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CTDOT AASHTO Trns•port Estimator® Procedures Guide

For Connecticut Department of Transportation

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Prepared by



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1. Overview

Before you use Trns•port Estimator[®], browse through the beginning chapters of this manual. Read through this chapter before proceeding through the manual; it tells you how the Guide is organized.

This guide was written to document the processes and procedures for Estimator as implemented at CTDOT. Additional information can be found in the *Estimator User's Guide*.

This guide is intended for users that will be delivering their final estimates to the lead engineer, and for lead engineers delivering their estimate to the Contract Development unit.

The *CTDOT Trns•port Estimator[®] Procedures Guide* is divided into six chapters and four appendices.

Chapter 2, Getting Started – Prerequisites, focuses on the steps and information needed to get Estimator installed and working with the CTDOT environment.

Chapter 3, Navigating in Estimator, provides general information on the navigation within the Estimator application.

Chapter 4, Using Estimator at Discipline Level, provides information on the different methods of starting an Estimate: hand entry into Estimator, Import from a Spreadsheet, and Import from Quantity Manager. This section will include detailed Estimator Instructions.

Chapter 5, More Information about Items, discusses Estimator Items in detail. It covers Biddable vs. Non-Biddable, Lump Sums, Obsolete Items, Special Provision (“A”) Items, Estimated Items, and Alternate Items.

Chapter 6, Using Estimator at Lead Level, details the steps the Lead Estimator will take on processing an existing estimate, getting an estimate into Project Wise; and how a consultant gets an estimate delivered to the DOT.

Appendix A, Checklists, provides a quick guide for working with estimates in Estimator.

Appendix B, Glossary, provides definitions of Estimator terms.

Appendix C, Global Options, provides requirements for consultants to set up options for working with CTDOT.

Appendix D, Locating Midpoint, provides instructions for finding the correct coordinates for the project.

1.1 Estimator

Estimator is an interactive, PC based, stand-alone cost estimation system for highway construction. It is a mature product which has been in production for nearly eighteen years and is currently being used in twenty five other states, including New York, Maine, Maryland, Ohio, Pennsylvania, Vermont, Virginia, and the District of Columbia.

The Estimator program provides the following benefits:

- Estimator supports estimation via cost-based and historical techniques, while permitting ad hoc data entry if historical data is not present. The base data to support historical techniques will be provided via CTDOT's Estimator catalogs. This information will be maintained by CTDOT and posted to the Department's website on the first of each month (See links below). CTDOT Estimator catalogs will include the item list and historical item price estimation data (both weighted average and regression coefficient).
- Estimator Estimates can be combined, allowing several designers to work independently on different engineering shares (or even parts of shares) then later merge them into a single estimate.
- Estimator verification functionality assists with finalizing the estimate by identifying errors such as incompatible or incomplete data. Estimator can be installed stand-alone or in a networked environment with managed user access (within your firm). Either installation model will use CTDOT's Estimator catalogs.

Estimator is designed to estimate the cost of a construction project using items of the project and several estimation methods to determine the price of the items. To use Estimator productively, you must understand the grouping of the items and estimation methodologies used.

Contractors bidding on highway construction projects must determine approximately how much it costs to perform the required work so their bid is not so low that they lose money or so high that they lose the contract. Agencies that pay for highway construction need to know how much a project costs so they can set up funding and evaluate the bids they

receive. Estimator helps agencies develop these highway construction detailed cost estimates.

Estimator makes sophisticated, technologically advanced highway construction estimation easy. Estimation typically involves an unwieldy quantity of information that must be logically divided to organize the estimation process. Estimator divides this information into manageable estimates and catalogs.

To determine the total cost of an estimate, the estimated cost for each item must be determined. Because quantity estimates have already been developed as part of the design process, the estimator's job becomes one of unit price estimation. The total of all individual item costs provides the cost of the complete construction estimate.

Estimator supports three approaches to estimate unit prices:

- Estimation based on the components (equipment, labor, and materials) used to produce the item (cost-based estimation).
- Estimation based on the historical price of the item from previous contracts (bid-based estimation).
- Estimation based on a subcontractor or supplier quote, or the estimator's experience (reference price estimation).

Each of these estimation methods are discussed later in this document. All estimation methodologies can be used in a single estimate.

1.1.1 High Level Business Workflow – Estimator

The flow diagram shown in this section (Figure 1-1) depicts the High Level Business Workflow for Estimator as used in CTDOT.

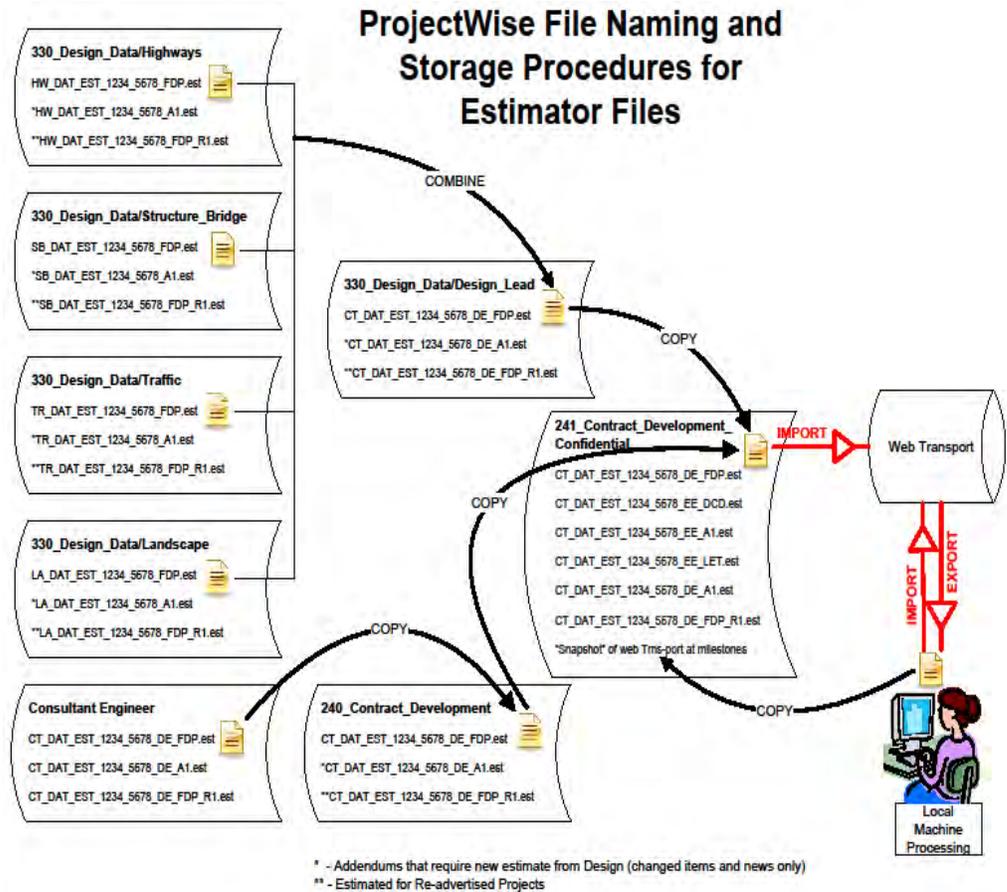


Figure 1-1. High Level Business Workflow

The diagram illustrates how estimates derived from consultants and from the Discipline Level flow into web Trns•port. It also shows how estimates can be imported to / exported from web Trns•port to perform additional processing of the estimate.

Each of the Discipline Level Estimators will create their estimates and pass them to the Design Lead to process.

The Design Lead will combine the estimates received from the Discipline Level Estimators into one estimate and pass the combined estimate on to Contract Development Confidential.

The Consultant Engineers will create a full estimate on their workstation and pass the completed estimate to Contract Development. From Contract Development the estimate will be passed to the Contract Development Confidential area.

Completed estimates will be imported into projects within web Trns•port. Estimates that are in projects within web Trns•port can be checked out to Estimator exported to XML files so that they can be worked on to make changes.

1.2 Trns•port Products Suite

To obtain more information regarding the Trns•port Products in use at CTDOT go to the Connecticut Department of Transportation website at:

<http://www.ct.gov/dot/site/default.asp>

From the main page navigate to the **DOING BUSINESS WITH CONNDOT** page. Locate the **CTDOT AASHTO Trns•port Environment** link under the **Engineering Resources** section and click on it.

On the **AASHTO Trns•port** page that is displayed you will find links to the various AASHTOware and Info Tech Products employed at CTDOT to get more information on these products. You will also find a **Trns•port Environment** diagram which shows the inter-relationship of these products at CTDOT.

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2. Getting Started - Prerequisites

Before you can use Trns•port Estimator[®] you will need to install the application on your system and set up your user access and reference data catalogs. This section will cover the information needed to get the application installed for your use. Follow the appropriate instructions below based on whether you are an In-House Agency user or a Consultant Non-Agency user.

This section will also cover information related to the catalog that you will use.

2.1 In-House

2.1.1 User ID / Password Request

At CTDOT one of the first things you must do in order to use Estimator is to make a formal request for an Estimator User ID and password. This is because the user ID and password must conform to CTDOT standards. You do this by sending an email request to the Estimator Request mailbox.

DOT.TrnsPortEstimator@ct.gov<<mailto:DOT.TrnsPortEstimator@ct.gov>>

Once you receive the User ID and Password you will be able to login to Estimator using the instructions provided in your email response. The first thing you should do after logging in is to Change Your Password.

Change Password

You should change your password the first time you run Estimator. This ensures that only you are using your Estimator account. If you forget your password, your system manager can reset it for you. Your password should be changed periodically for security purposes. Select **Change Passwords** from the **Tools** menu to change your Estimator password. Estimator displays the Change Password dialog box shown in Figure 2-1.

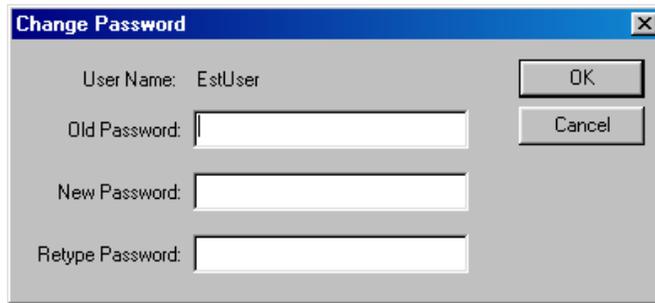


Figure 2-1. Change Password Dialog Box

Because Estimator does not display passwords on the screen as you type them, you could potentially make a typing error without knowing it. Therefore, Estimator requires you to enter the new password twice. Click **OK**.

Estimator compares the two entries of the new password to make sure they match. If the two entries of the new password are not exactly alike, Estimator displays an error message. If this occurs, you must enter the information again. When the new password has been entered the same way twice, Estimator accepts the new password and includes it in the Estimator User Catalog. You must use the new password when you start a subsequent Estimator work session.

Your password is *case-sensitive*, which means that capital and lowercase letters must be typed as such each time you enter your password.

2.2 Consultant Installation

Consultants working for CTDOT will need to license Estimator from Info Tech, Inc., install the application on a workstation at their office, and configure it to access the latest Metric and English catalogs available for download from CTDOT's website link.

2.2.1 Contact Info Tech Via Info Tech Web Link

Consultants may license the Estimator application software from Info Tech, Inc. by navigating to the Info Tech website at: <http://www.infotechfl.com/>

From the Home Page you should navigate to the Products dropdown in the upper left corner of the page beneath the Info Tech logo. On the dropdown list select the Estimator Software link. This will take you to the Estimator Software page.

On the Estimator Software page locate the **New Customers** and **Current Customers** links along the left hand side. You may also use the **Pricing** link. Click on one of the links.

Consultants may also get to the Info Tech Estimator software ordering page by navigating through the CTDOT website. From the CTDOT Home page located at:

<http://www.ct.gov/dot/site/default.asp>, navigate to the **DOING BUSINESS WITH CONNDOT** page. Locate the **CTDOT AASHTO Trns•port Environment** link under **Engineering Resources**. Now locate the **Estimator AASHTOWare Product Link** and click on it. On the Estimator Page under **Consultant Information** there is a link called: **How to Purchase Estimator**. Click on this link to get to the Info Tech software ordering website.

Consultants working with CTDOT will purchase a license for Estimator 2.9a. You will be taken through a series of screens that enable you to perform a credit card transaction to obtain the license and download access to the software.

If you have any difficulty obtaining the license, software download access, or installing the software you may use the Contact links on the left-hand side of the Estimator Software webpage.

2.2.2 Link to Catalog Download

CTDOT will provide a link to obtain the latest Metric and English catalogs for estimation work done with them. Consultants may find the latest CTDOT catalogs by navigating through the CTDOT website. From the CTDOT Home page located at:

<http://www.ct.gov/dot/site/default.asp>, navigate to the **DOING BUSINESS WITH CONNDOT** page. Locate the **CTDOT AASHTO Trns•port Environment** link under **Engineering Resources**. Now locate the **Estimator AASHTOWare Product Link** and click on it. On the Estimator Page under **Estimator Catalogs** there are links for the English and Metric versions of the catalogs containing the Itemlist and Bid Histories. Please follow the instructions on the site for downloading new catalogs, or downloading and applying monthly catalog updates.

2.3 Catalog Basics

Highway construction estimation is based on experience and past estimates. Estimators use a core set of information to develop several different estimates. Estimator catalogs store core information for use in estimation. The Estimator catalogs and code tables make data readily available through a well-organized, easy-to-use interface. You can quickly use information from the catalogs and code tables in your estimates.

2.3.1 Definition

When you first start Estimator, the current catalog is ready to use. To see which catalog is the Current Catalog, select **View Current Catalog** from the **View** menu. Estimator displays the catalog header and these available fields:

Name	The Name field contains the name of the currently loaded catalog.
Spec Year	The Spec Year field is an assigned year value for the standard item catalog. As of August 2011, the English spec year is '11' and the metric is '10'.
Description	The Description field is a brief comment about the contents of the catalog. It should indicate the measure of the catalog, along with more descriptive information.

If you have super-user status, you can change any or all of the user-modifiable catalog information values, plus import catalog information to update the catalogs. Super-users can also assign other users edit privileges for the Standard Item Catalog, Bid History Catalog, Cost Sheet Catalog, Reference Price Catalog, L/E/M Catalog, code tables, and catalog imports. For more information about super users, please read the *Estimator System Manager's Guide*.

You can also see which catalog an estimate is using by selecting **Estimate Options** from the **Edit** menu when your estimate is open.

2.4 The Standard Item Catalog

The Standard Item Catalog contains the construction items and pricing information available to estimate the cost of an estimate. The Itemlist will be updated monthly with new items; therefore, if you know you will need a new item for a project, follow standard procedures to request a new item at least 3-4 weeks in advance to allow time for processing. As a non super-user, you can view the items in the Standard Item catalog and add them to your estimate.

2.4.1 Viewing the Standard Item Catalog

To view the Standard Item Catalog window, select **View Current Catalog** from the **Tools** menu. Select **Standard Item Catalog** in the tree area. Estimator displays the Standard Item Catalog window shown in Figure 2-2.

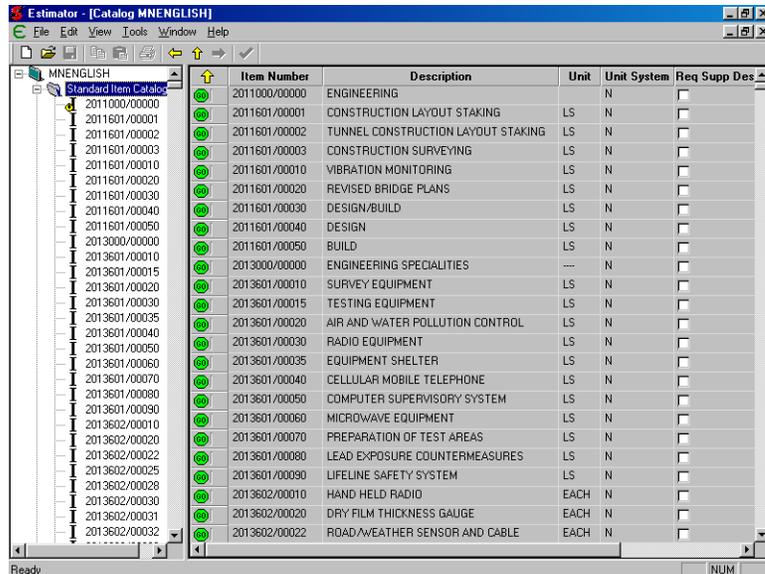


Figure 2-2. Standard Item Catalog Window

As shown in the figure above, the fields in the Standard Item Catalog are unavailable. This means you do not have the ability to edit the catalog. Super-users can grant this ability to other users.

2.4.2 Standard Item Catalog Window Fields

- Item Number** The Item Number field is a unique combination of letters, special characters, or numbers assigned to standard items by the agency. Estimator does not require you to follow an agency item code format. It is your responsibility to conform to any standards, if they apply.
- Description** The Description field includes the name of the item, a brief description of the item, or both.
- Unit** The Unit field is a specific unit of measurement that must be provided for each item (*hr* for time in hours, *c.y.* for cubic yards, *l.f.* for linear feet, LS for lump sum, etc.).
- Unit System** The Unit System field is the system of measurement used for the unit. It is either M for metric, E for English or N for None.
- Req Supp Desc?** The Require Supplemental Description field indicates whether a supplemental description is needed for the item.
- Trns•port?** The Trns•port field indicates whether the item came from a Trns•port application.

2.4.3 Viewing Cost Sheets Attached to a Standard Item Catalog Item

CTDOT does not plan to develop cost-based pricing in the catalog; however, consultants may wish to develop their own cost sheets.

Select an item in the Standard Item Catalog that has at least one cost sheet attached to it. Estimator displays a Cost Sheet window specific to the item you selected in the Standard Item Catalog. Click GO to see the cost sheet in its own catalog.

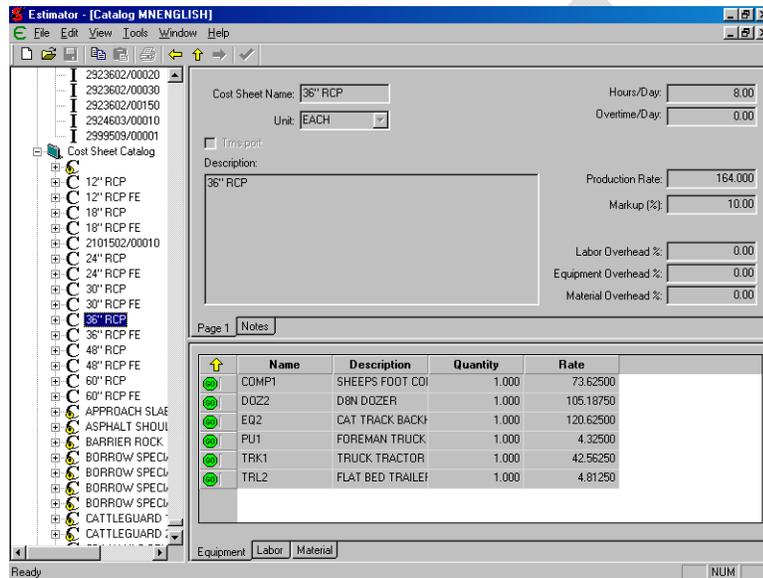


Figure 2-3. Cost Sheet in Cost Sheet Catalog Window

As shown in Figure 2-3, the fields in the Cost Sheet Catalog are unavailable. This means you do not have the ability to edit the catalog. Super-users can grant this ability to other users.

2.4.4 Viewing Bid Histories Attached to a Standard Item Catalog Item

Select an item in the Standard Item Catalog that has at least one bid-based price attached to it. Estimator displays the Bid History Catalog window specific to the item you selected in the Standard Item Catalog. Click the GO button to see the bid history in its own catalog.

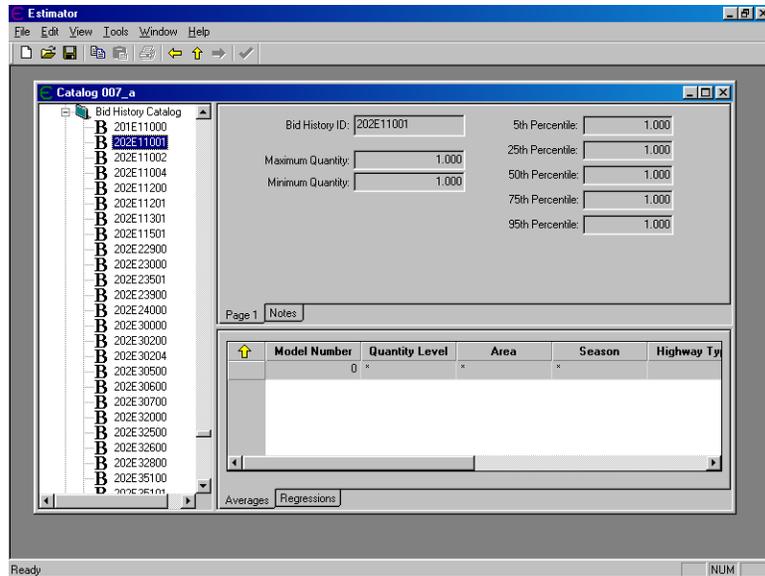


Figure 2-4. Bid History Catalog Window

As shown in Figure 2-4, the fields in the Bid History Catalog are unavailable. This means you do not have the ability to edit the catalog. Super-users can grant this ability to other users.

2.4.5 Viewing Reference Prices Attached to a Standard Catalog Item

Select an item in the Standard Item Catalog that has at least one reference price attached to it. Estimator displays a Reference Price Catalog window that is specific to the item you selected in the Standard Item Catalog. Click the GO button to see the reference price in its own catalog.

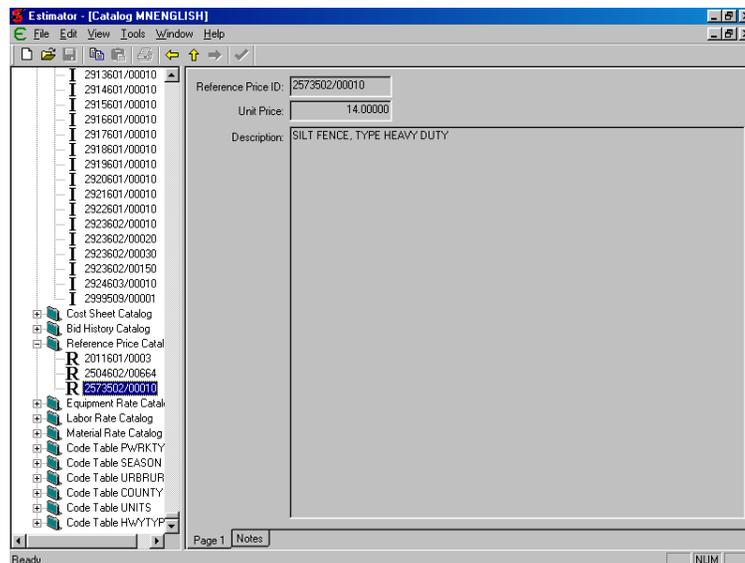


Figure 2-5. Reference Price Catalog Window

As shown in Figure 2-5, the fields in the Reference Price Catalog are unavailable. This means you do not have the ability to edit the catalog. Super-users can grant this ability to other users.

2.5 In-House Users Catalog Selection

CTDOT provides a Metric and English version of the latest catalogs. Catalogs should be available in the location pointed to by your **Catalog Path** specified on the **Global Options URLs** tab. You can select which catalog you will be using for the estimate by selecting **Open Catalog** from the **Tools** menu. If the **Open Catalog** selection is not available, then a current catalog is already open and **Switch Catalog** should be available.

When you open an existing estimate it has a catalog associated with it. This catalog will be opened, if it exists, and will become your current catalog. Select **Current Catalog** from the **View** menu to see the current catalog. If this is not the catalog you wish to use for your estimate, the **Switch Catalog** command located under the **Tools** menu will allow you to select a catalog to open.

Selecting either the **Open Catalog** or **Switch Catalog** operations from the **Tools** menu will present you with a **Select Catalog to Open** selection box. The top line of this box will display the currently selected catalog name or will be blank. The larger box beneath this will display the catalogs available to you from your **Catalog Path** location. Select the catalog you desire to work with for your estimate. The name will go into the top line. Select OK to accept this catalog as your current catalog. You will quickly see a **Loading Catalog** progress bar displayed as it loads the new catalog.

2.5.1 English

This catalog will be used for estimates that have English only items and bid history.

2.5.2 Metric

This catalog will be used for estimates that have metric only items and bid history.

2.6 Consultant Catalog Use

Refer to section 2.2.2 for information on downloading the CTDOT catalogs.

Refer to Section 2.3 for information on selecting catalogs once they are downloaded.

The catalogs provided by CTDOT (English and metric) have a .cat filename extension. These catalogs can be placed on the Estimator's workstation in the Catalog Path specified on the **Global Options URLs** tab.

Monthly updates to the catalogs will be provided within an .xml file from CTDOT. The updates will include any new items added during the month, and updated bid histories. This .xml file can be applied to an existing catalog by selecting **Import...** from the **File** menu. You will be presented with an **Import** box to locate the .xml file to be imported.

After selecting the file to be imported you will see a warning box advising you about inability to undo the import you are about to do. Read and follow the instructions on this warning box before proceeding.

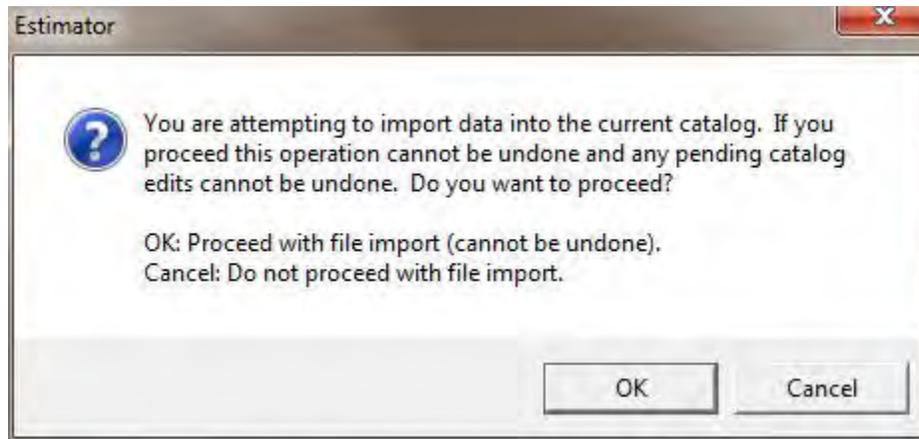


Figure 2-6. File Import Warning Message

If you click OK, the import will take place and the message box will disappear. There will be no additional message when the import completes, but when you exit Estimator you will be asked whether you wish to save the changes to the catalog.

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3. Navigating In Estimator

If you are a new Estimator user, you need to learn the software navigation mechanics before you can use Estimator to produce detailed estimates. This chapter explains Estimator system elements and how to make those elements interact. It tells you how to set up your working environment and describes Estimator windows and command menus.

3.1 Estimator Windows and Commands

You interact with Estimator through two basic elements: windows and commands. Windows display information and sometimes require you to enter information. Commands displayed in menus at the top of the screen or issued through shortcut keys and command buttons tell Estimator what function you want to perform.

3.1.1 Working With Estimator Windows

Estimator displays catalogs and estimates in windows. You can open several windows at the same time. The active window is the window in which you are currently working. The active window displays in the foreground and has a different colored (usually brighter) title bar. Only the active window receives your keyboard input. If you select **Delete** from the **Edit** menu with the wrong active window displayed, you could accidentally delete data. Make sure you know which window is currently active when you issue commands.

A window automatically activates when you open it. It remains active until you open another window or activate a different open window. The lower half of the Window menu lists the names of all open windows in alphabetical order (a maximum of nine window names are listed at one time). A check mark appears next to the name of the active window (only one window can be active) as shown in Figure 3-1.

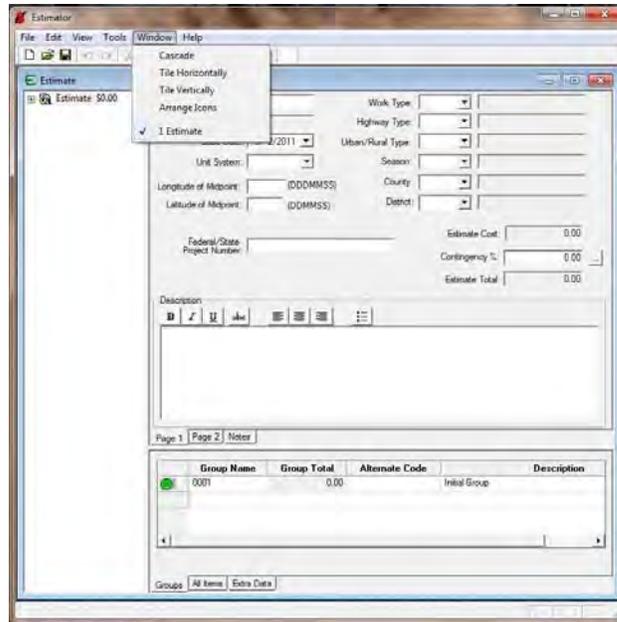


Figure 3-1. Active Window Displayed With Checkmark

You can activate an inactive open window in one of three ways: by clicking anywhere in the window with a mouse, by pressing CTRL+F6 until the desired window is activated, or by choosing the name of the window you want to activate from the Window menu.

When you perform one of these actions, Estimator activates the selected window and, if the window was partially or completely hidden behind another window or windows, it reorganizes all the windows on the display screen so that the newly activated window is fully visible.

If 10 or more windows are open on the screen at one time, the Window menu includes the More Windows... command. When you select **More Windows** from the Window menu, Estimator displays the Select Window dialog box, which lists the names of all open windows (see Figure 3-2).

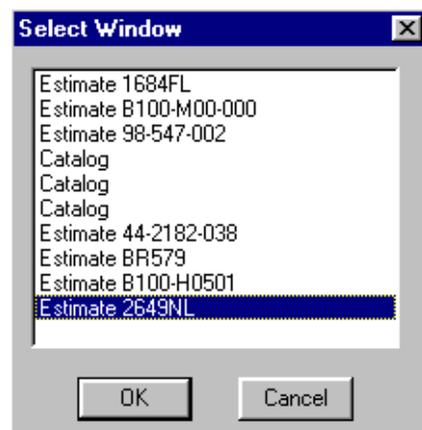


Figure 3-2. Select Window Dialog Box With List of Open Windows

To activate an open window, select the name of the desired window from the Windows list box and click OK.

Arranging Windows

You can modify the way Estimator displays open windows on the screen. The upper half of the Window menu contains the commands Tile and Cascade to allow to a way to establish how you want the windows displayed. The Window menu is only available when a window is open.

These commands organize the layout of the open windows. Estimator enables these commands when two or more windows are open.

Select **Cascade** from the **Window** menu to organize the open windows into an overlapping, cascading format.

Select **Tiled** (Vertically or Horizontally) from the Window menu to organize the open windows so all windows are simultaneously visible on the computer screen.

Read-Only Windows

If you do not have permission to edit an estimate or if the proper catalog is not loaded for that estimate, then the words Read Only appear in the title bar of the window (see Figure 3-3). If you work in windows that display this, you cannot make changes or additions to the catalog or estimate.

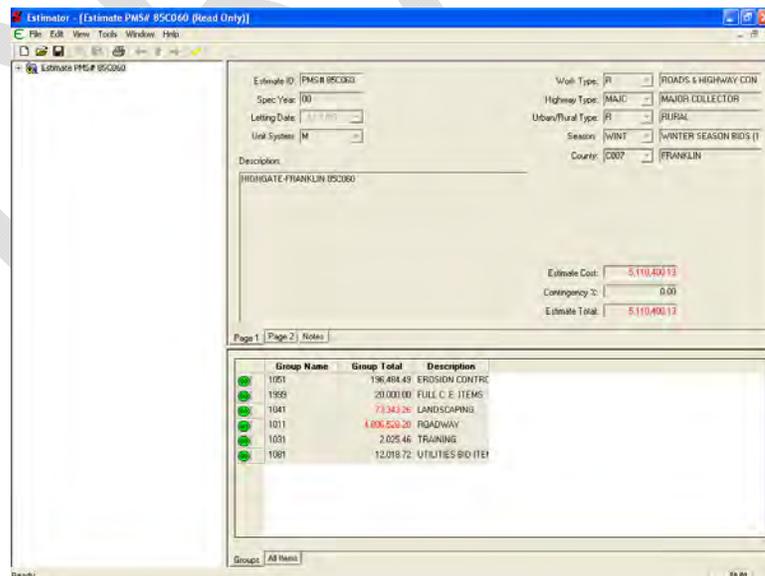


Figure 3-3. Estimator Window With Read-Only Access

If you are a system administrator accessing a catalog through a Web server, then data sharing can often be problematic between several users. Estimator allows the first user

who checks out a catalog to edit that catalog. Estimator grants subsequent system administrator users read-only access to the data. Note that CTDOT in-house estimators will be limited to read-only access to catalogs.

An estimate also becomes a read-only estimate when the current catalog changes to one that is incompatible with the estimate, such as a different spec year or different system of measure.

3.1.2 Tree Area vs. Grid Area

Estimator displays list information in a tree area, and the corresponding detail information in a grid area as depicted in Figure 3-4.

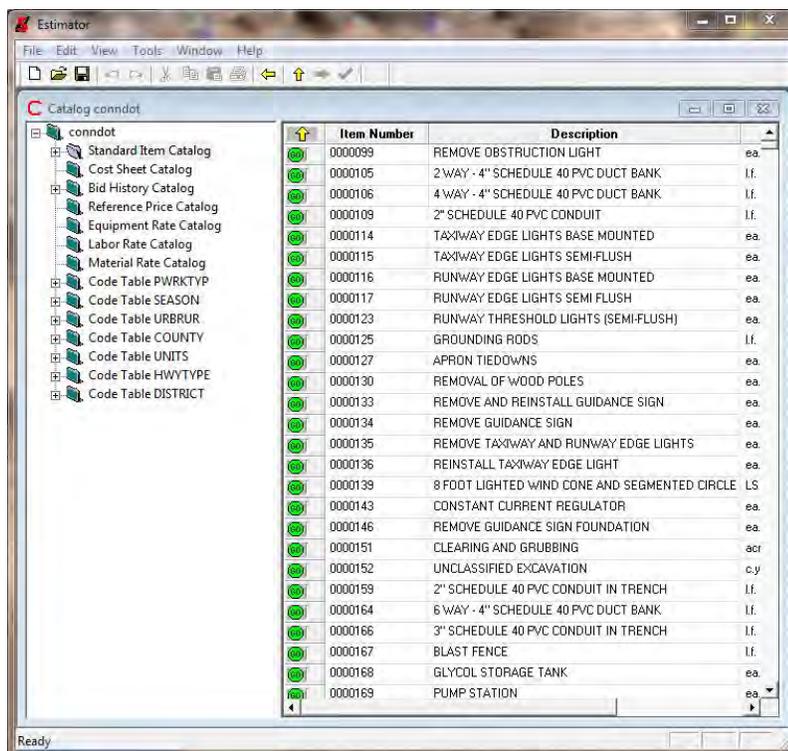


Figure 3-4. Catalog List in a Tree Area With Corresponding Catalog Selection in Grid Area

The tree area, in the left pane, is a list of all information available for that particular window. The elements with plus signs represent a hierarchy of information for that particular element.

The grid area, in the right pane, displays the details of the selected information in the tree area, although you do not need to use the tree to access the information in the grid. If you select an element in the grid area, the tree displays the location of that information in the hierarchy.

Most information in Estimator is displayed with tree areas and grid areas, even if they are mixed with other types of displayed information as shown in Figure 3-5.

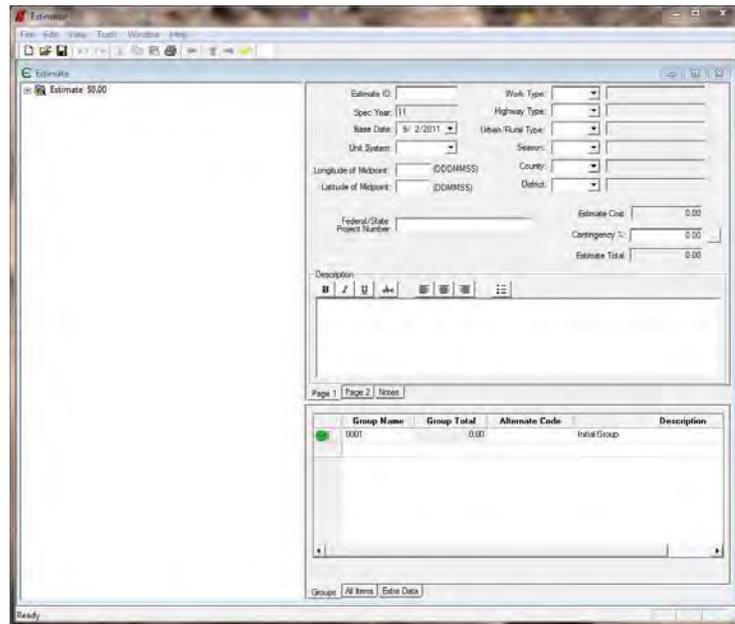


Figure 3-5. Estimate Displaying Tree Area, Grid Area, and Data Entry Fields

To move around in the tree area, use the plus signs next to the group, item, or catalog to display the details in the grid area, and select the desired element in the tree area to display it in the grid area. Click the GO button next to the information in the grid area or use the navigational arrows to access the corresponding information in the tree area.

3.1.3 Hide/Show Columns

In addition to hiding the tree view, you can also hide columns in your estimate or catalog. For example, if your agency never uses the Alternate Code description for a group, you can hide that column from the grid area.

Each window in Estimator has its own columns for hiding or showing. The Show/Hide Columns window displays differently depending on where you are in Estimator.

1. With the estimate open, select **Hide/Show Columns** from the **View** menu. Estimator displays the Show/Hide Columns window.

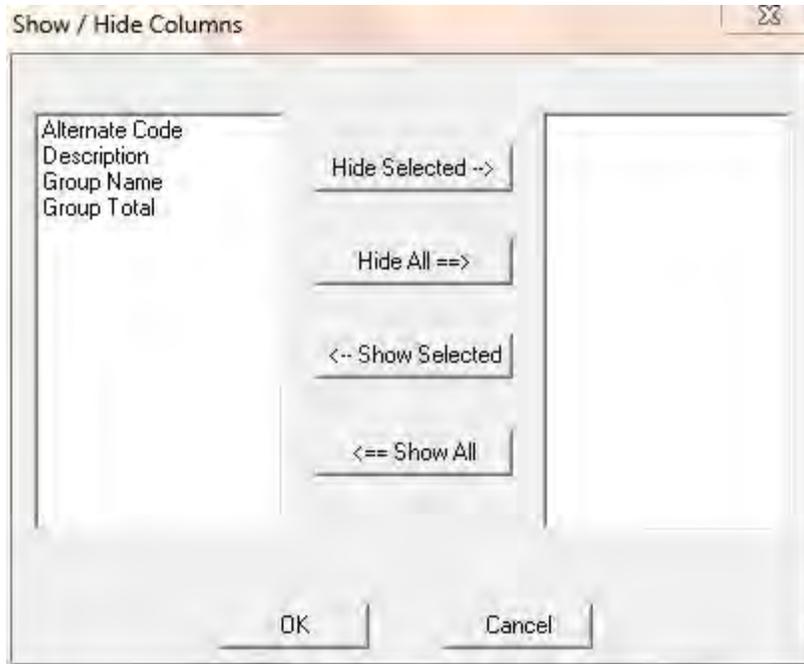


Figure 3-6. Estimator Show/Hide Columns Window

Figure 3-6 depicts the window that lists the current columns, and shows which ones are displayed and which are hidden.

2. Select the columns you wish to hide in the right pane. Then click **HIDE SELECTED**. The selected columns move to the left pane.
3. Click **OK**. The selected columns are hidden in your estimate.
4. To show the hidden columns, select **Show/Hide Columns** from the **View** menu.
5. Select the columns to be shown, then click **SHOW SELECTED**. The columns moves from the Hide list to the Show list.
6. Click **OK**. The hidden columns are now visible.

If you had wanted to hide all the columns, you would have clicked the **HIDE ALL** button in the Show/Hide Columns window. If you wanted all the hidden columns visible, you would have clicked the **SHOW ALL** button.

3.1.4 Show/Hide Tree View

If you prefer to work in the grid area only, you can hide the tree area in Estimator catalogs and estimates. You can navigate using the grid area.

To hide the tree view, open the catalog or estimate. Select **Show/Hide Tree View** from the **View** menu. Estimator displays the grid area only.

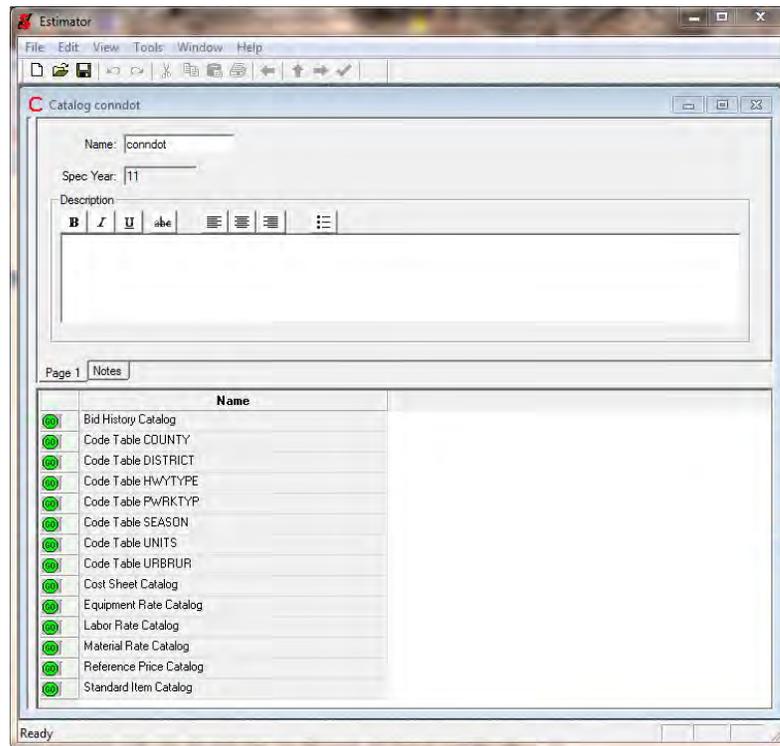


Figure 3-7. Catalog With Grid Area Only

When navigating with only the grid area, use the green GO buttons and the yellow directional arrows to move through the estimate or catalog. To view the tree area again, select **Show/Hide Tree Area** from the **View** menu.

3.1.5 Expand or Collapse All Tree View

Estimator has commands that will let you view all parts of the estimate in the tree area. When you choose to expand the tree view, Estimator acts as if you have clicked every plus (+) sign in the estimate or catalog. Each group, item, and price basis is visible when used in an estimate; each catalog and code table is visible when used in the current catalog.

To see all tree items for your selected estimate or catalog, select **Expand All Tree View** from the **View** menu.

You can also close each opened item at once using the Collapse All command. When you choose this command, Estimator acts as if you have clicked every minus (-) sign in the estimate or catalog.

To close all expanded tree items, select **Collapse All Tree View** from the **View** menu.

3.2 Getting Help

Estimator provides an online Help system you can access while using the application. Look in the online help for instructions on how to perform Estimator functions.

3.2.1 Using Online Help

You can access Help in a variety of ways, depending on the type of information you need. To get help on the active window, select **Help on Active Window** from the **Help** menu. To search for a specific topic, select **Search** from the **Help** menu. Select **Contents** from the Help menu to browse the table of contents for the Estimator Help system and then choose a topic.

Estimator Help is *context sensitive*. In other words, you can display help windows specific to open windows and menu commands while you are working in Estimator. To get help on the active window, press SHIFT+F1. To get Help on a specific menu command, press F1 when the menu command is highlighted.

3.2.2 Getting Information About Estimator

When you select **About Estimator...** from the **Help** menu, the About Estimator window appears (Figure 3-8), which contains the full-length name of the Estimator program, the Estimator icon, the Estimator program release number, and the copyright notice.

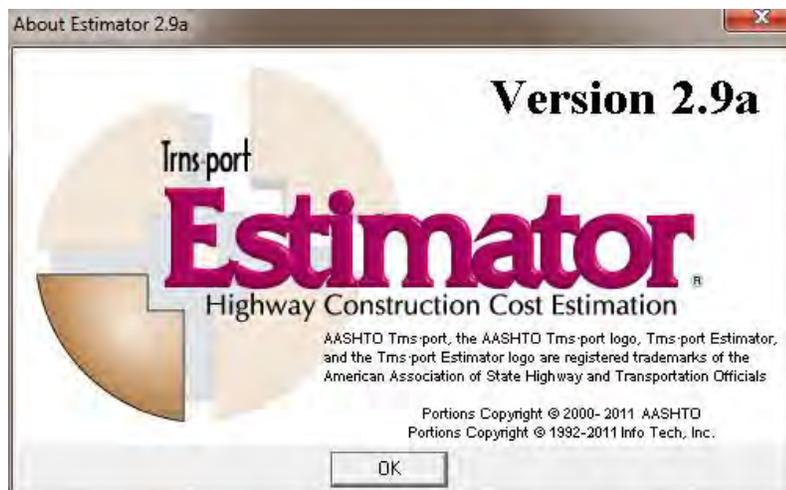


Figure 3-8. About Estimator Window

3.2.3 Generating a Support Request

The Generate Support Request command displays a support request form. Enter all the necessary information and save the file, then attach it to an e-mail and send it to DOT.TrnsPortEstimator@ct.gov.

Information on this form is used to help solve Estimator problems. You can also suggest future enhancements you would like added to Estimator. When you choose Generate Support Request from the Help menu, Estimator displays the Generate Support Request dialog box (see Figure 3-9).

Figure 3-9. Support Request Dialog Box

Enter your name and telephone number in the appropriate fields. In the Type field, click the down arrow and choose the type of request you are generating from the selection list. In the Priority field, click the down arrow and choose a priority level according to the importance of your request. In the Category field, select the type of problem you are having. In the Short Description field, give a brief description of the problem or comment. In the Long Description field, give a detailed description of the problem or comment. When you finish entering information for the request, click on SAVE. Save the support request as a text file, and then e-mail it to Info Tech.

The Priority field has several options from which to choose. Use the following descriptions to help you choose the right one.

- | | |
|----------------------------------|---|
| Low | Problem is a nuisance to business functions. |
| Medium | Problem is a definite issue that causes a minor inconvenience but does not prevent business functions from being completed. |
| High – Important | Problem is a major inconvenience but does not prevent critical business functions from being completed. |
| Critical – Very Important | Problem prevents implementation or upgrade of Trns•port from being completed. This classification is for use by licensees that are not in production use of the release and needs to include a date by which the fix is needed. This classification should only be used on errors that would be considered Urgent |

if the licensee was in production use of the software.

Urgent – Very Important

Problem stops the ability to perform a critical business function. This classification is for use by licensees that are in production use of the release.

3.2.4 Getting Estimator Support

If you are a consultant working for a state transportation agency, please contact the Estimator representative at the agency to obtain technical support for Estimator.

If you are working at CTDOT and need technical support, send an e-mail message to DOT.TrnsPortEstimator@ct.gov, using the form in Section 3.2.3.

3.3 Setting Up Your Working Environment

You can set defaults in Estimator that manage how windows display on the screen, how often you save your work, and other preferences.

3.3.1 Setting Preferences

You can modify some of your Estimator working environment as described earlier. However, there are some settings that are required by CTDOT. CTDOT in-house estimators will not be able to change the Global Options settings. If you are a consultant, please refer to Appendix D Global Options of this document for information on setting your Global Options.

4. Using Estimator at the Discipline Level

This chapter will cover four methods of estimate creation, detailed instructions for entering the estimate header, adding groups and items, and the various pricing methods. Finally, the chapter discusses the processes related to delivering the final estimate to the Lead Engineer.

- **Note:** For Estimator files being delivered to the lead engineer or to the Processing Unit at the Final Design Plan date (FDP), the items will be grouped only by funding source. Items that occur more than once will be combined (rolled up) so that there is only one occurrence of an individual item per estimate, unless they are in different funding groups. This is important as other downstream Trns•port processes, particularly SiteManager, need the estimate to be in this format.

4.1 Estimate Creation

There are four main methods of creating an estimate for CTDOT. The Estimate may be entered directly into Estimator, created from a template, imported from Excel spreadsheets, or imported from InRoads Quantity Manager.

4.1.1 Direct Entry into Estimator

- Log into Estimator and select File>New or select the New File icon
- Fill out the project header information (see Section 4.2.1)
- Enter a description for the default initial group. The description should be a funding group.
- Add other groups if necessary (if more than one funding source)

In the example below, two groups were added, one for 80%/20% Federal/State funding and another for 100% State funding:

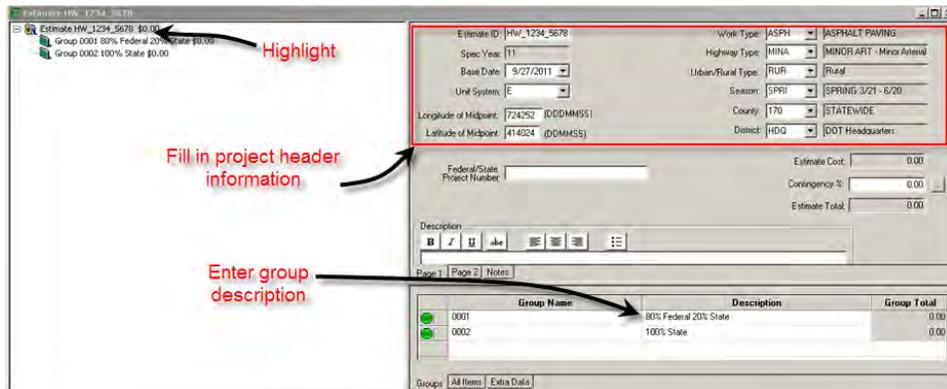


Figure 4-1. Estimate Direct Entry

To add individual items to a group, see Section 4.4.

4.1.2 Importing Templates

Estimator templates are currently being developed for the various disciplines. Templates can be used to save time when the same items are used for multiple estimates. Once templates are developed they will be made available internally and also on the web.

Further information about using templates will be added to the guide at that time.

4.1.3 Import from Excel Spreadsheet

When importing an estimate from an Excel spreadsheet, the spreadsheet must be formatted correctly for import. The following columns are required with headings:

- **Group** – items should be grouped by funding sources. All items that are in the same group must have the same value in the Group column
- **Item number** – must be formatted as text and contain leading zeros. The item number cannot contain the “A” for supplemental specifications
- **Supplemental Description** – Special Provision required (“A” Items) – needs to be in a separate column as “** See Special Provisions **” in this exact syntax.
- **Quantity** – rounded to the nearest whole number

The following columns are optional:

- **Item Description** – Estimator will get this from the catalog according to the item number.
- **Unit**– Estimator will get this from the catalog according to the item number.

- **Unit Price** – if user wishes to use predefined (ad-hoc) prices instead of prices provided by Estimator, add this column (round to the nearest cent).
- **Total Price (Unit Price X Quantity)** – Estimator will automatically compute this cost.

For an example of an Excel spreadsheet that is formatted correctly, go to this link:

To import an Excel spreadsheet, log into Estimator, select **Current Catalog** from the **View** menu and make sure that the correct catalog (English or metric) is loaded. If it is not, select **Switch Catalog** from the **Tools** menu and select the proper one. Then select **Import** from the **File** menu.

Browse to the spreadsheet you wish to import and click OPEN (the spreadsheet cannot be opened in Excel).

Select **Estimate** on the Excel Import dialog box and then click OK:

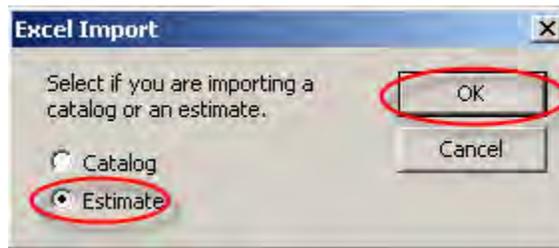


Figure 4-2. Importing From Excel

In the Estimate Import Spreadsheet Wizard dialog box, select **Show Worksheets** and select the worksheet you wish to import:

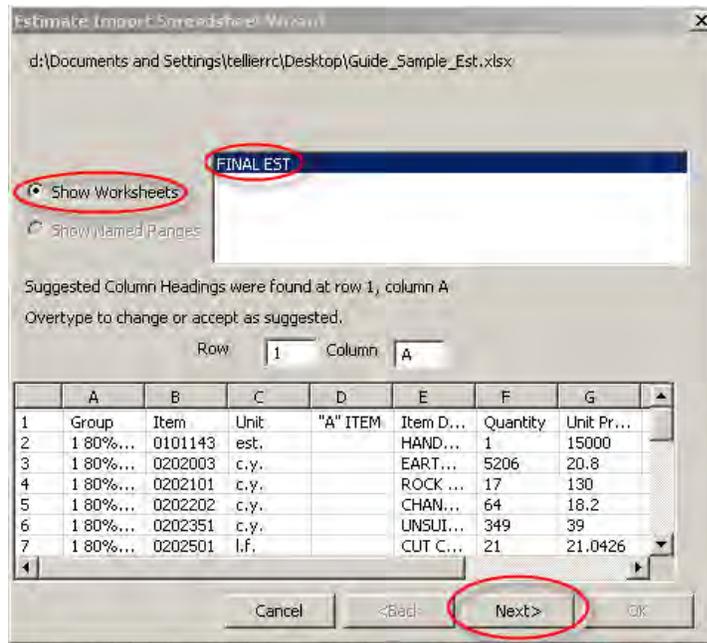


Figure 4-3. Selecting Estimate to Export

Click NEXT.

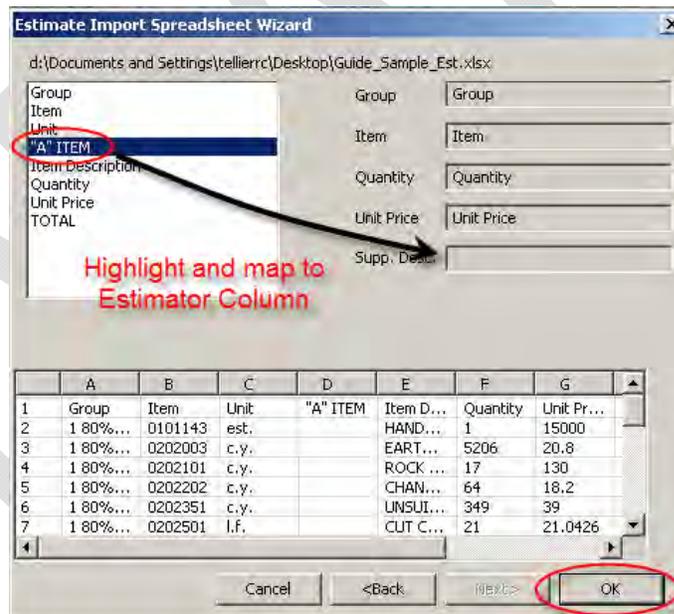


Figure 4-4. Mapping to Estimate

Since all the columns were named properly in the Excel spreadsheet, except for the "A" ITEM column, Estimator automatically maps the Excel columns on the left to the correct Estimator columns on the right. In this example, the "A" ITEM column needs to be mapped manually to the Estimator Supplemental Description heading.

Click OK.

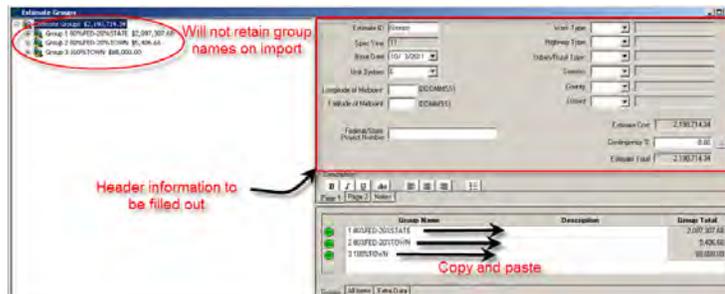


Figure 4-5. Estimate Details

At this point, Estimator has created an estimate with three groups based on funding sources. To complete the import

- Estimator does not retain the Group name since other Trns•port modules require a four-digit group number. If the user wishes to retain the name of the group as a description, it must be copied (in the Groups tab) from Group Name and pasted to the Group Description. This must be done immediately before any editing is done. (To copy, highlight the data and press **Ctrl** and **C**. To paste, click in the field and press **Ctrl** and **V**.)
- Fill in the project header information. Estimator automatically fills in the Estimate ID with the name of the worksheet that was imported. (You may need to update this to the correct ID). (See section 4.2.1 for details).
- Check for duplicate items in the same group and combine (roll-up) if necessary.
- Re-price the items (if you wish to do so).
- Verify the estimate.
- Save estimate and deliver to lead engineer or consultant liaison.

4.1.4 Import from Quantity Manager

Quantity Manager is a Bentley InRoads product used to harvest quantities directly from the MicroStation/InRoads design model. Guidelines for importing from Quantity Manager will be added at a later date.

4.2 Detailed Estimator Instructions

This section will detail the steps needed to complete an estimate. The estimate should have been created with one of the methods identified above. Once that has been done, then you can continue with the process of building the estimate.

4.2.1 Header Information Page 1

- 📄 **Note:** If pricing is done through estimator, the selection of work type, highway type, season, county and district in the project header may have a significant impact on the final cost. Choose these fields carefully.

Page 1 of the estimate header must be filled in with identifying data specific to the project being estimated. Use the screen shot shown in Figure 4-6 and the following steps to fill in Header Page 1:

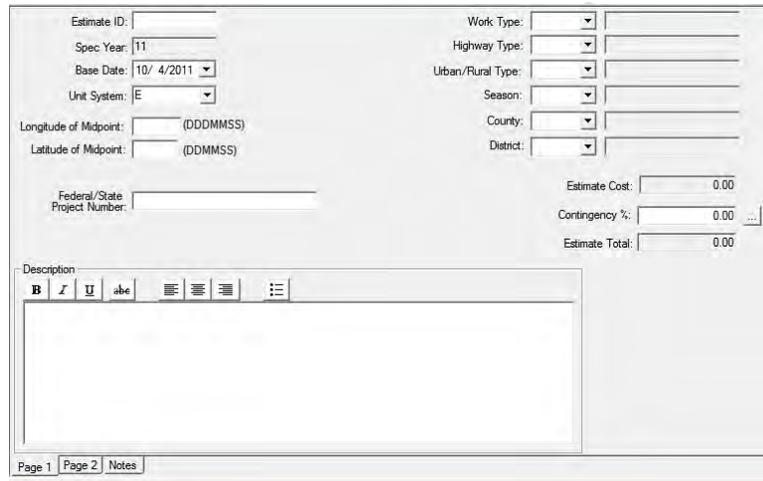


Figure 4-6. Estimate Header Page 1

Estimate ID

In the upper left corner of the Estimate's Grid Area you will find the **Estimate ID** field. The Estimate ID will consist of the actual Project ID number followed by the Discipline Designator (i.e. 1234_5678_TR). It is restricted to just 13 characters in length. (Note: The final estimate that goes to processing will have the Discipline Code removed from the Estimate ID (i.e. 1234_5678). When the estimate is saved, the Filename will be consistent with the Estimate ID.

Use these Discipline Designators in the Estimate ID:

- AE - Aeronautics
- EC – Environmental Compliance
- FA – Facilities
- HO – Highway Operations
- HW – Highways
- IL - Illumination

- LA – Landscape Architect
- PD – Project Development
- PL – Planning
- SB – Structures and Bridges
- TE – Traffic Electrical
- TR – Traffic
- UT – Utilities

Spec Year

Below the Estimate ID is the Spec Year field. The **Spec Year** will already contain the correct year for the catalog that your estimate has been opened with. This field cannot be changed and is grayed out. If the Metric catalog is being used, then the Spec Year will contain 10. If the English catalog is being used, then the Spec Year will contain 11. Ensure that you have the correct Spec Year for the project you are working on.

Base Date

The **Base Date** field is located below the Spec Year and should contain anticipated letting date of the project if known. If this date is not known use the FDP date + 70 days. This is the date that Estimator bid history prices base the inflation cost on. This date can be changed at any time using the date picker when clicking on the dropdown arrow.

Unit System

The **Unit System** field is located below the Base Date field. This field can be selected using the dropdown arrow and should contain the Unit System appropriate for the catalog and project you are estimating. The choices in the dropdown are limited to: E – English, M – Metric, and N – None.

Midpoint

The midpoint consists of two fields located under the Unit System field: **Longitude of Midpoint** and **Latitude of Midpoint**. The combination of these two coordinates should locate the approximate midpoint of the project and be in a DDDMMSS (degrees, minutes, seconds) format. Coordinates are required for web Trns•port Preconstruction and are extremely important for data analysis in Trns•port BAMS/DSS.

There are many free online sources for obtaining accurate coordinates. One such method is described in Appendix D of this document.

For Connecticut longitude will be from a maximum value of **730353** and a minimum value of **721458**. Latitude will be from a maximum value of **420258** and a minimum value of **405926** in DDMSS format. If the project is statewide, use the location of the central office (Headquarters). If the project is district wide, use the location of that district office. Latitudes and longitudes of Headquarters and all four district offices can be copied from the “Extra Data” tab on the header page:

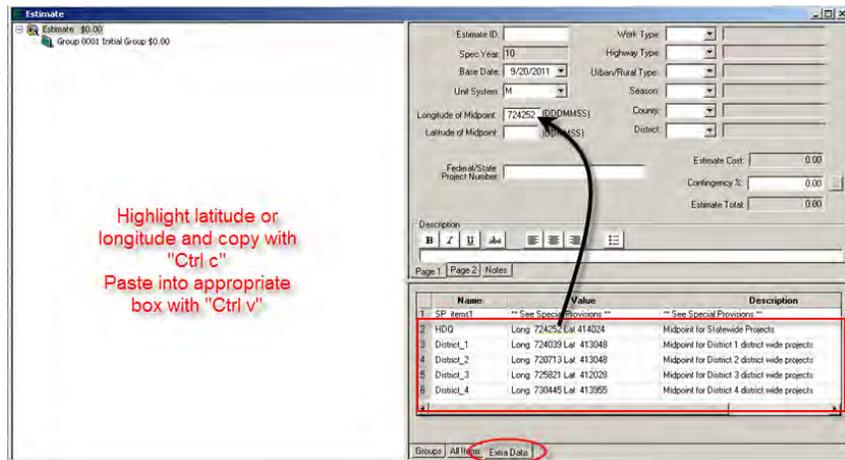


Figure 4-7. Longitude and Latitude

Federal/State Project Number

The **Federal/State Project Number** field is located on the Estimate Grid above the Description field. This field should contain the FAP number (Federal Aid Project number) if it is know; otherwise, leave it blank.

Work Type

The **Work Type** field is located in the upper right corner of the Estimate Grid on Page 1 of the header. This field is populated by selecting the Work Type with the dropdown. The Work Type Code selected is based on the most costly types of items within the project (e.g., How will most of the project money be spent?).

Highway Type

The **Highway Type** is located beneath the Work Type field. Select the correct Highway Type code from the dropdown to populate this field. Highway types are based on functional classifications. If the functional classification is not known, it can be found at: <http://www.ct.gov/dot/LIB/dot/Documents/dpolicy/hwylog/hwylog.pdf>

Urban/Rural Type

The **Urban/Rural Type** field is located under the Highway Type field. This field can be populated by selecting the Urban/Rural Type with the dropdown. There are two possible selections for this field: **Urban** and **Rural**.

Season

The **Season** field is located on the grid beneath the Urban/Rural Type field. This field should have the appropriate season that corresponds with the base date. Seasons that are available on the dropdown include:

FALL – Fall 9/21 – 12/20

SPRI – Spring 3/21 – 6/20

SUMM – Summer 6/21 – 9/20

WINT – Winter 12/21 – 3/20

County (Town)

The **County** field is located under the Season field on the grid view. This field can be selected with the dropdown which contains the names of all towns within the State of Connecticut, statewide and district wide selections. Select the most appropriate entry for your project from the dropdown list.

District

The **District** field is located beneath the County code in the grid view. This field can be selected with the dropdown. The contents of the dropdown for this field consist of:

- 1 – Rocky Hill
- 1A – New Haven Rail Yard
- 2 – Norwich
- 3 – New Haven
- 3A – Q Corridor
- 4 – Thomaston
- HDQ – DOT Headquarters

Contingency %

The **Contingency %** field is located in the center right of the grid view between Estimate Cost and Estimate Total. This field is filled in at the Lead Level and does not get passed to Preconstruction. The **Estimate Cost** and **Estimate Total** fields are calculated fields that will be filled in and updated as the estimate is worked on. The **Estimate Total** field uses the **Contingency %** in its calculation. If the user wishes to enter the contingency and incidental percentages, they can be added as a combined percentage in this box. If this is done, the user must enter a note on the Notes page of the project header listing the breakdown of the percentages:

The screenshot shows the 'Estimate 1234_5678' window. The 'Contingency %' field is highlighted with a red circle and contains the value '32.00'. Other fields include 'Estimate Cost: 2,190,714.34' and 'Estimate Total: 2,913,650.07'. The 'Notes' tab is also highlighted with a red circle.

Group Name	Description	Group Total
0001		2,097,307.68
2 80%FED-20%TOWN		5,406.66
3 100%TOWN		88,000.00

Figure 4-8. Contingency Percent

The screenshot shows the 'Notes' tab of the 'Estimate 1234_5678' window. The text 'Incidentals - 23%' and 'Contingencies - 10%' is highlighted with a red circle. The 'Notes' tab is also highlighted with a red circle.

Group Name	Description	Group Total
0001		2,097,307.68
2 80%FED-20%TOWN		5,406.66
3 100%TOWN		88,000.00

Figure 4-9. Notes Tab

Description

The **Description** field is located at the bottom of the grid view for Page 1 of the Header. This is a required field which is used to give a lengthy textual description of the project. The description should be the same as the project title. Additional information that needs to be recorded can be done on the Notes page (see below).

- 📄 **Note:** If you cannot see the Description field, drag the bottom of the header area down with your mouse.

4.2.2 Header Information Page 2

Page 2 of the estimate header contains the signoffs for the Estimate. The screen shot shown in Figure 4-10 illustrates the header information fields on Page 2. These fields are further described in the following sections.

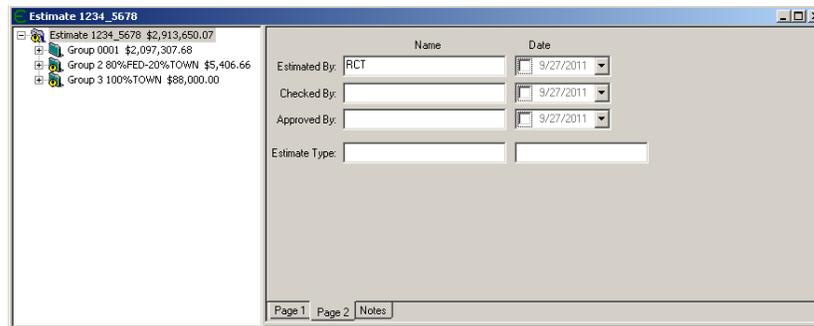


Figure 4-10. Estimate Header Page 2

Estimated By

The **Estimated By** field contains the name of the Primary Estimator and the date his/her estimate was completed. This will be auto-filled with the initials of the user logged in on the machine where the estimate is created. This field should be left as is because it must match the STAFF Code Table when imported into web Trns•port. For consultants, delete anything inside this box and leave blank.

Checked By

The **Checked By** field contains the name of the Estimate reviewer and the date he/she reviewed the estimate. This field is optional.

Approved By

The **Approved By** field contains the name of the lead approving the estimate and the date he/she approved it. This field is optional.

Estimate Type

This Estimate Type field should use one of the following:

- Scoping
- 30%
- 60%

- 90%
- Final
- Addendum
- Change Order
- Other

4.2.3 Header Information Notes Page

The Notes page of the estimate header contains any notes the Estimator/Reviewer/Approver may add for the Estimate. This page does not get exported from Estimator so it will not be seen externally. The screen shot shown in Figure 4-11 illustrates the header information field on the Notes page.

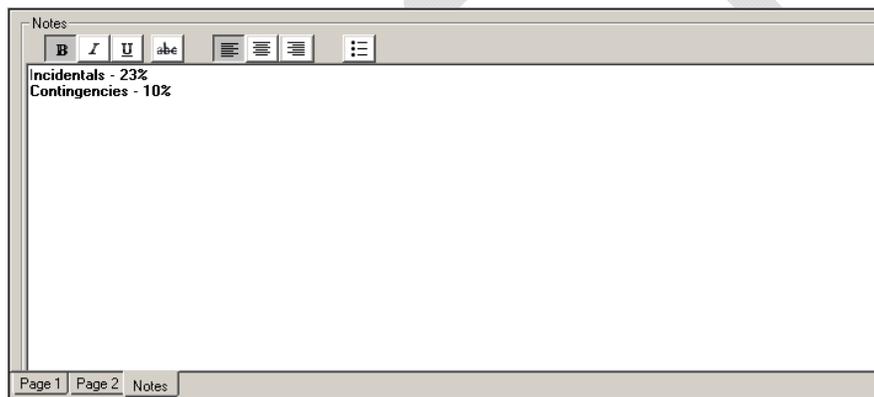


Figure 4-11. Estimate Header Notes Page

If the contingency box is filled out on Page 1 of the project header, a breakdown of contingency/incidental percentage should be listed here.

4.3 The Groups and All Items Tabs

At the bottom of the grid area of the estimate header window are two tabs - the GROUPS tab and the ALL ITEMS tab. Either tab can be used when you create your estimate. They contain the same information, but the information is added differently on each tab.

4.3.1 Introduction to the Groups Tab

When you use the GROUPS tab, the estimator creates groups in which items that relate to one another in some way are stored. In early estimates, this can include, for example, items that are all associated with a traffic intersection, or structure. However, at CTDOT, the final estimate groups will be based on items which share the same Funding source. Each group can contain an unlimited number of items.

When you first create an estimate, Estimator also creates one group for that estimate. To create a new group, make sure the estimate title is selected in the tree area, and select **Add Group** from the **Edit** menu. Estimator displays the group header window.

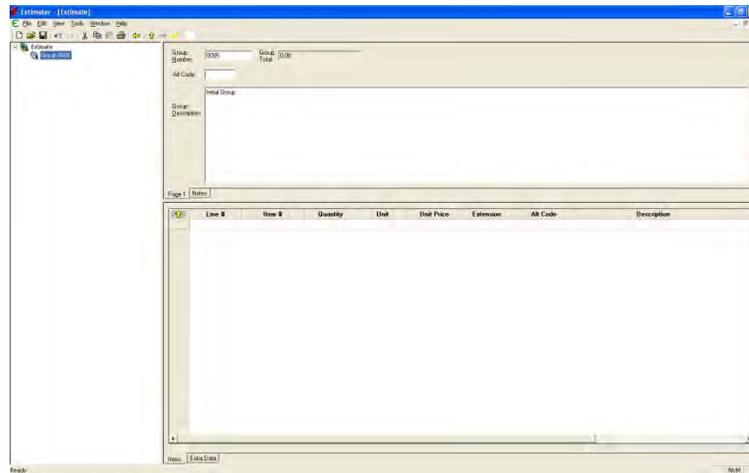


Figure 4-12. New Group Header Window

Once a group is created, the group header information must be completed. The Group Number field and the Group Increment are determined by the Estimator global options. Use the default group numbering, i.e., 0001, 0002, 0003, that has been set. Enter a group description based on the items that will be added to the group. For final estimates this will be based on funding source, for example, 80% Federal and 20% Town.

Once the group header information is filled out, you can start adding items to your group.

4.3.2 Introduction to the All Items Tab

When you use the ALL ITEMS tab, estimates are formed by adding items to the estimate, regardless of to which group they belong. Even though you are building the estimate in item order, you must still assign a group to each item as it is added to the estimate.

After you click the ALL ITEMS tab, Estimator displays a grid with a blank row available for your first item. You can assign your item to a group that already exists, or you can create a new group for your item. To assign an already-existing group, click the down arrow next to the Group # cell and select the group from the drop-down list.

If you try to leave the cell without selecting a group, Estimator displays the Select Group window.

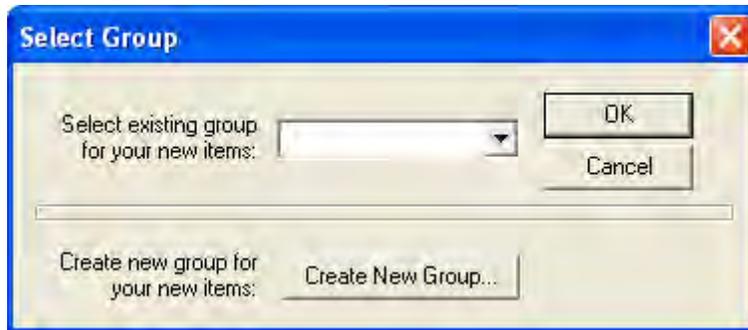


Figure 4-13. Select Group Window

Use the drop down list to select a preexisting group, or click CREATE NEW GROUP to create a new group for your item. Estimator displays the Create New Group window. Here you can add the new group to your estimate.



Figure 4-14. Create New Group Window

While only the Group Number field is required, use the other fields to enter more information about your group. When you are finished, click OK. Click CANCEL to return to the Select Group window.

When you are finished assigning your item to a group, click OK. Click CANCEL to return to the estimate without assigning a group. Once you click OK and return to the estimate, you can start adding information to your item.

4.4 Working with the Estimate Item List

The Item List contains all items that you have associated with an estimate. When a new estimate is created, the Item List is blank. The list also includes price bases and anything else attached to the items. The Item List can contain any number of items. On the GROUPS tab, the grid area contains the item list for the selected group. On the ALL ITEMS tab, the grid area contains the entire estimate item list. The entire estimate item list can also be viewed in the tree area if all groups are expanded to show their contents.

Finished Item Lists contain standard items found in the Estimator Catalog.

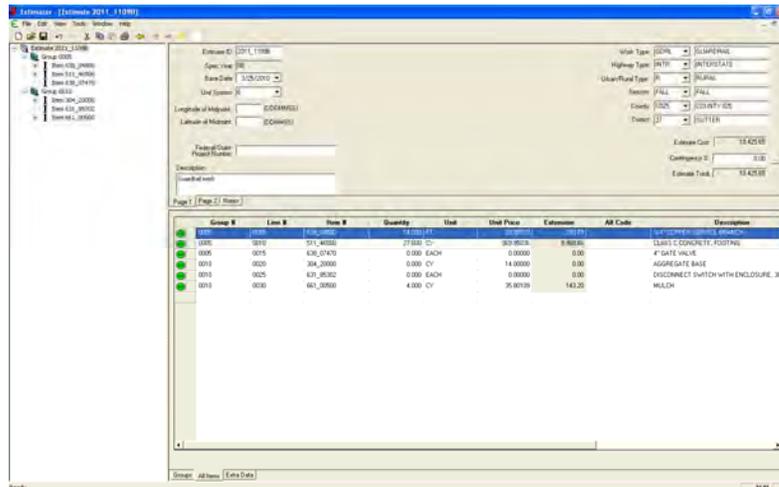


Figure 4-15. Estimate Item List Window

When you select an item in the tree area or in the grid, Estimator displays item information for these fields:

- Line Number** The Line Number field refers to the item's location in the estimate. Estimator saves this information and automatically generates new line numbers for newly added items according to the specifications in the Global Options.
- Item Number** The Item Number field is a combination of letters, special characters, numbers, or both, assigned to standard items by the agency.
- Quantity** The Quantity value for an item indicates the number of units of the item to be used in the estimate.
- Unit Price** The Unit Price field shows the cost of one unit of an item. This value can be determined by the estimator or it can be calculated by Estimator from a cost sheet, bid history, or reference price. This field is filled in by Estimator if the information is available.
- Price Source** The Price Source field identifies the type of price basis used to determine the unit price of the item. If there are no active price bases attached to the item, then the Price Source field is *None*. If there is only one type of active price basis, then the Price Source field reflects that type of price basis. If there is more than one type of active price bases, the Price Source is *Multiple*. If the user creates a price basis for the item, the Price Source is *Ad Hoc*.

Extension	The Extension field is the multiple of the item's Unit Price and Quantity fields. Estimator automatically calculates the extended amount from your entries in the Unit Price and Quantity fields. You cannot enter the extended amount value; this field is filled in by Estimator.
Description	The Description field contains a description of the item. This field is filled in by Estimator.
Supplemental Description	At CTDOT, the Supplemental Description is used to indicate whether there is a Special Provision attached to the item. See Chapter 5 for details on how to indicate this.
Alt Code	The Alt Code is used when the bidder will have a choice of which item to bid on. See Chapter 5 for further information.
Unit	The Unit field identifies a specific unit of measurement provided for an item (for example, hr for time in hours, c.y. for cubic yards, l.f. for linear feet, or LS for lump sum). This field is filled in by Estimator.
Exclude Item From Reference Price Calculations	This check box allows the user to determine whether an item should be included when a reference price is calculated as a percentage of the estimate total.

Use the NOTES tab of the Item header window to store additional information about the item.

4.5 Adding Items to Your Estimate

Items can be added to your estimate while in the two tabbed folders - GROUPS and ALL ITEMS. Although the information for each item is the same, the way it is entered depends on which tab you are using.

4.5.1 Adding an Item While in the Groups Grid

Within the group window, you can add new items, modify or delete existing items, and modify the quantity and price basis information for any or all of the items in the Item List.

While in the estimate header window for the GROUPS tab, click the green GO button next to the group in the grid area whose items you wish to see. You can also click on the plus sign (+) of the group in the tree area, but using the grid give you more detailed item information. Estimator displays the group Item List window.

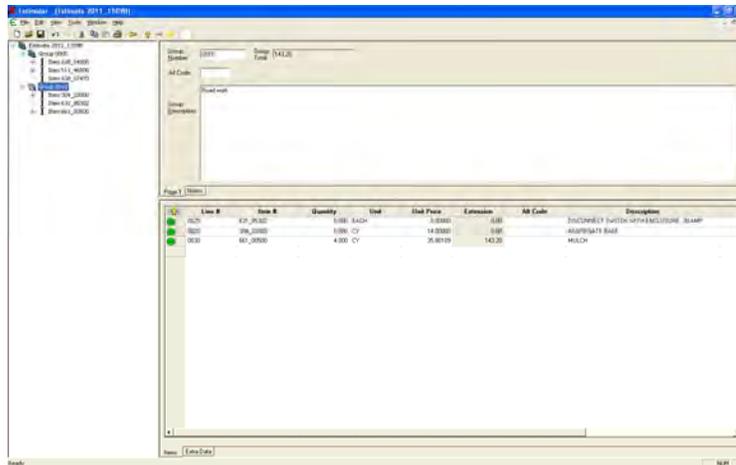


Figure 4-16. Group Item List

To add items to the group, select **Add Item** from the **Edit** menu. You can also add a new item by clicking in the empty Line # cell in the grid area of the group.

4.5.2 Adding an Item in the All Items Grid

Within the All Items grid, you can add new items, modify or delete existing items, and modify the quantity and price basis information for any or all of the items in the Item List.

While in the Estimate header window, select the ALL ITEMS tab. Click in the empty Group # cell in the All Items grid. Select a group from the drop down list or create your own group from the Select Group window. After you assign a group to your item, you can enter the rest of the item information into the grid.

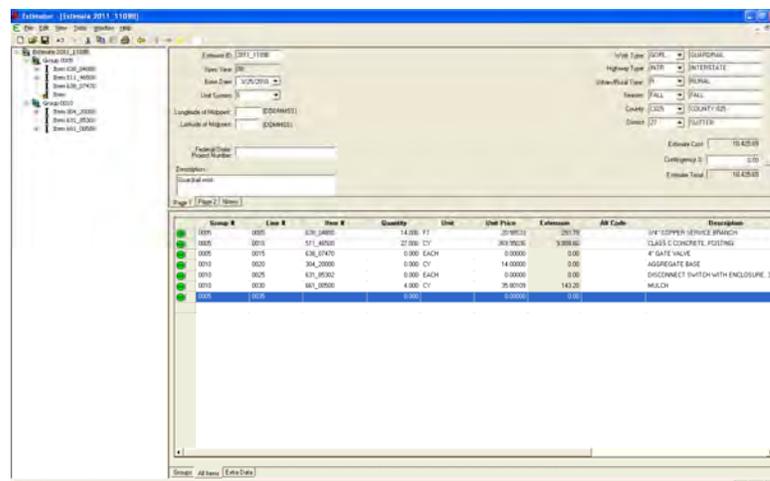


Figure 4-17. All Items Item List

If you know the item number of the item, you can enter it directly into the Item Number field. Estimator displays the first item in the list that matches the entered information; for

example, if you wanted to enter item number 1103027, when you type in the 1, the first item that starts with a 1 is displayed in the Item Number field. As you enter the subsequent numbers, the item in the Item Number field changes with each added number.

The Quantity field is required; Estimator does not supply this value. Lump sum items should always be set to a quantity of 1. After the Unit Price and Quantity values have been determined, Estimator automatically calculates the extended amount.

4.5.3 Using the Find Item Window

If you know the item code of an item, or a word or words included in the description, you can use that information to search for a particular item. You can also search for a unit of measurement or the unit system of English, metric, or none. The more information you enter about your item, the easier it will be to find.

Click the GO button next to the line number of the item for which you wish to find in the grid area of the Group window (for the GROUP tab) or the grid area of the Estimate header window (for the ALL ITEMS tab), or select the line number of the item in the tree area. You may have to create an item row if you are on the ALL ITEMS tab. Estimator displays the item window. Next to the Item Number field, a small button marked with an ellipsis (...) is visible. This is the FIND button.

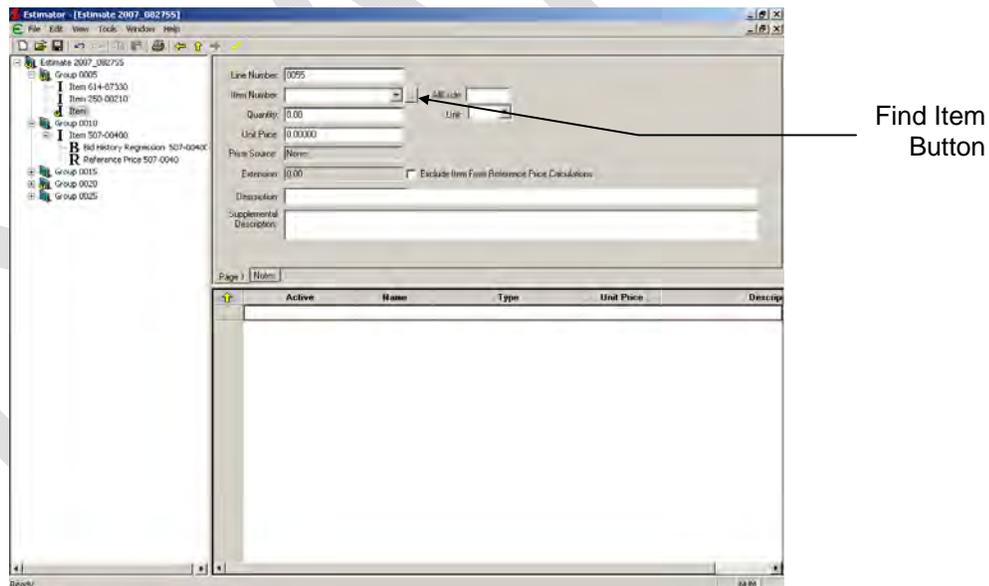


Figure 4-18. Find Item Button

Click the FIND button to bring up the Find Item window.

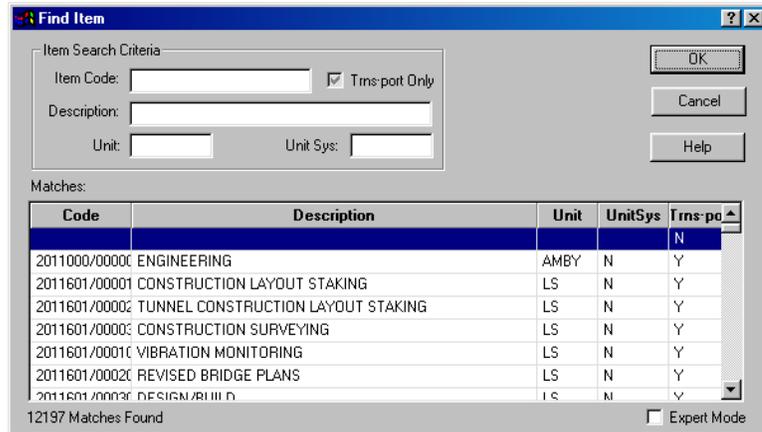


Figure 4-19. Find Item Window

Enter the criteria in the appropriate fields for the item you wish to find and press the TAB key between each entry. Do not press ENTER or click OK, as this will select the first item on the list and return you to the Item window.

Each time you press TAB, the list of matches narrows to those items that fit the entered information. Once you have entered all the criteria for which you are searching, select the desired item by highlighting it in the Matches list, and click OK. If there are no items that match the search, double check your information or be less specific and enter the search criteria again.

- **Note:** If an item is displayed with a line through it, it means the item does not match the unit system (English, metric, or none) of the estimate and cannot be selected.

Once you find the item you are searching for, select the item in the Matches list and click OK. Click CANCEL if you decide not to use any of the items.

Expert Mode

If the Expert Mode box is selected in the Find Item window, then the criteria entered in the Find fields must exactly match the item for which you are searching, or you must use wildcards to find the item for which you are searching.

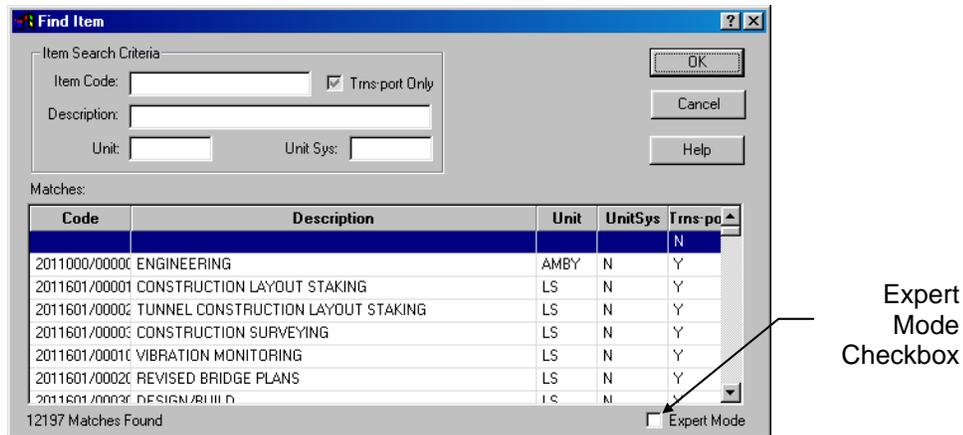


Figure 4-20. Find Item Expert Mode Box

For example, if you enter **Bridge** in the Description field when you are using Find Item in the regular mode, the Matches display every item in which the word *Bridge* appears somewhere in the description. In Expert Mode, however, you would have to enter the entire description - for example, **Bridge Approach Panel**, or **Install Bridge Superstructure** in order for Estimator to find a match, unless the item's entire description consists of the word *Bridge*.

Note: You must still use the TAB key in Expert Mode for Find Item to function.

You can also use wildcards to search for an item. The two wildcards Estimator uses are the question mark (?) and the asterisk (*).

Using * finds any number of characters. For example, if you know the word *Bridge* is the last word of an item's description, but you are not sure what the first word is, you can enter ***bridge** in the Description field and press TAB. Estimator displays all items that contain *Bridge* as their last word.

Using ? will find only one character. Suppose you wanted to find items that have a one-character designation; for example, *Remove G Light*, or *Remove 7 Light*. Enter **Remove ? Light** in the Description field and press TAB. Estimator displays all items that have the words *Remove* and *Light* in it, with one character in between the two words.

You can also combine the use of the wild cards. If you enter **?t*** in the Description field and press TAB, Estimator returns all items whose second letter is a T.

Once you find the item you are searching for, select the item in the Matches list and click OK. Click CANCEL if you decide not to use any of the items.

4.6 Sorting the Item List

You can sort the item list for the estimate from the ALL ITEMS tab, or sort each group's item list from the GROUPS tab. You can also sort Estimator's item list from the Item window before adding an item to your estimate. Estimator retains the sort order in the grid each time you access a sorted list, but the sort is not reflected in the tree area.

Estimator initially lists the items by Line # order. When you first click the desired sort column heading, Estimator sorts the items in ascending (A to Z, or 0 to 9) order, depending on the data in the field. Click again, and the sort order reverses to descending (Z to A, or 9 to 0).

4.6.1 Sorting the Estimate and Group Item Lists

You can sort the order of items in the estimate's Item List and a group's item list by any of the column headings. Simply click the column heading in the grid area of the characteristic by which you wish to sort. For example, to sort by Description, just click the description column heading. The items in the tree do not reflect the sort.

When you save the estimate, Estimator also saves the order of the items in the grid. If you reorder the items in an Item List and save the estimate, the next time you open the estimate file the items in the Item List are sorted in the same order.

4.7 Pricing

Estimator allows you to use five types of price bases to estimate the costs of the items in an estimate: cost sheets, bid histories, ad hoc, reference prices and price basis list.

Reference Prices can be derived from a variety of sources. For CTDOT, reference prices will usually be based upon a percentage of the total estimate, such as Mobilization.

Bid History pricing is the most commonly used pricing method. Bid history prices are based on past bids for that item. If there is sufficient bid history on an item, Estimator performs a regression analysis and provides a price which is based on quantity. It also bases the price on type of work, location within the State, time of year, and date, if this information is included in the Estimate header. **IT IS VERY IMPORTANT THAT THE HEADER INFORMATION BE FILLED OUT CORRECTLY AS IT CAN HAVE AN IMPACT ON THE PRICING.** If there is not sufficient data to perform a regression analysis, Estimator will return a weighted average price. If there is no supporting bid data, no price is returned, but the user may wish to use a bid history price for a similar item.

Ad hoc prices are prices that are entered by the estimator or are imported from an Excel spreadsheet.

Cost Sheets base an item's cost on equipment, labor and materials.

If an estimator knows what these prices are, they can be added by right clicking on an item and select Add Cost Sheet. To date, CTDOT does not have cost based pricing information. If these cost values are developed in the future, they will be included in the catalog. For further information, see the generic Estimator User's Guide (provided with the Estimator software), Section 3.3 Cost Based Estimation.

Price Basis List is a grouping of multiple pricing tasks which the user may find convenient to use as one task.

4.7.1 Working with Reference Prices

To view the reference price for an item, select that item in the tree area so it is expanded. Any price basis marked with an **R** is a reference price.

Select the desired reference price by highlighting it in the tree area or clicking GO in the grid. Estimator displays the selected reference price in a Reference Price window as shown in Figure 4-21.

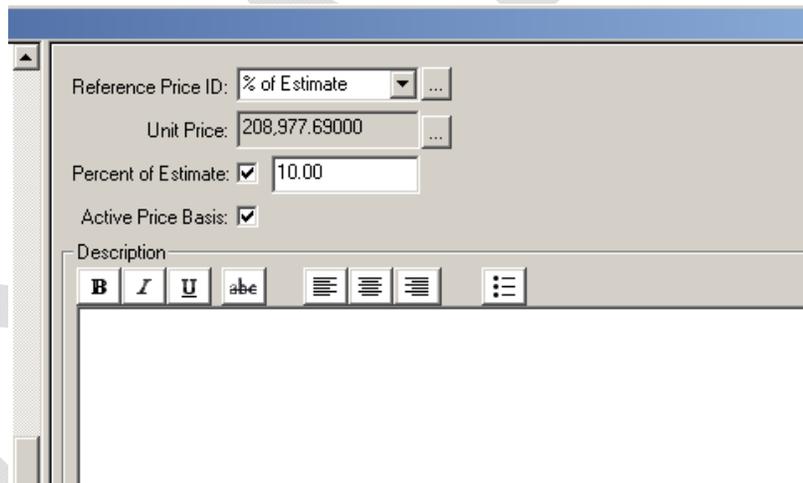


Figure 4-21. View Reference Price Dialog Box

Reference Price Window Fields

- | | |
|----------------------------|--|
| Reference Price ID | The Name field displays the name of the reference price. |
| Unit Price | The Unit Price field displays the estimated cost of one unit of the estimate item to which the reference price is attached. |
| Percent of Estimate | Select this check box to indicate the reference price be calculated as a percentage of the estimate total. Enter the total percentage in the field that appears if this check box is selected. |

Active Price Basis	The Active Price Basis check box determines if the reference price is used as a price basis. If this box is not selected, the price will not be included in the estimate total, so another pricing method must be used.
Description	The Description field is a text field used by the estimator to detail the characteristics of the reference price. For example, this field might contain the name of the outside source from which the reference price was derived, the circumstances under which the reference price is appropriate, the date that the reference price was entered into Estimator, and the name or initials of the estimator who entered the reference price.

To add a percentage based reference price to an item, right click on that item and select **Add Reference Price**. Select **Percent of Estimate** and fill in the percent.

 **Note:** Items that have Exclude Item from Reference Price Calculations selected will not be included in this price.

Changing a Reference Price

If you have permission to edit the estimate, you can change the reference price. Changes made to the reference price in an estimate are not reflected in the Reference Price catalog.

You can enter a new name for the reference price into the Reference Price ID field, a new price value for the reference price into the Unit Price field, and a new description into the Description field. The new description should explain the changes made to the reference price, the reason or basis for the changes, and include the name or initials of the user making the changes and the date the changes were made.

4.7.2 Working with Bid Histories

A *bid history*, information that has been derived by statistically analyzing past bids for an item, can be used to predict future bid prices for an item. There are two kinds of bid histories supported in Estimator: Average Prices and Regression Coefficients.

Average Prices predicts future bids on an item by determining the weighted average (total extended amount divided by total quantity) of past bids on the item.

Regression Coefficients use historical data (provided a sufficient amount exists) to fit the historical item bids into a formula that takes into account item quantity, inflation, estimate location, season of the year, and estimate work type. A statistical analysis model determines the coefficients of the formula that Estimator uses to predict a future bid price.

For detailed technical information of how bid histories are calculated, see Estimator User's Guide, Chapter 3.

You can display a bid history as long as the item selected has at least one bid history attached to it (whether or not it is the active price basis). You can also view bid histories from the Standard Item Catalog and the Bid History Catalog.

There are four fields that you can edit for a bid history:

- Bid History ID** The unique identifier of the bid history
- Item Code, if different** The item code to which this bid history belongs, if it is different than the item to which the bid history is attached.
- Quantity per Item Unit** The conversion factor used to adjust the quantity of the bid history when a bid history for a different item is used. For example, if the actual item's unit of measure is feet and the bid history item is inches, the Quantity per Item Unit should be set to 12. If the units of measure for both items are the same, the default value of 1 should be used.

Active Price Basis Indicates if the bid history is an active price basis.

Viewing Bid Histories

To view the bid history for an item, select the plus sign for that item so it is expanded. Any price basis in the tree area marked with a **B** is a bid history.

Select the desired bid history by highlighting it in the tree view or clicking the GO button in the grid. If you are looking at a bid history for an item, Estimator displays the selected bid history in a Bid History window as shown in Figure 4-22.

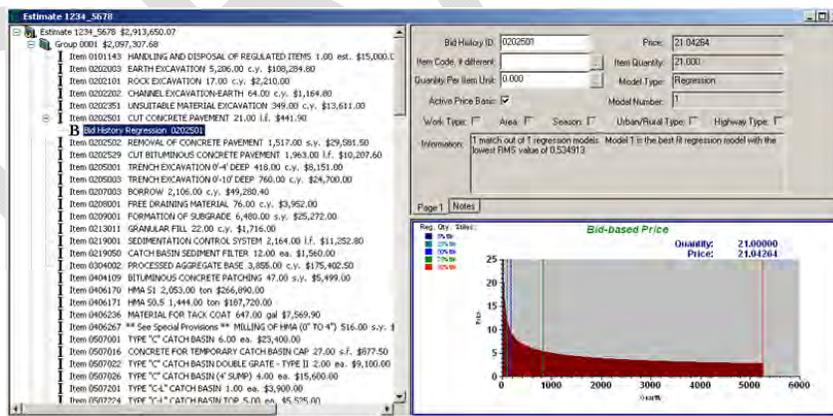


Figure 4-22. Bid History Window

For bid histories residing in estimates, the bid history windows include graphs of unit price versus quantity for the bid history item. Shown here is a sample graph of the regression price by quantity, while an average price by quantity graph displays Avg. Qty. %tile.

The green lines indicate the item's current quantity and price. You can find a specific price for quantity by placing your mouse on the graph, and pressing and holding down the right mouse button while finding that quantity and price on the graph.

The five colored lines on the graph represent the percentile in which the values are divided. This makes it easier to see where your quantity falls within the bid history regression plot.

Bid History Average

If there is not enough bid history to do a regression analysis and create a bid history regression plot, a bid history average is provided:



Figure 4-23. Bid History Average

This will give a weighted unit price for the item.

Viewing Scatter Plots

 **Note:** Scatter plots are only available to CTDOT internal users.

Scatter plots are graphical representation of the individual data points that make up the bid histories. To view the scatterplots, highlight an item and select either the *English Scatter Plot* or *Metric Scatter Plot* tab. A login dialog box will appear:

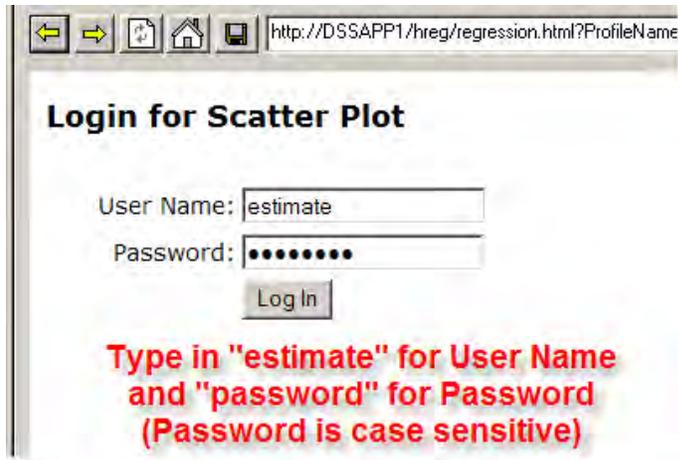


Figure 4-24. Scatter Plot Login

User Name: **estimate**

Password: **password**

The user will only have to log in once to the Scatter Plots per session.

Select English or Metric Scatter Plot tab.

- **Note:** The price on the scatter plot does not reflect selectors you have entered in the estimate header – it reflects options selected from the drop down menus; therefore it may be different from a bid-based price for the same item. Scatter plots may be used for viewing individual data points or for viewing the effects of different parameters on the price. If you do not wish to research the price, use the Bid History price suggested by Estimator instead.

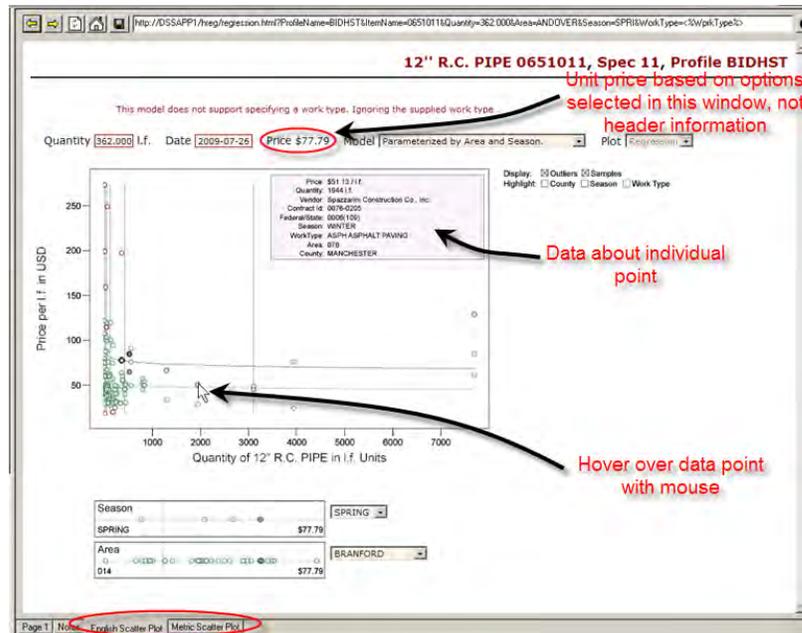


Figure 4-25. English Scatter Plot

This shows the details of the individual data point that was used to create the bid history graph.

4.7.3 Modifying a Price Basis in an Estimate

Once a price basis is added to your item, you can modify it, delete it, or update it.

Changing the Active Price Basis for an Item

If the item being added to the estimate already has one or more attached price bases, Estimator uses the item’s designated active price basis to determine the unit price of the item. If more than one price bases are attached to the item, you can select any of the attached price bases to serve as the active price basis.

Note: If an item has more than one active price basis checked, the prices will be added together.

To view an attached price basis of an item, open your estimate and select the item in the tree area or click the green GO button next to the item in the grid area for a group or on the ALL ITEMS tab. Estimator displays the symbol for each of the attached price bases:

- C** Cost Sheet
- R** Reference Price
- B** Bid-based Price
- I** Price Basis List, shown as a folder icon as well

An ad hoc price basis does not display as an attached price basis.

To make a price basis inactive, highlight that price basis in the tree view and select **Toggle Active/Inactive** from the **Edit** menu. You can also uncheck the box in the Active column in the grid view for that price basis. An ad hoc price basis is automatically active. Estimator places a red X on the inactive price basis.

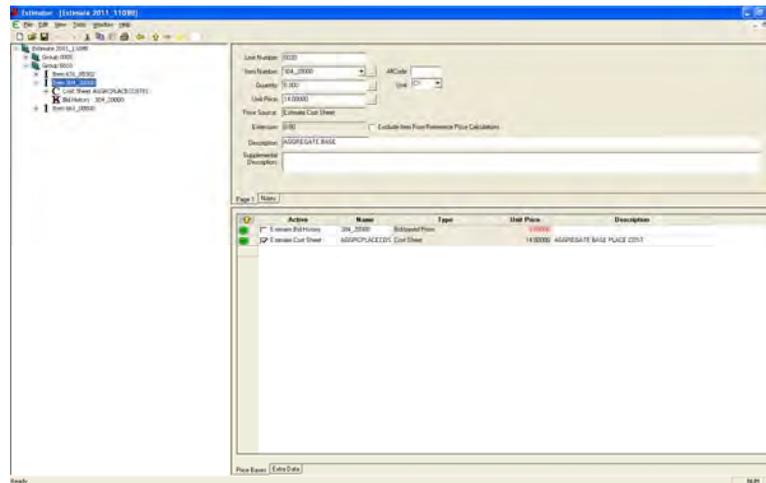


Figure 4-26. Item in Estimator With One Active and One Inactive Price Basis

To make the inactive price basis active, highlight that price basis in the tree view and select **Toggle Active/Inactive** from the **Edit** menu, or place a check in the Active column for that price basis.

Deleting Price Bases from an Item

To delete a price basis from an item, select the price basis in the tree view. Select the **Edit** menu and choose **Delete** for the desired price basis. This has no effect on other copies of the same price basis that might be included in a price basis catalog or that might be attached to other items in the same or different Estimator estimates; the delete only effects the selected item.

You can also delete the price basis from the grid area by highlighting it in the item window and selecting **Delete Price Bases** from the right mouse button menu.

If there is a possibility that the price basis might later be needed, you should make the price basis inactive instead of deleting it.

Re-pricing Items

Estimator is able to update prices in estimates if bid histories, rate catalog, or cost sheet information changes. Re-pricing can be done at the item level, group level, or estimate level, whichever is selected in the tree view. Select the desired element to be updated and select **Update Price Information** from the **Edit** menu.

You re-price estimates to reconcile an imported estimate with bid histories and cost sheets in the current catalog. You use this command most often when you import an estimate from another system; it is unlikely that you would re-price an estimate you created because doing so would cause you to lose any modifications you have made to estimate.

Sometimes it may be desirable to use the most up-to-date cost sheet and bid history data in an existing estimate. The most common use is to re-estimate items when new bid history is collected. Less frequently, you may wish to re-price an entire estimate (for example, if you import an estimate from another workstation). This is accomplished in both cases by using the Update Price Information command from the Edit menu.

You can update the entire estimate by selecting the estimate header before updating the price information. You can update specific price bases by selecting them in either the tree or grid area. If an item is selected, then only the price bases for that item are updated. If a group is selected then all price bases for each item in the group are updated. Whatever element is the active window is the only one updated.

-  **Note:** It is recommended that you save your estimate before updating the price information.

Once you select **Update Price Information** from the **Edit** menu, Estimator displays three updating choices as shown in Figure 4-27.

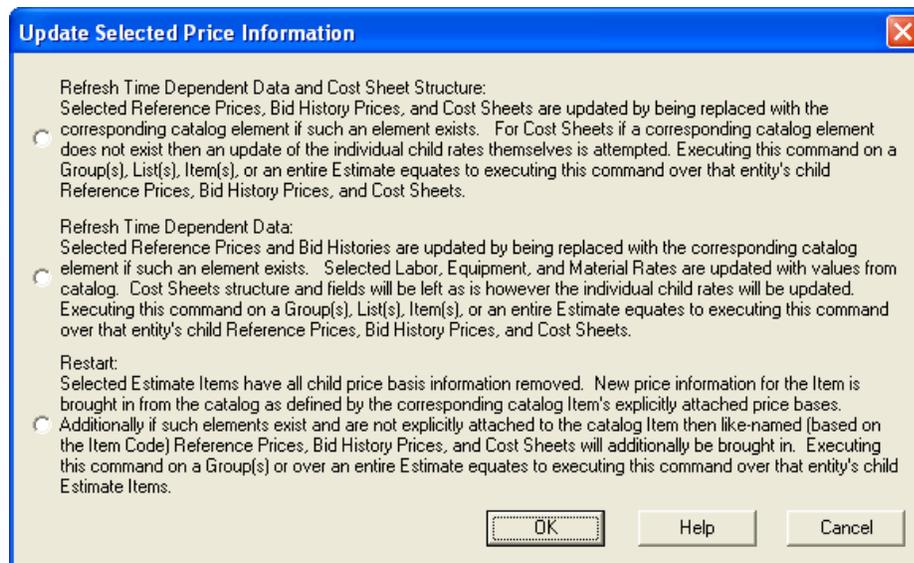


Figure 4-27. Update Selected Price Information Window

Choose which re-pricing option you wish to use and click OK, or click CANCEL to not re-price the estimate.

Refresh Time Dependent Data and Cost Sheet Structure

After you create estimates, the price bases catalogs may occasionally be modified. For example, if a supplier changed his quote, then the reference price from the catalog may change. To reflect these changes in your estimates, you need to refresh time dependent estimate prices.

Select **Refresh Time Dependent Data and Cost Sheet Structure** to replace the existing price bases an estimate uses with the updated price bases catalogs. Estimator compares the selected price basis in the estimate to the catalogs and then modifies the estimate's price bases according to any new or changed information that exists in the catalog.

Refresh Time Dependent Data

After you create estimates, the Reference Price Catalog, Bid History Catalog and Rate Catalogs may occasionally be modified. For example, if the minimum wage increased, the Labor Rate Catalog would need to be modified accordingly to reflect pay increases. If a supplier changed his quote, then the reference price would change. To reflect these changes in your estimates, you need to refresh time dependent estimate prices.

Select **Refresh Time Dependent Data** to replace the selected bid histories an estimate uses with bid histories from the Bid History Catalog and to replace the selected rates an estimate uses with rates from the Rate Catalogs. Estimator compares the selected items in the estimate to the catalogs and then modifies the estimate's selected bid histories or cost sheets according to any new or changed information that exists in the catalog. (It writes in any new bid histories, equipment, labor, or materials rates from the Bid History Catalog, Equipment Rate Catalog, Labor Rate Catalog, and Materials Rate Catalog, respectively.)

Restart

Selecting **Restart** clears away all child options (pricing tasks) of the selected entity and replaces the child options with the corresponding information in the Current Catalog. This option can be used by a single item, by a group for all items in that group, or by the estimate for all items in the estimate.

- 📄 **Note:** Any items that did not get priced are due to there not being any price basis in the catalog. You can set an ad-hoc price on these items by keying the value directly into the **Unit Price** field of the grid view.
- 📄 **Note:** Be careful when using this option as you are likely to lose pricing you have done previously!

From the **File** menu, select Save (or click the Save icon ()).



Figure 4-29. No Error Message

From the **File** menu, select Save (or click the Save icon ()).

4.8 Delivery to Lead Engineer

4.8.1 Roll up Items

- **Note:** If the same item appears in different funding groups, it does not need to be rolled up. Estimator will base the Bid History price on the total quantity of the item if the pricing was done through Estimator. If the prices are ad-hoc, they must be checked by the engineer.

To perform the Roll Up of items perform the following steps:

1. Locate the Estimate name in the **Tree View** and highlight it.
2. In the **Grid View** select the **All Items** tab.
3. Click on the **Group Number** column header in order to sort the items by Group Number.
4. Highlight the **Group Number** that you wish to combine items into and press **CTRL-C**.
5. Press **CTRL-V** to copy the number into each item.
6. Click on the **Item Number** column header to sort the items by Item Number.
7. Combine quantities for items that occur more than once and delete one occurrence of the items.
8. Make sure items are sorted by item number.
9. Locate the Estimate name in the **Tree View** and highlight it.
10. From the **Edit** menu, choose **Renumber Using Current Order**. Estimator makes the line numbers in every group increment by the number on the Global Options window, and changes the order of the numbers so that each line is sequential.

4.8.2 Delivery of Estimate File

ProjectWise is used to store the estimate at various stages. Once the estimate is complete, right click on the file in ProjectWise and select *Send To* and *Mail Recipient as Link*. This will create an email that should be forwarded to the lead engineer. The link will give them read-only access to the file.

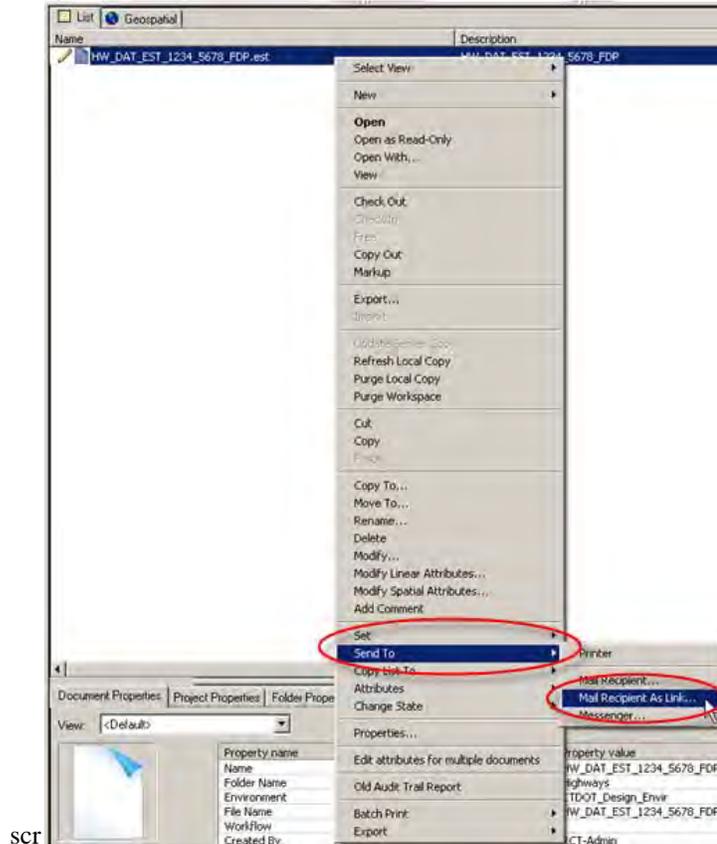


Figure 4-30. E-mailing the Estimate

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DRAFT

5. More Information about Items

The information in this chapter covers different aspects of CTDOT estimate items. It explains various types of items and how they are handled, including: Biddable vs. Non-Biddable, Obsolete, Lump Sum, Special Provision (“A”) items, Estimated items, and Alternate items.

5.1 Biddable vs. Non-Biddable

Most items in your estimates will be biddable items; that is, contractors will submit bids for these items when they are included in a bid proposal. There are some items, such as utility work, which do not appear in the list of proposal items of work, thus contractors do not bid on them. However, you should include the cost of these items in the estimate total.

Non-biddable items are identified by Item Numbers that begin with a numeral greater than 2; for example, item 3000006, WORK BY STATE FORCES; or utility items such as 3100011, C.L.+POWER CO. (ELECTRICAL). If there are multiple non-biddable items in your project, you may wish to add them all to the same Group; otherwise, just add them to the Group of items with the same funding source.

These items will be automatically designated as Non-bid when they are imported into Trns•port Preconstruction. However, you should select the check box for Exclude Item from Reference Price Calculations if you do not want the Non-bid items to contribute to percentage items such as Mobilization, as shown in Figure 5-1.

Line Number: 0270
Item Number: 3100113 AltCode:
Quantity: 1.000 Unit: LS
Unit Price: 5,000.00000
Price Source: Ad Hoc
Extension: 5,000.00 Exclude Item From Reference Price Calculations
Description
B *I* U abc
NORTHEAST UTILITIES SERVICE CO.
Page 1 Notes

Figure 5-1. Exclude Item From Reference Price Calculations

5.2 Lump Sums

Lump sum items are items that will always be bid with a quantity of 1. They are identified by a Unit code of LS. If there are multiple occurrences of the same lump sum item in a bid proposal, the system will always roll up the total quantity to 1.

Make sure that you always enter a quantity of 1 for your lump sum items. Note this is different from the way lump sum items were handled in the mainframe BMIS system in the past.

5.3 Estimated Cost Items

Estimated Cost items, or Cost Plus items, are items that may have the price adjusted during the construction phase. In the bid proposal, Estimated Cost items have a fixed price, that is, the bidder is required to bid the same price as the estimated price. Estimated Cost items are identified by a Unit code of “est.”. They will always be bid with a quantity of 1. If there are multiple occurrences of the same Estimated Cost item in a bid proposal, the system will always roll up the total quantity to 1.

Make sure that you always enter a quantity of 1 for your Estimated Cost items. Note this is different from the way Estimated Cost items were handled in the mainframe BMIS system in the past.

5.4 New Item Request

On occasion there may be an instance where an item does not exist in the catalogs. The new item will need to be formally added to the catalogs by making a New Item Request.

The link to perform the New Item Request will be available on the Connecticut Department of Transportation website at: <http://www.ct.gov/dot/site/default.asp>.

From the main page navigate to the **DOING BUSINESS WITH CONNDOT** page. Click the **CTDOT AASHTO Trns•port Environment** link located under the **Engineering Resources** section. On the **AASHTO Trns•port** page that is displayed you will find a link to request a new item.

Catalogs will be updated with new items on the afternoon of the first Wednesday of every month. It takes time for a request to be researched and processed, therefore please submit your request 3-4 weeks in advance.

5.5 Obsolete Items

Over time, as improvements are made in construction methods and materials and other changes occur, some items in the Trns•port reference item list become outdated and will no longer be used in design or construction. These items are designated by the agency as Obsolete. Obsolete items cannot be used in an active project or proposal in Preconstruction or Estimator, and will not appear in the Estimator catalog.

It is possible to remove the Obsolete status from an item so that it can be used again for the same purpose. If you think an item you need is no longer available, please follow the procedures for a new item request and specify that the item may already exist as obsolete. The Item Maintenance group may direct you to use a different item, or they may choose to change the status of the existing obsolete item. Changes to an item's Obsolete status will not take effect in the Estimator catalog until the catalog is updated on the first Wednesday of the following month.

5.6 Special Provision Items (“A” Items)

In the past, items requiring Special Provisions were identified by an “A” appended to the item number. This is no longer agency policy, except on the Detailed Estimate Sheet in the plans.

Now if an item in your estimate requires special provisions, you must paste the phrase “**See Special Provisions**” in the Supplemental Description field for the item. It is important to use this exact phrase because the field will be validated when the estimate is imported into Trns•port Preconstruction.

If the same item appears multiple times in your estimate, verify that the Supplemental Description is consistently populated in all occurrences of the item.

The phrase ****See Special Provisions**** is available for users to copy from the Extra Data tabs. Note that the Extra Data fields are for display and copying only. There are 3 ways to get to this text:

5.6.1 Estimate Detail

1. In the **Tree View** click on the Estimate ID.
2. Click on the EXTRA DATA tab at the bottom of the estimate detail area.
3. Find the text ****See Special Provisions**** and click on it to highlight it.
4. Press CTRL-C to copy the text.
5. Click on the ALL ITEMS tab to display all items.
6. Click in the **Supplemental Description** field to enter data.
7. Press CTRL -V to paste the text copied in Step 4 above. (Note: you can continue to paste the text into additional items without needing to copy it again.)

5.6.2 Group Detail

1. In the **Tree View** click on a group.
2. Click on the EXTRA DATA tab at the bottom of the group detail area.
3. Find the text ****See Special Provisions**** and click on it to highlight it.
4. Press CTRL-C to copy the text.
5. Click on the ALL ITEMS tab to display all items.
6. Click in the **Supplemental Description** field to enter data.
7. Press CTRL -V to paste the text copied in Step 4 above. (Note: you can continue to paste the text into additional items without needing to copy it again.)

5.6.3 Item Detail

1. Maximize your project on the screen.
2. In the Tree View click on the item or from the GRID VIEW GROUP tab click on the green GO button.
3. Click on the EXTRA DATA tab at the bottom of the item detail area.

4. Find the text ****See Special Provisions**** and click on it to highlight it.
5. Press CTRL-C to copy the text.
6. Click on the ALL ITEMS tab to display all items.
7. Click in the Supplemental Description field to enter data.
8. Press CTRL -V to paste the text copied in Step 4 above. (Note: you can continue to paste the text into additional items without needing to copy it again.)

Note if you have imported your estimate from a spreadsheet, you may only be able to use option 5.5.1.

5.7 Alternate Items

Alternate items are handled differently in Estimator than in the mainframe BMIS system. For items where the bidder must select which variation of an item they wish to bid, such as Noise Barrier Walls, the estimator must add all variations of the item to the estimate, with an Alt Code assigned as follows.

The first two characters of the Alt Code must be alphabetic, such as AA. This links which items will be alternates of each other. The third character of the Alt Code must be numeric, such as 1, which identifies the separate choices.

In the example in Figure 5-2, the estimator has assigned Alternate Codes to each variation of the noise wall item, using Alt Codes AA1 through AA5. Since there are varying prices, Estimator will select the lowest price item, AA5, to use in the total and ignore the others. If the user had priced all the items the same, Estimator would pick one item to include in the total and ignore the others. Make sure you assign a price to all of the alternates so that Estimator includes a price in the total.

	Line #	Item #	Quantity	Unit	Unit Price	Extension	Alt Code	Description
	0220	0916120	11,000.000	s.f.	100.00000	1,100,000.00	AA1	NOISE BARRIER WALL (UNDER ITEM NO. 916120 - NOISE
	0230	0916120-02	11,000.000	s.f.	99.99000	1,099,890.00	AA2	2. TIMBER NOISE BARRIER WALL T TYPE 2.
	0240	0916120-03	11,000.000	s.f.	99.00000	1,089,000.00	AA3	3. HARDWOOD NOISE BARRIER WALL T TYPE 1.
	0250	0916120-04	11,000.000	s.f.	99.50000	1,094,500.00	AA4	4. HARDWOOD NOISE BARRIER WALL T TYPE 2.
	0260	0916120-05	11,000.000	s.f.	98.00000	1,078,000.00	AA5	5. MASONRY NOISE BARRIER WALL

Figure 5-2. Alternate Codes

This page inserted to accommodate duplex printing.

6. Using Estimator at Lead Level

The lead estimator will be responsible for compiling the estimates received from the discipline estimators in order to make one estimate for the project, with items grouped by funding source, and ensuring that there are no duplicate items within the same funding group.

This may be done by combining estimates within the Estimator software. Another option is to export all contributing estimates to spreadsheets and combine within the Excel software, then import into Estimator.

Since every group of estimates is different, rather than list out exact instructions for combining estimates, the various processes and commands you may use to manipulate the data are listed below.

6.1 Header Information

The lead estimator should review the data in the Estimator header to see if adjustments are required, in particular for the Work Type, Base Date, Season and Description. For detailed information on filling out the estimate header, see section 4.x.x.

6.2 Combining Estimator Files

To move data from one estimate file to another within Estimator, open two estimate files. From the View menu, select Tile Vertically or Tile Horizontally. This will allow you to use the commands described in the following sections to move the data from one estimate to another. Figure 6-1 shows an example of two estimates tiled vertically.

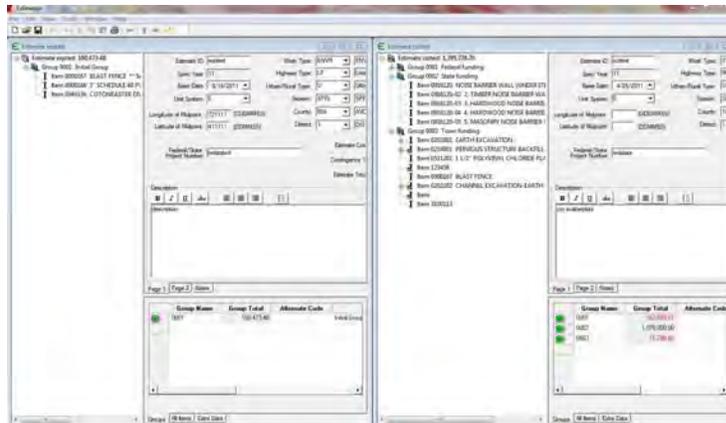


Figure 6-1. Windows Tiled Vertically

6.2.1 Manipulating Estimate Data

Cut, copy and paste are Estimator features that add flexibility when the need arises to move data within estimates. In terms of cut, copy, and paste, the *source* is defined as where the data comes from initially and the *destination* is defined as where the data is going. The cut, copy, and paste commands are context sensitive, which means the type of active window and number of selected items you want to use as the source determines where paste is enabled. The destination has to be capable of holding the source. The copy and paste commands do not delete selected items. In fact, if you have more than one item selected in a list, the paste command is disabled.

- 📄 **Note:** Pasting items into an estimate item list can throw off the item numbering. When you paste into an item list, you may wish to consider renumbering the items. Select **Renumber Estimate Items** from the **Edit** menu to renumber an estimate's item list.

6.2.2 Cut Command

The Cut command copies the currently selected items in a list window or the active window's content to the clipboard, then deletes it from its current location. To do this, the clipboard acts as temporary storage and holds the data to be pasted into another location. However, if you cut or copy something else before the previously cut data is pasted, the data is deleted from the clipboard and cannot be retrieved.

To use the Cut command, select the desired text and choose **Cut** from the **Edit** menu.

6.2.3 Copy Command

The Copy command copies the currently selected items in a list window or the active window's contents to the clipboard. For example, you might want to copy items from one list to another or an entire cost sheet into a different cost sheet. To do this, the clipboard acts as temporary storage and holds the information to be pasted into another location. However, if you cut or copy something else before the previously copied data is

pasted, the data is deleted from the clipboard and you will have to copy it again if you want to use it elsewhere.

To use the Copy command, select the desired text and choose **Copy** from the **Edit** menu.

6.2.4 Paste Command

The Paste command copies the contents of the clipboard into the active list or window. Paste is enabled if the data from the source window logically fits into the destination window. For example, it makes no sense to copy a group into an item list.

 **Note:** Paste is disabled when multiple items are selected to prevent accidental overwriting of data.

To use the Paste command, select the desired text, and then select **Paste** from the **Edit** menu. Before using the Paste command, you must have first cut or copied the text. The information remains in the clipboard until something else is cut or copied.

6.2.5 Roll Up Items

Another step the Lead Estimator will be responsible for when compiling the estimates received from the Discipline Estimators is to perform the Roll-Up of Items in the estimate. Most items have a price and quantity relationship where the unit price lowers when a higher quantity of the item is used. If this option is selected, quantities of like items are *rolled up* and this combined quantity is used for the bid history pricing of the individual items. This emulates how a contractor would price items that occur multiple times on a contract. Normally this is desirable and thus it is a default setting.

Estimator only uses the combined quantities of an item that has more than one occurrence in an estimate for bid history pricing. It does not physically combine the item. Any item that has more than one occurrence and the same funding source must be combined by the engineer. To perform the Roll Up of items perform the following steps:

1. Locate the Estimate name in the **Tree View** and highlight it.
2. In the **Grid View** select the ALL ITEMS tab.
3. Click on the **Group Number** column header in order to sort the items by Group Number.
4. Highlight the **Group Number** that you wish to combine items into and press CTRL-C.
5. Press CTRL-V to copy the number into each item.
6. Click on the **Item Number** column header to sort the items by Item Number.

7. Manually combine quantities for items that occur more than once and delete one occurrence of the items.
8. Make sure items are sorted by item number.
9. Locate the Estimate name in the **Tree View** and highlight it.
10. From the **Edit** menu, choose **Renumber Using Current Order**. Estimator makes the line numbers in every group increment by the number on the Global Options window, and changes the order of the numbers so that each line is sequential.

6.3 Check for Duplicate Items

Any items that are duplicates of one another and in different groups need to be checked to ensure that they have similar Supplemental Descriptions. If one item is marked as having a Special Provision, both items need to be marked as such.

6.4 Update Price Information

You may wish to apply your own price adjustments. For information on how to have Estimator automatically apply or update default prices, see Repricing Items in section 4.1.

6.5 Verify Estimate

Once your estimate is complete, you can make sure all the information contained in the estimate is valid by selecting **Verify Estimate** from the **Edit** menu. Estimator displays a list of required fields that were left blank or have invalid entries. You can also access the Verify Estimate window by clicking the yellow CHECKMARK (✓) on the Estimator toolbar.

In the Save as Type dropdown box, choose Excel 97-2003 Workbook or Excel 2007 Workbook, as shown in Figure 6-4.



Figure 6-4. Select Workbook Type

Click Save. The exported spreadsheet will open in Microsoft® Excel.

For detailed information on importing a Microsoft® Excel spreadsheet into Estimator, please see Section 4.1.2. After the import, the header, group names, line numbering and pricing should be checked.

6.7 Delivery of Final Estimate to Contract Development

For the deliverables of the estimate at the following stages:

- Final Design Plans (FDP)
- Addenda that involve estimate modifications
- Design initiated construction change orders that involve estimate modifications
- Revised estimates (if the project is re-let)

The estimate file with the *.est* extension will be delivered to the ProjectWise 240_Contract_Development folder for that project.

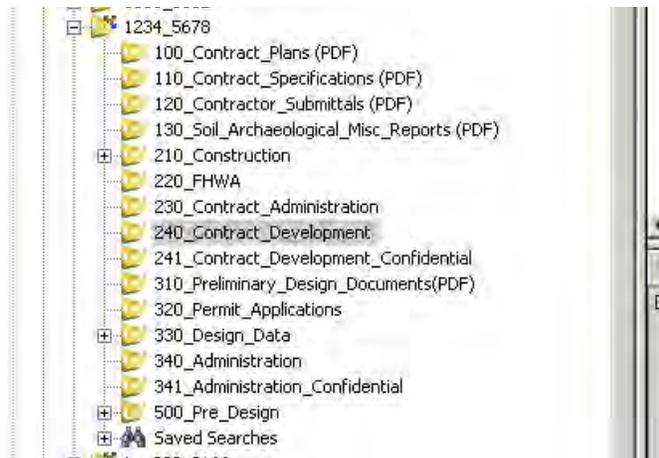


Figure 6-5. Estimate Save Location

The final estimate file must be dragged and dropped (not copied and pasted) from Windows Explorer. Once the file is dropped into the proper location in ProjectWise, a Document Creation Wizard dialog box will appear. This wizard will define the document properties for storage in ProjectWise. Highlight *Advanced Wizard* and select *OK*. This will bring up the Advanced Document Creation Wizard.

Click OK or NEXT for the next three dialog boxes.

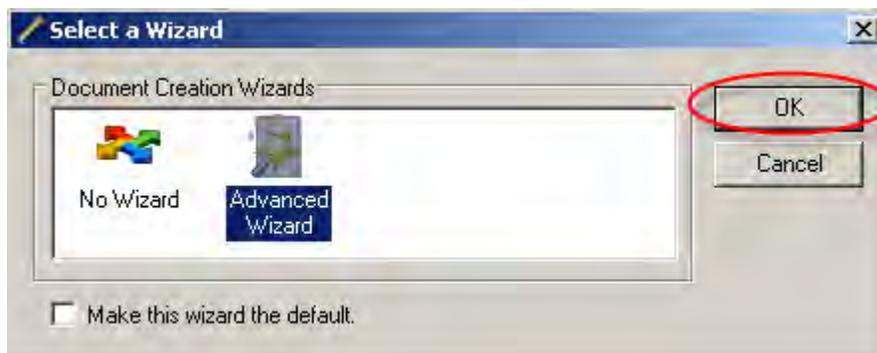


Figure 6-6. Wizard Selection

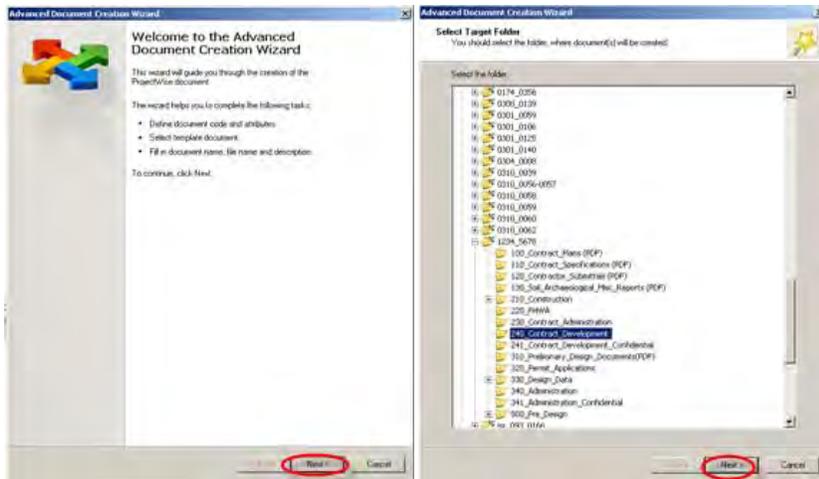


Figure 6-7. Advanced Document Creation Wizard

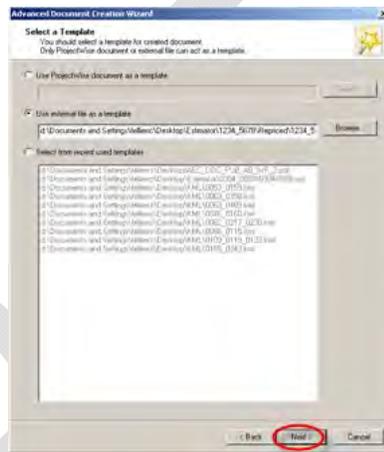


Figure 6-8. Select a Template

In the Define Document Attributes dialog box, there are three drop down attributes that must be chosen and one user defined attribute that must be filled in:



Figure 6-9. Select Attributes

Discipline: select CT - (CTDOT Plans, Specs, Std)

Main Category: select DAT – (Data)

Sub Category: select EST – (Estimate)

Label (User Defined)

In the Label box, the user will type in what type of estimate is being submitted using the following format:

DE_FDP –(lead) Designers Estimate at FDP

EE_FDP –Engineers (Processing) Estimate

For Addendums:

Designers Estimate – DE_A1, DE_A2, etc.

Engineers Estimate – EE_A1, EE_A2, etc.

For Change Orderss:

Designers Estimate – DE_C1, DE_C2, etc.

Engineers Estimate – EE_C1, EE_C2, etc.

For Revised Estimant (Re-lettings)

Designers Estimate – DE_R1, DE_R2, etc.

Engineers Estimate – EE_R1, EE_R2, etc.

The Advanced Document Creation Wizard will automatically concatenate a document attribute of:

CT_DAT_EST_XXXX_XXXX_Label

Where XXXX_XXXX is the project number where the estimate was placed and the Label is what the user filled in:

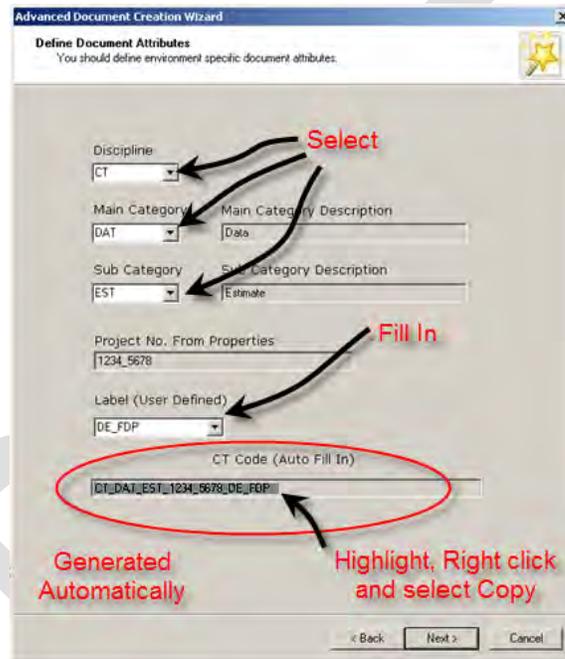


Figure 6-10. Define Document Attributes

Highlight the CT Code, right click, select COPY and NEXT.

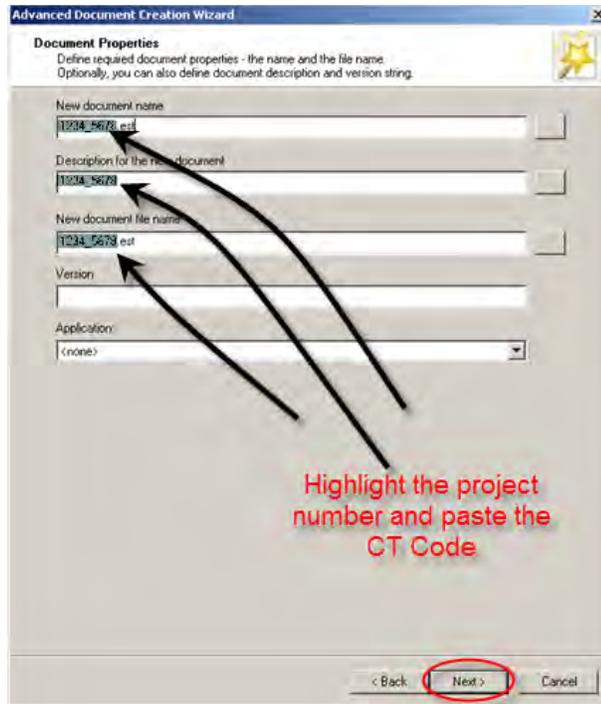


Figure 6-11. Document Properties

Highlight the project number (do not highlight the .est extension) and paste the CT Code that was copied from the previous dialog box. Click NEXT for the following dialog box and FINISH for the last box:

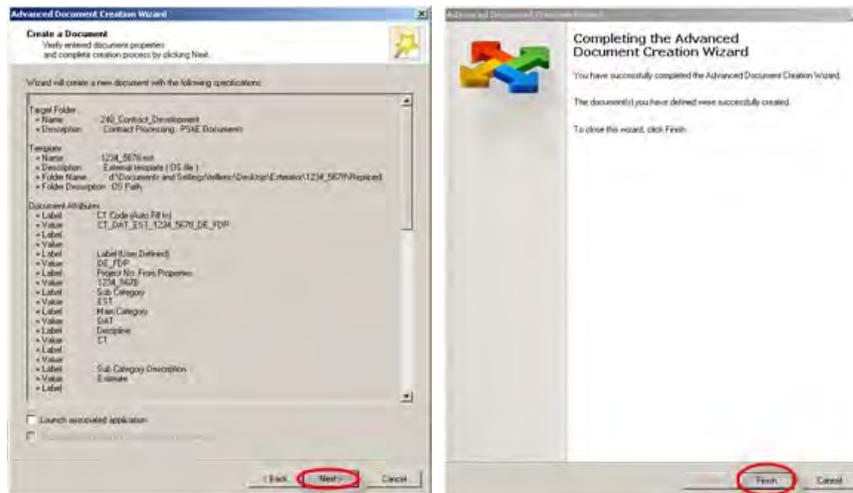


Figure 6-12. Create a Document

Right click on the document and select **Send To** and **Mail Recipient As Link**:



Figure 6-13. Document Mail Links

Fill out the appropriate information in the email and select SEND.

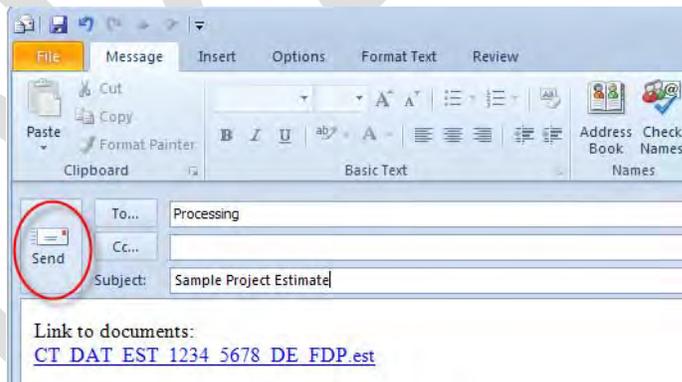


Figure 6-14. Send an Email

Appendix A. Checklists

A.1 Discipline Level

- Create Estimate
- Fill out all fields in Project Header
- Add Groups by funding source
- Add items to groups
- Price items
- Verify Estimate
- Save
- Forward Estimate to lead engineer via ProjectWise

A.2 Lead Level

- Create Estimate
- Combine discipline estimates into one estimate
- Verify all fields in Project Header
- Check that items are grouped by funding source
- Check to see if there are multiple occurrences of the same item within the same group. If there are, combine items.

- Re-price if necessary
- Sort items by Item Number and Renumber Using Current Order
- Verify Estimate
- Forward Estimate to Contract Development/Consultant Liaison via ProjectWise

A.3 Consultant Liaison

- Verify all fields in Project Header
- Check Estimated By: field in header information on Page 2. This field should be blank.
- Verify Estimate
- Forward Estimate to Contract Development via ProjectWise

Appendix B: Glossary

Active Price Basis	The price basis of an item that is used by Estimator to calculate the Unit Price of the item.
Active Estimate	The one open estimate (out of many) that will currently be affected by commands.
Active Window	The one open window that will currently be affected by commands.
Ad Hoc	A type of price basis that relies on the estimator's abilities to determine item prices.
Agency	Used as part of the brand to distinguish a group of Estimator users (see Brand, Location).
Ascending	The ordering of a list with the lowest value first and each successive value occurring later in the alphabet or number system. The list of numbers 10, 20, 40 and the list of codes A25, C11, Z44 are in ascending order (see Descending).
Bid-based Price	Unit price for a work item that is derived in Estimator using one of three estimation methods, which, listed in order of priority, are regression, averages, and historical/reference price.
Brand	Used to distinguish the different agencies and locations using Estimator (see Agency, Location).
Catalog	A collection of commonly used elements stored by Estimator. Those with catalog edit or import access store and update information in the catalogs. Elements in a catalog are not associated with a particular estimate and can be used in any estimate.

Code Table Catalogs	Catalogs that contain information used to fill in drop-down list options. These values can be entered manually or imported from another source by those with catalog edit and import privileges.
Check Box	A dialog box component that allows you to select options. Any number of these square boxes might be present and you might select none, some, or all of them (see Radio Button and List Box).
Click	The act of pressing and releasing one of the buttons on the mouse, generally the left mouse button.
Combo Box	A dialog component that contains a fixed list of choices. Only one of the choices can be active at a time. The combo box will have a scroll bar to aid in moving through the list (see Radio Button, Check Box, and List Box).
Control Menu	A menu in the upper-left corner of every window which contains commands that change the size of, move, or close the active window.
Cost Sheet	Utility used to tally the costs of the equipment, labor, and materials needed to complete an item. Cost sheets are only used for cost-based estimation.
Descending	The ordering of a list with the highest value first and each successive value occurring earlier in the alphabet or number system. The list of numbers 40, 20, 10 and the list of codes Z44, C11, A25 are in descending order (see Ascending).
Dialog Box	A box displayed on the screen in which you enter information. It might contain text boxes, list boxes, radio buttons, and check boxes.
Double Clicking	The act of quickly pressing a mouse button twice in succession.
Drag and Drop	The act of using the mouse moves an element from one location to another. First, highlight the desired element. Next, press and hold down the left mouse button and move the cursor to the desired location for the element. Drop the element in that location by releasing the left mouse button.
Equipment	Any mechanical tool or contrivance that must be bought, rented, or leased.
Estimate	Estimates, which are made up of estimate header information and group and item lists, store the items used in a construction estimate, the price bases, and supporting information about the contract.
Estimator	A computer program designed to estimate the cost of a construction project with cost-based and bid-based estimation.

Extra Data	Information the user wishes to store in Estimator that has no designated place.
Expression Builder	Estimator function that allows the user to find a value for a numeric field by using a formula to derive that value.
File	An entity that stores all information associated with exactly one estimate or exactly one catalog and its elements.
Grid Area	Usually in the right pane of a catalog or estimate window, the grid area displays a list of the entity selected in the tree area.
Group	An overall heading for related items in an estimate.
Group List	A list displayed in the tree or grid area of an estimate of all the groups in that estimate.
Header Information	Header Information contains general information about the element with which it is associated. For an estimate, this includes the spec year, highway type, and county; for an item, this includes the unit price and system of measurement; for a catalog, this includes the name and description.
Highlight	To shade an area to give it emphasis. Can be performed with a mouse by pointing and clicking on the beginning of the area and dragging until the desired area is shaded.
Item	Stored in the Standard Item Catalog, items are the basic units of an estimate.
Item List	For an estimate, the item list is a list of all the items that comprise the estimate groups. For the Standard Item Catalog, it is a list of all the items in the catalog.
Labor	For costing purposes, labor is defined as work performed by people.
List	A collection of related elements found in a catalog or formed by an estimator using Estimator. Each list is associated with a specific catalog or estimate.
List Box	A dialog box component that contains a list of choices. Only one of the choices can be selected at a time. The list box will have a scroll bar to aid in moving through the list (see Radio Button, Check Box, and Combo Box).
Location	Used as part of the brand to distinguish groups of Estimator users (see Agency, Brand).

Material	Any quantifiable physical entity which is consumed in the performance of an item of work (excluding power or fuel for equipment).
Menu	A list of related commands that can be pulled down and viewed simultaneously.
None	A privilege level of None means that the user can not access a new estimate.
Owner	A privilege level of Owner means that the user can edit a new estimate as well as change information on the estimate's User list.
Password	A code that Estimator uses to identify you. This code is used in conjunction with your username when you want to tell Estimator who you are. You must keep your password secret at all times to prevent other people from accessing your files without your knowledge.
Price Basis	A method used to determine an item's price. Price bases include one or more cost sheets, bid histories, and reference prices. Ad hoc is a different type of price basis that relies on the estimator's abilities to determine item prices.
Price Bases Catalogs	The Cost Sheet, Bid History, and Reference Price Catalogs, they comprise the bases of the ways the estimate can be estimated.
Privileges/Permissions	The level of access to a new estimate. The access levels are owner, user, write, read, and none.
Production Rate	The number of units of an item generated in one day of work.
Radio Button	A dialog box component that allows you to select one option from a small group of related options. A circular button (see List Box and Check Box) represents each choice.
Rate Catalogs	The Equipment Rate, Labor Rate, and Material Rate Catalogs, used to comprise the information for the Cost Sheet Catalog.
Read	A privilege level of Read means that a user can access a new estimate, but not make any changes to it.
Reference Price	A price used as the basis for estimating an item's cost. Reference prices may be stipulated directly or they may be derived from formulas.
Roll Up Quantity	A system management function on the GENERAL tab of the Global Options, it allows you to total the quantities of an item across groups for use with bid-based pricing.

Scroll Bar	A rectangular box that is present in list boxes or windows. The bar contains up and down scroll arrows and a scroll box. The scroll bar allows you to move through text to view sections that are not currently visible. To use the bar for scrolling, click on the scroll box and drag it up or down. Alternatively, you can click on the scroll arrows to produce the same results.
Scrolling	The up or down shifting of text that occurs when you move your cursor to see parts of the text that are not currently visible (see Scroll Bar).
Spec Year	A base year used for pricing purposes. The spec year is used to ensure that all pricing information within an estimate is correct for the time period encompassed by the estimate.
Super-User	A user granted special privileges. A super-user has automatic owner access to new estimates, can edit and import new catalogs, and can change fields for a user in the Users Table.
Text Box	A dialog box component that accepts input that is typed in or copied from an Estimator catalog.
Tree Area	Usually in the left pane of a catalog or estimate window, the tree area displays all the entities that comprise an estimate or catalog.
User	A privilege level of User means that a user can edit a new estimate and make changes to the estimate's User list, but not change any fields for a user designated as an Owner.
Users List	For Estimator, it is a list of all users, their real names, and new estimate and catalog access permission. For an estimate, it is a list of all users with privileges to at least read the estimate.
User Permission	A user's right to view and edit the information in an estimate. Each estimate can have one or more people listed as users. User permission differs from owner permission in that someone with user permission cannot view or edit the User List for the estimate.
Username	The name by which Estimator knows you. Estimator uses your name and password to verify who you are so that you can work on Estimator estimates for which your username is listed as an authorized user.
Web Services	An option set by the System Manager to allow parts of estimates or catalogs to view information over the Internet set up by the transportation agency.

Wild Card

A character that can substitute for one or more characters. The asterisk wild card (*) can substitute for one or more characters whereas the question mark wild card (?) can substitute for only a single character. For example, the wild card in the name 1989?.est can substitute for 1989A. est, 1989X. est, or 1989!. est. Estimator uses wild cards in file names and user security permission codes.

Write

A privilege level of Write means that a user can edit a new estimate.

Appendix C. Global Options

This appendix defines the Global Options settings to be used in the Trns•port Estimator® client installation. The Global Options can be accessed after logging into Estimator by selecting **Global Options** from the **Tools** menu. A screen shot of each Global Option tab is shown followed by a definition of the option. Each definition will indicate the settings, in bold, as they apply to a CTDOT user or consultant. Consultants must set these to be consistent with CTDOT internal settings.

C.1 The General Tab

The GENERAL tab depicted in Figure C-1 sets the options for the estimate archive and auto-save functions. It also allows you to enter the agency's name and use out of range bid history prices.



Figure C-1. The Global Options Window - General Tab

These are the options available on the GENERAL tab:

Agency Name The agency brand for this copy of Estimator. This name appears on printed estimates. Only the system manager can change this option.

Enter: CTDOT – Connecticut Department of Transportation

Auto Save Interval (minutes) Estimator has an auto-save feature that automatically saves every open window after the designated time has elapsed. These saved files can then be accessed in case of a power-outage, or if Estimator is shut down in an unconventional way. The Auto Save function is turned off if you set the Auto Save Level to 0.

0

Archive Level When you save your estimate, Estimator keeps the former estimate intact in an archive. You can archive up to nine levels. These files can be accessed in the directory where the estimator.exe file is kept. The Archive function is turned off if you set the Archive Level to 0.

0

Verify Estimates Upon Opening If this box is selected, the Estimator software runs a verification check on an estimate when it is opened. A message displays

only if there are errors in the estimate.

OFF

Estimate Out of Range Bid History Prices

Usually when using a bid history, the outliers of an item occurrence or quantity entered into an estimate (that is, any number that falls below the 5th percentile or above the 95th percentile) is not used in calculating the bid history price. If this option is selected, then the bid history will use all of the item's occurrences. Only the system manager can change this option.

OFF

Roll Up Item Quantity for Bid History Prices

When bid-based prices are used, the cost of the item usually lowers when a high quantity of an item is purchased. Using a bid-based item price across multiple groups does not give you the advantage of a high quantity purchase. When bid history items match estimate item codes and both estimate items are priced with a single bid history record matching the same item code, you should *roll up* the quantities bid-based items across multiple. Only the system manager can set this option.

ON

New Estimate Use only Trns•port items and codes

When adding items and code table values to your estimate, only ones that are compatible with Trns•port applications will be available when this option is selected. Only the system manager can set this option.

ON

Prohibit Duplicate Line Numbers

When copying items from one group to another, if this global option is disabled, the target items will have the same line numbers as the source. Enabling this option forces the target items' line numbers to increment based upon the agency's defined line number increment setting.

ON

Prohibit Multiple Active Price Bases

When this option is enabled, a user may have only one active price basis for an estimate item. If an active price basis already exists and a user adds a new price basis, the first will be toggled inactive and the newly added price basis will become active.

OFF

- **Note:** When using the Roll Up Item Quantity for Bid History Prices feature, the application enforces a safety permutation limit to prevent Estimator from responding slowly when the estimate contains numerous alternate items. This safety limit can be modified in the estimator.ini file.

C.2 Numeric/Rounding

The NUMERIC/ROUNDING tab depicted in Figure C-2 sets how you want the estimate to round its prices, extended amounts, and quantity. It also sets the line and group number starts and increments. Only the system manager can change options on this tab.

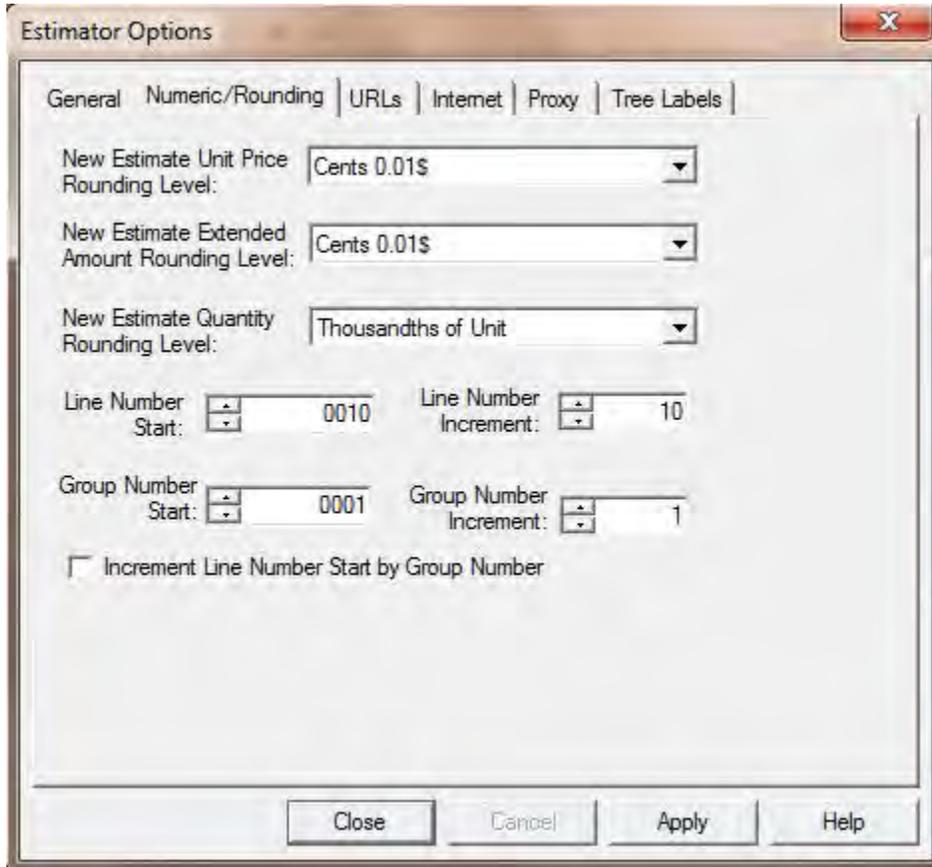


Figure C-2. The Global Options Window – Numeric/Rounding Tab

These are the options available on the NUMERIC/ROUNDING tab:

New Estimate Unit Price Rounding Level You can choose to round estimate unit prices from between one dollar (\$1.00) to thousandths of cents (\$0.00001).

Cents 0.01\$

New Estimate Extended Amount Rounding Level You can choose to round an estimate's extended amount from between one dollar (\$1.00) to thousandths of cents (\$0.00001).

Cents 0.01\$

New Estimate Quantity Rounding Level You can choose to round estimate quantities from between one unit to thousandths of unit.

Thousandths of Unit.

Line Number Start This is the line number that appears when a new item is added to an estimate.

0010

Line Number Increment This is the amount the line numbers increment when new items are added to an estimate.

10

Group Number Start The first group in an estimate is given this number when it is created.

0001

Group Number Increment Each successive group is numbered in this increment from the first group.

1

Increment Line Number Start by Group Number Each item is numbered according to the group number, though incrementing accordingly within the group.

OFF

C.3 URLs

The URLs tab depicted in Figure C-3 contains the paths for your catalog, estimate, template, custom print reports, and cache folders.

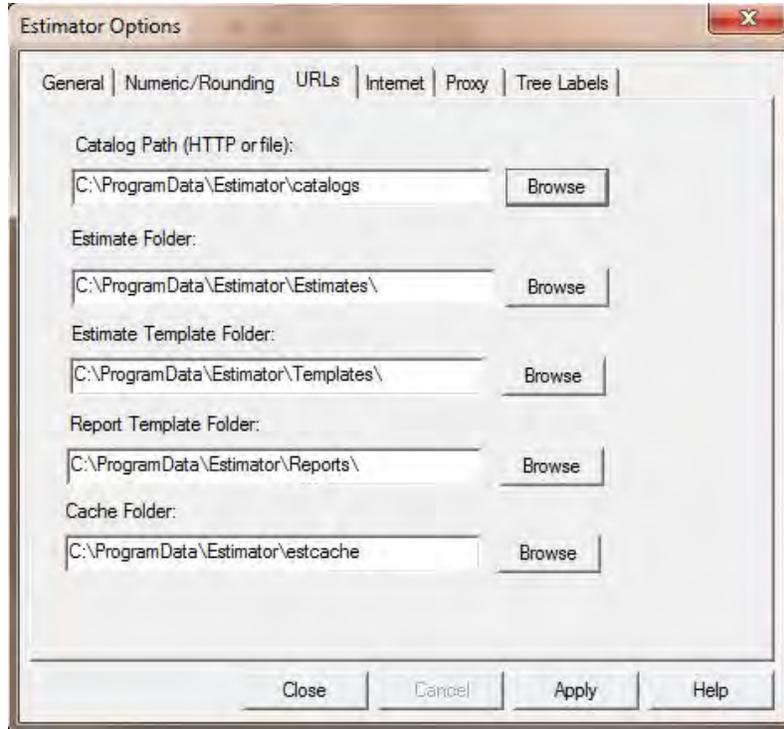


Figure C-3. The Global Options Window - URLs Tab

Here are the options available on the URLs tab:

Catalog Path (HTTP or file) This field displays the location of the Estimator catalogs. This is the directory Estimator displays when you select Switch Catalog from the Tools menu.

Default: C:\ProgramData\Estimator\catalogs

Estimate Folder This is the directory to which new estimates are saved.

Default: C:\ProgramData\Estimator\Estimates

Template Folder This is the directory where estimate templates are kept. Only the system manager can change this option.

Default: C:\ProgramData\Estimator\Templates

Reports Template Folder This is the directory where customized print report templates for estimates are kept. Only the system manager can change this option.

Optional report templates can be created with the full version of the Crystal Reports[®] software and placed in the directory specified in this field. These reports will be available in the Print Options window when you print an estimate.

Default: C:\ProgramData\Estimator\Reports

Cache Folder

This is the local directory that Estimator uses for file download when your user table or catalogs are stored on a web server.

Default: C:\ProgramData\Estimator\estcache

Only the system manager can change the Template path and the Reports Template path on this tab.

C.4 Internet

The INTERNET tab depicted in Figure C-4 allows Estimator to connect to a Web server and look for catalog updates, and download them into the Current Catalog. Any user can change the options on this tab.

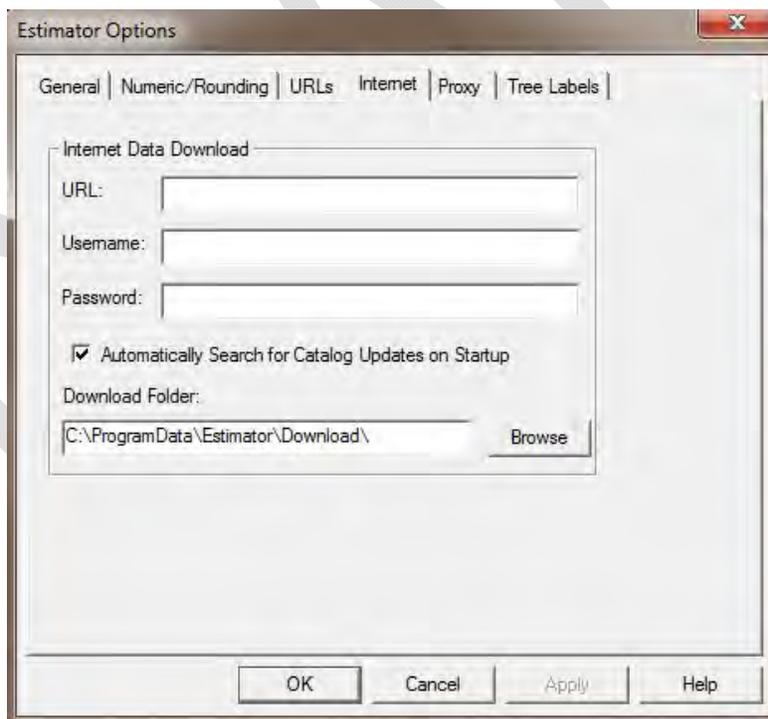


Figure C-4. The Global Options Window - Internet Tab

These are the options available on the INTERNET tab:

- URL** The Internet site designated by the transportation agency where the catalog updates are located.
Blank
- Username** If the Internet site is secured, the username that will allow you to access the site.
Blank
- Password** If the Internet site is secured, the password that will allow you to access the site.
Blank
- Automatically Search for Catalog on Startup** This option tells Estimator to look for catalog updates each time you start the program. You can also search for catalog updates by selecting **Check for Catalog Updates** from the **Tools** menu.
OFF
- Download Folder** The Download Folder field displays the local directory that Estimator uses for file downloads when you run the Catalog Update command.
Default: C:\ProgramData\Estimator\Download

C.5 Proxy

The PROXY tab depicted in Figure C-5 controls the way Estimator connects to the Internet. Any user can change the options on this tab.

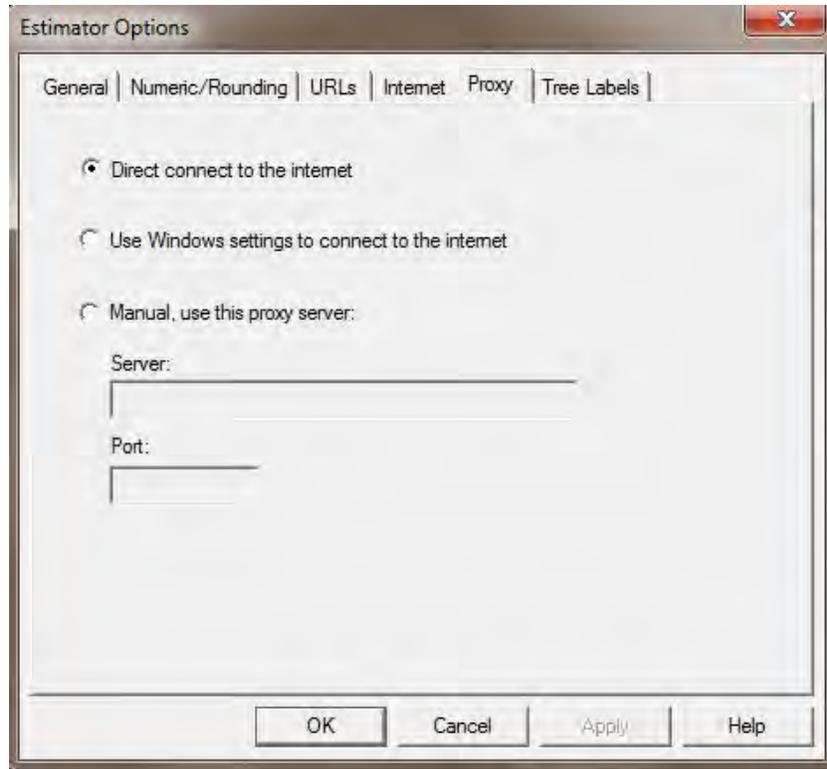


Figure C-5. The Global Options Window - Proxy Tab

These are the options available on the PROXY tab:

Direct Connect to the Internet This indicates that your computer does not need to go through a proxy server to access the Internet.

ON

Use Windows settings to connect to the Internet This tells Estimator to check the Windows settings when connecting to the Internet and to use the same settings.

OFF

Manual, use this proxy server Use this option to have Estimator use a proxy server not indicated by your Windows settings. Fill in the proxy server name in the Server field and the port number in the Port field.

OFF

C.6 Tree Labels

The TREE LABELS tab depicted in Figure C-6 allows you to label the different parts of the estimate in the tree view. The labels appear for each element of an estimate. Only the system manager can change these options.

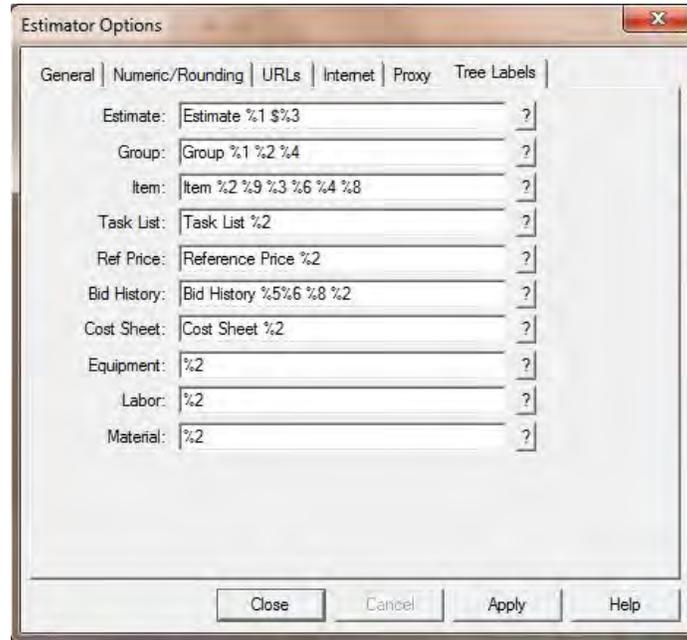


Figure C-6. The Global Options Window – Tree Labels Tab

These are the options available on the TREE LABELS tab:

- | | |
|------------------|--|
| Estimate | The label of the estimate.
Estimate %1 \$%3 |
| Group | The label of the group.
Group %1 %2 %4 |
| Item | The label of the item.
Item %2 %9 %3 %6 %4 %8 |
| Task List | The label of the Task List.
Task List %2 |
| Ref Price | The label of the Reference Price.
Reference Price %2 |

Bid History	The label of the Bid History. Bid History %5%6 %8 %2
Cost Sheet	The label of the Cost Sheet. Cost Sheet %2
Equipment	The label of the equipment. %2
Labor	The label of the labor. %2
Material	The label of the material. %2

The question mark (?) box next to each field contains the list of the fields after which the label can be named. For example, for the Estimate field, if you select %1, then the label will be based on the Estimate ID field. If you do not include a %, then the field will always be named after the text.

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Appendix D. Locating Midpoint Latitude & Longitude

The correct geographical location of a project is needed in Estimator so that prices can be calculated correctly (this is one of the fields that the bid history looks at). To locate the midpoint of a project:

1. Open Google Earth: Start | Programs | Google Earth | Google Earth or
2. Desktop Shortcut



Figure D-1. Google Earth

3. In the search box type a known address or intersection that is within the project limits and select Search. This should bring you to a close proximity of the project.

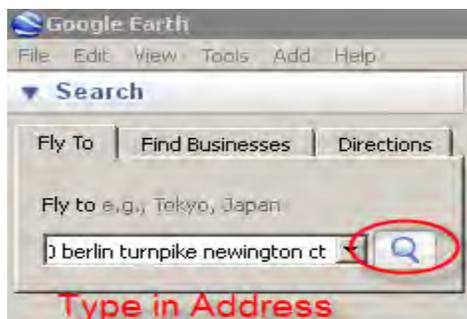


Figure D-2. Google Earth Search

4. Add a placemark by selecting the Add Placemark icon.

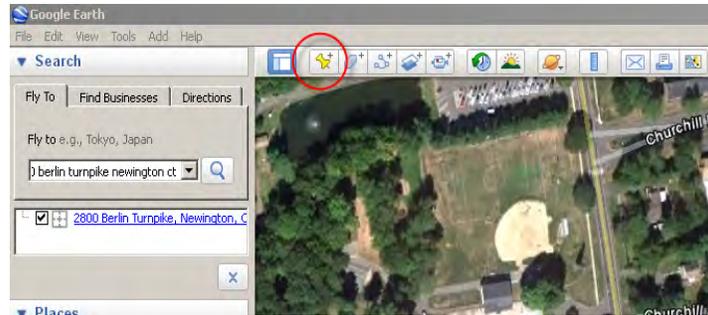


Figure D-3. Add Placemark Icon

5. Center the placemark within the project limits. In the New Placemark window, note the Latitude and Longitude of the midpoint of the project.

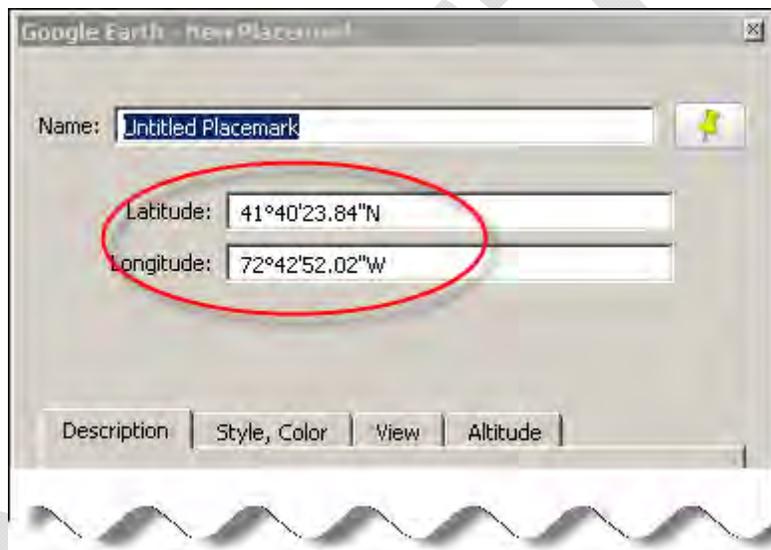


Figure D-4. Latitude and Longitude of Project

6. In the Longitude and Latitude box in the project header in Estimator, enter the information in a DDMSS format, rounding to the nearest second. In the above example, the location would be entered as:

Estimate ID:	<input type="text"/>	Work Type:	<input type="text"/>
Spec Year:	11	Highway Type:	<input type="text"/>
Base Date:	8/12/2011	Urban/Rural Type:	<input type="text"/>
Unit System:	E	Season:	<input type="text"/>
Longitude of Midpoint:	724252 (DDMMSS)	County:	<input type="text"/>
Latitude of Midpoint:	414024 (DDMMSS)	District:	<input type="text"/>
Federal/State Project Number:	<input type="text"/>		

Figure 4-5. Estimator Latitude and Longitude Fields

It should be noted that for all locations in Connecticut the degrees will be between:

41°-42°N and 71°-73°W

For Connecticut longitude will be from a maximum value of **730353** and a minimum value of **721458** in (DDMMSS format). Latitude will be from a maximum value of **420258** and a minimum value of **405926** in (DDMMSS format). There are many free online sources for obtaining accurate coordinates.

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