button. The information is added to the Physical Location grid collection above. More than one physical location can be added to the collection if warranted.
10. To make a correction to the values just entered, select the value from the grid, type the new information and then click the **Modify** button.

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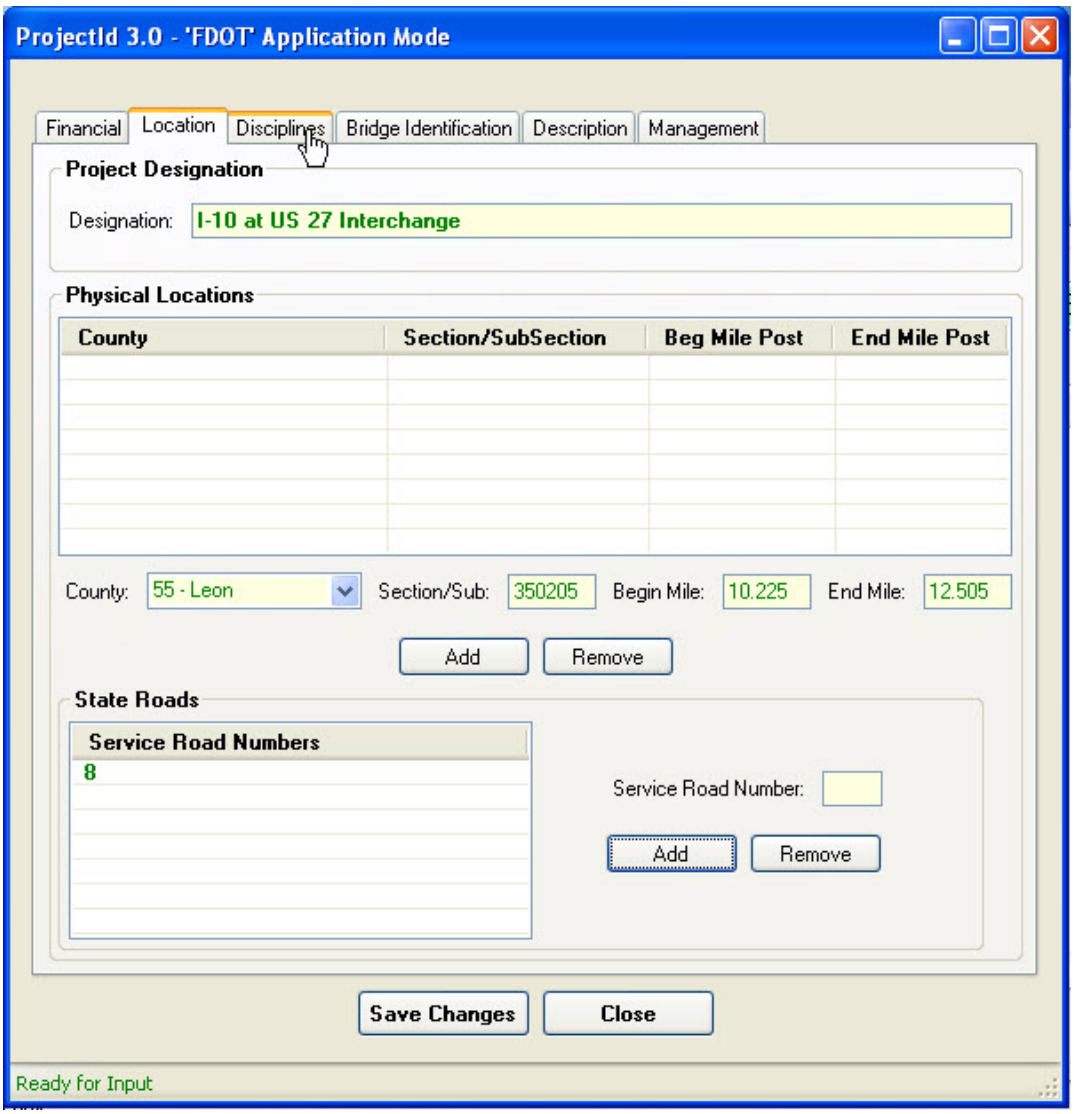
11. Type the **Designation** (common name of the facility).



Project ID for PEDDS (Location) dialog

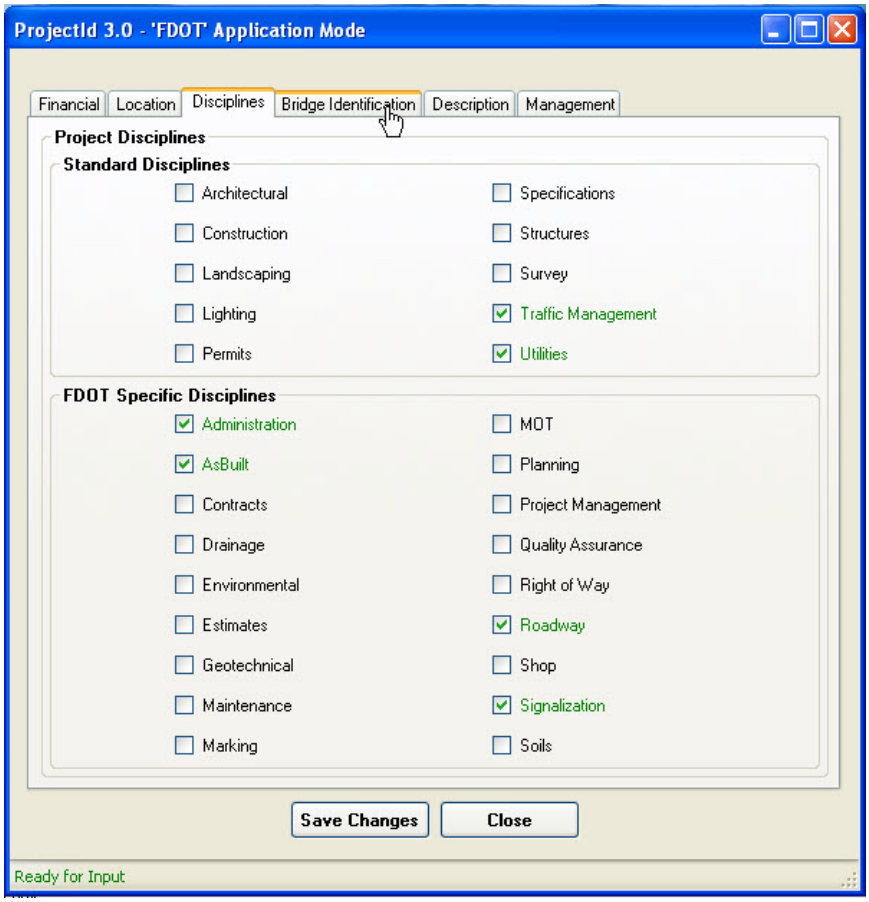
12. Enter the **State Road Number** and then click the **Add** button. More than one State Road number may be added to its collection grid.

Note If the user attempts to add an invalid county number, a warning appears. The figure below is a Table of County Numbers from PEDDS on-line help.

FDOT District 1	FDOT District 2	FDOT District 3	FDOT District 4	FDOT District 5	FDOT District 6	FDOT District 7
01-Charlotte	26-Alachua	46-Bay	86-Broward	70-Brevard	87-Miami-Dade	02-Citrus
03-Collier	27-Baker	47-Calhoun	88-Indian River	73-Flagler	90-Monroe	08-Hernando
04-DeSoto	28-Bradford	48-Escambia	89-Martin	11-Lake		10-Hillsborough
05-Glades	71-Clay	49-Franklin	93-Palm Beach	36-Marion		14-Pasco
06-Hardee	29-Columbia	50-Gadsden	94-St.Lucie	75-Orange		15-Pinellas
07-Hendry	30-Dixie	51-Gulf		92-Osceola		
09-Highlands	72-Duval	52-Holmes		77-Seminole		
12-Lee	31-Gilchrist	53-Jackson		18-Sumter		
13-Manatee	32-Hamilton	54-Jefferson		79-Volusia		
91-Okeechobee	33-Lafayette	55-Leon				
16-Polk	34-Levy	56-Liberty				
17-Sarasota	35-Madison	57-Okaloosa				
	74-Nassau	58-Santa Rosa				
	76-Putnam	59-Wakulla				
	78-St. Johns	60-Walton				
	37-Suwannee	61-Washington				
	38-Taylor					
	39-Union					

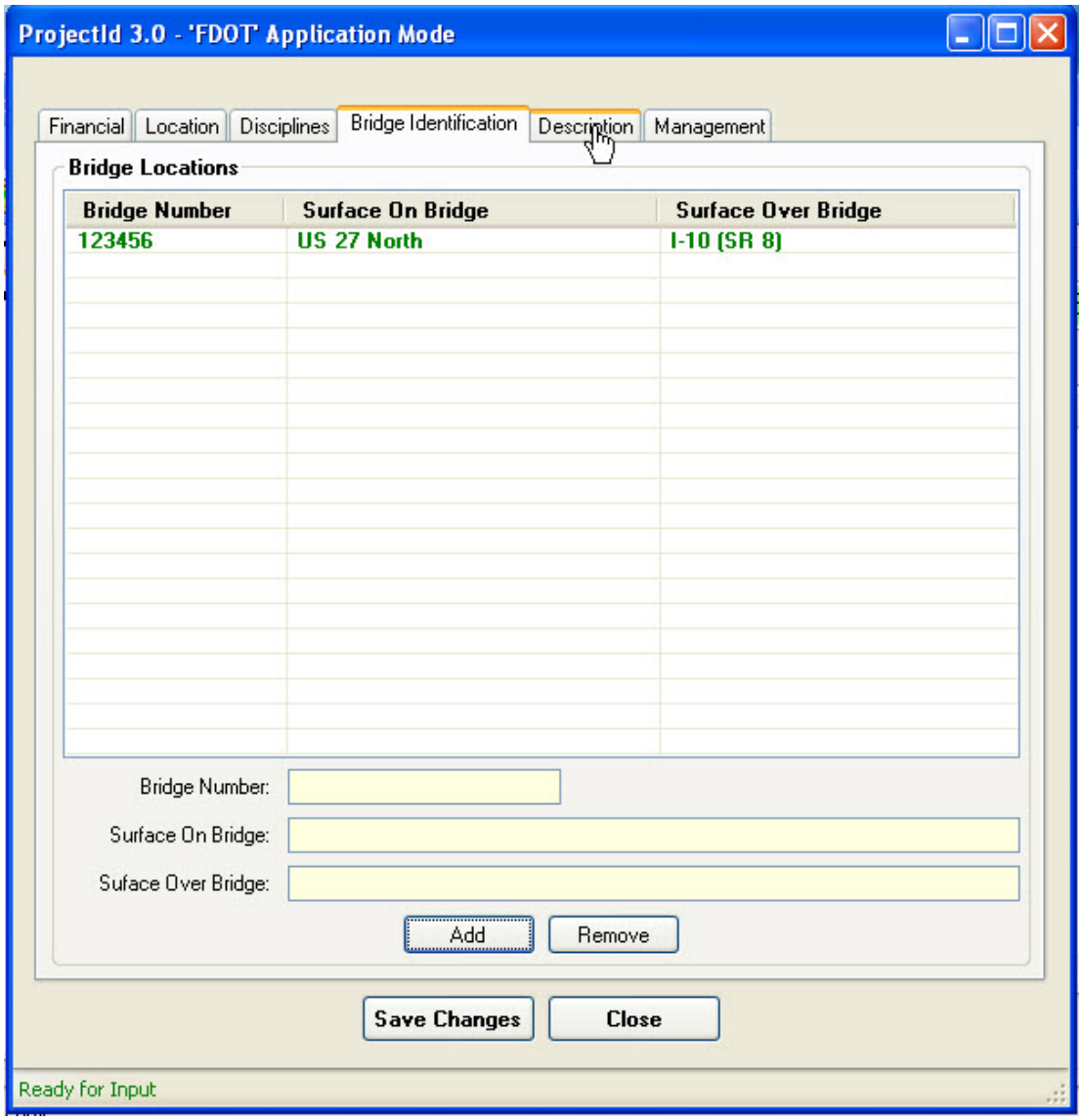
Table of County Numbers from PEDDS On-Line Help

13. Click the **Next** button to display Project ID for PEDDS (Disciplines).
14. Select any disciplines that are known for the project and then click the Next button to display to display Project ID for PEDDS (Bridge Identification) .



Project ID for PEDDS (Disciplines) dialog

15. Enter the 6-digit Bridge Number as defined in the National Bridge Inventory (NBI) file.

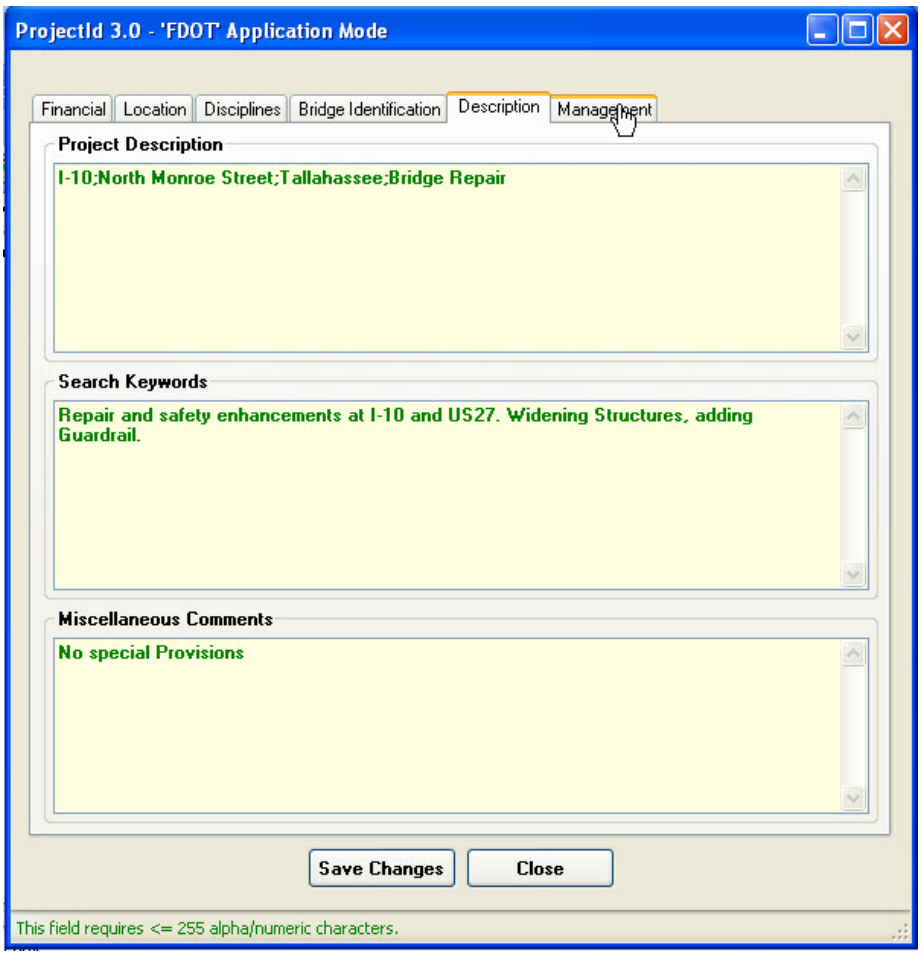


PEDDS - Bridge Identification dialog box

CAUTION If something other than 6 digits is entered and the **Add** button is clicked, this causes an error, known as an error trap. **Enter only 6 digits**.

16. Enter the **Surface On Bridge** description.
17. Enter the **Surface Over Bridge** information, and then click the **Add** button. Once information is added, the **Add** button is dimmed.

18. Click the **Next** button to display. Project ID for PEDDS (Description).



PEDDS - Project Description dialog box

19. Type any **Key Words** about the project. These can be used later to search in PEDDS DB.

Important In Project Description, separate the text phrases in the Key Words field by semi-colons (;).

20. Type a general **Project Description** about the project. This should be a verbose, detailed description of the project. It appears in reports generated during other Electronic Delivery operations.

21. Type any **Miscellaneous Comments** about the project. This is internal data that does not appear in subsequent reports.

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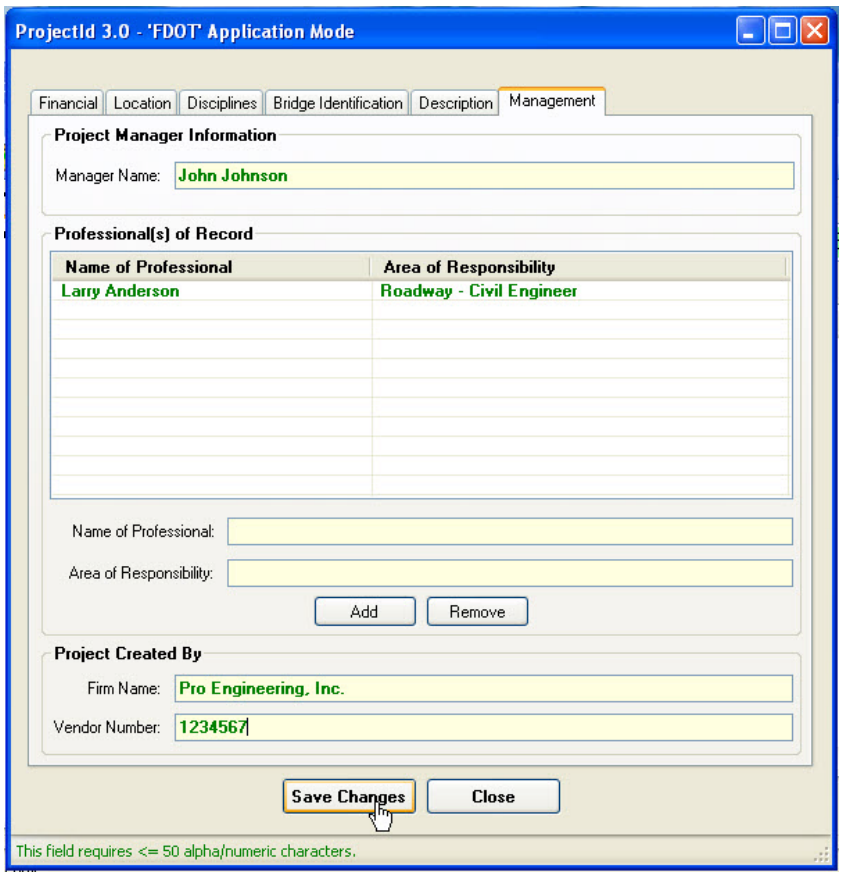
22. Click the **Next** button to display the Project ID for PEDDS (Management).



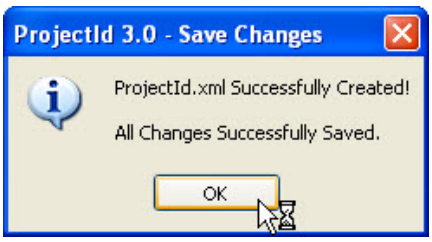
PEDDS – Project Management dialog box

23. In the **FDOT Project Manager** box, enter the names of all FDOT Project Managers.

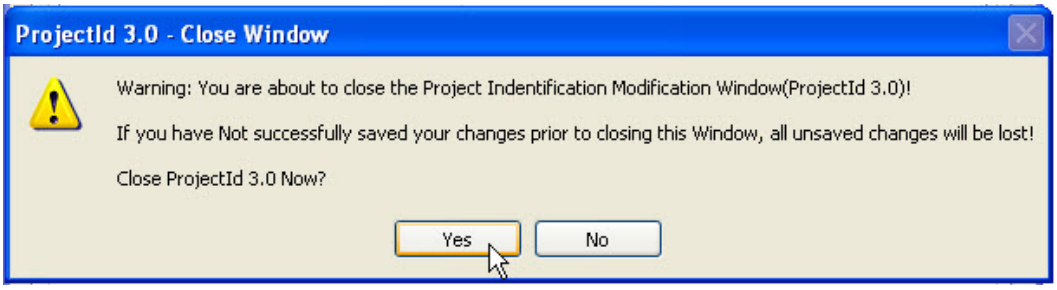
Important Separate each Project Manager's name by a semi-colon (;) if there is more than one.

24. In the **Name of Professional** box, enter the name of a professional of record *anticipated* to participate on the project.
25. In the **Area of Responsibility** box, enter the type of work that the Professional of Record is responsible for.
26. Click the **Add** button. To enter additional Professionals of Record, if needed, repeat steps 23-24 for each one.
27. To make a correction to a Professional of Record, select the entry from the grid, make corrections in the edit fields, and click the **Update** button.
28. In the **Name of Firm** field, type the name of the firm working on the project, or the FDOT district number (i.e., "FDOT District 4").
29. In the **State Vendor Number** field, type the Vendor number.

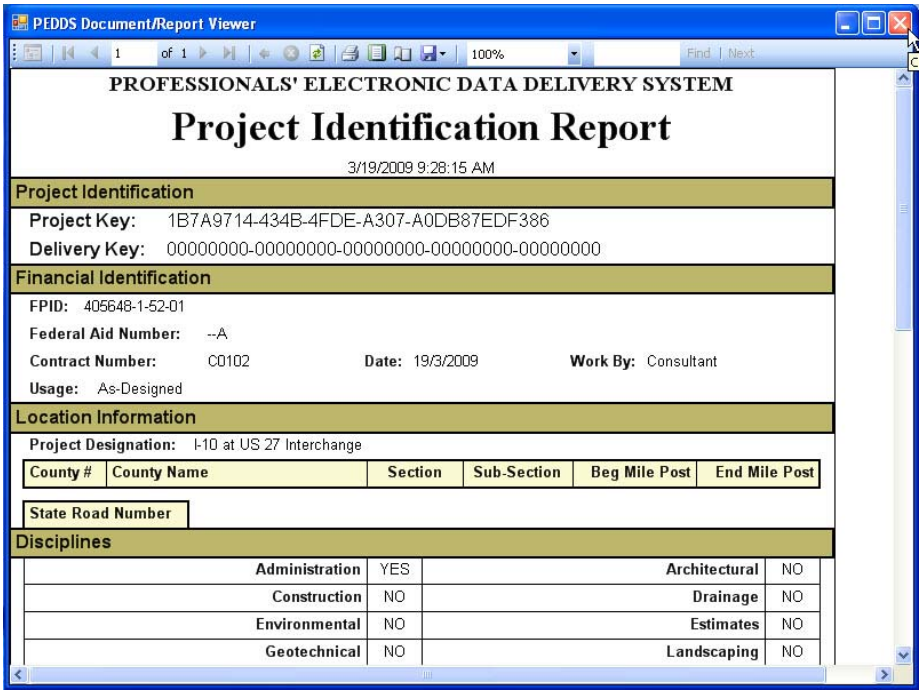
30. Click the **Finish** button. Project ID re-opens with the entered project information.



PEDDS – ProjectId Save Changes confirmation



PEDDS – Close ProjectId dialog box



PEDDS - Project ID dialog box

Tip The Project ID entries can be verified by scrolling up and down the dialog box. If any information is incorrect, click Create/Edit a Project ID File to return to previous dialog boxes.

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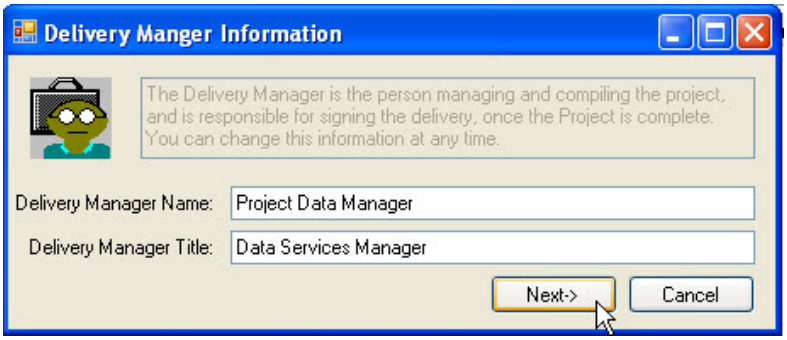
Exercise 2.6 Creating PEDDS Project Header Data in Manifest.XML

The creation of the PEDDS Project Header Data (Delivery Manager and Description) in this exercise is a continuation of the creation of the Project Identification. The Project header data is stored in the Manifest.XML file. If the Project was created using the EDI2 application, the user will not be able to create the Project Header as shown in this Exercise. Instead, see Exercise 2.8 for the method to modify the Project Header.

To create a Project Header continuing from the creation of the Project Identification:

1. Continuing in Project ID, click the **Next** button. Delivery Manager Information opens.

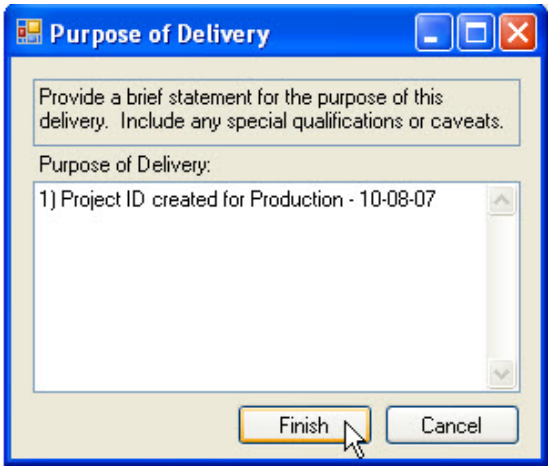


PEDDS - Project Manager Information dialog

2. In Delivery Manager Information, enter the Delivery Manager Name.

Note The Delivery Manager is the person managing the data, not necessarily the Project Manager overseeing the plans/specs development (although it could be). This Delivery Manager is the person securing the seed project prior to transmittal to the design consultant and authenticating the data delivered to the Department following the Production phase.

3. In the **Delivery Manager Title** field, type his/her Title, then click the **Next** button. Purpose of Delivery opens.



PEDDS Purpose of Delivery dialog box

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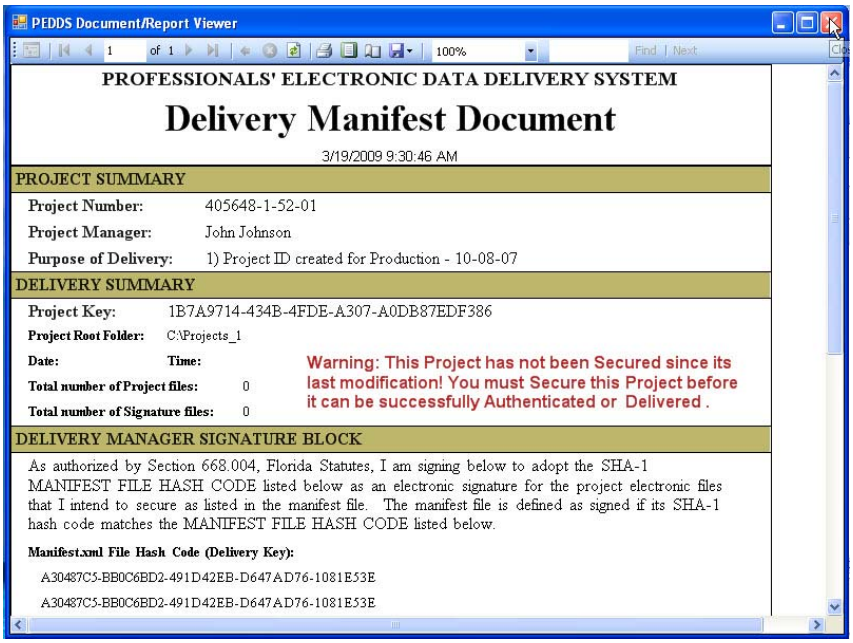
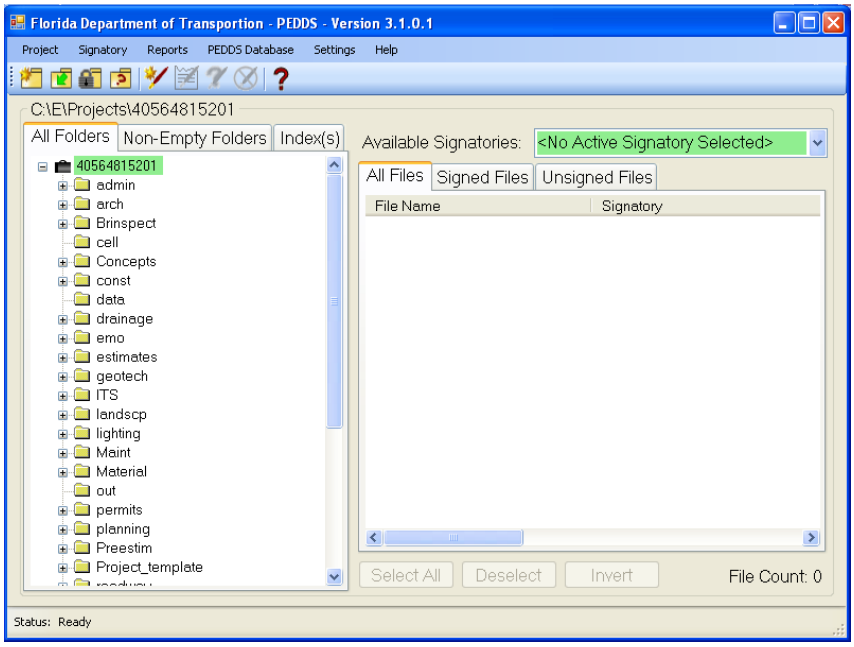
4. In **Purpose of Delivery**, enter a brief project description for the purpose of the delivery and the reasons for securing the project



PEDDS - Project Description dialog box

5. Click the **Finish** button. Florida Department of Transportation - PEDDS opens with the information from Project ID added to the _meta_info folder. A **Manifest.XML** file is also created that contains the project header data just entered (Delivery Manager and Description).



PEDDS window

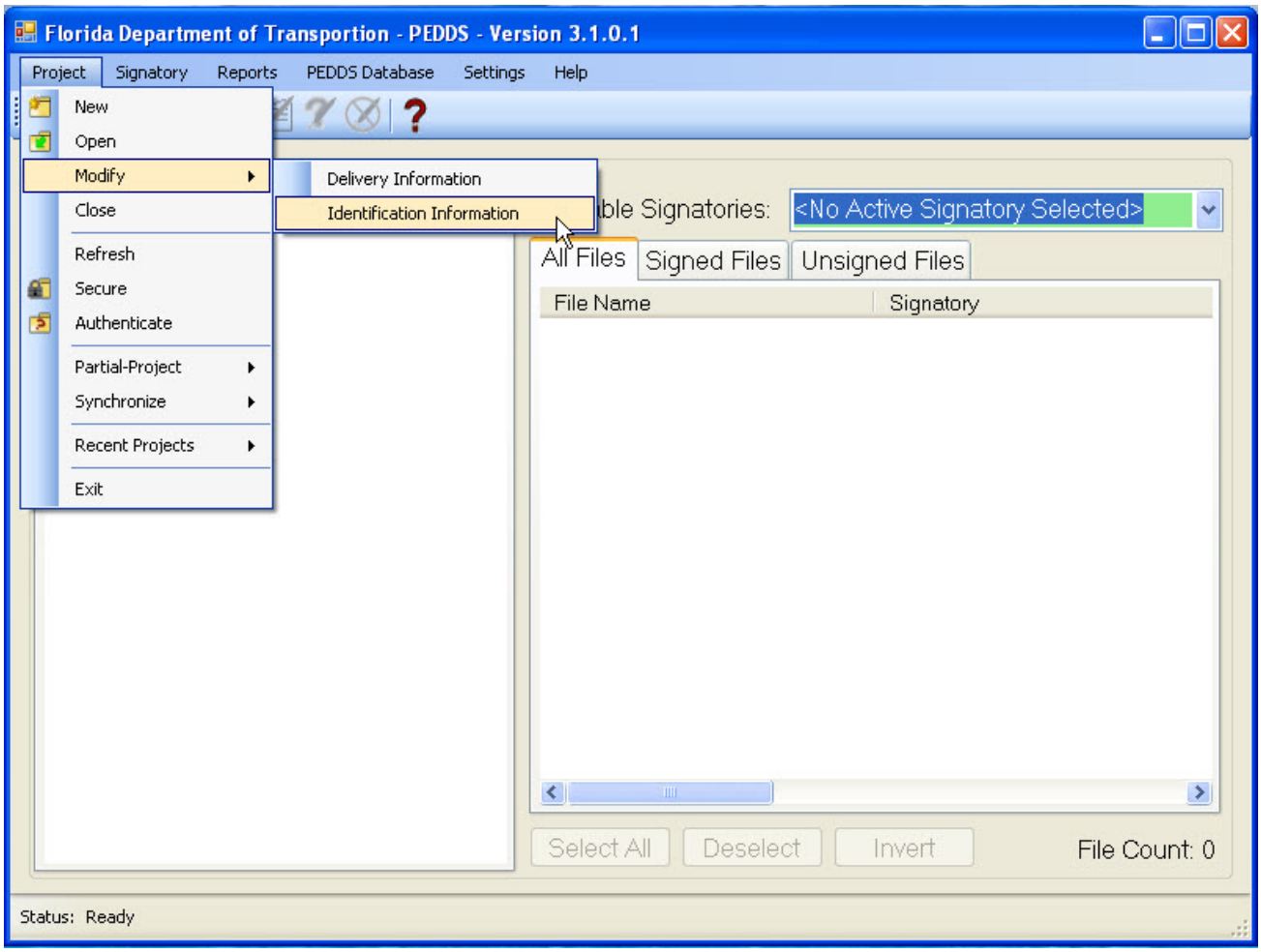
Note PEDDS now displays a briefcase icon for the project just entered. This indicates that PEDDS now recognizes the project.

Exercise 2.7 Modifying a PEDDS Project ID file

Once created, Project Managers, Prime Consultants and Sub Consultants can modify the Project ID as necessary to reflect current information. Examples for modifying a Project ID would be adding Professional of Records, disciplines, or making corrections to erroneous information.

To modify a PEDDS Project ID from PEDDS

1. From the **Project** menu, select **Modify** < **Project ID**. Project ID opens.



PEDDS - Modify Project ID

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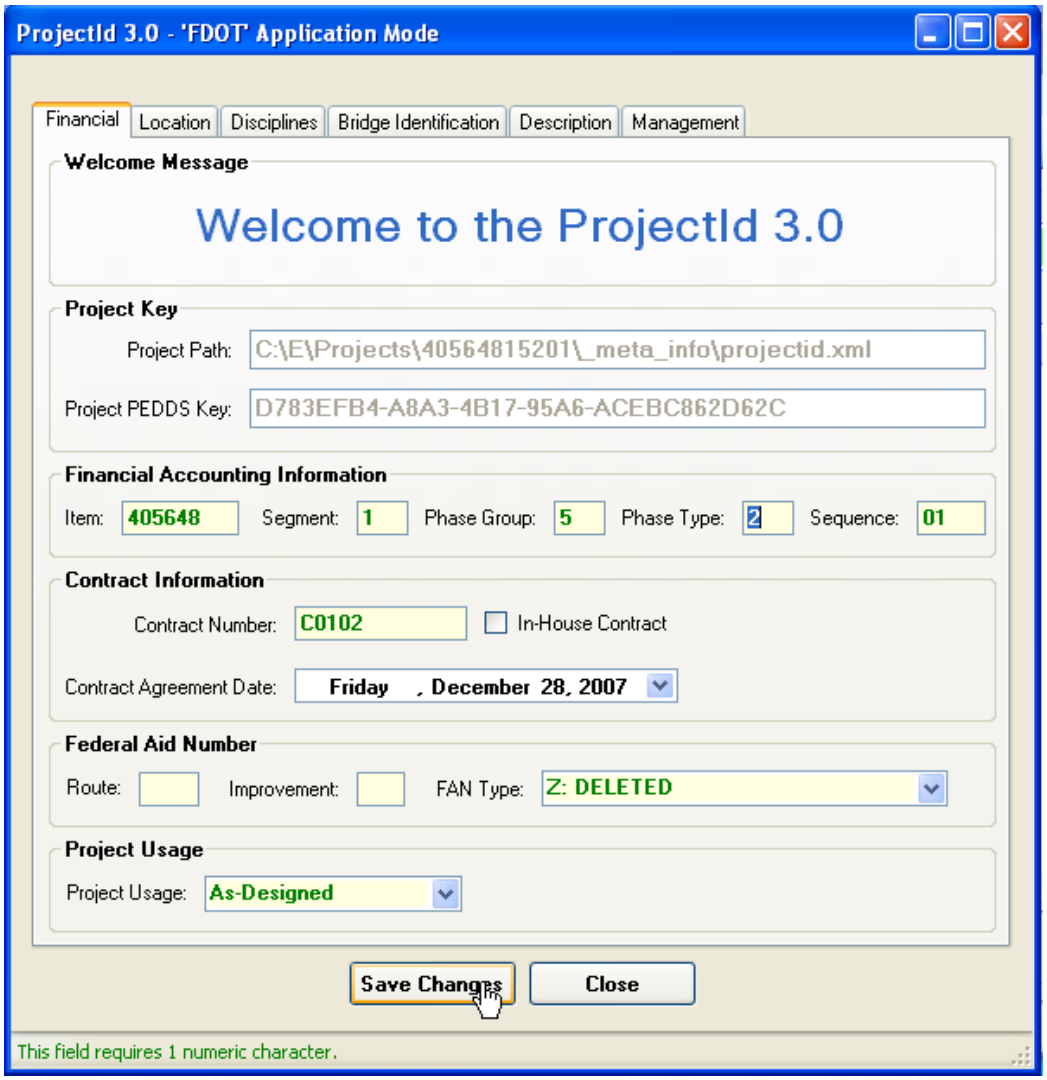
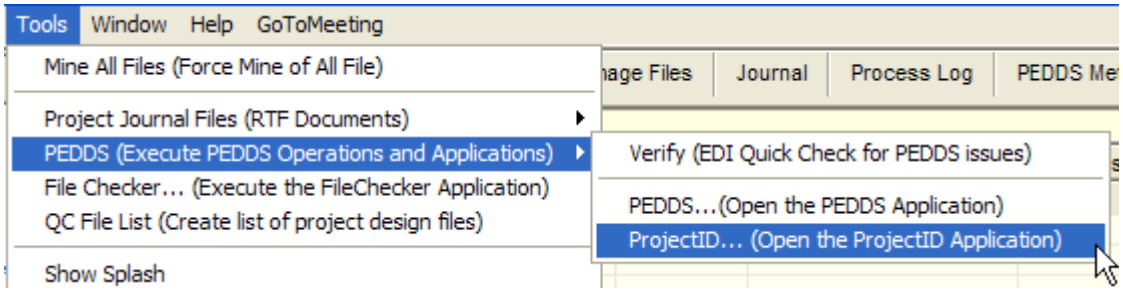
2. In Project ID, begin editing the PEDDS Project ID file. Refer to Exercise 2.5 and modify the Project ID as required.



PEDDS - Project ID (Editing the Project ID)

Note As previously mentioned, the Project ID for PEDDS application can also be accessed from EDI2:



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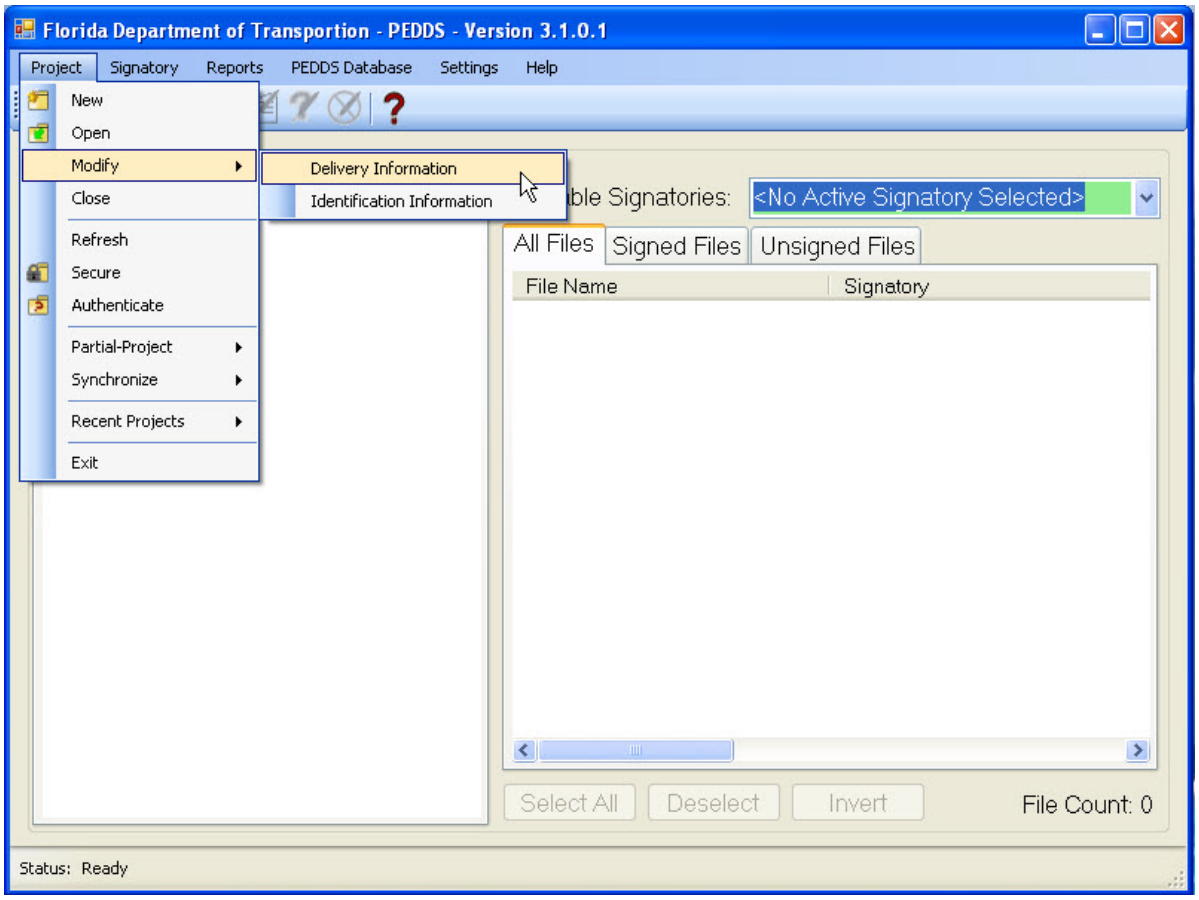
Exercise 2.8 Modifying a PEDDS Project Header in Manifest.XML

Use this function to modify a **PEDDS Project Header**. This function is also used to create a **PEDDS Project Header** if EDI2 was used initially to create the Seed Project. The project header includes the name and title of the delivery manager and a description of the secured delivery. Anytime a project is secured for delivery, this description must be changed to describe the purpose of the delivery.

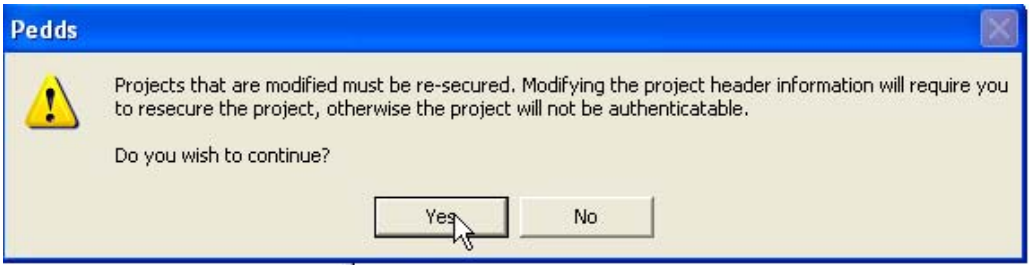
To modify a PEDDS Project Header

1. On the **Project** menu, select **Modify** < **Delivery Information**.



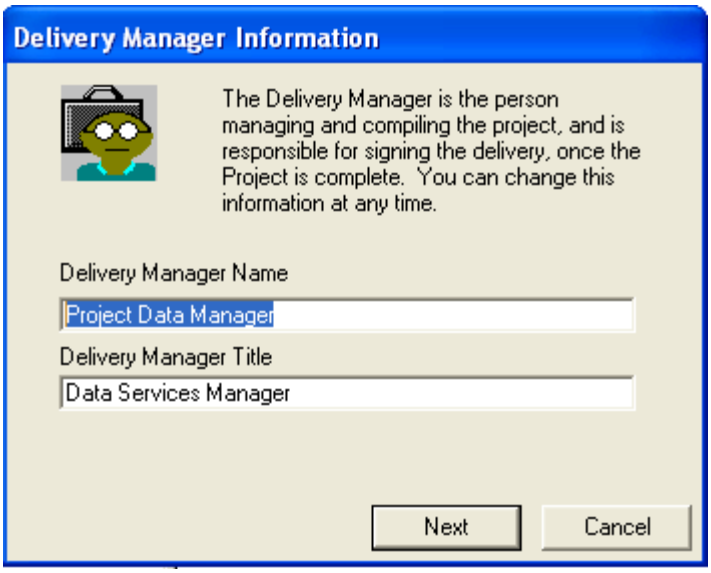
PEDDS - Modify Project Header

2. A PEDDS warning dialog opens. Click the **Yes** button to continue modifying the Project Header.



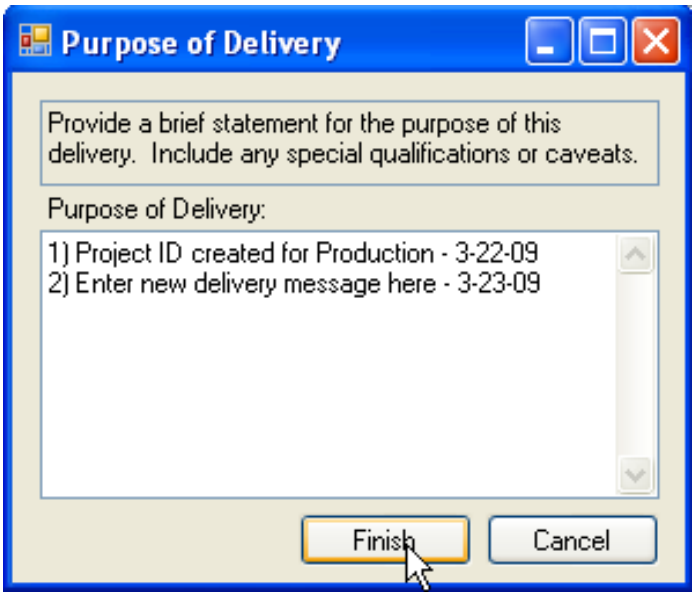
PEDDS dialog box

3. After Delivery Manager Information displays, modify the data as required and click the **Next** button to continue.



PEDDS - Project Manager Information dialog

4. Purpose of Delivery displays. Enter the description as required. Multiple lines may be entered, separated with the **Enter** key.



PEDDS - Project Description dialog

5. Click the **Finish** button to close Description of Delivery and return to Florida Department of Transportation - PEDDS. Other actions in PEDDS may take place after this, or PEDDS may be closed.

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Section 2.6 Checking the Project with File Checker

Section 2.6.1 Introduction to File Checker - ED Desktop

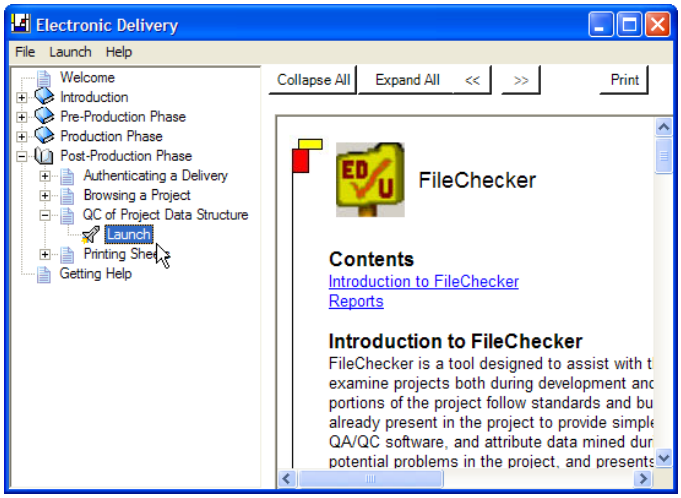
File Checker is a tool designed to assist with the Quality Control (QC) of Electronic Delivery projects. It is used to examine projects both during development and ready for submission, in order to provide reporting that certain portions of the project follow standards and business rules for the Electronic Delivery. File Checker uses data already present in the project to provide simpler reporting, such as pre-existing QC reports (*.txt) from QA/QC software, and attribute data mined during Sheet Navigator runs. The program examines a variety of potential problems in the project, 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 File Checker:

- FDOT directory structure intact (directories added / deleted / and non-standard directories)
- Reports directories greater than 16 chars, with spaces, multiple consecutive spaces, or special characters
- Reports file names with spaces, multiple consecutive spaces, long file names, and special characters
- Makes sure that full paths to files are 255 characters or less
- 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)
- Looks for MicroStation files that do not meet FDOT file naming conventions
- Looks Sheet files that have been signed / sealed, but are not registered in the index (**ProjectIndex.XML**)
- Looks for Indexed sheets that are not signed / sealed (not selected by any Signatory file).
- Determines presence of key ED component files (**SheetNDX#.htm**, **ProjectIndex.XML**, **Project#.pdf**, **Projectfiles.xml**) and looks at their chronology.
- Indexes validated against PEDDS data, against data on-disk (URL paths, SHA-1 hashes, etc.)
- Searches for QC reports, and extracts QC Report data into sort able tables, including QC reporting of Critical files

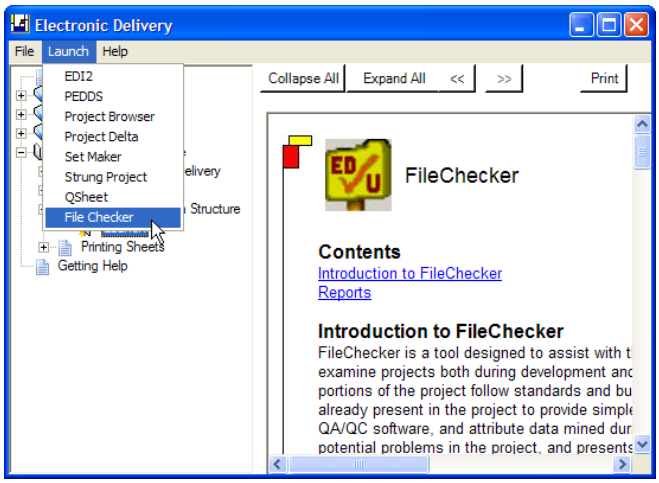
A Video tutorial for the operation of the File Checker utility is available on the Florida Department of Transportation, Engineering / CADD Office website.

Note File Checker is only a tool to assist in the audit and reporting of projects for the items it checks. One should not consider it a "black box" that will uncover all potential problems. Likewise, the one should read the reports carefully to determine if a reported item is indeed problematic for the project.

File Checker is accessed from the Electronic Delivery Desktop (Post Production Phase > QC of Project Data Structure > Launch) from the browsing pane, or from the Launch pull-down menu as shown in the following figures:

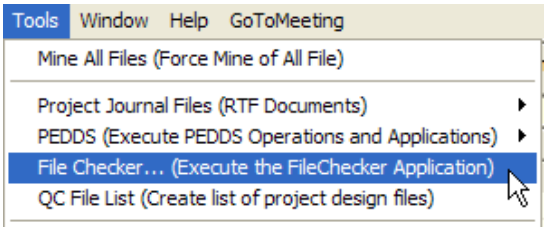


ED – Filechecker launch



ED – Filechecker launch

File Checker may also be accessed in EDI2 by selecting **Tools > File Checker... (Execute the FileChecker** Application as shown in the following figure:



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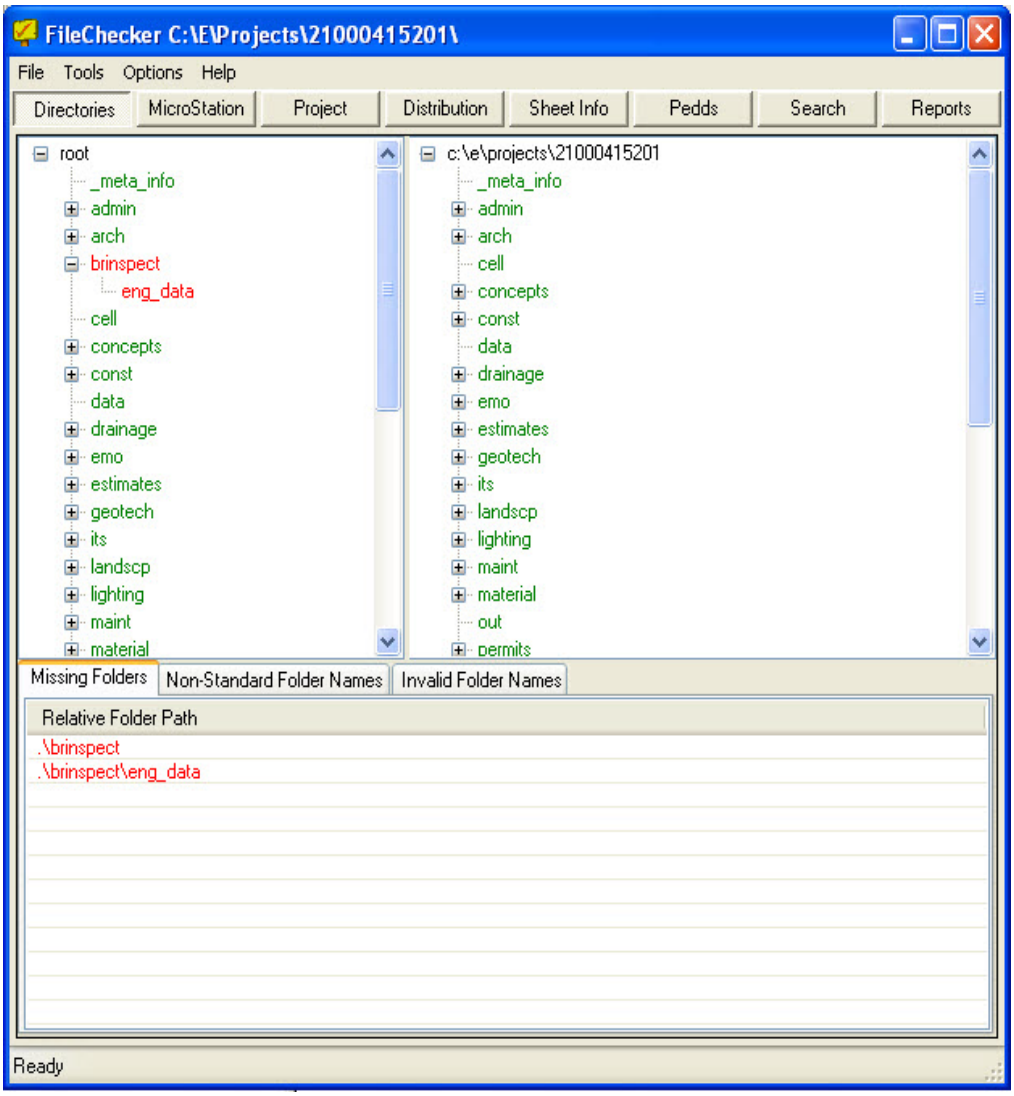
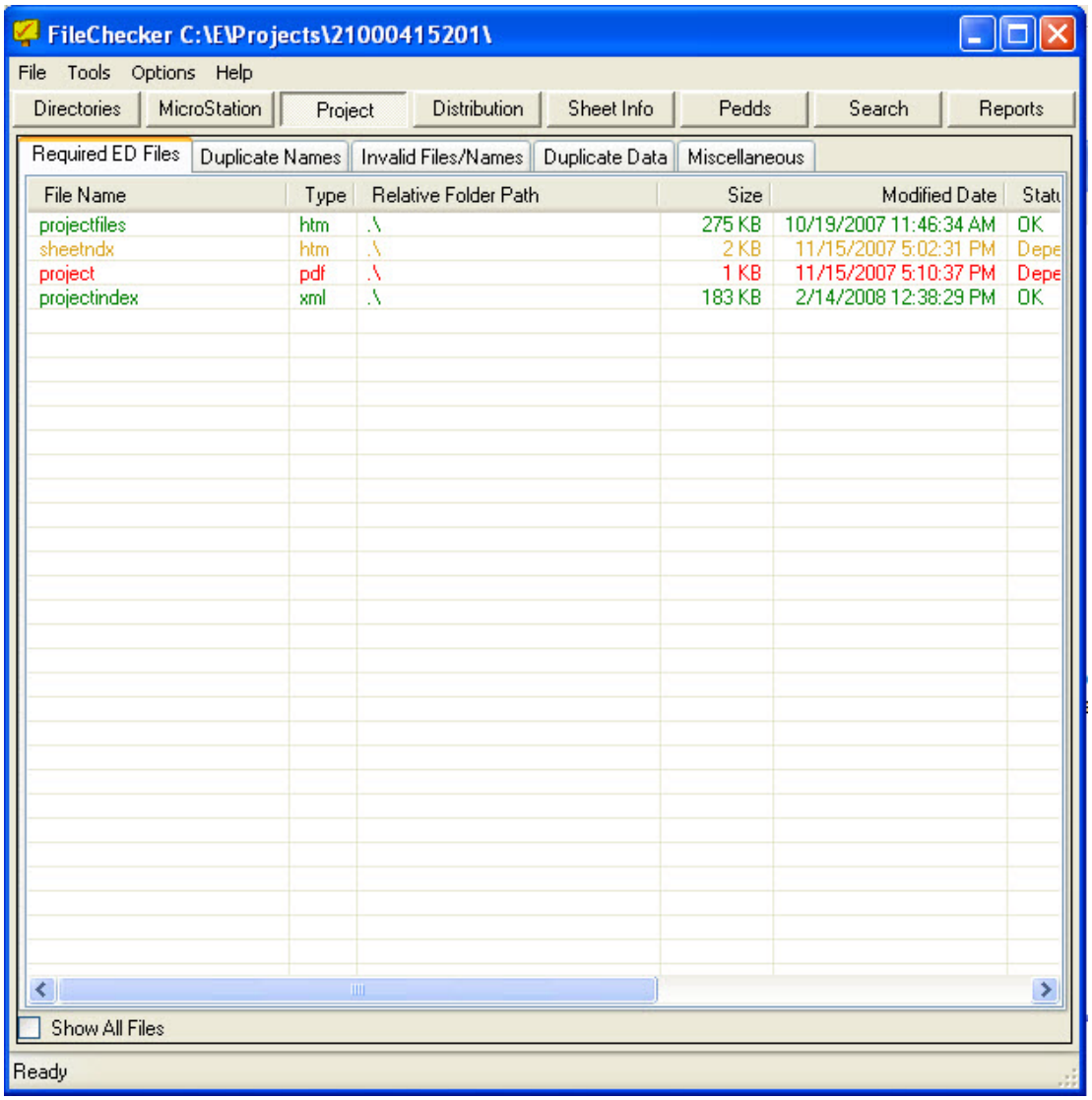
Section 2.6.2 Directory Structure Tab



FileChecker - Directory Structure Tab

- **Missing Folders** - checks the default structure (found in the \FDOT2008\Project_Template\ folder) on the left against the active project structure on the right and reports any folders missing, added folders, etc. If \FDOT2008\Project_Template\ is missing, then it uses C:\FDOT2008\APPS\FileChecker\resources.zip\dirlist.txt as a backup for comparison.
- **Non-Standard Folder Names** - checks the default structure on the left against the active project structure on the right and reports any non-standard folder names that have been added to the active project and do not meet standards.
- **Invalid Folder Names** - checks the default structure on the left against the active project structure on the right and reports any invalid folder names found in the active project directory structure.

Section 2.6.3 Project Files Tab



FileChecker - Project Files Tab

After the **Directory Structure** tab is accessed (and its sub tabs: **Missing Folders, Non-Standard Folder Names, Invalid Folder Names**, then next tab the user should open is the **Project Files** tab.

The **Project Files** tab subsequently reads all project data, and loads several control files found in the **\FDOT2008\APPS\FileChecker** directory for use in its subsequent checking operations and reporting. The size of the project, and where it is located (local disk or across the network on a server) dictates how long this operation will take.

Required ED Files - Reads RequiredFiles.xml from the \FDOT2008\APPS\FileChecker\ directory and checks the active project for these files and their chronology (who came first?).

Duplicate Names - Checks the active project and lists any with the same name, but same or differing data (different versions of the same file in another location?).

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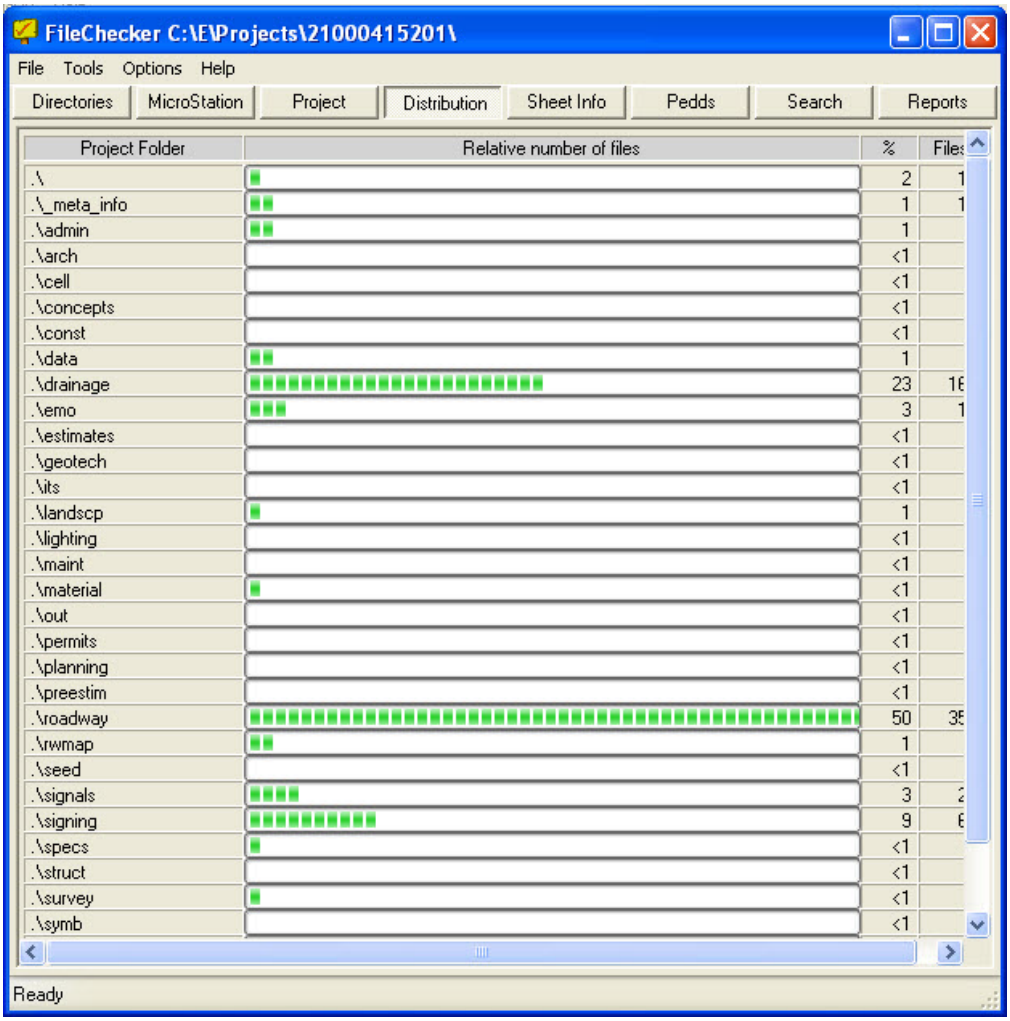
Invalid Files/Names - Reads the project directory, compares against FDOT project file naming business rules and the files FileNames.txt and DescriptionData.txt in the \FDOT2008\APPS\FileChecker\ directory and checks the active project for any invalid files and non-standard file naming conventions. Also checks for zero-byte files (empty files), very large files (> 100 MB, >200 MB), and files that contain special characters and spaces (particularly consecutive spaces), etc.

Duplicate Data - Checks the active project and lists any file(s) that contains duplicate data (the same name or different file name?).

Miscellaneous - Checks the active project and lists any miscellaneous file(s), looking particularly for files that may contain known engineering data from FDOT design software, like GEOPAK (.inp, .gpk, .tin, .dat, etc.), which should have either Journal entries describing those files and their content, or have EDMS entries (more later on this).

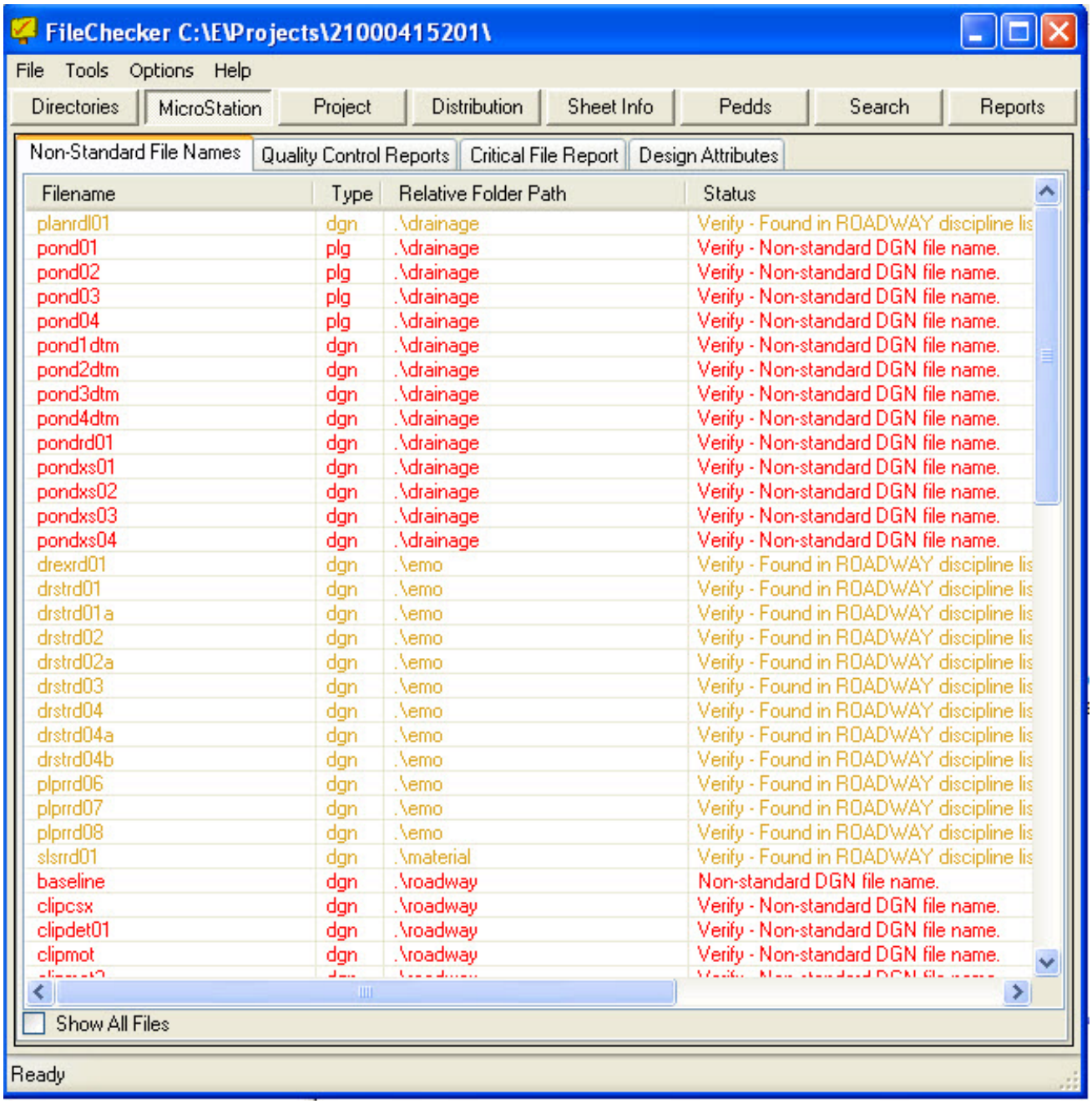
Section 2.6.4 File Distribution Tab



FileChecker - File Distribution Tab

File Distribution - Provides graphics which show the file distribution (% data wise of the total project, and an actual file count per folder) across the entire active project.

Section 2.6.5 MicroStation Files Tab



FileChecker - MicroStation Files Tab

Non-Standard Names - Reads the files **FileNames.txt** and **DescriptionData.txt** in the **\FDOT2008\APPS\FileChecker** directory and checks the active project for any non-standard MicroStation files naming conventions.

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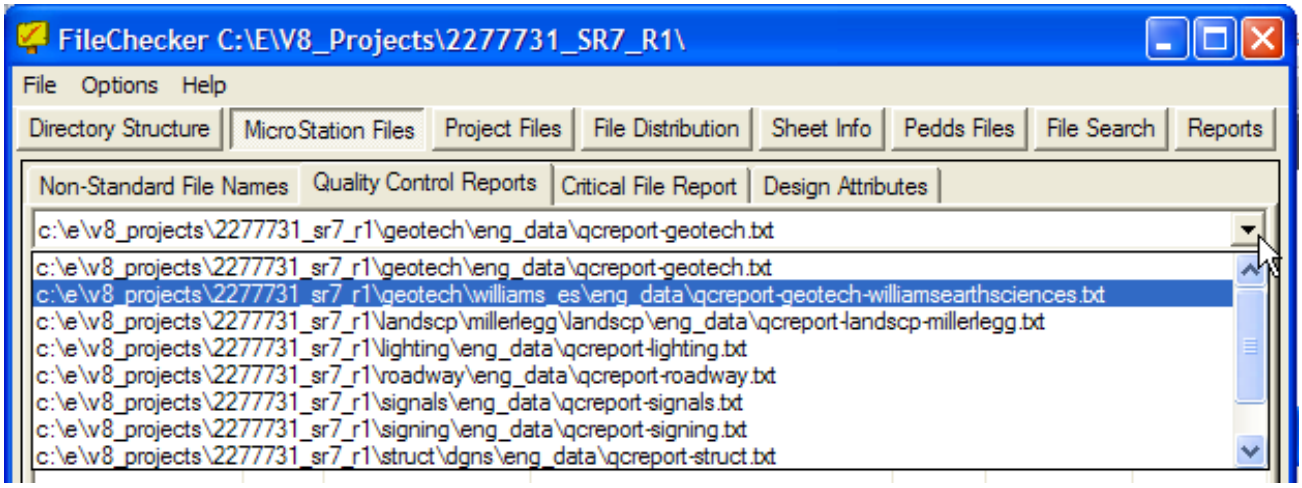
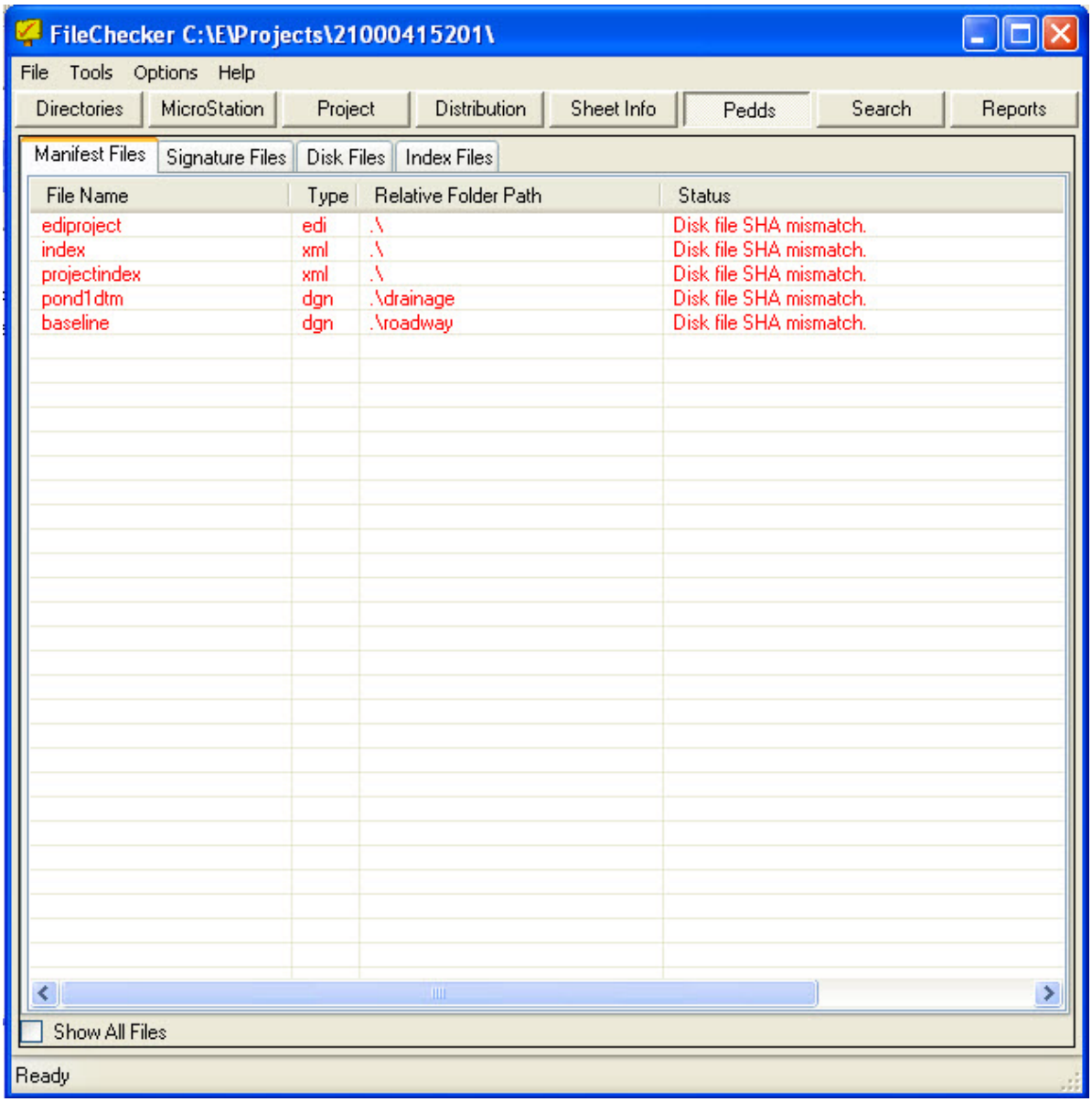
Quality Control Reports - Checks the active project for existing QC Reports (those .txt files produced by the GDM QC Reporter application), lists all reports found and displays QC information including the compliance in the dialog. Compliance matching data is derived from **DescriptionData.txt** in the **\FDOT2008\APPS\FileChecker** directory. Each different QC report found is accessed from the file drop down list by clicking as shown:



Critical File Report - Checks the active project for existing QC Reports on critical files lists all reports found and displays QC information including compliance in the dialog. Critical files are those MicroStation files deemed to need a high level of symbology QC compliance because subsequent automation depends on the symbology of the graphical elements in these files being correct.

Design Attributes – Reads the Indexes (**Index.XML** and/or **SheetInfo.XML**) from the active project, if present, and provides information about the design files including sheet information, and attached and missing MicroStation reference files.

Section 2.6.6 PEDDS Files Tab



FileChecker - PEDDS Files Tab

Manifest Files - Checks the PEDDS SHA-1 hash codes and file URLs (paths) from the _meta_info**Manifest.XML** against the files in the active project and reports any file that has been modified, added, or deleted after being secured.

Signature Files - Checks PEDDS SHA-1 hash codes and file URLs (paths) from the _meta_info**Signatory Files** and validates any Signatures in the active project.

Disk Files - Validates the PEDDS Manifest and reports any file with an invalid hash code. This report is similar in content to the Manifest Files tab report.

Index Files - Validates files that are referenced in the Index (**ProjectIndex.XML**) of sheets and the status of those files in PEDDS.

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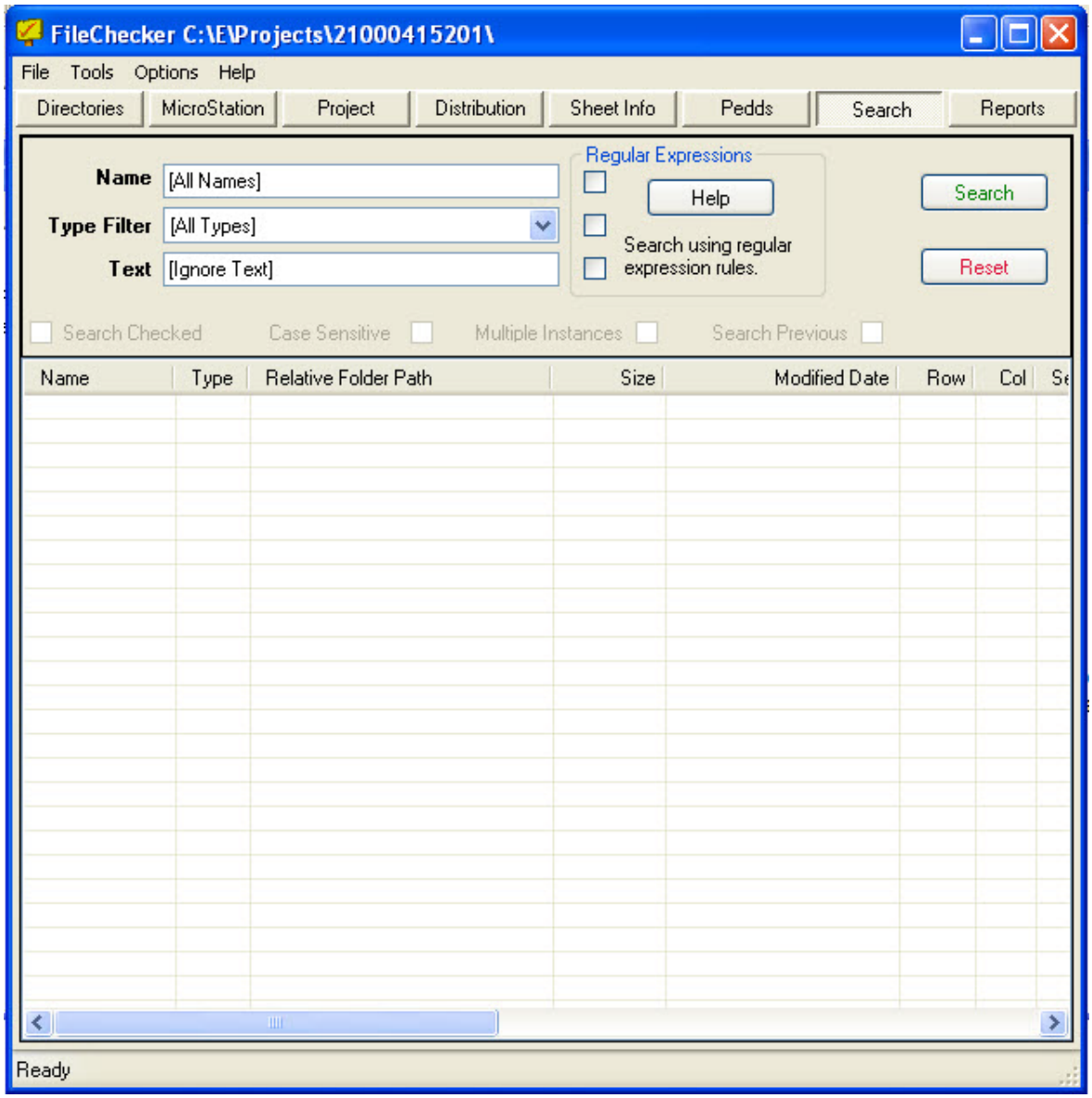
Section 2.6.7 File Search Tab

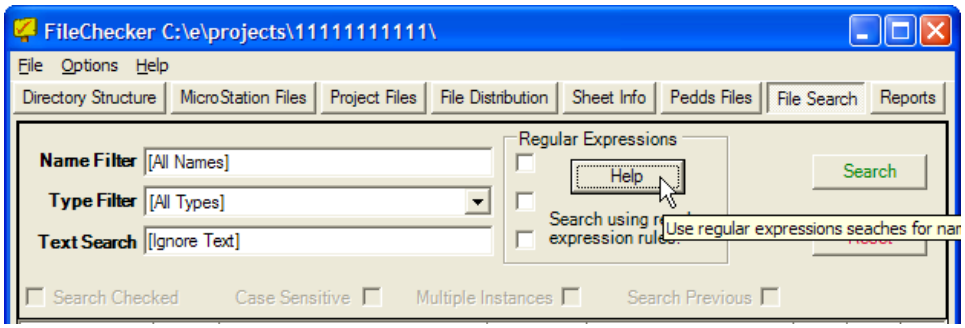


File Checker - File Search Tab

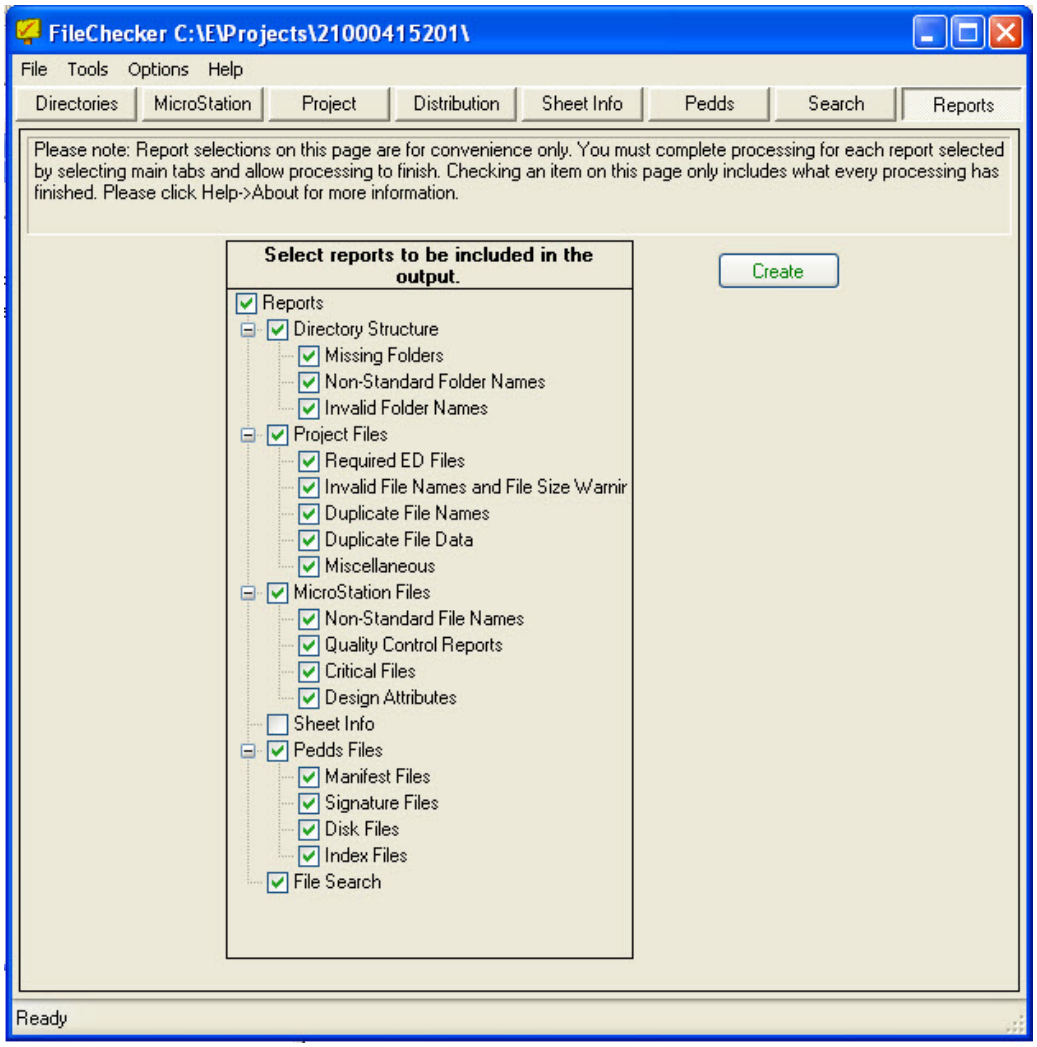
File Search Tab - Allows users to search the active project for files. Searches may be conducted by combinations of File Name, File Type (extensions) and text phrases within the files of given names or types. The **Type Filter** is a pull-down showing file extensions found in the project, including logical groupings.

For text searching, File Checker can list the locations of the text within files for easier editing with other editors, as File Checker is not an editor. Note that once files are found and shown in the grid, double-clicking the file name opens that file using the associated application within Windows.

The search option supports standard wildcards and regular expression searches (see File Checker's on-line help for regular expressions (shown below) or the wealth of documentation on the internet about regular expressions).



Section 2.6.8 Reports Tab



File Checker - Reports Tab

Reports Tab - Allows users to create and save HTML formatted reports based on the options checked in the dialog (and those options opened/viewed under the tabs). These reports are not mandatory for Electronic Delivery, but are provided for convenience. Note that some Districts may require users to produce and deliver the reports as evidence of good Quality Control practices. The report contains those sections that are checked in the interface.

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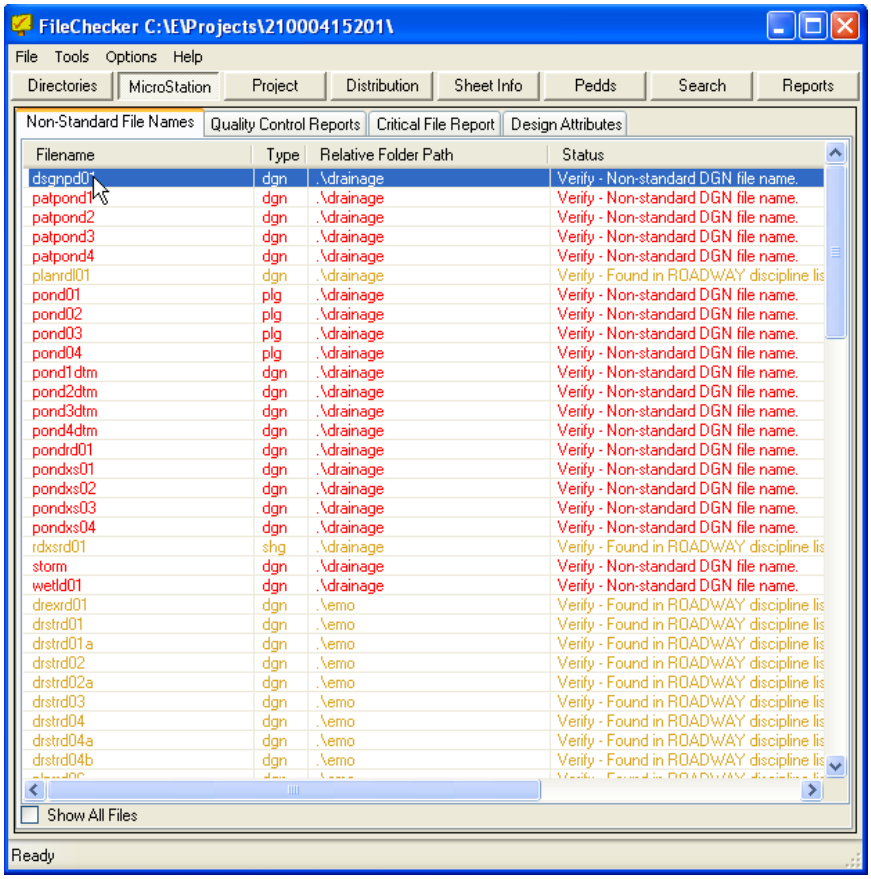
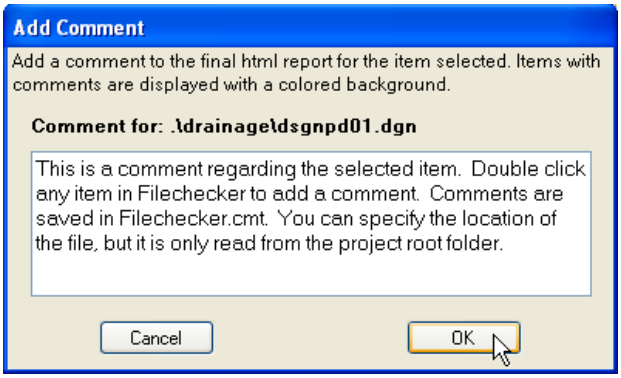
Section 2.6.9 FileChecker Comment Feature

In order to add a comment to any item in FileChecker (Folders or Files), the user needs to double click the item as shown in the figures below. The "add comment" dialog box opens . Type the comment into the "add comment" dialog box and click ok. Filechecker reappears. To view or change the comments for the file, double click the file and the comments will appear in the dialog box. Comments are saved in Filechecker.cmt. You can specify the location of the file, but it is only read from the project root folder.



File Checker – Comment Feature (Double Click any item)

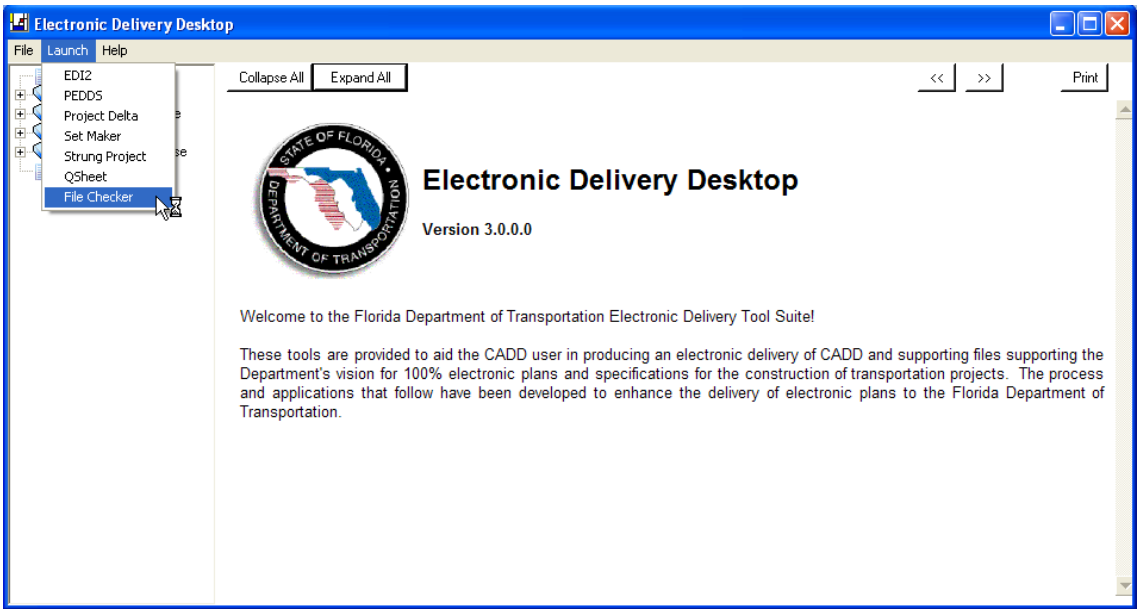


File Checker – Add Comment

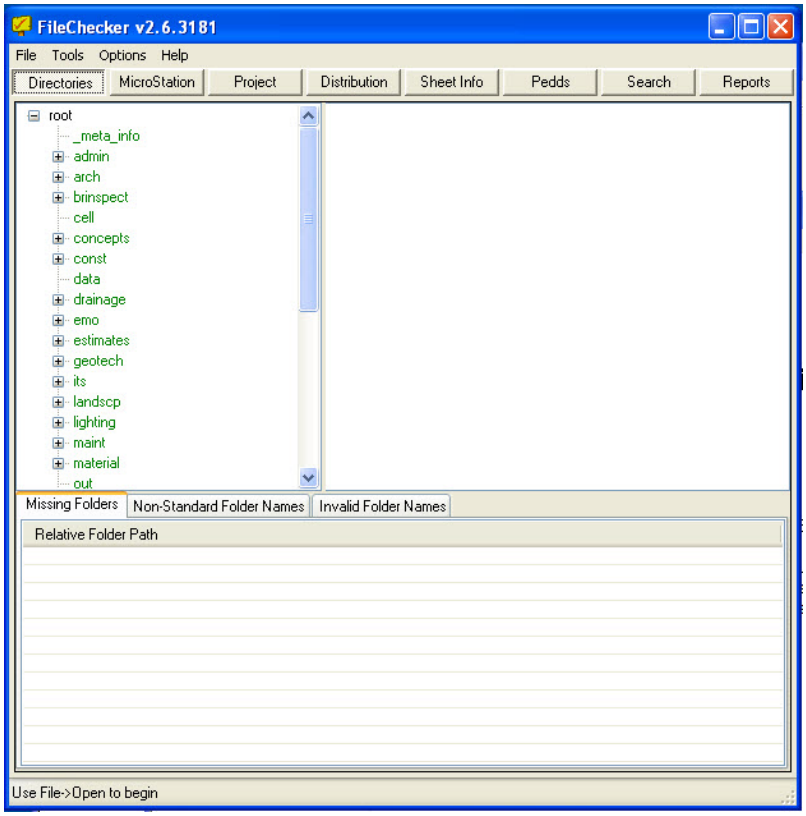
Exercise 2.9 Checking the Project with File Checker

To open the Seed Project with File Checker

1. From Electronic delivery, click launch and then click the FileChecker link. FileChecker opens.



Open FileChecker from Electronic Delivery kiosk



FileChecker

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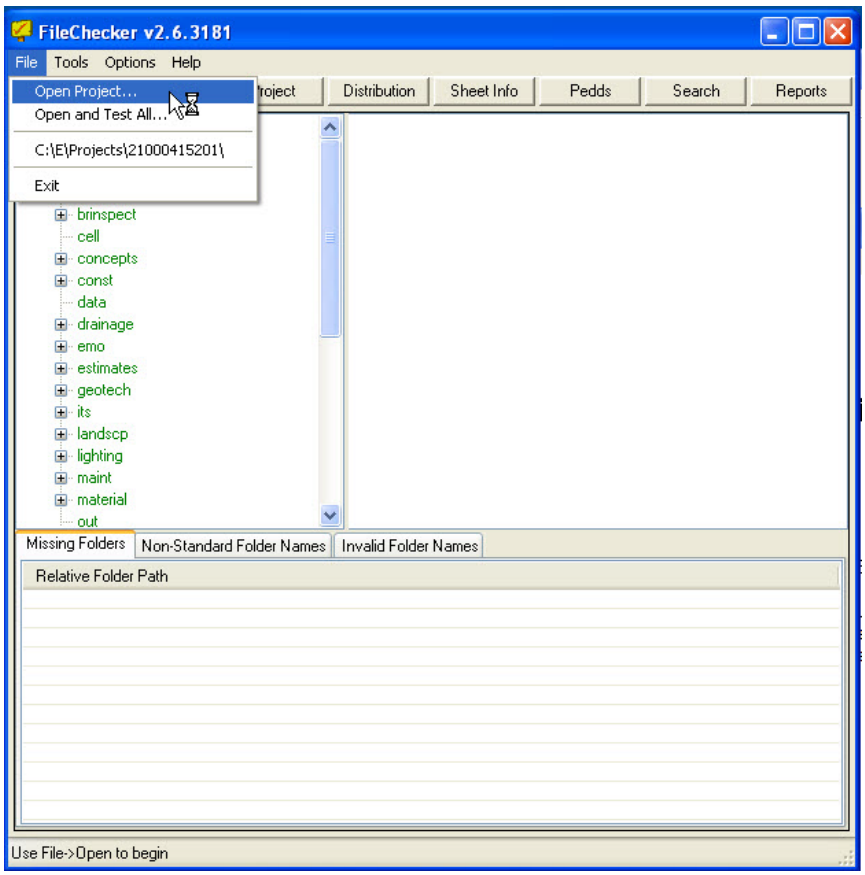
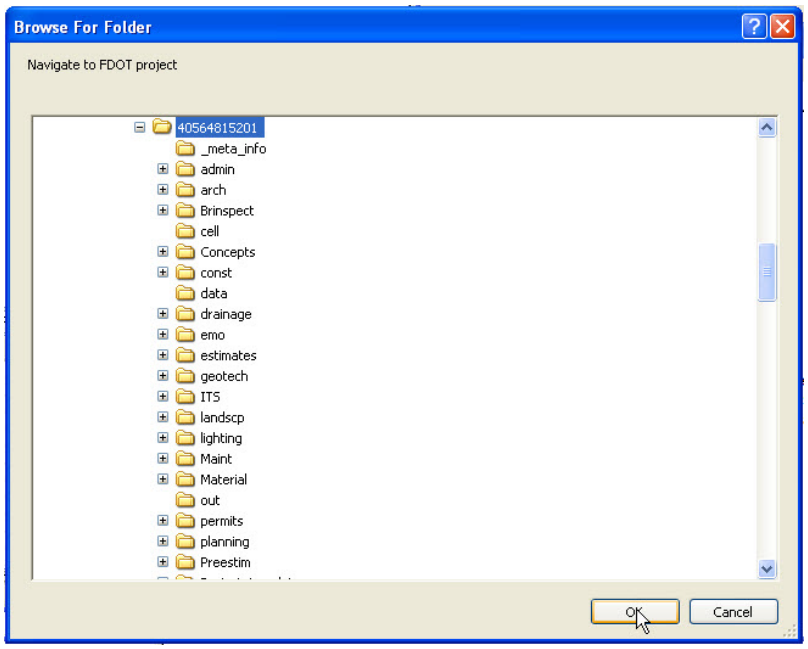
2. From the **File** Menu, select **Open Project.**



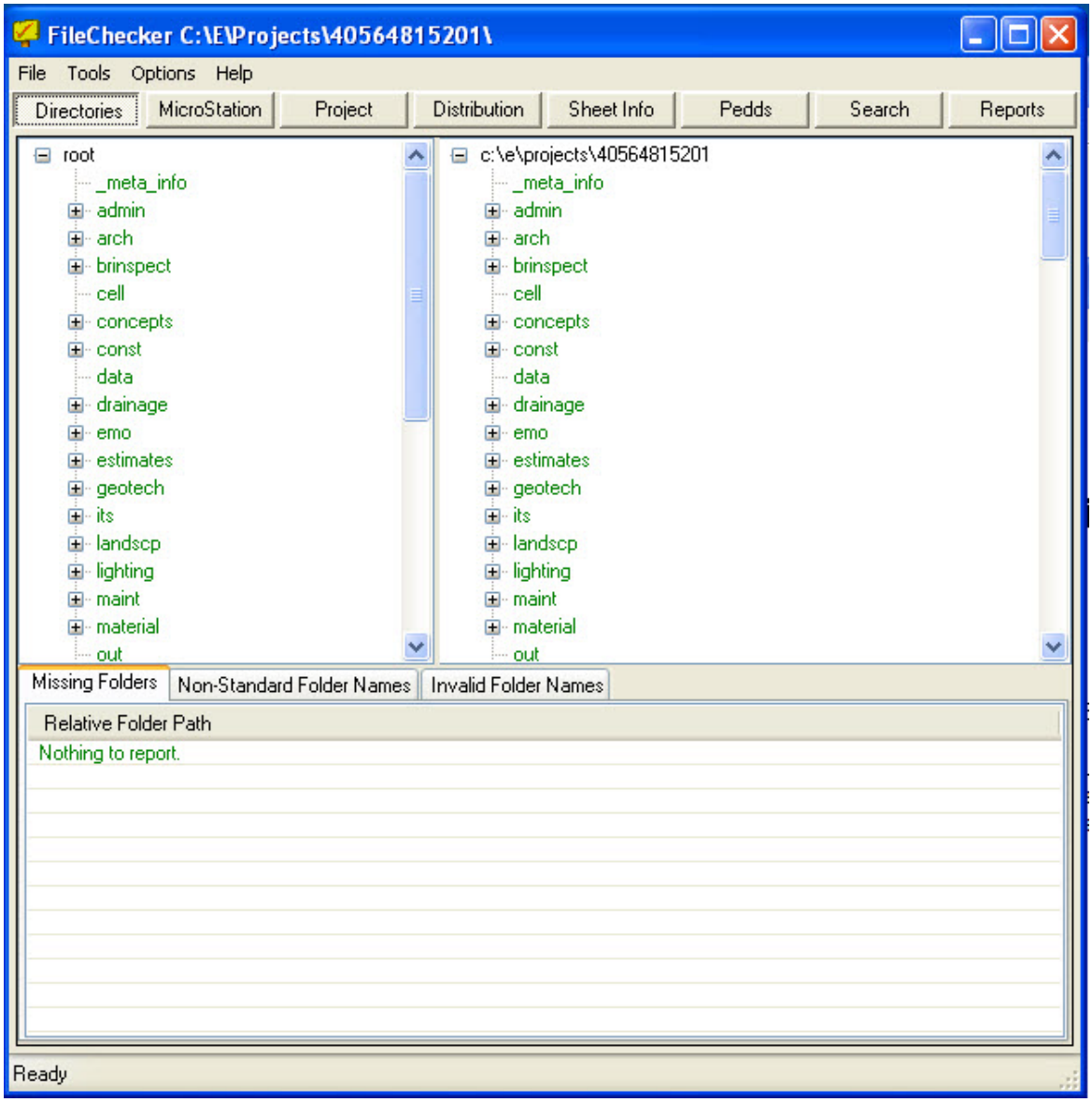
FileChecker - Open Project

3. Once Browse For Folder displays, browse to the active project, **C:\E\Projects\40564815201** and click the **OK** button to continue.



Browse For Folder

4. FileChecker re-appears with the selected project loaded.



FileChecker C:\E\Projects\40564815201

To check the Project

1. Follow the instructor during a discussion on the various tabs and reports available in File Checker.

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Section 2.7 Securing the Project for Delivery to Design Consultant

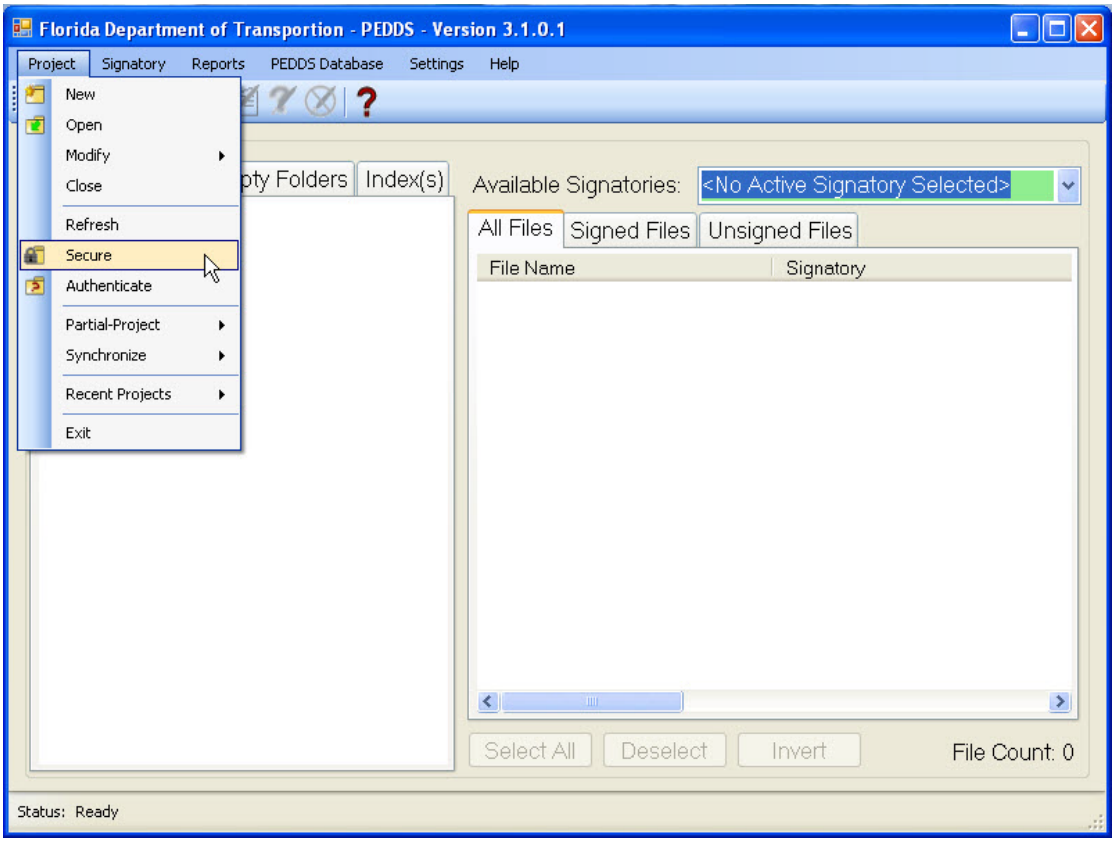
Prior to delivery of the seed project to the Design Consultant, the project should be secured with PEDDS. Securing the project provides a means of "fingerprinting" the files in the project such that if any file(s) are modified, the authentication process can identify the changes. This is important should questions arise.

After FDOT has secured the project, the project can be copied to a portable media, such as a floppy disk (subject to project size), or burned to a CD. The authentication procedure is performed to ensure that the project template transmitted by the Department can be verified when received by the Design Consultant.

Exercise 2.10 Securing the Project for Delivery to Design Consultant

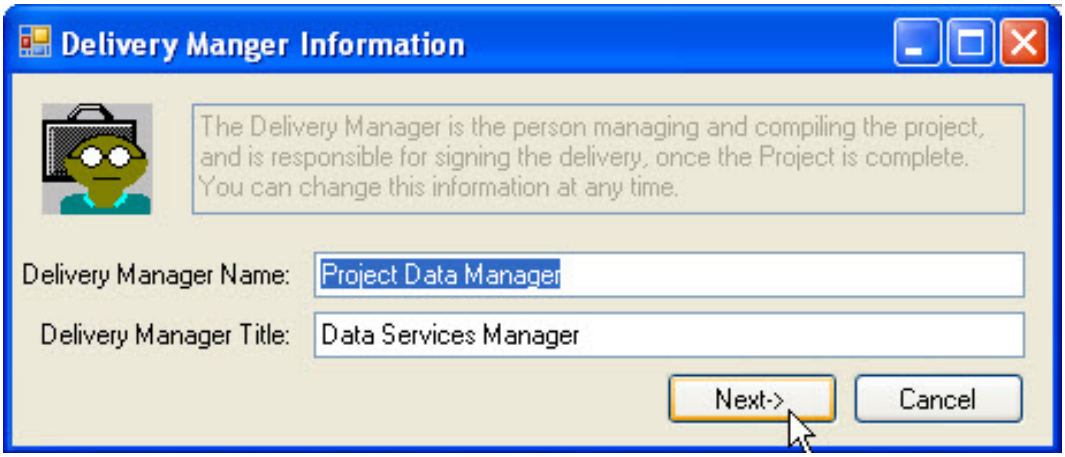
To secure the project for delivery to design consultant

1. Open PEDDS by any of the methods previously presented.
2. From the PEDDS **Project** menu, select **Secure** --*or*—click the **Secure the Current Project** icon on the tool bar. Securing Project opens briefly then closes. .



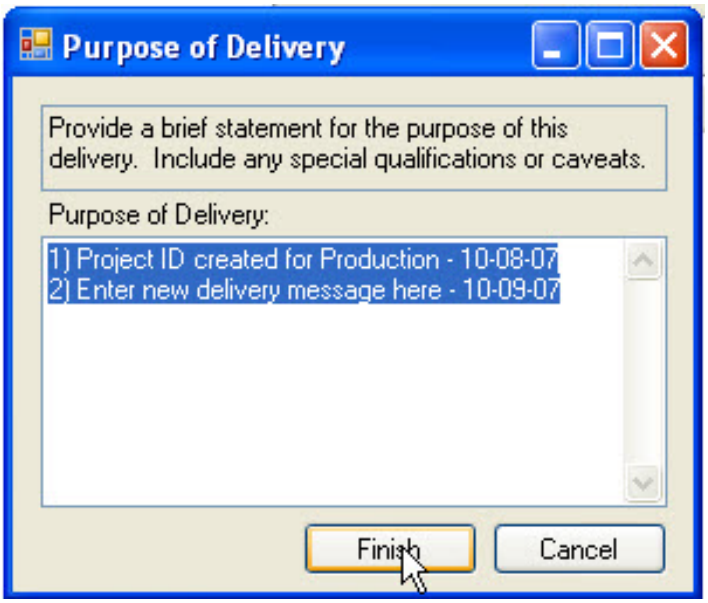
PEDDS

3. Delivery Manager Information displays. Enter the required **Project Manager Name** and **Project Manager Title** and then click the **Next** button to continue.



Delivery Manager Information

4. Once Purpose of Delivery opens, enter a brief description of the purpose of the delivery and then click the **Finish** button. PEDDS begins the process the secure the project.



Description of Delivery

Note PEDDS passes all files in the project through the Federal Government SHA-1 secure Hash algorithm to create a manifest list of Hash Codes for each file. That manifest is contained in a file called Manifest.XML, located in the \Project_meta_info\ folder.

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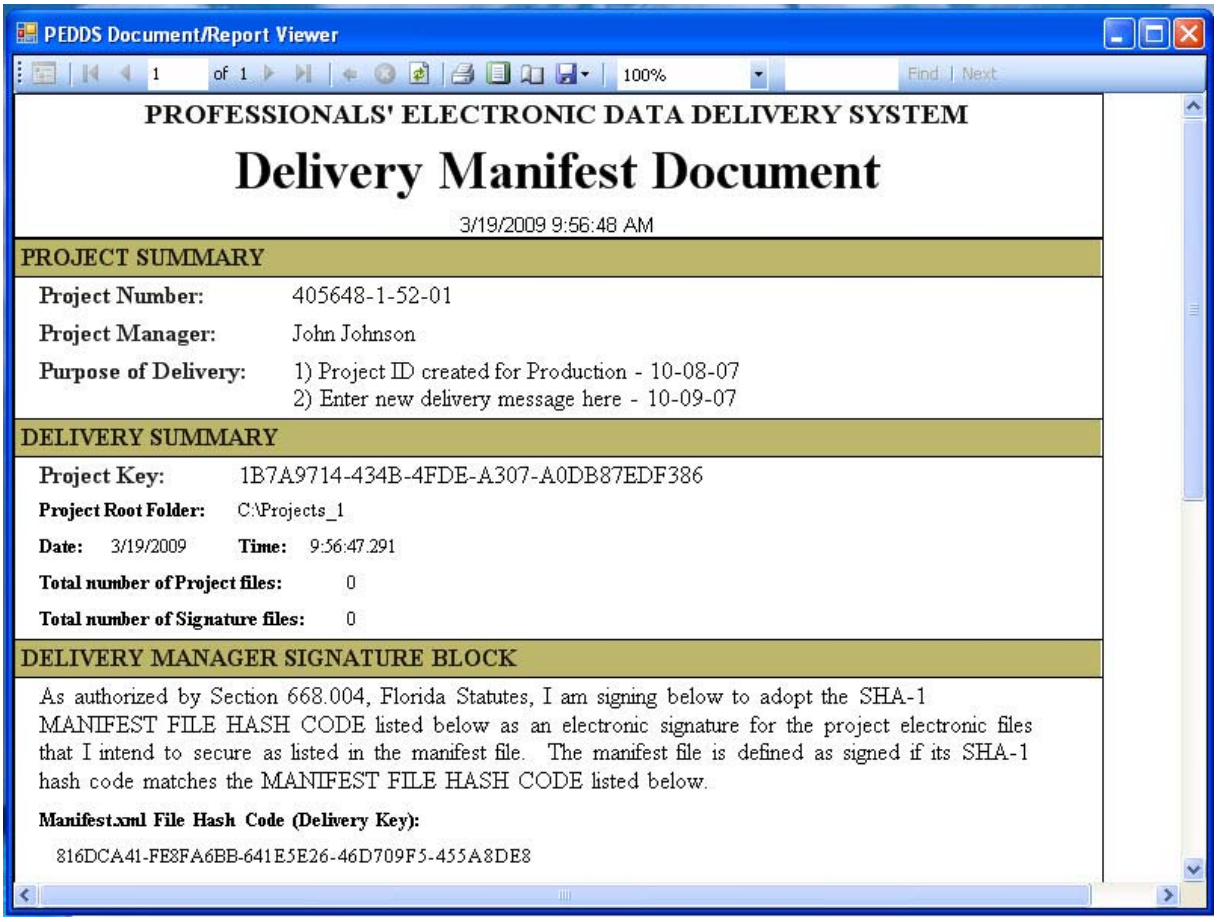
5. Report Viewer opens and displays the **Delivery Manifest Document** (a report based on the **Manifest.XML** file). Click the Print button to send the **Delivery Manifest Document** to a print device. The **Delivery Manifest Document** must be printed (See Item 14 of the Compliance Certification Checklist Report) and reviewed by the delivery manager.



PEDDS - Report Viewer

Note The **Delivery Manifest Document** is a signed paper document used to secure a Manifest File (and those files referenced by the Manifest File) and to reference the Signature files in the project delivery.

By signing the **Delivery Manifest Document**, one has associated their name (the delivery manager) to the manifest file that corresponds to the hash code on the paper **Delivery Manifest Document**.

The Manifest File itself lists the project files by their relative URL and each file's SHA-1 hash-code, thus the signatory has signed (but not sealed!) the files listed in the Manifest (that they belong to the project data set).

6. Click the **EXIT** button to close Report Viewer.

Section 2.8 Preparing the Delivery Media

After the seed project is secured, it can be copied to a portable media, such as a floppy disk (if it fits), or burned to a CD for delivery to the design consultant. If a CD is to be burned, always choose the Data CD creation option when burning the CD.

If anything changes in the project directory (files added, files deleted, files modified) prior to putting the project on a portable media for the consultant, open this project in PEDDS and re-secure the project.

This concludes the Pre-Production Phase of the Electronic Delivery Training Course.

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3 Production Phase

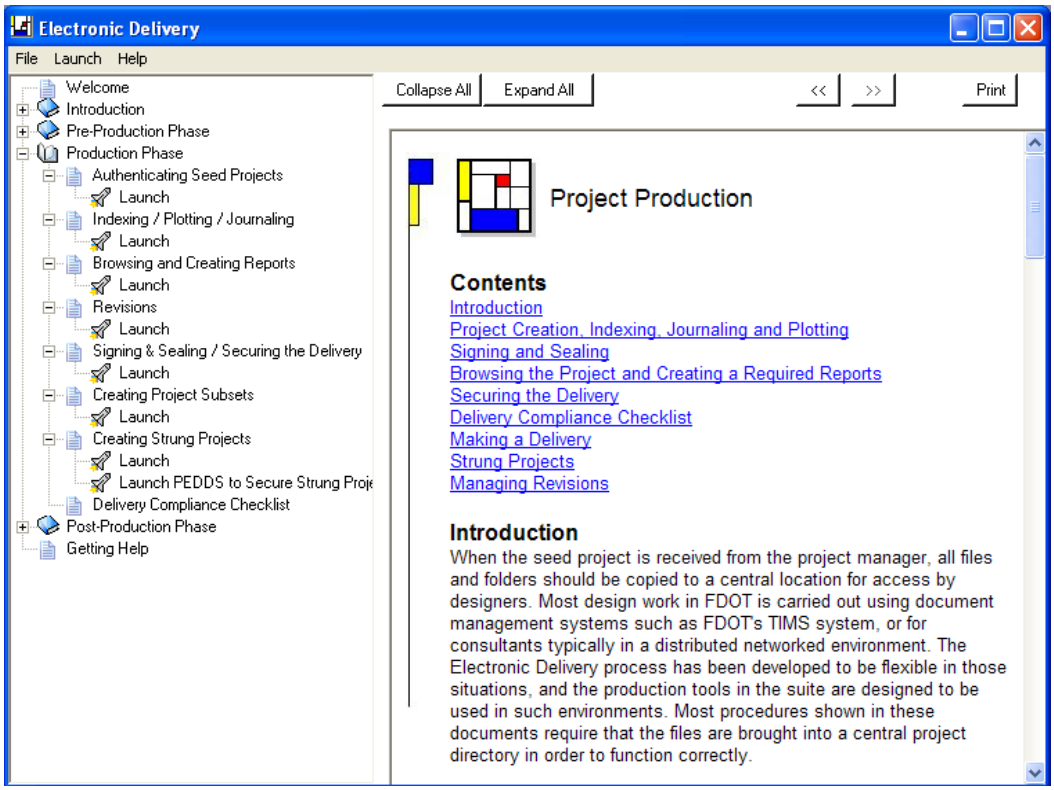
The Production Phase training section covers the details of using the production tools.

- Introduction to Production Tools
- File Management Considerations
- Authenticating the Project
- Importing the Seed Project
- Indexing / Plotting / Journaling - Indexing
- Review of the EDI2 Application
- Indexing the Project
- Adding EDMS Comments
- Updating Attributes
- Updating the Index
- Indexing / Plotting / Journaling - Plotting
- Indexing / Plotting / Journaling - Journaling
- Creating Reports and Project.pdf in EDI
- Revisions
- Signing & Sealing the Project
- Indexing / Plotting / Journaling - Updating the Index
- Signing & Sealing / Securing the Delivery
- Indexing / Plotting / Journaling –PEDDS Viewer
- Creating Project Subsets
- Creating Strung Projects
- Delivery Compliance Checklist
- Making a Delivery

Section 3.1 Introduction to Production Tools

Section 8.5 of the ***CADD Production Criteria Handbook*** (CPCH) describes the Production Phase as the incorporation of several functions that produce a successful electronic delivery for future utilization of project data. This requires compliance with standards and documentation for the methods and decisions used to produce CADD deliverables. A few of these functions include the creation of files to FDOT standards, documentation of those files, and electronic securing and packaging of them.

Shown below are tools used during the Production Phase of Electronic Delivery (ED).



Expanded Production Phase

- When the project is created and delivered to the Prime Consultant or Lead Designers (See Section 2 of this manual), the Production Phase of Electronic Delivery for the project can begin.
- Project Distribution should be provided by the Department's Project Manager. The Design Consultant receives the project created in the Pre-Production Phase on a CD ROM or other portable media. The Production Phase begins, for the consultant, with authenticating and importing the contents of the received CD ROM to a desired project directory on their server or workstation.
- FDOT requires the delivery of graphic files to be in a MicroStation Design File format and the delivery of Plan Sheet images to be in a Postscript format. (See Chapter 3 of the FDOT *CADD Manual*).
- A link to the **Compliance Certificate Form** is also provided in the Production Phase. The Compliance Certificate is to be printed and used as a checklist to verify that the noted items are reviewed and addressed.

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Section 3.2 File Management Considerations

The processes of Electronic Delivery can be very intensive in terms of file management. Because large amounts of data are accessed repeatedly during Electronic Delivery operations, it is highly recommended that most Electronic Delivery operations be done on the local hard drive for both performance reasons, and that the fail safes are better between local processors and local memory and the local hard disk. It has been observed many times that processes fail when being run across even a well maintained network of server mapped drives, but run successfully when the data is copied to a local hard drive. However, prudency dictates that the data be preserved on the networked server's shared drive for joint access to the data and backup purposes.

FDOT employs a file management system called TIMS (see http://www.tims3.com) to allow FDOT to operate and edit files on the local hard drive, but warehouse the files each night to the server. There are other tools like TIMS on the market. If there is no tool like TIMS, the user could employ the "poor man's" file management system and use what the current Operating System (Windows) provides. The user could set up batch commands in Windows, which copy changed files to the users hard drive, where the user could then work. Then another batch file could be run to copy just the changes back to the server. The Windows consol XCOPY command and several qualifiers, to assist the user in copying modified files from a network location to a local drive and then back again are ideal for this task.

The following switches employed in the example batch file commands are:

/D – copies only files changed on or after the date of the destination file (Modified files)

/E – Copies all directories and subdirectories (includes all project files)

/V – Verify the files copied

/H – Copies hidden and system files (just to make sure the projects are identical)

/Y – Suppresses confirmation during processing

Example #1
Batch file commands copies Project 23028825201 from remote server drive "M:" to local drive "C:"

```
cls
echo off
echo ************************************
echo ** **
echo ** COPY Project 2302882 to LOCAL **
echo ** **
echo ************************************
pause
xcopy M:\Server_Share\23028825201\*.* c:\e\projects\23028825201\ /D /E /V /H /Y
cls
```

Example #2
Batch file commands copies Project 23028825201 from local drive “C:” to remote drive “M:”

```
cls
echo off
echo ************************************
echo ** **
echo ** COPY Project 2302882 to SERVER **
echo ** **
echo ************************************
pause
xcopy c:\e\projects\23028825201\*.* M:\Server_Share\23028825201\ /D /E /V /H /Y
cls
```

Note Modify the example batch files to designate the appropriate remote and local location.

The examples can be made into batch files (a file with a .bat extension in Windows) and edited to reflect the project data being worked on. These are executed in Windows by running them like any other executable (i.e. double-clicking the file name from Windows Explorer, or creating an icon on the desktop to launch the batch file, etc.). The user can even set up the Windows Task Scheduler to run the batch files automatically at specific times (like example #2 at the end of the work day to copy the files up to the server, then example #1 just before arriving at work each morning so the latest “fresh” files are ready to work on). Likewise, the Windows Scheduler can also be set to run the batch file upon logging on, or when the computer is idle, etc.

Note If configuring batch files to run with Windows scheduler, make sure they do not include the “pause” command, as that would stop their execution from completing until user interaction is received.

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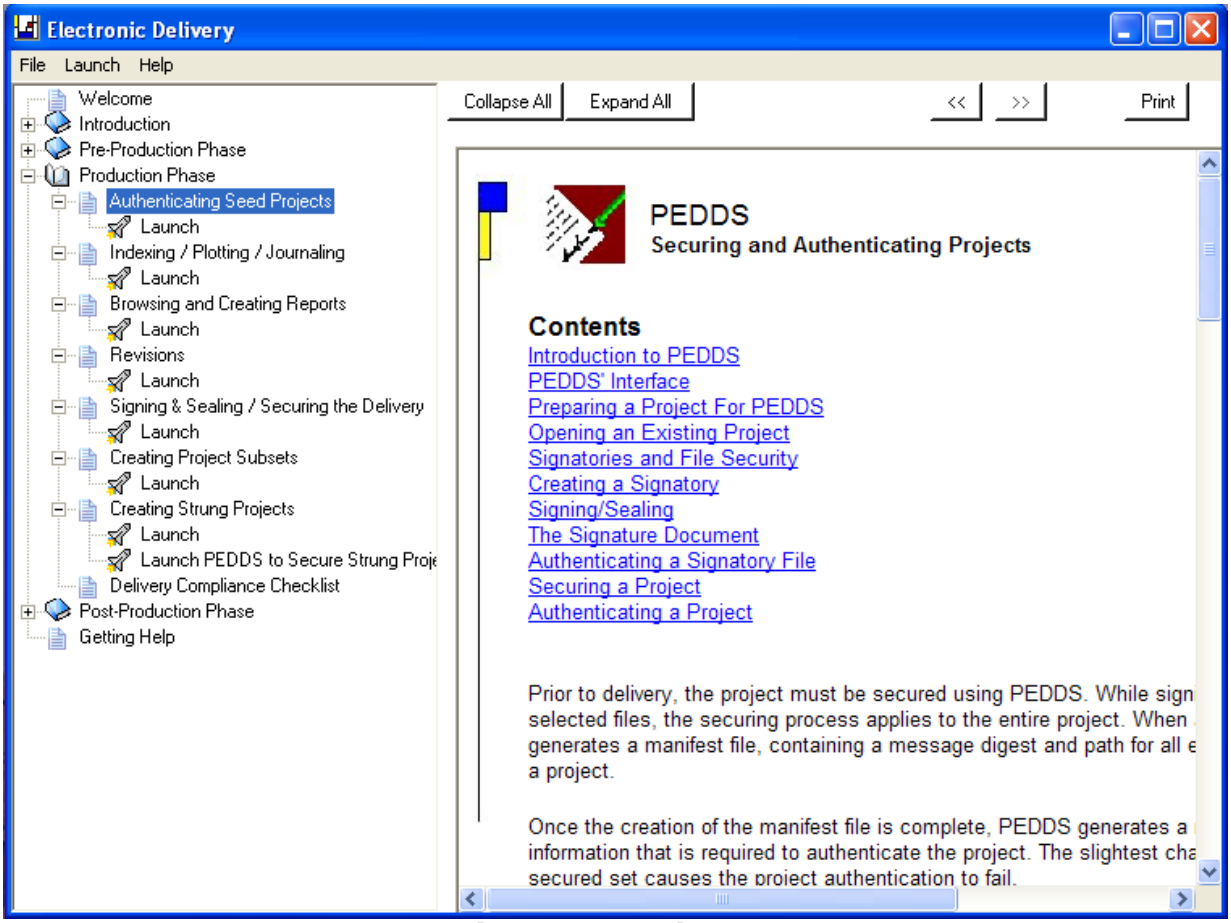
Section 3.3 Authenticating the Project

If the FDOT Project Manager provides a project CD to the consultant, it is recommended to authenticate the CD prior to importing the contents to the project server.

PEDDS features the ability to check the integrity of secured project files and directories. This function of PEDDS is used to authenticate all files and the directory structure delivered to design consultants or FDOT. Project designers may use the program at any time to check that the project has not been tampered with after it was secured. Authenticating a project detects any additions, deletions, or modification of files.

Authentication is 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 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.

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.



Authenticating Seed Projects

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Exercise 3.1 Authenticating the Project

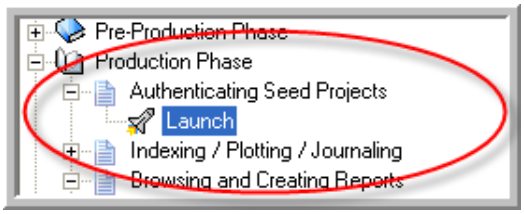
The entire project or just the signed and sealed files (covered later in course) can be authenticated. According to standard procedure, it is recommended that the consultant authenticate the project delivered from FDOT Project Manager prior to importing the project.

To load a project in PEDDS

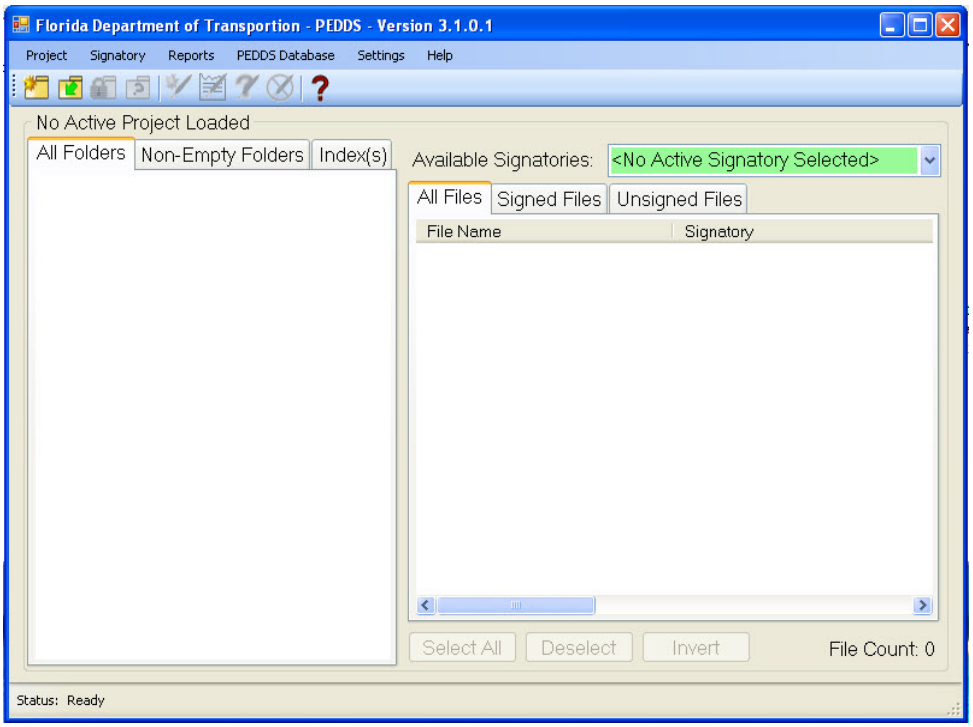
1. Select the executable file **EDSection3ExercisesStart.exe**, ensure **Unzip to folder** is set to **C:\e** and click the **Unzip** button to place the starting dataset for Section 3 on the hard drive.

Note Executable files are provided in the dataset for logical starting points throughout Section 3. For example: the executable file **EDSection5Exercise5.8Start.exe** contains the files from Section 5 exercises up to Exercise 5.9. If encountering errors while working through an exercise, select the executable with the nearest starting point and unzip the files as demonstrated above. The **Unzip to folder** will be set to the correct hard drive location.

2. In the **Authenticating Seed Projects** folder, click **Launch.** Florida Department of Transportation – PEDDS opens**.**



Launching PEDDS



Florida Department of Transportation - PEDDS

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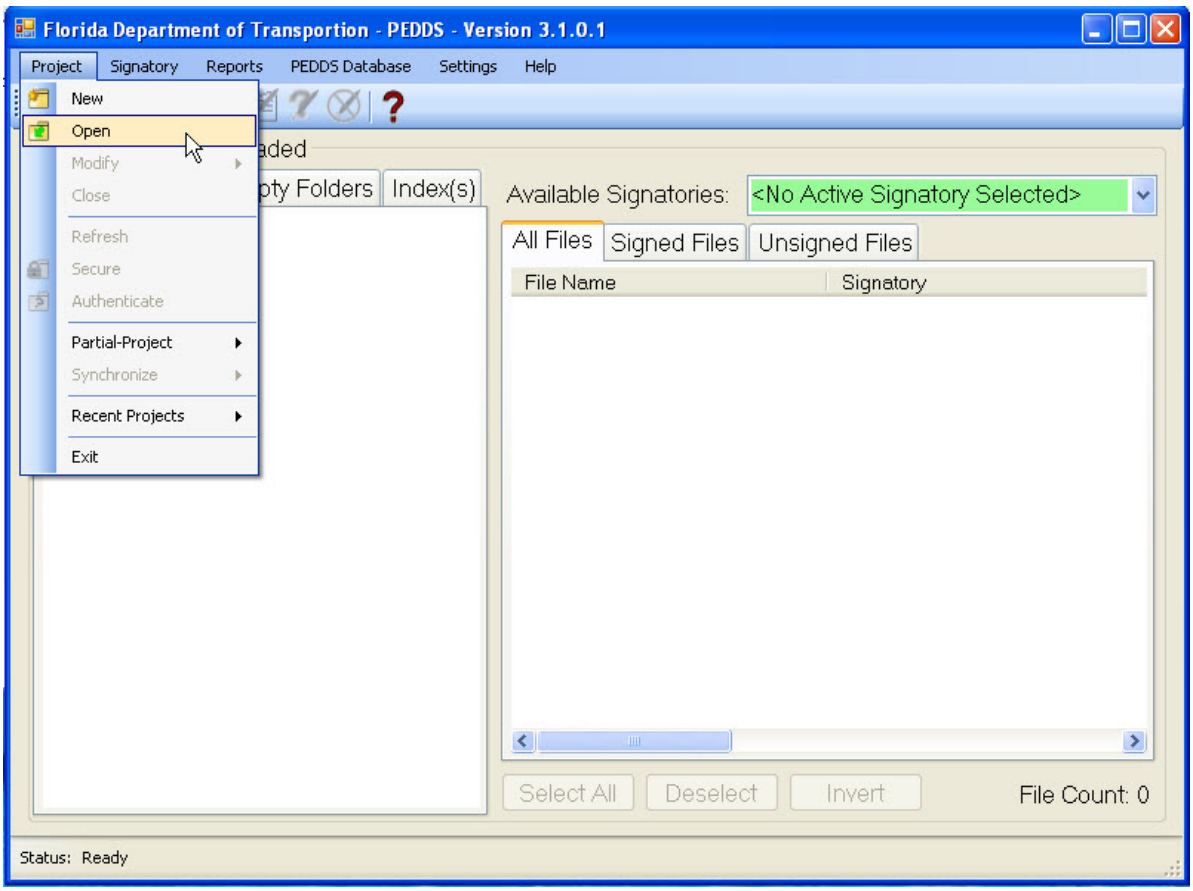
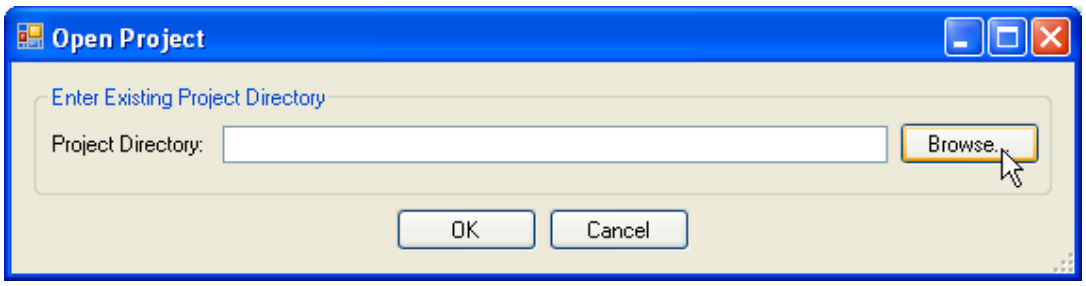
3. From the **Project** menu, select **Open** --*or*-- click the **Open Project** icon on the toolbar.



Open a PEDDS Project

4. Open Project appears. Select the drive letter where the project resides, usually the CD drive, from the pull-down menu as shown below.



Open a PEDDS Project

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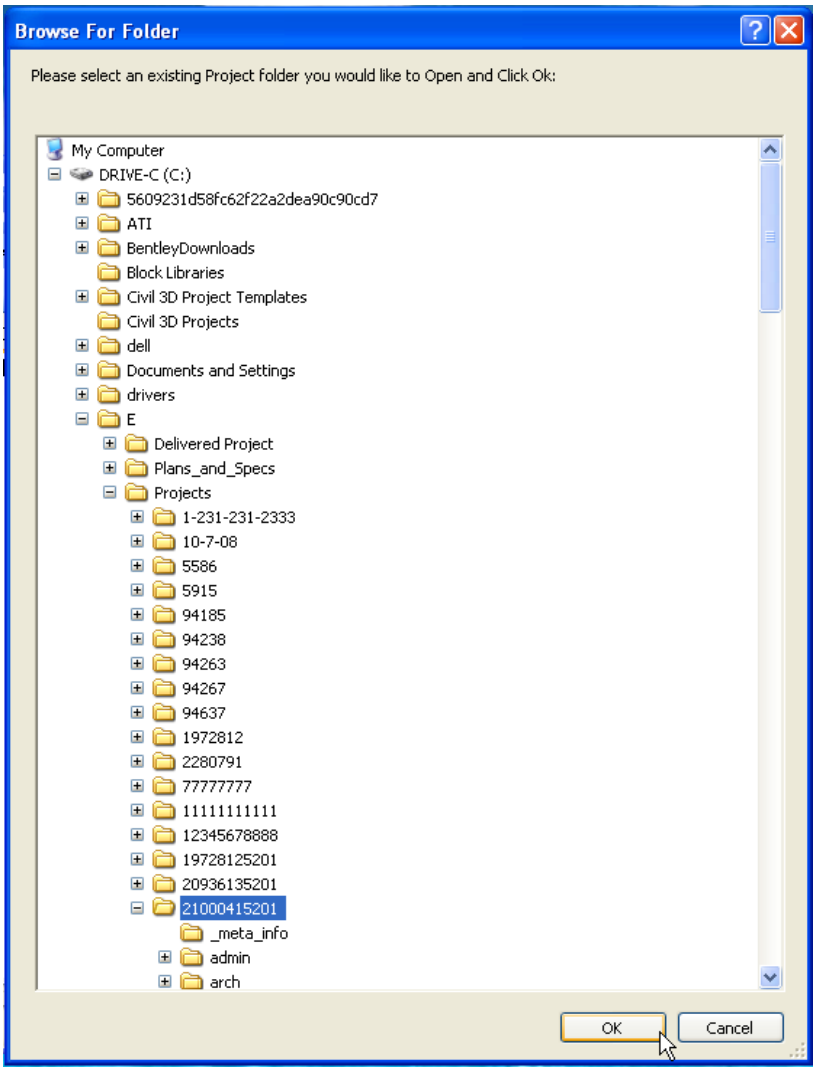
5. Navigate to the projects folder and double-click the project. Verify the selection of the project in the **Current Path** box. If the selected project is incorrect, repeat this step. To load the selected project into PEDDS, click the **OK** button. The loaded project is now ready to be authenticated.



PEDDS Open Project

Note The class project may already be copied to the local hard drive under the working folder C:\e\projects\.

Important *If the project is on multiple CD's, use standard Windows tools to copy the complete project to a temporary folder. Authentication across multi-media is not supported. The project must reside in a single contiguous block of storage space to be processed by PEDDS.*

Tip Folders with a **Briefcase** icon represent existing PEDDS projects. Populate the **Find all Projects on Current Drive** checkbox to have PEDDS locate the PEDDS projects on the current drive.

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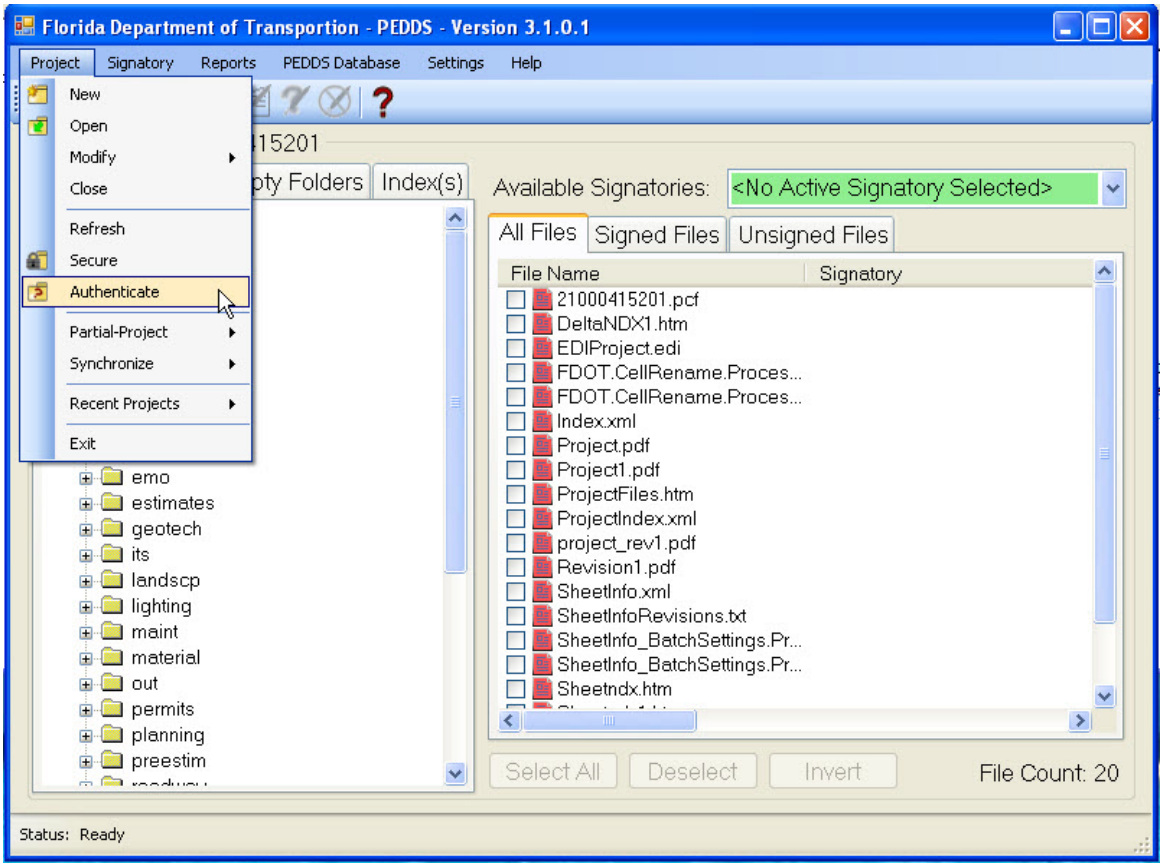
To authenticate the project

1. From the **Project** menu, select **Authenticate** --*or*-- click the **Authenticate the Current Project** icon ( ) on the toolbar.



PEDDS - Authenticate a Project

2. If the project was previously secured, Authenticating Project opens and the authentication process begins.

Authenticating Project dialog box

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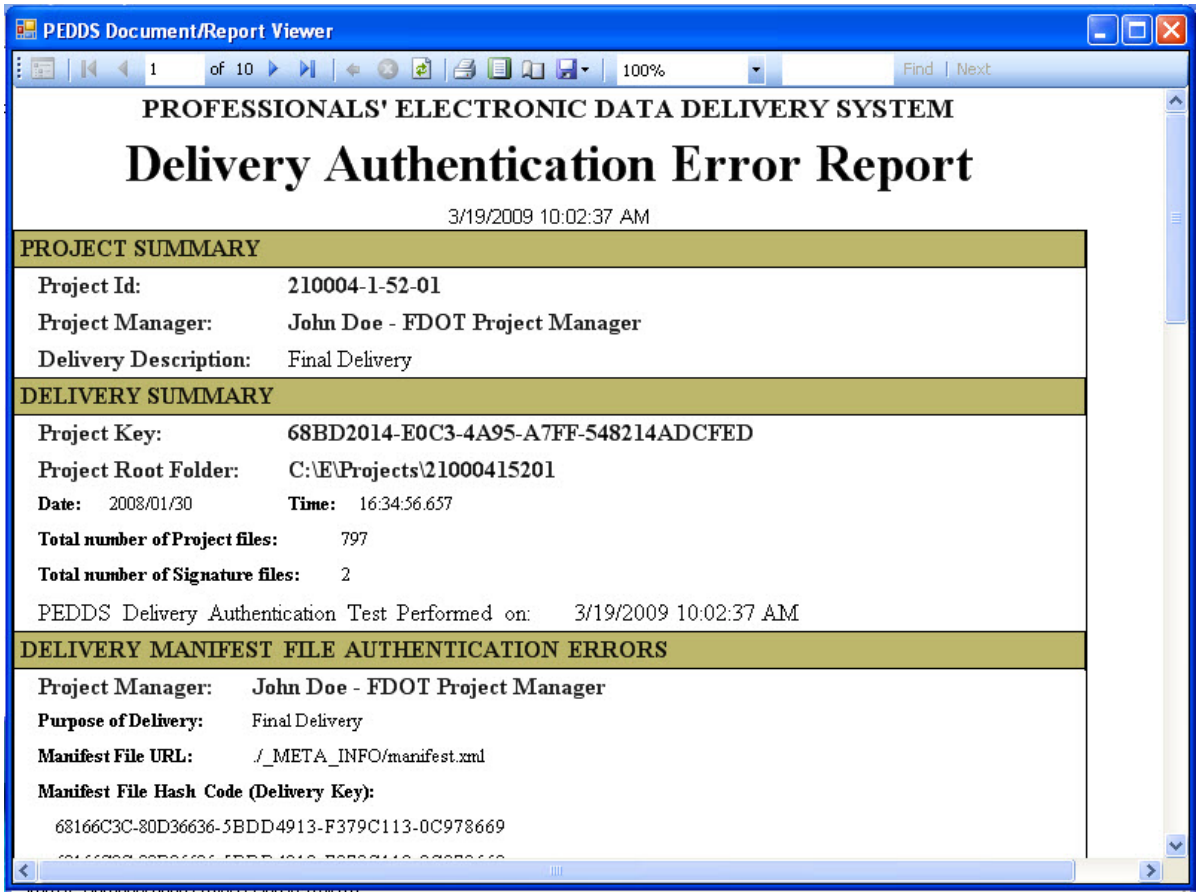
3. After the authentication process finishes, the Report Viewer automatically opens and displays the results in a report called **Delivery Authentication Error Report.** Click the **Print** button to send the report to a print device.



PEDDS - Report Viewer dialog

4. To close Report Viewer, click the **EXIT** button.

Note The **Delivery Authentication Error Report** is a paper trail validating that all files in the project directory are the same files as listed on the manifest document. This validates that no file has been changed since the project was secured.

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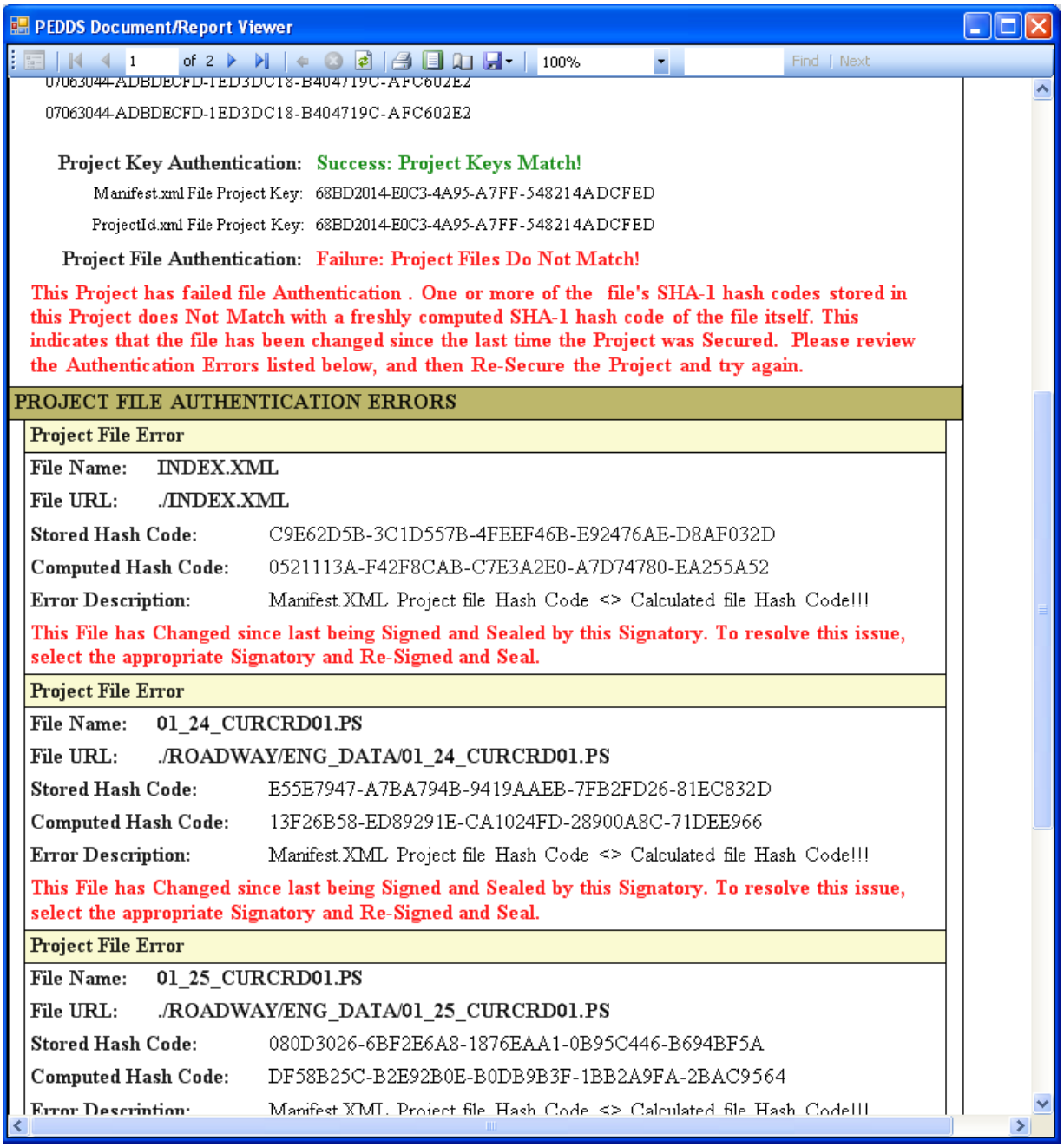
Important *Authenticating the Project: Modified File Error Messages*

The following figure displays an example of a **Delivery Authentication Error Report** identifying a file that has been modified and does not pass authentication. The authentication process identifies files that have been modified, as well as files that have been added to or deleted from a project.



Report Viewer - Invalid Project Files

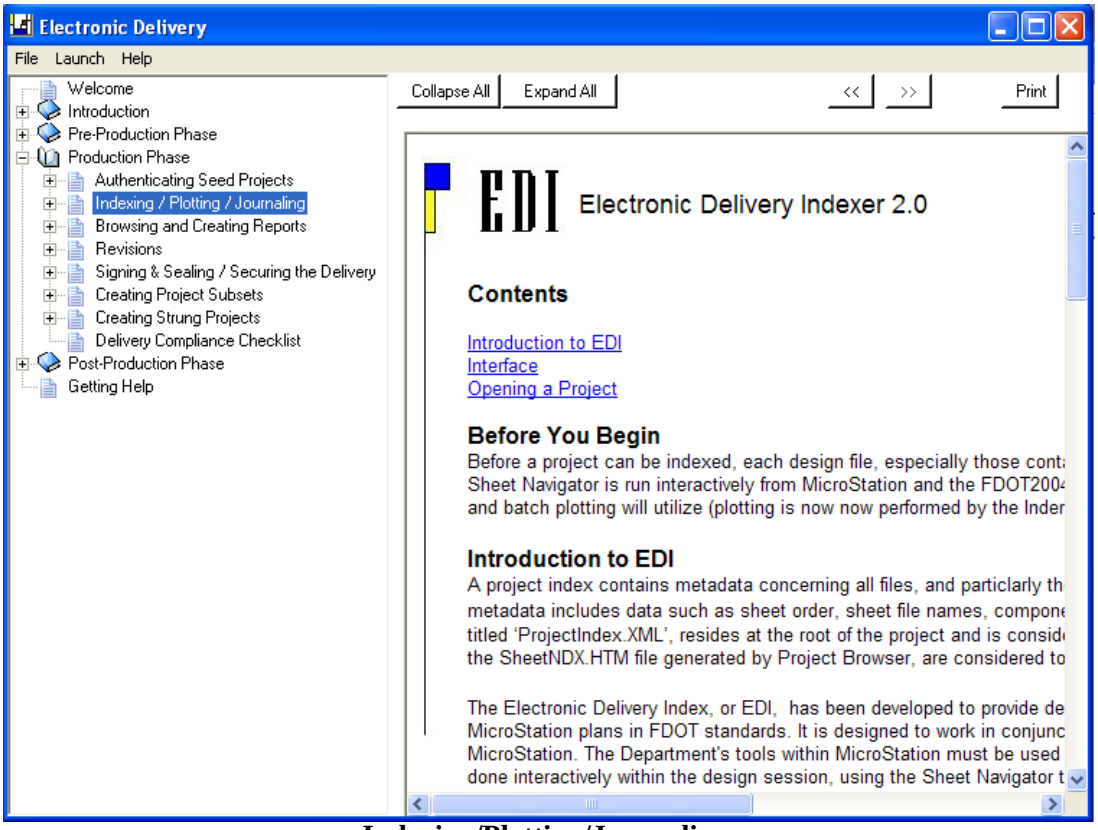
Section 3.4 Importing Seed Projects

Before a design consultant can begin work on a project, a copy of the project must be made available on the consultant's production server. The folder structure of the project is defined in Chapter 4 of the CPCH. If the user receives a project CD from the FDOT Project Manager as recommended in Section 8.5.2 of the CPCH, then the design consultant may use standard practices to copy the contents of the project CD to the production server.

If no project CD is made available by the FDOT Project Manager, the design consultant may use one of the 3 methods described in the Pre-Production Phase to create a new project. For FDOT In-House projects, the project is made available in TIMS Document Management software. The Project Root Directory is the file system directory that contains all project files and discipline 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. Note: There are no exercises for this section.

Section 3.5 Indexing / Plotting / Journaling

A Project Index contains meta data for all files, and particularly those identified as sheets in a project directory. This meta data includes data such as sheet order, sheet file names, component and discipline information, and file descriptions. The Index file, titled **ProjectIndex.xml**, resides at the root of the project and is considered the sole source of sheet index information. Other files (such as **Sheetndx.htm**, which is generated by EDI2) are considered index reports.



Indexing/Plotting/Journaling

The Electronic Delivery Index (EDI2) application provides tools designers can use to quickly build an index from a set of MicroStation plans in FDOT standards. EDI2 works in conjunction with the Department's required CADD package, Bentley MicroStation. The Department's tools within MicroStation must be used to tag the proper information within the design file sheets. This is done interactively within the design session, using the Sheet Navigator application (available from the FDOT Menu in the FDOT2008 workspace interface).

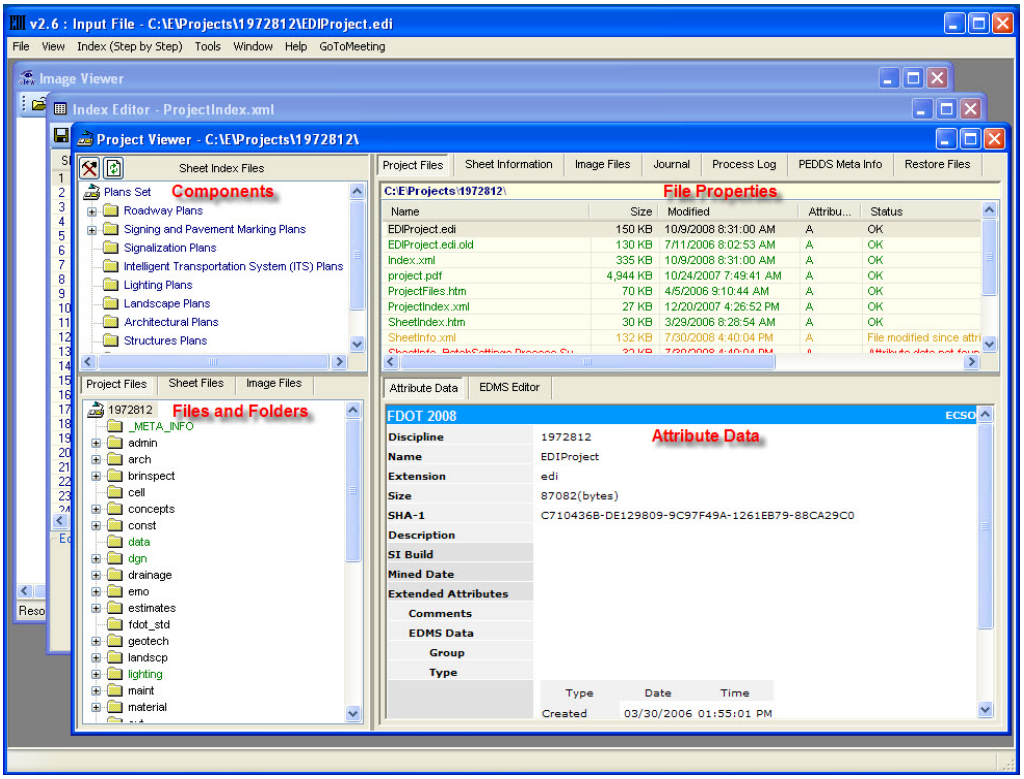
Sheet Navigator identifies administrative information on sheets, such as sheet type, sheet number, description, County, State Road number, etc. EDI2 calls Sheet Navigator in the background to mine this data and build an index of information about those files. EDI2 can also import Sheet Navigator index data directly. Sheet Navigator creates index data, named **SheetInfo.xml**, in the project root folder and optionally in project discipline folders. EDI2 stores mined data as a single file in the root directory of the project called **Index.XML**, and contains the meta data about the parent files it documents. The Sheet Index, **ProjectIndex.XML** is produced from this attribute data and also stored in a standardized XML format. Both **Index.XML** and **ProjectIndex.XML** must be delivered to the Department.

Because EDI2 is aware of the sheets in the plan set, it makes sense that the functionality of batch plotting a project also falls within its operational parameters. EDI2 uses MicroStation plotting to produce image files of each plans sheet to FDOT specifications.

EDI2 also creates new FDOT seed projects if they do not previously exist.

Section 3.6 Reviewing the EDI2 Application

Section 3.6.1 EDI2 Interface



EDI2 is a multi-document interface application. In the image above, the three EDI2 windows are shown.. The three windows initially available in EDI2 are Project Viewer, Image Viewer and Index Editor. These windows may be arranged sized, tiled and cascaded. EDI2 opens many other windows and panes as well.

The Project Viewer window is comprised of four panes; Components, Files and Folders, File Properties and Attribute Data. Several of the tabs, which provide different methods for working with project data, found on the individual panes are linked including the following:

The Project Files tabs in both the Files and Folders and the Files Properties panes display the data for all files in the project.

The Sheet Files tab in the Files and Folders pane and Sheet Information tab in the Files Properties panes display the sheet information mined from design files.

The Image Files tabs in both the Files and Folders and the Files Properties panes display information about image files in the project.

Note Each list view or tree view of files and folders is linked to a context menu. Users can explore the functionality of **EDI2** by positioning their mouse over a window pane, an item in the pane or a status bar, and then right-clicking to see available options.

Section 3.6.2 EDI2 File Data

When executing and navigating to a project, EDI2 creates the following files in the project root folder and in the current local user application data folder (Typically: **C:\Documents and Settings*username*\Local Settings\Application Data\EDI**). The first time EDI2 is executed (or after a new version is installed) EDI2 configures and initializes all settings according to the users workstation environment.

- **EDIProject.edi** - Saves the Sheet Index Files tree view as XML data in the project root folder.
- **EDILog.xml** - Saves all informational, warning and error data.
- **EDIConfigure.xml** - The initial EDI2 configuration files that is generated and read when EDI2 is first run. Any changes to most of this data, is stored in the registry and takes precedence.
- **EDIBackupList.xml** - A list of files saved when the user deletes sheet files while in EDI2. They can be restored from the Restore Files tab in the Project Viewer's File Properties pane. These files are copied to the user's local application data folder and given GUID names, so files in different folders with the same name can be restored. Backup files are automatically restored if the Re-create Plot File process fails.
- **Index.xml** - The primary project database file used throughout the ED process.
- **ProjectIndex.xml** - The XML output used to define a simple sheet index.
- **Sheetndx#.htm** - A required file that is generated to display the project and sheet index information in a user-friendly form. This file can be created using EDI2.

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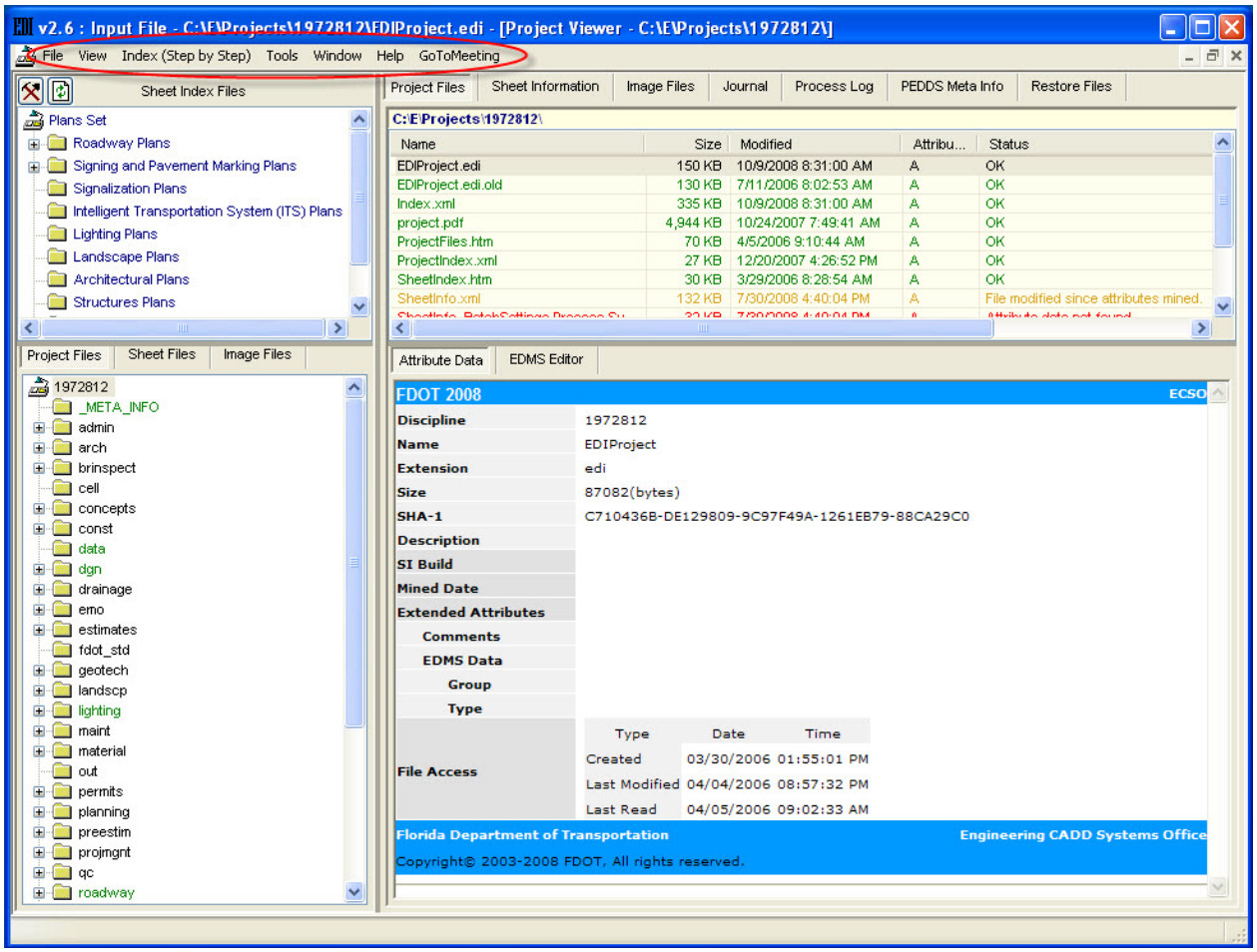
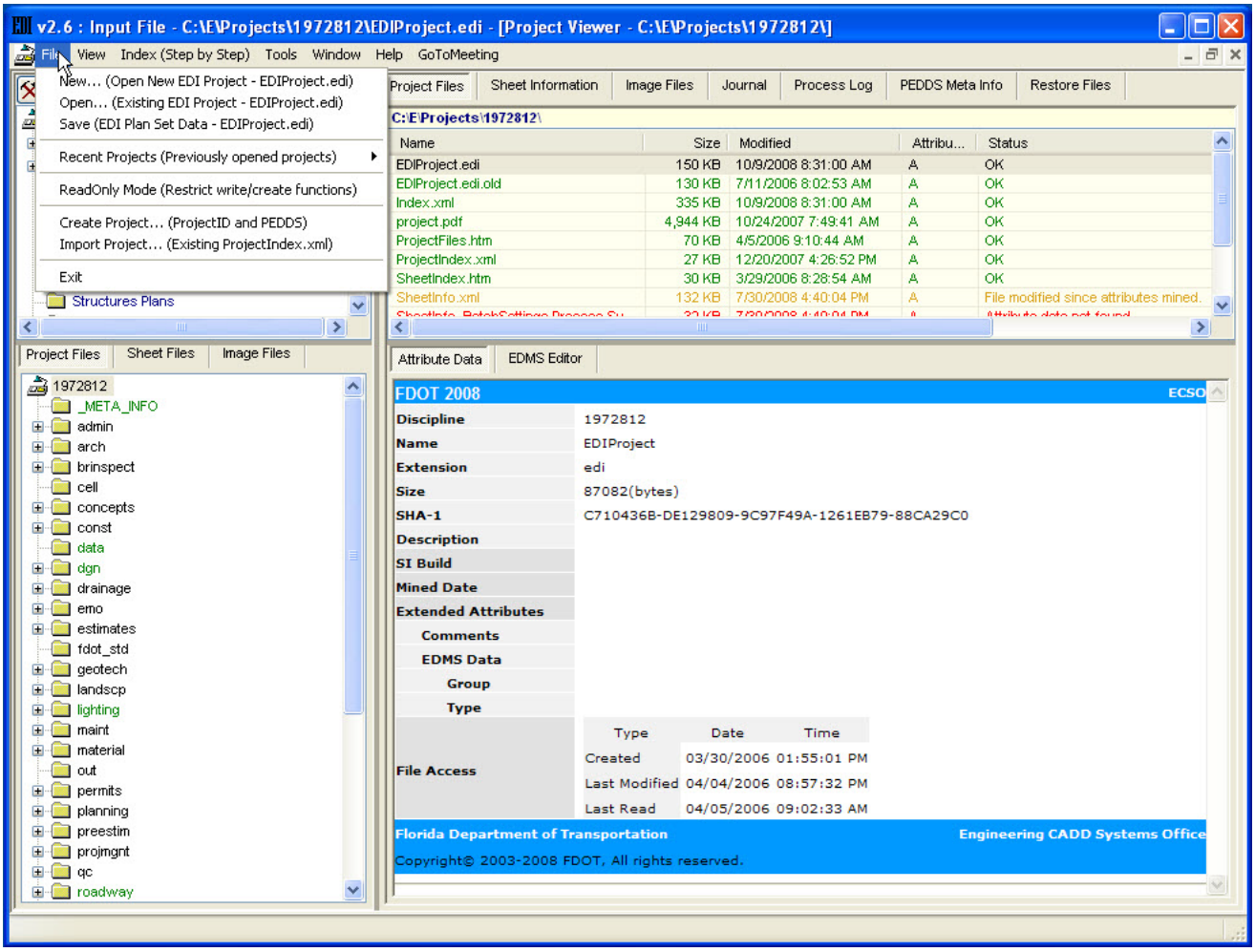
- **Project#.pdf** – The complete plans set. All sheets in the project are consolidated into a single PDF document. An intermediate Postscript file of all sheets may be deleted.
- **ProjectFiles.htm** - An HTML report containing a simple file index. ProjectFile.htm - An HTML generated to document all project files and EDMS data.

Section 3.6.3 EDI2 Main Menu



File	Opens, imports, creates and saves EDI2 project data
View	Displays EDI2 Projects, Index, Image, Journal, and other view windows
Index (Step by Step)	Provides a step by step work flow for creating ED data
Tools	Provides access to other ED applications and EDI2 settings and options
Window	Selects and manipulates EDI2 windows
Help	Displays Help menus and the EDI2 Splash Screen
GoToMeeting	Provides easy access to join a GoToMeeting session.

Section 3.6.3.1 EDI2 File Menu



EDI2 File Menu

New... (Open New EDI Project – EDIProject.edi)

- Clears the Plans Set tree view.
- Clears the project index data.
- Prompts user to set a new **EDIProject.edi** location.
- Sets initial project path (The project path can be altered through Start Project. The **EDIProject.edi** location is the root folder of the project.)
- Prompts for overwrite if EDI2 input file exists.
- If the Project **Index.xml** exists, EDI2 backs up the original file before overwriting.
- Optionally, an existing **Index.xml** can be read and updated for a new EDI2 project.
- If no **Index.xml** exists, EDI2 prompts to create a new one.

Open... (Existing EDI Project – EDIProject.edi)

- Opens an existing project.
- Reads Plans Set data.
- Sets the corresponding project path.
- Reads **Index.xml**, if exists and may prompt the user to mine project data.
- If no **Index.xml** exists, prompts to mine project data.

Save... (EDI Plan Set Data – EDIProject.edi)

- Saves **EDIProject.edi** data to disk, which also automatically occurs on exit of application.
- Index.xml and EDIProject.edi are automatically saved for when File > New **(Open New EDI Project – EDIProject.edi)** or File > Open**... (Existing EDI Project – EDIProject.edi) is selected,** or upon exit.
- If ReadOnly Mode (Restrict write/create functions) is selected, saving data is disabled.

Create Project... (ProjectID and PEDDS)

- Creates a new project from the FDOT project template and begins to create a Project ID (**ProjectID.xml**) in the project's ***_meta_info*** folder for PEDDS.
- Optionally invokes PEDDS to review and complete Project ID data.

Exit

- Saves registry settings.
- Additionally, if **ReadOnly Mode (Restrict write/create functions)** is NOT toggled on, saves current **Index.xml** and **EDIProject.edi** to disk.
- Closes MicroStation, if started.
- Exits EDI2.

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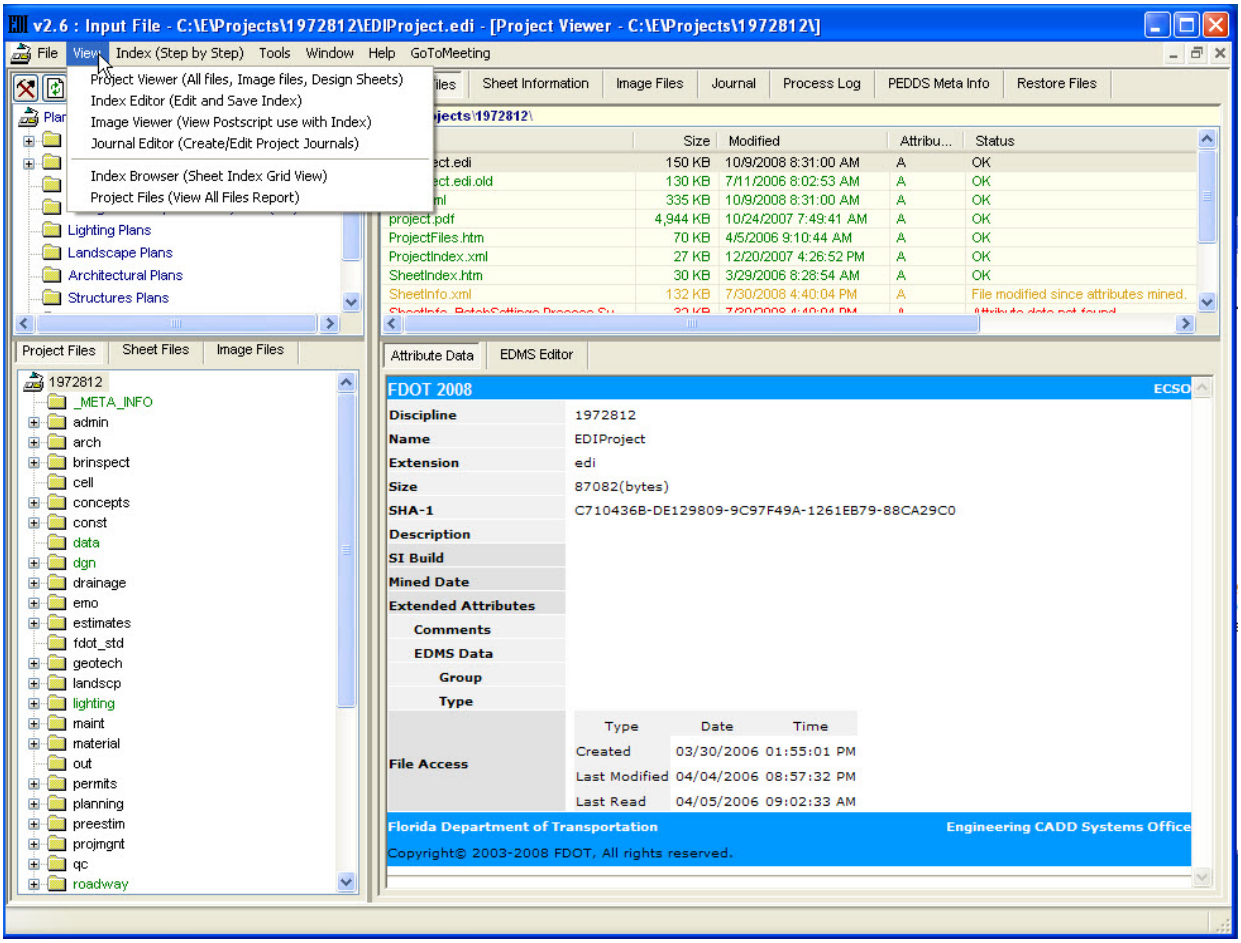
Section 3.6.3.2 EDI2 View Menu



EDI2 - View Menu

Project Viewer (All files, Image files, Design Sheets) Displays overall view of project folder and files, including sheet information and status. Several tabs are displayed along the tops of various window panes, including the following:

- **Sheet Index Files (Plans Set)** – Tree view representation of the sheet index. Sheets can be placed by *dragging and dropping* from the file list on **Image Files** tab, automatically from the **Sheet Information** tab by way of a right-click menu item or selecting **Index (Step by Step) > 4) Sheets (Working With Sheets) > 1) Update... (Add/Replace index sheets)**.
- **Project Files** (linked tabs) – Tree view representation of project folders, files and sheet information. All files, regardless of type, are displayed in this list view for each directory in the project.
- **Sheet Information** (linked to **Sheet Files** tab) – Tree view representation of project folders and sheet specific files.
- **Image Files** (linked tabs) – Tree view representation of project folders and a list view of all image files including Postscript, pdf, jpeg, and tiff. The user may drag image files from folder listings to the appropriate Plans Set component tree view node. The image file appears at the bottom of the component listing.

- **Process Log tab** – Errors, warnings and information messages are displayed. Process log information is automatically saved in XML format. Any time a warning bell sounds, corresponding error information is recorded here.
- **PEDDS Meta Info tab -** Displays PEDDS information read from the _meta_info folder.

In general, the following color-coding is used:

On the Project Files tab

- Green – File attribute data (mined data) is present and appears OK. (Project Files)
- Red – File attribute data is missing. Data needs to be updated.

On the Sheet Information tab

- Green – All sheets are present and accounted for. (Sheet Information)
- Amber – Postscript sheets are present but the master design file was open for write access and may have been modified. EDI2 only checks the master design file modify date for comparison. Reference files are not checked.

Note Opening a file with MicroStation for write access modifies the file attributes.

- Red – Postscript sheet files found in the source that are missing or do not exist.
- Blue - Postscript sheet files that are not to be plotted. These files are marked "Not Plot" or "Obsolete" by Sheet Navigator.

On the Image Files tab

- Black – Image file has not been assigned to the project sheet index (Plans Set).
- Green – Image file is included in the project sheet index (Plans Set).

Index Editor (Edit and Save Index) – Assembles the Plans Set data into a listing of plans sheets. The user can make corrections to description and sheet number as necessary, as well as removing invalid sheets.

Clicking the *Save* icon ( ), saves index data to ProjectIndex.xml.

Note If changes are detected, the user is prompted to save **ProjectIndex.xml** on exit and, if required, for other downstream processing. In any case, EDI2 remembers the sheet information in **EDIProject.edi**, which is automatically saved.

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Image Viewer (View Postscript use with Index) – Displays Postscript images to verify sheet information, and enables zooming, measuring and printing of sheets. The *Lock* feature, used in combination with the Index Editor, makes scanning of project sheets for description and sheet numbers possible.

For example, EDI2 can display sheets sequentially using the Index Editor and Image Viewer. After collapsing other windows, tile the Image Viewer and Index Editor horizontally. Zoom and locate the lower right corner ( ) of a sheet in the Image Viewer. Lock the image ( ) and select the Show Image icon ( ) in the Index Editor. The user can navigate down through the sheets ( ) and see the sheet numbers of each sheet.

Journal Editor (Create/Edit Project Journals) – Edits the Journal files. The Journal Editor can be launched from a folder or file to include a relative path reference automatically (see right-click menus). Journals are opened and saved in the data folder by default or as specified by the user.

Index Browser (Sheet Index Grid View) – Displays index data in a simple HTML format by generating SheetIndex.htm (The final HTML index, Sheetndx.htm can be created in EDI2).

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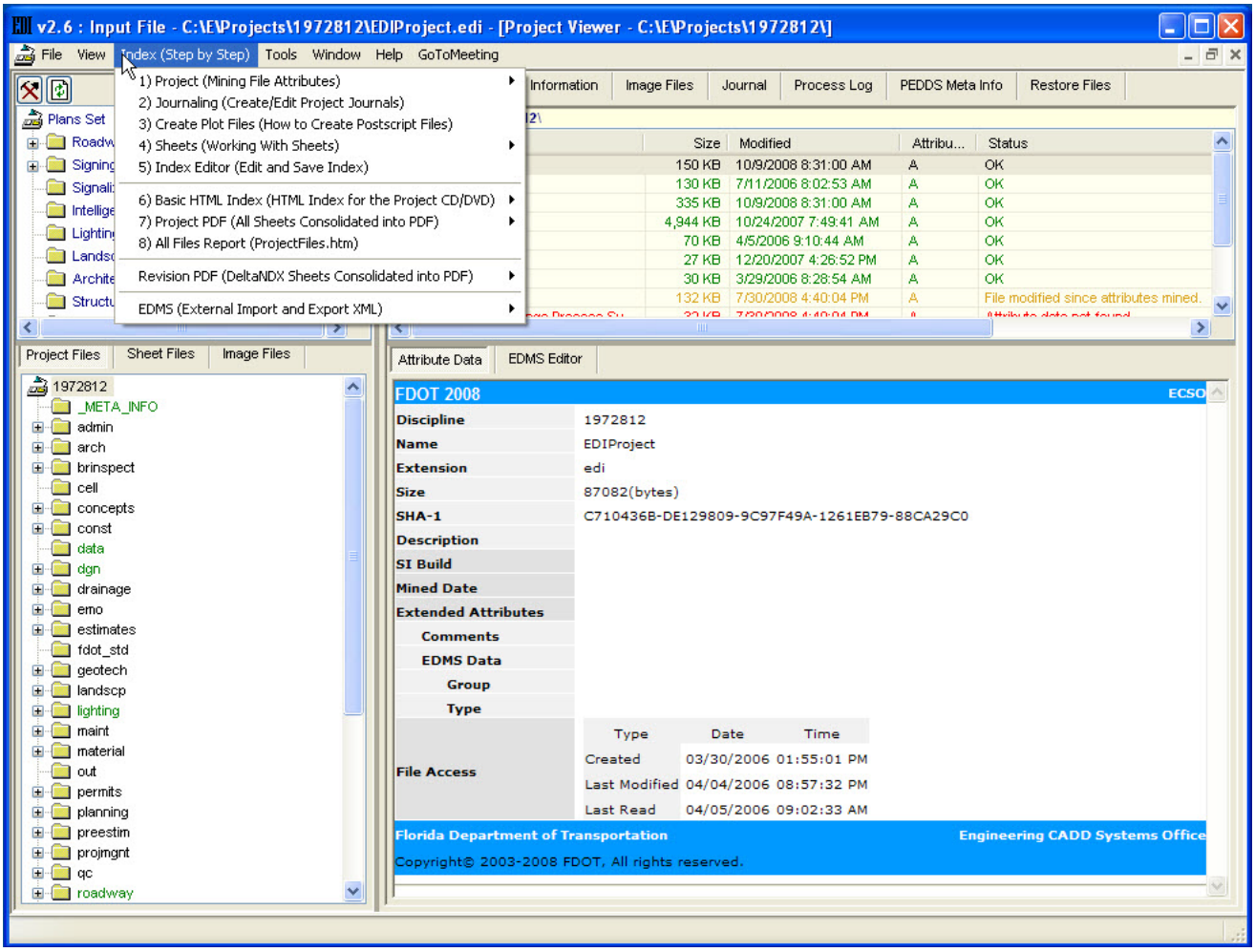
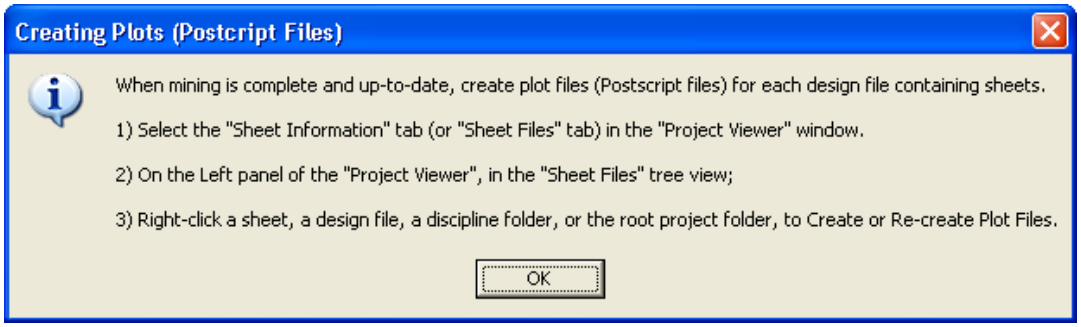
Section 3.6.3.3 EDI2 Index (Step by Step) Menu



Project (Mining File Attributes) - Displays commands related to the EDI2 project index data, Index.xml, and the mining process.

Journaling (Create / Edit Project Journals) – Opens the journal editor window by way of the Journal tab.

Create Plot Files (How to Create Postscript Files) – Displays a dialog explaining how to use EDI2 to create Postscript Files.



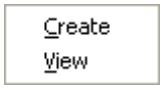
EDI2 – Index Data

Sheets (Working with Sheets) – Displays commands related to the project sheet index, ProjectIndex.xml.

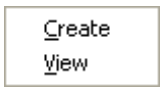
Index Editor (Edit and Save Index) – Invokes the Index Editor.

Note Each time the editor is activated, the Plans Set is polled for new or updated entries. The reverse process occurs when the Project Viewer is activated.

Basic HTML Index (HTML Index for the Project CD/DVD) – Creates and views the required final HTML sheet index, Sheetndx.htm.



Project PDF (All Sheets Consolidated into PDF) – Creates and views the composite PDF file. Project#.pdf contains all sheets in the ProjectIndex.xml.



All Files Report (ProjectFiles.htm) - Creates an HTML report on all files in the project, ProjectFiles.htm. Before creating ProjectFiles.htm, EDI2 prompts the user to verify that attribute data is available for every file in the project.

Revision PDF (DeltaNDX Sheets Consolidated into PDF) – Displays the following menu items for working with revised projects.

- **Create** – Creates the composite pdf for a revised project. Revised project PDFs are named **Revision1.pdf**, **Revision2.pdf** and so forth. The user selects the appropriate index number.
- **View** – Views the revised project pdf. The user selects the appropriate index number.
- **View DeltaNDX** – Displays **DeltaNDX#.htm** in an Internet browser window. This file is th**e source inde**x for the re**vised projec**t index. **DeltaNDX#.htm**, in addition to providing the Delta report, also contains XML data.

EDMS (External Import and Export XML) – Used to preserve EDMS data or combine data from sub projects.

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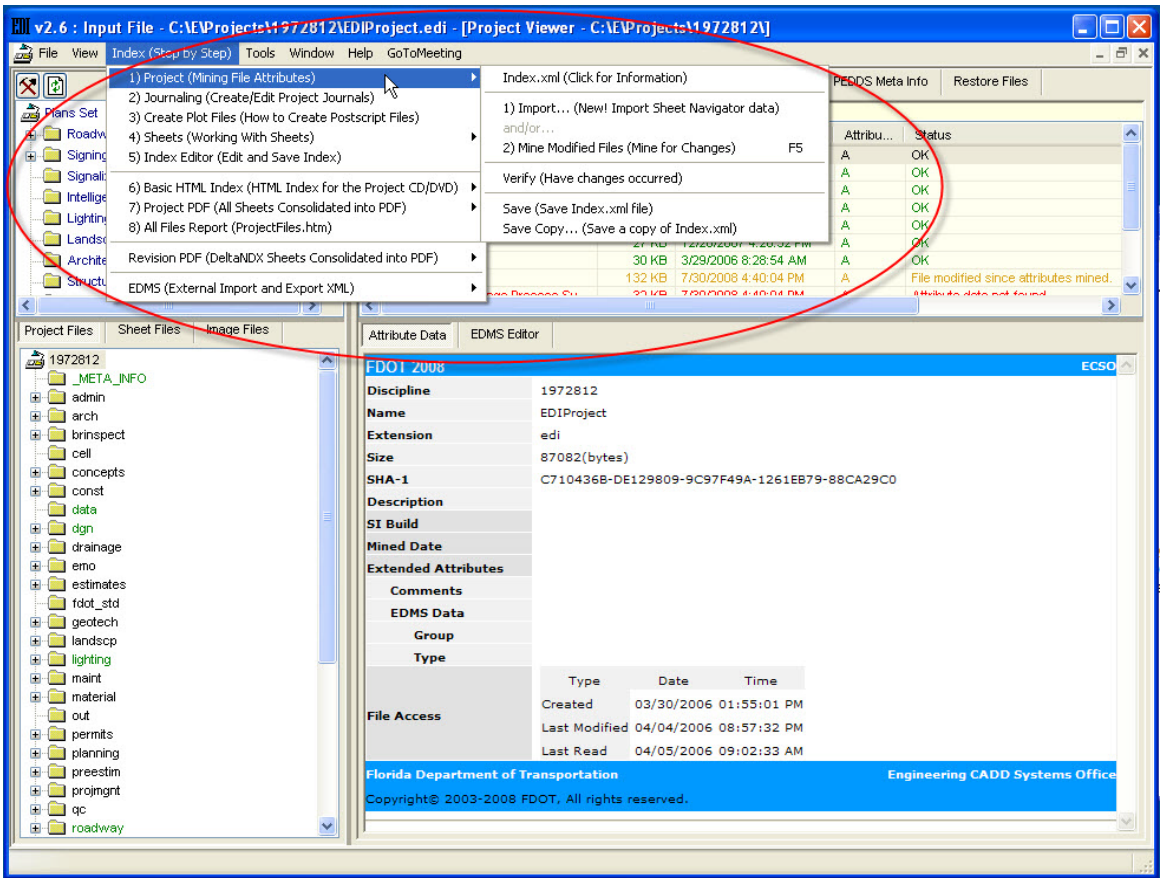
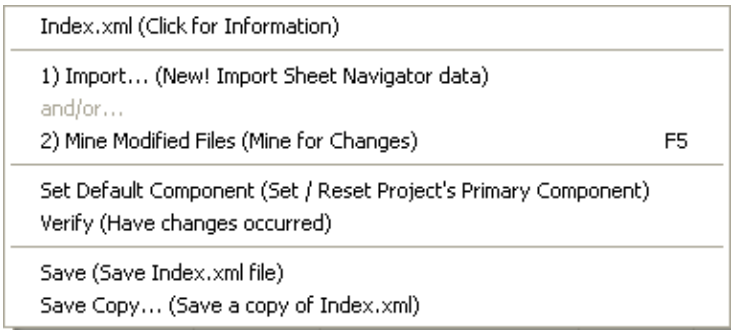
PROJECT INDEX TOOLS

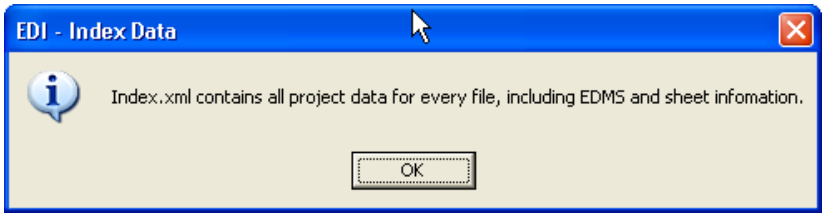


EDI2 - Index Menu - Project Index tools

Project (Mining File Attributes) displays commands related to the EDI2 project index data, Index.xml, and the mining process.



Index.xml (Click for Information) – Displays a dialog explaining what is contained in Index.xml.



EDI2 – Index Data

- **Import… (New! Import Sheet Navigator data)** – Imports **SheetIndex.xml** from the root folder or any discipline folder.

Note This is the preferred method for mining design file data. Ideally, the user should execute Sheet Navigator to create SheetIndex.xml for the project or at least a discipline, and then import this index. This is the quickest and most efficient method. Once SheetIndex.xml is imported use Mine Modified Files to complete the mining process for all other files.

- **Mine Modified Files (Mine for Changes)** – Mines only files modified since a previous mining operation.

Note To mine all files in the project, select Tools > Mine All Files (Force Mine of All Files).

- **Verify (Have changes occurred)** – Verifies all files are mined and up to date. EDI2 writes information concerning suspect files into the *Process Log*, *Errors* list.
- **Save (Save Index.xml file)** – Saves index data to Index.xml, explicitly.
- **Save Copy** (Save a copy of Index.xml) - Saves a copy of Index.xml to another location.

Note EDI2 saves the Index.xml data automatically when closing or changing to other projects, as long as Read Only mode is NOT enabled. Also, the project Index.xml must be located in the project root folder.

Set Default Component (Set/Reset Project's Primary Component) – There are options available to set or reset the project's primary component as well as the component for sheet files within a discipline folder.

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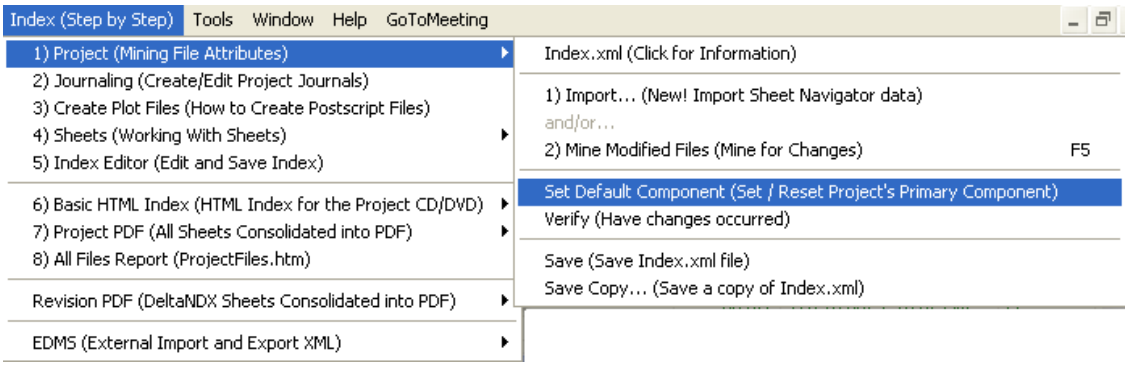
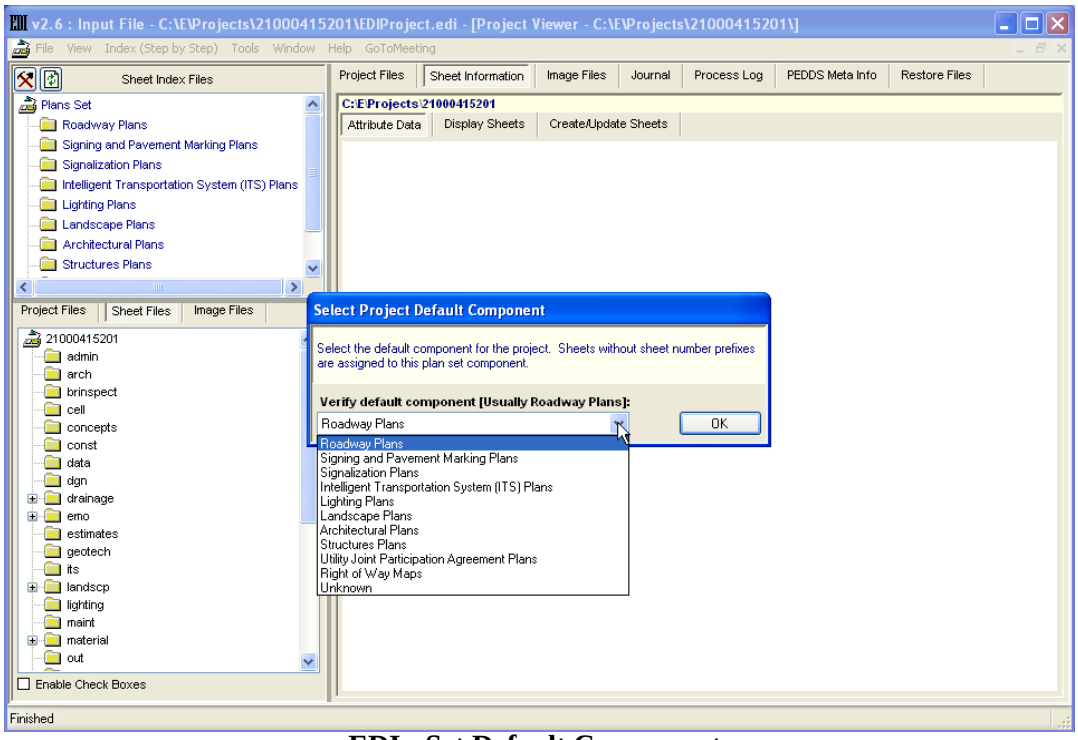
To Set the Default Component from within EDI

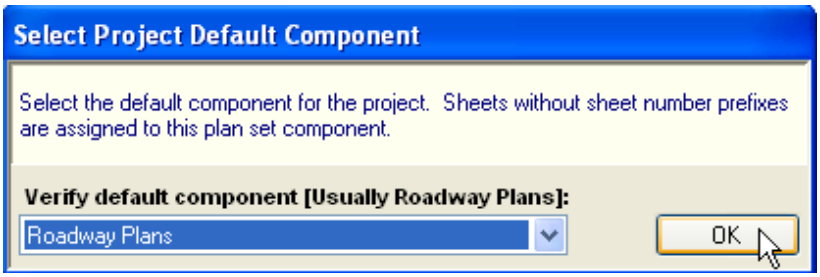
1. Go to Index (step-by-step) < Project (Mining File Attributes) < Click Set Default Component (Set/Reset Project's Primary Component). Set Default Component dialog box opens.
2. Select the desired component from the pull-down menu and press **OK** (see figures below).



EDI – Set Default Component



EDI - Set Default Component



EDI - Set Default Component

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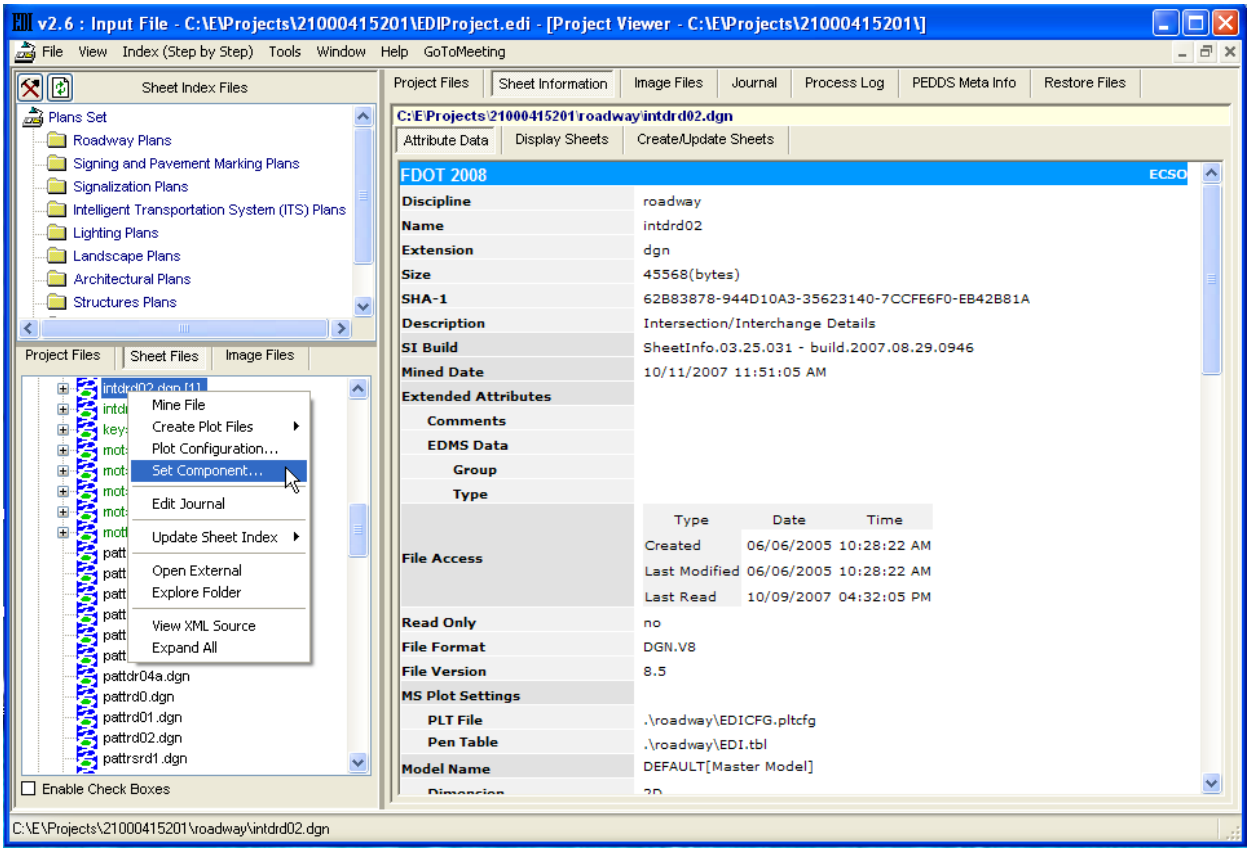
To Set Individual or Components of Sheets within Discipline Folders

1. Click on the **Sheet Files** tab in EDI.
2. Right click on the discipline folder or sheet file and click **Set Component,** as needed. (see figures below).



Set Component (sheet file)

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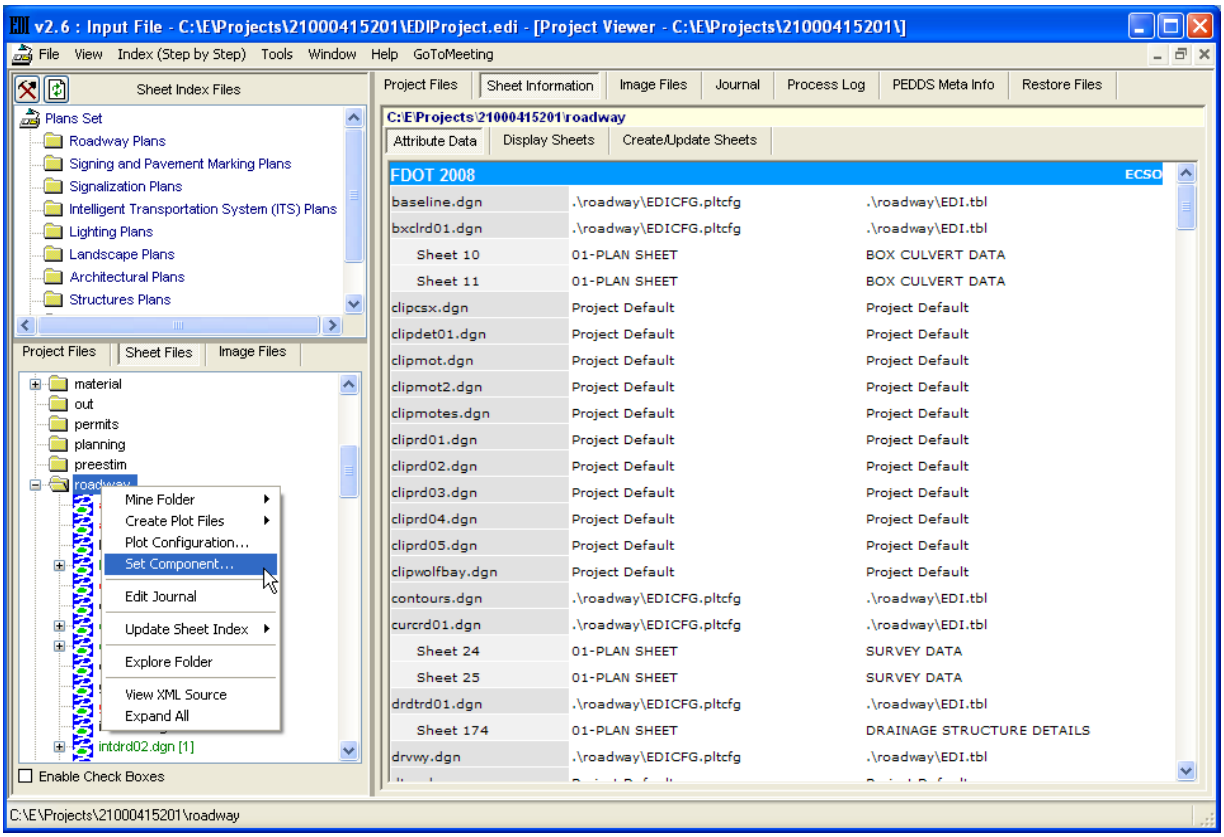
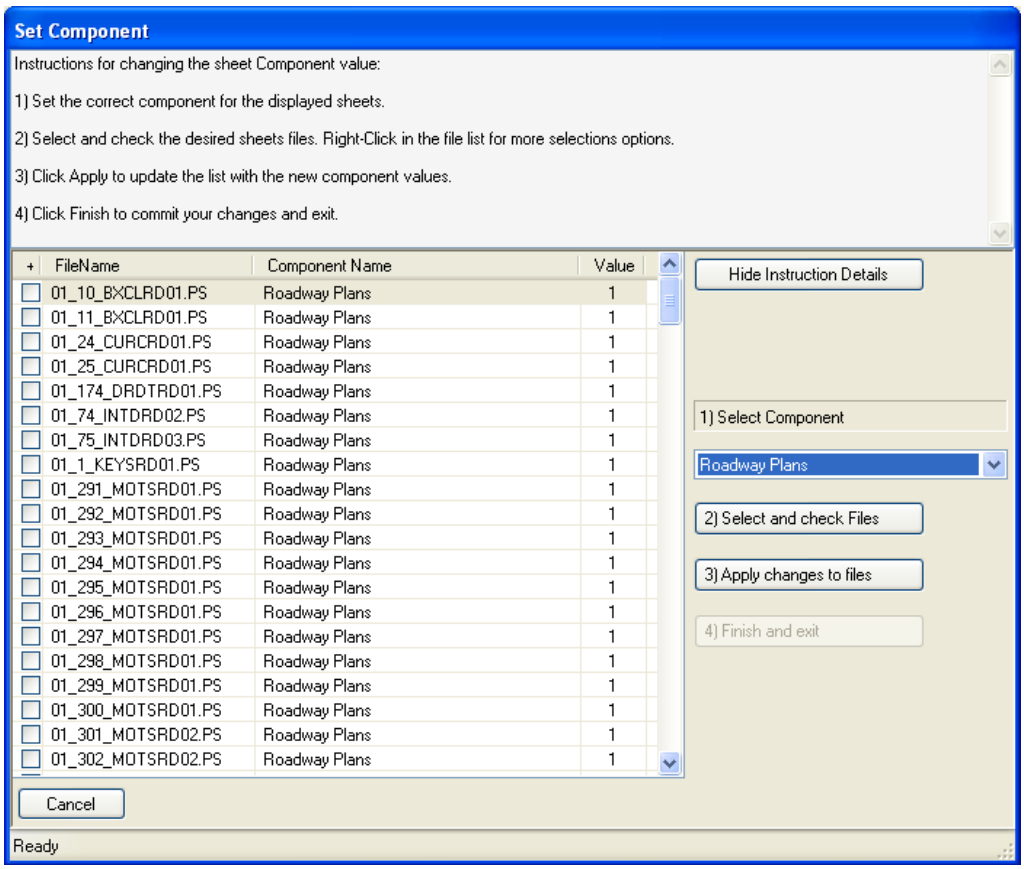
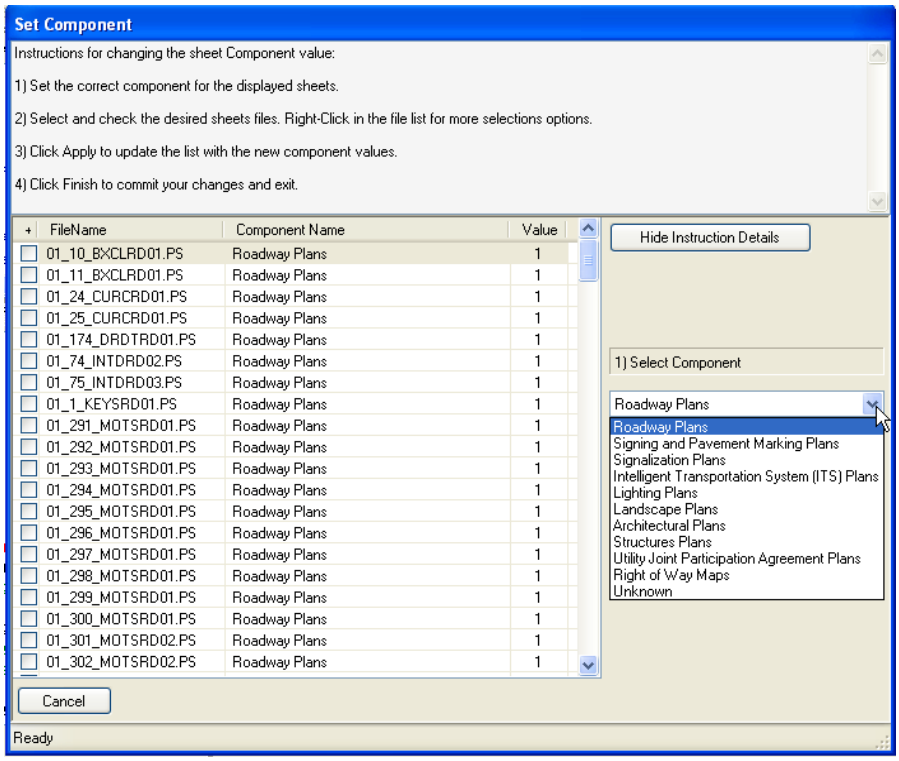


EDI - Set Component (discipline folder)



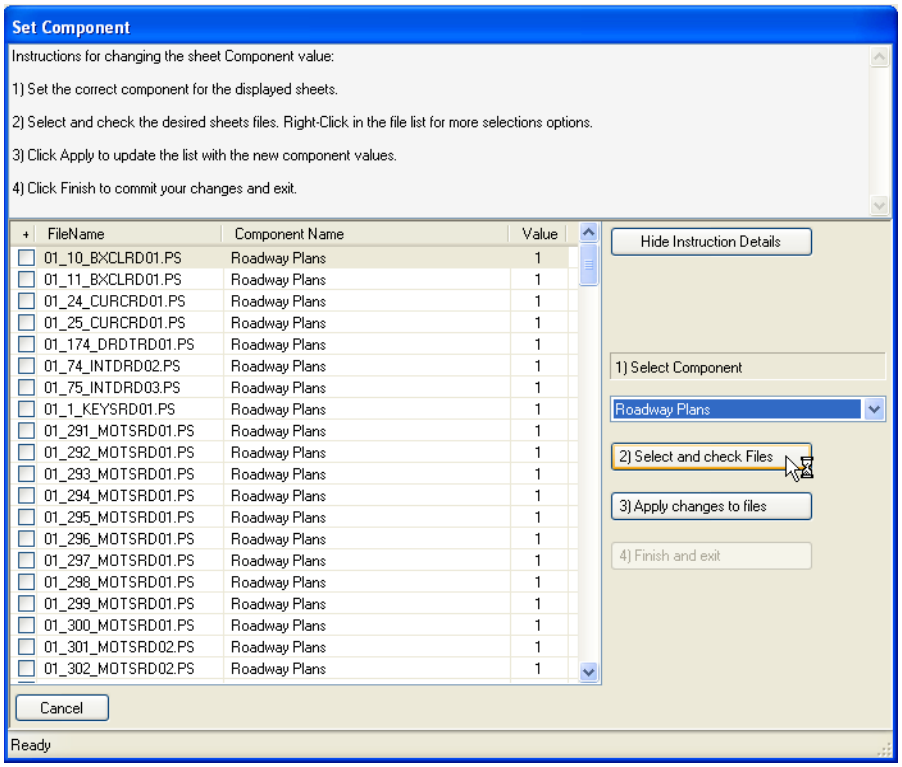
EDI - Set Component dialog box

3. The Set Component dialog box opens. Set the correct component for the displayed sheets.



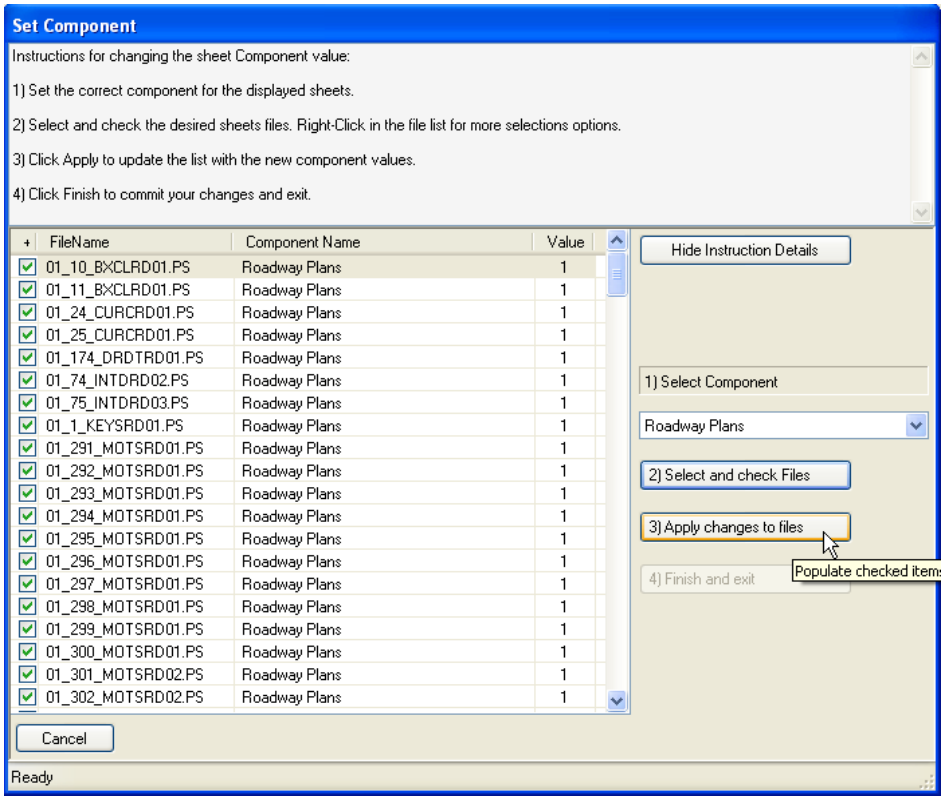
EDI - Set Component

4. Select and check the desired sheet files. Right-click in the list for more selections options.



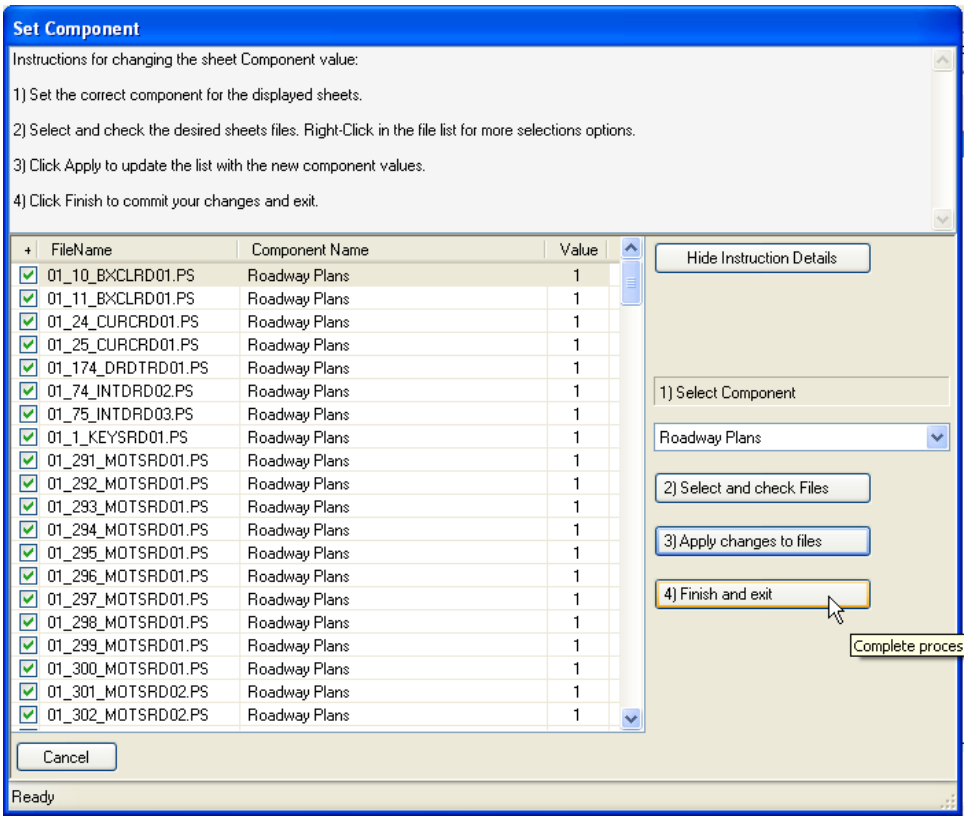
EDI - Set Component

5. Click **Apply** to update the list with the new component values.



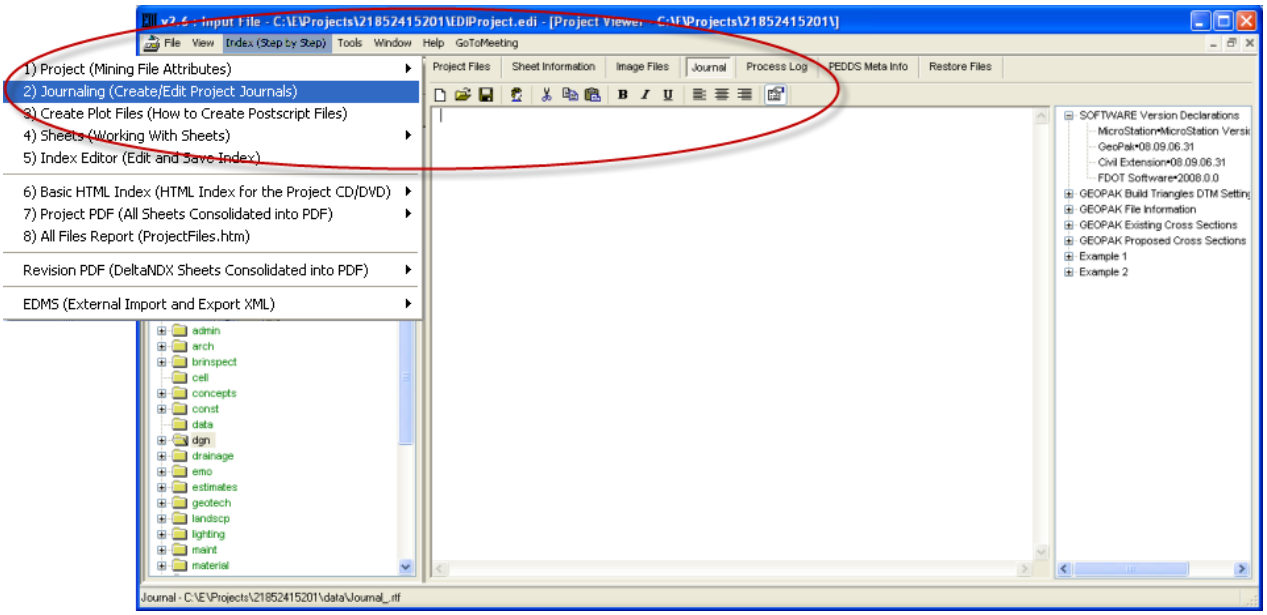
EDI - Set Component

6. Click **Finish** to commit changes and exit.



EDI - Set Component

JOURNAL TOOLS



EDI2 - Tools - Journal

Journaling (Create/Edit Project Journals) provides tools to assist users in creating Rich Text Format (RTF) files, which document a project. Opens the Journal Editor by way of the **Journal** tab on the Project Viewer window.

Note EDI2 versions prior to MR 3, stored journal data in XML format. This IS NO longer the preferred method. RTF is a common format and allows the inclusion of images. Journal files are now created in RTF only.

The Journal Editor provides a tool bar for creating, opening, and other common editor functions.

- **New –** Creates a new journal**.**
- **Open** – Opens an existing journal
- **Save –** Saves the current journal
- **User Info** – Opens a user dialog used to insert user data into the journal
- **Text Edit Buttons** - Cut, Copy, Paste, Bold, Italic, Underline and text Justification.
- **Insert Standard Text** – Displays a tree view of standard text to be inserted into the journal.

  The Insert Standard Text Menu displays by right-clicking in the Insert Standard Text tree view (The right window pane in the Journal Editor. See **Insert Standard Text** toolbar icon above.).

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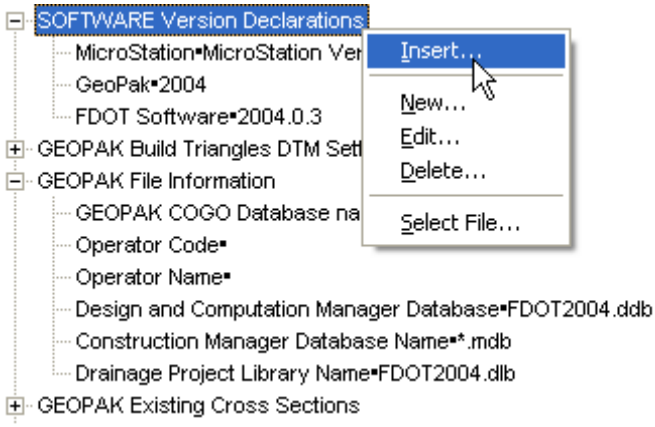
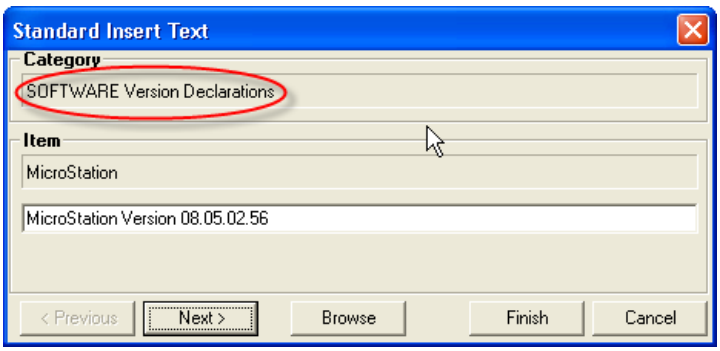
- **Insert** - Select standard text category to insert.



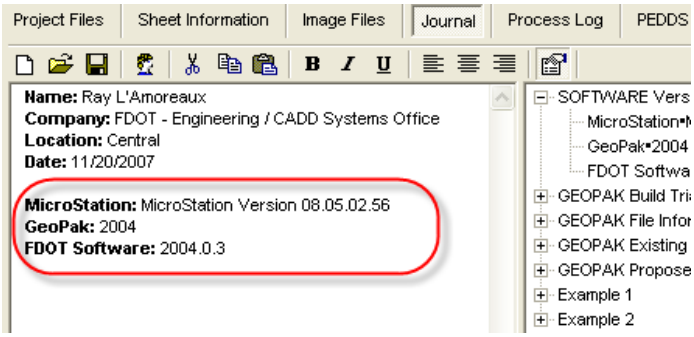
  - **Standard Insert Text Entry Dialog –** Prompts the user to enter data.



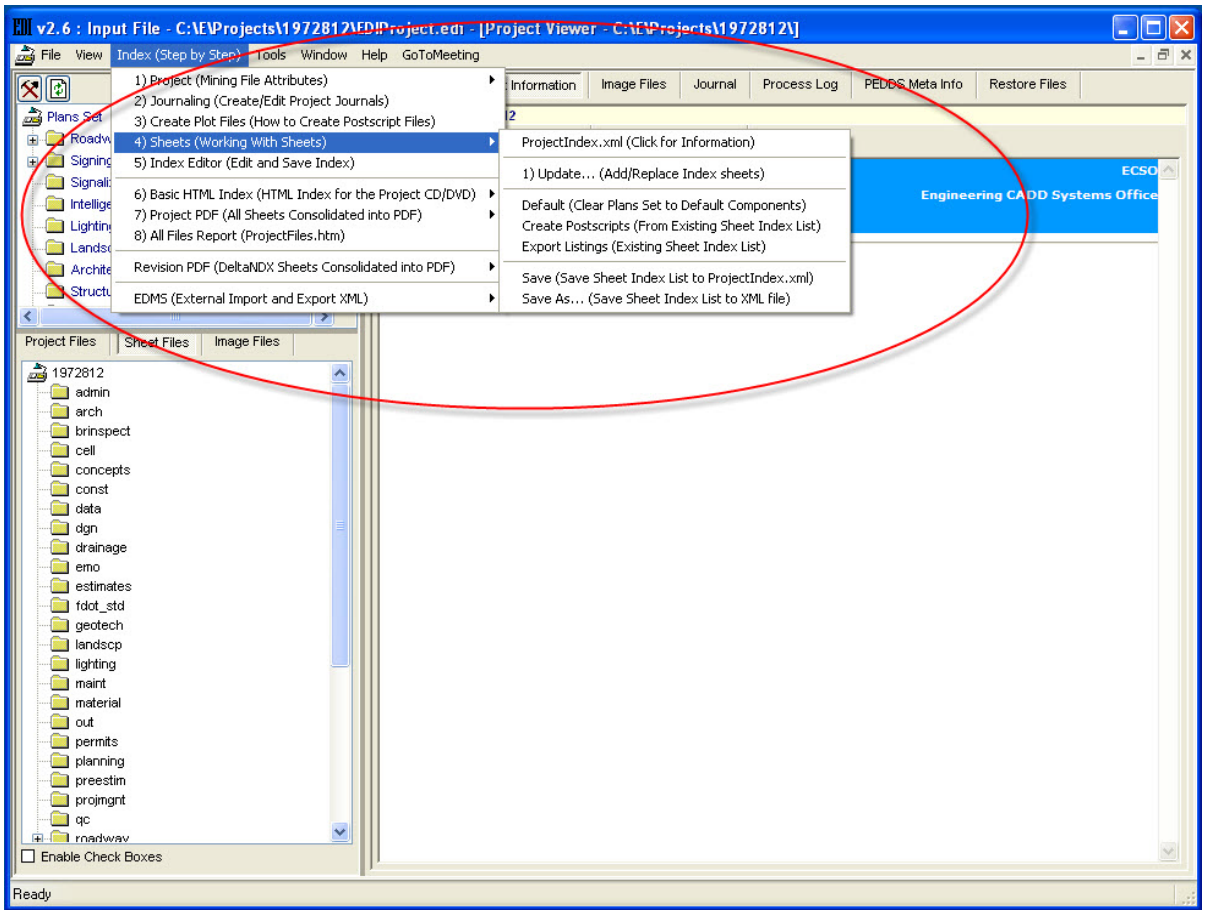
Note Data entered into the standard text dialog is automatically saved for later entry. The default file is located in the application's support sub-folder as StandardInsertText.xml, typically at: **C:\FDOT2008\Win32\EDI2\support\StandardInsertText.xml.**

Note Tip The user may copy the **StandardInsertText.xml** from the applications support sub-folder and specify the new file with the right-click menu item, **Select File**. Custom text categories may be added, edited and deleted.

  - Standard text inserts into the Journal Editor window.

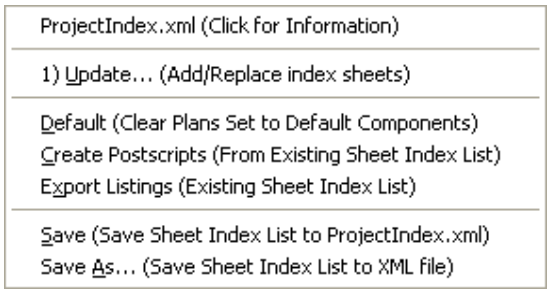


SHEET INDEX TOOLS



EDI2 - Index Menu - Sheet Index tools

Sheets (Working with Sheets) - displays commands related to the project sheet index, ProjectIndex.xml.



- **ProjectIndex.xml** (Click for Information) – Contains the final Sheet Index data: Sheet numbers, component and image file specifications.
- **Update...(Add/Replace index sheets)** – Invokes the sheet index update process, to add sheet data to the *Plans Set*. Sheets are added, optionally overwritten or removed as specified by the user for the entire project. Use the right-click menu in the **Sheet Files** tree view to add individual sheets, files or folders.
- **Default (Clear Plans Set to Default Components)** – EDI2 reads the component data from **SheetInfo.xml**, then clears the *Plans Set* to default component folders.

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Note **SheetInfo.xml** found in the FDOT2008 software suite, **mdlapps** folder, is not the same as the **SheetInfo.xml** index data, produced by Sheet Navigator and placed in the project root or discipline folder(s). This **SheetIndex.xml** provides the **settings** for Sheet Navigator.

- **Create Postscripts (From Existing Sheet Index List)** – Invokes a window which provides a method for creating sheets using an existing index data as displayed in the Index Editor.
- **Export Listings (Existing Sheet Index List)** – Invokes a window which provides a method for exporting various listings to file(s), using an existing index data as display in the **Index Editor**.

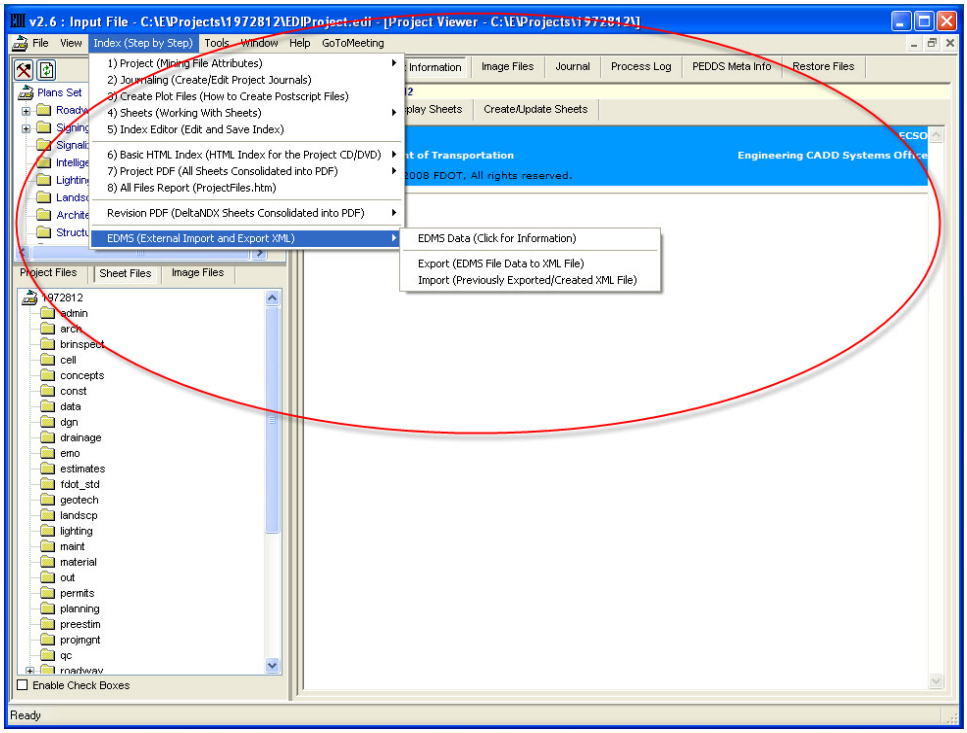
Note **Create Postscripts** and **Export Listings** menu items are tools for advanced users and may not function as expected.

- **Save (Save Sheet Index List to ProjectIndex.xml)** - Saves the sheet index data to ProjectIndex.xml, explicitly.

Note If changes are detected, the user is prompted to save **ProjectIndex.xml** on exit and if required for other downstream processing. In any case, EDI2 remembers the sheet information in **EDIProject.edi**, which is automatically saved.

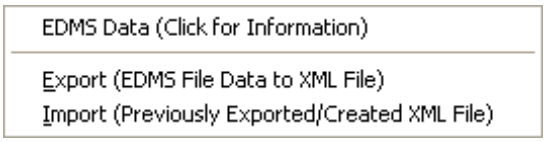
- **Save As…(Save Sheet Index List to XML file)** – Saves a copy of ProjectIndex.xml to another location.

EDMS INDEX TOOLS

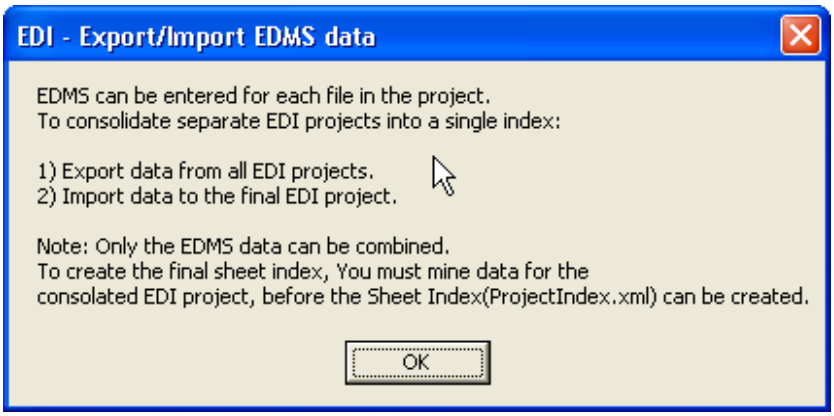


EDI2 - Index Menu - EDMS Index tools

EDMS (External Import and Export XML) preserves EDMS data or combine data from sub projects.



- **EDMS Data (Click for Information)** – Displays the following dialog, which explains the EDMS Export and Import feature.



EDI2 – Esport/Import EDMS data

- **Export (EDMS File Data to XML file)** – Exports EDMS data to EDMSData.xml in the project folder.
- Import (Previously Exported/Created XML File) – Imports EDMSData.xml and combines EDMS data with the existing project, which means sub project EDMS data can be imported.

Note Import overlays EDMS comments if the Group and Type are the same; otherwise the user is prompted to decide which to save. If no Group or Type is specified for the current file, then imported EDMS data is applied.

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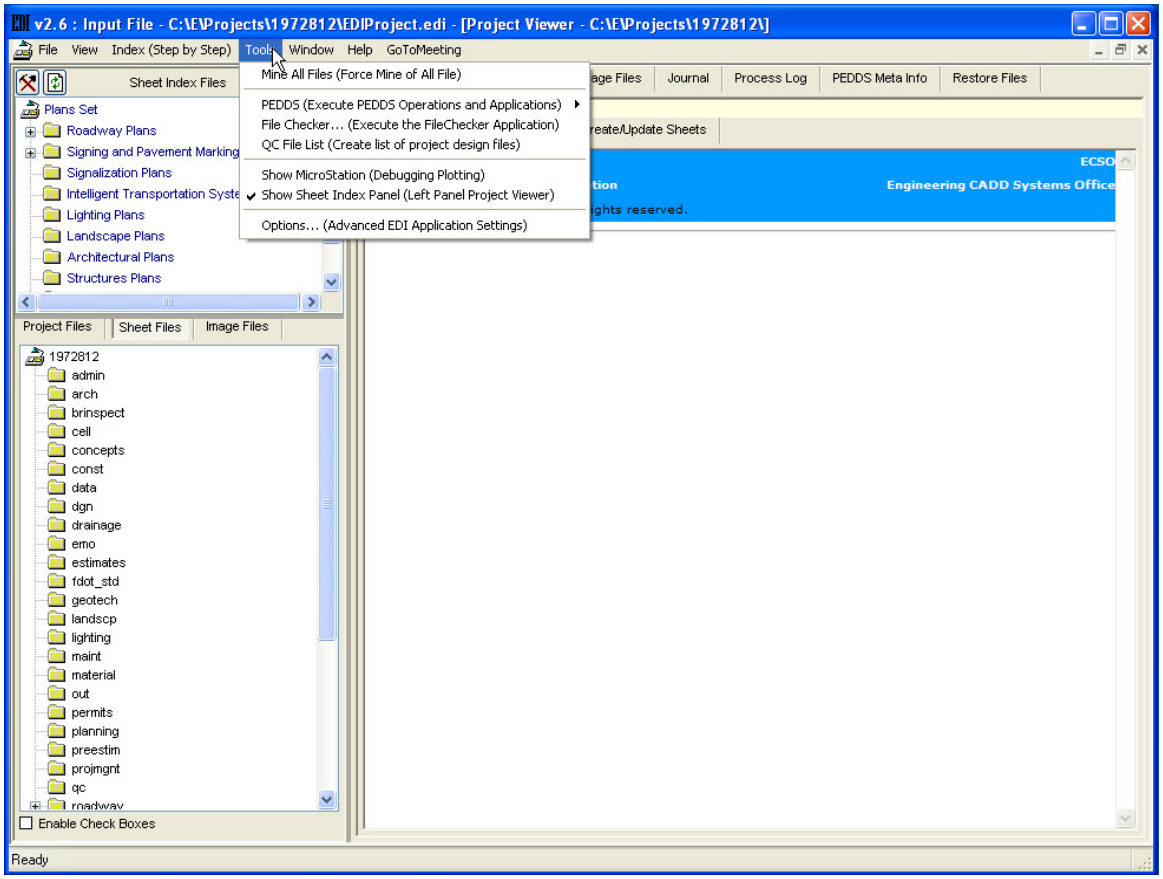
Section 3.6.3.4 EDI2 Tools Menu



EDI2 - Tools Menu

Mine All Files (Force Mine of All Files) – This forces mining of all files in the project.

Note **This IS NO longer the preferred method for mining data. Instead, it is recommended that users use** Import… (New! Import Sheet Navigator data)**. And** Mine Modified Files (Mine for Changes)**.**

PEDDS (Execute PEDDS Operations and Applications) – See PEDDS Tools later in this section**.**

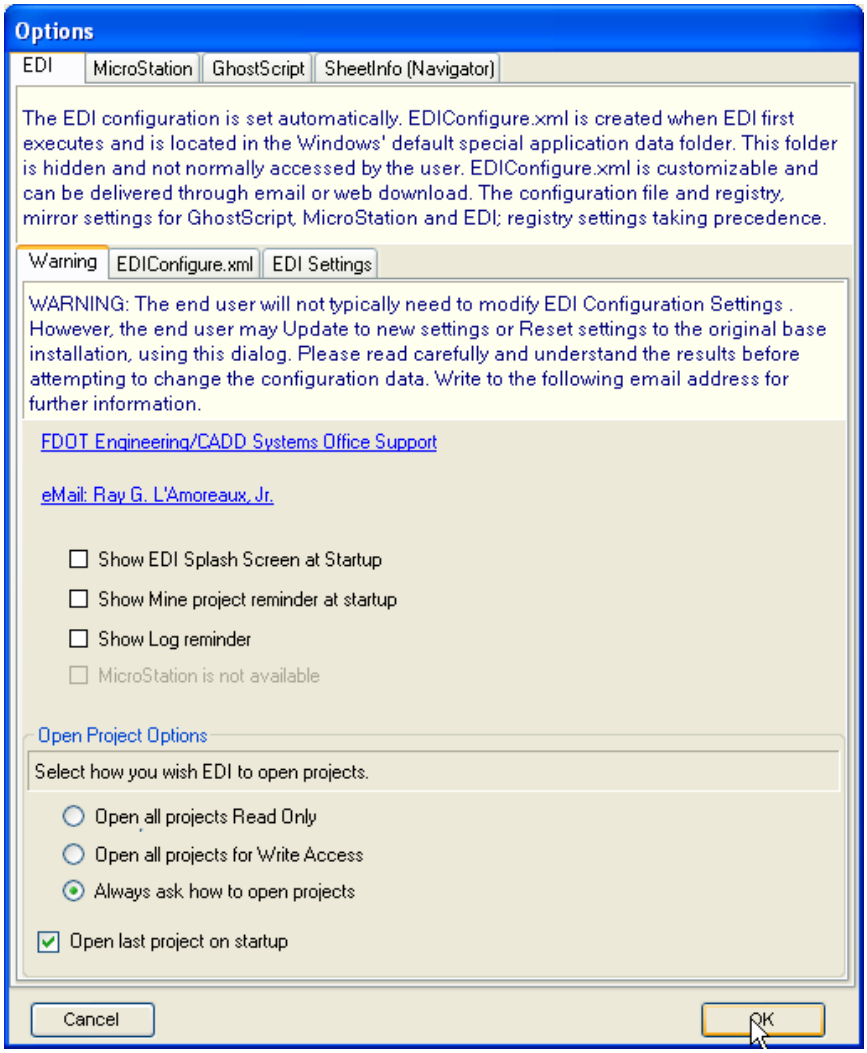
File Checker (Execute the FileChecker Application) - Invokes File Checker application, used to check the project content for missing files, incorrect file/folder naming, PEDDS inconsistencies, and much more.

QC File List (Create list of project design files) – Creates a list of design files found in the project named DGNFileList.txt to be used as input to the GDM QC Reporter application.

Show MicroStation (Debugging Plotting) – Allows the user to view MicroStation while creating plot files (Postscript or PDF).

Note To help determine how MicroStation and EDI2 sets the plot settings; enable Show MicroStation (Debugging Plotting), create a plot file using the Sheet Files tree view context menu, and then click to focus on the MicroStation window on the main Windows Taskbar. This is also useful when plotting fails.

Show Sheet Index Panel (Left Panel Project Viewer) – Alternately displays and hides the left pane of the EDI2 Project Viewer window.**Options… (Advanced EDI application settings) –** Under the **EDI < Warning** tabs, select the appropriate startup options. See EDI Options later in this Section for more extensive discussion.



EDI - Open Project Options

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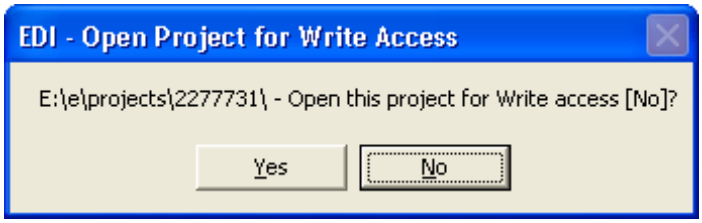
- **Show EDI Splash Screen at Setup** – Disable or enable EDI2's splash window at startup.
- **Show Mine project reminder at startup** – Enables or disables the mining dialog at EDI2 startup. This is automatically disabled if projects are open for Read Only access.
- **Open All projects Read Only –** Disables EDI2 write access and prevents EDI2 from writing data to disk.

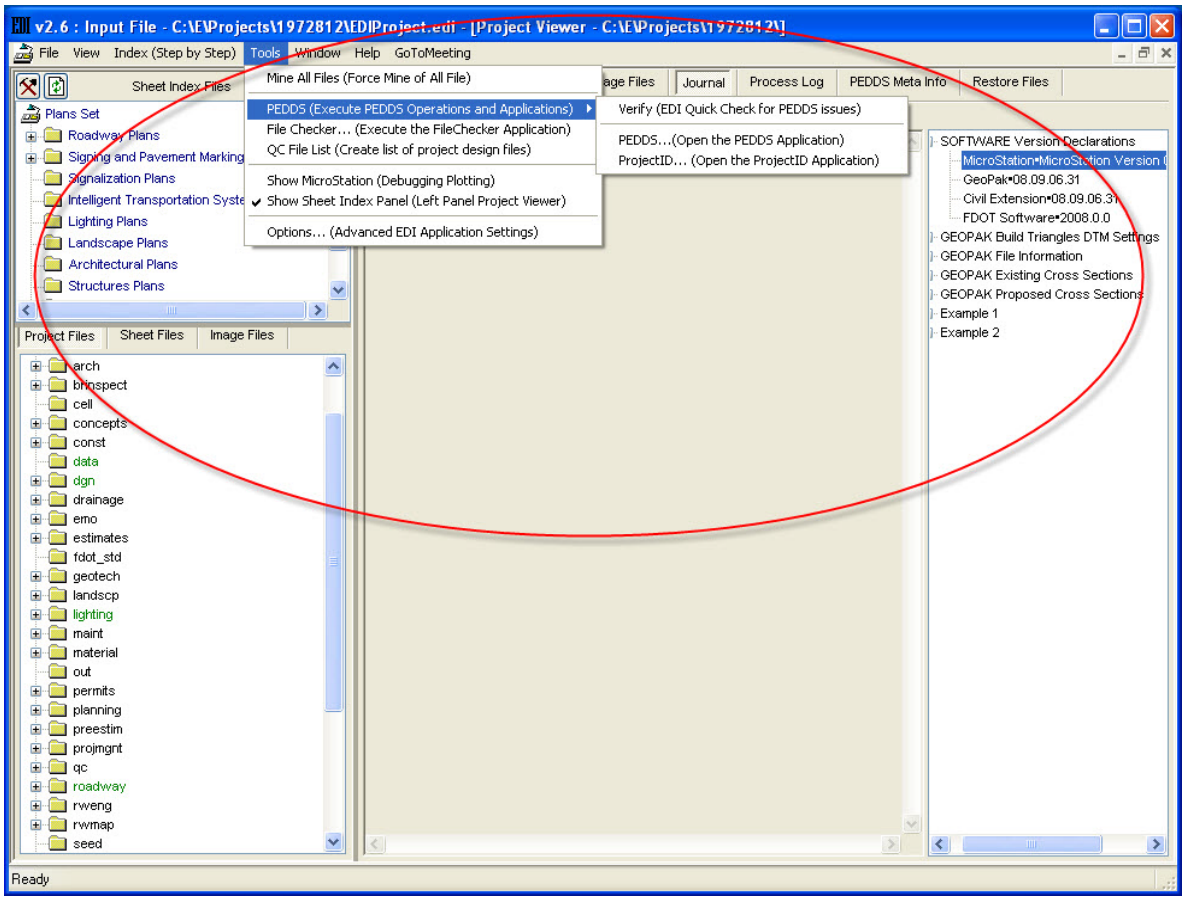
Warning! ReadOnly Mode access does NOT guarantee the user cannot write to the project. Write functions are disabled and normal operation of EDI2 does not write to disk; however, it is possible to circumvent EDI2's protection.

- **Open all projects for Write Access -** If enabled, then the Read Only Mode setting will not be remembered when opening other projects (i.e.; All projects are opened with write access).
- **Always ask how to open projects** - If selected, a dialog similar to the one below appears when opening projects:



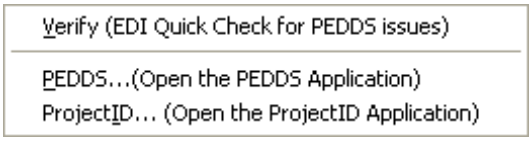
EDI2 – Open Project Write Access

PEDDS TOOLS



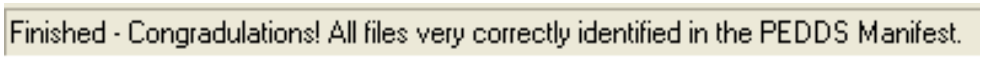
EDI2 - Tools - PEDDS

PEDDS (Execute PEDDS Operations and Applications) displays commands related to the PEDDS application.



- **Verify (EDI Quick Check for PEDDS issues)** – Looks up data for each file in the **Index.xml** (in memory during application activity). Flags files as follows:
- If the SHA-1 code matches, the data is considered up to date and the file is not flagged.
- If sheet information for a design file data is missing; even if the SHA-1 code matches, the file is flagged (red) and recorded in the Process Log.

Note The total number of files failing verification is displayed in EDI2's main window's status bar. The list of failed file names is added to the *Process Log*, *Errors* list. If all files pass, the following status bar entry is displayed:



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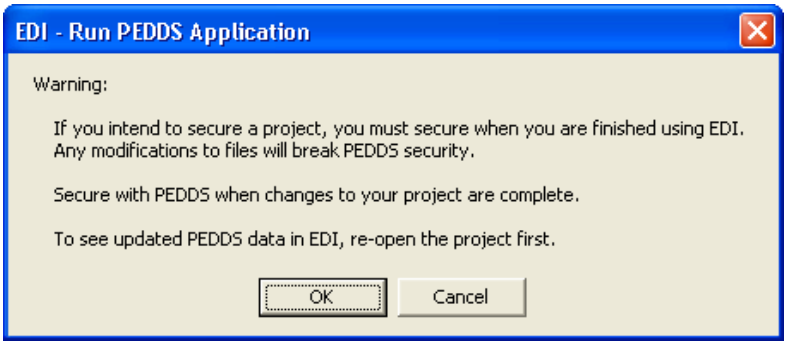
Warning! This is not a substitute for using the PEDDS application and does not guarantee a secure project. This is used to list files with hash codes that do not match those found in the PEDDS **Manifest.xml** file.

- **PEDDS (Open the PEDDS Application)** – Executes the PEDDS application and opens the current project and displays the following warning dialog.



Note If EDI2 is set to *Read Only* mode, PEDDS can successfully *Secure* a project while EDI2 is executing.

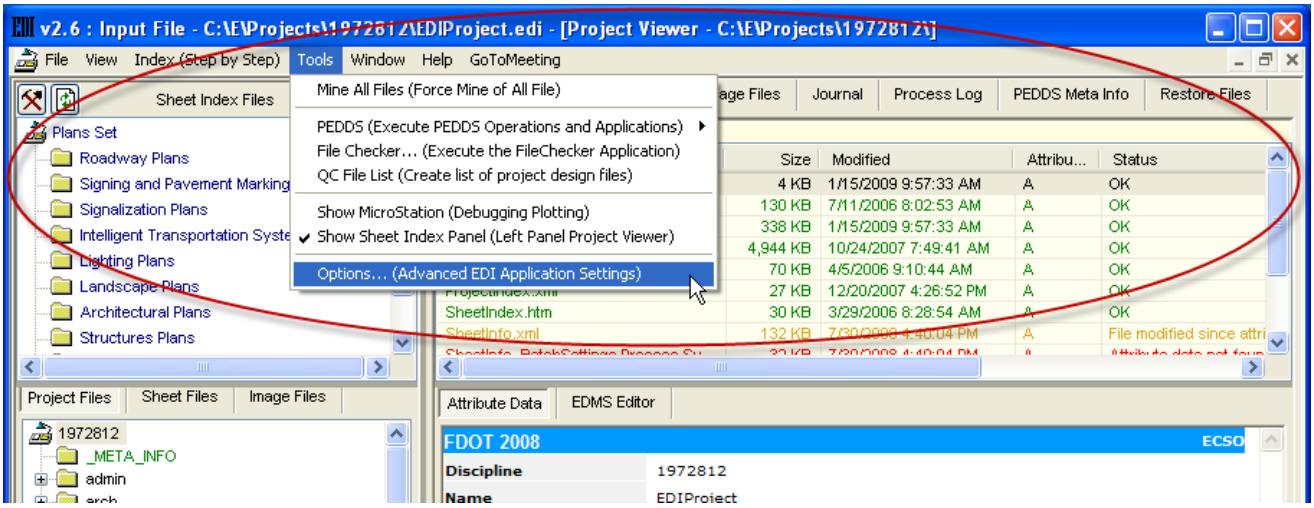
Tip If the **PEDDS Meta Info** tab is active, changes in PEDDS are not reflected in EDI2 until the project is re-opened; however, **Tools** < PEDDS (Execute PEDDS Operations and Applications) < **Verify (EDI Quick Check for PEDDS issues)** functions properly.

- **ProjectID (Open the ProjectID Application)** – Executes the PEDDS ProjectID application to create or modify **ProjectId.xml**, located in the project's ***_meta_info*** folder.

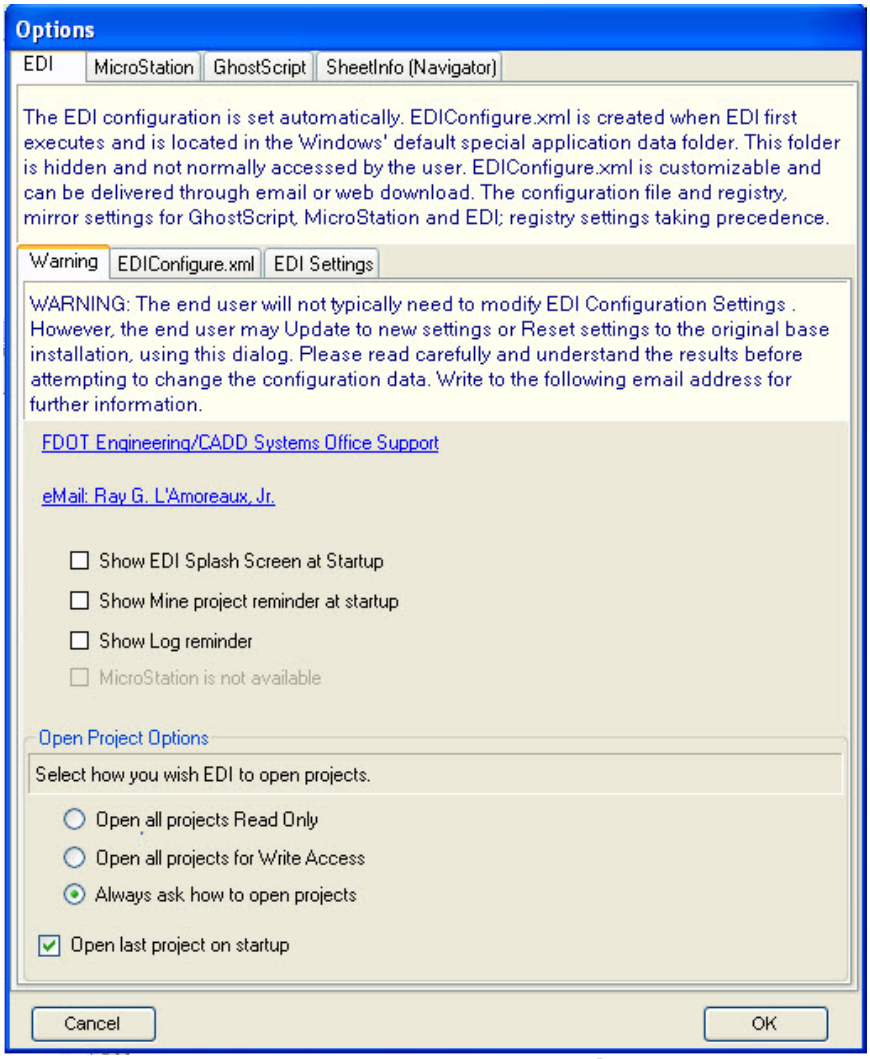
Warning! Never copy or modify the ProjectId.xml or any file in the _meta_info folder.

Tip EDI2 calls the ProjectID application when creating new projects. Run ProjectID any time the project identification data changes or needs to be completed by selecting **File** < **Create Project...(Project ID and PEDDS).**

EDI Options… (Advanced EDI Application Settings)



EDI Options



EDI2 Options – Waring Tab

Note The end user does not typically need to modify EDI2 configuration settings.

- **Warning Tab –** (shown above) Options settings, if set incorrectly can adversely affect processing times or completely disable processing all together.
    - *Links* - Provided for ECSO Support and the code author's email.
    - *Check Boxes* – Turns On/Off EDI2 splash, mining dialog at startup, and an information dialog when the user opens the Process Log database.
    - *Installing EDI without MicroStation* is rare. This option may not have the desired results in later version of EDI2. The user should be able to safely ignore this option. See **Tools** > **ReadOnly Mode (Restrict write/create functions)** documentation for similar features.

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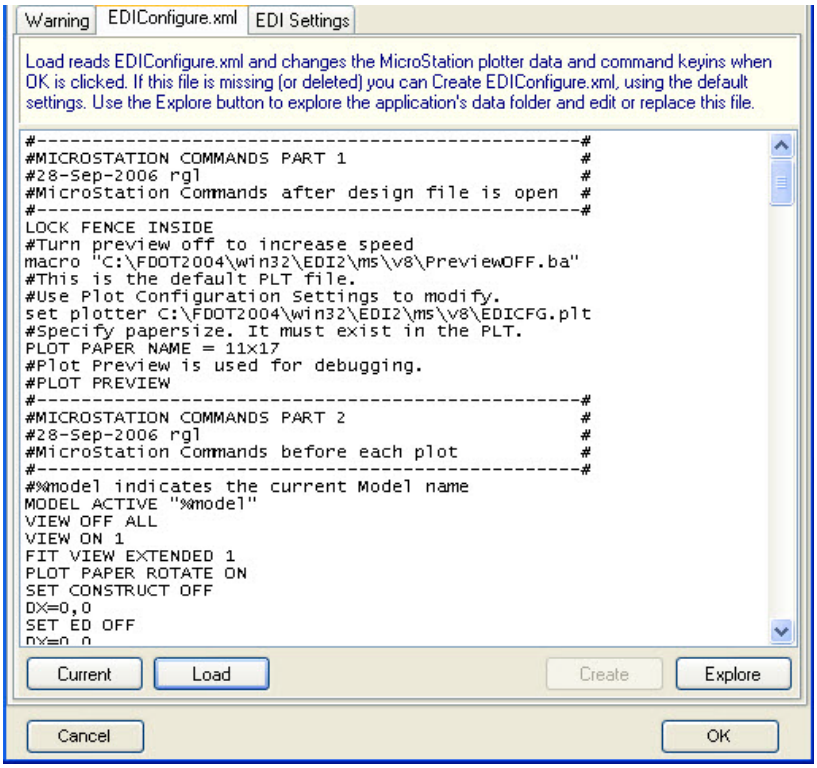
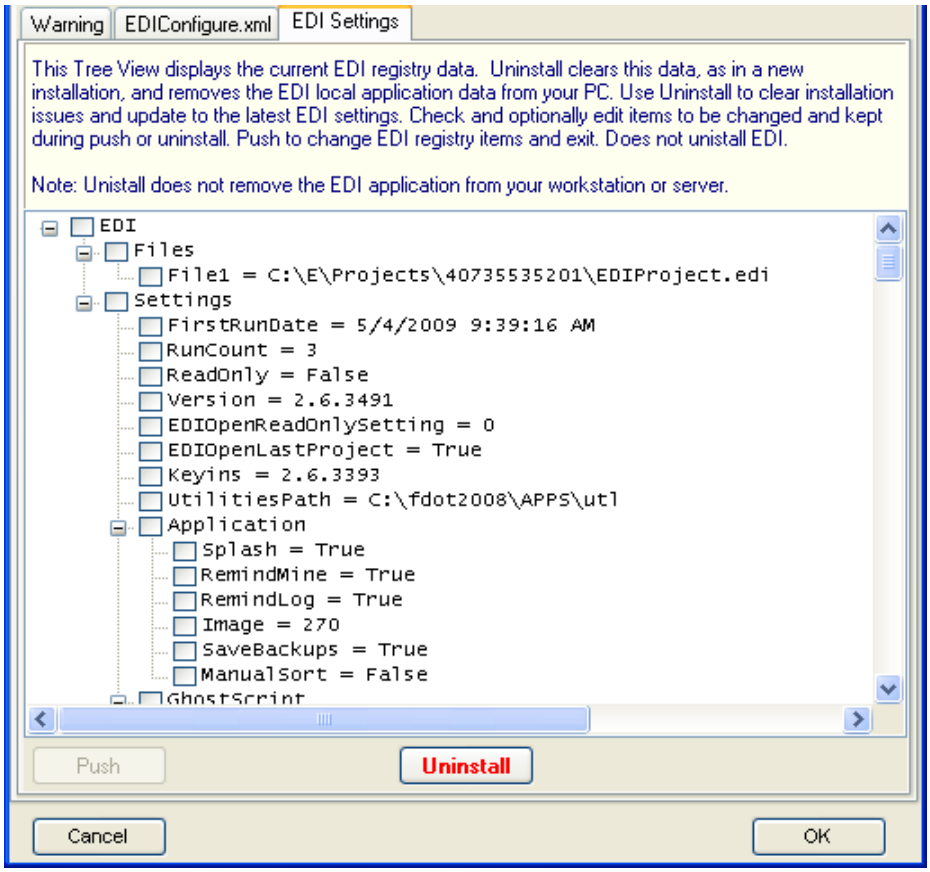


EDI Options - EDIConfigure.xml Tab

- **EDIConfigure.xml Tab-** A configuration settings file created in the Applications data folder (Typically: C:\Documents and Settings\username\Local Settings\Application Data\EDI\EDIConfigure.xml), the first time EDI is executed.
    - *Current* – Displays the current settings as stored in the registry.
    - *Load* - Reads the EDIConfigure.xml file and overwrites any changes to current configuration (as saved in the registry) when OK is clicked.
    - *Create* – Allows the user to create the default configuration file, as in the initial install, if the file is missing (or deleted). Otherwise create is unavailable.
    - *Explore* – Opens the application data folder to allow access to the configuration file (view or delete).

Note The **EDIConfigure.xml** tab is of limited use, and is not typically accessed by the user.



EDI Options – EDI Settings Tab

- **EDI Settings Tab** – Displays the registry settings values EDI2 is currently using. By deleting the EDIConfigure.xml and resetting the registry values, the user can return the EDI2 application to the initial installed state upon the next execution.
    - Uninstall – Clears registry settings and EDI local application data from the users PC, but does not restart. If EDI2 does not execute properly after Reset is selected, use Uninstall.

Note To completely remove EDI, delete the EDI2 program folder after selecting **Uninstall**.

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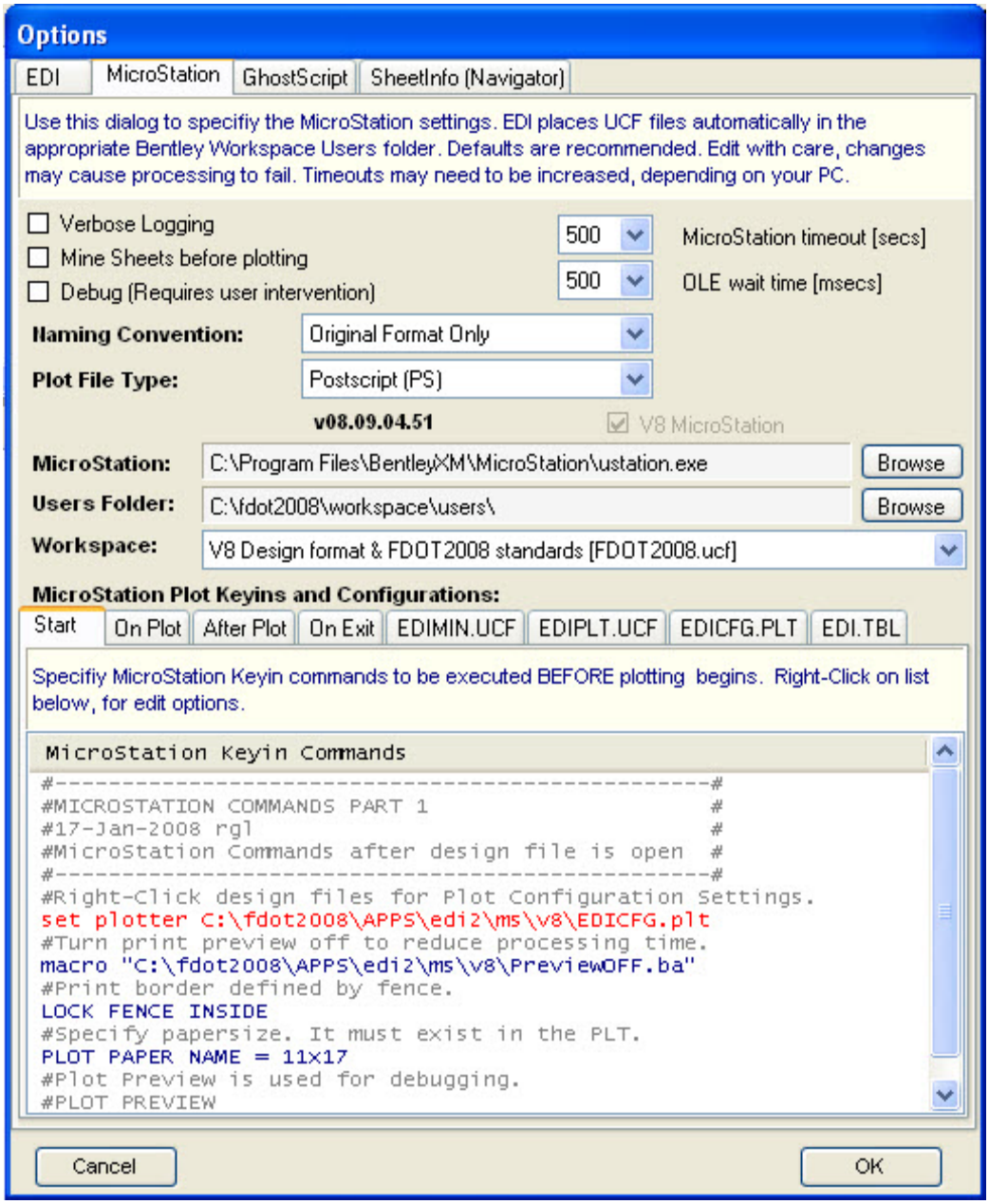
MicroStation Options

These settings enable the MicroStation program to create the Postscript (or PDF) file output for an electronic Plan Set. **EDI2** is tightly integrated with the FDOT software and the default settings use the V8 Design format and FDOT2008 standards workspace (FDOT2008.ucf). It is recommended that alterations be made only if necessary.



MicroStation Tab Options

- **Mine Sheets before plotting** checkbox – Performs the mining operation prior to creating the Postscript file. This option slows processing a little, but insures that the sheet data is current.

Note This option is not normally needed. Just make sure design file's attribute data is up to date.

- **Debug Processing (Requires user intervention)** checkbox - May be used to determine processing issues. This option causes EDI2 to display MicroStation during Postscript file creation and allows the user to interact with MicroStation. Use this option to intervene and take control while EDI2 waits for input.

Tip Use Tools->Show MicroStation (Debugging Plotting) for simple debugging operations.

- **MicroStation timeout [secs]** pull-down – Limits the amount of time in seconds that MicroStation is allowed to attempt to create the Postscript files. This prevents hanging up if MicroStation encounters a corrupt design file.

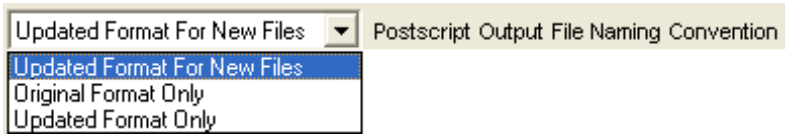
Note Some files require extended processing time. An example is cross-section sheets. A design file with 100 sheets or more, may require more than 300 seconds to process. Adjust as necessary to ensure all files and sheets are processed. Network issues also slow down processing considerably.

Tip Copy projects locally to the users PC for processing. Networks can slow down and even prevent processing of some or all files in the project.

- **OLE Wait time [msecs]** pull-down – This is the time in milliseconds EDI2 waits for MicroStation automation to answer a connection request. Usually 500 (0.5 seconds) is reasonable value. If MicroStation fails to connect for the first (create plot sheet) operation, try increasing this value.

Note This value rarely needs adjusting.

- **Naming Convention** pull-down –Selects between the old and new file naming convention for postscript output file (Postscript or PDF file names).



  - **Updated Format For New Files** – Includes existing plot files using EDI's original naming convention while naming missing (or deleted) sheets with the new convention.
  - **Original Format Only** – Uses the original naming convention for all sheet files.
  - **Update Format Only** – Uses the new naming convention for all sheet files.

Tip Use **Updated Format For New Files** for working with existing projects and use **Updated Format Only**, for new projects.

Note Selecting **Updated Format For New Files** on an existing project creates a sheet index with a mix of names. This is acceptable, however should be avoided if possible for clarity.

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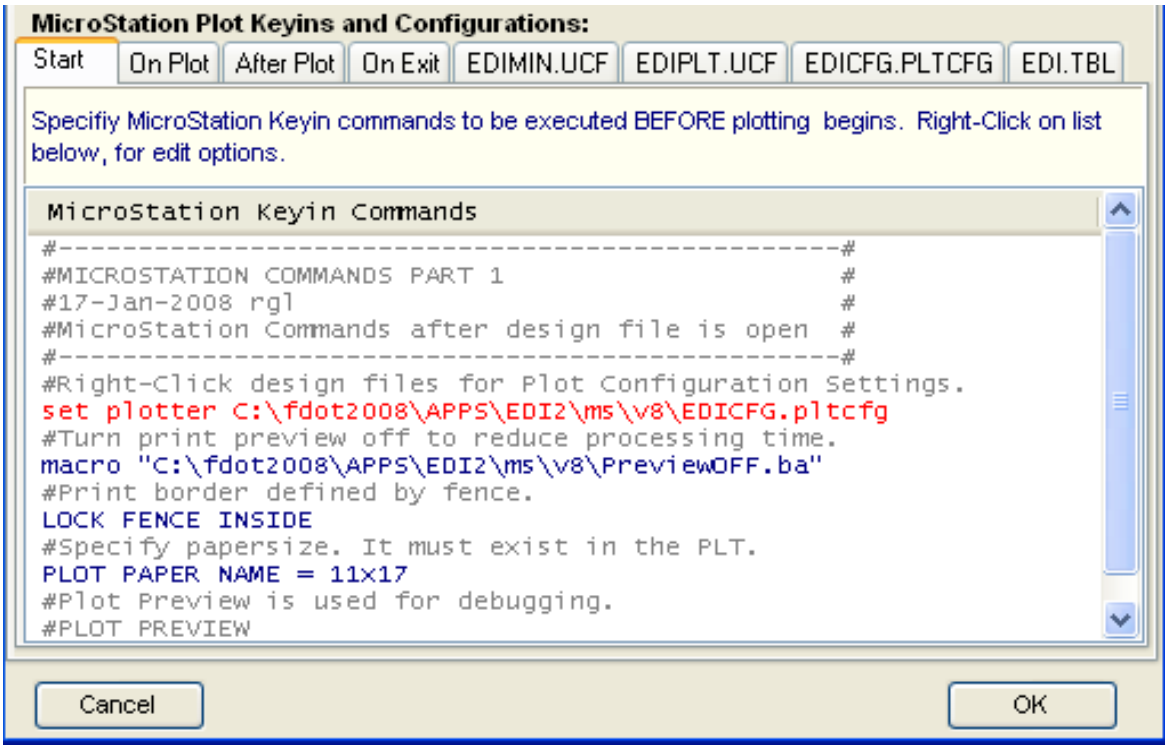
Warning! Switching formats DOES NOT update the file names in an existing sheet index (as in the *Index Editor* and *Plans Set* tree view). The *Sheet Files* tree view displays names and EDI2 processes sheets according to this setting.

- **Plot File Type** pull down - Selects between Postscript (PS) and Portable Document Format (PDF).
- **MicroStation** Application – Location of **ustation.exe** for MicroStation processing. Set at installation; use the **Browse** button to specify the correct location, only if necessary.
- **Users Folder** – Set at installation, correct only if necessary.
- **Workspace** pull-down – Specifies the MicroStation user workspace.
- **MicroStation Plot Key-ins and Configurations** – Allow the user to configure special key-ins to insert or modify during plot file processing.



Warning! These settings rarely need adjustment. Entering invalid commands or data can prevent processing with little or no feedback from MicroStation or EDI2.

- *Start Tab* – The MicroStation key-in commands executed at startup of MicroStation processing.
- *On Plot Tab* – Commands executed immediately prior to and including the Postscript file creation (Plot command).
- *After Plot Tab* – Commands executed immediately after each plot.
- *On Exit Tab* – Commands executed before MicroStation processing exits

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- *EDIMIN.UCF Tab* – Default user configuration file used for Postscript file creation processing.
- *EDIPLT.UCF Tab* – Default user configuration file used for sheet information application mining operation.

Warning! **EDIMIN.UCF** and **EDIPLT.UCF** are created on-the-fly and cannot be edited manually.

Note On rare occasions MicroStation acts differently when design files are open for Read Only access (which is the default for EDI2). To allow MicroStation to open files for write access, remove or *comment out* the MS_READONLY in this listing.

Tip Fix the design file, so that MicroStation can open the file with Read Only access and still create the correct output. Open the design file with Read Only access and determine what is not loading properly.

- *EDICFG.PLTCFG Tab* - Default user plotter configuration file for Postscript plot file creation. The file type PLTCFG is a new XML based plotter configuration file type for MicroStation XM.

Note The user cannot edit this file listing. This file can be set for individual design files using the *Plotter Settings* dialog, which is accessed through the *Sheet Files* tree view, right-click menu.

Warning! When files are opened for write access by MicroStation, they are always modified. This causes EDI2 to flag these files as modified (amber colored file names) in the Sheet Files tree view.

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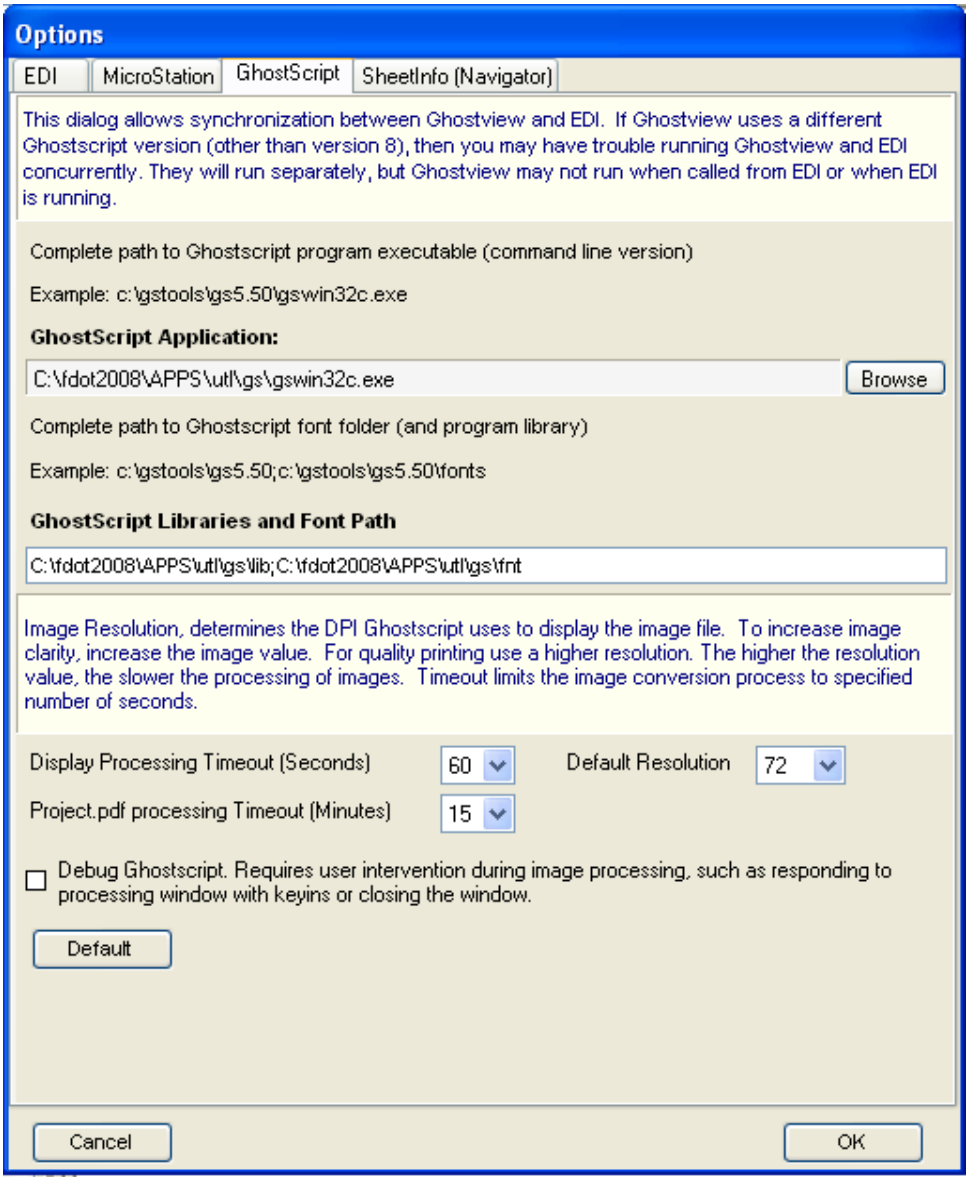
GhostScript Options

These settings are required to view Postscript files using the included GhostScript features.



GhostScript Options

- **GhostScript Application** - The location of the application and supporting files are determined at installation. Use the **Browse** button to correct the location only if necessary
- **GhostScript Libraries and Font Path** – Environment variables are set interactively by EDI2 to define the GhostScript supporting files library path and font files path.
- **Display Processing Timeout (Seconds)** pull-down – Limits the processing time used to display images. The GhostScript application is run independently and may fail to function properly (hang). This timeout prevents EDI2 from waiting indefinitely. This rarely needs to be adjusted, except on some slower PCs.

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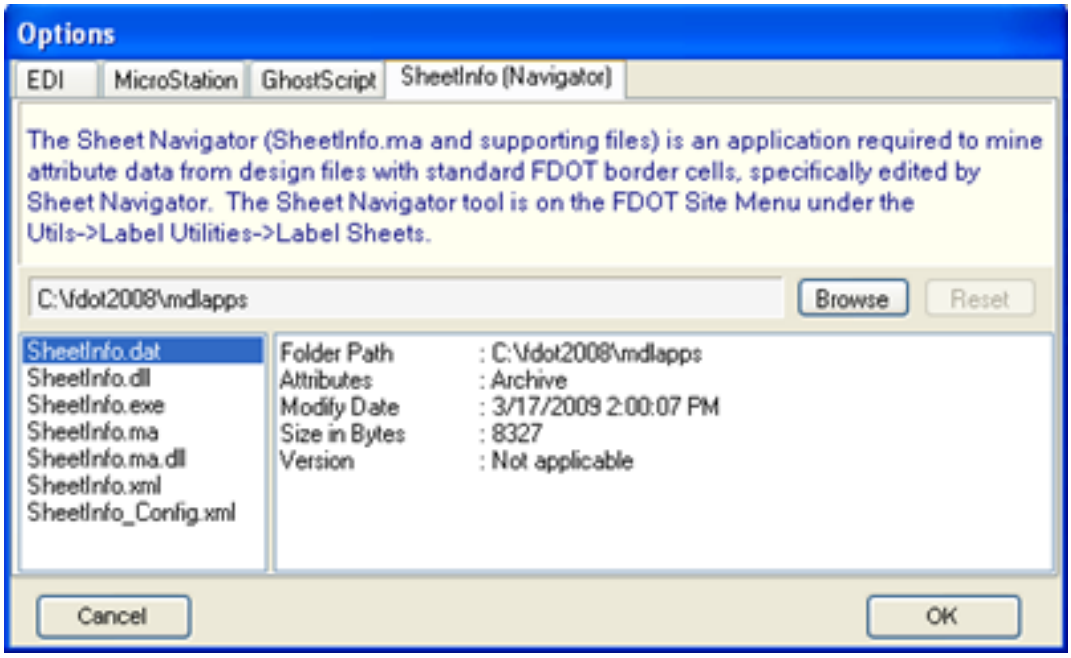
- **Project.pdf processing Timeout (Minutes)** pull-down – GhostScript processing time for creating the project PDF depends on the size of the project. Fifteen minutes should be enough for most average projects. Adjust if the **Project.pdf** fails to convert (Times Out) from the **Project.ps**.
- **Default Resolution** pull-down - The default resolution, which can be adjusted in the Image Viewer. A lower resolution (72) increases performance and provides good screen viewing. A higher resolution (300) degrades performance significantly, but may be required for quality printing. The display resolution of the *Postscript View*, on the *Sheet Information* tab (of the *Project Viewer*), is set independently from the **Default Resolution** setting.
- **Debug GhostScript** checkbox – Displays the GhostScript command window to aid in debugging the display process. The user must exit the command window to continue EDI2 processing (only applies to the debugging process).
- **Default** button – Resets the location defaults to the current installation location. Installation information is retained in the registry. If EDI2 is moved, this data can be corrected by using the **Default** button.
-

SheetInfo (Navigator) Options

The path to the Sheet Navigator application and supporting files, required to mine attribute data from the design file. See warning below.



SheetInfo (Navigator)

Warning! DO NOT change this path setting in versions of EDI2 prior to MR 5, as mining will fail. If this occurs, use the EDI2 menu option **Tools > Options... (Advanced EDI Application Settings) < EDI Option < EDI Settings tab**, selecting the **Uninstall** button and restart EDI2 to correct this issue.

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Section 3.7 Indexing a Project

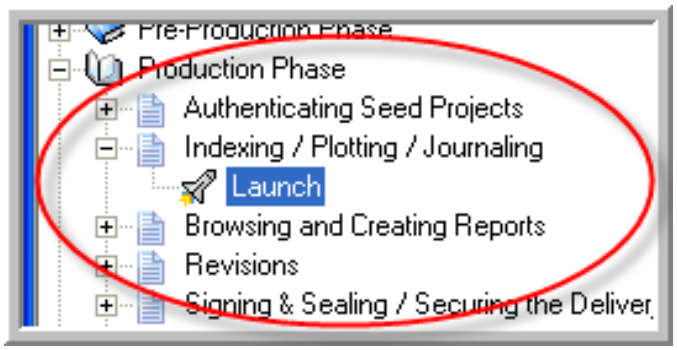
Section 5.1 of the CPCH requires that Indexes of delivered files be produced and delivered in accordance with the *FDOT CADD Manual*. The purpose of the indexes are to document delivered project files, so one might reasonably understand the purpose and content of the files delivered for posterity. Indexes are crucial to the successful use of data by downstream customers. The index of plan sheets is used to provide information and access the plans sheets. The project and sheet index should be updated and reviewed as work progresses.

EDI2 provides two methods for creating an Electronic Index for FDOT Electronic Project Deliveries. EDI2, preferably, can generate the sheet data required to automatically produce the index. The project is mined, then the user selects to create the index and the index is generated. The index can be manually reviewed, updated and edited as needed. A simple index is exported as a linked html file, suitable for inclusion in an ED project. Additionally, EDI2 creates an XML Index for further processing with the ED Software.

EDI2 can also manually scan the selected project folder and arrange image files in a Project Tree view similar to the Windows file explorer folder view. Image files are defined as Postscript, PDF and TIF files. Files are selected for the standard Plan set through drag and drop and placed in the appropriate component with the Plan set, also represented in a tree view window. Files are viewed and sheet numbers entered along with descriptions to complete the index.

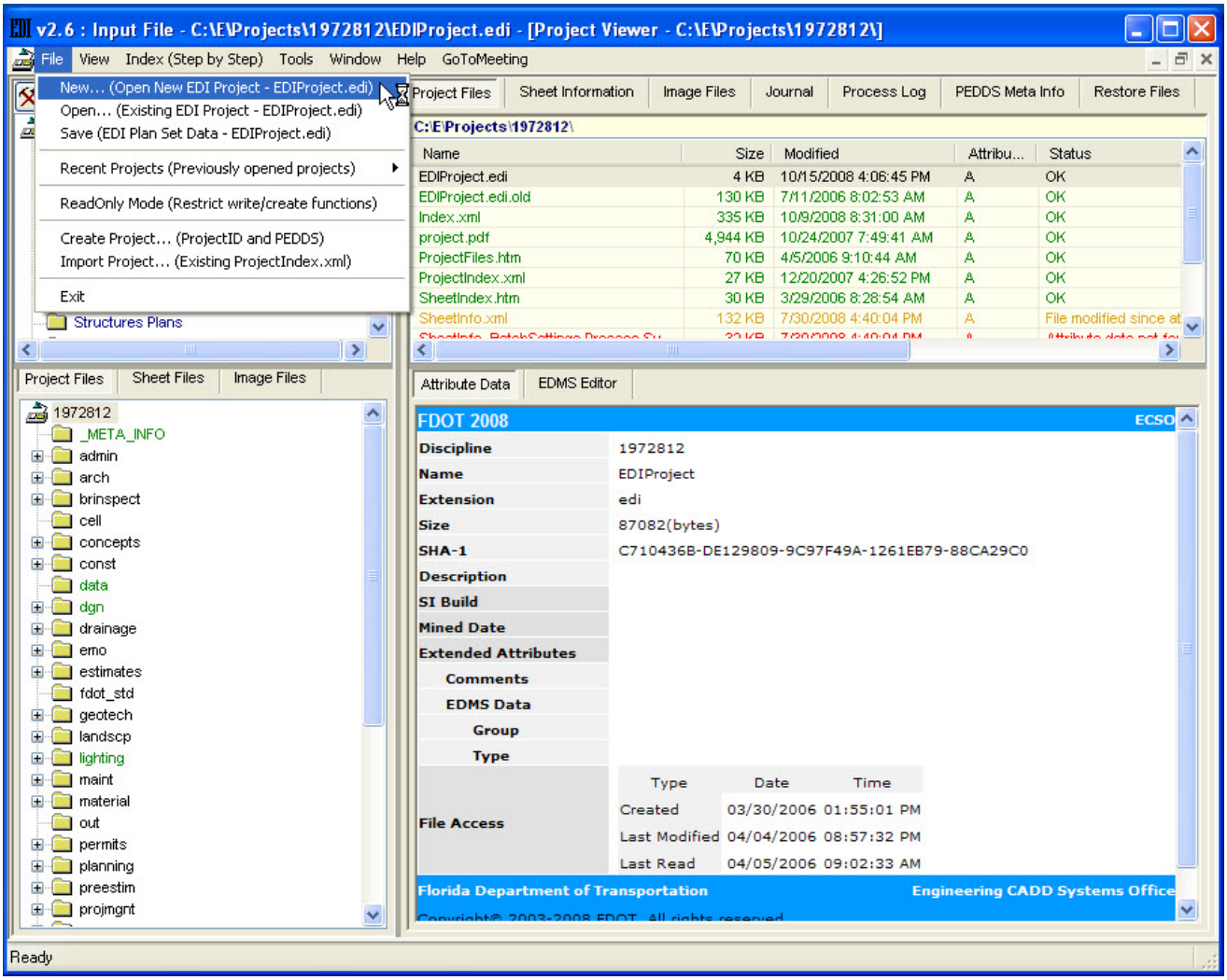
Exercise 3.2 To create a New Index Project

1. In the **Indexing/Plotting/Journaling** folder, click **Launch**. EDI2 opens.



Indexing/Plotting/Journaling

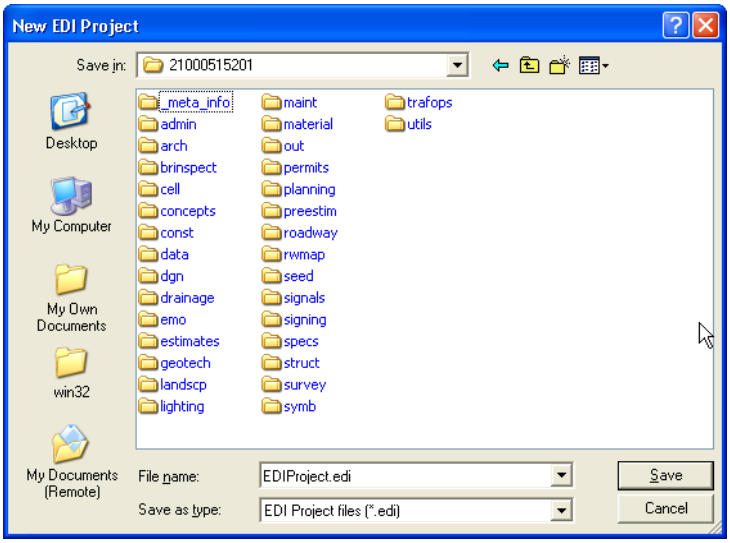
2. From the EDI2 **File** menu, select **New... (Open New EDI Project – EDIProject.edi).**



EDI2

Note EDI2 opens to the last project opened. Use the **Recent Projects (Previously opened projects)** to view a list of previously opened projects or use **Open... (Existing EDI Project – EDIProject.edi)** and navigate to the current project.

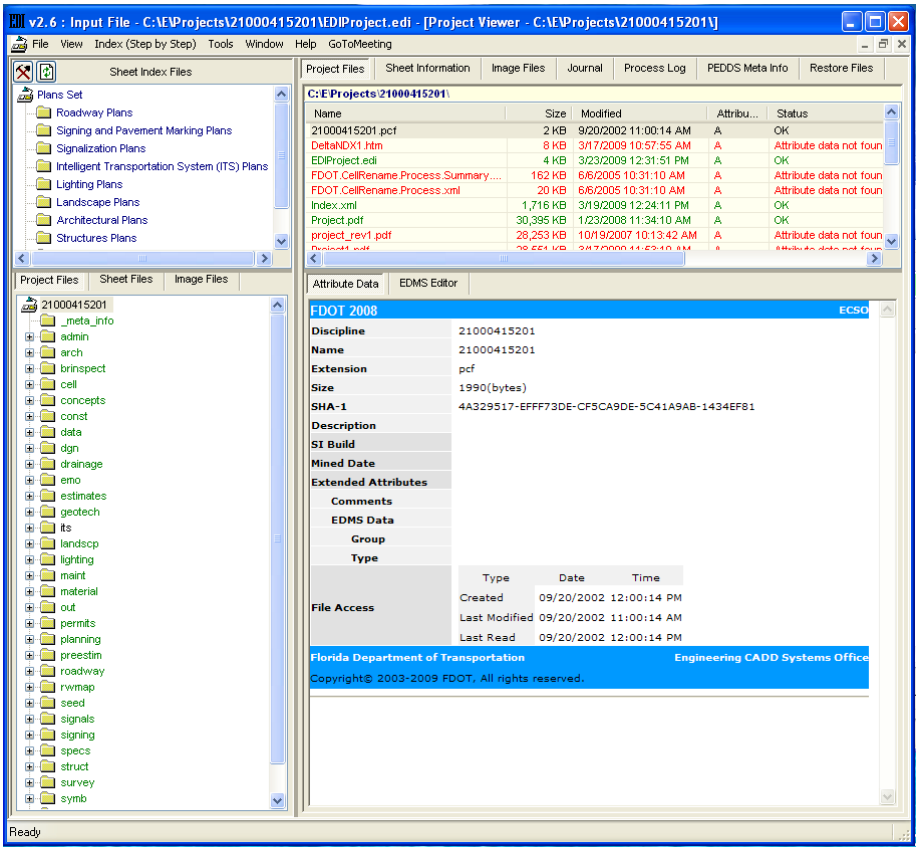
3. When New EDI Project opens**,** navigate to the project folder and click the **Save** button. For the purposes of this course, navigate to the **c:\E\Projects\21000415201** folder. EDI2 loads the new project and Mining Project Files Attributes opens.



New EDI Project

Note EDI2 automatically names the files, **EDIProject.edi.** This file is always saved to the projects root directory.

4. From EDI - Mining Project Files Attributes, click the **OK** button. EDI2 creates the file, **EDIProject.edi,** and then EDI2 appears as shown below.



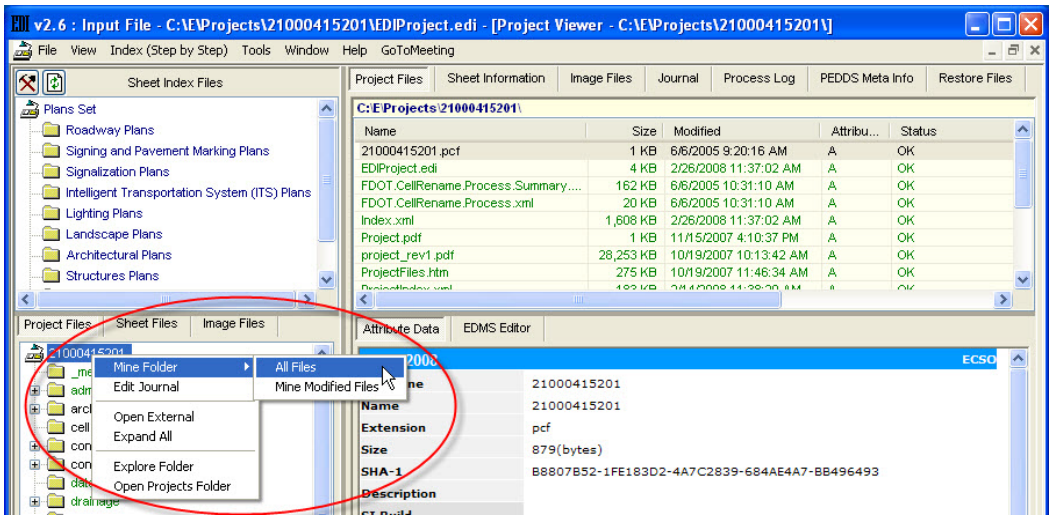
EDI2

Exercise 3.3 To Mine Project Attributes - Index.xml

EDI2 mines attribute data to a single file, **Index.xml** in the root folder of the project. EDI2 also has the ability to mine data at the project level, folder level and individual file level.

1. From EDI2 menu select **Index** (Step by Step) < **Project (Mining File Attributes)** < **Mine Modified Files (Mine for Changes)**

   –or-- right-click on the project's root folder in the **Project Files** tree view and select **Mine Folder** < **All Files.**



EDI2 - Mine Folder Attributes

EDI Mine Attributes Processing appears and the mining process begins. Upon completion, EDI2 re-appears as shown below.

Important *Before a project can be indexed, each design file with plans sheets must be prepared with the Sheet Navigator tool. Sheet Navigator runs in MicroStation from the FDOT2008 Menu and extracts sheet data. Plotting is performed by EDI2 using this data.*

Important *EDI2 provides a method for importing Sheet Navigator index data directly. This is a more efficient method than demonstrated in this exercise. Create* ***SheetInfo.xml*** *using Sheet Navigator for a project or discipline and use* ***Index (Step by Step) > 1) Project (Mining File Attributes) > 1) Import...(New! Import Sheet Navigator data)*** *to load the data into EDI2. Next, select* ***Index (Step by Step)*** *>* ***Project (Mining File Attributes) > 2) Mine Modified Files (Mine for Changes)*** *to mine the rest of the project or use the* ***Mine all modified files*** *icon (* *) at any time to mine modified files.*

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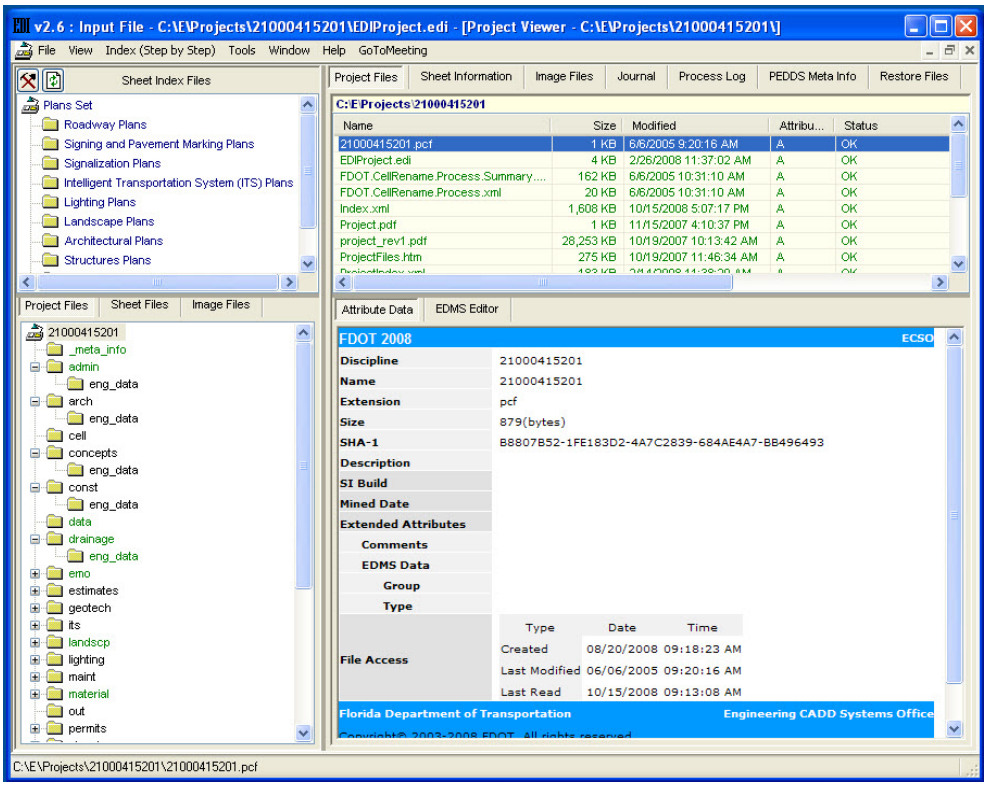
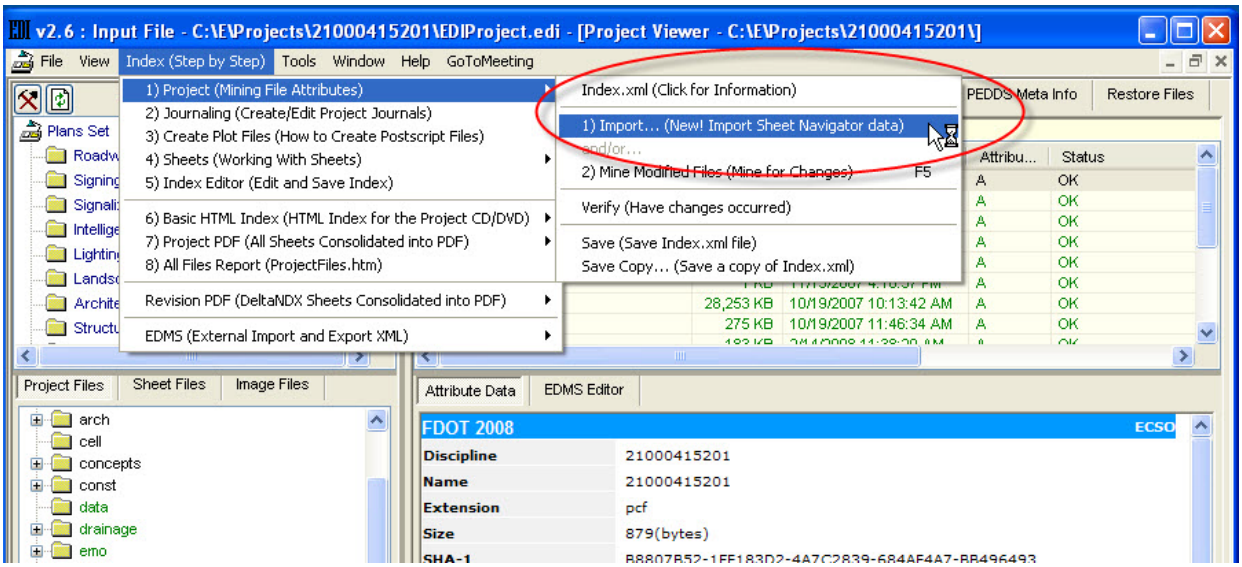


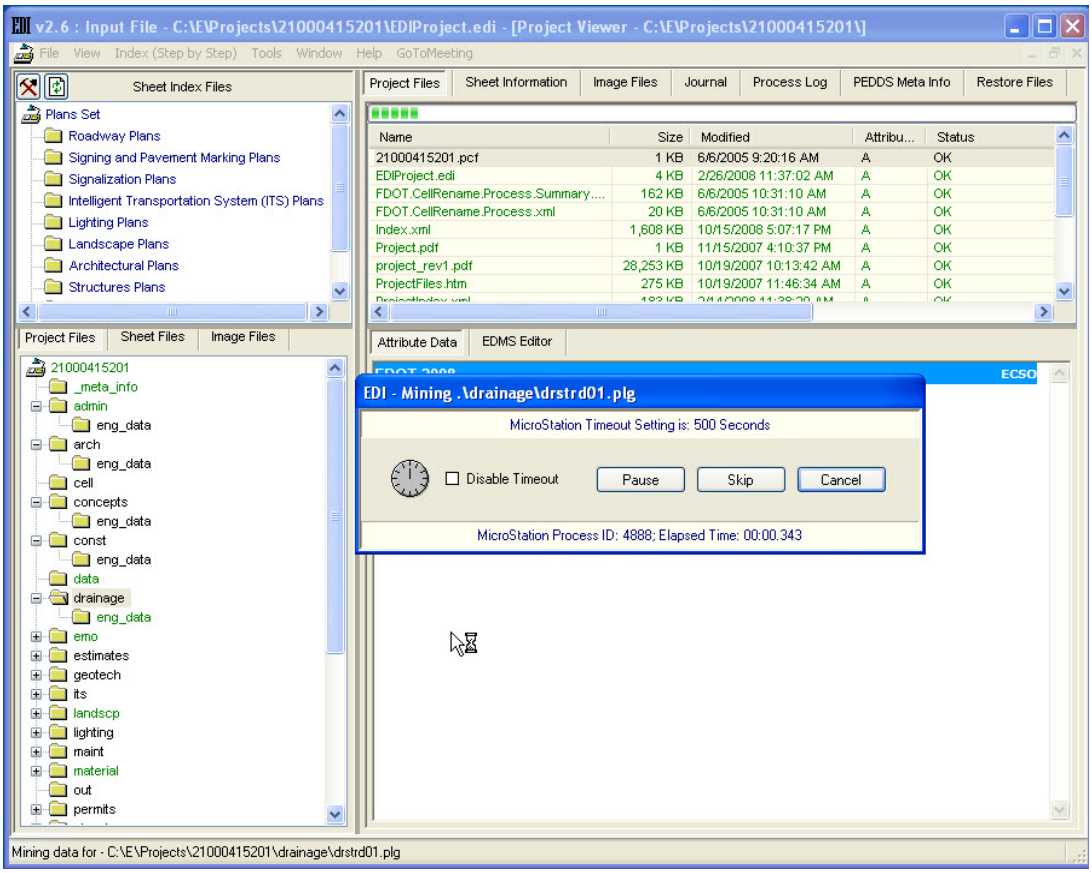
EDI2

Note EDI2 uses **MicroStation** automation to open and close design files. This is a CPU intensive process. Multi-tasking in Windows, may not be practical while the mining process is active.



Note The **Index (Step by Step)** menu is the preferred method for using EDI2. Start by importing data from Sheet Navigator with Index (Step by Step) > **1) Project (Mining File Attributes) > 1)** Import... (New! Import Sheet Navigator data) and then Index (Step by Step) > 1) **Project (Mining File Attributes) -> 2) Mine Modified Files (Mine for Changes)**.

Note The **Mine all modified files** icon ( ) will work at any time to insure file attributes are up to date.



EDI2 Mining

Note As EDI2 mines each folder, the status of the mining operation is displayed in a progress bar at the top of the Project Viewer window while the current file is shown in the status bar. EDI - Mine Attribute Processing displays the MicroStation Process ID and elapsed processing time.

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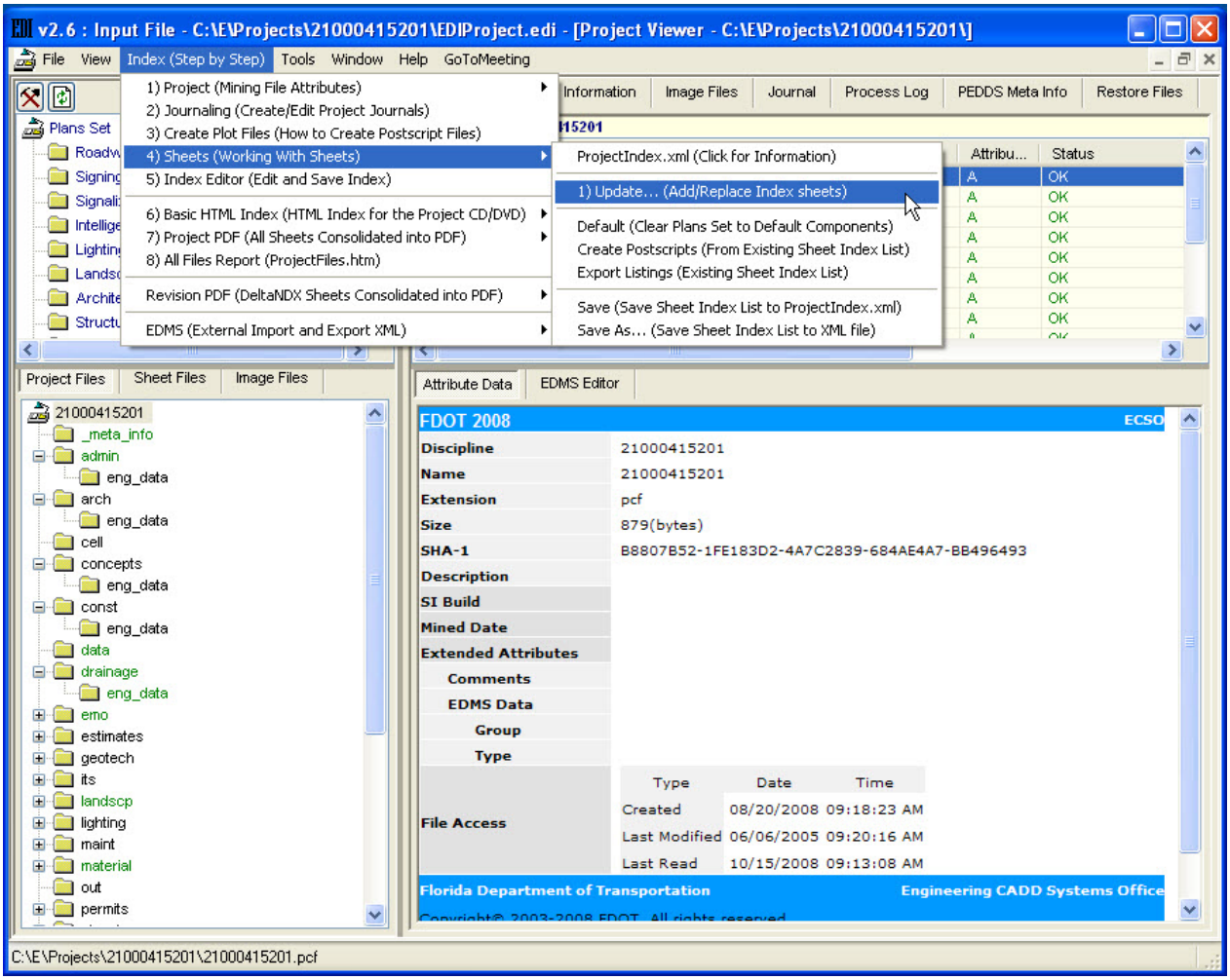
Exercise 3.4 To create Index of Sheets - ProjectIndex.xml

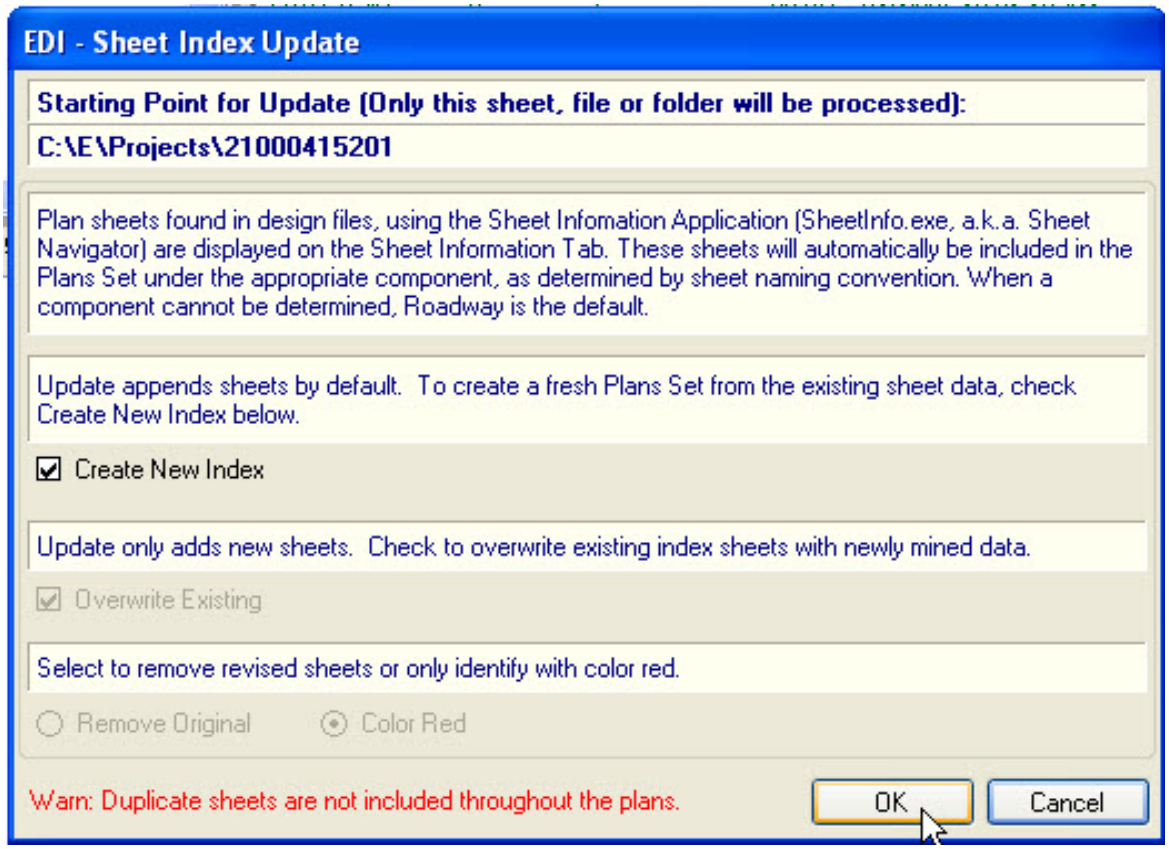
Once the project is mined, Index.xml is created, the Project Sheet Index, (the sheet index data) ProjectIndex.xml can be created.

1. From the EDI2 Index (Step by Step) menu, select Sheets (Working With Sheets) > Update... (Add/Replace index sheets).



Sheet Index

2. EDI - Sheet Index Update displays. Populate the **Create New Index** checkbox and then click the **OK** button.



Updating Project Index

Note EDI2 searches through the project and assimilates all sheets into the Plans Set under the appropriate components according to the rules defined in the Sheet Navigator application.

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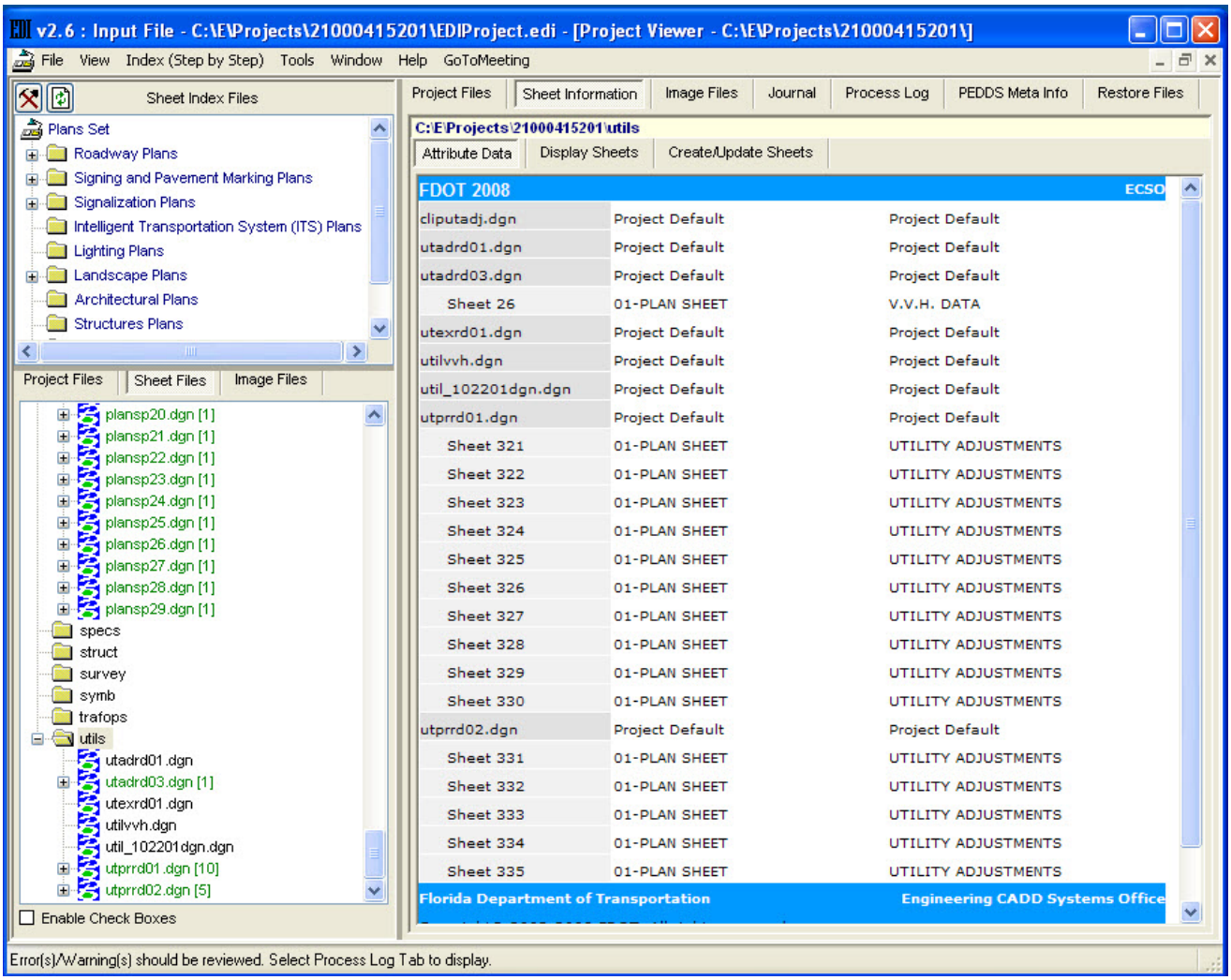
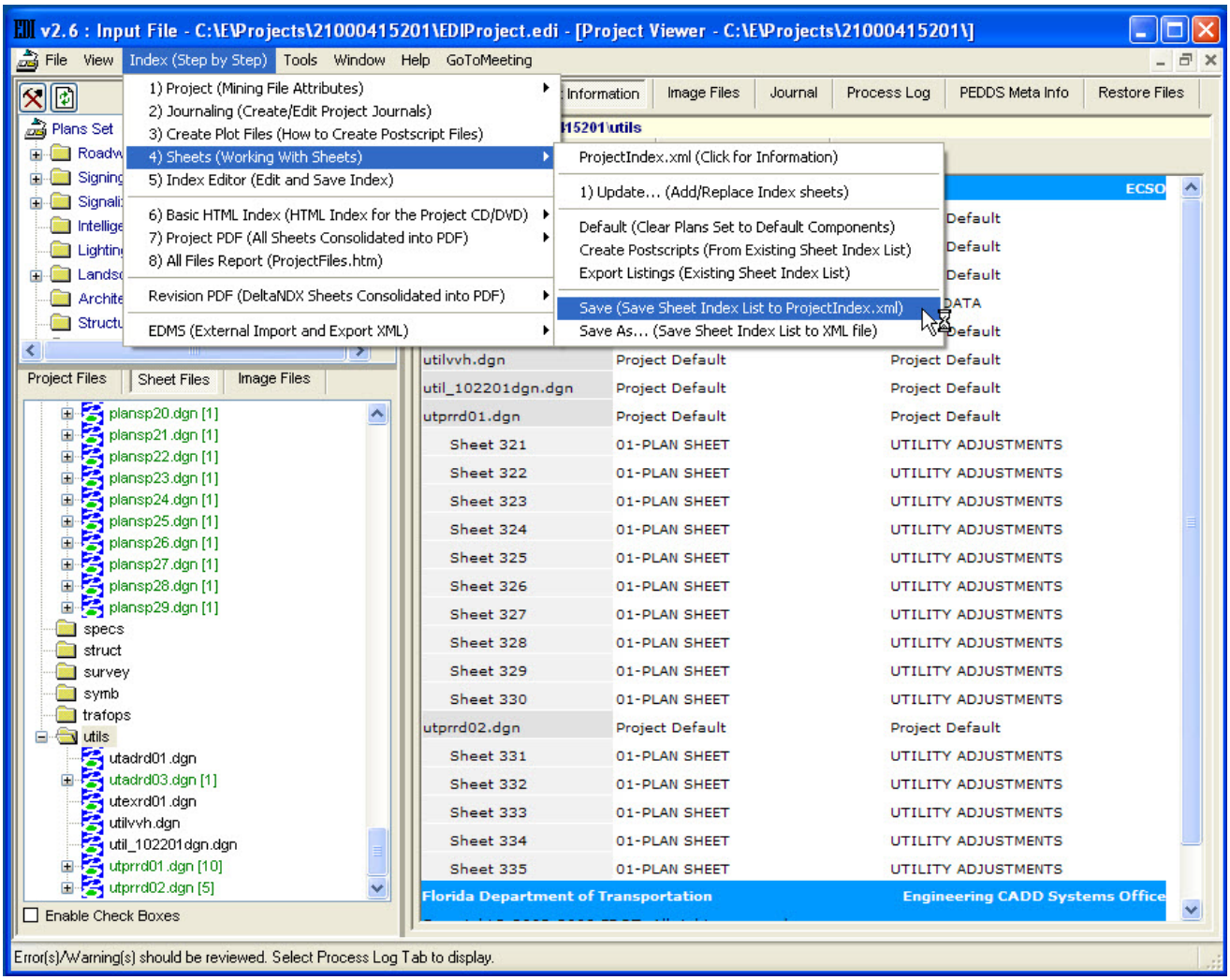
3. After EDI2 processes the sheet index, EDI2 reappears as shown below. **EDI2** displays sheet information for each design file in the **Sheet Files** tree view and **Sheet Information, Attribute Data** pane. The file names are red when the sheet image files do not exist.



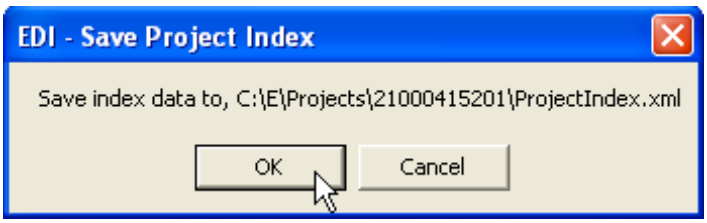
EDI2

4. From EDI2, select **Index (Step by Step) > 4) Sheets (Working With Sheets) > Save (Save Sheet Index List to ProjectIndex.xml)**.



EDI2

Note When the sheet index is modified or updated, EDI2 prompts the user to save ProjectIndex.xml before exiting the application or when processing depends on ProjectIndex.xml.



EDI - Save Project Index

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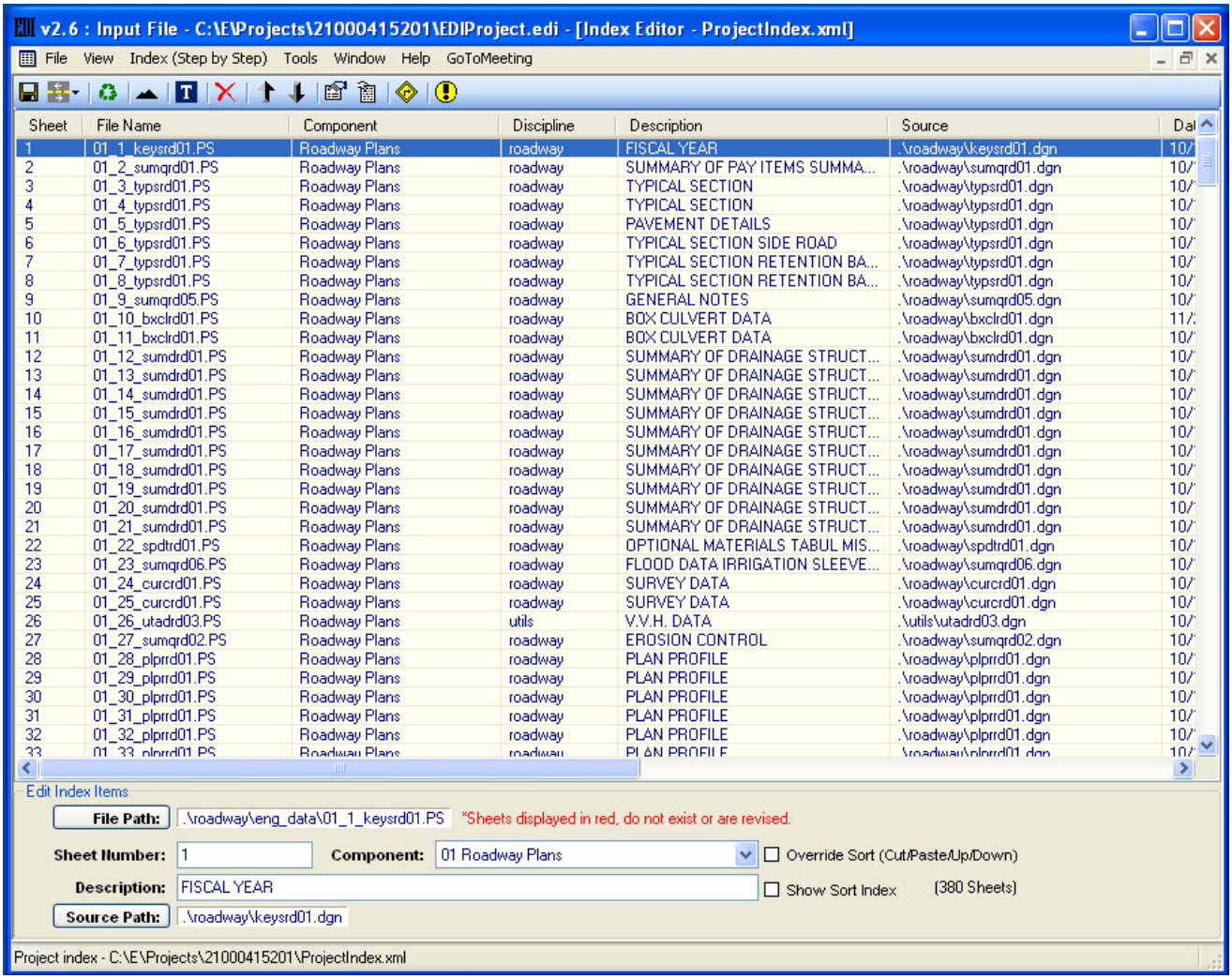
5. When EDI Save Project Index displays, click the **OK** button. EDI2 saves the Index, **ProjectIndex.xml,** and re-appears in the Index Editor view as shown below.



EDI2 - Index Editor view

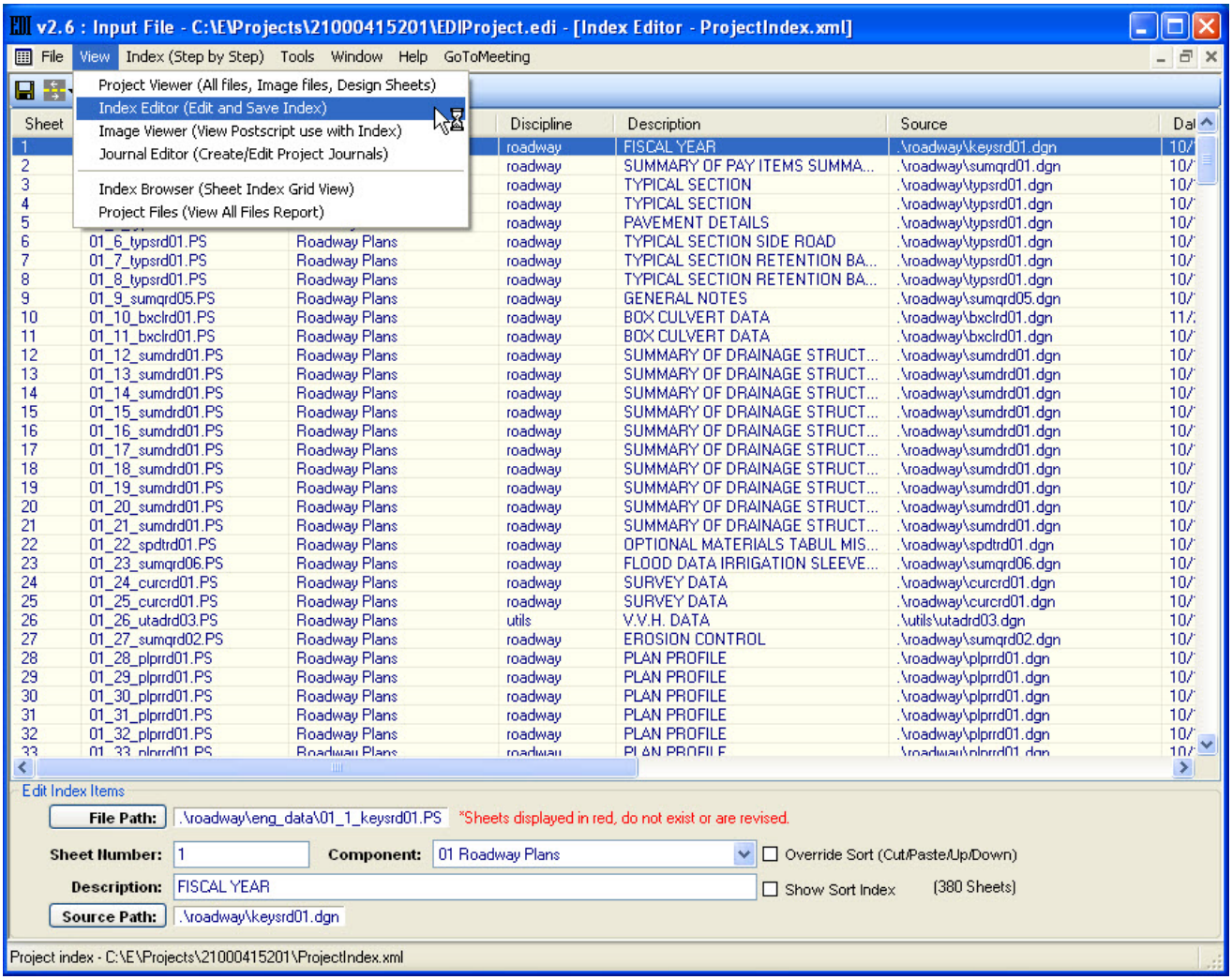
6. Review the index for missing sheets, gaps in sheet numbers, missing descriptions, etc.
7. Upon completion, click the close button at the top right corner of the Index Editor window or select **View > Project Viewer (All files, Image files, Design Sheets)**. EDI2 returns to the Project Viewer window.

Note Sheet image files shown in red in the Index Editor do not exist. At this point in the exercise, no plotting has been performed; therefore, no image files exist. Components of the plan set can be modified using this view.

Exercise 3.5 To view the Index with the Index Editor

To review or edit the index, open the Index Editor directly from the **View** menu as shown below.

1. From the EDI2 **View** menu, select **Index Editor (Edit and Save Index)**. The Index Editor view of EDI2 opens.



Index Editor

Section 3.8 Adding EDMS Comments

EDI2 has a general comment function, EDMS Editor, which allows the user to include a general comment and description about all files that do not follow the FDOT standard file naming convention. EDMS Editor allows the user to enter comments or descriptors for files. These descriptors, which are tied directly to the attribute file, will provide future use with FDOT's EDMS (document management) software.

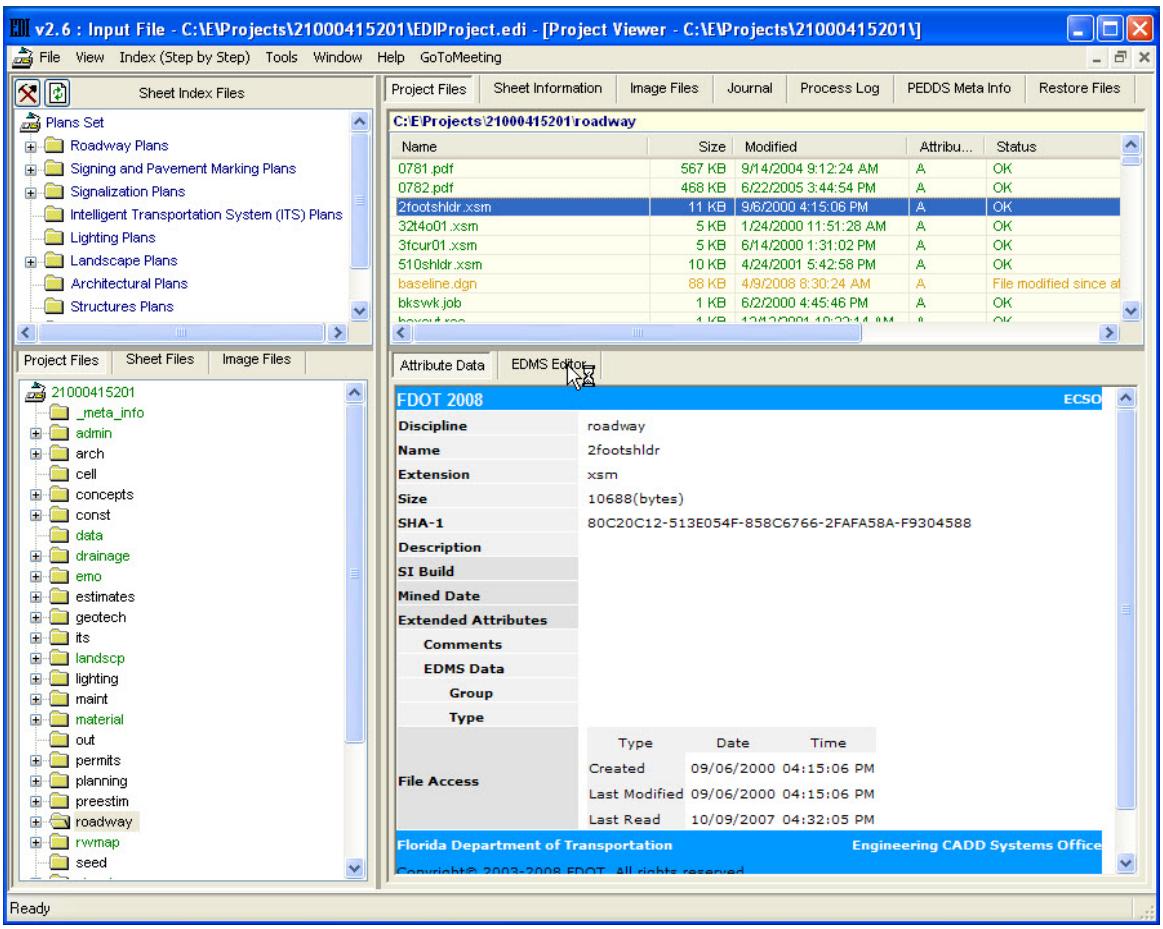
An example of using EDMS comments is to add a comment for an input file generated to describe which cross-section that input file generated, as there could be many based on the number of alignments.

EDMS comments must be added to files prior to creating the All Files Report, **ProjectFiles.htm,** as this index includes these comments.

Exercise 3.6 To add an EDMS Comments

Add EDMS comment to a project file.

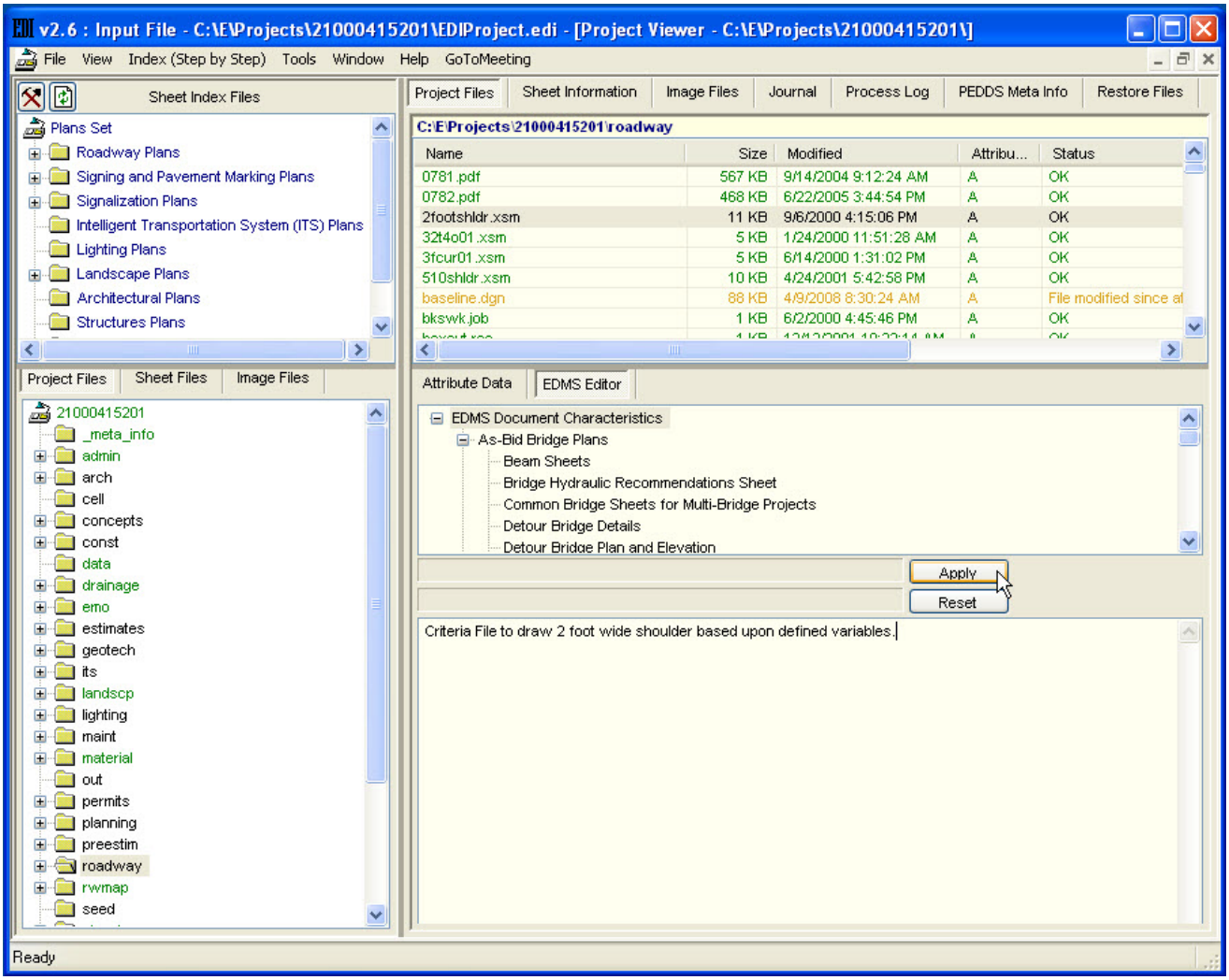
1. In EDI2, verify that the **Project Files** tab is selected. Click the **roadway** folder and then click the file **2footshldr.xsm** as shown below. Click the **EDMS Editor** tab. EDI2 opens the EDMS Editor pane.



EDI2 - EDMS Editor

Tip EDI2 allows sorting of a category by clicking the heading of that category.

2. In the EDMS Editor pane, enter the description for the selected file. Once the file description is entered, click the **Apply** button. For the purposes of this exercise, enter: **Criteria File to draw a 2 foot wide shoulder based upon user defined variables**.



EDMS Editor

Tip EDI2 adds the comment to the attributes file but remains on the **EDMS Editor** tab.

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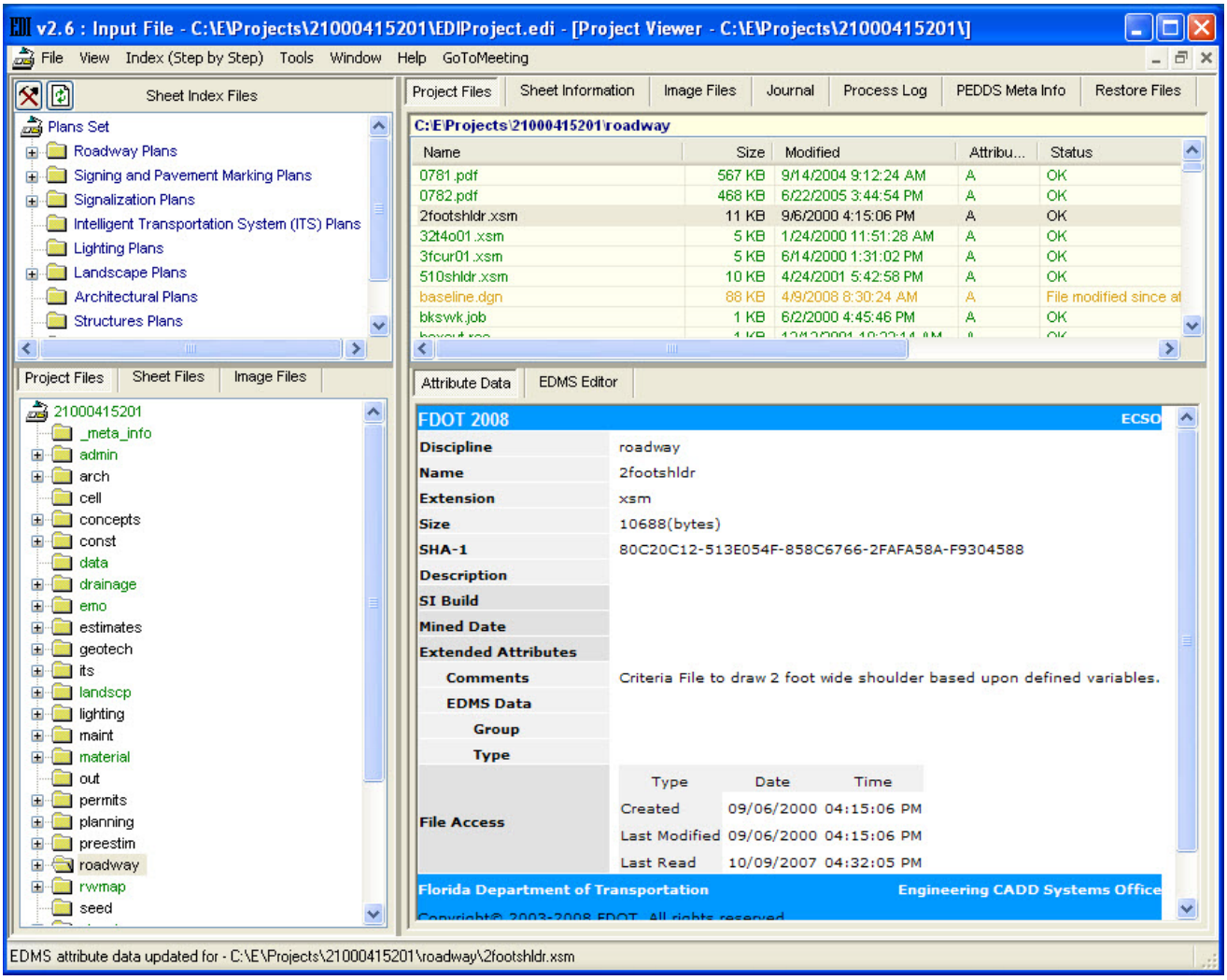
3. Click the **Attribute Data** tab to display the file's attribute data. The entered comment appears in the Attribute Data pane.

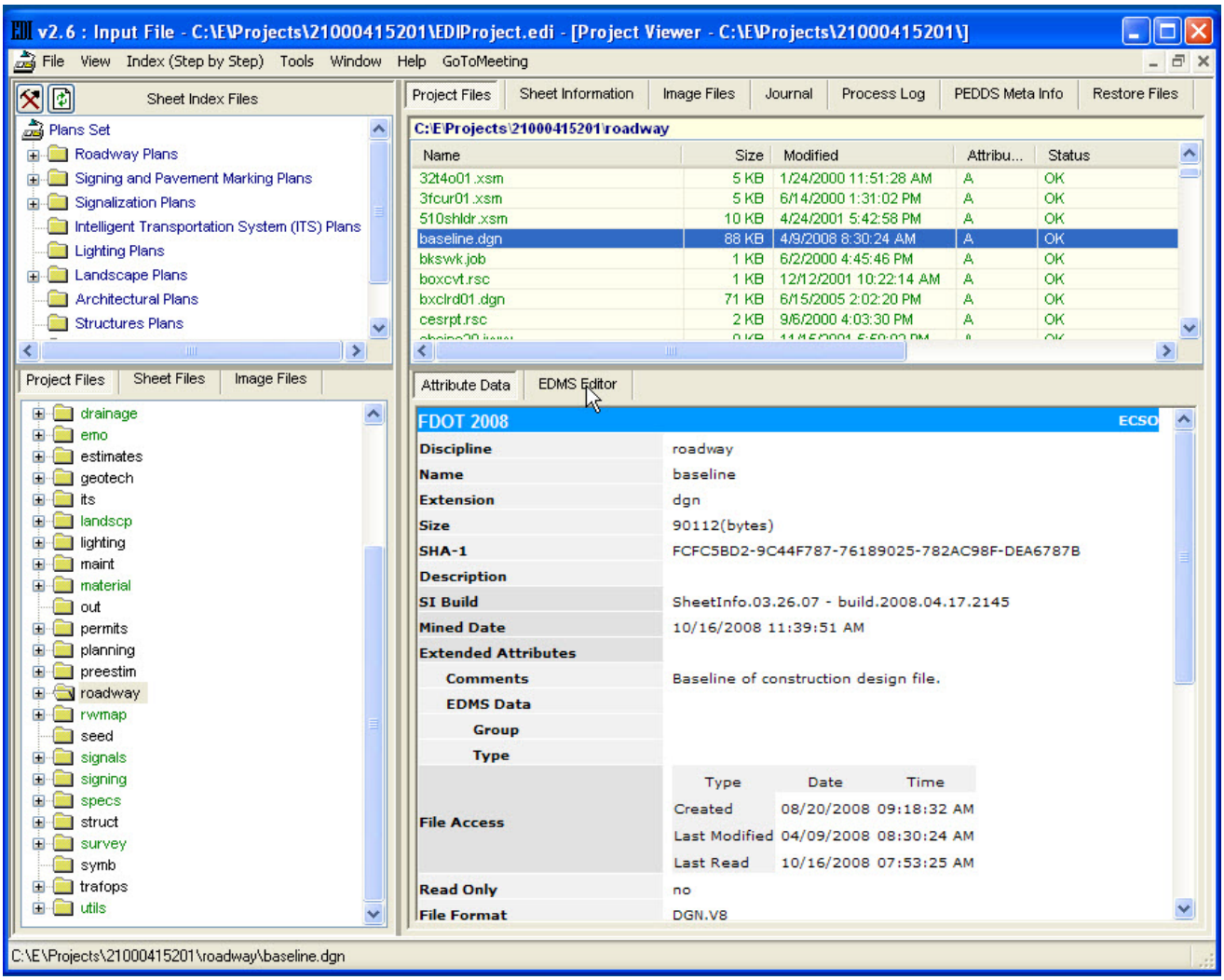


Attribute Data

Add an EDMS Comment to a Sheet File

In this exercise, a comment is added to a MicroStation Sheet or MicroStation design File.

1. In EDI2, verify that the **Project Files** tab is selected.
2. In the File Properties Pane, click the design file **baseline.dgn**.



EDMS Editor

3. Click the **EDMS Editor** tab to open the EDMS Editor pane.
4. In the EDMS Editor pane, enter the description for the selected file. For the purposes of this exercise, enter: **Baseline of construction design file**.

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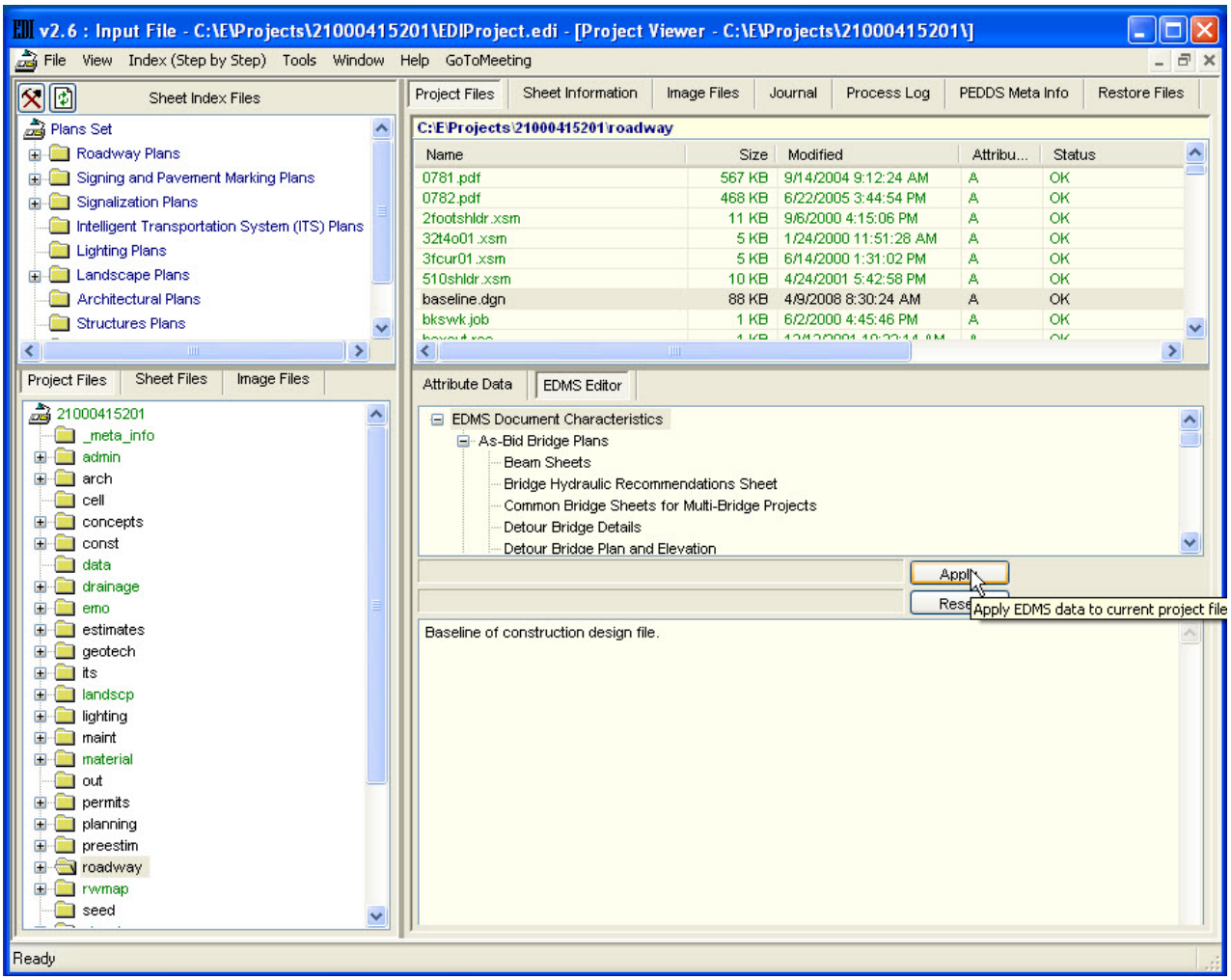
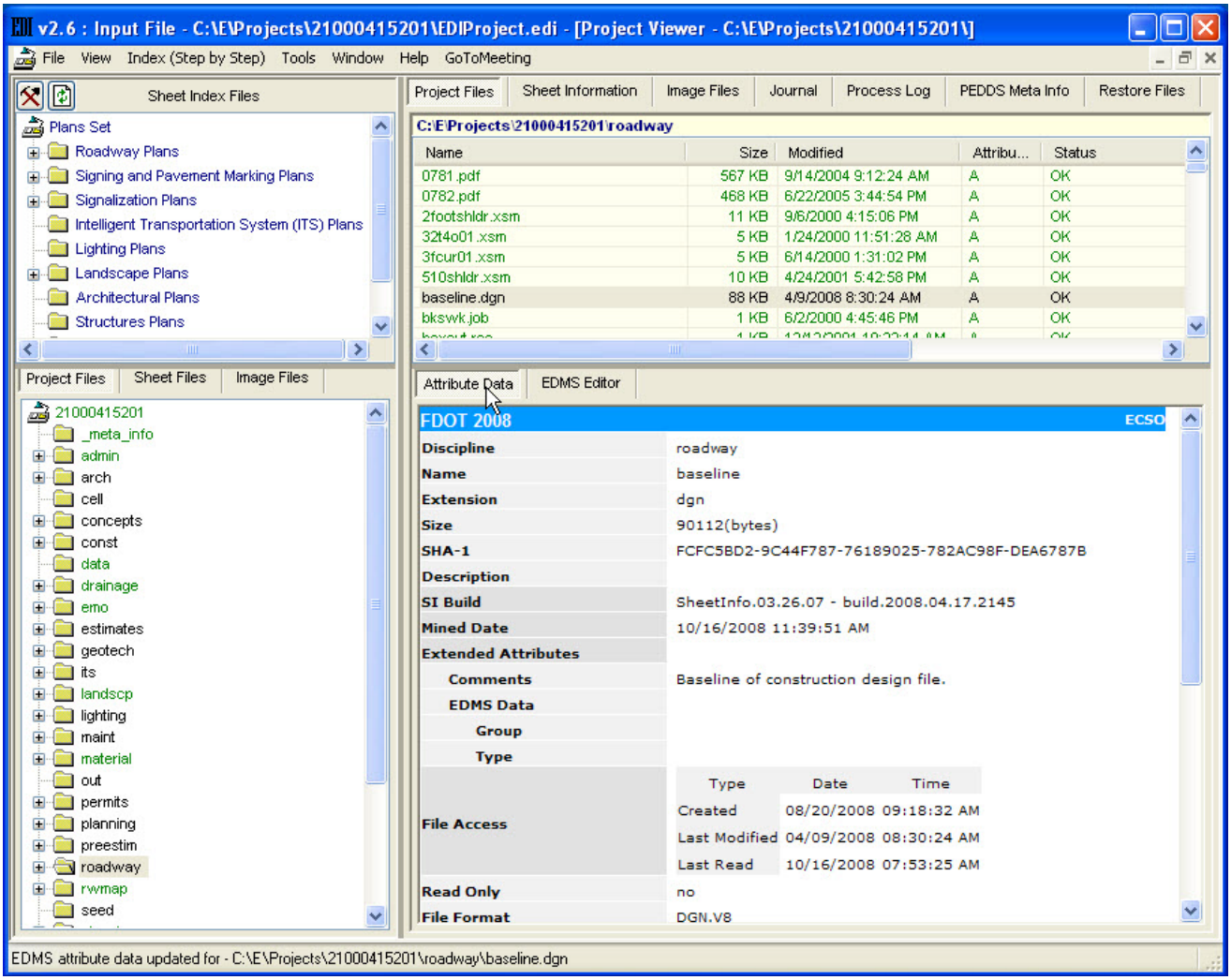
5. Once the file description is entered, click the **Apply** button.



EDMS Editor

6. Click the **Attribute Data** tab to display the file's attribute data. The entered comment appears in the **Attribute Data pane**.



Attribute Data

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Section 3.9 Updating Attributes

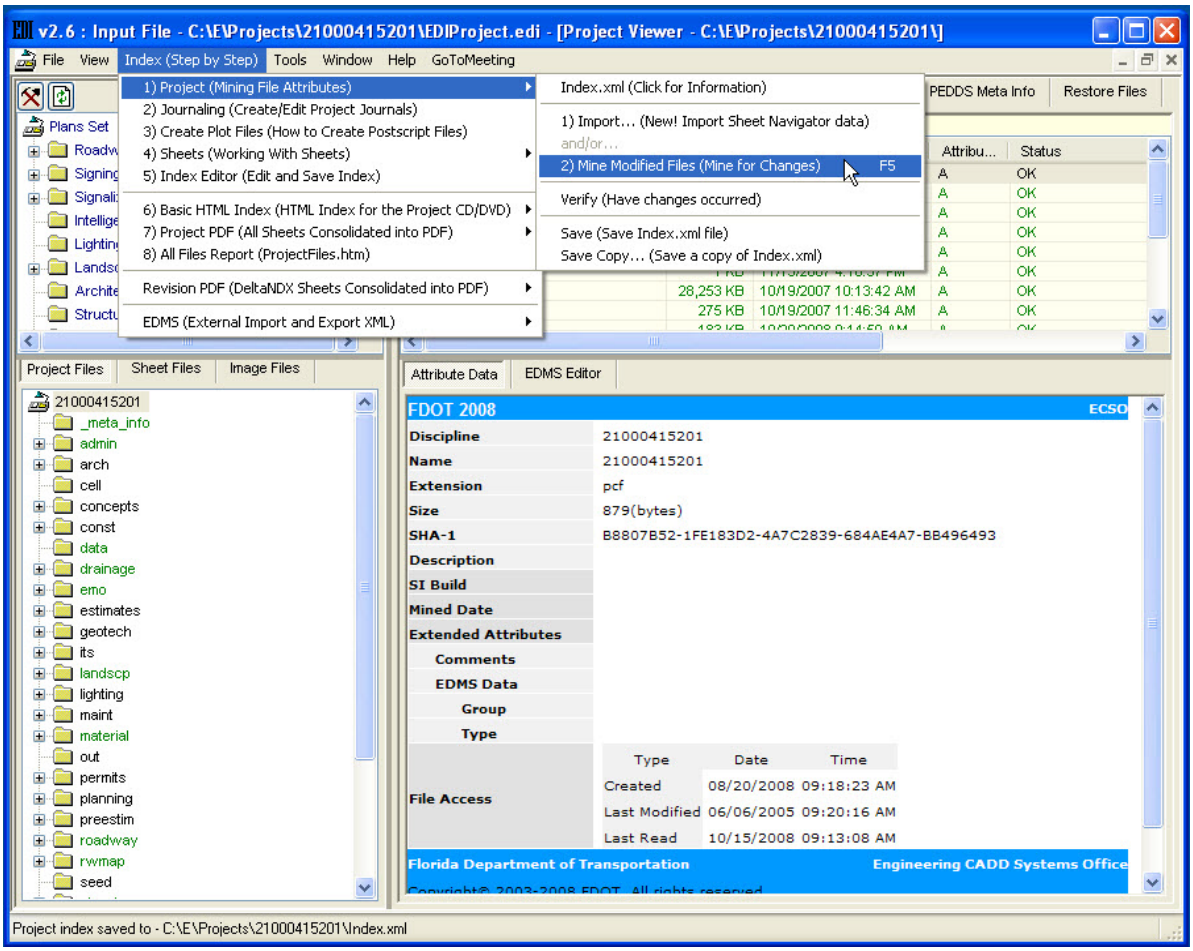
EDI2 can mine attributes at the Project's root level, a folder level or for a single file. The exercises that follow demonstrate several options to update attributes at the different levels.

Exercise 3.7 To update attributes

To Update Attributes at the Project level.

If the **Project Files** tab of EDI2 is selected, all project files are updated. If the **Sheet Information** tab of EDI2 is selected, only MicroStation design files are updated. This exercise demonstrates how to update all project files; however, updating MicroStation design files is done the same way.

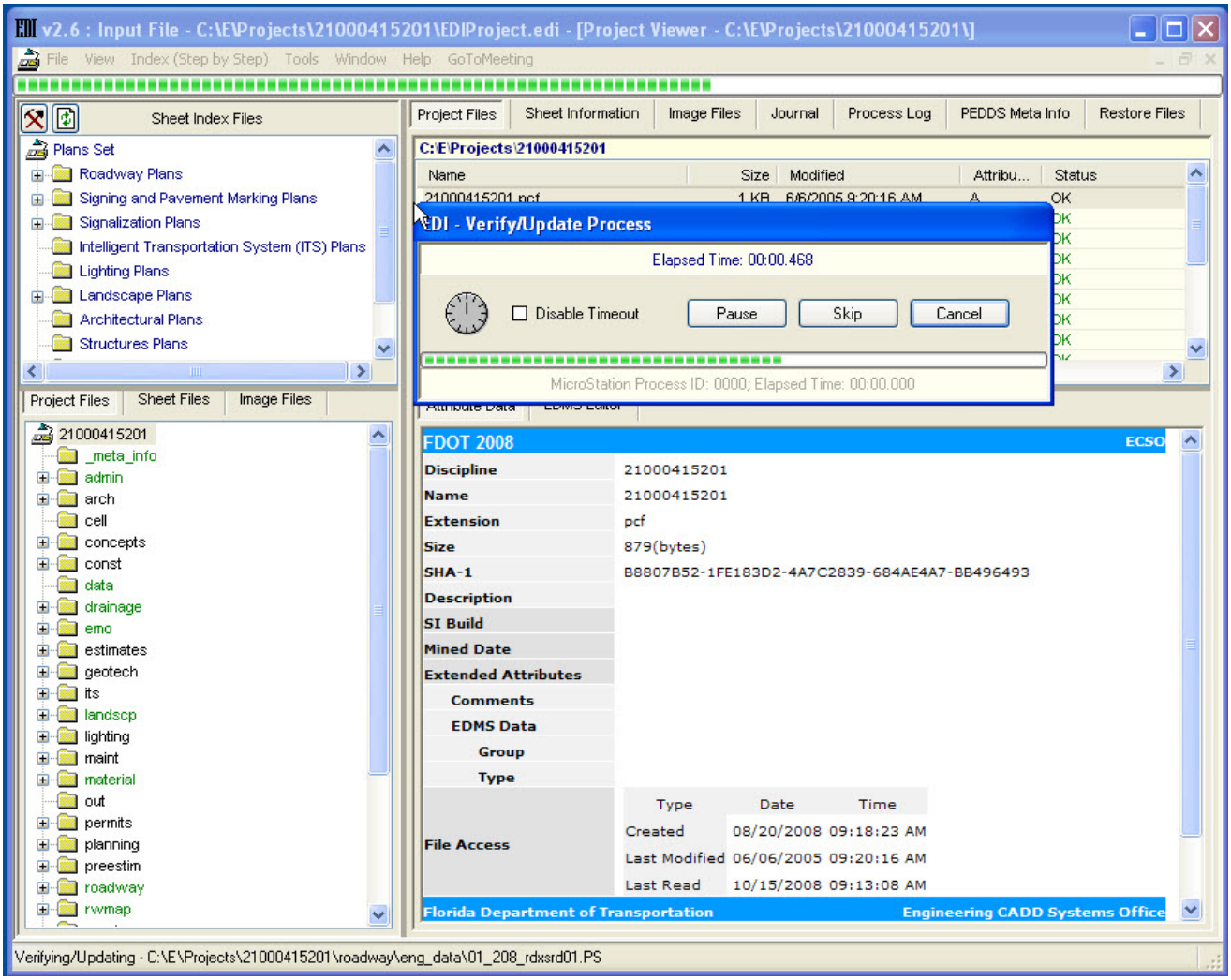
1. From EDI2, verify that the **Project Files** tab is selected and then select **Index (Step by Step) > 1) Project (Mining File Attributes) > Mine Modified Files (Mine for Changes).** Verify/Update Process opens and the mining process begins.



EDI2 - Update Project Attributes

Note Selecting **F5** while EDI2 has focus or clicking the **Mine all modified files** icon ( ) invokes the same process.

2. As EDI2 mines each folder, the status of the mining operation is displayed in a progress bar at the top of the Project Viewer window while the current file is shown in the status bar. Mining File Attributes displays the **MicroStation Process ID** and the elapsed processing time as shown below.



EDI - Verify/Update Process

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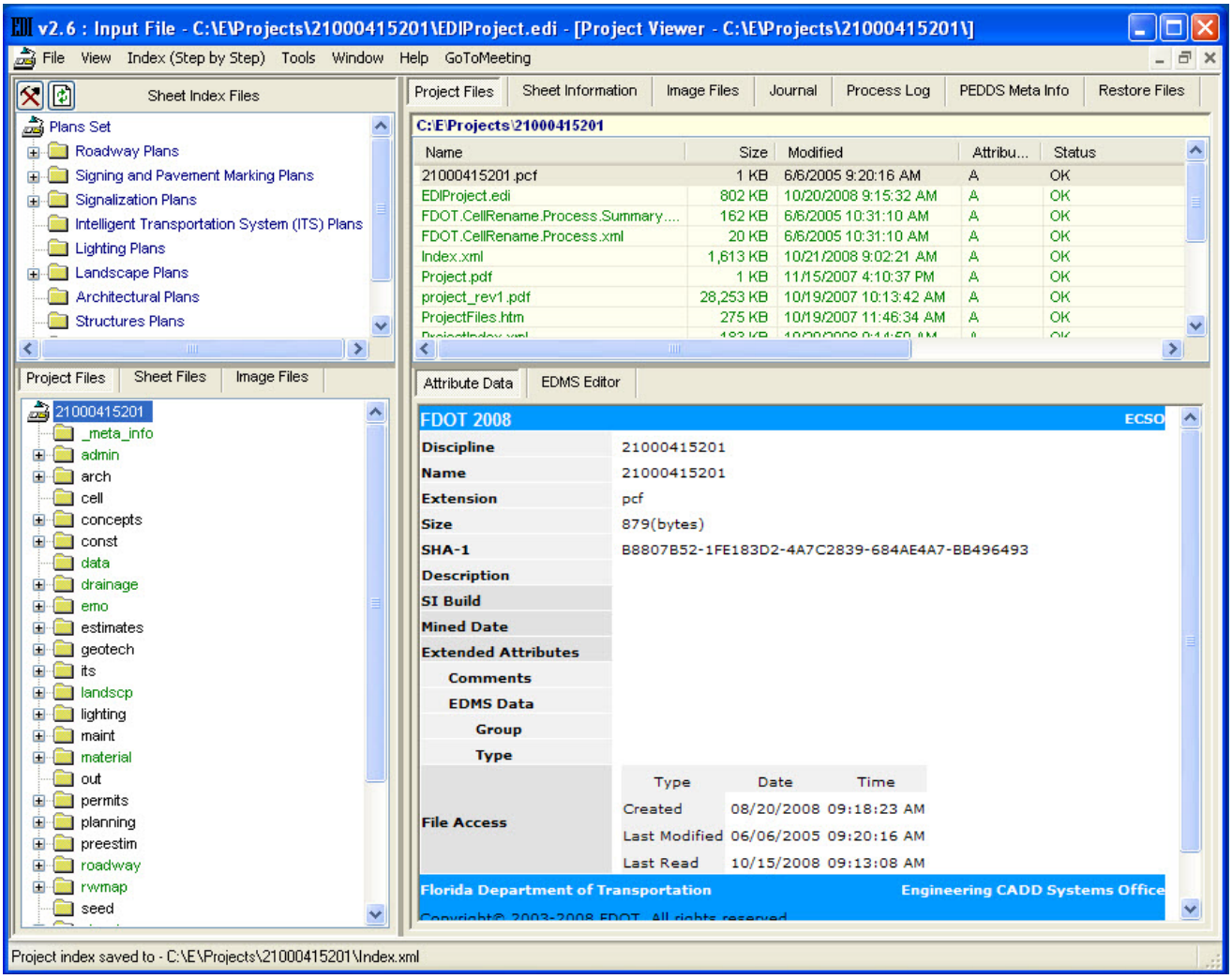
3. When the mining process is complete, EDI2 reappears as shown in the following figure. Project Files display in **green** on the file list pane when **current** with up to date attribute data. Project Files display in **red** when **No attribute data** is present. Project Files display in **amber** when **modified** since the mining process occurred.

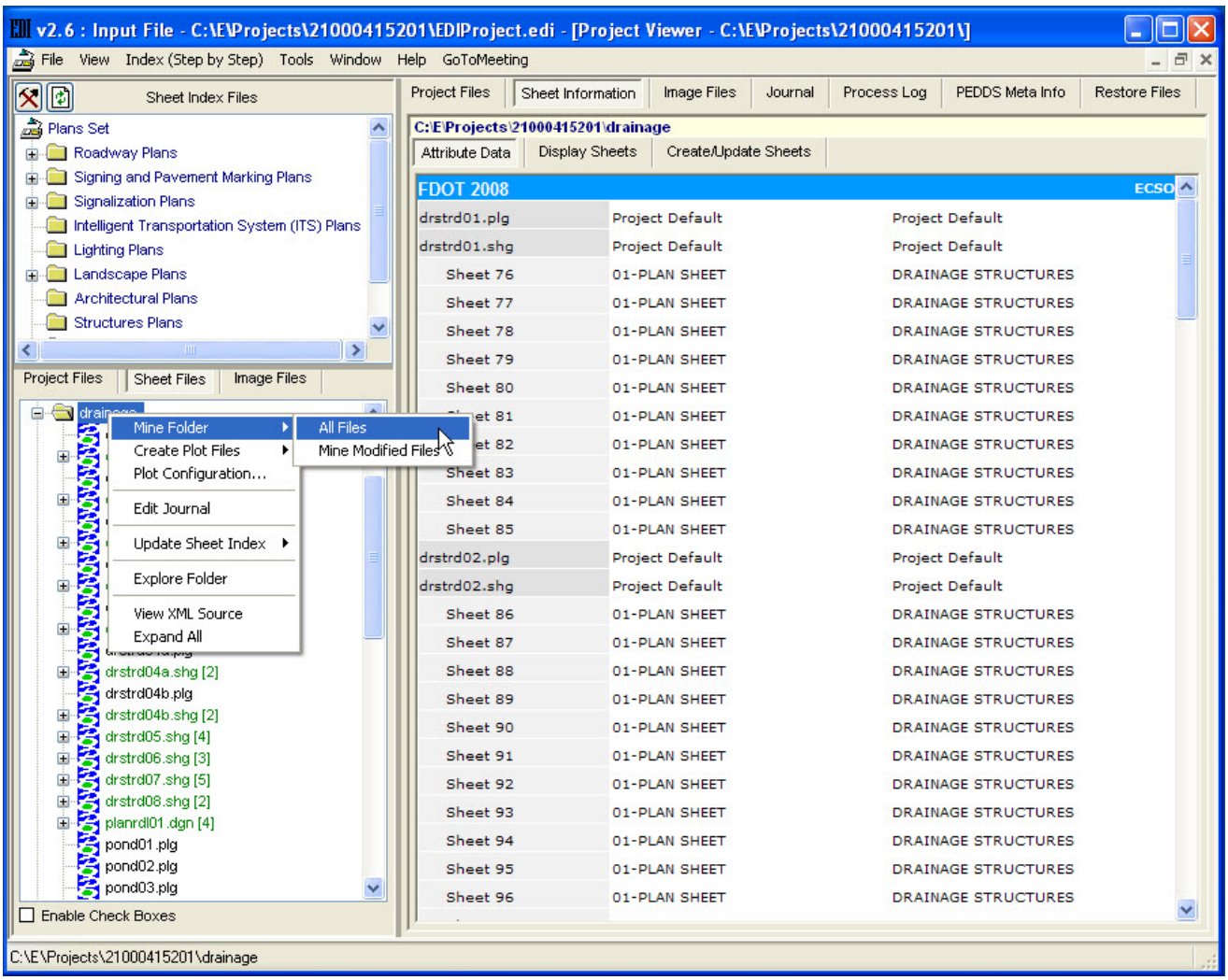


EDI2

To update attributes at the Folder level

In this exercise, only the discipline folder's sheet file attributes are updated. As described above, if the **Projects Files** tab is selected, all files in the folder are updated. Select the **Sheet Files** tab to update all MicroStation design files in the folder.

1. From EDI2, verify that the **Sheet Information** tab is selected and then select the **drainage** folder.
2. Right-click on the folder and click **Mine Folder** > **All Files**.



EDI2 - Mine Folder>All Files

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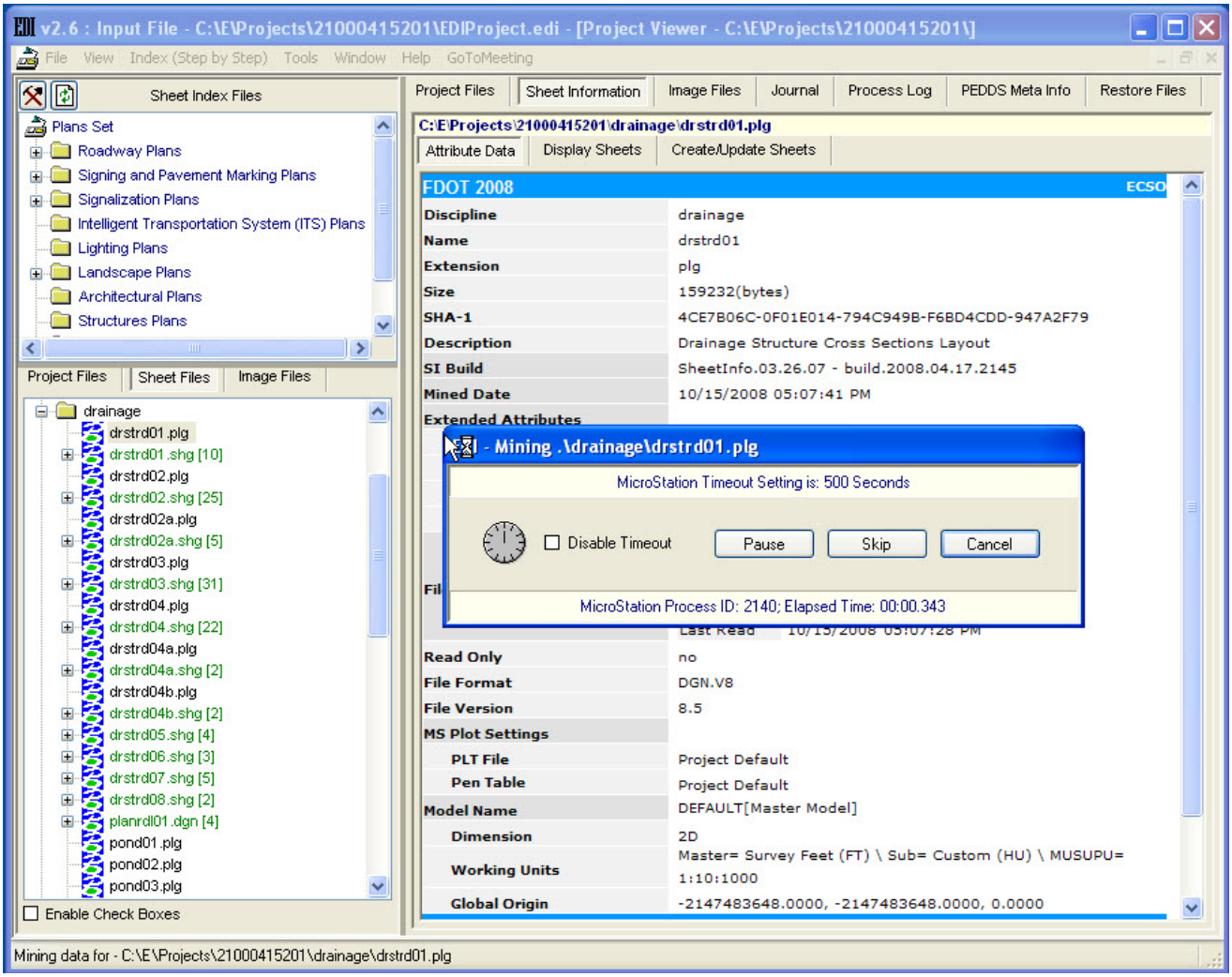
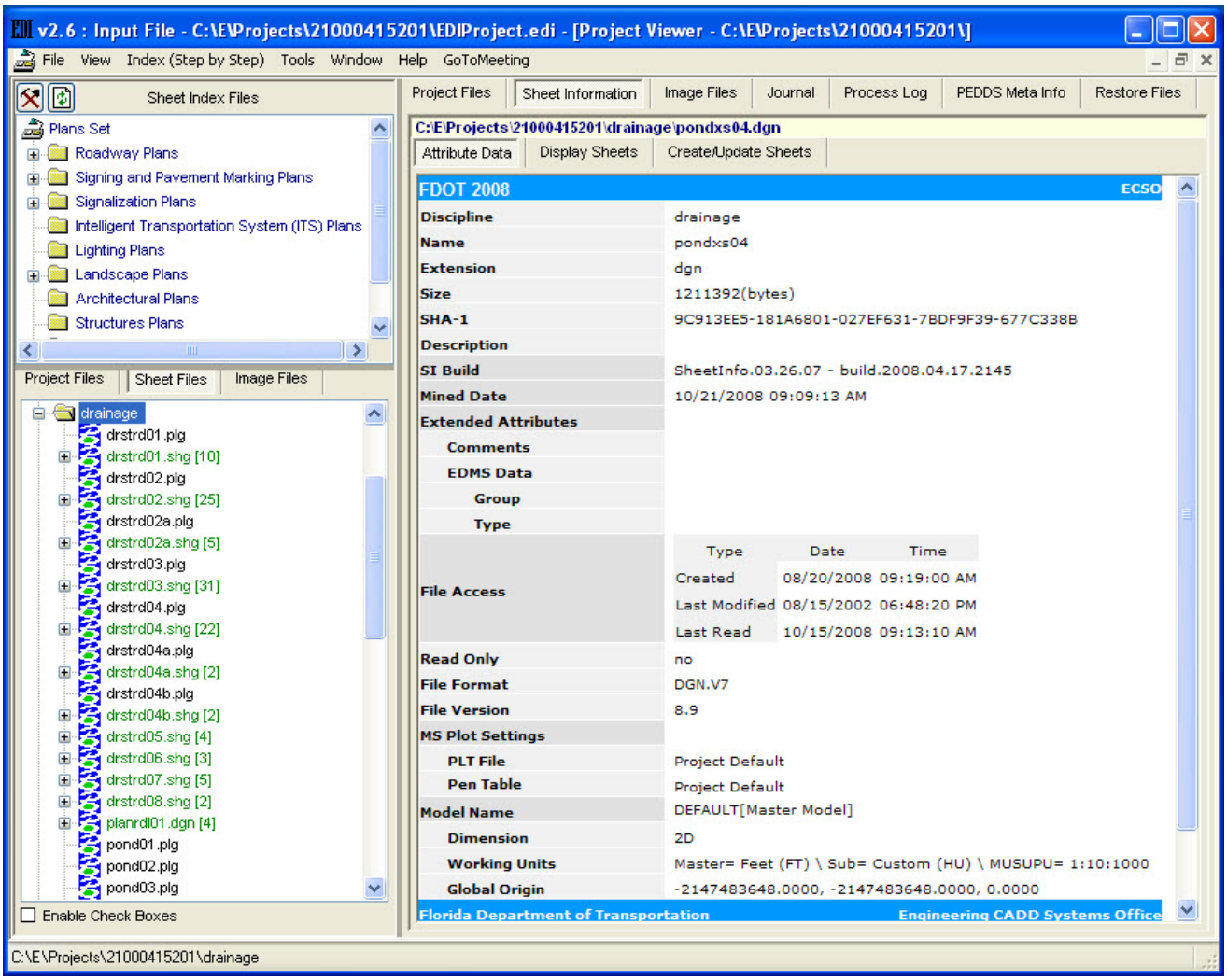
3. EDI - Mining appears and the mining process begins. EDI - Mining displays the MicroStation Process ID and the elapsed processing time for each file.



EDI – Mining

4. Upon completion, EDI2 reappears with the **drainage discipline** folder expanded as shown below.



EDI2

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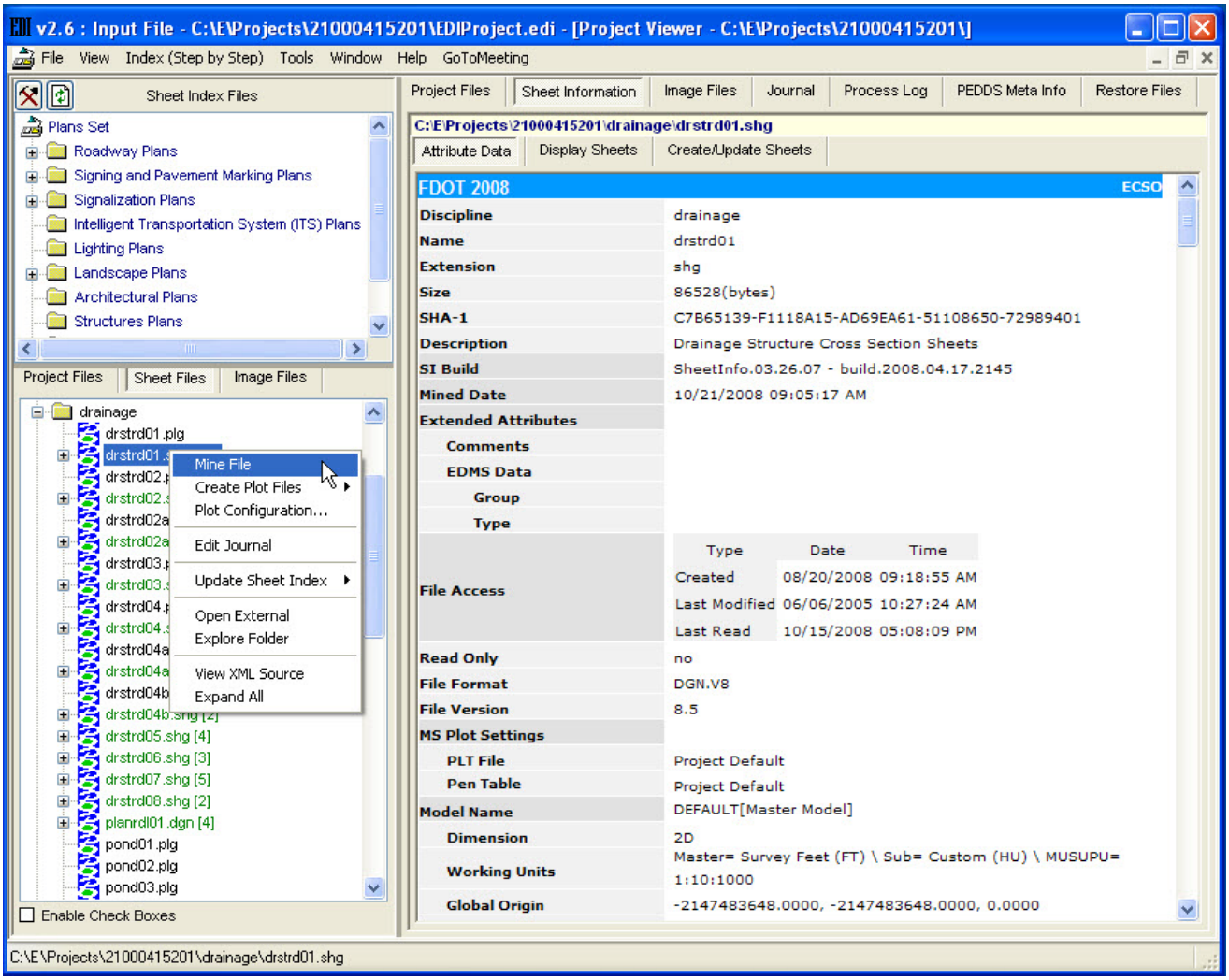
To update attributes at the File level

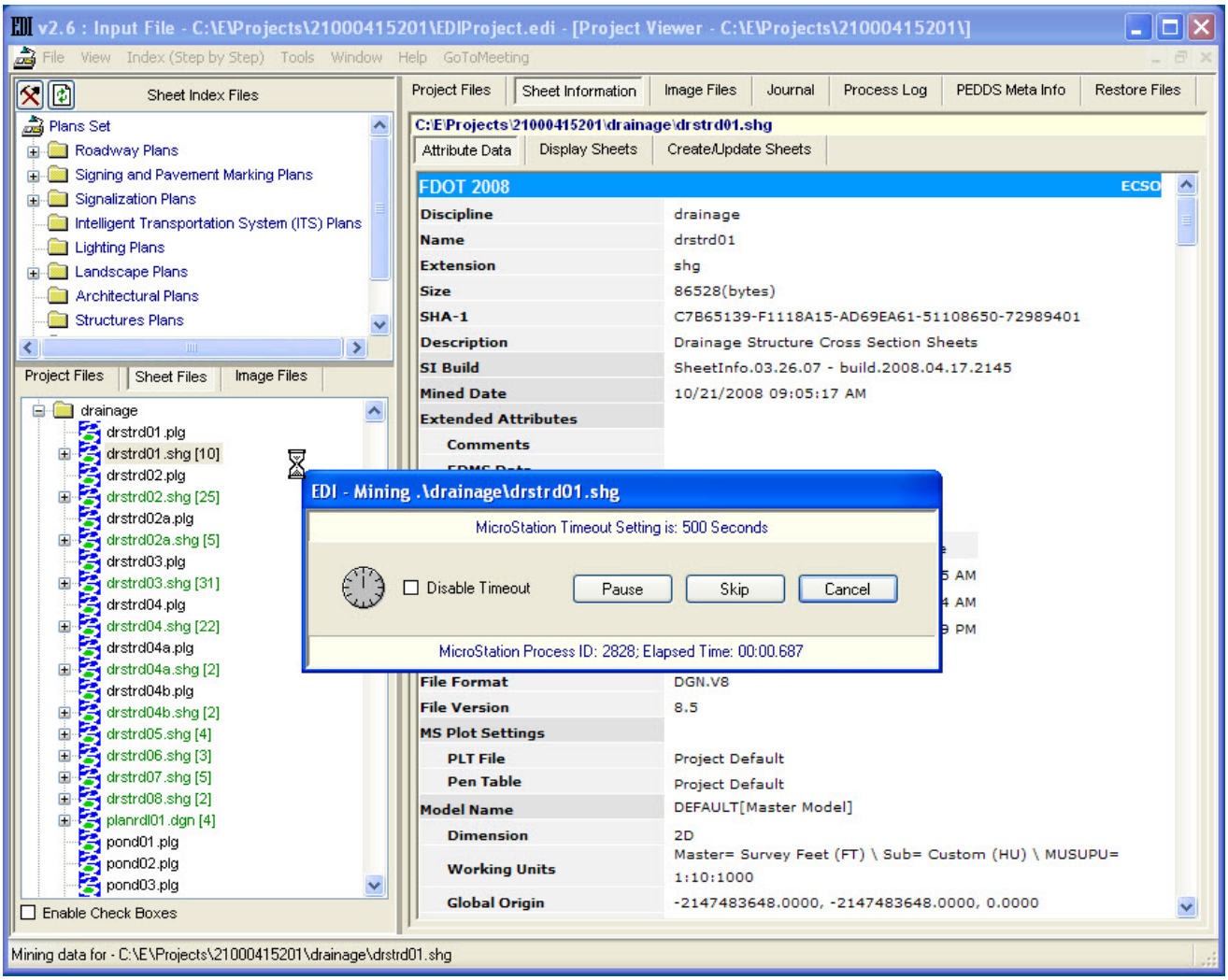
In this exercise, only one file's attributes are updated. This method allows the user to pick individual files to update.

1. Continuing in the Drainage discipline, Right-click on the first MicroStation design file (**drstrd01.shg**) that contains sheet information and click **Mine File**.



EDI2 - Mine Attributes

2. EDI-Mining appears and the mining process begins. EDI2 only mines the selected file's attributes.



EDI - Mining

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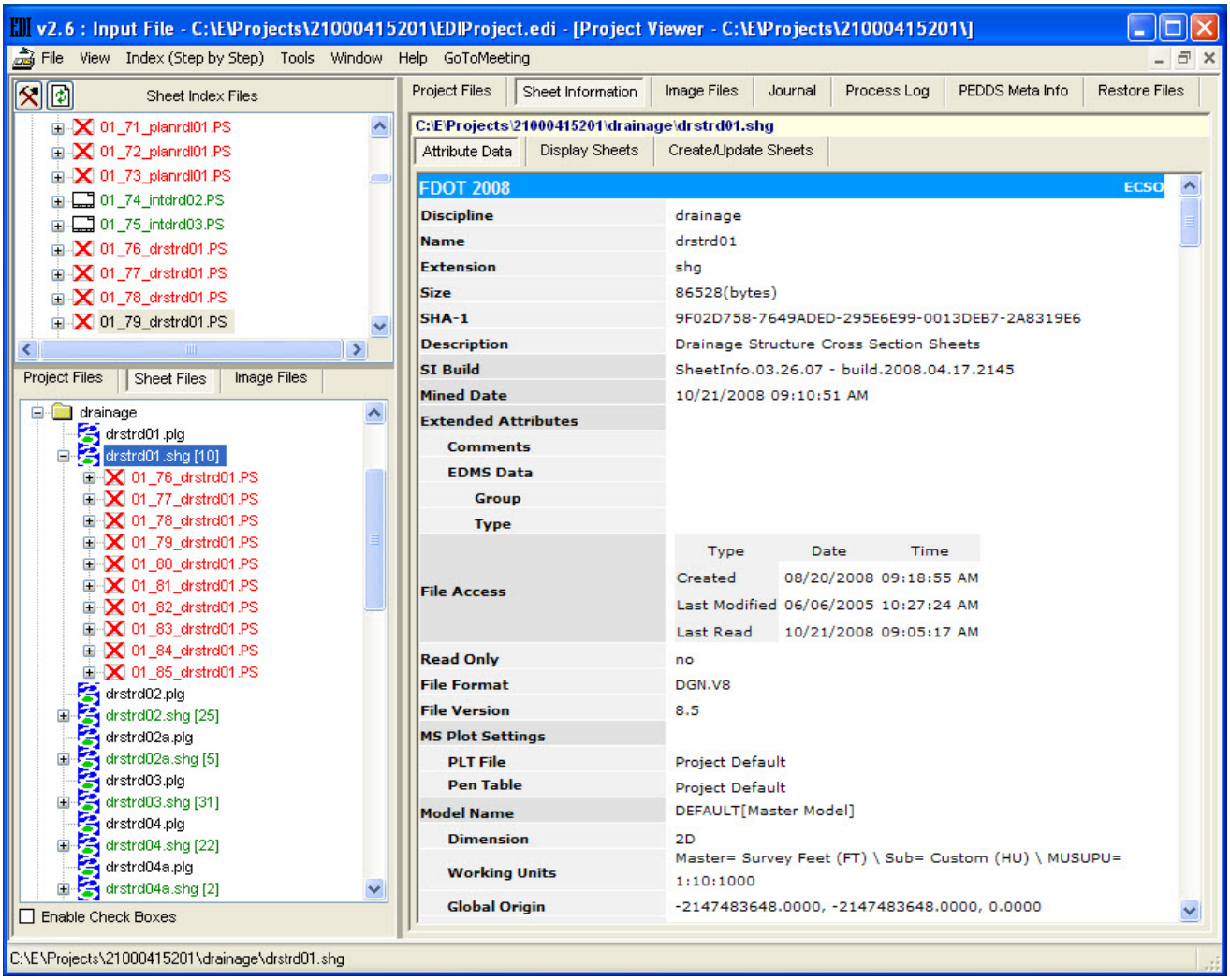
3. Upon completion, EDI2 re-appears as shown below.



EDI2

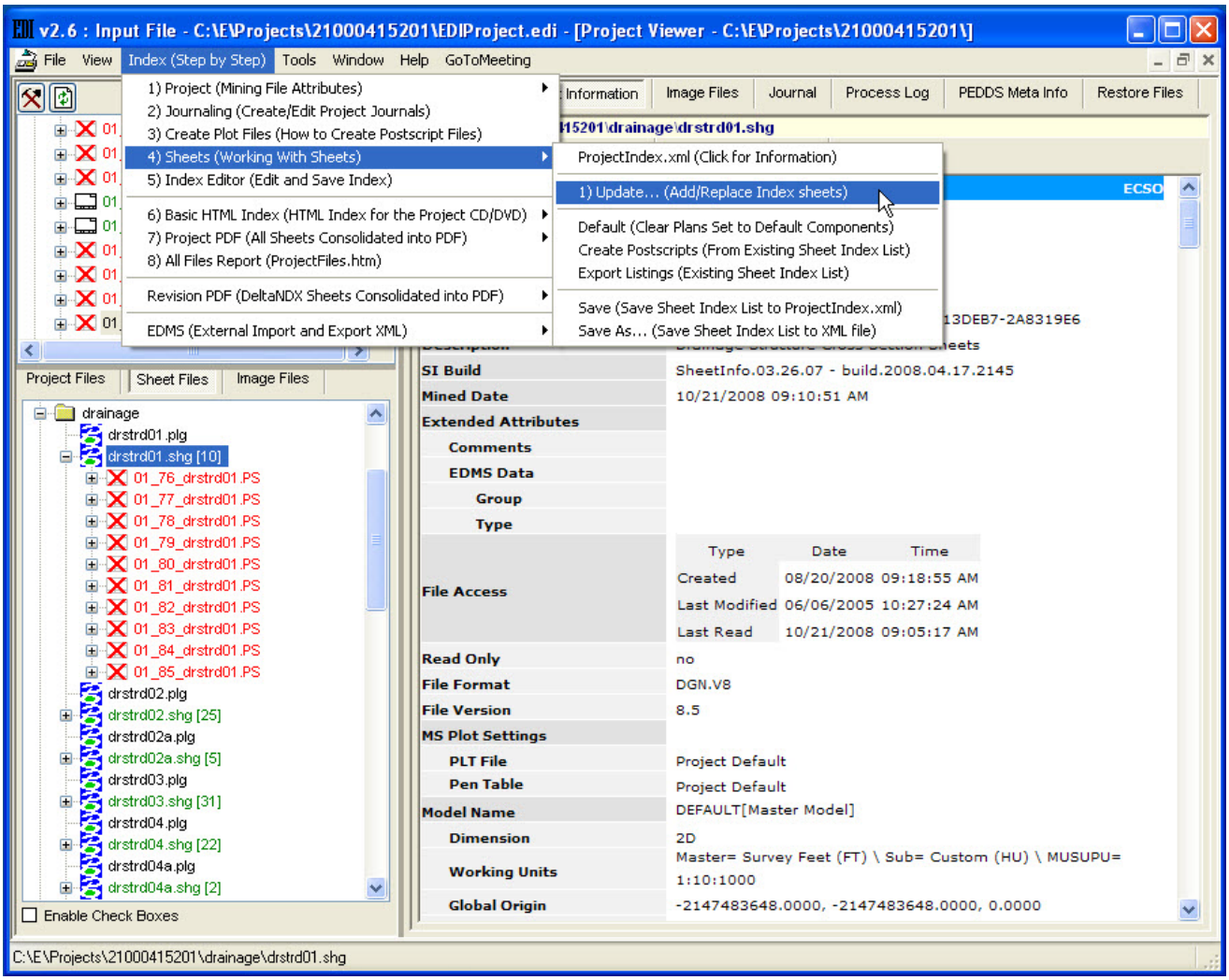
Tip Update on a regular basis, as soon as Production begins. to save time when finishing the project. Clicking the **Mine all modified files** icon ( ) insures file attributes are up to date.

Section 3.10 Updating the Index

Unlike updating sheet or project file attributes, updating the index is processed on the complete project. When updating the Index, it makes no difference if updating occurs from the **Sheet Information** tab or the **Project Files** tab of EDI2.

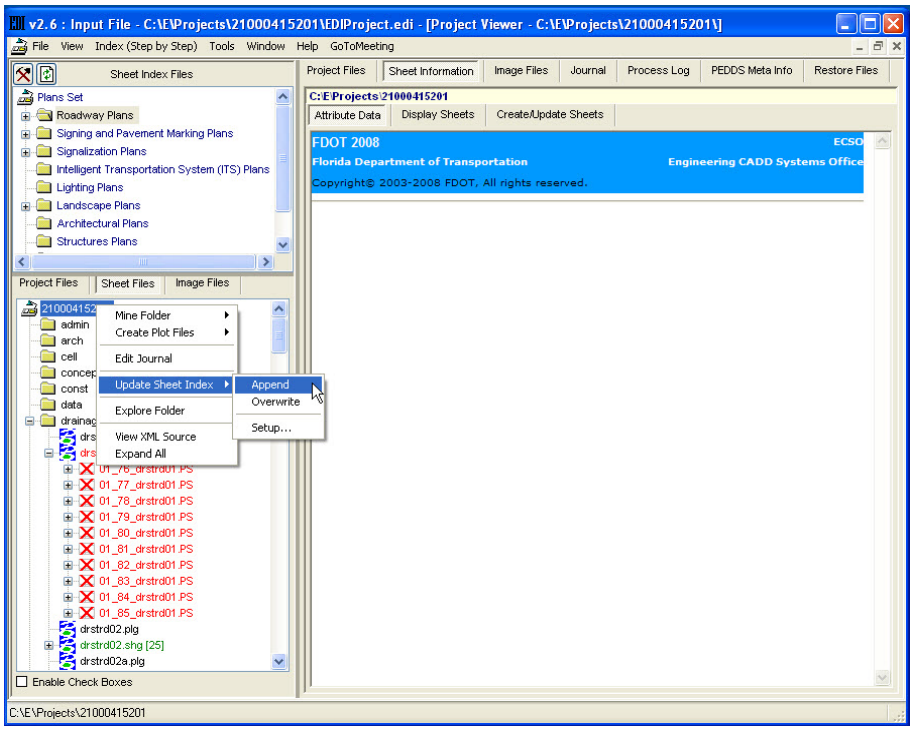
Exercise 3.8 To update the Project Index

1. From EDI2, select Index (Step by Step) > 4) Sheets (Working With Sheets) > 1) Update... (Add/Replace index sheets) as shown below.



EDI2 - Sheet Index Update

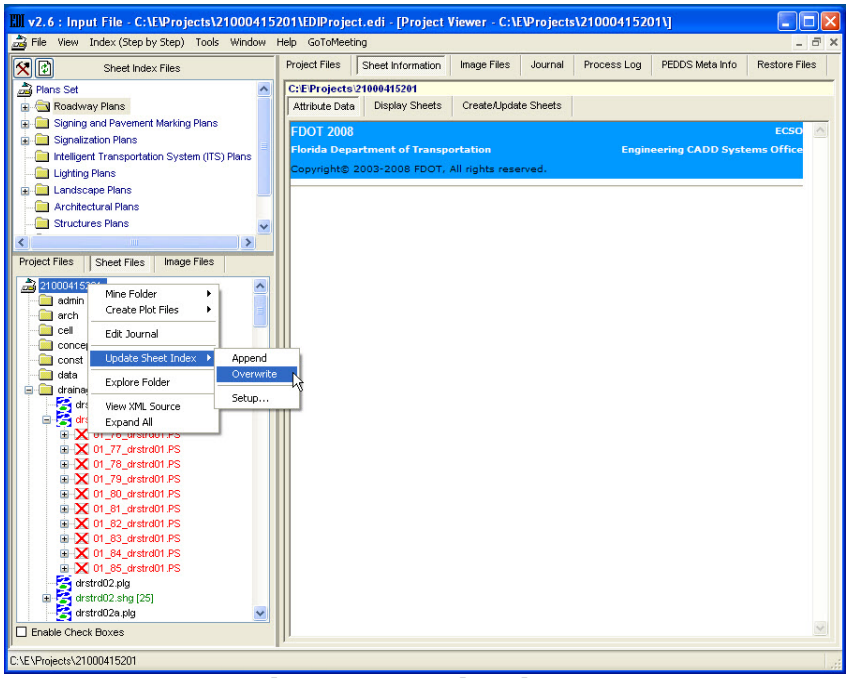
--OR-- Right-click, on any file or folder in the Sheet Files tree view, and then click **Update Sheet Index** as shown below to process just those files or folder.



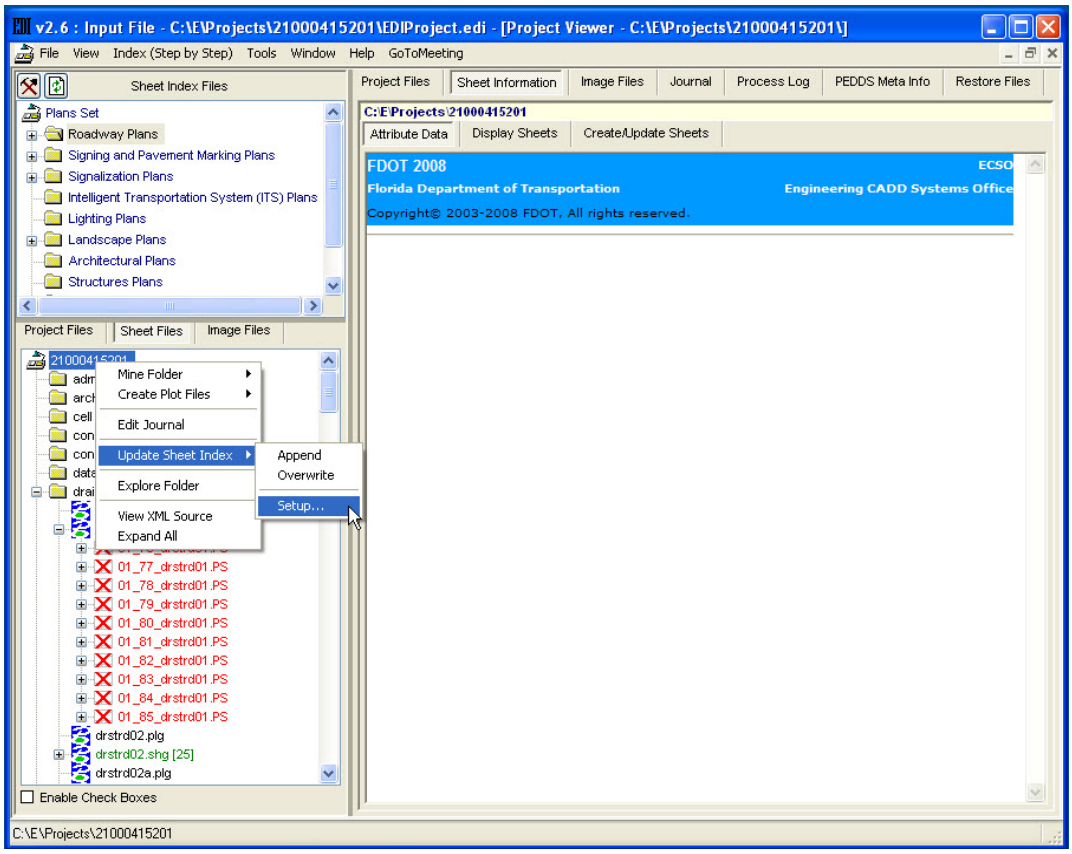
EDI2 - Update Sheet Index

2. Once EDI -Sheet Index Update opens, populate the Overwrite **Existing** checkbox and click the **OK** button.

Note If no option is selected, the index is **updated with new sheets only**. Check **Overwrite Existing** to update existing sheets with modified design file sheet data.



Update Project Index Plans Set



Update Project Index Plans Set - Setup

Important *At first, the* ***Plans Set*** *tree view has component nodes only. When the sheet index is created, each sheet found in the* ***Sheet Files*** *tree view, is inserted into Plans Set under the appropriate component nodes as defined by SheetInfo at the time the sheet was mined.*

Important *When updating* ***the sheet index****, existing sheets already in the index are not overwritten, even if the attribute data changes. This includes page renumbering, description and component changes. Check* ***Create New Index*** *or modify the information by using* ***Overwrite Existing*** *to update the sheet index, with recently mined data.*

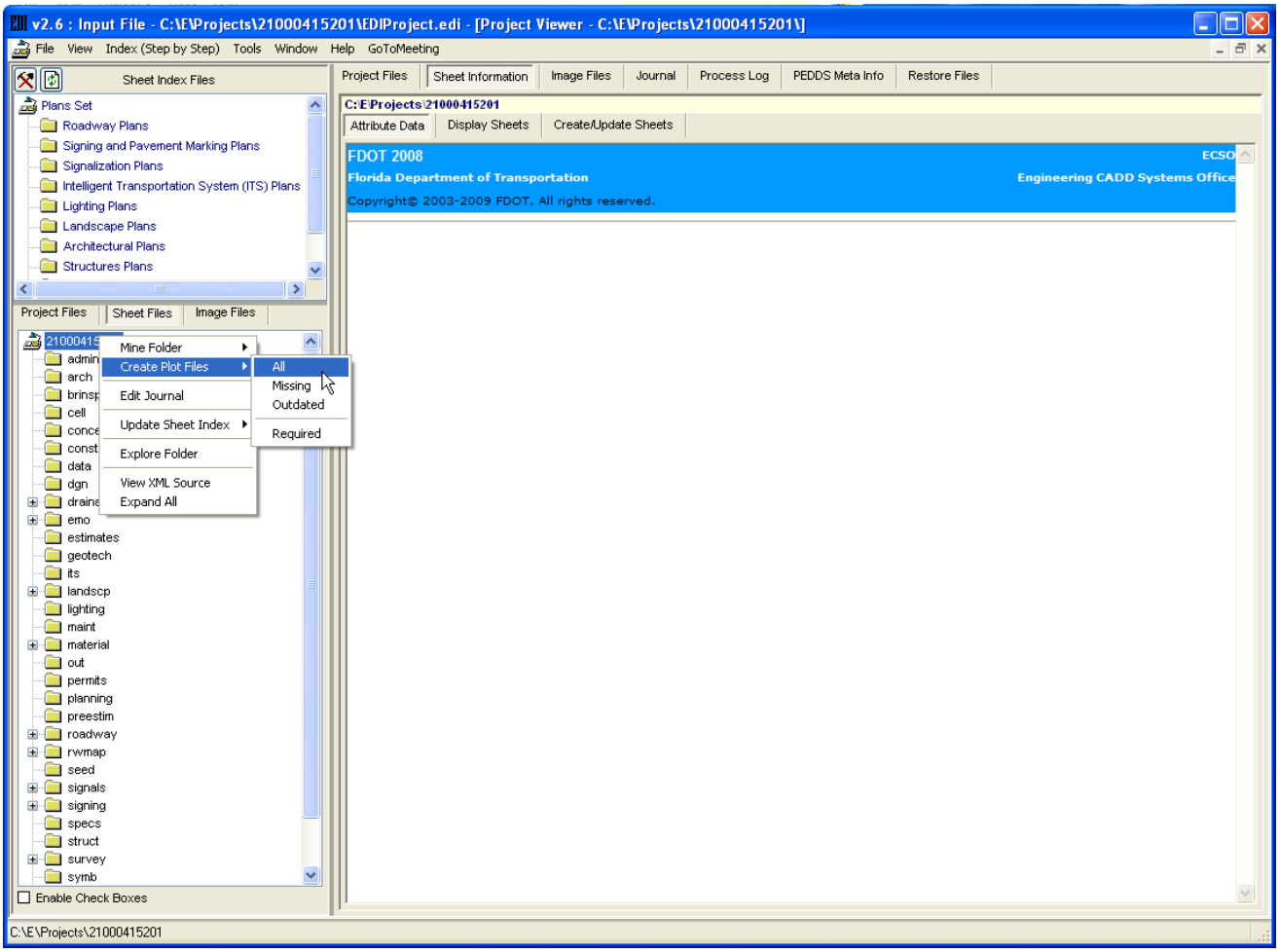
Section 3.11 Indexing/Plotting/Journaling - Plotting

EDI2 allows the user to create sheet image files for the entire project, a discipline folder or an individual sheet.

Exercise 3.9 Creating Postscript Image Files

To create Postscript Image Files of the Project

1. In the **Sheet File** tree view, select the project number and right-click.
2. Select **Create Plot Files > All.**

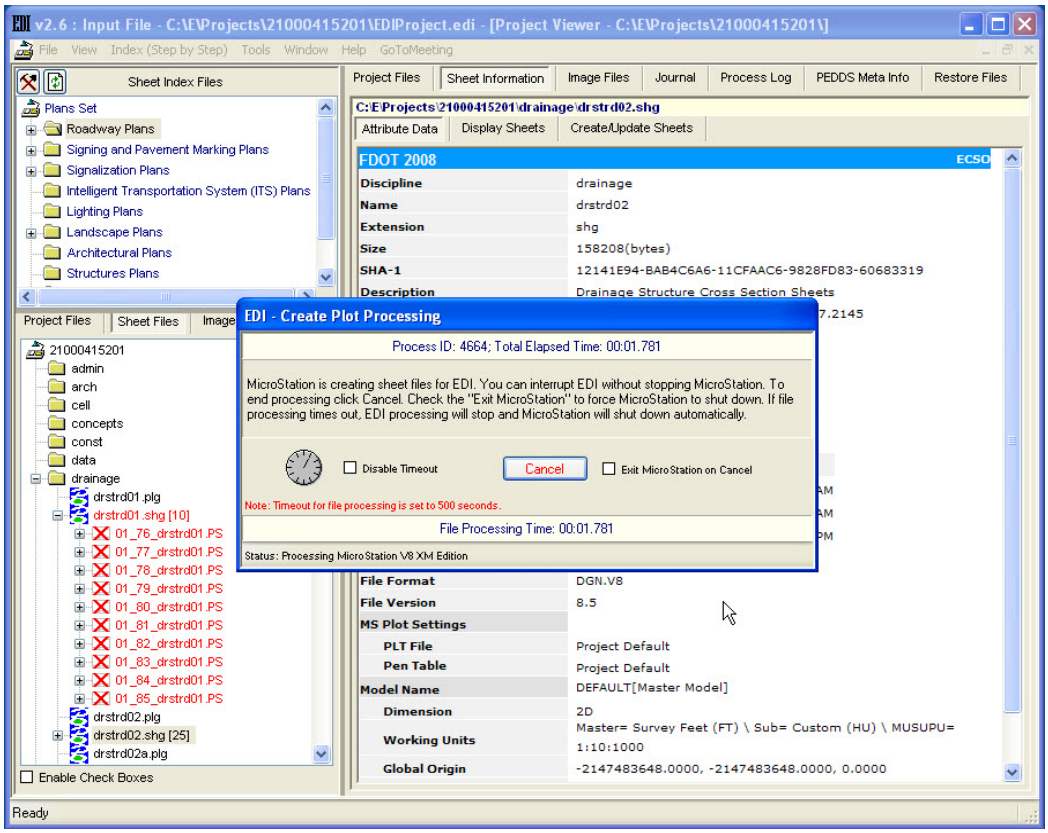


EDI2

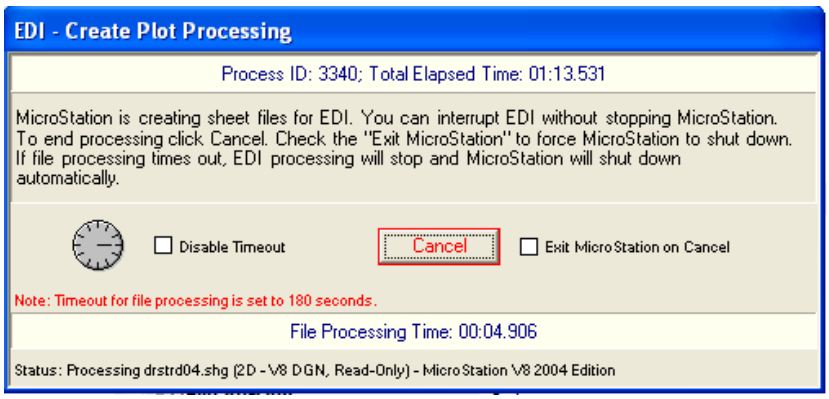
Tip To scan the project for missing image files and create those only, right-click and select **Create Plot Files > Missing**. To process design files that may have changed, right-click and select **Create Plot Files > Outdated**.

3. EDI - Create Plot Processing appears and the plotting process begins. EDI2 processes design files that contain sheets. The status of the plotting operation is displayed at the top and bottom of EDI2.

Note EDI - Create Plot Processing shows the design file currently processing, the total elapsed time and the current file processing time.



EDI2 Creating Postscript Image files



Tip EDI - Create Plot ProcessingCheck **Disable Timeout** to process large design files or files with many sheets. Select **Cancel** to stop processing. Check **Exit MicroStation on Cancel** to unload the MicroStation automation process.

Note The next few pages are not formal exercises, but rather additional information on available plotting options.

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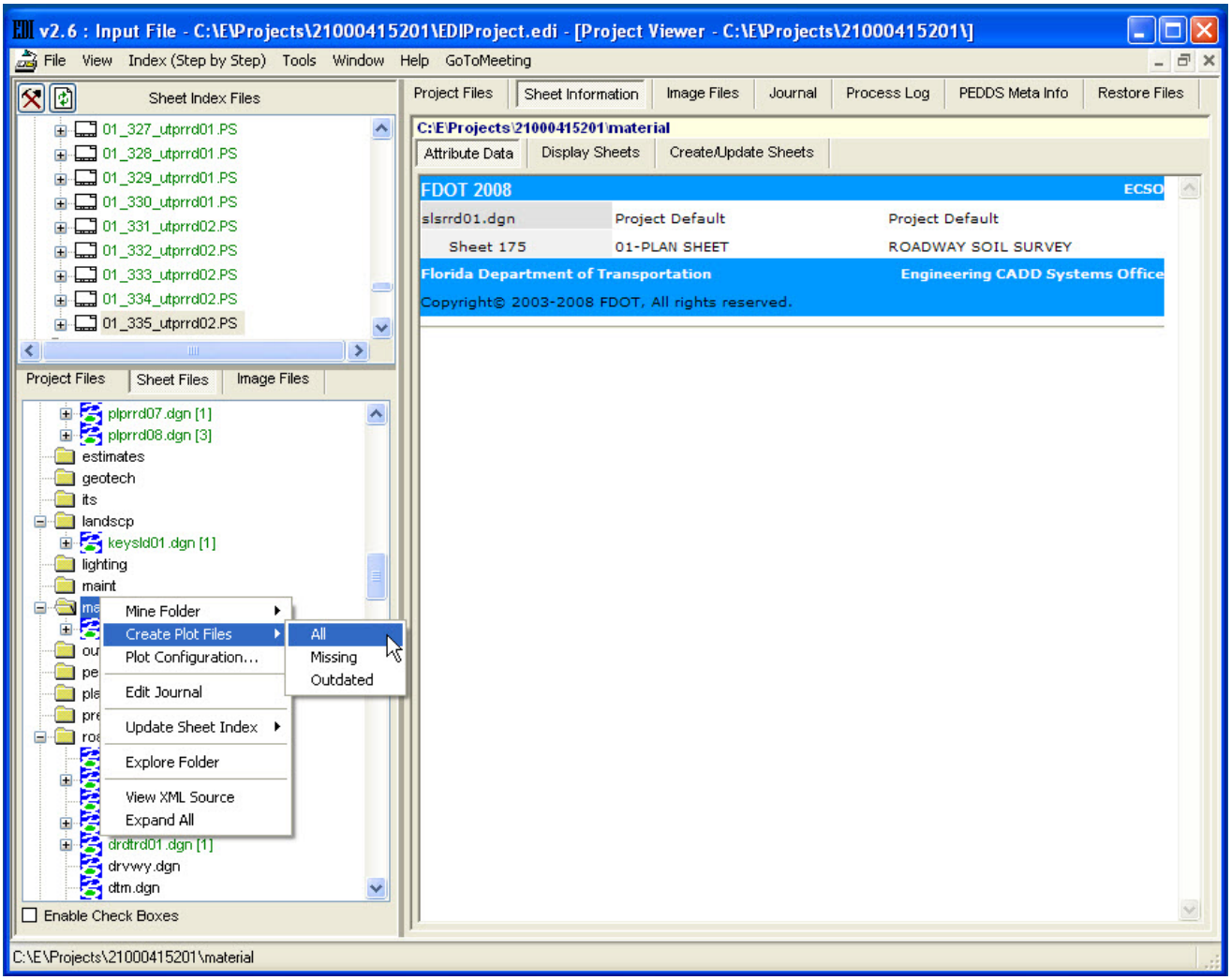
To Create the Postscript Images for an Individual Folders

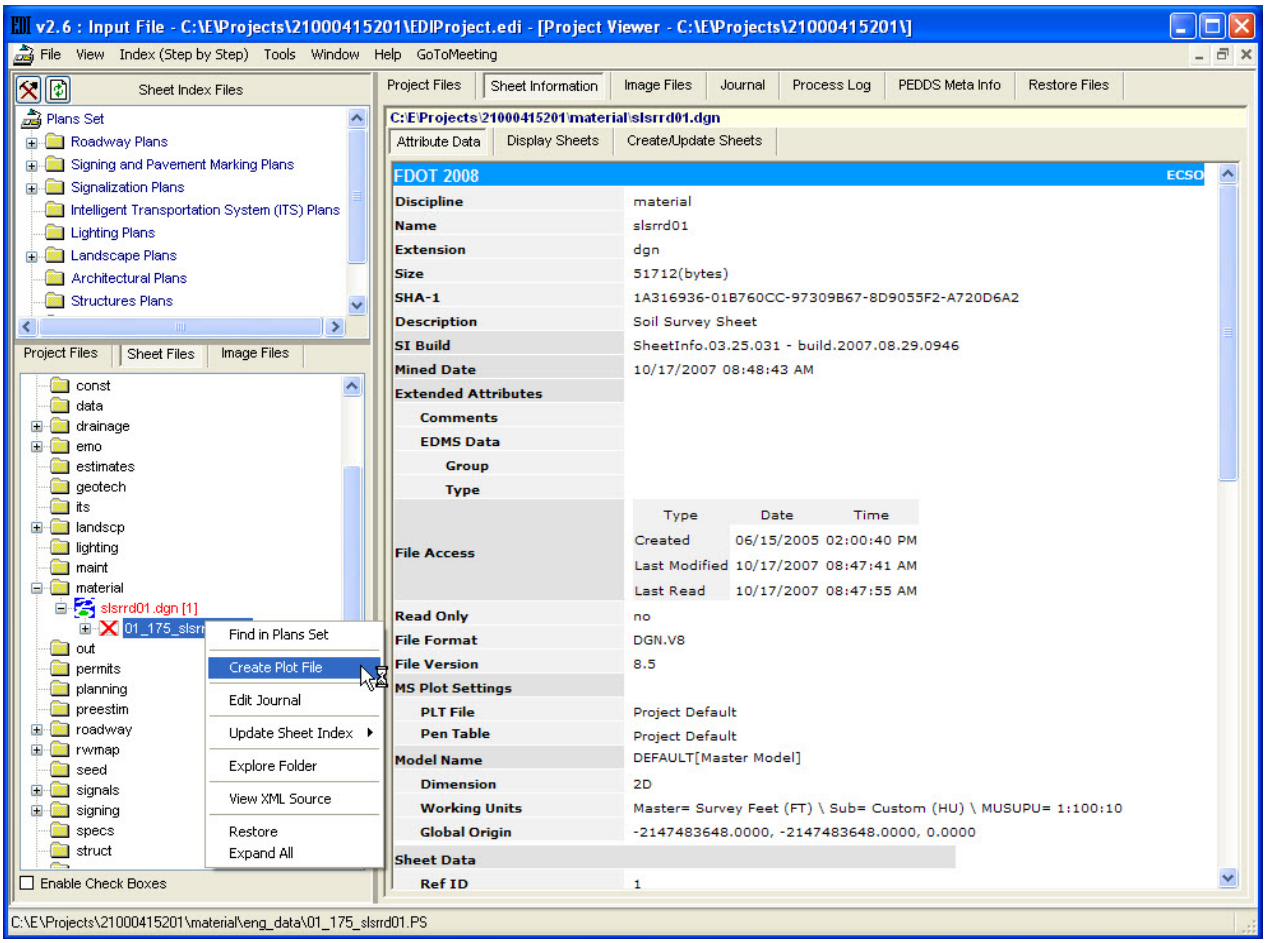
1. From EDI2, verify that the **Sheet Files** tab is selected and click the desired **discipline folder**.
2. In the Sheet Files tree view, right-click the desired folder, then select **Create Plot File** and the appropriate option**.**
3. EDI - Create Plot Processing appears and the plotting process begins



Plotting at the Folder level

To create a plot image for an individual sheet

1. From EDI2, verify that the **Sheet File** tab is selected and click the desired **sheet**.
2. Right-click the sheet and select **Create Plot File** from the menu**.**
3. EDI - Create Plot Processing appears and the plotting process begins.



Plotting Individual Sheets

4. Upon completion or plotting process, the created plot files are **green** in both the **Sheet Files and Plans Set** tree views as shown below.

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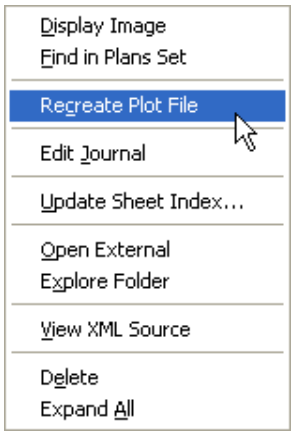
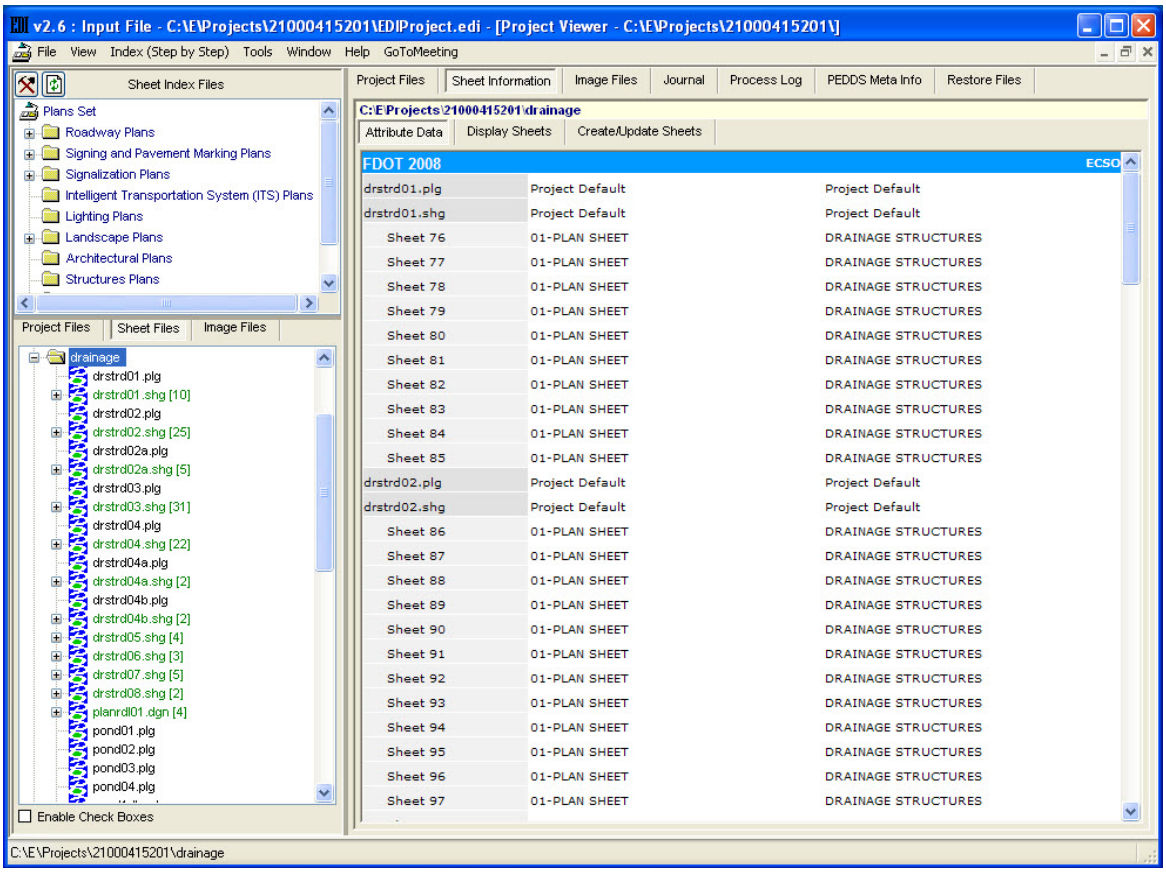
5. If the color of the design file name is red or a red “X” sheet icon is present, then at least one sheet image file is missing (does not exist). A green design file name indicates all sheets exist. When sheets exist, Create Plot File in the right-click menu becomes Recreate Plot file as shown in the following figure.



Recreate Plot File

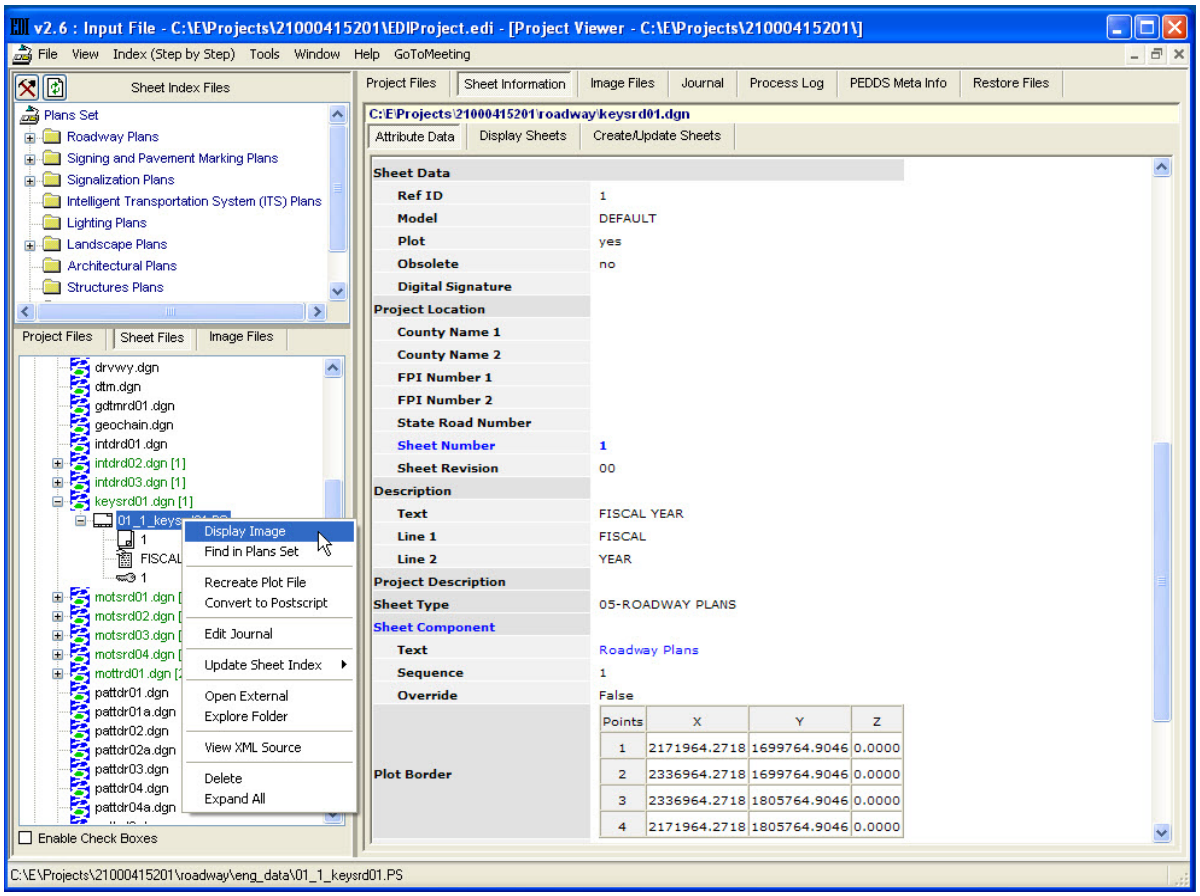


EDI2

Note An Index of all files is created near the end of the ED process, as more required files are created.

To view Postscript images

1. From EDI2, verify that the **Sheet File** tab is active, select the **roadway** folder and then click **keysrd01.dgn**.
2. To expand the information under **keysrd01.dgn**, click the ***plus(+)*** symbol.
3. Click on the Postscript file name.
4. Right-click the file name and from the menu, click **Display Image**.



EDI2 - Display Image

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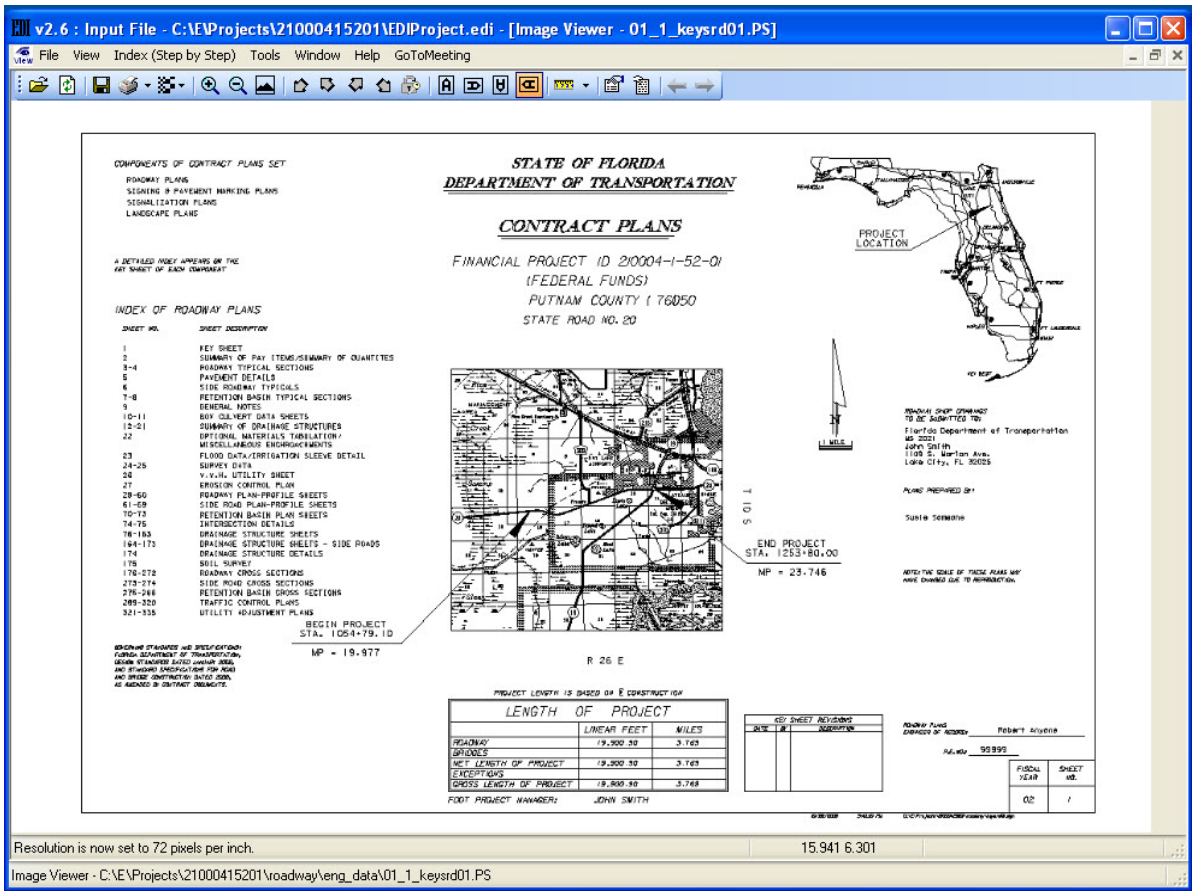
5. The Image Viewer window opens and displays the Postscript image. Review the image in Image Viewer.

Note In class, several of the other available options will be discussed.



EDI2 - Image Viewer

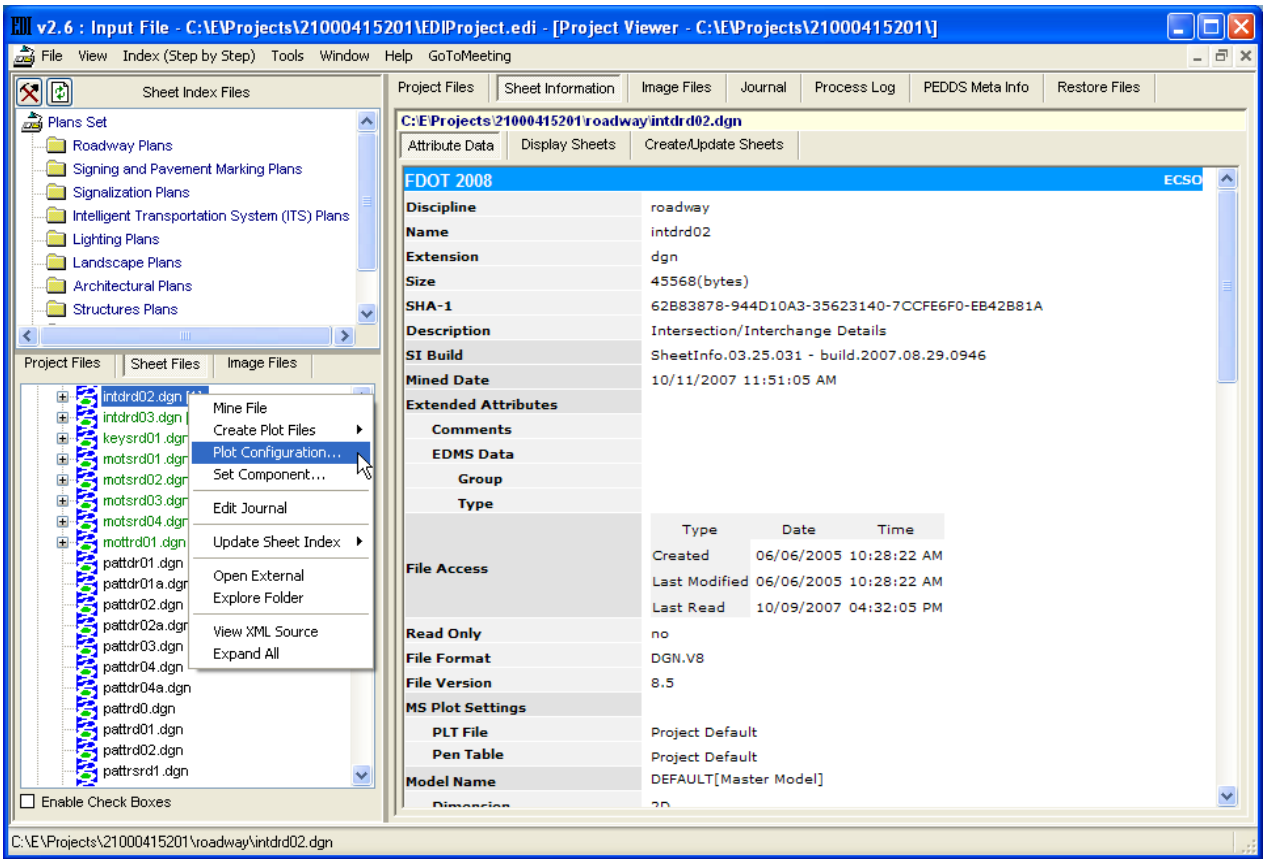
6. To switch back to Project Viewer, select **View** > **Project Viewer (All files, Image Files, Design Sheets)**.

Important *Image Viewer is set to a default of 72 pixels per inch to maximize screen display speed. If the Image Viewer is used to print, the screen resolution should be increased to produce a better quality image, however, screen display speed decreases.*

To Alternate Plotter Configuration

To specify alternate plot settings for design files, use the new context menu item named "Plot Configuration" by doing the following steps:

1. From the Project Viewer window, select the **Sheet Information** tab.
2. Right-click on any folder or design file from the tree view as shown below.



EDI – Plot Configuration

3. From the menu, select **Plot Configuration…** to display the Plot Configuration Settings dialog as shown below.

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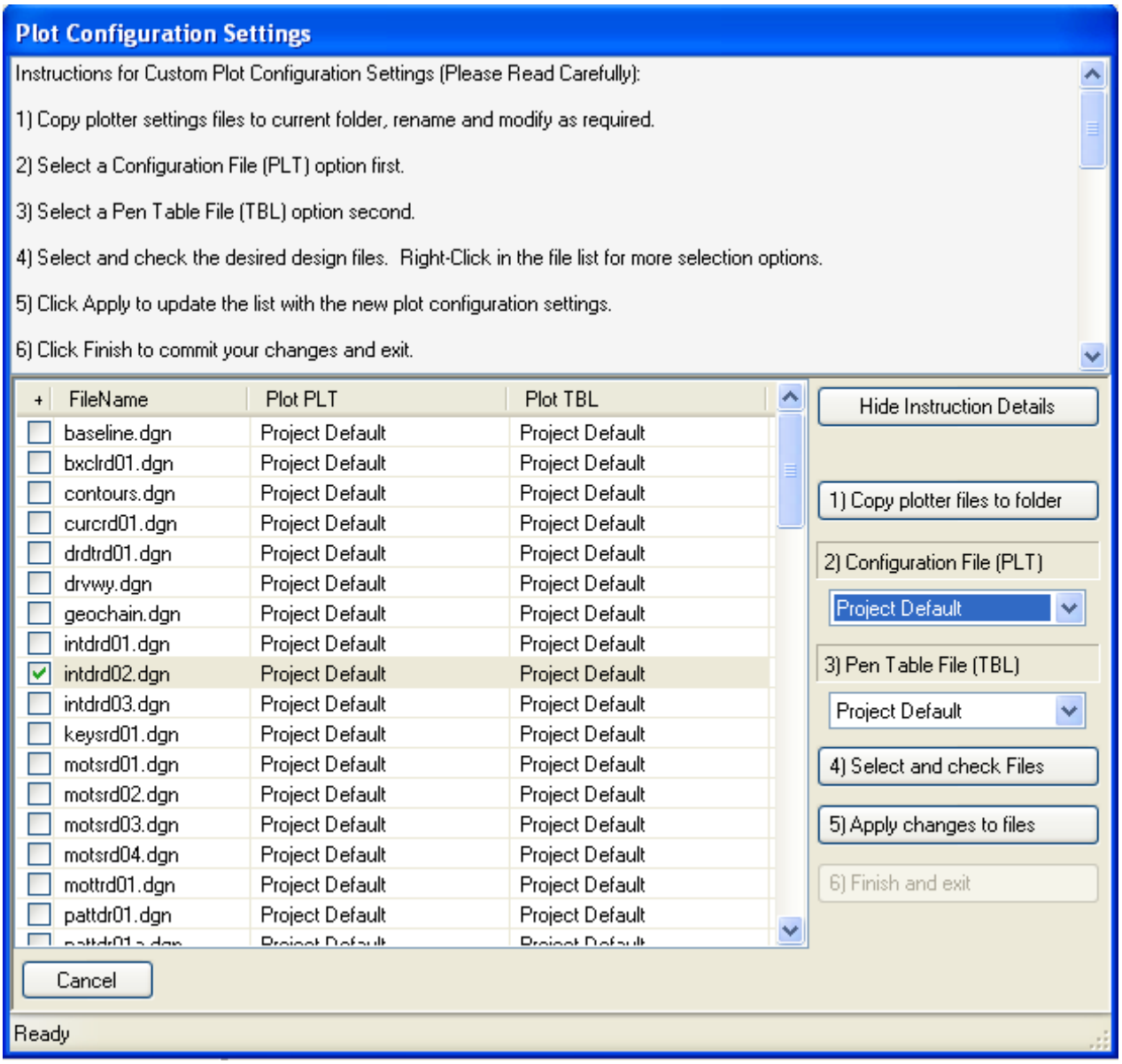
4. Read the step-by-step instructions at the top of the dialog before proceeding.
5. This ends the initial startup.

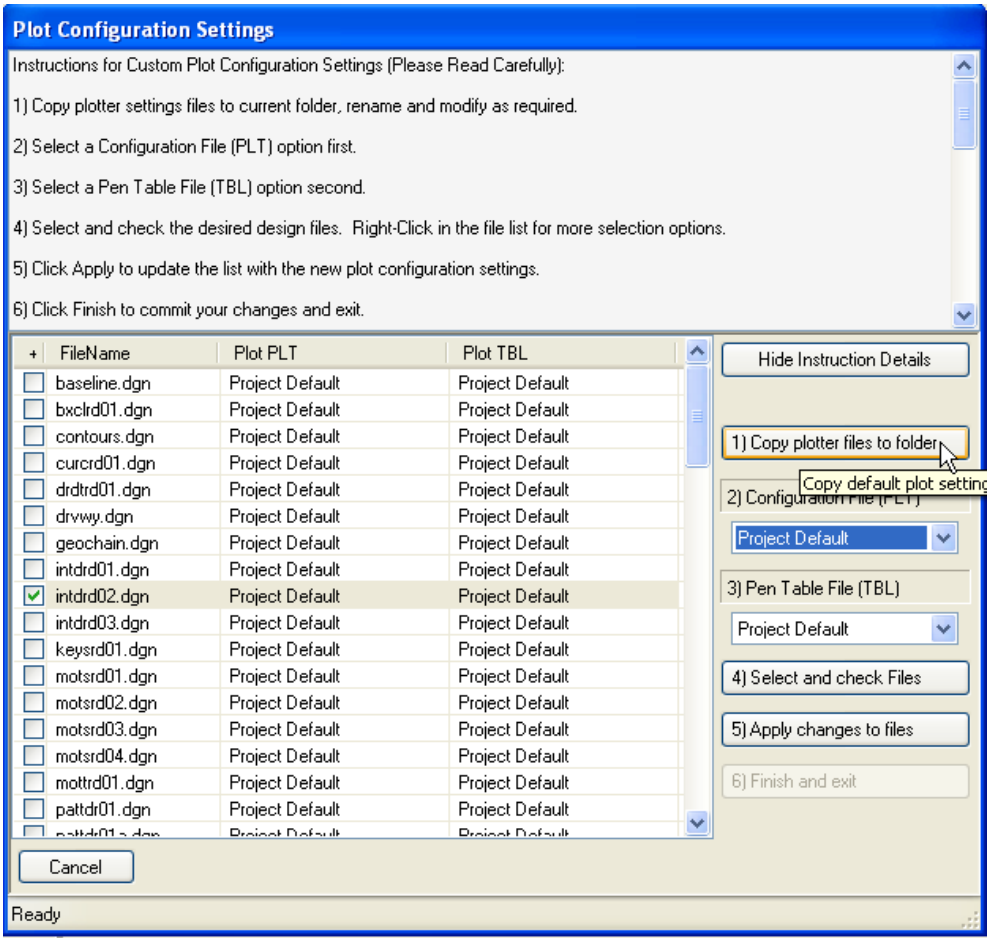


EDI – Plot configuration dialog box

Process Selected Design Files Using an Alternate PTL or TBL Setting

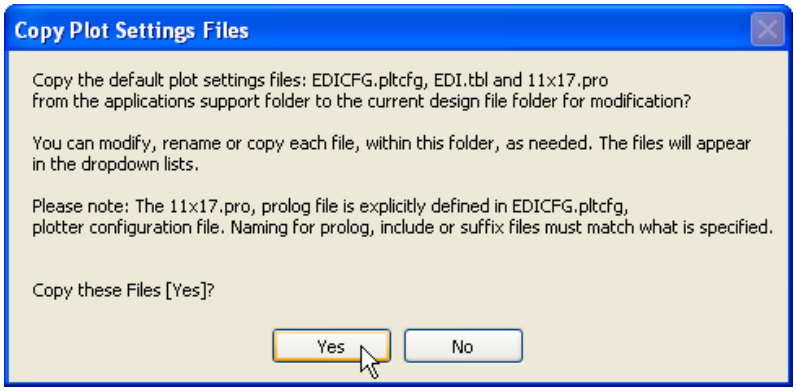
1. Copy plot settings files to the current discipline folder. On the Plot Configuration Settings, click **Copy plotter files to folder**.

Note The user may edit and rename these files, then return to the Plot Configuration Settings dialog to make selections.



EDI – Plot Configuration copy plotter settings

2. Copy Plotter Settings Files opens. Click **Yes** to copy the default settings files to the current design file folder for modification.



EDI – Plot Configuration - copy plotter settings

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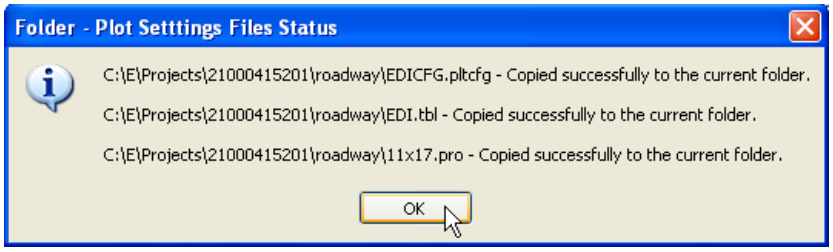
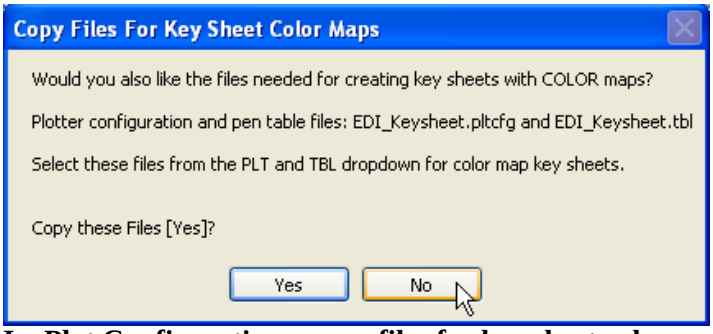
3. Plot Settings File Status opens. Click **OK**.



EDI – Plot Configuration – plot settings files status

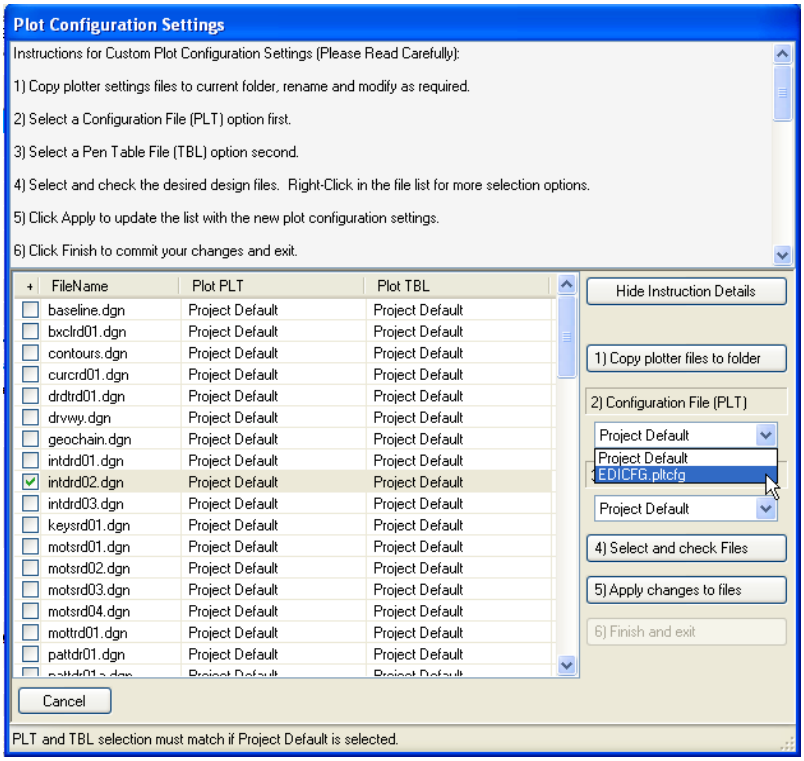
4. Copy Files for Key Sheet Color Maps opens. Click **Yes** or **No** depending on whether or not the key sheet color map **.pltcfg** and **.tbl** files will be needed to plot the sheet files.



EDI – Plot Configuration – copy files for key sheet color maps

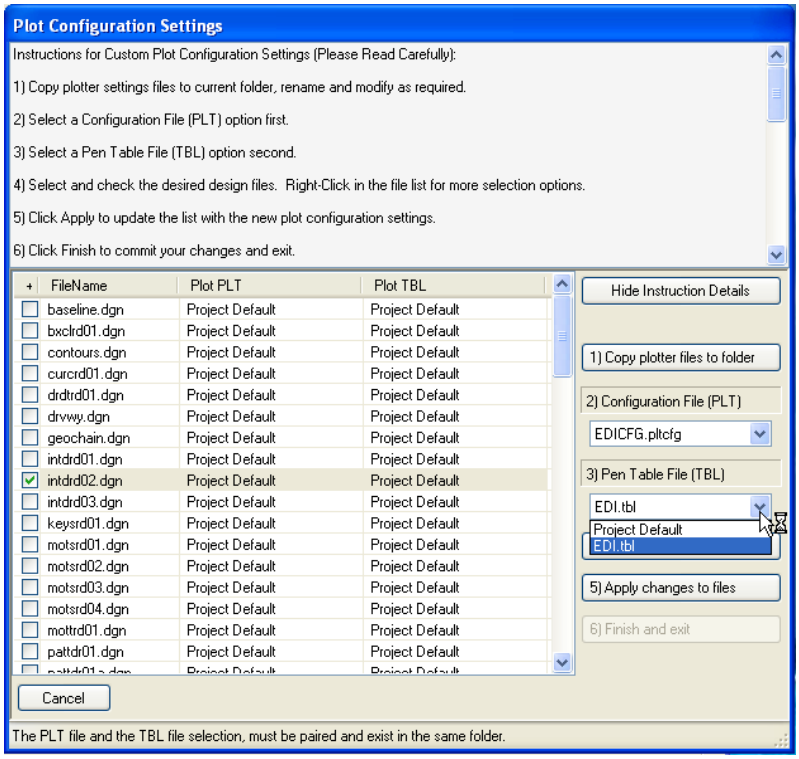
5. Select the **Configuration File (PLT)** from the drop down menu.

Note Always select this option first. The default pen table file automatically displays in the **Pen Table File (TBL)** dropdown box.



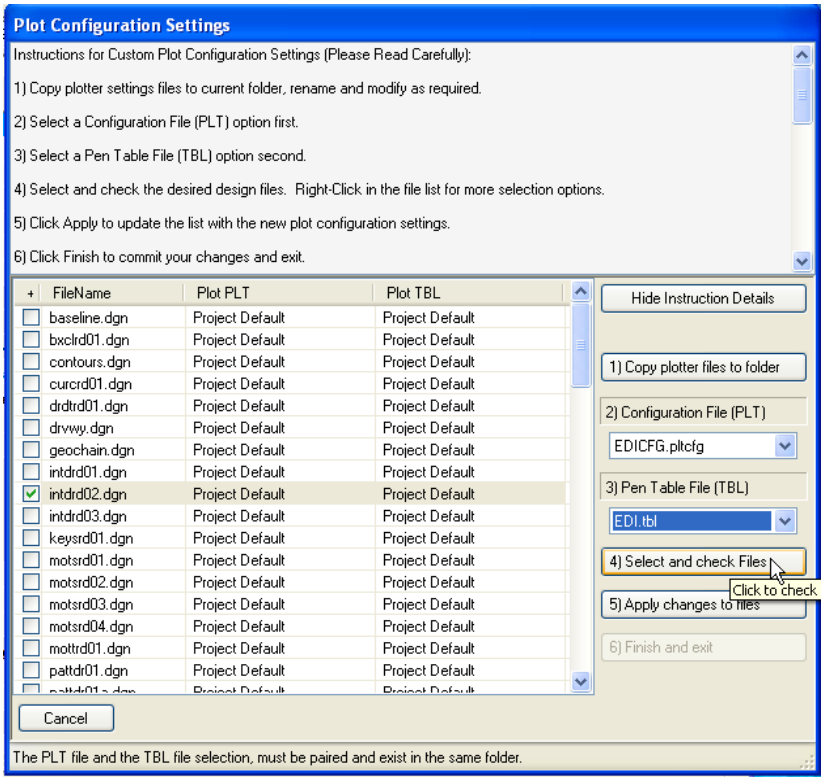
EDI – Plot Configuration - configuration file (PLT)

6. If necessary, **s**elect the **Pen Table File (TBL)** from the dropdown box.



EDI – Plot Configuration – Pen Table file (TBL)

7. Click the **Select and check Files** button to check all files, or use "Ctrl-Click" or "Shift-Click" selection features or the Right-Click selection menu, to select and check files in the design file list.



EDI – Plot Configuration – Select and check Files

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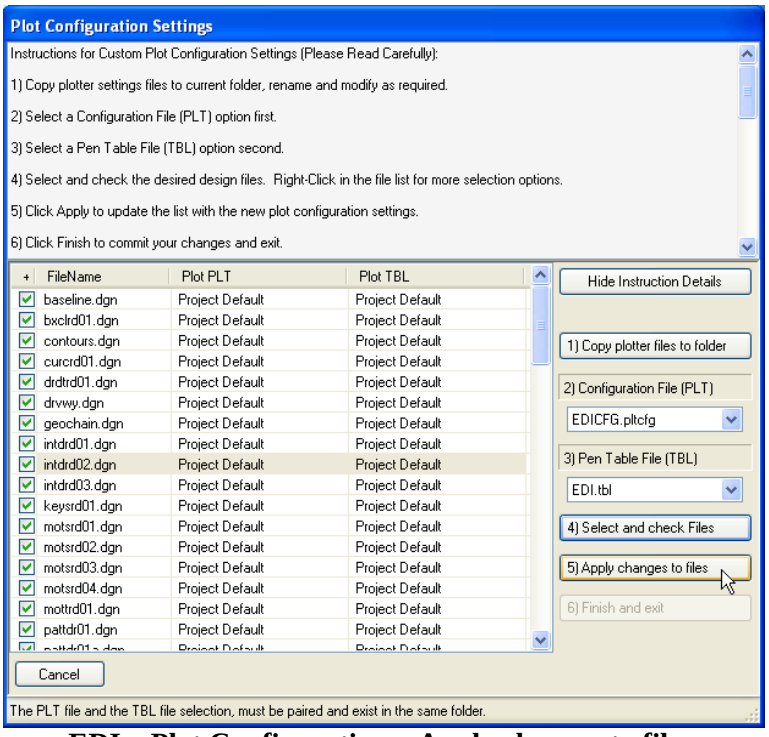
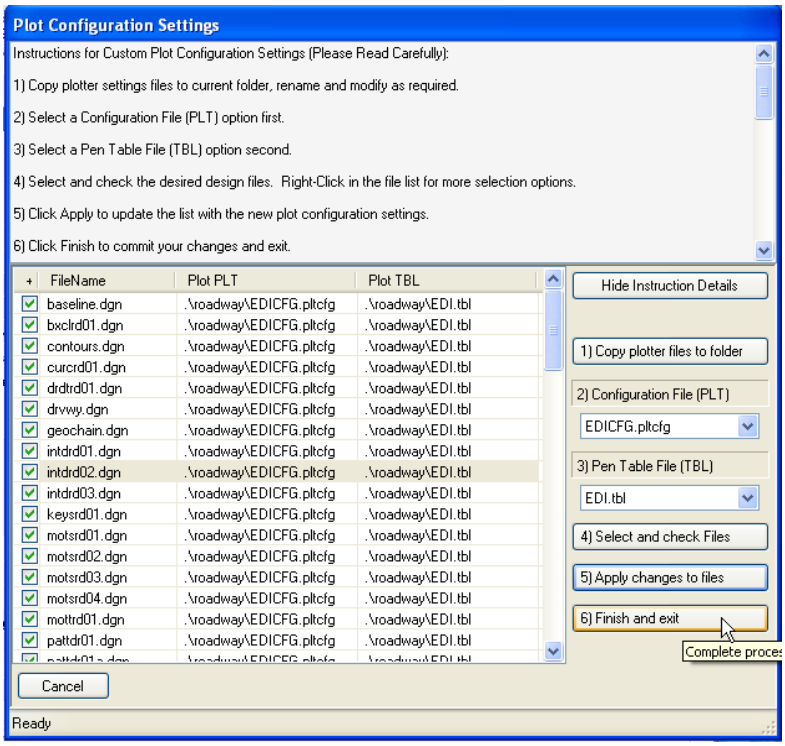
8. Click **Apply changes to files** button. Each checked file will display the relative path for the selected PLT and TBL files.



EDI – Plot Configuration – Apply changes to files

9. Click the Finish and exit button to accept the changes and dismiss the plot configuration dialog. EDI reappears with the sheet files configured with the plot PLT and plot TBL files that were chosen during the plot configuration process.



EDI – Plot Configuration – Finish and exit

Section 3.12 Indexing/Plotting/Journaling - Journaling

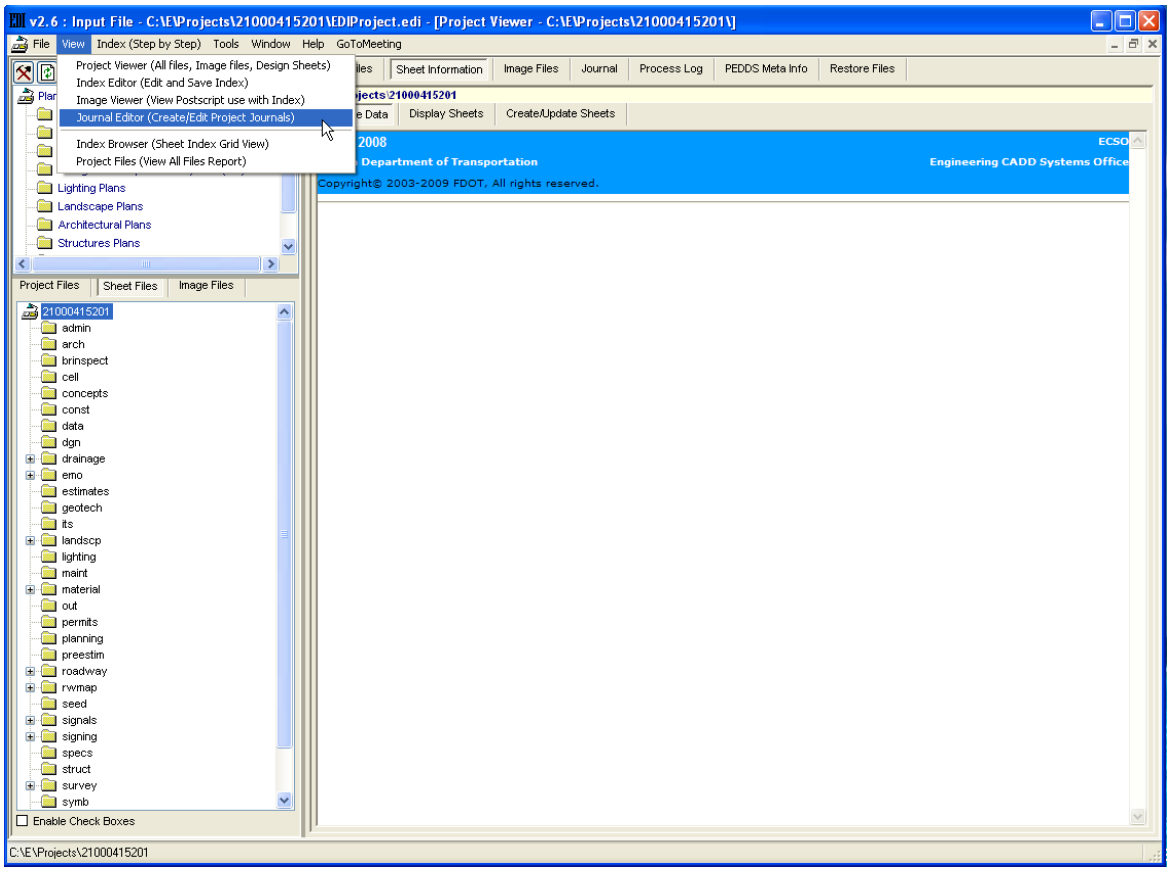
All Journaling is done within EDI2. Section 5.2 of the CPCH defines the purpose of the Journal as detailing design aspects and decisions made during the life of project and documenting processes used during the course of design. Journal file entries should document methods employed, procedures used, 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.

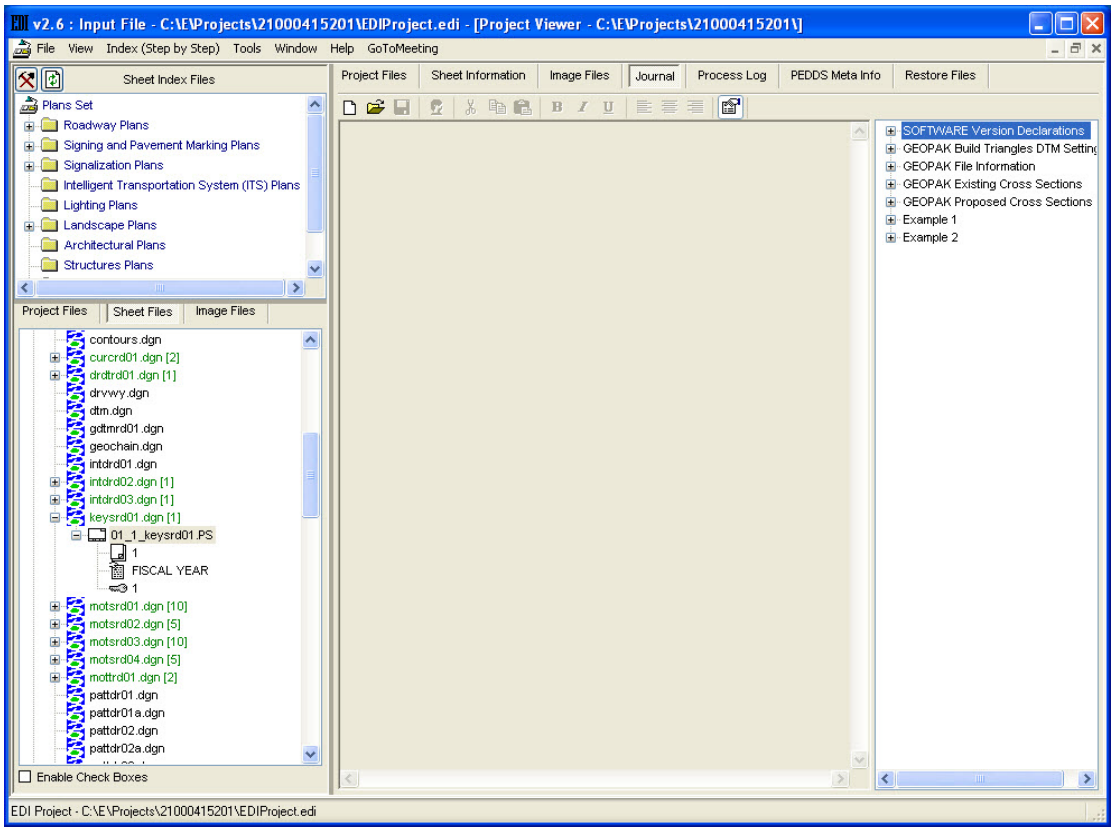
Exercise 3.10 Journaling

To create a New Journal User

1. Continuing in EDI2, select **View -> Journal Editor (Create/Edit Project Journals** to open the Journal Editor view as shown below.

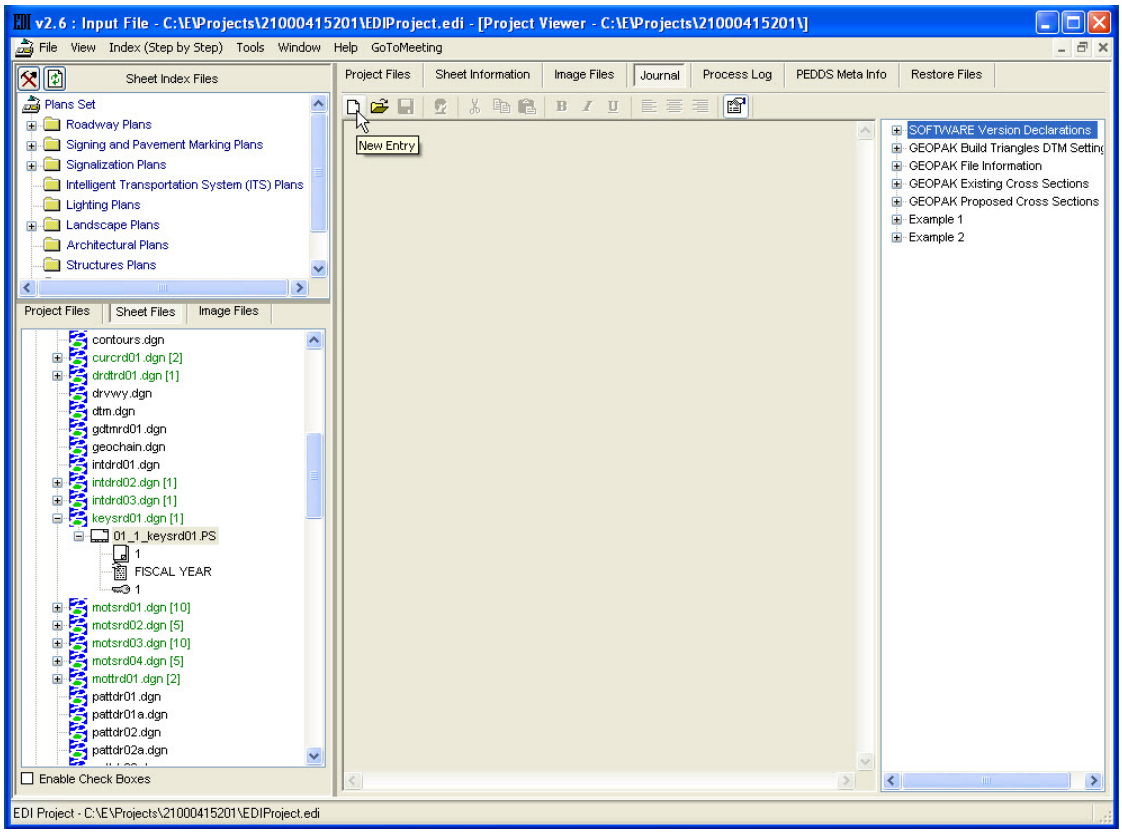


Journal Editor



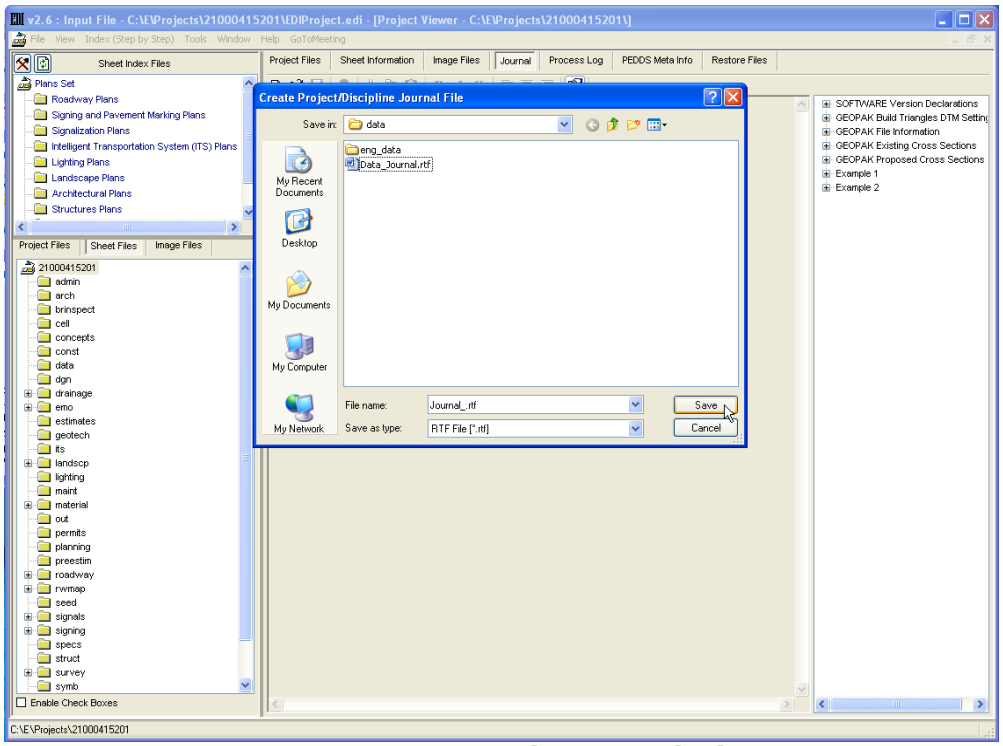
Journal View

2. Click the blank page icon to begin a **New Journal Entry**.



Journal View

3. Create Project/Discipline Journal File opens. Enter the file name **Journal_1** for the journal and set **Save as type** to rich text file **(RTF File (*.rtf))**. Then click the **Save** button to continue.



Create Project/Discipline Journal File

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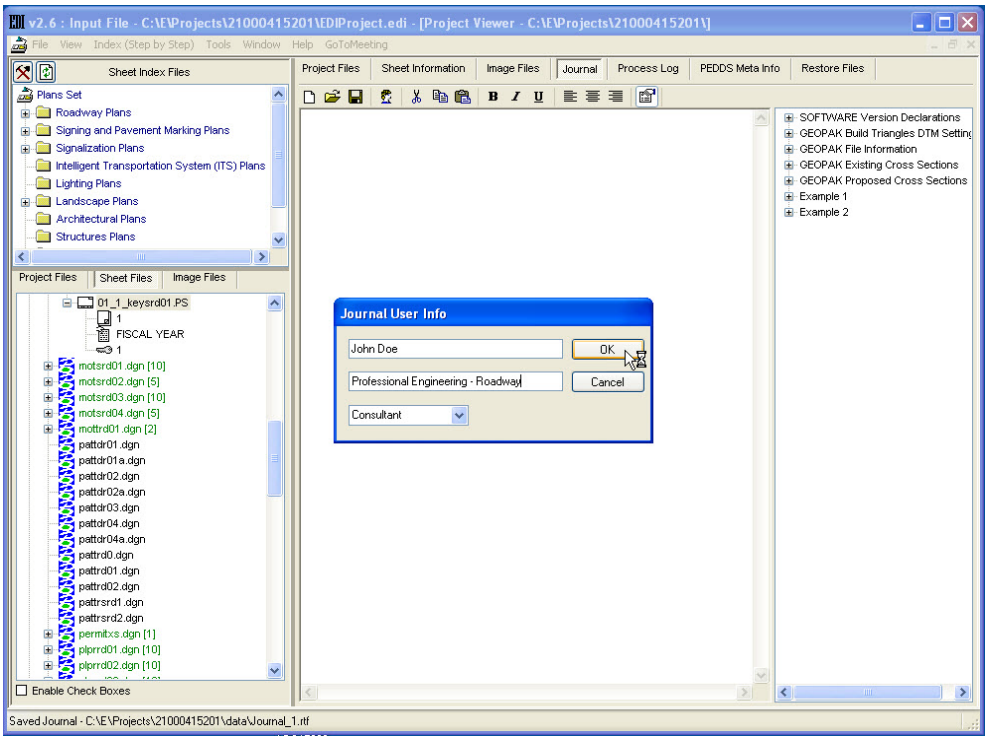
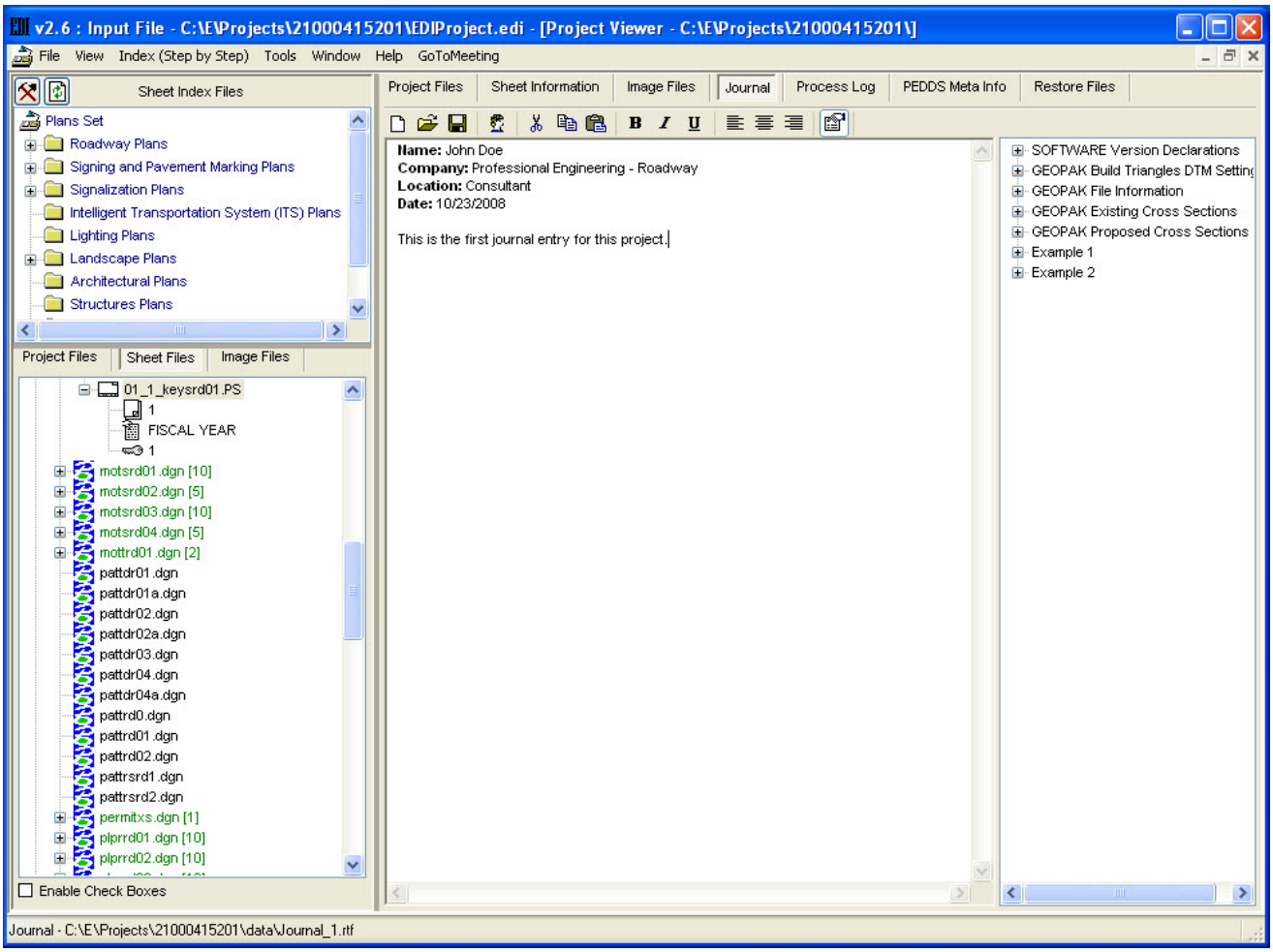
4. Journal User Info opens. Enter the **New User** data. For the purposes of this course, fill in **your name, etc**. When finished, click the **OK** button.



Journal User Info

5. EDI2 displays a blank page with the input user information and the date in the Journal Editor view.



Journal View

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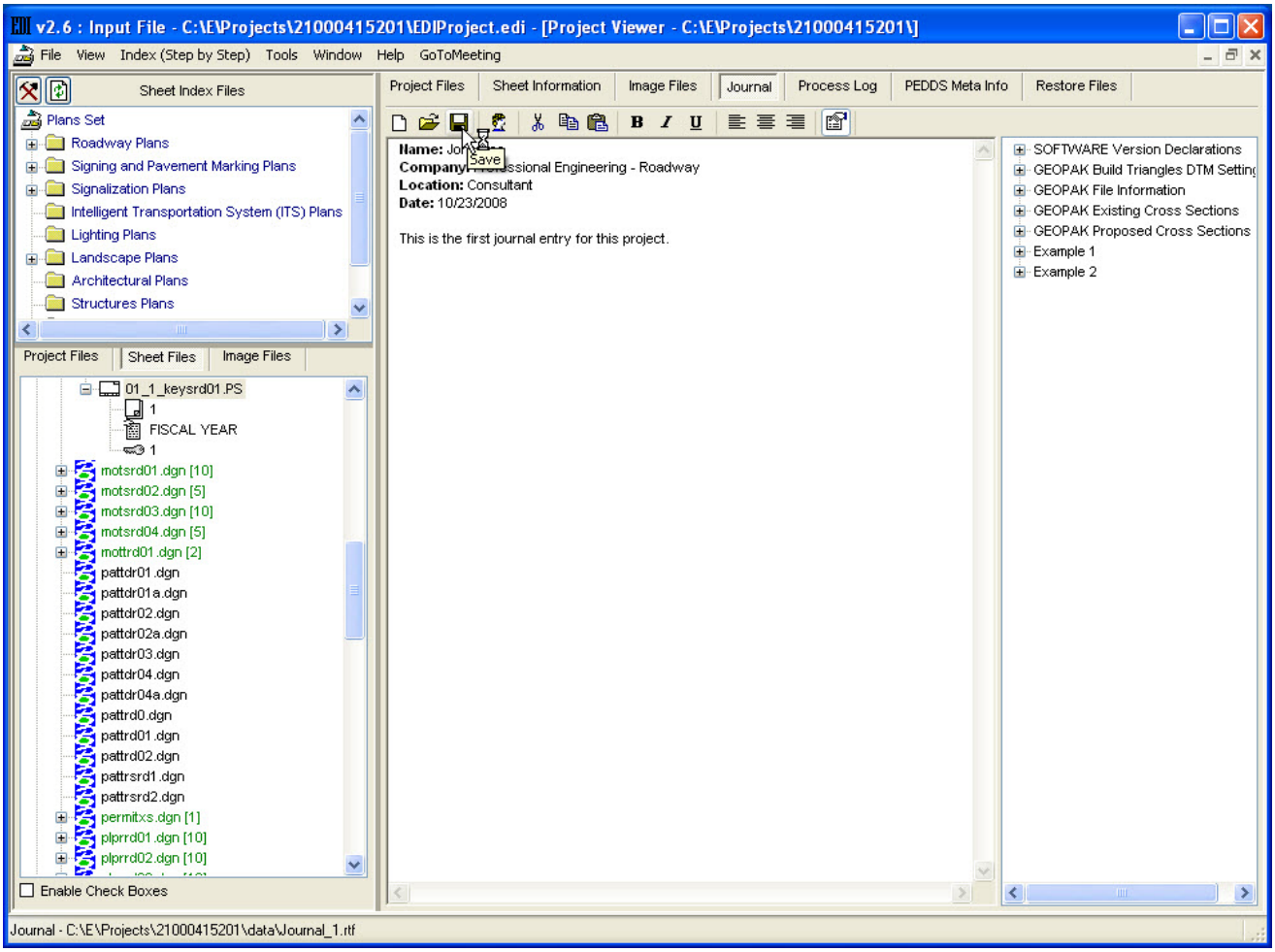
To create a Journal Entry

1. Begin typing under the user information. For the purposes of this exercise, enter: **This is the first Journal entry for this project**.
2. If needed, right-click in the journal entry area to access additional tools.
3. Upon completion of the entry, click the **Save** button ( ) on the toolbar. The journal entry is saved.



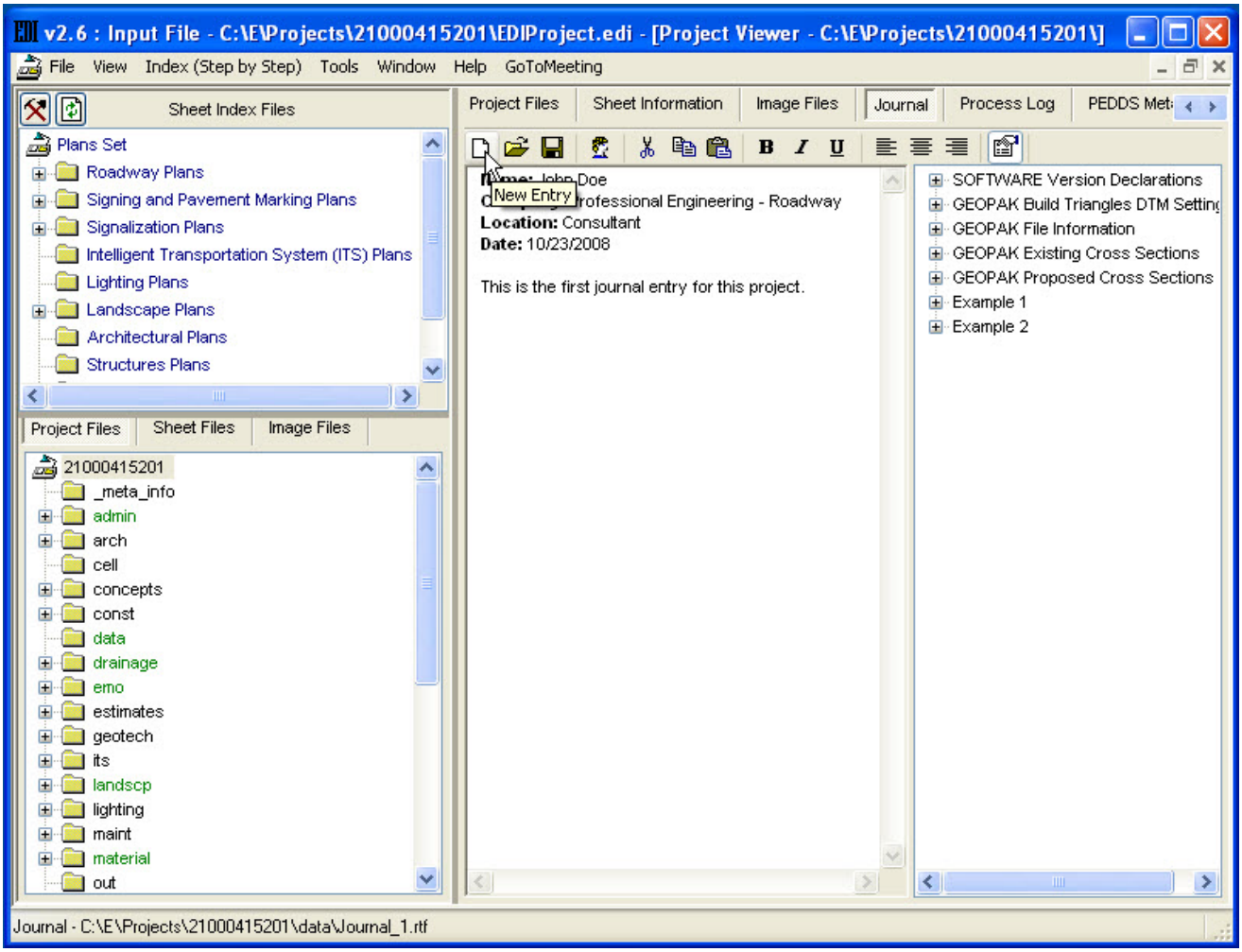
Journal

Exercise 3.11 Creating Additional Entries

To create additional Journal Entry while still in the Journal

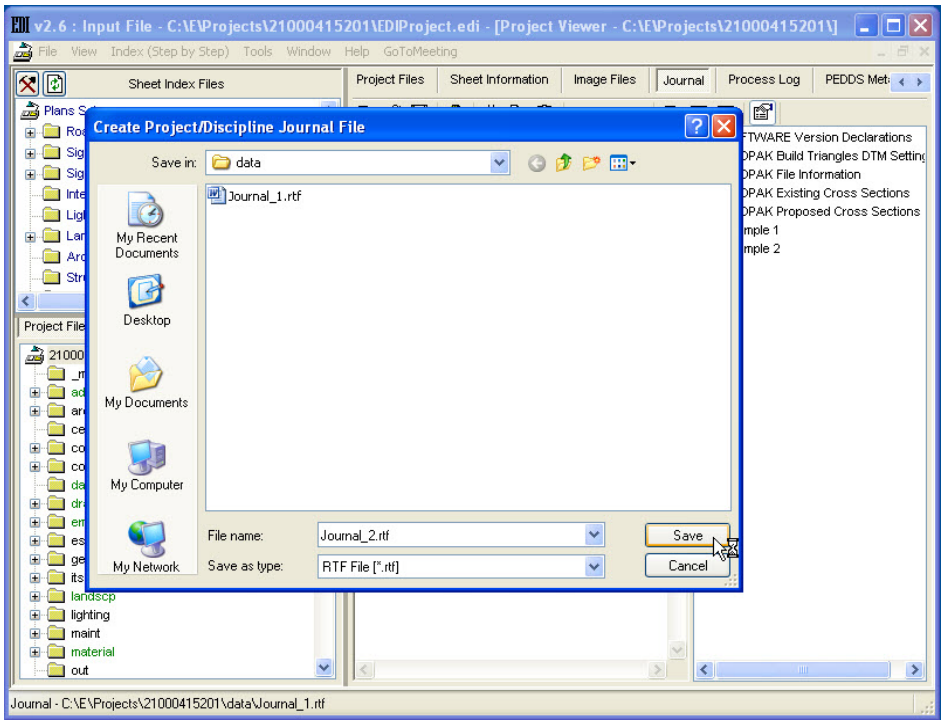
1 Continuing in the Journal, click the **New Entry** icon ( ) on the toolbar and repeat the steps in Exercise 3.7.

Note Remember to change the name of the journal to **Journal_2**, to ensure the previous journal is not overwritten.



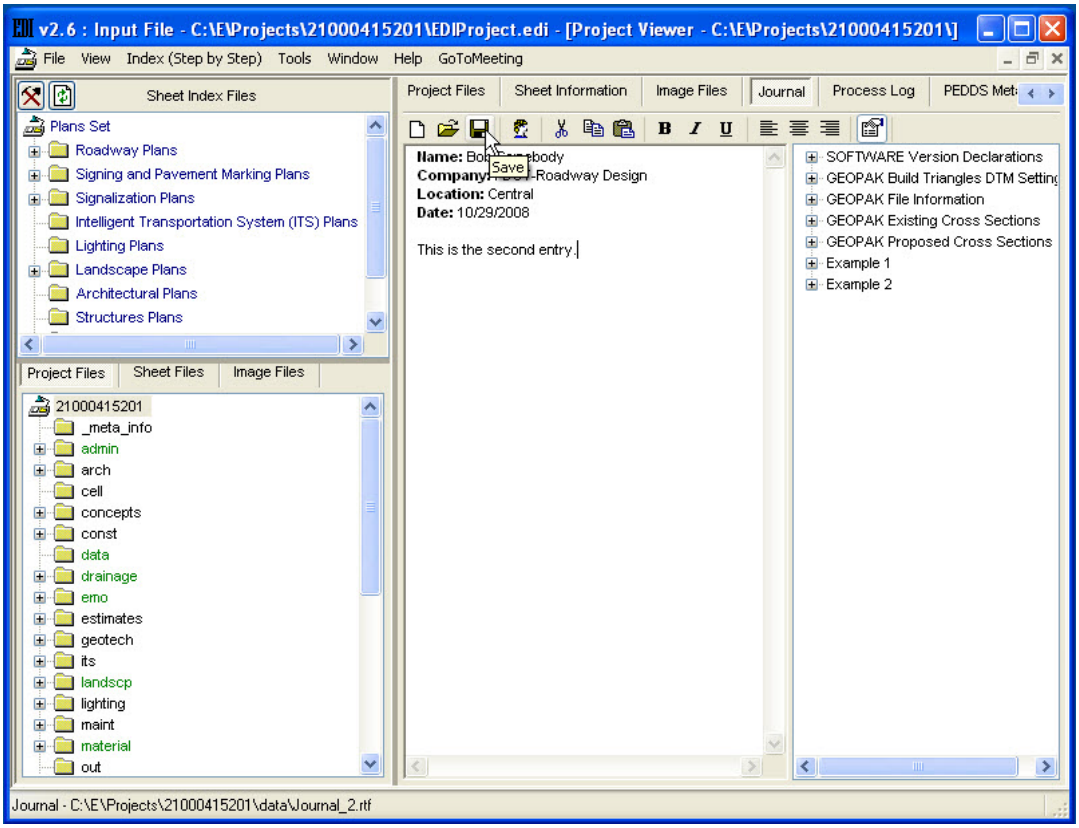
Journal - New Entry

 © 2009 FDOT



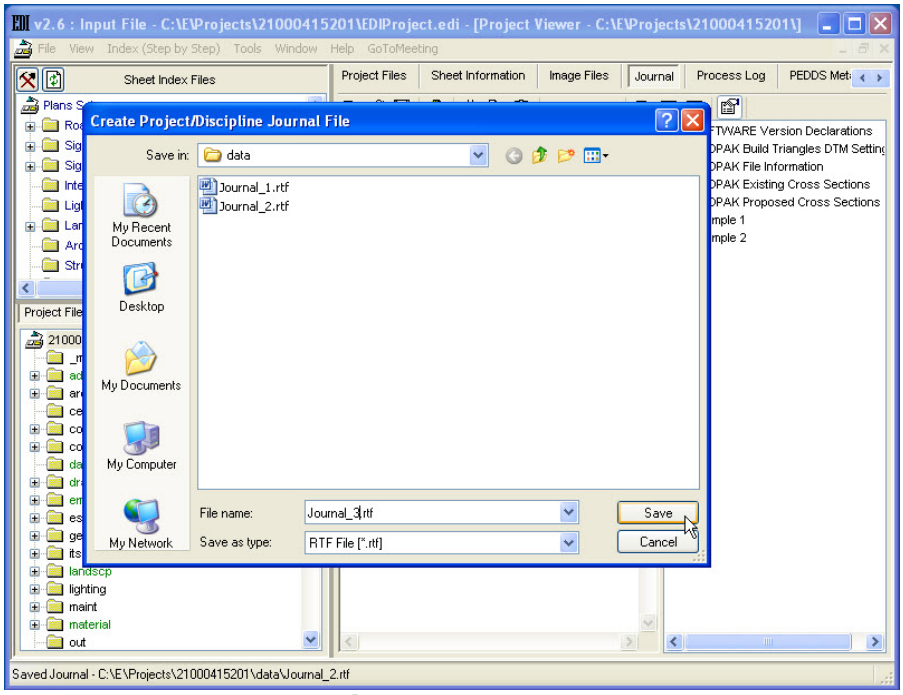
Journal Entry #2 - Save name

4. Type in the required entry and click the **Save** button on the tool bar to save the journal entry. For the purposes of this exercise, enter: **This is the second entry.** as shown below**.**



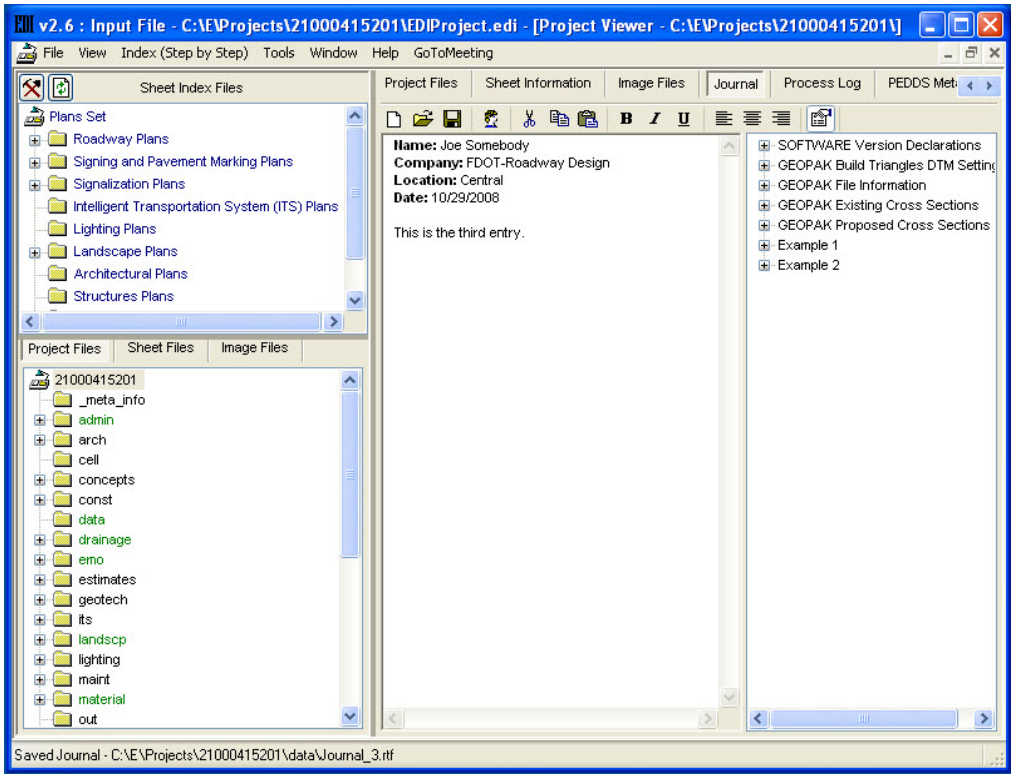
Journal Entry #2

5. Continuing in the Journal, click the **New Entry** icon ( ) on the toolbar and repeat the steps in Exercise 3.7 for **Journal_3**.



Journal Entry #3 - Save name

6. Type in the required entry and click the **Save** button on the tool bar to save the journal entry. For the purposes of this exercise, enter: **This is the third entry.** as shown below.



Journal Entry #3

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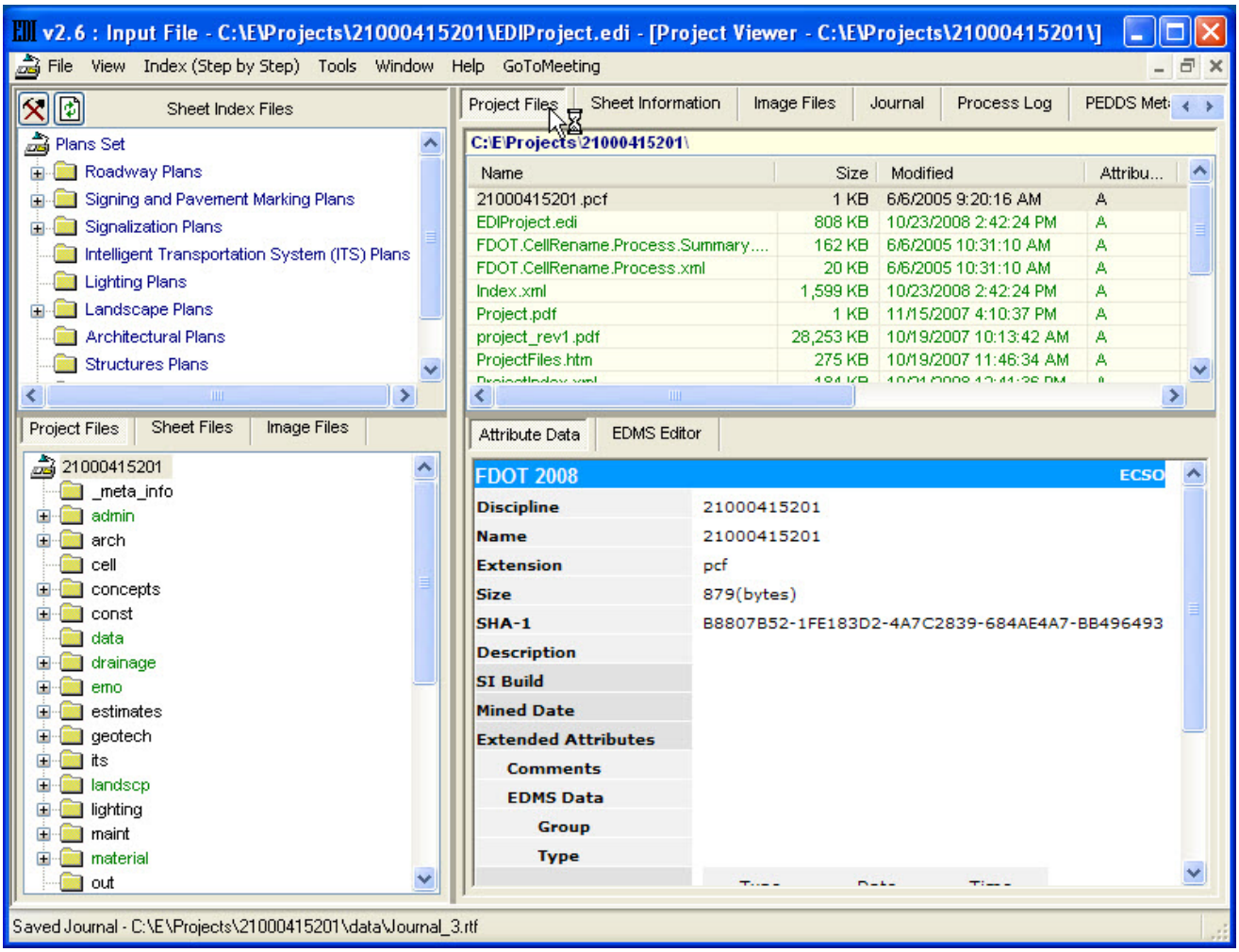
7. To exit the Journal Editor view in EDI2, click **the Project Files** tab as shown below. EDI2 reopens the Project Viewer window.



Project Files View

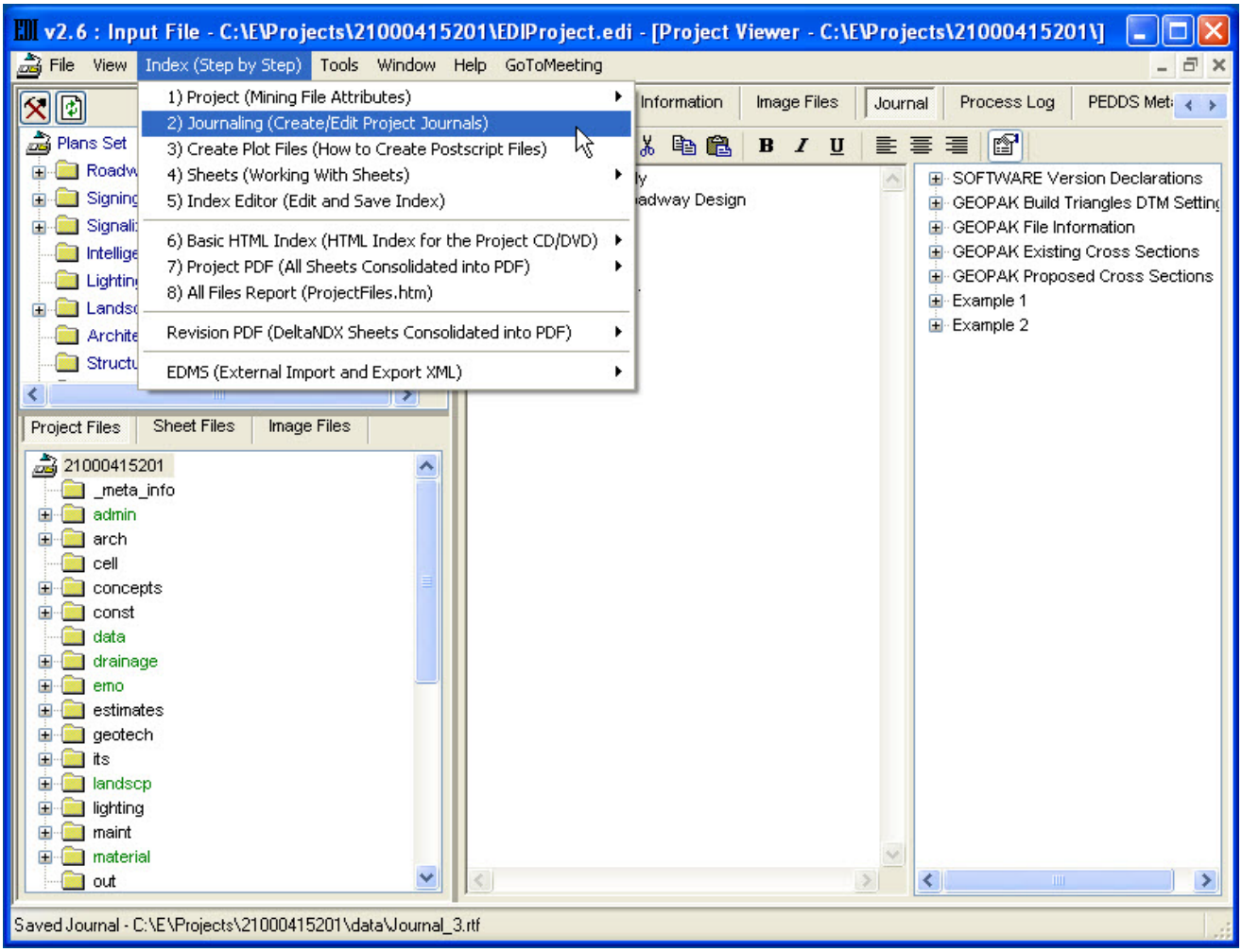
Exercise 3.12 Standard Insert Text

Pre-coded **Standard Insert Text** is available to automate recording various GEOPAK and MicroStation settings used during the design process. Items for selection, along with their associated sub-components, are contained in an xml file named **StandardInserText.xml**, located in the **C:\FDOT2008\win32\EDI2\Support** folder.

To use Standard Insert Text

For the purposes of this exercise and to be in compliance with Item 2 of the Compliance Certification Checklist Report, SOFTWARE Version Declarations will be used.

1. Continuing in EDI2, select **Tools** > **Project Journal Files (RTF Documents)** > **Open (Create Project Journals)** to display the Journal Editor view.



EDI2 - Journal Login

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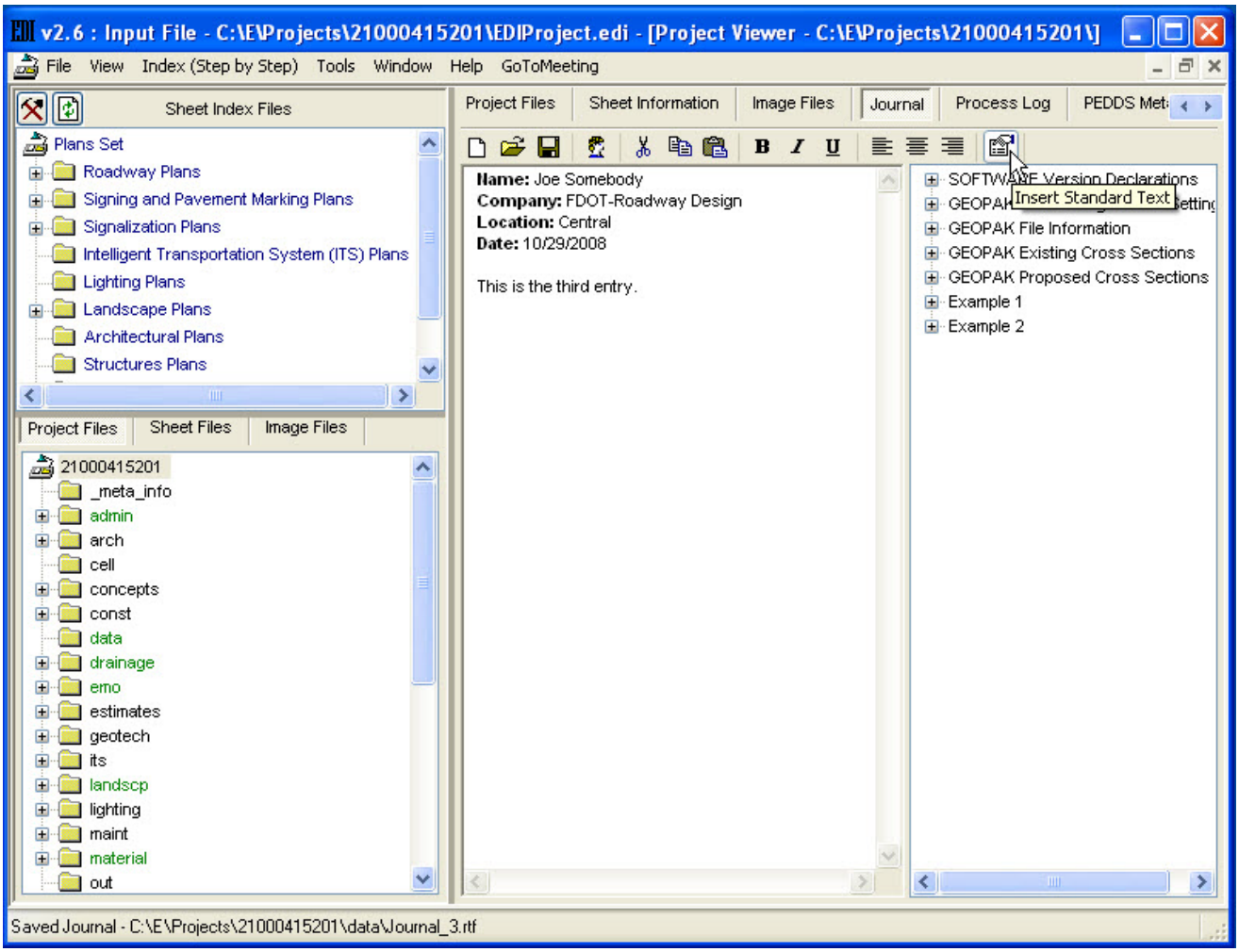
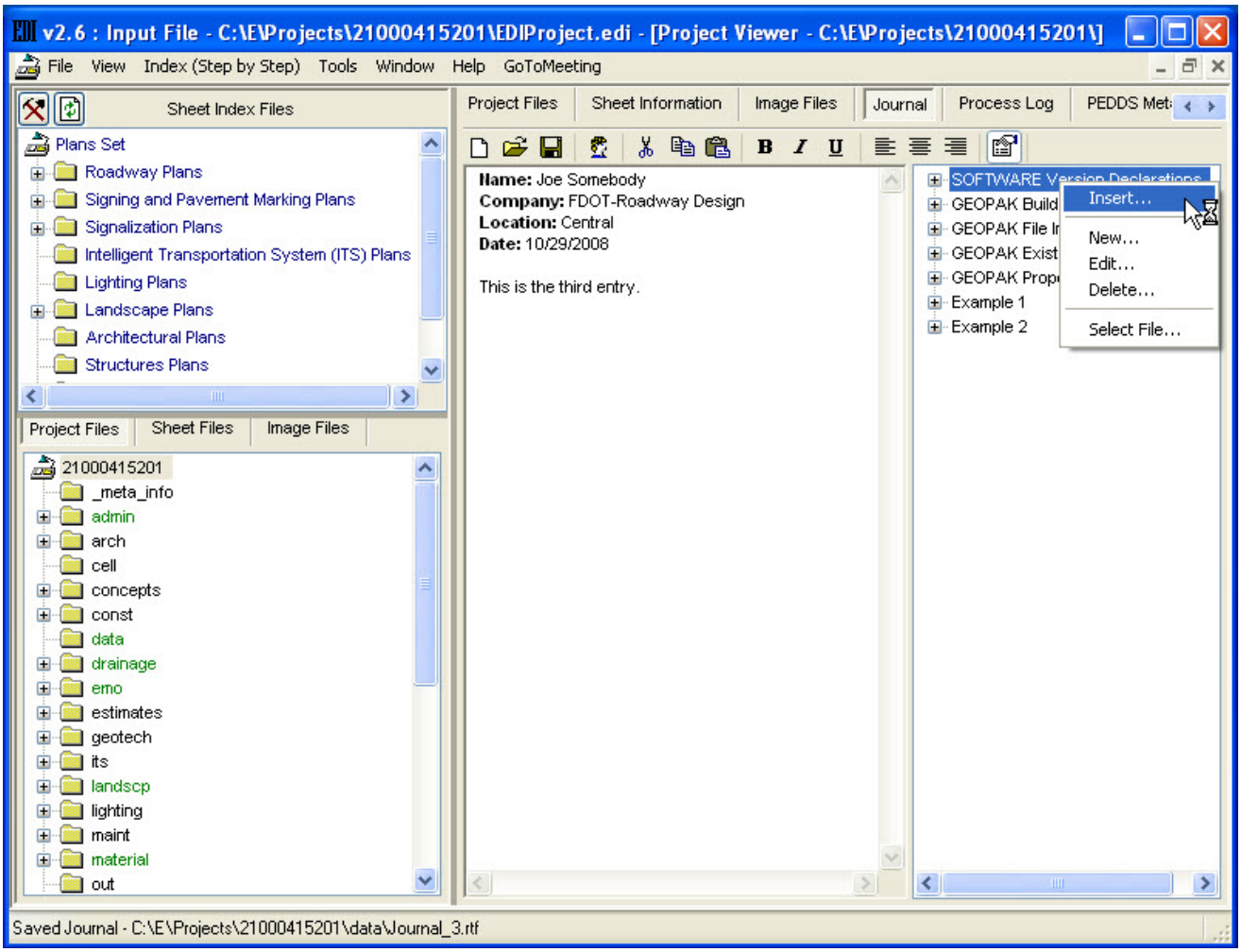
2. If the Standard Text options are not shown in the right pane, click the **Insert Standard Text icon** ( ) on the toolbar as shown below.



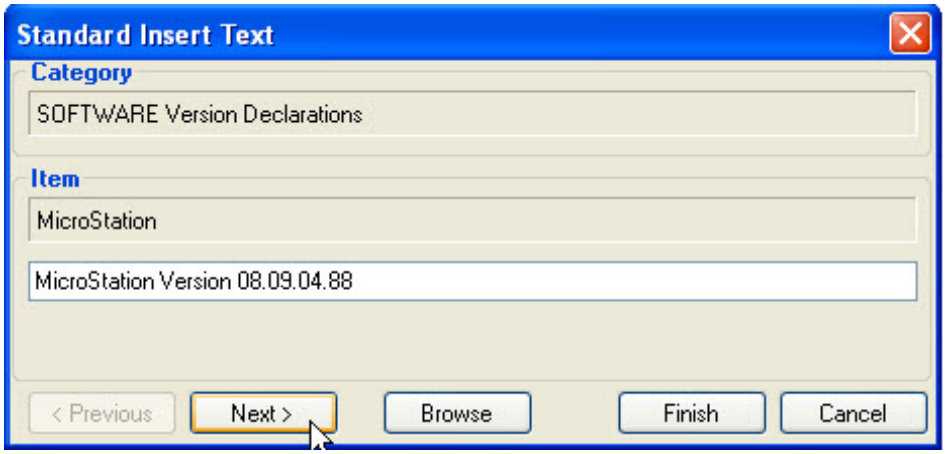
EDI - Journal View - Insert Standard Text

3. Right-click the desired **Standard Insert Text** and select **Insert** from the menu.



Standard Insert Text - Insert...

4. Standard Insert Text opens displaying the information for the MicroStation **Item**. Modify the **MicroStation** text as needed. Click the **Next** button to continue.



Standard Insert Text

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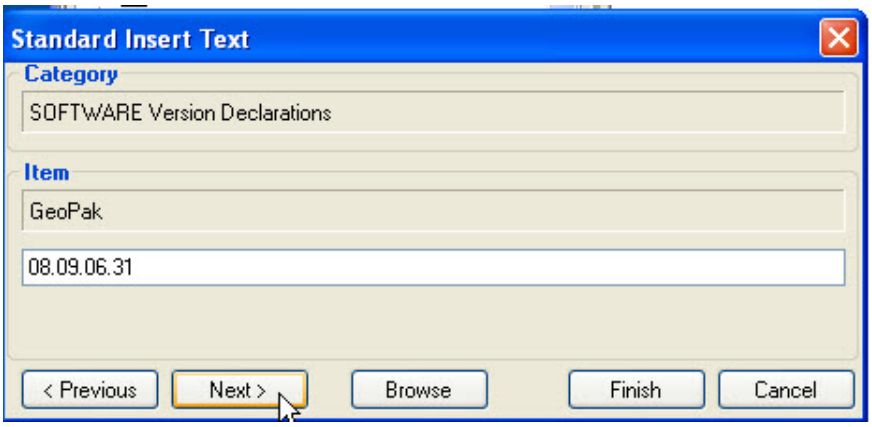
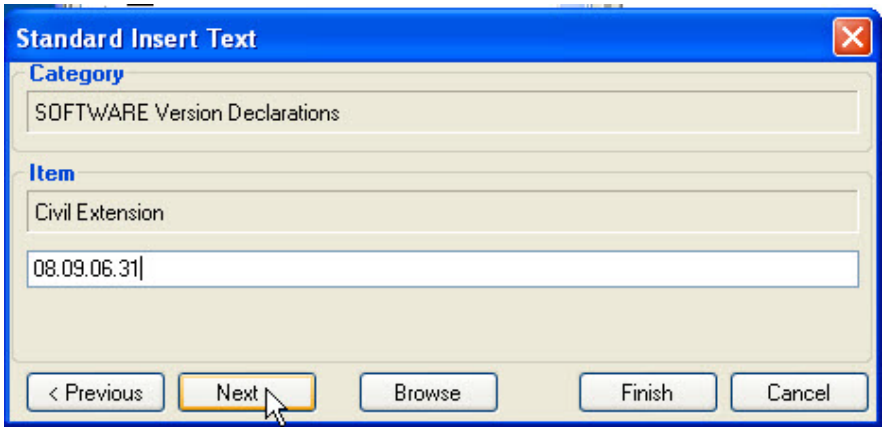
5. From Standard Insert Text, modify GeoPak **Item** as needed and click the **Next** button to continue.



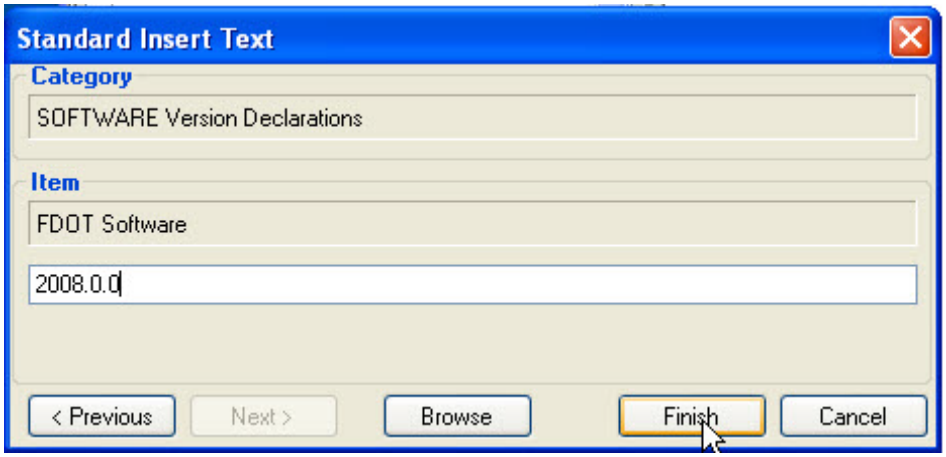
Standard Insert Text

6. From Standard Insert Text, modify Civil Extension **Item** as needed and click the **Finish** button to continue to add the Standard Insert Text to the Journal entry.



Standard Insert Text

7. From Standard Insert Text, modify FDOT Software **Item** as needed and click the **Finish** button to continue to add the **Standard Insert Text** to the Journal entry.



Standard Insert Text

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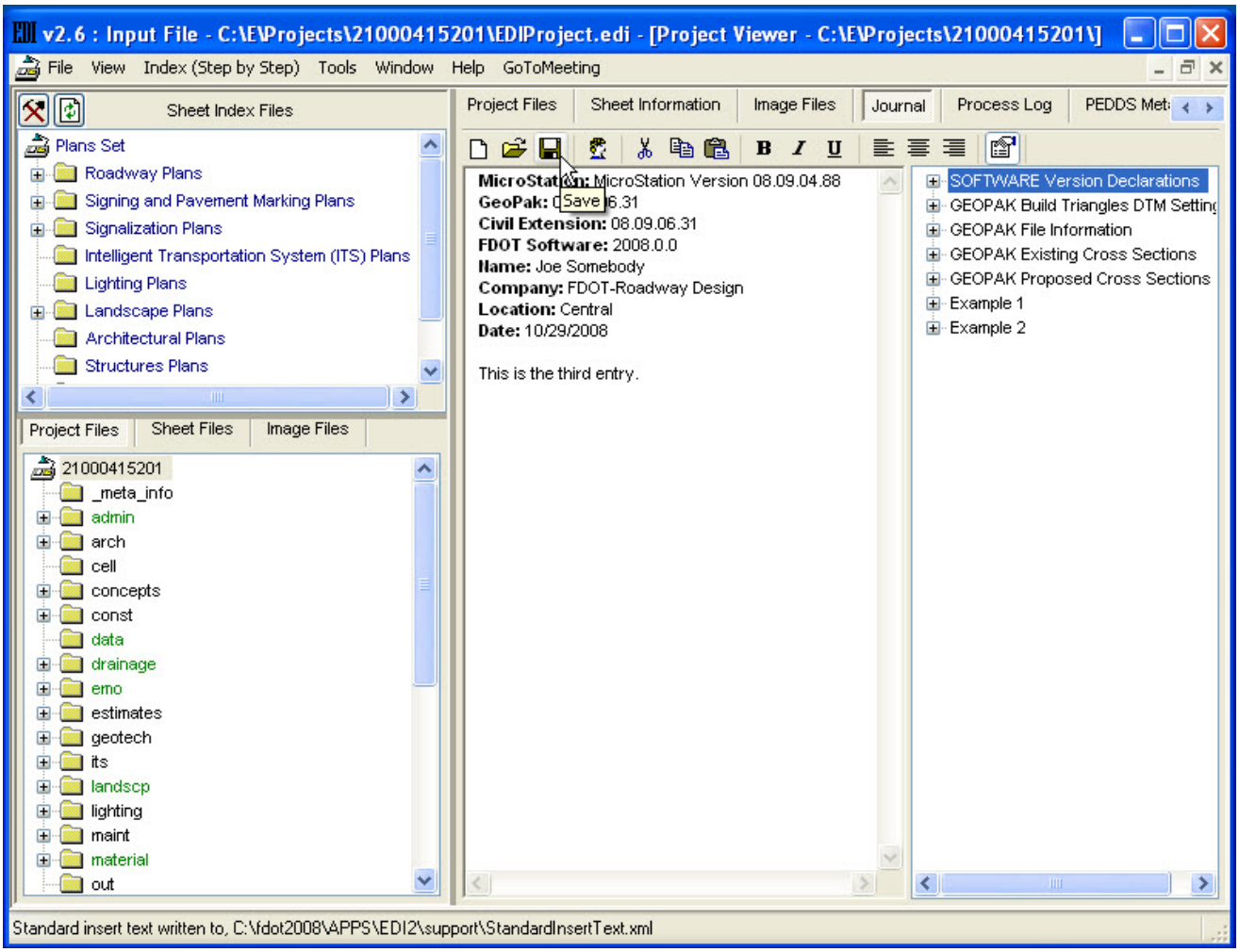
8. Lastly, click the **Save** icon ( ) on the toolbar to save the journal entry as shown below.



Journal Entry #3

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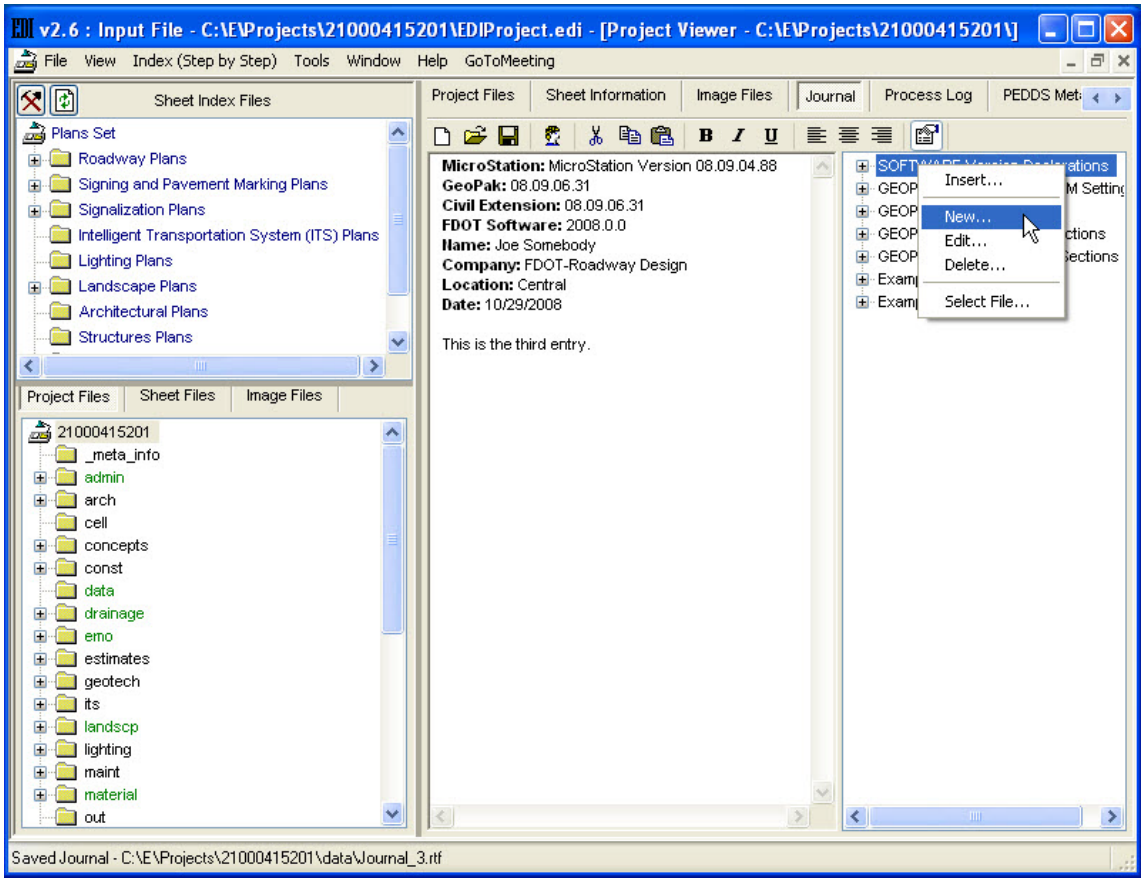
To create a Standard Insert Text

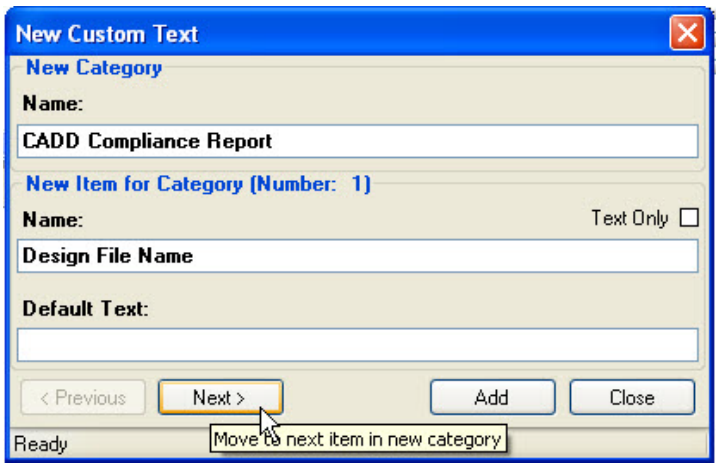
Journal allows the user to create custom **Standard Insert Text**. For the purposes of this exercise, a Standard Insert Text titled **CADD Compliance** will be created. This entry can be used to track CADD Compliance Reports and any Exception rule files.

1. Continuing in the Journal, right-click one of the **Standard Insert Text** and select **New** from the menu to display New Custom Text.

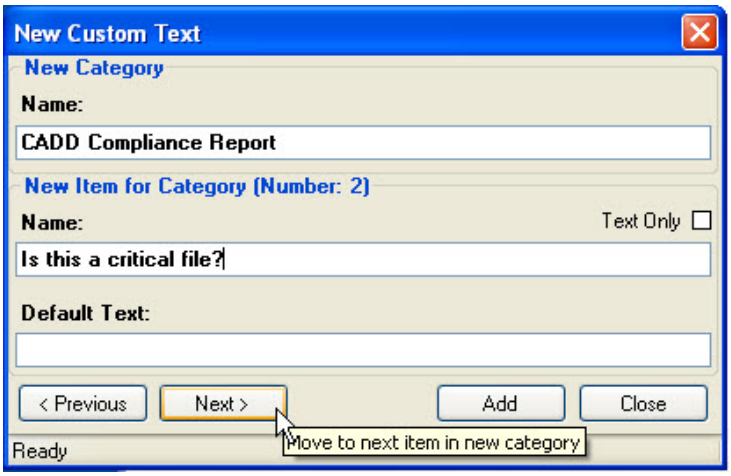


Standard Insert Text

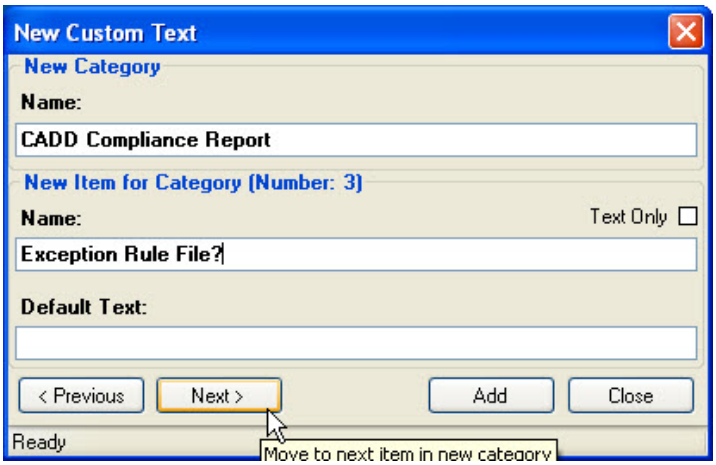
2. Enter the New Custom Text for **New Item for Category (Number 1)** as shown below, and then click the **Next** button to continue.



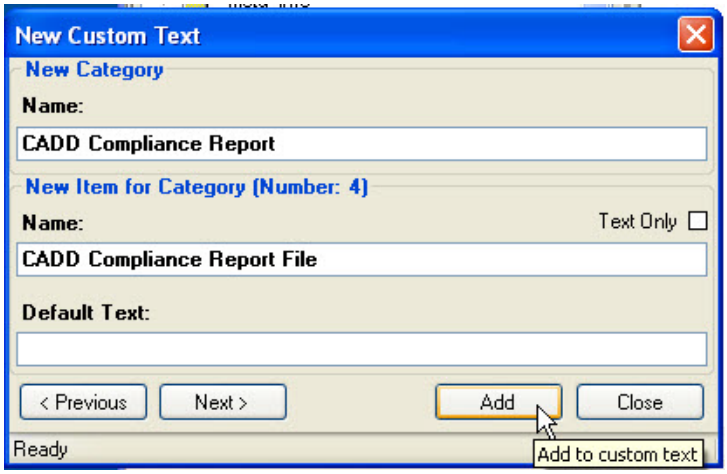
3. Enter the New Custom Text for **New Item for Category (Number 2)** as shown below, and then click the **Next** button to continue.



4. Enter the New Custom Text for New Item for **Category (Number 3**) as shown below, and then click the **Next** button.



5. Enter the New Custom Text for **New Item for Category (Number 4)** as shown below, and then click the **Add** button. The **Custom Insert Text** is added.



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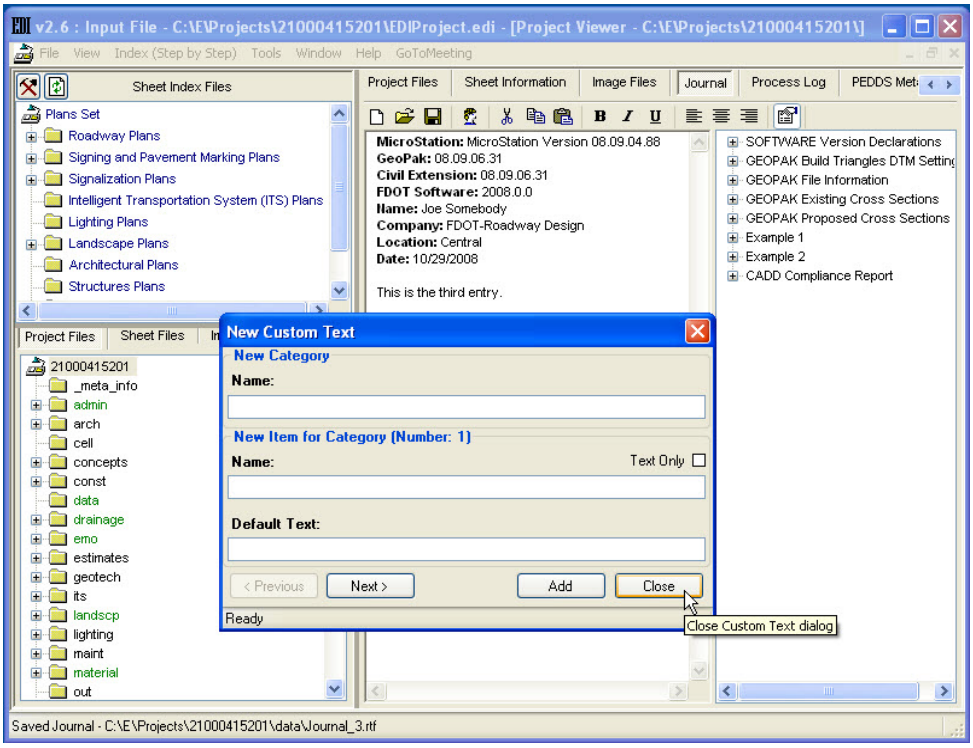
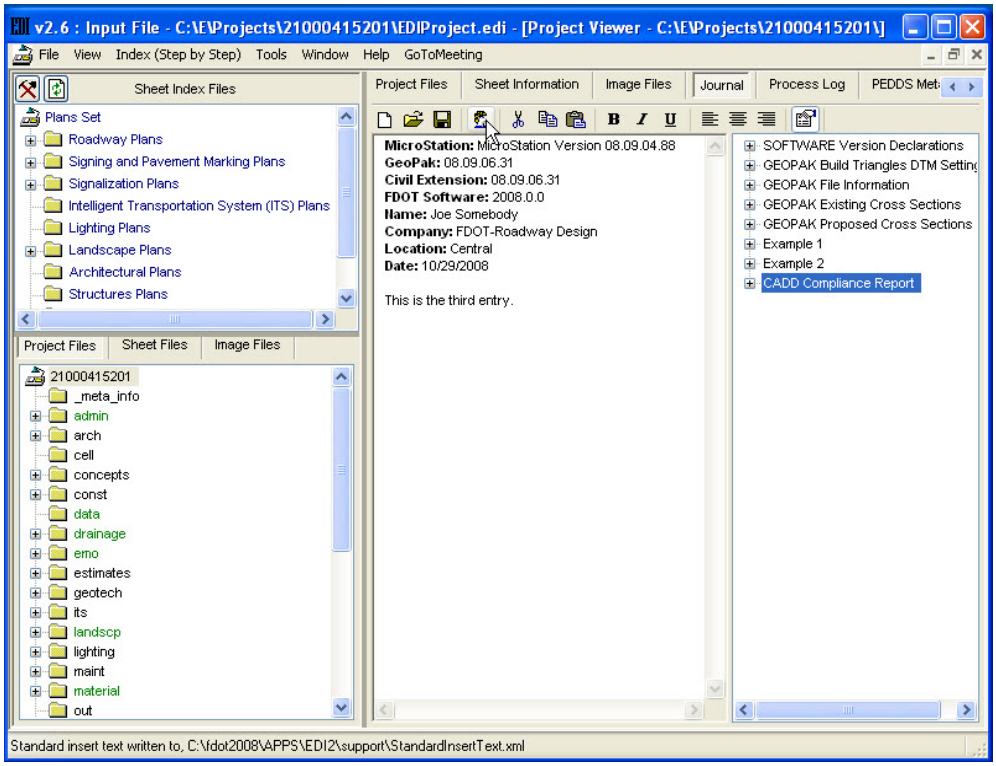
6. Click the **Close** button to exit New Custom Text.



EDI 2



EDI 2

Important *Although the Custom Insert Text is added to the listing, it is not saved.*

Note Try using the created Custom Insert Text in an entry.

Section 3.13 Creating Reports and Project.pdf in EDI

EDI2 extends the reporting capability of the FDOT ED suite of tools by adding the ability to generate the SheetNDX#.HTM report. This HTML report provides a simple, transportable interface to project sheets - grouped by component and hyper linked.

In addition, **EDI2** now allows users to generate a single file sheet summary report, **Project#.pdf**, containing all sheets that comprise a project, as specified by the project index. This report is available in PostScript and Adobe PDF formats. These tasks were previously done in Project Browser.

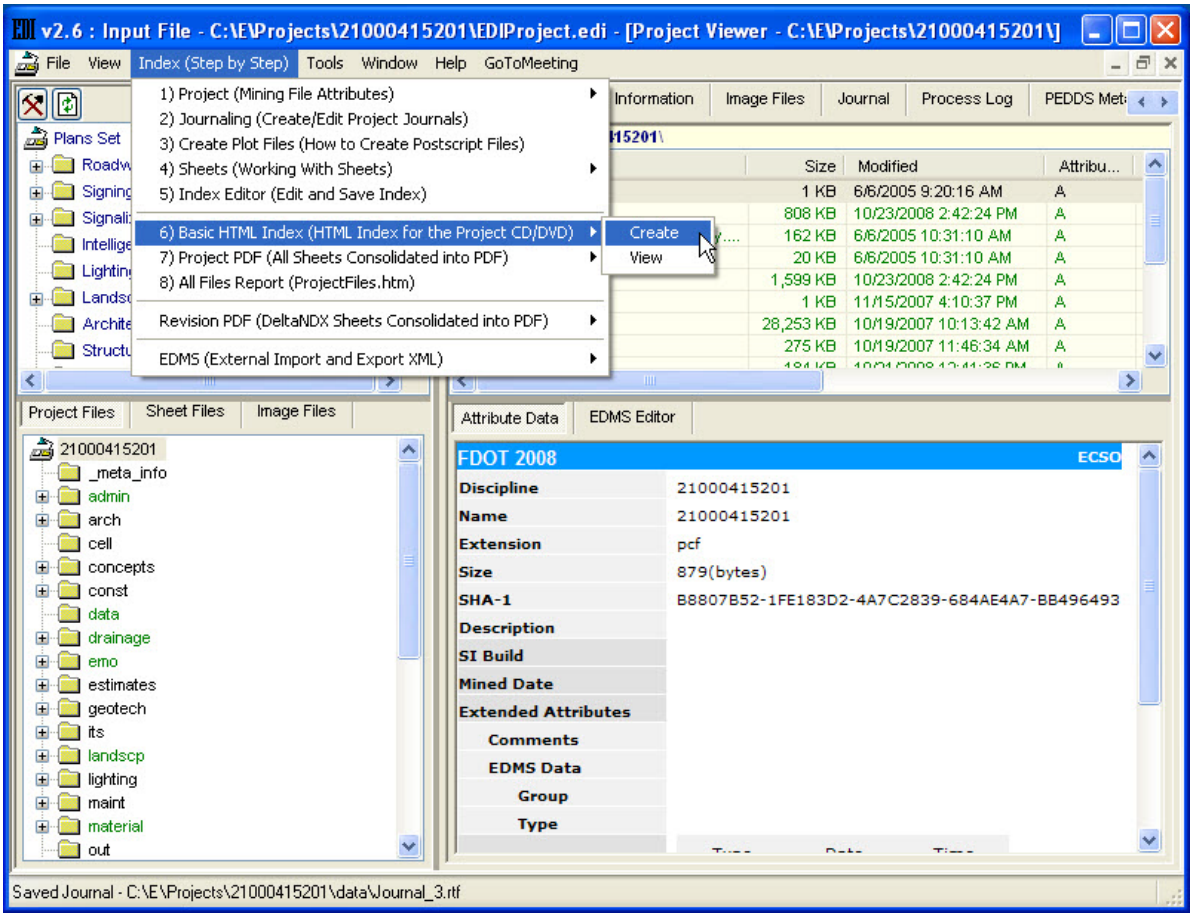
Exercise 3.13 Creating an HTML Index Report

The Sheet Index Report is an HTML report derived from the project's Index, **ProjectIndex.xml**. The report file is titled **Sheetndx#.htm** and must reside in the project's root directory.

To create Sheetndx.htm

Important *The Sheet Index Report,* ***Sheetndx#.htm,*** *is a required deliverable item per the* ***Compliance Certification Check List Report - Item 17****.*

1. Select **Index (Step-by-Step)** > Basic HTML index (HTML Index for the Project CD/DVD) > Create. The creation of the Basic HTML processes.



EDI - Create Basic HTML

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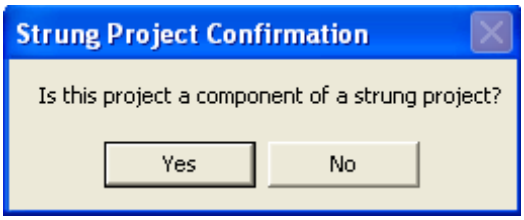
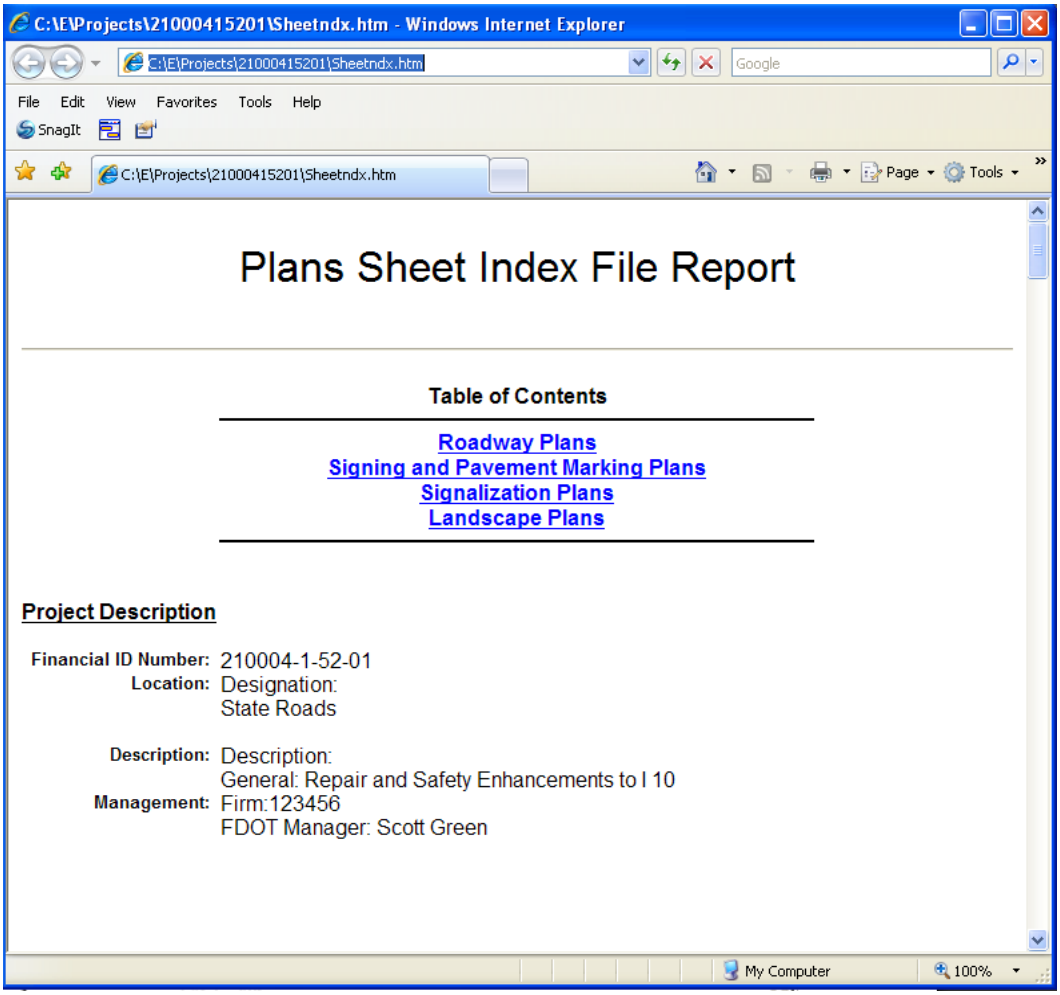
2. Strung Project Confirmation opens. Click the **No** button.



Strung Project Confirmation

Note For the purposes of this training course, this is a standalone project; therefore, it is not a component of a Strung Project.

3. The Basic HTML Index file, **Sheetndx#.htm,** is created in the project's root directory and opens in a web page.



Sheetndx#.htm HTML Web Page View

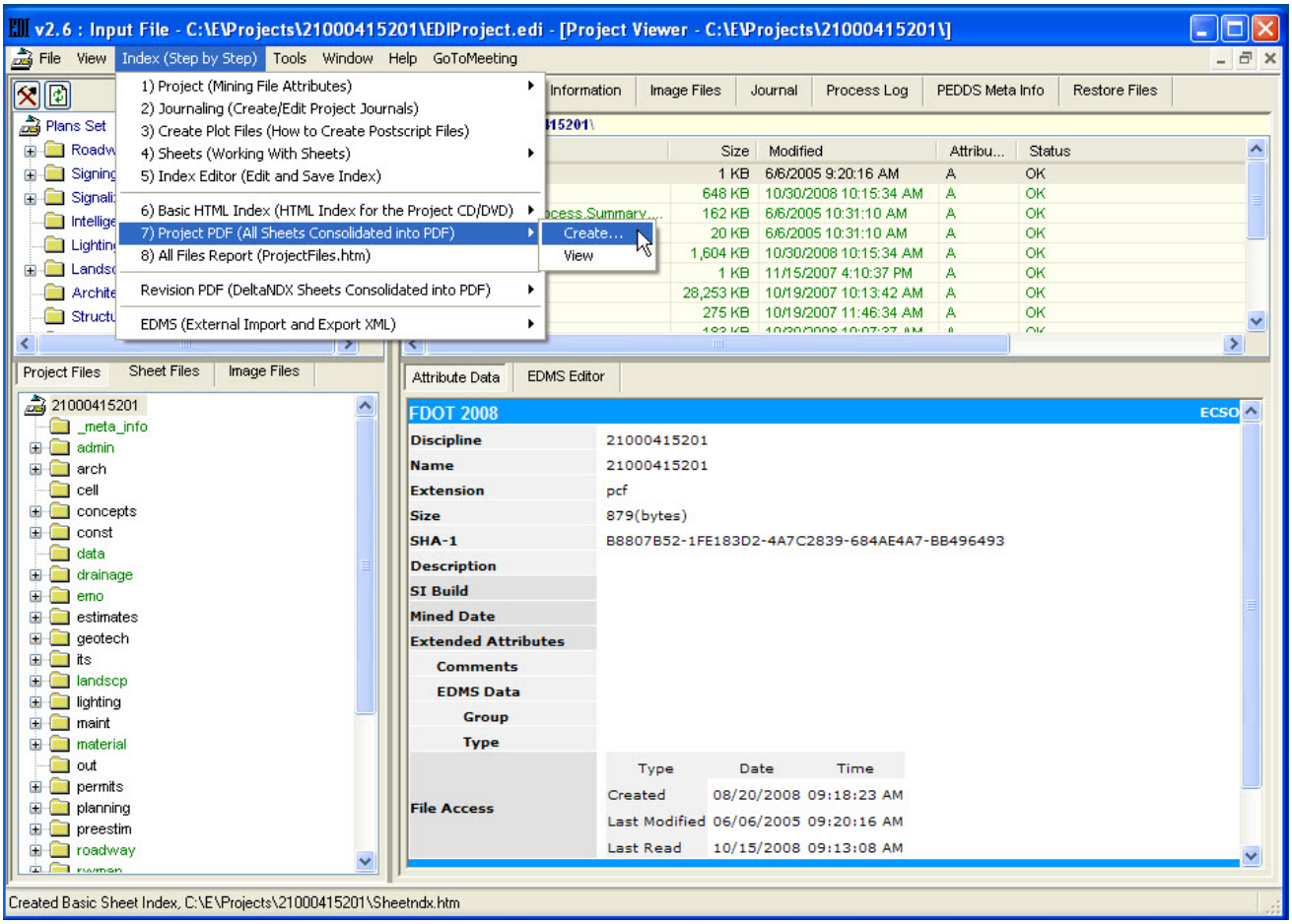
Note The HTML web page allows users to browse the project and view files with an external Web Browser, like Internet Explorer.

Exercise 3.14 Creating a Summary PDF Report

The Summary PDF is a single document which contains all plan sheet images in index order. This file, in Adobe Portable Document Format (PDF), resides in the project's root directory, and is titled **Project.pdf**. During the creation of the **Project.pdf**, the application automatically overrides any previously created **Project.pdf** or Summary PostScript file, **Project.ps**. Only one Summary file is created.

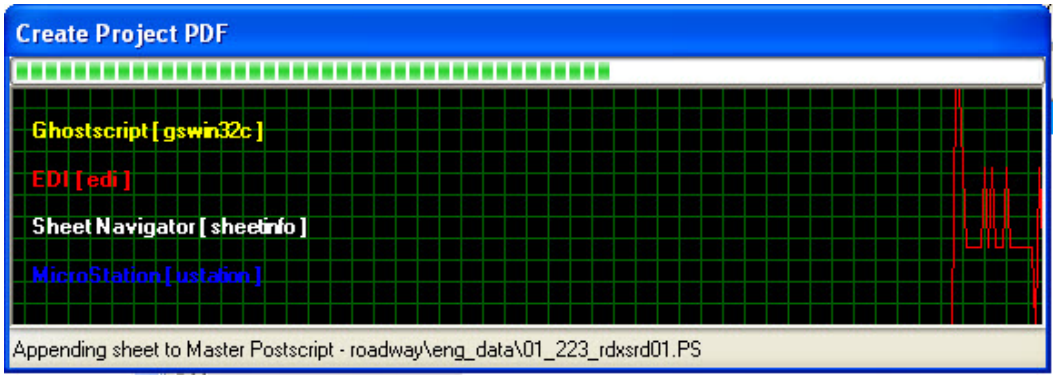
To create a Project.pdf

1. Select **Index (Step-by-Step) > Project PDF (All Sheets Consolidated into PDF) > Create.** EDI2 begins the creation process.



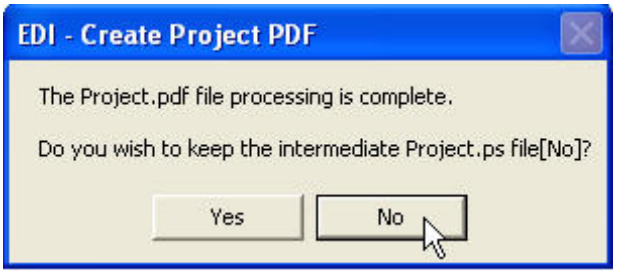
Create Project#.pdf

2. Upon completion of the creation process, Create Project PDF opens and displays the "behind the scenes" processes of Ghostscript and EDI2.



Create Project PDF

3. From EDI – Create Project PDF, the user can choose whether or not to keep the intermediate **Project.ps** file. For this project, select **No**.



EDI – Create Project PDF

4. Display Project PDF opens. Click the **YES** button. Adobe Reader opens to display contents of **Project.pdf.**

EDI – Display Project PDF

Tip The user can change Adobe's view from portrait to landscape to rotate the view of **Project#.pdf**. Check the orientation of any manually inserted sheets prior to building the **Project#.pdf** file.

Note PDF (Portable Document Format) is not a perfect solution. There is no control over the original size/sheet dimensions, sheet rotation, pixel density or output paper size. PDF does offer an inexpensive printing and viewing solution for other users of FDOT information that are unable to print or view postscript files as it preserves the data.

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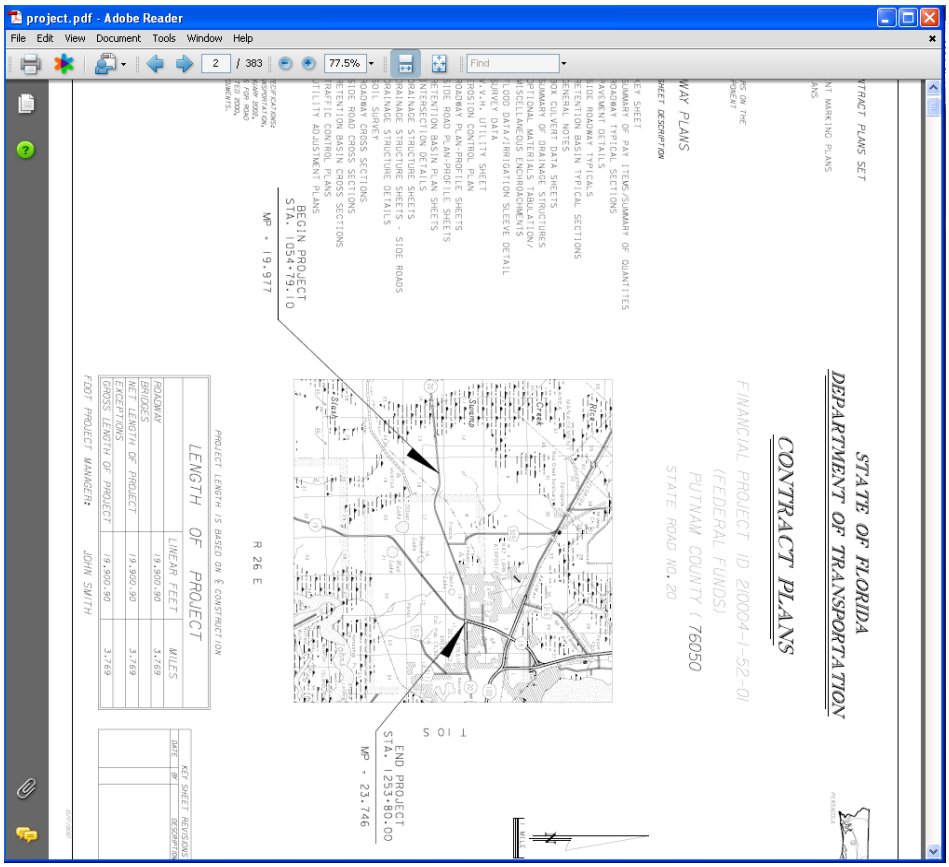
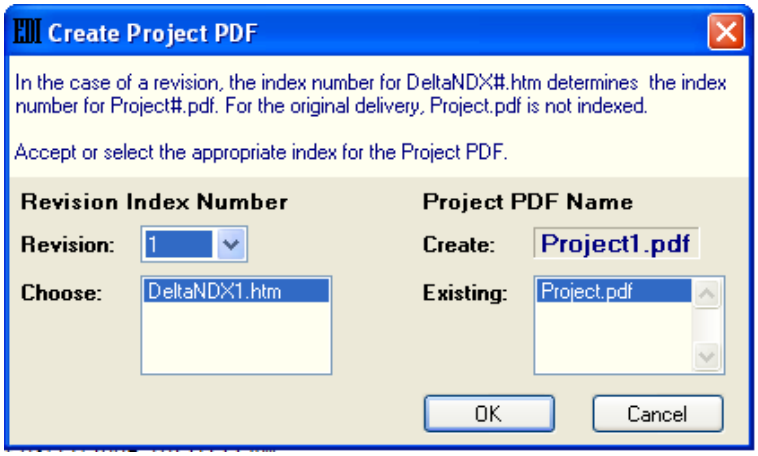


Important *Adobe Reader – Project#.pdfThe Summary PDF,* ***Project#.pdf*** *is a required deliverable item as per the* ***Compliance Certification Check List Report - Item 16****.*

Note 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.

Note In the case of a revision, and if the project already contains a **deltandx#.htm** report, the following dialog box displays, which provides options allowing the user to choose the revision number of the **project.pdf,** as well as the coinciding **deltandx#.htm** report.



EDI – Create Project#.pdf

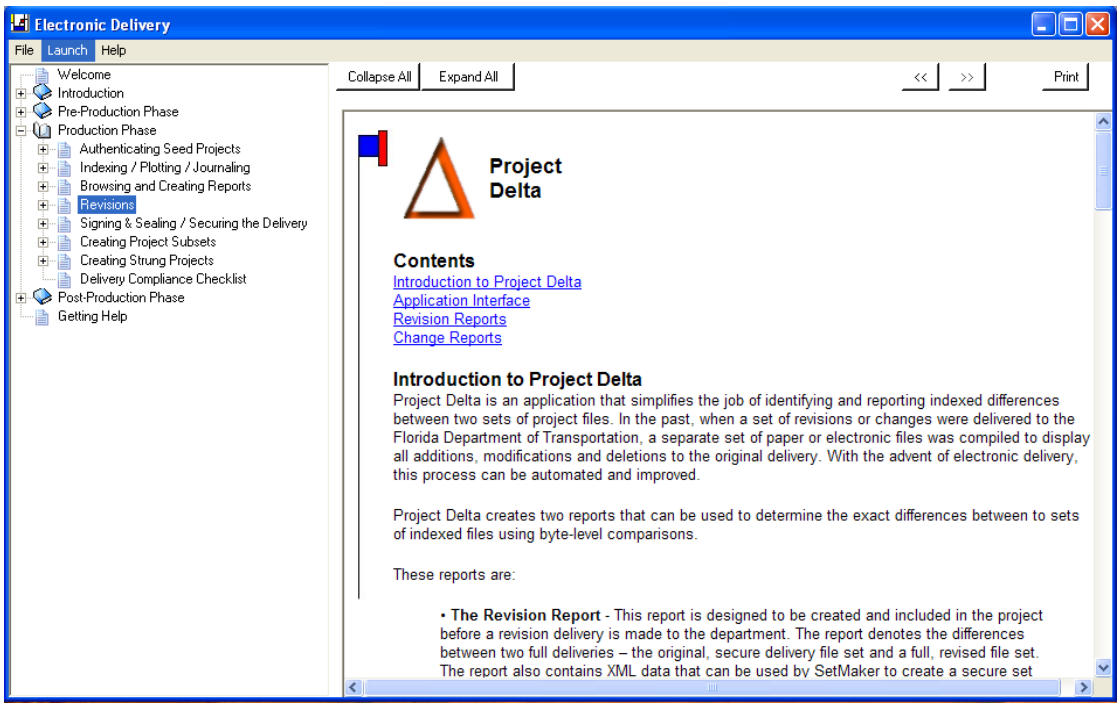
Section 3.14 Revisions

Section 20.4 of Volume I of the Plans Preparation Manual defines a revision as a modification to the plans package after it has been transmitted to Central Office but prior to bid opening.

Project Delta is an application that simplifies the job of identifying and reporting indexed differences between two sets of project files. In the past, when a set of revisions or changes were delivered to FDOT, a separate set of paper or electronic files was compiled to display all additions, modifications and deletions to the original delivery. With the advent of ED, this process can be automated and improved.

Project Delta creates two reports used to determine the differences between two sets of indexed files using byte-level comparisons, the **Revision Report** and the **Change Report**.

- **Revision Report** - This report is designed to be created and included in the project before a revision delivery is made to the Department. The report denotes the differences between two full deliveries; the original, secure delivery file set and a full, revised file set. The report also contains XML data that can be used by Set Maker to create a secure set of revised files.
- **Change Report** – This report is designed to report the indexed differences between any two project files sets, not merely full project deliveries, as does the Revision Report. Though the report was originally designed for tracking the differences between an original project delivery and a later corrected delivery, the report has many uses; from determining file changes between sets to ensuring that a revision set contains the proper files. As this report is designed for quality assurance, it does contain set generation information, as does the Revision Report.



Revisions - Project Delta

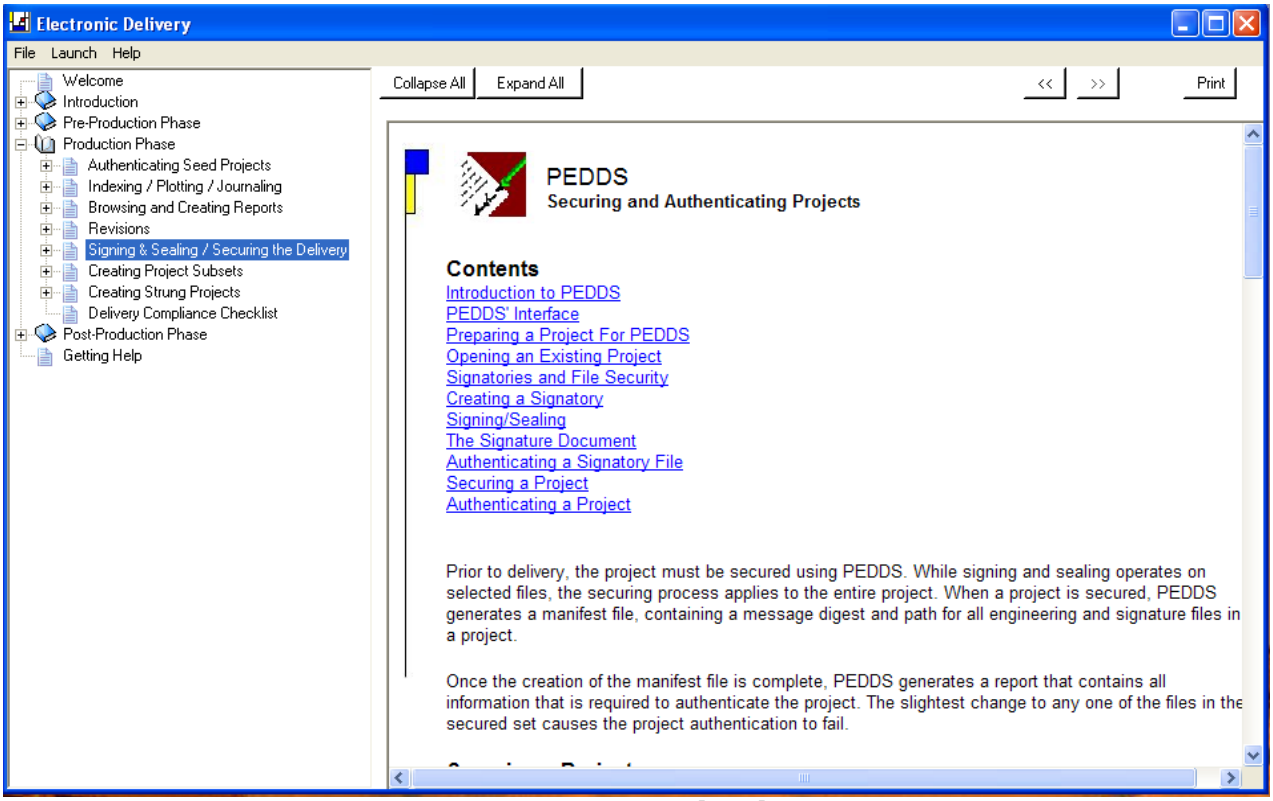
Note **Section 5 - ED - Handling Revisions** provides in-depth exercise on revisions made after an initial delivery.

Section 3.15 Signing & Sealing the Project

For years engineers have had the ability to sign and/or seal any document that could be included in a project. Prior to delivery of the project to the Department, the engineer of record must electronically sign and seal project files using PEDDS, which extends this ability to the digital domain. Rather than applying a marker on each individual file, PEDDS keeps track of the files that each user signs.

When a user 'signs' a file, the application generates a unique, identifying code (the file's SHA-1 message digest) and places it in a password protected file in the project's **_meta_info** directory. Once the file is updated, the application generates a report that lists the files that the user has signed, as well as the code for that 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 listed on the report.



PEDDS Signing and Sealing

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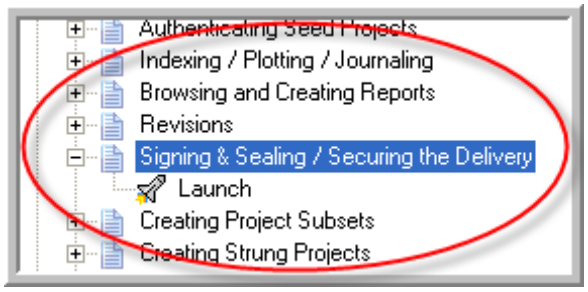
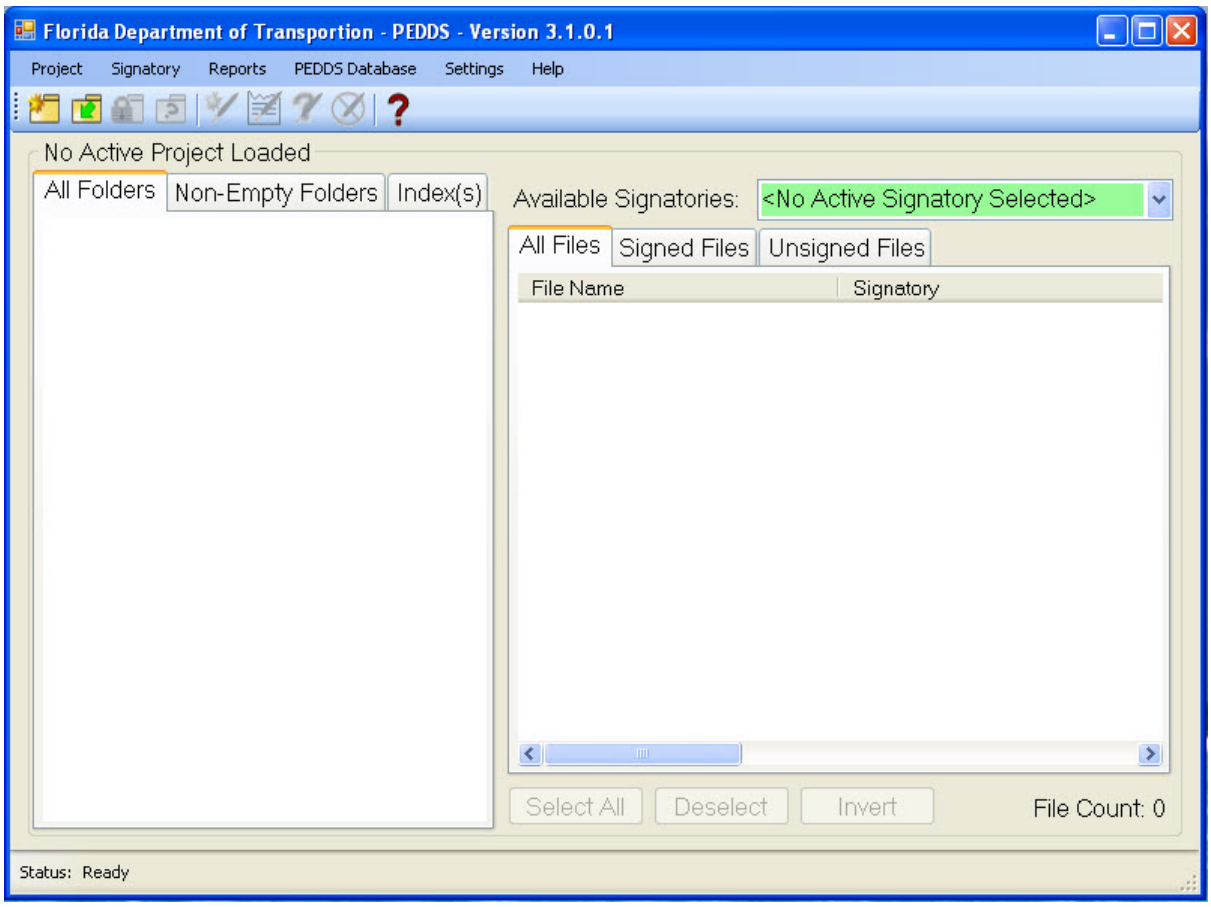
Section 3.15.1 Signing & Sealing

TO OPEN A PEDDS PROJECT

1. To open a PEDDS Project In the **Signing & Sealing / Securing the Delivery** folder, click **Launch**. Florida Department of Transportation - PEDDS opens.

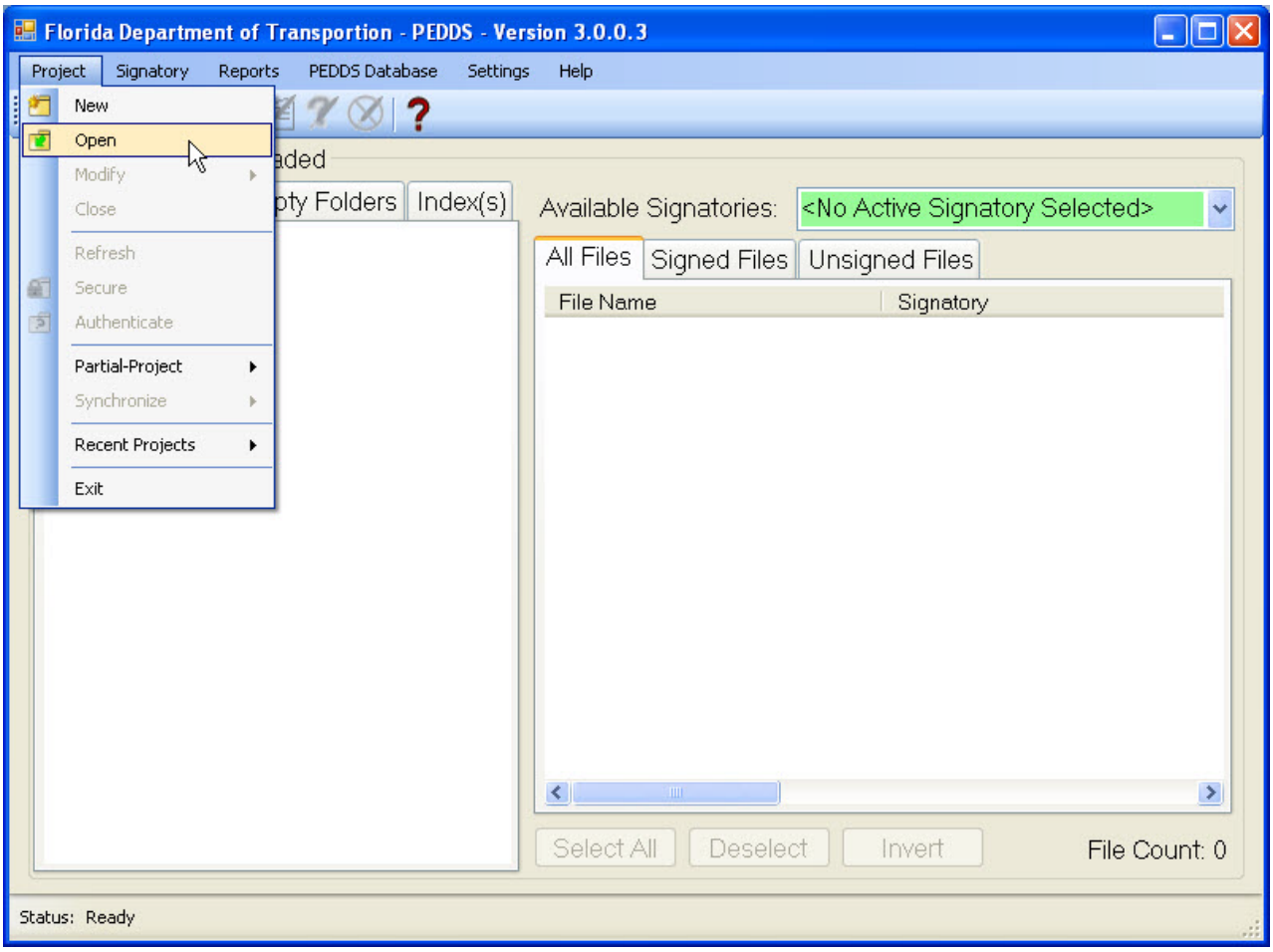


Launching PEDDS



Florida Department of Transportation - PEDDS

2. From the **Project** menu, select **Open** --*or*-- click the **Open an Existing Project** icon( ) on the toolbar to display Open Project.

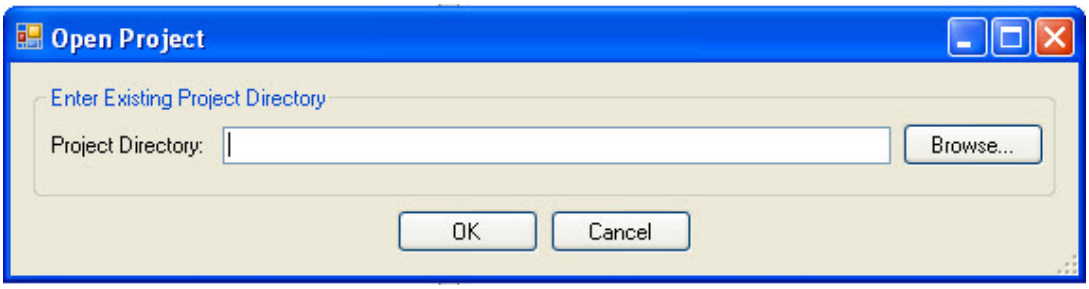


Florida Department of Transportation - PEDDS

3. In Open Project, select the drive letter where projects reside from the **Drive** pull-down menu.
4. Navigate to the **Project** folder and click the project.

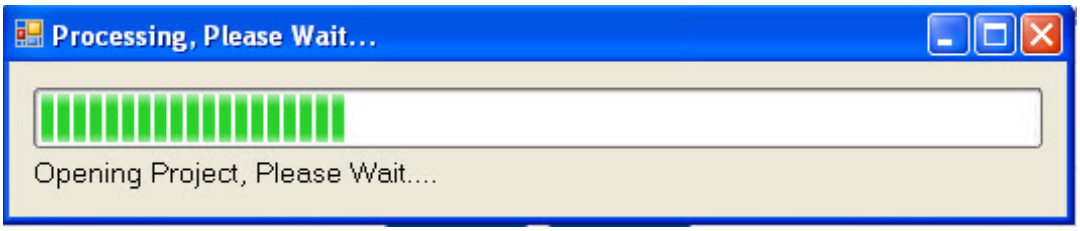
Note A PEDDS project always has a **briefcase** icon.

5. In the **Current Path** box, verify the selection of the project. If the selected project is incorrect, repeat step 4.
6. To load the selected project into PEDDS, click the **OK** button.



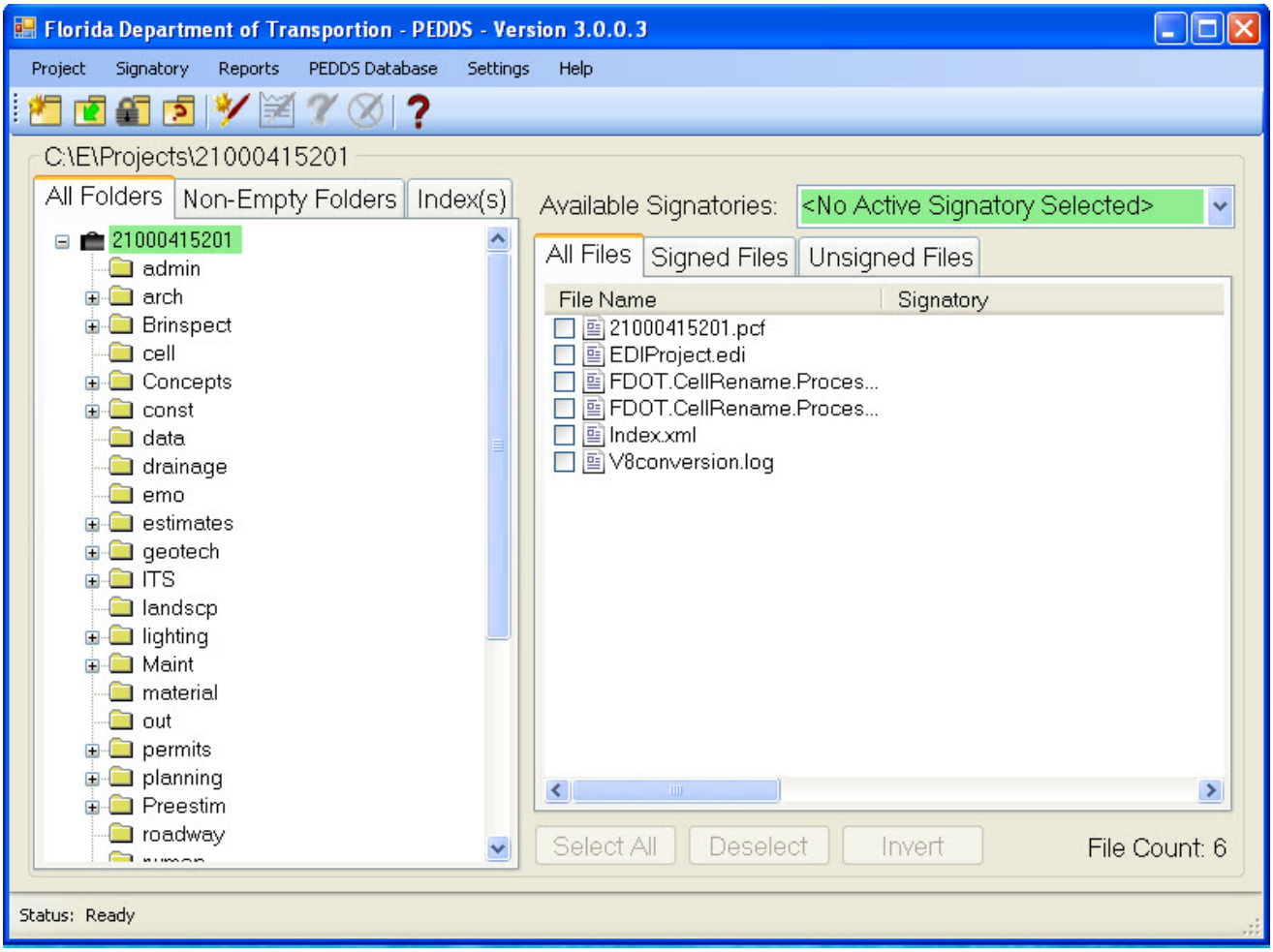
PEDDS Open Project

© 2009 FDOT



PEDDS Open Project

7. The loaded project is now ready for PEDDS processing as shown below.



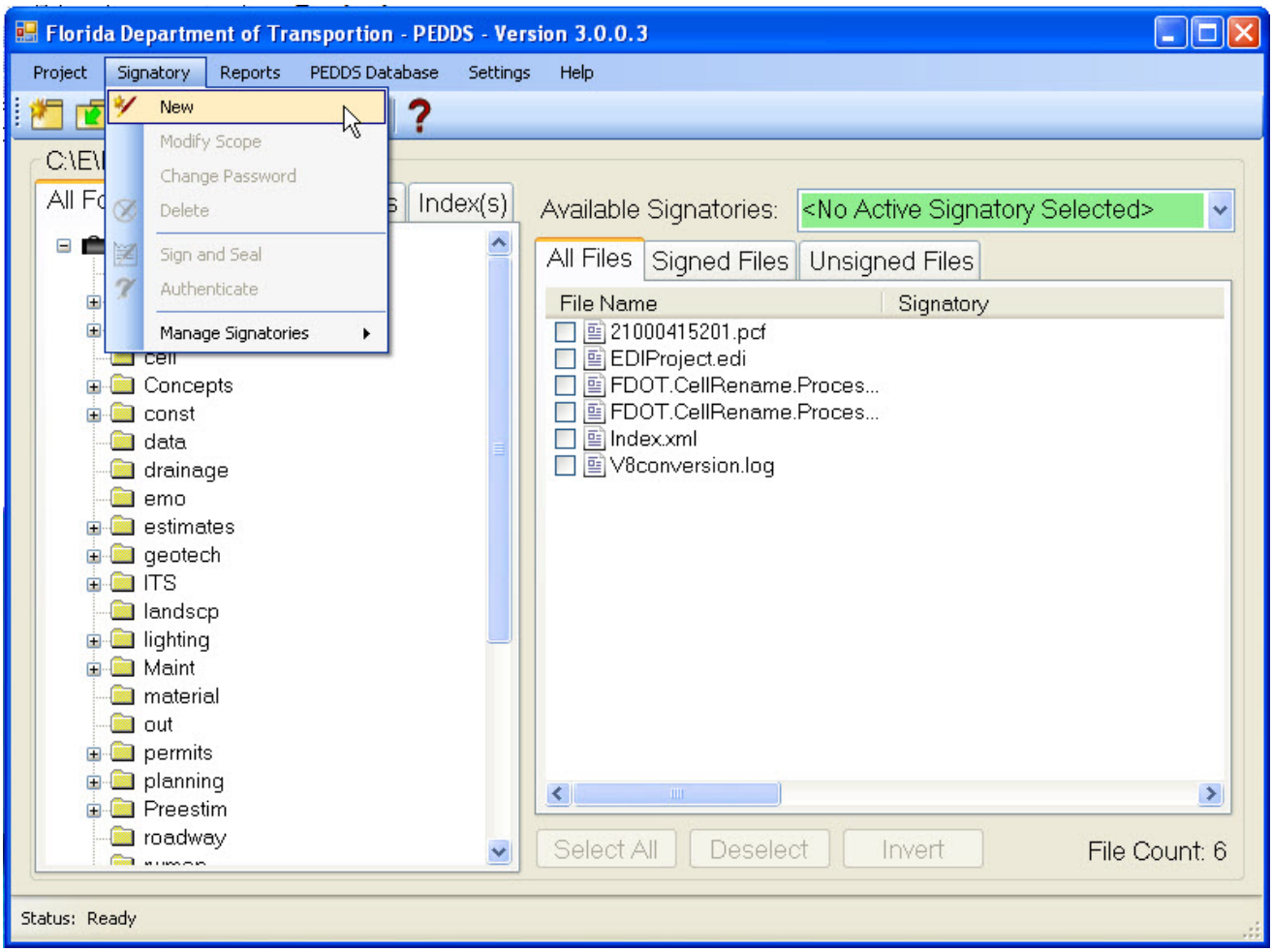
PEDDS

TO CREATE A SIGNATORY FOR SIGNING AND SEALING

Before a professional can sign/seal files, that person must be known to the PEDDS software by creating a Signatory.

A Signatory is the person(s) or professional(s) who secures files in a delivery using a signature file and document. If the signatory is a professional, signatures are governed by rules defined by the Florida Boards of Professional Regulation.

1. From the **Signatory** menu, click **Create Signatory** --or—click the **Create a New Signature** icon ( ) on the toolbar. Signatory Information opens.



Florida Department of Transportation - PEDDS

Note Signatory Information contains information about the individual who is signing and sealing the plans.

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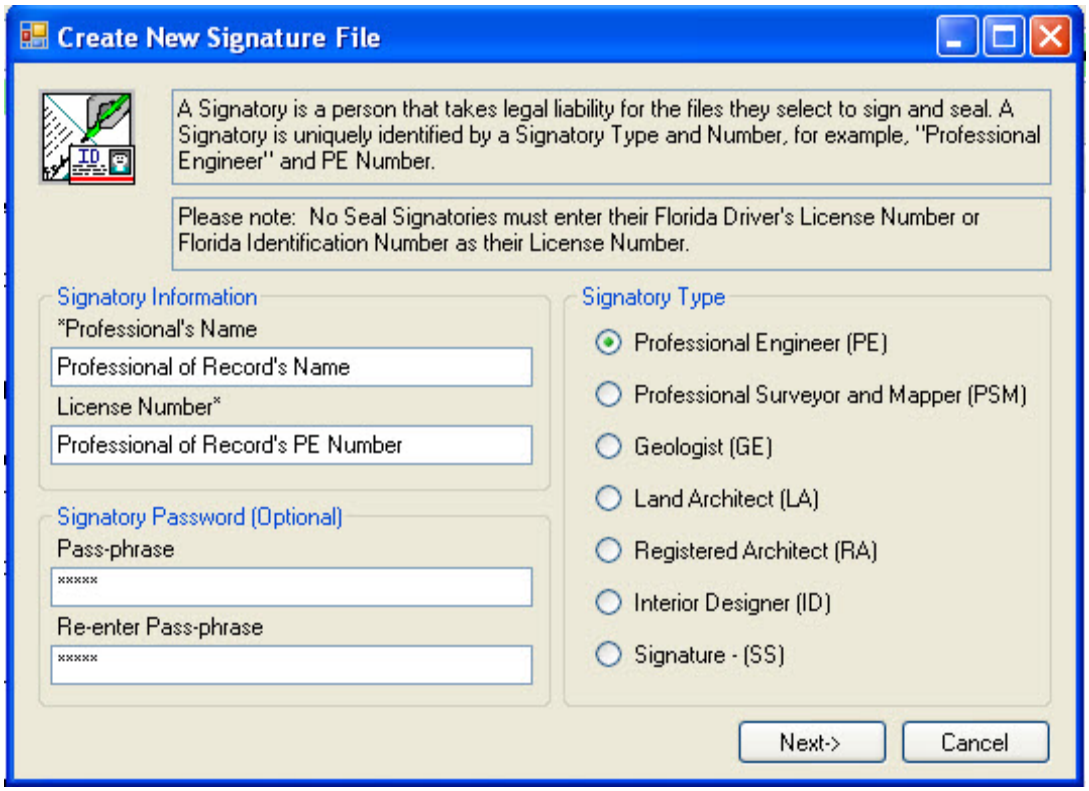
2. In Signatory Information, enter the following information:
3. In the **Signatory Name** box, type your name.
4. In the **Signatory Number** box, type **12345**.
5. In the **Pass-phrase** box, type **12345**.
6. In the **Re-enter Pass-phrase** box, type **12345**.

Note The **Pass-phrase** is a password, unique to each professional responsible for signing and sealing files. If the professional forgets his or her pass-phrase, PEDDS allows the creation of additional signatories.

7. Select the **Signatory Type** and click the **OK** button.
8. For **Signatory Types** other than **Signature - No Seal (SS)**, type your professional number in the **Signatory Number** box.

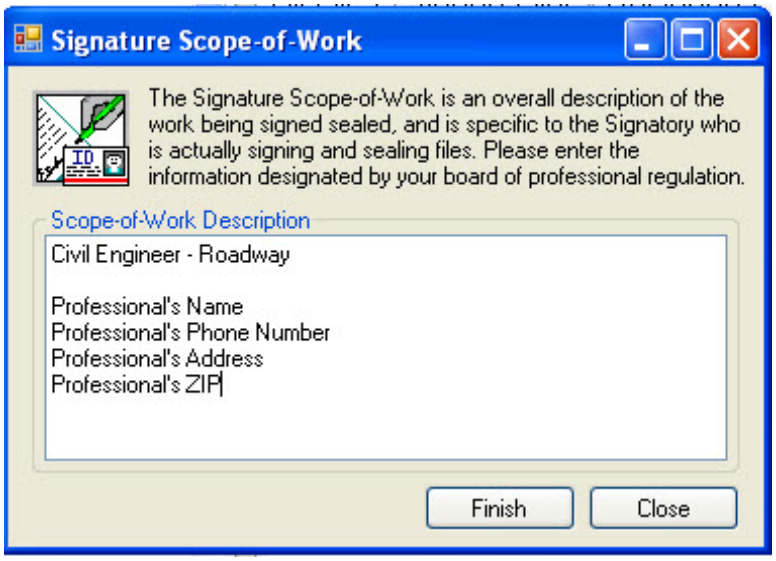


Signatory Information- Professional Engineer

Important *The requirements for sealing information stored in electronic files is defined by the Board of Professional Engineers in Rule 61G15-23.003, F.A.C. For each professional engineer in responsible charge who is signing and sealing files in a project, the PEDDS program generates:*

- A signature file that defines which files are being signed and sealed, and
- A signature document that is printed, signed, dated, and sealed by the professional engineer with an impression seal.

9. Signatory Scope-of-Work displays. Type a description of the work to be signed/sealed by the Signatory.



Signature Scope of Work

Signature Scope of Work

Important *The professional's name, address and phone number are required by PEDDS.*

Signature Scope of Work

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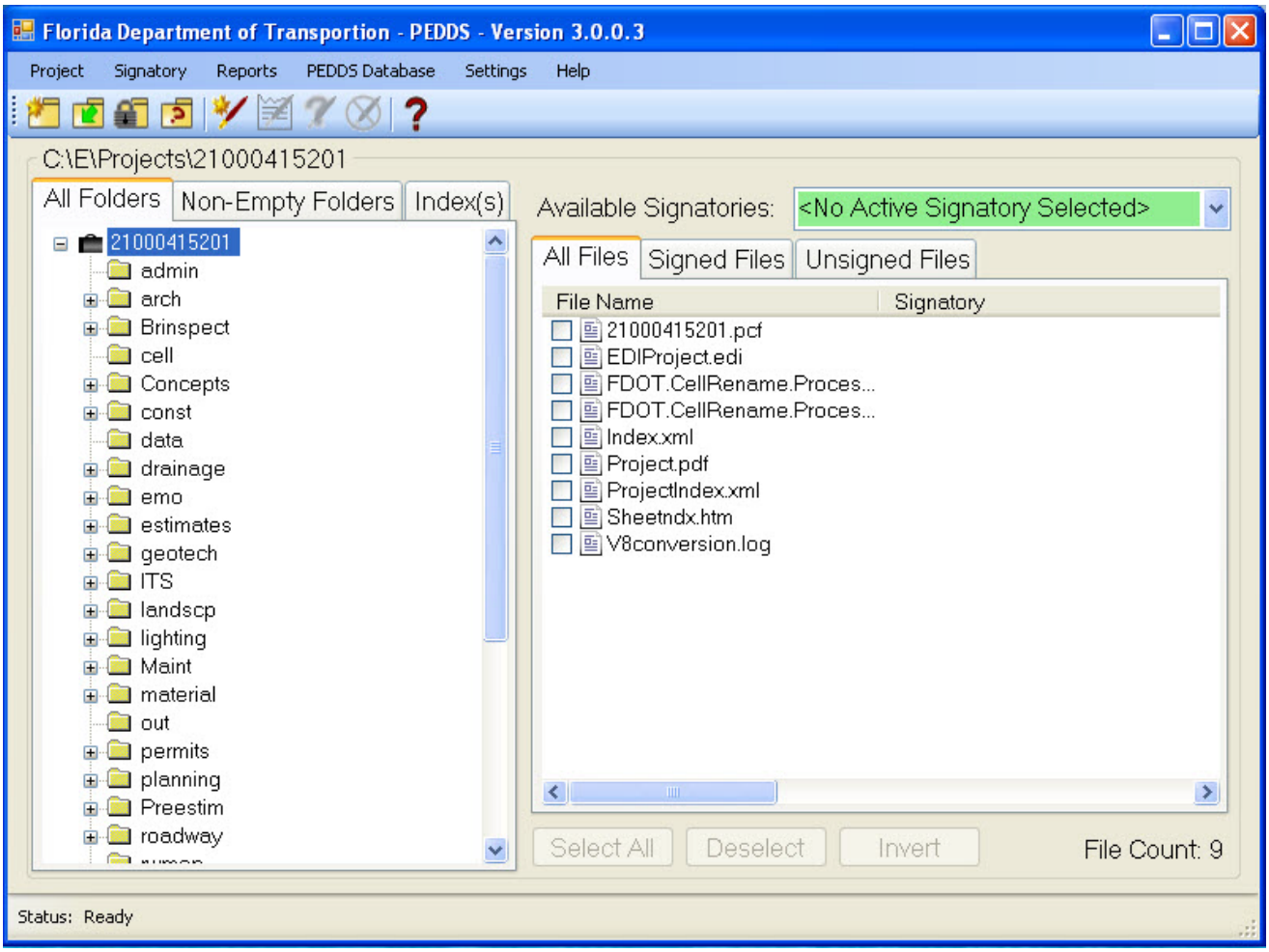
10. Click the **Finish** button. Florida Department of Transportation - PEDDS re-opens with the new signatory displays in the **Current Signatory** box.



PEDDS displaying new Signatory

Note Upon the creation of the Signatory, PEDDS also creates a Signatory File in the **/_meta_info/** folder of the project. The Signatory File is a file that defines the project files a signatory is going to sign or sign-and-seal.

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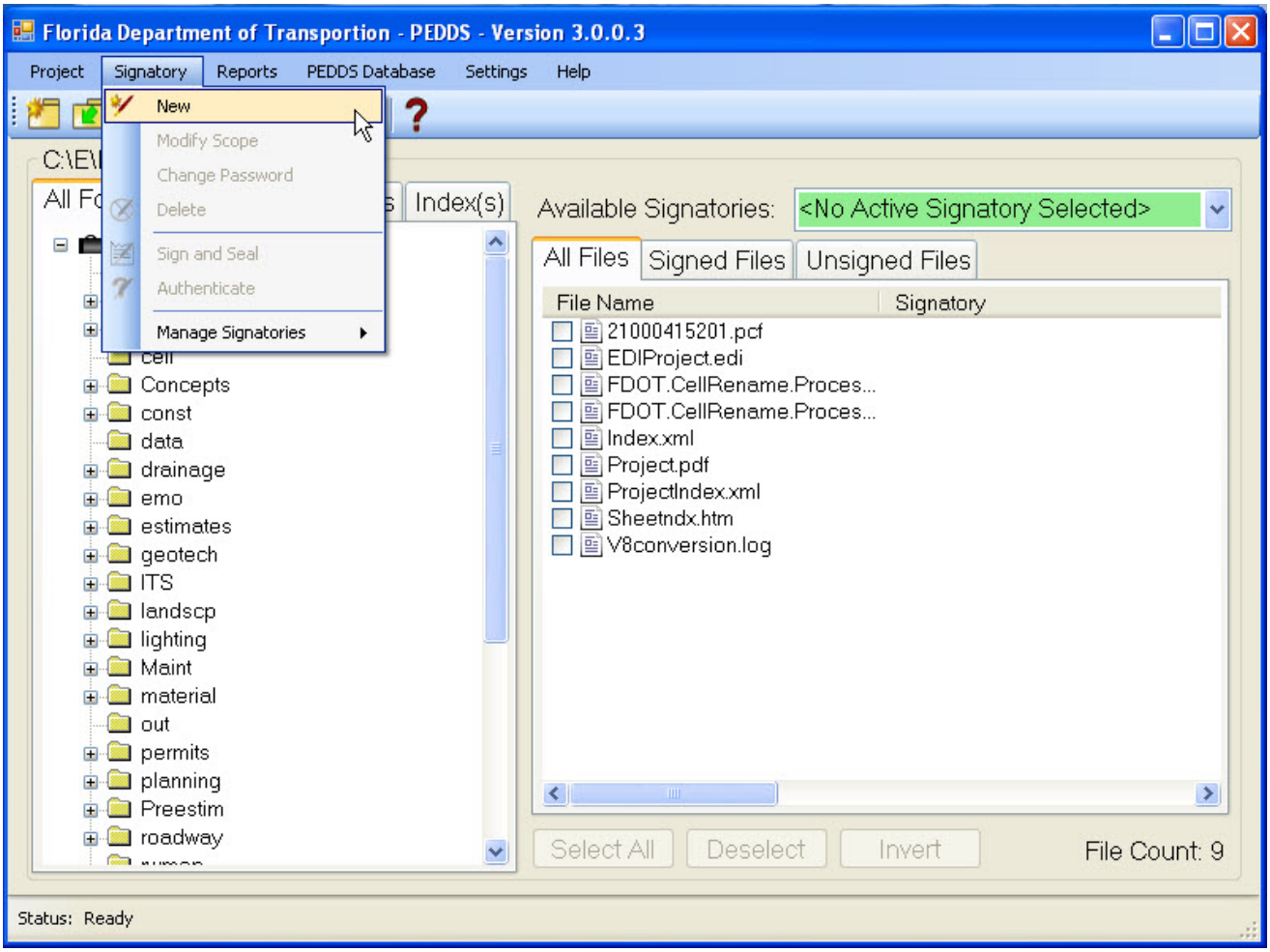
TO CREATE A SIGNATORY TO SIGN WITH NO SEAL (OPTIONAL)

PEDDS allows a lay person (non Professional) to sign files with no seal. This is known as Signing, which is 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 registered professional. Signing a file adds file information to the signatory's signature file. Before the lay person can sign files, that person must be known to the PEDDS software by creating an additional Signatory.

1 From the **Signatory** menu, click **Create Signatory** --or—click the **Create a New Signature** icon ( ) on the toolbar to display Signatory Information.



Florida Department of Transportation - PEDDS

Note Signatory Information contains information about the individual who is signing the plans.

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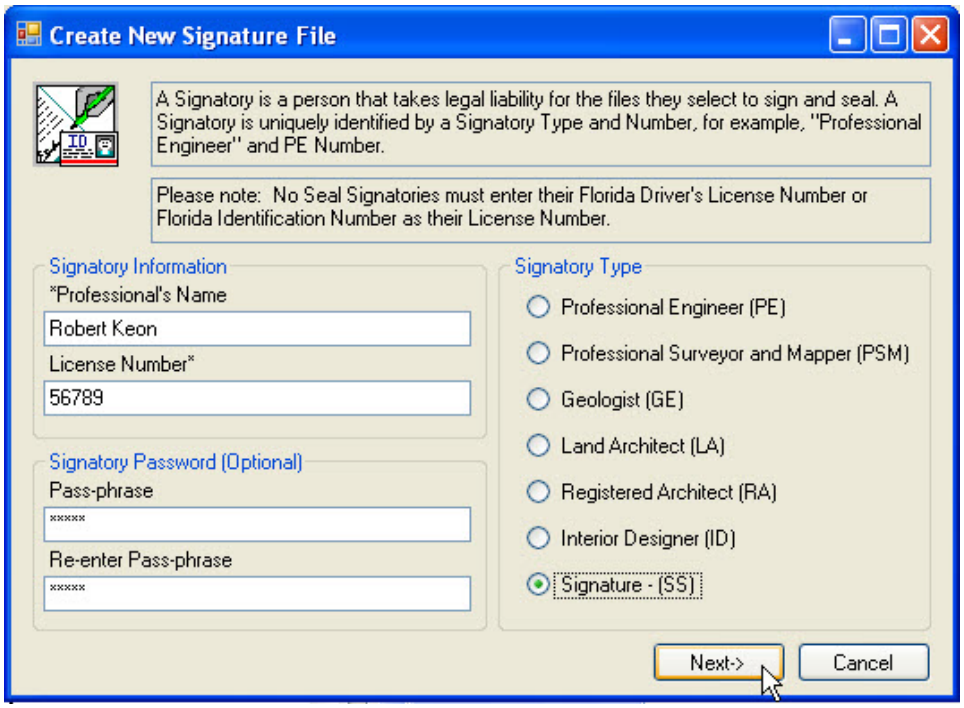
11. In Signatory Information **Signatory Name** box, type **Robert Keon.**
12. In the **Signatory Number** box, type **56789**.

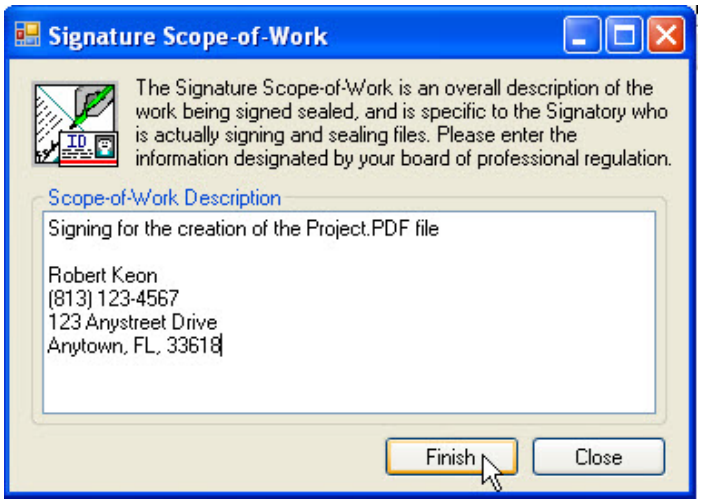
Important ***Signature - No Seal (SS)*** *signatories must enter their Florida Driver's License Number as their signatory number.*

13. In the **Pass-phrase** box, type **56789**.
14. In the **Re-enter Pass-phrase** box, type **56789**.
15. Select the **Signatory Type Select Signature - No Seal (SS)**.



Signatory Information - Signature-No Seal (SS)

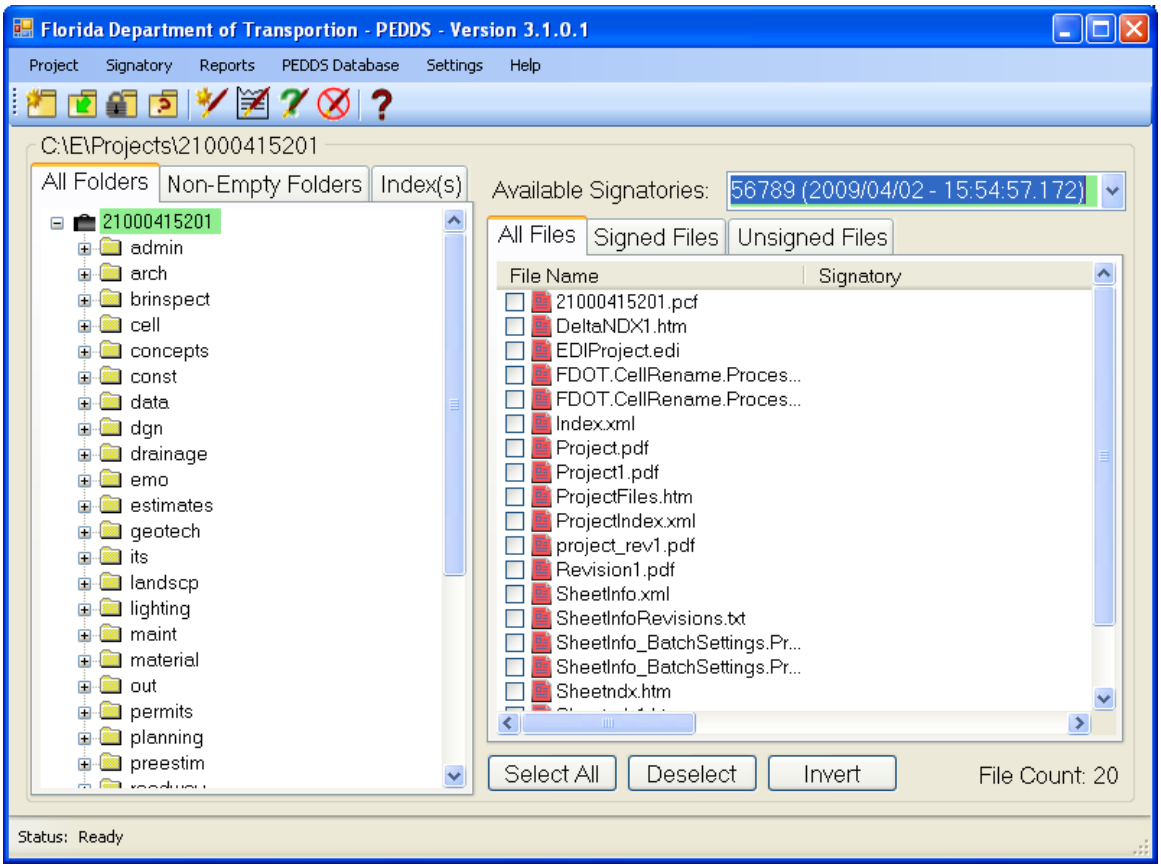
16. When finished, click the **OK** button. Signature Scope-of-Work opens.



Signature Scope of Work

Important *The lay person's name, address and phone number are required by* ***PEDDS****.*

17. Click the **Finish** button. Florida Department of Transportation - PEDDS re-opens with the new signatory.



PEDDS displaying new Signatory

TO SELECT FILES TO SIGN AND SEAL

Note Once the Professional of Record has been identified to PEDDS, the signatory can begin the process of signing files. From the **Current Signatory** drop- down list of Florida Department of Transportation - PEDDS, select a **Current Signatory**. Enter Password appears.

1. In Enter Password, type **12345** for the selected Signatory and then click the **OK** button.

PEDDS Enter Password

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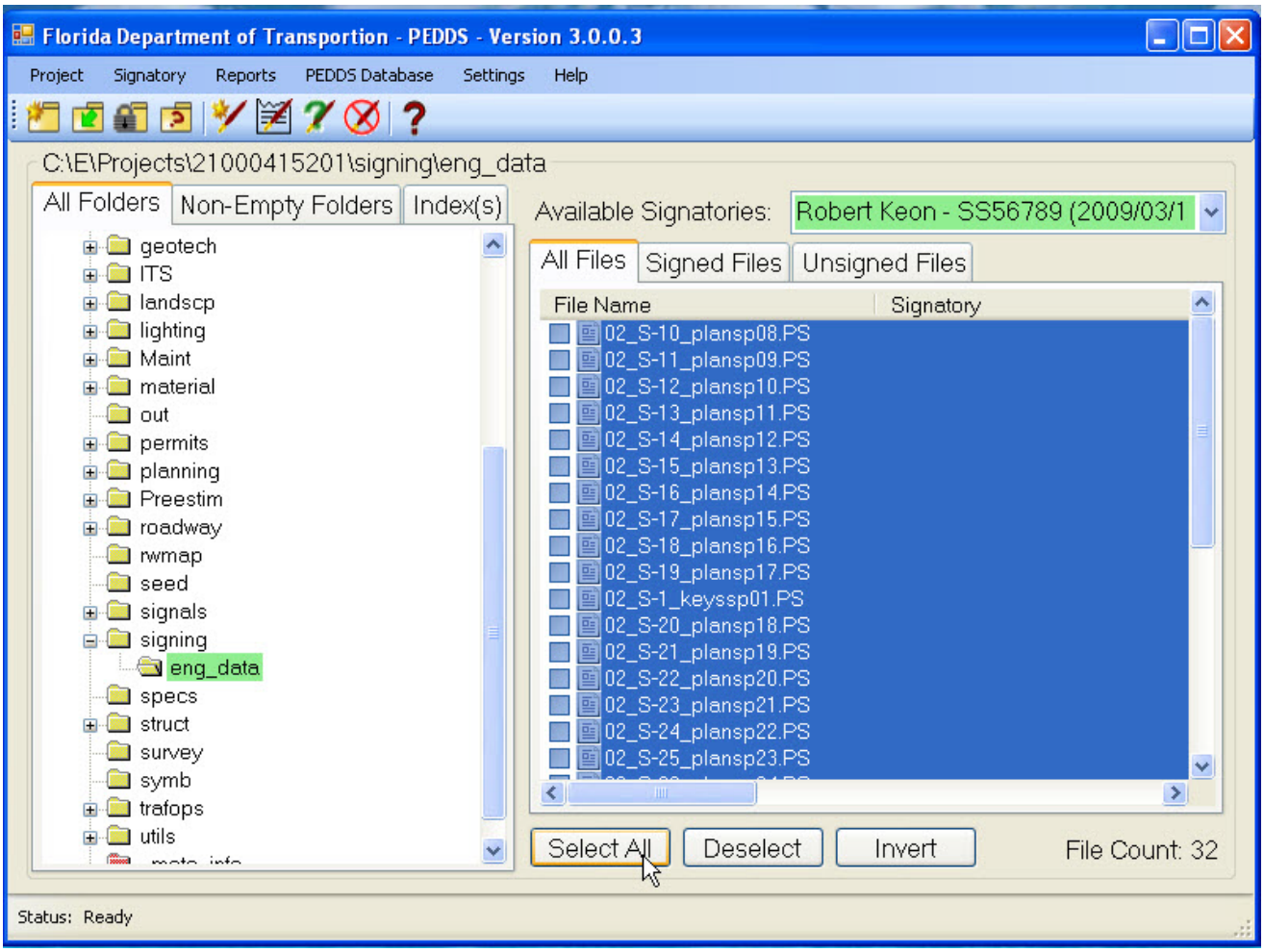
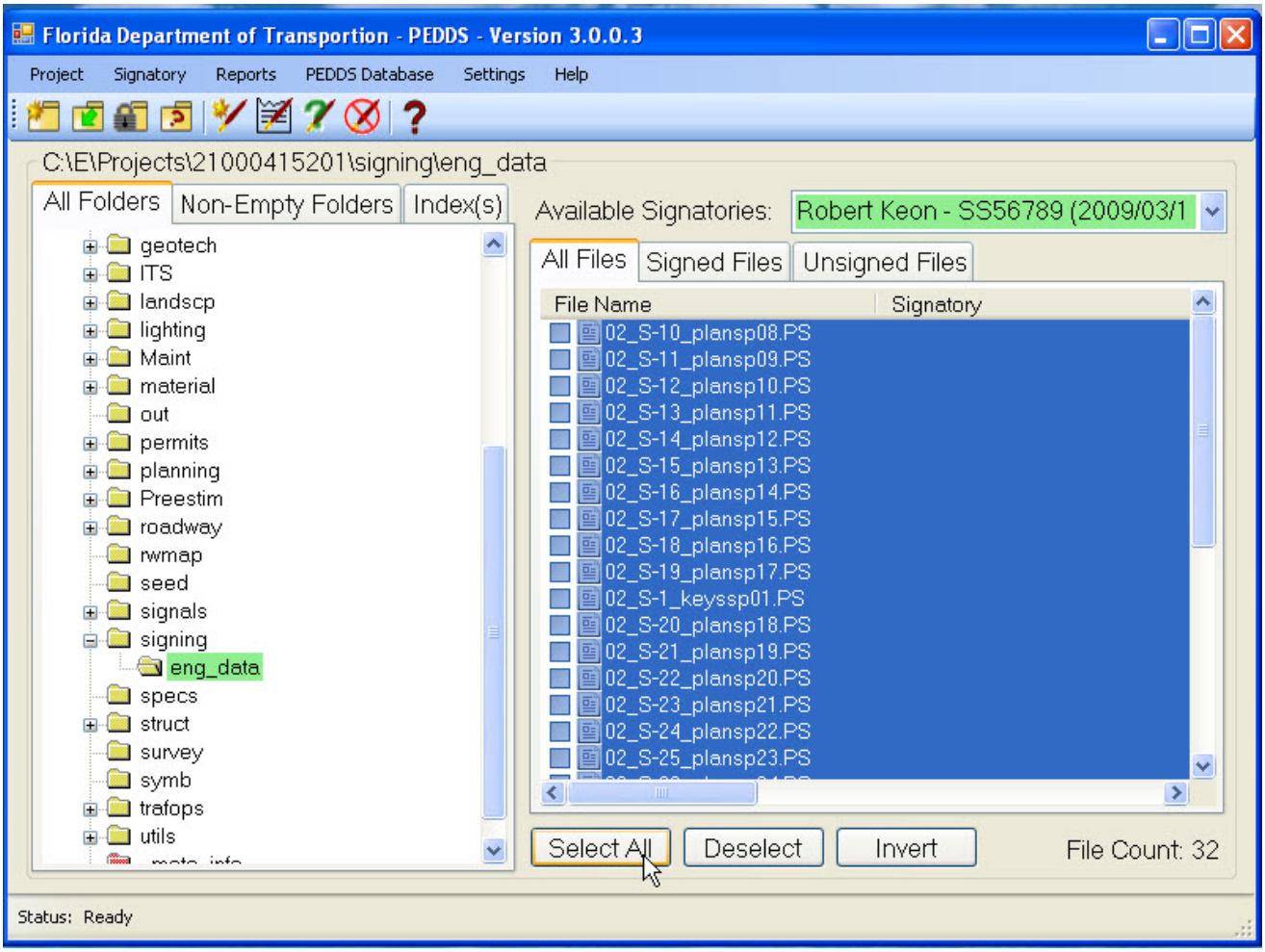
2. From the left pane of Florida Department of Transportation - PEDDS, click the **roadway** discipline folder.
3. Select all the Postscript image files for signing.



PEDDS Selecting Files for Signing

Tip Standard windows tools, **Shift** and **CTRL** keys can be used to select multiple files. Each discipline of the entire Project must be signed and sealed by the responsible professional.

4. Right-click one of the selected files and then click **Select/Deselect**. A green icon appears with each selected file and the current signatory, to be assigned responsibility for the selected files, appears in the **Signatory** column.



PEDDS Select/Deselect

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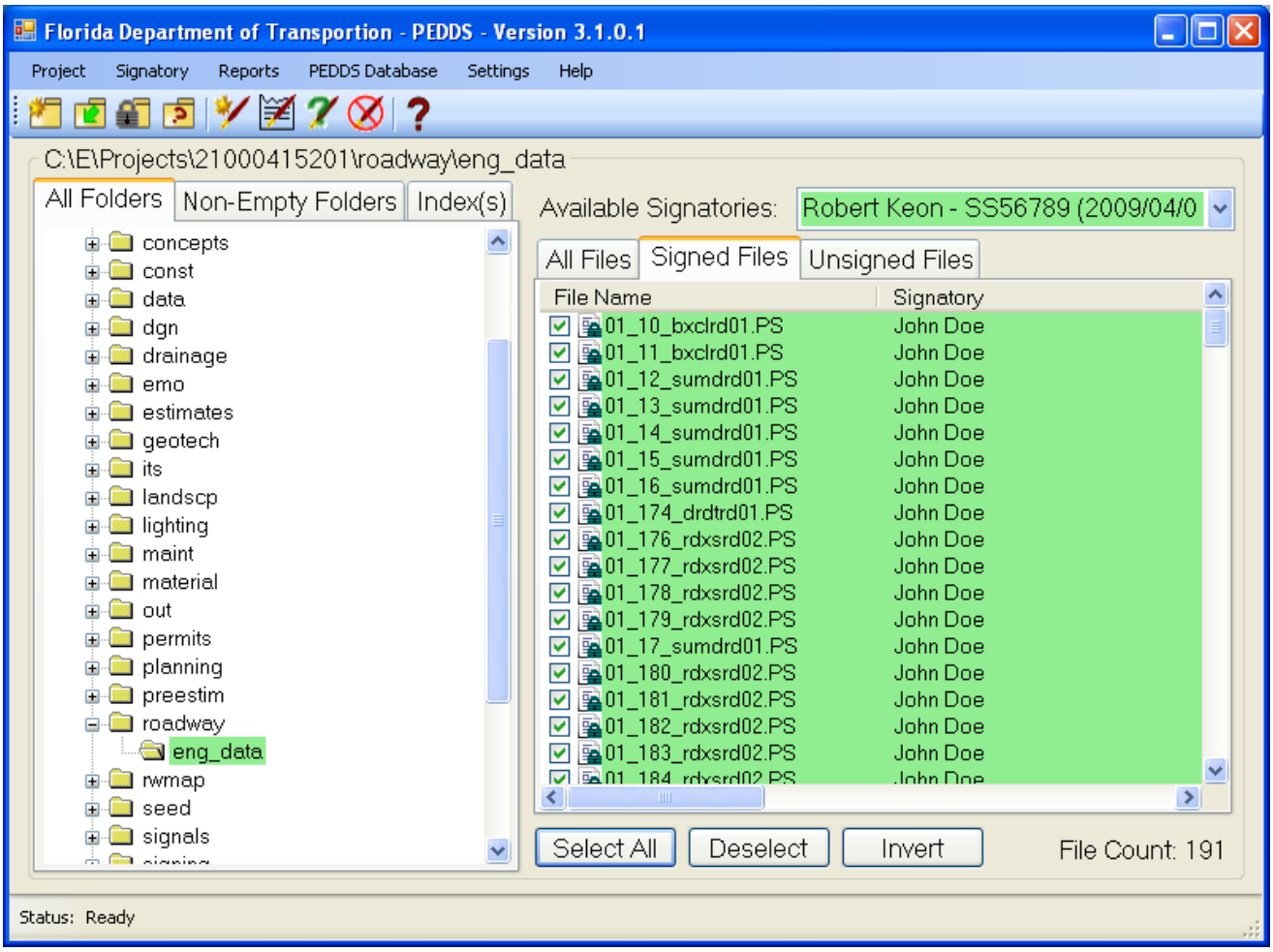
5. A green icon appears with each selected file and the current signatory, to be assigned responsibility for the selected files, appears in the **Signatory** column.

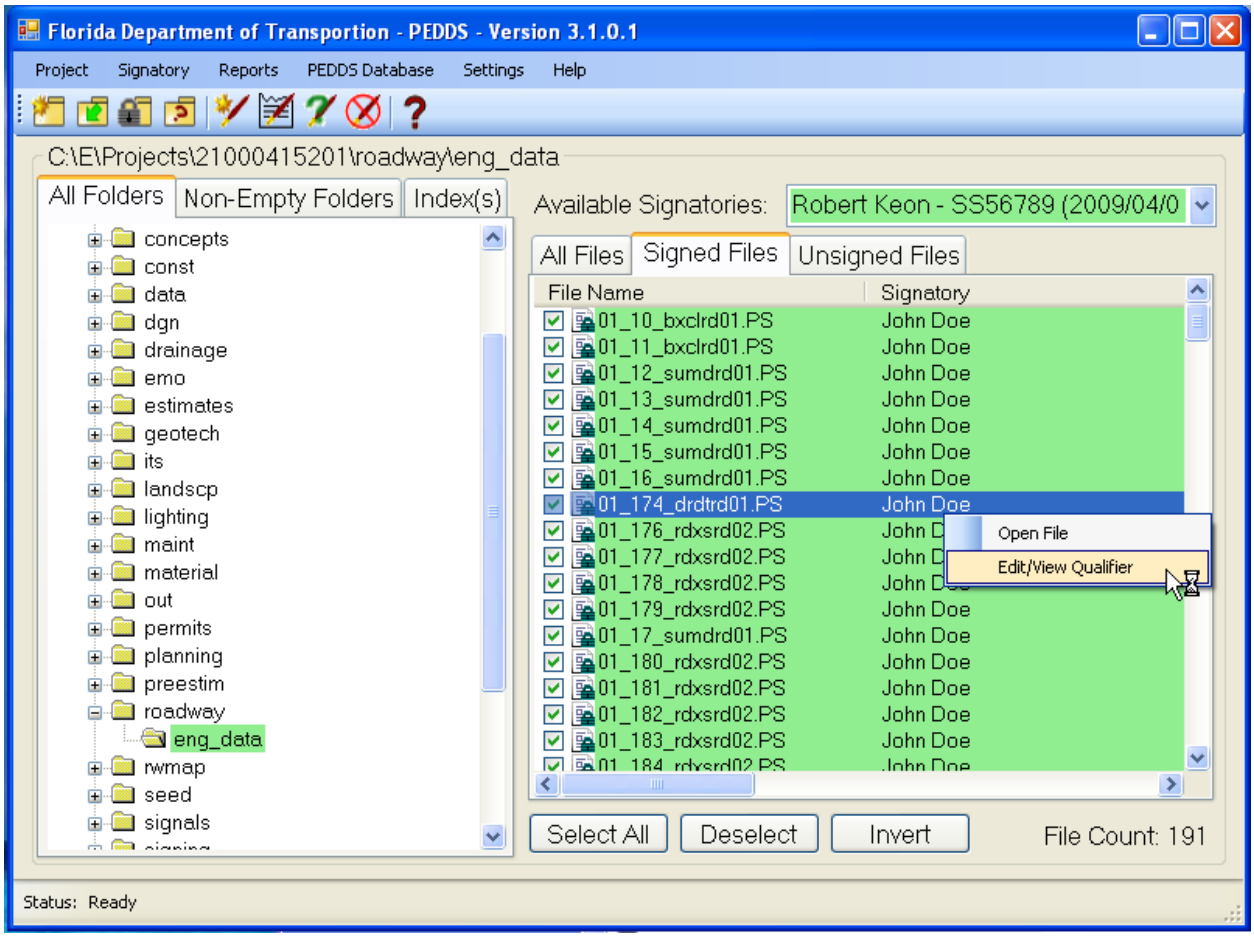


PEDDS - files selected

TO ADD A QUALIFIER

Qualifiers or contingencies can be added to a file that is going to be signed and sealed in the current session, or to a file selected to be signed and sealed at a later date. The qualifier text may be edited only if the file or files have been selected or signed and sealed by the current signatory; otherwise, the qualifier is read only and may not be modified. If an asterisk (*) appears in the **Qualifier** column, then the file has a qualifier, but the qualifier was appended by a signatory other than the currently selected signatory. Qualifier text is displayed only for files signed and sealed or selected by the currently selected signatory.

1. With the files still selected right-click on a file and then click **Edit/View Qualifier**.



PEDDS - View/Edit Qualifier

Important *Before the qualifier can be edited, the files have to be signed and sealed by the active signatory. If this is not done, the error message above will appear.*

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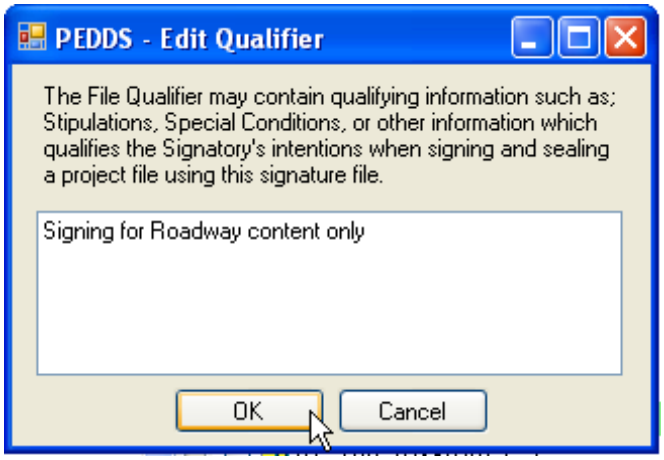
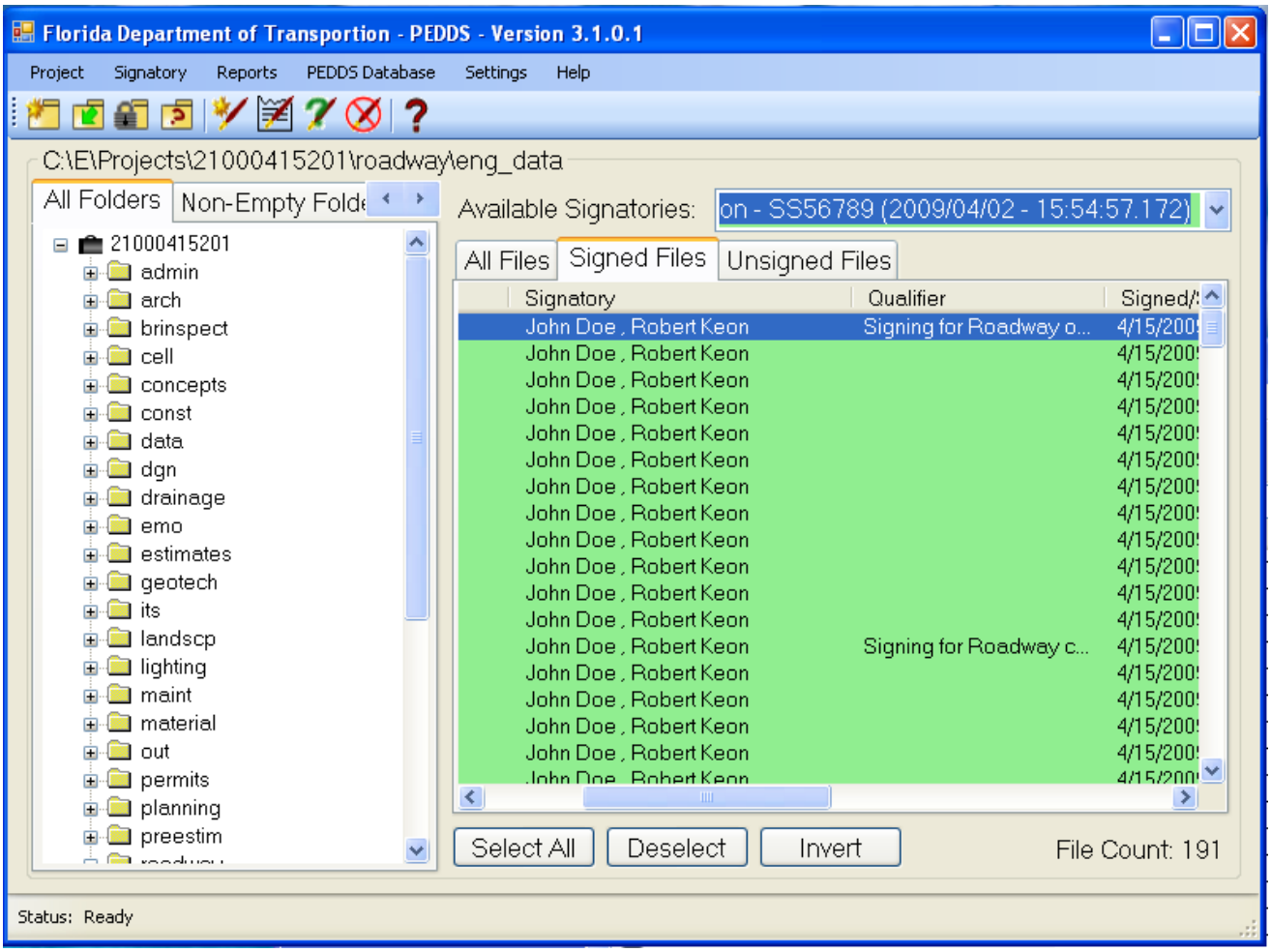
2. File Qualifier displays. Type the Qualifier statement for the files selected.



PEDDS - File Qualifier

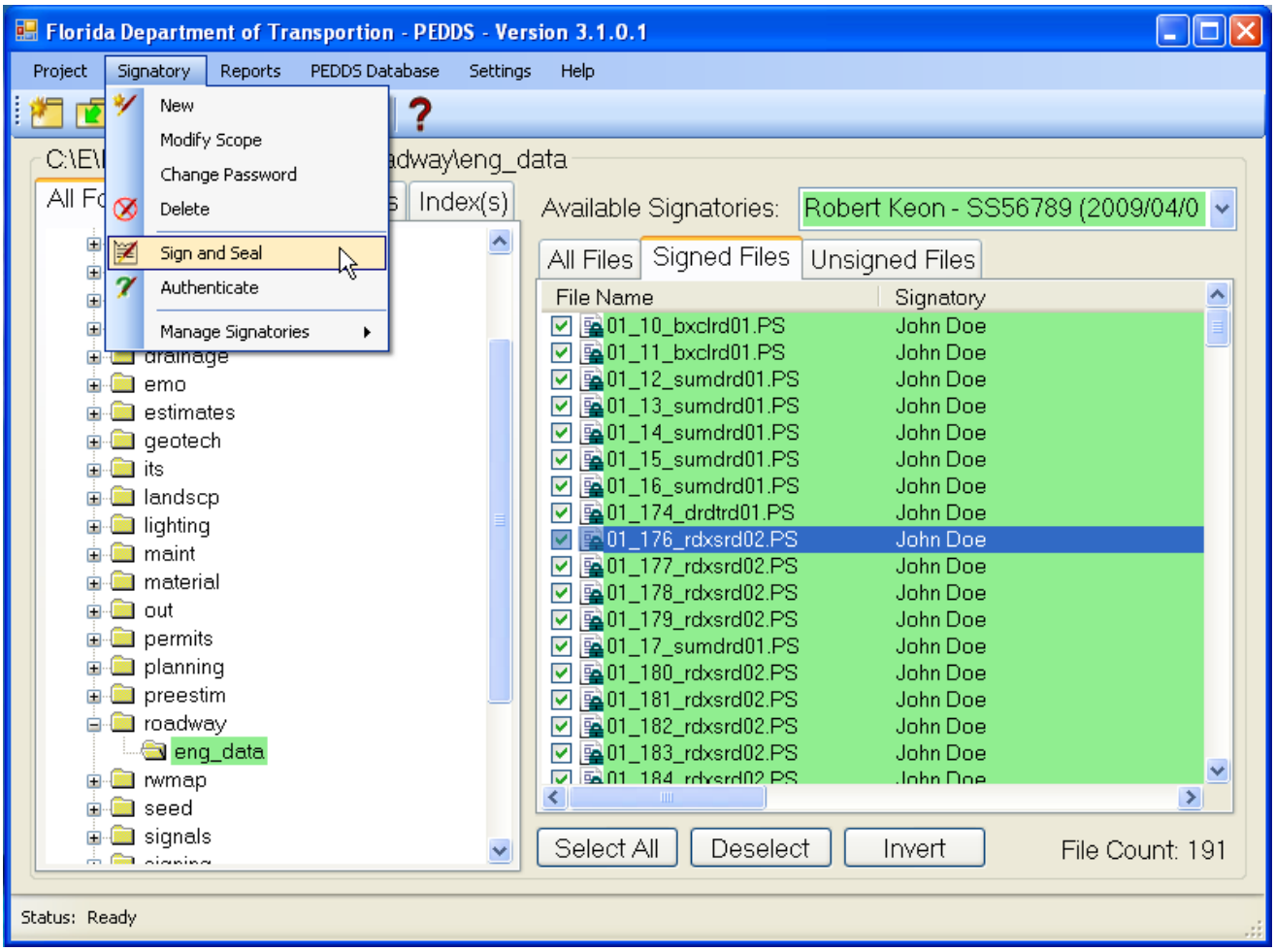
3. When finished, click the **OK** button. Florida Department of Transportation - PEDDS re-opens displaying the new qualifier added.



PEDDS - Qualifier displayed

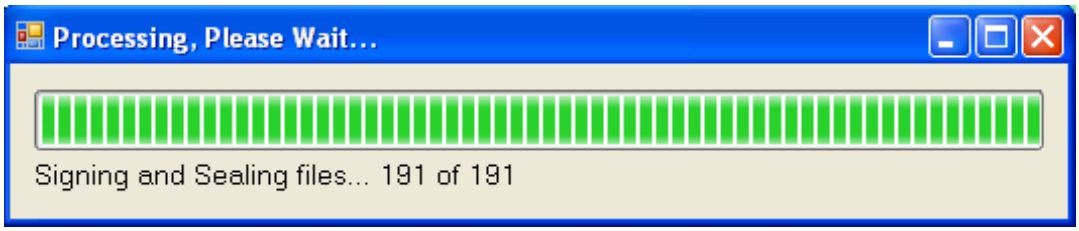
TO SIGN AND SEAL THE FILES

1. With the files still selected, select **Sign and Seal** from the **Signatory** menu -- or—click the Sign and Seal the Current Signature icon ( ) on the toolbar.



PEDDS - Signing and Sealing

2. Signing and Sealing opens briefly then closes. Report Viewer then opens.



Signing and Sealing process status bar

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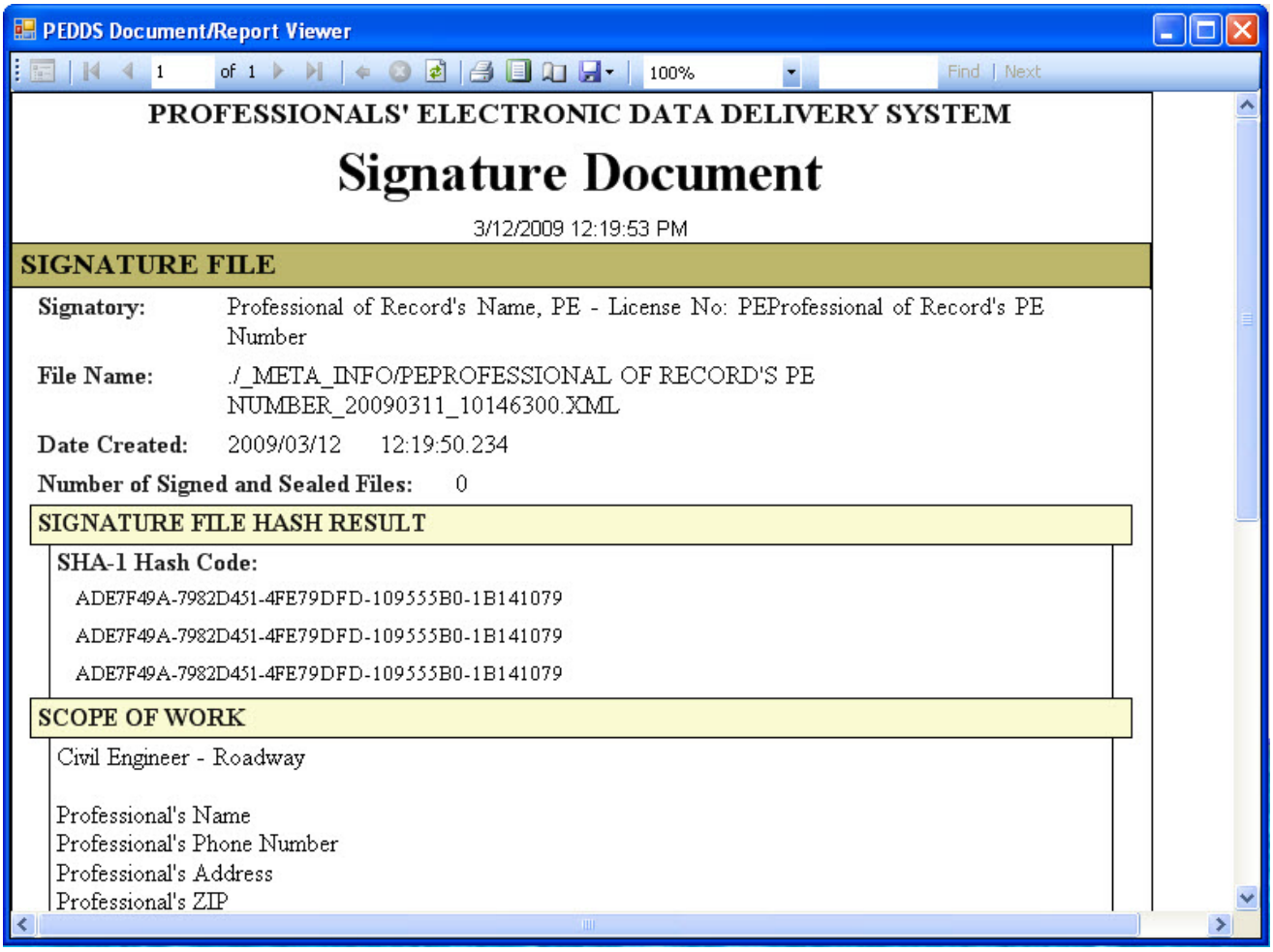
3. In Report Viewer, click the **Print** button to send the report to a print device.



PEDDS - Signature Document

Important *The **Signature Document** report must be signed, dated and manually sealed by the Professional of Record as it is a required deliverable item as per Item 14 of the Compliance Certificate Checklist Report.*

Note The **Signatory Document** is 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.

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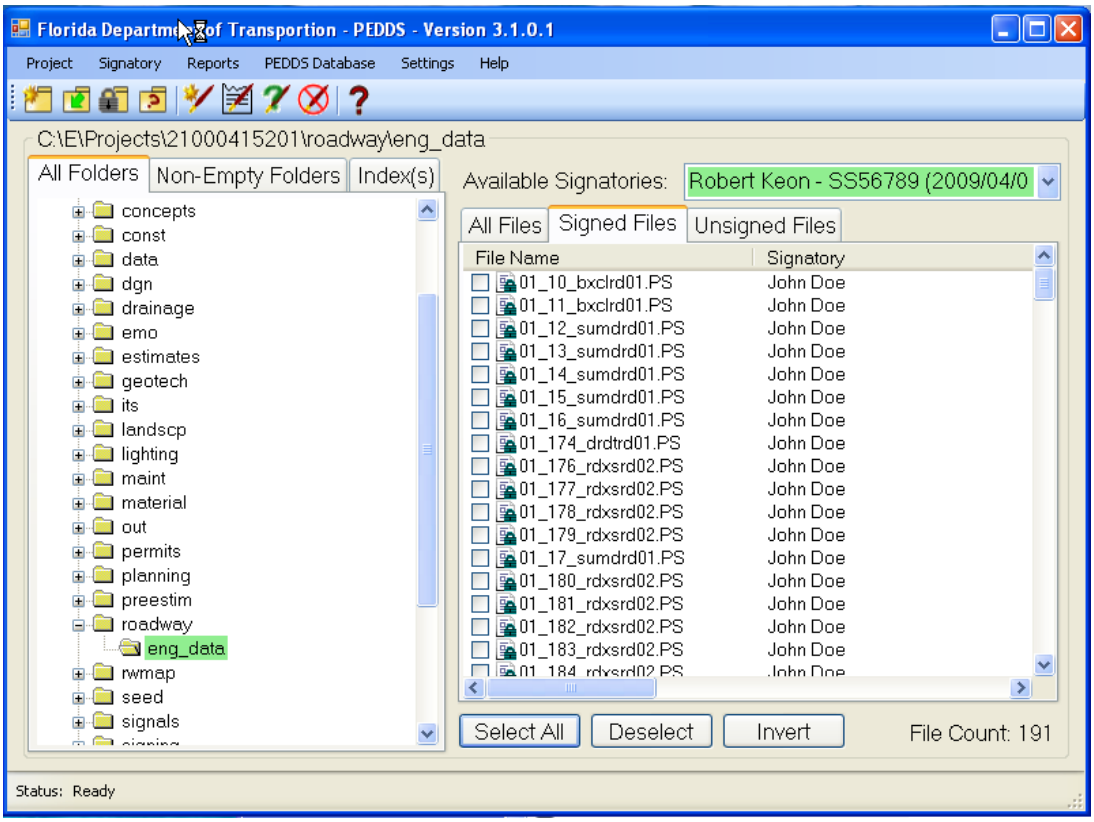
4. Florida Department of Transportation - PEDDS re-opens displaying the signed and sealed files.



PEDDS - Signed and Sealed files

Note The Florida Board of Professional Engineers has approved this process and the signing/sealing procedure.

Section 3.15.2 Authenticating Signing and Sealing

Signing and Sealing is 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:

- signature files 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 by a registered professional. Signing and Sealing a file adds file information to the signatory's signatory file, while the act of Signing is 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 registered professional. Signing a file adds file information to the signatory's signature file.

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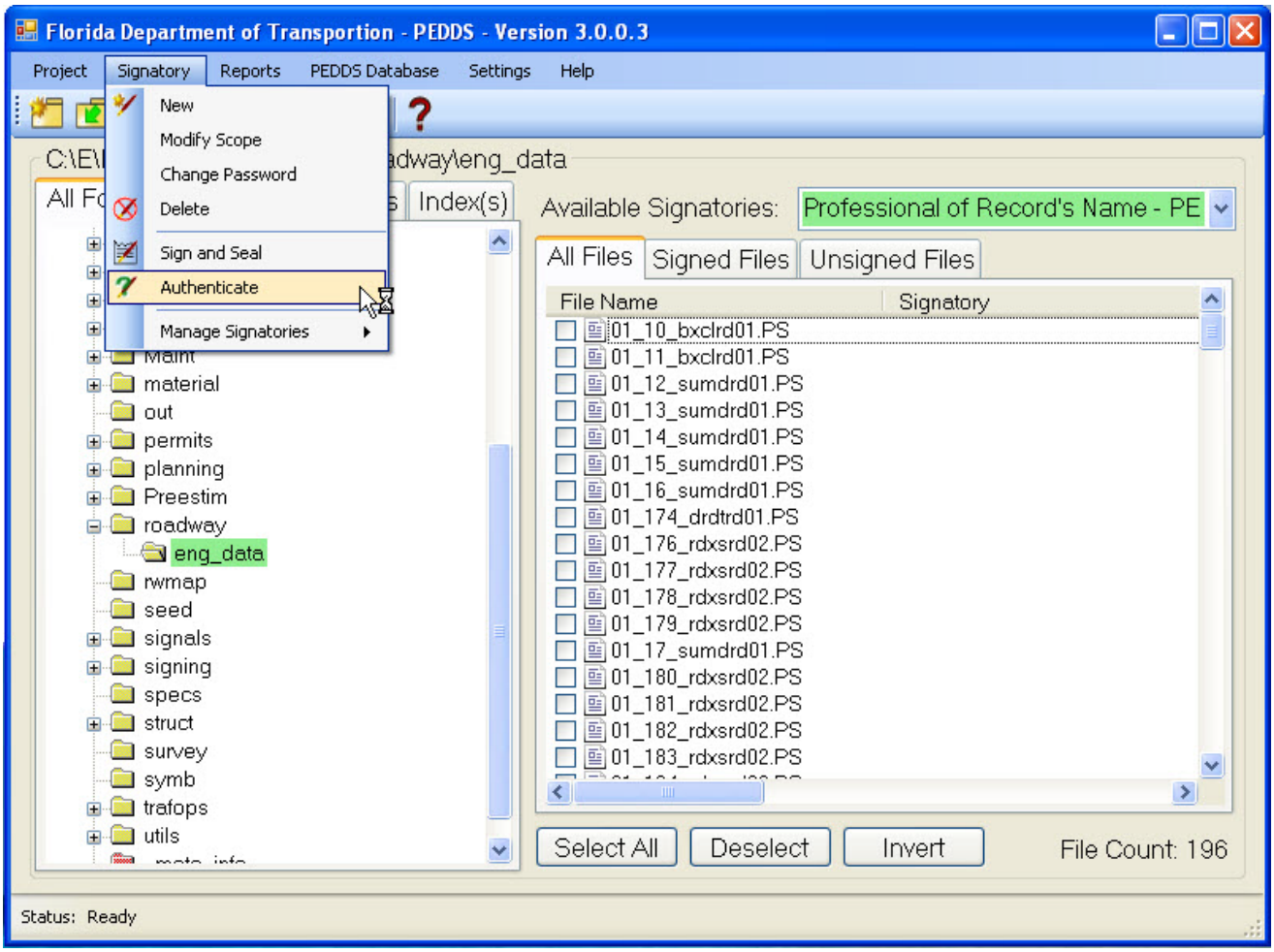
PEDDS Signing and Sealing of files also allows the following:

- A single file can be Signed and Sealed by more than one Signatory.
- A Qualifier must be included if file is signed by more than one Signatory.
- Files can be unsigned (the Signatory is removed).
- In case of revisions, files can be re-signed.
- Signatories can be deleted.

A file signed by the same Name and PE number is acceptable.

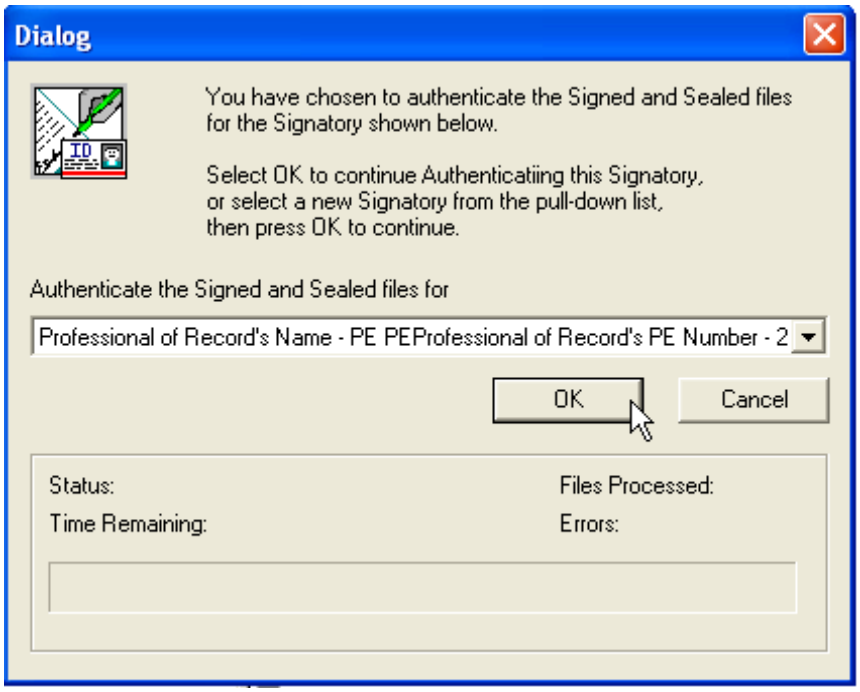
AUTHENTICATING SIGNED AND SEALED FILES

1. Open the project in Florida Department of Transportation - PEDDS if necessary.
2. From **Authenticate** menu, select **Signed and Sealed**.



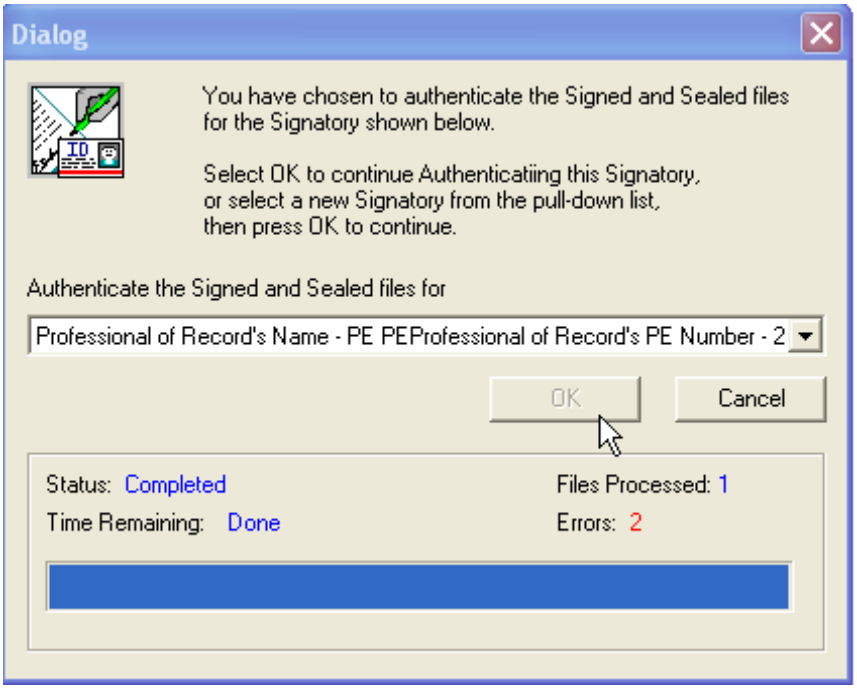
PEDDS - Authenticate Signed and Sealed

3. Dialog displays. In Authenticate the Signed and Sealed files for drop-down list, select the signatory name.



PEDDS - Dialog

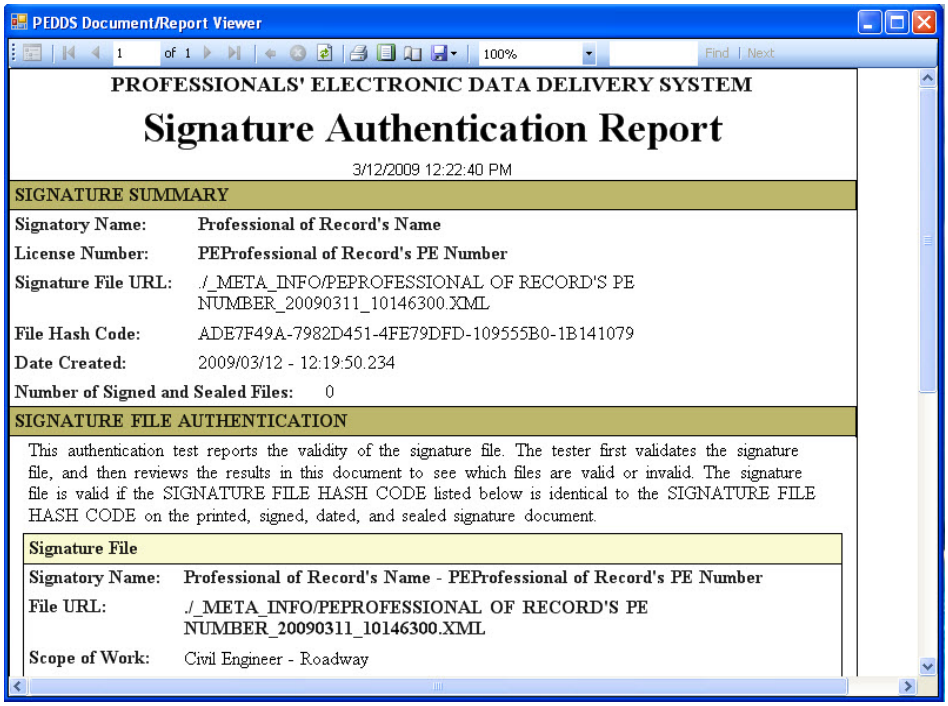
4. Click the **OK** button. Dialog processes the authentication for the selected signatory and then Report Viewer opens.



PEDDS Dialog

© 2009 FDOT

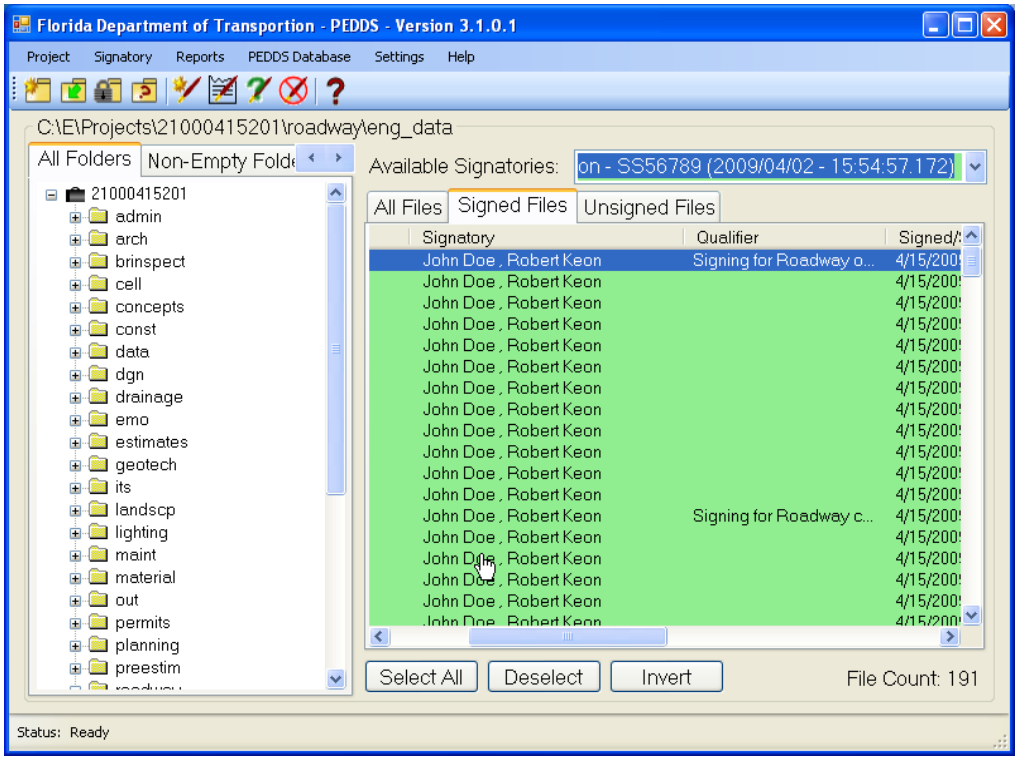
5. In Report Viewer, click the **Print** button to send the report to a print device.



PEDDS - Report Viewer

Note Optionally, the **Signature Authentication Test** report can be signed and manually sealed by the Professional of Record.

6. Click the **EXIT** button. Report Viewer closes and Florida Department of Transportation - PEDDS re-opens.

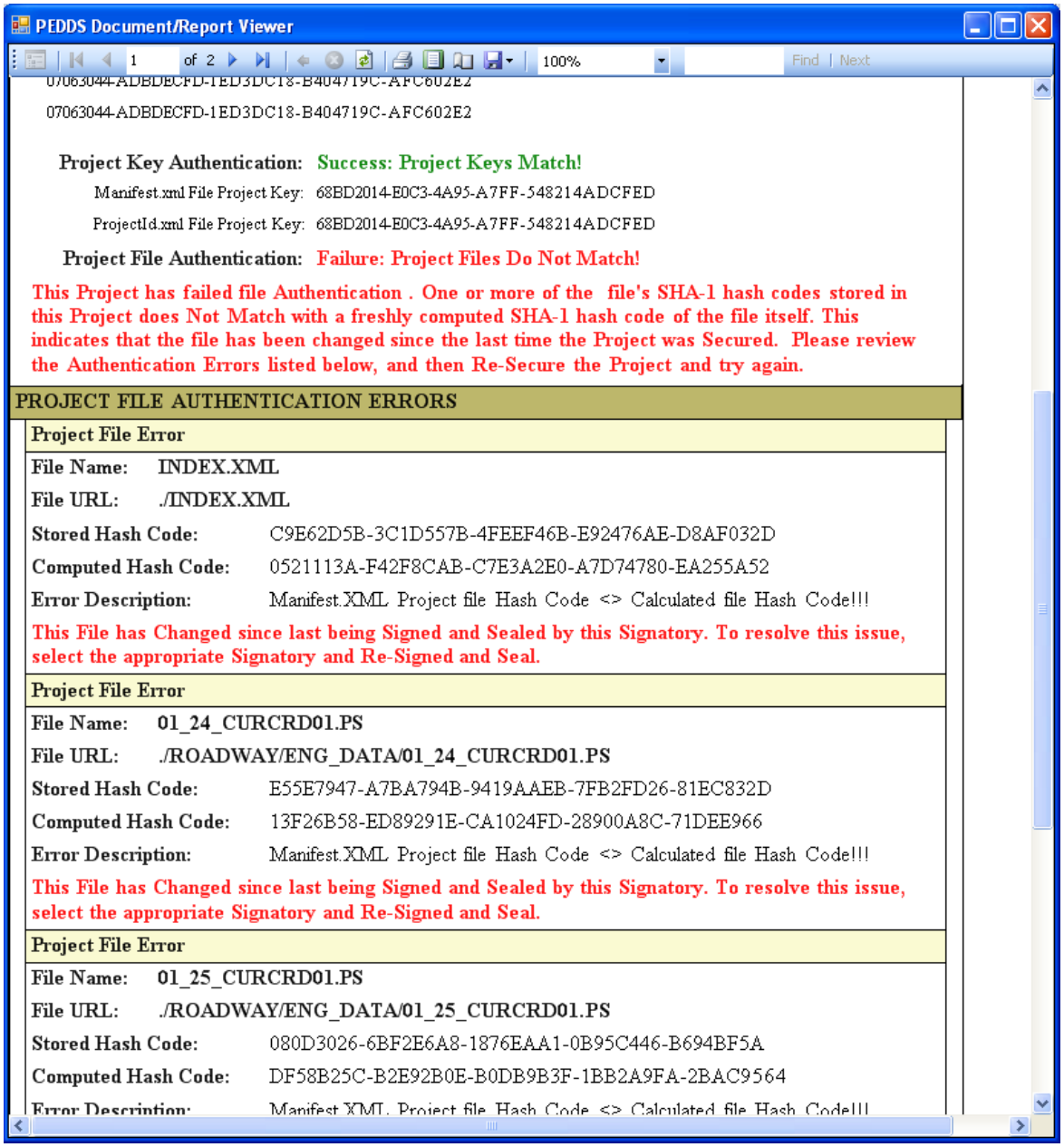


PEDDS

Section 3.15.3 Authenticating Signed and Sealed Files: Possible Error Messages

After running the Authentication process on Signed and Sealed Files, the following error message could display:

The following figure displays an example of a Signature Authentication Test Report identifying files that have been modified and do not pass authentication. The authentication process identifies files that have been modified, as well as files that have been added or deleted from a project.



Report Viewer - Invalid Signed and Sealed Files

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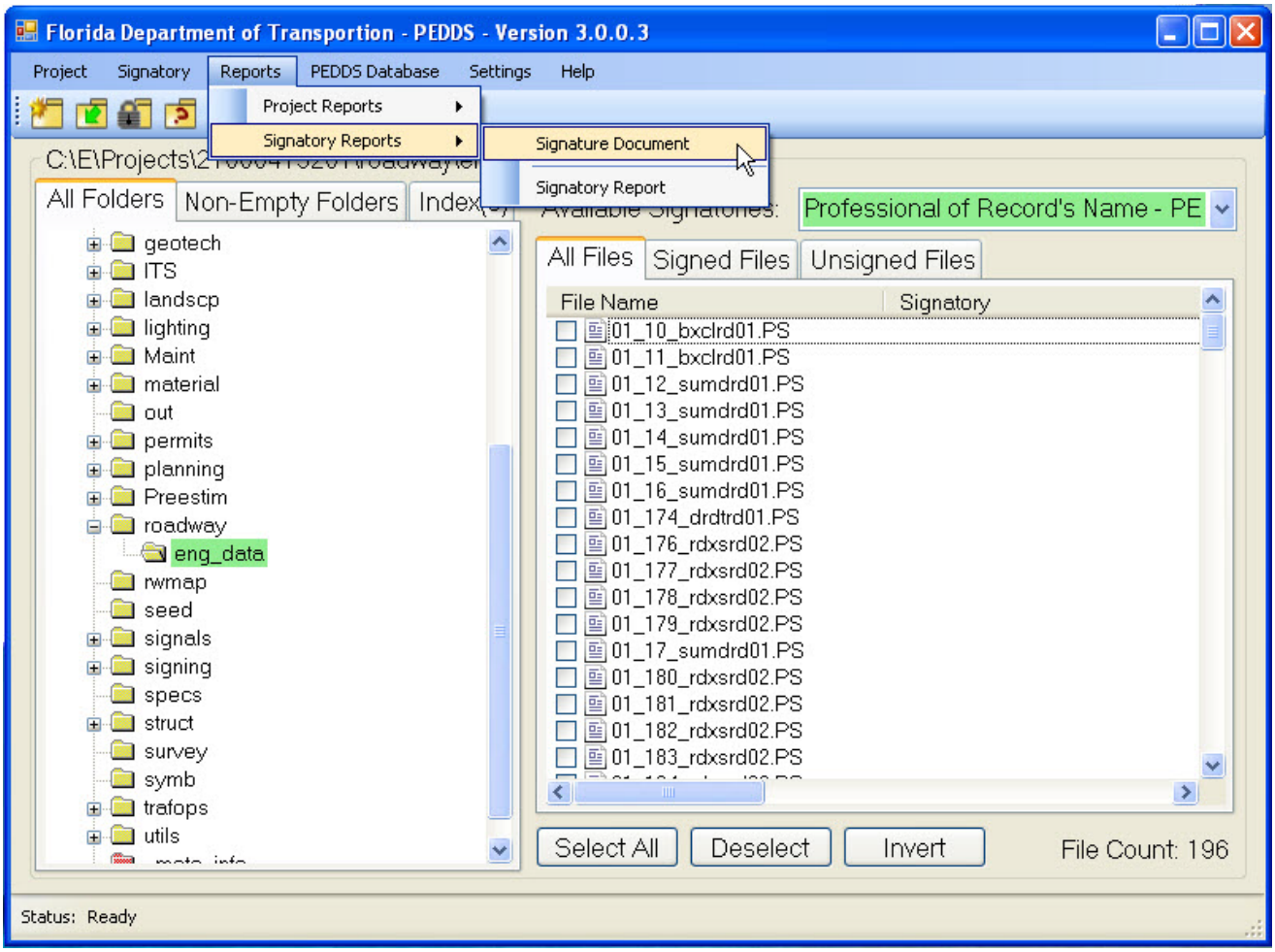
Section 3.15.4 PEDDS Report Documents

TO VIEW AND PRINT REPORTS

- From Florida Department of Transportation - PEDDS, select **Signatory** > **View/Print** > **Signatory Document** (or **Signatory Report)**.

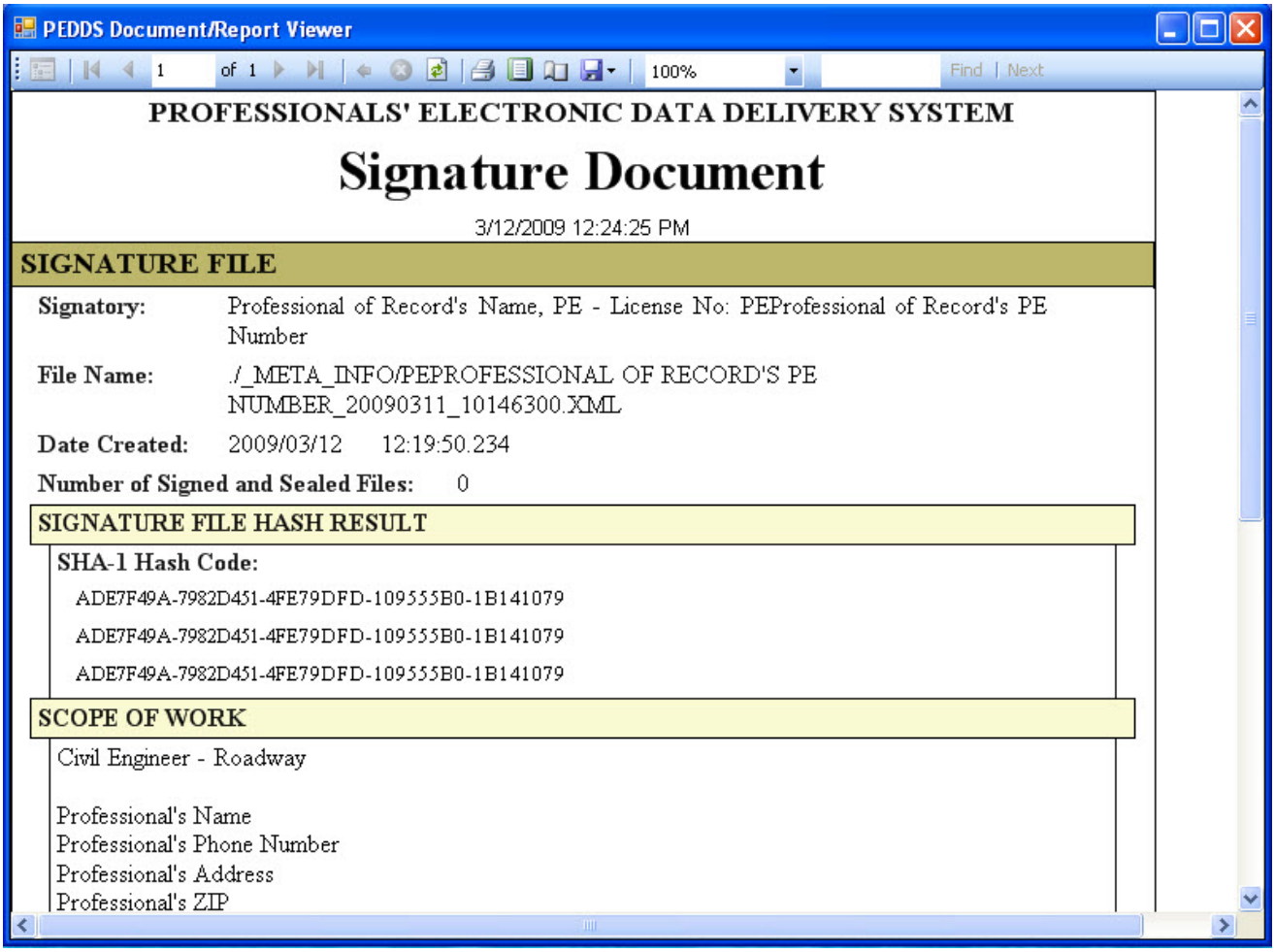


PEDDS displaying available reports

Section 3.15.4.1 Signature Document

Like the Manifest Document, the Signature Document is integral to the security process implemented by PEDDS. This document contains the SHA-1 message digest of a signature file, which in turn contains the SHA-1 message digests of each file signed and sealed in the signature. The Signature Document must be signed *and sealed* by a licensed or registered professional (the professional responsible for the work) and included as a part of the project ED contents. This process is necessary to fulfill the legal requirements for signing and sealing.

Validation and authentication of signed and sealed files is simple. Equivalence of the generated Signature SHA (on an authentication checklist or Manifest Document) to the Signature SHA on every signed and sealed Signature Document enclosed in a project ED assures that the contents of the files secured by the Signature are the files actually signed and sealed. In fact, this process is the only way to assign legal responsibility to the signatory through PEDDS.



PEDDS - Signature Document

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Section 3.15.4.2 Signatory Report

The contents of a selected Signature are outlined within the Signatory Report. This report lists the URL, SHA, and qualifier for every file signed and sealed by the specified Signatory. These reports can serve as a useful record of the signed and sealed files, although they are not a part of the required project ED contents.

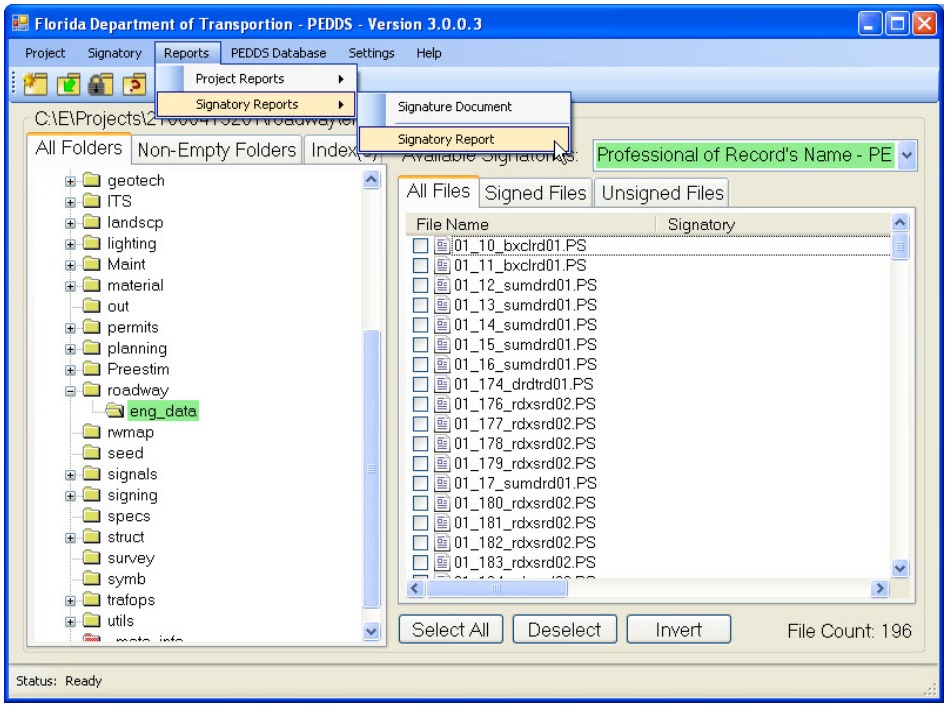
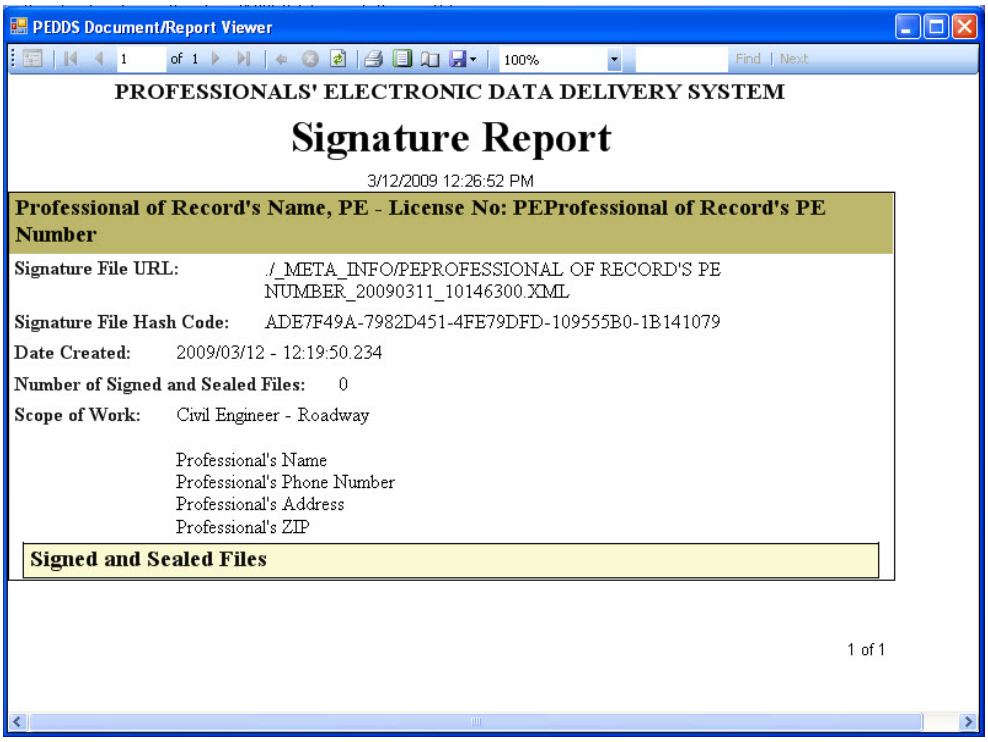


Figure 3-161a: PEDDS – Signatory Report

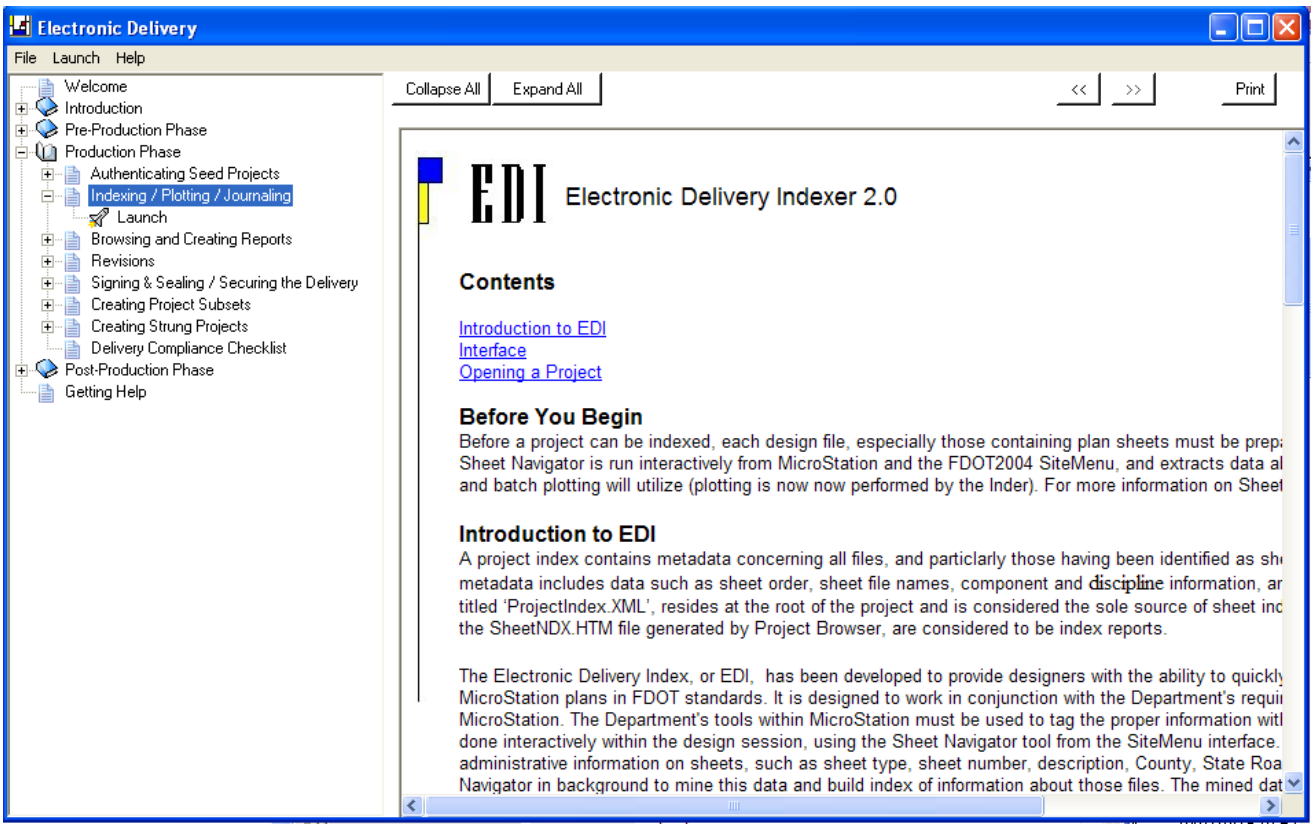


PEDDS - Signatory Report

Section 3.16 Indexing/Plotting/Journaling – Updating the Index

Sometimes, while using **PEDDS** to Sign and Seal files, new project files are created. These newly created files must have their attributes mined and be included in the project's Index. **EDI2** is used to create required reports, like the Summary PDF file, **Project.pdf** and the HTML report of the project, **Sheetndx.htm**.

While Signing and Sealing, **PEDDS** created signatory file and delivery manifest files in the _meta_info folder of the project. When all files are created and mined, the final summary index **ProjectFiles.htm** is created. At this point PEDDS is used to secure all project files one last time.



Indexing/Printing/Journaling

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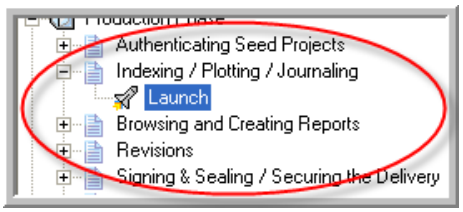
Exercise 3.15 Updating the Index

EDI2 uses color coding to provide visual feedback to the user. Upon opening EDI2, the **Project Files** view displays files in green and/or red. Green indicates that file attribute data is present and appears up to date, while the red indicates that file attribute data is missing and the index needs to be updated.

To update the Index

The user can visually see files that need to be updated.

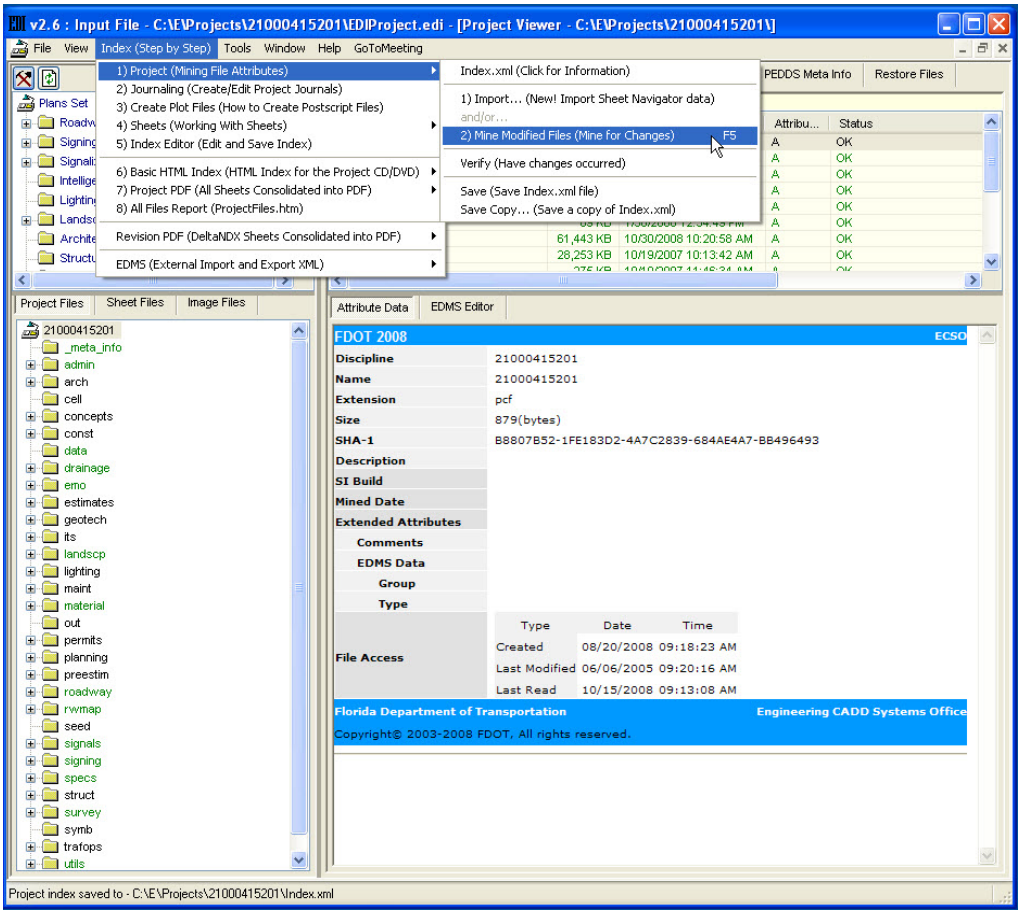
1. In the Index/Printing/Journaling folder, click **Launch**. EDI2 opens.



Launching EDI2

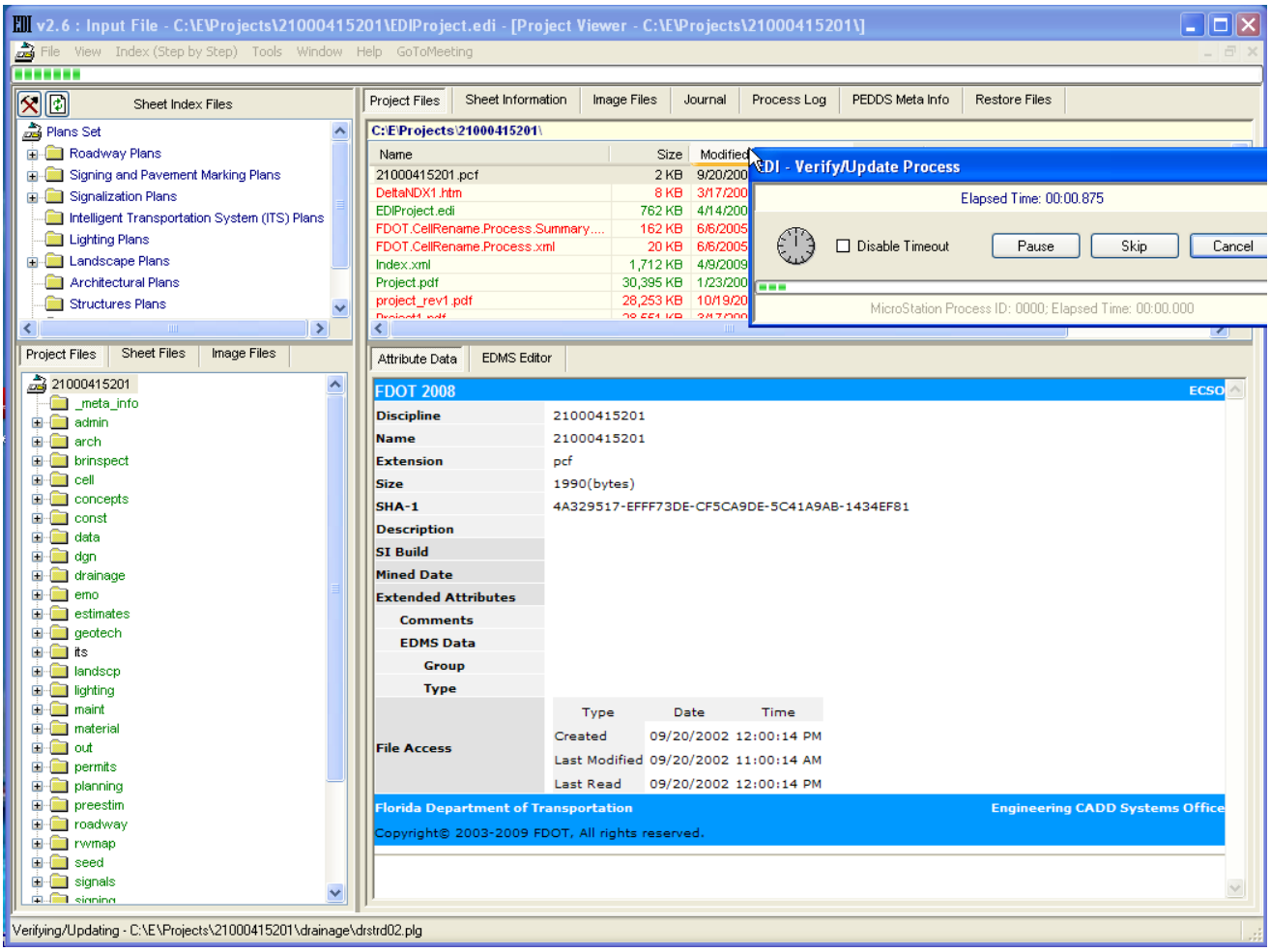
Note EDI2 by default opens the previously opened project, therefore Project **21000415201** is the default project opened.

2. On the **Index (Step by Step)** menu, click 1) **Project (Mining File Attributes)** and then click **2) Mine Modified Files (Mine for Changes)**.



EDI2 - Updating Index

3. EDI - Mining opens. Upon completion of the updating (or mining) process, files in the **Project Files** view are now green and attribute data is up to date.



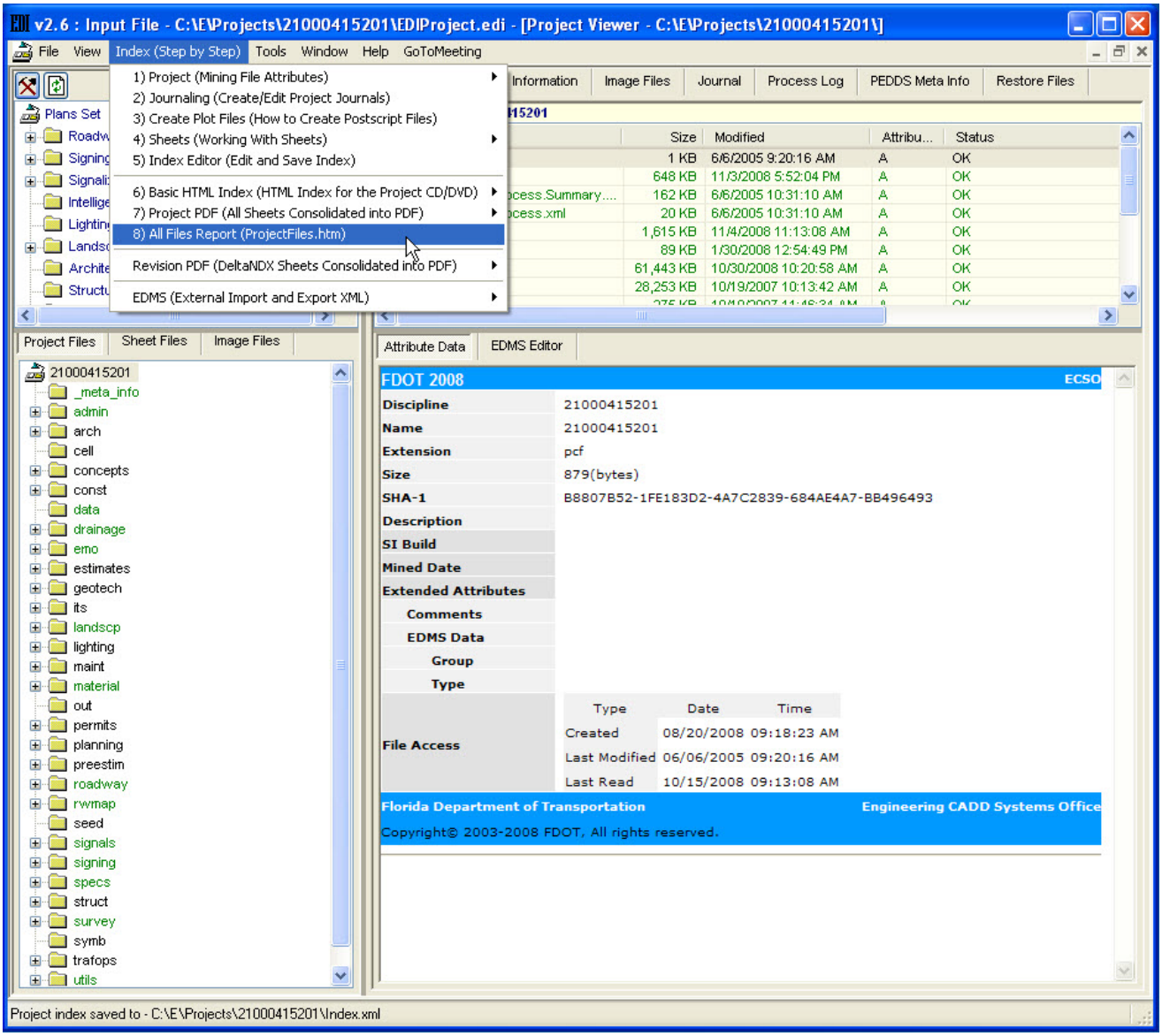
EDI2 - Verify/Update Process

Exercise 3.16 Creating the Index of Project Files

To create the Index of Project Files - ProjectFiles.htm

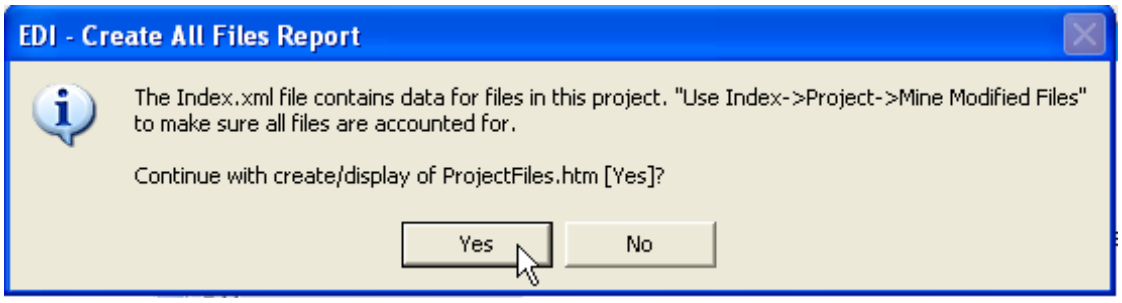
ProjectFiles.htm is an HTML report containing a simple file index. This index is generated to display all project files in a user-friendly form.

1. From EDI2, select **Index** (Step by Step) > 8) **All Files Report**.



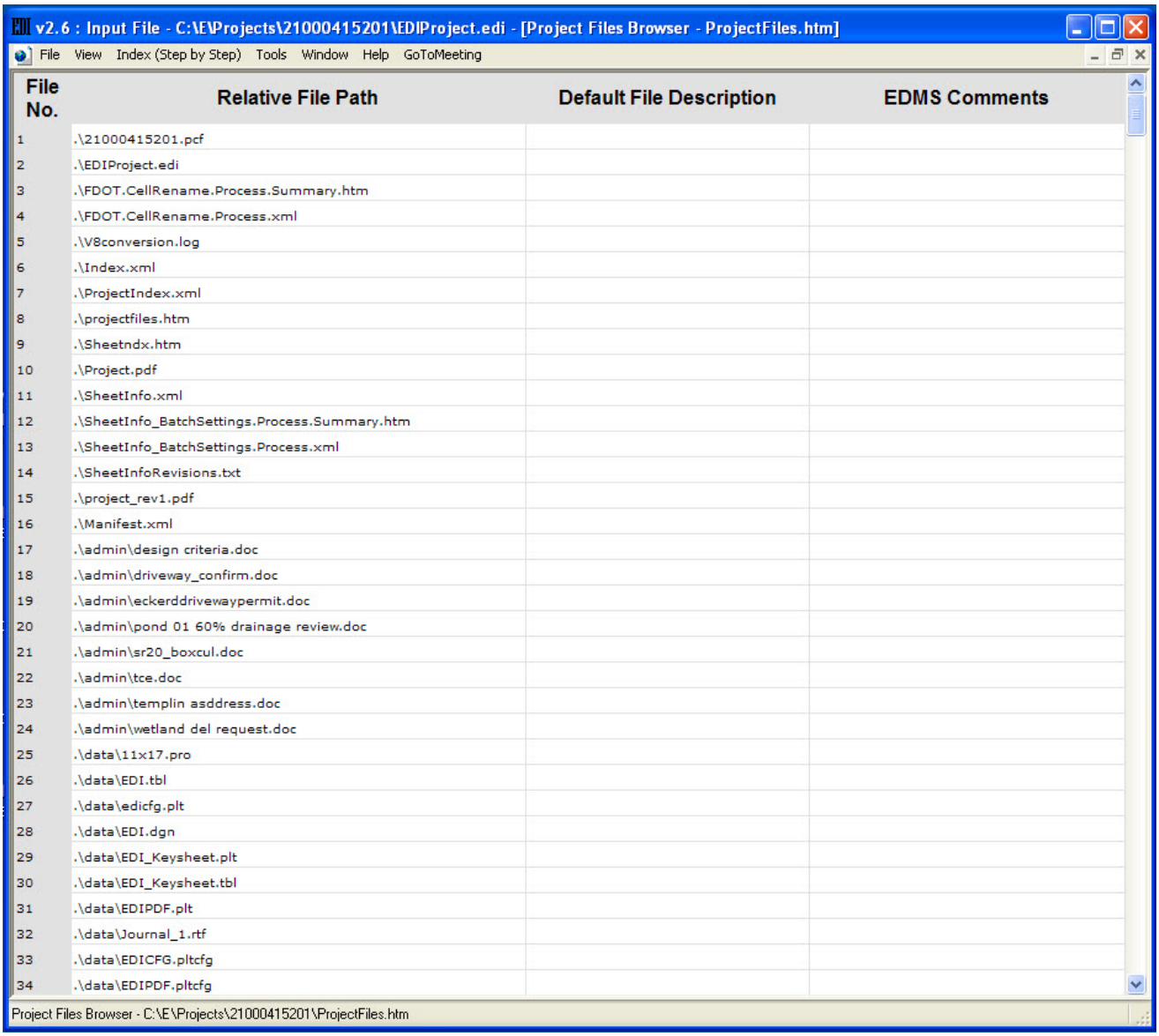
EDI2 - All Files Report

2. When EDI - Create All Files Report opens, click the **Yes** button. The file creation process starts and the newly created file, **ProjectFiles.htm** is displayed.



Create All Files Report

Note The **No** button is selected when the index attributes were previously mined and all attributes are up to date.

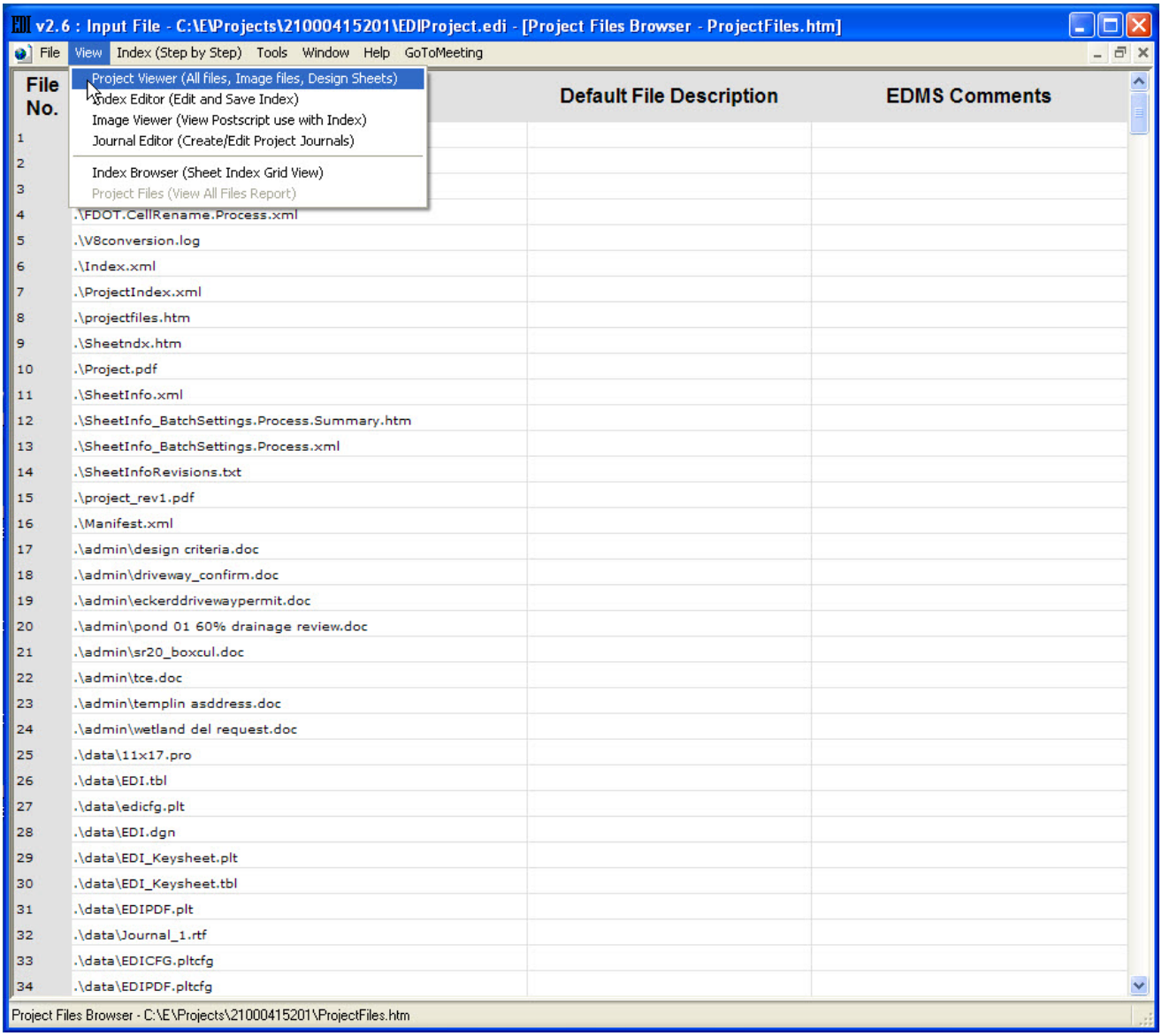


File No.	Relative File Path	Default File Description	EDMS Comments
1	.\21000415201.pcf		
2	.\EDIProject.edi		
3	.\FDOT.CellRename.Process.Summary.htm		
4	.\FDOT.CellRename.Process.xml		
5	.\V8conversion.log		
6	.\Index.xml		
7	.\ProjectIndex.xml		
8	.\projectfiles.htm		
9	.\Sheetndx.htm		
10	.\Project.pdf		
11	.\SheetInfo.xml		
12	.\SheetInfo_BatchSettings.Process.Summary.htm		
13	.\SheetInfo_BatchSettings.Process.xml		
14	.\SheetInfoRevisions.txt		
15	.\project_rev1.pdf		
16	.\Manifest.xml		
17	.\admin\design criteria.doc		
18	.\admin\driveway_confirm.doc		
19	.\admin\eckerddrivewaypermit.doc		
20	.\admin\pond 01 60% drainage review.doc		
21	.\admin\sr20_boxcul.doc		
22	.\admin\tce.doc		
23	.\admin\templin asddress.doc		
24	.\admin\wetland del request.doc		
25	.\data\11x17.pro		
26	.\data\EDI.tbl		
27	.\data\edicfg.plt		
28	.\data\EDI.dgn		
29	.\data\EDI_Keysheet.plt		
30	.\data\EDI_Keysheet.tbl		
31	.\data\EDIPDF.plt		
32	.\data\Journal_1.rtf		
33	.\data\EDICFG.pltcfg		
34	.\data\EDIPDF.pltcfg		

EDI2 - ProjectFiles.htm

 © 2009 FDOT

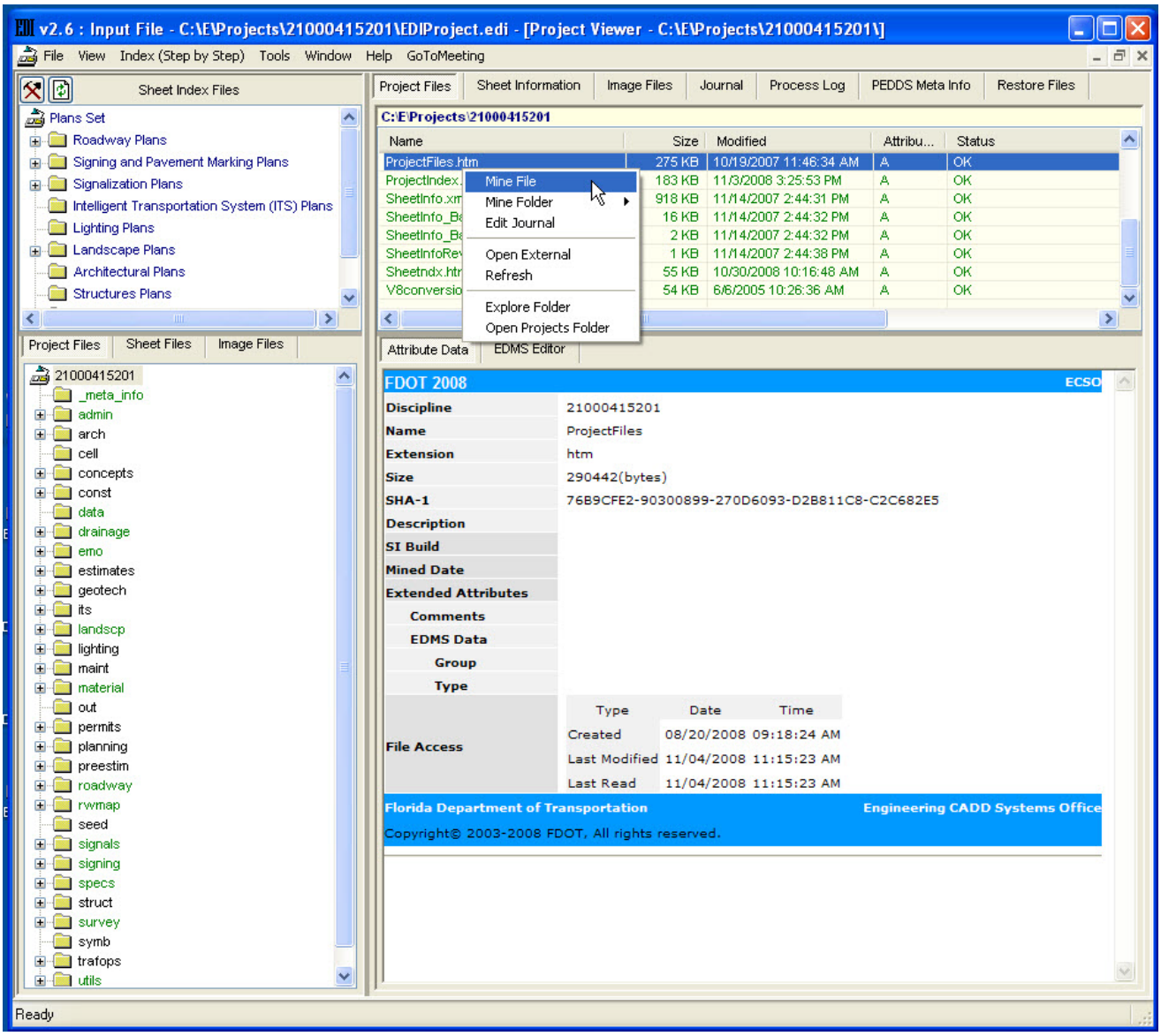
3. From EDI2, select **File > Save (EDI Plan Set Data – EDIProject.edi)**.



EDI2 - ProjectFiles.htm

4. From the **View** menu, select **Project Viewer (All files, Image files, Design Sheets)**. EDI2 changes to the Project Viewer view.

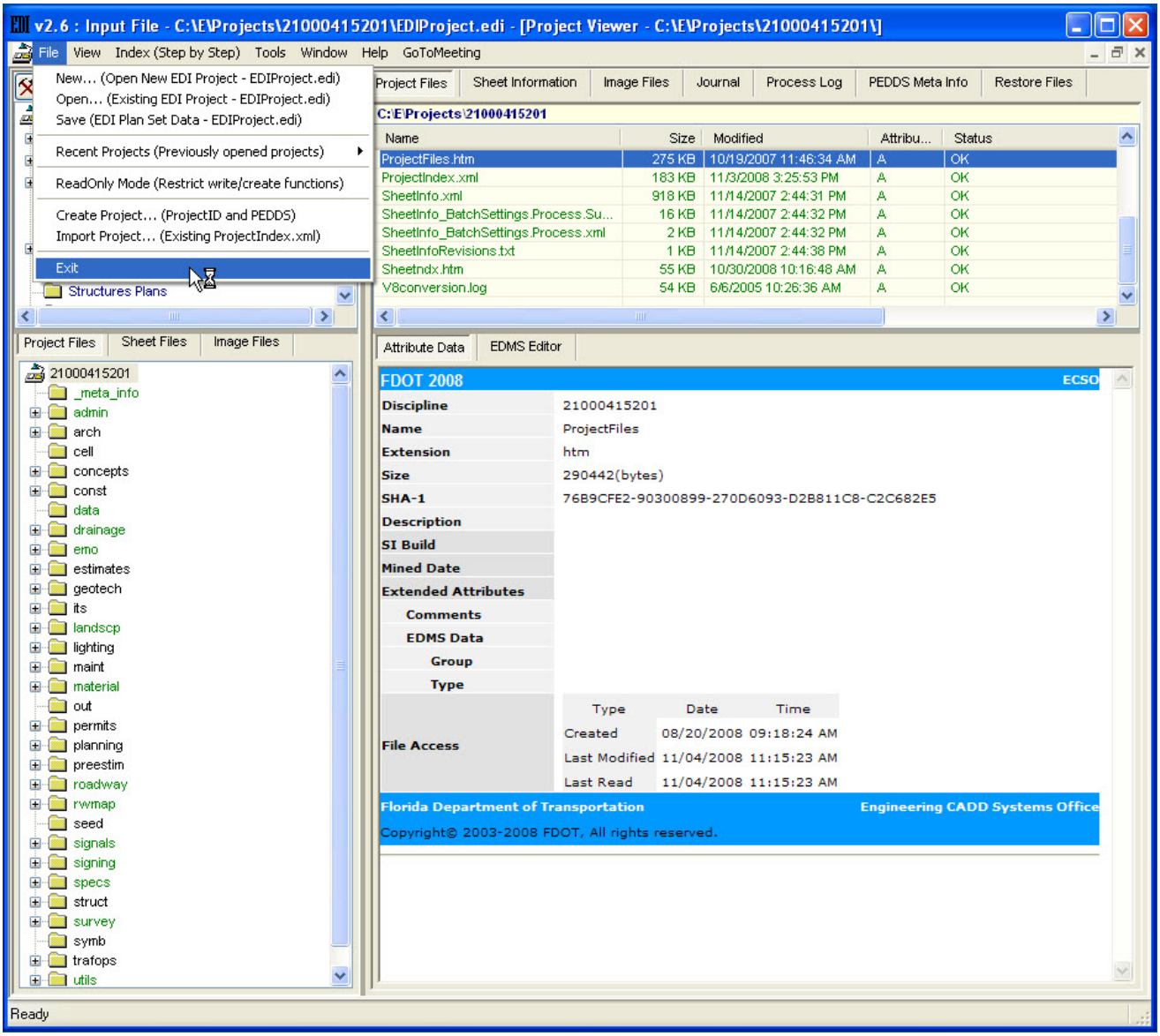
5. Select the newly created **ProjectFiles.htm**, right click and select **Mine File**. EDI2 mines the attributes for this newly created file.



EDI2 - Mine File

Important *EDI2 does not automatically display all newly created files. It may be necessary to select a discipline folder and then re-select the root level of the project. EDI2 then re-scans the directory and lists newly created files.*

6. Select **File** > **Exit to close** EDI2.



EDI2 - Exit

Note The index is now up to date and all required project files that EDI2 can create have been created. The project can now be secured for delivery.

Section 3.17 Signing & Sealing/Securing the Delivery

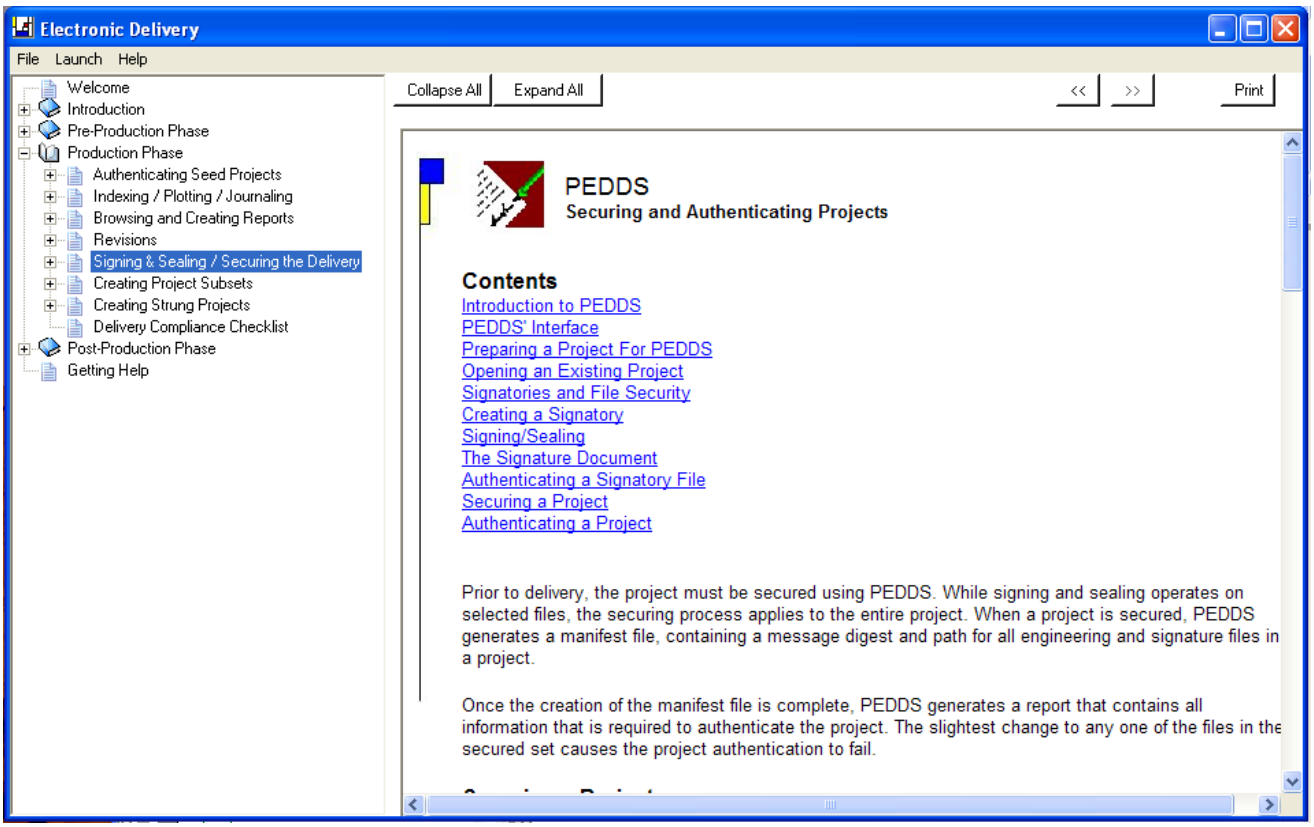
Prior to delivery, the project must be secured using PEDDS. Securing is the act of creating and storing SHA-1 message digests for a specific file or file set. Message digests and relative file paths are kept in the project's **Manifest.xml** file, which in turn allows PEDDS to validate secured files.

The Manifest.xml file is created and maintained by PEDDS to define and secure the entire contents of a project delivery. This manifest file always resides in the project's **_meta_info** sub-directory.

The US Secure Hash Algorithm 1 (SHA-1) 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.

When a project is secured, PEDDS generates a hash code (or fingerprint) for each and every file in the total project directory structure and then processes the set of hash codes to generate a master hash code for the project. PEDDS then generates a manifest file, containing a message digest and path for all engineering and signature files in a project.

Once the creation of the manifest file is complete, PEDDS generates a report, the Manifest Document, which contains all information required to authenticate the project. The slightest change to one of the files in the secured set causes project authentication to fail.



Signing & Sealing / Securing for Delivery

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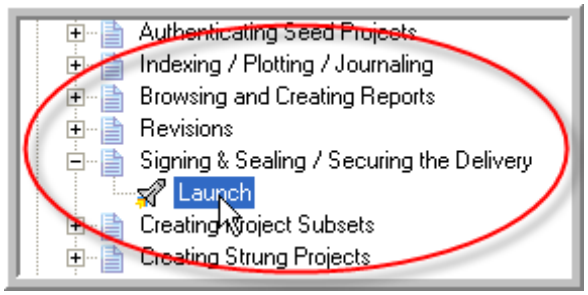
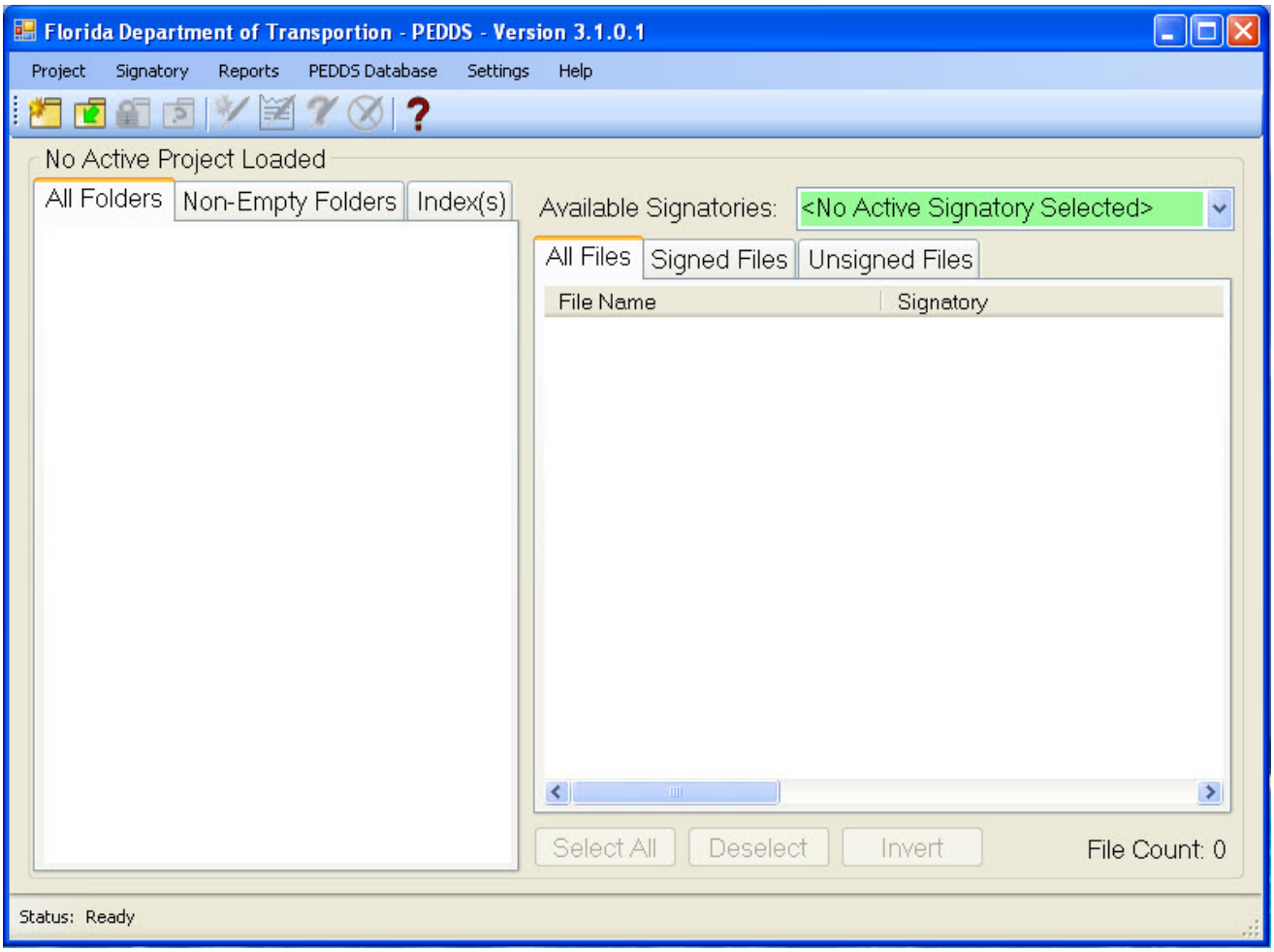
Exercise 3.17 Securing the Project for Delivery

To secure the project

1. If **PEDDS** is not already open, click **Launch from Securing the Delivery**. Florida Department of Transportation - PEDDS opens.

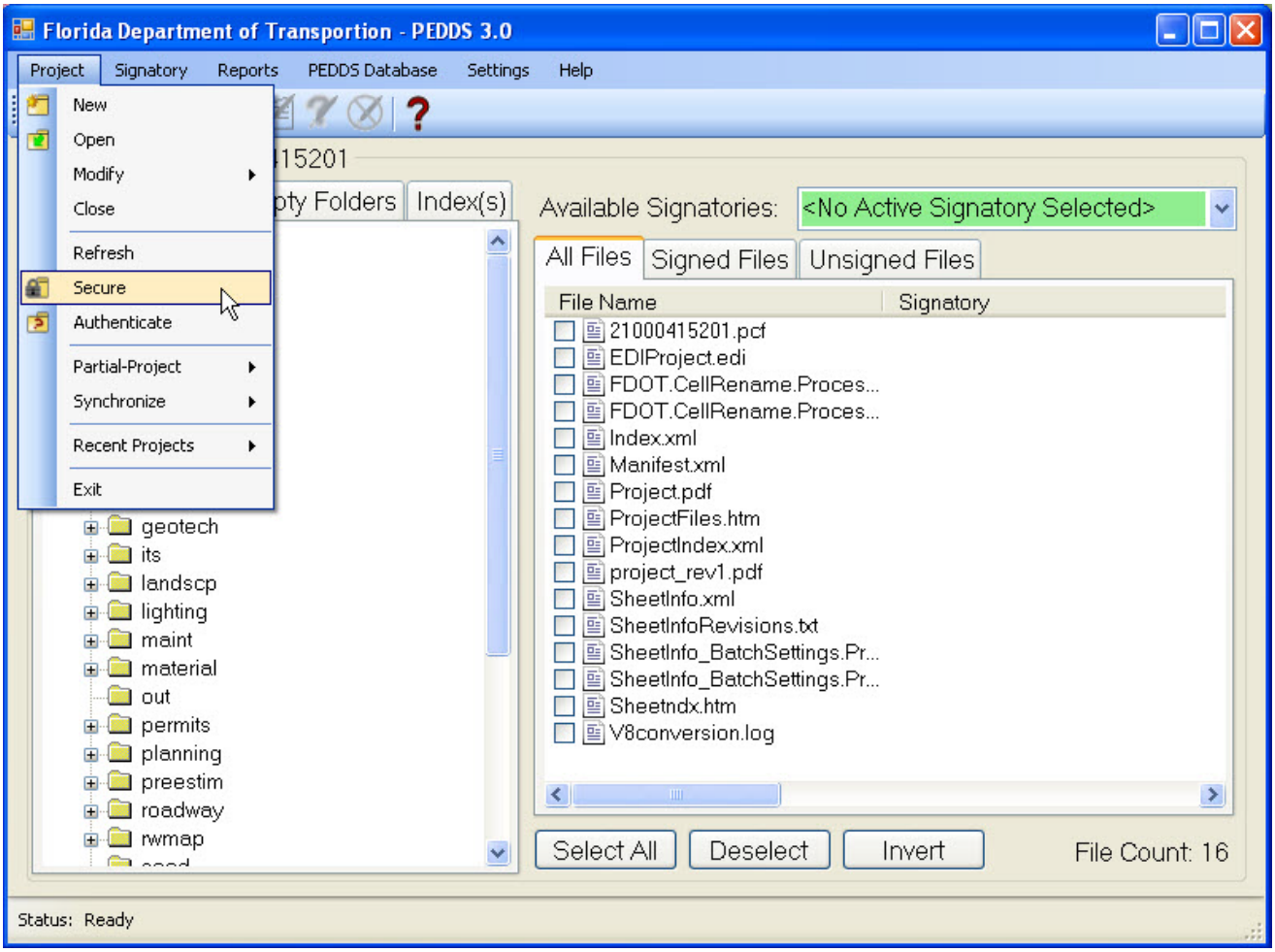


Launching PEDDS

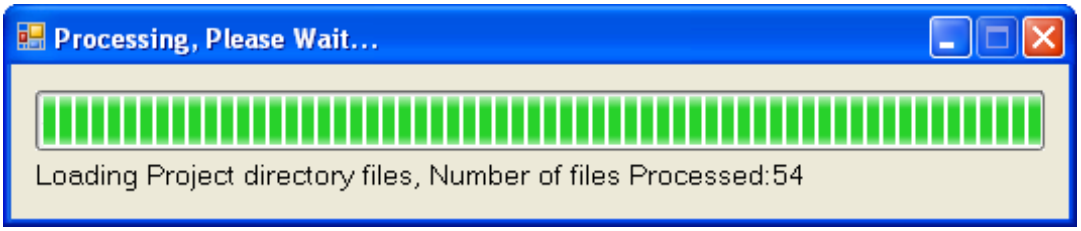


Florida Department of Transportation - PEDDS

2. Open Project **21000415201**.
3. From the **Project** menu, click **Secure --or—**click the **Secure the Current Project** icon ( ) on the toolbar.
4. Securing Project opens briefly then closes.



PEDDS Securing the Project



PEDDS Securing the Project processing dialog box

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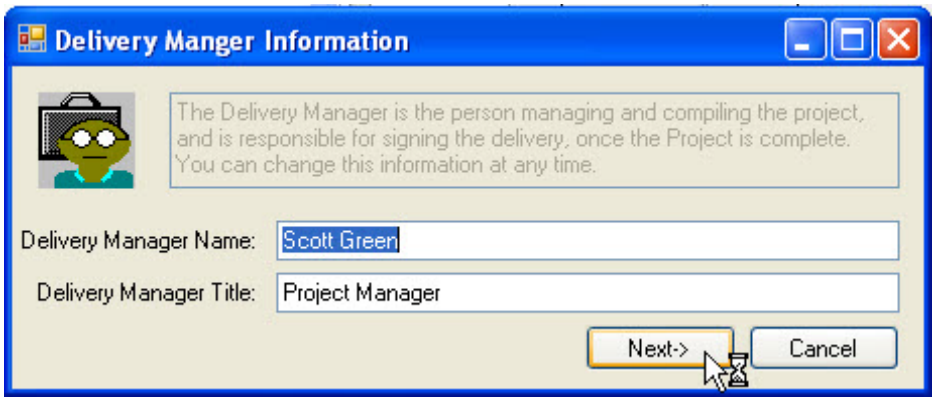
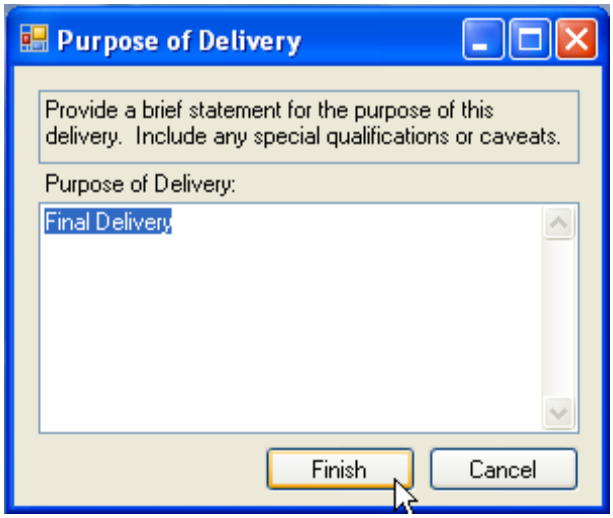
5. Delivery Manager Information opens. Enter the **Delivery Manager Name and Delivery Manager Title**.



Project Manager Information

6. Click the **Next** button to continue.
7. Description of Delivery opens. Enter the purpose for the delivery and click the **Finish** button.



Project Description

Note **Project Manager** information verified and/or modified above is the PEDDS project's **Project Header**. This can also be changed by modifying the PEDDS Project Header.

8. Report Viewer then opens to present the Delivery Manifest Document.

Note PEDDS passes all files through the Federal Government SHA-1 secure Hash algorithm to create a manifest listing of Hash Codes for each file. That manifest is contained in a file called the manifest file.

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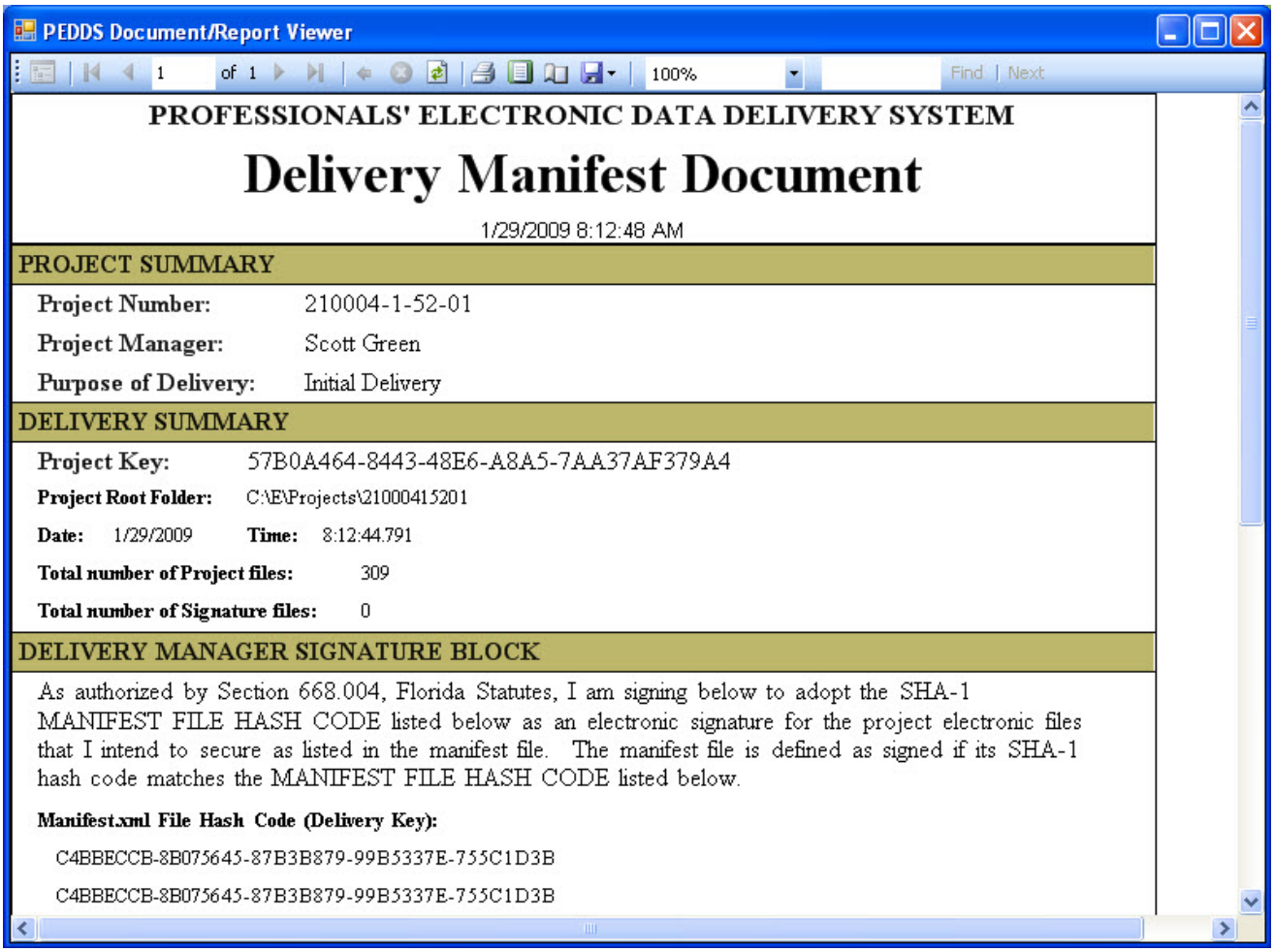
9. In Report Viewer, click the **Print** button. The Delivery Manifest Document is sent to a print device.



PEDDS Document/Report Viewer

1 of 1 100% Find | Next

PROFESSIONALS' ELECTRONIC DATA DELIVERY SYSTEM

Delivery Manifest Document

1/29/2009 8:12:48 AM

PROJECT SUMMARY

Project Number: 210004-1-52-01

Project Manager: Scott Green

Purpose of Delivery: Initial Delivery

DELIVERY SUMMARY

Project Key: 57B0A464-8443-48E6-A8A5-7AA37AF379A4

Project Root Folder: C:\E\Projects\21000415201

Date: 1/29/2009 Time: 8:12:44.791

Total number of Project files: 309

Total number of Signature files: 0

DELIVERY MANAGER SIGNATURE BLOCK

As authorized by Section 668.004, Florida Statutes, I am signing below to adopt the SHA-1 MANIFEST FILE HASH CODE listed below as an electronic signature for the project electronic files that I intend to secure as listed in the manifest file. The manifest file is defined as signed if its SHA-1 hash code matches the MANIFEST FILE HASH CODE listed below.

Manifest.xml File Hash Code (Delivery Key):

C4BBECCB-8B075645-87B3B879-99B5337E-755C1D3B

C4BBECCB-8B075645-87B3B879-99B5337E-755C1D3B

PEDDS - Manifest Document

Important *The* ***Delivery Manifest Document****, called manifest.txt, and its related manifest.xml are saved in the* ***_meta_info*** *folder of the project directory. The Delivery Manifest Document must be printed, reviewed, signed, dated, and manually sealed by the Professional of Record as it is a required deliverable item per Item 13 of the Compliance Certificate Checklist Report.*

Note The **Delivery Manifest Document** is a signed paper document used to secure a manifest file and 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.

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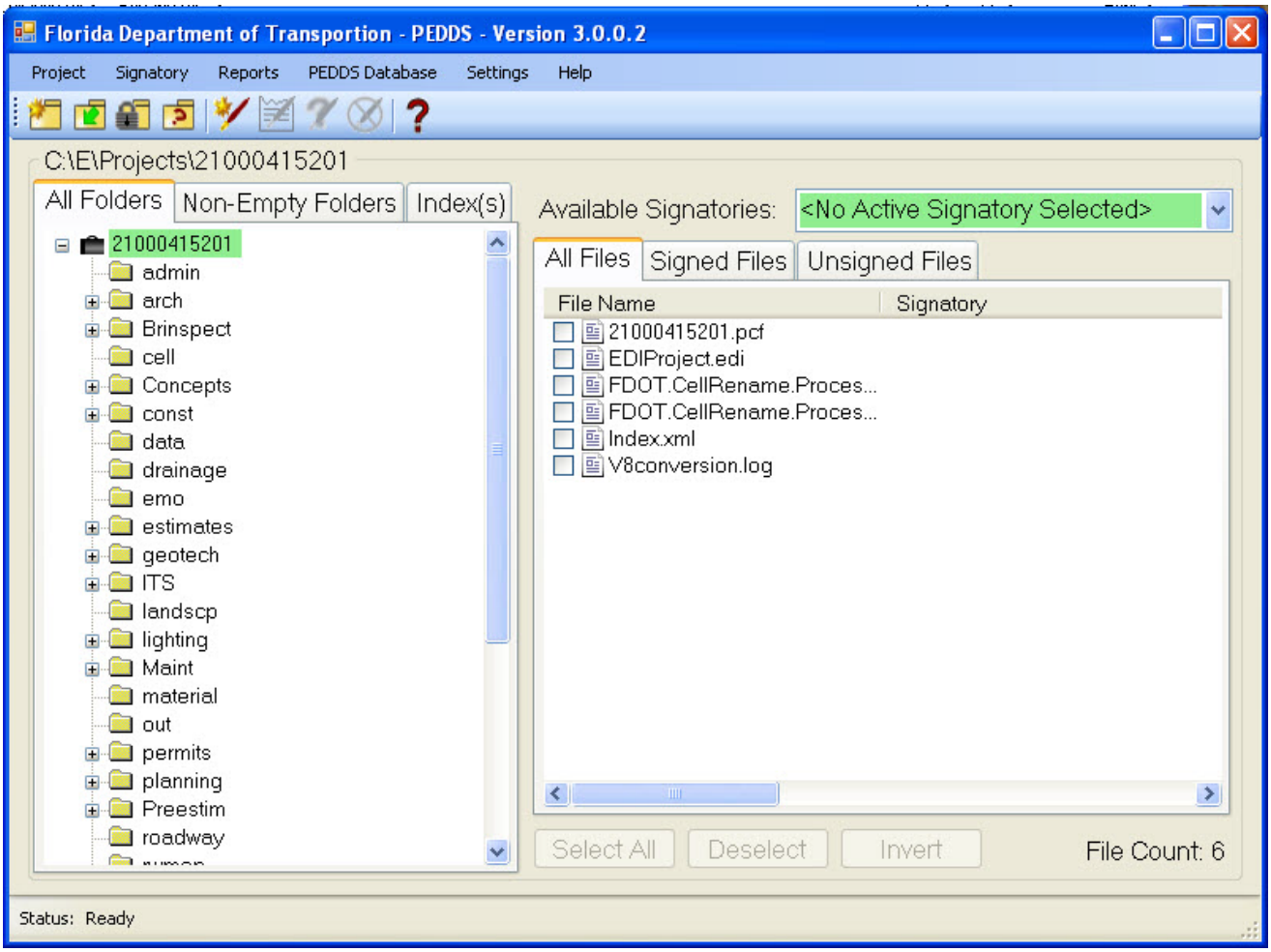
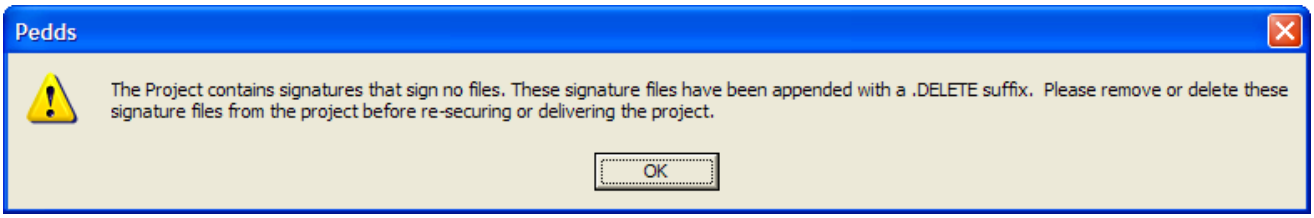
10. Click the **EXIT** button in Report Viewer to re-open Florida Department of Transportation - PEDDS.



PEDDS

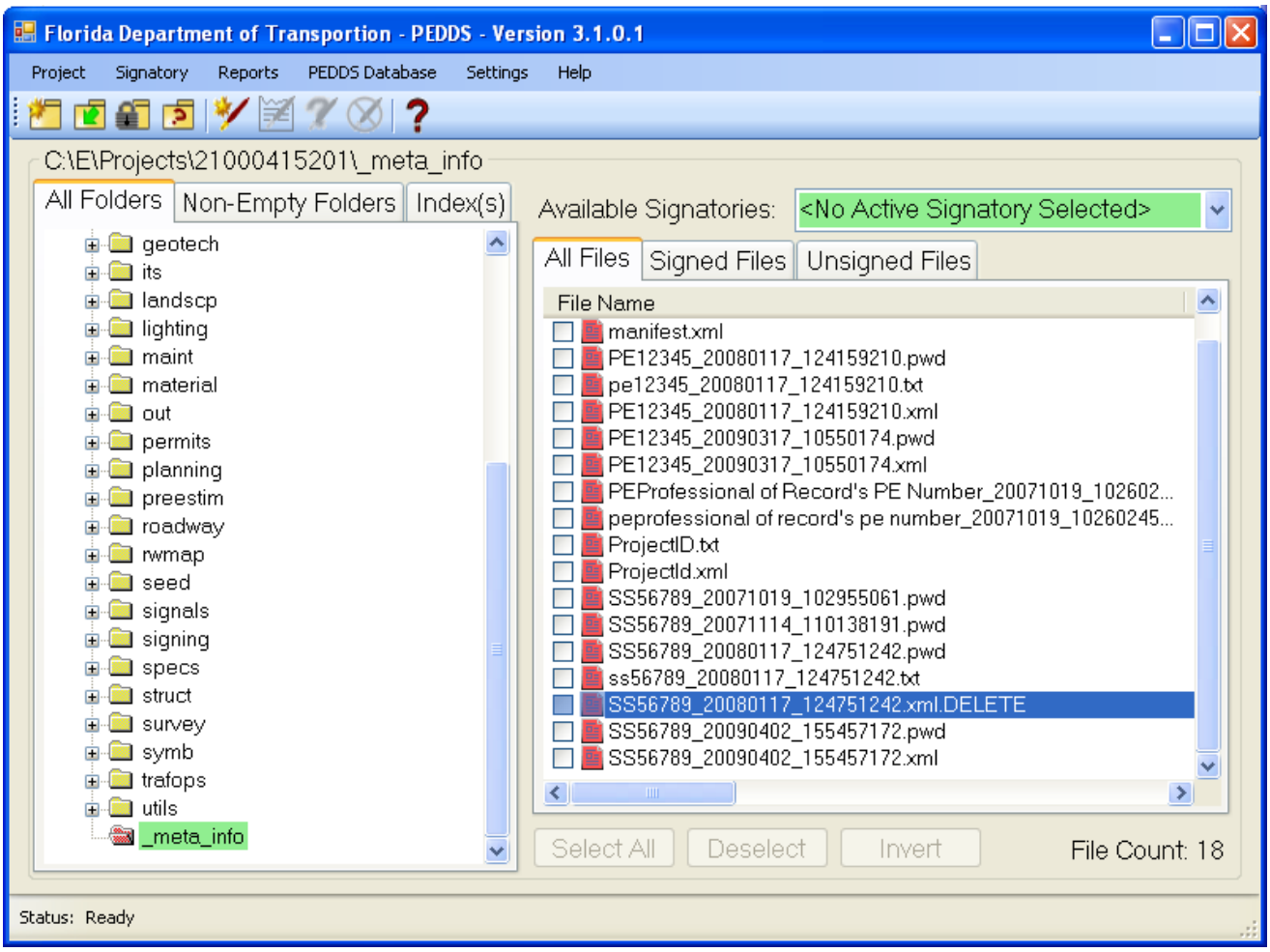
Securing the Project for Delivery: Possible Errors

After securing process is complete, the **Delivery Manifest Document** opens. A Pedds alert dialog displays if there is an unused signatory, since the project cannot contain unused signatories.



Pedds Alert Dialog

PEDDS suffixes the unused signatory file with a .DELETE extension. To eliminate this error, this signatory must either be used or deleted.



Unused Signatory File

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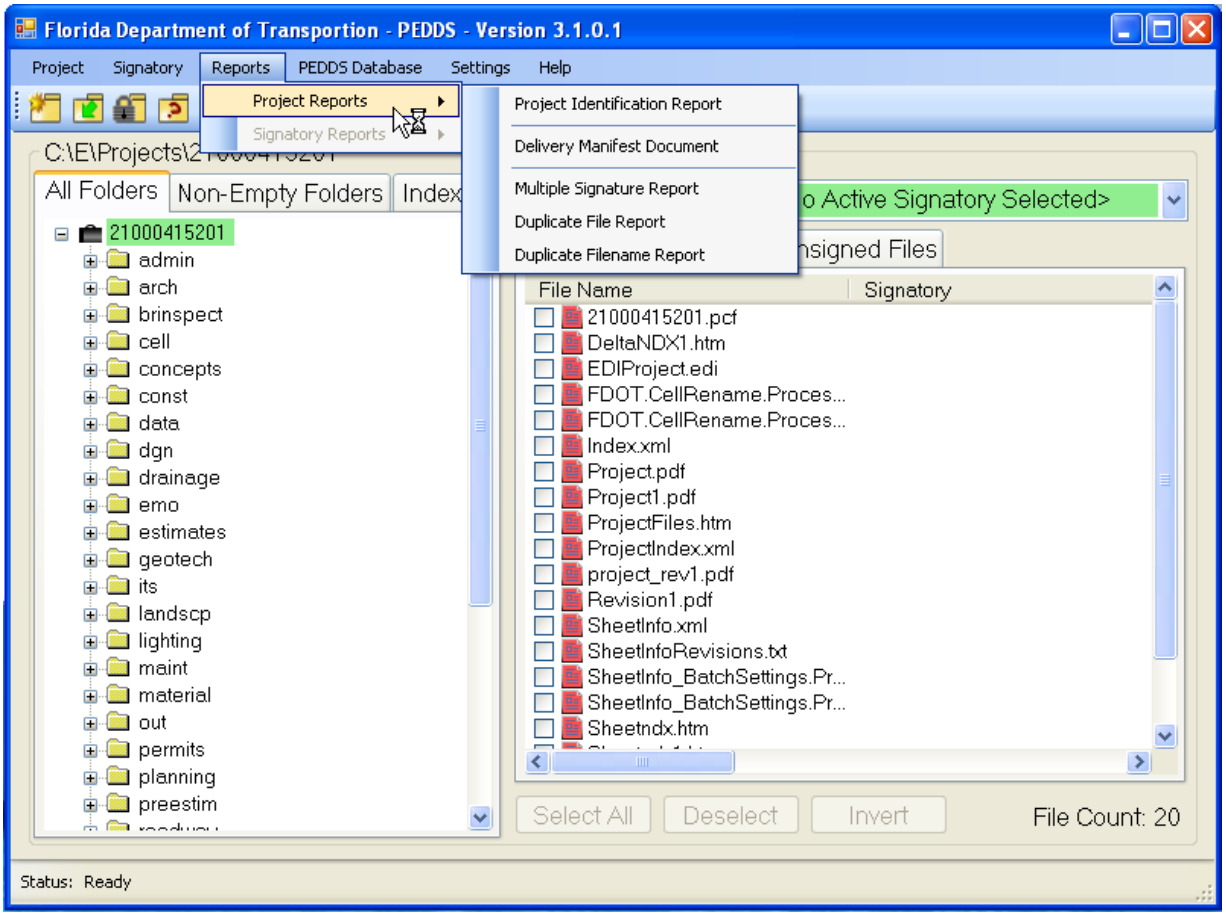
Section 3.18 Additional PEDDS Reports

To view and print additional PEDDS reports

From the **Reports** menu, select **Project Reports** to list available printable reports.



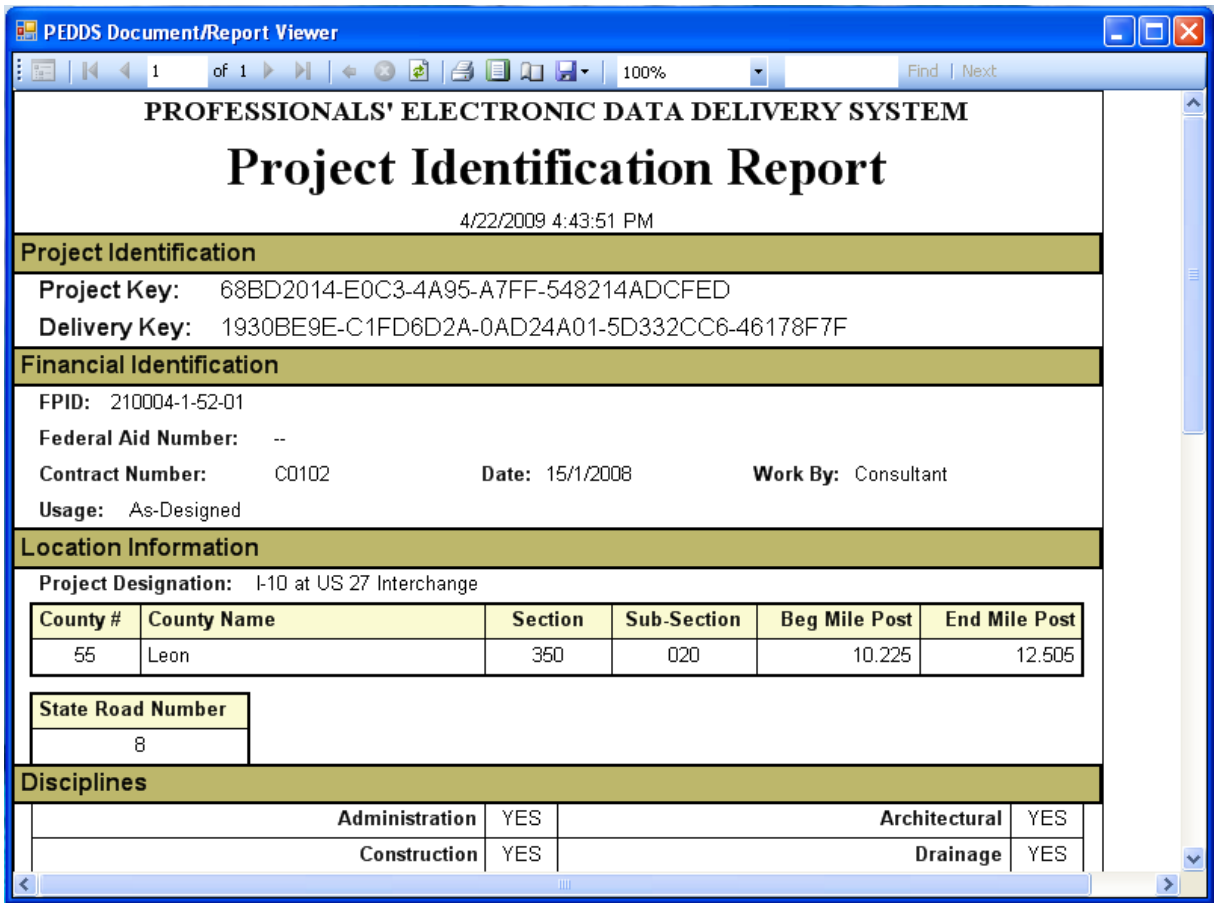
PEDDS - Additional Reports

Note Some of these reports are not necessarily required deliverable reports.

Section 3.18.1 Project Identification Report

Although not technically a part of the PEDDS application, PEDDS relies on the Project ID application to provide unique project identification information for each project PEDDS secures. This information is summarized within the Project Identification Report.

In the current version of PEDDS, the project ID information includes the PEDDS Key, a unique identifier (literally a GUID - globally unique identifier - generated by the computer from a set of changing values; sometimes called a UUID - universally unique identifier) that is used in PEDDS and PEDDSDB to uniquely identify a project. When a project ID file - **projectid.xml** - is generated for a project for the first time, this identifier is assigned and never changes afterwards.



PEDDS - Project Identification Report

© 2009 FDOT

Section 3.18.2 Delivery Manifest Document

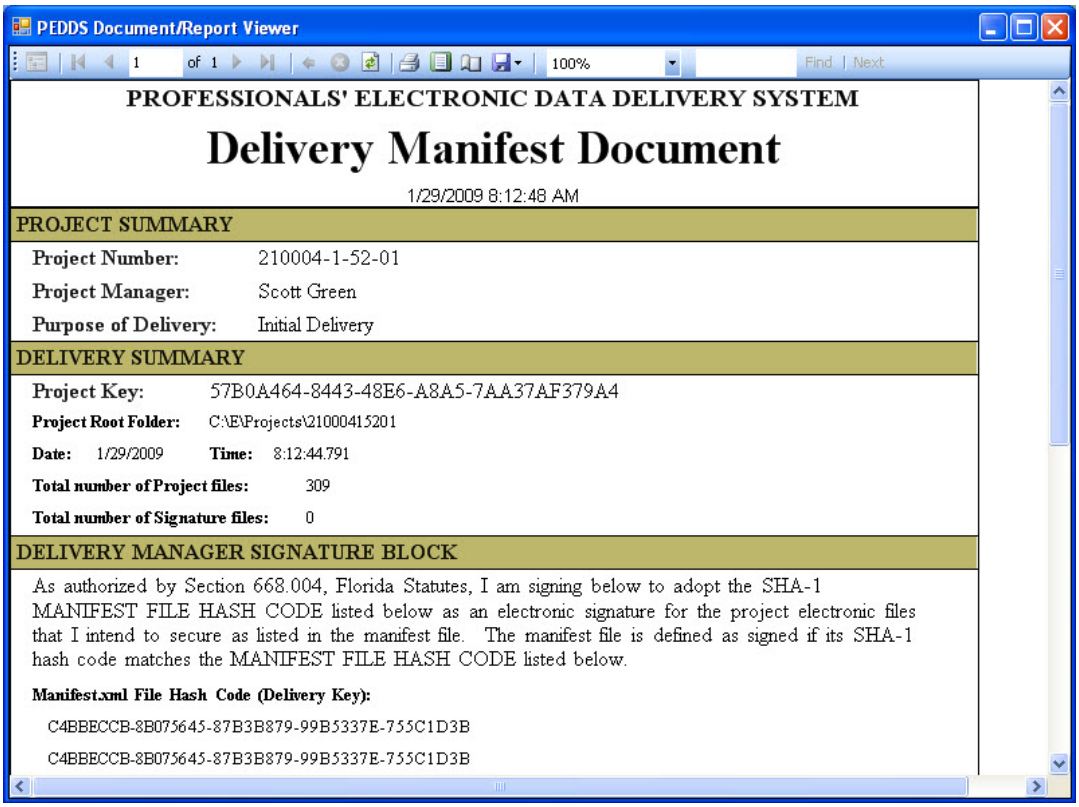
The Delivery Manifest Document is the essential validation mechanism for project delivery. The Delivery Manifest Document is created every time a project delivery is secured by the Project Manager, and a printed copy of this document, signed by the Project Manager, must be included with the ED package (CDs and documentation) provided to FDOT.

This document contains the results of the chain of SHA-1 message digest creation at the heart of the PEDDS validation process. Included in the Delivery Manifest Document are the following:

- Manifest SHA - the message digest of the **manifest.xml** file - the file that contains the SHA-1 message digests of all files within the project delivery
- Summary of Signature files - a listing of signature files included in the project delivery

When a project is secured, an SHA-1 message digest is generated for all the files within the project. These file message digests are stored within the manifest file (manifest.xml) within the project delivery's *_meta_info* folder, thereby securing each file's contents. Then, an SHA-1 message digest is generated for the manifest.xml itself, securing its contents - the message digests of the files in the project. Finally, the manifest.xml message digest (called the Manifest SHA) is printed on the Delivery Manifest Document, which is signed by the Project Manager, thereby securing the project through a chain of message digest generation.

As shown below, the Delivery Manifest Document contains the only copy of the Manifest SHA, and thus is integral to the process that secures the project as a whole. All authentication and validation for the project delivery as a whole rely upon the comparison of a generated Manifest SHA against the Manifest SHA stored and secured on the signed Delivery Manifest Document.


PEDDS Document/Report Viewer

PROFESSIONALS' ELECTRONIC DATA DELIVERY SYSTEM

Delivery Manifest Document

1/29/2009 8:12:48 AM

PROJECT SUMMARY

Project Number: 210004-1-52-01
Project Manager: Scott Green
Purpose of Delivery: Initial Delivery

DELIVERY SUMMARY

Project Key: 57B0A464-8443-48E6-A8A5-7AA37AF379A4
Project Root Folder: C:\E\Projects\21000415201
Date: 1/29/2009 Time: 8:12:44.791
Total number of Project files: 309
Total number of Signature files: 0

DELIVERY MANAGER SIGNATURE BLOCK

As authorized by Section 668.004, Florida Statutes, I am signing below to adopt the SHA-1 MANIFEST FILE HASH CODE listed below as an electronic signature for the project electronic files that I intend to secure as listed in the manifest file. The manifest file is defined as signed if its SHA-1 hash code matches the MANIFEST FILE HASH CODE listed below.

Manifest.xml File Hash Code (Delivery Key):

C4BBECCB-8B075645-87B3B879-99B5337E-755C1D3B

C4BBECCB-8B075645-87B3B879-99B5337E-755C1D3B

PEDDS – Delivery Manifest Document

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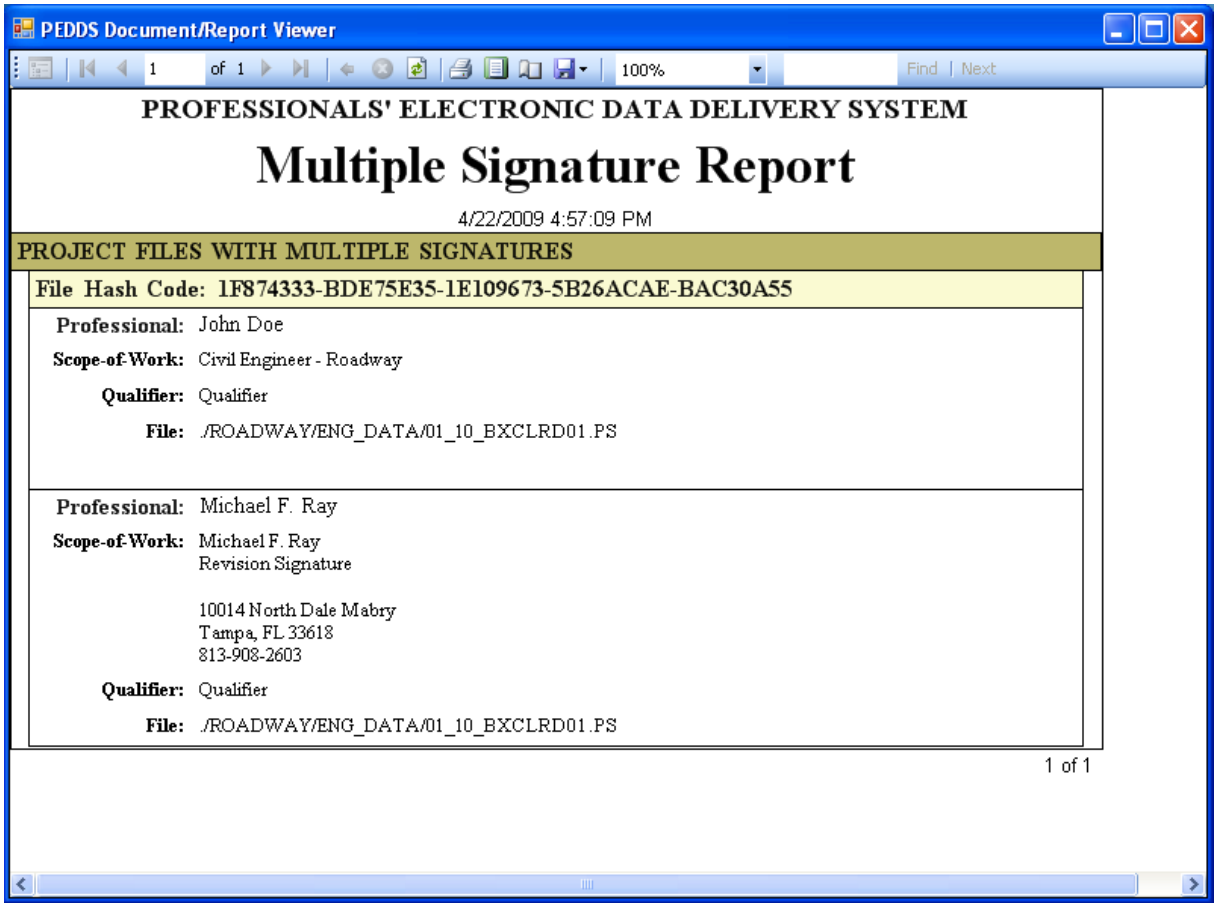
Section 3.18.3 Multiple Signature Report

PEDDS allowing for the signing and sealing of files by multiple signatories. The Multiple Signature Report reflects those changes, providing a quick, easy way to see what files within a project delivery are signed and sealed by multiple signatories. Files signed with multiple signatories are listed in this report by their SHA-1 message digest, plus the signatory, signatory qualifier or scope of work, and the file URL of the signed and sealed file.



PEDDS - Project Files with Multiple Signatures

Section 3.18.4 Duplicate File Report

Some projects may contain files whose contents are identical, though their file names may or may not differ. To aid in identifying these files, the Duplicate File Report checks the SHA-1 message digests stored in the manifest file for duplicates. These duplicates are reported in the Duplicate File Report. Please note the apparent similarity of this report to the next report, the Duplicate Filename Report. The Duplicate File Report actually checks the SHA-1 message digest of the files contained in the project delivery - ignoring the file names; the Duplicate Filename Report only compares the file names of the files and ignores the message digests.

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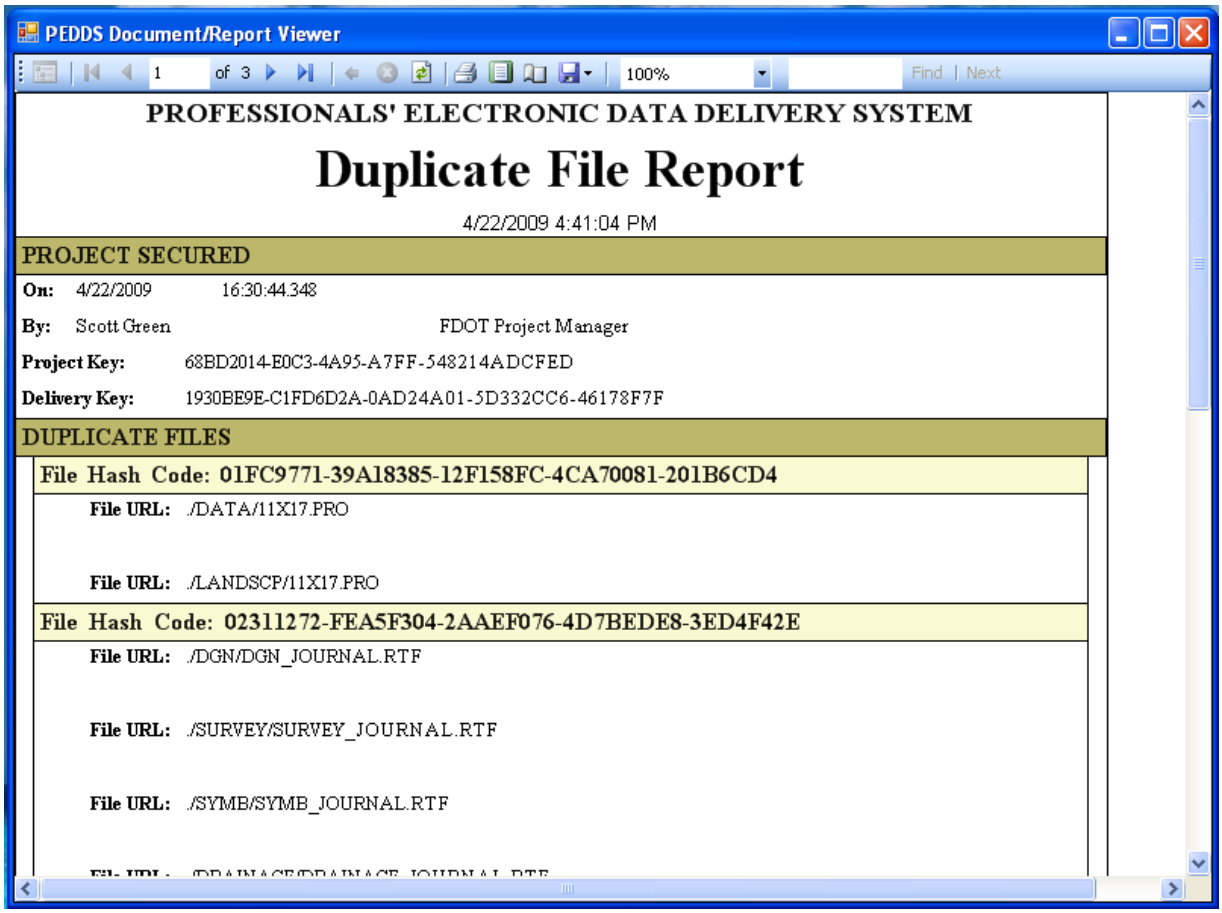
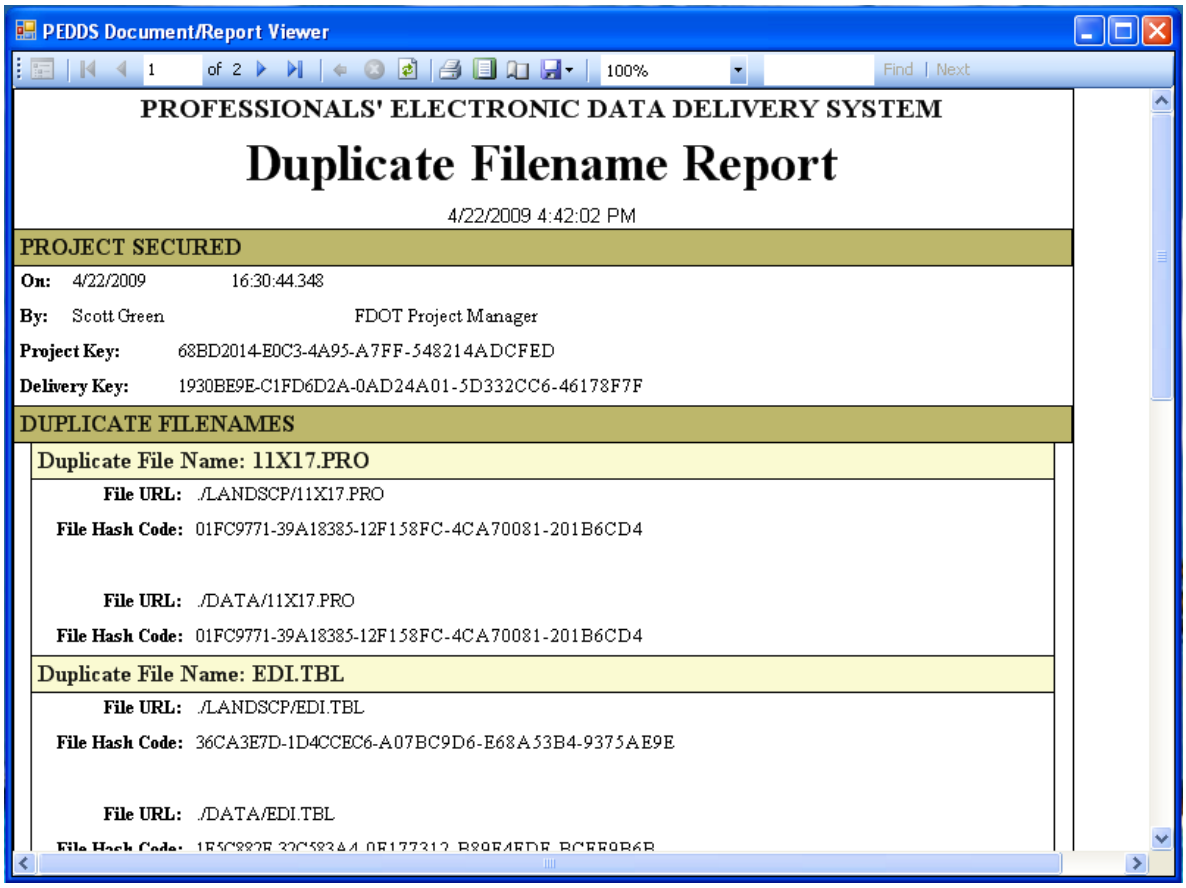


PEDDS - Duplicate File Report

Section 3.18.5 Duplicate Filename Report

Unlike the Duplicate File Report, the Duplicate Filename Report checks the file names of the contents of a project delivery. Duplicate file names are listed in this report to aid in identifying duplicate file names which may or may not contain identical contents.



PEDDS - Duplicate Filename Report

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Section 3.19 Indexing/Plotting/Journaling - PEDDS Viewer

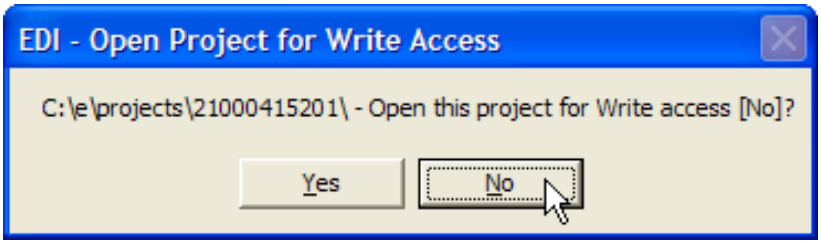
EDI2 is PEDDS aware and contains a tab (PEDDS Meta Info) that allows the user to review and verify PEDDS data. This gives the user the ability to have over-plot protection for signed / sealed files from one interface. Also, EDI2 cross references on-disk files with the PEDDS Manifest and Signature file data and offers a color coded display.

Exercise 3.18 EDI2 - PEDDS Meta Info Tab

Once the project has been secured, the Manifest document, manifext.xml is up to date and the project can be opened with EDI2 to validate the project.

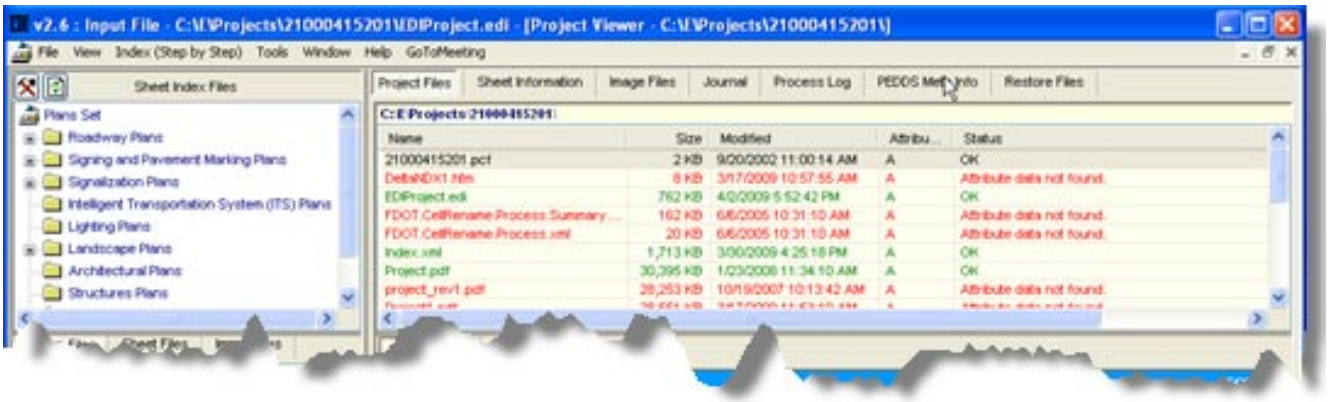
To use the PEDDS Meta Info Tab

1. Open EDI2. When EDI – Open Project for Write Access displays, click the **No** button. Otherwise, the secured project will not authenticate.



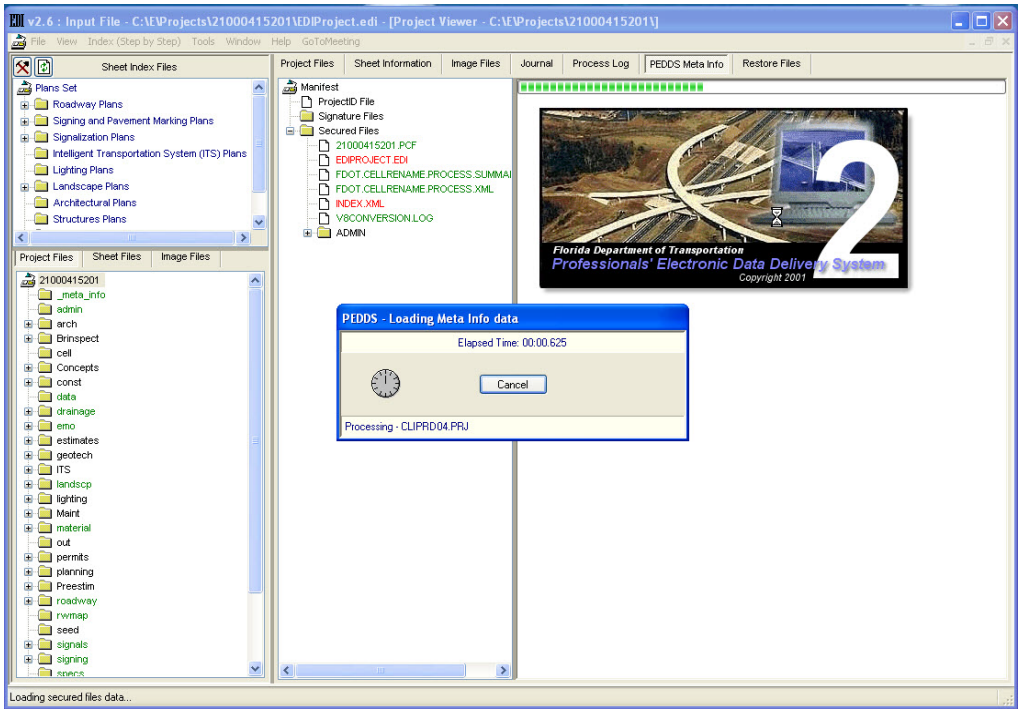
EDI – Open Project for Write Access

11. Verify that project **21000415201** is opened and click the **PEDDS Meta Info** tab.



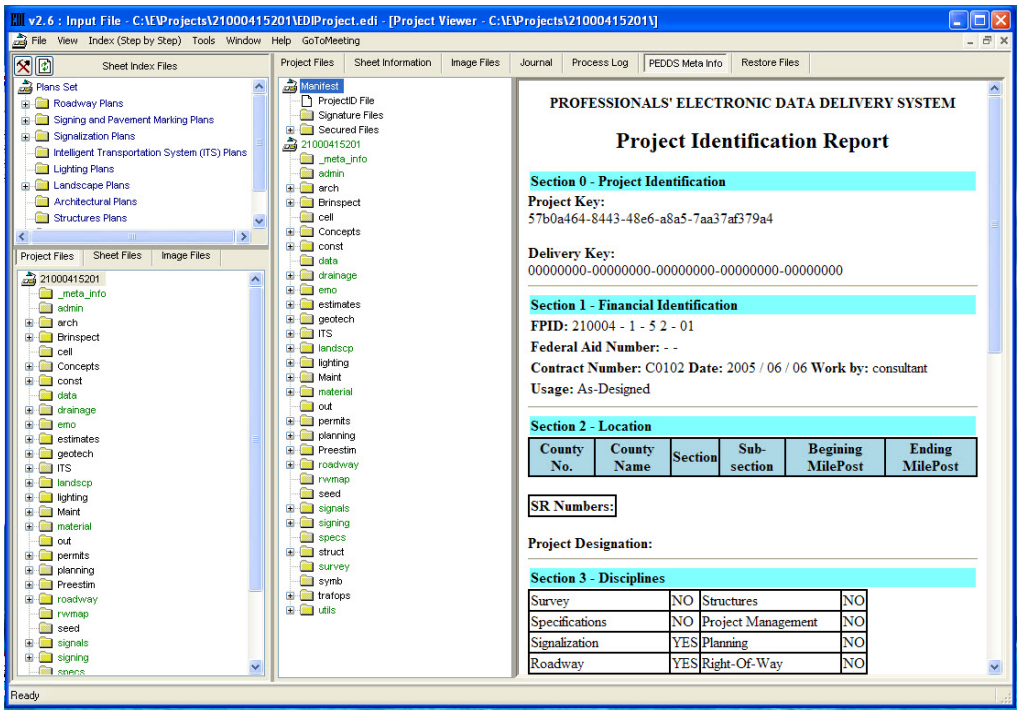
EDI2 - PEDDS Meta Info Tab Selection

12. EDI2 begins the validation of PEDDS information.



EDI2 - PEDDS Validation

13. Click and open several of the folders and review the **PEDDS** validation information.



EDI2 - Manifest Project Report

Note During this exercise discussions are held on the different information found from the **PEDDS Meta Info** tab in EDI2.

14. Select **File** > **Exit** To close EDI2.

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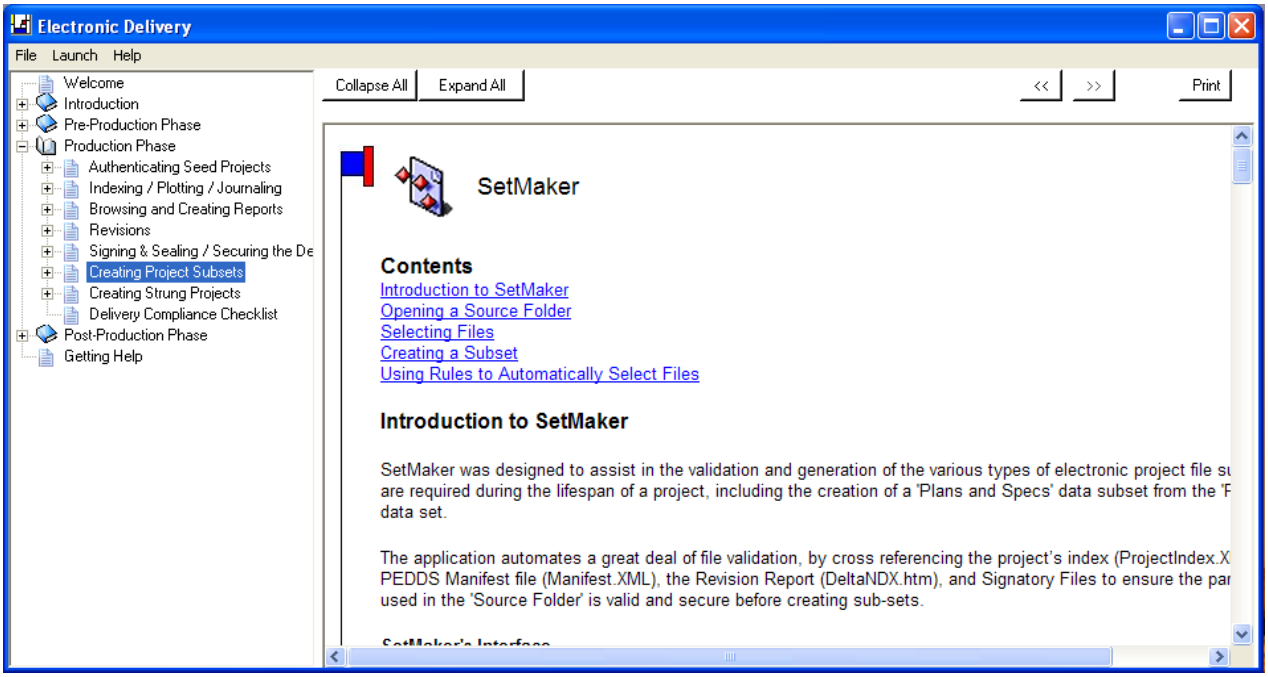
Section 3.20 Creating Project Subsets

Set Maker was designed and developed by the FDOT Engineering/CADD Systems office to assist in the validation and generation of various types of electronic project file subsets required during the life span of a project, including the creation of a 'Plans and Specs' data subset from the 'Project CD' data set.



Set Maker

The application automates a great deal of file validation, by cross referencing the project's index (**ProjectIndex.XML**), PEDDS manifest file (**Mainfest.XML**), Sheet Index Reports (**Sheetndx.HTM**), and other PEDDS information (Signature files, and the SHA-1 hash codes for files) to ensure the parent project used in the 'Source Folder' is valid and secure before creating subsets.

Set Maker can be used to build any subset of data from a project. Set Maker always secures the data set it creates. The selection of files is done both manually and by Business Rules:

Predefined rules

- all files signed and sealed
- all files secured by PEDDS (This would be the entire project, since Set Maker requires a project to be Secured before it operates on it)
- all files included in indexes (**ProjectIndex.XML** and/or **SheetNDX.htm**)
- revised files contained in **DeltaNDX#.htm**, etc.

User-defined rules

- include files in a given directory by filespec (including wild cards)
- exclude files in a given directory by filespec (including wild cards)

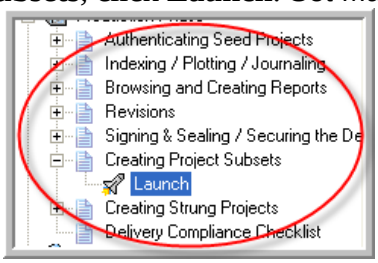
Exercise 3.19 Creating Subsets -Plans and Specs

The following exercises use Set Maker to create several types of sets:

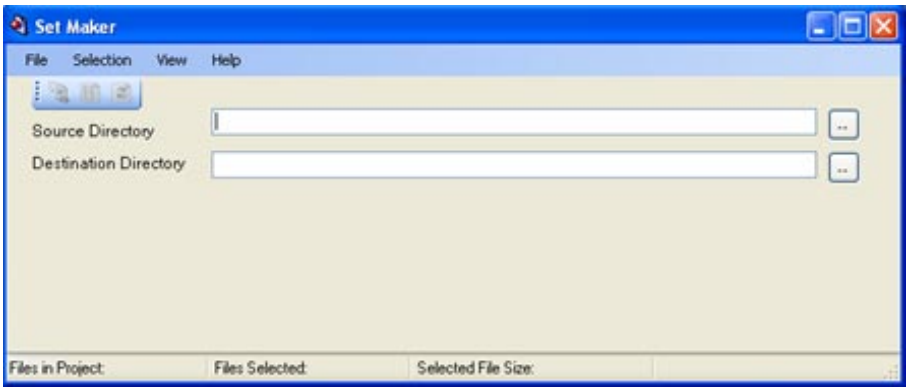
- Plans and Specs - which can be burned to a CD (Plans and Specs CD).
- Plans and Specs Revision - which can be burned to a CD (Plans and Specs Revision CD).

To create of a Plans and Specs Set

1. In **Creating Project Subsets**, click **Launch**. Set Maker opens.

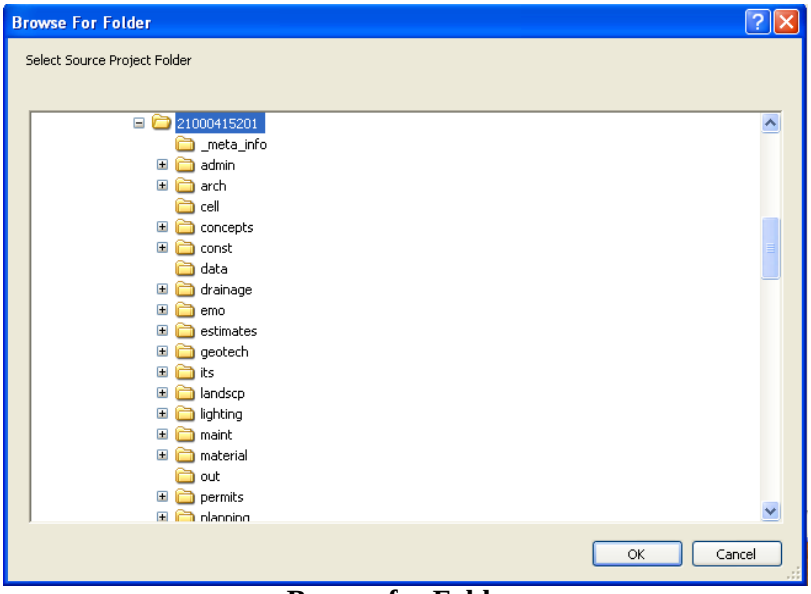


Launching Set Maker



Set Maker

15. In **Source directory** click the **Browse** button ( ). Browse for Folder opens.



Browse for Folder

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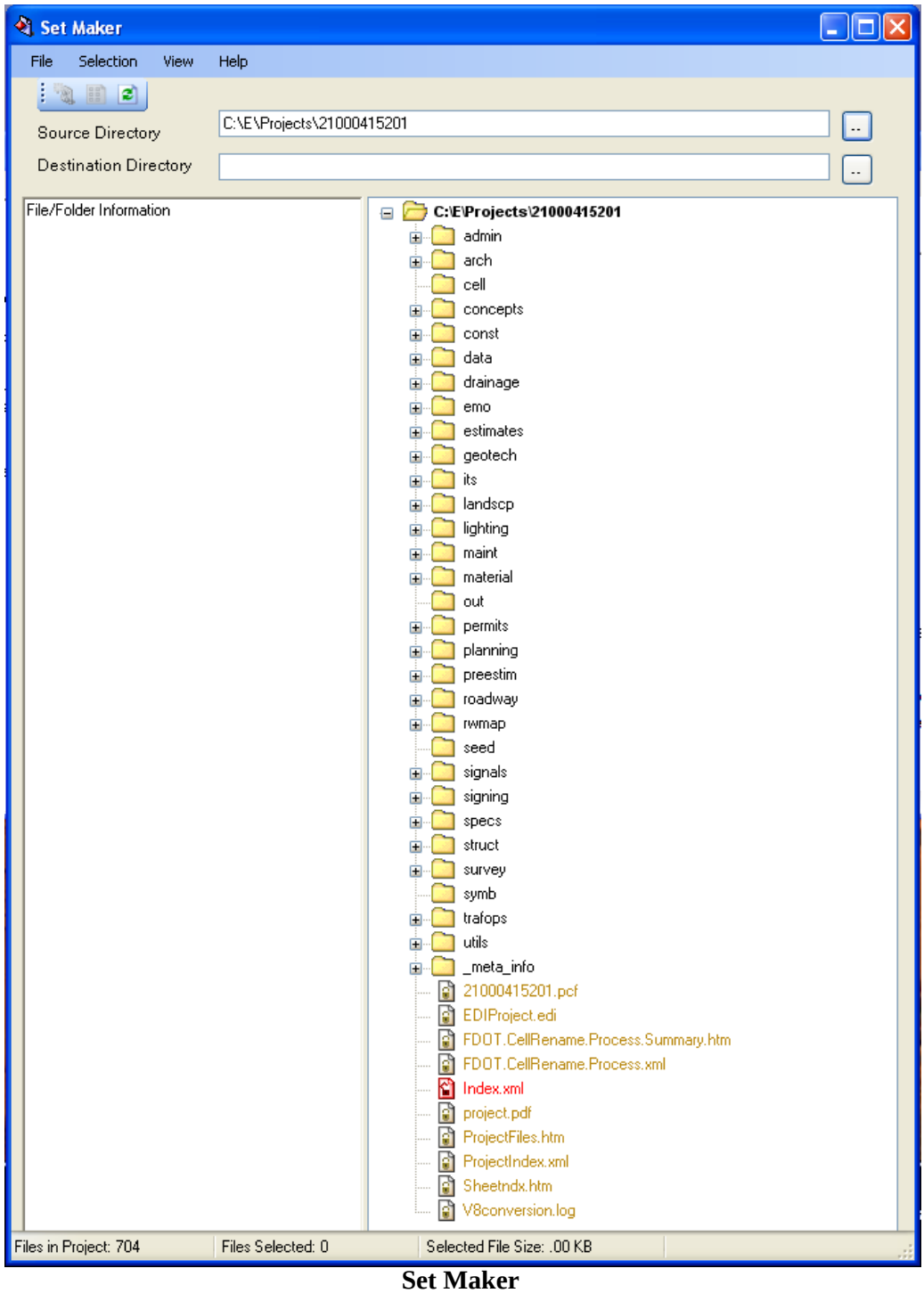
16. From Browse for Folder, navigate to and select the active project (for the purposes of this exercise, select **c:\E\Projects\21000415201**).
17. Click the **OK** button. Set Maker validates the project information and then re-appears.



Set Maker

Important *SetMaker requires that both a valid* ***ProjectID.xml*** *and* ***Manifest.xml*** *file exist in the project's* ***_meta_info*** *directory. If these files are not found, the application reports an error and does not allow users to continue the set making process.*

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Section 3.21 PEDDS File Validation - Excerpt from ED Desktop

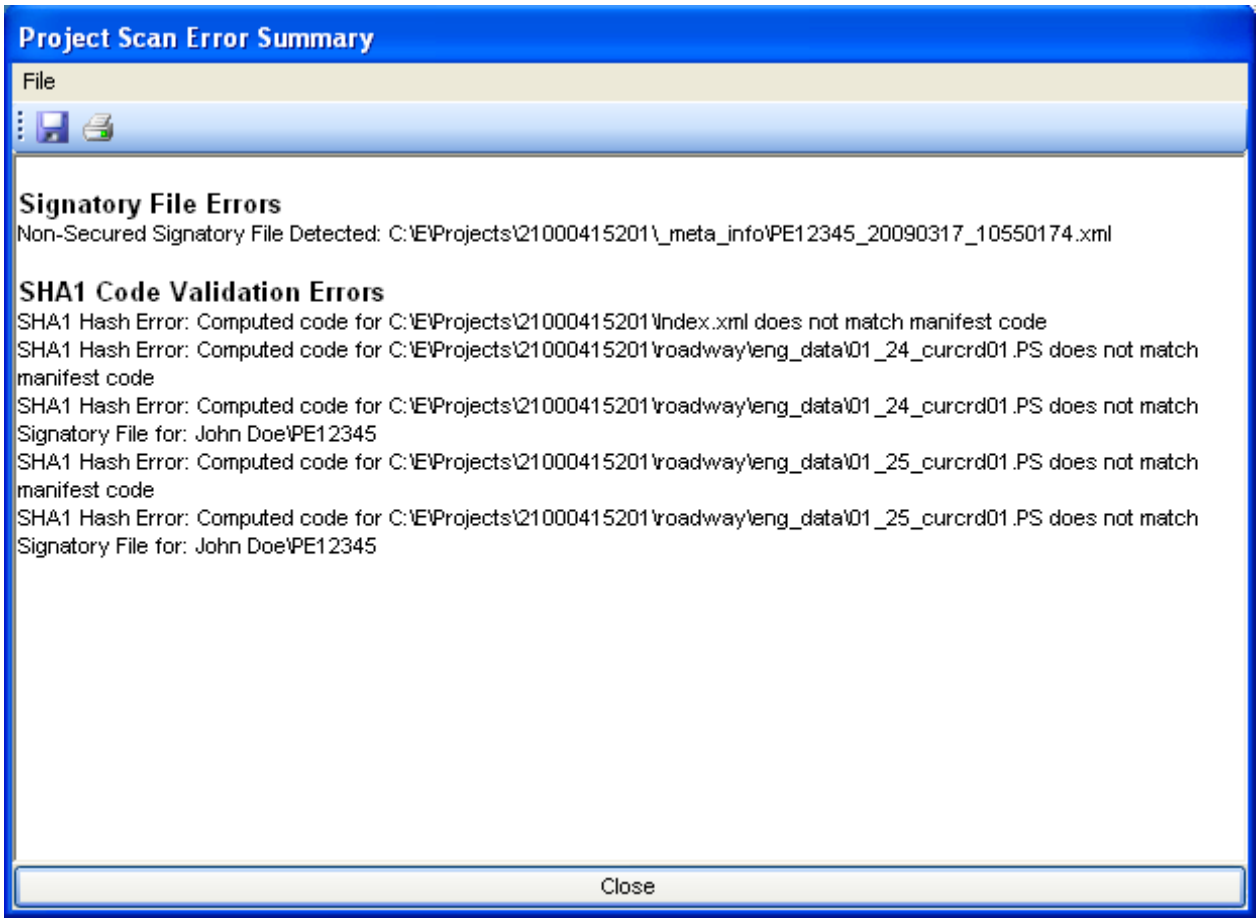
Set Maker automatically validates PEDDS SHA-1 hash codes for each file in the project. Set Maker calculates the SHA-1 code for each file in the project on-disk, and compares the computed hashes with those stored in the PEDDS Manifest.XML file, Signatory files, and the DeltaNDX#.htm xml data. If the hash codes do not agree, the process is suspended and appropriate warnings are generated (see figure below).

File Validation Errors & Warnings

Set Maker may encounter errors and warnings during the validation process. If such errors are found, the application displays an error report detailing each problem. An error disables the ability to create a selection set where as a warning allows the creation of a sub-set. It is highly recommended to investigate the cause of warning messages before proceeding with the creation of sub-sets.

From the Project Scan Error Summary form's toolbar, users may save the error report by selecting the disk icon ( ) or print the report by selecting the printer icon ( ).

Once a project has been validated, users may revisit the error report at any time by selecting View > Error Log from the Set Maker menu bar.



Set Maker - PEDDS File Validation Errors & Warnings

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Errors are grouped together based on the type of error:

- **Manifest File Errors:** files listed in Manifiest.xml that are not physically located in the project directory structure.
- **Signatory File Errors:** files listed in a signatory file that are not physically located in the project directory structure.
- **SHA1 Code Validation Errors:** files that do not match the SHA1 Hash code in either Manifest.xml file, Signatory File, and/or DeltaNDX#.htm file.
- **ProjectIndex File Errors:** files listed in ProjectIndex.xml that are not physically located in the project directory structure.
- **DeltaNDX File Errors and Warnings:** files listed in DeltaNDX#.htm as 'New' or 'Modified' that do not exist within the physical directory structure are marked as errors. File listed as 'Deleted' that do not exist within the directory structure are marked as warnings.
- **Non Project File Errors:** files detected in the project directory structure that are not listed in the Manifest.xml file. The *_meta_info* folder may contain files NOT listed in the manifest with the exception of Signatory files. ALL signatory files MUST be listed in the manifest.

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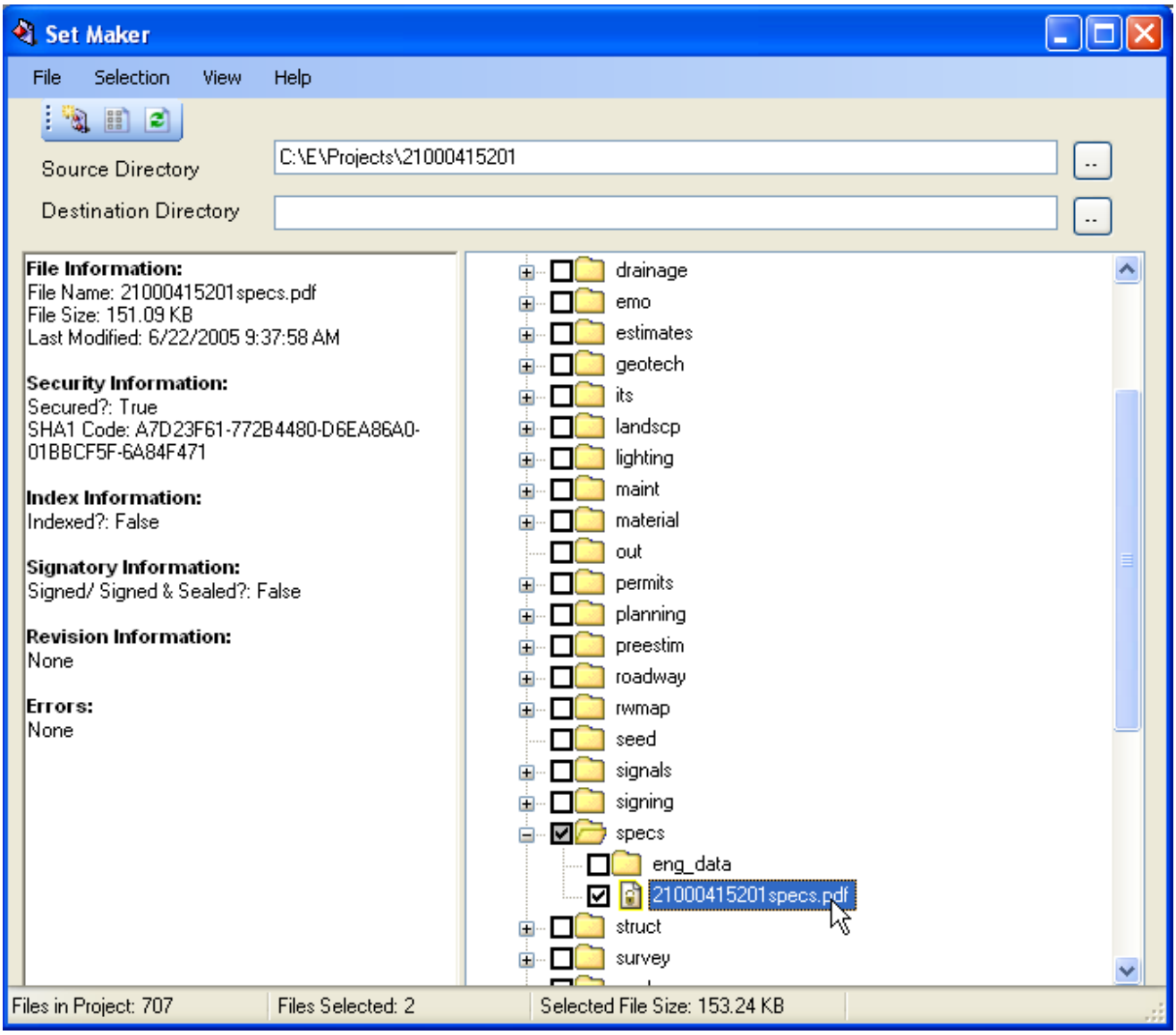
Exercise 3.20 To select files by File Selection and File Selection Rules

To further expedite file selection, Set Maker has a number of pre-defined selection options. The selection options select sheets found in **Projectindex.xml**, using pre-defined selection rules to select sheets to build the Plans/Specs set. Files that are not part of the Project Index do not meet the selection rules and must be selected manually.

1. From the project tree, navigate down to the **Specs** folder and select the specification document. For this exercise, click **21000415201specs.pdf.**



Set Maker - Specs Document Selected

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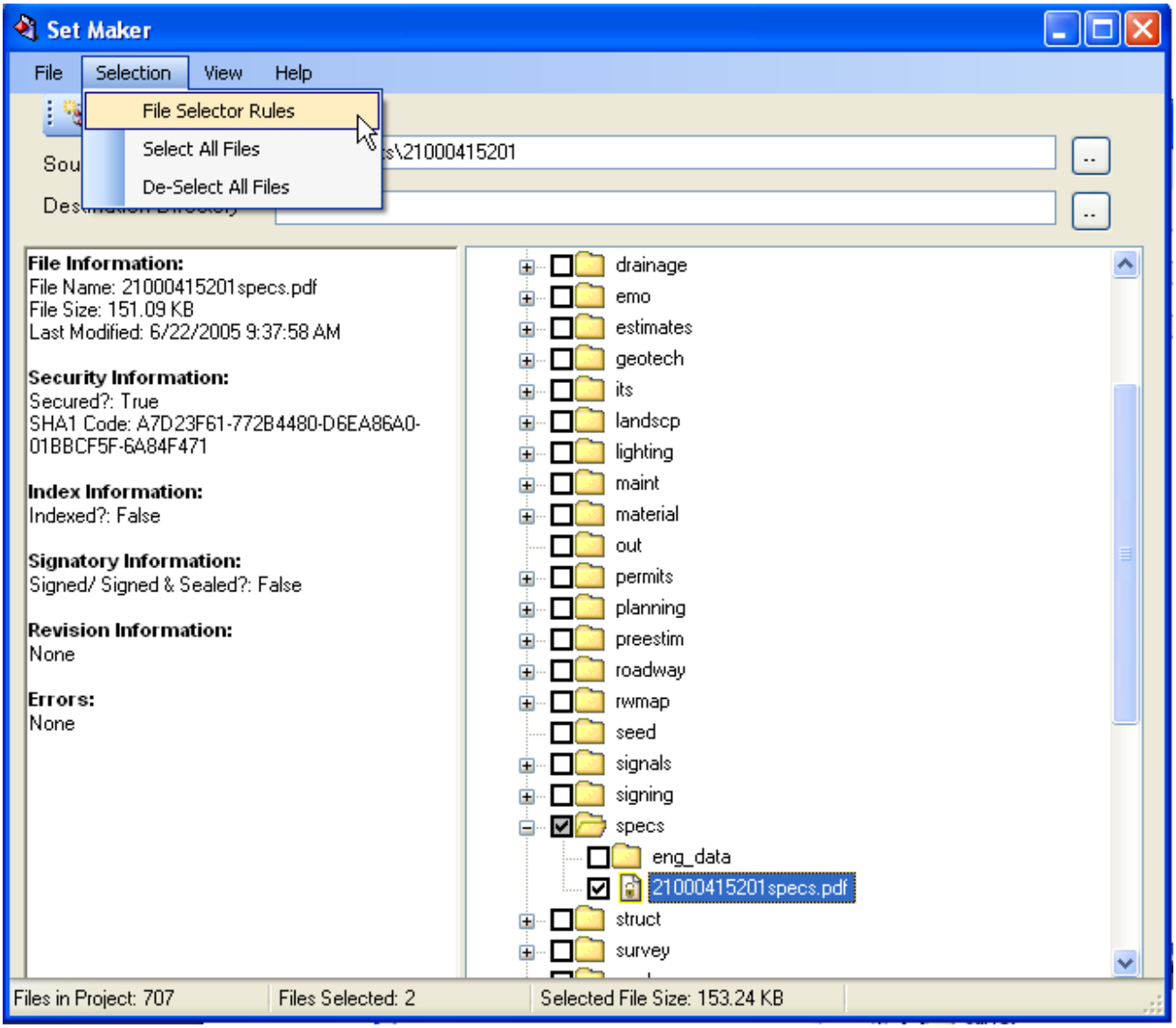
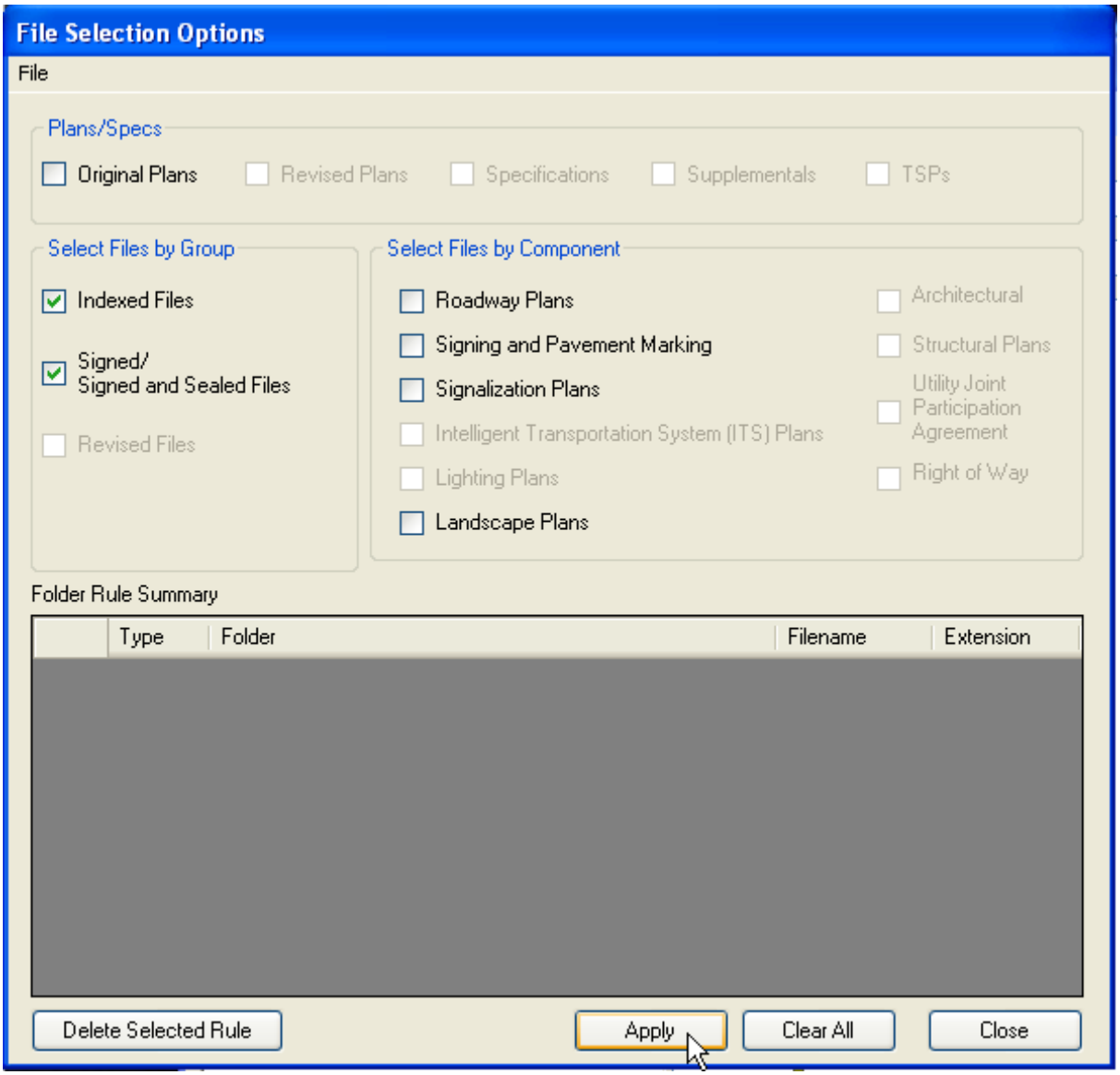
2. From the **Selection** menu, click **File Selector Rules**.



Set Maker - File Selection Rules

3. File Selections Options opens. Populate the checkboxes for **Indexed Files** and **Signed/Signed and Sealed Files** and then click the **Apply** button.



File Selection Options - Plans/Specs

Important *If the* ***Signed/Signed and Sealed Files*** *rule is selected,* ***ALL*** *files secured by* ***ALL Signatories*** *are copied to the subset.* Set Maker *will not* ***break Signatories****. As a result, this ensures that all signatories can be authenticated in the subset.*

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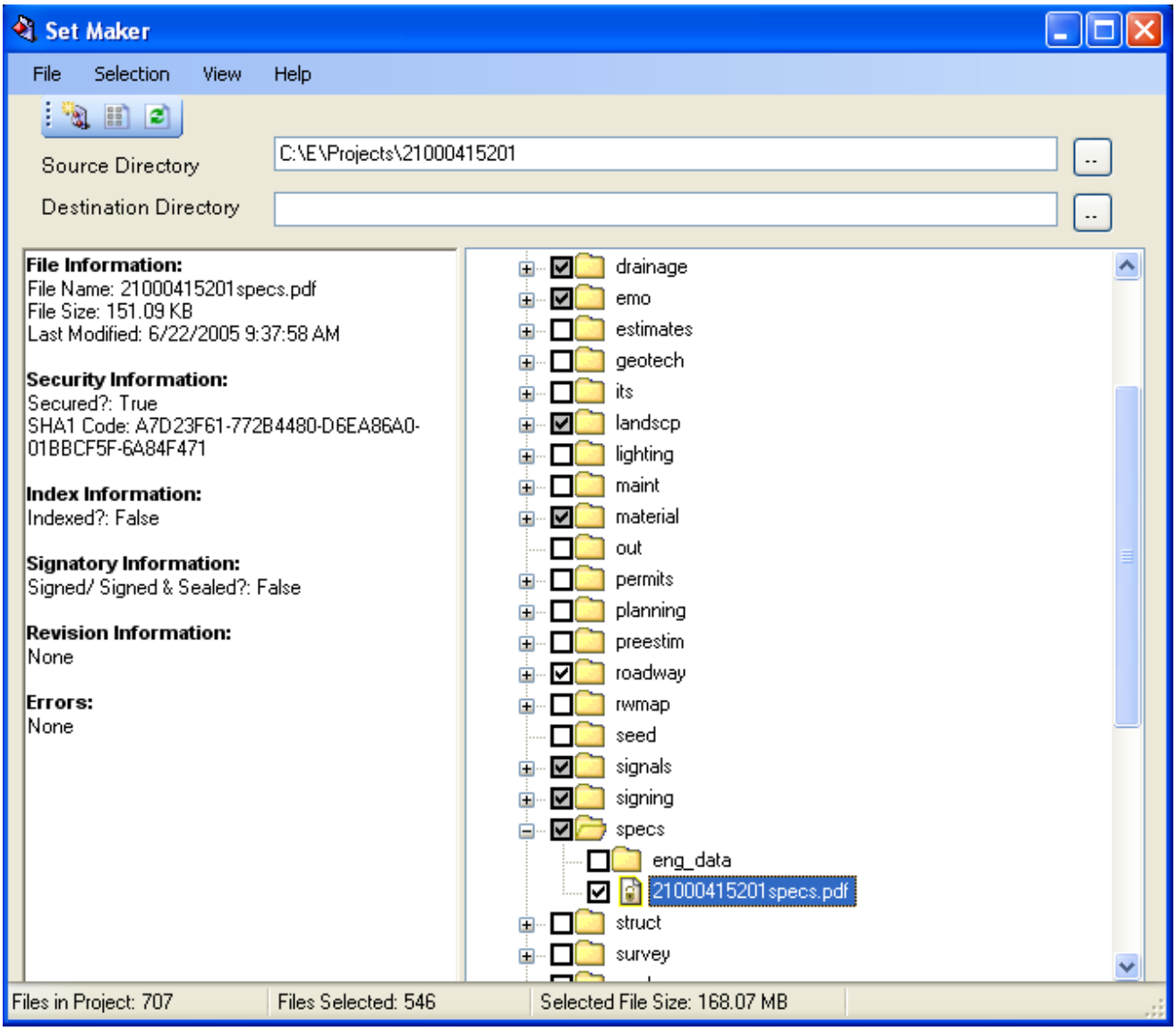
4. From File Selection Options, click the **Close** button. Set Maker reappears and the files are selected based on the specified selection rules.



Set Maker - Files selected

Note **Project.pdf** is not included in either **Sheetndx.htm** or **ProjectIndex.xml**. If **Project.pdf** is not signed or signed and sealed, it is not specified by the pre-defined File Selection Rules. This file must be included with Plans and Specs and therefore, it must be manually selected.

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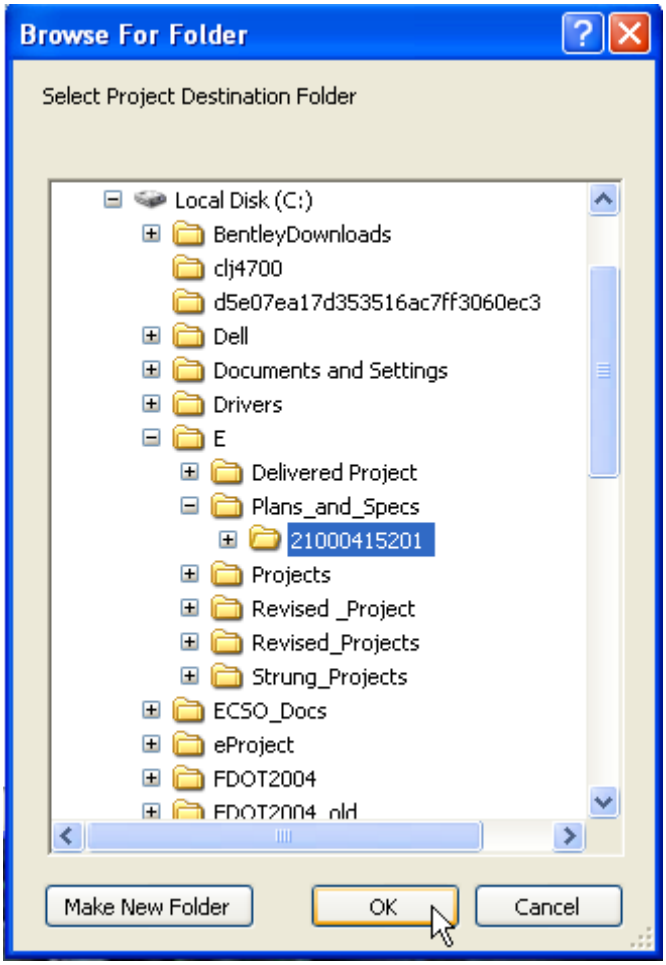
5. Click the **Browse** button ( ) to the right of the Destination Directory box. Browse for Folder opens.



Browse to Folder

6. From Browse for Folder, navigate to and select the active project (for the purposes of this exercise, select **C:\E\Plans_and_Specs\21000415201**) and click the **OK** button. Note: the destination folder must be empty to successfully create a subset.

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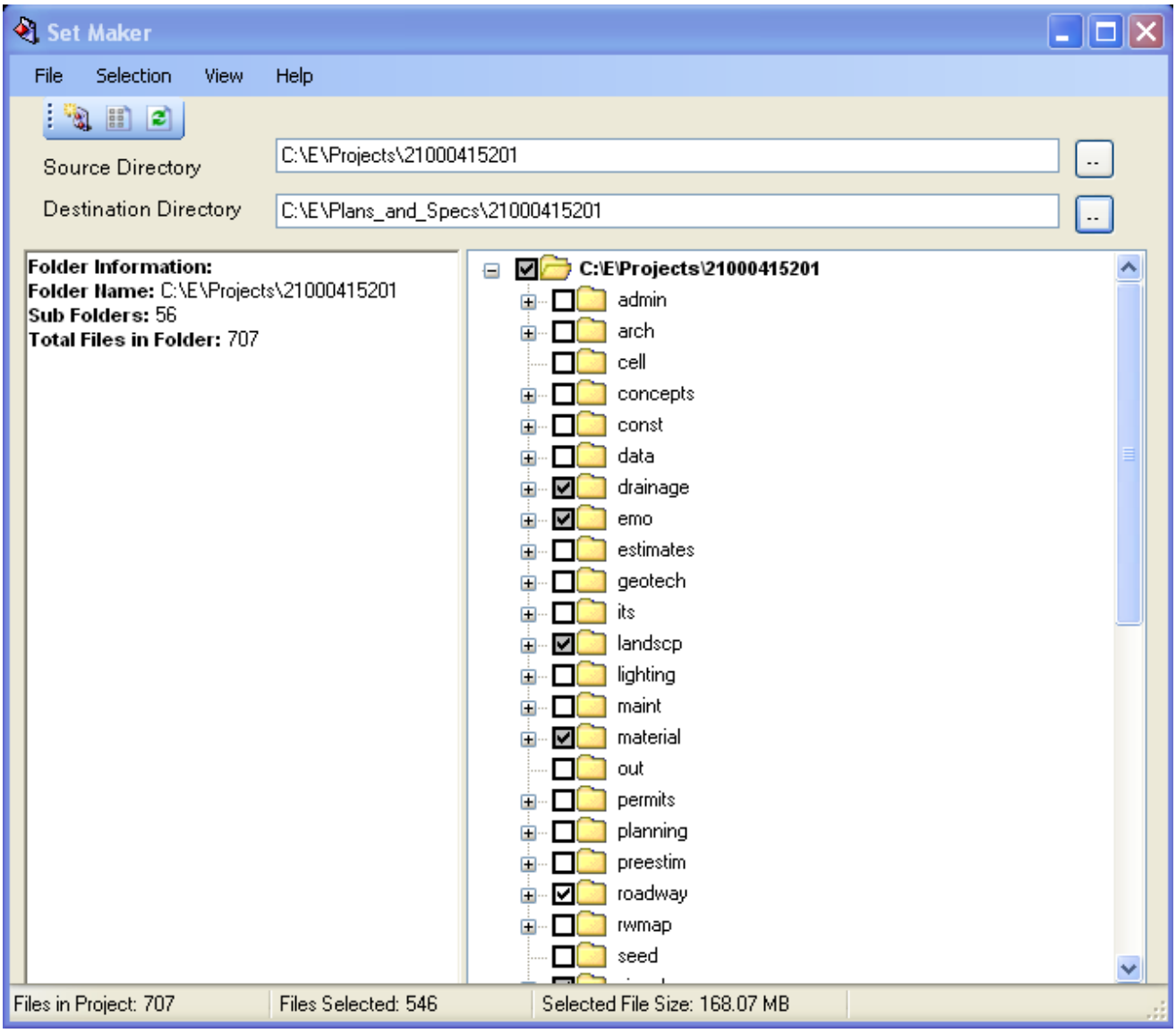
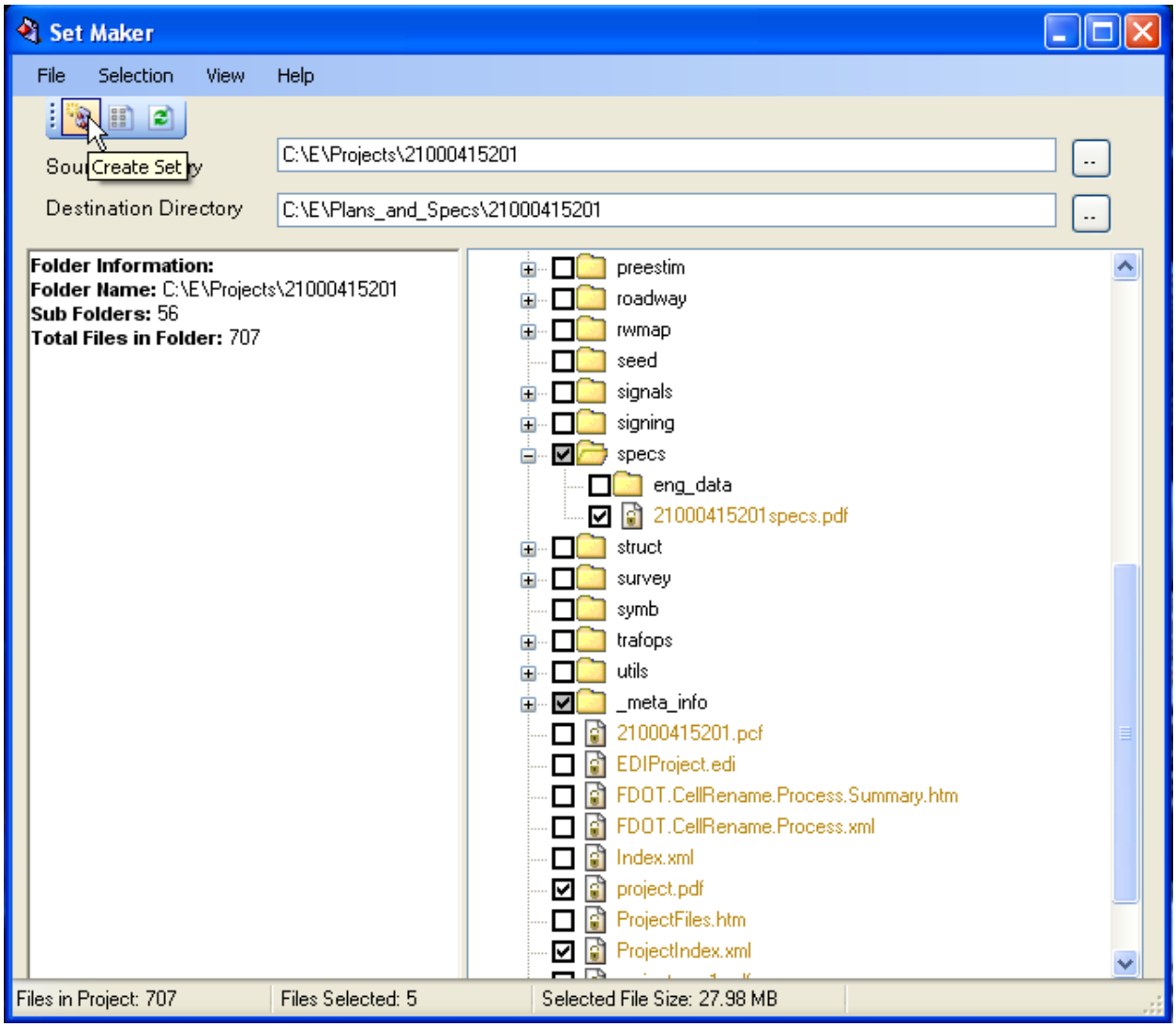
7. Set Maker reappears with the selected Destination Directory added as shown in the following figure.



Set Maker

Note Consultants can name the destination folder to meet their own workflow.

8. From the **File** menu, click **Create Set** --*or*-- click the **Create Set** button ( ) on the toolbar.



Set Maker - Files selected

9. User Information opens. Enter the required information as follows:
10. User Name - FDOT Project Manager
11. Title – Project Manager
12. Set Usage – Select Other since it is for a **Plans and Specs CD**
13. **Description** - Plans and Specification for Project 21000415201

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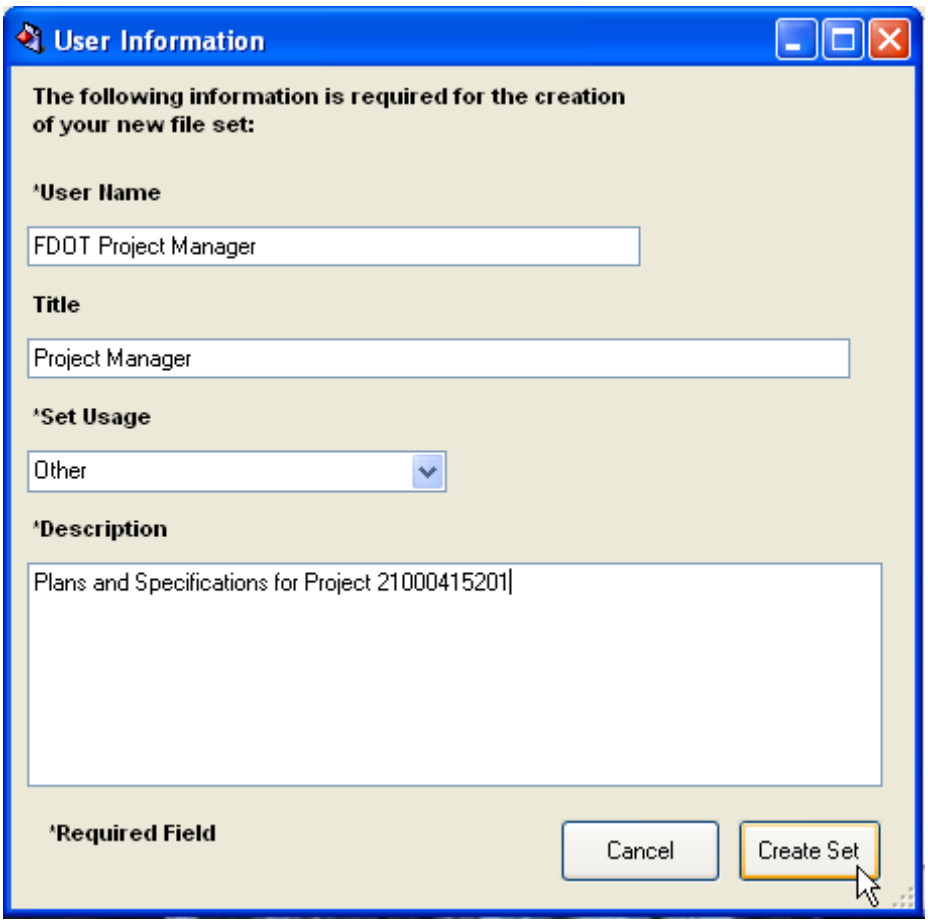
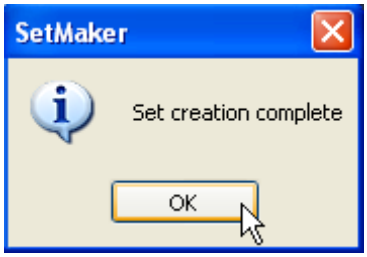
14. When finished, click the **Create Set** button. The creation of the set begins.



User Information

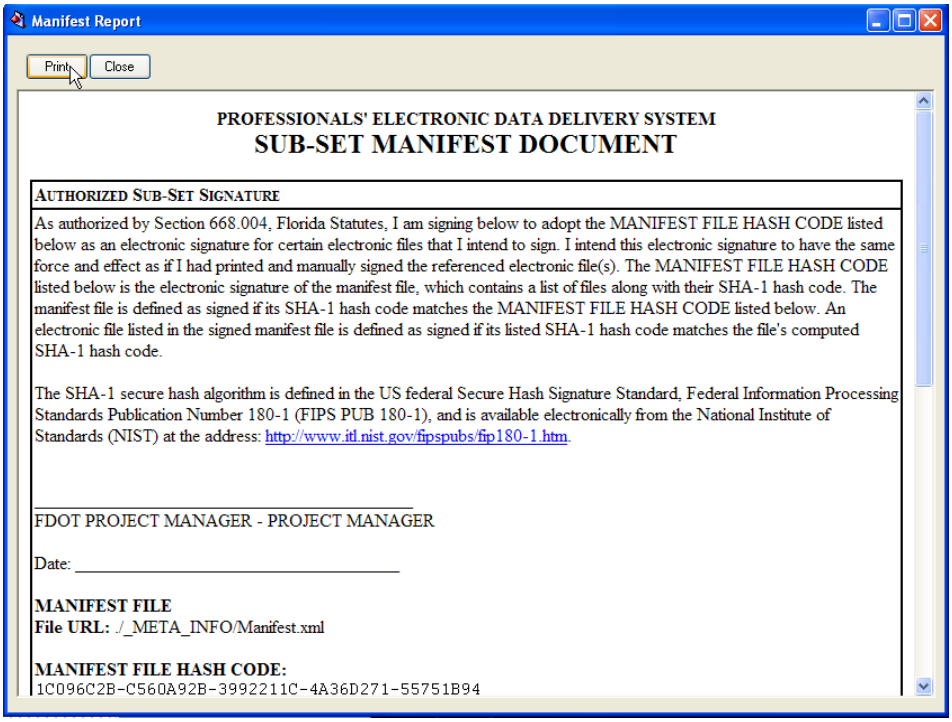
Important *User Information defines the lineage of the subset. The information entered is contained in the* ***manifest file*** *created in the subset. This always links back to the parent or originating project the subset was created from.*

15. Upon creation of the set, SetMaker opens to confirm the creation. Click the **OK** button to continue.



SetMaker

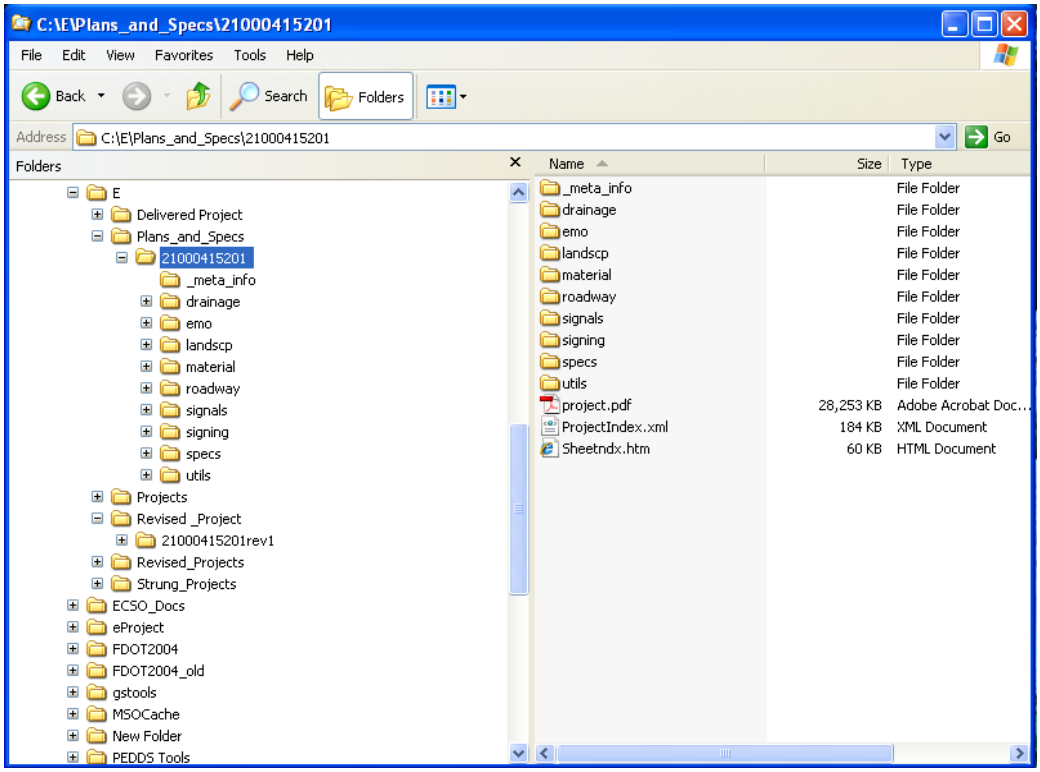
16. Manifest Report displays. Click the **Print** button to send the report to a print device.



Sub-Set Manifest Document

17. Click the **Close** button. Set Maker reappears. The files and folders needed to create a Plans and Specs CD are copied to the defined location as shown in the following figure.

Important *A CD properly labeled for Plans and Specs can now be created.*



Windows Explorer - Plans and Specs Set

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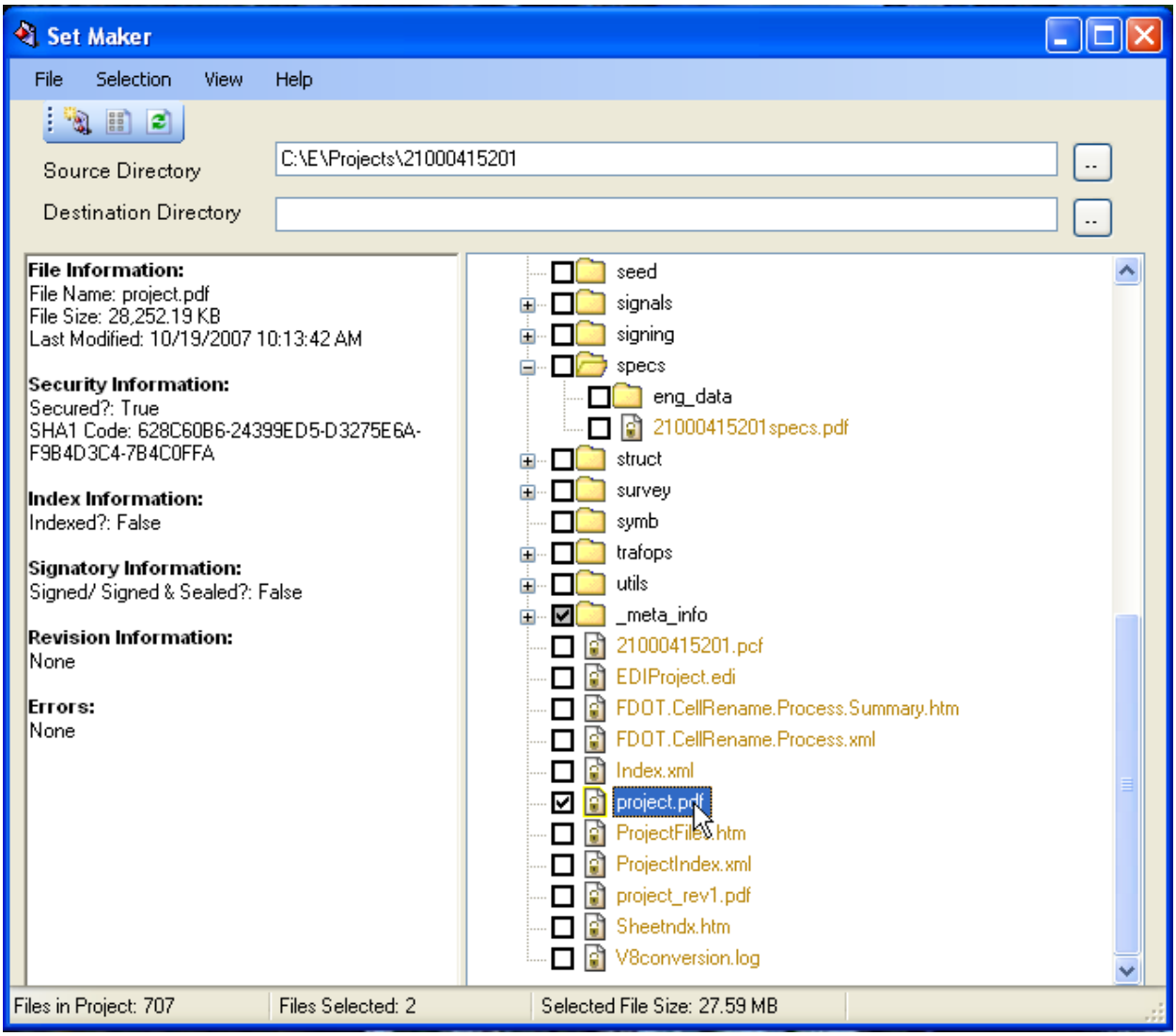
Exercise 3.21 Creating Subsets - Plans and Specs Revision

Using Set Maker to create sets for Plans and Specs Revisions requires that revisions to plan sheets be created. As such, this exercise can be found in Section 5, Electronic Delivery - Handling Revisions, of this manual.

Exercise 3.22 SetMaker - Additional Information

To review File Information

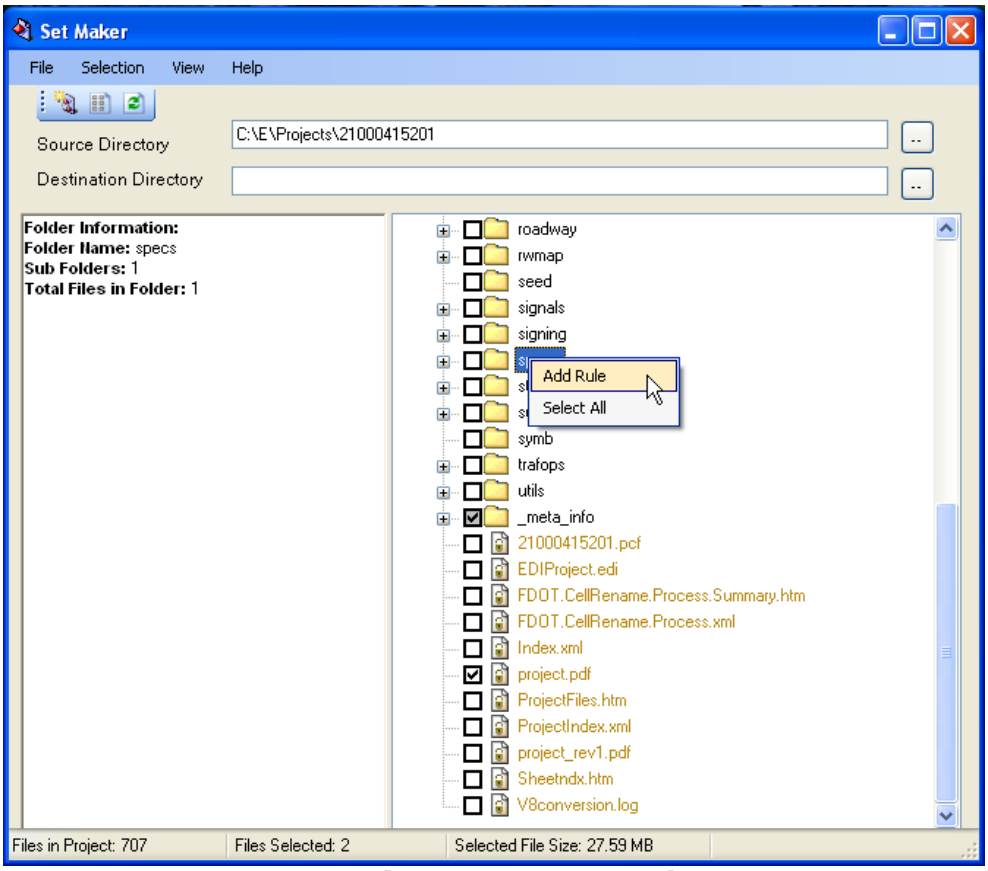
Upon selecting a file in Set Maker, information about the file is displayed in the left pane of Set Maker.



SetMaker - File Information

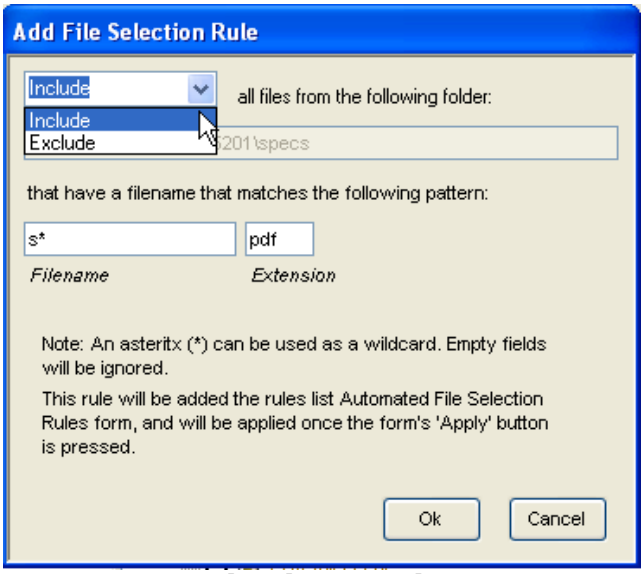
To create User Defined Rules

1. Right-clicking on a folder allows the user to select an option, **Add Rule**, to add a new User Defined Rule or **Select All**.



Set Maker - Create a New Rule

2. Upon selecting **Add Rule**, File Selection Rule opens. In this box, the user can choose to **Include** or **Exclude** files in the selection. After saving the rule, the rule is saved to the File Selection Options.



File Selection Rule

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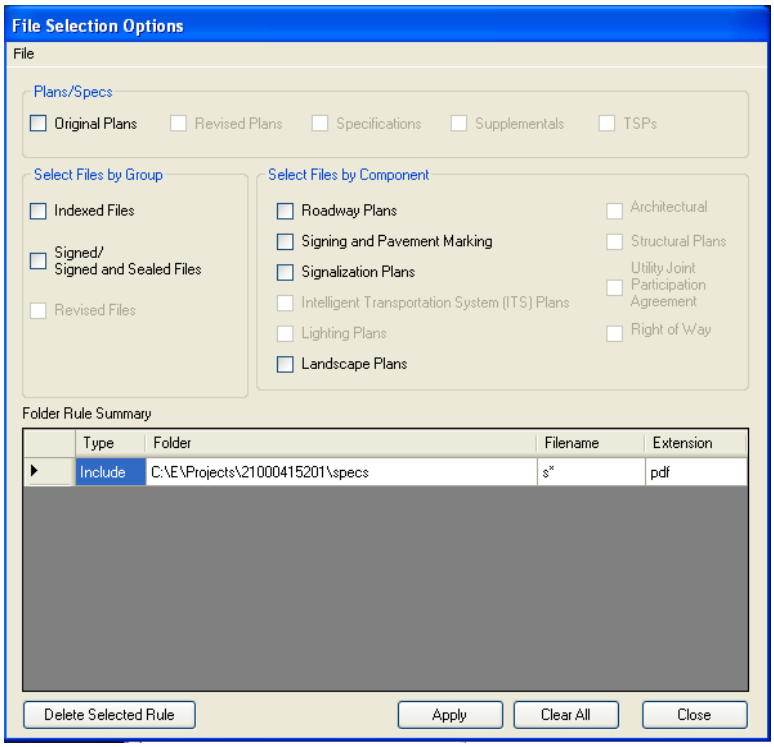
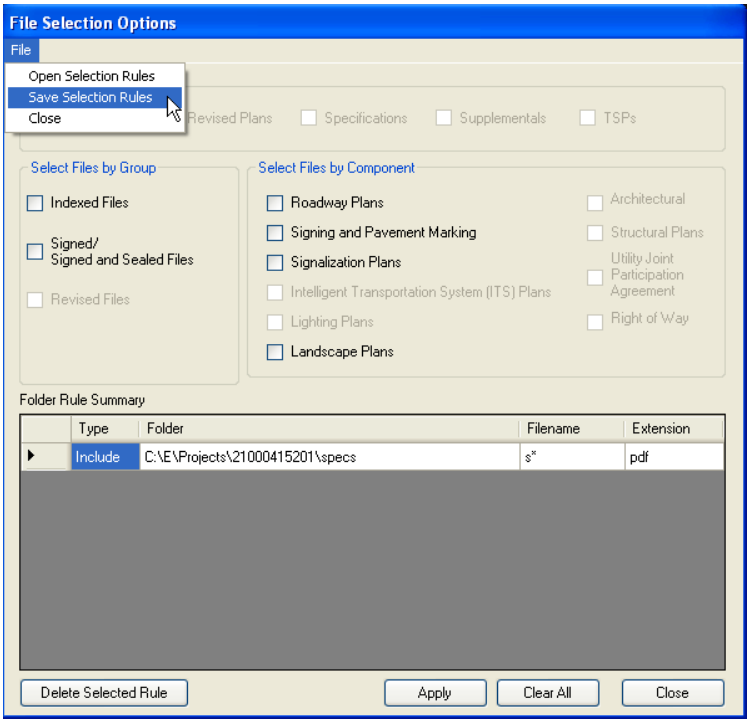
3. Upon opening File Selection Options, the new rule is available to **Include** (or **Exclude**).



File Selection Options

4. File selection options, as well as any user defined rules shown in File Selection Options, can be saved to a file for recall anytime Set Maker is used by selecting **File** > **Save Selection Rules** as shown in the following figure. The Selection Rules are saved to a text file.

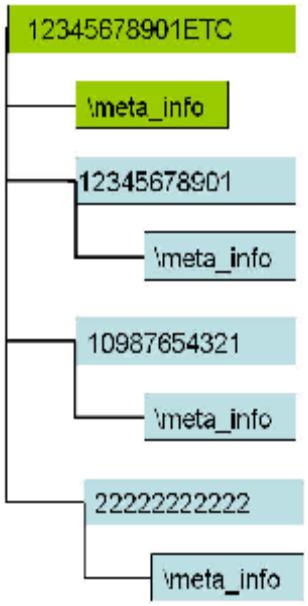


Save Selection Rules

Section 3.22 Creating Strung Projects

Section 3.22.1 Introduction to Strung Project

Strung Project is a new application designed to assist with the creation of strung project directory structures for the ED process. **Strung Project** allows selection of a '**Lead project**' and multiple '**Goes-with project**' Plans and Specs' data subsets, and copies them to the correct strung project directory structure (shown below). While doing so, **Strung Project** also creates the environment to secure the newly created strung project directory structure with **PEDDS**.



Structure

- Lead Project 'Plans and Specs' data subset = **12345678901**
- Goes-with Project 'Plans and Specs' data subset = **10987654321**
- Goes-with Project 'Plans and Specs' data subset = **22222222222**

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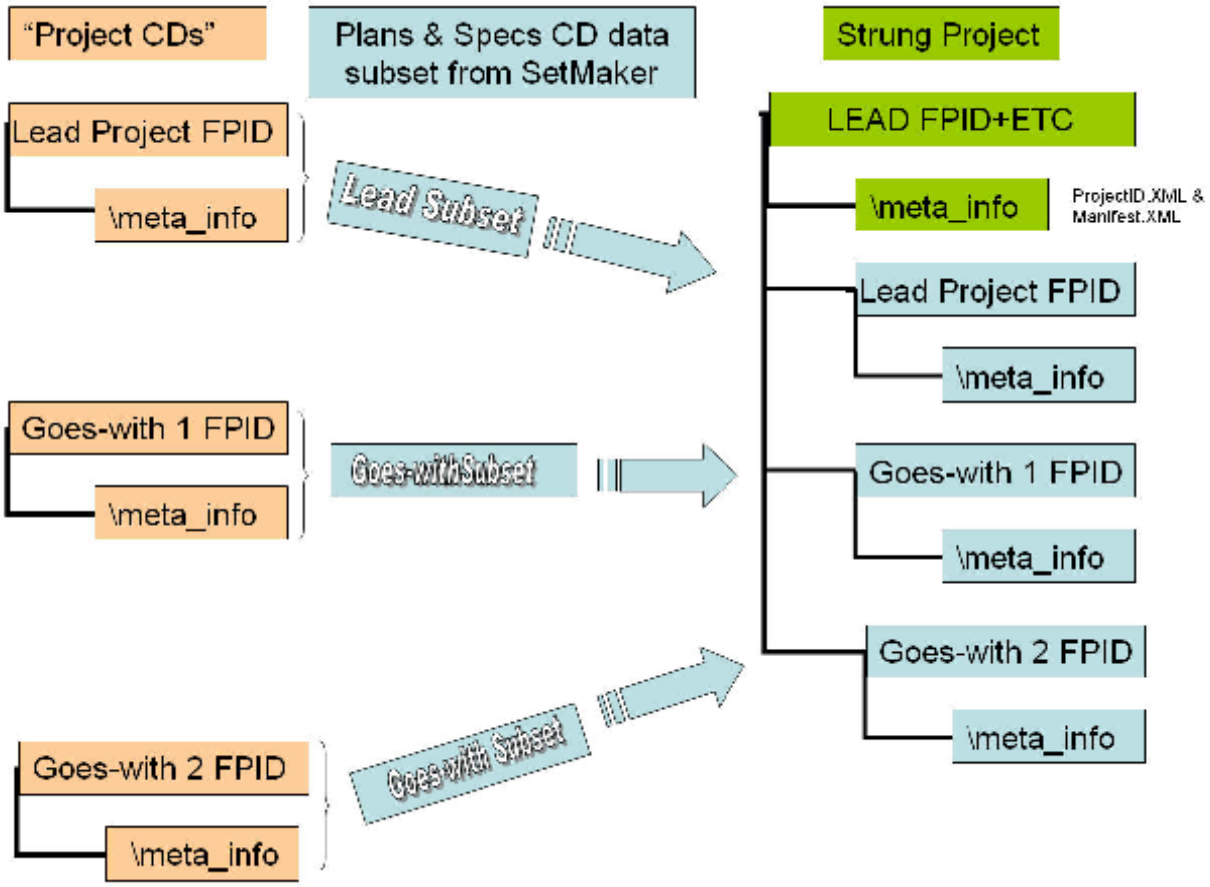
Section 3.22.2 Requirements

Before creating 'Plans and Specs' data sub-sets with **Set Maker**, the project data sets should already contain the navigational hyperlinks in their **Sheet Index Reports** (Sheetndx.htm). These navigation hyperlinks can be added during the creation of the **Sheetndx.htm** reports, using the EDI.

Typically, it is known prior to project delivery if the project in question is going to be a component in a strung project, or not. **EDI** prompts the user to specify whether or not the project is going to be a component of a strung project at the time the Sheet Index Report (Sheetndx.htm) is created.

Strung Project requires that the data source for both 'Lead' and 'Goes-With' projects be previously secured. **Strung Project** validates candidate 'Lead' and 'Goes-With' Plans and Specs data sub-sets to enforce this requirement. The source data for 'Lead' and 'Goes-With' projects are subsets of Project CD data sets created by the **Set Maker** application.



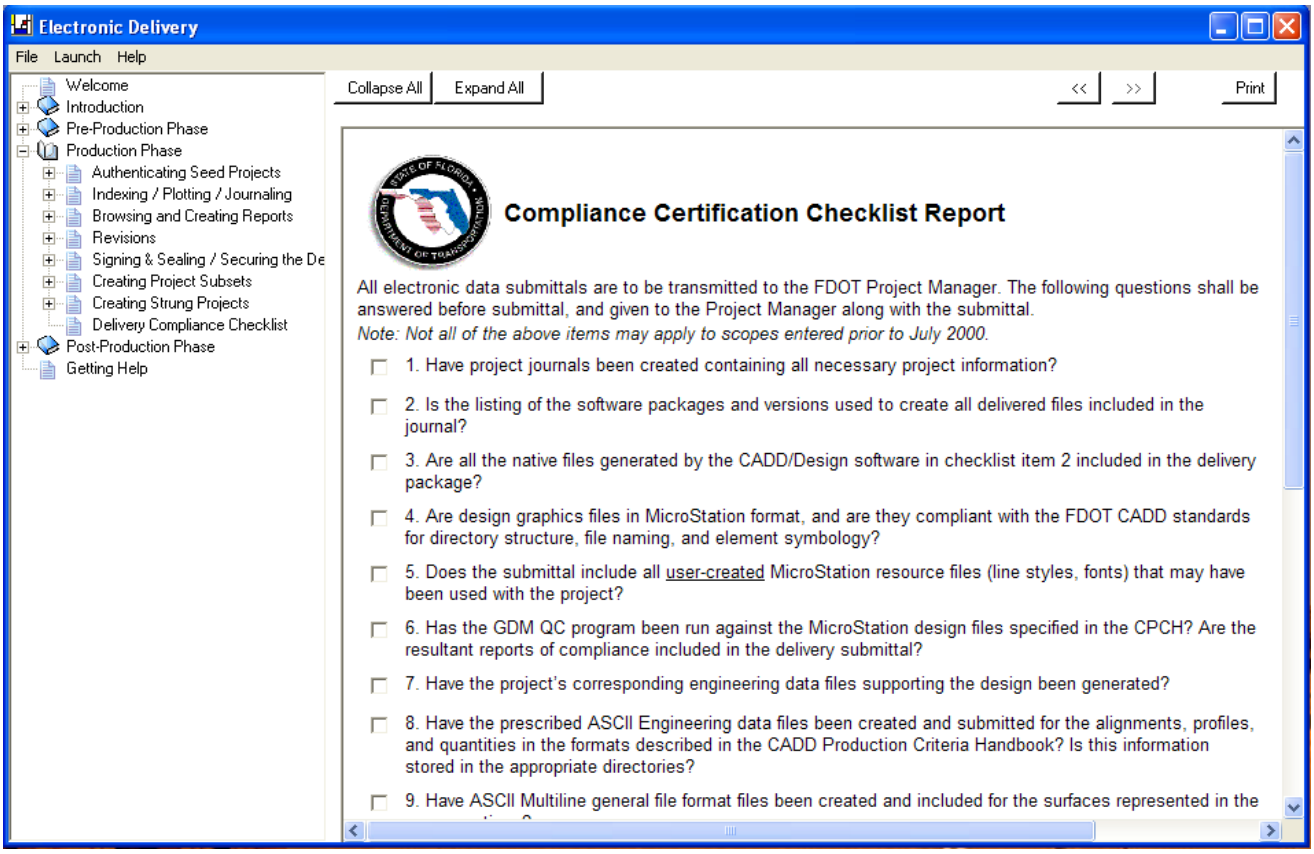
Structure

Section 3.22.3 Strung Projects

Section 6, Electronic Delivery – Strung Projects of the this manual contains an in-depth exercise on this topic.

Section 3.23 Delivery Compliance Checklist

Along with the secured project CD, the requirements listed in the **Compliance Certification Checklist Report** must be delivered to the FDOT Project Manager. The Compliance Certification Checklist Report, also known as the Compliance Certification Worksheet, is a document that contains the data producers' certification that all items required by the *CADD Manual* are included in the project. A signed **Compliance Certification Checklist Report** must also be delivered to the FDOT Project Manager.



Compliance Certification Checklist Report

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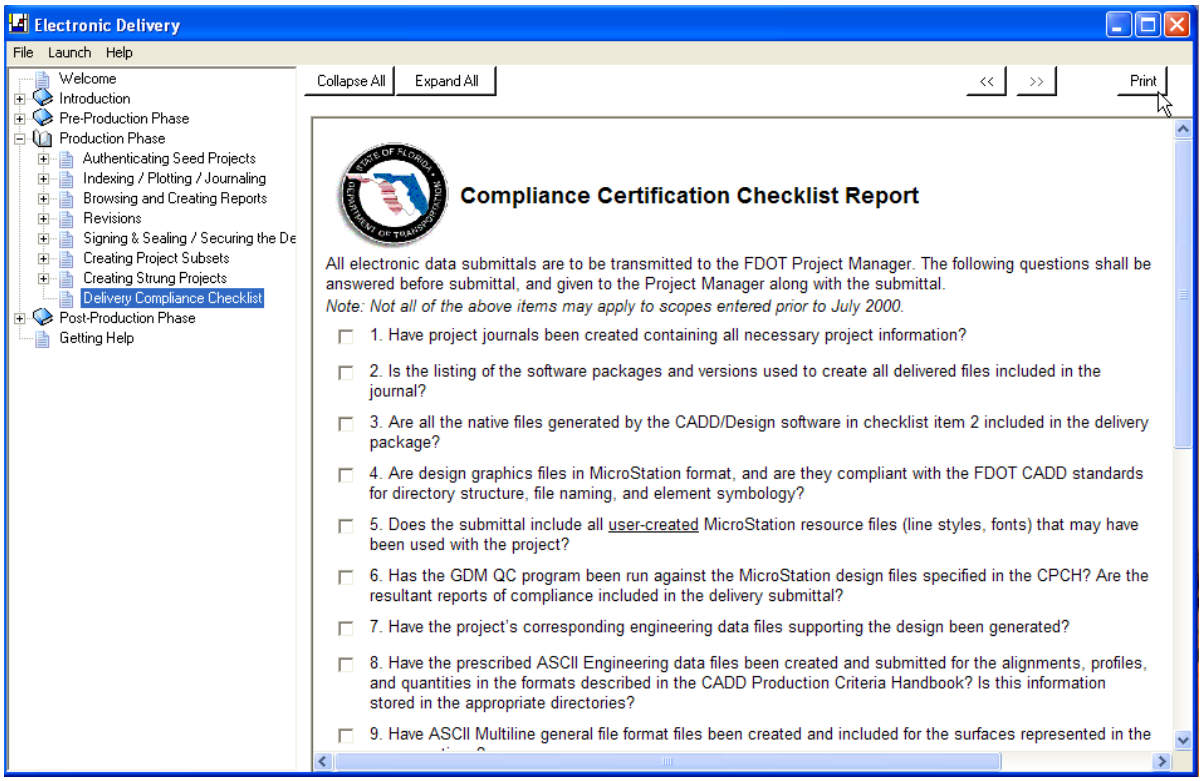
Exercise 3.23 Printing the Compliance Certification Checklist Report

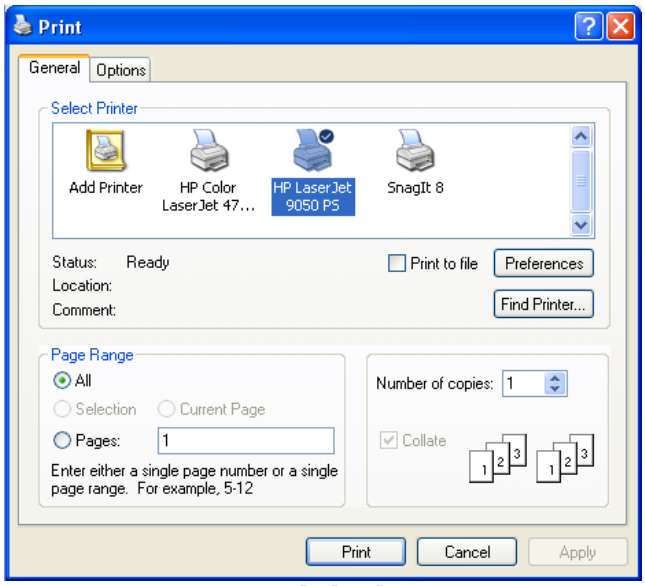
To print the checklist

1. From Electronic Delivery, click **Delivery Compliance Checklist as shown in the following figure and then click the Print button.**



Electronic Delivery - Delivery Compliance Checklist

5. Print opens. Specify the desired printer and click the **Print** button. The Compliance Certificate Checklist Report prints.



Print dialog box

Section 3.24 Making a Delivery

After the project is secured and the Compliance Certification Checklist Report is completed, the project can be copied to portable media, such as a CD Rom or DVD and labeled accordingly for delivery to the Department.

This delivery should include the Project CD, signed Compliance Certification Checklist Report, and all signature documents generated by PEDDS.

It is recommended that the project be authenticated on the delivery media prior to delivery to the Department, per Item number 15 of the Compliance Certification Checklist Report.

The **Project CD** is described as the 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.

Example of a labeled CD suitable for delivery

If the project is too large to fit onto one CD, the use of DVD is permitted as long as the delivery media is labeled as a DVD. If DVD is not available, the recommended procedure is to span the project across multiple CDs.

If multiple CDs are used, the recommended method of authenticating the delivery media changes as PEDDS cannot authenticate across multiple CDs.

Exercise 3.24 To authenticate multiple CDs

1. Copy all project data from the CDs to a temporary storage location using Windows Explorer.

Important *Do not make any changes to the project after copying to the temporary storage location.*

2. Authenticate the copied project in the new temporary location using PEDDS.
3. If project verifies, send the delivery media (multiple CDs) to the Department.
4. Remove the temporary project copied from the CD

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4 Post-Production Phase

The Post-Production Phase training section covers the details of receiving and authenticating a delivered project.

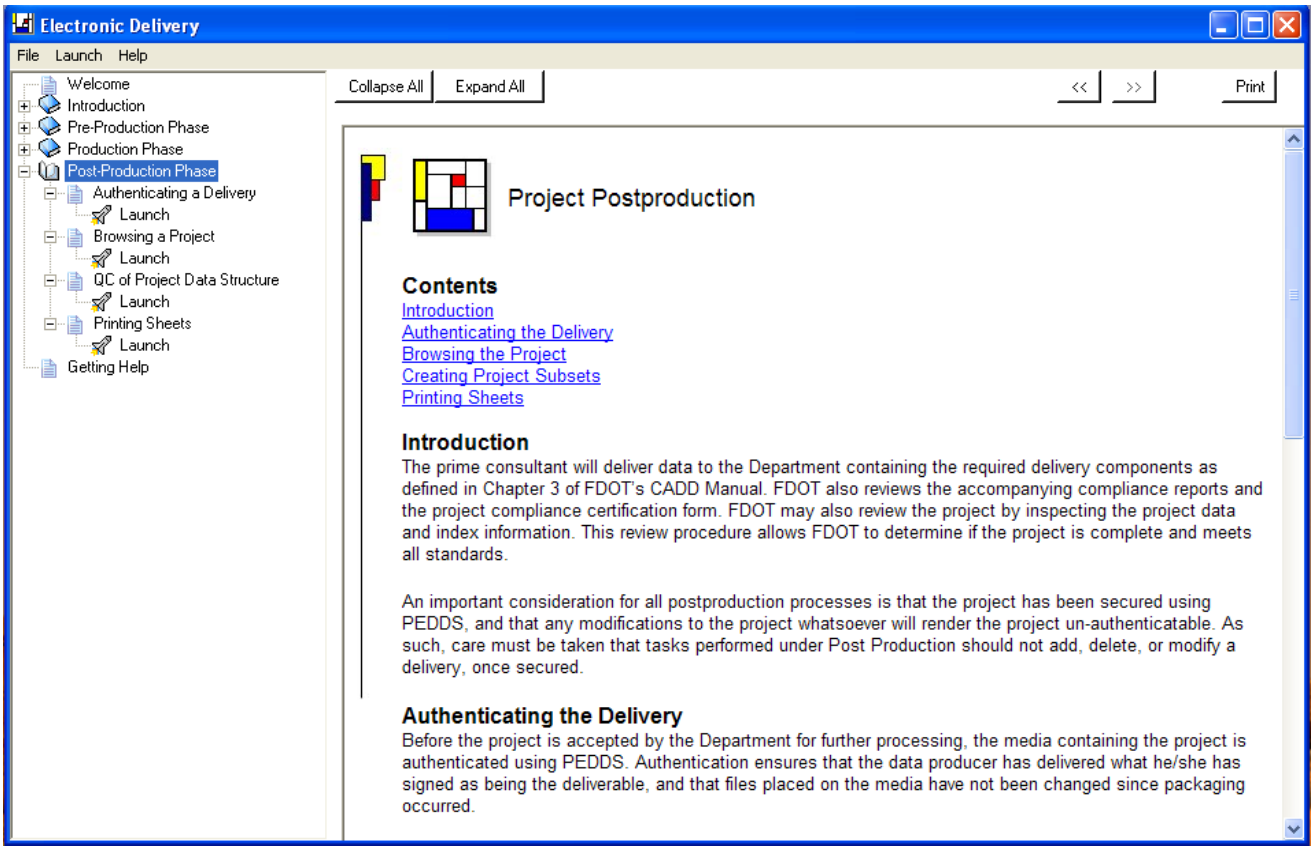
- Post-Production Phase
- Authenticating a Delivery
- Authenticating a Project: Other Considerations
- QC of Project Data Structure
- Printing Sheets
- Project Storage and Accessibility

Section 4.1 Post-Production Phase

Section 8.5 of the *CADD Production Criteria Handbook* (CPCH) describes the Post-Production Phase of Electronic Delivery as the review and acceptance of the data and supporting documentation, as well as making the delivery available to FDOT internal services for posting.

The consultant delivers a Project CD to Florida Department of Transportation (FDOT) containing the required delivery components as defined in Chapter 3 of FDOT's *CADD Manual*. FDOT project managers review the accompanying data, the Professional Electronic Data Delivery System (PEDDS) and other reports, and project compliance certification form (or an alternative form or checklist the District chooses to aid in doing Quality Assurance (QA) on the project delivered). Project managers also review the project by inspecting the project data and index information. This review procedure allows project managers to determine if the project is complete and meets appropriate standards.

An important consideration for all Post-Production processes is that the project data be secured using PEDDS, and any modifications to the project would cause it to not be able to authenticate in PEDDS. As such, all tasks performed under Post-Production should not add, delete, or modify the delivery in any way (unless so desired).



Expanded Post-Production Phase

The following are recommended review suggestions for the project manager:

- Ensure the CD (or other delivery media) has the proper labels.
- Authenticate with PEDDS, and safely manage all hard-copy documentation present (i.e., enroll the documents into the Department's EDMS system or other method for long-term document management).
- Make provisions to store the media the delivery came on, in the event the delivery is to be accepted.

Use the File Checker application to interrogate the project for evidence, or lack of QC controls. Review the File Checker reports submitted by the producer if applicable.

- Review the Index data and the referenced plan sheets using the Sheet Index Report (**SheetNDX#.htm**) in a Web Browser and the associated application to open and view the plan sheets themselves.
- Print any sheets that need further scrutiny, and seek the assistance of experts.

The list above only contains suggestions and is not complete. Each district has its own project acceptance criteria.

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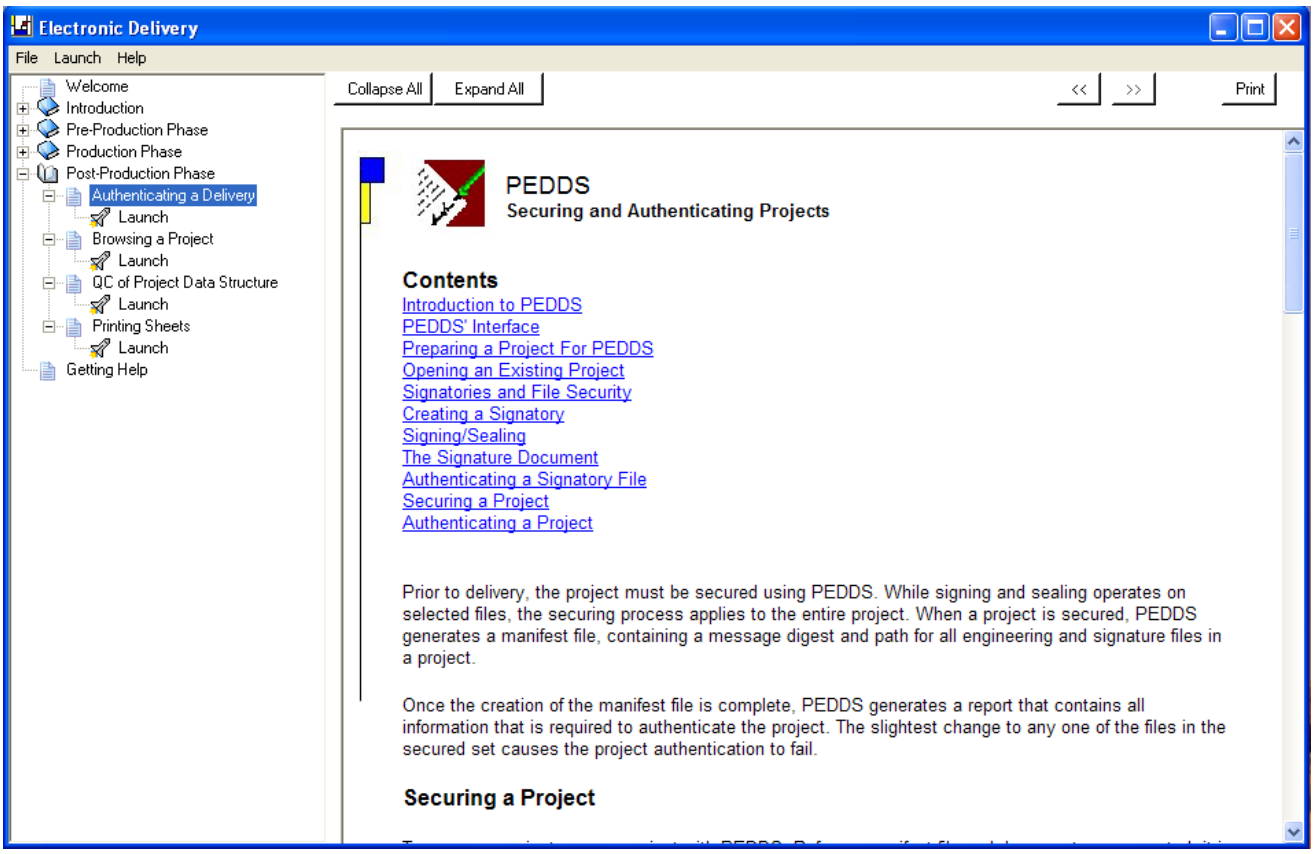
Section 4.2 Authenticating a Delivery

The PEDDS program features the ability to check the integrity of secured project files and directories and is used to authenticate delivered files. Project designers may use the program at any time to verify that the project has not been tampered with after being secured. Authenticating a project detects any additions, deletions, or modifications of files.

Authentication is the process of comparing the newly generated SHA-1 Hash Codes of the Manifest File (**Manifest.XML**), found printed on the Authentication Report [and those of the referenced Signature Files] for an on-hand delivery to those recorded on a received signed Manifest Document for a specific delivery. This process is similar to validation, but extends the process to the examining the signed paper Manifest Document.



PEDDS Securing and Authenticating Projects

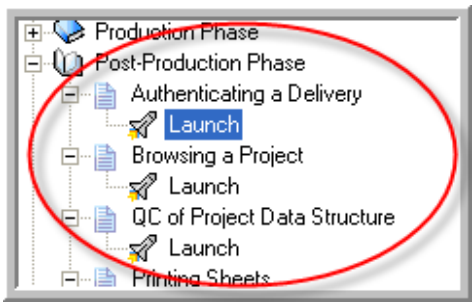
Exercise 4.1 Authenticating a Delivery

The entire delivered project will be authenticated. It is recommended to Authenticate the delivered Project CD (media on which the data arrived) itself. This CD should contain all data associated with a project, including all files on the Plans & Specs CD, all design files, all reference files, project journals, etc.

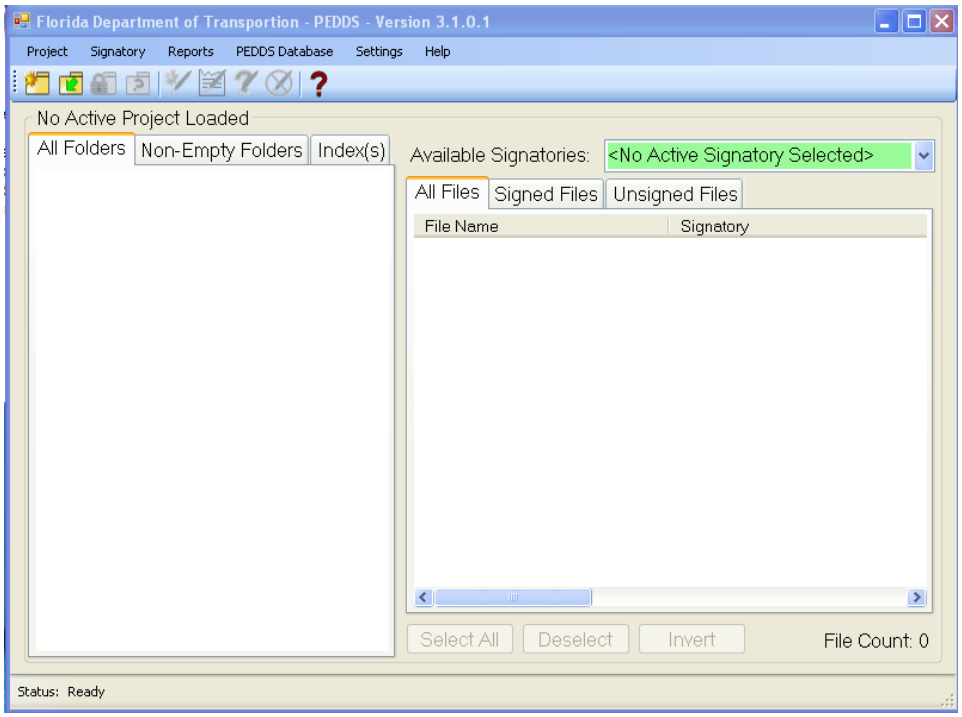
To open a project In PEDDS

1. Select the executable file **EDSection4ExercisesStart.exe**, ensure **Unzip to folder** is set to **C:\e** and click the **Unzip** button to place the starting dataset for Section 6 on the hard drive. Notice that there is an additional copy of the final secured project **21000415201** in the **C:\E\Plans_and_Specs** folder.

2. In the **Authenticating a Delivery** folder, click **Launch.** The Florida Department of Transportation – PEDDS window opens**.**



Launching PEDDS



Florida Department of Transportation - PEDDS

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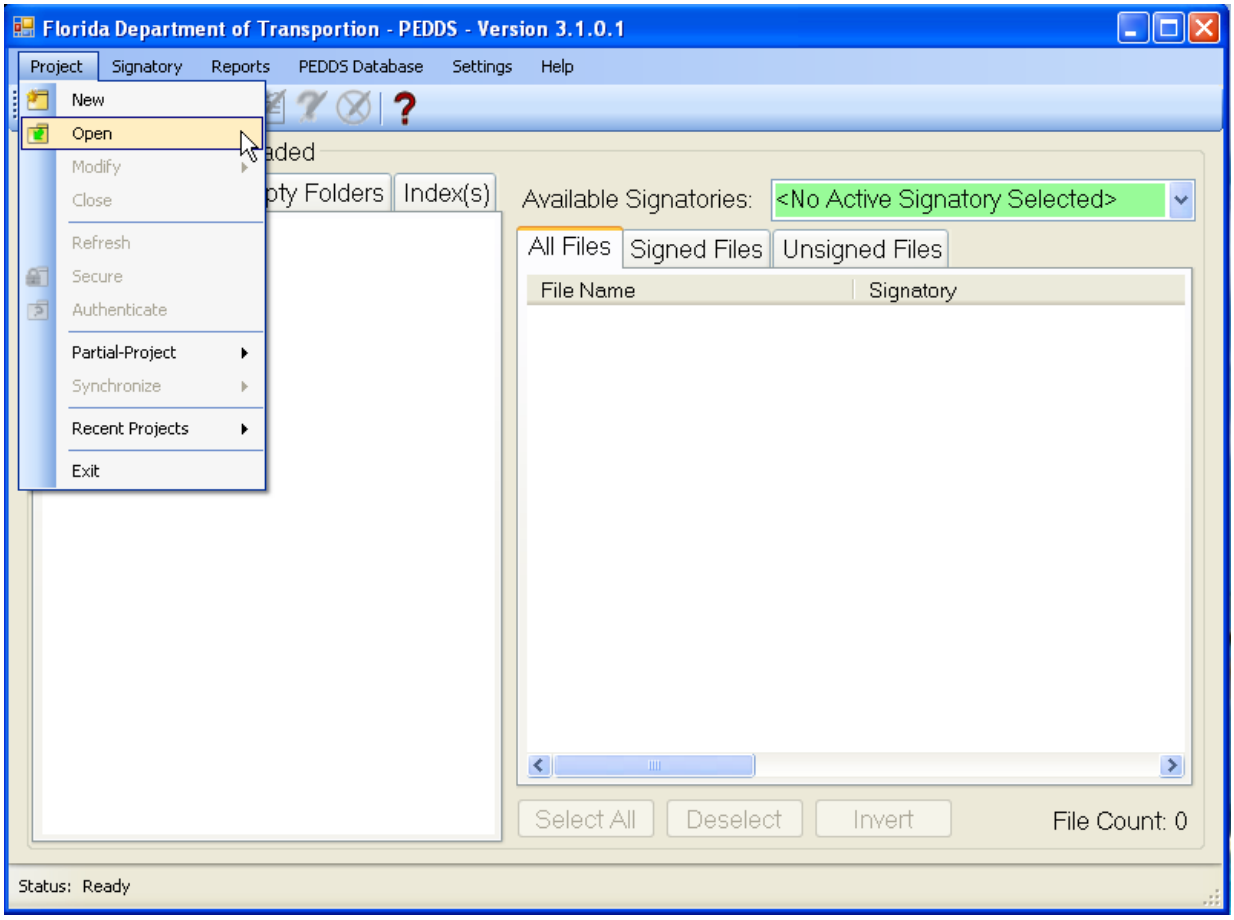
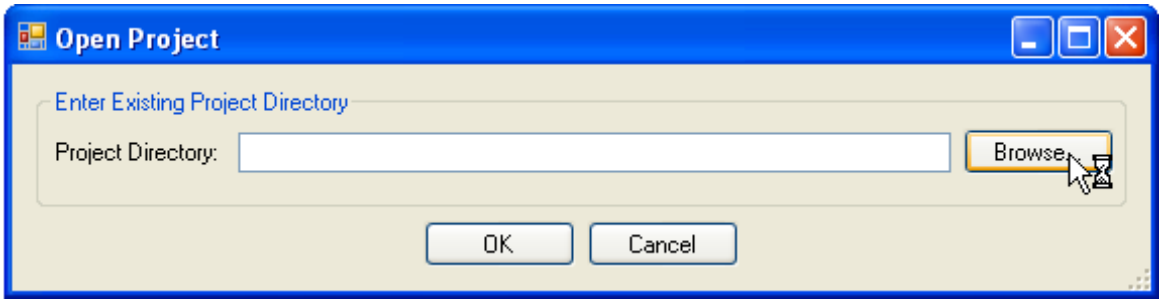
3. From the **Project** menu, select **Open** --*or*-- click the **Open Project** icon on the toolbar.



Open a PEDDS Project

4. Open Project displays. In the Drive box, select the drive letter from the pull-down where projects reside. This is usually the CD drive if authenticating the media the project was delivered on.
5. Navigate to the projects folder and select the project.



Open a PEDDS Project dialog box

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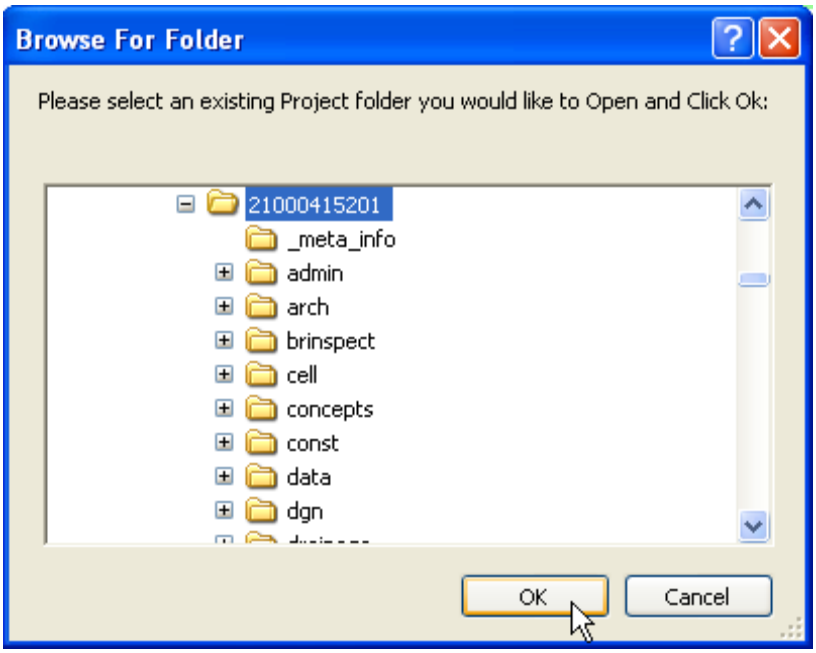
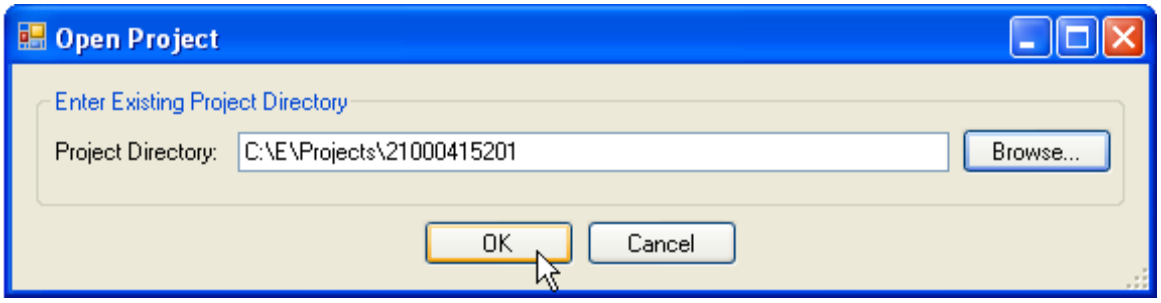


Open a PEDDS Project – browse for folder



PEDDS Open Project

Important If the project is on multiple CDs, use standard Windows tools to copy the complete project to a temporary folder on the hard drive where the data can re-combined. Authentication across multi-media is not supported. The project must reside in a single contiguous block of storage space to be processed by PEDDS.

Note Folders with a Briefcase icon represent existing PEDDS projects. Check **Find all Projects on** Current Drive to locate only the PEDDS projects on the current drive.

6. In the Current Path box, verify the project selection. If the selected project is incorrect, repeat step
7. To load the selected project into PEDDS, click the **OK** button. The loaded project is now ready to be authenticated.

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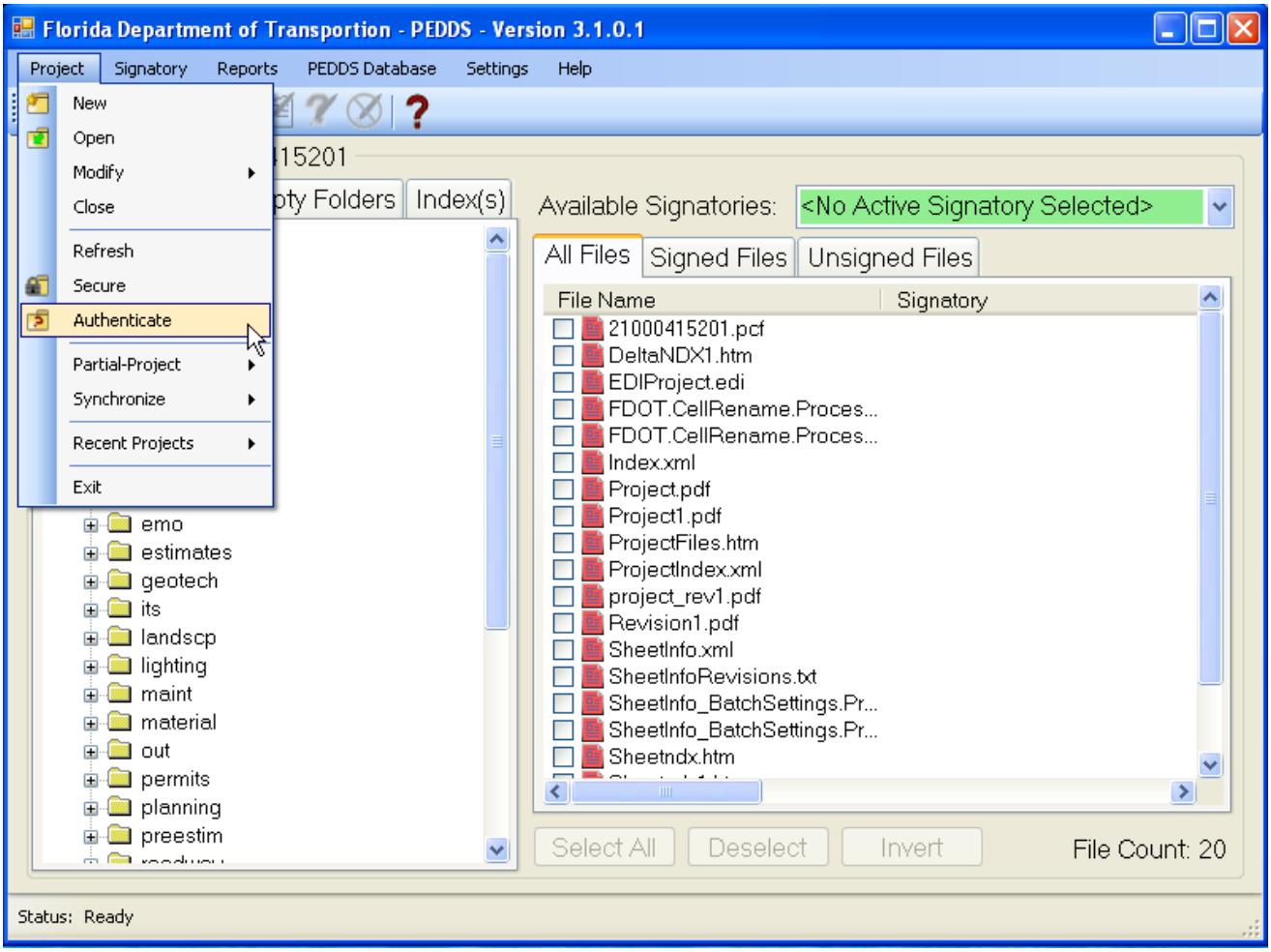
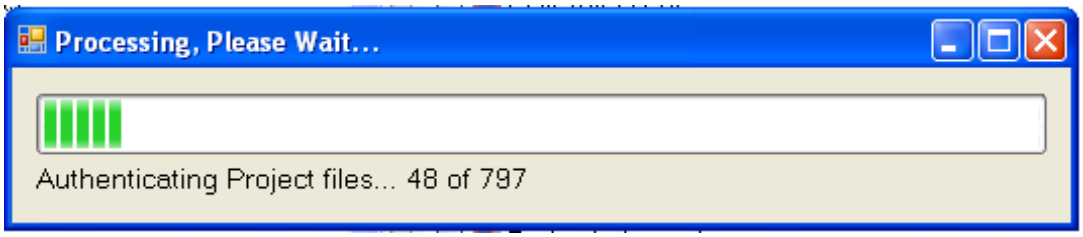
To authenticate the project

1. From the **Authenticate** menu, select **Project** --***or***-- click the **Authenticate the Current Project** icon on the toolbar. If the project was previously secured, Authenticate opens.



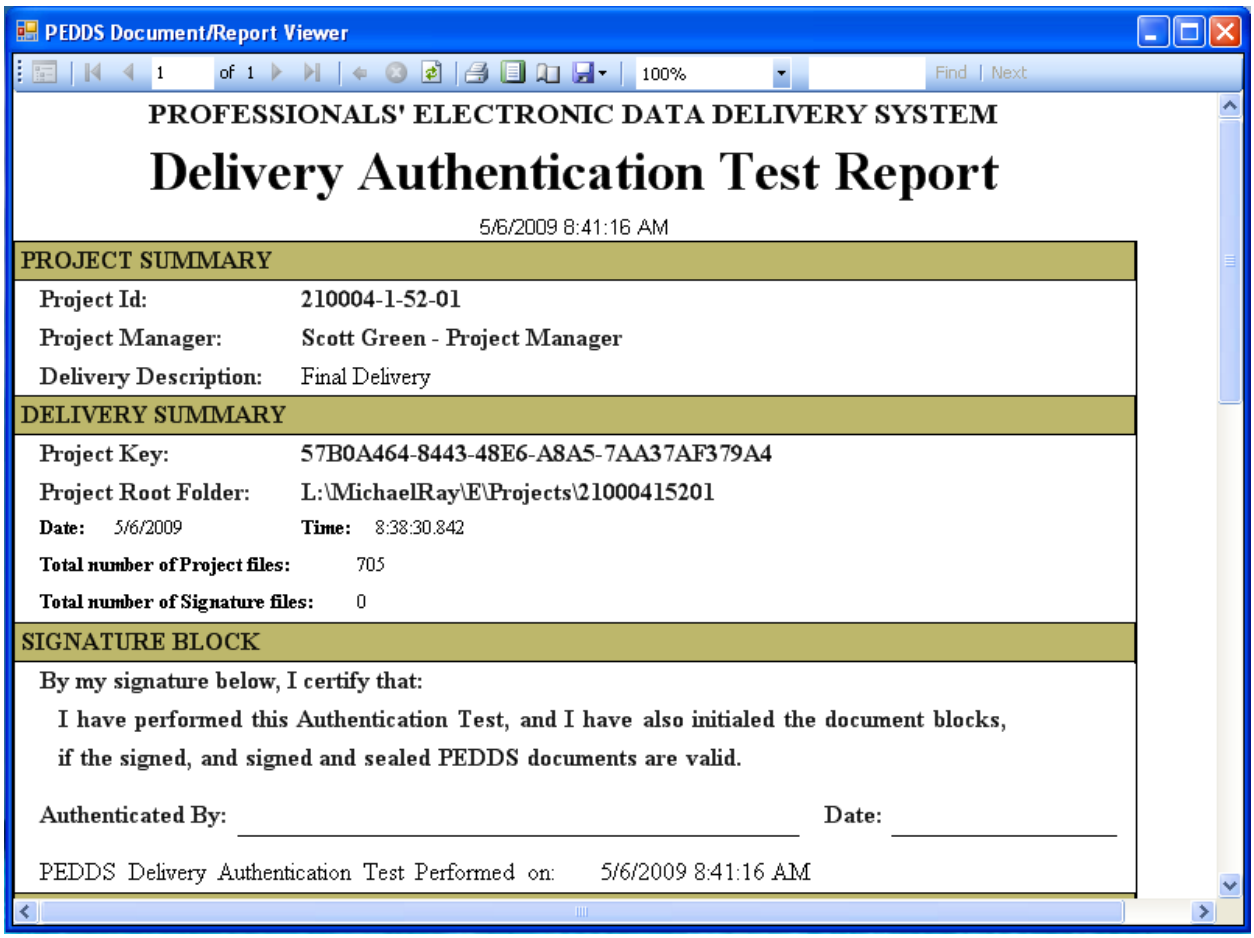
Authenticate a PEDDS Project



Authenticate a PEDDS Project – processing dialog box

Important According to standard procedure, the project must be secured prior to delivery.

2. In Report Viewer, click the **Print** button to send the report to a print device.
3. To close Report Viewer, click the **EXIT** button.



PEDDS - Report Viewer dialog box

Important The **Delivery** Authentication Test report is a required deliverable item as per Item 14 of the Compliance Certification CheckList Report. This requirement was included because many deliveries the Department received prior to the requirement would not authenticate. This ensures the data producer has at least taken made certain the project was correctly written to the delivery media.

4. At this juncture, the SHA-1 Hash code for the Manifest File appearing on the **Delivery Authentication Test Report** as shown above, should be manually compared with the one found on the printed Manifest Document that accompanied the delivery. If the SHA-1 Hash codes of the Manifest(s) appearing on each report match, then the project is Authenticated; that is no files have been modified, deleted, or added during transmission of the project between the data producer and data receiver (the Department).

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Section 4.3 Authenticating the Project: Other Considerations

The signing and sealing authentication process generates a report that:

- Displays the computed hash code of the professionals' signatory file, or other discipline signatory files.
- Displays the computed and stored SHA-1 hash code of the ProjectID.xml file.
- Displays any project files with an invalid SHA-1 hash code or missing project files.

This is the authentication process required by the Board of Professional Engineers to insure that files are signed and sealed.

The user must compare the signatory's SHA-1 hash code from the authentication report against the SHA-1 hash code from the signed and sealed signature document. If they match, then the signature file is valid. If no invalid project files are found and no files are missing, then all project files listed are signed and sealed. If there are any invalid files or missing files, then those files are excluded from the list of project files that are signed and sealed.

A file is the smallest quantity of work that can be signed and sealed; however, a file may be signed and sealed by more than one Signatory. The professional must ensure that the file to be signed and sealed contains only the work that he/she wants to sign and seal. There is no way to sign and seal a portion of a file. The qualifier option should be used to distinguish work disciplines within a file the signatory is taking responsibility for.

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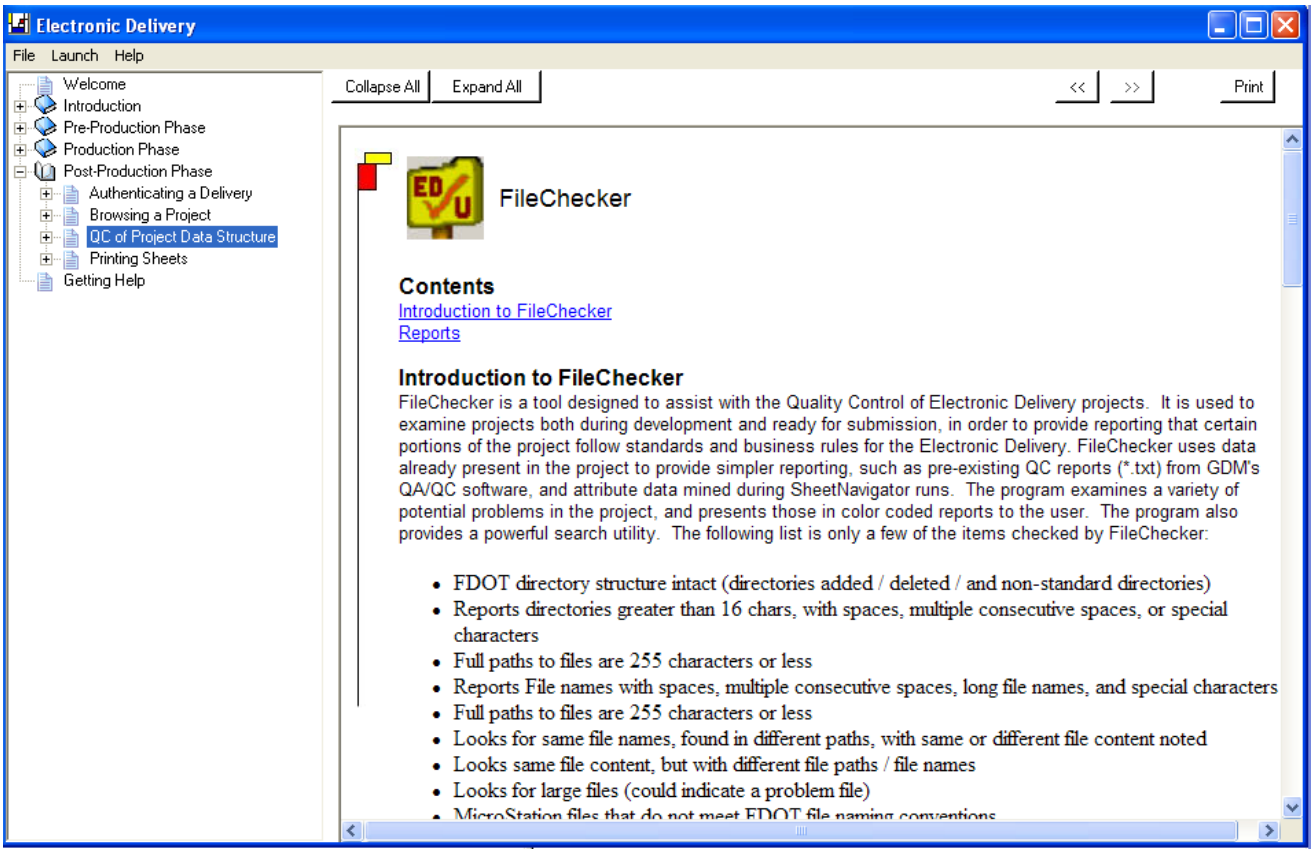
Section 4.4 QC of Project Data Structure

File Checker is a tool designed to assist with Quality Control (QC) of electronic delivery projects. It is used to examine projects both during development and when they're ready for submission and provides reporting that the project follows standards and business rules for the electronic delivery.



QC of Project Data Structure

File Checker uses data already present in the project to provide simpler reporting, such as pre-existing QC reports (*.txt) from QA/QC software and attribute data mined during SheetNavigator runs. The program examines a variety of potential problems in the project, and presents those in color coded reports to the user.

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The program also provides a powerful search utility. The following list is only a few of the items checked by File Checker:

- FDOT directory structure intact (directories added / deleted / and non-standard directories).
- Reports directories greater than 16 chars, with spaces, multiple consecutive spaces, or special characters.
- Reports File names with spaces, multiple consecutive spaces, long file names, and special characters.
- Full paths to files are 255 characters or less.
- Looks for same file names, found in different paths, with same or different file content noted.
- Looks for same file content with different file paths / file names.
- Looks for large files (could indicate a problem file.)
- Identifies MicroStation files that do not meet FDOT file naming conventions.
- Looks for Sheet files that have been signed / sealed, but are not 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**, etc.).
- Index validation, Index validation against PEDDS data, against data on-disk.
- Searches for QC reports, extracts data into sortable tables, including QC reporting of Critical files

File Checker is only a tool to assist in the reporting of projects for the items it checks. Users should not assume that it uncovers all potential problems. Likewise, read the reports carefully to determine if a reported item is indeed problematic for the project. This utility also requires Microsoft.NET Framework (which should already be installed if you are using other FDOT Electronic Delivery tools).

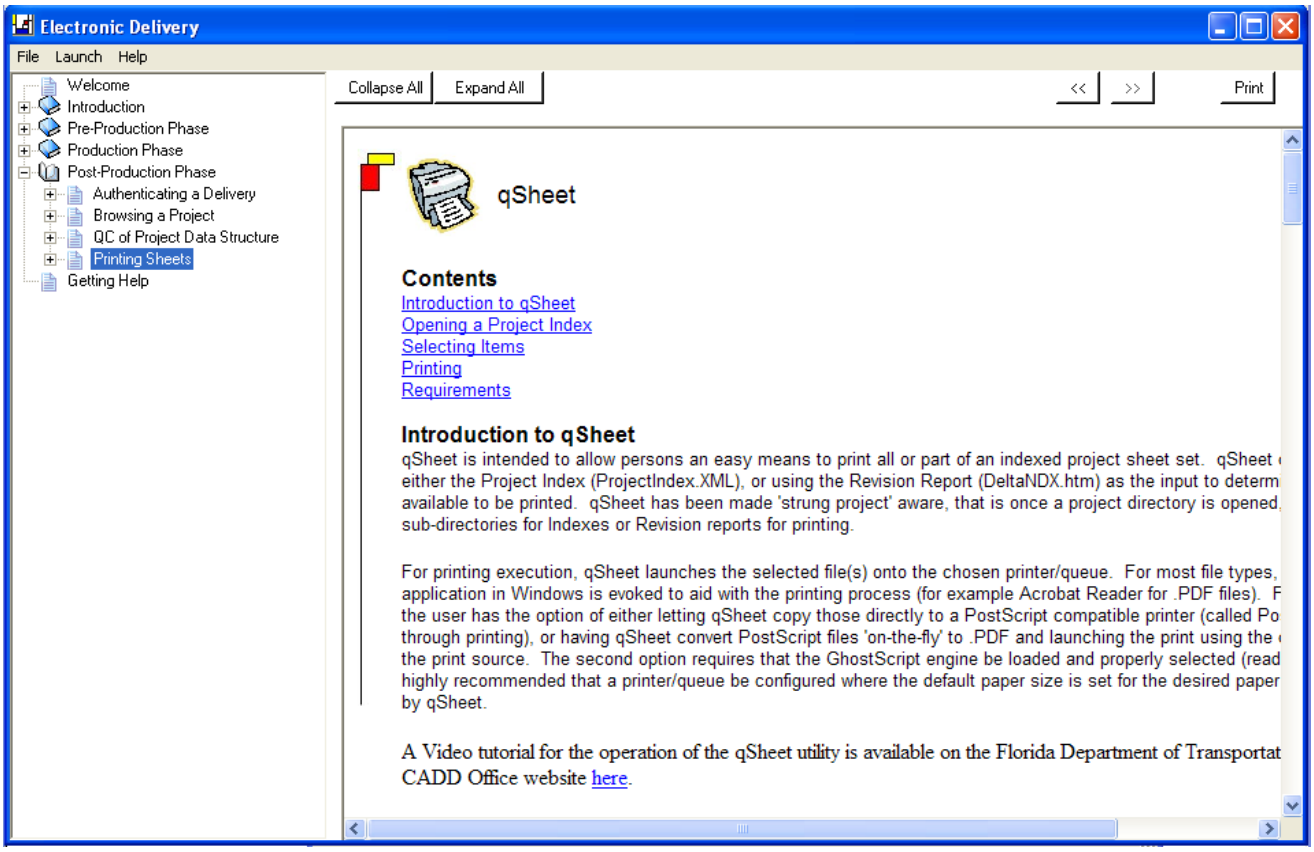
Note For more detailed information on the File Checker's Interface, see Section 2.5 of the Pre-Production Phase.

Section 4.5 Printing Sheets

QSheet is intended to allow a means to print all or part of an indexed project sheet set. qSheet can print using either the Project Index (**ProjectIndex.XML**) or the Revision Report (**DeltaNDX#.htm**) as the input to determine which files are available to be printed. qSheet is 'strung project' aware; once a project directory is opened, qSheet searches sub-directories for Indexes or Revision reports for printing.

For printing execution, qSheet launches the selected file(s) onto the chosen printer/queue. For most file types, the associated application in Windows is evoked to aid with the printing process (for example **Acrobat Reader** for .PDF files). For PostScript files, the user has the option of either letting qSheet copy those directly to a PostScript compatible printer (called Postscript pass-through printing), or having qSheet convert PostScript files 'on-the-fly' to PDF and launching the print using the converted PDF as the print source. The second option requires that the **GhostScript** engine be loaded and properly selected. It is highly recommended that a printer/queue be configured where the default paper size is set for the desired paper size to be printed by qSheet.

A Video tutorial for the operation of the qSheet utility is available on the FDOT, Engineering / CADD Office website. This video also discusses the proper configuration of the print queue for qSheet to work properly.



qSheet

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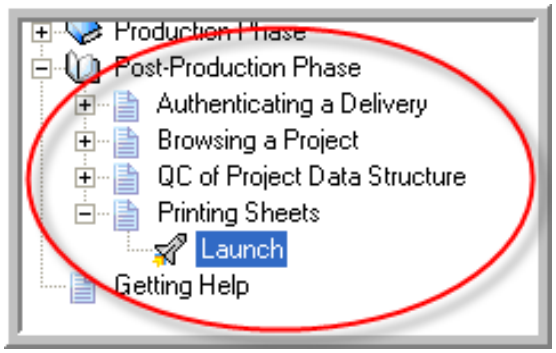
Section 4.5.1 To open the Project

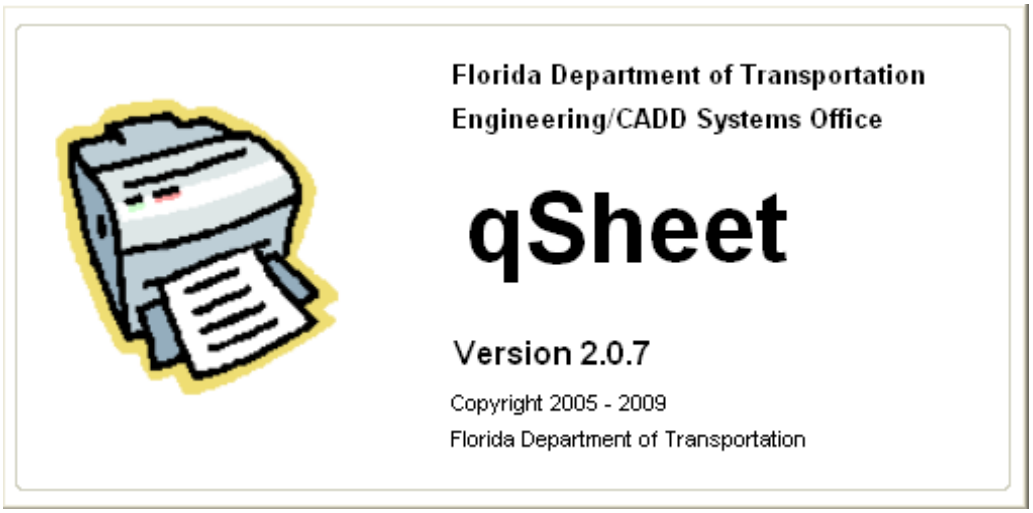
The qSheet application searches for all Indexes and revision reports under that directory structure. As these are found, each is validated (are the files being referenced found, and available for printing) before loading into the left pane tree view of the interface as shown in **Fig. 4-31**. Select the Index or report file in the left pane - the right pane automatically loads and refreshes the available sheets to print.

qSheet has been designed to run as a stand-alone application and requires no installation. It can be executed from non-writable media, such as a CD-ROM. Before a set of sheets can be printed, you must have a completed **ProjectIndex.XML** or **DeltaNDX#.HTM** file at the root level(s) of the project or sub-project (strung projects).

1. In **Printing Sheets**, click **Launch**. qSheet opens.

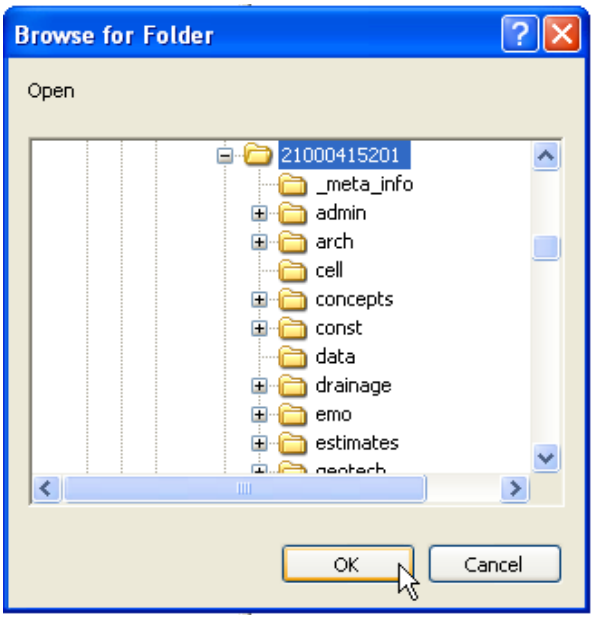


Printing Sheets



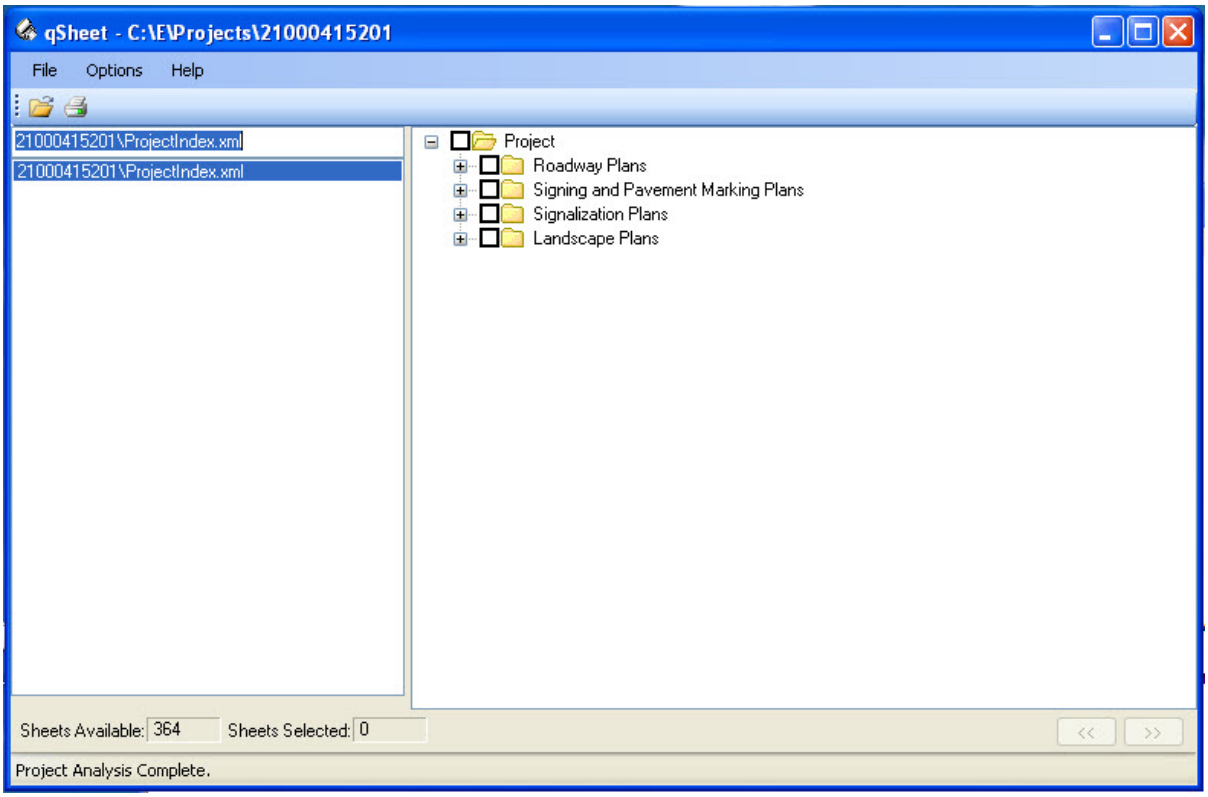
qSheet

2. From the **File** menu, click **Open** --***or***-- click the **Open** button on the tool bar. Browse for Folder appears.



Open

3. From Browse for Folder, navigate to the current project.
4. Click the **OK** button. qSheet re-opens and displays the project.



qSheet - Project 2100041 opened

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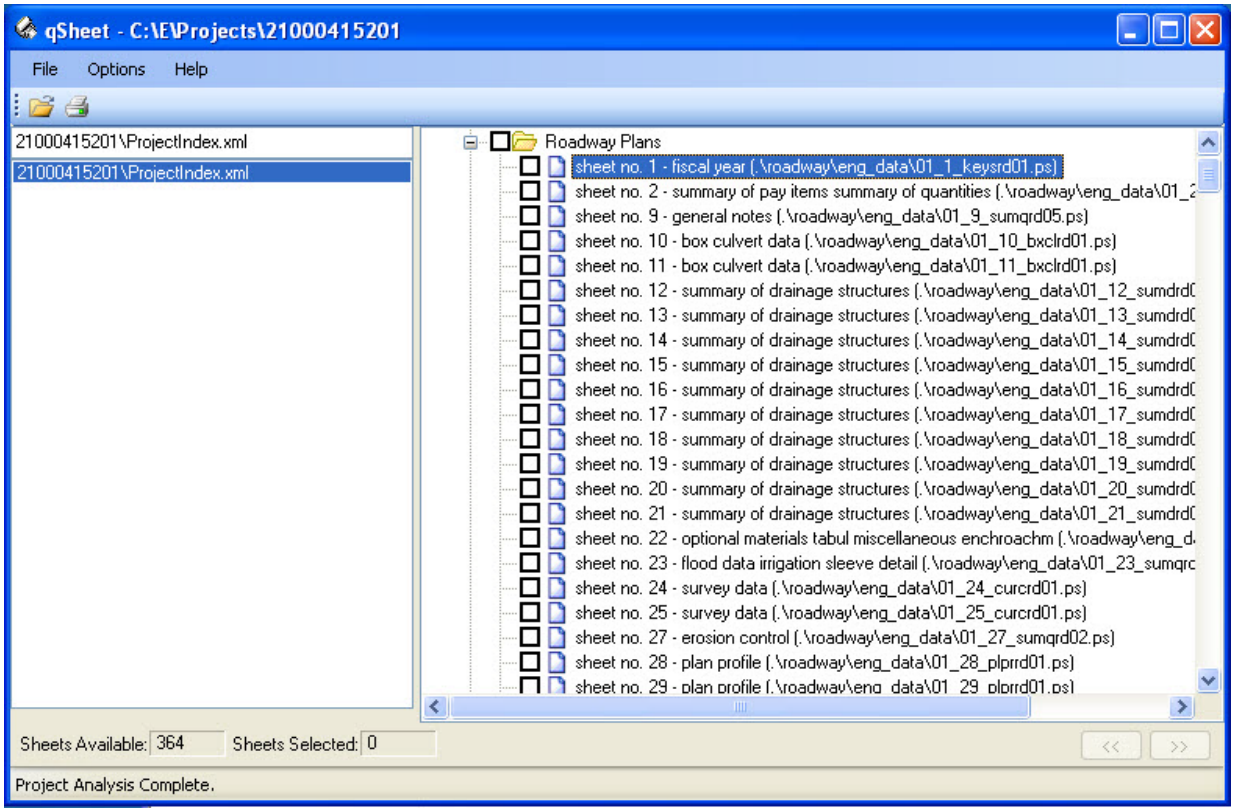
5. From the listed and available reports, click **21000415201\ProjectIndex.xml**. qSheet now displays the available components and, if expanded, the sheets available for printing are displayed.

Important If qSheet finds that an indexed sheet is missing from the project, an error message displays and the project continues to load without reference to the missing sheet.



qSheet - ProjectIndex.xml selected and expanded

6. Once the project index is loaded, select the box next to the desired item. To deselect an item, click the check box again.

Note The user may select or deselect one sheet a time, select or deselect all sheets within each plans component, or select or deselect the entire project.

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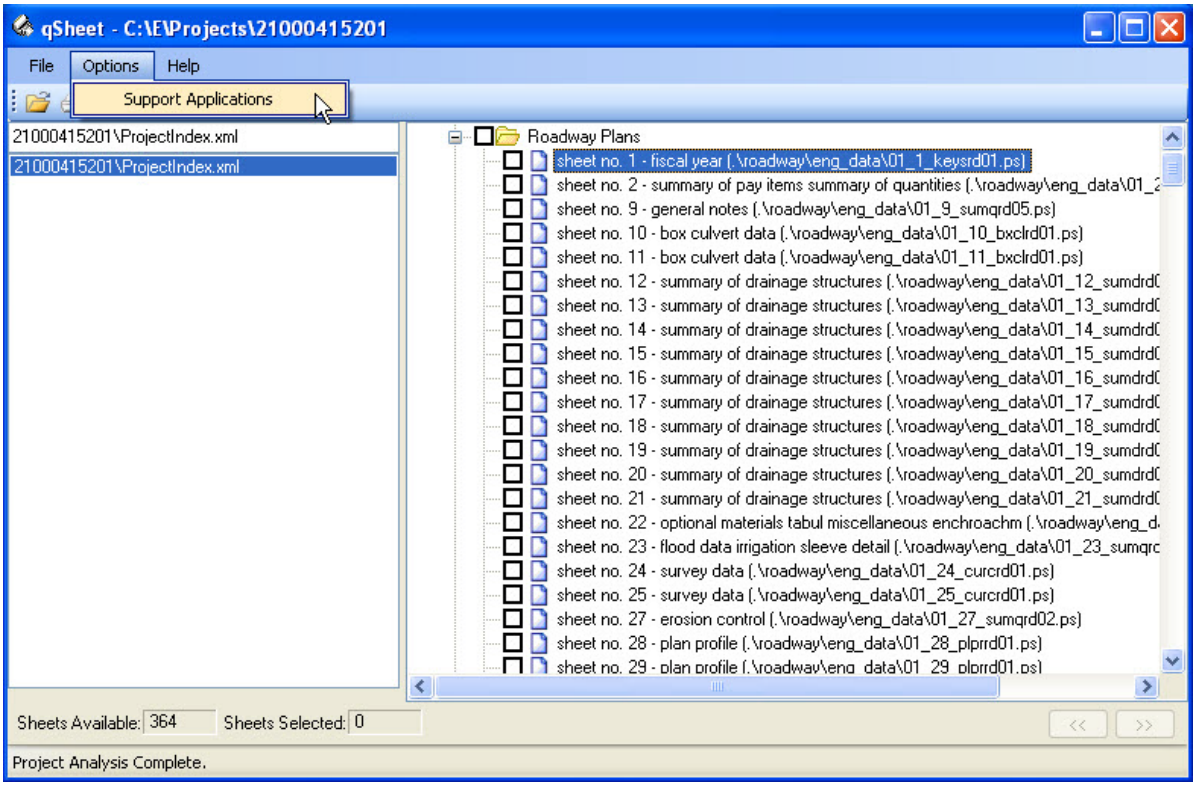
To print sheets

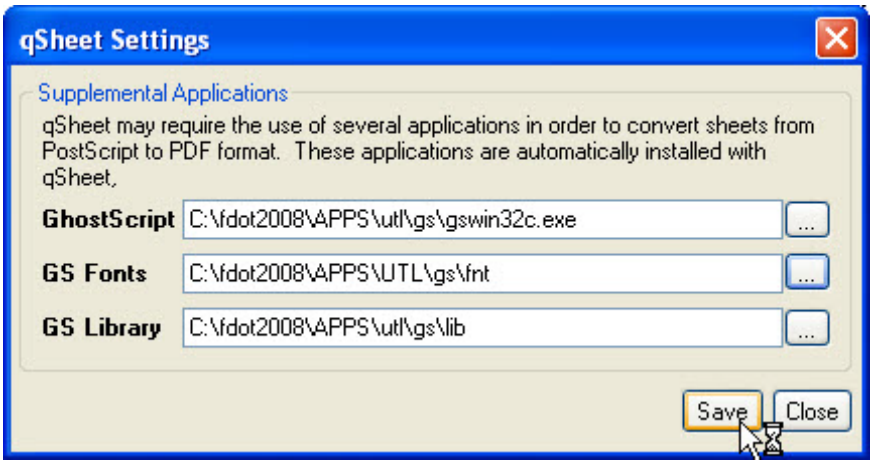
Before printing with qSheet, the Support Applications, which enable the **GhostScript** application to convert a Postscript file to PDF 'on-the-fly' for user who don't have a PostScript printer, must be verified. **GhostScript** is automatically loaded with the FDOT Electronic Delivery software.

1. From the **Options** menu, select **Support Applications**. .



qSheet - Support Applications

2. Supplemental Applications displays. Verify the paths to the support applications are as shown below and then click the **Save** button. Click the **Close** button to continue.



Supplemental Applications

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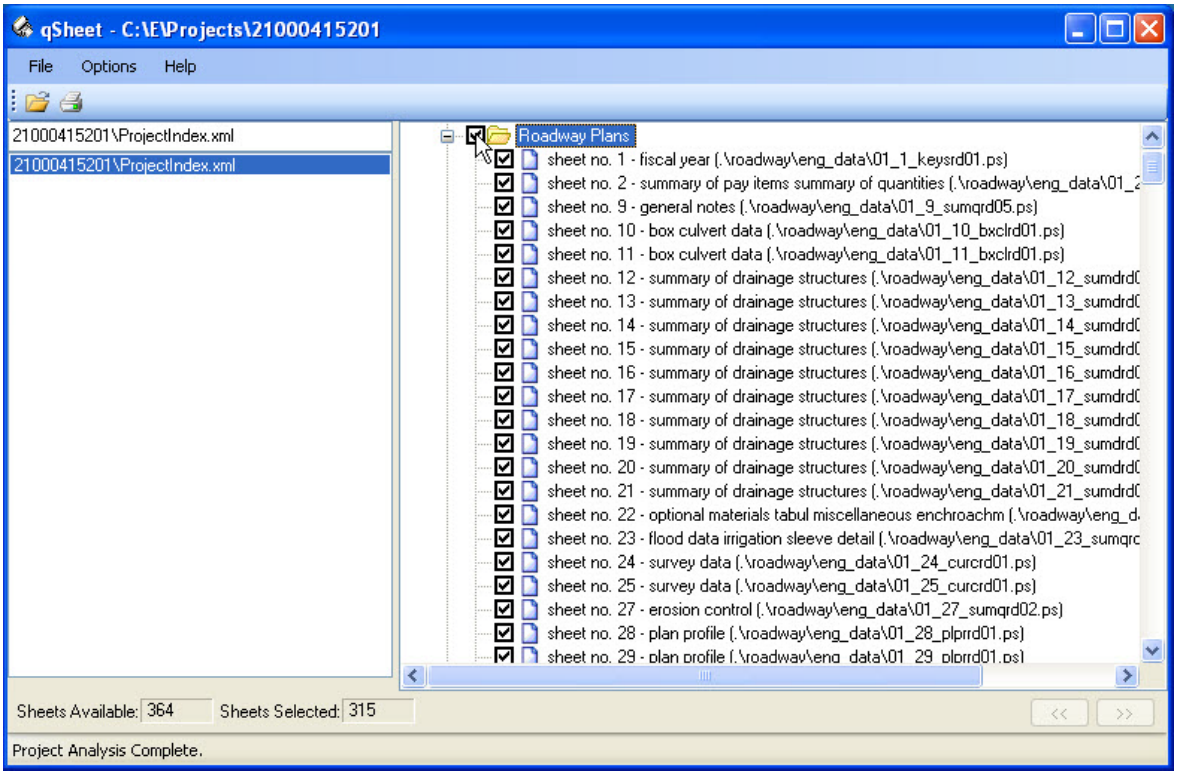
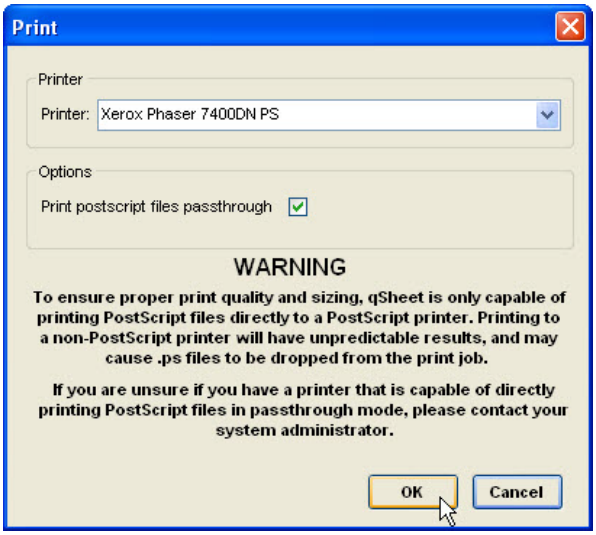


Supplemental Applications

3. Qsheet re-opens and is now ready for printing. From the **File** menu, select **Print** --*or*-- click the **Print** button on the tool bar. Print opens.



Print

4. From the **Printer** list, select the desired printer (output device). Preferably, pick a postscript compatible printer like the one shown above, which allows qSheet to copy postscript sheet files directly to the printer in "pass-through" mode Populate the checkbox for Print postscript files passthrough as shown in the previous figure.

Section 4.5.2 “Pass-through” PostScript Printing

If you have a PostScript compatible printer, and want to print PostScript files by copying them directly to a Postscript printer, there is a check box on Print as shown in **Figure 4-39**. This is what is referred to as “pass-through" printing, because the PostScript files are not processed by the Windows printing process. Windows normally uses a helper application (the associated application) to process print requests. Pass-through printing bypasses the Windows print process for PostScript files only (all other file types printed are processed by the associated Windows applications).

When the “pass-through” option is selected, Postscript files are not converted to PDF on-the-fly for printing and are copied directly to the printer/queue, resulting in faster printing. This option may also result in more accurate printing because no supplemental conversion to PDF takes place.

During PostScript pass-through printing, qSheet executes the following console command in Windows:

copy /b filename.ps \\server\printer_name

In Windows, a printer can be named something other than the printer's "share" name on the network or server. qSheet cannot resolve differences between those names (because it is executing a console copy command).If Postscript pass-through printing does not work, check the network share name of the printer and see if it is the same name as the printer name in the queue (as it should be). This can be done by looking at the sharing tab on the printer properties dialog for the printer.

Section 4.5.3 “On-the-Fly” PDF conversion Printing

When no Postscript printer is available, use the PDF conversion “on-the-fly” option to print the Postscript files. **This option is selected by making sure the “pass-through” option checkbox is not populated (no checkmark).** qSheet uses **GhostScript** to convert PostScript files to PDF “on-the-fly”, using the **GhostScript** setting selected in the Supplemental Applications dialog shown previously. The converted PostScript files is launched onto the Windows print process as PDF files (so the associated application for PDF printing, usually Adobe Acrobat, handles printing of converted PostScript -> PDF files). The converted PostScript -> PDF files are not stored on the disk permanently.

Make sure you have a print queue that has the default paper size set to size of paper you wish to get from the printer, and that the PDF printing settings are correctly established in Acrobat or Acrobat Reader (or an alternate associated application for handling PDF on your computer) before the print session is started in qSheet. When a postscript is converted to PDF on-the-fly, and launched on the Windows print process, qSheet has no ability to control Acrobat Reader to tell it the sheet size, orientation, scale, etc. – That is why it is necessary for the user to set it up ahead of time on your print queue (device default) and perhaps launch Acrobat Raeder or Acrobat ahead of time to make sure the settings are the default prior to printing with qSheet.

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Section 4.5.4 Printer Selection Considerations

Printer selection and setup can be the most difficult aspect of the project printing process. The following items should be considered when selecting and setting up the printer:

- **Print PostScript (.ps) files to a PostScript printer.** Attempting to print a PostScript file on a non-PostScript printer can have very unpredictable results, from skipping the item in the print queue to printing enormous amounts of empty pages. If you are not sure that the printer is a PostScript printer, contact the systems administrator or check the printer manual.

- **To print sheets as PostScript files converted "on-the-fly" to .PDF files,** a print queue available which sets the proper default paper size on the printer must be available. The new queue must be setup with a default paper size (i.e. tabloid or 11x17) in order to print the sheets correctly and on the correct paper size for plans

- **Get to know the printer settings.** Sheets in the print queue that are not PostScript files are printed at the default paper size that has been selected for the printer, which could result in .PDF or .TIF sheet images being printed on letter-sized rather than tabloid-sized paper. The selected sheet size is applied to all non-PostScript files in the print queue, so you may wish to print letter-sized spec packages as a separate print job.

  Printing an entire project can require a large amount of resources for the printer, and can overwhelm the printer's print buffer if too much data is sent. Most network printers have 48 to 64 megabytes of internal memory, and this may not be enough for larger print jobs. ECSO recommends against printing to a stand-alone network printer with limited buffer memory for large print jobs. Printing to a local printer or a network printer that is connected to a print server with additional storage capacity is preferred. If these are not available, you may have to print your project in batches.

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Section 4.6 Project Storage and Accessibility

Once the project is accepted by FDOT, the secured delivery is stored in the PEDDS database (**PEDDS-DB**).

Depending on the type of work, a project may also be defined in FDOT's Technical Information Management System (TIMS) for use in other post-design and/or post-letting phases of the project. TIMS is FDOT's internal file management system used during plans production for file check in/checkout.

Once the project is let to contract, if applicable, construction personnel may access TIMS project data for use during the construction phase. Furthermore, a secured delivery may be accessed from PEDDS-DB through the PEDDS interface or a Browser. Access of TIMS warehoused project or PEDDS DB secured deliveries is done from the internal FDOT intranet. As applicable, the files can be used as a basis for producing the final, as-built plan set using many of the tools found in the FDOT CADD software suite.

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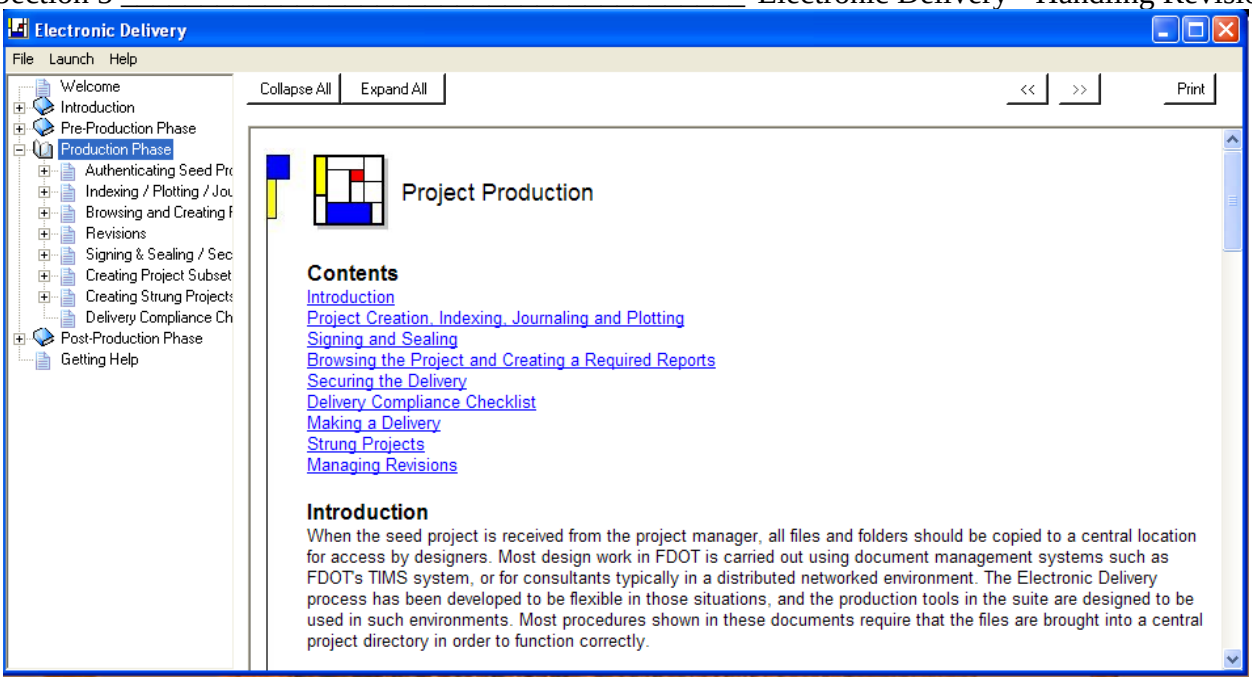
5 Electronic Delivery - Handling Revisions

The Electronic Delivery - Handling Revisions training section covers the details of handling revisions using Production Phase tools including:

- Revisions – Project Delta
- Sheet Navigator
- Updating the Index PostScript Images
- Using Project Delta
- PEDDS - Signing and Sealing Revisions
- Creating Data Subsets for Revisions
- Additional Revision Considerations

Section 5.1 Revisions - Project Delta

Section 20.4 of the *Plans Preparation Manual (PPM), Volume I* defines a revision as a modification to the PS&E package after it has been transmitted to Central Office but prior to bid opening. When processing Plan Sheet revisions in the context of electronic delivery, it is important to recognize how MicroStation works and consider the need to protect legacy data from earlier deliveries. The methods described are the recommendations for revising plan sheets in MicroStation files using software in the Electronic Delivery suite of tools.



Production Phase in the Context of Revisions

Production Phase workflow and Production tools are used to make revisions as part of the overall contemporary version of the project. These tools are used to bring the project up to date and create a new Project CD for delivery. Project Delta is used to report all revisions and Set Maker is used to build a data subset that represents the changed data only (Plans and Specs Revision CD).

Section 5.1.1 Preparing the Data for Revisions

To outline the exercise, a proposed drainage structure located at station 11+08.60 needs to be moved to station 11+08 due to a construction conflict. The required modification of the drainage structures in the design file **pondrd01.dgn** from the drainage discipline, only affects Sheets 35 and 36 found in **plprrd01.dgn** of the roadway discipline.

Note An assumption is made that the required revisions to **pondrd01.dgn** and **profrd01.dgn** design files have already been completed by the designer. The required changes to the Key Sheet are not made in this exercise due to time constraints.

For the purposes of our revisions exercises, the following assumptions are true:

- The Project CD is completed, secured and delivered.
- According to the PPM, the “Plans to Tallahassee Date” has passed.
- Revisions, not changes, are required.

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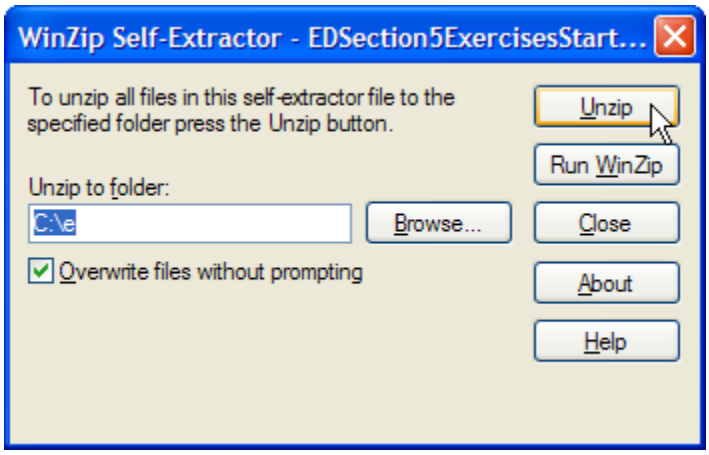
Exercise 5.1 To Prepare the Original Project for Revisions

During the revision procedure and following exercises, several new folders are created and used. The names of these folders are not important. The folder names in this course have been established by the writer only. The designer should follow corporate naming conventions when creating folders.

Important The revision procedure is required for Plan Sheets only. Although design modifications are made to referenced design files that are clipped into plans sheets, these design files, like a critical file, do not need to be revised using this procedure, as it would lead to a downstream file management nightmare.

1. Select the executable file **EDSection5ExercisesStart.exe**, ensure **Unzip to folder** is set to **C:\e** and click the **Unzip** button to place the starting dataset for Section 5 on the hard drive. Notice that there is an additional copy of the final secured project **21000415201** in the **C:\E\Delivered Projects** folder.



Unzipping the Dataset

Note Executable files are provided in the dataset for logical starting points throughout Section 5. For example the executable file EDSection5Exercise5.4Start.exe contains the files from Section 5 exercises up to Exercise 5.4. If you encounter errors while working through an exercise, select the executable with the nearest starting point and unzip the files as demonstrated above. The Unzip to folder will be set to the correct hard drive location.

Important Leave a copy of the **21000415201** project in the **C:\E\Projects**\ folder to use for the revisions. When preparing revisions, always preserve the original delivery in a folder like the **Delivered Project** folder created above. Not only does Project Delta require an original copy of the delivery, but also the original delivery's files, Postscript files, etc. that are signed and sealed by a signatory and must be preserved so they will Authenticate.

Note In the following exercise, the Electronic Delivery processes are made aware of the revision. During the revision process, changes are made to the design files that represent the sheets to be subsequently plotted.

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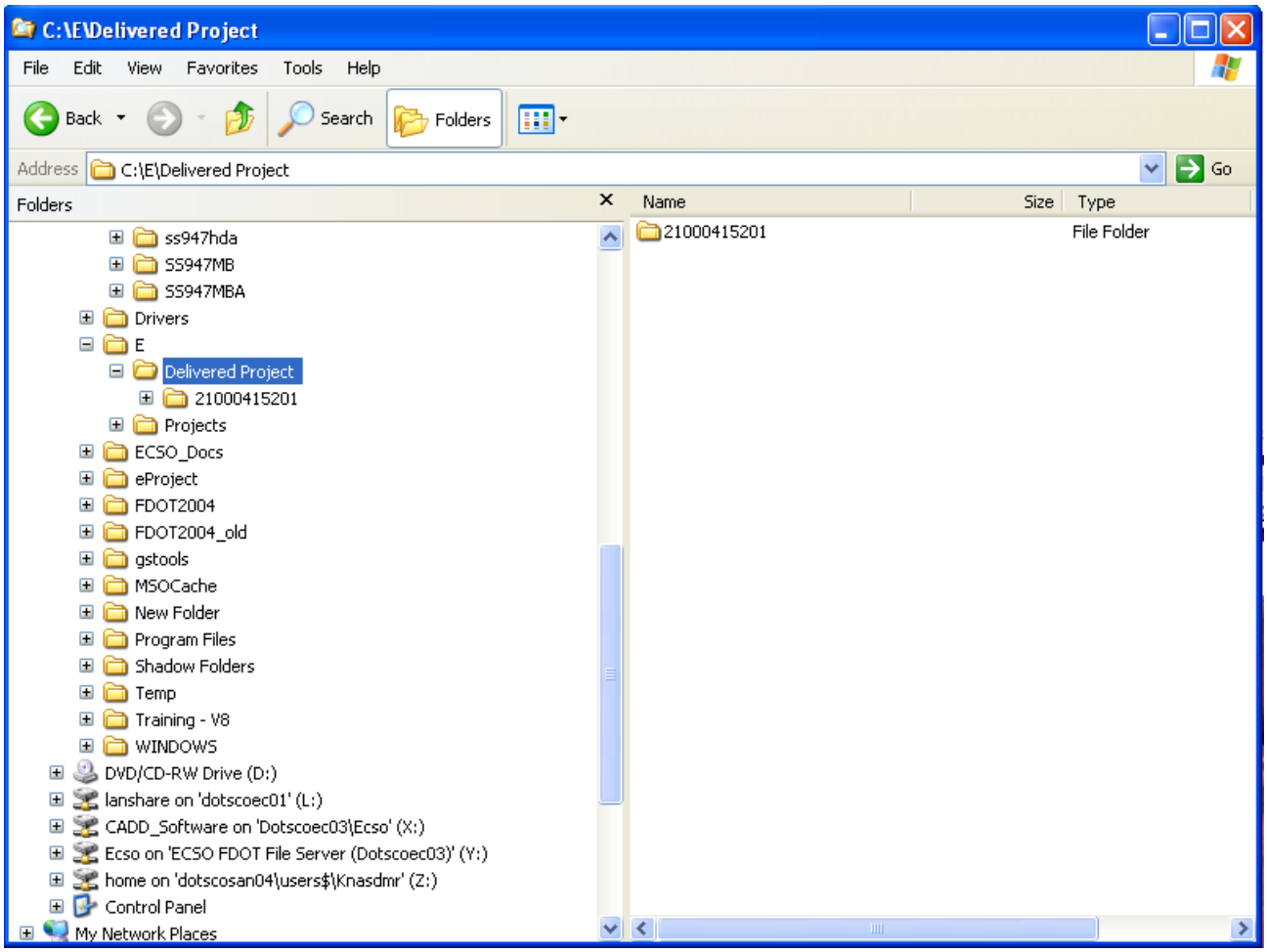
Important Do not make changes to the names of the sheet design files. Instead, the software used in the Electronic Delivery process, specifically Sheet Navigator, is instructed that a revision to a sheet has occurred. In Sheet Navigator, the revised sheet is flagged as revised and includes the revision number of the contemporary version of the revised sheet. Sheets that are not revised remain at the revision number they were before the contemporary revision. If a sheet has never been revised, its revision number remains zero (0).



Windows Explorer - Original Project copied

Section 5.2 Sheet Navigator

Sheet Navigator is used to mark sheets for revision. It backs up the original design file, tracks the revision number, marks the original sheets as obsolete and places revision text in the revision title block. Any sheet(s) marked obsolete display with a red "X", become inactive and are ignored by the Electronic Delivery Indexer, or EDI2, and Plotting.

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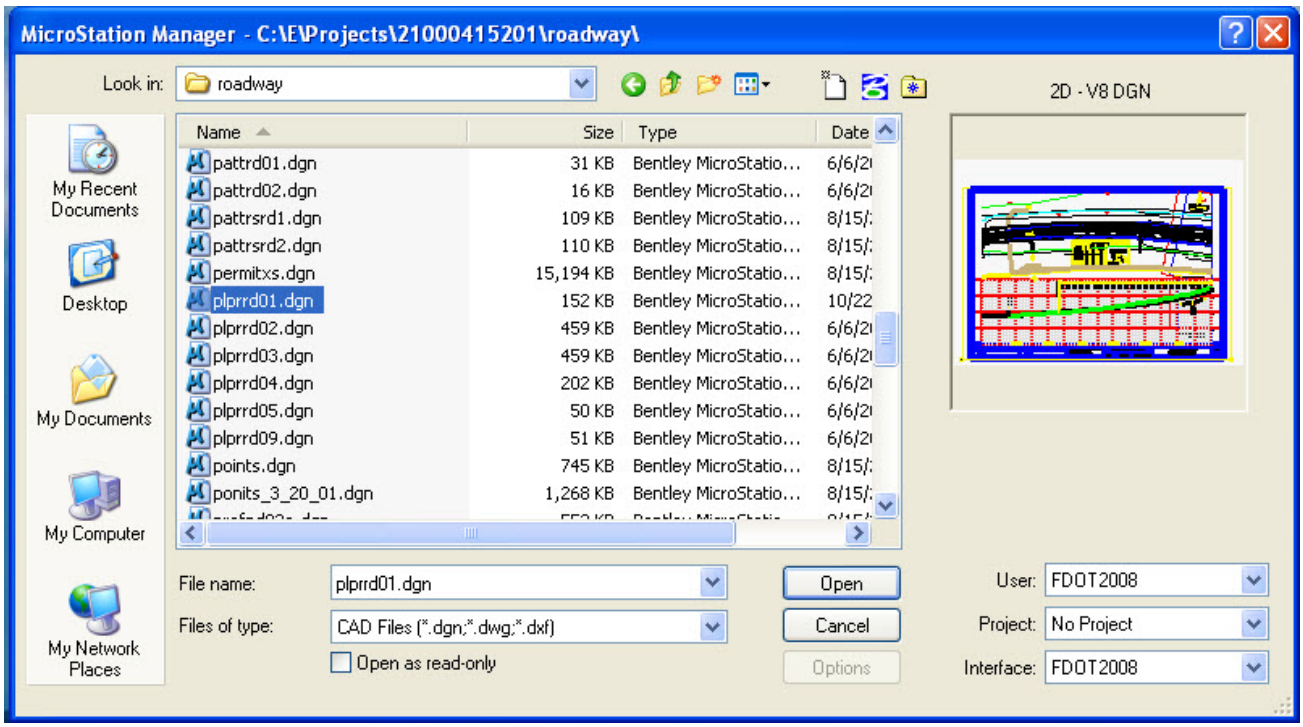
Exercise 5.2 To use Sheet Navigator to revise Plan Sheets

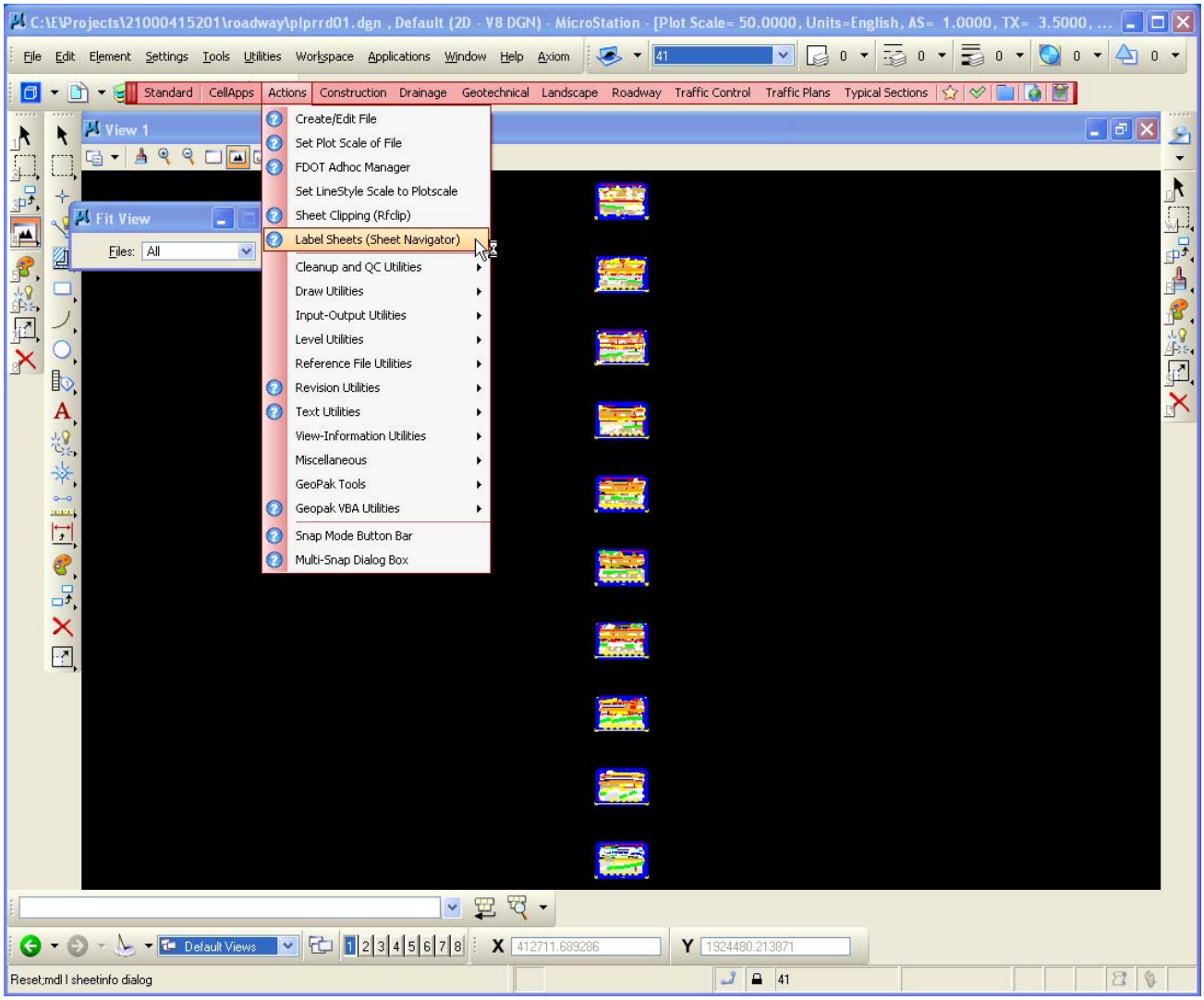
Prior to opening Plan Sheet(s) for revision, the user should make necessary modifications to any referenced MicroStation design files. For the purposes of this course, we are making the assumption that all necessary design file modifications are complete.

1. Double-click the **FDOT2008** icon to start MicroStation XM.
2. From the MicroStation Manager, select **plprrd01.dgn** and click the **OK** button.



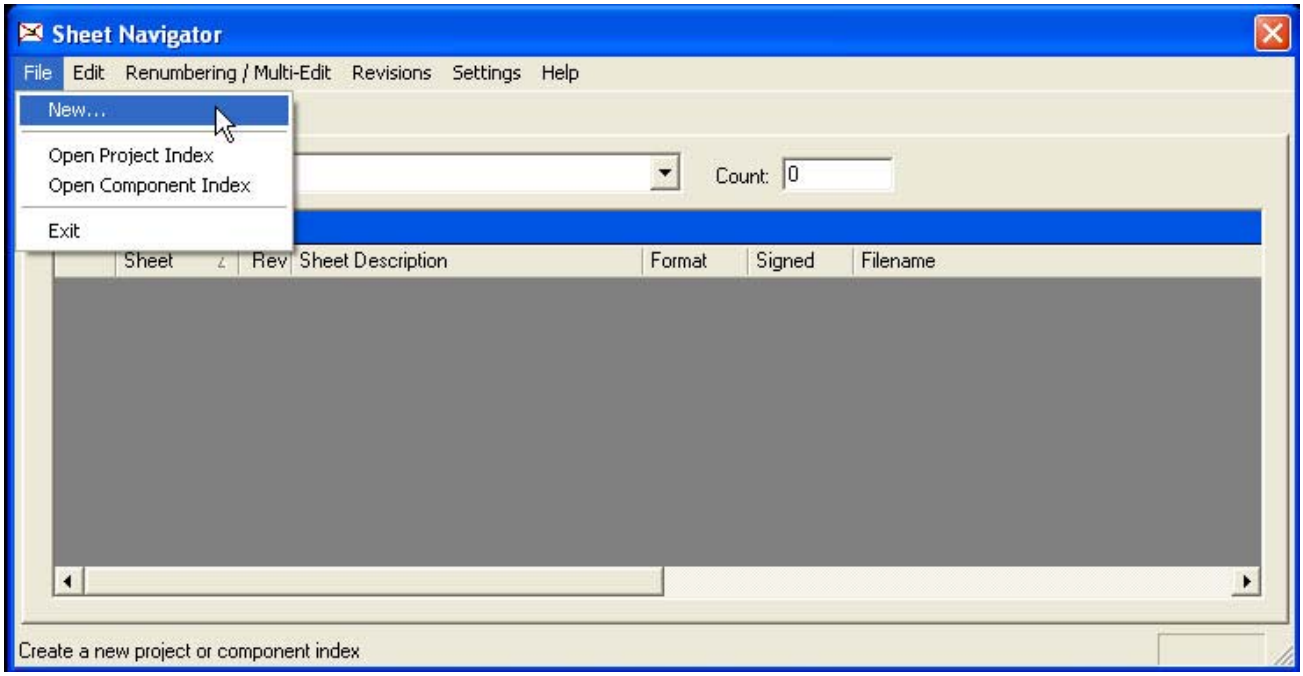
MicroStation Manager

3 MicroStation XM opens in the FDOT2008 workspace. From the FDOT Menu option **Utils**, select **Label Sheets (Sheet Navigator)**.



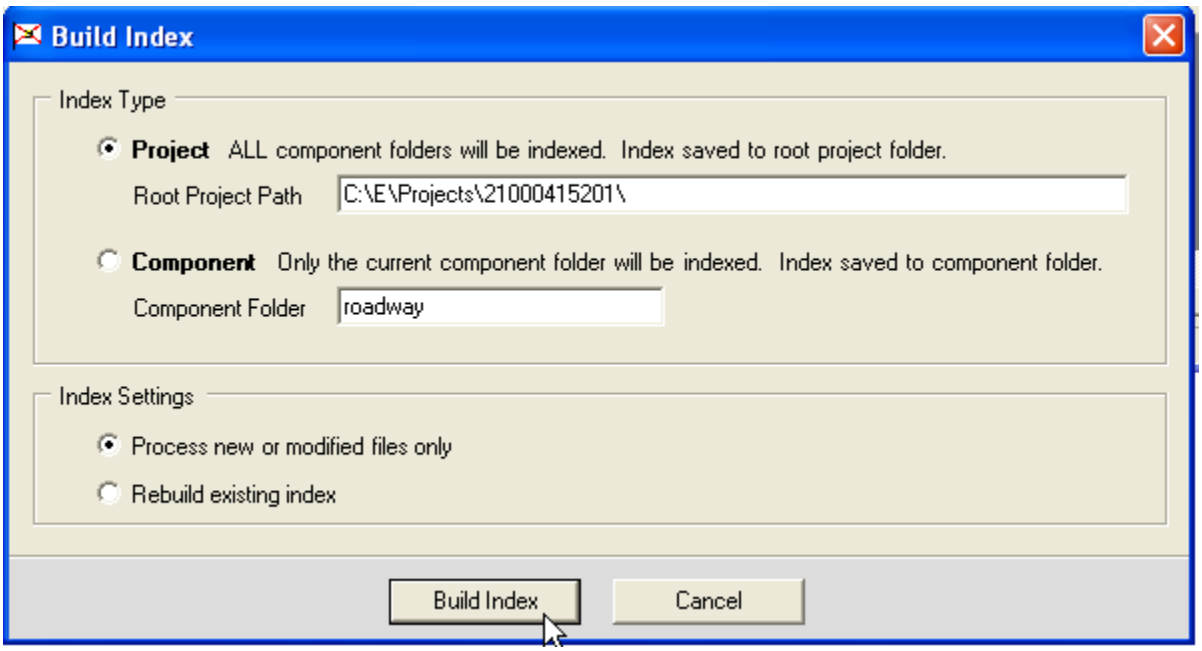
MicroStation with Cadpilot

3. Sheet Navigator opens displaying the **Sheet Edit** tab in the MicroStation window. Click the **Navigator** tab and then select **File** > **New**.



Sheet Navigator - Navigator Tab

4. When Build Index opens, verify the active project.



Build Index

5. Click the **Build Index** button. MicroStation XM minimizes and CM.Batch opens.

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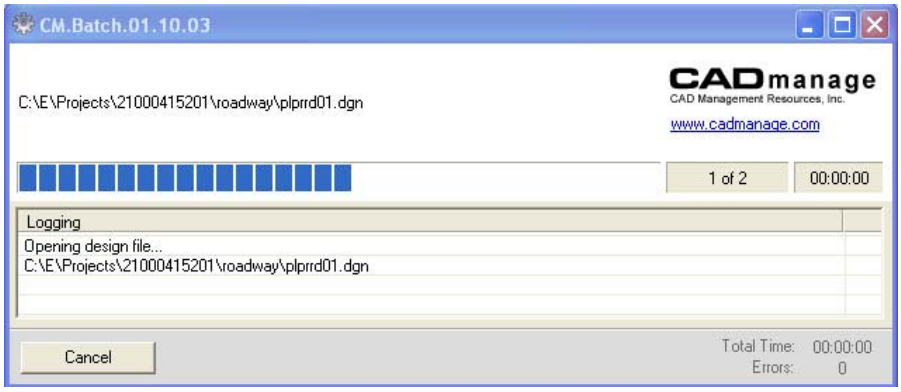
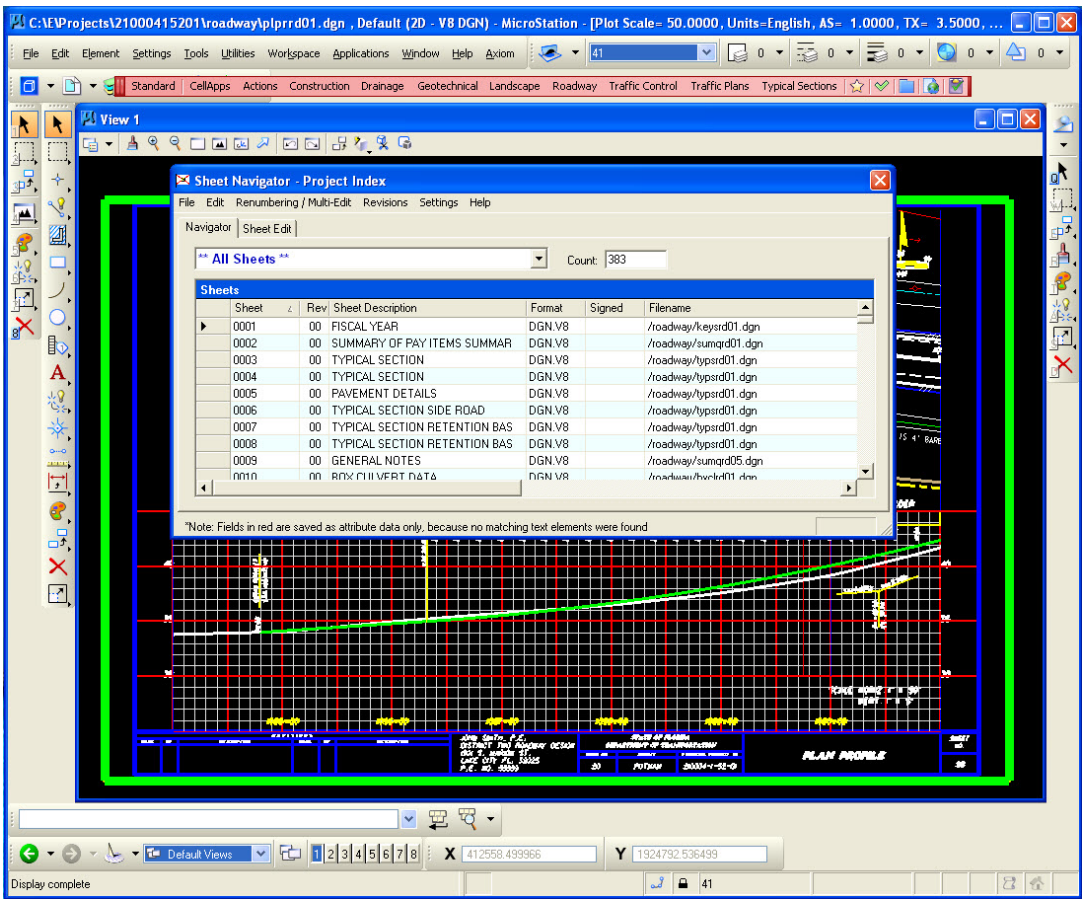
Note Sheet Navigator creates the file **SheetInfo.xml** by default in the project's root directory. If the file already exists, it is updated by the process as shown in the previous figure. This file is required for Sheet Navigator to use automation tools, such as **Renumbering**, **Revisions**, and **Multi-Sheet edit**.



CM Batch Processing

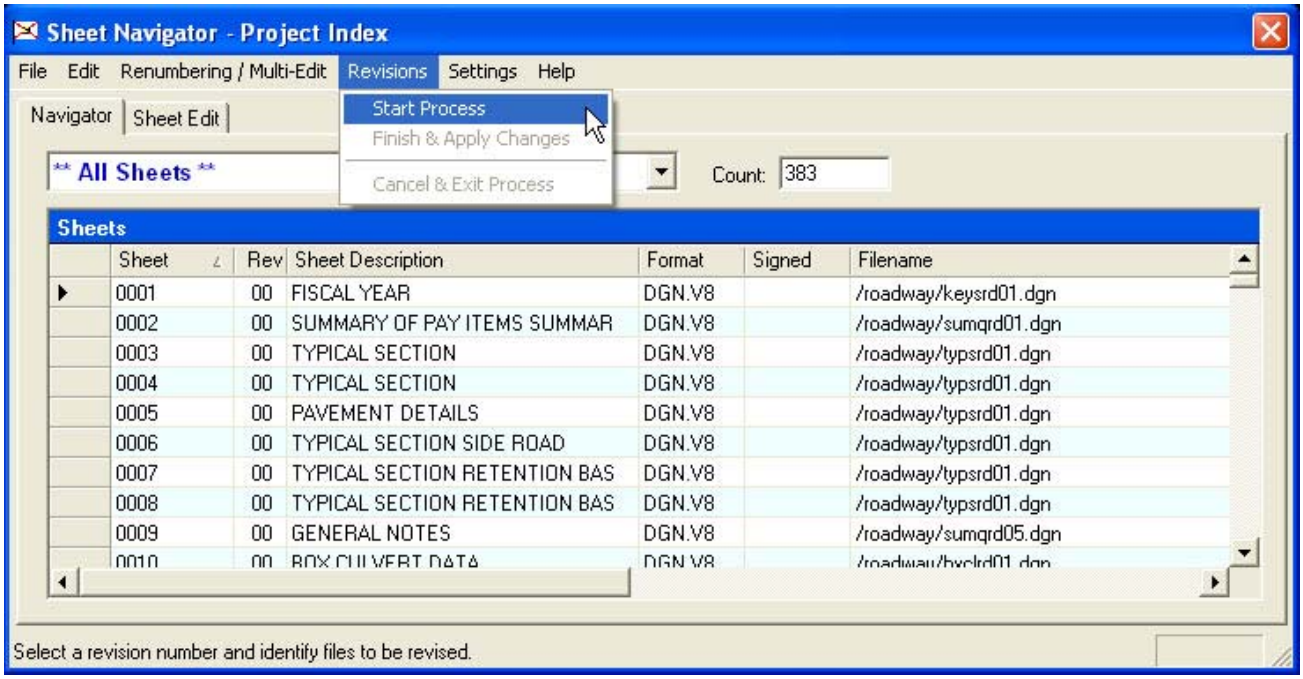
6. Upon completion of the CM Batch processing, MicroStation XM re-displays and the newly created file, **SheetInfo.xml** is loaded into Sheet Navigator. Notice the **Rev** column in the display, which displays the current revision number for each sheet identified by Sheet Navigator.



MicroStation XM

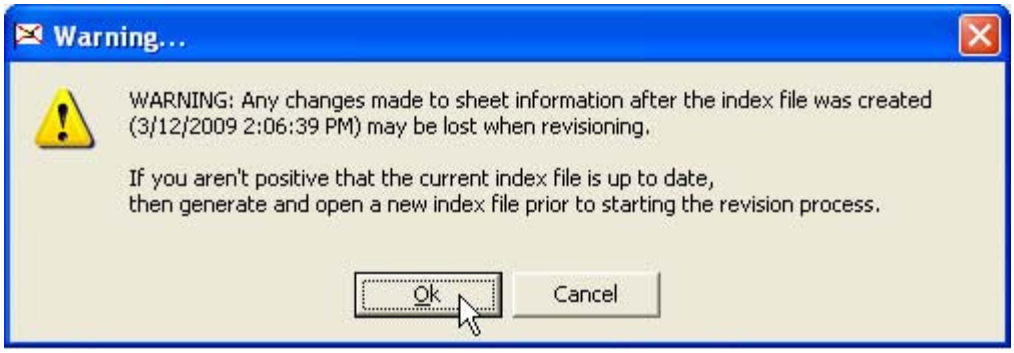
Exercise 5.3 To use Sheet Navigator's Revision Tool

1. From Sheet Navigator, select **Revisions** > **Start Process**.



Sheet Navigator - Revisions

2. Warning Message displays. Click the **OK** button.



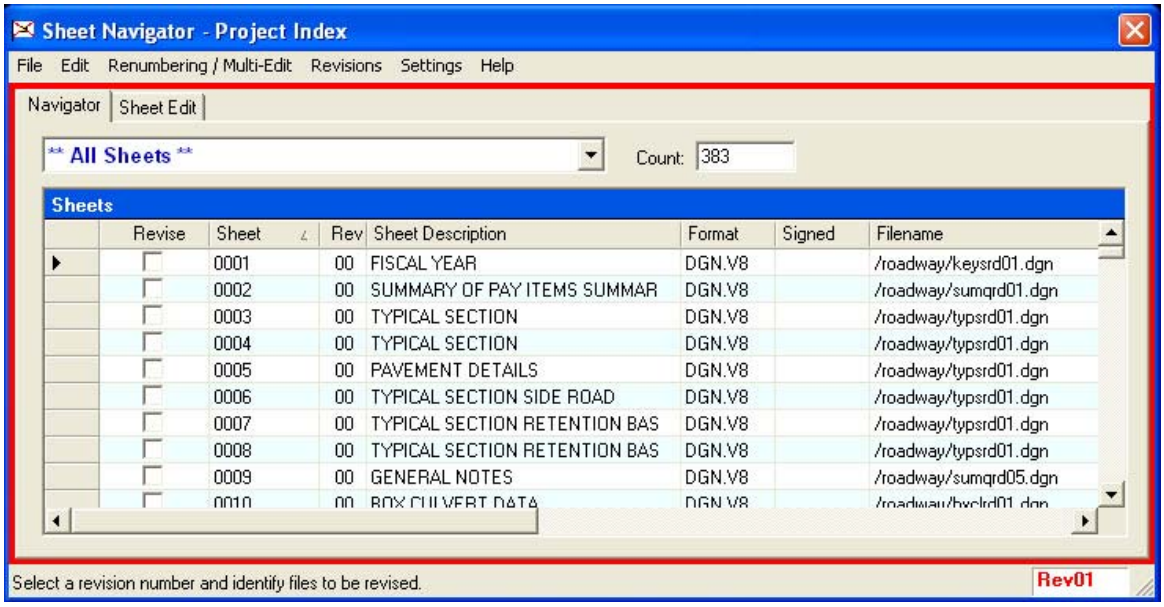
Warning Message

3. Set Revision Number opens. Select **01** from the **Revision No.** list.

Set Revision Number

4. Click the **OK** button. Sheet Navigator displays with a red box around it in the **Revision** mode.

Important This number represents the current Revision number for the drawing. The Revision number automatically increments for each revision. The list can be used to change the number. Currently, Revision numbers have a maximum value of 20.



Sheet Navigator - Revision process

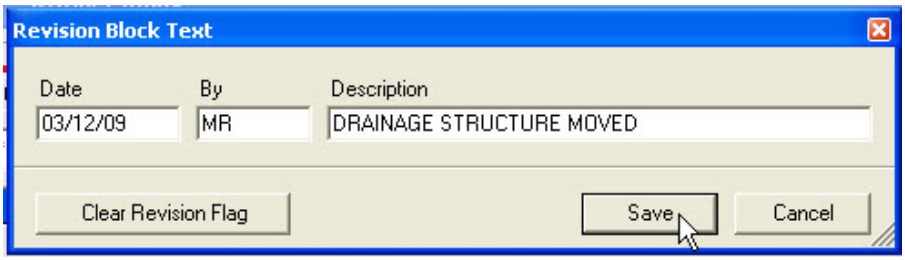
5. From Sheet Navigator, scroll down to sheets 35 **(0035)** and 36 **(0036)**. Populate sheet 35's checkbox under the **Revise** column to open Revision Block Text.

6. In Revision Block Text, enter the following:

- **By** – *Your initials*. Please note that the By field should contain the initials of the designer making the revision. If no initials are desired, also leave the By field blank. Also, note that the Date field is automatically populated with the current date. The date can be changed to match the "official" date of the revision or be left blank entirely if no date is to be placed in the revision block of the plan sheet.

- **Description** – Drainage Structure Moved

7. When finished, click the **Save** button.



Revision Block Text

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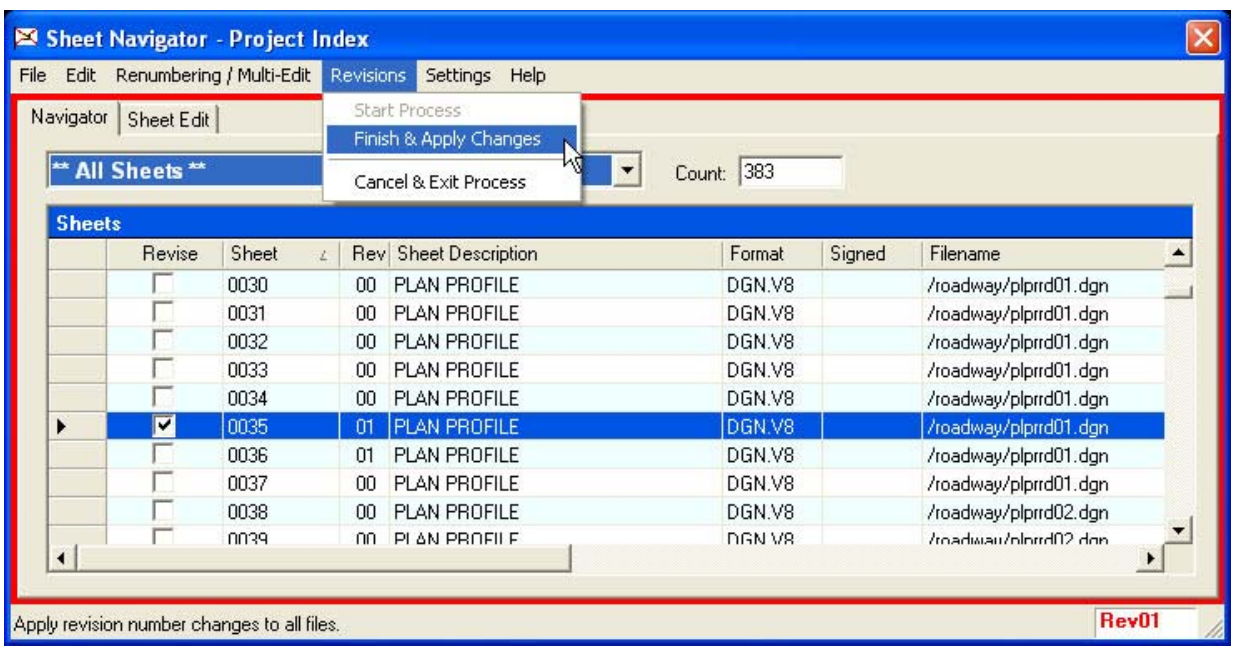
8. Repeat Steps 5-7 for sheet 36.
9. Click the **Save** button to close Revision Block Text.

Note If the Key Sheet needs to be revised, reference the *Plans Preparation Manual, Volume II*. Chapter 3. Section 3.11 says "the lead key sheet (usually roadway) shall show a complete record of all plans revisions. The component (such as roadway, structures, signing and pavement marking), the sheet numbers involved, and the date when the sheet was revised shall be listed. A newly sealed lead key sheet is required when any sheet is revised.

Revisions shall be shown on the lower left corner of the key sheet in the "Revisions" area. Revisions to strung project sheets shall be listed here, under the respective Financial Project ID. A Key Sheet Revisions Block shall be shown on the right side of each component key sheet that shall contain a record of all revisions particular to that sheet. It shall list the revision date, the initials of the person responsible for the revision and a brief description of the revision.

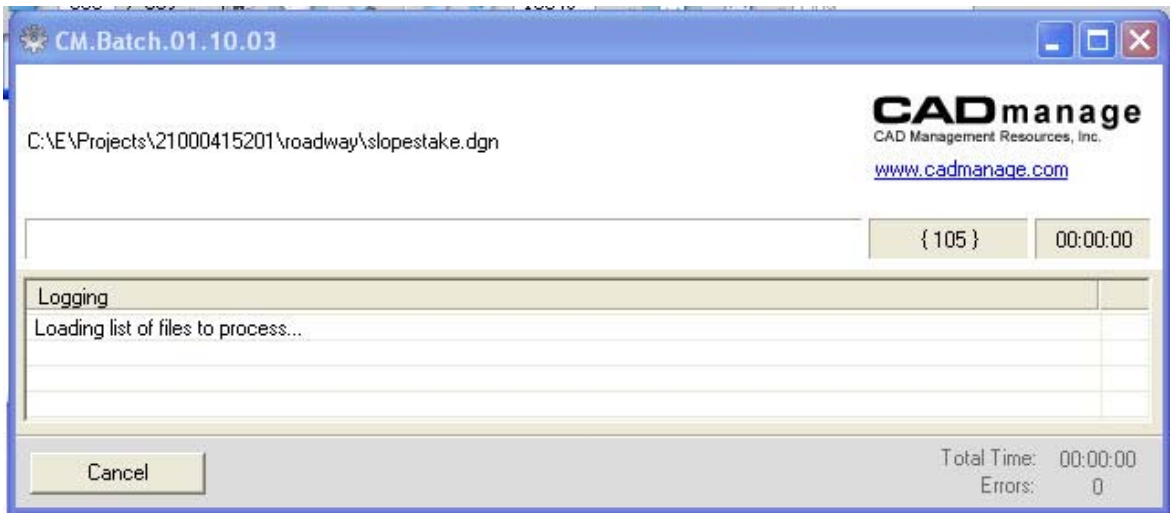
If the changes to a key sheet only involve notes in the Revisions area, no entry is made in the Key Sheet Revisions Block at the lower right corner. The Key Sheet Revisions Block is only used to record changes other than revisions notes."

10. From Sheet Navigator, select **Revisions** > **Finish & Apply Changes**.
11. From Sheet Navigator, click **Revisions** and then click **Finish & Apply Changes**. MicroStation XM minimizes and SheetInfo Processing Dialog, CM Batch process opens.



Sheet Navigator – Revisions

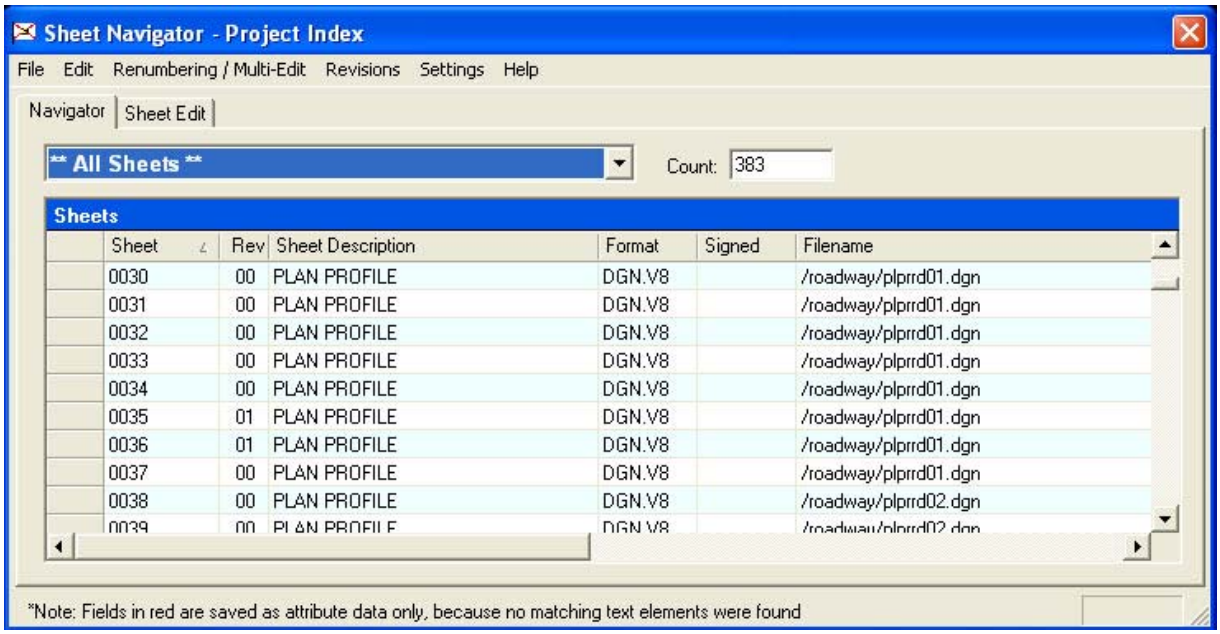
12. MicroStation XM minimizes and SheetInfo Processing Dialog, CM Batch opens.



SheetInfo Processing Dialog (CM Batch)

13. Upon completion of the processing, MicroStation XM re-displays and the revised **sheetinfo.xml** file is loaded into Sheet Navigator.

14. Navigate to **Sheets** 35 **and** 36 and review the changes. Note the updated revision number (**01**) in the **Rev** column.



Sheet Navigator - Navigator tab

Note Sheet Navigator finds and records the **Rev** number in the **Navigator** tab. The Key Sheet also reflects the revisions as shown above.

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15. From Sheet Navigator, select the **Sheet Edit** tab and review **Sheets 34**, **35** and **36**. The Key Sheet also shows **Revision 01** and **Allow Plot** is enabled.

Sheet Navigator - Sheet Edit tab

Note In reviewing **Sheet Number 34** (an unrevised sheet), note that Sheet Navigator displays **00** as the **Revision** number and **Allow Plot** is disabled. Sheet Navigator is aware that this sheet has not been revised and the original postscript plot image is still valid. Upon reviewing **Sheets 35** and **36**, Sheet Navigator displays **01** as a **Revision** and **Allow Plot** is turned on. Sheet Navigator is aware that this sheet has been modified and the modified sheet will be plotted and indexed by EDI 2.

Note If the **Revision** number needs to be changed manually, or the **Allow Plot** status updated, Sheet Navigator can edit these, on a per–sheet basis, by opening the **Settings** menu, and selecting the **Allow Advanced Modifications** option. Use extreme caution when making advanced modifications, and only do so as necessary.

16. Close Sheet Navigator by selecting **File** > **Exit**.

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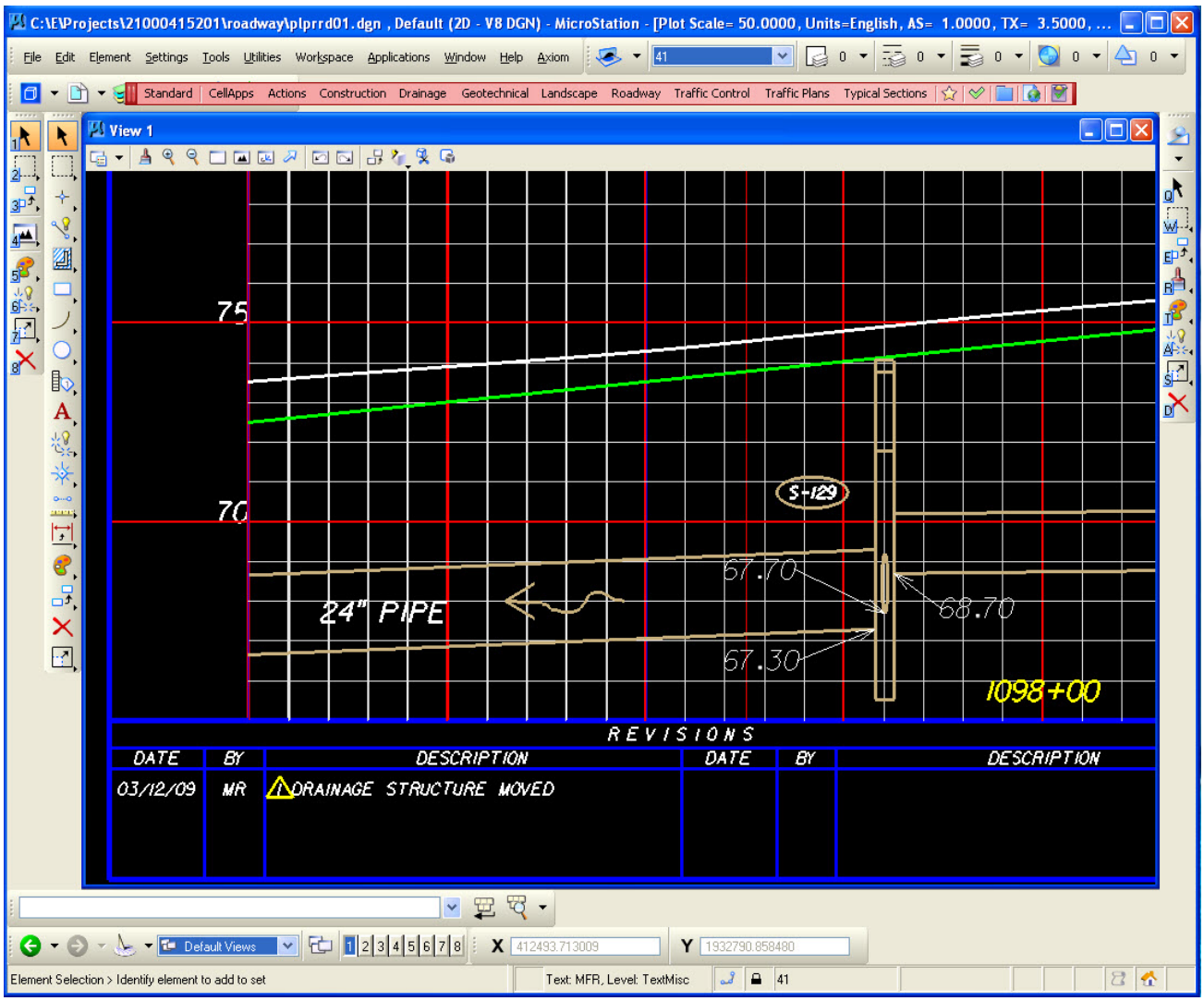
17. Double-click on **Sheet Number 35** in the **Sheets** list on the left and review the title block information of **Sheet 35** in MicroStation XM.



MicroStation XM

Note Using Sheet Navigator's **Revision** tool automatically places the **Date**, **Description** and modification **BY** initials in the correct location of the Revision Title Block area in **MicroStation XM**. Please note that the **BY** column is no longer part of the Revision Title Block for newer projects. This is placed as MicroStation text to correct FDOT standard symbology.

The designer can use MicroStation Edit Text if the text needs to be modified. The delta symbol containing the revision number shown in the revision Description could also subsequently be copied to the area on the plan sheet adjacent to the objects changed reflecting the revision as necessary.

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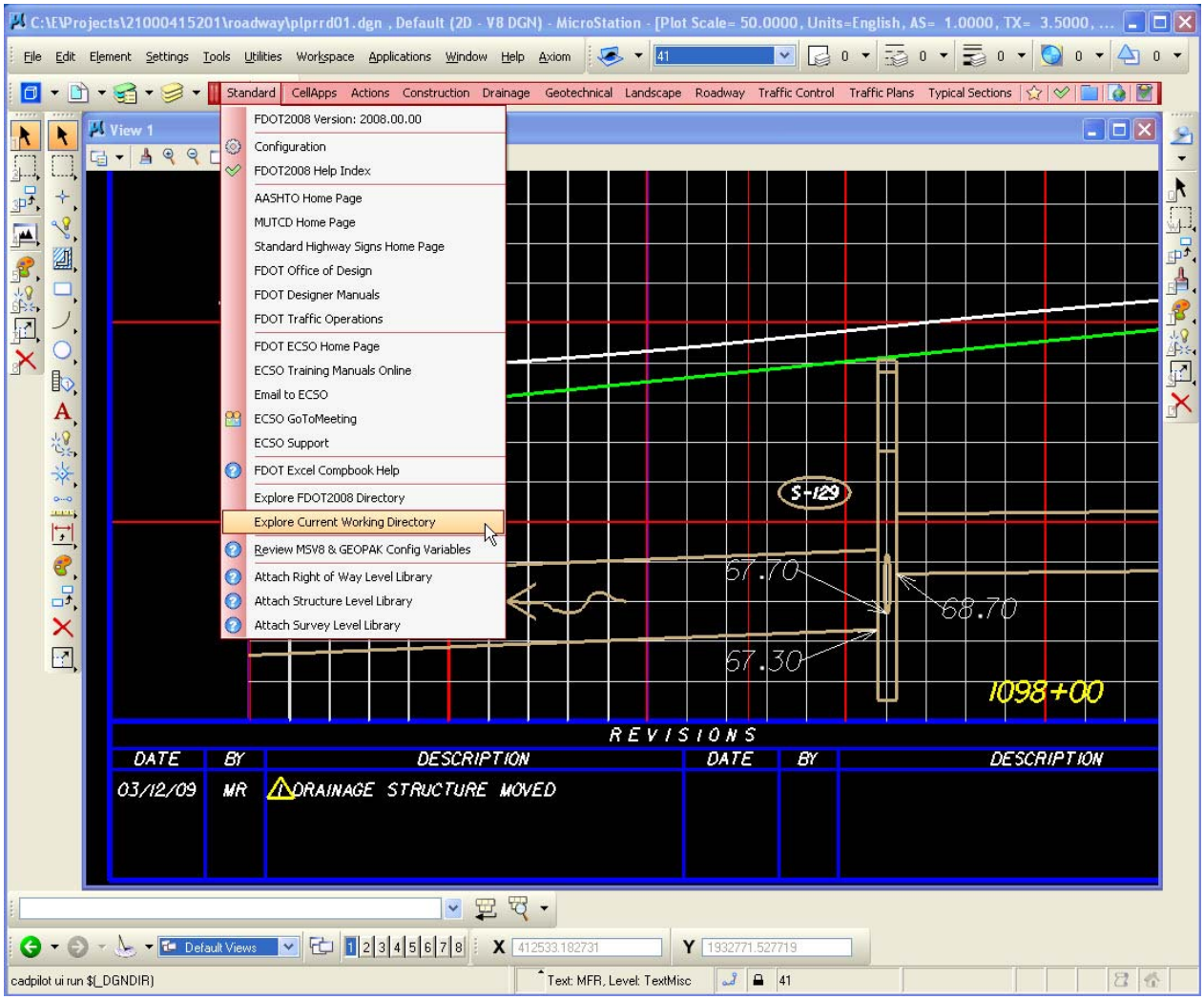
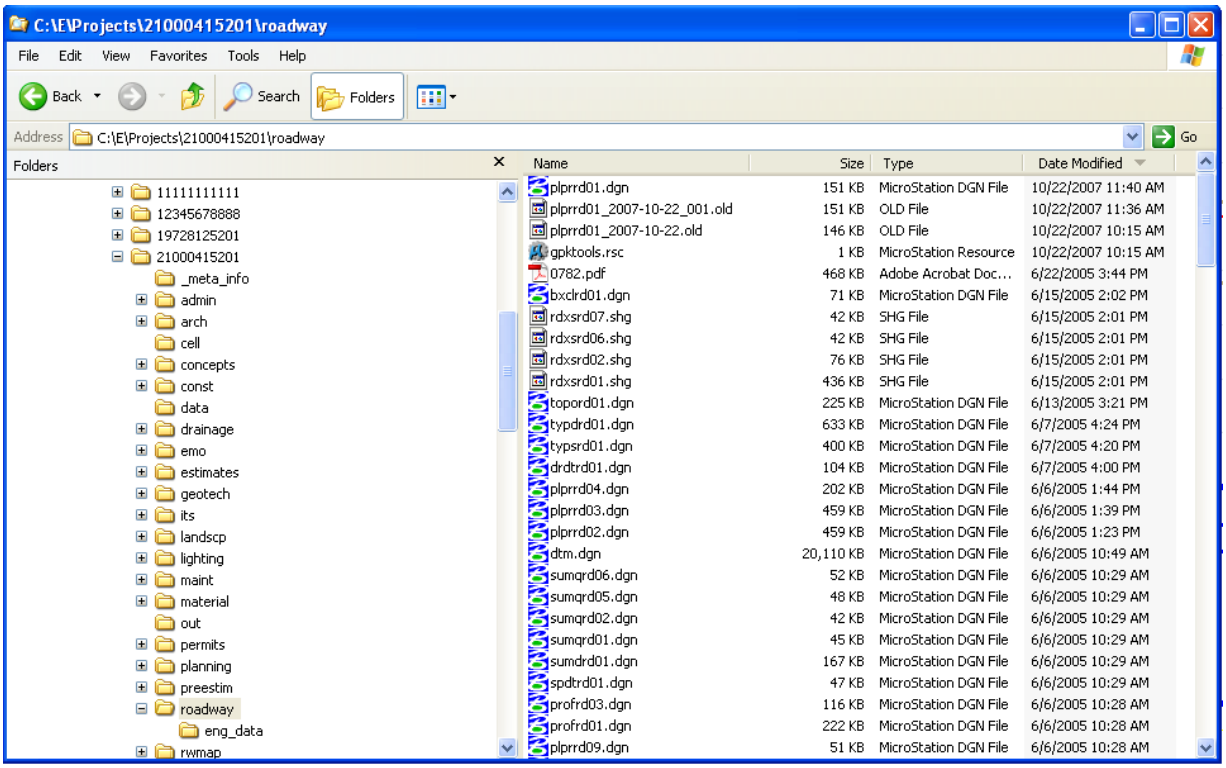
18. From FDOT Menu, select **Standard** > **Explore Current Working Directory**.
    Windows Explorer opens to the current working directory of the active design file.



MicroStation XM - Cadpilot

19. In Windows Explorer, browse to the **roadway** folder and review the revised design files for naming conventions.



Windows Explorer

Note Using Sheet Navigator's **Revision** tool automatically backs up the original design file adding the date of the revision to the filename and adds the **.old** extension. The newly revised file maintains its original (hopefully FDOT standard) file name.

For example, the revised Plan-Profile Sheet remains **plprrd01.dgn** while the original sheet has been backed up to **plprrd01_2007-10-22.old**. This file, if tested, will also evoke the proper QC rule file as the file maintains the **plprrd** prefix meeting standard naming conventions for QC rules.

20. Exit MicroStation XM.

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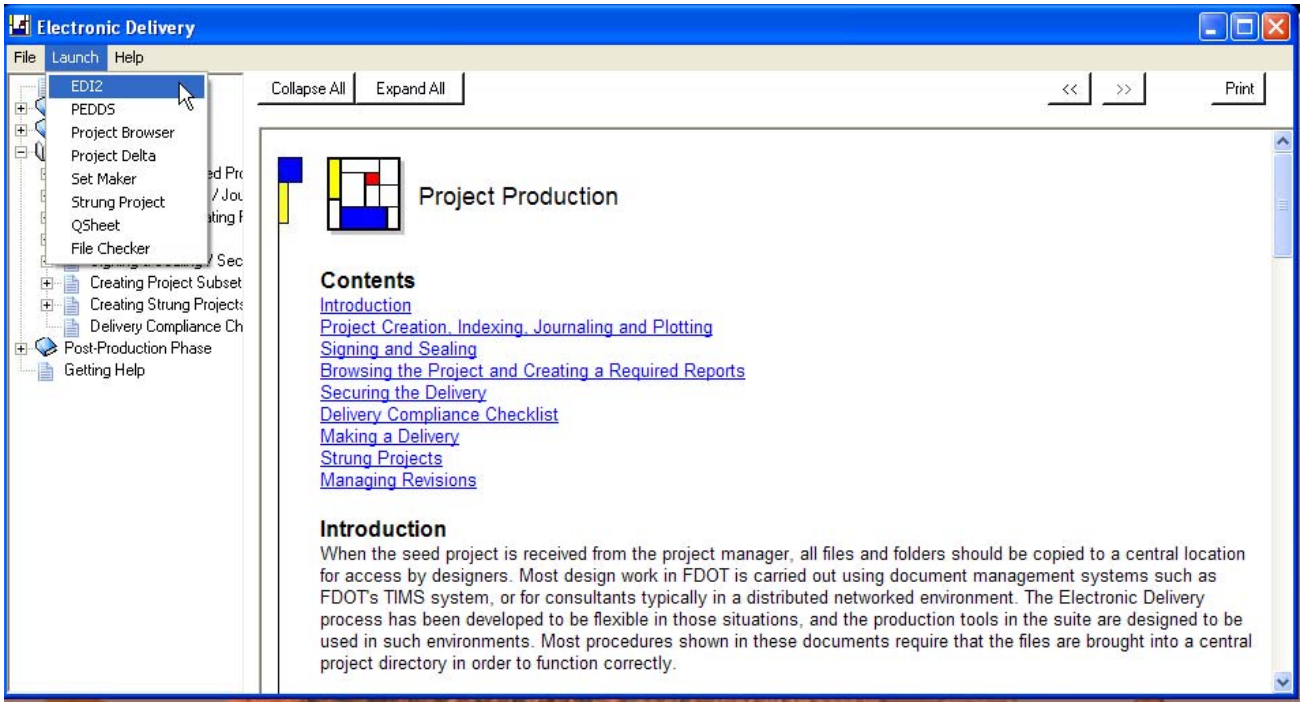
Section 5.3 Updating the Index and Postscript Images

EDI2 is used to update the sheet index and create new postscript images for revised sheets. Upon opening the index, backed up design files appear in red. Associated sheets do not appear in the revised information.

Exercise 5.4 To update File Attributes

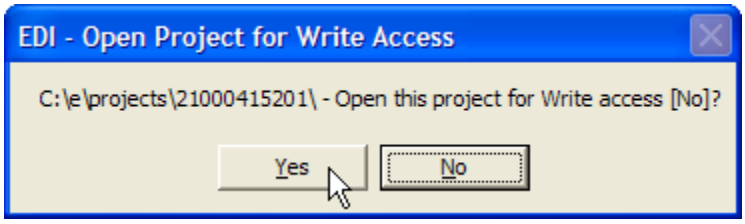
1. If MicroStation is open, close it prior to launching EDI2.
2. From Electronic Delivery, select **Launch** > **ED12**.



Electronic Delivery

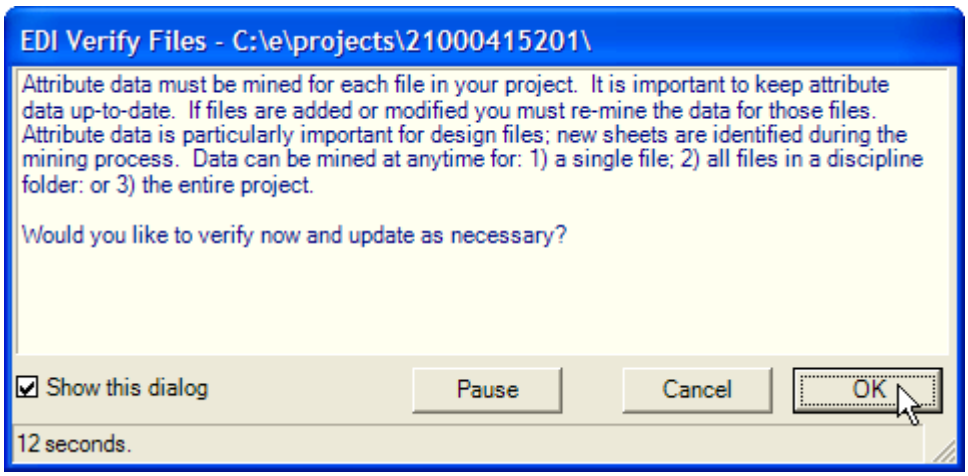
Note An automated version of MicroStation XM opens with EDI2.

3. From EDI – Open Project for Write Access, select the **Yes** button.



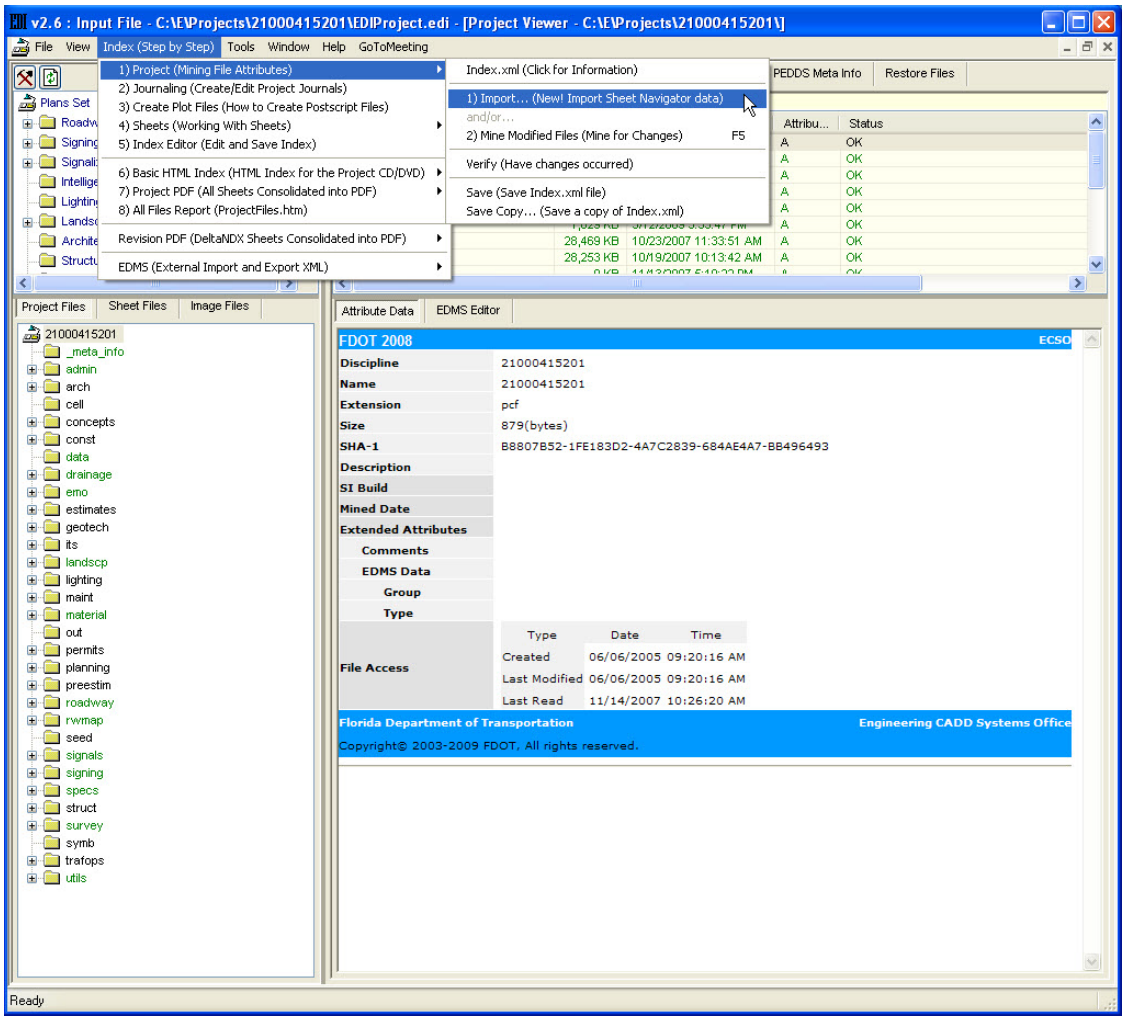
EDI – Open Project for Write Access

4. From EDI Verify Files, select the **OK** button.



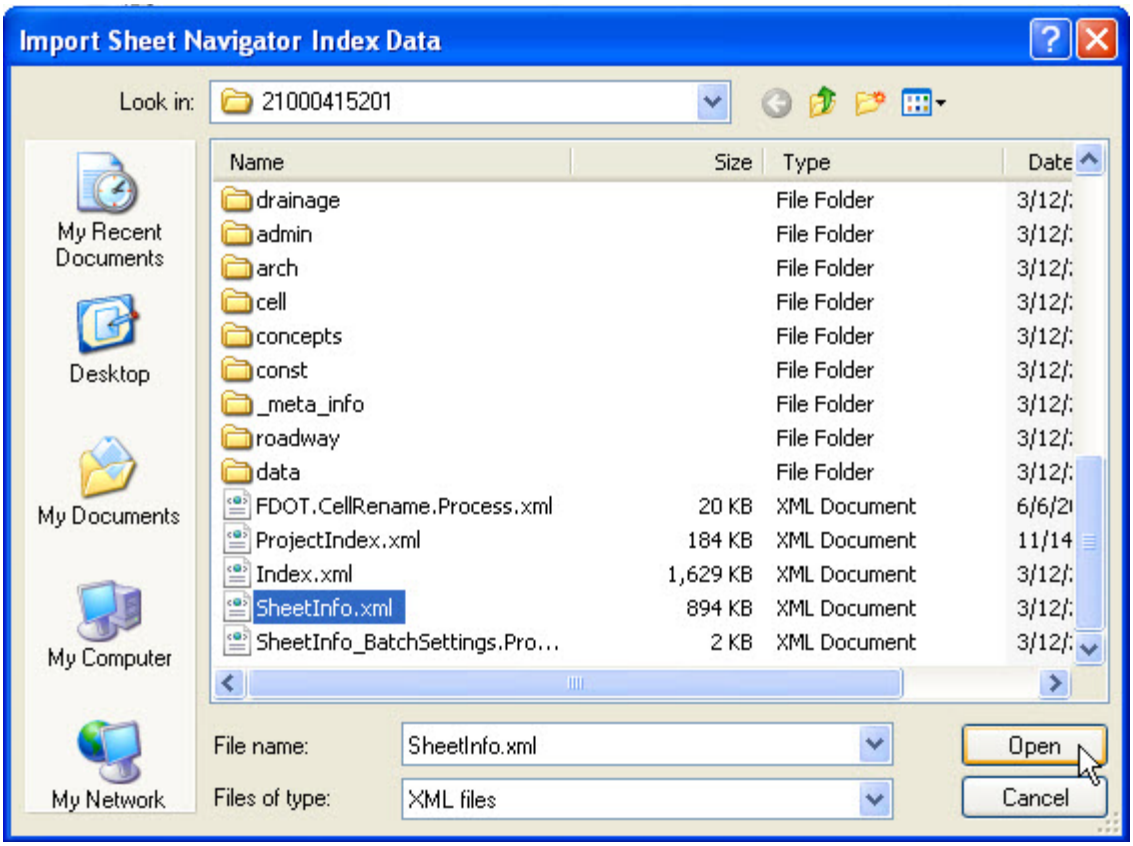
EDI – Verify Files

5. From EDI2, select **Index (Step by Step) > 1) Project (Mining File Attributes) > 1) Import... (New! Import Sheet Navigator data)**.



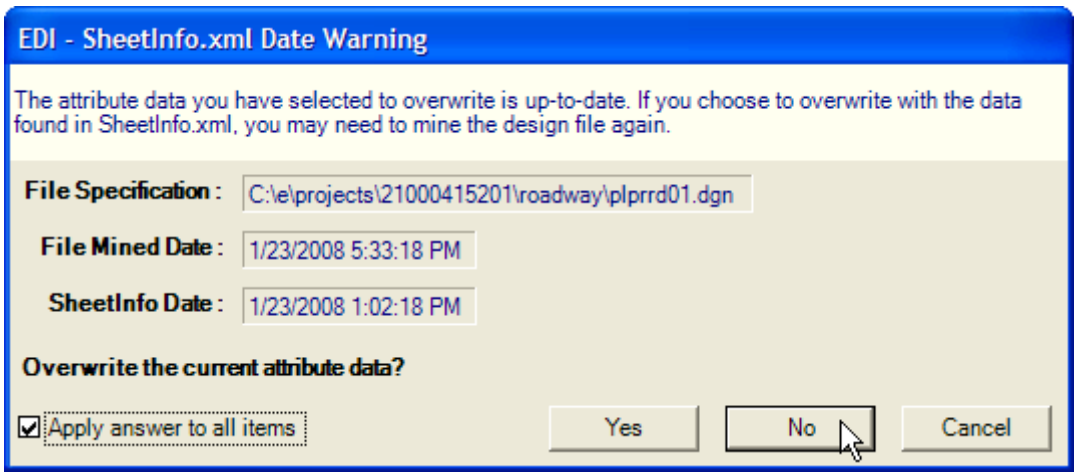
EDI2 – Import Sheet Navigator Data

6. From Import Sheet Navigator Index Data, select **SheetInfo.xml** and click the **OK** button.



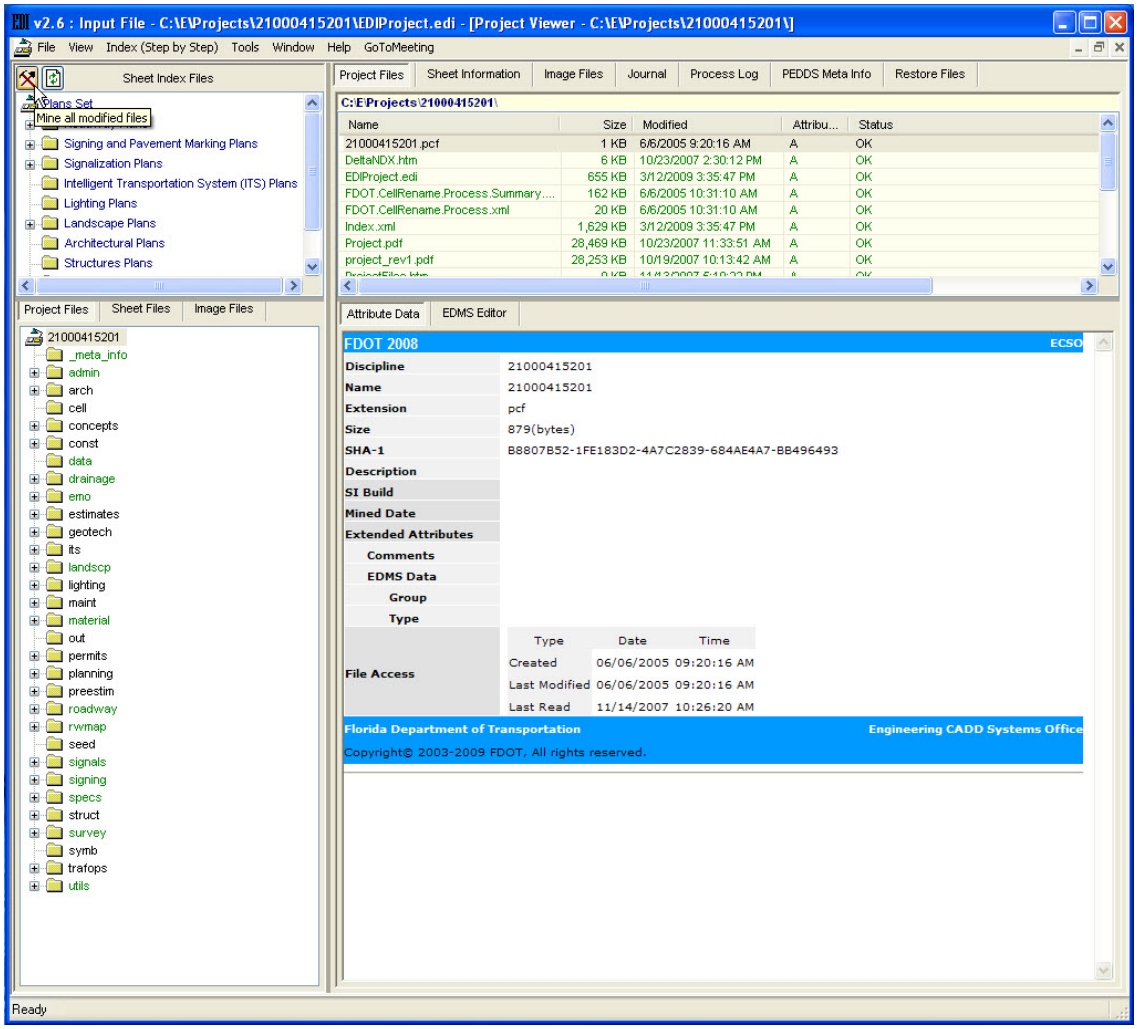
Import Sheet Navigator Index Data

7. EDI – SheetInfo.xml Date Warning displays. Populate the **Apply answer to all items** checkbox and click the **No** button.



EDI – SheetInfo.xml Date Warning

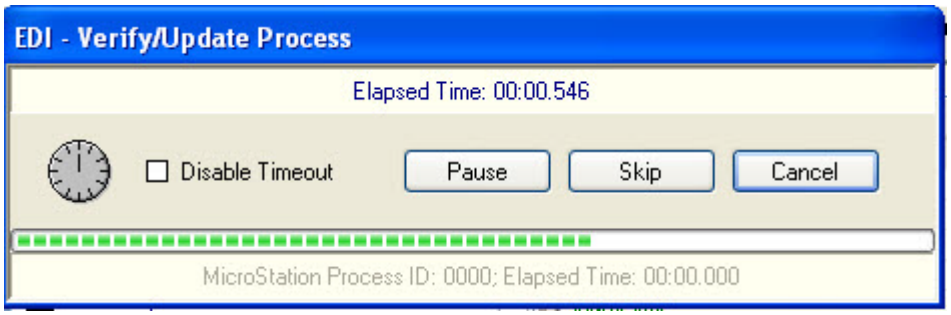
8. Click the **Mine all modified files** icon ( ).



EDI2 – Mine all modified files icon

Note In EDI2, mining for the modified files retrieves attribute data for just those files which have changed, which is a faster option of updating the attribute data for the revision.

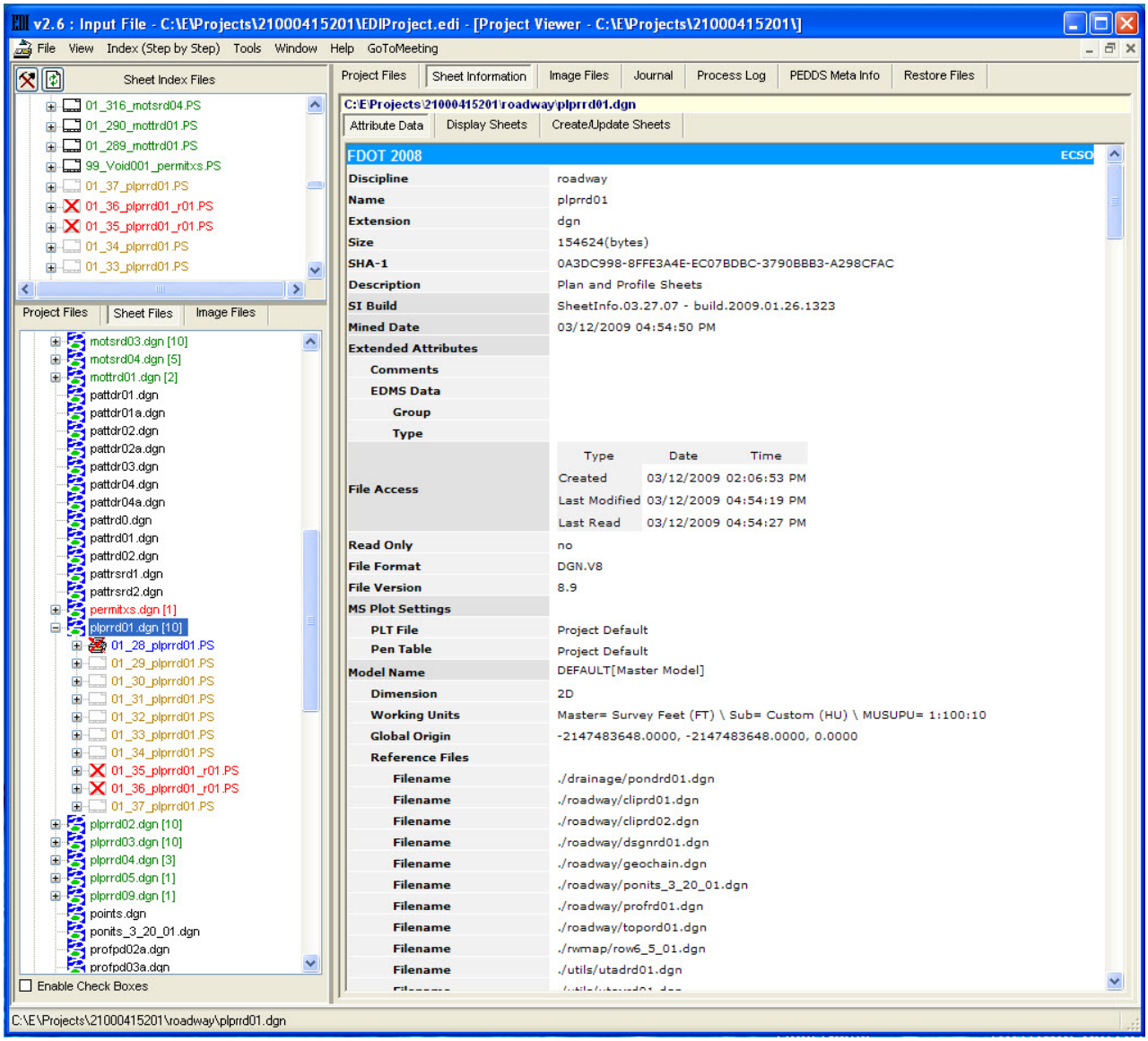
9. EDI - Mining opens and starts mining the project attributes. The status of the mining can be seen at the bottom of EDI2. EDI - Mining also displays the MicroStation Process ID, which can be used to identify errors if MicroStation fails.



EDI 2 - Mining File Attributes

Note 01_28_plprrd01.PS and 01_35_plprrd01_r01.PS are examples of messages in the Sheet Information Tree View of EDI.

10. EDI - Mining File Attributes closes and EDI2 is ready to update the index. Upon completion of the mining, the file expands and displays the postscript files found from the new attributes.



EDI 2 - plprdrd01.dgn design file

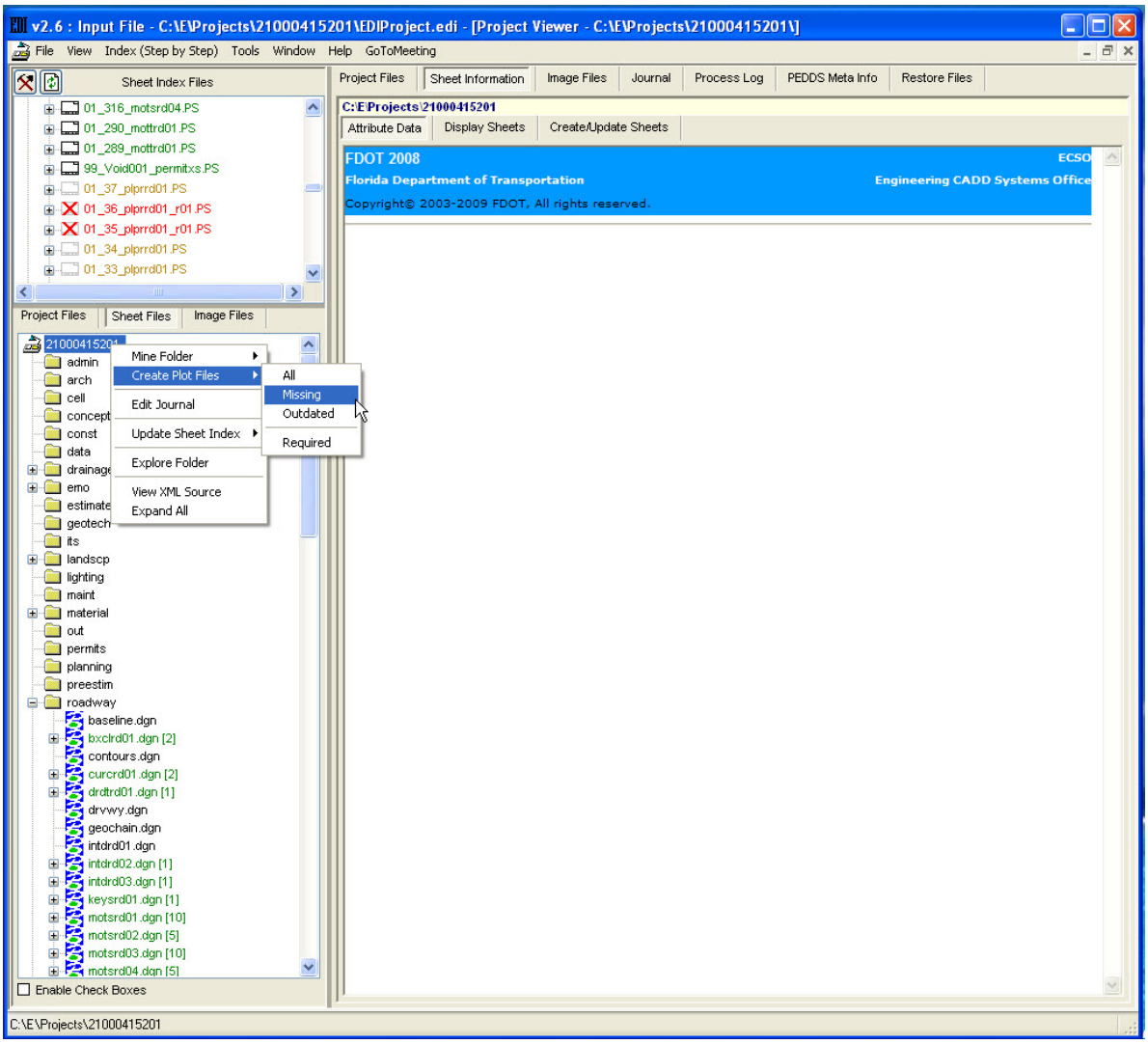
Important The file icons have valuable meaning as described below:

Amber color means the postscript sheet is present in the index but the source file; **plprrd01.dgn** has been modified since the associated sheet was plotted. The red X through the printer icon is derived from the Revision process of Sheet Navigator. This represents that while the source file, **plprrd01.dgn** has been modified; this sheet in the file has not changed and has been marked non-plottable by Sheet Navigator. Sheet Navigator knows this sheet file already exists from the original delivery.

Red color (with the red X through the sheet icon) defines that the postscript file does not yet exist. The naming convention is automatically derived from the Sheet Navigator plan component and sheet number. The suffix, appended to the postscript file name, is derived from the revision value used during the revision process in Sheet Navigator.

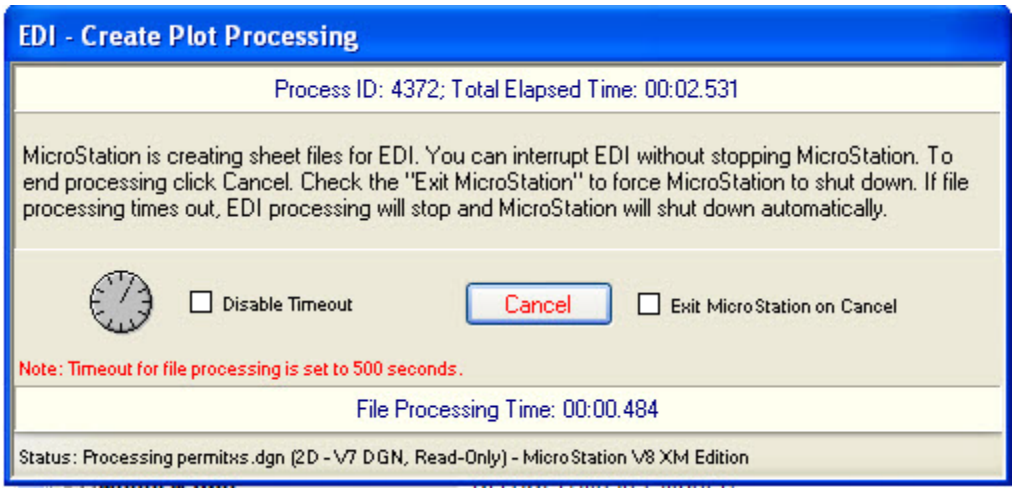
To create Postscript files for the revised sheets

1. In EDI2, verify the **Sheet Files** tab is active. Right click on the root project folder and select **Create Plot Files > Missing**.



EDI2 - Create Plot Files

2. EDI - Create Plot Processing opens and closes when done processing.



EDI 2 - Create Plot Processing

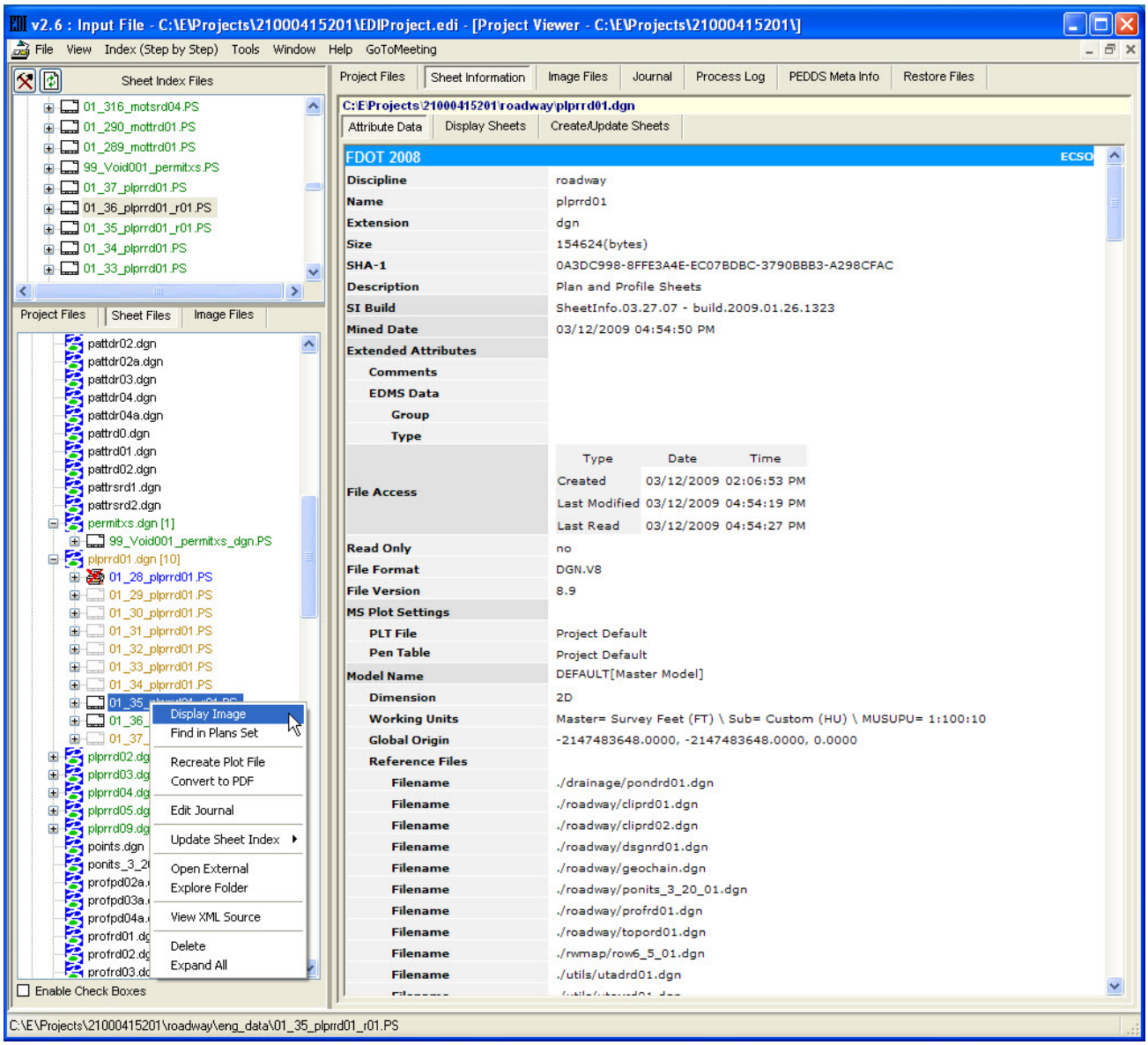
Important During the revision process, it is vitally important that existing postscript image files not change (because some or all may be signed and sealed by a Signatory). EDI2 presents the user with visual color codes to help identify files (as discussed during the mining process).

Also note that if EDI2 detects that the user is about to over plot a postscript file that is signed and sealed, a dialog displays to confirm or cancel the overwrite. Pay very close attention and answer this prompt as intended, because of the consequences to the Signatory that signed/sealed the files before being overwritten.

Tip Choosing the **Missing** option to create plot files allows EDI2 to pass over existing files and only plot postscript image files containing revisions.

3. From EDI2, verify that the **Sheet Files** tab is still active and click the + symbol to expand the information under **plprrd01.dgn**.

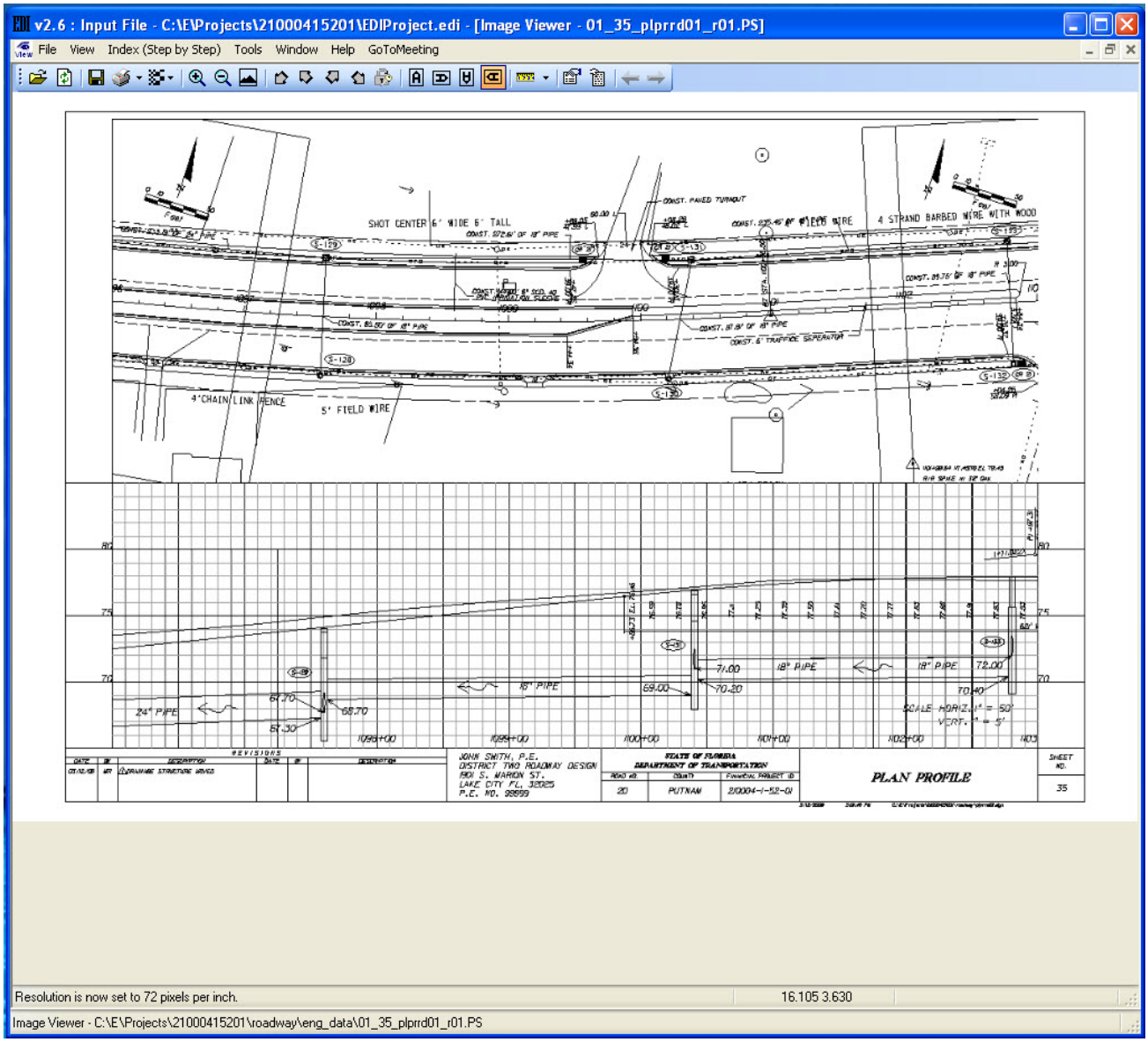
4. Click the postscript file name for **Sheet 35** and then right-click the file name**.** From the displayed menu, select **Display Image.**



EDI 2 - Display Image

Note Observing the Sheet Index Files pane, the user is again presented with a color-coded listing.

5. EDI2 displays the selected image in the Image Viewer window. Review the image and verify that the revision block is filled in.



EDI 2 - Image Viewer

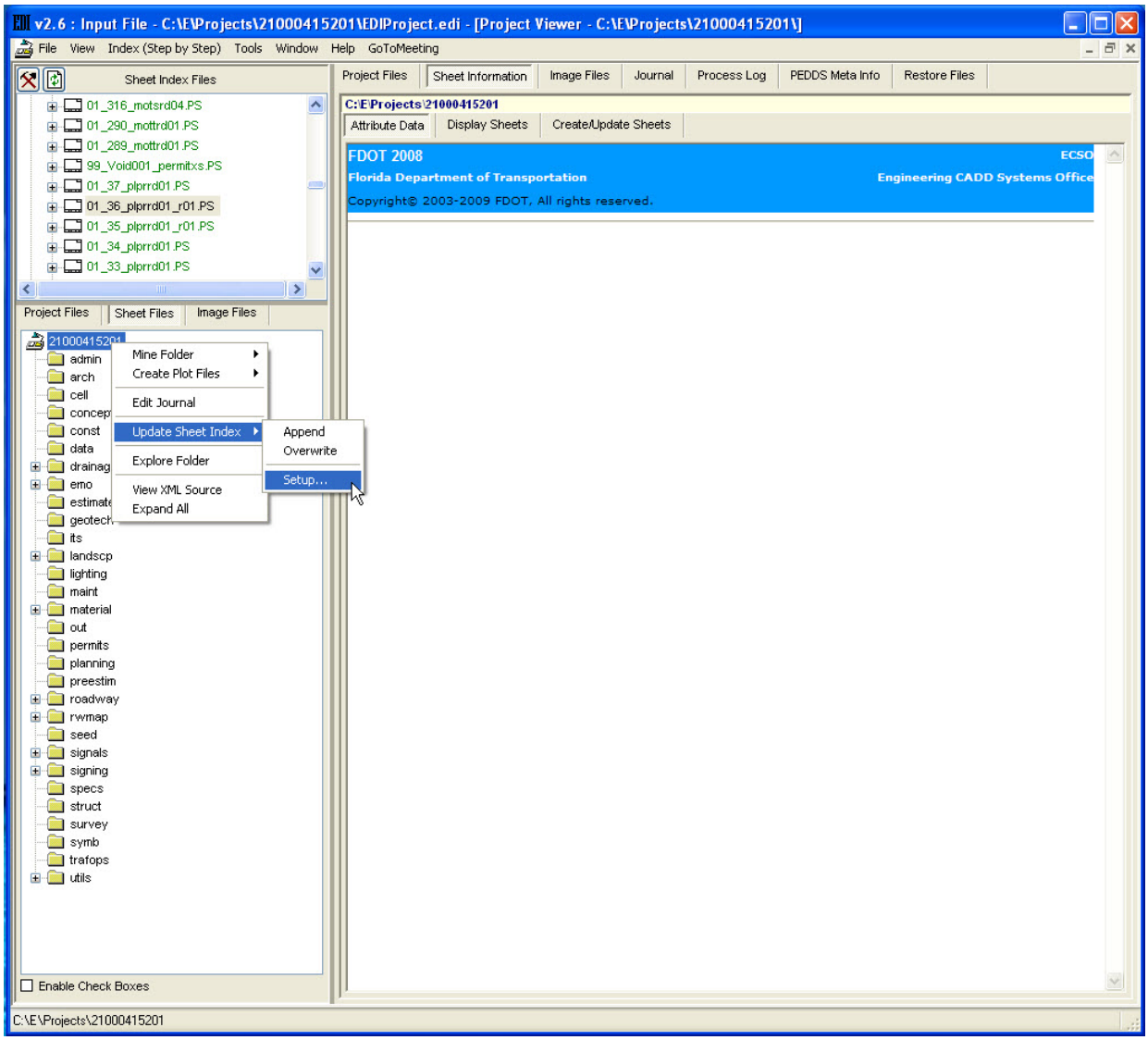
Tip Image Viewer is set to a default of 72 pixels per inch to maximize screen display speed. If Image Viewer is going to be used to print the displayed sheet, increase the screen resolution using the Set plot output resolution icon ( ) from the menu to produce a better quality image; however, screen display response speed could decrease.

6. From EDI2, select **View** > **Project Viewer (All files, Image files, Design Sheets)** to return to the Project Viewer.

To update the Index

The file **ProjectIndex.xml** will be updated.

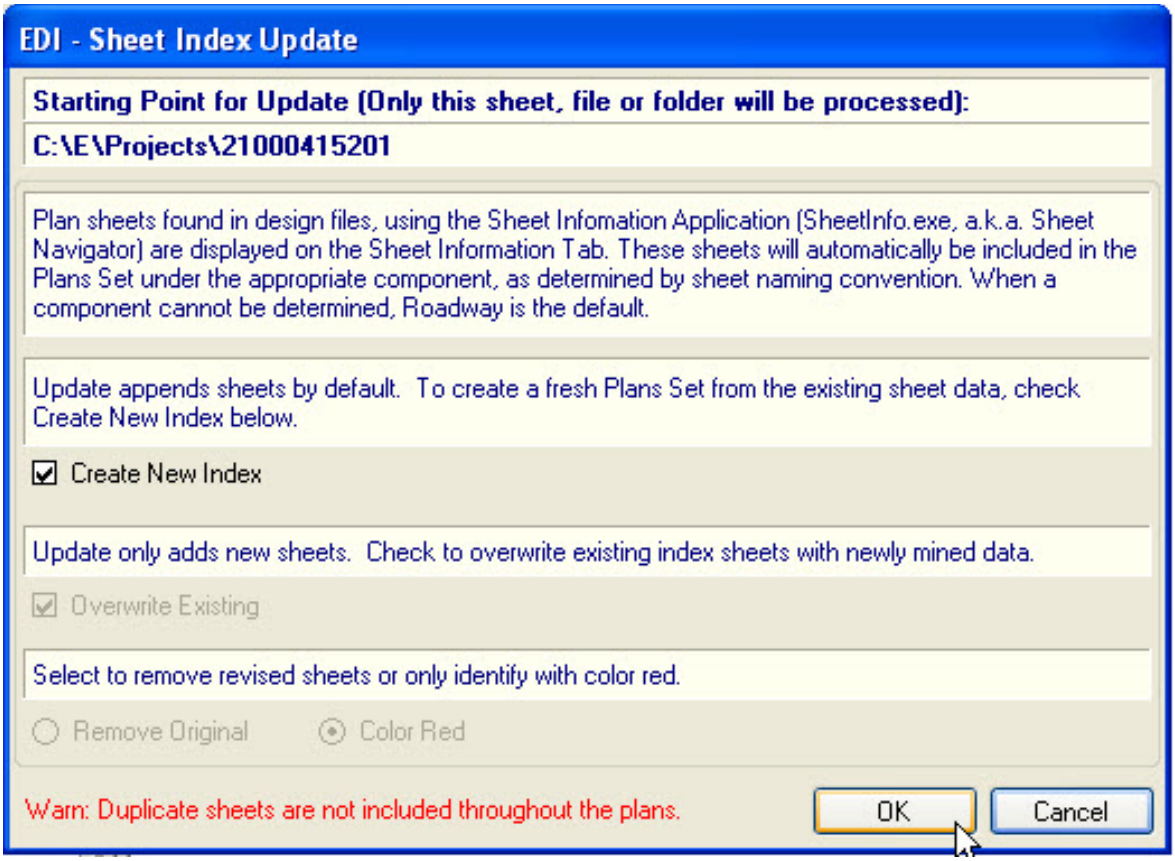
1. In EDI2, verify the **Sheet Files** tab is active. Right click on the root project folder and select **Update Sheet Index**.



EDI 2 – Updating the Index

2. EDI – Sheet Index Update opens. Populate the **Create New Index** check box and click the **OK** button. EDI2 creates a new the index file, **ProjectIndex.xml**, replacing existing file, if already created.

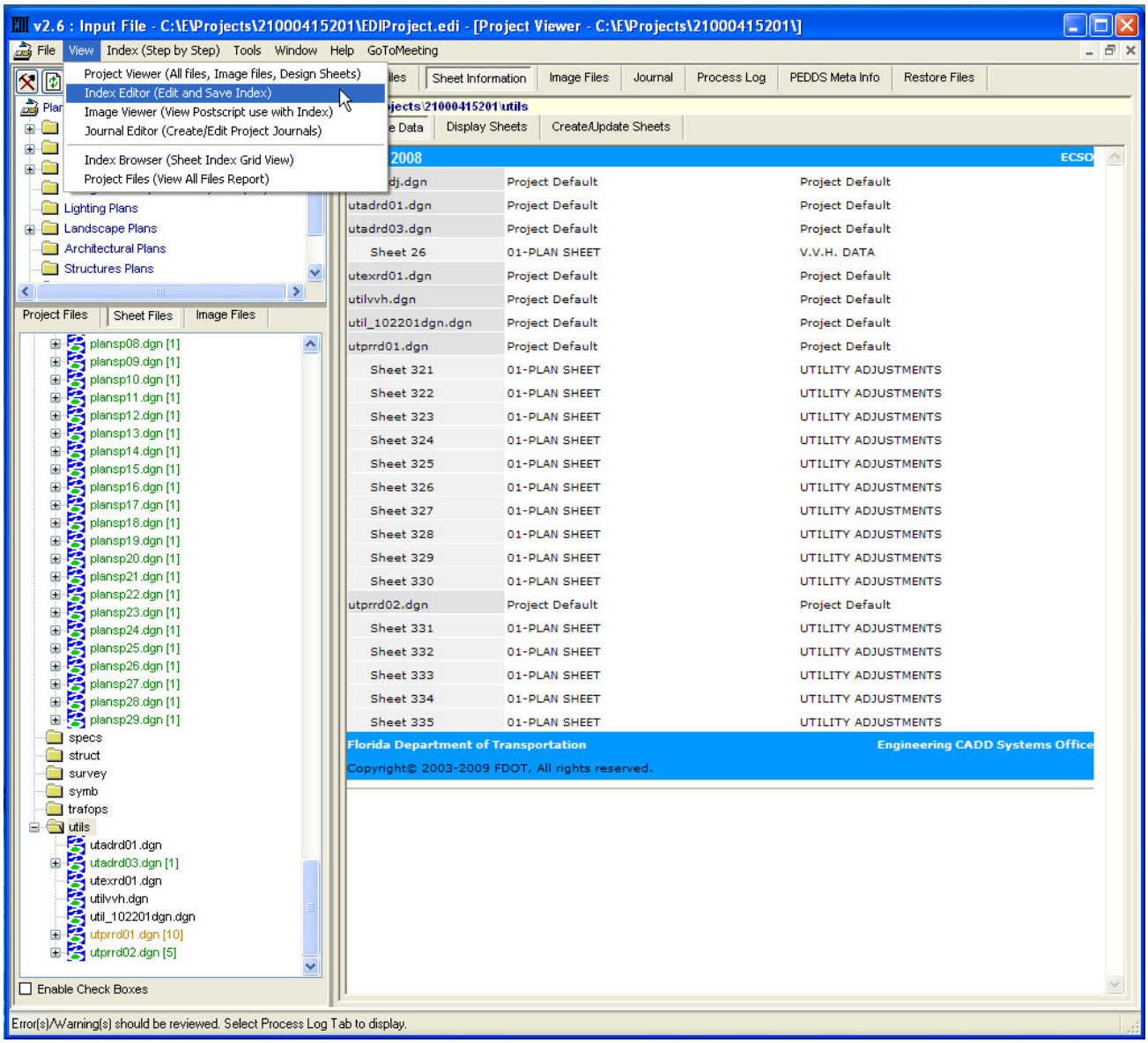
Note **Remove Original** will remove the original **Sheets 35 and 36** from the index and replace them with the newly revised sheets.



EDI- Sheet Index Update

Note The most conservative (and safest) update option is to take the default, which is to have **Create New Index** and **Overwrite Existing** unchecked. However, this requires the user to open the Index Editor (**View > Index Editor (Edit and Save Index)**) to manually remove the old entries for the non-revised sheets. Some users choose to do this as it provides a level of confidence the index was updated correctly with the correct sheet references, despite requiring a little extra work.

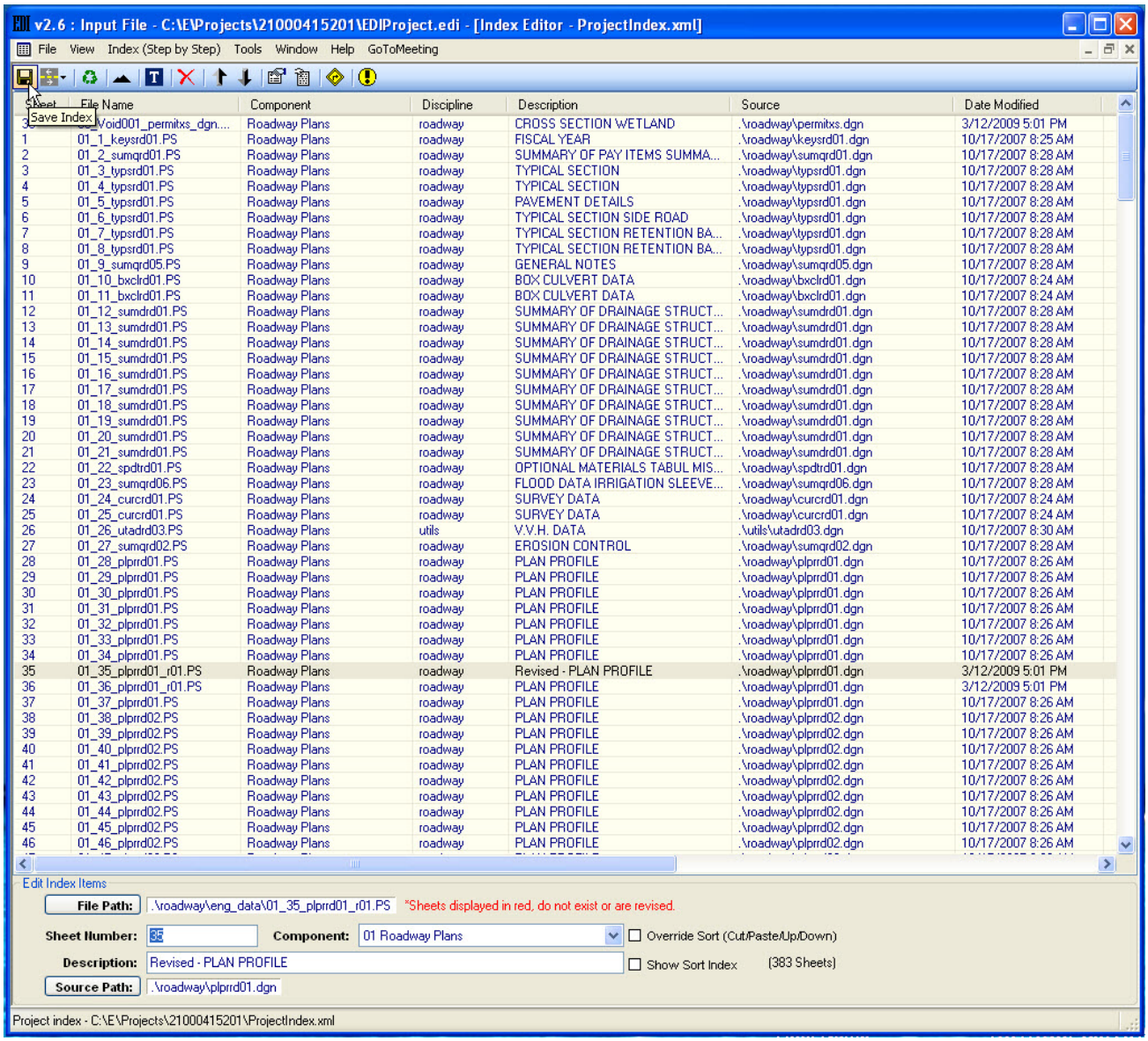
3. Upon completion of updating the index, select **View > Index Editor (Edit and Save Index)**.



EDI 2

4. Index Editor displays. Review the updated index, **ProjectIndex.xml**, and note the changes to the revised files and postscript images.

5. Click the **Save** button ( ) to save the updated index, **ProjectIndex.xml**.



EDI 2 Index Editor View

Note To review, the attributes were updated, the revised file's postscript image files were created and the index, **ProjectIndex.xml**, was updated to reflect the revised files.

6. Click the **Mine all modified files** icon ( ) and then exit EDI2.

Section 5.4 Additional Information Found in EDI

EDI2 also offers other valuable information to the user. EDI2 reads and reports back PEDDS information, such as whether a postscript image file is signed or not. To access this information select the **PEDDS (Execute PEDDS Operations and Applications)** submenu from the **Tools** menu. The submenu items relate to examining or modifying PEDDS related data.

Additionally, the **Tools** menu provides the ability to generate a listing of files to run with the QC Reporter application, to generate a current QC Report for the graphics files in the project.

Also, File Checker can be evoked to perform other QC functions.

Section 5.5 PEDDS - Signing and Sealing Revisions

When Signing and Sealing revisions, it is important to create and use a new Signatory file to sign the revised plan sheets. Keep the original Signatories intact with the original signed sheets/files, as it is historical data which must be preserved. Do not use an original signatory file to sign a revision. Instead, create a new signatory file for each Signatory who needs to sign a revised sheet. Remember, a Signatory (person) can have multiple Signatory files, and should if they need to sign revisions.

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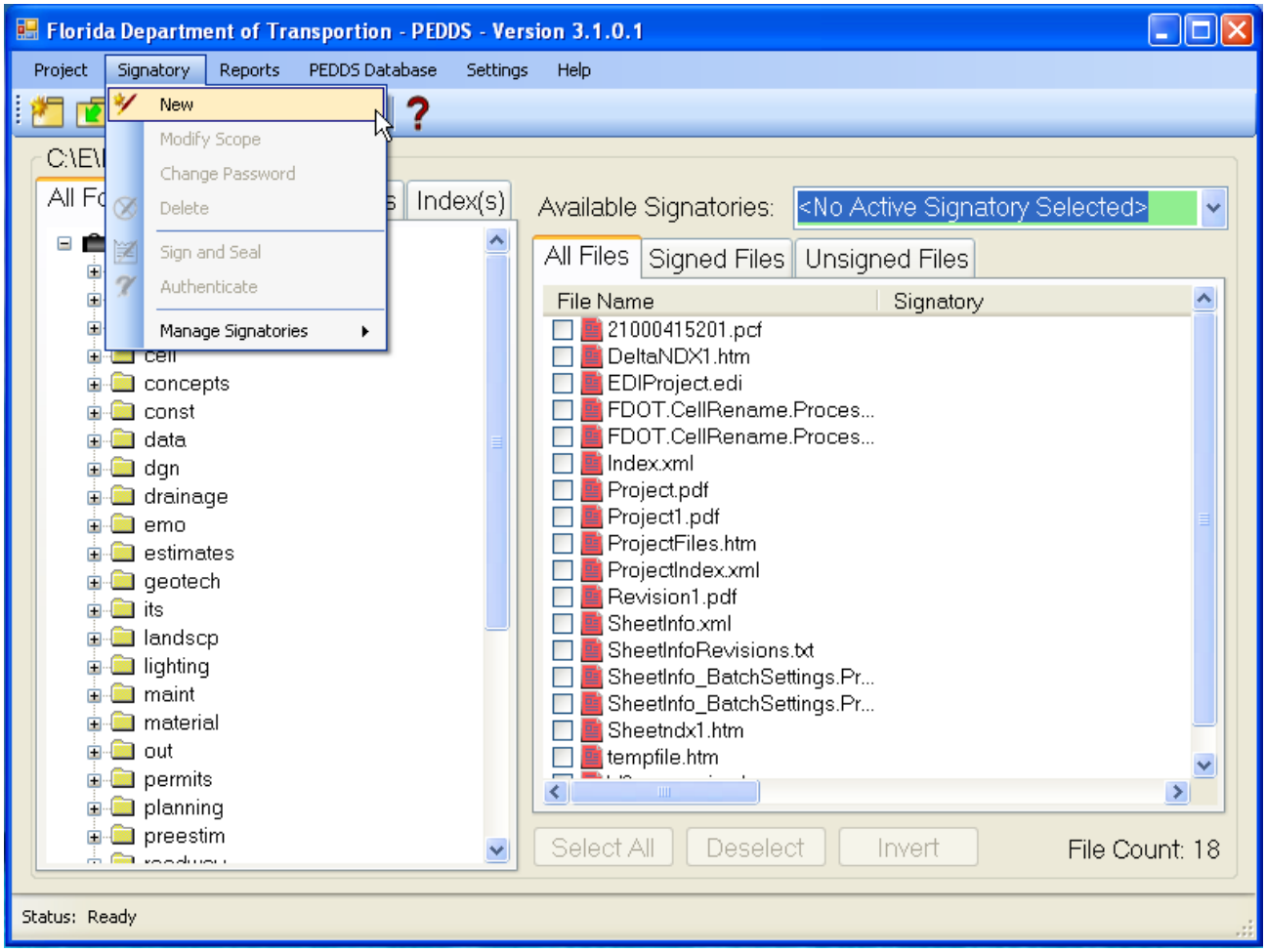
Exercise 5.5 To sign and seal the revised sheets using a New Signatory

1. Open project **21000415201** in PEDDS.
2. From the **Signatory** menu, select **Create Signatory** --*or*—

   click the **Create a New Signature** icon ( ) on the toolbar.

   Signatory Information opens.



Florida Department of Transportation - PEDDS

3. Signatory Information contains information about the individual who is signing and sealing the plans.
4. In the **Signatory Name** box, type your name.

Tip If your signatory already exists, add a descriptor to the signatory name. For example, if the signatory, John Johnson exists, and the same signatory is subsequently signing revisions, John can use "John Johnson – Revisions" as the signatory name to sign the revision.

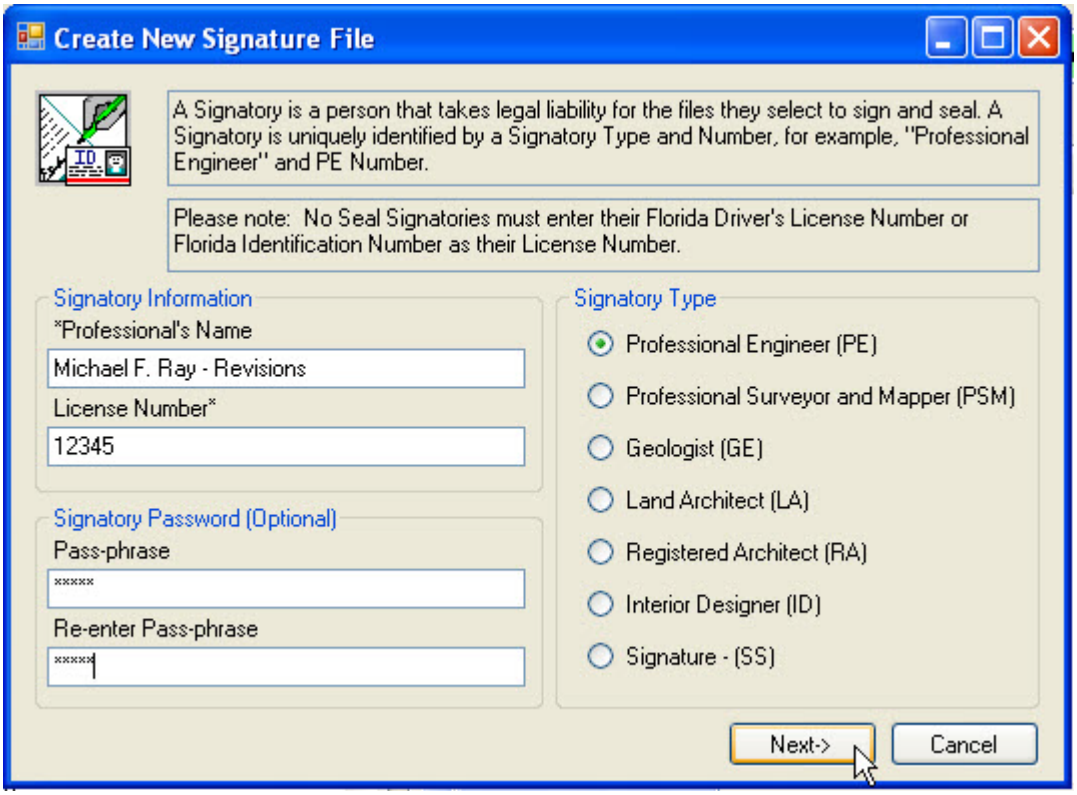
5. In the **Signatory Number** box, type **12345**.
6. In the **Pass-phrase** box, type **12345**.

7. In the **Re-enter Pass-phrase** box, type **12345**.

Note The Pass-phrase is a password (or a phrase of characters), unique to each professional responsible for signing and sealing files. If the professional forgets his or her pass-phrase, PEDDS allows the creation of additional signatories. Pass phrases are not required, and do not add any additional security to the signed and sealed files. Pass phrases only help prevent someone from accidentally opening a Signatory's Signature file and making modifications to the file set selected to be signed and sealed. Remember, the security is still the ink signature, date and impression seal on the printed Signatory Report!

Even though the Professional of Record could be using the same name, same PE number and even same pass-phrase, PEDDS differentiates between Signatory files by the dates and times they are created (date, time is added to the file name itself).

8. Select the **Signatory Type**.
9. Click the **OK** button to continue.



Signatory Information - Professional Engineer (PE)

Tip If a District requires the same Professional of Record to use different Signatories for different disciplines or purpose, the Professional of Record can add a description of what the signature is being used for, as shown above.

Also note the Signature scope of Work, shown above, is required by Florida rule, and should more verbosely describe the reason for the work.

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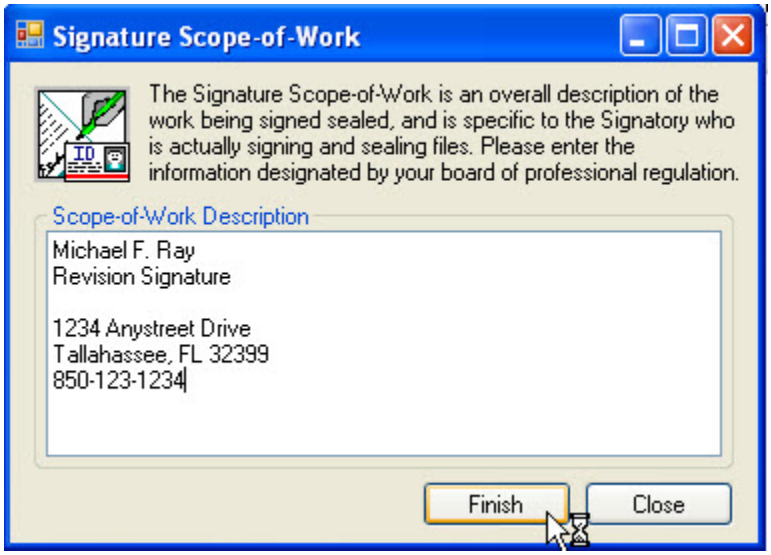
Important The requirements for sealing information stored in electronic files are defined by the Board of Professional Engineers in Rule 61G15-23.003, F.A.C. For each professional engineer in responsible charge who is signing and sealing files in a project, PEDDS generates the following:

A Signature File that defines which files are being signed and sealed, and

A Signature Document that is printed, signed, dated, and sealed by the Professional Engineer with an impression seal.

10. Signature Scope-of-Work opens. If a **Signatory Type** other than **Signature - No Seal (SS)** is chosen, enter your professional number in the **Signatory Number** field.
11. In Signature Scope-of-Work, type a description of the work to be signed/sealed by the Signatory.
12. Click the **Finish** button. PEDDS New Signatory confirmation dialog box appears. Click **OK**.

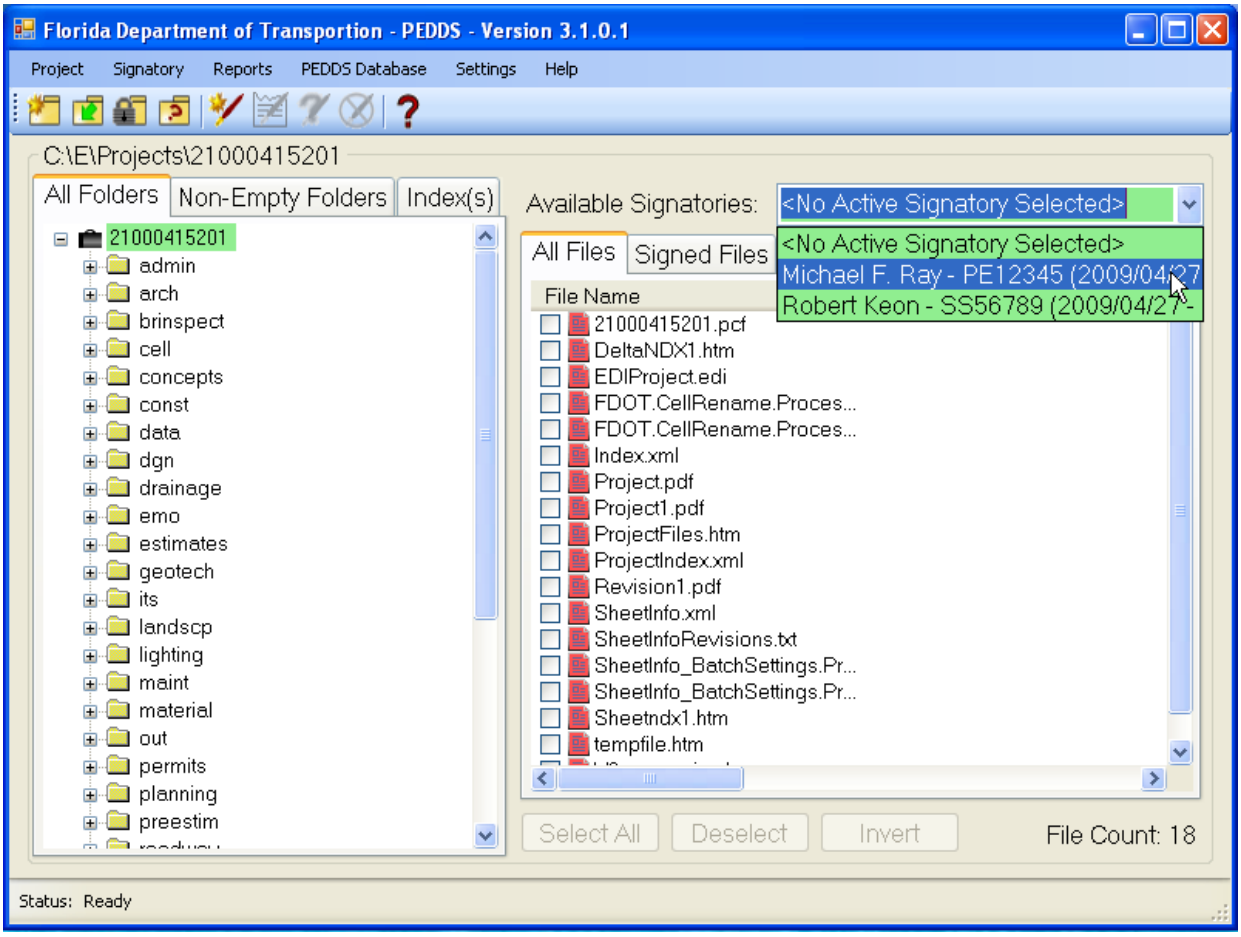


Signature Scope-of-Work dialog box

Figure 5-42a: Signature Scope-of-Work dialog box

Important The professional's name, address and phone number are not required, however the description of the work is. Note that Signatory shown above chose to add their contact information as part of their Scope-of-Work. This may be requested by some districts. Any other exculpatory language the Signatory chooses to add to this scope would also be entered here.

13. In the **Available Signatories** menu, select the newly created signatory. When the Change Active Signatory dialog box appears, enter the password for the **signatory** and click **OK**.



PEDDS - Signatory Files

Figure 5-43a: PEDDS - Signatory Files

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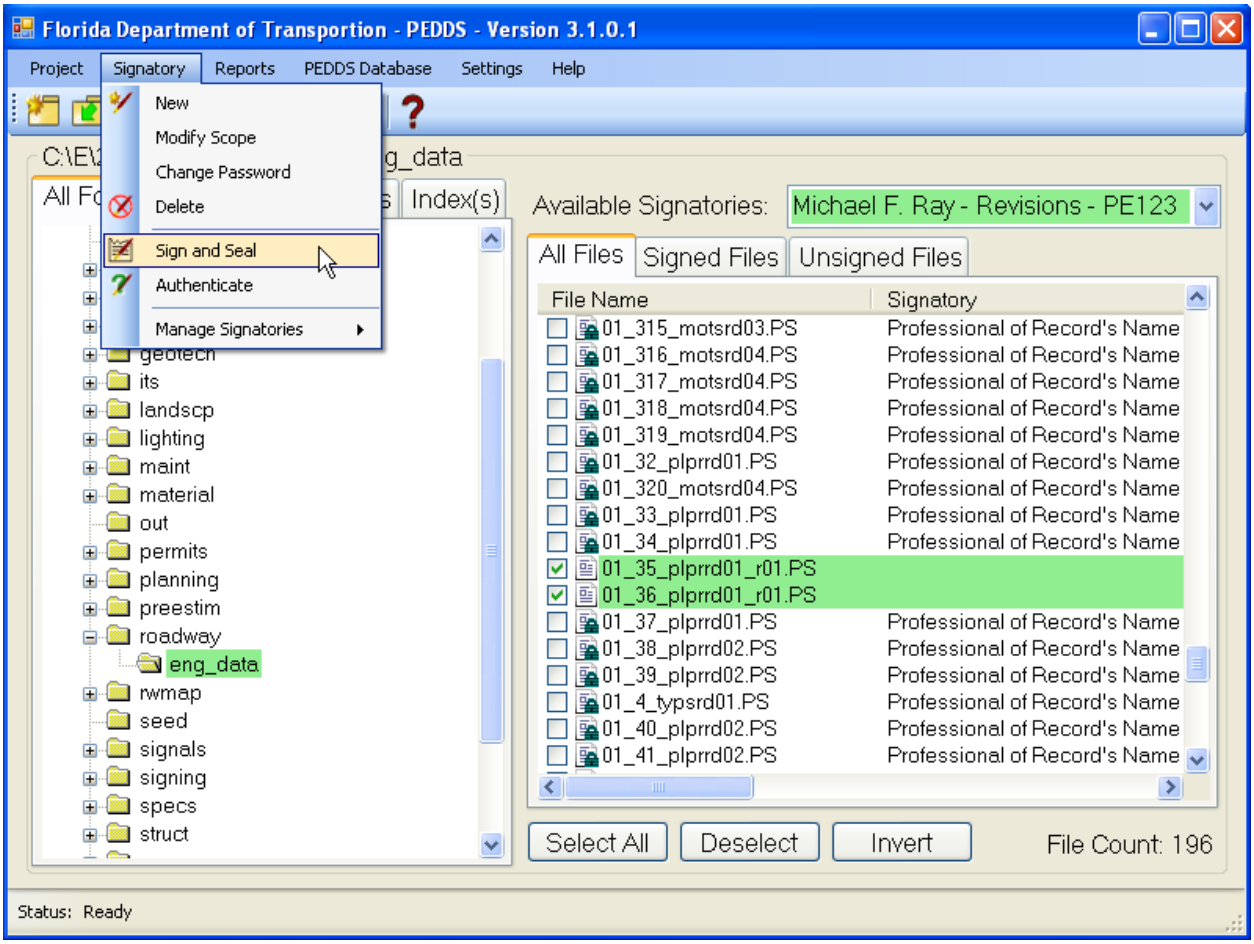
14. Using the newly created **Signatory**, select the revised files for signing and sealing. Then select **Signatory** > **Sign and Seal**.

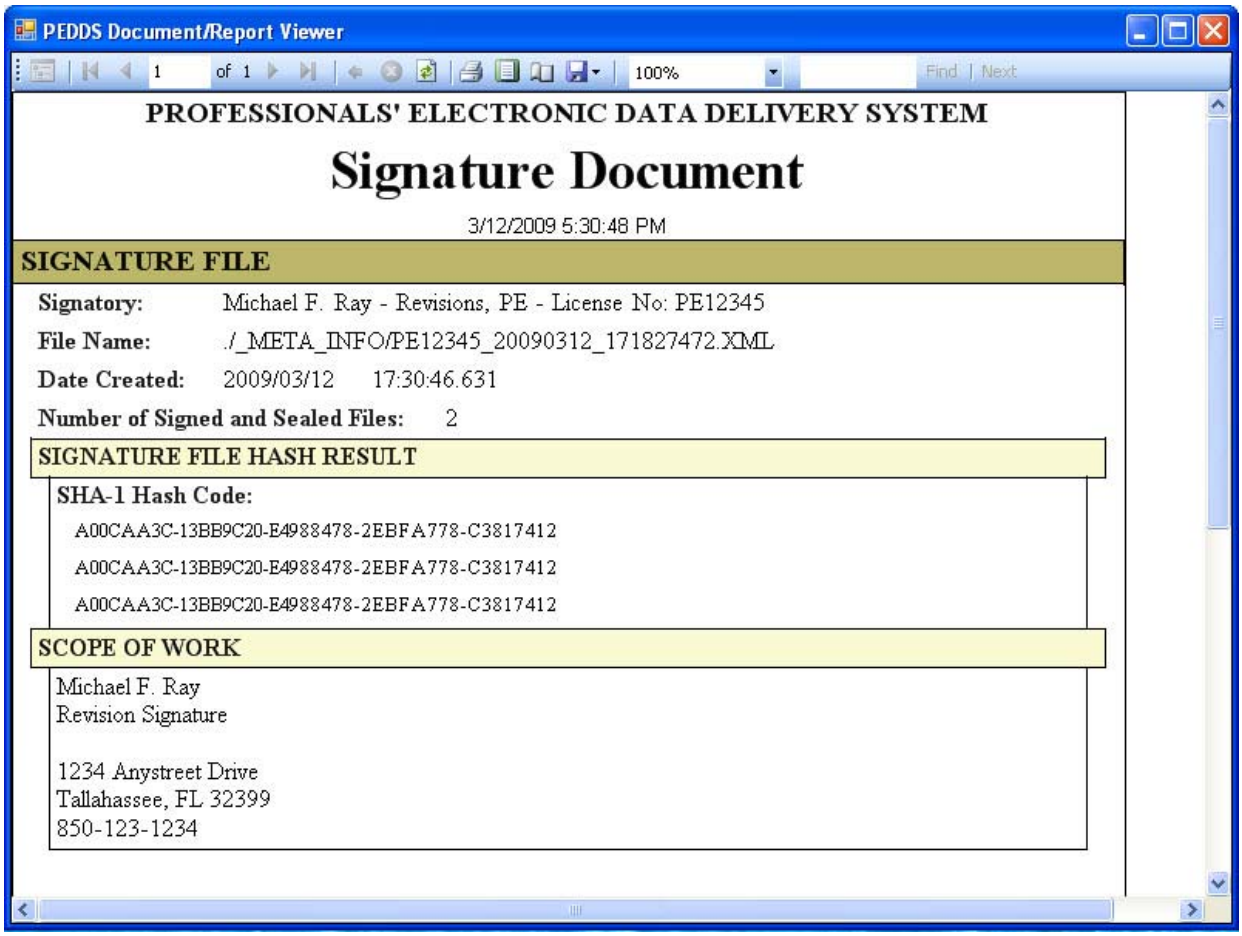


PEDDS - Revised Sheets Signed and Sealed

Important When Signing and Sealing, a Qualifier can be used to specifically add exculpatory language about any particular file, or group of files being selected to sign and seal. A Qualifier is not required, but should be used if there is more than one Signatory signing any single file in order to distinguish what portions of that file the Signatory is taking responsibility for.

Upon completion of the **Signing and Sealing** process, Report Viewer opens. Click the **Print** button to send the report to a print device. The **Signature Document**, once printed on paper, is then manually signed, dated, and impression sealed by the Signatory.

Note The files <u>are not</u> electronically signed and sealed electronically, until the paper report process just described has been completed, despite completing the electronic process in PEDDS.



PEDDS - Report Viewer

15. Click the **Exit** button. Report Viewer closes.

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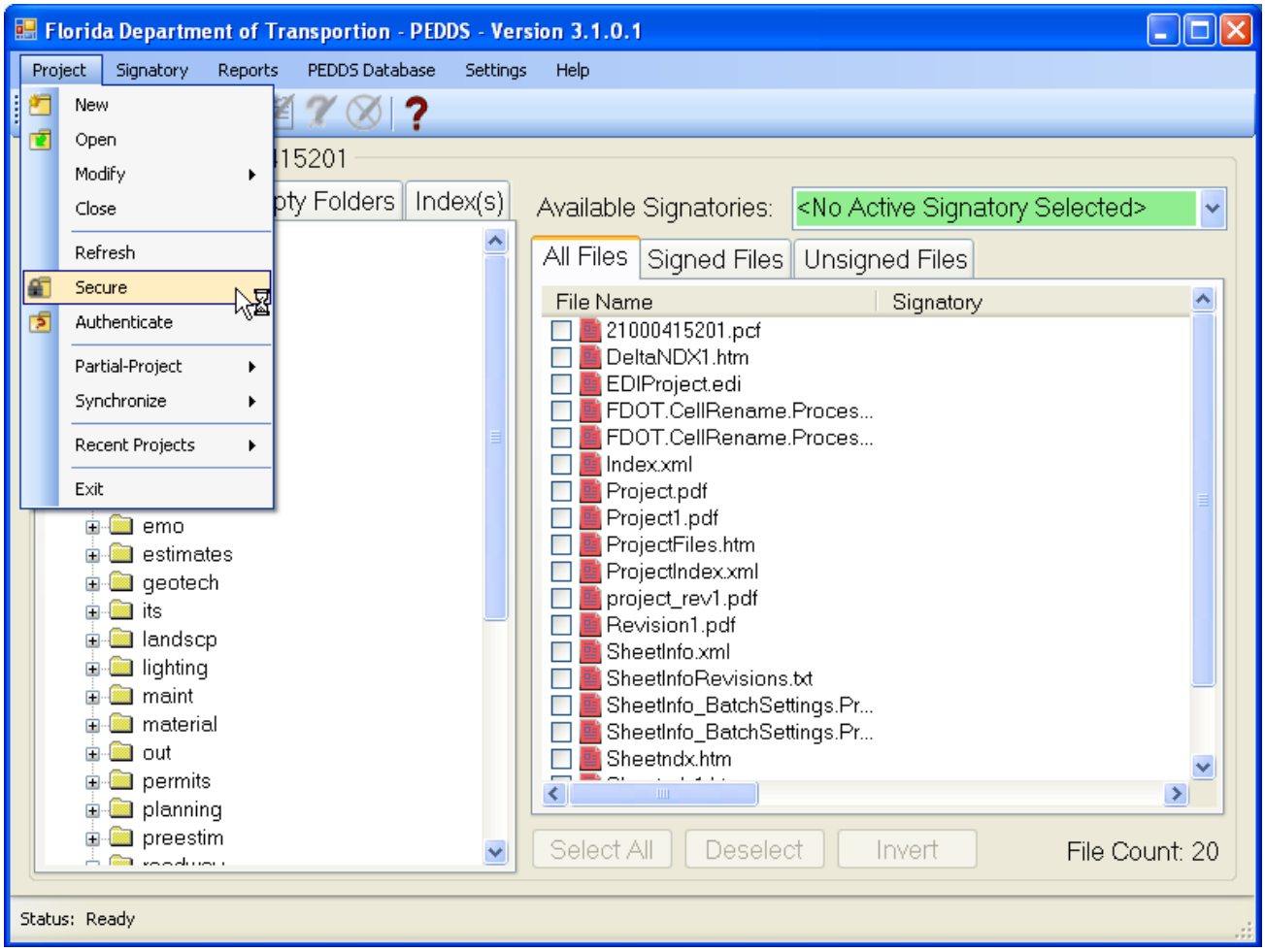
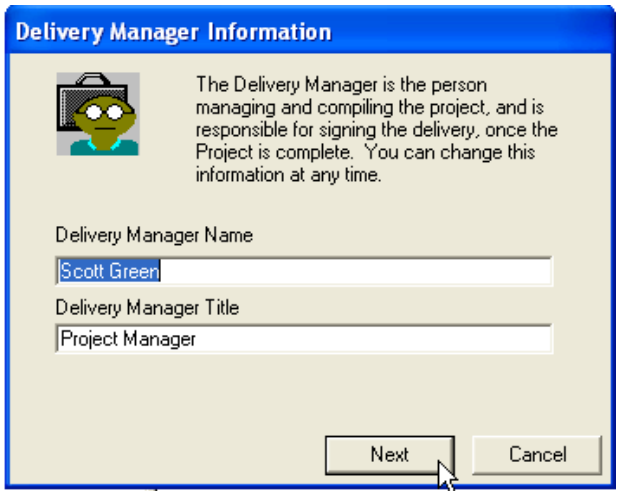
16. Click **Project>Secure**. Enter the **Delivery Manager's Name**. If the information displayed is valid, the user can accept what is there.



PEDDS - Secure

17. Enter the **Delivery Manager Title** and click the **Next** button.



Project Manager Information

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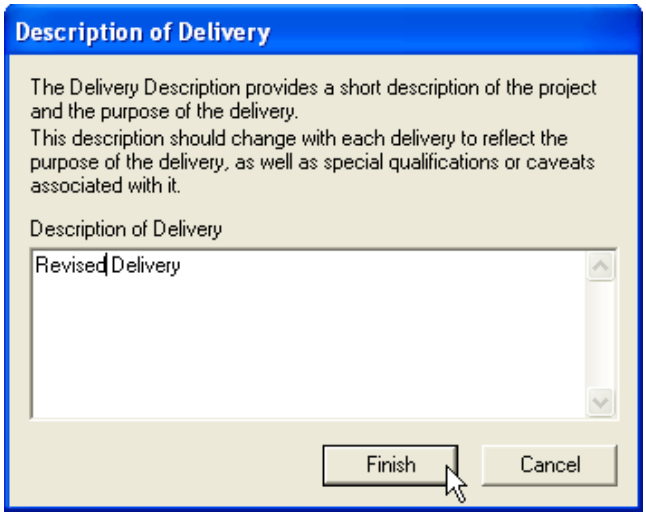
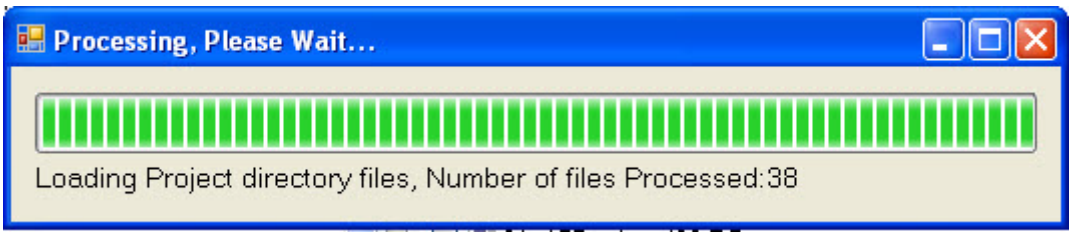
18. Description of Delivery opens. Enter the purpose for the delivery. Again, this description should contain enough detail to sufficiently describe the purpose for the delivery.



Project Description

19. Click the **Finish** button. Securing Project opens briefly then closes.



Securing Project

Note PEDDS passes all files through the Federal Government SHA-1 secure Hash algorithm to create a manifest listing of Hash Codes for each file. That manifest is contained in a file called the Manifest file.

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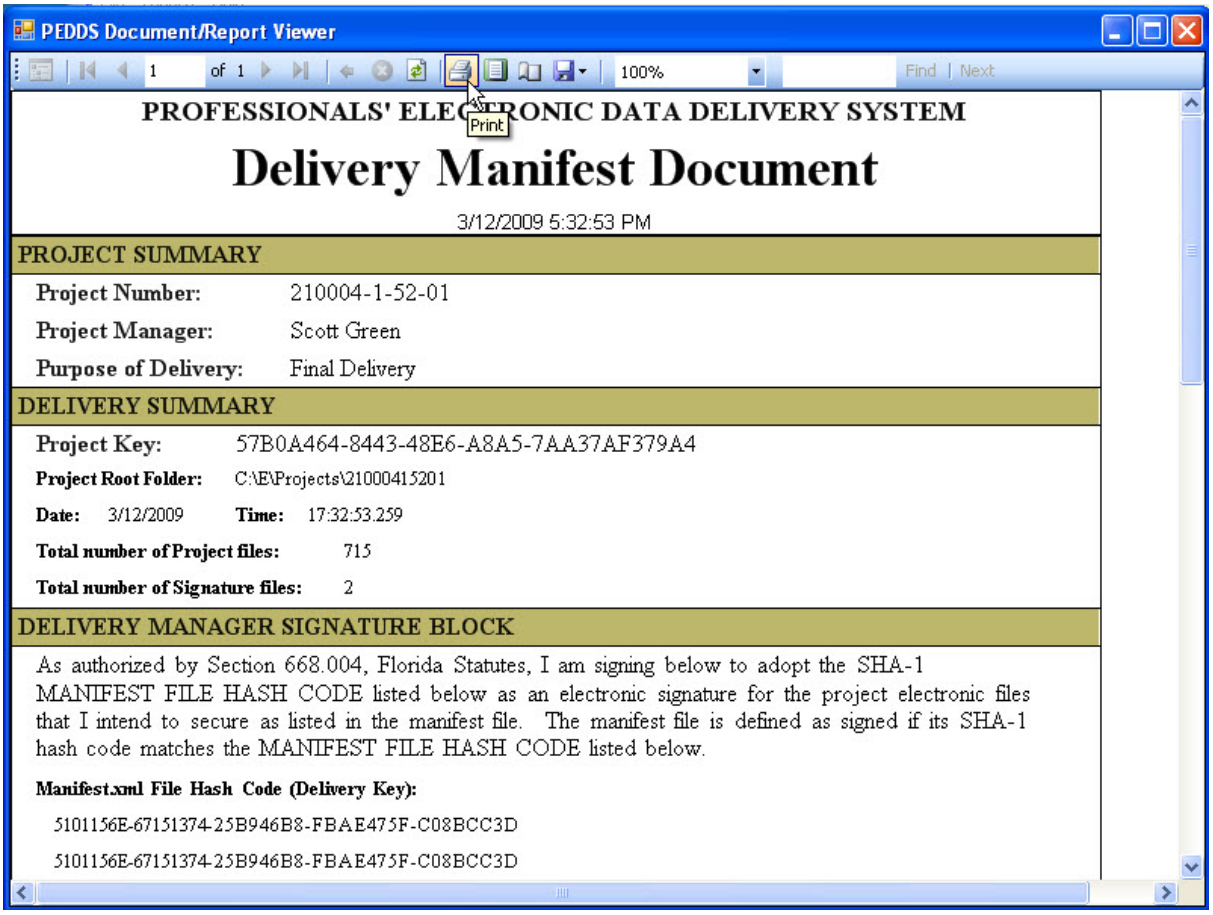
20. Report Viewer then opens to present the **Delivery Manifest Document**. Click the **Print** button to send the **Delivery Manifest Document** to a print device.



PEDDS – Delivery Manifest Document

21. Click the **Exit** button to close Report Viewer and exit Pedds.

Section 5.6 Using Project Delta

As discussed in Section 3.13 of the Production Phase, Project Delta is an application that simplifies the job of identifying and reporting indexed differences between two sets of project deliveries. Project Delta compares a historical delivery to a revised contemporary delivery. It uses the differences between the indexes (**ProjectIndex.xml**) and those files referenced by the index for the sheets to determine if sheets have been added, modified, or removed from the revision.

Project Delta creates two reports that can be used to report the differences between two sets of indexed projects, the **Revision Report** and **Change Report**:

Revision Report - This report (**DeltaNDX#.htm**) is created and included in the project before a revision delivery is made to the Department. The report denotes the differences between two full deliveries; the original (historical), delivery project (which must be secure) and a full, revised (contemporary) project delivery. The report also contains data that is used by Set Maker to create a secure subset of revised files from the revised (contemporary) project delivery.

Change Report – This report is designed to report the indexed differences between any two project files sets, not merely full project deliveries, as does the **Revision Report**. Though the report was originally designed for tracking the differences between an original project delivery and a later corrected delivery, the report has many uses – from determining file changes between sets to ensuring that a revision set contains the proper files. As this report is designed for quality assurance, it does contain set generation information as does the **Revision Report**.

Note Additional reporting capability is available in Project Delta, which utilizes the **CSDIFF** application called by Project Delta to report specific file changes at the folder level between projects.

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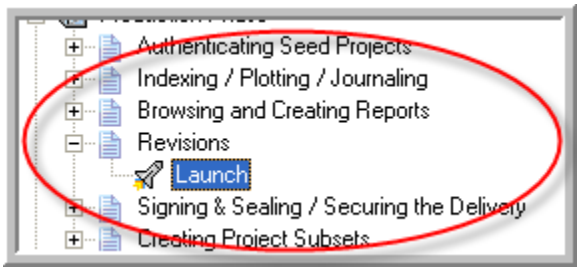
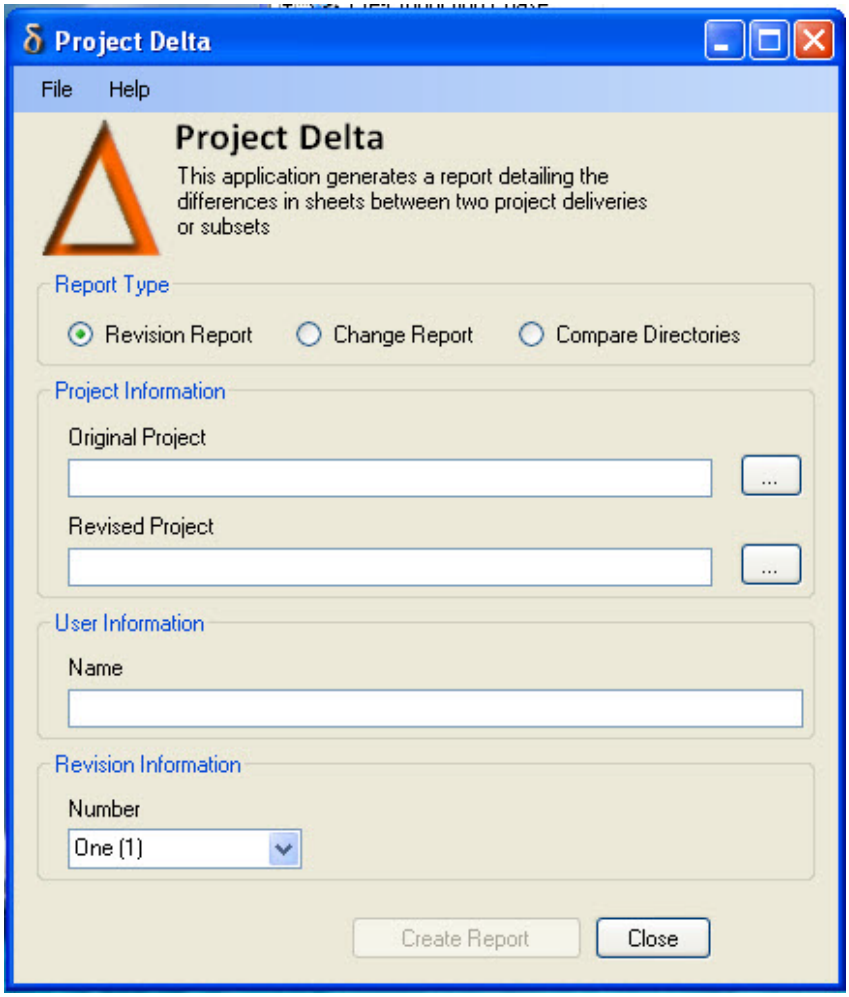
Exercise 5.6 To create the Plan Revision Index Report

Using Project Delta, the **Revision Report**, **DeltaNDX#.htm**, is created by comparing the originally delivered project, known as the Original Project, to the newly revised project, known as the New Project. **DeltaNDX#.htm** is saved to the revised project's root directory and only displays information about indexed plan sheets that are added, removed or revised. Non-indexed modified design files (files containing no plan sheets) are not reported.

1. In the **Revision** folder, click **Launch** to open Project Delta.



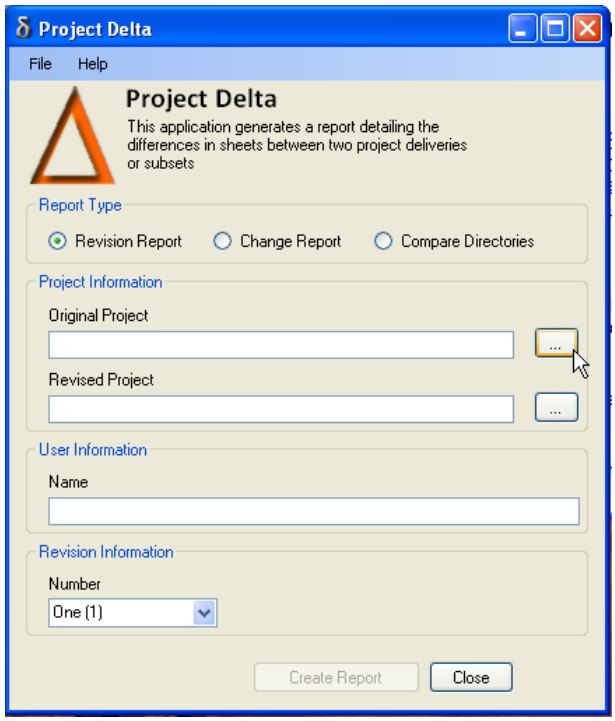
Revisions



Project Delta

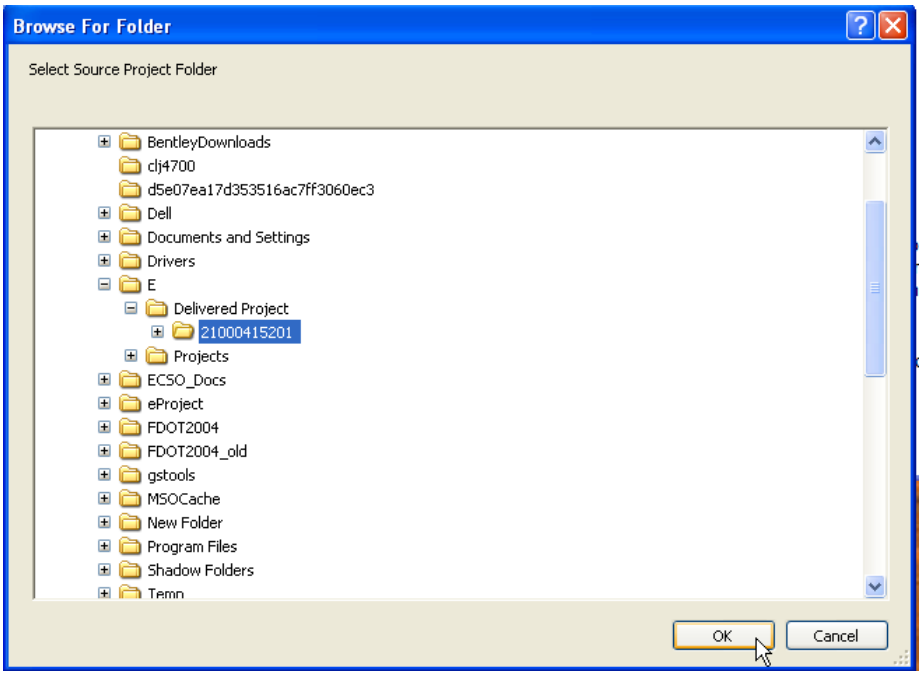
2. Under **Report Type**, populate the **Revision Report** radio button.

3. Click the **Browse** button ( ) to the right of the **Original Project** box, to browse to the project to be compared.



Project Delta - Browse to Folder

4. Browse For Folder opens. Navigate to the location of the originally delivered, **secure** project at **C:\E\Delivered Project\21000415201** and click the **OK** button.



Browse For Folder

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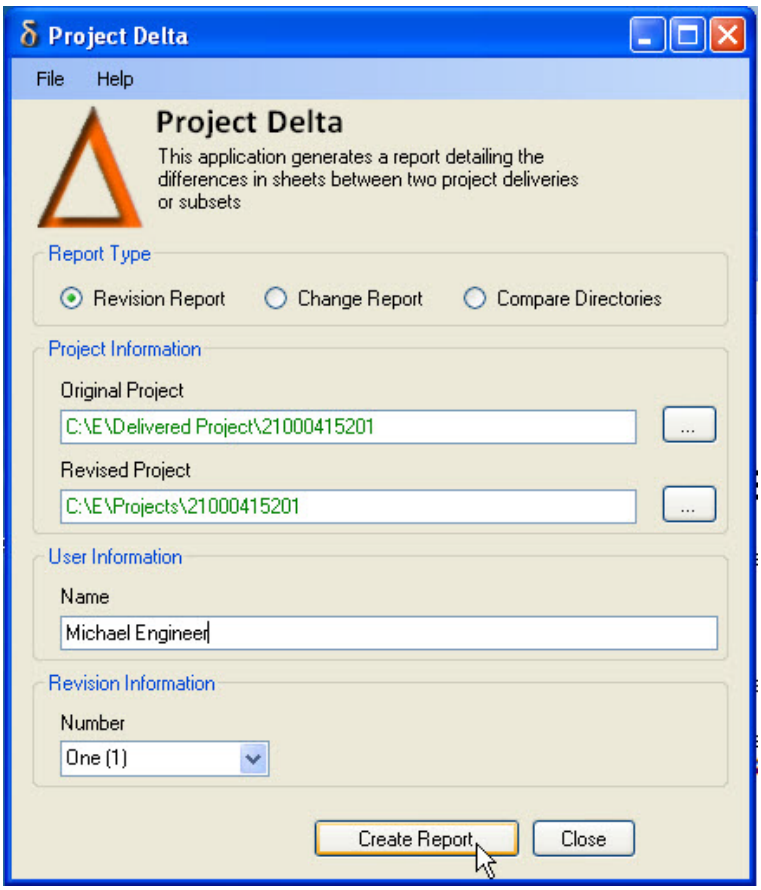
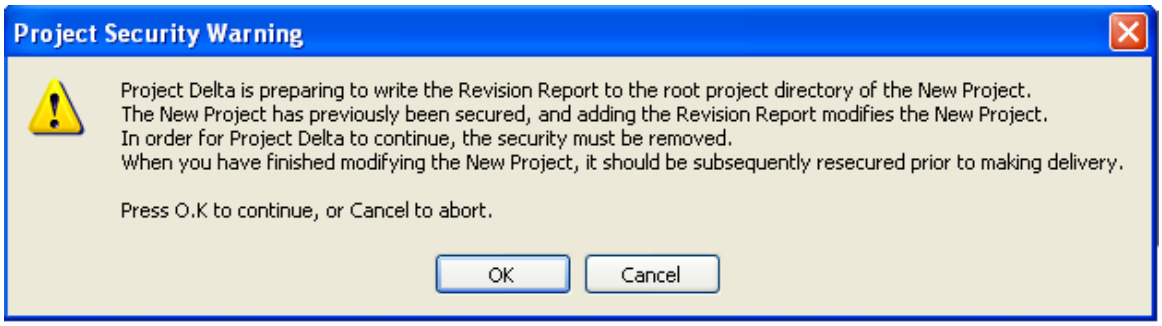
5. Click the **OK** button. Project Delta displays project directory in the **Original Project** box.
6. Repeat steps 4 - 6, selecting the Revised Project as **C:\E\Projects\21000415201.**
7. In the **User Information Name** box, type your name and select **One (1)** from the **Revision Information Number** menu. The revision number that is selected will determine the name of the **deltandx#** report (i.e. deltandx1.htm).



Project Delta

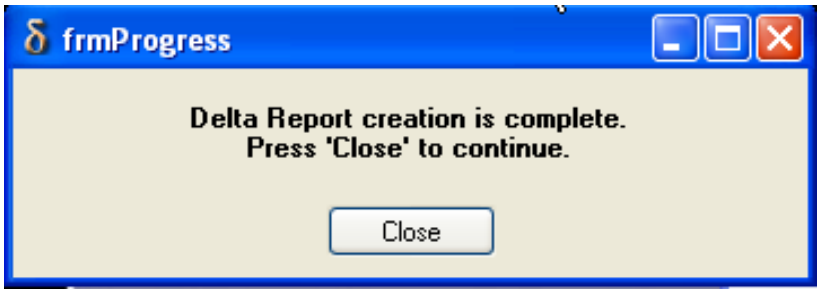
8. Click the **Create Report** button to continue.
9. Project Security Warning displays. Click the **OK** button. The **Revision Report** begins the creation process.



System Message

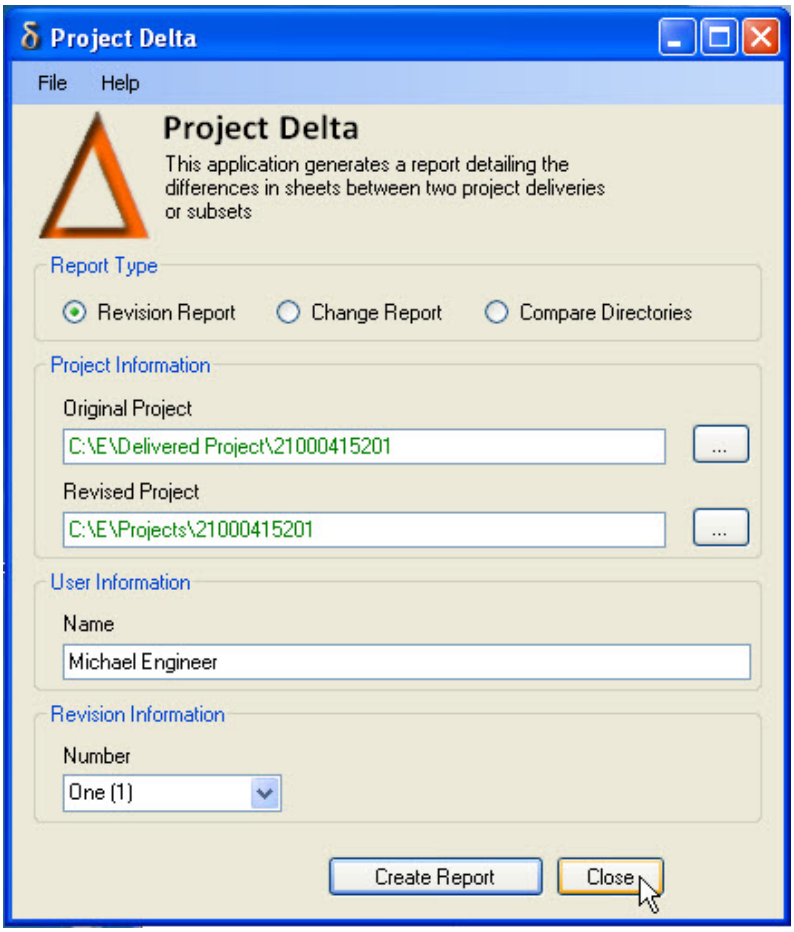
Important While Project Delta is creating the **Revision Report**, it strips out all of the file and hash-code values of the revised project's manifest (which is copied from the original secured manifest). Project Delta leaves the Header information in the manifest, **but the project is no longer secured**. PEDDS must be used to re-secure the project before delivery. The original, secured project's manifest is not altered in any way during this process.

10. Several Creating Delta Report dialogs open displaying the progress of the report generation. Upon creation of the Report, the **Revisions Report** opens, along with frmProgress, which state that the "***Delta Report creation is complete***." Click the **Close** button to reopen Project Delta.



Creating Delta Report Progress

11. From Project Delta, click the **Close** button.



Project Delta

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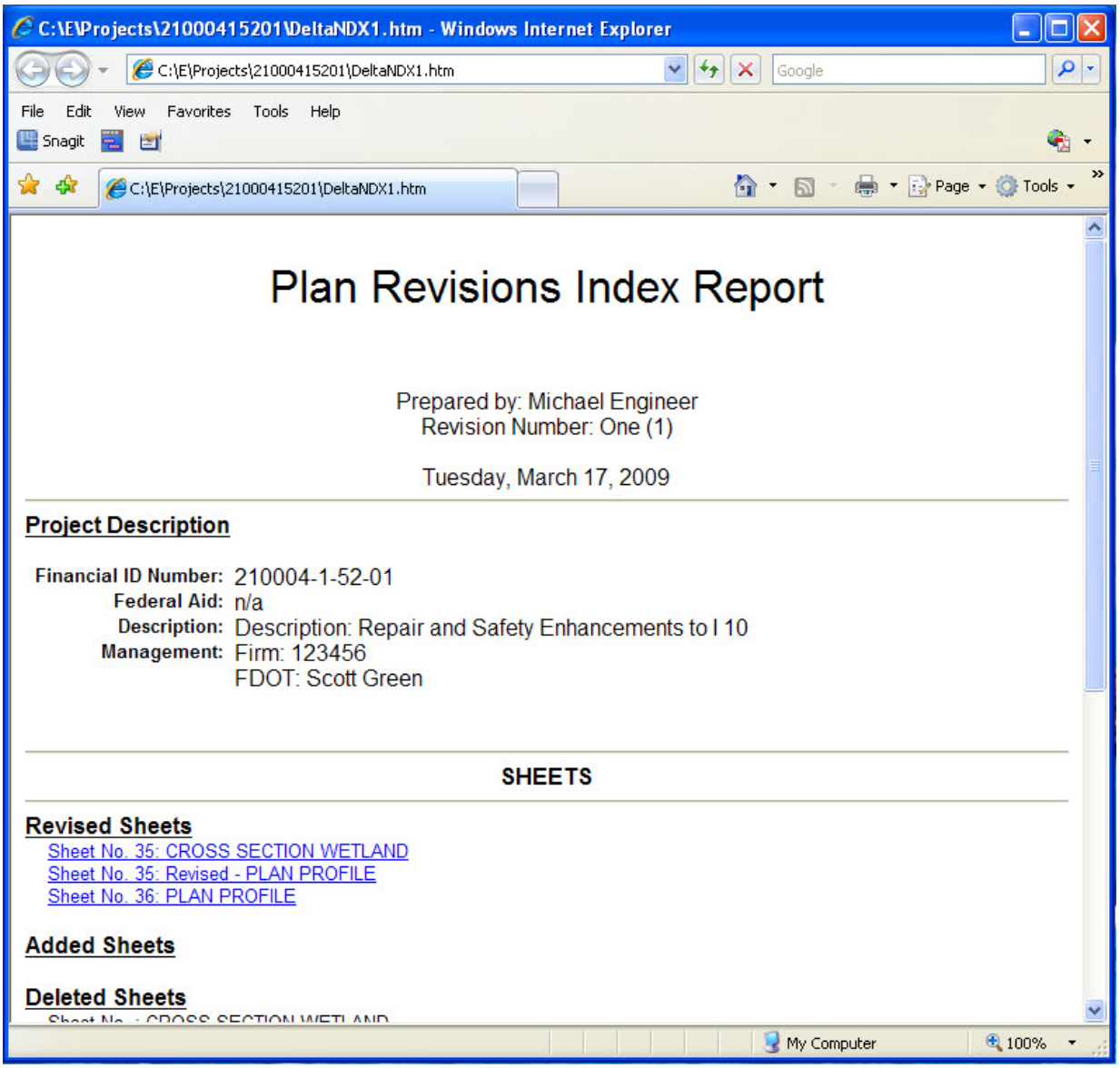


Plan Revisions Index Report

Note The report, **DeltaNDX#.htm**, is a web page that describes the differences between the original project delivery and the revised project in two contexts. The first is what the differences are between the two in terms of sheets (where any added, removed, or modified) between the two project indexes. The second context is what files referenced by those two project indexes were affected. With both of the contexts, the user gets a complete picture about what changed, sheet index wise, between the original project delivery and the revision being prepared.

Note The naming convention of the deltandx report has changed. The name now includes the revision number (example: deltandx#.htm). As shown above, the name for the deltandx report of the first revision is deltandx1.htm.

Exercise 5.7 Updating Reports for a Revision

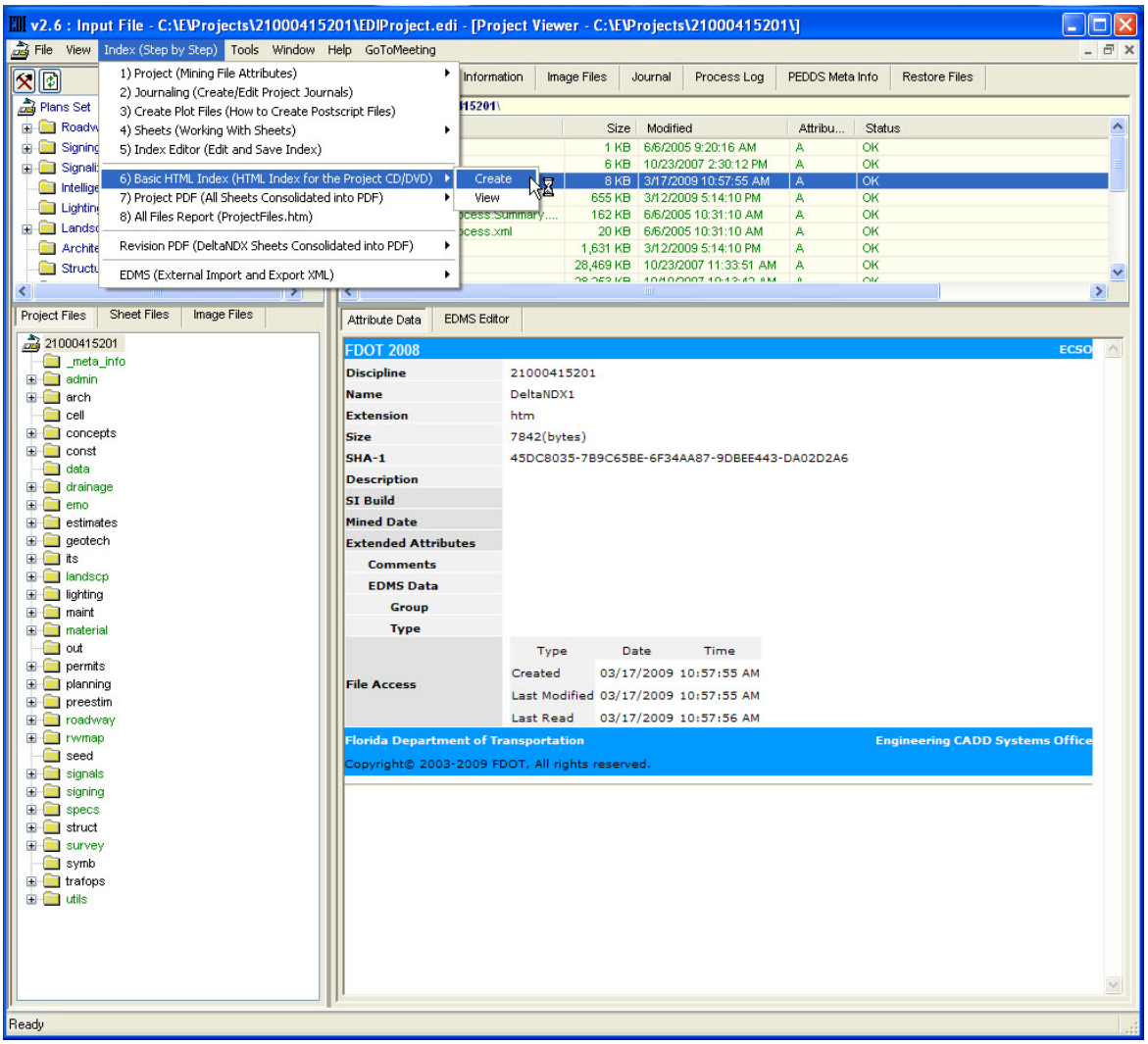
To create the revised reports

The Sheet Index Report is an HTML report derived from the project's Index, **ProjectIndex.xml**. The report file is titled **Sheetndx#.htm** and must reside in the project's root directory.

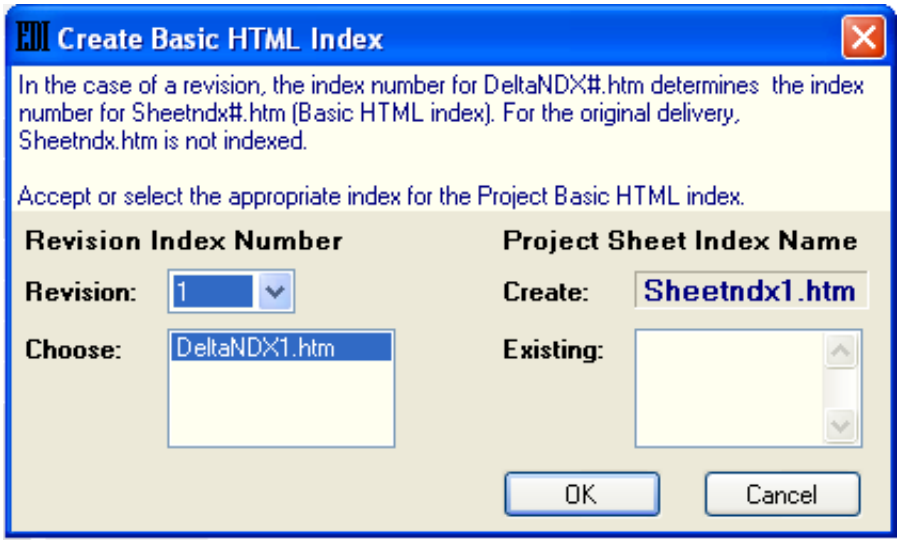
To update Sheetndx#.htm

Important The Sheet Index Report, **Sheetndx#.htm** is a required deliverable item per Item 17 of the Compliance Certification Checklist Report.

1. Open the project **21000415201** with EDI2. Be sure to open the project with write access when prompted. Click the **Mine all modified files** icon ( ).
2. From EDI2, select **Index (Step-by-Step) > 6) Basic HTML index (Index) > Create.** Creation of the Basic HTML Index, **Sheetndx#.htm**, processes.



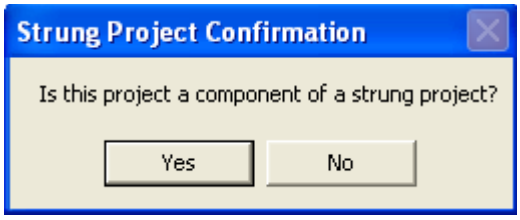
EDI - Create Basic HTML Index



Create Basic HTML index (deltandx#.htm report option)

Note 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.

3. Strung Project Confirmation opens. Click the **NO** button.



Strung Project Confirmation

Note For the purposes of this training course, this is a standalone project; therefore, it is not a component of a Strung Project.

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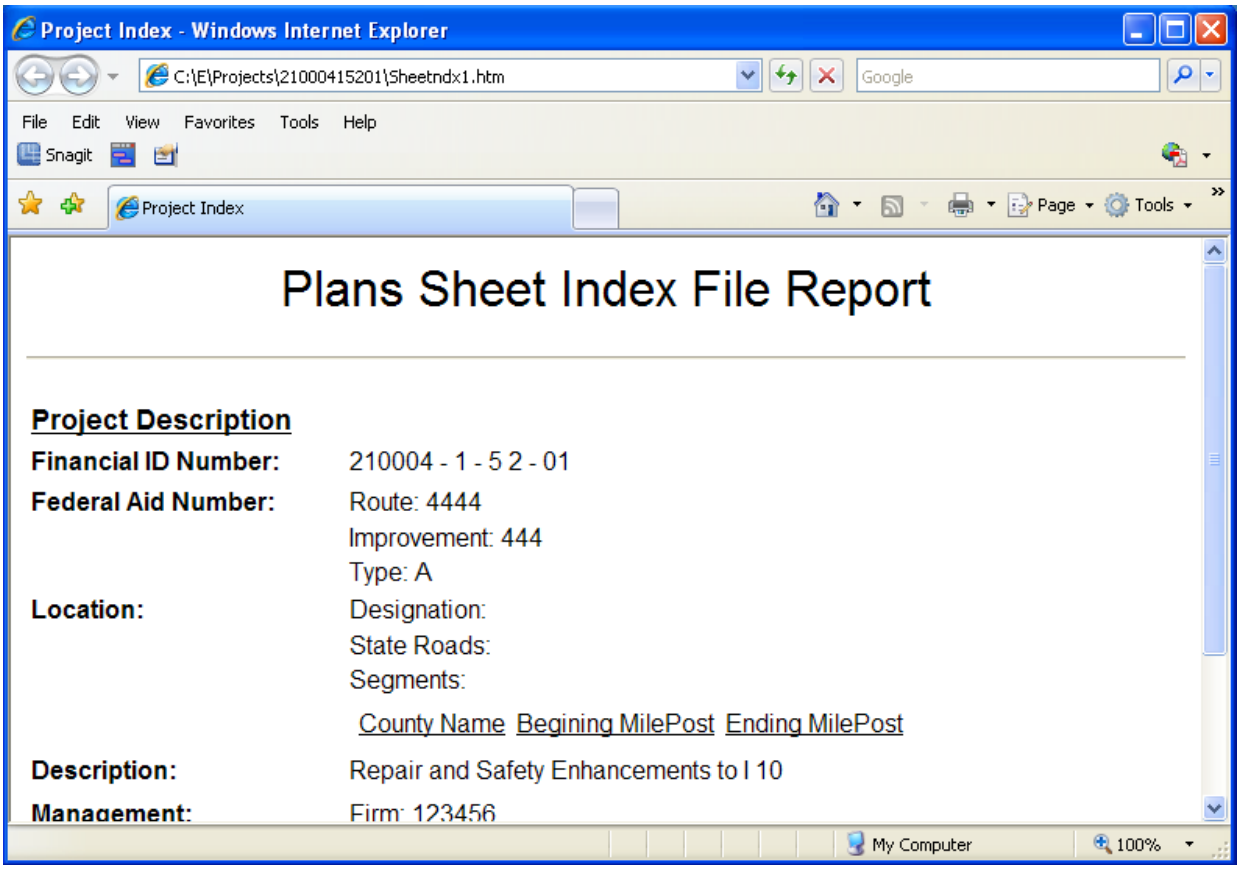
4. The HTML file **Sheetndx.htm** is created in the project's root directory and displays in a web browser.



Sheetndx1.htm HTML Web Page View

5. The HTML web page allows users to browse the project and view files with an external Web Browser, like Internet Explorer.

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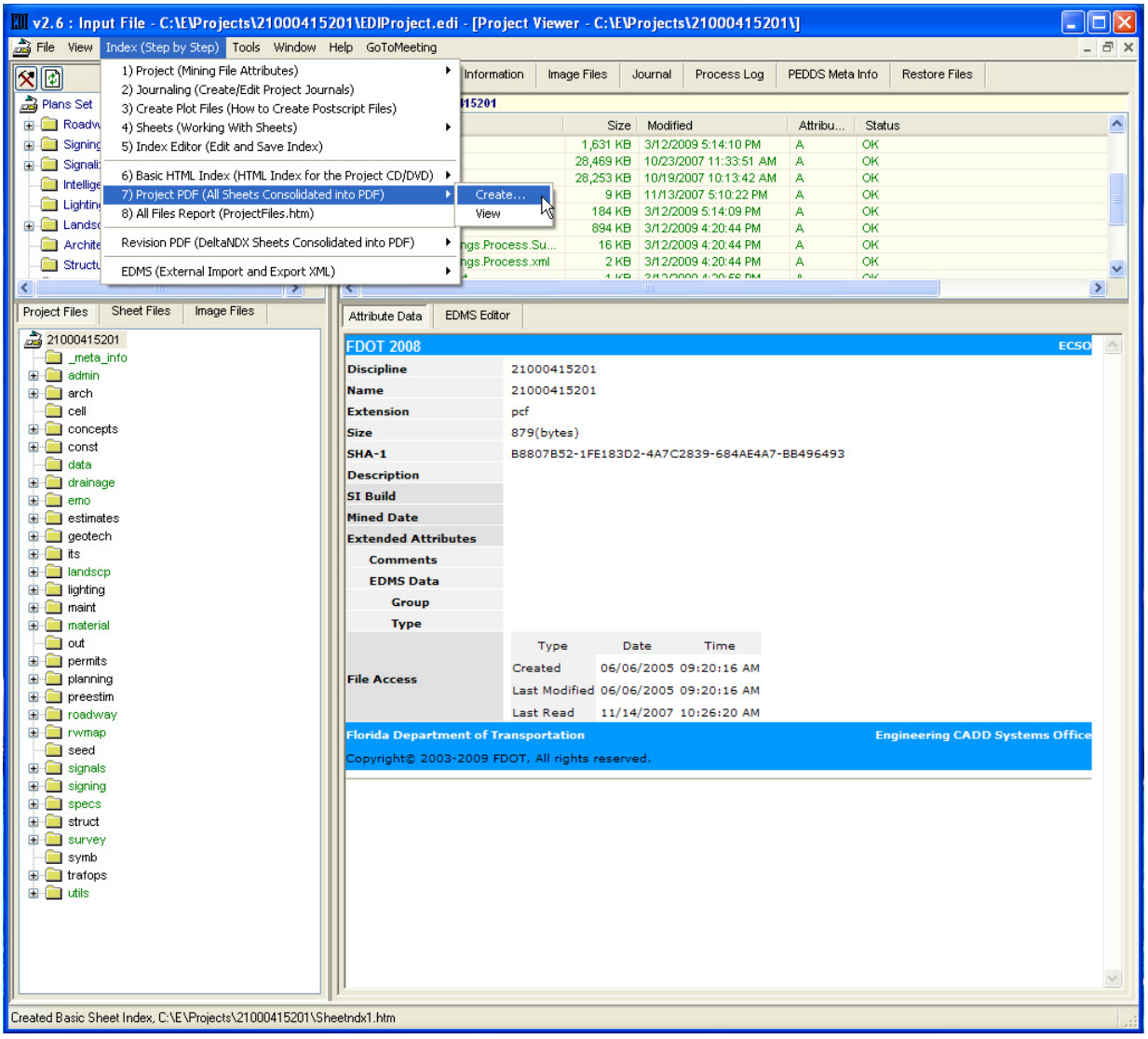
To update the Project#.pdf

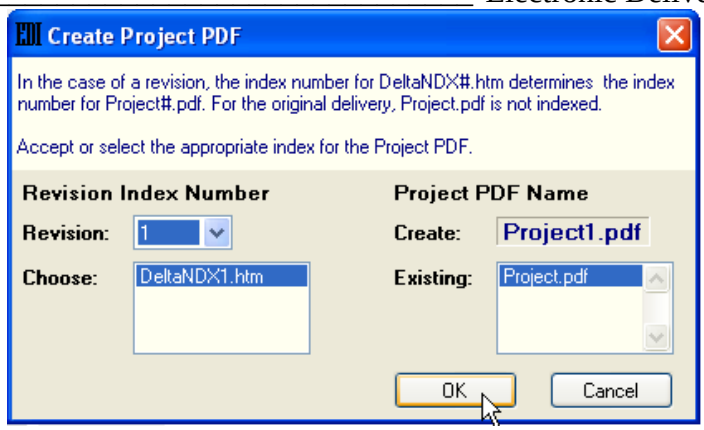
The Summary PDF is a single document which contains all plan sheet images in index order. This file, in Adobe Portable Document Format (PDF), resides in the project's root directory, and is titled **Project#.pdf**. During the creation of the **Project#.pdf**, if a previously created **Project#.pdf** or a Summary PostScript file, **Project.ps** exists, the application automatically overwrites the files, so only one Summary file is created.

To create an updated Project#.pdf

1. From EDI2, select **Index (Step-by-Step) > 7) Project PDF (All Sheets Consolidated into PDF) > Create**. EDI2 begins the creation process.

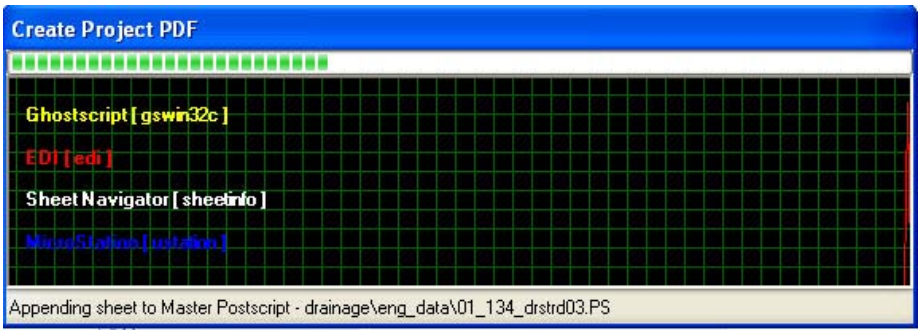


EDI - Create Project.pdf



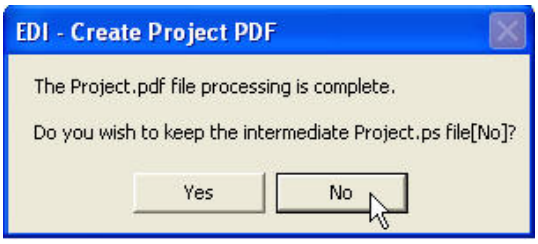
Create Project.pdf (select revision # and deltandx#.htm)

Note Upon initializing the creation process, Create Project PDF opens and displays the "behind the scenes" processes of **Ghostscript**, **EDI**, **Sheet Navigator**, and **MicroStation**.



Create Project PDF

2. From EDI – Create Project PDF, the user can choose whether or not to keep the intermediate **Project.ps** file. For this exercise, click the **No** button.



Create Project PDF

3. Display Project PDF opens. Click the **Yes** button. Adobe Reader opens to display contents of **Project1.pdf.**

Display Project# PDF

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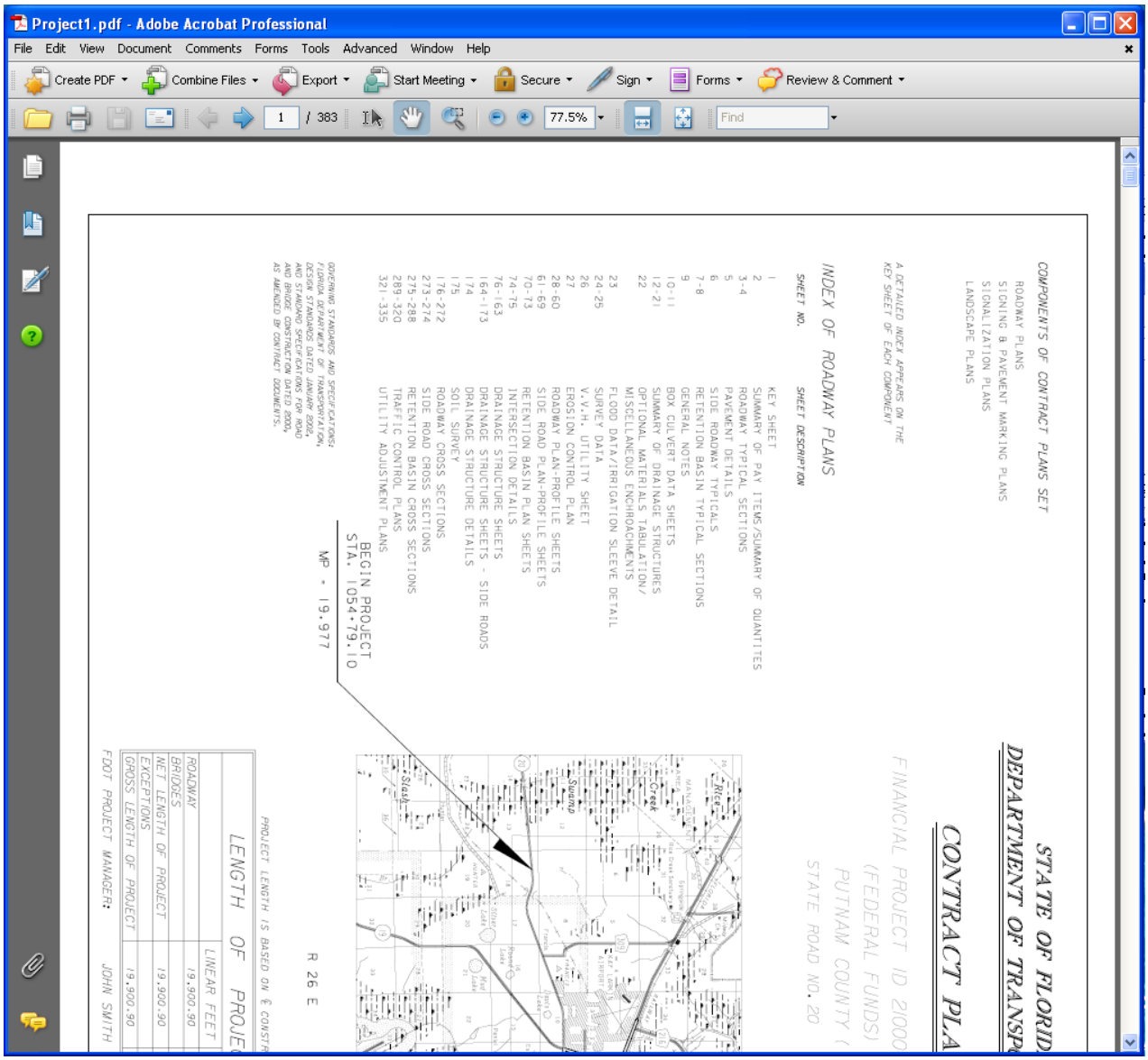
Tip The user can change Adobe Reader's view from portrait to landscape to rotate the view of **Project#.pdf**. Check the orientation of any manually inserted sheets prior to building the **Project#.pdf** file.



Adobe Reader – Project1.pdf

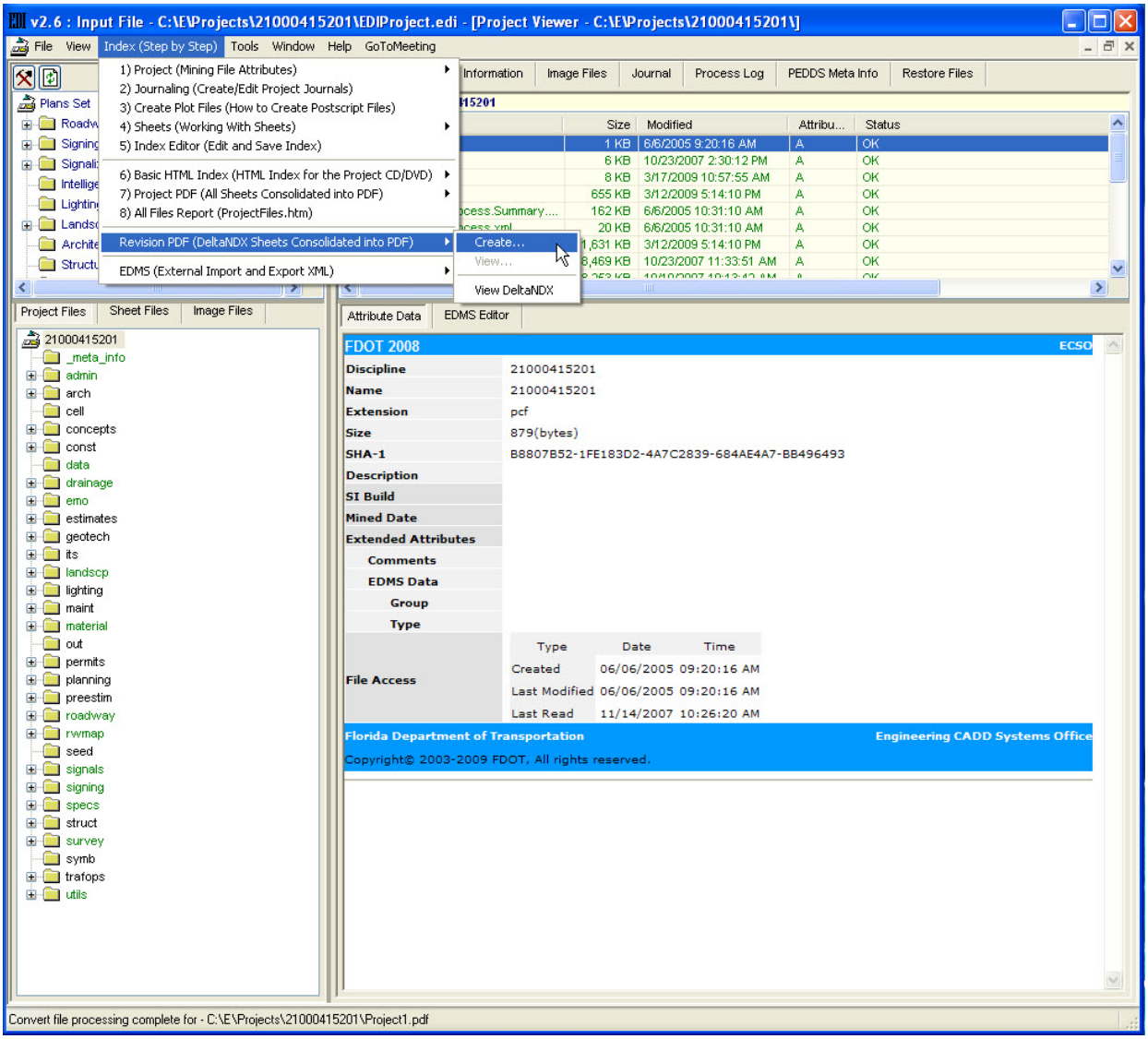
4. PDF (Portable Document Format) is not a perfect solution. There is no control over the original size/sheet dimensions, sheet rotation, pixel density or output paper size. PDF does, however, offer an inexpensive printing and viewing solution for other users of FDOT information that are unable to print or view postscript files as PDF preserves the data.

Important The Summary PDF, **Project#.pdf** is a required deliverable item as per Item 16 of the Compliance Certification Checklist Report.

To create the Revision#.pdf

The Summary PDF is a single document which contains all plan sheet images in index order. This file, in Adobe Portable Document Format (PDF), resides in the project's root directory, and is titled **Project#.pdf**. During the creation of the **Project#.pdf**, if a previously created **Project#.pdf** or a Summary PostScript file, **Project.ps** exists, the application automatically overwrites the files, so only one Summary file is created.

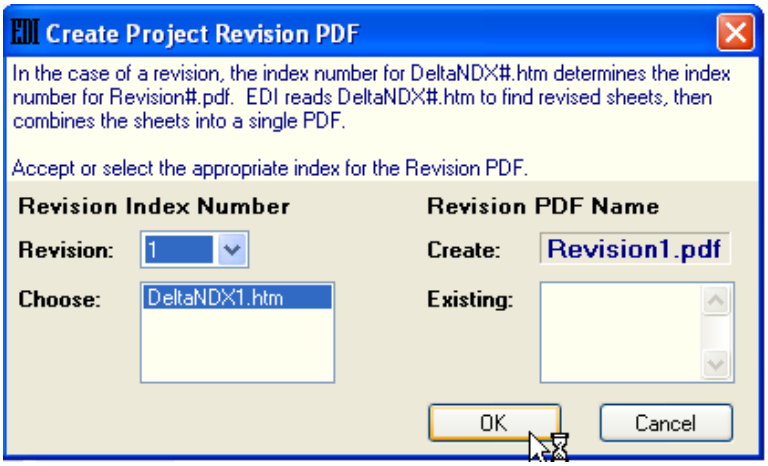
1. From EDI2, select **Index (Step-by-Step)** > **Revision PDF (DeltaNDX Sheets Consolidated into PDF)** > **Create**. EDI2 begins the creation process.



EDI - Create Revision#.pdf

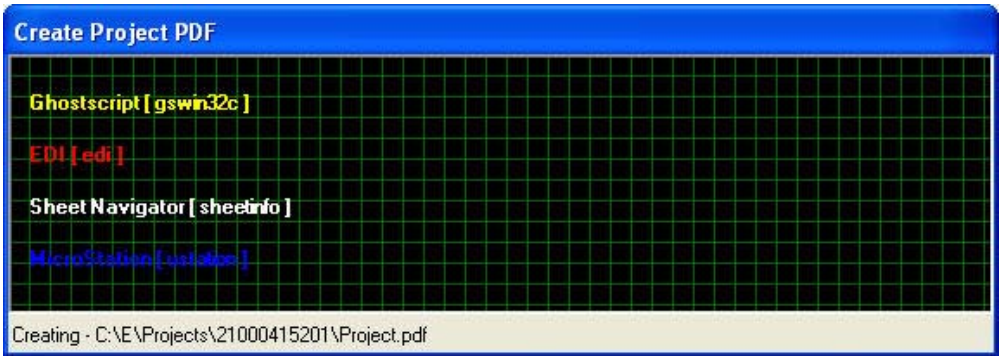
2. Create Project Revision PDF opens. Ensure 1 is selected in the **Revision** menu and that the **deltandx1.htm** report is highlighted and then click the **OK** button.

Note If there are other revision.pdf files that reside in the root of the project folder, each of the files will be listed in the "existing" box.



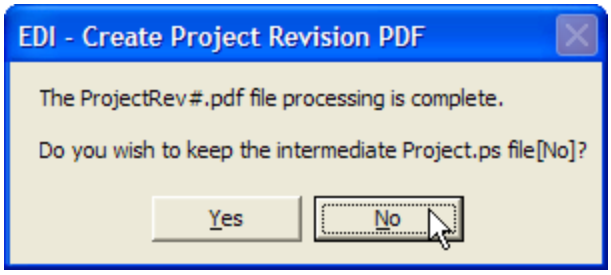
EDI2 – Select Revision Number and deltandx#.htm report to Create Revision#.pdf

3. Upon initializing the creation process, Create Project PDF opens and displays the "behind the scenes" processes of **Ghostscript**, **EDI**, **Sheet Navigator**, and **MicroStation**.



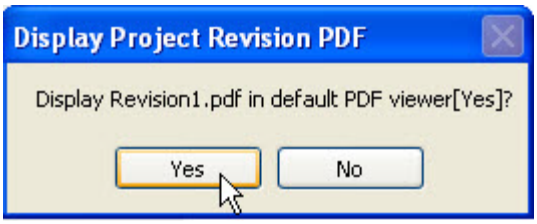
Create Revision# PDF

4. From EDI – Create Project PDF, the user can choose whether or not to keep the intermediate **Project.ps** file. For this exercise, click the **No** button.



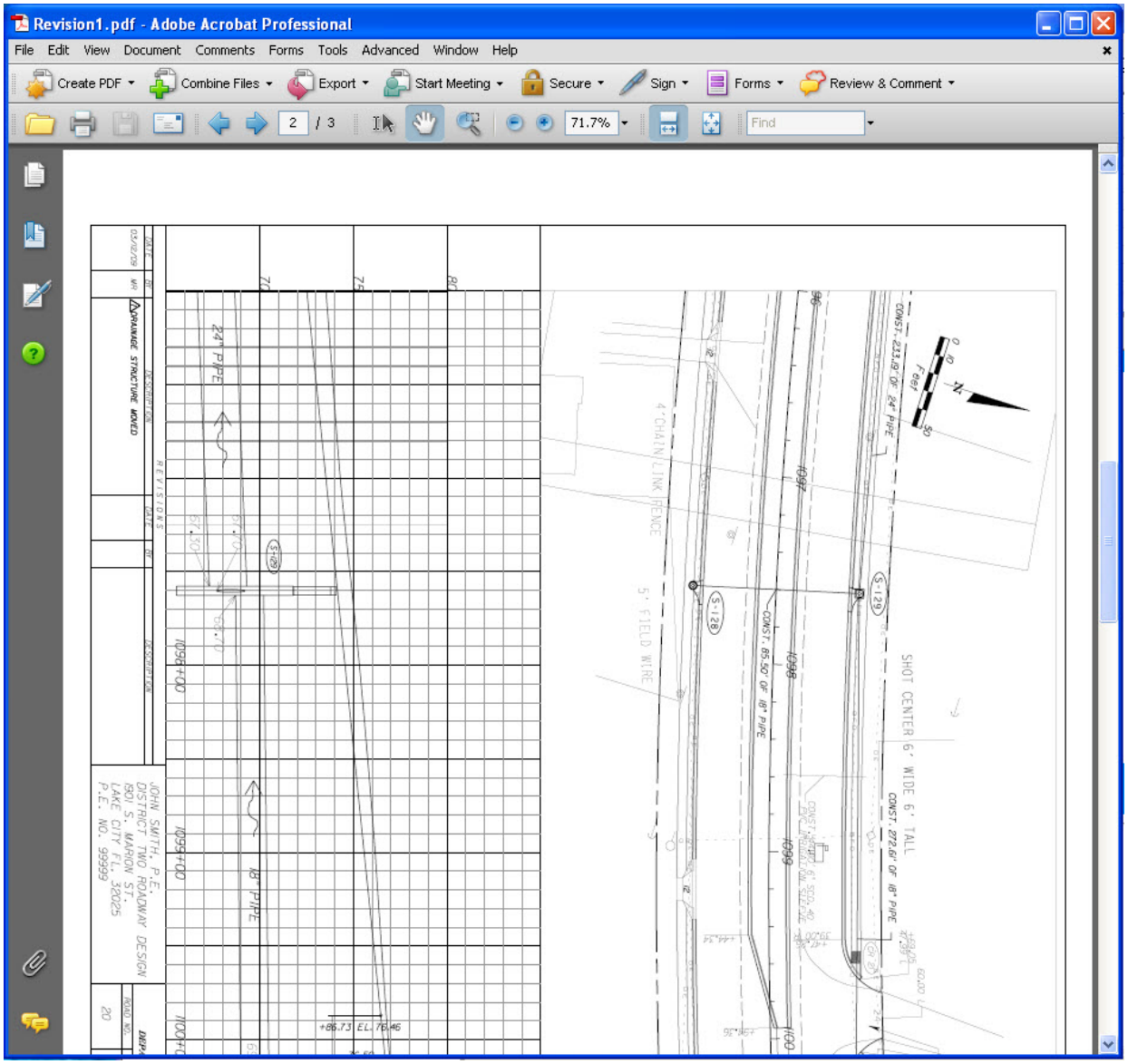
EDI – Create Project Revision PDF

5. Display Project PDF opens. Click the **Yes** button. Adobe Reader opens to display contents of **Revision#.pdf.**



Display Project Revision PDF

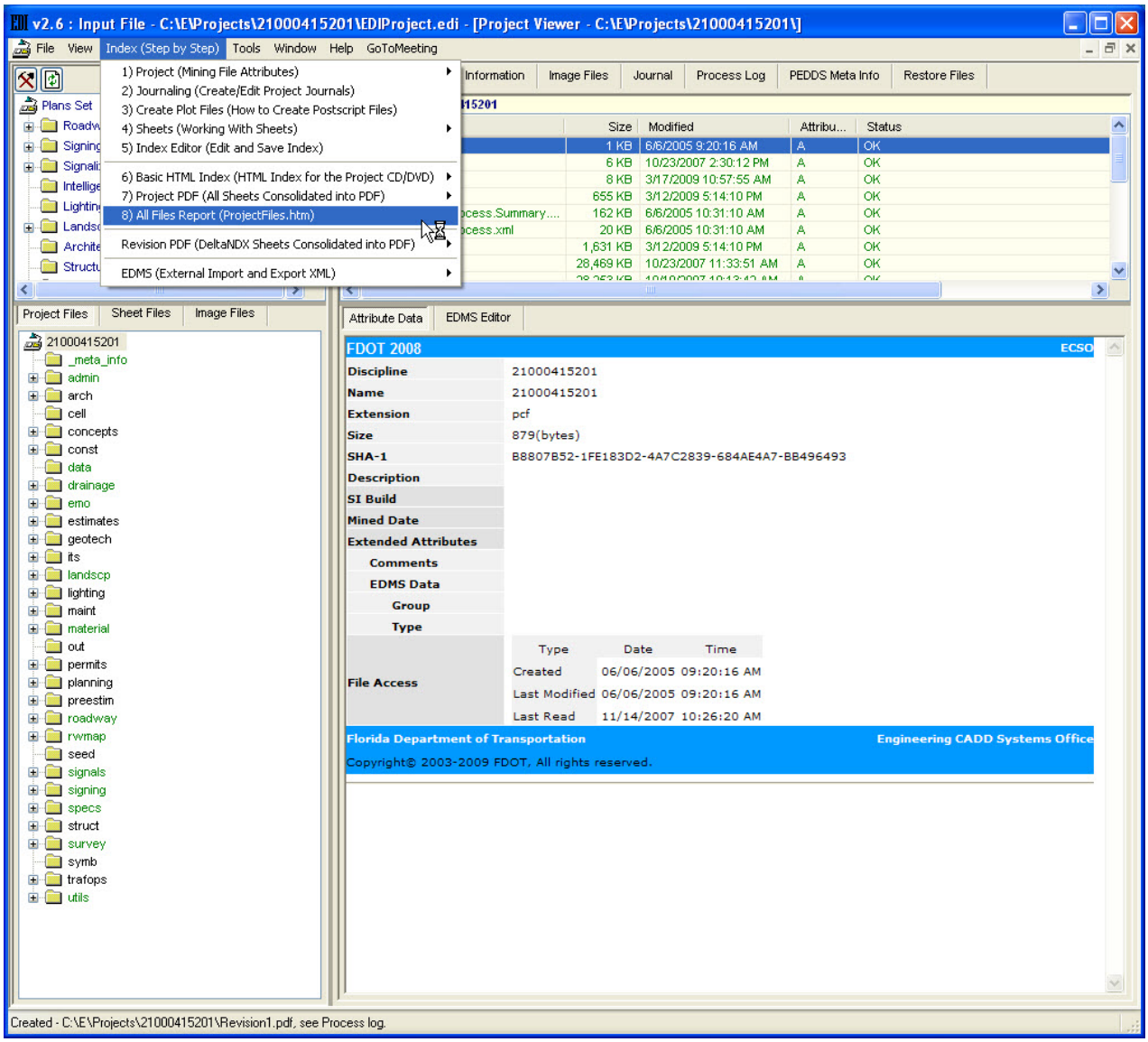
Tip The user can change Adobe Reader's view from portrait to landscape to rotate the view of **Revision#pdf**. Check the orientation of any manually inserted sheets prior to building the **Revision#.pdf** file.



Adobe Reader – Revision1.pdf

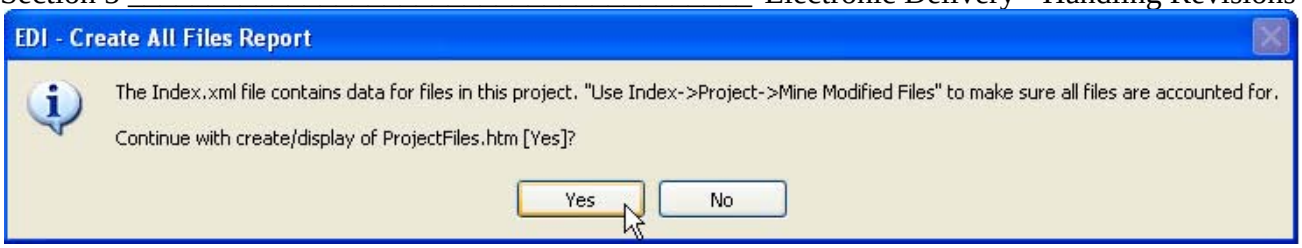
To update ProjectFiles.htm

1. Continuing in EDI2, select **Index (Step-by-Step) > 8) All Files Report (ProjectFiles.htm)**.



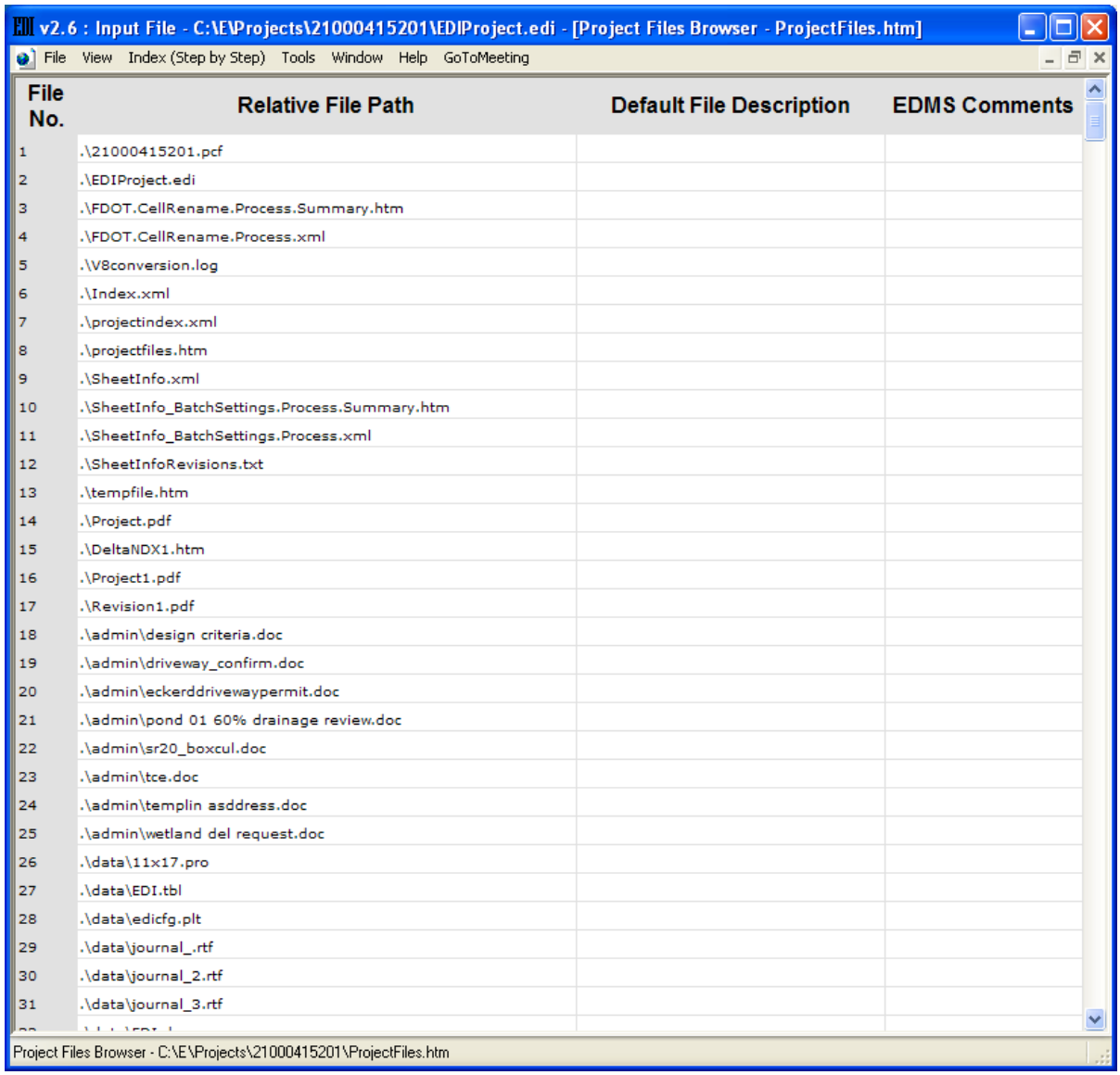
EDI - Create Basic HTML Index

2. EDI – Create All Files Report opens. Click the **Yes** button. The project index is read to create **ProjectFiles.htm**.



EDI – Create All Files Report

3. When the creation process concludes, EDI2 displays ProjectFiles.htm.



File No.	Relative File Path	Default File Description	EDMS Comments
1	.\21000415201.pcf		
2	.\EDIProject.edi		
3	.\FDOT.CellRename.Process.Summary.htm		
4	.\FDOT.CellRename.Process.xml		
5	.\V8conversion.log		
6	.\Index.xml		
7	.\projectindex.xml		
8	.\projectfiles.htm		
9	.\SheetInfo.xml		
10	.\SheetInfo_BatchSettings.Process.Summary.htm		
11	.\SheetInfo_BatchSettings.Process.xml		
12	.\SheetInfoRevisions.txt		
13	.\tempfile.htm		
14	.\Project.pdf		
15	.\DeltaNDX1.htm		
16	.\Project1.pdf		
17	.\Revision1.pdf		
18	.\admin\design criteria.doc		
19	.\admin\driveway_confirm.doc		
20	.\admin\eckerddrivewaypermit.doc		
21	.\admin\pond 01 60% drainage review.doc		
22	.\admin\sr20_boxcul.doc		
23	.\admin\tce.doc		
24	.\admin\templin asddress.doc		
25	.\admin\wetland del request.doc		
26	.\data\11x17.pro		
27	.\data\EDI.tbl		
28	.\data\edicfg.plt		
29	.\data\journal_.rtf		
30	.\data\journal_2.rtf		
31	.\data\journal_3.rtf		

EDI2 – Project Files Report

4. Return to the **Project Viewer** window by selecting **View > Project Viewer (All files, Image files, Design Sheets)**.

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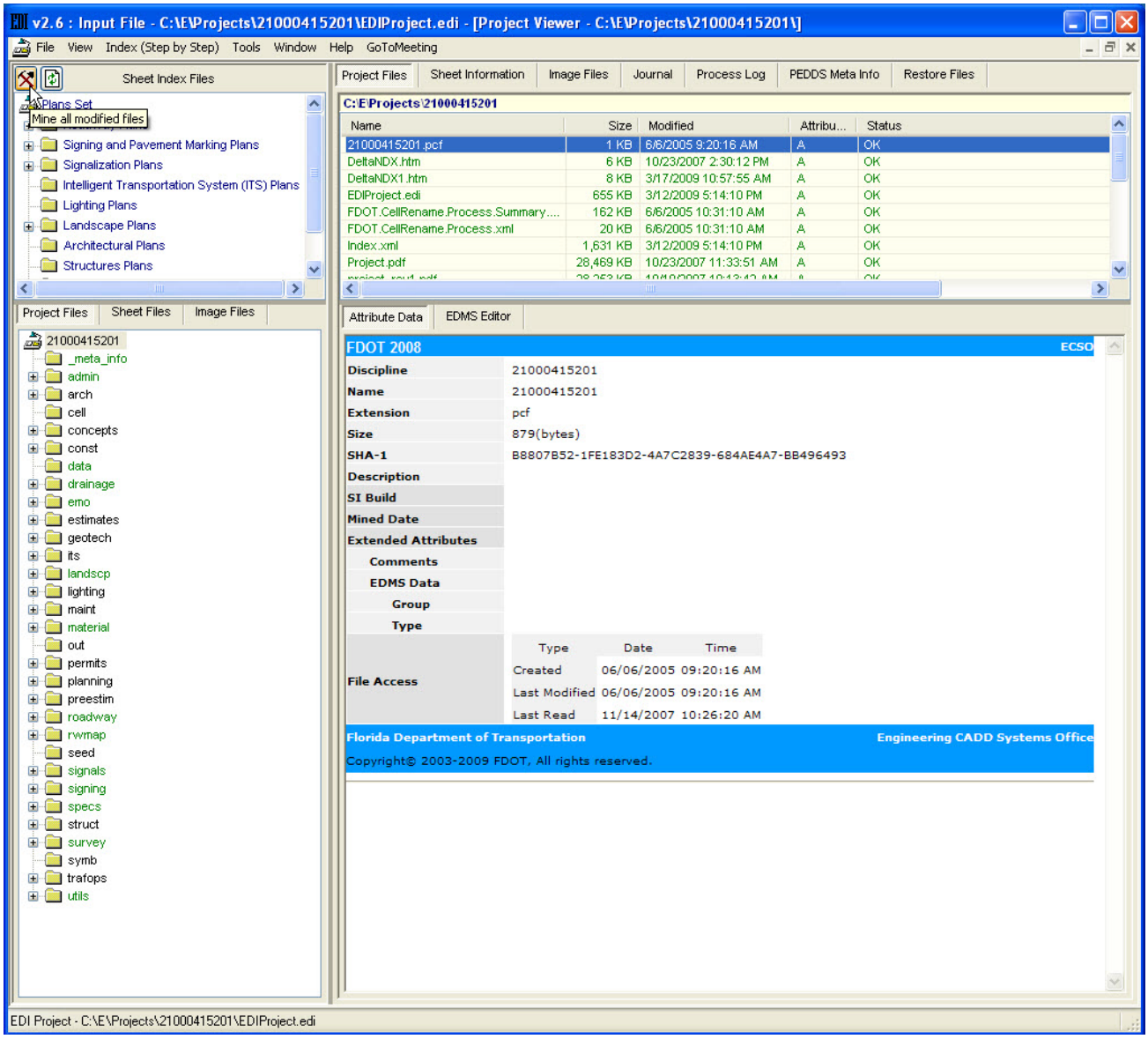
5. Click the **Mine all modified files** icon ( ) and then exit EDI2.

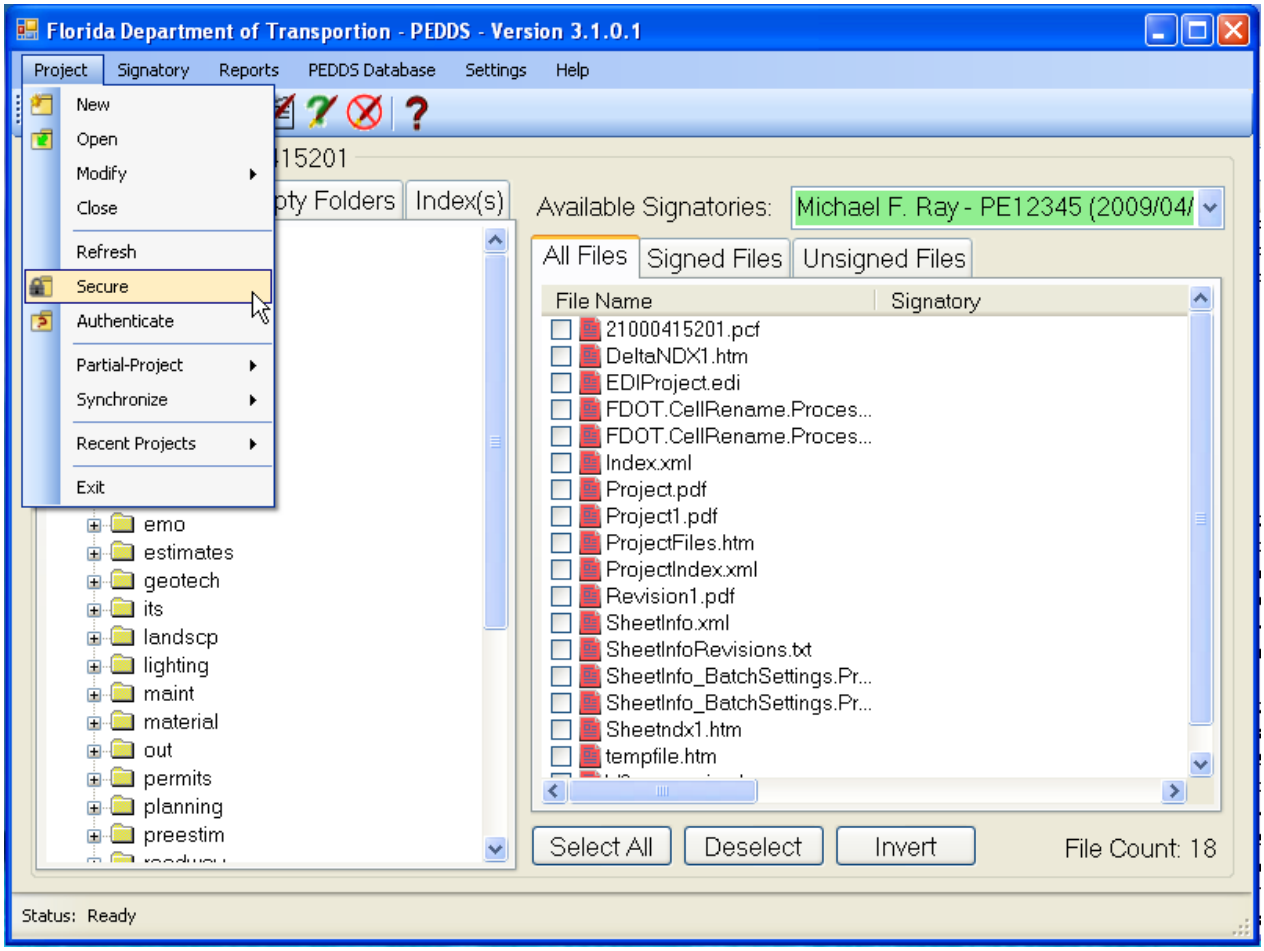


EDI2 – Mine All Modified Files

Exercise 5.8 Securing the Revised Delivery

To secure the revised project with PEDDS

1. If necessary, open PEDDS.
2. From the **Project** menu, select **Secure** --*or*—click the **Secure the Current Project** icon ( ) on the toolbar.



PEDDS Securing the Project

3. Delivery Manager Information opens. Enter the **Delivery Manager's Name**. If the information displayed is valid, the user can accept what is there.

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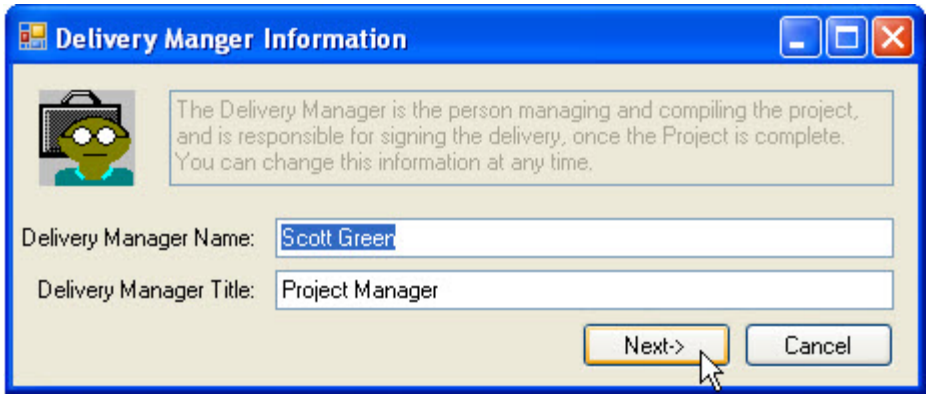
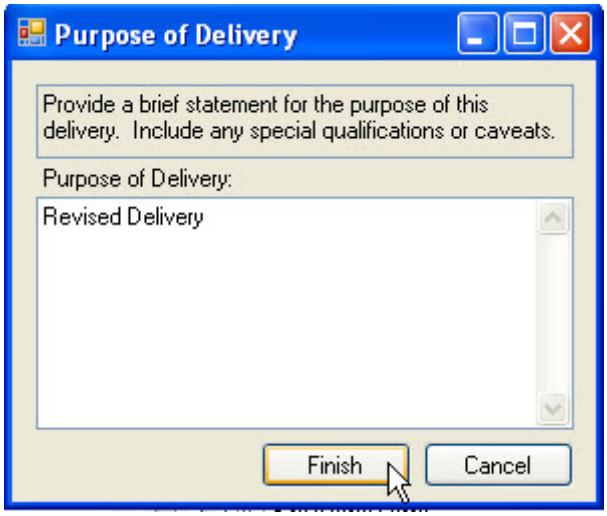
4. Enter the **Delivery Manager Title** and click the **Next** button.

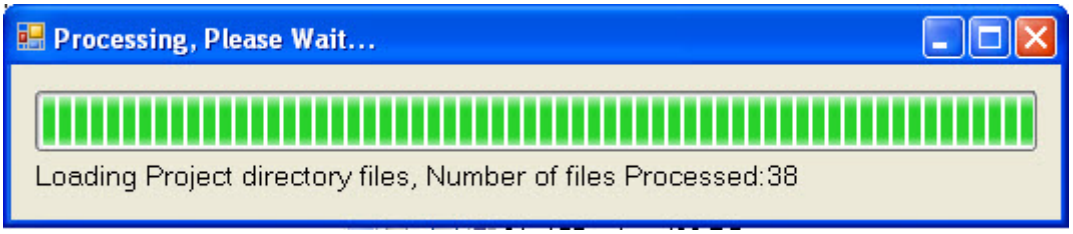


Project Manager Information

5. Description of Delivery opens. Enter the purpose for the delivery. Again, this description should contain enough detail to sufficiently describe the purpose for the delivery.
6. Click the **Finish** button. Securing Project, shown below, opens briefly then closes.



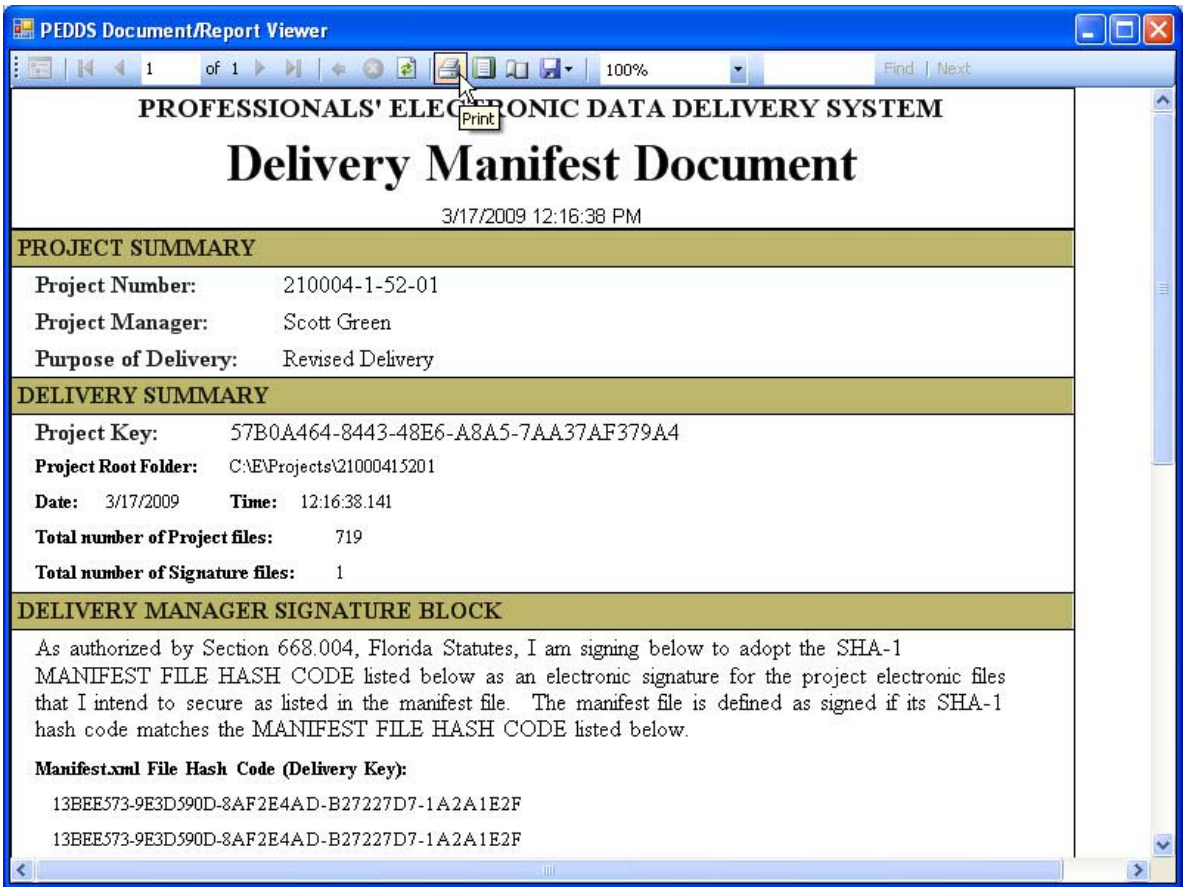
Project Description



Securing Project

7. PEDDS passes all files through the Federal Government SHA-1 secure Hash algorithm to create a manifest listing of Hash Codes for each file. That manifest is contained in a file called the Manifest file.

8. Report Viewer then opens to present the **Delivery Manifest Document**. Click the **Print** button to send the **Delivery Manifest Document** to a print device.



PEDDS – Delivery Manifest Document

Important The **Delivery Manifest Document** results are derived from the Manifest file (**Manifest.xml**, saved in the ***_meta_info*** folder in the project directory). The **Delivery Manifest Document** must be printed (see Item 13 of the Compliance Certification Checklist Report), reviewed and signed (not sealed) by the Delivery Manager.

Important The **Delivery Manifest Document** is a signed paper document used to secure a Manifest file and to reference 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 paper document. The Manifest file lists the project files by URL and the project files' hash-codes, thus the Delivery manager has signed (but not sealed) the files listed in the Manifest as belonging to the delivery.

9. Click the **OK** button to continue. Florida Department of Transportation - PEDDS re-appears.

10. Close Florida Department of Transportation - PEDDS.

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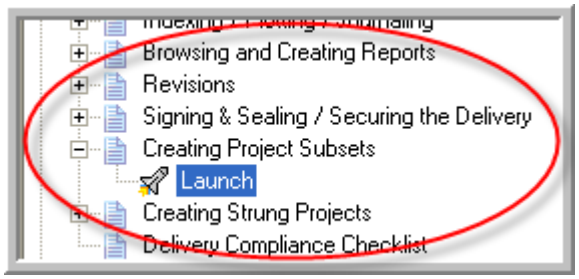
Section 5.7 Creating Data Subsets for a Revision

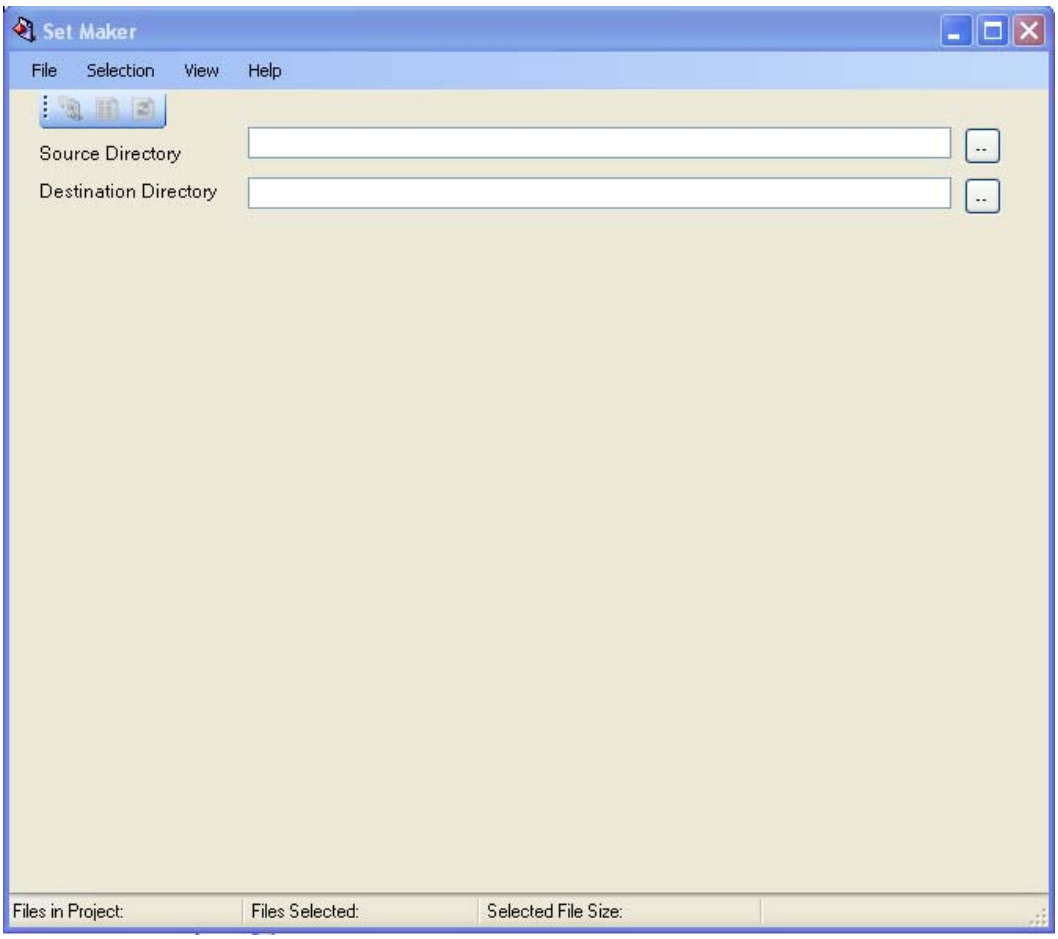
Unlike creating a subset for a Plans and Specs CD, a Plans and Specs Revision CD only contains revised sheets and files. The responsibility for creating a subset may be that of the data producer, or the District (Depending on which District).

Exercise 5.9 To create of a Plans and Specs Revisions Subset

1. In **Creating Project Subsets**, click **Launch** to open Set Maker.



Creating Project Subsets



Set Maker

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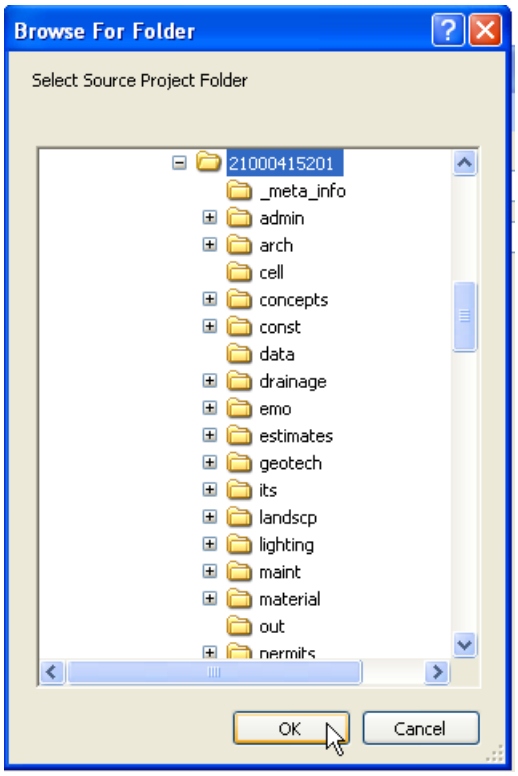
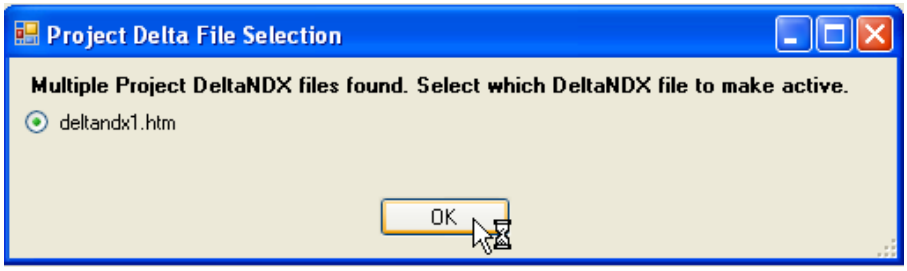
2. Click the Browse button ( ) to the right of the **Source Directory** box.
3. Browse For Folder opens. Navigate to the active project and select the active project (for the purposes of this exercise, **c:\E\Projects\21000415201**).



Browse For Folder

Important Set Maker requires the source project be secured with PEDDS. If Set Maker detects that the source project is not secured, the user receives an error message and processing stops. Set Maker also performs various other validation activities, which might generate both error messages (and processing stops) or warning messages (which processing continues). Pay close attention to the messages to understand what problem Set Maker may have detected.

4. Click the **OK** button. Set Maker begins to validate the project information, and the Project Delta File selection dialog box appears.
5. Click the radio button that corresponds to the **deltandx1.htm** report. If there were more than one **deltandx#.htm** report, the selection would be based on which **deltandx#.htm** would need to be used for the specific revision project.



Project Delta File Selection

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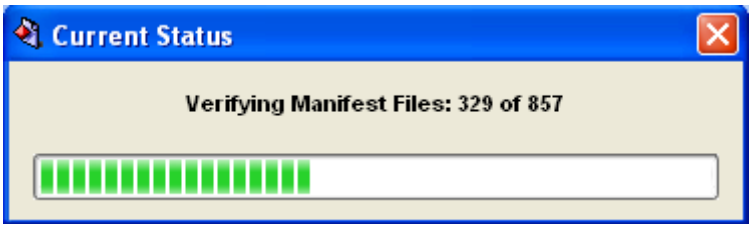
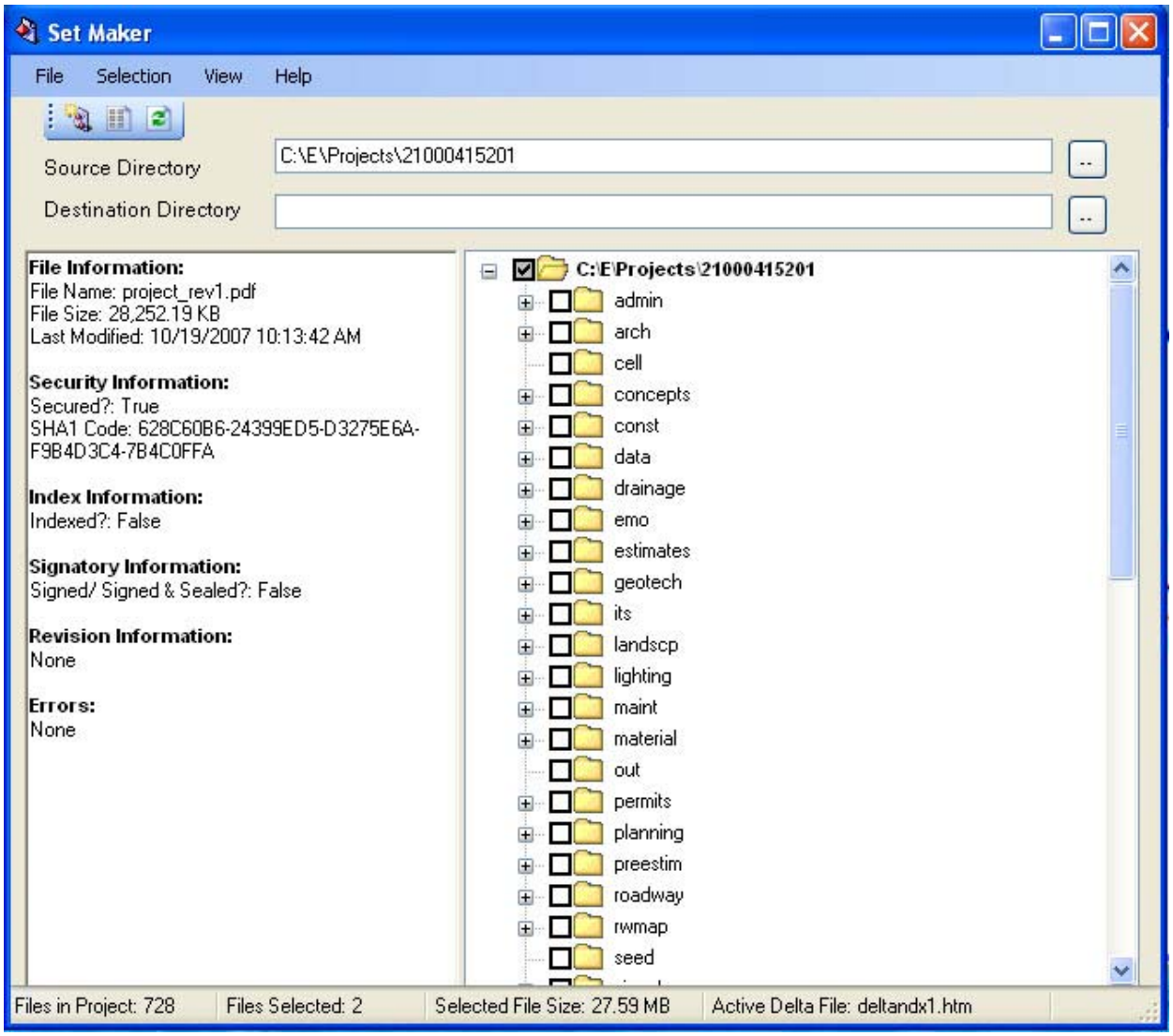
6. File Verification starts and finishes, then SetMaker re-appears.



SetMaker file verification



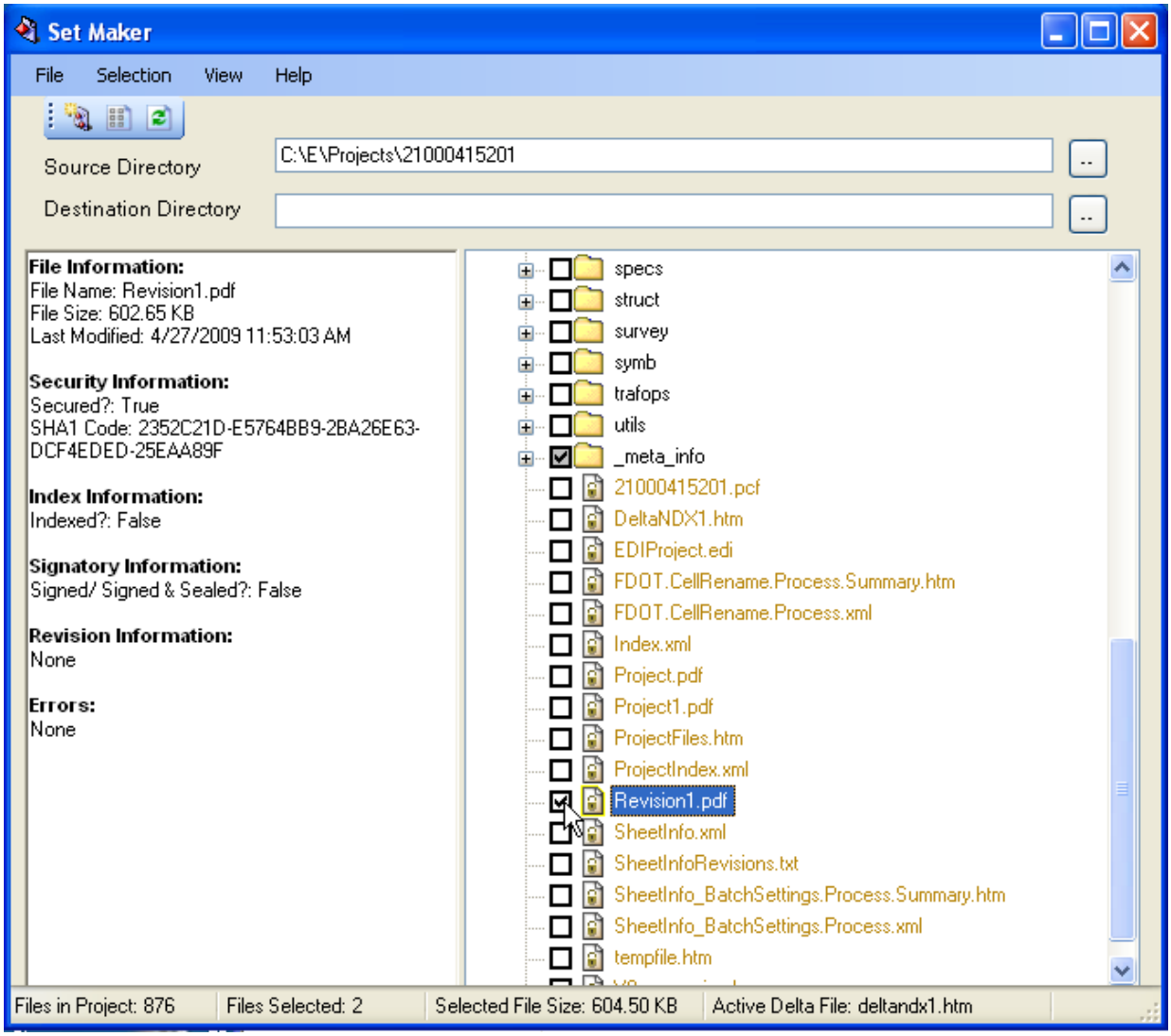
Set Maker

Important Set Maker requires that both a valid **ProjectID.xml** and **Manifest.xml** file exist in the project's ***_meta_info*** directory. If these files are not found, the application reports an error and does not continue with the set making process.

Exercise 5.10 To select files by File Selection and File Selection Rules

To further expedite file selection, Set Maker has a number of pre-defined selection options. For revisions, these options select sheets found in **Sheetndx#.htm**.

1. From the project tree in Set Maker, under the project's root directory, select **Revision1.pdf** to see how files may be manually selected for inclusion in the subset**.**



Set Maker - project_rev1.pdf

2. As the specifications for this project have not been modified, the specs file does not need to be included in the set.

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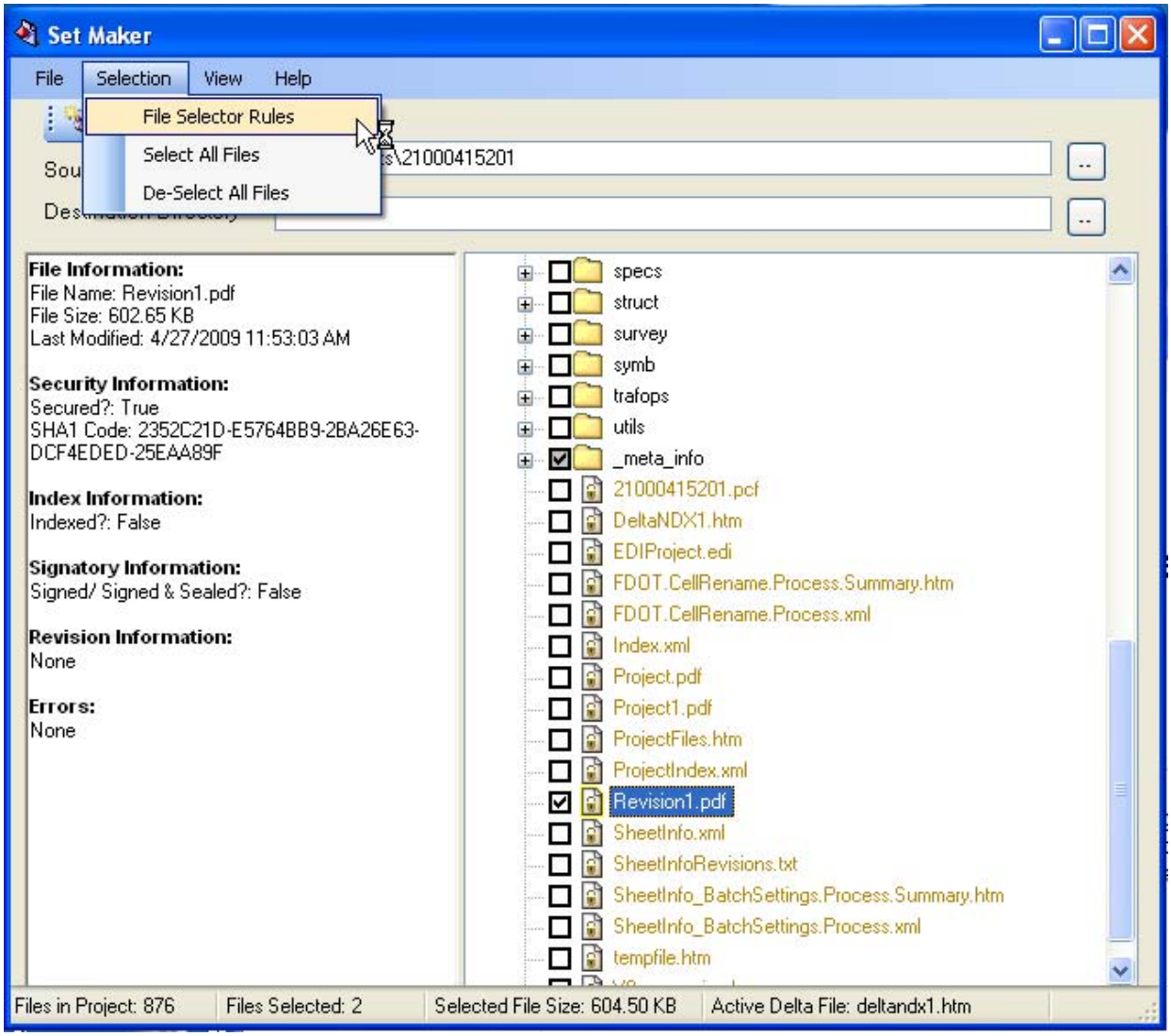
3. From the **Selection** menu, select **File Selector Rules** --*or*-- click the **File Selection Rules** icon ( ) on the toolbar.



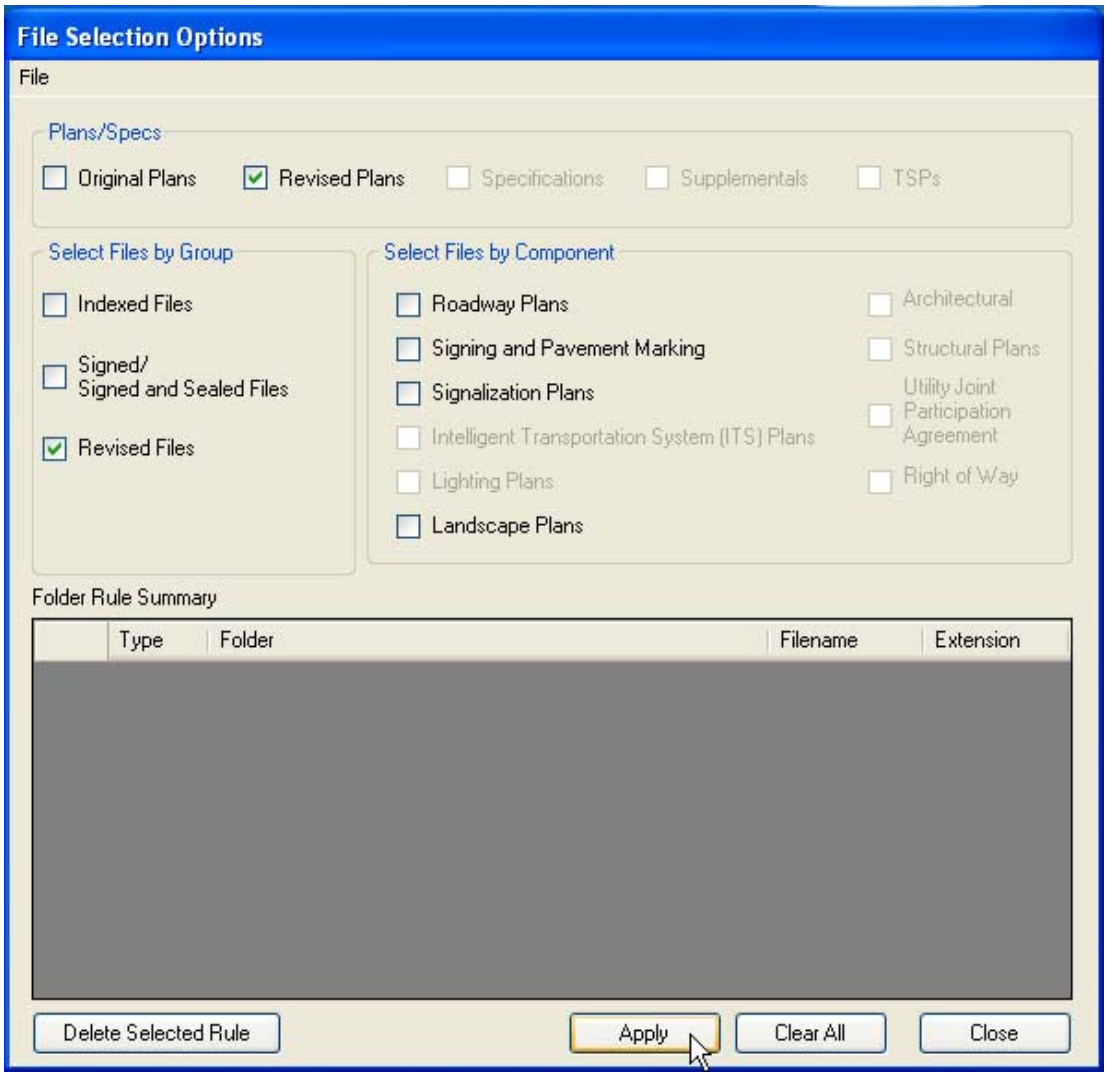
Set Maker - File Selection Rules

4. File Selections Options open. Populate the **Revised Files** check box. The File Selections Options attempts to present the available conditions from which Subsets can be made. An Original plans delivery would be created by populating the Original Plans checkbox (and nothing else). If a Revision exists (by the presence of **DeltaNDX#.htm**) then the Revised Plans checkbox becomes available.

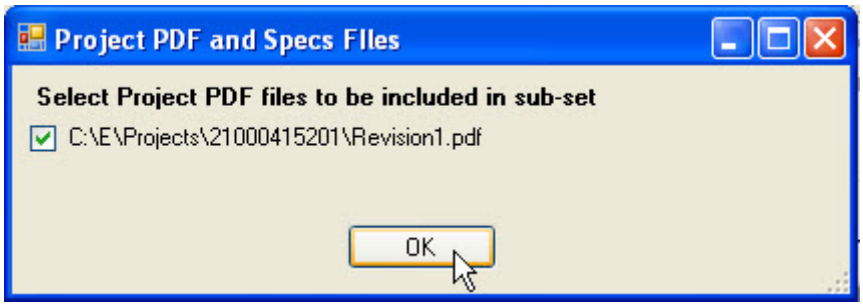
5. Once the business rules are selected, press the **Apply** button to make those selections. The Project PDF and Specs Files dialog box appears.

6. Check the box that corresponds to the **Revision#.pdf** file that needs to be used to create the set.

7. When all automatic selections are made, close the File Selection Options by pressing the **Close** button.



File Selection Options - Revised Files



Project PDF and Specs Files.

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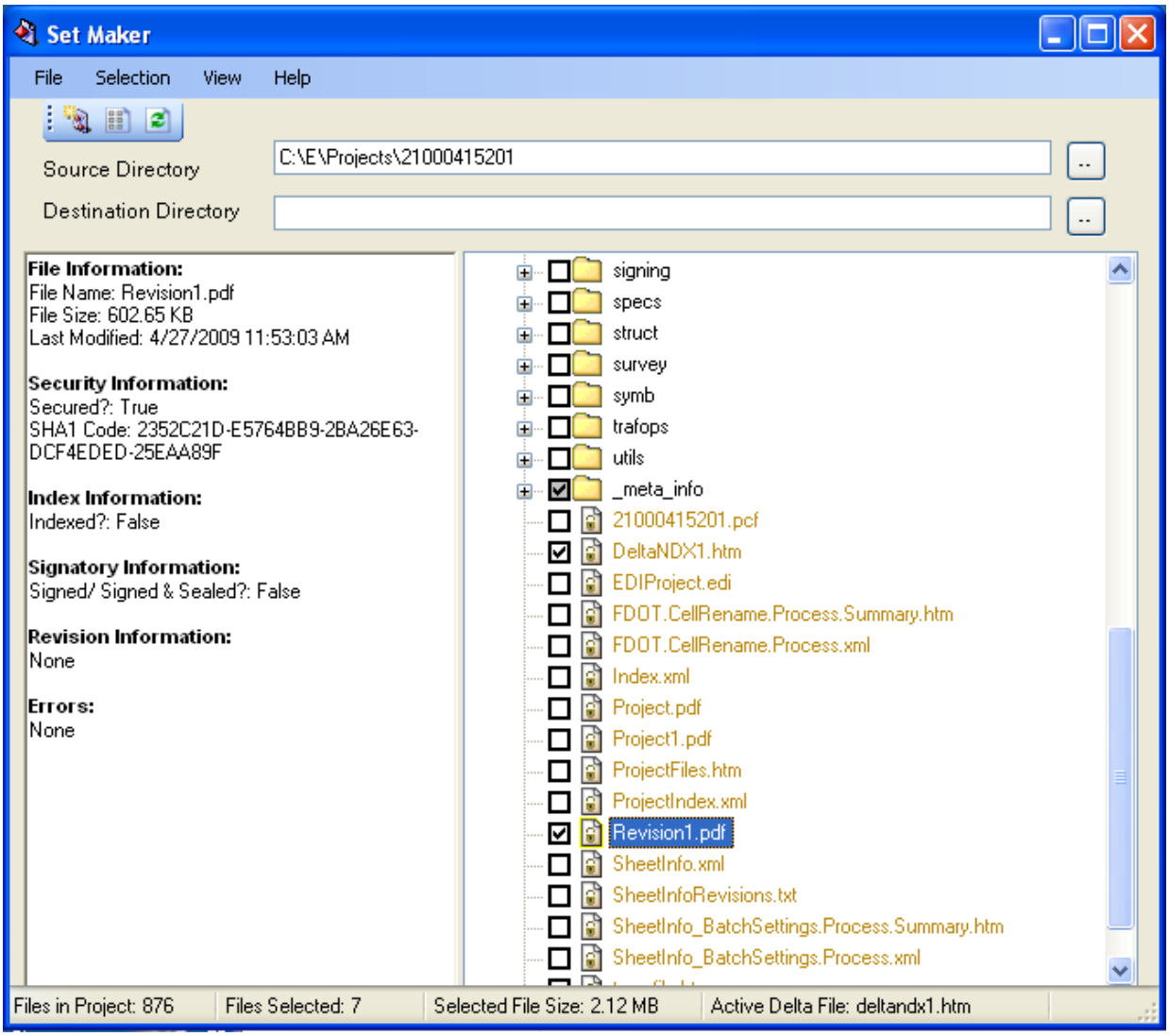
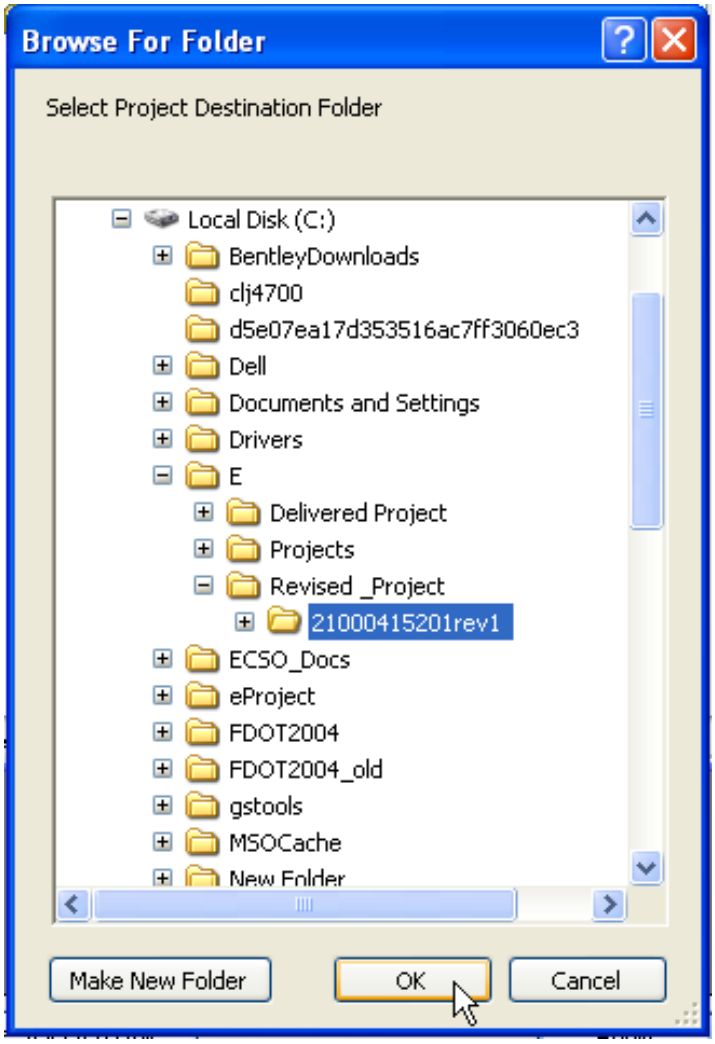


Set Maker - Revised files selected

Important Revised Files is available as a File Selection Options, because the **Deltandx#.htm** report file, created by Project Delta exists at the project's root directory. Note that the **revision#.pdf** was selected automatically because of the File Selection Options chosen earlier.

8. Click the **Browse** button ( ) to the right of the **Destination Directory** box.

9. Browse For Folder opens. Navigate to the active project and select the active project (for the purposes of this exercise, **c:\E\Revised_Projects\21000415201rev1**\).



Browse For Folder

10. For the purposes of this class, the **c:\E\Revised_Projects\21000415201rev1**\ folder is already created. Always select an empty folder to write a subset to.

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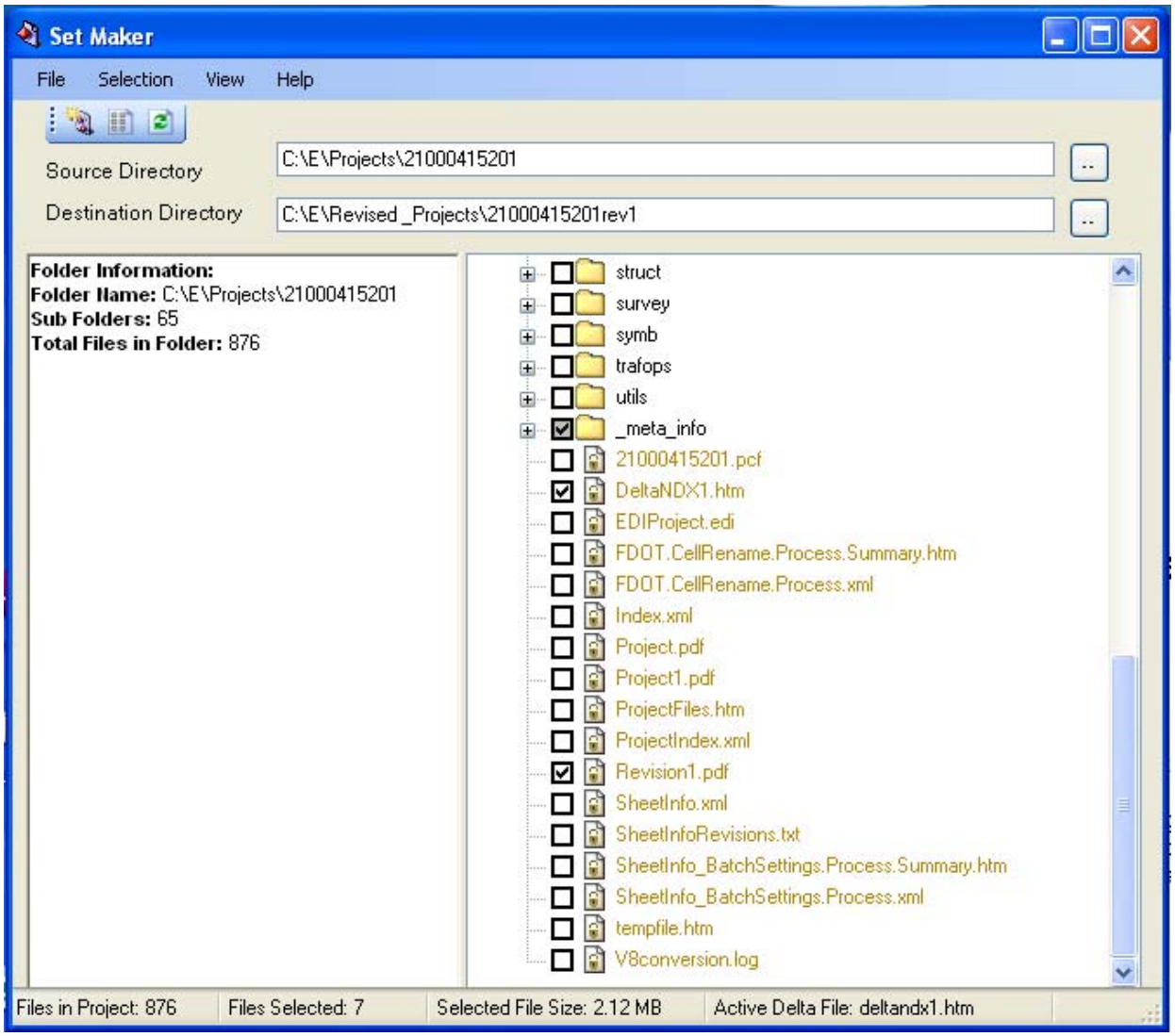
11. Click the **OK** button. Set Maker reappears with the selected destination added.



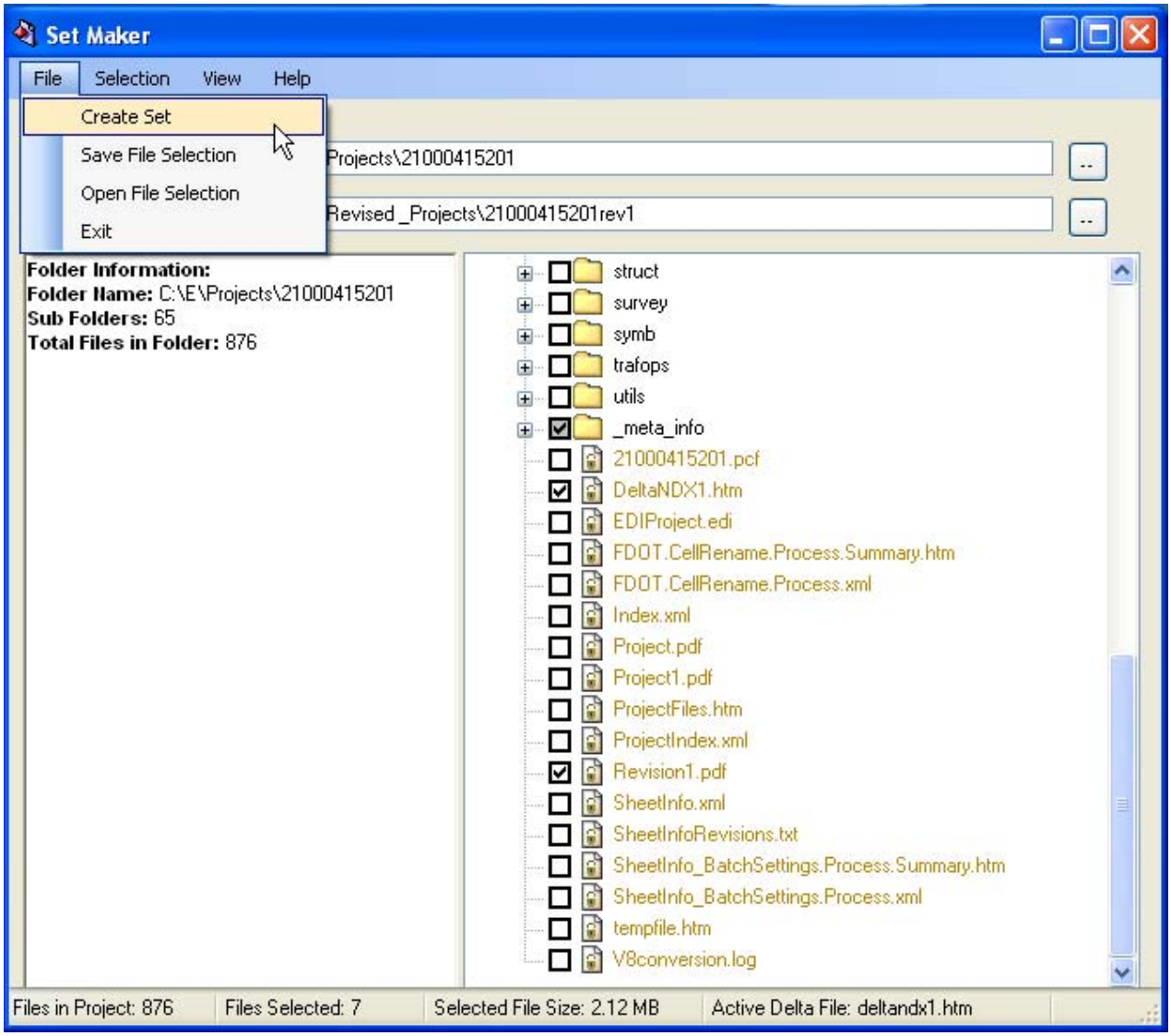
Set Maker

Important The recommended Root Directory Names for Plans and Specs CD data sets created for a revision are described below:

	Project CD	**Plans and Specs (Revision) CD**
Original Delivery	21000415201	21000415201
After Revision 1	21000415201	21000415201rev1
After Revision 2	21000415201	21000415201rev2

Note Description of Supplemental revisions and Plans and Specs revisions which include a revised specs package are discussed later.

12. From the **File** menu, select **Create Set** --*or*-- click the **Create Set** icon ( ) on the toolbar.



Set Maker - Create Set

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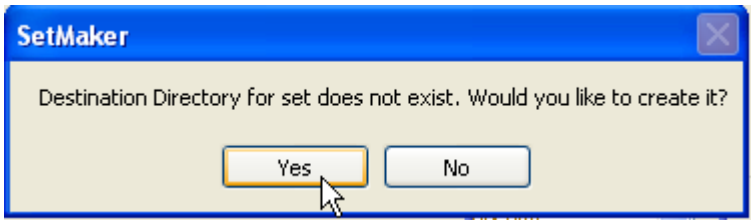
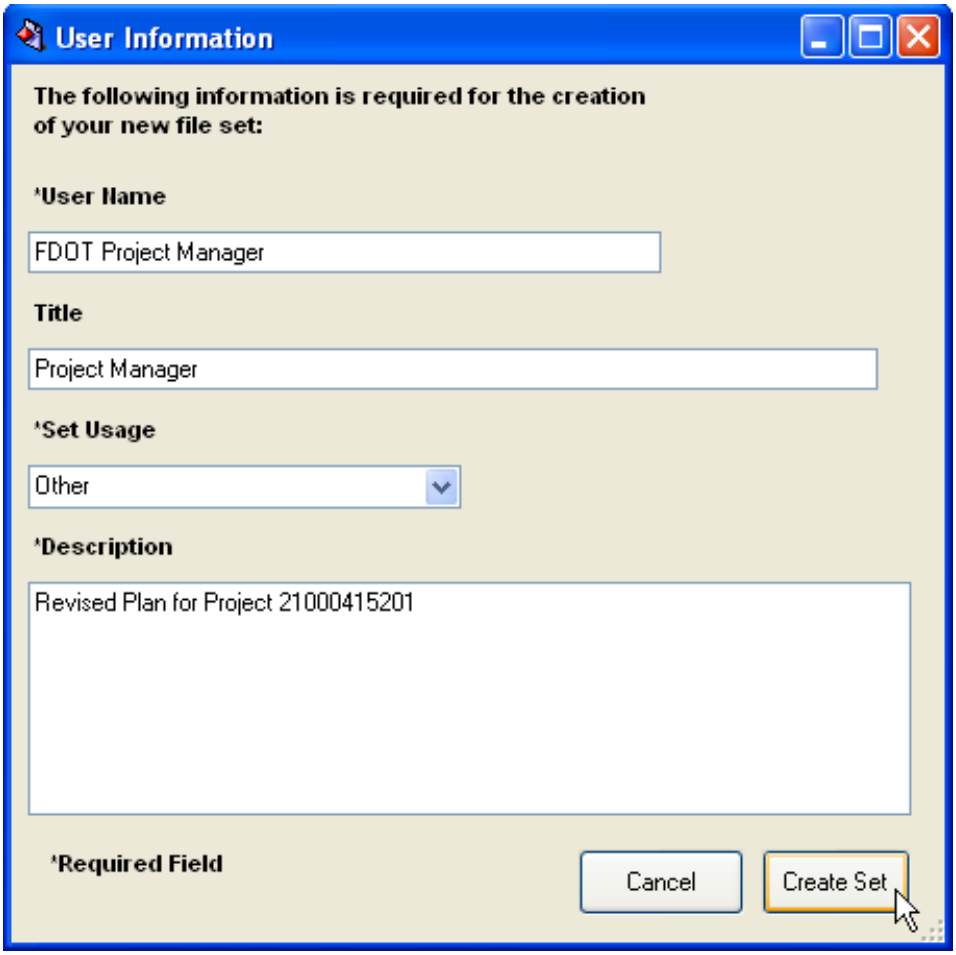
Note If you enter a destination folder that doesn't already exist, Set Maker displays the message shown in Figure 5-93. Click the **Yes** button to confirm the creation of the new folder.



SetMaker

13. User Information opens. In User Information, enter the required information. In the **Description** field, enter a detailed description for the subset. Note that this description appears on subsequent reports.
14. From the **Set Usage** pull-down list, select **Other**. Note that the user can type in a short usage message in this field, like "Subset for Revision 1."
15. When finished entering the required information, click the **Create Set** button. Creation of the set begins.



User Information

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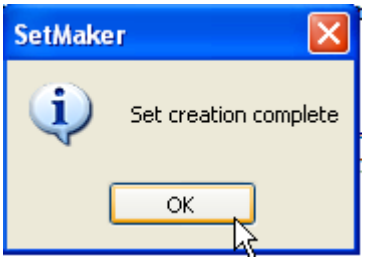
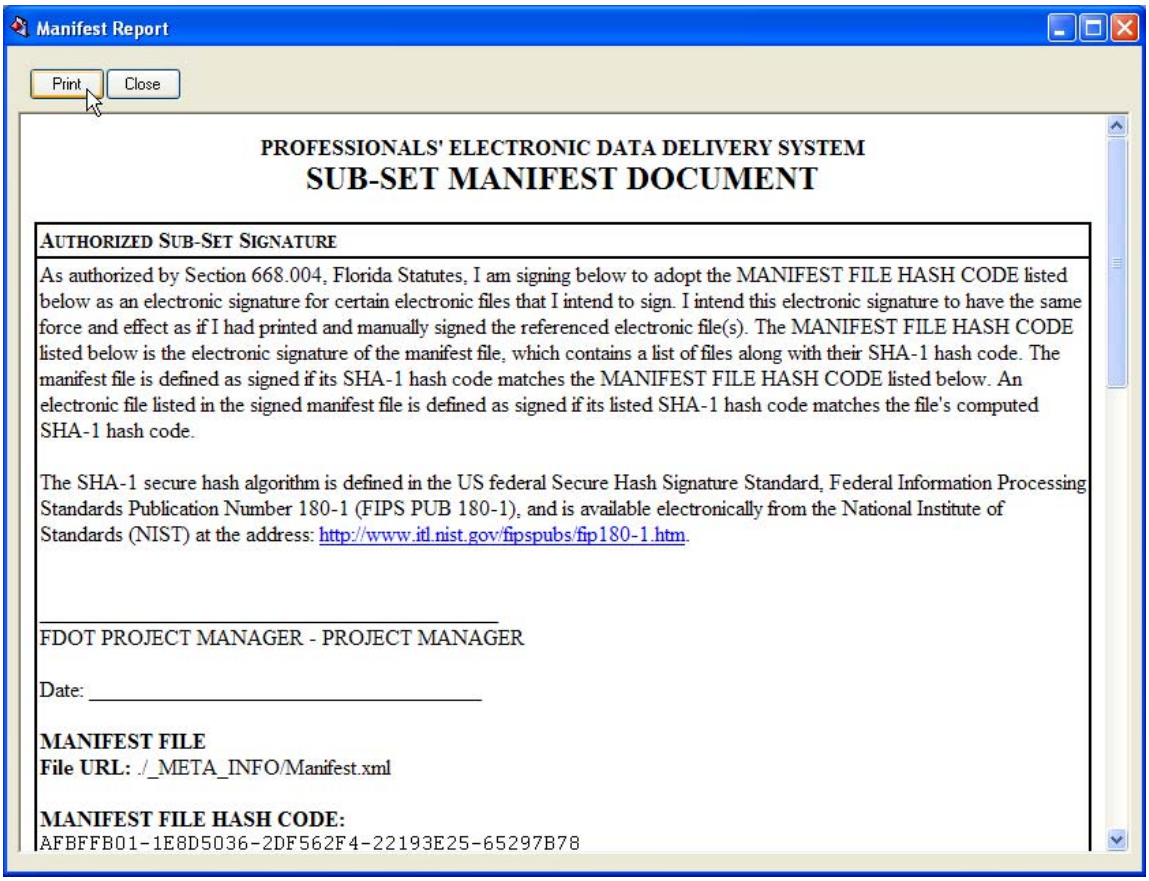
Important The User Information defines the lineage of the subset. The information entered into User Information is contained within the **manifest file** created in the subset, which is the link back to the parent or originating project the subset was created from.

16. Even though the specs file is not included with the revised set, the CD is still titled a Plans and Specs Revised CD.
17. Upon creation of the set, SetMaker opens to confirm the creation. Click the **OK** button.



SetMaker

18. Manifest Report opens. Click the **Print** button to send the report to a print device.



Manifest Report

19. Click the **Close** button. Set Maker re-appears. The Plans and Specs set has been created and now can be copied to a CD and properly labeled.

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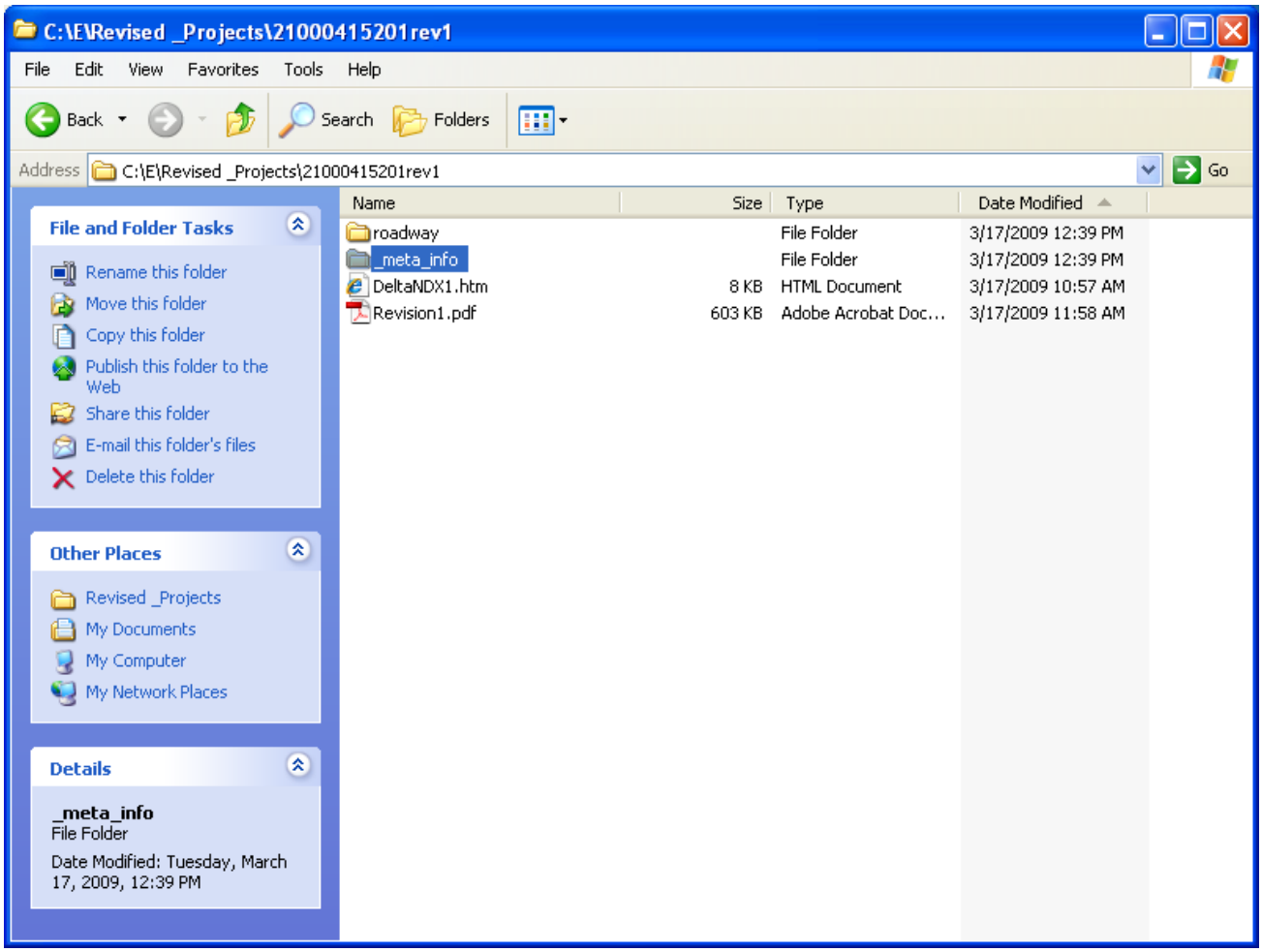
20. The following figure displays the set created in Windows Explorer.



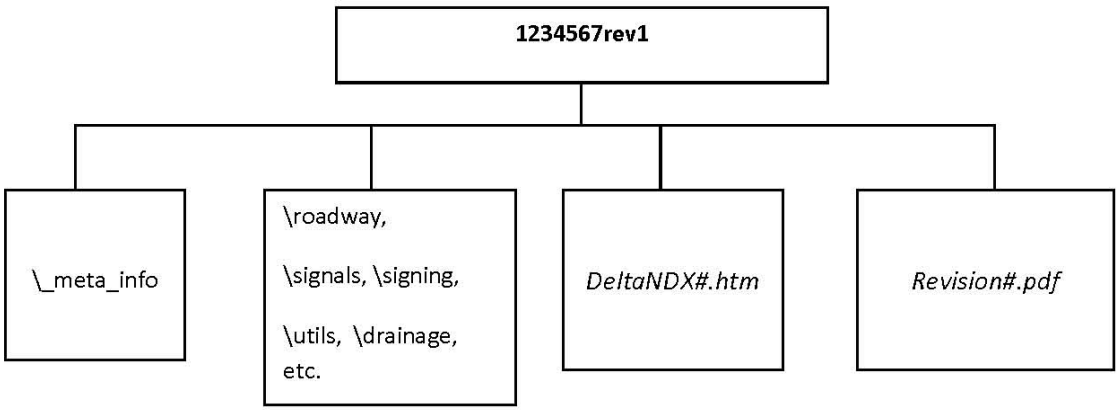
Windows Explorer - Plans and Specs Revised Set

Important The procedure just described handles a Plans and Specs Revision, where the Specs file remained unchanged.

Section 5.8 Additional Revision Considerations

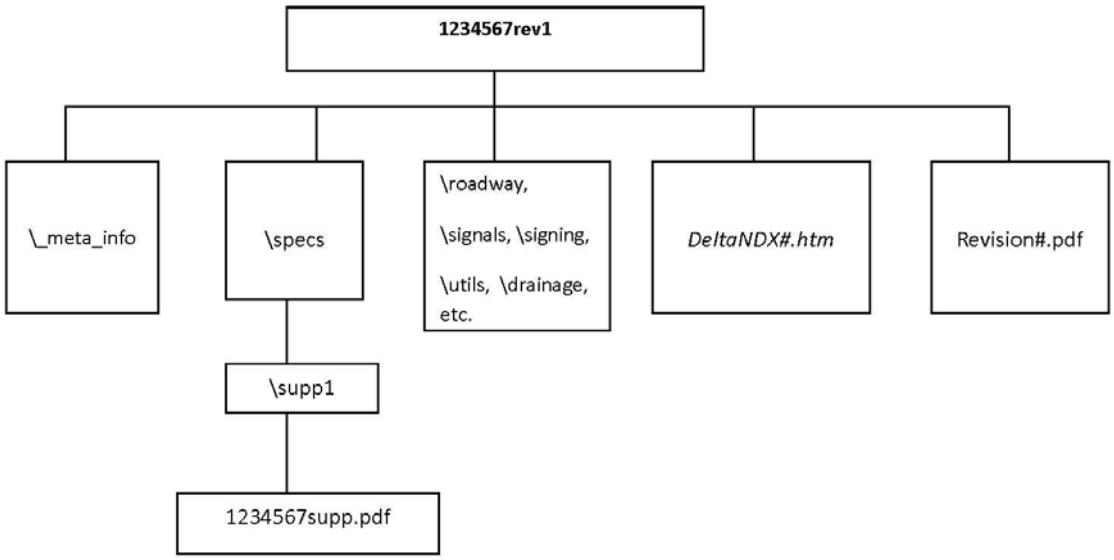
The revised Plans and Specs data submittal (contrasted with the Project CD submittal) uses the following directory naming conventions for revisions and/or supplements. This does not apply for the Project CD submissions, only for revisions and/or supplements and the subsets (Plans and Specs CD) created from them.

Section 5.1 discussed handling revisions when plan revisions were needed. The directory structure (and content) for the revision without the supplement is shown in the following figure.



Plans Revisions only

When both a plans revision and specifications changes (called a supplement) are needed, the exercise outlined in Section 1 is used, with the addition of the specs folder and the revised \supp1 folder. The directory structure (and content) for the revision with a supplement is shown below:



Plans and Spec Revisions

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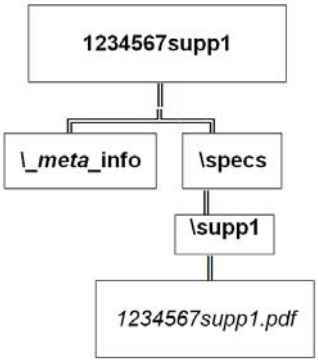
If there are specifications supplements only, the directory structure shown in the following figure is used.



Supplement Revisions Only

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

As a result of the directory structure format for revisions, the following ***Root Directory Names*** for **Plans and Specs CD** data sets created for all possible revisions and/or supplements are as follows:

	Project CD	Plans and Specs (Revision) CD
Original Delivery	1234567	1234567
After Revision 1 only	1234567	1234567rev1
After Supplement 1 only	1234567	1234567supp1
After Supplement 2 only	1234567	1234567supp2
After Revision 2 only	1234567	1234567rev2
After Revision 2, Supplement 2	1234567	1234567rev2supp2

Plans and Specs (Revisions) CD directory names

Section 5.9 Revision Naming Convention Changes

Changes in Contracts Administration's release of revisions to the Contractor electronically have spawned a request to make modifications to the file naming protocols in Electronic Delivery. They wish to suffix (sequence) certain ED files with the revision number, and have the ED applications do so and manage the data as seamlessly as possible. The proposed revision sequences and names of files are as follows:

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

Revision naming convention changes

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6 Electronic Delivery – Strung Projects

The Strung Projects training section covers the details of stringing two or more project subsets together including:

- Strung Projects
- Preparing a Project for Strung Projects
- Securing the Strung Project with PEDDS
- Making a Delivery

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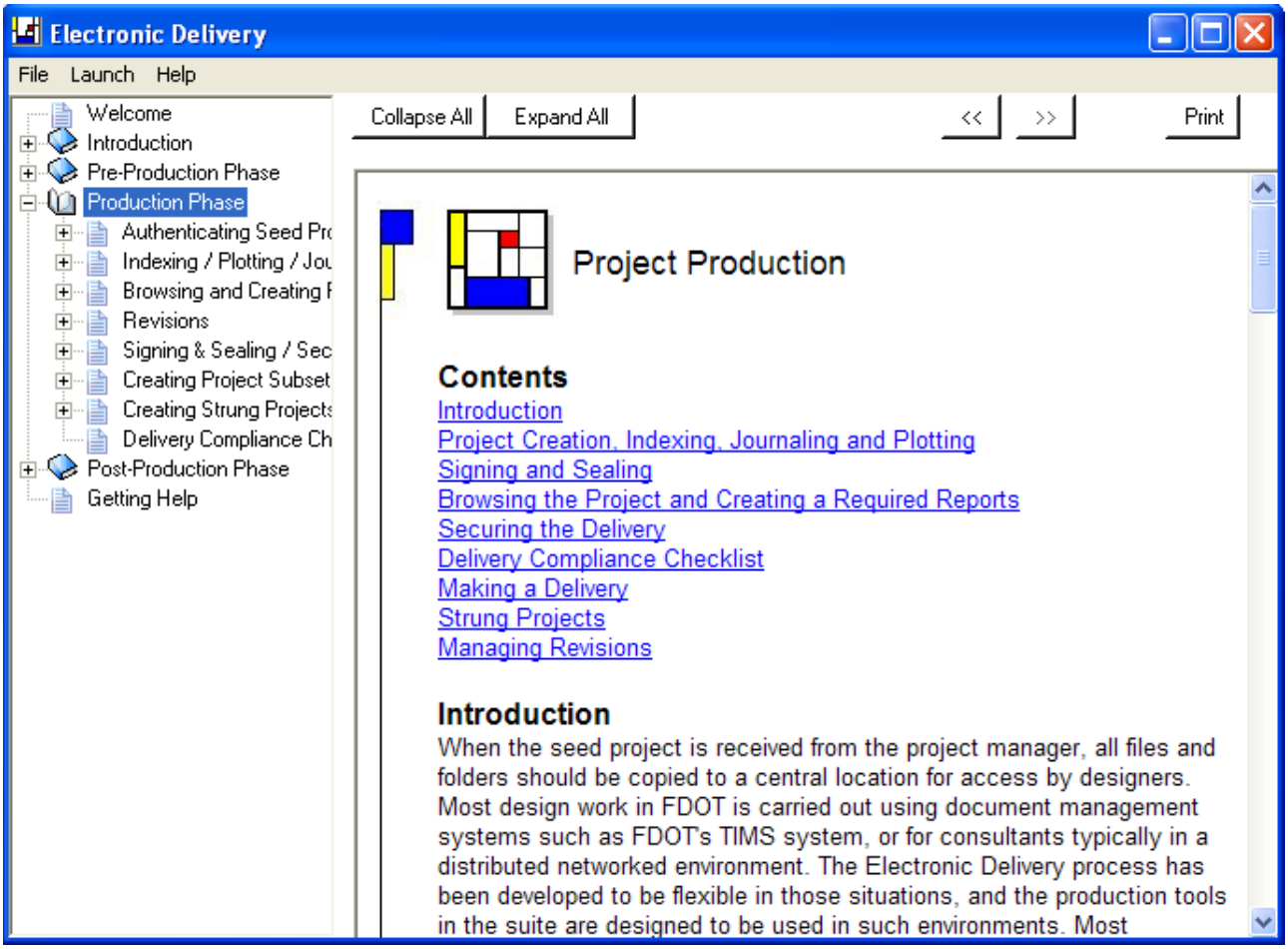
Section 6.1 Strung Projects

Electronic Delivery of Strung Projects involves the act of combining two or more independent and secured project subsets together. Stringing projects is the result of the administrative practice of letting two, or more projects under the same construction contract.

For Electronic Delivery, stringing project subsets involves combining the data in a way so that the end user, typically a contractor, can reasonably navigate the '**Lead project**' and '**Goes-with projects**' comprising the strung project using a simple Internet Browser.



Production Phase in the Context of Revision

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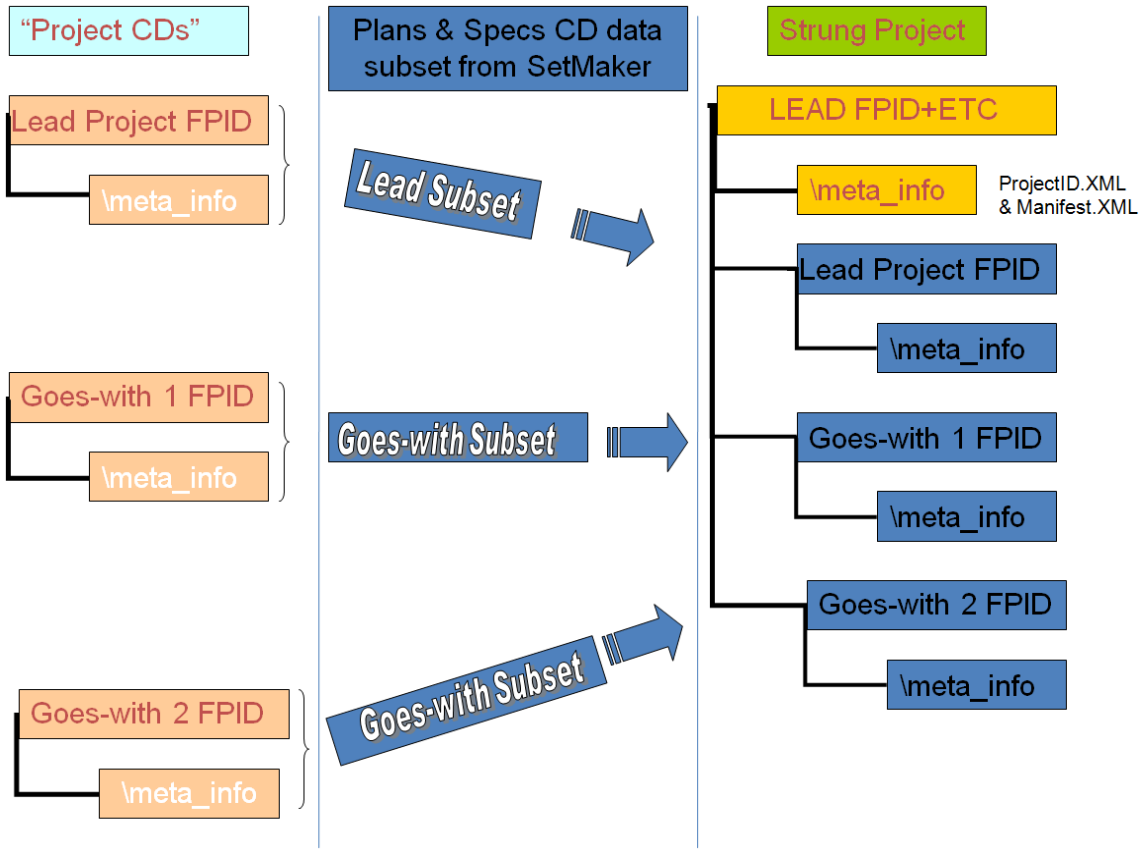
Section 6.1.1 Setting the stage for Strung Projects

To prepare for Strung Projects, the user has to create the subsets with Set Maker before they can be "strung" together using Strung Project.



Section 6.2 Preparing a Project for Strung Projects

Before the Strung Projects process can begin, the project subsets to be used must meet certain criteria. The following items need to be completed prior to stringing project subsets together:

- Each project subset must contain its own Index (ProjectIndex.xml, or Deltandx#.htm if it represents a revision), basic HTML Index report (Sheetndx#.htm), and Summary PDF file (Project#.pdf, or Revision#.pdf, if a revision, etc).
- The projects are each independently secured (Note that Set Maker automatically secures every subset it creates).
- The project subsets independently authenticated with PEDDS.
- Subsets made from the project (Remember, only project subsets should be strung).

Exercise 6.1 Creating Strung Projects

This exercise uses 2 projects. Project **19728125201** represents the '**Lead Project**'. This project has been indexed and postscript image files have been created and all required files are Signed and Sealed. In the interest of time, Project **29728125201**, which represents the '**Goes-With Project**' is also secured and ready to use.

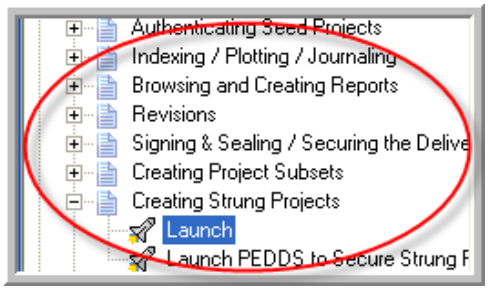
Therefore, the two projects are independent, secured, deliverable projects. Note that the subsets were created by Set Maker. This can be confirmed by examining the Manifest report by opening the Projects in PEDDS.

To select the Target Location for the Strung Project

1. Select the executable file **EDSection6ExercisesStart.exe**, ensure **Unzip to folder** is set to **C:\e** and click the **Unzip** button to place the starting dataset for Section 5 on the hard drive. Notice that there is an additional folder **Strung_Projects** in the **C:\e** folder.

Note Executable files are provided in the dataset for logical starting points throughout Section 6. For example the executable file EDSection6Exercise6.2Start.exe contains the files from Section 6 exercises up to Exercise 6.2. If you encounter errors while working through an exercise, select the executable with the nearest starting point and unzip the files as demonstrated above. The Unzip to folder will be set to the correct hard drive location.

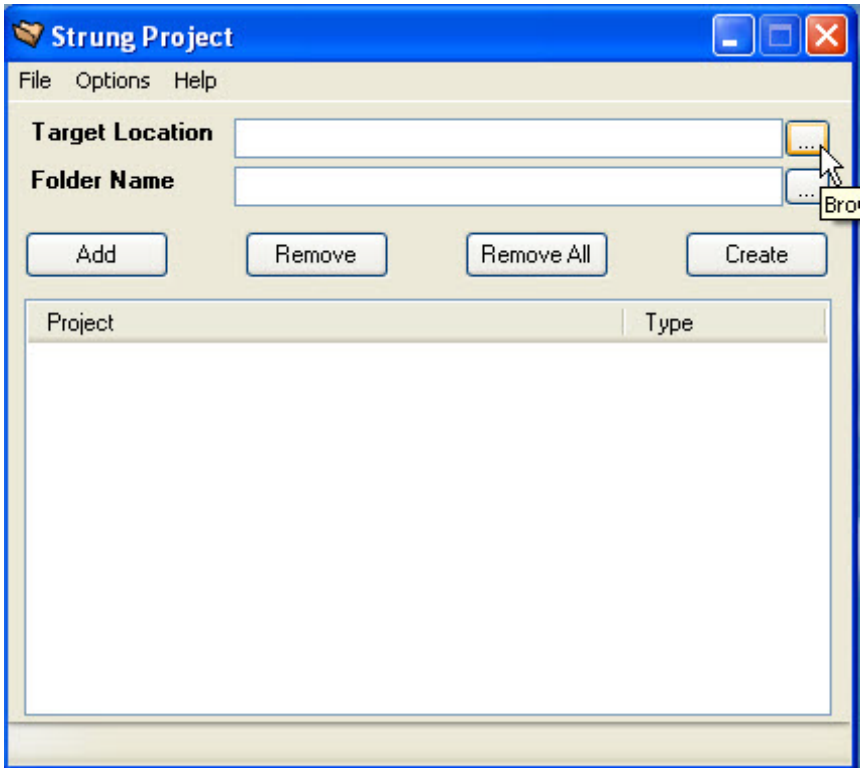
2. In the **Creating Strung Projects** folder, click **Launch**. Strung Project opens.



Creating Strung Projects - Launch

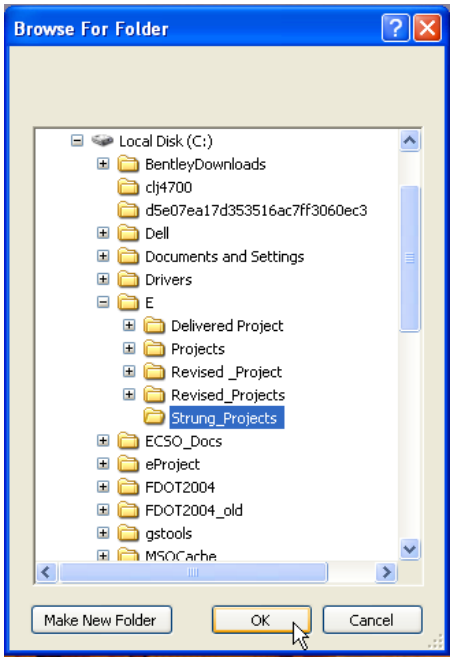
Strung Projects

3. On the right of **Target Location** box, click the **Browse** button ( ).



Target Location

4. Browse for Folder opens. Navigate to **c:\E\Strung_Projects**. This is the location where the resulting strung project will be written to. Click the **Strung Projects** folder so that it is shown as open in the following figure.



Browse For Folder

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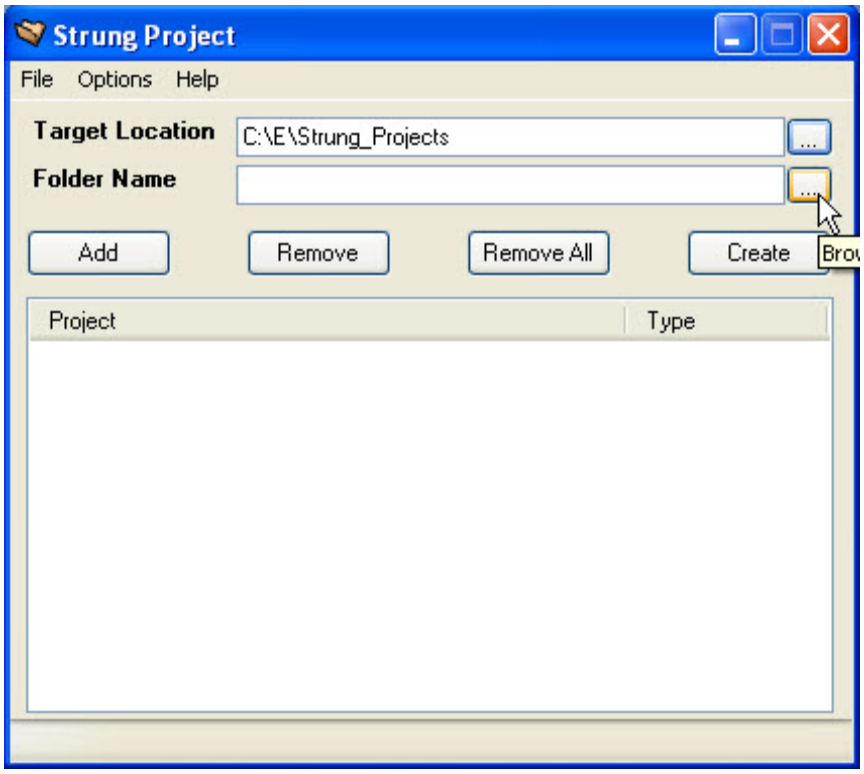
5. Click the **OK** button. Strung Project reappears.

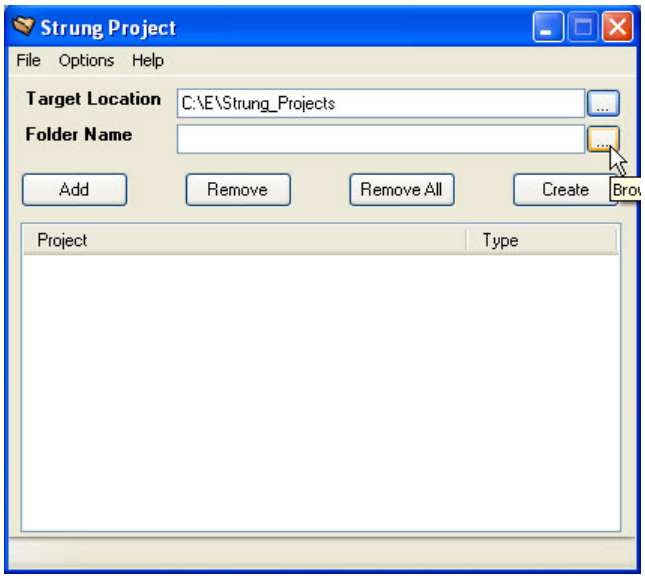


Strung Project - Target Location Set

To add the "Lead" Project

The Lead and Goes-With projects must now be added. The lead project is presumed to be the first member of the strung project selected.

1. At the right of **Folder Name** box, click the **Browse** button (...).



File Name

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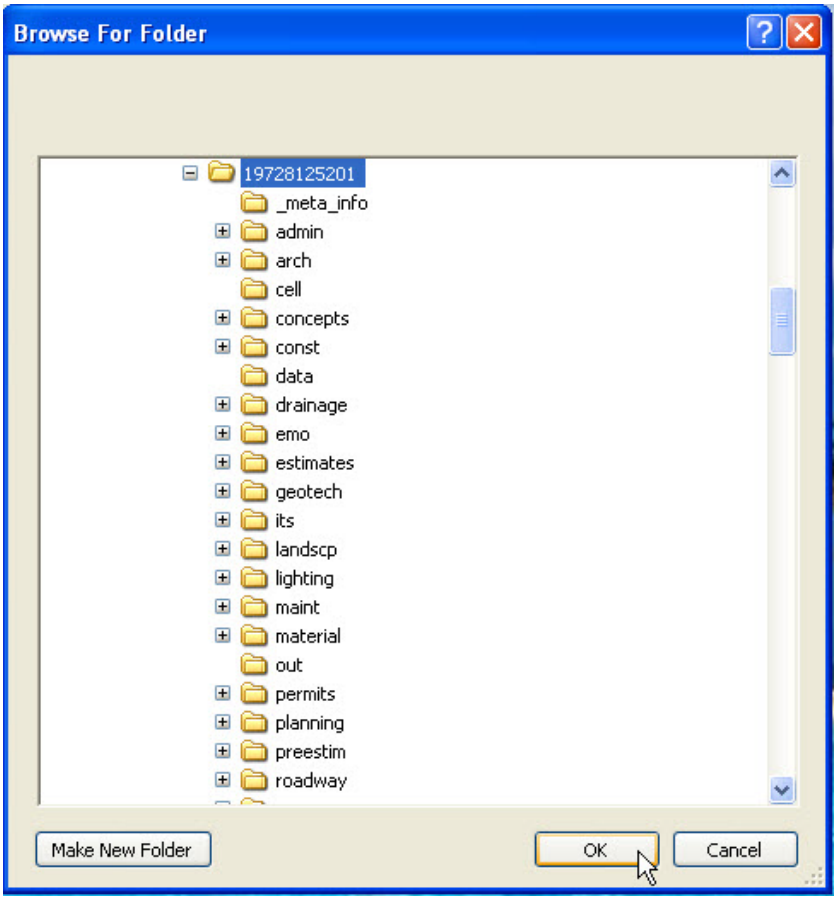
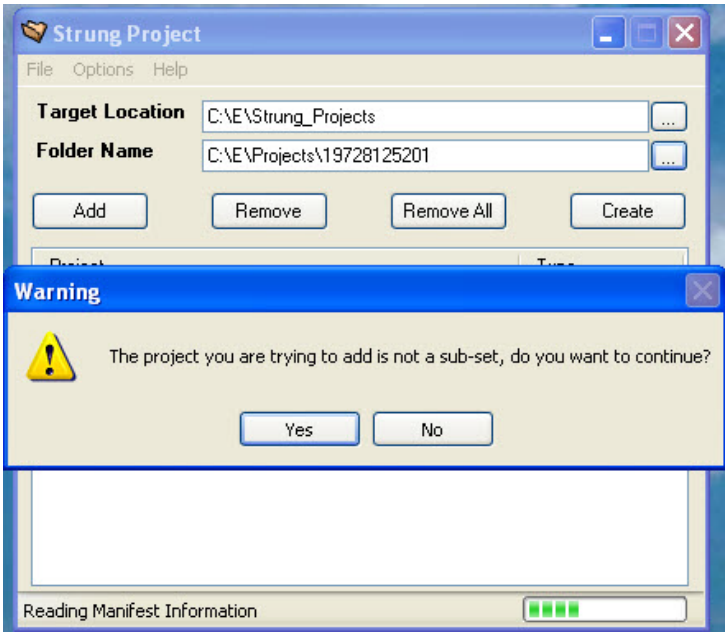
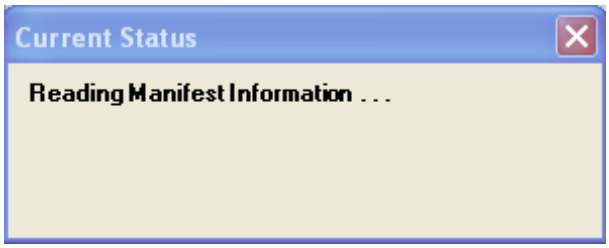
2. Browse For Folder opens. Navigate to and select the project that is the "Lead Project". For the purposes of this exercise, select **C:\E\Projects\19728125201**.



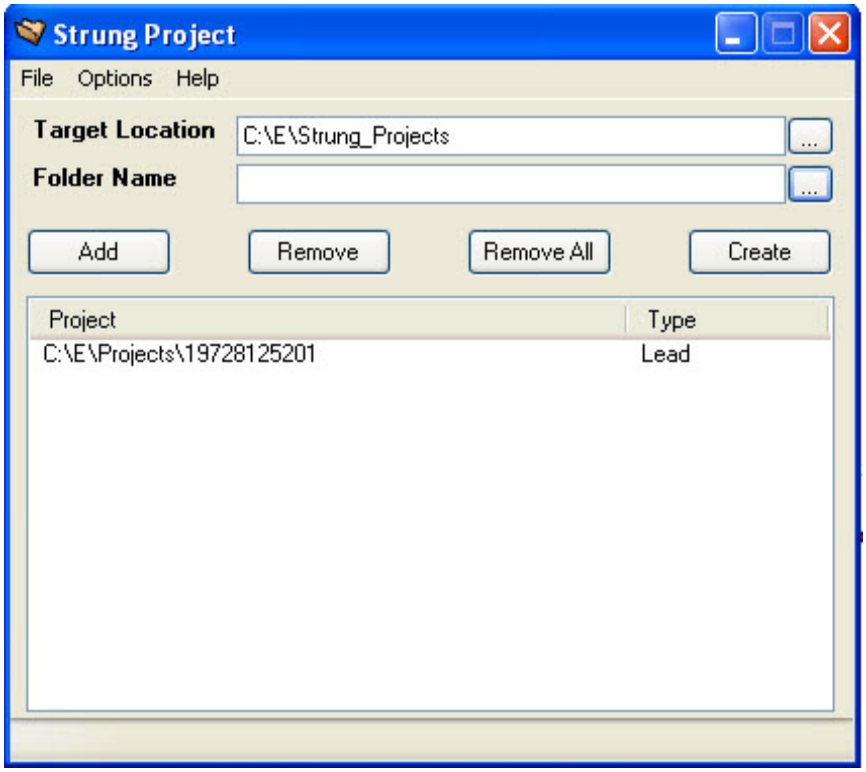
Browse For Folder



3. Click the **OK** button. Current Status opens briefly and checks the selected project. Upon completion of the validation process, Strung Project reappears with the selected project set as the **Lead** Project, as shown in Figure 6-30.



Strung Project Validation



Strung Project - Lead Project

Note The **Add** button is used to add a selected project to the list. This works the same as the steps in the exercise. The **Remove** button can be used to remove a selected project from the collected list. The **Remove All** button can be used to remove all projects from the list. The **Create** button is used to start the creation of the Strung Project as shown later in the exercise.

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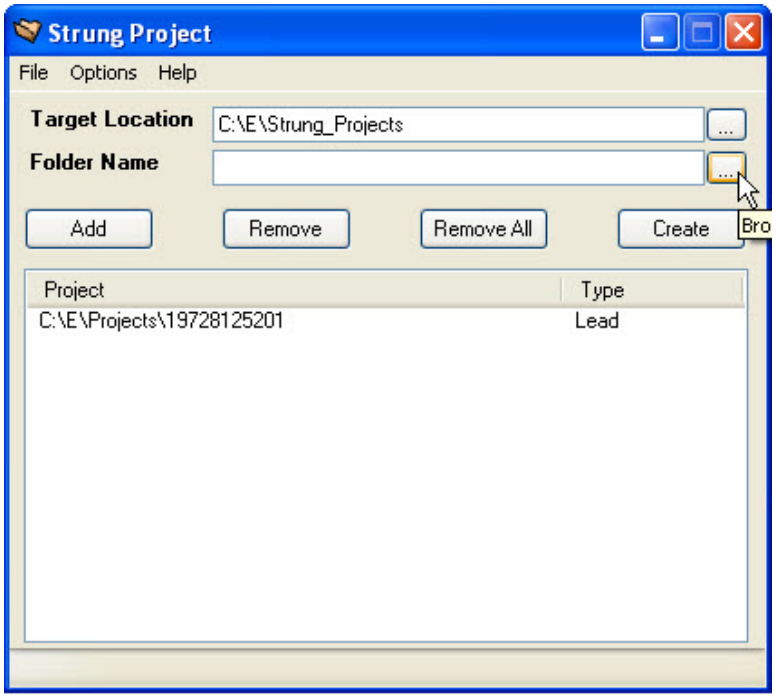
To add a "Goes-With" Project

1. At the right of **File Name** box, click the **Browse** button ( ).

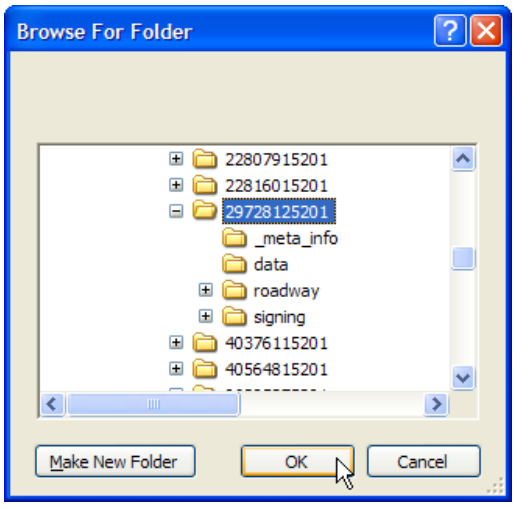


File Name

2. Browse For Folder opens. Navigate to and select the project that is the "Goes-With Project". For the purposes of this exercise, select **c:\E\Projects\29728125201**.

   The order that the user selects the projects typically does not matter, however the user may want to select Goes-With projects in the order that they would like them to appear in the indexes to the strung project that will be generated.

Note Remember that the Lead Project is always the first project selected.



Browse For Folder

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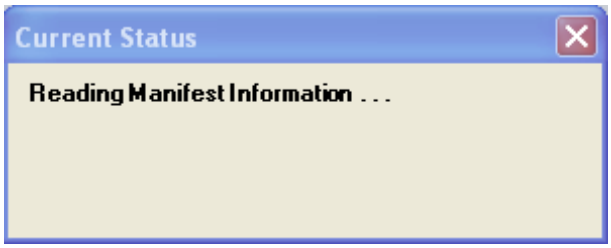
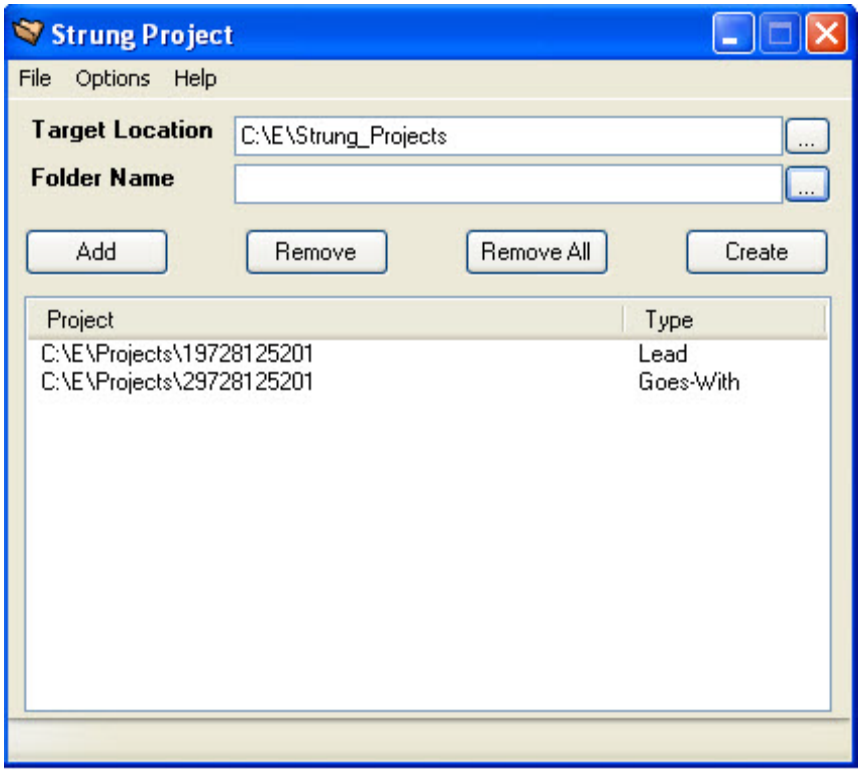
3. Click the **OK** button. Current Status opens and checks the selected project. Upon completion of the validation process, Strung Project re-appears with the selected project set as the **Goes-With** Project, as shown in Figure 6-34.



Strung Project Current Status



Strung Project - Goes-With Project

Note During the creation of the strung project, a composite **Project.pdf** for all **Lead** and **Goes-With** projects is created in the root directory of the strung project structure. The **Project.pdf** found in the **Lead** Project has each of the **Project.pdf**(s) from the Goes-With Project(s) appended to it, and the resulting composite **Project.pdf** is written to the root directory of the strung project.

This operation could take an extended period of time, depending on the size of the source PDFs. It is highly recommended that any batch process operations like this be done on the local hard drive, and not across a network for performance reasons!

This operation also requires the paths to the GhostScript engine be set from the **Options** menu.

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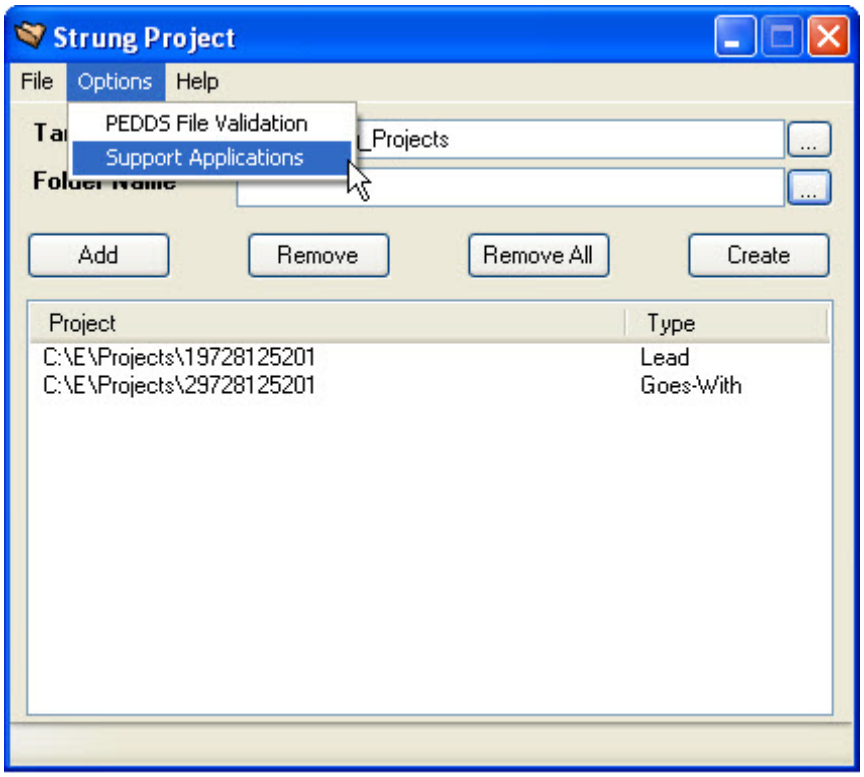
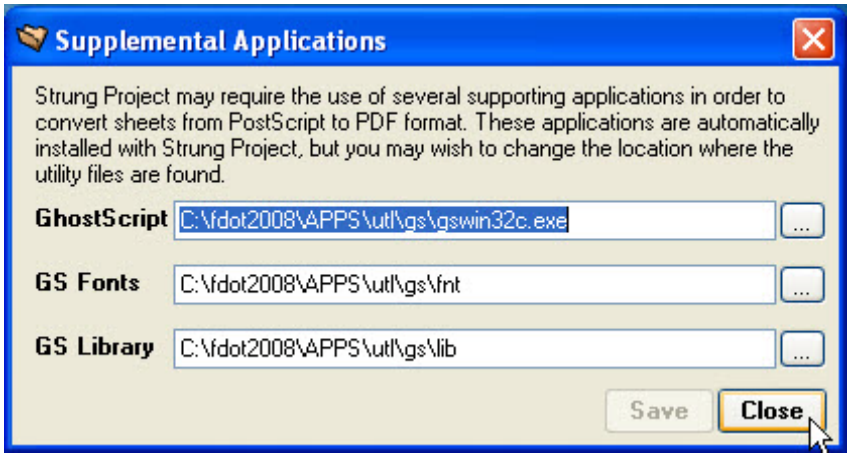
To set GhostScript Paths

1. From Strung Project, select **Options** > **Support Applications** to open Supplemental Applications. Ensure the settings for GhostScript are correct. Normally, the GhostScript settings are those shown below.
2. When finished, click the **Close** button to continue.



Support Applications



Supplemental Applications

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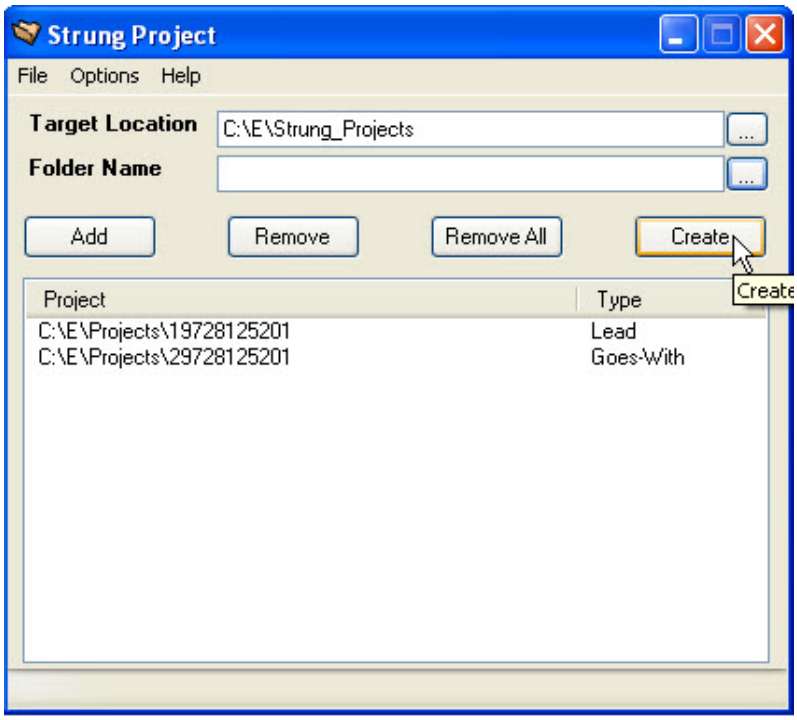
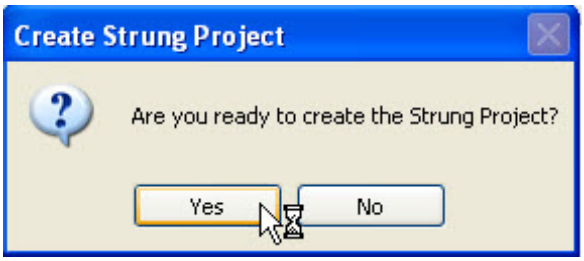
To create the Strung Project

1. From Strung Project, click the **Create** button. Current Status opens and provides progress statistics.

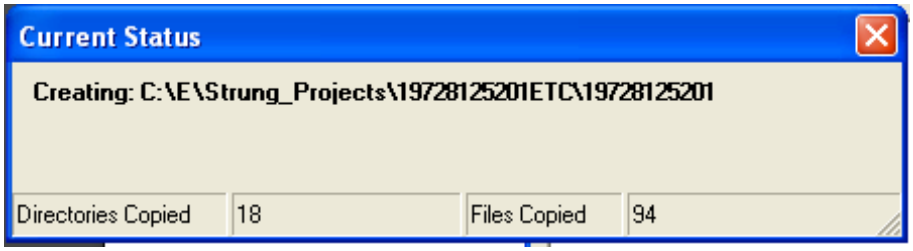


Strung Project - Create

2. Create Strung Project displays. Click the **Yes** button. Current Status opens and provides progress statistics. Strung Project begins by creating and completing the appropriate strung project directory structure, and then copies each of the component 'Lead' and 'Goes-with' sub-projects into the strung project structure.



Create Strung Project



Current Status

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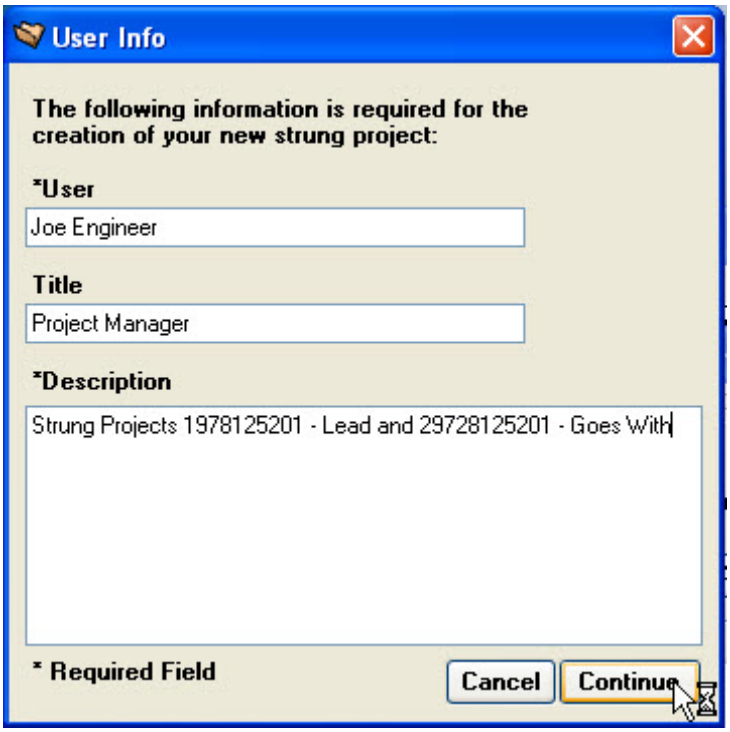
Note Once copying is complete, Strung Project creates a Project Identification file, **ProjectID.xml** in the ***_meta_info*** folder of the root strung project structure. This Project ID file is copied from the Lead project, and modified slightly by Strung Project so that PEDDS recognizes the strung project as a unique project, separate from either the **Lead** project or any of the **Goes-With** projects.

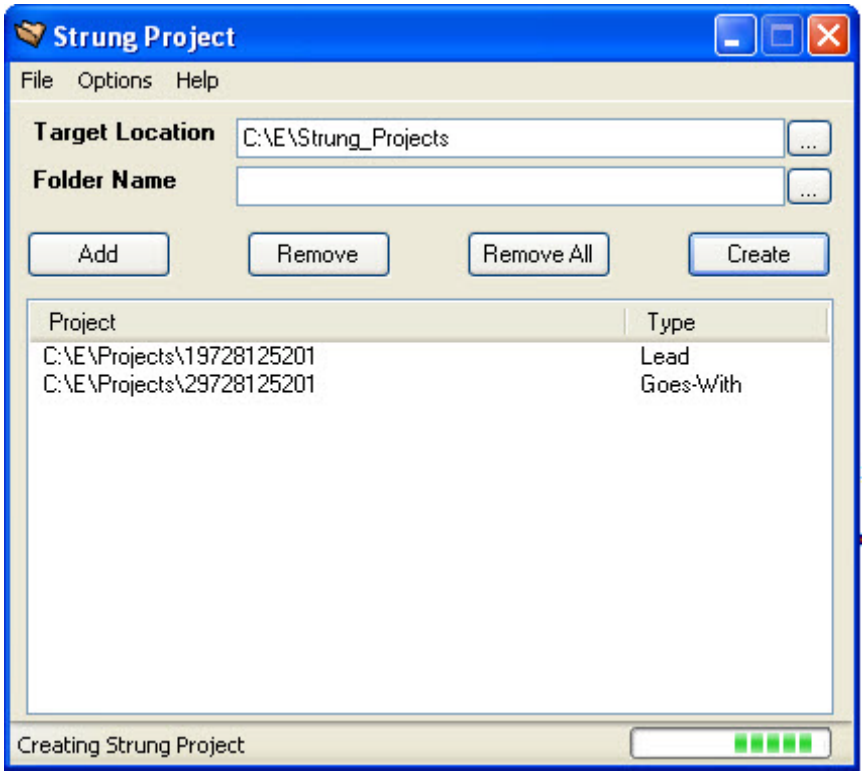
Likewise, a "seed" Manifest file, **Manifest.xml** is also created in the ***_meta_info*** folder; however it does not contain any file listing data.

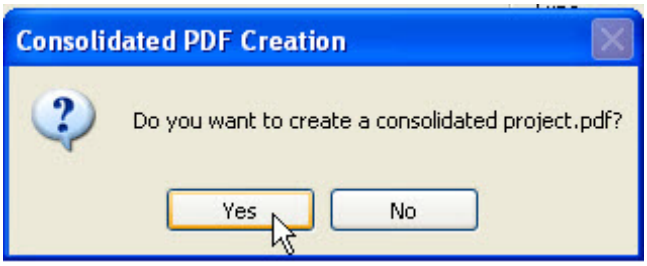
At this point, the newly Strung Project is not yet secured and PEDDS must be used to secure the project.

3. User Info opens. Fill in the user information as shown in the following figure and then click the **Continue** button.

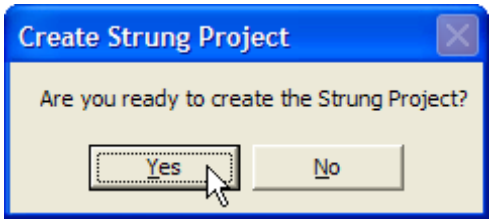


User Info





4. Create Strung Project displays. Click the **Yes** button.



Create Strung Project

5. When the strung project's Manifest data is complete, and **Project#.pdf** is appended, GhostScript opens.

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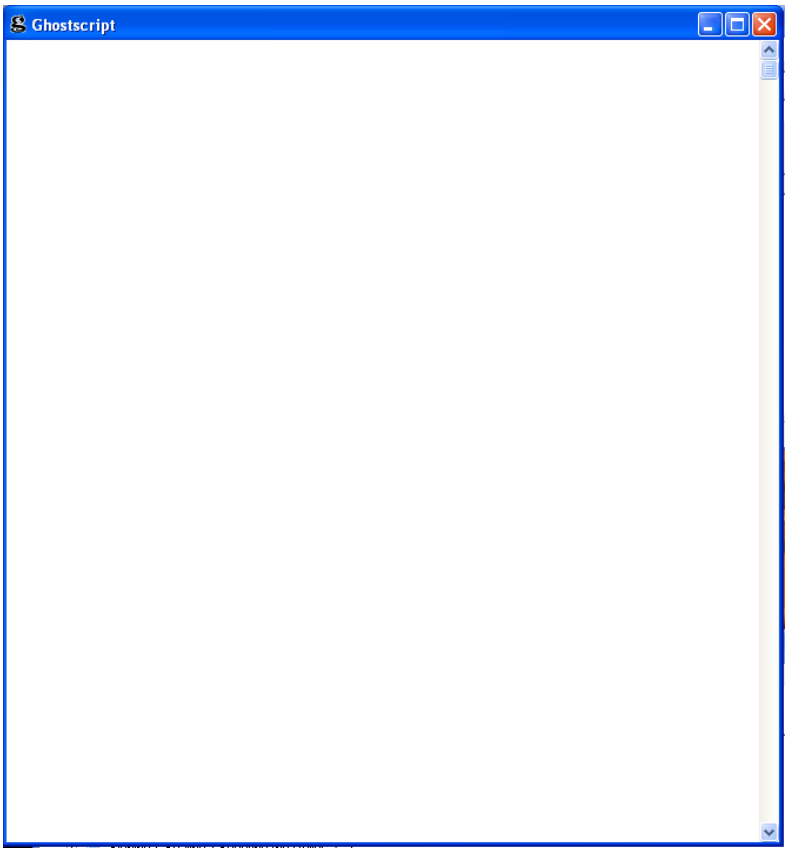
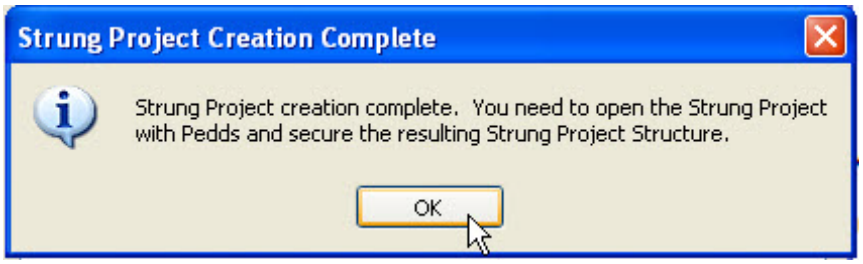
Note GhostScript runs with no user interface, and what appears to be a blank window opens for each **Project#.pdf** found in the component project(s) to build the composite **Project#.pdf** in the root directory of the strung project.

Be patient and allow this process to complete, as PDFs are being un-distilled to PostScript, concatenated, and re-distilled back to PDF, which is a very intensive operation.



Ghostscript Window

6. At the end of the process, GhostScript closes and Strung Project Complete opens. Strung Project Complete notifies the user that the strung project must still be secured with PEDDS. Click the **OK** button to continue.

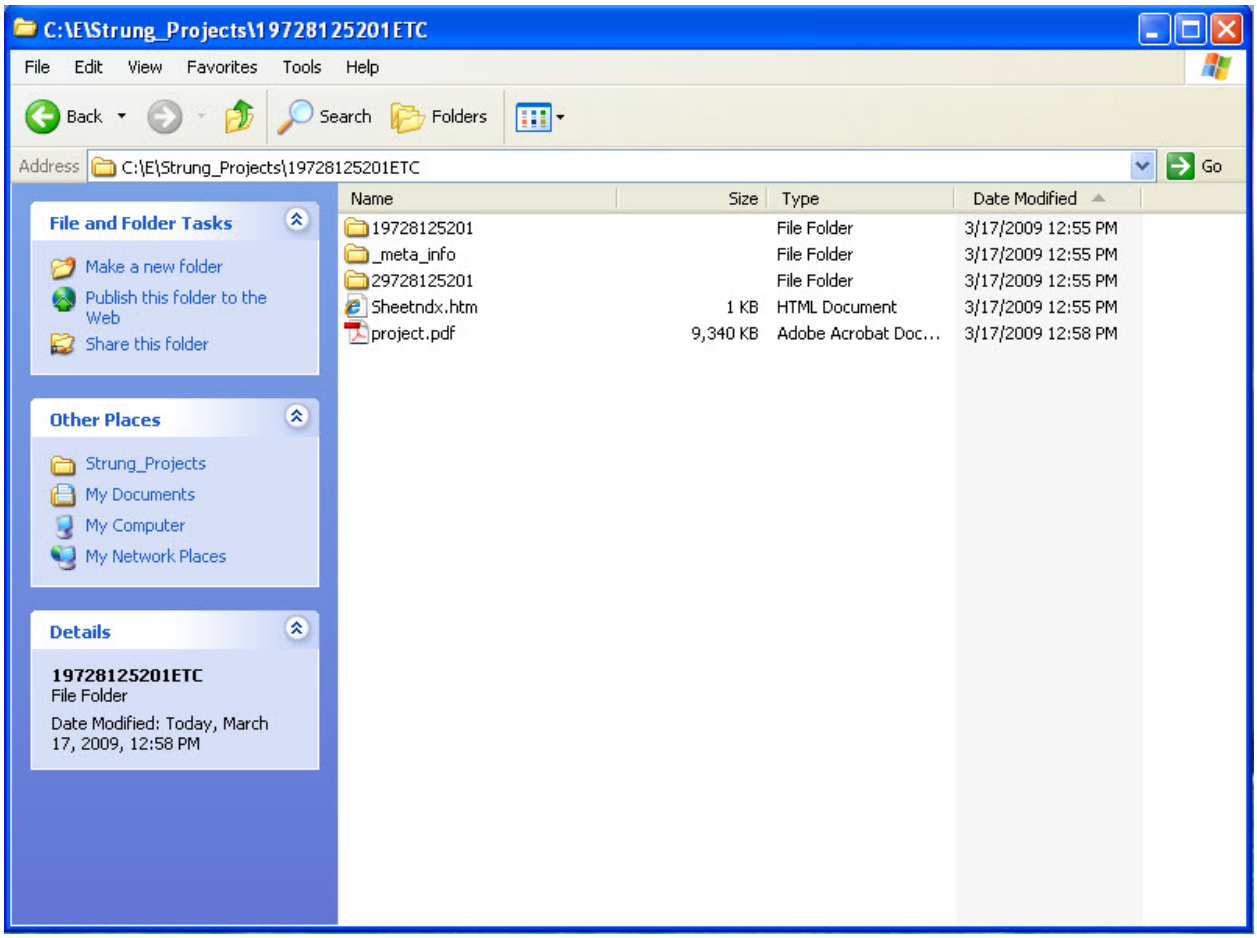


Strung Project Complete

7. Exit the Strung Project application.

Note The following figure displays the newly created strung project and its directory structure. Note that "**ETC**" is added to the folder name inherited from the **Lead** Project.

Also, if files (or additional folders) need to be added to the root folder structure (the one with the "**ETC**") outside of the Lead and Goes-with project folders (don't mess with them), it can be done now.



Windows Explorer

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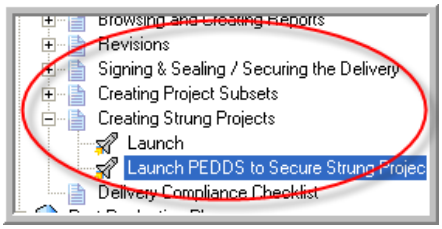
Section 6.3 Securing the Strung Project with PEDDS

PEDDS is used to secure the new strung project. PEDDS may be used to modify the Project identification data, **ProjectID.xml** for the strung project, or Project Header data, which is stored in **Manifest.xml** file. Securing the strung project structure for delivery is done by the normal securing procedure in PEDDS.

Exercise 6.2 Securing the Delivery

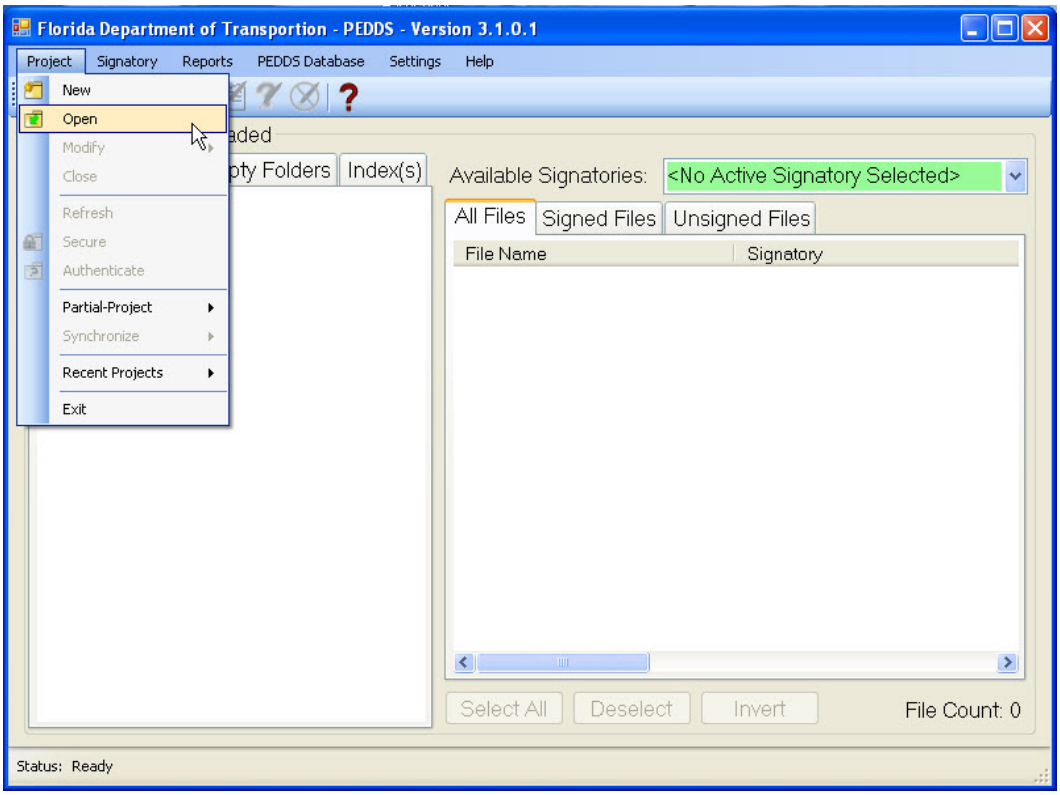
To open the Strung Project

1. In the **Creating Strung Projects** folder, click **Launch PEDDS to Secure Strung Projects**.



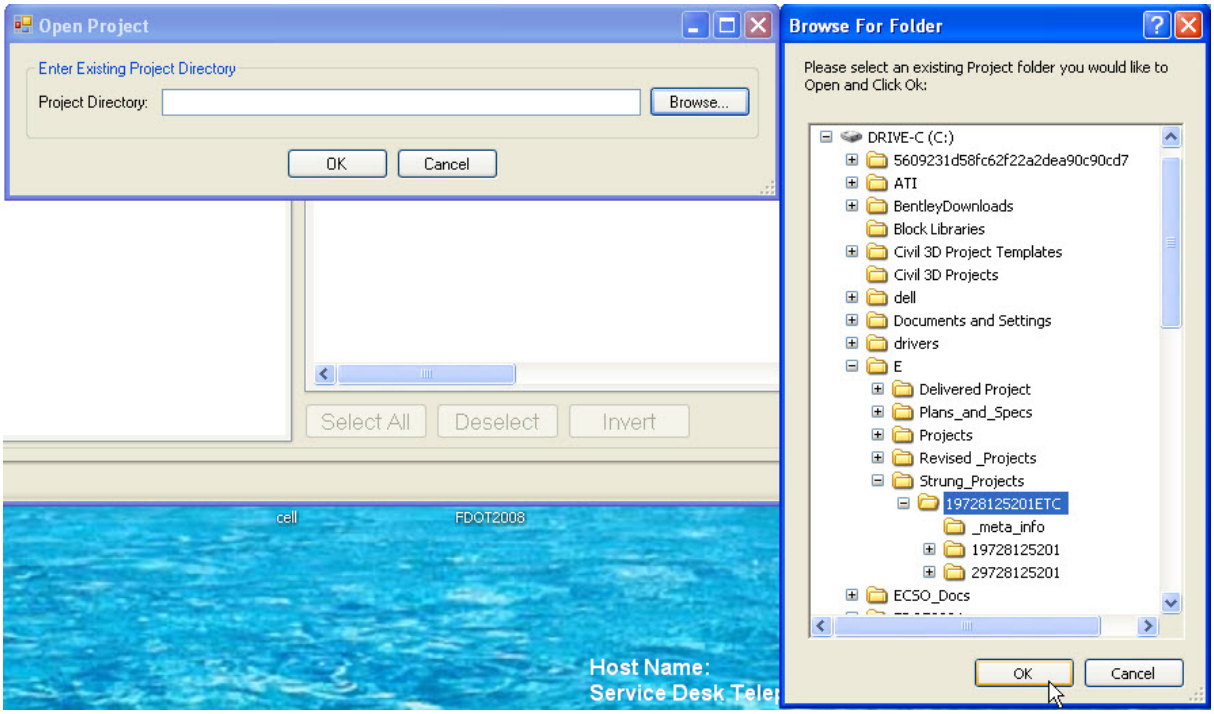
Creating Strung Projects - Launch PEDDS…

2. Florida Department of Transportation - PEDDS opens. From the **Project** menu, select **Open** --*or*-- click the **Open an Existing Project** icon ( ) on the toolbar.

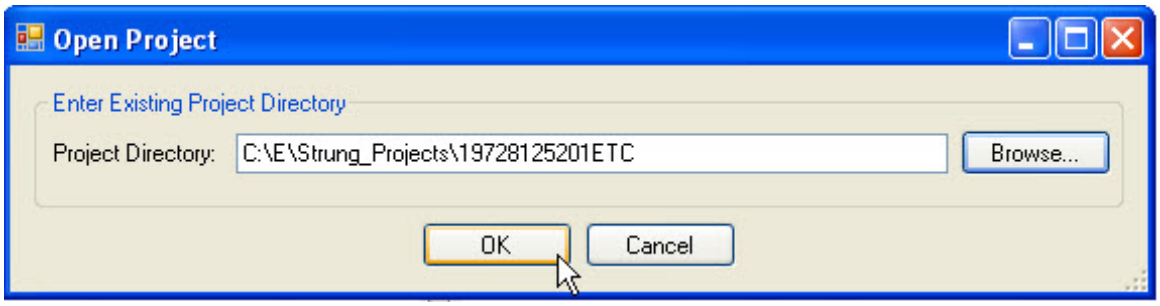


Florida Department of Transportation - PEDDS

3. Open Project appears. Select the **Drive** letter where strung project resides from the pull-down menu.
4. Navigate to the **C:\e\projects** folder and select the project. To load the selected project in PEDDS, click the **OK** button. The loaded project is now ready for PEDDS processing.



PEDDS - Open Project



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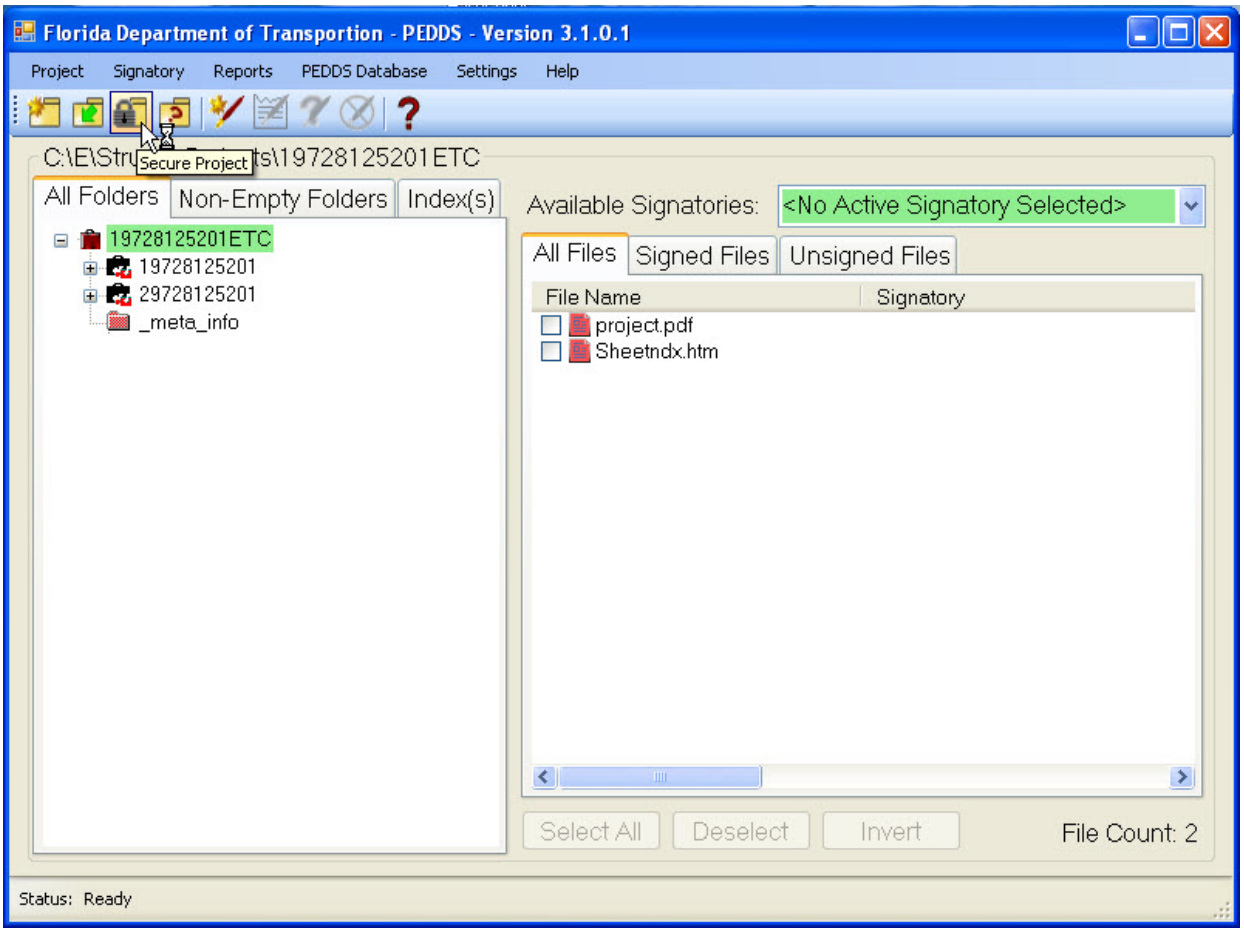
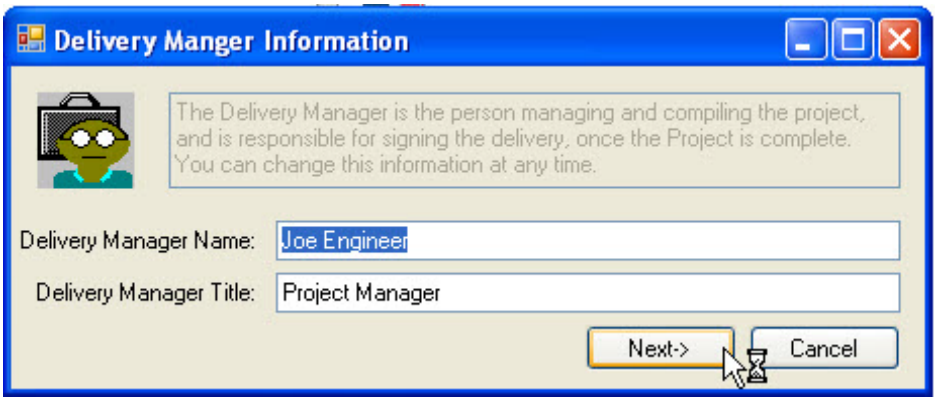
To secure the Strung Project

1. From the **Project** menu, select **Secure** --*or*—click the **Secure the Current Project** icon ( ) on the toolbar.



PEDDS - Securing the Project

2. Delivery Manager Information opens. Enter the **Delivery Manager Name** and **Delivery Manager Title**. Then click the **Next** button.



Delivery Manager Information

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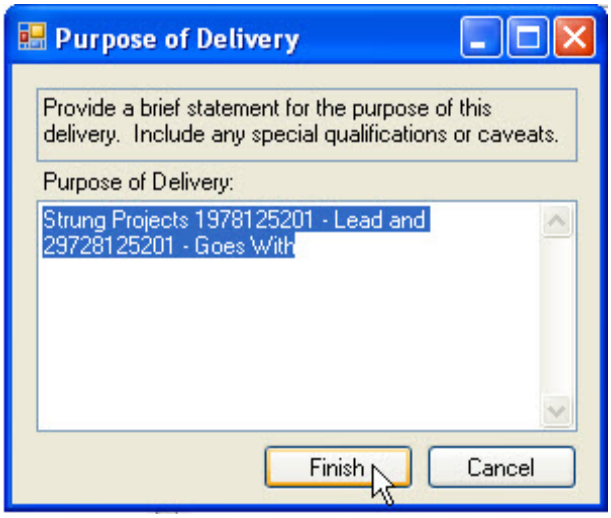
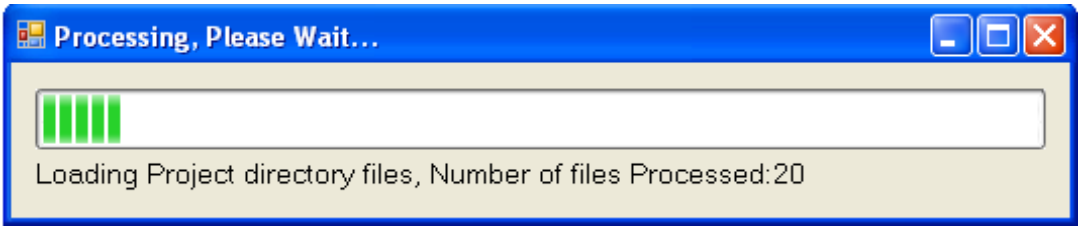
3. Description of Delivery opens. Enter the purpose for the delivery and click the **Finish** button.
4. Securing Project opens briefly then closes and Report Viewer opens.



Description of Delivery

Note The **Delivery Manager Name** and **Delivery Manager Title**, as well as the **Delivery Description** are filled in with the information entered during the Strung Project creation, as this information is inherited from the Lead Project.



Securing Project

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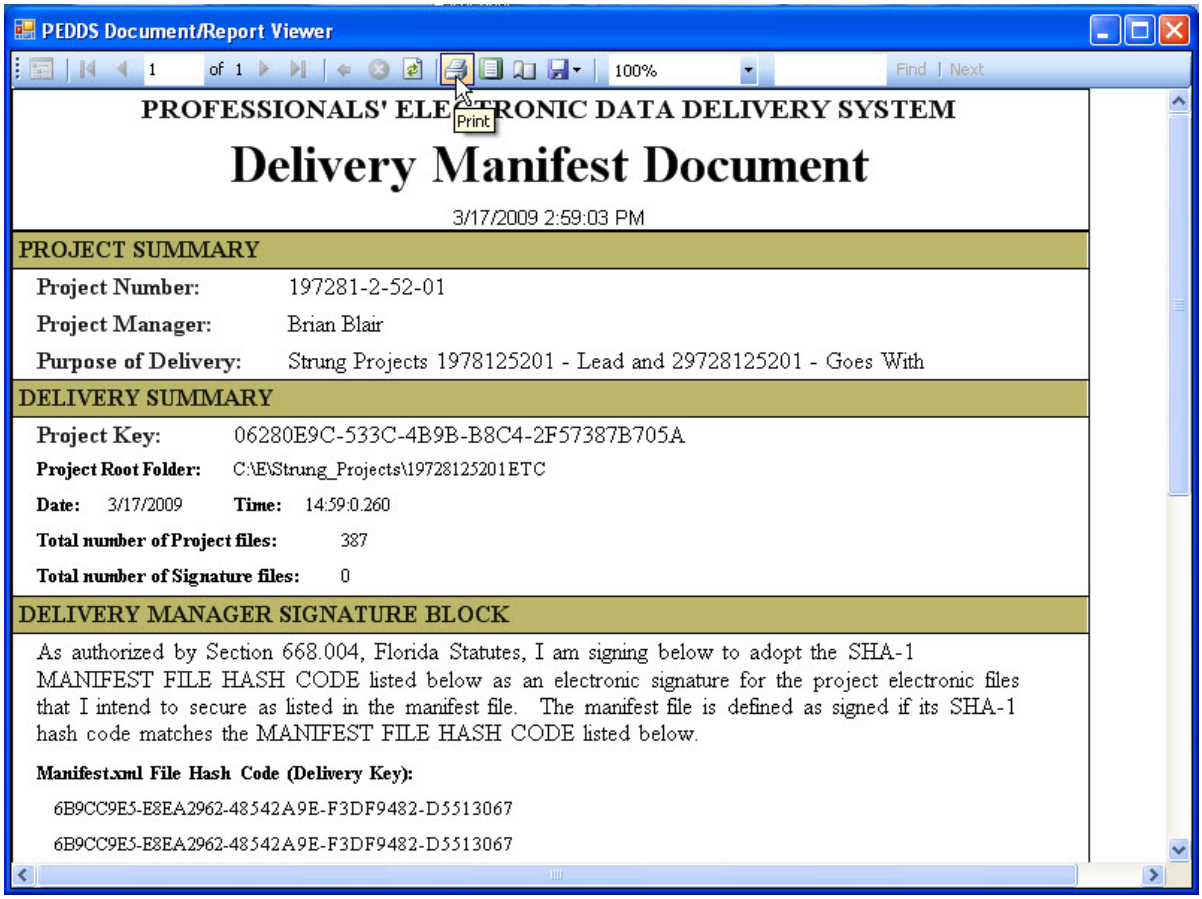
5. The **Delivery Manifest Document** is shown Report Viewer. Click the **Print** button to send the **Delivery Manifest Document** to a print device.



Report Viewer – Delivery Manifest Document

6. Click the **OK** button. Florida Department of Transportation - PEDDS reappears.
7. Exit PEDDS.

Section 6.4 Making a Delivery

After the project is secured and the Compliance Certification Checklist Report completed, the project can be copied to portable media, such as a CD-ROM or DVD-ROM, and labeled accordingly for delivery to the Department. This delivery should include the Project CD, the Compliance Certification Checklist Report (or alternative document the District requires as evidence the data producer followed their QC plan), and all signature documents generated by PEDDS. It is recommended that the project be authenticated on the delivery media prior to delivery to the department as per Item number 15 of the Compliance Certification Checklist Report.

The Project CD is described as the 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. Note the example below of a well labeled CD-ROM.

Example of a labeled CD suitable for delivery

If the project is too large to fit onto one CD, the use of DVD is permitted as long as the delivery media is labeled as a DVD. If DVD is not available, the recommended procedure is to span the project across multiple CDs.

If multiple CDs are used, the recommended method of authenticating the delivery media changes as PEDDS cannot authenticate across multiple CDs.

Exercise 6.3 To authenticate multiple CDs

1. Copy all project data from the CDs it to a temporary storage location using Windows Explorer.

Important Do not make any changes to the project after copying it to the temporary storage location.

2. Authenticate the copied project using PEDDS.
3. If project verifies, send the delivery media (multiple CD) to the Department.
4. Remove the temporary project originally copied from the CDs.

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7 Production Phase - Extras

This section contains additional reference material on Production Tools that can assist the user while preparing a project for electronic delivery. If time permits at the end of the of the Electronic Delivery Production course, these exercises can be started. If time does not permit, these exercises contain valuable reference material for possible future use. These extra topics cover the following:

- Manually inserting sheet(s) into a Index
- PEDDS - Partial-Project
- PEDDS - Synchronize

Section 7.1 Manually inserting Sheets into a Index

Occasionally, a project contains plan sheets not generated from MicroStation design files, such as sheets in PDF format that came from a scanner or other sources. This exercise details the steps, considering both Sheet Navigator and EDI2, to prepare the index for insertion of sheets from a source different than the conventional indexing and plotting postscript from MicroStation design files.

Exercise 7.1 Manually inserting Sheets into a Index

This exercise manually adds three new sheets to the project. These two sheets represent two Design Standards PDF files.

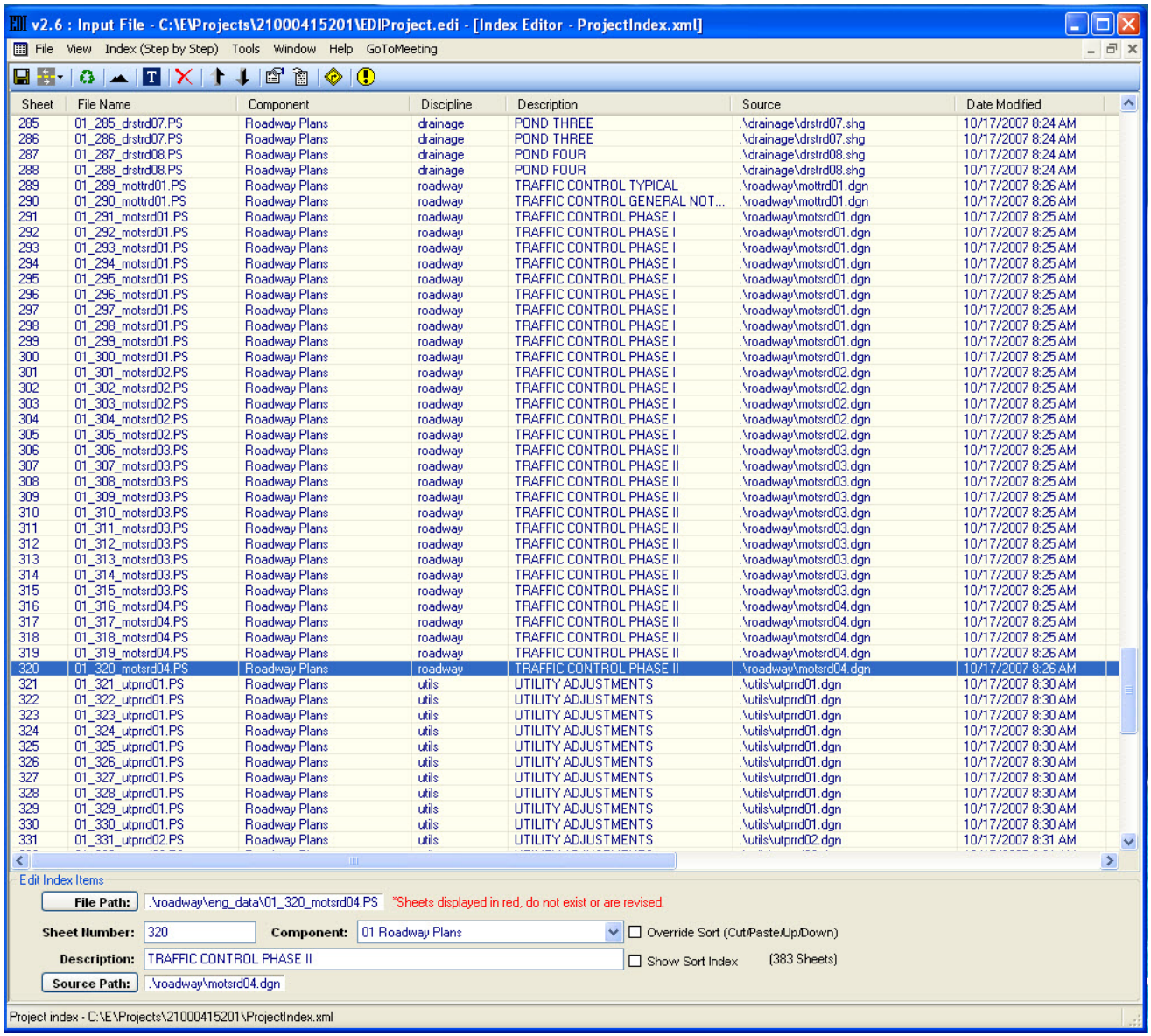
To manually insert sheets into the Index

1. Select the executable file **EDSection7ExercisesStart.exe**, ensure **Unzip to folder** is set to **C:\e** and click the **Unzip** button to place the starting dataset for Section 7 on the hard drive. Notice that there is an additional folder **Strung Projects** in the **C:\e** folder.

Note Executable files are provided in the dataset for logical starting points throughout Section 7. For example the executable file EDSection6Exercise7.2Start.exe contains the files from Section 7 exercises up to Exercise 7.2. If you encounter errors while working through an

exercise, select the executable with the nearest starting point and unzip the files as demonstrated above. The Unzip to folder will be set to the correct hard drive location

2. From EDI2, open the project **21000415201**.
3. Once the project is open, switch to the Index Editor view in EDI2 (**View** > **Index Editor (Edit and Save Index)**).
4. Scroll down to sheet **320** under the **Sheet** column and review the index to this point, noting the sheets to be manually inserted fall after sheet **320**.



71EDI2 Index Editor View

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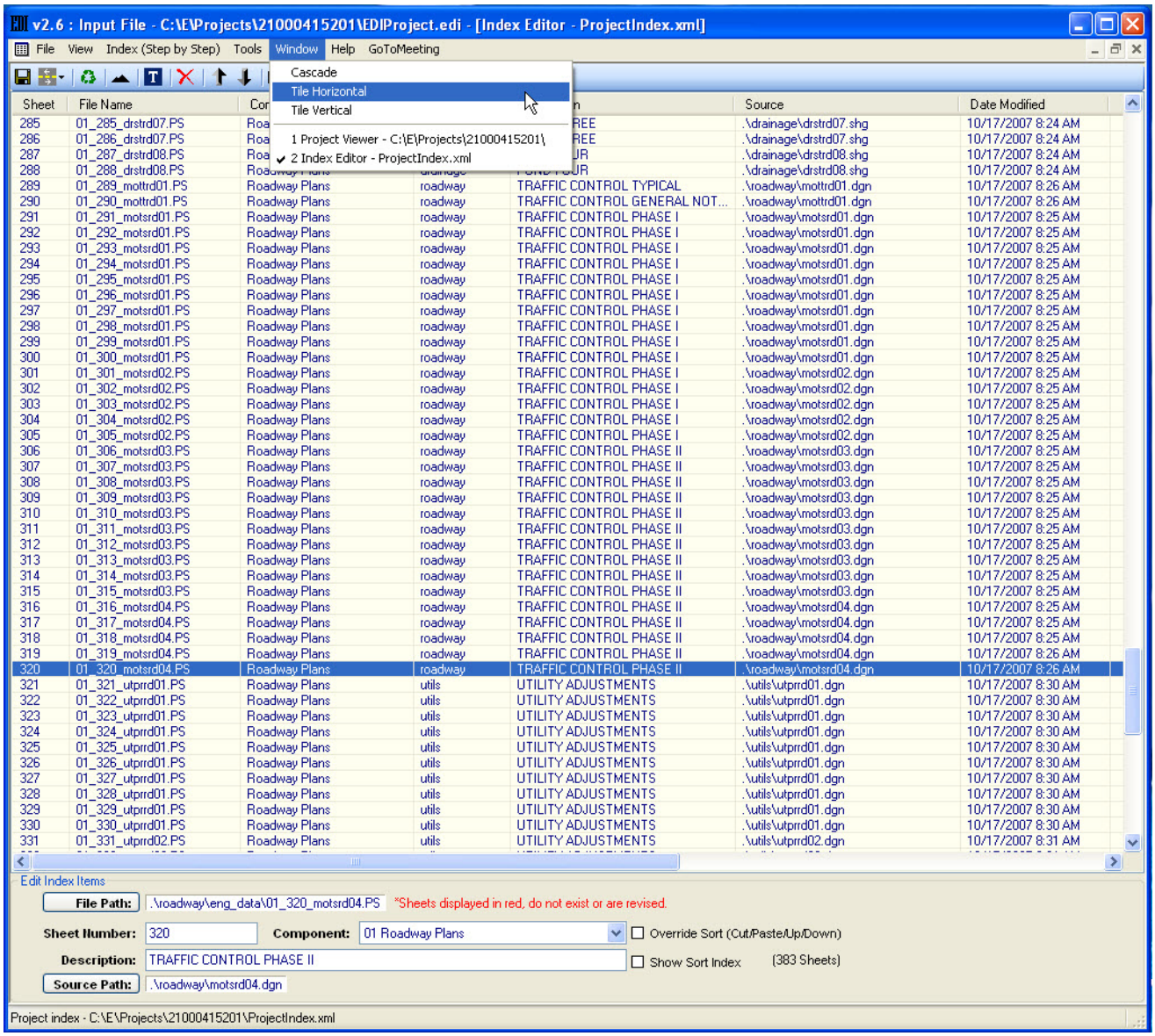
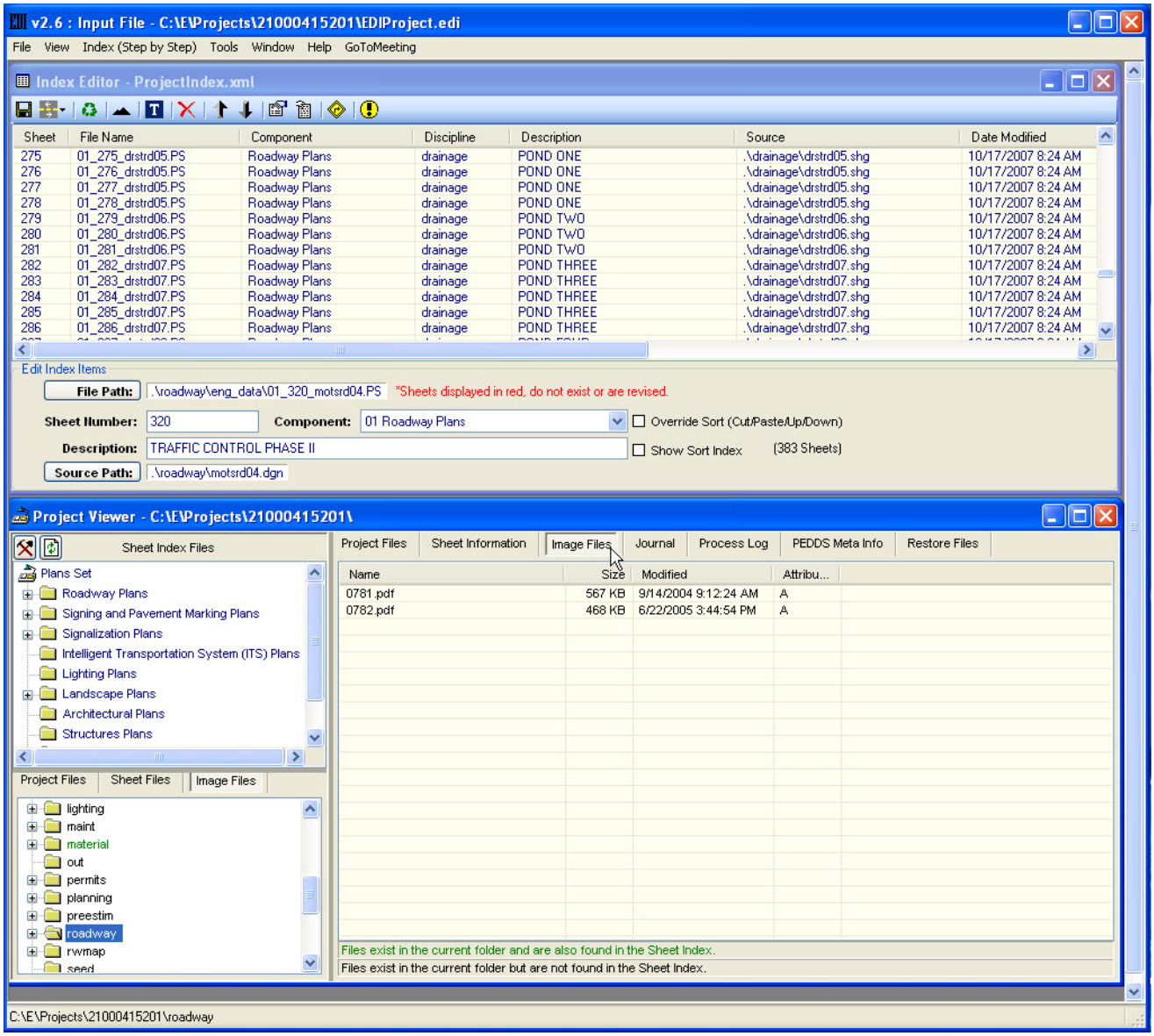
5. From the EDI2 **Window** menu, select **Tile Horizontal**.



EDI2- Tile Horizontal

6. The Project Viewer window reappears tiled with the Index Editor window. Click the **Image Files** tab as shown in the following figure and then click the **roadway** discipline folder. Image files **0781.pdf** and **0782.pdf** display.



EDI2 - Index Editor and Project Viewer Windows Tiled

7. From the **Image Files** pane, click **0781.pdf** and while holding down the **Ctrl** key on the keyboard, click **0782.pdf** to select both files.

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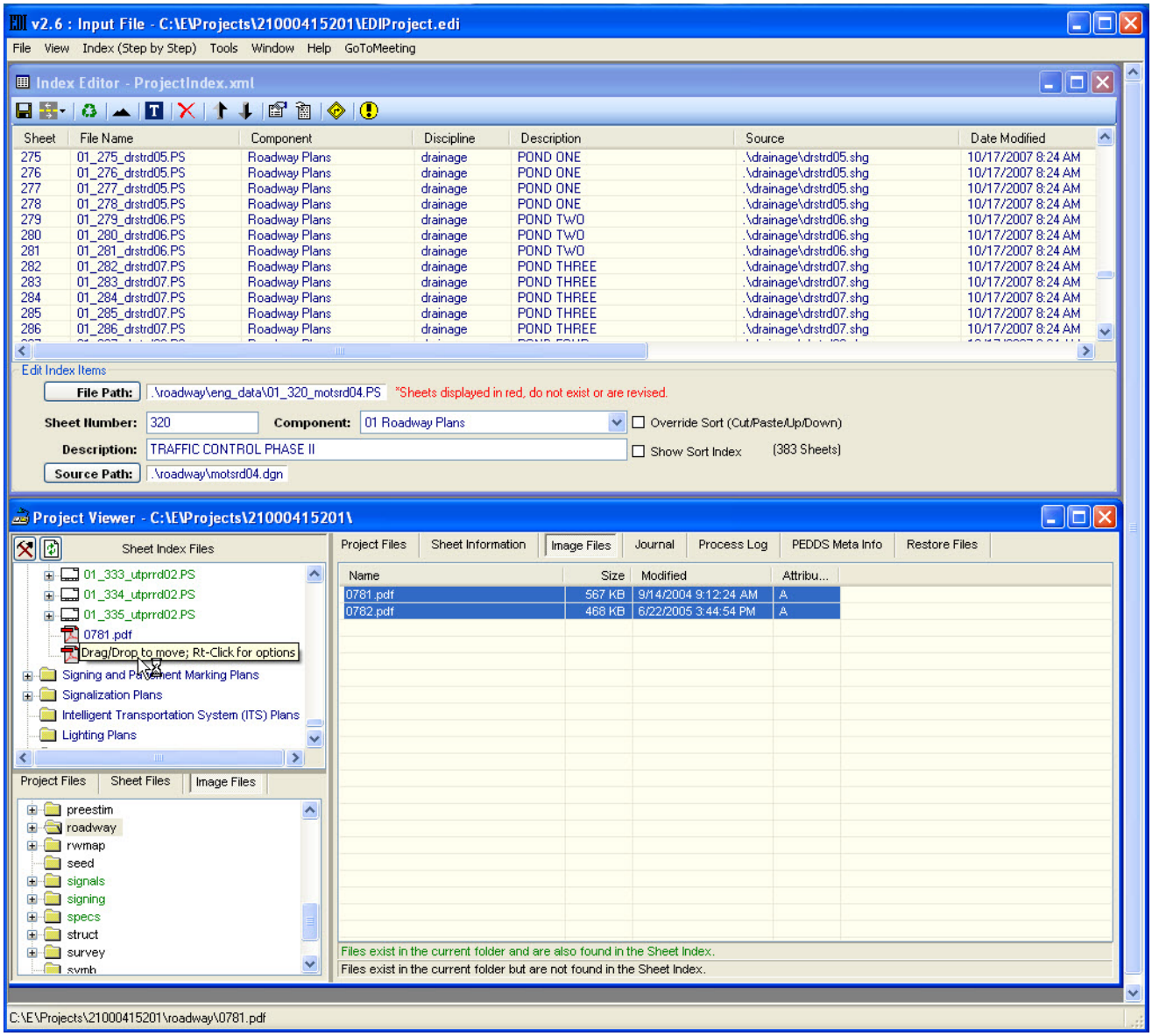
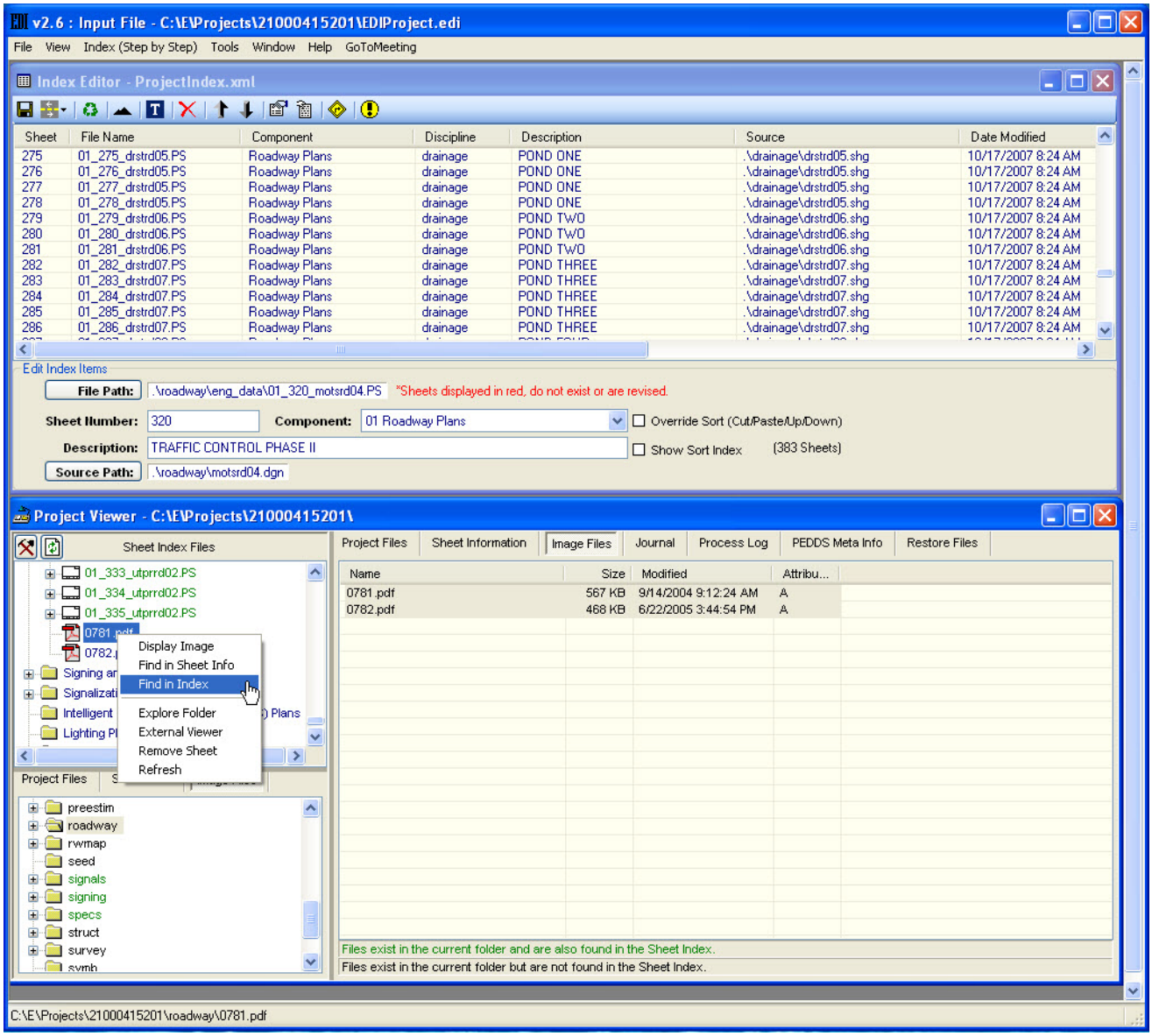
8. Drag and drop the selected Image Files to the **Roadway Plans** Component folder of the Plans Set (the **Sheet Index Files** pane to the upper left of the Project Viewer).



EDI2 - Image Files added to Plans Set Roadway Component

9. From the Sheet Index Files pane, select **0781.pdf** and right-click on the file**.**

10. From the displayed menu, select **Find in Index**.



EDI2 - Find in Index

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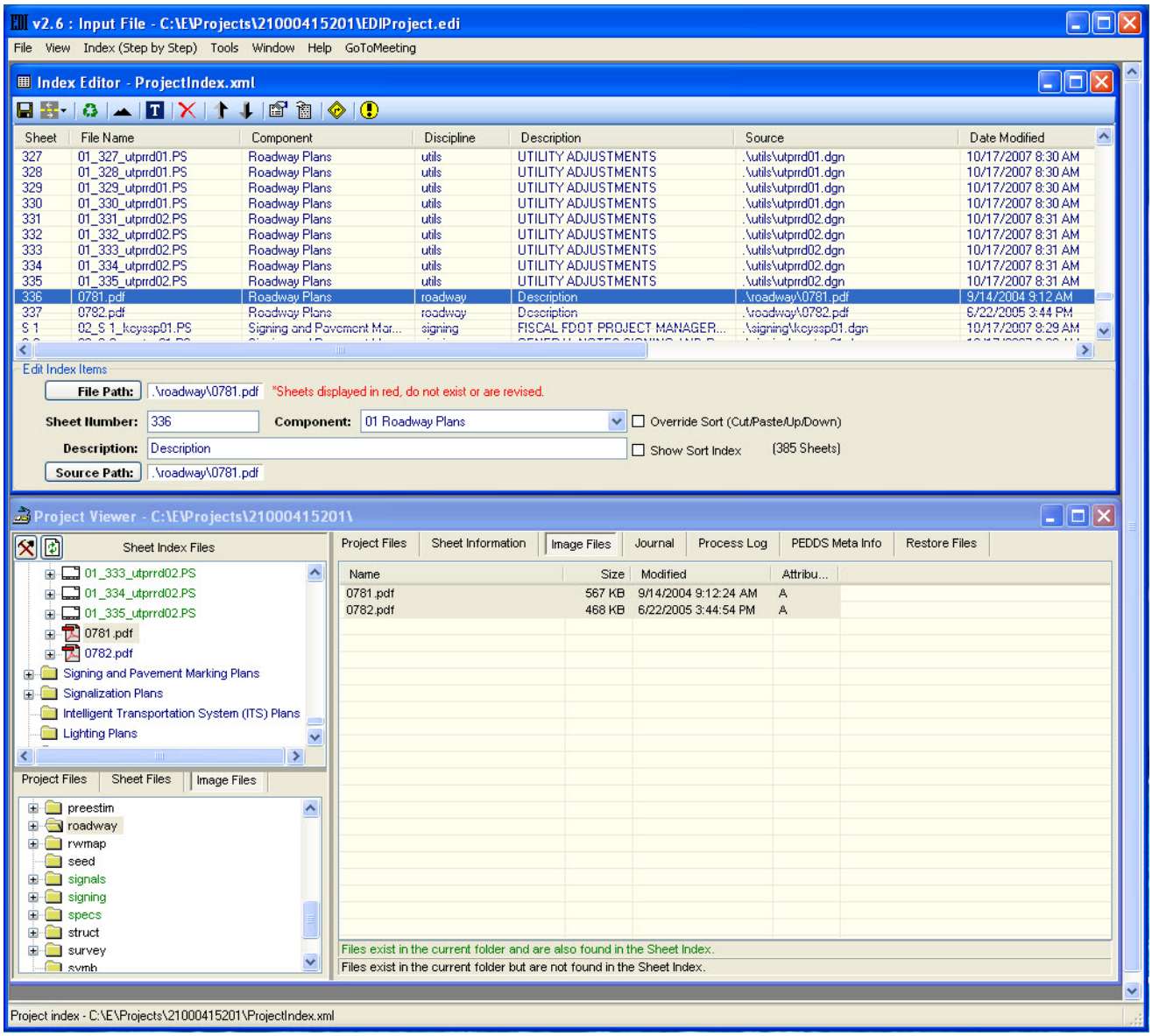
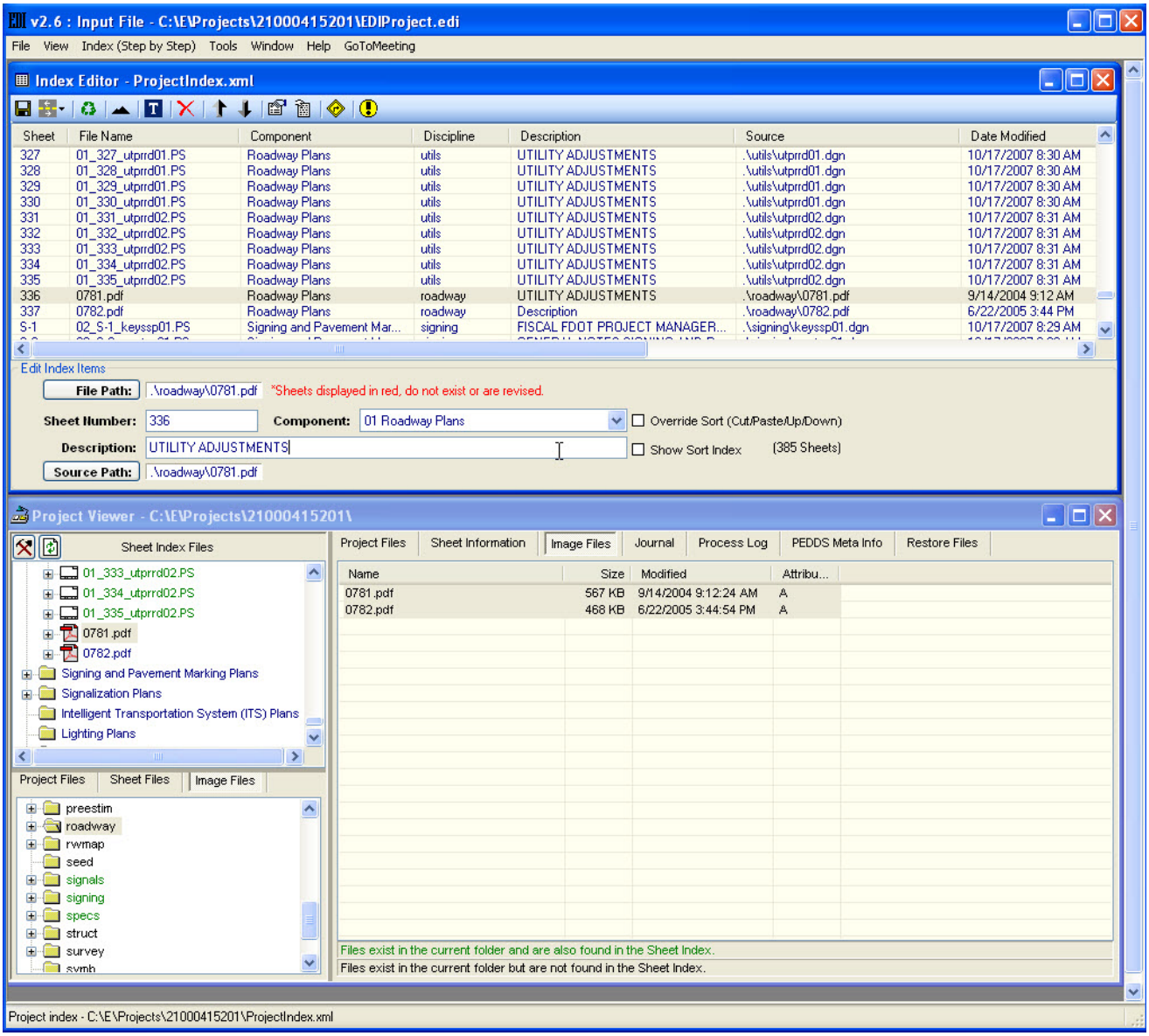
11. EDI2 changes focus to the **Index Editor** window and displays the selected file as shown in the following figure.



EDI2 - Index Editor

To manually modify Sheet information in the Index Editor

1. Continuing in the Index Editor, modify the Sheet Number and Description of the inserted sheets in the **Edit Index Items** pane, as shown and then click the **Save** button.



EDI2 - Edit Index Items

From the Index Editor, click the **Refresh (Undo) to last synch with Sheet Index Files, Plans Set tree view** icon on the toolbar.

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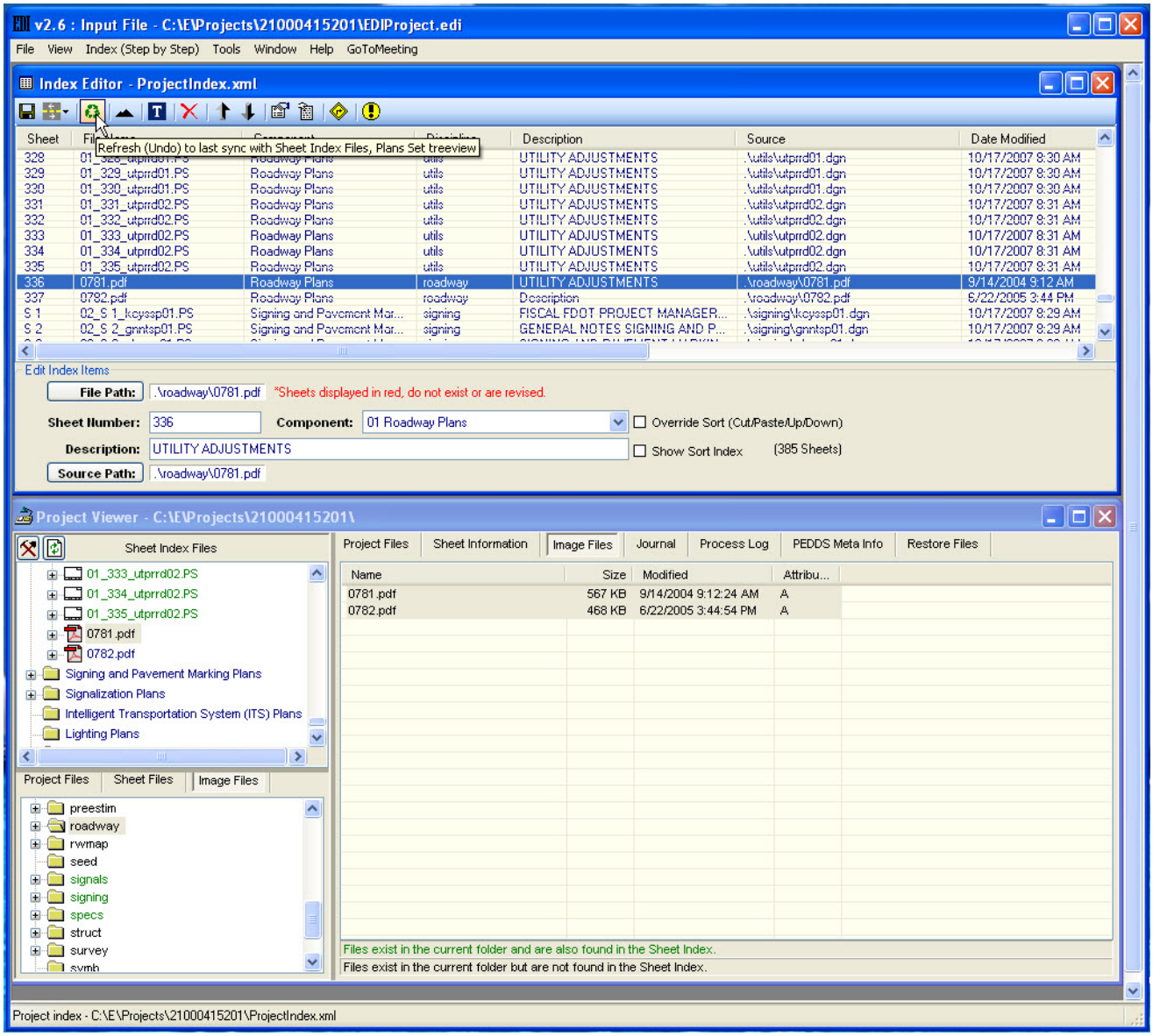
2. Scroll up to **Sheet 321** and review the index.

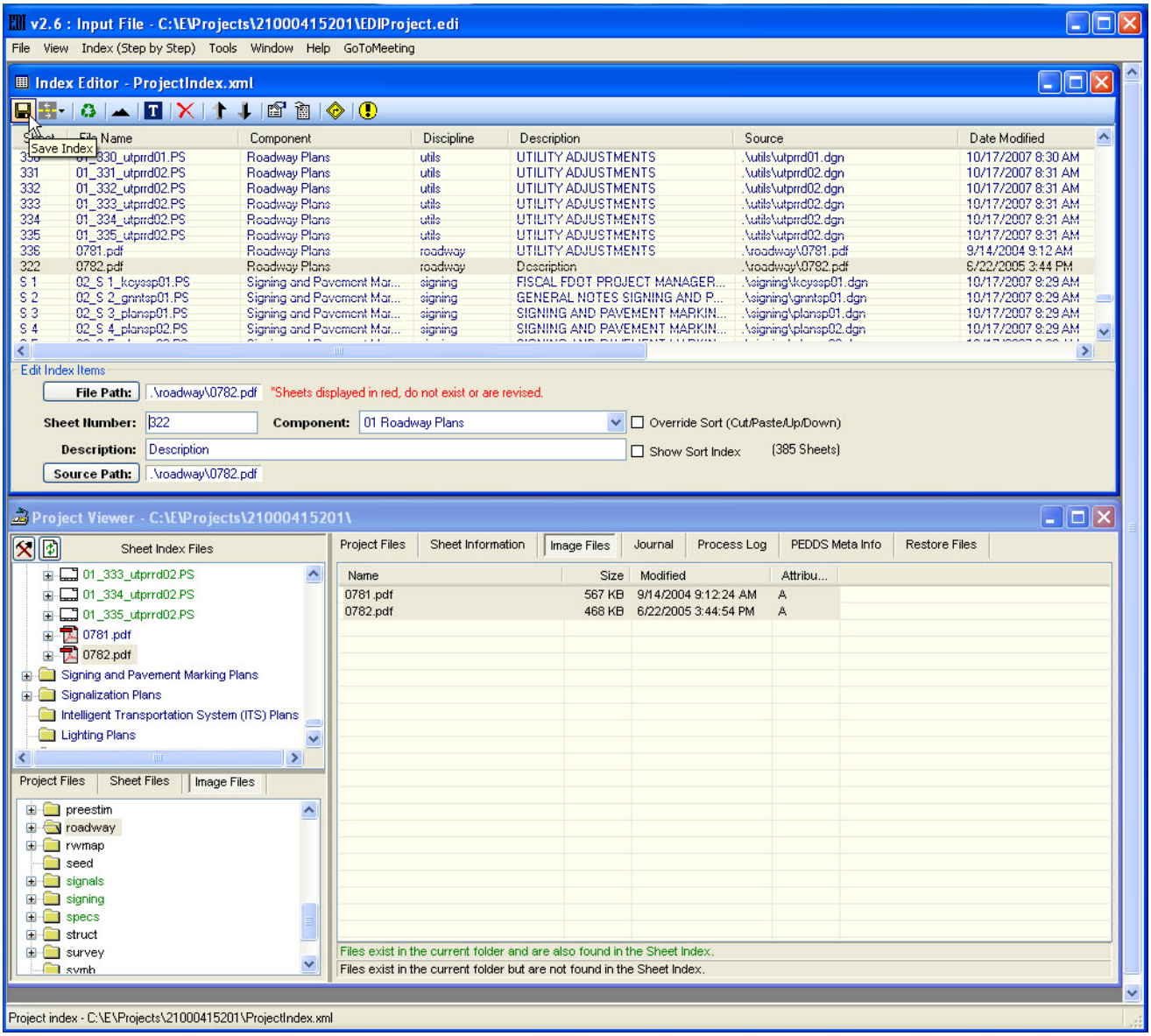


Refresh (Undo) to last synch with Sheet Index Files, Plans Set treeview

Note As shown above, Image File **0781.pdf** is inserted in the index and the description of the sheet is modified and saved.

3. Repeat the procedure for Image File **0782.pdf** and renumber the sheet to Sheet number **322**.

Note Upon completion, the index looks like the following figure.



EDI2

4. From Index Editor, click the **Save** button ( ) on the toolbar to save the Index.

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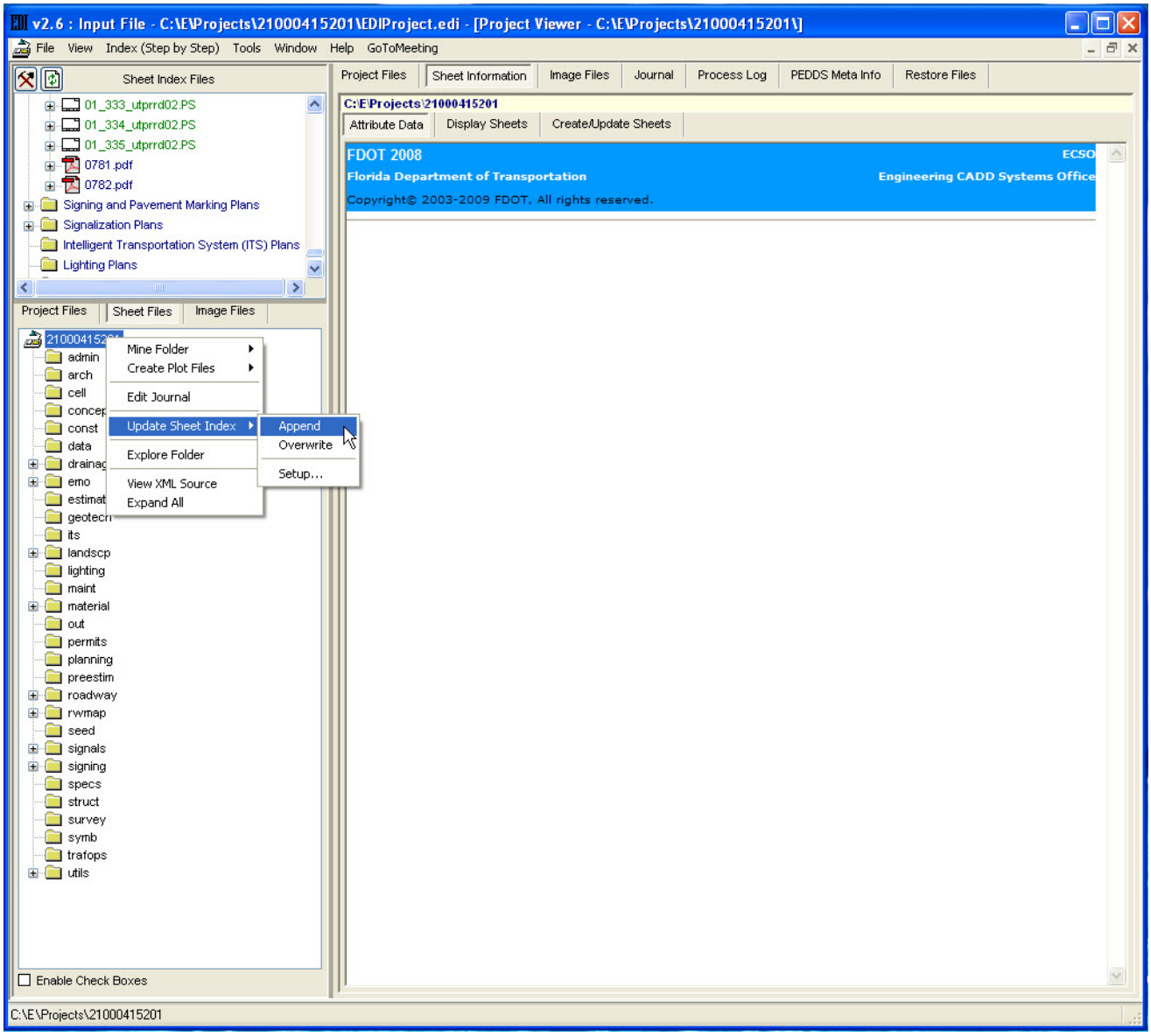
To update the Sheet Index

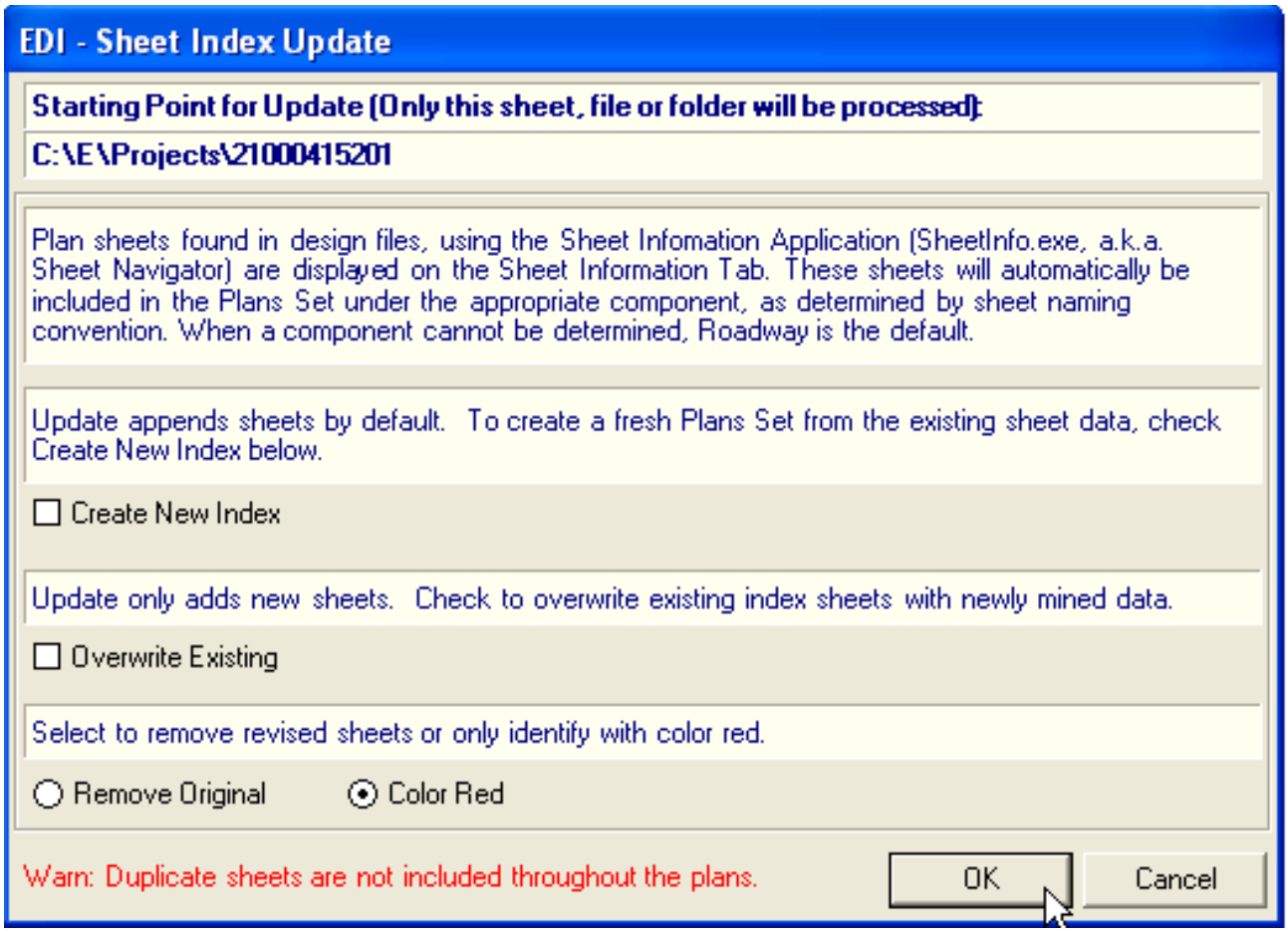
1. Close **Index Editor**. From the Project Viewer window, right-click on the project folder as shown in the following figure.
2. From the displayed menu, select **Update Sheet Index**.



EDI2 - Update Sheet Index

3. EDI – Sheet Index Update opens. Ensure all checkboxes are not populated.

4. Click the **OK** button. The index, **ProjectIndex.xml** is updated.



Update Project Index Plans Set

Note As shown in the following figure, the once missing Postscript Image files are displayed green in the **Sheet Index Files** pane.

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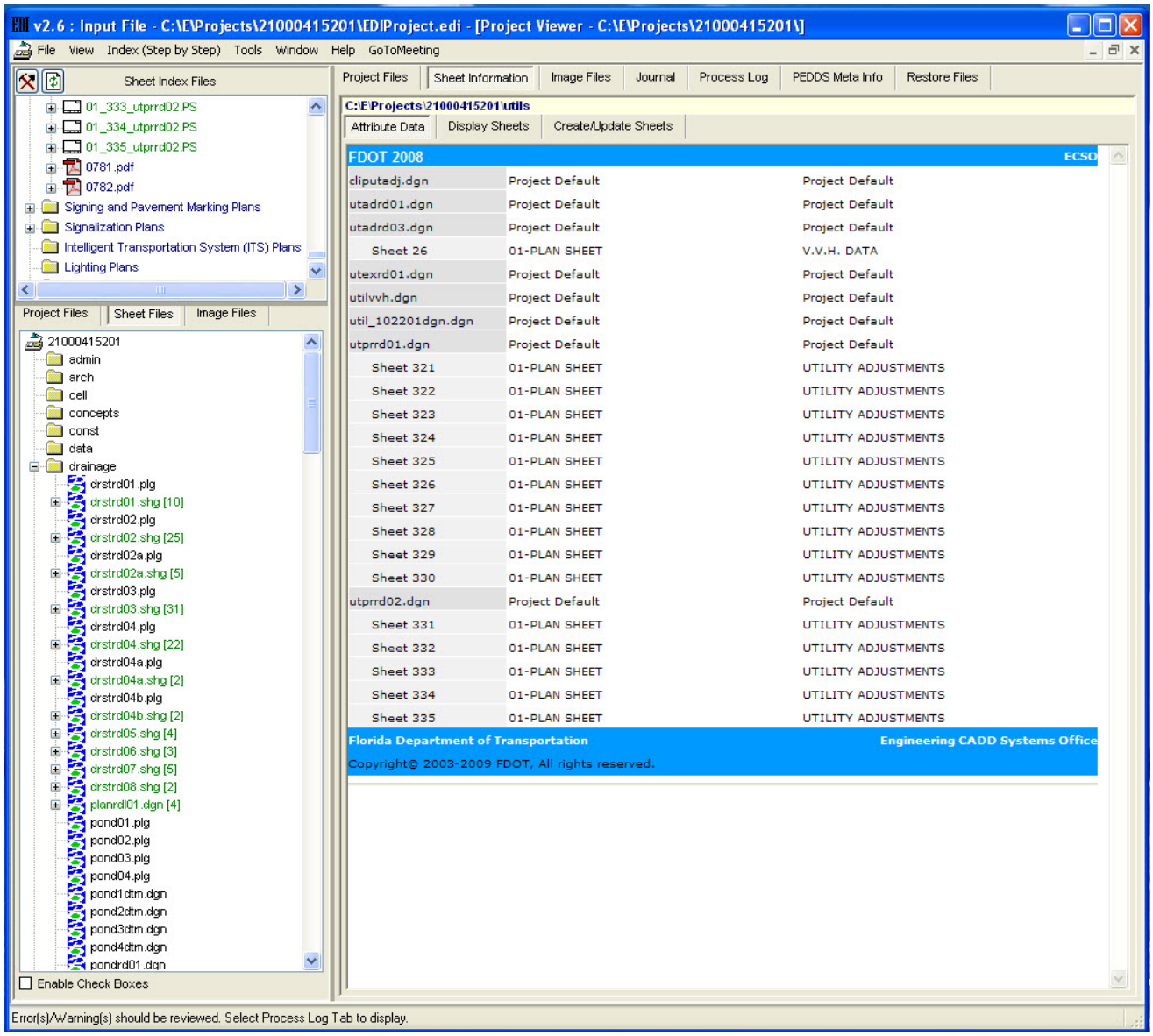
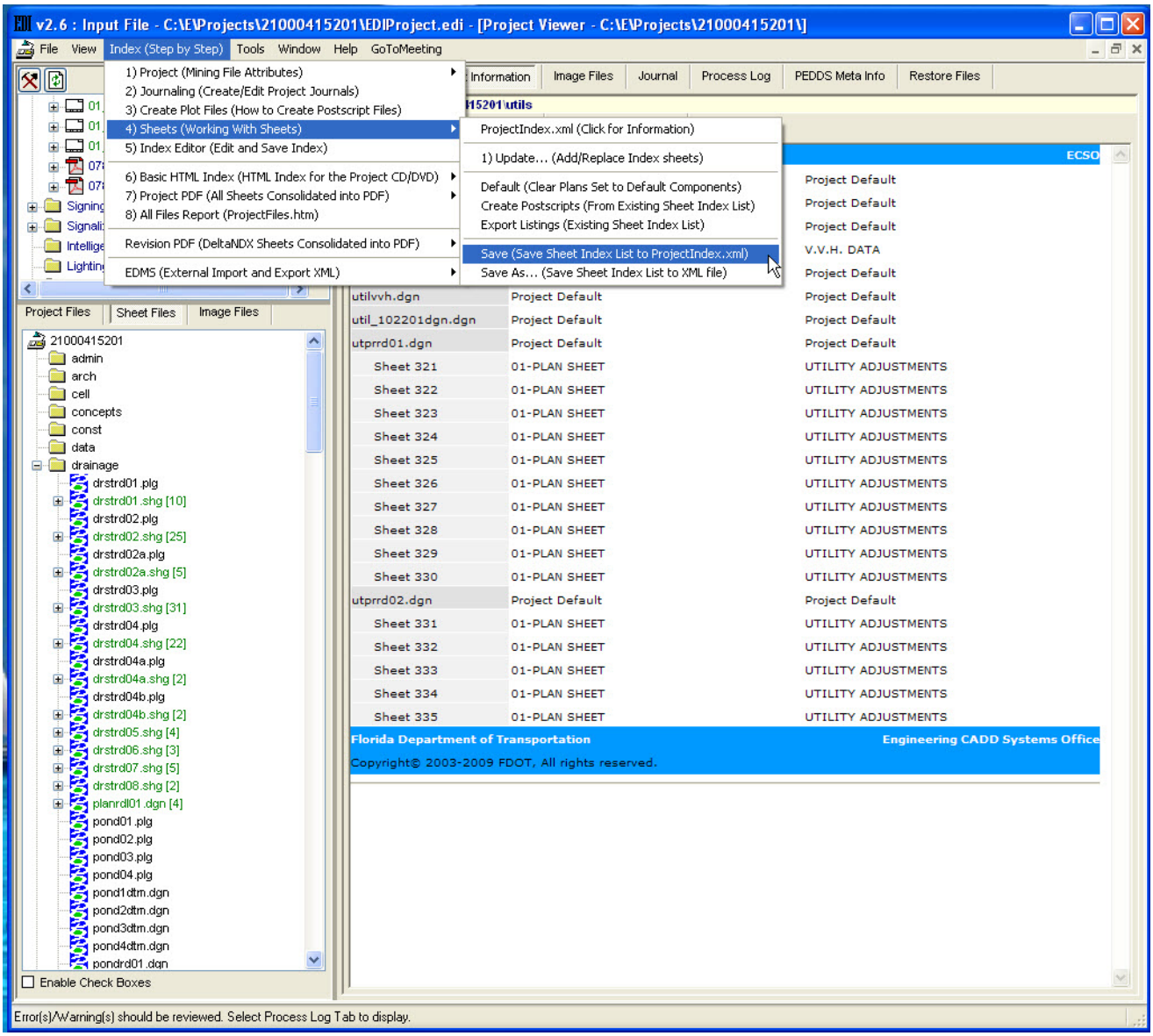


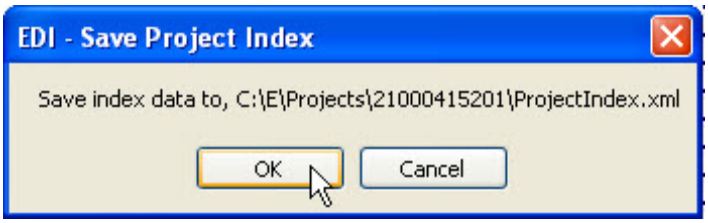
EDI2 - Updated Index

5. From EDI2, select **Index (Step by Step)** > 4) **Sheets (Working With Sheets) > Save (Save Sheet Index List to ProjectIndex.xml.**



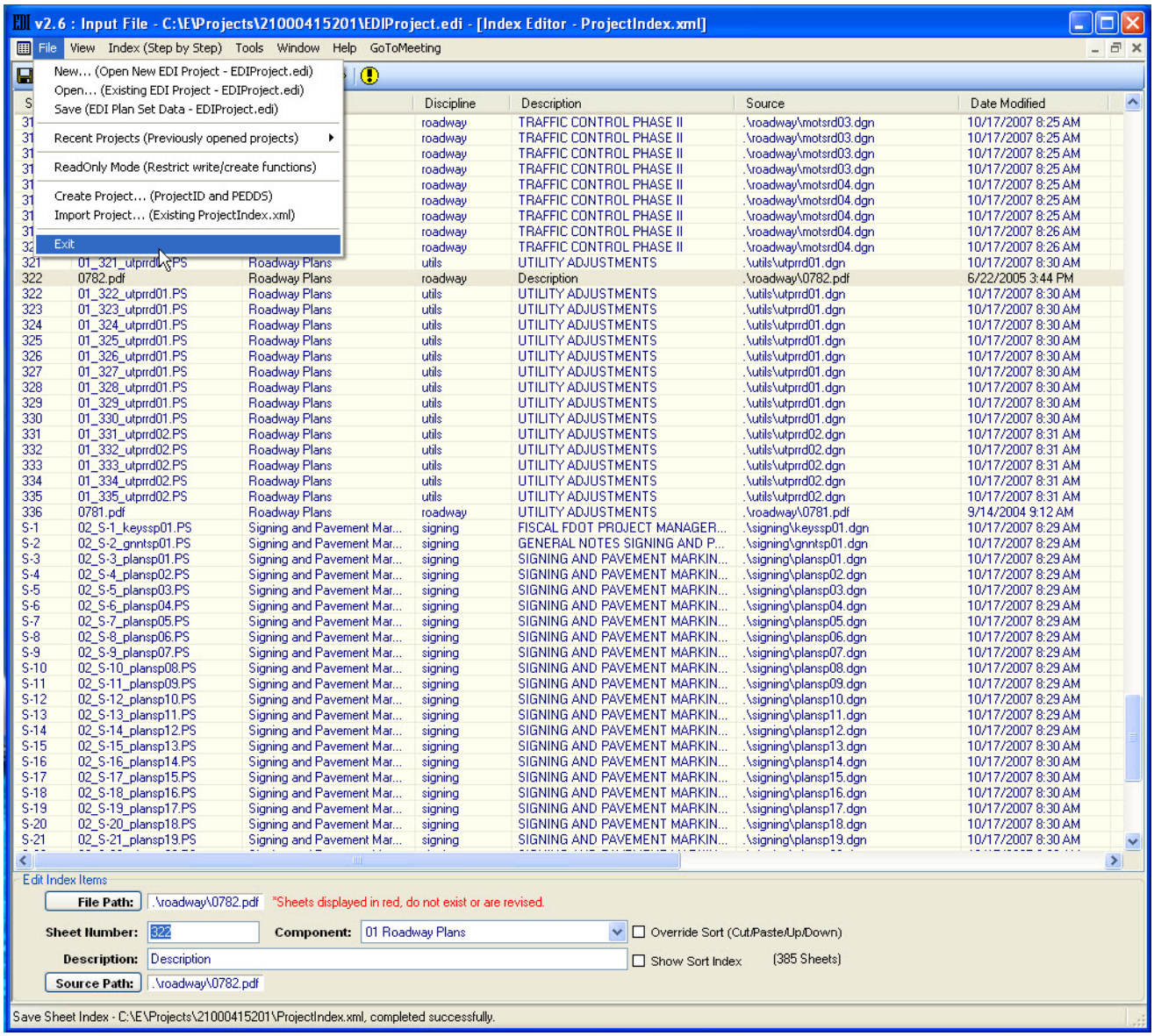
EDI2 – Save Sheet Index

6. EDI - Save Project Index opens. Click the **OK** button to save the Index, **ProjectIndex.xml**.



EDI - Save Project Index

7. EDI2 reappears in the Index Editor view. From EDI 2, select **File** > **Exit** to close EDI2.



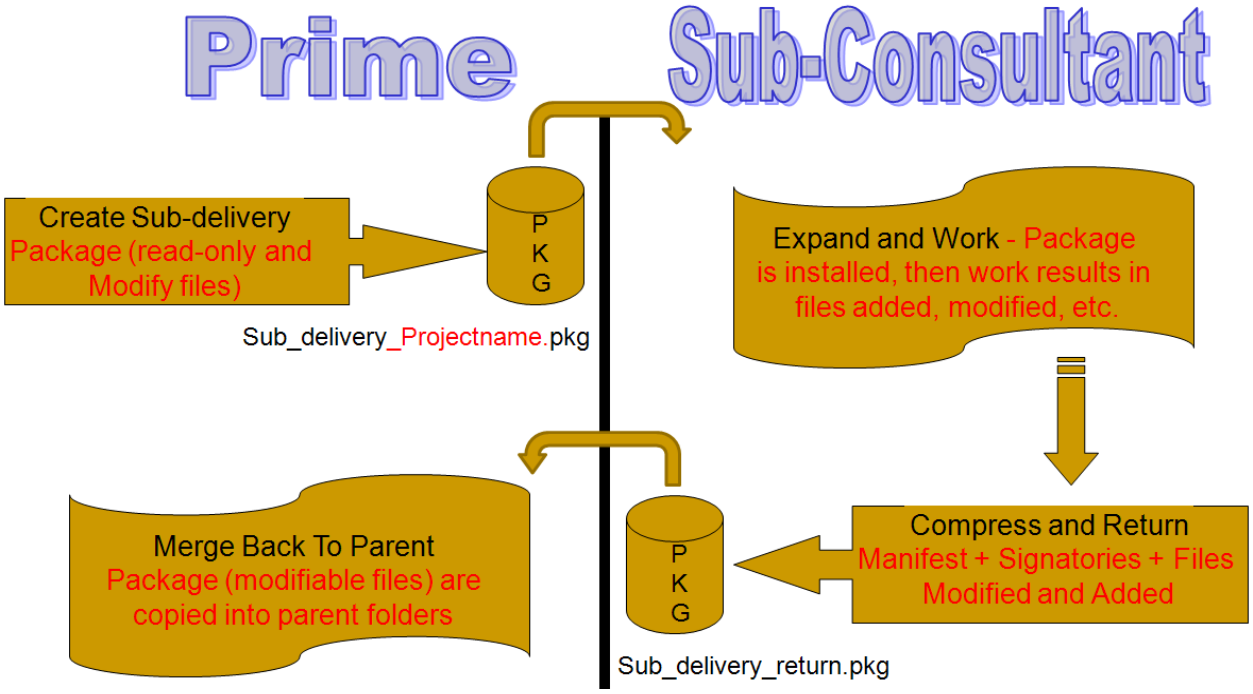
EDI2 - Exit

Note This concludes the exercise on inserting non Postscript Image files into an index manually. See **Section 3, Production Phase** of this manual for instructions to complete the electronic delivery.

Section 7.2 PEDDS - Partial Project

PEDDS provides the ability for sub-project file management. The Prime Consultant can designate folder(s) for a Sub Consultant to work in and use those for reference. The tool also allows the Prime Consultant to package the designated work folders and files and any additional folders as read-only reference data to the Sub Consultant.

The Sub Consultant uses the same tool to deliver the package back to the Prime Consultant. PEDDS does not overwrite any data changed in the folders marked read-only back into the original project.



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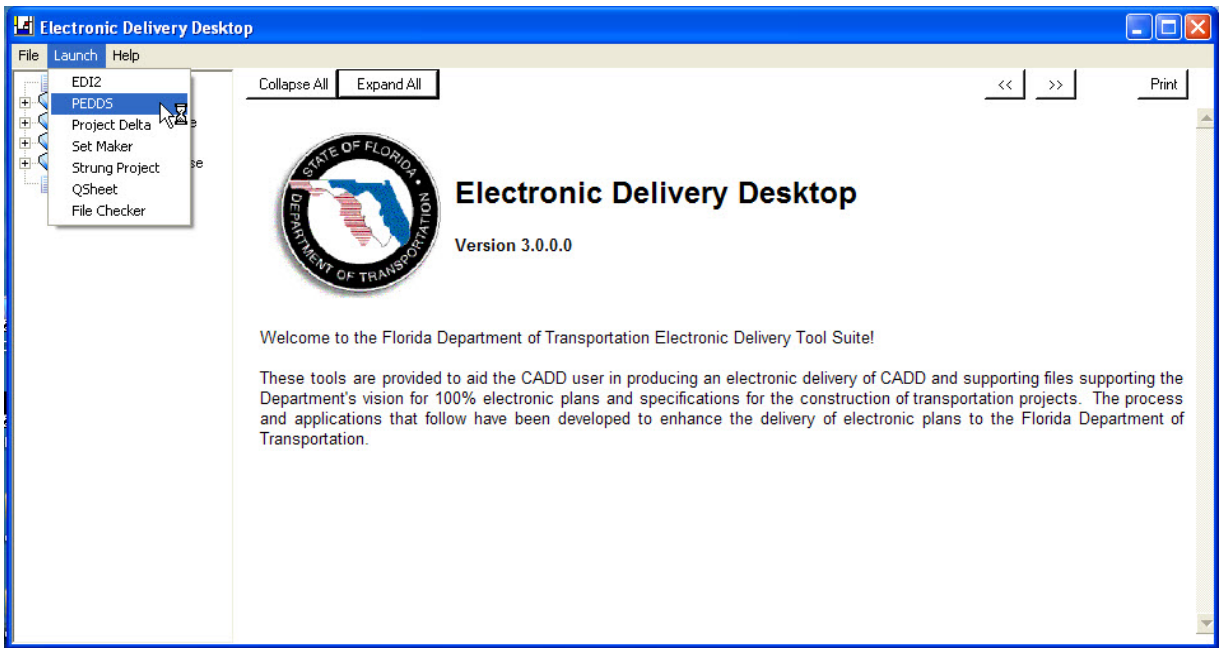
Exercise 7.2 PEDDS - Partial-Project Package

For the purposes of this exercise, use Project **99728125201**. This is a small project in Phase 1of Production. A surveying Sub Consultant has been hired and they will work in the Survey folder and the contents of the roadway folder will be delivered as reference.

To Create a PEDDS Partial-Project Package

The Prime Consultant initializes the transaction by first building a Partial-Project.

1. From Electronic Delivery Desktop, select **Launch** > **PEDDS**.



Electronic Delivery Desktop – Launching PEDDS

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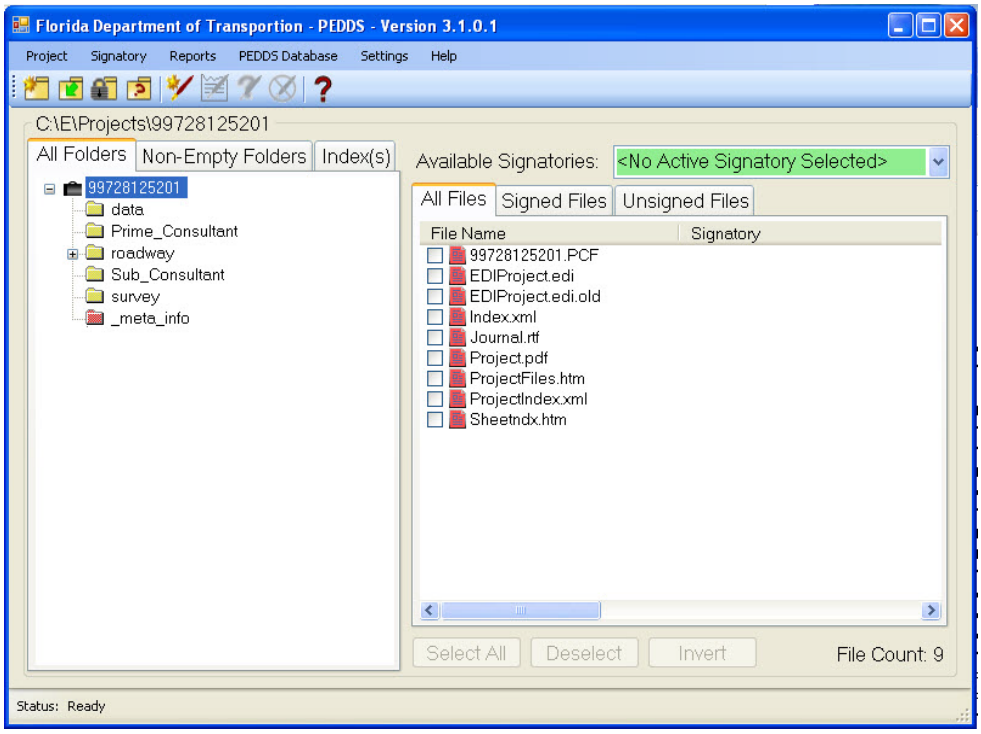
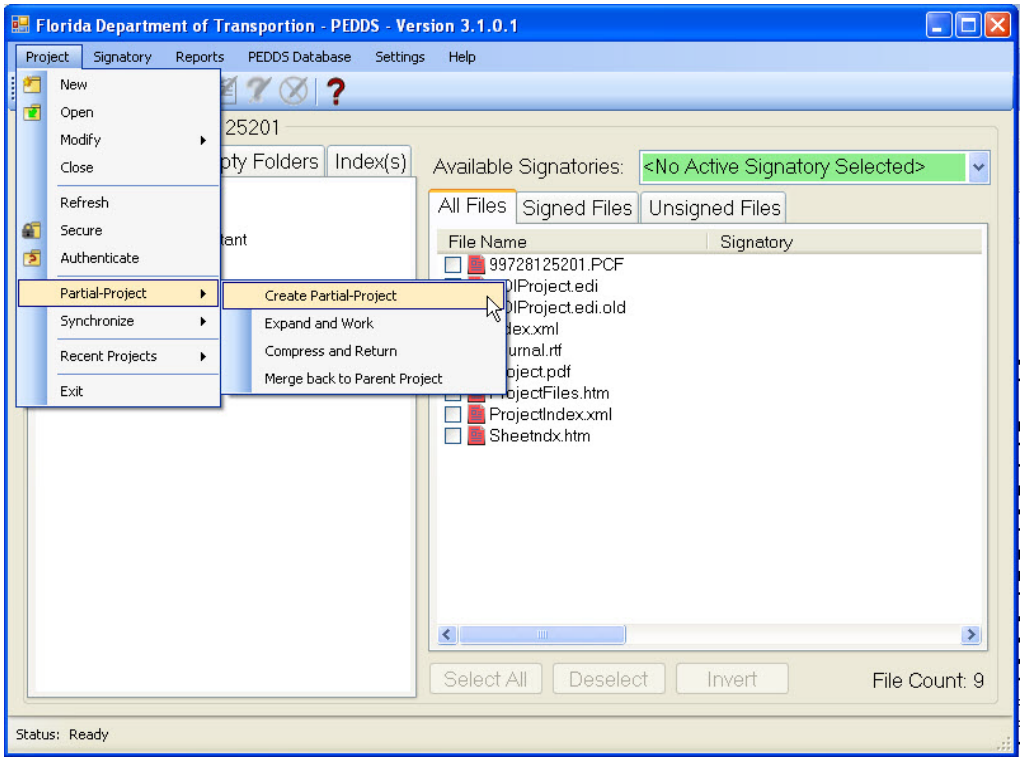
2. From Florida Department of Transportation - PEDDS, open Project **99728125201**.



Florida Department of Transportation - PEDDS

3. From Florida Department of Transportation - PEDDS, select **Partial-Project** > **Create Partial-Project**.



PEDDS - Sub-Delivery

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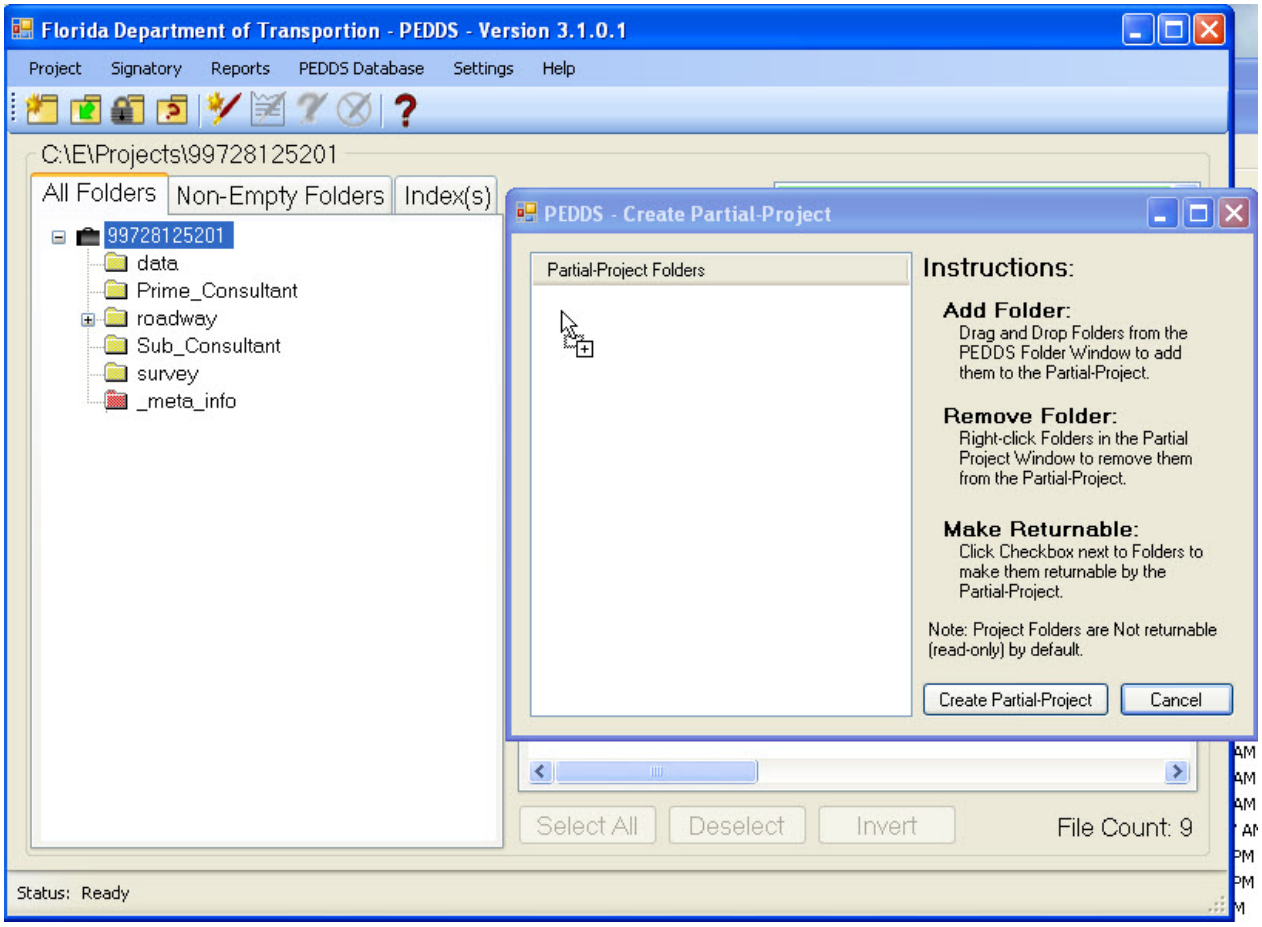
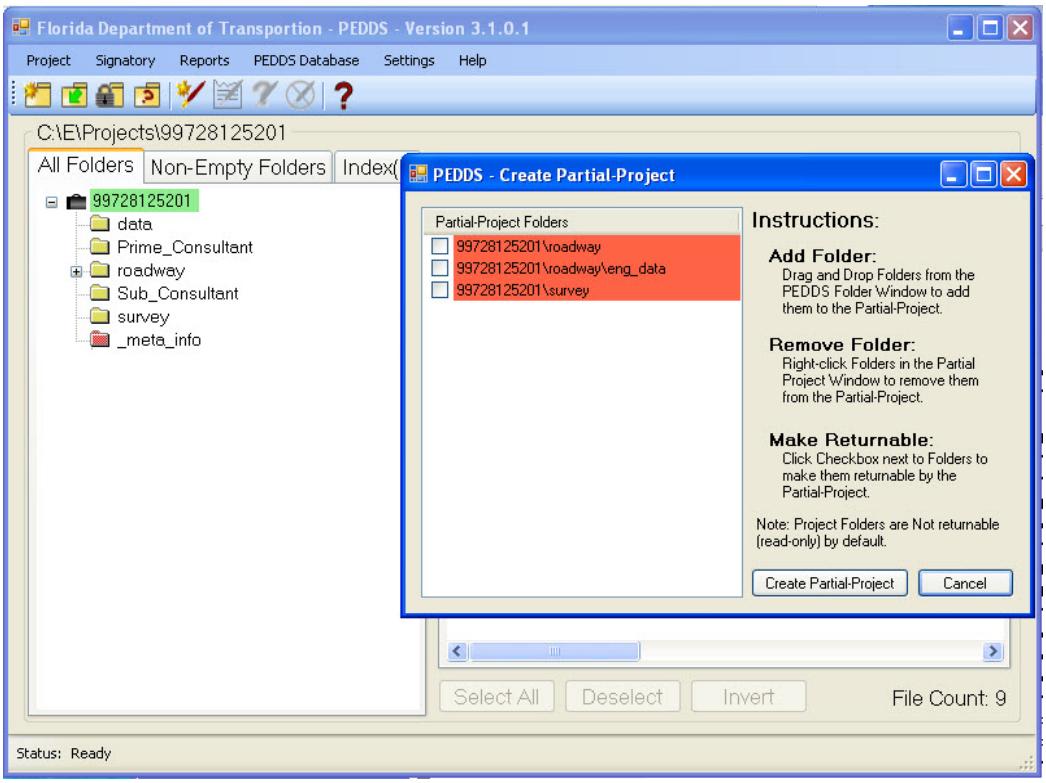
4. Create Partial-Project dialog box opens. As the instructions indicate, folders can be added by dragging and dropping them from the PEDDS folder window on the left to the Create Partial-Project dialog box on the right or they can be removed by right-clicking the folders in the Create Partial Project dialog box.

   For the purposes of this exercise, drag and drop **Survey** and then **Roadway** from the PEDDS folder window on the left to the Create Partial-Project window on the right. These folders are added to **Sub-Delivery Files**.

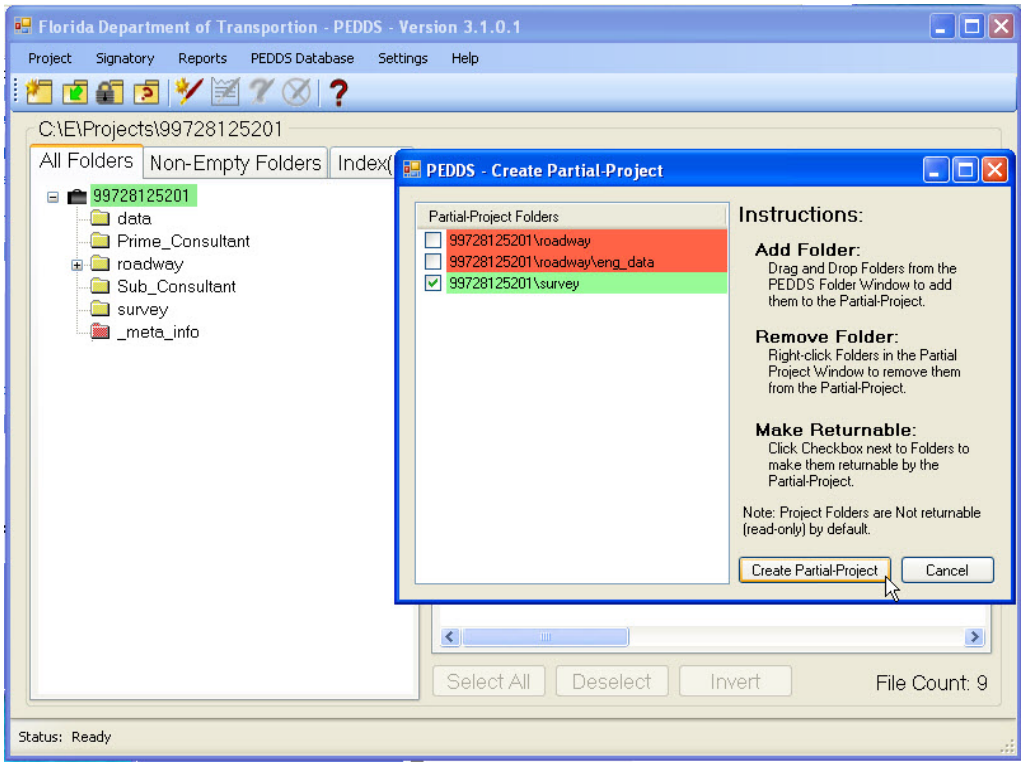


Create Partial-Project



Partial-Project Files

5. From Partial-Project Folders, populate the **Survey** checkbox to make it writable for the Sub Consultant.



Partial-Project Files

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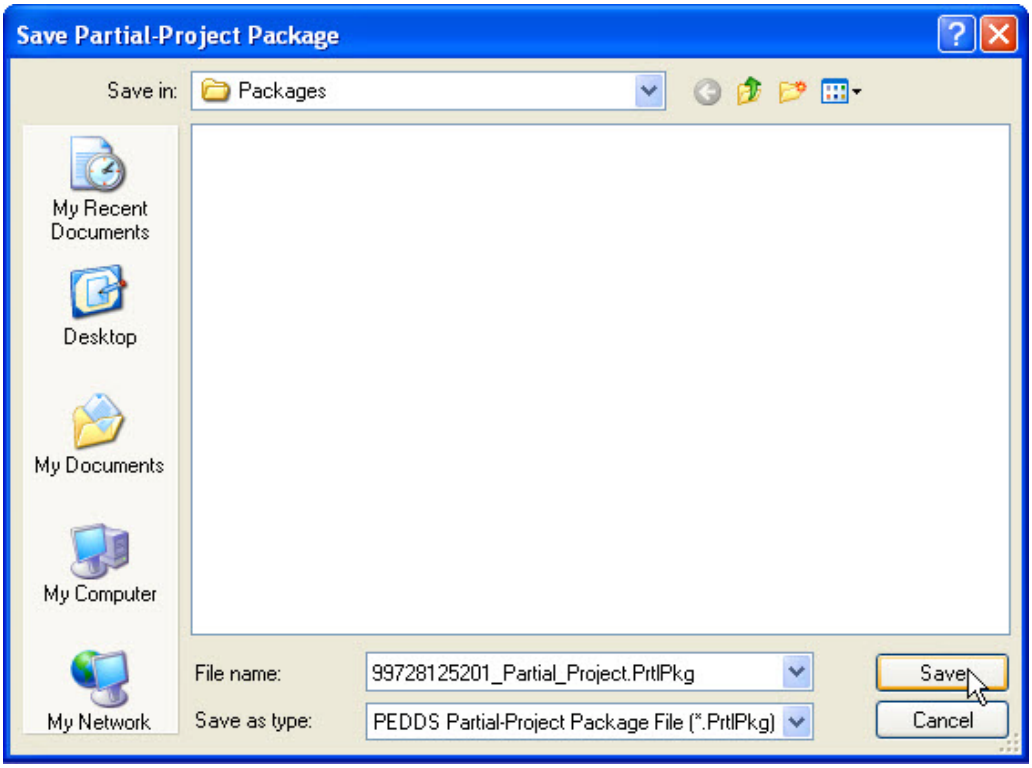
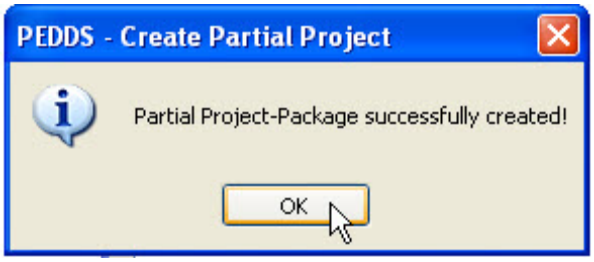
6. Click the **Create Partial-Project** button.
7. Save Partial-Project Package opens. In order to specify which folder the Partial-Project Package needs to be saved in, go to **PEEDS>Settings>Click User Settings**.
8. For this exercise, go to **User Settings**, click the browse button which is located to the right of the package save directory, navigate to **C:\E\Projects** and create a folder named **Packages**. (The User Settings can also be used to specify the locations of the Project Lookup Directory and the Error Log Directory).



Save As

9. Click the Save button. The file Partial_Project.PrtPkg is saved. The "create partial project" dialog box appears. Click ok. PEDDS reappears.



Create Partial Project package successful creation message.

Note PEDDS compresses the selected folder and files and creates a Sub Delivery Manifest. This information is saved to the file **_partial_project.prtpkg**. This compressed file can be sent by e-mail, depending on file size, to the Sub Consultant. Also note that only the folder structure selected is transmitted to the sub-consultant.

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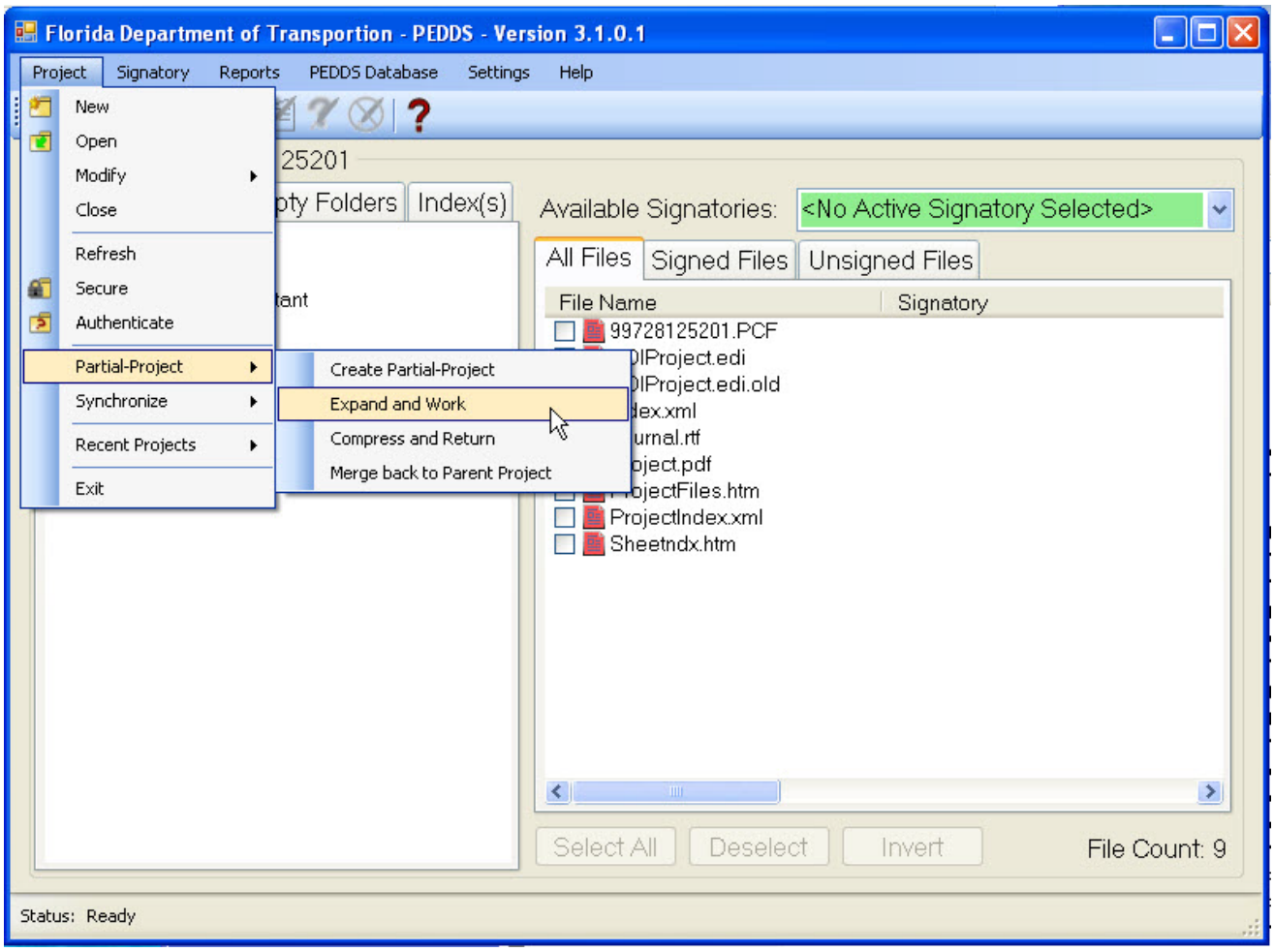
To receive the Partial-Project by the Sub Consultant

Once the file, **_partial_project.prtpkg** is received, the Sub Consultant can expand and start working on the project using the directory structure the Prime Consultant sent.

1. Launch PEDDS. No project needs to be selected.
2. From Florida Department of Transportation - PEDDS, select **Project** > **Partial-Project** > **Expand and work**.



PEDDS - Expand and work.

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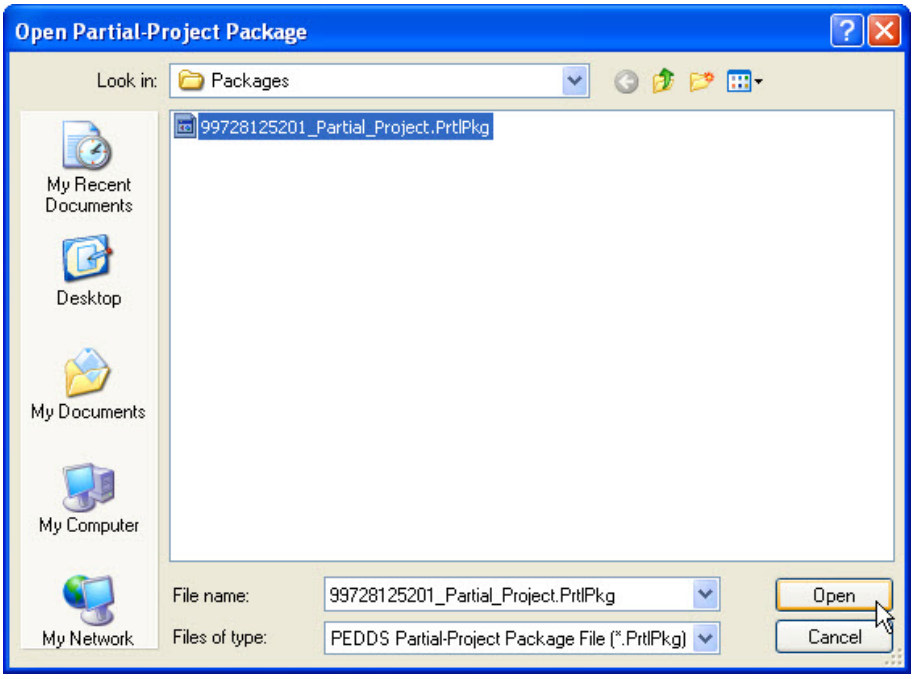
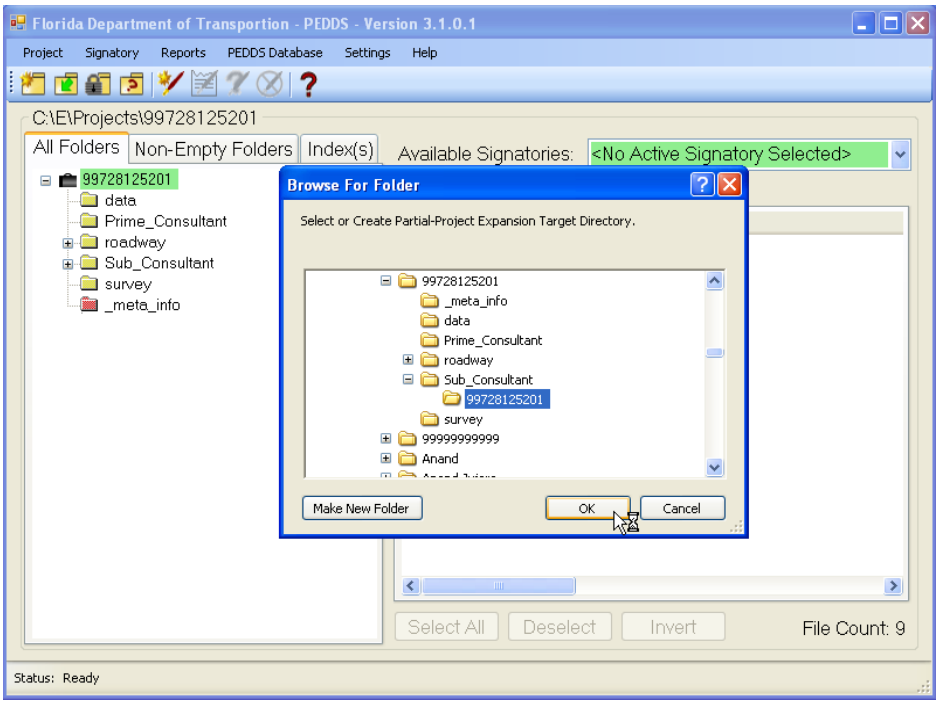
3. Open Partial-Project **displays**. Navigate to the location where the file **_partial_project.prtpkg** sent by the Prime Consultant is saved and click the **Open** button.



Open Partial-Project

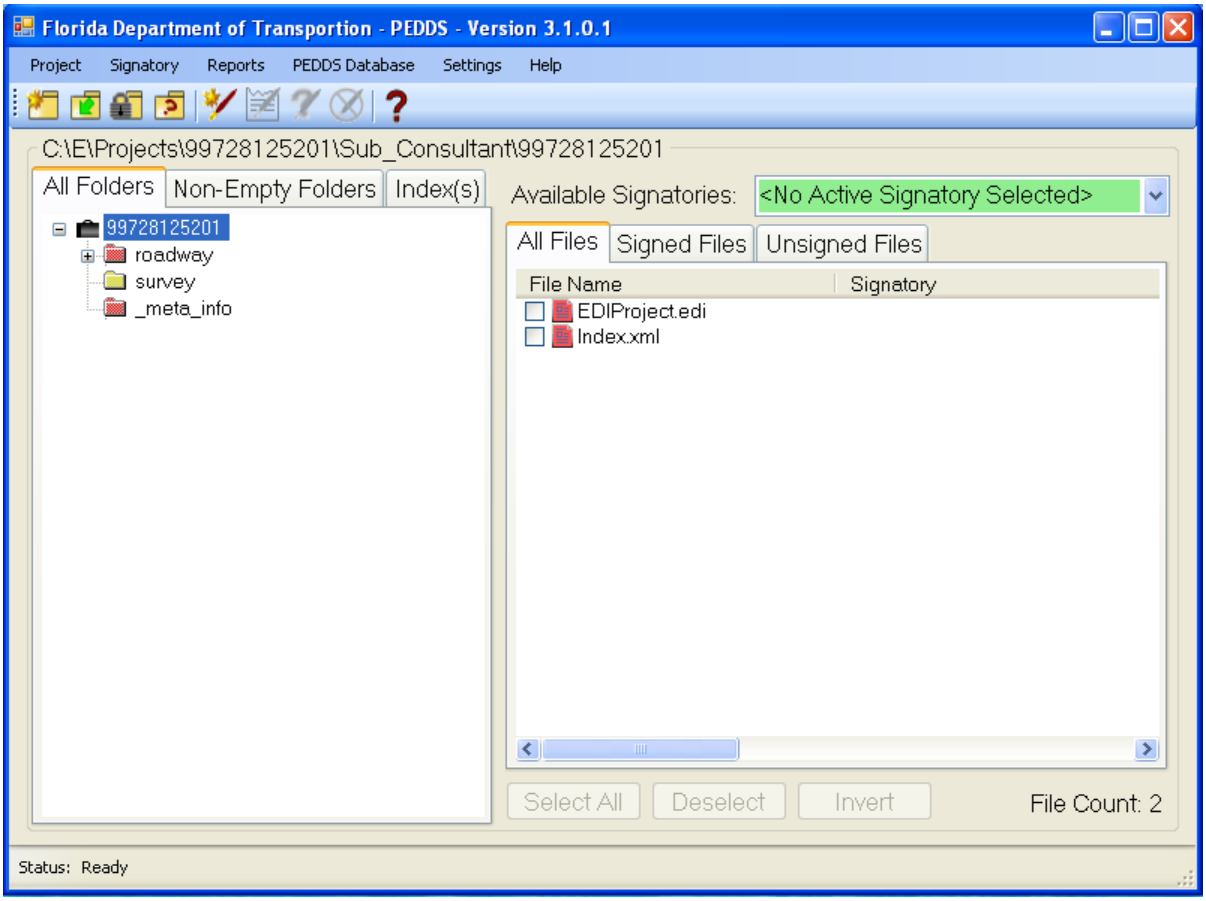
4. Partial Project expansion begins and Browse For Folder opens. If not already available, create two new folders named **Sub_Consultant** and **99728125201** under the current project location: **C:\e\projects\99728125201\Sub_Consultant\99728125201**.



Select Target Folder

5. Partial-Project Expansion continues. Upon completion of the project expansion, the project is loaded into PEDDS. The sub-consultant can now work on the project.

   In this example, work should be saved to the **\Survey** folder by the Sub Consultant using the **\Roadway** folder for **reference**. No work will be returned to the Prime in any other folder than the **\Survey** folder.



Florida Department of Transportation – PEDDS

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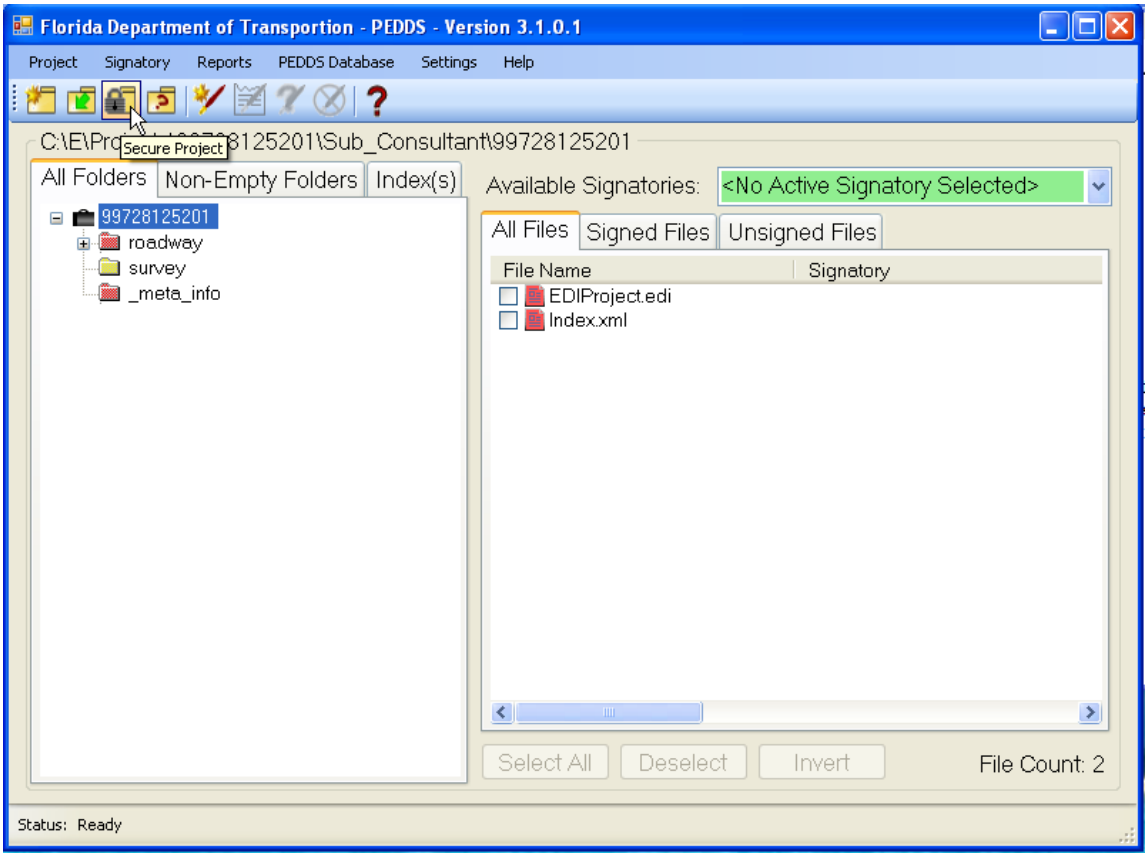
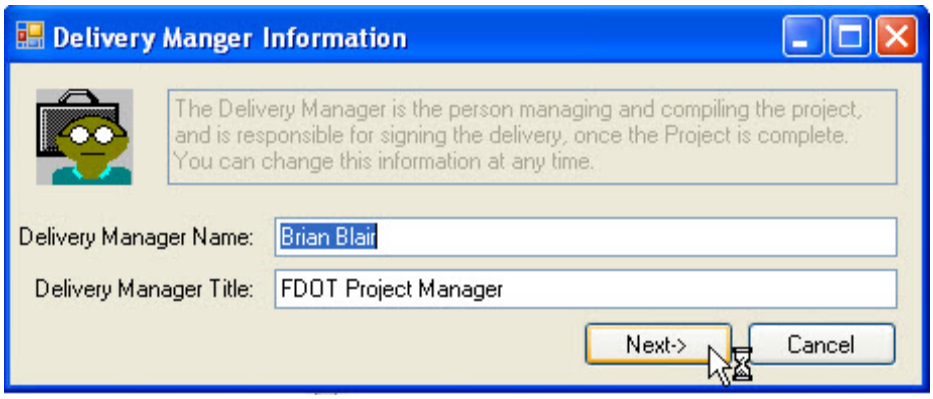
6. Click the **Secure Project** icon.



Secure the Current Project

7. Delivery Manager Information opens. Modify the displayed information as required and click the **Next** button.



Delivery Manager Information

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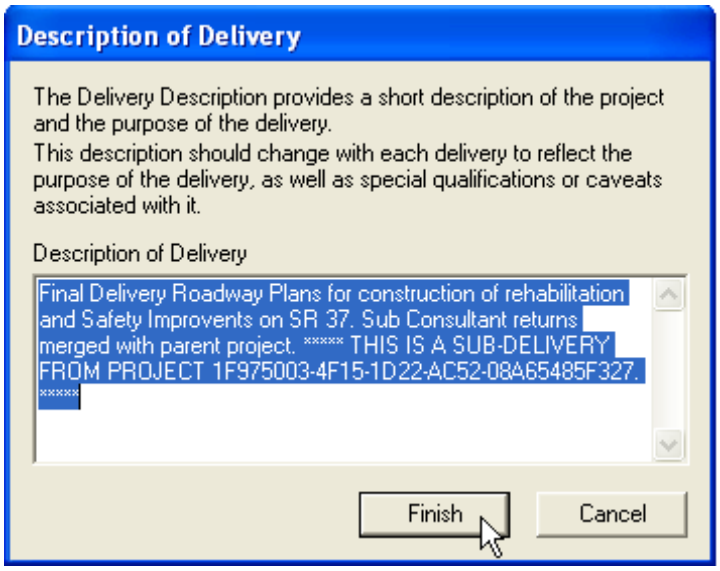
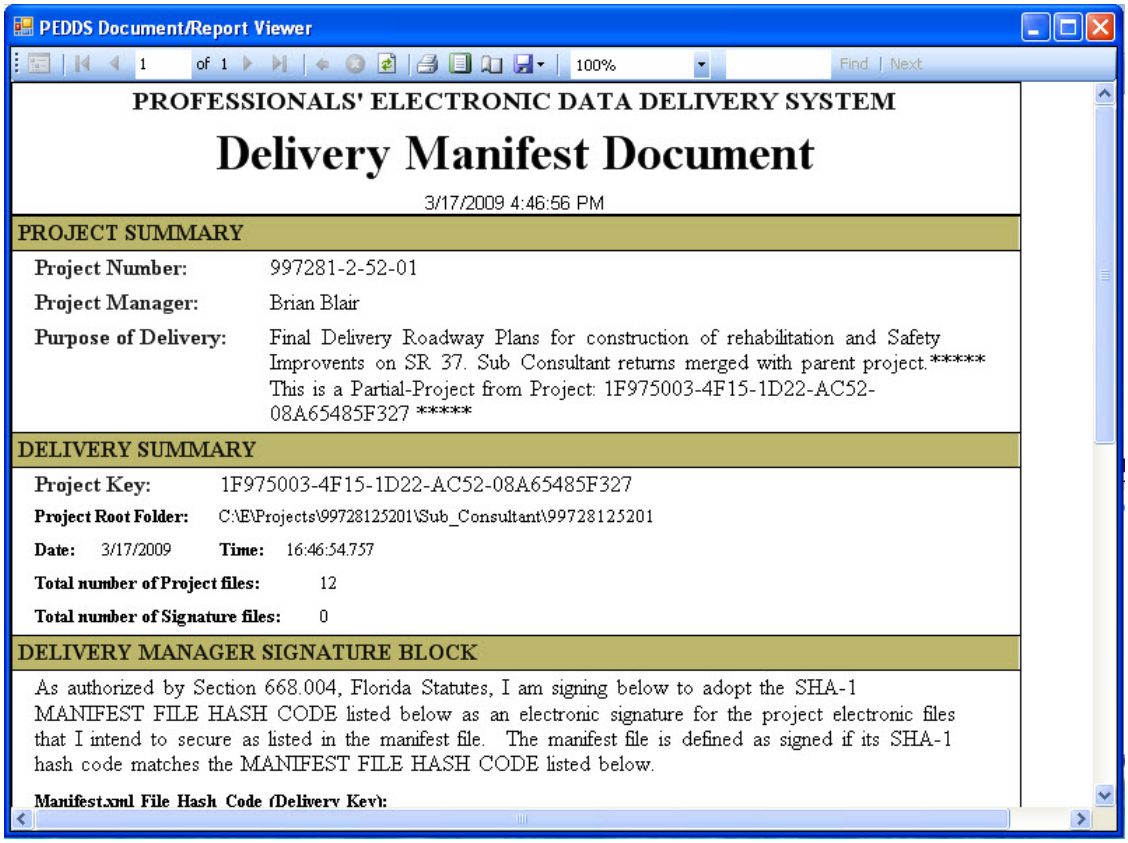
8. Description of Delivery opens. Enter the required description.

Note The description details the purpose for the securing of the project.



Description of Delivery

9. Click the **Finish** button and the Delivery Manifest Document opens. Click **exit** (or **Print in order to print the document**) .



Report Display

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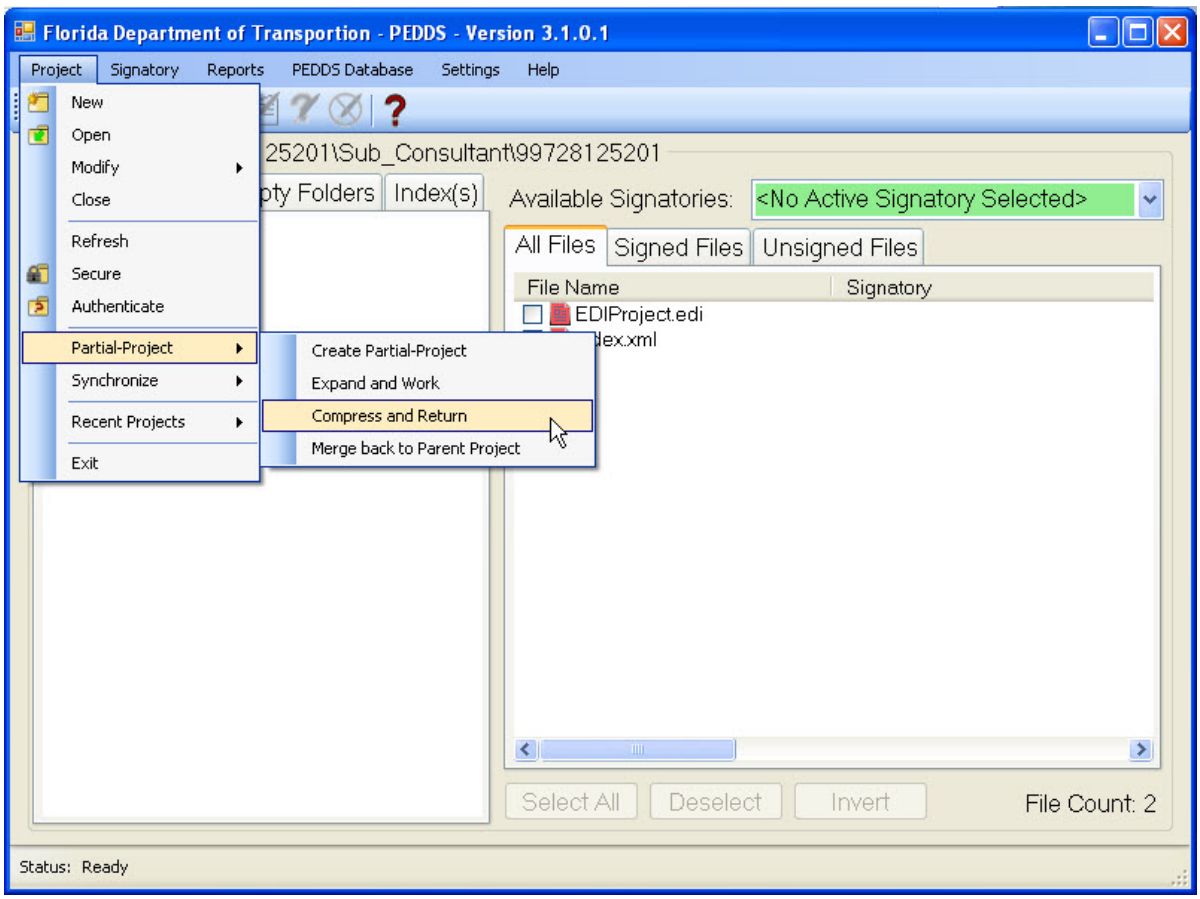
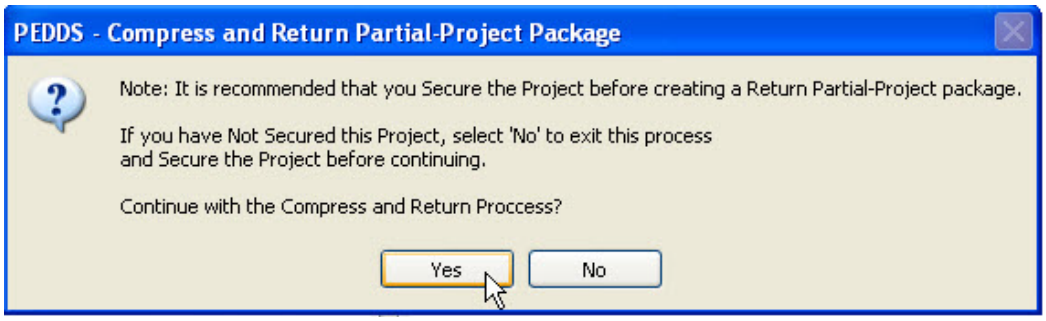
To compress and return the Partial-Project to the Prime Consultant

Upon Completion of the project, the Sub Consultant uses PEDDS to compress the project and return it to the Prime Consultant.

1. Launch PEDDS and open the project.
2. From Florida Department of Transportation - PEDDS, select **Project** > **Partial-Project** > **Compress and return**.



Compress and return.



PEDDS Compress and Return Partial Package Secure project verification

Important The partial project must be secured prior to running the Compress and return routine.

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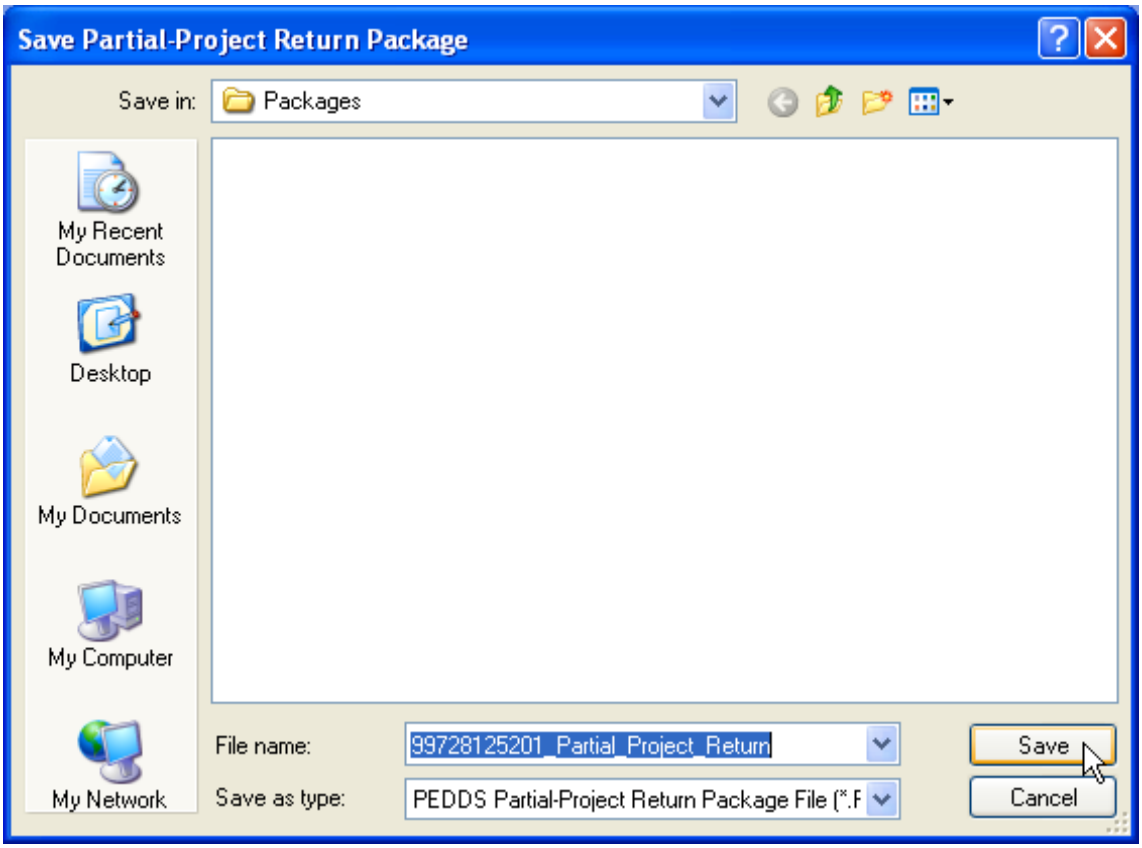
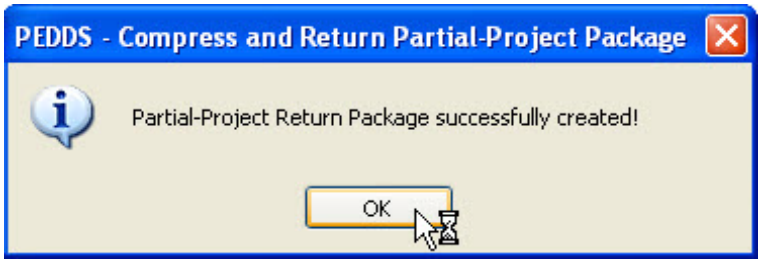
3. Save As opens. The **C:\E\Projects\Packages** folder opens. Click the **Save** button. The file **99728125201_partial_project_return.prtpkg** is saved.



Save Partial-Project Return Package

4. PEDDS Compress and Return Partial-Project Package confirmation dialog box appears.



PEDDS Compress and Return Partial-Project Package

5. Click OK. PEDDS reappears.
6. Exit PEDDS.

Note PEDDS compresses the selected folder and files and creates a Delivery Manifest. This information is saved to the file **sub-delivery_return.pkg**. This compressed file can be sent by e-mail, depending on file size, back to the Prime Consultant.

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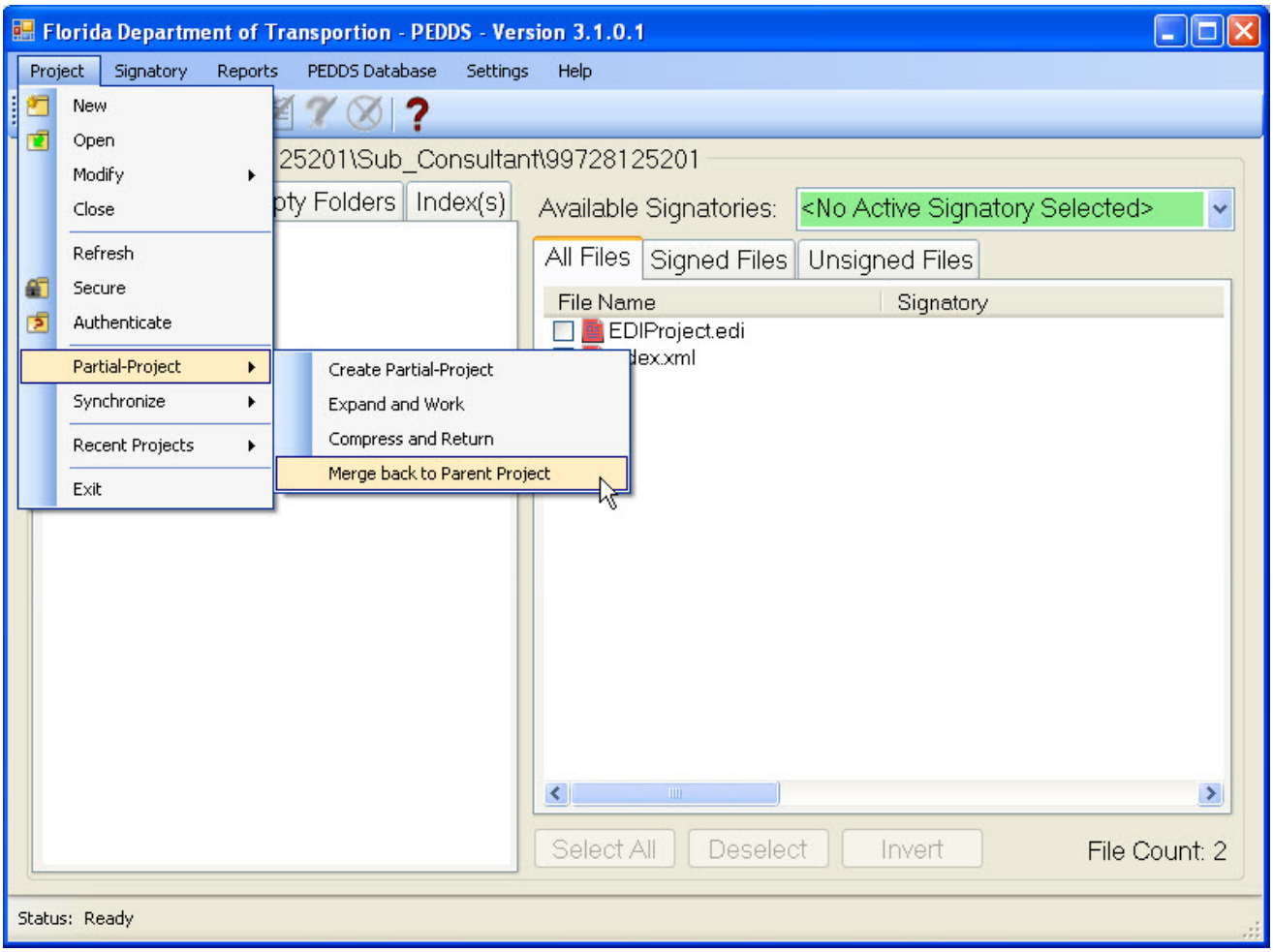
To merge the Partial-Project back into the Parent Project

The Prime Consultant can now finalize the Partial-Project process by merging the Sub Consultants returns back into the parent project.

1. Launch PEDDS and open the parent project.
2. From Florida Department of Transportation - PEDDS, select the menu option **Project** > **Partial-Project** > **Merge back to Parent Project**.



Merge back to Parent Project

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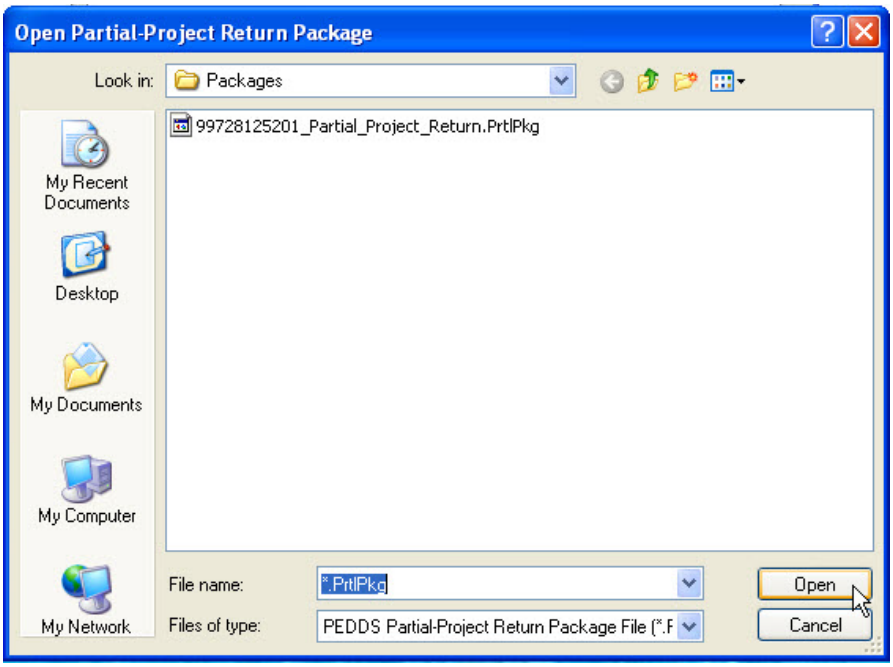
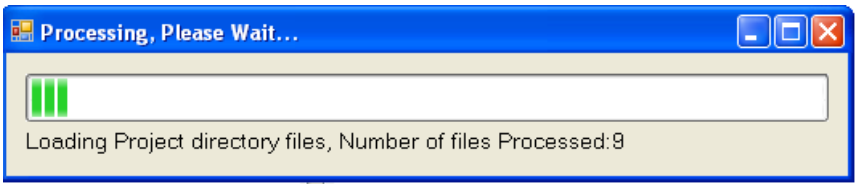
3. OpenPartial-Project Return Package displays. Navigate to the location where the file **99728125201_partial_project_return.PrtPkg** sent by the Sub Consultant is saved and click the **Open** button.



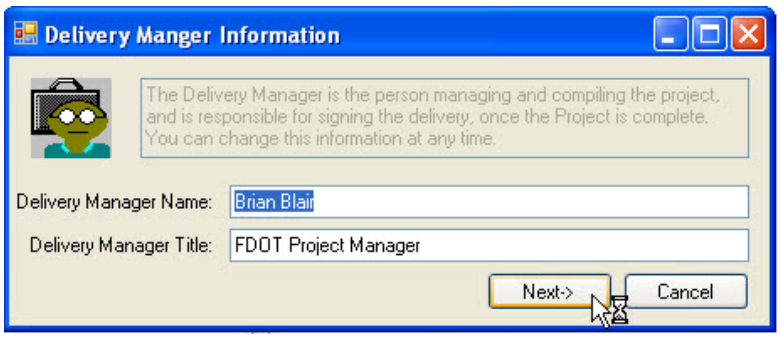
Open Partial-Project Return Package

4. Pedds opens. Click the **Yes** button to continue.



PEDDS – Securing/Processing Merge back to Parent Project

5. Delivery Manager Information opens. Modify the displayed information as required and click the **Next** button.



Delivery Manager Information

6. Description of Delivery opens. Enter the required description. The description details the purpose for the securing of the project.

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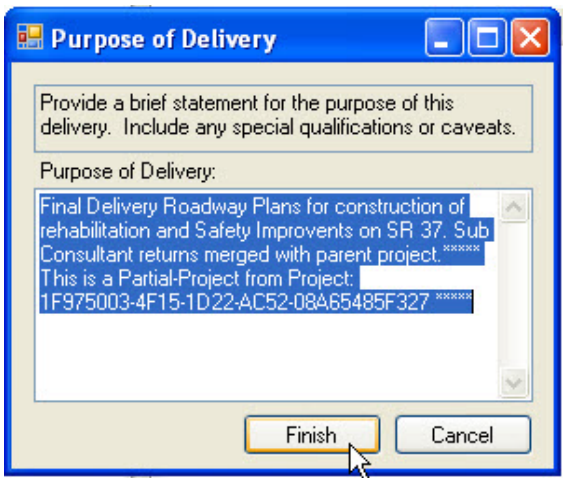
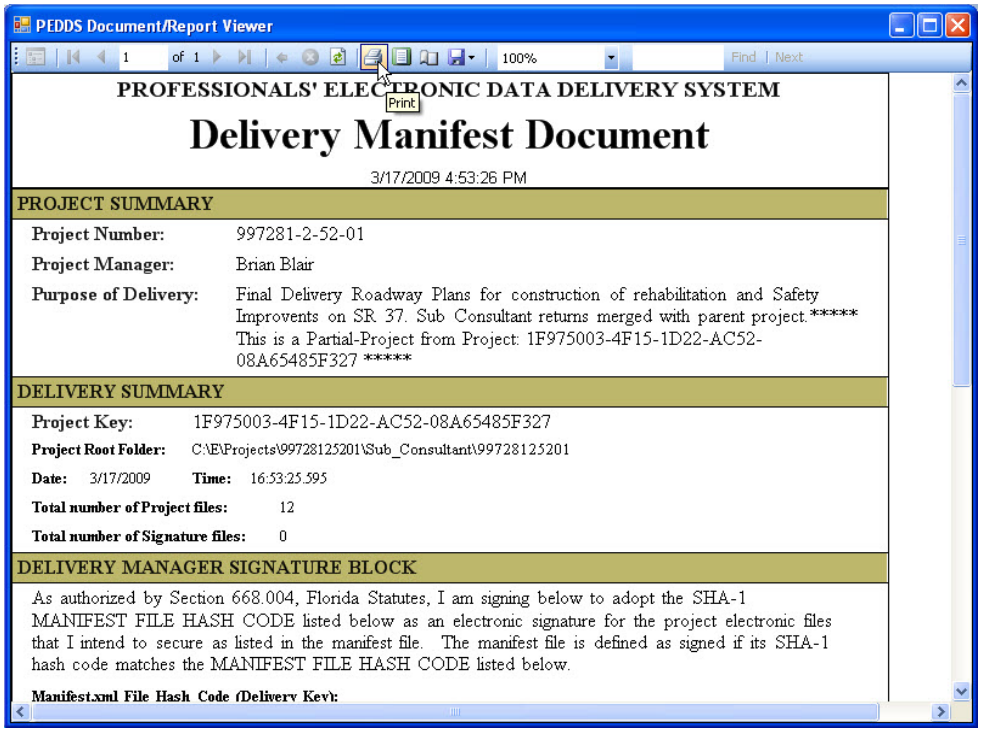


Purpose of Delivery

7. Click the **Finish** button. PEDDS merges the **Partial-Project** into the parent project and Report Displays opens. From Report Display, click the **Print** button.



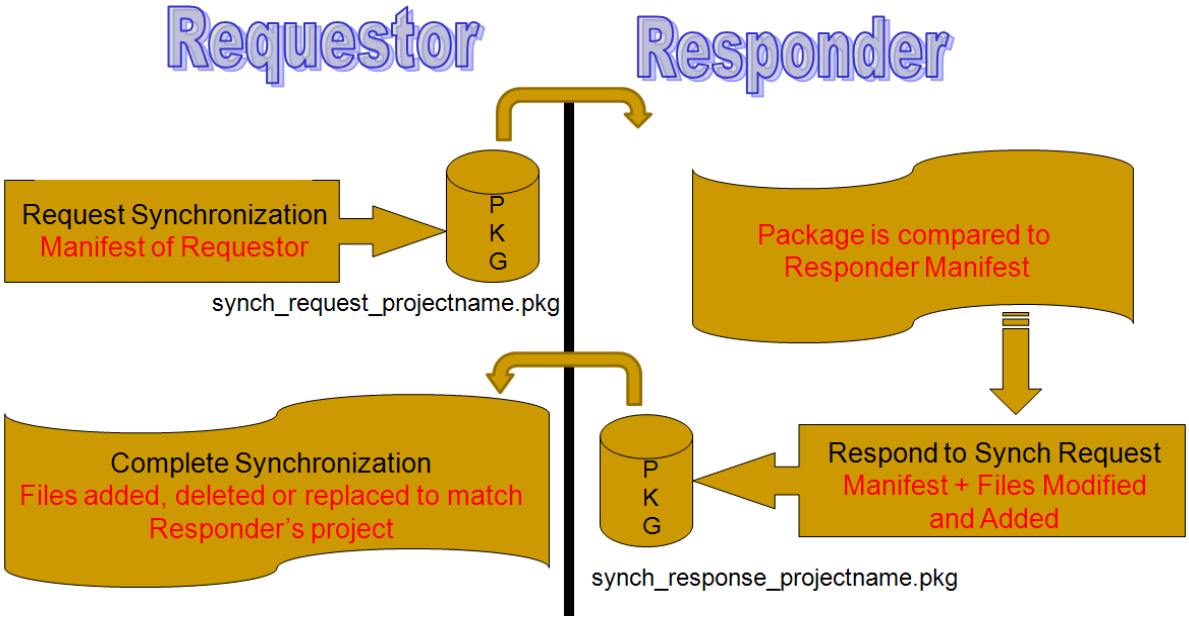
Report Display - Delivery Manifest Document

8. Click **Exit** to close the PEDDS Document/Report Viewer.
9. When Florida Department of Transportation - PEDDS re-appears, **Exit** the program.

Important PEDDS merged the Partial-Project into the parent project. Since the survey folder was the only folder selected as writable, PEDDS only merged the files from this folder into the parent project. If the Sub Consultant, added, modified or deleted files from the roadway folder, as this folder was originally marked as read-only, PEDDS would ignore this folder during the merging process.

Section 7.3 PEDDS - Synchronize

PEDDS provides the ability to make a requestor's and responder's project data exactly the same. This process is called synchronization. Note that during this process, the Requestor's version of project data is made to match exactly the Responder's version of the project data. That is, only the files that the Responder has will be on the Requestor's version of the project after synchronization.



Exercise 7.3 Synchronizing a Project

The following procedure is used to synchronize a Project between two project teams (Requestor and Responder).

To Synchronize a Project

The requestor for this example is a Sub Consultant who needs to verify that their project files are up to date with the Prime Consultant's project files. The requestor should make sure their version of the Project is secure before starting the Synchronization process.

1. The Sub Consultant opens their project in PEDDS. From Florida Department of Transportation - PEDDS, select **Project** > **Synchronize** > **Request synch**. PEDDS begins to generate the Synchronization request and then Save As opens.

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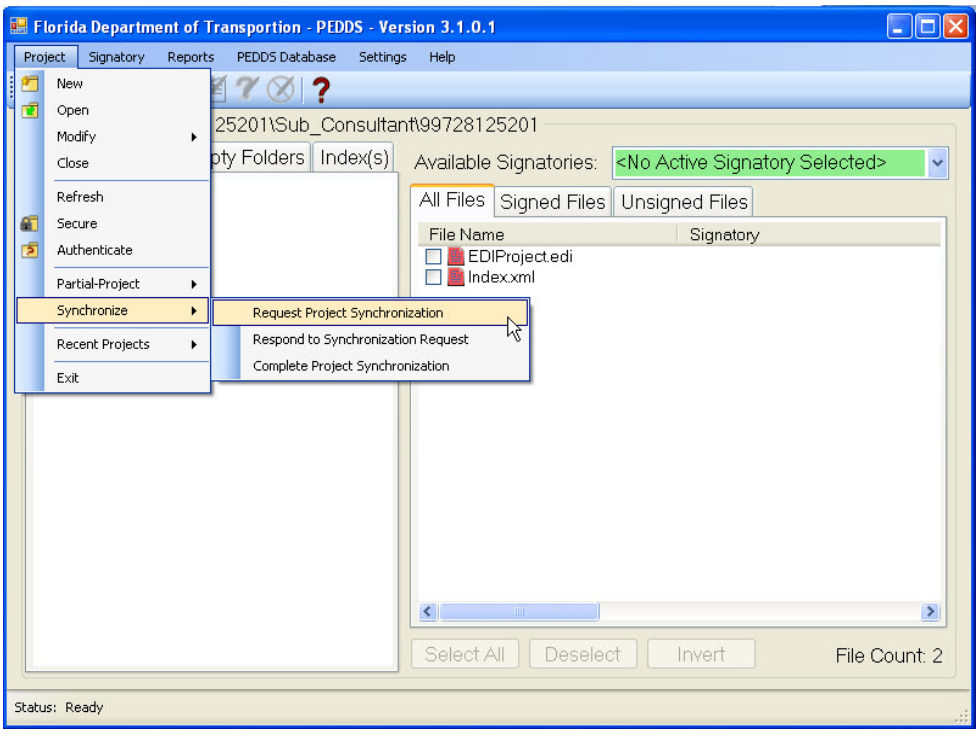
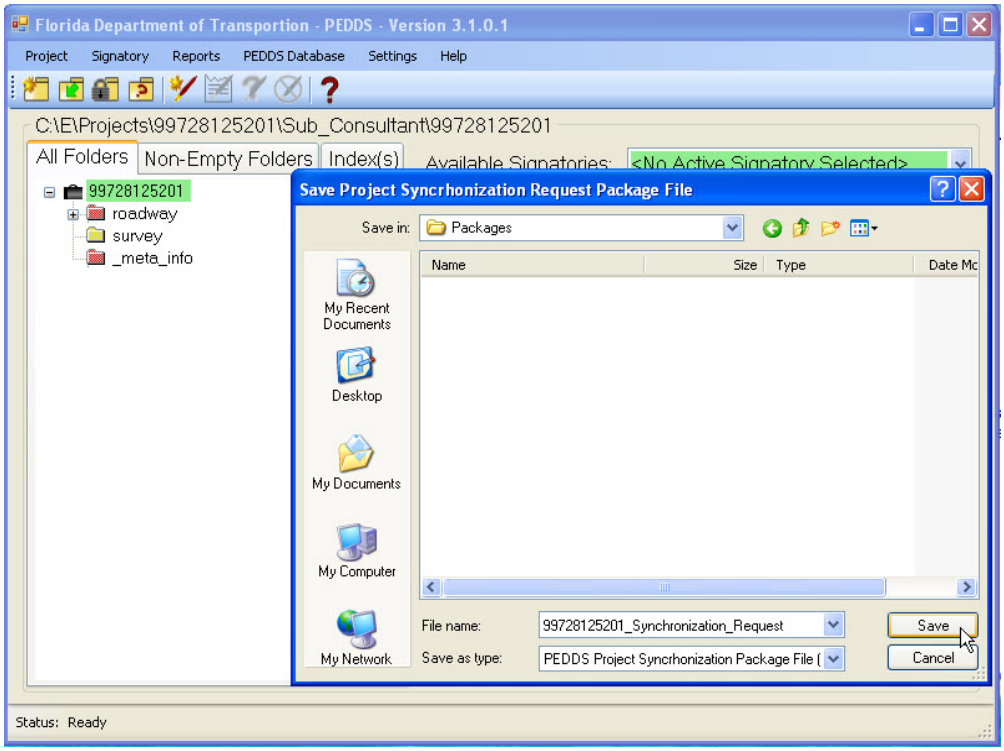


Request synch

2. From Save As, navigate to a directory to save the **synch request package**, ***.syncpkg** file and then click the **Save** button. PEDDS begins the Synchronization process by compressing and packaging a copy of the Requestor's Manifest file, and then creating a **Synchronization Request Package**.



Save As - Generating Synchronization

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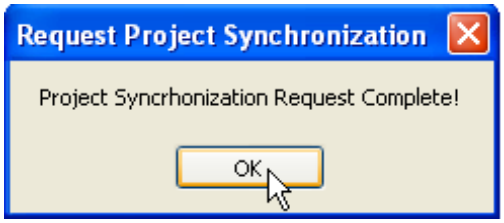
3. Request Project Synchronization dialog box appears. Click Ok.



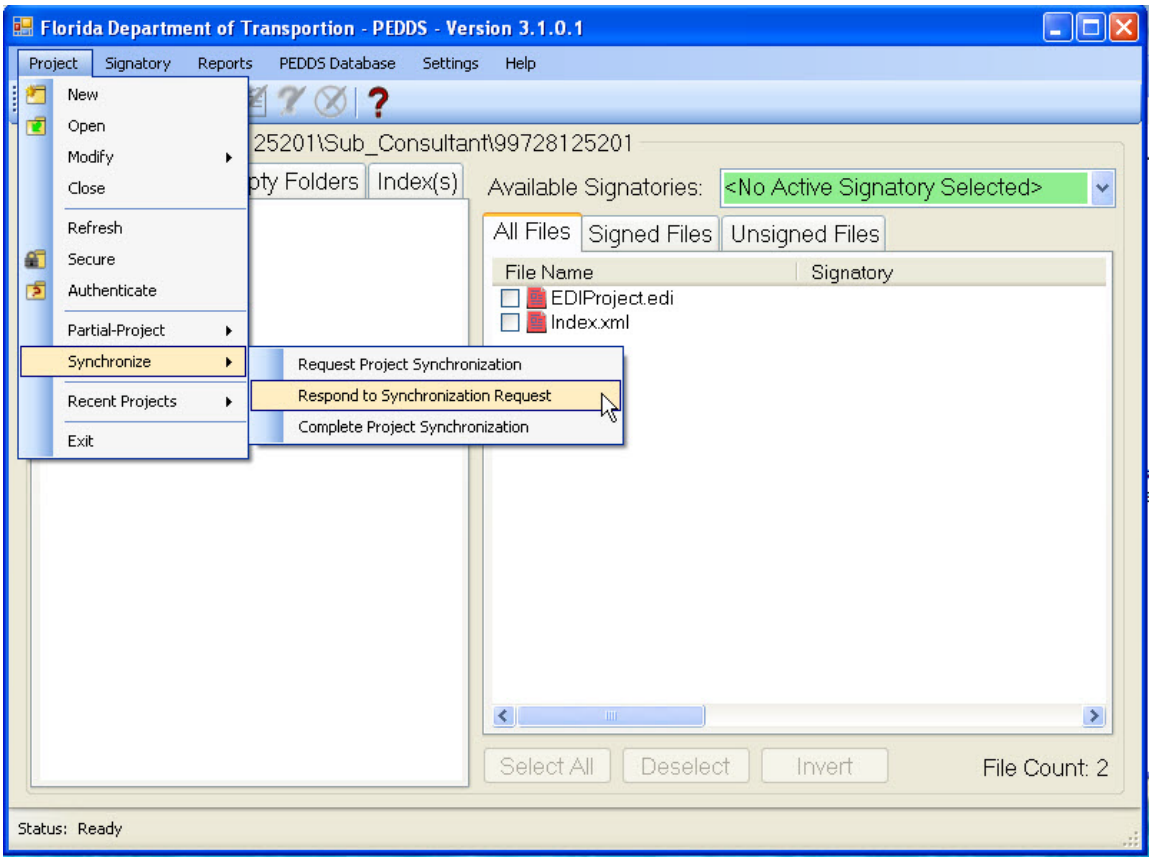
Request Project Synchronization

4. The Sub Consultant exits PEDDS and sends the newly created **synch request package**, ***.pkg** file to the Responder (Prime Consultant). Note that this request package is usually small enough to be transmitted by e-mail.

To Respond to a Synchronization Request

The responder for this example is the Prime Consultant. The Prime Consultants uses PEDDS to open the requestor's **synch request package**, ***.syncpkg** file. The responder should also have their version of the project secure before beginning the response process.

1. The Prime Consultant opens their project in PEDDS and then selects **Project** > **Synchronize** > **Respond to synch request**.



Respond to synch request.

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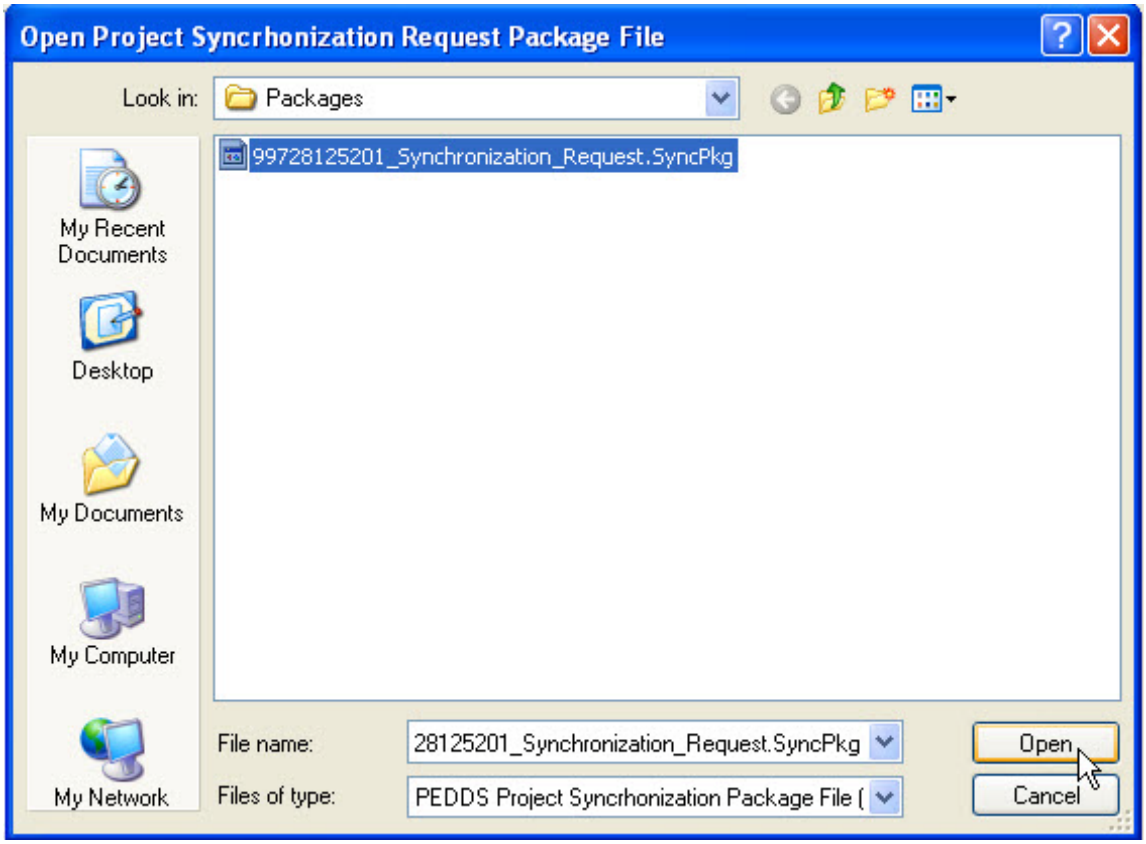
2. Open Project Synchronization Request Package File opens. Tthe Prime Consultant navigates to the location of the saved **synch request package**, ***.syncpkg** file, received from the Sub Consultant and then clicks the **Open** button.

Note PEDDS compares the contents of the package to the contents of the Responder's open project.



Open

3. Save As opens. From Save As, the Prime Consultant navigates to a directory where the synchronization response is to be saved and clicks the **Save** button.

   The newly created **synch_response package**, ***.syncpkg file** is saved. The package contains all files modified or added to the project that the Sub Consultant requested. It also includes an instruction set to remove any files on the Requestor's version of the project that are not present in the Responder's.

Note Remember, after Synchronization, both the Requestor's and Responder's version of the project are exactly the same.

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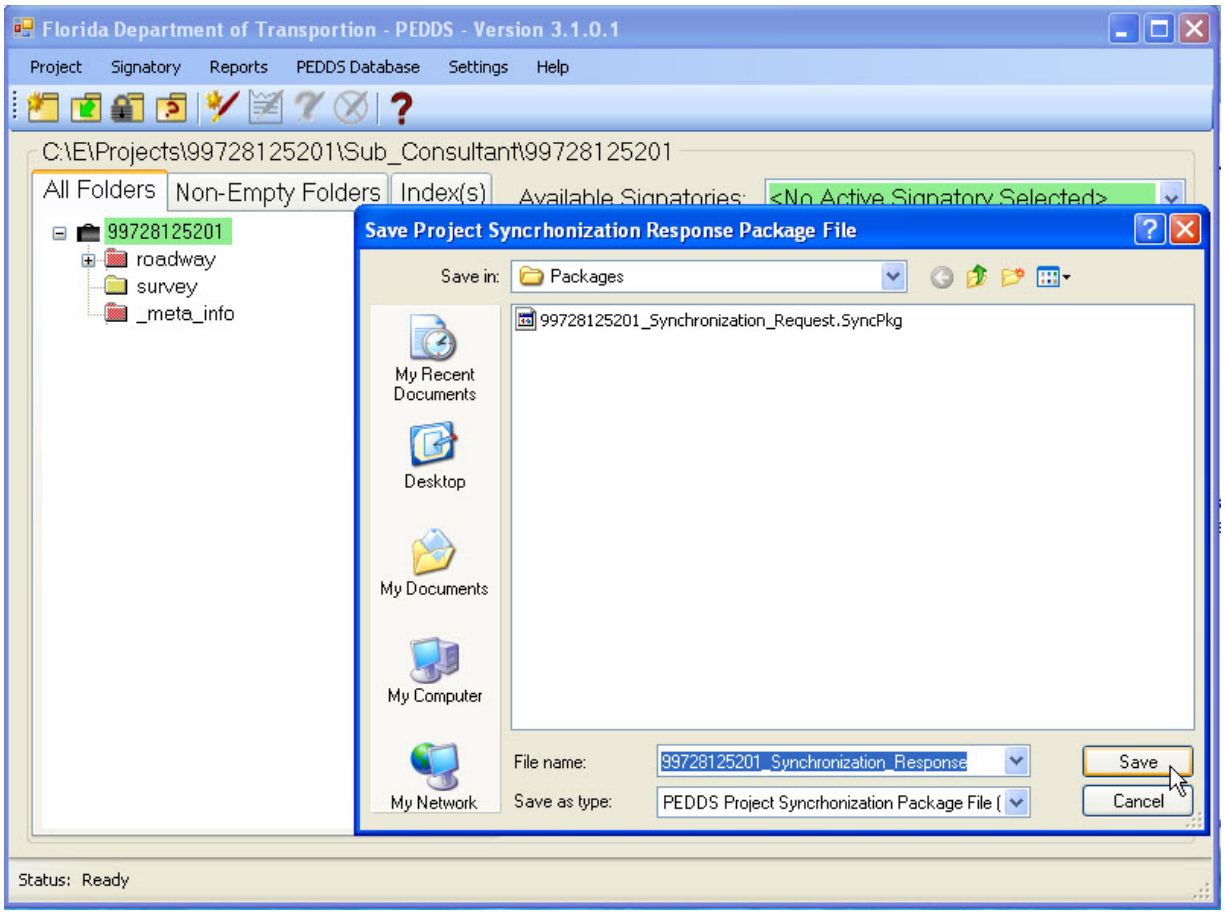
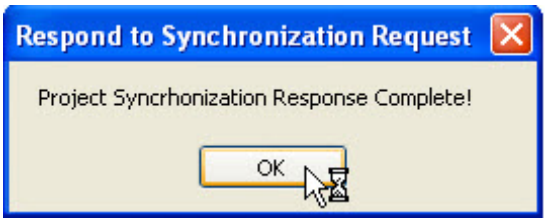


Responder Synchronization Project



Respond to Synchronization Project

4. The Prime Consultant exits PEDDS and sends the newly created **synch response package**, ***.syncpkg** file to the requestor (Sub Consultant).

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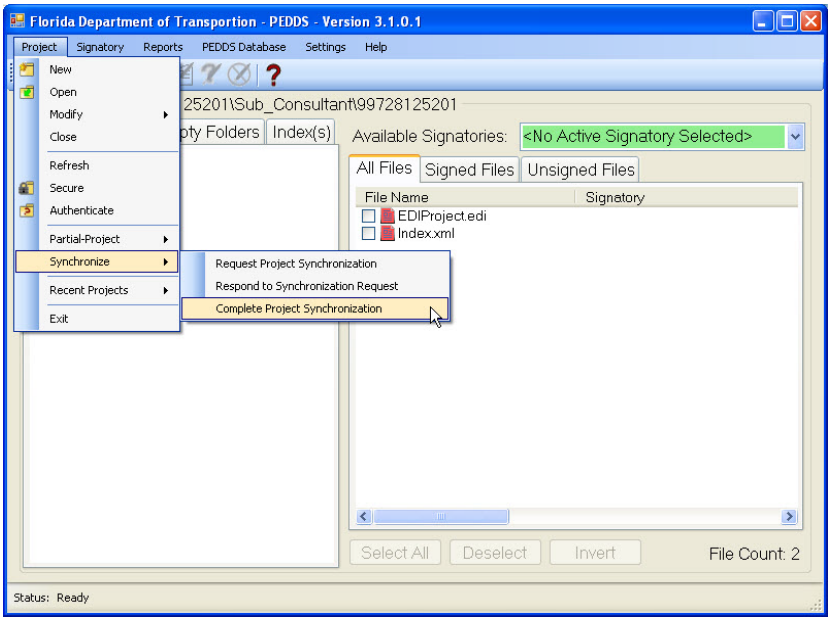
To Complete the Synchronization process

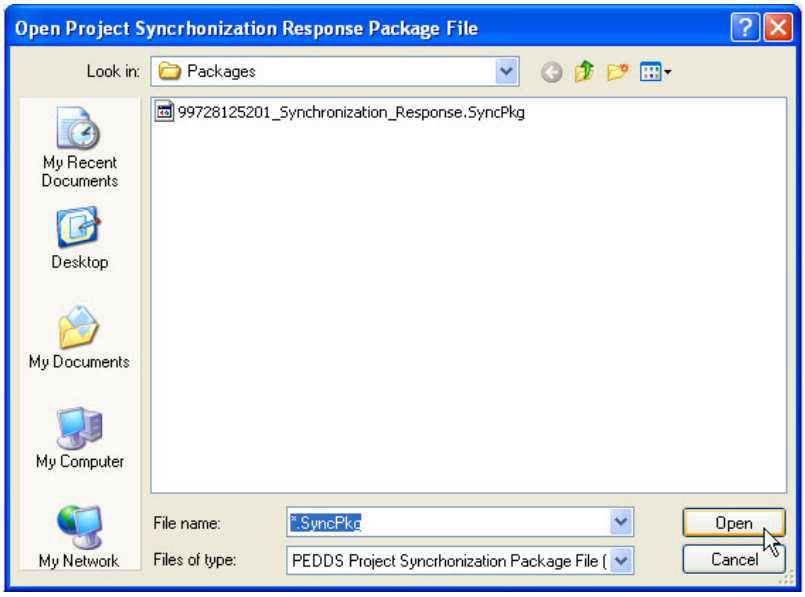
The requestor, the Sub Consultant in this example, uses PEDDS to open the responder's **synch response package**, ***.syncpkg** file.

1. The Sub Consultant opens their project in PEDDS and selects **Project** > **Synchronize** > **Complete synch**.



Complete Synch.

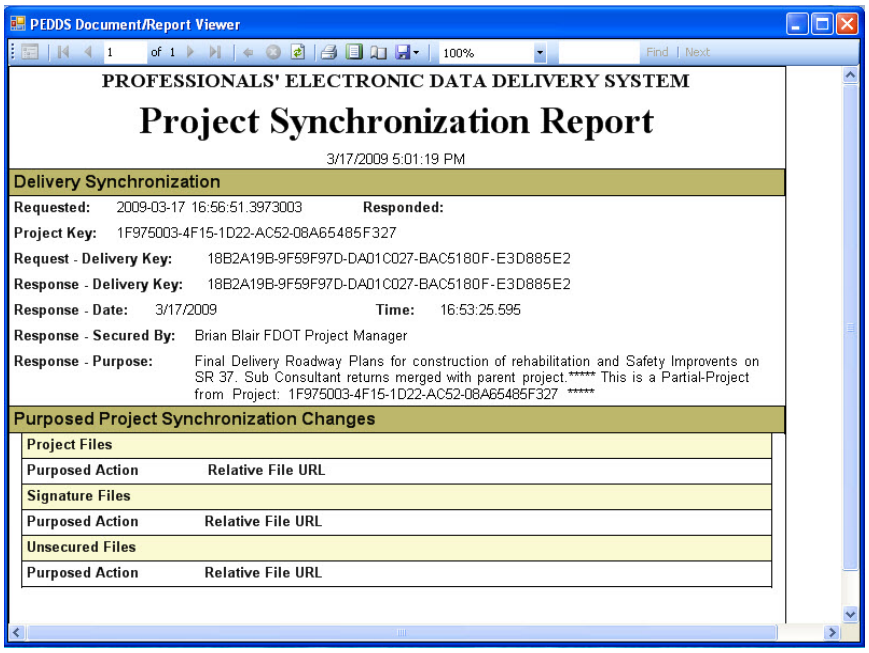
2. Open displays and the Sub Consultant navigates to the location of the saved **synch response package**, ***.syncpkg** file, received from the Prime Consultant and then clicks the **Open** button. PEDDS compares the contents of the package to the contents of the Sub Consultants active project.



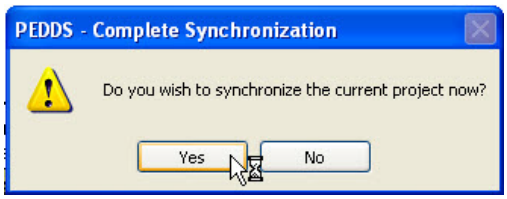
Synch Response

3. Report Viewer opens. From Report Viewer, the Sub Consultant reads and verifies the contents of the **Project Synchronization Report,** clicks the **Exit** button, and then clicks the **Yes** Button if they want to proceed with Synchronization.

   The report details exactly what changes will be made, including what files will be added, replaced, and deleted.



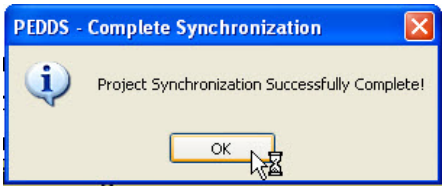
Report Display



Synchronize current project now

Note If the **Yes** button is clicked, PEDDS adds, deletes or replaces the Sub Consultant's (the Requestor's) project files to match those of the Prime Consultant's (the Responder's) active project. If the **No** button is clicked, no synchronization takes place and the process is aborted.

4. Pedds Complete Synchronization displays. Click the **OK** button to continue.



PEDDS – Complete Synchronization

5. When Florida Department of Transportation - PEDDS re-appears, **Exit** the program.

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