

# EEBACS USER GUIDE 1.0

## Chapter 2 - Design Module

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UPDATED: 03.07.2012

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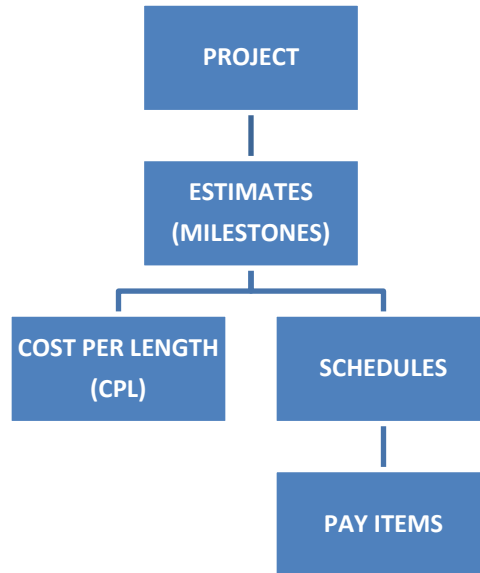
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## 2.0.1 Preface

The Design module creates the Independent Government Estimate (IGE) and supporting documents.

A project may have one or multiple estimates. An estimate can be as simple as a Cost-Per-Length (CPL) or be comprised of multiple schedules that can contain numerous pay items.

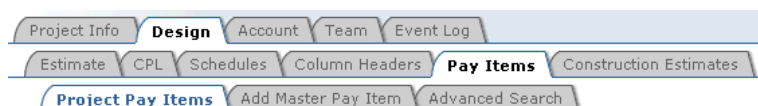
While a CPL estimate can be under the same milestone umbrella as a schedule estimate, it is recommended that CPL estimates be developed under their own milestone name (CPL).



Reports created by schedule in this module:

- EE (Engineer's Estimate);
- Design EE Column;
- Design Summary;
- PE Summary of Quantities;
- Summary of Quantities; and
- UPA (Unit Price Analysis).

Guidance for the Design module is organized by tabs as viewed in the program.



## 2.0.2 < Reserved >

## 2.0.3 Project Creation

Contact your Division's EEBACS Design Component Lead or EEBACS Division Administrator to add a project to the system.

Provide the following information:

- Date of request;
- Requester's name;
- FP version;
- Project number;
- Project name;
- Project description (begin and end point);
- Unit (Metric or USC);
- State(s); and
- If an estimate from a previous project is to be copied, include the project number, name, which estimate and schedule is to be copied.

Follow your Division's numbering and naming convention.

Submit information on form EEBAC-005 to your Division's EEBACS Design Component Lead.

## 2.0.4 Navigation

The list of projects is extensive in EEBACS and navigating to a specific project is made easier by using the "recent items" on the home page if a project has been accessed before or at the "Estimate list" tab by using the "search filter" or "next page" function.

### 2.0.4.1 Home page navigation

Upon logging into the program, the user will encounter the Home tab or page. The home page allows you to navigate by either the sidebar or most recent item visited.

- Select any category on the sidebar; or
- Select from any of the most recent user entries.

The screenshot displays the EEBACS Home page interface. On the left, a sidebar contains navigation links: Home, Calendar, Projects (All), Design, Acquisition, Construction, Archived, Ad Hoc Reporting, Ad Hoc UPA, and My Account. Below these is a 'Users Online' section showing '(1) Government'. An orange arrow labeled 'A' points to the sidebar. The main content area is titled 'Home' and includes an 'Announcements' section with the message 'There are no announcements at this time.' To the right, a 'Recent Items' list shows several project entries, including 'Estimate: WY PRA-YELL 10(15) Grand Loop Road (Madison to Norris)', 'Project: WY PRA-YELL 10(15) Grand Loop Road (Madison to Norris)', 'Project: PRA-GLAC 10(28) Ninh Small Project Test', 'Estimate: PRA-GLAC 10(28) Ninh Small Project Test: Preliminary', 'Project: PFH HSH 114-1(3)(Copy) Heidi Hyamoom Test - 2nd try', 'Project: AR HSH 9-1(1) NEW Project Nov 5, 2008', 'Estimate: AR HSH 9-1(1) NEW Project Nov 5, 2008: 70% Estimate', 'Project: DAN 1-4 DANTEST081104-TEST', 'Acquisition: DAN 1-4 DANTEST081104-TEST: DTFH70-09-C-00111 / DTFH71-08-C-0002', and 'Estimate: DAN 1-4 DANTEST081104-TEST: PIH'. An orange arrow labeled 'B' points to the 'Recent Items' list. On the far right, there is a calendar for January 2009 and an 'EEBACS Statistics' table.

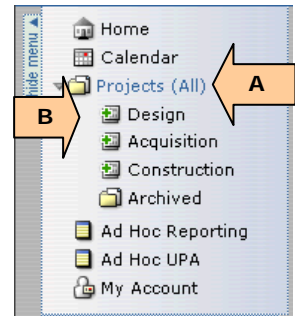
January 2009						
S	M	T	W	T	F	S
28	29	30	31	1	2	3
	5	6	7	8	9	10
	12	13	14	15	16	17
	18	19	20	21	22	23
	25	26	27	28	29	30

EEBACS Statistics	
User	88
Projects	745
Estimates	945
Acquisition	709
Bids	2138

### 2.0.4.2 Side bar navigation

The most commonly used categories on the sidebar are "Project All" and "Design". This enables the user to view a listing of all projects within the system or the Design module.

- Select "Project All" to view a listing of all projects within the system; or
- Select "Design" to view a listing of all projects in the Design module.



The example in "Chapter 2.0.4.3 Estimate list navigation" for Design is formatted and navigated in the same manner for the "Project All" screen.

### 2.0.4.3 Estimate list navigation

- Allows for filtering of data by the constraints selected;
- Next page provides viewing for the next 20 projects; and
- Indicates sequence of project being viewed and total number of projects in the system.

**Search Filters:**

- Keywords:
- Complete:  yes  no
- Show Current:  yes  no
- Federal Lands Division:
- State(s):
- Partner Agency:
- Project Manager:
- Highway Design Manager:
- Designer:

**Items 1-20 of 83**

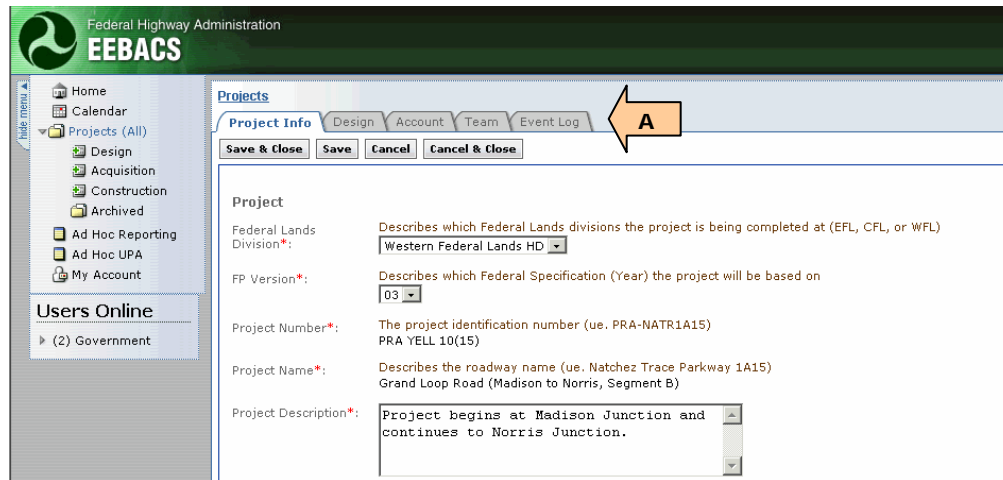
State	Project Number	Project Name	Progress	Complete	Jump	Quick Links
CO	20071126	EEBACS Team Test	70% Estimate	2007-11-26	our	
AL	ABT - 0001	AB_Test - 0001	100% Estimate		our	
AL	ABT - 0002	AB_Test - 0002(Copy)	100% Estimate	2008-05-01	our	
AL	ABT - 0003	AB_Test - 0003(Copy)	Amendment A1		our	
AL	ABT - 0004	AB_Test - 0004(Copy)	100% Estimate		our	
DC	ACOT 2801	Acquisition Cut Over Test	75% PS&E	2008-04-28	our	
AR	AR HSH 9-1(1)	NEW Project Nov. 5, 2008	99.5% Estimate		our	
AR	AR HSH 9-1(14)(Copy to Metric)	NEW Project Nov. 5, 2008(Copy)	99% Estimate		our	
CO	CO PPH JOHN 1(2)	John - Large Test	100% Estimate	2008-05-22	our	
CA	CA PPH BRENDA 1(2)	Brenda - Large Test	100% Estimate	2008-05-22	our	
CA	CA PPH HSH 110(10)	Heidi Large Test	100% Estimate	2008-05-23	our	
CA	CA PPH HSH 200(1)	US Customary to Metric Test - clean data	95% Estimate	2008-06-02	our	
CA	CA Test 998	Test Sept. 9, 2008 for Julie	Amendment A004	Do we need this?	our	
CA	CA Test 999	Test September 9, 2008	100% Estimate	100% Estimate(Copy from 70%)	our	
CA	CA Test 999-1 (Copy partial)	Test September 9, 2008 (Copy partial)	100% Estimate	100% Estimate(Copy from 70%)	our	
CA	CA Test 999-2 (Copy All)	Test September 9, 2008 (Copy All)	100% Estimate	100% Estimate(Copy from 70%)	our	
CA	CA Test 999-3 (Copy ALL)	Miscellaneous Testing	100% Estimate	100% Estimate(Copy from 70%)	our	
CO	CO PRA HEIDI 333(1)	MINI TEST FOR CONSTRUCTION	100% PS&E	2008-10-14	our	
CO	CO PRA HEIDI 333(1A)	MINI TEST FOR CONSTRUCTION	100% PS&E	2008-10-02	our	
CO	CO PRA LINDEN 333(5)	MINI TEST FOR CONSTRUCTION	100% PS&E	2008-10-10	our	

**Items 1-20 of 83**

### 2.0.4.4 Project tab navigation

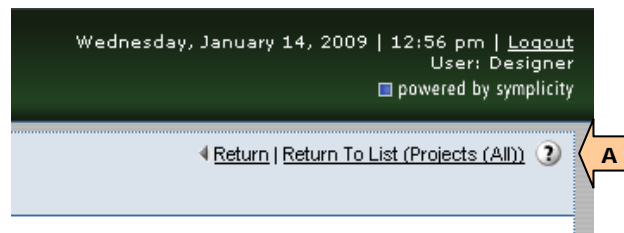
Once a project is selected, access to sub-activities within the module is by tabs.

- A. Tabs and sub-tabs allow access to various functions.



### 2.0.4.5 Return to last screen or list navigation

- A. Allows return to the last screen (return) or depending on location the Design/Project list.

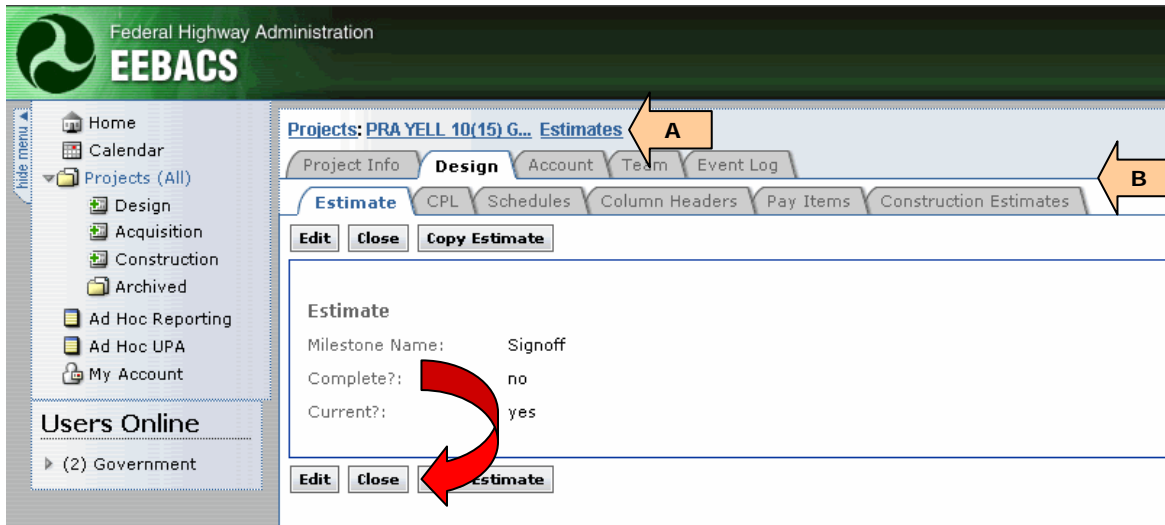


Note: Do not use the Internet Explorer "back" button to return to the last screen.

### 2.0.4.6 Within project navigation

- A. Allows return to selected function; and
- B. Navigation can also be accomplished by using tabs. White colored tabs indicate path to active tab and the active tab of the current window.

**WARNING:** Save data inputs in the current tab before accessing another tab or data may be lost.



- 💡 Not seeing the screen you expect when in a tab? Try selecting the "Close" icon. EEBACS saves the last sub-screen you viewed when last in the tab.

## 2.0.4.7 Master Pay Item navigation

A. Search Filter. Allows the user to find a pay item or items by:

- Keyword (a word within the pay item description);
- pay item number, in whole or part (301 or 30101 or 30101-1000); or
- show pay items previously “selected” or “all” pay items by selecting the radio buttons;

B. Advances to the first pay item number in the selected range; and

C. Advances screen by page.

The screenshot displays the EEBCS web application interface. The top navigation bar includes 'Estimate: P.L.H.' and various tabs like 'Project Info', 'Design', 'Account', 'Team', 'Event Log', 'Estimate', 'CPL', 'Schedules', 'Column Headers', 'Pay Items', and 'Construction Estimates'. The 'Pay Items' tab is active, showing a search filter section with 'Keywords' and 'Pay Item Number' input fields, and radio buttons for 'selected' and 'all'. Below the search filter is a table of pay items with columns for 'Options', 'Pay Item #', 'Pay Item Description (US Customary)', 'Pay Item Type', and 'U.S. Pay Units'. The table lists various survey and staking items. Navigation controls include 'Apply Search', 'Jump' (with a dropdown menu), and 'Next' buttons. Three orange arrows labeled 'A', 'B', and 'C' point to the search filter, the 'Jump' dropdown, and the 'Next' button, respectively.

Options	Pay Item #	Pay Item Description (US Customary)	Pay Item Type	U.S. Pay Units
	15101-0000	MOBILIZATION	N	LPSM
	15201-0000	CONSTRUCTION SURVEY AND STAKING	N	LPSM
	15205-0000	SLOPE, REFERENCE, AND CLEARING AND GRUBBING STAKE	N	LPSM
	15206-0000	SLOPE, REFERENCE, AND CLEARING AND GRUBBING STAKE	N	STA
	15210-0000	CENTERLINE, REESTABLISHMENT	N	STA
	15210-1000	CENTERLINE, STAKING	N	STA
	15210-2000	CENTERLINE, REFERENCING AND REESTABLISHMENT	N	STA
	15210-3000	CENTERLINE, VERIFICATION AND STAKING	N	STA
	15210-4000	CENTERLINE, ESTABLISHMENT	N	STA
	15214-0000	SURVEY AND STAKING, MISCELLANEOUS	N	LPSM
	15214-1000	SURVEY AND STAKING, BRIDGE	N	LPSM
	15214-2000	SURVEY AND STAKING, RETAINING WALL	N	LPSM
	15214-3000	SURVEY AND STAKING, PARKING AREA	N	LPSM
	15215-1000	SURVEY AND STAKING, APPROACH ROAD	N	EACH
	15215-2000	SURVEY AND STAKING, BRIDGE	N	EACH
	15215-3000	SURVEY AND STAKING, DRAINAGE STRUCTURE	N	EACH
	15215-4000	SURVEY AND STAKING, PERMANENT MONUMENT AND MARKER	N	EACH
	15215-5000	SURVEY AND STAKING, BOX CULVERT	N	EACH
	15216-1000	SURVEY AND STAKING, ROADWAY CROSS-SECTIONS	N	STA
	15216-2000	SURVEY AND STAKING, GRADE FINISHING STAKES	N	STA



## 2.1 Project Information

Project Info Design Account Team Event Log

Project information is descriptive data specific to the project. Required data (Federal Lands Division, FP version, project number, project name, project description, unit, and state) will initially be added by the Division's EEBAC Design Component Lead.

Before the project is transferred to Acquisitions, all remaining data fields must be populated.

- A. County pull-down will activate once state(s) has been selected. Multiple counties may be selected;
- B. Density and terrain description are determined through AASHTO, A Policy on Geometric Design of Highways and Streets;
- C. Federal Land is the name of the National Park, National Forest, or Wildlife Refuge, etc.;
- D. FLMA (Federal Land Management Agency) Number is a number assigned to the project by the landowner agency. Examples are:
  - NPS: PMIS No.: 129153 Drawing No.: 102-100064;
  - BIA: BIA No.: J51-624-163(455)213; and
  - State: AHTD Job 040283; and
- E. To exit the screen, select one of the following commands.

The screenshot shows the 'Project Information' form with the following fields and values:

- Project:** Federal Lands Division\*: Western Federal Lands HD
- FP Version\*:** 03
- Project Number\*:** PRA YELL 10(15)
- Project Name\*:** Grand Loop Road (Madison to Norris, Segment B)
- Project Description\*:** Project begins at Madison Junction and continues to Norris Junction.
- Units\*:** U.S. Customary
- State(s)\*:** 1 of 53 selected (show selected | show all)
- County(s):** Park Teton (indicated by arrow A)
- Density:** Rural (indicated by arrow B)
- Terrain:** Rolling (indicated by arrow C)
- Partner Agency:** NPS (indicated by arrow D)
- Funding Source(s):** PRA  NPS  PPH  PLH  BP  FWS  IRR  ERFO  OMAD
- FLMA Number:** 54337 101/43943
- Status:** Design

Navigation buttons at the bottom: Save & Close, Save, Cancel, Cancel & Close.

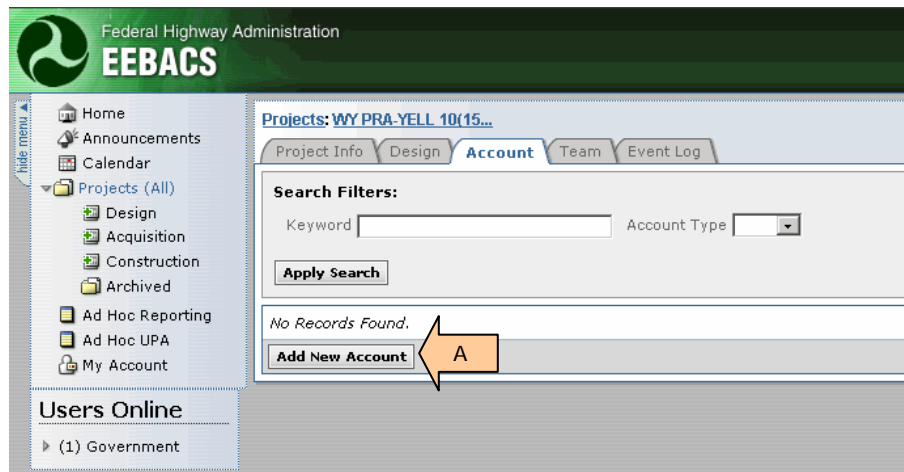
Note: Changing units (US Customary = Metric) will automatically change any data previously entered (pay item descriptions, pay units, quantities, and unit prices) as defined by conversion factors.

## 2.2 Account

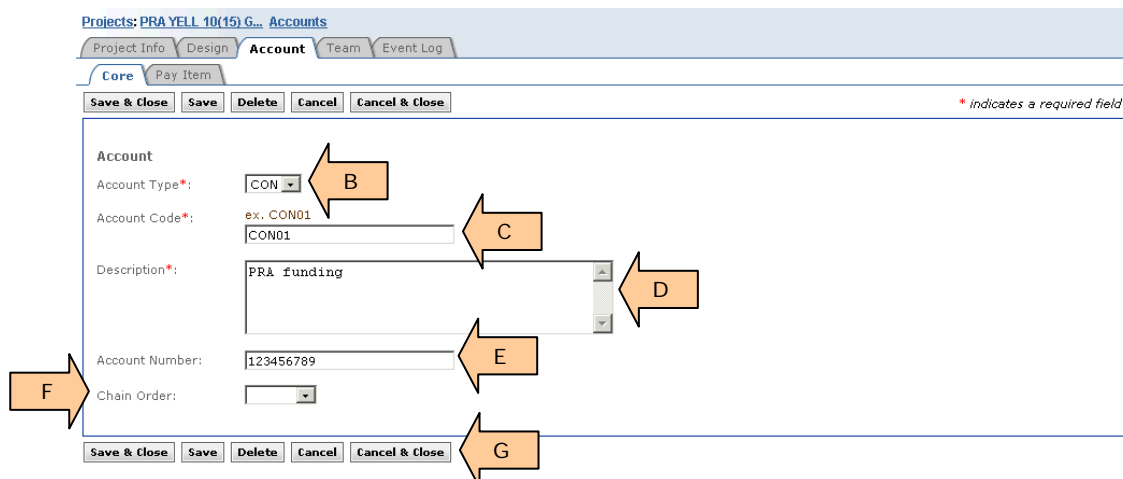
Project Info Design **Account** Team Event Log

The account tab allows for input of one or multiple account numbers. Sometimes projects have multiple funding sources and require schedules, pay items or quantities within pay items to be assigned a specific account number. Even if the project will only have one Account, that Account number must be added here.

- A. Select "Add New Account" to allow input of account numbers;



- B. Select the account type. Generally CON (Construction) is selected;
- C. Account code is a "nickname" for an accounting number. Always include account type in "nickname." (i.e. CON01);
- D. Input a description of the account (examples: PRA, Fee Demo, County funds, etc.);
- E. If known, enter the Delphi account number;  
(example: 1517560401020 540.00.F179.56.1756001404);
- F. Chain order will be determined in Construction; and
- G. Select the appropriate command to exit the screen.



## 2.3 Team

The team tab allows assignment and archive of project team members.

### 2.3.1 Add Team Member (Assign Project Role)

- Select the "Add New Team Member" icon to access assignment screen;
- Begin typing a name. A pick list will appear. Select a name from the pick list. Only add approved team members, since, in some cases, this will provide additional user rights;
- Choose the role in which the team member will be assigned for this project. If a role cannot be found in the pick list, contact your EEBACS Division Administrator; and
- Select the "Save and Close" icon.

The first screenshot shows the 'Team' tab selected in the navigation bar. Below the navigation bar, there are 'Search Filters' for 'Section' (Design, Acquisition, Construction) and 'Roles' ([select]). An 'Apply Search' button is present. Below the search filters, it says 'No Records Found.' and there is an 'Add New Team Member' button. An orange arrow labeled 'A' points to this button.

The second screenshot shows the 'Add New Team Member' screen for project 'KS PRA HEHI 10(2)'. It has buttons for 'Save & Close', 'Save', and 'Cancel'. The 'Project Team' section has a 'Member\*:' field with a pick list showing 'Christine' and 'Christine Black'. An orange arrow labeled 'B' points to the pick list.

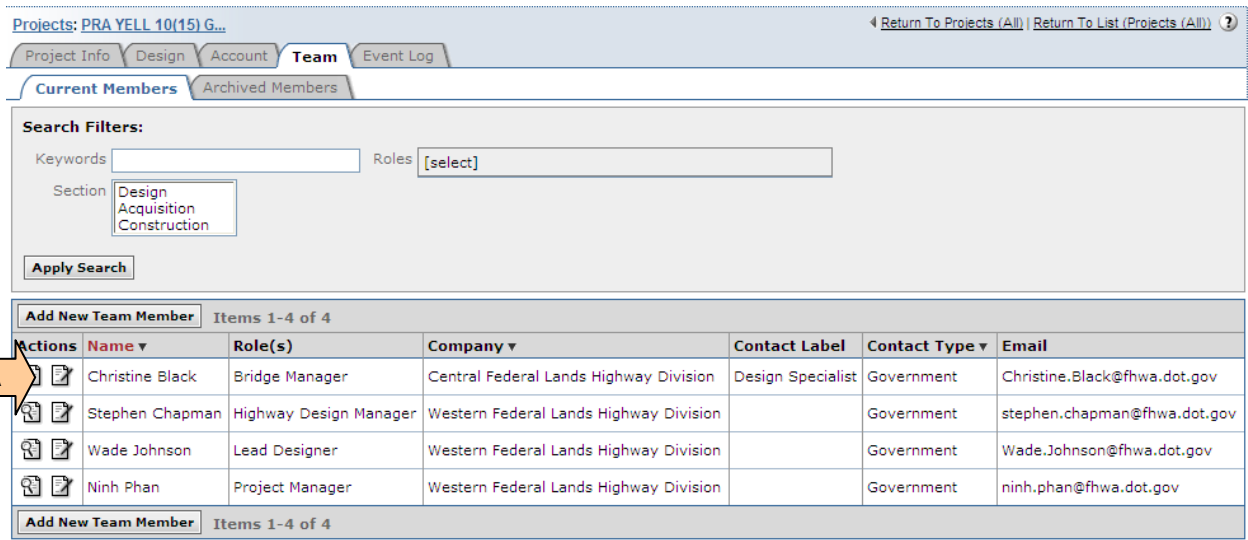
The third screenshot shows the same screen with 'Christine Black' selected in the 'Member\*:' field. The 'Roles\*:' section has four checkboxes: 'Bridge Manager', 'Highway Design Manager', 'Lead Designer', and 'Project Manager'. An orange arrow labeled 'C' points to the 'Project Manager' checkbox. At the bottom, there are buttons for 'Save & Close', 'Save', and 'Cancel'. An orange arrow labeled 'D' points to the 'Save & Close' button.

## 2.3.2 Archive Team Member (Archive Project Role)

If user is no longer a member of the project team, the user should be archived within the project. This is particularly important for A/E Staff and Construction Contractors, since this will remove their access to this project. For Government users and Contract staff, archiving the project team member may reduce their rights within this project.

- A. "Edit" project team member to be deleted
- B. "Delete" project team member
- C. "Okay" if you really want to delete (archive) project team member. This cannot be undone.

Example of a populated team roster:



Projects: PRA YELL 10(15) G... Return To Projects (All) | Return To List (Projects (All)) ?

Project Info | Design | Account | **Team** | Event Log

Current Members | Archived Members

**Search Filters:**

Keywords:  Roles: [select]

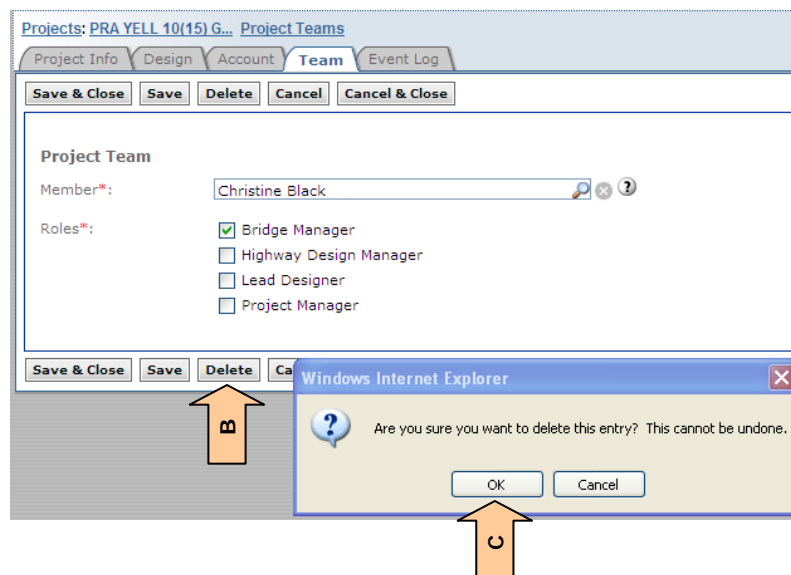
Section: Design, Acquisition, Construction

Apply Search

Add New Team Member Items 1-4 of 4

Actions	Name	Role(s)	Company	Contact Label	Contact Type	Email
	Christine Black	Bridge Manager	Central Federal Lands Highway Division	Design Specialist	Government	Christine.Black@fhwa.dot.gov
	Stephen Chapman	Highway Design Manager	Western Federal Lands Highway Division		Government	stephen.chapman@fhwa.dot.gov
	Wade Johnson	Lead Designer	Western Federal Lands Highway Division		Government	Wade.Johnson@fhwa.dot.gov
	Ninh Phan	Project Manager	Western Federal Lands Highway Division		Government	ninh.phan@fhwa.dot.gov

Add New Team Member Items 1-4 of 4



Projects: PRA YELL 10(15) G... Project Teams

Project Info | Design | Account | **Team** | Event Log

Save & Close | Save | Delete | Cancel | Cancel & Close

**Project Team**

Member\*: Christine Black

Roles\*:  Bridge Manager,  Highway Design Manager,  Lead Designer,  Project Manager

Save & Close | Save | Delete | Ca

Windows Internet Explorer

Are you sure you want to delete this entry? This cannot be undone.

OK | Cancel

Once the project team member has been deleted (archived), the Archived Members tab automatically appears.

- A. User search filters to find archived users
- B. Select appropriate status for archive user. In most cases "Active" is the correct status. **Need to expand on status definitions.**

The screenshot displays the 'Archived Members' tab in a software application. At the top, there are navigation tabs for 'Project Info', 'Design', 'Account', and 'Team'. Below these are sub-tabs for 'Current Members' and 'Archived Members'. The 'Archived Members' tab is active, showing a search filter section with fields for 'Keyword', 'Held Position Until', 'Roles', and 'Status'. An orange arrow labeled 'A' points to the search filter section. Below the search filters is a table with columns: 'Member', 'Held Position Until', 'Role(s)', and 'Status'. The table contains one entry for 'Julee McTaggart' with a role of 'Bridge Manager'. The 'Status' dropdown menu is open, showing options: 'Active', 'Frozen', and 'Removed'. An orange arrow points to the 'Status' dropdown menu.

## 2.4 < Reserved >

## 2.5 Design

Project Info **Design** Account Team Event Log



The "Design" tab allows the user to gain access to a majority of the estimating functions. It allows for the development of Independent Government Estimates (IGEs). IGEs can be broad in scope when developed under the cost-per-length option or extremely detailed when using the standard estimating option with schedules.

Estimates can be developed using stored bid history from projects with similar items of work or developed through labor-equipment-material calculations.

Project Info **Design** Account Team Event Log  
Estimate List

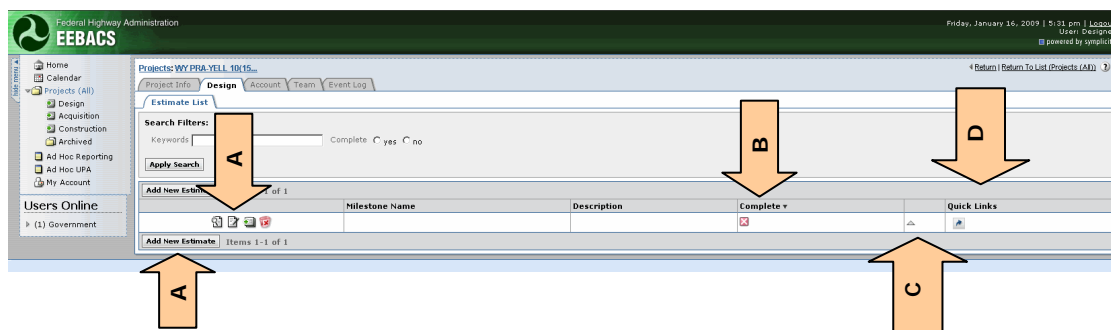
### 2.5.1 Estimate List

Each project will have one or multiple estimates (milestones). Milestone estimates are snapshots in time of how much a project is expected to cost given all the known factors. Each estimate will contain one or multiple schedules.

- A. Allows user to view, edit, copy, delete, or add a new estimate;
- B. Designates whether an estimate is complete.
  -  shows that the Estimate is not complete and is still open to changes.
  -  2009-03-04 shows that the Estimate was marked complete on a certain date. Completed estimates can be viewed and copied, but not edited or deleted.

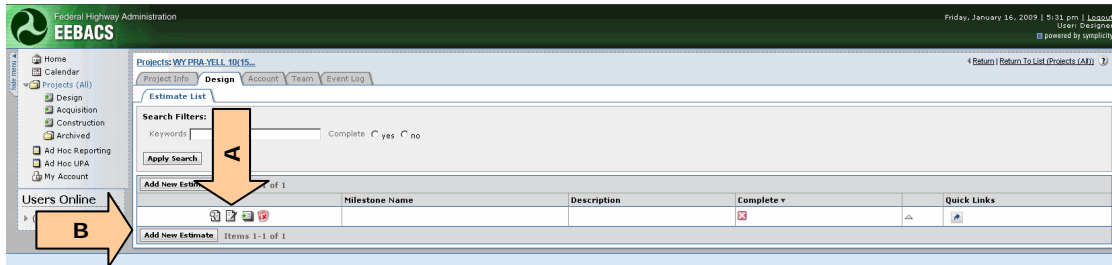
To change the status, go to the "Estimate" tab;

- C. Indicates whether the estimate is current ("cur" appears in the column) or not. It is extremely important to have a "current" estimate. It is the milestone that will show up on the Projects (All) tab listing. Current does not necessarily mean a completed estimate; it only means that is the most recent estimate being worked on. To change the status, go to the "Estimate" tab; and
- D. The Quick Link Pull-down menu allows users to proceed directly to Cost per Length (CPL), Schedules, Column Headers, Pay Items, or Construction Estimate tabs.



### 2.5.1.1 Adding a New Estimate

- A. When opening the Estimate List for the first time, select edit command of the placeholder estimate; and
- B. For subsequent adding of estimates select the “Add New Estimate” icon.

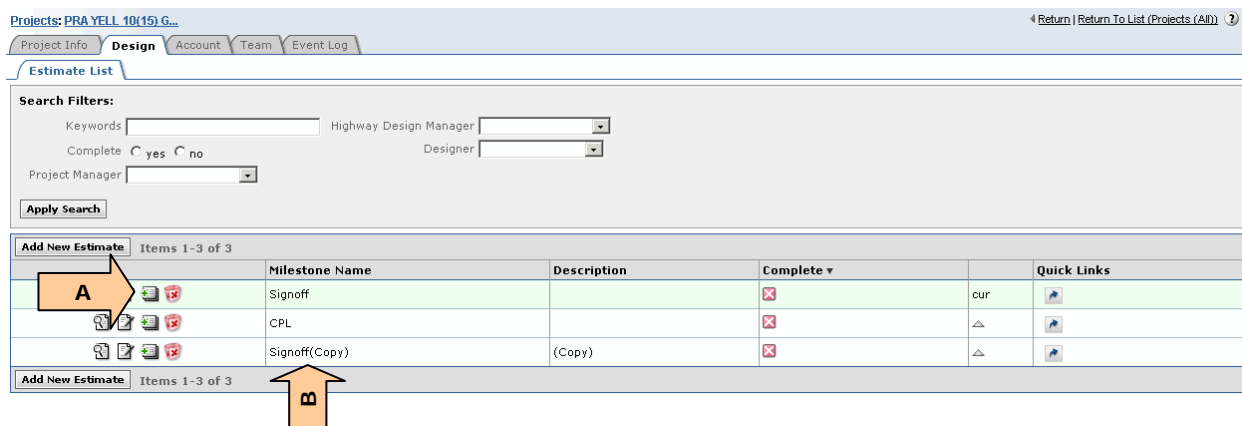


The selection will advance the program to the “Estimate” tab (See Chapter 2.5.2).

### 2.5.1.2 Copy Estimate

The copy command will create a new estimate from a previously created estimate. As the project progresses, it is important to save estimates at major milestones by copying the completed estimate to the next milestone. This provides a record of the project development and could also save rework if project requirements change.

- A. To copy a previously created estimate, select the copy icon; and
- B. A copied estimate must be edited to change the Milestone Name, Description, etc.



### 2.5.1.3 Edit a Previously Created Estimate

A. To edit to a previously created estimate, select the “edit” icon.

The screenshot shows the 'Estimate List' interface for project 'PRA YELL 10(15) G...'. It includes search filters for Keywords, Highway Design Manager, Complete (yes/no), Designer, and Project Manager. Below the filters is a table with columns: Milestone Name, Description, Complete, and Quick Links. The table contains two rows: 'CPL' (complete 2009-06-05) and 'Signoff' (not complete). An arrow labeled 'A' points to the edit icon in the first row.

Milestone Name	Description	Complete	Quick Links
CPL		2009-06-05	▲
Signoff		✖	cur

The selection will advance the program to the “Estimate” tab (See Chapter 2.5.2).

### 2.5.1.4 Viewing a Previously Created Estimate

A. To view to a previously created estimate, select the view icon.

The screenshot shows the 'Estimate List' interface for project 'PRA YELL 10(15) G...'. It includes search filters for Keywords, Highway Design Manager, Complete (yes/no), Designer, and Project Manager. Below the filters is a table with columns: Milestone Name, Description, Complete, and Quick Links. The table contains two rows: 'CPL' (complete 2009-06-05) and 'Signoff' (not complete). An arrow labeled 'A' points to the view icon in the first row.

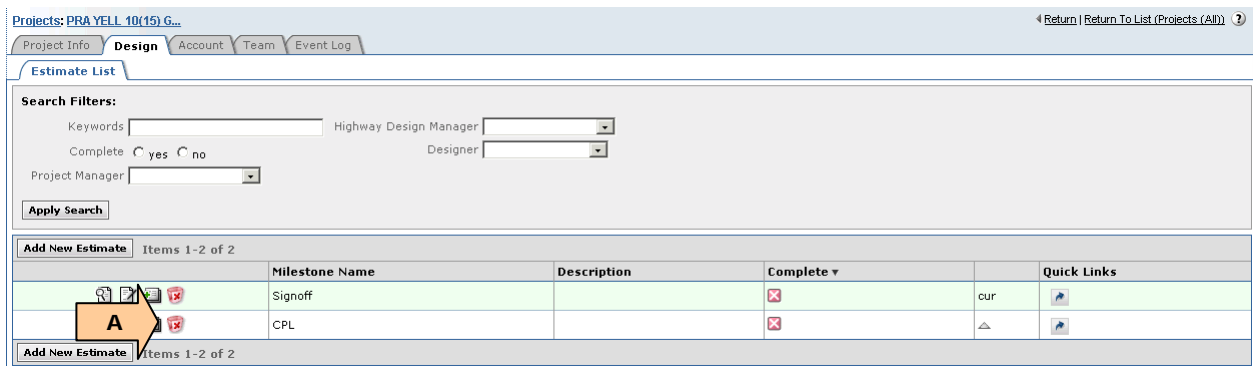
Milestone Name	Description	Complete	Quick Links
CPL		2009-06-05	▲
Signoff		✖	cur

The selection will advance the program to the “Estimate” tab (See Chapter 2.5.2).

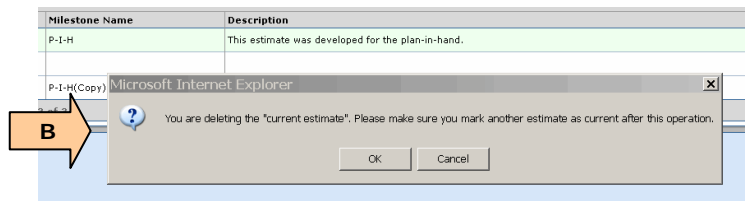


### 2.5.1.5 Deleting a Previously Created Estimate

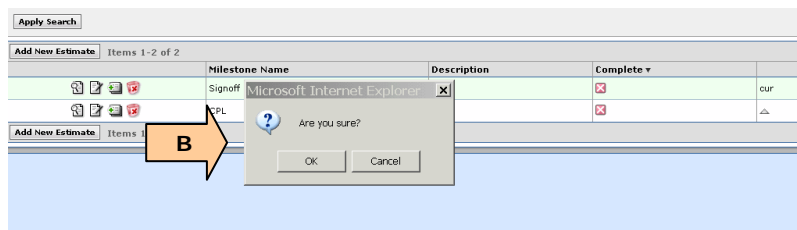
A. To delete a previously created estimate, select the delete icon.



B. A warning pop-up will appear. Once the deletion has been confirmed, it cannot be undone. **There is no backup copy.** Note that other milestone estimates will remain.

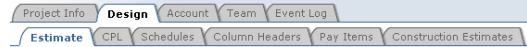


Current Estimate example



Non-current Estimate example

## 2.5.2 Estimate



The “estimate” tab allows for the naming of the estimate (milestone name), a brief description of the estimate, and the status of the estimate (complete/current).

- Insert the estimate’s milestone name (examples: 15%, 30%, 50%, P-I-H, Final PS&E, PS&E Approval Reviews);
- Insert description of estimate (examples: 15%, 30%, 50%, P-I-H, Final PS&E, PS&E Approval Reviews, this is a temporary estimate for parking area A, delete when no longer needed). Do not leave blank;
- The radio buttons for “complete” and “current” designate the status of the estimate. When work on an estimate is complete, toggle “yes” in the “complete” row. An estimate marked complete can no longer be edited. Editing can only be accomplished in an incomplete estimate; and
- Select a command to continue with the program.

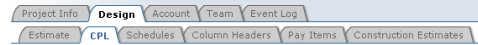
The screenshot shows the EEBCS software interface. The main window is titled 'Estimate' and contains the following elements:

- Navigation Tabs:** Project Info, Design, Account, Team, Event Log, Estimate, CPL, Schedules, Column Headers, Pay Items, Construction Estimates.
- Warning Message:** 'This project is currently missing the following role(s): Bridge Manager. You can correct this by adding the missing roles on the Team Tab.'
- Buttons:** Save & Close, Save, Delete, Cancel, Cancel & Close, Copy Estimate.
- Form Fields:**
  - Milestone Name\*:** A text input field containing 'P-I-H'.
  - Description:** A text area containing 'This estimate was developed for the plan-in-hand.'
  - Check Spelling:** A button.
  - Complete\*:** Radio buttons for 'yes' and 'no'.
  - Current\*:** Radio buttons for 'yes' and 'no'.
- Estimate Info:** A table showing metadata:
 

Created:	2009-01-19 09:49:10
By:	Designer
Modified:	2009-01-19 09:49:10
By:	Designer
- Annotations:** Four orange arrows labeled A, B, C, and D point to the Milestone Name field, the Description field, the Complete radio button, and the Save & Close button, respectively.

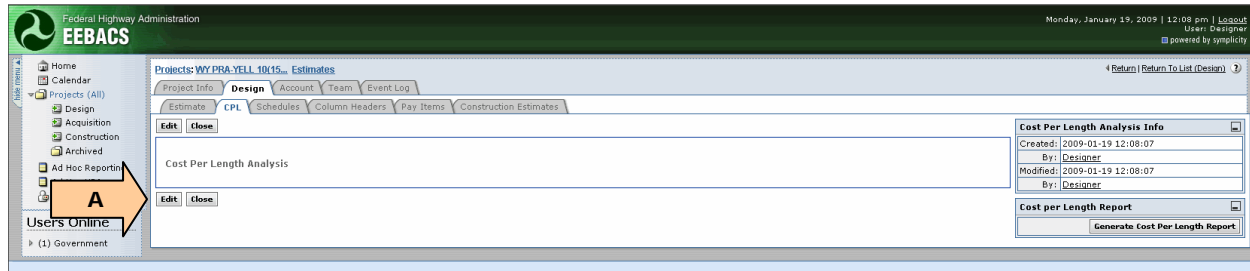
- 💡 Prior to generating the engineer’s estimate report and the summary of quantities for formal PS&E distribution, the milestone estimate should be marked as complete, with the completion date added.

## 2.5.3 CPL (Cost Per Length)

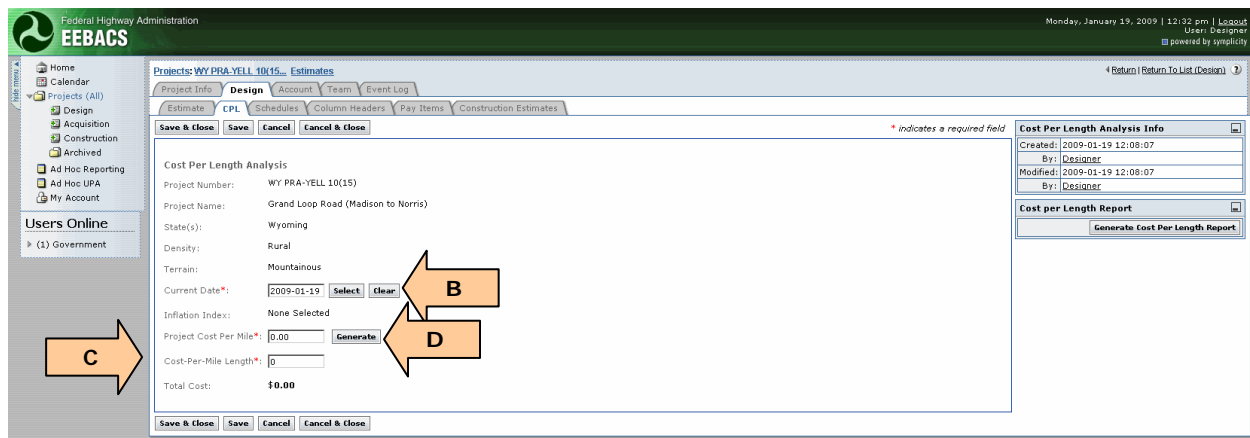


The “CPL” tab enables an estimated to be developed by using “comparable” past projects costs. Data is taken from bid history. To use this estimating method you must know the length (miles/kilometers) of the project and have knowledge of past projects with similar work. Consult with your supervisor if you do not have knowledge of past projects before using this estimating method. Costs developed using this method are approximate and intended to be used for preliminary or scoping estimates only.

- A. Select a command to continue with the program.



- B. Current date is automatically populated, but can be changed by the user;
- C. Input project length. This data needs to be inputted before the “Generate” icon is selected in step “D”; and
- D. To determine the project cost per length, select the “generate” icon.



- E. Limit the projects to be considered by using the search filter. Typically select state, density, terrain, and award date range. Upon selecting "apply search" the results table will be populated;
- F. Select appropriate project costs;
- G. Select an appropriate inflation for your project. The inflated costs will populate the table in a bold font style below the original cost. Prices will be inflated to the most recent published data for the selected construction cost index (most indices are updated quarterly). Future price escalation are not included;
- H. Select the update icon to populate the minimum, average, and maximum past project costs;
- I. Add relevant remarks that inform reviewers how the "unit price used" was established;
- J. Input the "unit price used" by either selecting the minimum, average, or maximum price generated or inputting a price determined by the user. Round the unit price per your Division's policy; and
- K. Select a command to continue with the program.

**Cost Per Length**

Search Filters:  
 Keywords: \_\_\_\_\_ Density: Rural  
 State: Montana Wyoming Terrain: Mountainous  
 Construction Type: \_\_\_\_\_ Award Date: 2000 to 2009  
 Schedule Length: \_\_\_\_\_ to \_\_\_\_\_ Show Selected Only?  Yes  Ignore

**Results: Items 1-8 of 8**

State	Schedule Letter	Project Number	Project Name	Award Date	Inflation Rate	Schedule Length	Low 1	Low 2	Low 3	Low 4	Low 5	Total Amt	Construction Type	Terrain	Density
MT	A	GLAC 12(157-TEST)	GLACIER TEST 11172008	Nov 18, 2008	0%	2.8	<input type="checkbox"/> \$2,446,785.71 <b>\$2,446,785.71</b>	<input type="checkbox"/> \$5,479,357.14 <b>\$5,479,357.14</b>				\$15,342,200.00	902 AC Construction 5/8	Mountainous	Rural
MT	B	GLAC 12(157-TEST)	GLACIER TEST 11172008	Nov 18, 2008	0%	2.8	<input type="checkbox"/> \$30,913,660.71 <b>\$30,913,660.71</b>	<input type="checkbox"/> \$3,568,937.50 <b>\$3,568,937.50</b>				\$0.00	902 AC Construction 5/8	Mountainous	Rural
WY	A	WY PRA-GRTE 100(1), 209(1), & 225(1)	MOOSE-WILSON ROAD, LAKE CREEK BRIDGE, ETAL.	Aug 11, 2004	64.71%	0.131	<input checked="" type="checkbox"/> \$9,148,353.05 <b>\$15,068,252.31</b>	<input checked="" type="checkbox"/> \$10,684,492.37 <b>\$17,598,427.38</b>	<input checked="" type="checkbox"/> \$10,816,325.19 <b>\$17,815,569.22</b>	<input type="checkbox"/> \$12,276,758.40 <b>\$20,221,048.76</b>	<input type="checkbox"/> \$14,462,374.05 <b>\$23,820,976.29</b>	\$1,198,434.25	B	Mountainous	Rural
WY	A	WY PRA-YELL 13(3)	EAST ENTRANCE ROAD, SEGMENT C	May 26, 2004	64.71%	4.978	<input type="checkbox"/> \$0.00 <b>\$0.00</b>					\$13,727,654.90	R	Mountainous	Rural
MT	A	MT PFH 59-1 (1)	BEAR TOOTH HIGHWAY	Feb 23, 2004	64.71%	4.978	<input checked="" type="checkbox"/> \$2,057,899.68 <b>\$3,389,566.56</b>	<input type="checkbox"/> \$2,135,944.05 <b>\$3,510,113.45</b>	<input type="checkbox"/> \$2,252,352.75 <b>\$3,709,050.22</b>	<input type="checkbox"/> \$2,833,305.76 <b>\$4,666,737.91</b>		\$11,212,212.00	R	Mountainous	Rural
MT	A	MT PFH 29-1 (1)	LAKE SIDE TO NELSON	Dec 12, 2003	93.1%	3.195	<input type="checkbox"/> \$312,018.42 <b>\$602,507.57</b>	<input type="checkbox"/> \$404,735.45 <b>\$781,544.15</b>				\$996,890.85	3	Mountainous	Rural
MT	A	MT PRA - GLAC 10(17) & 10(18)	GOING TO THE SUN ROAD (PHASE III) & (PHASE IV)	Oct 24, 2003	93.1%	0.242	<input type="checkbox"/> \$0.00 <b>\$4.14</b>	<input type="checkbox"/> \$9,069,809.09 <b>\$17,513,994.45</b>	<input type="checkbox"/> \$12,074,923.55 <b>\$23,316,677.38</b>	<input type="checkbox"/> \$13,219,305.79 <b>\$25,526,479.47</b>		\$2,922,131.50	3	Mountainous	Rural
WY	D	WY PRA-GRTE 13(1)	NORTH PARK ROAD - OPTION C	Jul 03, 2003	93.1%	3.119	<input type="checkbox"/> \$0.00 <b>\$0.00</b>					\$291,500.00	R	Mountainous	Rural

4 Bid Picked Avg: \$13,467,953.87 Max: \$17,815,569.22 Min: \$3,389,566.56

Unit Price Used: 13500000 Remark: section limited. used projects of like work, but lesser lengths Inflation: Washington DOT

💡 If prices are to be selected from multiple screens (pages), select the "update" button of the current screen before going to the next screen and selecting more prices (otherwise current screen price selections are not saved).

- L. The “unit price used” generated from the previous screen multiplied by the inputted “cost-per-mile (kilometer)” length is used to compute the total cost;
- M. A CPL report may be generated; and
- N. Select a command to continue with the program.

## 2.5.4 Schedules



The “Schedules” tab allows for one or multiple schedules to be created within an estimate.

- A. Select “Add New Schedule” to continue with the program.

- B. Allows for the copying of an existing schedule within the project’s estimate. The user may select a “copy” or a “shared” version. Shared estimates link pay items together (i.e. any change in a pay item for one schedule will be reflected in the other schedule). Copied estimates do not link pay items and is generally the preferred method of coping schedules;
- C. Required fields:
  - Schedule Type – Base, Option, or Alternate. An “alternate” schedule is selected when soliciting prices for multiples schedules. A “base” schedule is selected when soliciting prices for one schedule or if there are multiple schedules with one or multiple “option” schedules. An “option” schedule is selected when soliciting prices for multiple schedules using Base schedule(s) and Option schedule(s). Options can be awarded at a later date.

- Schedule Letter – Attaches an alpha designator (A-Z) to the schedule. Consult with your supervisor for your Division's practices;
- Construction Type – Describes the major type of work to be accomplished in this schedule. If the pull-down menu does not adequately reflect project work, consult with the Division's EEBAACS Design Component Administrator. Note: Do not use the last 4 codes in the pull-down (3, R, N, or B). These codes are included in the program because of bid history data but should not be used for any current or future projects;
- Schedule Description – Input major work items to be performed
- Schedule Termini – Describe the beginning and ending points of the project that this schedule represents (example: station to station, milepost to milepost, or route junction to route junction);
- Line Item Starting Number – Each pay item is automatically assigned a line item number. Line item numbers are four digits. Start the first line item number with 0010 or 0100 depending on the amount of pay items;
- Line Item Increment Number – The user defines the spacing between line item numbers. It is important to set the line item number increment as large as possible, in order to leave room for new pay items resulting from Amendments, Contract Modifications, or Quality incentive payments. Line Item Numbers will vary from estimate to estimate. Once a project is advertised the Line Item Number can no longer be changed. Line item Numbers should not exceed 9999; and

D. CPM Days. This is the estimated number of days required to complete the work, typically calculated using the Critical Path Method (CPM). See your supervisor for details regarding CPM.

The screenshot shows the 'Schedules' form in the EEBAACS software. The form is titled 'Projects: PRA YELL 10(15) G... Estimates: Signoff' and has a navigation bar with tabs for 'Project Info', 'Design', 'Account', 'Team', and 'Event Log'. Below the navigation bar are tabs for 'Estimate', 'CPL', 'Schedules', 'Column Headers', 'Pay Items', and 'Construction Estimates'. The form contains several fields and buttons:

- Copy Existing:** A dropdown menu with the text 'Pick a schedule from which you'd like to copy data'. An orange arrow labeled 'B' points to this dropdown.
- Schedule Type\*:** A dropdown menu.
- Schedule Letter\*:** A dropdown menu.
- Construction Type\*:** A dropdown menu with the description 'Describes the type of construction for the project (i.e. Mill 2"/Overlay 4")'.
- Schedule Description\*:** A text area with the description 'Describes the type of work being performed on the project (i.e. Grading, Base, Pavement)'. An orange arrow labeled 'C' points to this field.
- Schedule Termini\*:** A text area with the description 'Describes the beginning and ending location of the project (i.e. From Milepost 349.7 to I-40)'. An orange arrow labeled 'C' points to this field.
- CPM Days:** A text input field. An orange arrow labeled 'D' points to this field.
- Line Item Starting Number\*:** A text input field.
- Line Item Increment Number\*:** A text input field.
- GIS Route(s):** A button labeled 'Add GIS Route'.
- Schedule Length:** A text input field with '0 miles' and a small icon.
- Lane Miles:** A text input field.
- Bridge(s):** A button labeled 'Add Bridge'.

At the bottom of the form are buttons for 'Save & Close', 'Save', and 'Cancel'. A note at the top right of the form states '\* indicates a required field'.

### 2.5.4.1 GIS Routes and Bridges

Geographic Information System (GIS) is a collection of data on routes that assists FLMA and FLH in managing transportation systems.

- A. Select the “Add GIS Route” icon and a detailed data field screen appears. See next page for details;
  - B. Schedule Length and Lane Miles. The schedule length is the length of the schedule from beginning to end. Schedule length is the same length shown on the title sheet of the plans for that schedule. Lengths are to three decimal places. By default, the schedule length is the total of the GIS route lengths in a particular schedule. If that is not true for your project, select the edit icon to manually enter the schedule Length. Lane-miles must always be manually entered;
- Lane miles is the length of lanes in a schedule. Lane miles is not always a doubling of the schedule length. Lane miles include acceleration lanes, deceleration lanes, etc.;
- C. Select the “Add Bridges” icon and a detailed data field screen appears. See next page for details; and
  - D. Select a command to continue with the program.

The screenshot shows the EEBACS software interface for creating a schedule. The main content area is titled 'Estimates: P-LH' and contains the following fields and controls:

- Copy Existing:** A dropdown menu with a 'Pick a schedule from which you'd like to copy data' tooltip.
- Schedule Type\*:** A dropdown menu.
- Schedule Letter\*:** A dropdown menu.
- Construction Type\*:** A dropdown menu with a tooltip: 'Describes the type of construction for the project (i.e. Mill 2"/Overlay 4")'.
- Schedule Description\*:** A text area with a tooltip: 'Describes the type of work being performed on the project (i.e. Grading, Base, Pavement)'.
- Schedule Termini\*:** A text area with a tooltip: 'Describes the beginning and ending location of the project (i.e. From Milepost 349.7 to 1+40)'.
- Design CPM Days:** A text input field.
- Line Item Starting Number\*:** A text input field.
- Line Item Increment Number\*:** A text input field.
- GIS Route(s):** A text input field with an 'Add GIS Route' button.
- Schedule Length:** A text input field with a unit selector set to 'miles'.
- Lane Miles:** A text input field.
- Bridge(s):** A text input field with an 'Add Bridge' button.

At the bottom of the form are three buttons: 'Save & Close', 'Save', and 'Cancel'. Orange arrows labeled A, B, and C point to the 'Add GIS Route' button, the 'Schedule Length' and 'Lane Miles' fields, and the 'Add Bridge' button, respectively. A red asterisk indicates required fields.

When the “Add GIS Route” icon has been selected the following data fields appear:

- A. Data for required fields may be determined according to the [GIS Appendix](#);
- B. Opens additional data fields to input data for an additional GIS route; and
- C. Deletes the GIS data.

The screenshot shows a software interface for adding a GIS route. On the left, there are input fields for 'Design CPM Days', 'Line Item Starting Number\*', and 'Line Item Increment Number\*'. The main area is titled 'GIS Route(s):' and contains a list of fields for a 'GIS Route'. These fields include: 'GIS Route\*' (text), 'Length\*' (text with 'miles' unit), 'Construction Type\*' (dropdown), 'GIS Milepost Start' (text), 'GIS Milepost End' (text), 'Parking Lot Area' (text with 'SQYD' unit), 'Lat Begin of Project' (text), 'Long Begin of Project' (text), 'Lat End of Project' (text), 'Long End of Project' (text), 'Termini' (text), and 'Comment' (text). At the bottom left of the dialog is an 'Add GIS Route' button, and at the bottom right is a 'Remove GIS Route' button. Callout 'A' is a bracket pointing to the 'Length\*' field. Callout 'B' is an arrow pointing to the 'Add GIS Route' button. Callout 'C' is an arrow pointing to the 'Remove GIS Route' button.

When the “Add Bridge” icon has been selected the following data fields appear:

- A. Data for required fields may be determined according to the GIS Appendix;
- B. Opens additional data fields to input data for an additional bridge;
- C. Input bridge length; and
- D. Deletes the bridge data inputted.

The screenshot shows a software interface for adding a bridge. On the left, there are input fields for 'Schedule Length:' (text with 'miles' unit) and 'Lane Miles:' (text). The main area is titled 'Bridge(s):' and contains a list of fields for a 'Bridge'. These fields include: 'Bridge Identification' (text), 'GIS Route' (text), 'Bridge Construction Type' (dropdown), 'Bridge Size (area)' (text with 'SQFT' unit), 'GIS Milepost Start' (text), 'GIS Milepost End' (text), 'Bridge Lat Begin' (text), 'Bridge Long Begin' (text), 'Bridge Lat End' (text), 'Bridge Long End' (text), 'Bridge Length\*' (text with 'FT' unit), and 'Remove Bridge' (button). At the bottom left of the dialog is an 'Add Bridge' button, and at the bottom right is a 'Remove Bridge' button. Callout 'A' is a bracket pointing to the 'Bridge Size (area)' field. Callout 'B' is an arrow pointing to the 'Add Bridge' button. Callout 'C' is an arrow pointing to the 'Bridge Length\*' field. Callout 'D' is an arrow pointing to the 'Remove Bridge' button. At the very bottom of the window are 'Save & Close', 'Save', and 'Cancel' buttons.

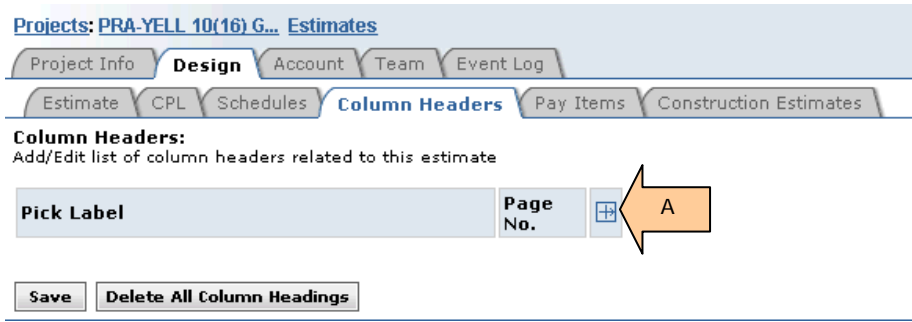


## 2.5.5 Column Headers

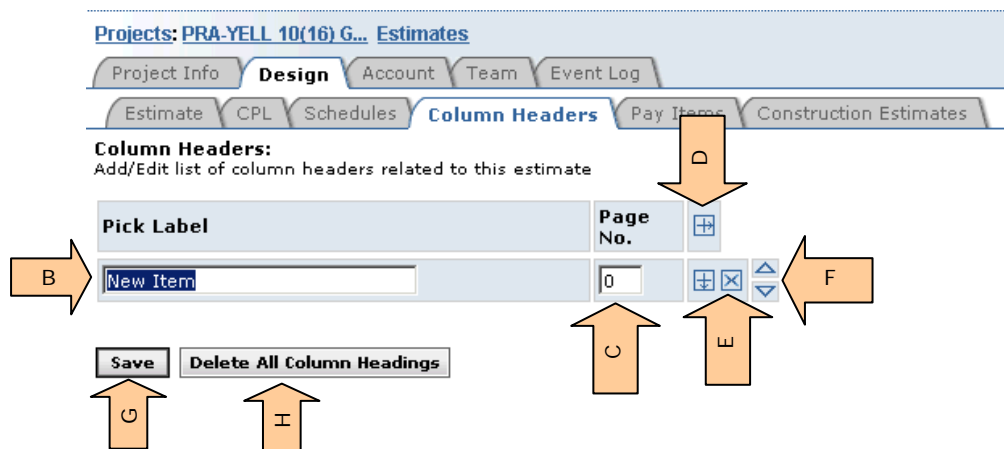


The "Column Headers" tab allows for the establishment of column headers for the Summary of Quantity plan sheet (or report). A maximum of 26 columns are available. Consult your supervisor for your Division's format.

- A. Select the "add a pick" box to open "Pick Label" and "Page No." data fields for input; then



- B. Input column header name (Typical Section, Plan & Profile, Surfacing Summary, Roadway name, etc.);
- C. Input plan sheet page number or plan section alpha designator depending on your Division's policy;
- D. Select icon to add another data field below;
- E. Select icon to delete the adjacent pick label and page number;
- F. Select icon to move pick label and page number up or down in the listing;
- G. Select a command to continue with the program; and
- H. Select icon to delete all column headings. **Warning:** Quantities will remain in the database, but will be inaccessible. Therefore it is extremely important to delete column quantities, before deleting the column heading.



## 2.5.6 Pay Items



The "Pay Items" tab allows for creating temporary pay items, adding, editing, and deleting of pay items for an estimate or schedules.

### 2.5.6.1 Project Pay Items



The "Project Pay Items" tabs allow access to the master pay items (see Subchapter 2.5.6.2 for more details), adding of temporary pay items, and updating line number. Once pay items are added to a schedule, it also lists all pay items.

Project pay items must be assigned a schedule in order for the pay item to be included in the total estimate cost. The construction estimate will compute even if all items are not complete. Those incomplete items will just not be included in the total estimate dollar amount. Pay items can be assigned to one schedule or be shared between multiple schedules (determine your Division's policy before using "shared pay items").

A pay item assigned to a schedule will be shown in the project pay item listing as follows:

Example of a pay item assigned to one schedule:

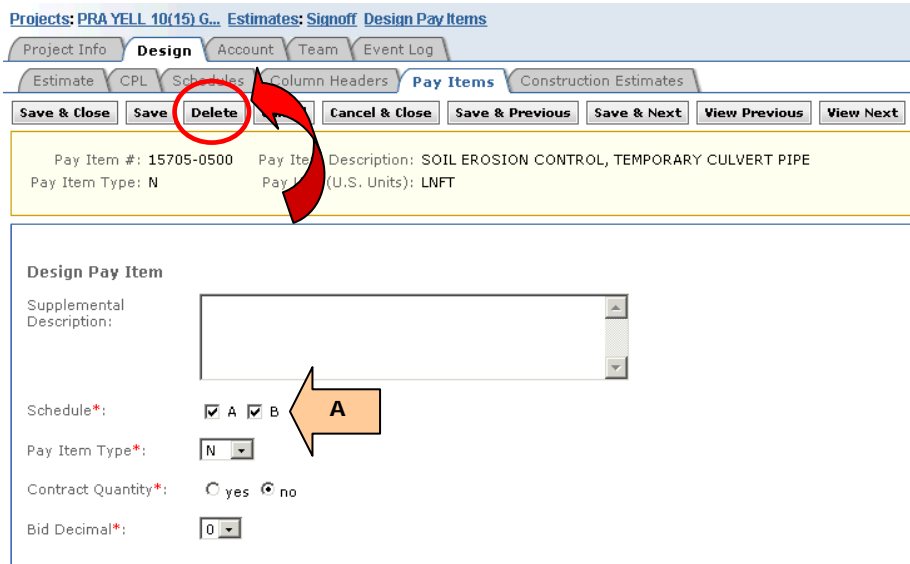
Add Temporary Pay Item		Add Master Pay Items		Update All Line Numbers		Items 1-20 of 25				
	Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Unit Price	Quantity	Total Price	Comp.	
<input type="checkbox"/>	15101-0000	A	N	MOBILIZATION	LPSM	\$255,450.00	ALL	\$255,450.00	yes	
<input type="checkbox"/>	15201-0000	A	N	CONSTRUCTION SURVEY AND STAKING	LPSM	\$200,000.00	ALL	\$200,000.00	yes	
<input type="checkbox"/>	15301-0010	A	N	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM	\$300,000.00	ALL	\$300,000.00	yes	
<input type="checkbox"/>	15401-0000	A	N	CONTRACTOR TESTING	LPSM	\$100,000.00	ALL	\$100,000.00	yes	
<input type="checkbox"/>	15501-0000	A	N	CONSTRUCTION SCHEDULE	LPSM	\$90,000.00	ALL	\$90,000.00	yes	
<input type="checkbox"/>	15705-0100	A	N	SOIL EROSION CONTROL, SILT FENCE	LNFT	\$15.00	2,000	\$30,000.00	yes	
<input type="checkbox"/>	15705-0500	A	N	SOIL EROSION CONTROL, TEMPORARY CULVERT PIPE	LNFT	\$65.00	500	\$32,500.00	yes	
<input type="checkbox"/>	20101-0000	A	N	CLEARING AND GRUBBING	ACRE	\$2,500.00	10.0	\$25,000.00	yes	

Example of a pay item shared by two schedules:

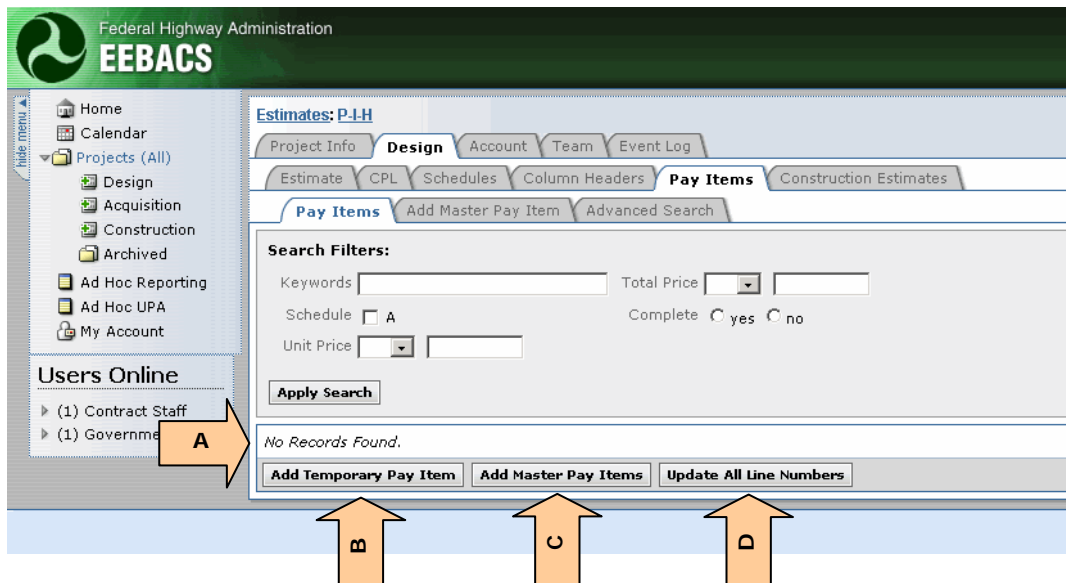
Add Temporary Pay Item		Add Master Pay Items		Update All Line Numbers		Items 1-20 of 24		
	Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units			
<input type="checkbox"/>	15101-0000	A, B	N	MOBILIZATION	LPSM			
<input type="checkbox"/>	15201-0000	A, B	N	CONSTRUCTION SURVEY AND STAKING	LPSM			

- A. To unlink a shared pay item, the schedule must be unchecked when editing the pay item.

**Caution:** Un-checking a schedule for a pay item is the same as deleting the pay item from the unchecked schedule. Deleting a shared pay item will delete the pay item from all schedules.



- A. Before pay items are included, this screen will indicate “No Records Found”;
- B. Select “Add Temporary Pay Item” icon when a pay item is not available in the master pay item list and is needed immediately. (See Subchapter 2.5.6.3);
- C. Select “Add Master Pay Item” icon when adding pay items to an estimate (See Subchapter 2.5.6.2); and
- D. Select “Update All Line Numbers” icon when pay items are added, deleted, or reordered in an estimate (See Subchapter 2.5.6.6).



## 2.5.6.2 Add Master Pay Item

The “Add Master Pay Item” tab allows pay items to be added to an estimate.



- A. Select the “add” icon to include the pay item in an estimate. The same pay item can be selected numerous times (duplicate pay items are acceptable) by selecting the “add” icon again.

Options	Pay Item #	Pay Item Description (US Customary)	Pay Item Type	U.S. Pay Units
	15705-0600	SOIL EROSION CONTROL, TEMPORARY 24-INCH CULVERT PIPE	N	LNFT
	15705-0700	SOIL EROSION CONTROL, TEMPORARY 30-INCH CULVERT PIPE	N	LNFT
	15705-0800	SOIL EROSION CONTROL, TEMPORARY 36-INCH CULVERT PIPE	N	LNFT
	15705-0900	SOIL EROSION CONTROL, TEMPORARY 42-INCH CULVERT PIPE	N	LNFT
	15705-1000	SOIL EROSION CONTROL, TEMPORARY 48-INCH CULVERT PIPE	N	LNFT
	15705-1100	SOIL EROSION CONTROL, TEMPORARY 60-INCH CULVERT PIPE	N	LNFT
	15705-1200	SOIL EROSION CONTROL, TEMPORARY 72-INCH CULVERT PIPE	N	LNFT
	15705-1300	SOIL EROSION CONTROL, TEMPORARY DIVERSION CHANNEL	N	LNFT
	15705-1400	SOIL EROSION CONTROL, SEDIMENT LOG	N	LNFT

- B. Duplicate pay item numbers are indicated by the number a pay item is selected in parenthesis (i.e. “(2)” in this example). The options column is also populated with “edit pay item” and “delete most recent” icon; and
- C. Selected pay items are indicated by bold font style.

Options	Pay Item #	Pay Item Description (US Customary)	Pay Item Type	U.S. Pay Units
	63316-3000	REMOVE AND RESET OBJECT MARKER	N	EACH
	63317-1000	REMOVE AND RESET SIGN	N	SQYD
	63318-1000	SNOWPOLE	N	EACH
	63319-0000	POST SLEEPER	N	EACH
	63401-0000	PAVEMENT MARKINGS	N	LNFT
	<b>63401-0100</b>	<b>PAVEMENT MARKINGS, TYPE A, SOLID</b>	N	LNFT
	<b>63401-0200</b>	<b>PAVEMENT MARKINGS, TYPE A, BROKEN</b>	N	LNFT
	63401-0300	PAVEMENT MARKINGS, TYPE B, SOLID	N	LNFT

Continue to add items to the schedule until all desired items are selected.

Cannot find an item in the table? Place a request to a new pay item with your EEBACS Division Administrator. Go to <http://flh.fhwa.dot.gov/resources/pse/estimate/#pay-items> for more information and time requirements for requests.

An example of a Project Pay Item list after adding items from the “Master Pay Items” icon:

Projects: PRA YELL 10(15) G... Estimates: Signoff(Copy) Return | Return To List (Design) ?

Project Info | Design | Account | Team | Event Log

Estimate | CPL | Schedules | Column Headers | Pay Items | Construction Estimates

Project Pay Items | Add Master Pay Item | Advanced Search

**Search Filters:**

Keywords:  Total Price:

Schedule:  A  B Complete:  yes  no

Unit Price:

<input type="button" value="Add Temporary Pay Item"/>		<input type="button" value="Add Master Pay Items"/>		<input type="button" value="Update All Line Numbers"/>		Batch Options		Items 1-12 of 12			
<input type="checkbox"/>	<input type="checkbox"/>	Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Unit Price	Quantity	Total Price	Comp.	Options
<input type="checkbox"/>	<input type="checkbox"/>	15101-0000		N	MOBILIZATION	LPSM	\$0.00	ALL	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	15201-0000		N	CONSTRUCTION SURVEY AND STAKING	LPSM	\$0.00	ALL	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	15301-0010		N	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM	\$0.00	ALL	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	15401-0000		N	CONTRACTOR TESTING	LPSM	\$0.00	ALL	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	15501-0000		N	CONSTRUCTION SCHEDULE	LPSM	\$0.00	ALL	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	15701-0000		N	SOIL EROSION CONTROL	LPSM	\$0.00	ALL	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	20401-0000		N	ROADWAY EXCAVATION	CUYD	\$0.00	0	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	30101-1000		NM	AGGREGATE BASE GRADING C	TON	\$0.00	0	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	40101-0100		NR	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL	TON	\$0.00	0	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	60201-0800		N	24-INCH PIPE CULVERT	LNFT	\$0.00	0	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	60201-1000		N	36-INCH PIPE CULVERT	LNFT	\$0.00	0	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	<input type="checkbox"/>	60201-1200		N	48-INCH PIPE CULVERT	LNFT	\$0.00	0	\$0.00	no	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>

Items 1-12 of 12

💡 In EEBACS, partnering, performance incentives, asphalt/fuel escalation should be added as 999 Pay Items:

<input type="button" value="Add New Pay Item"/>		Items 1-13 of 13									
Actions	Pay Item #	Description (Metric)	Description (US Customary)	Metric Units	US Units	Bid	Pay	Type	FP Year	modified	created
<input type="checkbox"/>	99901-0000	Partnering	PARTNERING	LPSM	LPSM	0	0	DI	03	06-25-2010 16:00:46	10-29-2007 17:13:26
<input type="checkbox"/>	99902-0000	Performance Incentives	PERFORMANCE INCENTIVES	LPSM	LPSM	0	0	DI	03	08-06-2008 19:00:18	10-29-2007 17:13:26
<input type="checkbox"/>	99903-0000	Performance Incentives	PERFORMANCE INCENTIVES	Day	DAY	0	0	DI	03	10-14-2008 17:20:21	10-29-2007 17:13:26
<input type="checkbox"/>	99904-0000	Asphalt Escalation	ASPHALT ESCALATION	LPSM	LPSM	0	0	DI	03	11-16-2008 13:55:36	10-29-2007 17:13:26
<input type="checkbox"/>	99905-0000	Fuel Escalation	FUEL ESCALATION	LPSM	LPSM	0	0	DI	03	11-16-2008 13:55:47	10-29-2007 17:13:26

### 2.5.6.3 Add Temporary Pay Item

The “Add Temporary Pay Item” icon allows temporary pay items to be added to an estimate or schedules until a permanent pay item (from the Master Pay Item table) can be established.

Note: Submit requests for new pay items as early in the process as possible. Do not wait until the project is almost ready to be promoted to Acquisitions. Estimates with temporary pay items **cannot** be forwarded to Acquisitions.

- A. Select “Add Temporary Pay Item” icon to access additional data fields.

The screenshot shows the 'Pay Items' tab in the software. The 'Project Pay Items' section is active, displaying search filters for Keywords, Total Price, Schedule, and Unit Price. Below the search filters, there is a message 'No Records Found.' and three buttons: 'Add Temporary Pay Item', 'Add Master Pay Items', and 'Update All Line Numbers'. An orange arrow labeled 'A' points to the 'Add Temporary Pay Item' button.

Creating a temporary pay item is much like editing a pay item from the master pay item list except for the following:

- B. Enter a five digit number. The first three digits should reflect the FP Section in which the work will be performed (example: 647\_\_ for work in Section 647). The next two digits can be any numbers that best fits;
- C. Enter a pay item description that reflects the work. Where possible try to use the same format as similar pay item descriptions (example: Temporary traffic control, *new temporary pay item description*); and
- D. See *Chapter 2.5.6.4, Editing a Pay Item*, for further instructions on how to populate pay item data fields.

The screenshot shows the 'Temporary Pay Item' form. The form has several fields: 'Temp Pay Item #' (with a red note: 'Enter the 5 digits to be used for the Pay Item Number'), 'Pay Item #' (with a red note: 'A unique number assigned to a pay item (i.e. 60201-2000). Pay items define specific work to complete the project (i.e. 24-inch pipe culvert, would include all material, labor and equipment necessary to complete the installation of the pipe culvert on the project)'), 'Pay Item Description (US Customary)' (with a red note: 'For the unique pay item number a description reflecting U.S. customary/Metric Units description of the pay item (i.e. 24-inch pipe culvert)'), 'Pay Item Type\*' (with a dropdown menu), 'Pay Unit (U.S. Units)' (with a dropdown menu), and 'Pay Unit (U.S. Units)' (with a red note: 'For the unique pay item number a description of the payment measurement reflecting U.S. customary measure (i.e. Linear feet)'). Orange arrows labeled B, C, and D point to the respective input fields.

E. Temporary pay items are designated “-TEMP” in the pay item number.

Projects: WY PRA-YELL 10(15), Estimates: P-LH

Project Info Design Account Team Event Log

Estimate CPL Schedules Column Headers Pay Items Construction Estimates

Project Pay Items Add Master Pay Item Advanced Search

Search Filters:  
 Keywords:  Total Price:   
 Schedule:  A Complete:  yes  no  
 Unit Price:

Apply Search

Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Ur
15101-0000	A	N	MOBILIZATION	LPSM	
15201-0000	A	N	CONSTRUCTION SURVEY AND STAKING	LPSM	\$
15301-0010	A	N	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM	\$
15401-0000	A	N	CONTRACTOR TESTING	LPSM	
15501-0000	A	N	CONSTRUCTION SCHEDULE	LPSM	
15705-0100	A	N	SOIL EROSION CONTROL, SILT FENCE	LNFT	
15705-0500	A	N	SOIL EROSION CONTROL, TEMPORARY CULVERT PIPE	LNFT	
20101-0000	A	N	CLEARING AND GRUBBING	ACRE	
20220-1000	A	N	REMOVAL, INDIVIDUAL TREE	EACH	
20301-TEMP	A	N	REMOVAL OF FLAG POLE	EACH	



### 2.5.6.4 Editing a Pay Item

Editing a pay item allows the user to populate data fields in order to develop a cost for the item of work.

A. Select the “edit” icon of the pay item to be edited.

Federal Highway Administration EEBACS

Estimates: P-LH

Project Info Design Account Team Event Log

Estimate CPL Schedules Column Headers Pay Items Construction Estimates

Pay Items Add Master Pay Item Advanced Search

Search Filters:  
 Keywords:  Total Price:   
 Schedule:  A Complete:  yes  no  
 Unit Price:

Apply Search

Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Unit Price	Quantity	Total Price	Comp.	Options
15101-0000	N	N	MOBILIZATION	LPSM	\$0.00	ALL	\$0.00	no	BHQP CBQP
15201-0000	N	N	CONSTRUCTION SURVEY AND STAKING	LPSM	\$0.00	ALL	\$0.00	no	BHQP CBQP
15301-0010	N	N	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM	\$0.00	ALL	\$0.00	no	BHQP CBQP
15401-0000	N	N	CONTRACTOR TESTING	LPSM	\$0.00	ALL	\$0.00	no	BHQP CBQP
15501-0000	N	N	CONSTRUCTION SCHEDULE	LPSM	\$0.00	ALL	\$0.00	no	BHQP CBQP
15705-0100	N	N	SOIL EROSION CONTROL, SILT FENCE	LNFT	\$0.00	0	\$0.00	no	BHQP CBQP
15705-0500	N	N	SOIL EROSION CONTROL, TEMPORARY CULVERT PIPE	LNFT	\$0.00	0	\$0.00	no	BHQP CBQP
20101-0000	N	N	CLEARING AND GRUBBING	ACRE	\$0.00	0.0	\$0.00	no	BHQP CBQP
20220-1000	N	N	REMOVAL, INDIVIDUAL TREE	EACH	\$0.00	0	\$0.00	no	BHQP CBQP
20401-0000	N	N	ROADWAY EXCAVATION	CUYD	\$0.00	0	\$0.00	no	BHQP CBQP
30101-2000	NM	N	AGGREGATE BASE GRADING D	TON	\$0.00	0	\$0.00	no	BHQP CBQP
40101-0100	NR	N	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL	TON	\$0.00	0	\$0.00	no	BHQP CBQP
63302-0000	N	N	SIGN SYSTEM	SQFT	\$0.00	0	\$0.00	no	BHQP CBQP
63401-0100	N	N	PAVEMENT MARKINGS, TYPE A, SOLID	LNFT	\$0.00	0	\$0.00	no	BHQP CBQP
63401-0100	N	N	PAVEMENT MARKINGS, TYPE A, SOLID	LNFT	\$0.00	0	\$0.00	no	BHQP CBQP
63401-0200	N	N	PAVEMENT MARKINGS, TYPE A, BROKEN	LNFT	\$0.00	0	\$0.00	no	BHQP CBQP



**Special Consideration:** Pay Item 15101-0000 Mobilization. This pay item does not require the user to input a "Unit Price". Unit price is computed through the program using the "Construction Estimate" tab. The field will be automatically populated once the requirements of the "Construction Estimate" tab have been fulfilled.

All other data fields need user input:

The Mobilization pay item will not be marked complete until the account splits are shown in the pay item.

- B. Pay Item Identifier. Shows pertinent pay item information such as pay item number, description, pay item type, and pay unit (stating whether the unit is Metric or USC unit);
- C. Supplemental Description. Input a supplemental description in parenthesis when further description of a pay item is required. This is commonly used when there is more than one pay item with the same number and description (example: 63401-0100 Pavement markings, type A, solid (yellow) or 63401-0100 Pavement markings, type A, solid (white));
- D. Schedule. When multiple schedules are required, select the schedules of the pay item to be edited; and
- E. Pay item type. The pay item type is established when pay items are added to the master pay item list by an administrator. The default type indicated is usually correct for the pay item. A user may change the type if desired by selecting from the pull-down list. Pay item types are:
  - N = Normal pay item (no incentive);
  - NM = Normal pay item, may need material incentive;
  - NR = Normal pay item, may need pavement roughness (International Roughness Index, IRI) and material incentive;
  - NS = Normal pay item, may need pavement smoothness (Profile Ride Index, PRI) and material incentive;
  - DI = Design Incentive are established 999 incentive pay items (i.e. 99901-0000 Partnering). These pay items are not included in the Estimate Total of Bid Items. The DI pay item type cannot be changed; and



- F. Contract Quantity. Contract quantity is described in Section 109 of the *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP)*. Indicating a pay item is to be a contract quantity means the quantity will not be measured in the field, but will be paid at the quantity shown in the Bid Schedule. Selecting the contract quantity will automatically place "Contract Quantity" in the Summary of Quantity report for those pay items selected.

The screenshot displays the EEBACS software interface for managing Design Pay Items. The main form is titled "Design Pay Item" and contains several sections:

- Design Pay Item Info:** Includes fields for Pay Item # (15201-0000), Pay Item Description (CONSTRUCTION SURVEY AND STAKING), Pay Item Type (N), and Pay Unit (LPSM). It also shows creation and modification dates and user information.
- Design Pay Item:** Contains a Supplemental Description field (pointed to by arrow C), a Schedule dropdown menu (pointed to by arrow D), a Pay Item Type dropdown menu (pointed to by arrow E), and Contract Quantity radio buttons (pointed to by arrow F). The "yes" option is selected.
- Column Headings & Accounts:** A table for defining column headings and accounts. The table has two columns: "Column Headings" and "CONSTR Account\*". The "Quantity\*" column is set to 100. The account is "com01 account 1".
- Unit Price:** Set to \$0.00.
- Remarks:** A text area for additional notes.
- Total Price:** Set to \$0.00.
- Summary of Quantity:** A text area for a summary of the quantity.

Navigation buttons at the top and bottom of the form include "Save & Close", "Save", "Delete", "Cancel", "Cancel & Close", "Save & Previous", "Save & Next", "View Previous", and "View Next".

- A. Column Headings. Select from the pick list a column heading that will contain the quantity found in that section of the plans. Lump sum (LPSM) quantity (ALL) generally does not have a column heading as it is not included in the plan section (check with your HDM for Division policy). Column headings are found in the Summary of Quantities report and act as a quantity index for the plan sheets;
  - B. Quantity. Input the quantity found in that plan section (column) and account number. Depending on pay item unit, quantities will either be a number or percentage (lump sum items, LPSM, and contingent sum items, CTSM, are always a percentage);
  - C. Account Number. Select the appropriate account number “nickname” from the pick list;
- Warning:** Even if the project only has one Account, Do NOT leave the Account number blank as this will cause problems in the Acquisitions and Construction modules.
- D. Add Account. Allows for multiple accounts. Divide the quantity accordingly;
  - E. Column Heading Total. Indicates the total quantity of one or more accounts for that column heading; and
  - F. Add Column Heading. If a pay item quantity is shown in more than one section in the plans, the user needs to add another column header opening a similar data box to the one shown and continue inputting data as described above (steps A-D).

The screenshot displays the EEBACS software interface for managing Design Pay Items. The main window is titled 'Design Pay Items' and shows a form for entering item details. The 'Column Headings & Accounts' section is the primary focus, with several orange arrows pointing to specific fields:

- A:** Points to the 'Column Headings' dropdown menu, which lists options like 'None', 'C:Typical Section', 'D:Plan & Profile', 'E:Tabulation of Drainage', 'F:Temporary Traffic Control', and 'G:Permanent Traffic Control'.
- B:** Points to the 'Quantity' field, which is currently set to '100'.
- C:** Points to the 'Account' dropdown menu, which lists options like 'None', 'CON1 PRA Funding', and 'CON2 Additional Funding provided by the Friends of Scenic Highways'.
- D:** Points to the 'Add Account' button.
- E:** Points to the 'Column Heading Total' field, which is currently set to '100'.
- F:** Points to the 'Add Column Heading' button.

The 'Design Pay Item Info' panel on the right provides additional details for the selected pay item, including its ID (15201-0000), description (CONSTRUCTION SURVEY AND STAKING), type (LPSM), and unit (%).

- A. Unit price. Can be automatically populated using Bid History Unit Price (BHUP) or Cost-base Unit Price (CBUP) analysis methods. A price may also be manually inserted into the data field. It is recommended that the BHUP or CBUP is used to document how the price was determined;
- B. Remarks. Remarks can be input either in the data field from this screen or carried-over from remarks in the BHUP/CBUP analysis. Use remarks to explain how the unit price was determined (example: *Unit price was determined from taking the average of 3 projects of similar scope and quantity.*);
- C. Total price. This number is calculated by EEBACS (unit price x total quantity = total price);
- D. Summary of Quantity Remarks. Input text to describe calculations or directions for pay items on the Summary of Quantity report. (Example: Item 40101-0100 might show a remark explaining *"The quantity was based on 2.3 tons per cubic meter."*); and
- E. Select a command to continue with the program.

The screenshot displays the EEBACS software interface for the 'Design Pay Items' screen. The interface includes a navigation menu on the left, a main form area, and a right-hand panel. Five orange arrows labeled A through E point to specific fields:

- A:** Points to the 'Unit Price' field, which is currently set to 0.00. Below it are radio buttons for 'BHUP' and 'CBUP'.
- B:** Points to the 'Remarks' text area, which is currently empty.
- C:** Points to the 'Total Price' field, which is currently set to \$0.00.
- D:** Points to the 'Summary of Quantity Remarks' text area, which is currently empty.
- E:** Points to the 'Save & Close' button at the bottom of the form.

The right-hand panel shows 'Design Pay Item Info' for Pay Item # 15201-0000, including details like 'Pay Item Description: CONSTRUCTION SURVEY AND STAKING', 'Pay Item Type: N', and 'U.S. Pay Units: LPSM'. It also includes a 'UPA Report' section with a 'Generate UPA Report' button.

### 2.5.6.5 Reordering Pay Items

When duplicate pay item numbers are found in an estimate, it may be necessary to reorder the pay items.

- A. Select the icon to reorder the pay item. Upon reordering pay items, update all line numbers.

<input type="checkbox"/>		63302-0000	A	N	SIGN SYSTEM	SQFT	\$25.00	150	\$3,750.00	yes		
<input type="checkbox"/>		63401-0100	A	N	PAVEMENT MARKINGS, TYPE A, SOLID (YELLOW)	LNFT	\$0.30	10,000	\$3,000.00	yes		
<input type="checkbox"/>		63401-0100	A	N	PAVEMENT MARKINGS, TYPE A, SOLID (WHITE)	LNFT	\$0.30	40,000	\$12,000.00	yes		
<input type="checkbox"/>		63401-0200	A	N	PAVEMENT MARKINGS, TYPE A, BROKEN (YELLOW)	LNFT	\$0.25	3,000	\$750.00	yes		



Note the change in order between Pavement markings, type A, solid yellow and solid white.

<input type="checkbox"/>		63302-0000	A	N	SIGN SYSTEM	SQFT	\$25.00	150	\$3,750.00	yes		
<input type="checkbox"/>		63401-0100	A	N	PAVEMENT MARKINGS, TYPE A, SOLID (WHITE)	LNFT	\$0.30	40,000	\$12,000.00	yes		
<input type="checkbox"/>		63401-0100	A	N	PAVEMENT MARKINGS, TYPE A, SOLID (YELLOW)	LNFT	\$0.30	10,000	\$3,000.00	yes		
<input type="checkbox"/>		63401-0200	A	N	PAVEMENT MARKINGS, TYPE A, BROKEN (YELLOW)	LNFT	\$0.25	3,000	\$750.00	yes		

**Warning:** Update all line numbers immediately after the pay item order has been changed, otherwise the order change will be lost.

### 2.5.6.6 Update All Line Numbers

Select the "Update All Line Numbers" button to refresh line numbers after pay items have been added, deleted, or reordered in an estimate. Line items may be update in either the "Project Pay Item" or "Schedules" tabs.

Projects: PRA YELL 10(15) G... Estimates: Signoff Return | Return To List (Design) ?

Project Info Design Account Team Event Log

Estimate CPL Schedules Column Headers Pay Items Construction Estimates

Project Pay Items Add Master Pay Item Advanced Search

**Search Filters:**

Keywords:  Total Price:

Schedule:  A Complete:  yes  no

Unit Price:

Items 1-20 of 24 Jump 1 | Next >

<input type="checkbox"/>		Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Unit Price	Quantity	Total Price	Comp.	Options	
<input type="checkbox"/>		15101-0000	A	N	MOBILIZATION	LPSM	\$353,100.00	ALL	\$353,100.00	yes		
<input type="checkbox"/>		15201-0000	A	N	CONSTRUCTION SURVEY AND STAKING	LPSM	\$200,000.00	ALL	\$200,000.00	yes		
<input type="checkbox"/>		15401-0000	A	N	CONTRACTOR TESTING	LPSM	\$100,000.00	ALL	\$100,000.00	yes		



Projects: PRA YELL 10(15) G... Estimates: Signoff

Project Info Design Account Team Event Log

Estimate CPL Schedules Column Headers Pay Items Construction Estimates

Items 1-1 of 1

		Schedule Letter	Schedule Type	<input type="button" value="Update Line Item"/>
		A	Base	<input type="button" value="Update Line Item"/>

Items 1-1 of 1



Example: Pay item 15301-0000 was deleted from Schedule A which eliminated Line Item Number A0030 as shown in the Engineer's Estimate report below.

Line Item Number	Pay Item No.	Description	Quantity	Unit	Unit Price	Amount
A0010	15101-0000	MOBILIZATION				
		Acet CON01	\$255,450.00			\$255,450.00
		Total	ALL	LPSM	\$255,450.00	\$255,450.00
A0020	15201-0000	CONSTRUCTION SURVEY AND STAKING				
		Acet CON01	\$100,000.00			\$100,000.00
		Acet CON02	\$100,000.00			\$100,000.00
		Total	ALL	LPSM	\$200,000.00	\$200,000.00
A0040	15401-0000	CONTRACTOR TESTING				
		Acet CON01	\$100,000.00			\$100,000.00
		Total	ALL	LPSM	\$100,000.00	\$100,000.00
A0050	15501-0000	CONSTRUCTION SCHEDULE				
		Acet CON01	\$90,000.00			\$90,000.00
		Total	ALL	LPSM	\$90,000.00	\$90,000.00

Example: By selecting the "Update All Line Numbers" icon, the line item numbers are sequenced in the proper increment.

Line Item Number	Pay Item No.	Description	Quantity	Unit	Unit Price	Amount
A0010	15101-0000	MOBILIZATION				
		Acet CON01	\$255,450.00			\$255,450.00
		Total	ALL	LPSM	\$255,450.00	\$255,450.00
A0020	15201-0000	CONSTRUCTION SURVEY AND STAKING				
		Acet CON01	\$100,000.00			\$100,000.00
		Acet CON02	\$100,000.00			\$100,000.00
		Total	ALL	LPSM	\$200,000.00	\$200,000.00
A0030	15401-0000	CONTRACTOR TESTING				
		Acet CON01	\$100,000.00			\$100,000.00
		Total	ALL	LPSM	\$100,000.00	\$100,000.00
A0040	15501-0000	CONSTRUCTION SCHEDULE				
		Acet CON01	\$90,000.00			\$90,000.00
		Total	ALL	LPSM	\$90,000.00	\$90,000.00

Note: Quality incentives associated with some pay items may cause a gap in line numbers which is appropriate.

### 2.5.6.7 Batch Options

The batch option button allows the user to:

- Print Bid History Unit Price (BHUP) for selected pay items which were developed by this analysis system;
- Print Cost Based Unit Price (CBUP) for selected pay items which were developed by this analysis system;

- Print Quality Unit Price Analysis (QUP) for selected pay items in which QUPs were required;
- Print Unit Price Analysis for selected pay items; or
- Delete selected pay items.

Projects: PRA YELL 10(15) G... Estimates: Signoff

Project Info Design Account Team Event Log

Estimate CPL Schedules Column Headers Pay Items Construction Estimates

Project Pay Items Add Master Pay Item Advanced Search

**Search Filters:**

Keywords  Total Price

Schedule  A  B Complete  yes  no

Unit Price

Apply Search

Add Temporary Pay Item Add Master Pay Items Update All Line Numbers Batch Options

	Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	
<input type="checkbox"/>	15101-0000	A	N	MOBILIZATION	
<input type="checkbox"/>	15201-0000	A	N	CONSTRUCTION SURVEY AND STAKING	LPSM
<input type="checkbox"/>	15401-0000	A	N	CONTRACTOR TESTING	LPSM
<input type="checkbox"/>	15501-0000	A	N	CONSTRUCTION SCHEDULE	LPSM
<input type="checkbox"/>	15705-0100	A	N	SOIL EROSION CONTROL, SILT FENCE	LNFT

Batch Options:

- Print Bid History Unit Price
- Print Cost Based Unit Price
- Print Quality Unit Price Analysis
- Print Unit Price Analysis
- Delete Pay Items

Select pay items for batch options by either:

- Toggle individual pay items; or
- all pay items by selecting the "+" button (pay items may be de-selected by selecting the "-" button; and
- For batch printing requests, select the PDF icon when it appears to view the report.

Projects: PRA YELL 10(15) G... Estimates: Signoff

Project Info Design Account Team Event Log

Estimate CPL Schedules Column Headers Pay Items Construction Estimates

Project Pay Items Add Master Pay Item Advanced Search

**Bid History Unit Price Analysis**

**Search Filters:**

Keywords  Total Price

Schedule  A  B Complete  yes  no

Unit Price

Apply Search

Add Temporary Pay Item Add Master Pay Items Update All Line Numbers Batch Options Items 1-20 of 24

	Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Unit Price	Qty	Total Price	Comp.	Options
<input checked="" type="checkbox"/>	15101-0000	A	N	MOBILIZATION	LPSM	\$353,100.00	ALL	\$353,100.00	yes	BHUP CBUP
<input checked="" type="checkbox"/>	15201-0000	A	N	CONSTRUCTION SURVEY AND STAKING	LPSM	\$200,000.00	ALL	\$200,000.00	yes	BHUP CBUP
<input checked="" type="checkbox"/>	15401-0000	A	N	CONTRACTOR TESTING	LPSM	\$100,000.00	ALL	\$100,000.00	yes	BHUP CBUP
<input checked="" type="checkbox"/>	15501-0000	A	N	CONSTRUCTION SCHEDULE	LPSM	\$90,000.00	ALL	\$90,000.00	yes	BHUP CBUP
<input checked="" type="checkbox"/>	15705-0100	A	N	SOIL EROSION CONTROL, SILT FENCE	LNFT	\$15.00	2,000	\$30,000.00	yes	BHUP CBUP
<input checked="" type="checkbox"/>	15705-0500	A	N	SOIL EROSION CONTROL, TEMPORARY CULVERT PIPE	LNFT	\$65.00	500	\$32,500.00	yes	BHUP CBUP
<input checked="" type="checkbox"/>	20101-0000	A	N	CLEARING AND GRUBBING	ACRE	\$2,500.00	10.0	\$25,000.00	yes	BHUP CBUP
<input checked="" type="checkbox"/>	20220-1000	A	N	REMOVAL, INDIVIDUAL TREE	EACH	\$3,000.00	10	\$30,000.00	yes	BHUP CBUP

## 2.5.7 Determining Unit Prices

Each pay item requires a unit price to be determined in order to develop a total price for the estimate. Two methods of developing a unit price for a pay item are available.

### 2.5.7.1 Bid History Unit Price (BHUP)

The BHUP analysis gathers bid history from past projects in the database to assist in determining a unit price for the pay item. Use bid history with caution. Prices shown in the bid history reflect prices at that point in time and can be influenced by geographical location, quantity, haul, terrain, and price of raw materials. Use search filters to display projects with similar traits. Good engineering judgment is critical when using BHUP.

- A. Select the BHUP icon to access the list of past projects with recorded bid history for that pay item.

The screenshot displays the EEBACS software interface for editing a 'Design Pay Item'. The main form area contains the following fields and controls:

- Design Pay Item Info:** Pay Item #: 15201-0000, Pay Item Description: CONSTRUCTION SURVEY AND STAKING, Pay Item Type: N, Pay Unit (U.S. Units): LPSM.
- Design Pay Item Details:** Supplemental Description, Schedule (checked A), Pay Item Type (N), Contract Quantity (no).
- Column Headings & Accounts:** A table with 'Column Headings' and 'CONSTR Account'. The 'Quantity' field is set to 100. The 'Unit Price' field is set to 0.00. The 'Remarks' field contains 'BHUP', which is circled in red and has an orange arrow labeled 'A' pointing to it.
- Summary:** Total Price: \$0.00.

Navigation buttons at the bottom include: Save & Close, Save, Delete, Cancel, Cancel & Close, Save & Previous, Save & Next, View Previous, and View Next.

- A. Use search filters to display projects with similar traits. Select the “apply search” icon to populate the listing with projects using the selected parameters;
- B. Select bid prices from projects with similar work. Prices may also be deselected. The top unit prices reflect the actual bid price for the contract awarded. The “bolded” unit price below, reflects an adjusted price once an inflation factor has been applied (see step D);
- C. For more bid history on the pay item, select either screen “jump” or “next”. If you want to select bid prices from multiple screens, select “update” to save selections on the current before going to the next screen otherwise they will not be saved;
- D. Select from the pick list inflation factors developed by various state and federal agencies. Choose an entity close to your area of work;
- E. Select the “update” icon to populate the “Avg., Max., and Min. calculated prices. If additional unit prices are selected or deselected, update the values;
- F. Select the average (recommended), minimum, or maximum historical unit bid price to populate the “unit price used” for the item;
- G. The user has the option of editing (such as rounding the average unit price from step E above) or inputting a unit price;
- H. Describe factors taken into consideration in developing the unit price. These remarks will carry forward to the pay item screen; and
- I. Select a command to continue with the program.

**Bid History Analysis**

15201-0000 CONSTRUCTION SURVEY AND STAKING  
 Pay Item Type: N Pay Unit: LPSM  
 Quantity: All

**Search Filters:**  
 Pay Item Number: 15201-0000  
 Quantity: to  
 State: [select]  
 Construction Type: [select]  
 Density: [select]  
 Terrain: [select]  
 Award Date: 1995 to 2009  
 Show Selected Only?  Yes  Ignore

apply search clear

**Results: Items 1-10 of 416**

Pay State	Pay Item # v	Description	Sched	Project Number v	Award Date	Inflation Rate	Qty v	Low 1	Low 2	Low 3	Low 4	Low 5	Total Amt	Construction Type	Terrain	Density
CO	15201-0000	CONSTRUCTION SURVEY AND STAKING	A	CO PRA HEIDI 333(1A)	Oct 27, 2008	8.71%	All	<input type="checkbox"/> \$65,000.00 <b>\$65,000.00</b>	<input type="checkbox"/> \$79.00 <b>\$79.00</b>	<input type="checkbox"/> \$65,000.00 <b>\$65,000.00</b>			\$8,261,467.00	902 AC Construction 5/8	Mountainous	Rural
CO	15201-0000	CONSTRUCTION SURVEY AND STAKING	A	CO PRA LINDEN 333(5)	Oct 27, 2008	8.71%	All	<input type="checkbox"/> \$50,000.00 <b>\$50,000.00</b>	<input type="checkbox"/> \$55,000.00 <b>\$55,000.00</b>	<input type="checkbox"/> \$45,000.00 <b>\$45,000.00</b>	<input type="checkbox"/> \$65,000.00 <b>\$70,661.50</b>		\$8,571,880.00	902 AC Construction 5/8	Mountainous	Rural
CO	15201-0000	CONSTRUCTION SURVEY AND STAKING	A	CO PRA WADE 333(4)	Oct 27, 2008	8.71%	All	<input checked="" type="checkbox"/> \$80,000.00 <b>\$80,000.00</b>	<input type="checkbox"/> \$45,000.00 <b>\$45,000.00</b>	<input type="checkbox"/> \$75,000.00 <b>\$75,000.00</b>			\$8,300,970.00	902 AC Construction 5/8	Mountainous	Rural
CO	15201-0000	CONSTRUCTION SURVEY AND STAKING	A	CO PRA RANDY 333(2)	Oct 15, 2008	8.71%	All	<input checked="" type="checkbox"/> \$95,000.00 <b>\$95,000.00</b>					\$9,753,178.00	902 AC Construction 5/8	Mountainous	Rural
CO	15201-0000	CONSTRUCTION SURVEY AND STAKING	A	CO PRA RANDY 333(3)	Oct 15, 2008	8.71%	All	<input type="checkbox"/> \$60,000.00 <b>\$60,000.00</b>	<input type="checkbox"/> \$51,000.00 <b>\$51,000.00</b>				\$5,632,300.00	902 AC Construction 5/8	Mountainous	Rural
WA	15201-0000	CONSTRUCTION SURVEY AND STAKING	B	PRA JULEE 1 (2)	Sep 13, 2008	8.71%	All	<input type="checkbox"/> \$10,000.00 <b>\$10,871.00</b>	<input type="checkbox"/> \$1.00 <b>\$1.09</b>	<input type="checkbox"/> \$10.00 <b>\$10.87</b>	<input type="checkbox"/> \$410.00 <b>\$410.00</b>		\$8,790,000.00	901 AC Construction 3/6	Mountainous	Rural
WA	15201-0000	CONSTRUCTION SURVEY AND STAKING	A	PRA JULEE 1 (2)	Sep 13, 2008	8.71%	All	<input type="checkbox"/> \$20,000.00 <b>\$21,742.00</b>	<input type="checkbox"/> \$1.00 <b>\$1.09</b>	<input type="checkbox"/> \$40.00 <b>\$43.48</b>	<input type="checkbox"/> \$5,000.00 <b>\$5,000.00</b>		\$5,442,591.00	902 AC Construction 5/8	Mountainous	Rural
WA	15201-0000	CONSTRUCTION SURVEY AND STAKING	B	PH JULEE	Aug 06, 2008	8.71%	All	<input type="checkbox"/> \$25,000.00 <b>\$27,177.50</b>					\$1,575,960.33	901 AC Construction 3/6	Mountainous	Rural
WA	15201-0000	CONSTRUCTION SURVEY AND STAKING	A	PH JULEE	Aug 06, 2008	8.71%	All	<input type="checkbox"/> \$1,000.00 <b>\$1,087.10</b>					\$1,605,527.67	902 AC Construction 5/8	Mountainous	Rural
CA	15201-0000	CONSTRUCTION SURVEY AND STAKING	B	PH BRENDA 1(2)	Jul 22, 2008	8.71%	All	<input type="checkbox"/> \$1.00 <b>\$1.09</b>	<input type="checkbox"/> \$2.00 <b>\$2.17</b>	<input type="checkbox"/> \$10.00 <b>\$10.87</b>	<input type="checkbox"/> \$20.00 <b>\$21.74</b>		\$12,000,000.00	901 AC Construction 3/6	Mountainous	Rural

2 Bid Picked Avg: \$87,500.00 Max: \$95,000.00 Min: \$80,000.00 update Jump 1 Next 2

Unit Price Used: 90000 Remark: Select projects with similar traits. Inflation: Washington DOT Save & Close Cancel





- A. Upon saving and closing the previous screen, the BHUP icon text is colored red to indicate that analysis type was used and the remaining fields are populated.

### 2.5.7.2 Cost-base Unit Price (CBUP)

Cost-base unit price analysis develops a unit price by using the cost of labor, material, equipment, time it will take to perform the work, and associated costs (such as overhead and profit). This type of analysis often requires contacting local suppliers, referring to construction equipment ownership and operating expense schedules (such as developed by the USACE), and determining wage rates using the Davis-Bacon Wage Rates for a particular area.

- A. Select the CBUP icon to access the worksheet to develop labor, equipment, and material costs for the pay item.

A. Select an appropriate analysis sub-function to begin developing a unit price.

Cost Based Unit Price

20401-0000 ROADWAY EXCAVATION

Save & Close Cancel \* indicates a required field

Cost Based Unit Price Analysis

Equipment:  
Add Equipment  
Total Equipment Cost:  
\$0.00

Labor:  
Add Labor  
Total Labor Cost:  
\$0.00

Material:  
Add Material  
Total Material Cost:  
\$0.00

Total Labor/Equipment/Mat Costs:  
\$0.00

Total Cost/Unit for Pay Item:  
\$0.00

Unit Price Used\*:  
\$

Additional Remarks:

Save & Close Cancel

- A. Type. Input type of equipment (Bulldozer, 80HP minimum flywheel power, or Dump truck 10 cuyd minimum capacity, etc.), labor (General, or High scaler, or Bulldozer operator over 120,000 lbs, etc.) or material (crushed aggregate, or plantings, or riprap, etc.);
- B. Quantity. Input the number of a specific equipment or labor type (Loader – 1, Dump trucks – 4, General Labor – 2, Dump truck drivers – 4, Loader operator -1, etc.). For material type input the quantity to be used;
- C. Number of Units. Input the quantity for one unit of equipment or labor. Example: 5 General laborers, each work 9 days would be inputted, "Type": *General laborer*; "Quantity": 5; "Number of Units": 9; "Unit": *days*;
- D. Unit. Select the appropriate unit from the pick-list (hour, day, ton, etc.);
- E. Cost/Unit. Input the cost per unit. Cost per unit is established by using the USACE construction equipment ownership and operating expense schedules for equipment, Davis-Bacon Wage Rates for labor/equipment operators, and calling suppliers for material costs. See your Division's procedures;
- F. Total Overhead & Profit. Is a percentage of the actual cost. Overhead are those expenses not directly related to the items of work. They may include lighting and heating for the project and home office, upper management and office personnel salaries, cost of office equipment, and company vehicles. The percentage may vary depending on region and work;
- G. Remarks. Describe how costs were determined for that specific item; and
- H. Select the Delete button if that line item is no longer relevant.

The screenshot shows the 'Cost Based Unit Price' window for project '20401-0000 ROADWAY EXCAVATION'. It features three main data entry sections: Equipment, Labor, and Material. Each section has a table with columns for Type, Quantity, No of Units, Unit, Cost/Unit, Total, Overhead & Profit (%), Overhead & Profit, Total with O&P, and Remarks. A 'Delete' button is located at the end of each table. A 'Unit Price Used\*' field and an 'Additional Remarks' text area are at the bottom. A unit selection list is open, showing options like ACRE, CTSM, CUFT, CUYD, DAY, EACH, FIX HR RA, GAL, HOUR, LB, LINT, LPSM, NFBM, MGAL, MILE, MO, SLRY, SQFT, SQYD, STA, TON, and WEEK. Annotations A through H point to the Type, Quantity, No of Units, Unit, Cost/Unit, Total, Overhead & Profit (%), Overhead & Profit, Total with O&P, Remarks, and Delete buttons respectively.

- A. Total Cost (Equipment, Labor, or Material). Automatic summation of all types for that component of work;
- B. Total Cost of Equipment, Labor, and Material. Automatic summation of all components of work;
- C. Total Cost per Unit for Pay Item. This is calculated by EEBACS by dividing the Total Labor/Equipment/Material Costs by the pay item quantity. Note: If the pay item quantity is not saved before entering the CBUP worksheet, this total will not calculate;
- D. Unit Price Used. Input a unit price to carry forward to the pay item tab to calculate the final pay item cost;
- E. Remarks. Describe how costs were determined for the pay item; and
- F. Select a command to continue with the program.

The screenshot shows the 'Cost Based Unit Price' window for project '20401-0000 ROADWAY EXCAVATION'. It contains three main sections: Equipment, Labor, and Material. Each section has a table with columns for Type, Quantity, No of Units, Unit, Cost/Unit, Total, Overhead & Profit (%), Overhead & Profit, Total with O&P, and Remarks. Below these tables are summary fields for Total Equipment Cost, Total Labor Cost, and Total Material Cost. A 'Total Labor/Equipment/Mat Costs' field is also present. The 'Unit Price Used' field is set to 8.50. The 'Additional Remarks' field contains text about excavation. Callout arrows A through L point to various elements: A points to the 'Add Equipment' button; A points to the 'Add Labor' button; A points to the 'Add Material' button; B points to the 'Total Labor/Equipment/Mat Costs' field; C points to the 'Total Cost/Unit for Pay Item' field; D points to the 'Unit Price Used' field; E points to the 'Additional Remarks' text area; and L points to the 'Save & Close' button.

- A. The BHUP or CBUP button text in the pay item screen will be red depending on the type of analysis selected.

This close-up shows the 'Unit Price' field with the value '8.50' and two buttons, 'BHUP' and 'CBUP'. The 'CBUP' button is highlighted in red. Below it is the 'Remarks' text area containing the same text as in the previous screenshot. A callout arrow A points to the 'CBUP' button. At the bottom, it says '(maximum characters: 4000) 3907 remaining.'

- A. Completed pay items will be highlighted in green in the pay item listing for the project. The BHUP or CBUP icon text will be red depending on the type of analysis selected.

Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Unit Price	Quantity	Total Price	Comp.	Options
15101-0000	A	N	MOBILIZATION	LPSM	\$0.00	ALL	\$0.00	yes	BHUP
15201-0000	A	N	CONSTRUCTION SURVEY AND STAKING	LPSM	\$240,000.00	ALL	\$240,000.00	yes	BHUP
15301-0010		N	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM	\$0.00	ALL	\$0.00	no	BHUP
15401-0000		N	CONTRACTOR TESTING	LPSM	\$0.00	ALL	\$0.00	no	BHUP
15501-0000		N	CONSTRUCTION SCHEDULE	LPSM	\$0.00	ALL	\$0.00	no	BHUP
15705-0100		N	SOIL EROSION CONTROL, SILT FENCE	LNFT	\$0.00	0	\$0.00	no	BHUP
15705-0500		N	SOIL EROSION CONTROL, TEMPORARY CULVERT PIPE	LNFT	\$0.00	0	\$0.00	no	BHUP
20101-0000		N	CLEARING AND GRUBBING	ACRE	\$0.00	0.0	\$0.00	no	BHUP
20220-1000		N	REMOVAL, INDIVIDUAL TREE	EACH	\$0.00	0	\$0.00	no	BHUP
20401-0000	A	N	ROADWAY EXCAVATION	CLVD	\$8.50	40,000	\$340,000.00	yes	BHUP
30101-2000		NM	AGGREGATE BASE GRADING 0	TON	\$0.00	0	\$0.00	no	BHUP
40101-0100		NR	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL	TON	\$0.00	0	\$0.00	no	BHUP
63302-0000		N	SIGN SYSTEM	SQFT	\$0.00	0	\$0.00	no	BHUP
63401-0100		N	PAVEMENT MARKINGS, TYPE A, SOLID	LNFT	\$0.00	0	\$0.00	no	BHUP
63401-0100		N	PAVEMENT MARKINGS, TYPE A, SOLID	LNFT	\$0.00	0	\$0.00	no	BHUP
63401-0200		N	PAVEMENT MARKINGS, TYPE A, BROKEN	LNFT	\$0.00	0	\$0.00	no	BHUP

## 2.5.8 Adding Incentives

At this time there are two methods for adding incentives to the estimate.

The first process is the Quality Unit Price (QUP) process which will be used to add material quality incentives only.

The second process is to add all other incentive pay items. This process will be used to add asphalt/fuel escalation, partnering, performance incentives, etc. This process will also be used as an interim procedure for adding smoothness and roughness quality incentives.

### 2.5.8.1 Adding Material Quality Incentives

At this time QUP process should only be used for material quality incentives. Do **NOT** use this process for smoothness or roughness quality incentives.

Upon determining a unit price, quantity, and calculating a total price for a particular pay item; the QUP icon will appear when the pay item type (incentive) is NM, NR, or NS. (See Section 2.5.6.4 for a description of the pay item types).

If material quality incentive needs to be included:

A: Select the QUP icon to add the material incentive item.

Projects: NE PRA TEST 105 P... Estimates: 100% Design Pay Items

Pay Item #: 40101-0100 Pay Item Description: SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL  
Pay Item Type: NR Pay Unit (U.S. Units): TON

Design Pay Item Info  
Created: 06-18-2009 11:45:59  
By: Heidi Hirsbrunner  
Modified: 12-21-2011 10:49:42  
By: Heidi Hirsbrunner

Design Pay Item  
Supplemental Description:  
Schedule\*:  A  
Pay Item Type\*: **NR**  
Contract Quantity\*:  Yes  No  
Bid Decimal\*: 0

Column Headings & Accounts

Column Headings	CONSTR Account*	Quantity*	Price
C7:surfacing summary	Quantity*: 6523 Account*: CON01 PRA funding	6,757	\$675,700.00
	Quantity*: 234 Account*: CON02 ARRA funding	6,523	\$652,300.00
		234	\$23,400.00
<b>Column Heading Total:</b> 6,757			

Unit Price: 100.00

Remarks:  **A**

Quantity: 6,757  
Total Price: \$675,700.00

Summary of Quantity  
Remarks:

A Quality Unit Price Analysis worksheet will appear:

- A. Pay Item Type. **Always** select from the pick list QM (Material incentive);
  - Warning:** Do NOT select QS or QR pay item types (smoothness or roughness incentives). Smoothness and roughness quality incentives will be added as other incentives according to Section 2.5.8.2.
- B. Incentive (%). Input the maximum pay factor. Values are inputted as percentages (1.05 pay factor would be inputted as 5%).
- C. Unit Price Used. Input the program calculated incentive unit price, rounding to the nearest penny;
- D. Remarks. Input applicable remarks to document data selection; and
- E. Select a command to continue with the program.

The screenshot shows the 'Quality Unit Price' dialog box with the following fields and callouts:

- Callout A:** Points to the 'Pay Item Type\*' dropdown menu, which is set to 'QM'.
- Callout B:** Points to the 'Incentive (%)' text input field, which contains the value '5'.
- Callout C:** Points to the 'Unit Price Used\*' text input field, which contains the value '\$5.00'.
- Callout D:** Points to the 'Remarks' text area, which contains the text 'Price based on maximum 1.05 pay factor'.
- Callout E:** Points to the 'save and close' button at the bottom of the dialog.

Other visible fields include: Pay Item Number: 40101-0100; Pay Item Description: SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL; Pay Unit (U.S. Units): TON; Unit Price: \$100.00; Incentive Unit Price: \$5.00; and a character count of 4000 remaining.

A QM pay item will be created with the exact same pay item number as the original item. These quality items will not be shown in the Summary of Quantity or Bid Schedule reports, but will be shown in the summary sheets of the Engineer's Estimate.

Projects: NE PRA TEST 105 P., Estimates: 100% Return To Projects (All) | Return To List (Design)

Project Info | **Design** | Account | Team | Event Log

Estimate | CPL | Schedules | Column Headers | **Pay Items** | Construction Estimates

Project Pay Items | Add Master Pay Item | Advanced Search

**Warning:** The following Construction Estimates are now out of date:  
Schedule A

**Search Filters:**  
 Keywords:  Total Price:    
 Schedule:  A Complete:  Yes  No  
 Unit Price:

Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Unit Price	Quantity	Total Price	Comp.	Options
	A	N	MOBILIZATION	LPSM	\$564,996.20	ALL	\$564,996.20	yes	BHUP CBUP
	A	N	CLEARING AND GRUBBING	ACRE	\$28,000.00	56.0	\$1,568,000.00	yes	BHUP CBUP
40101-0100	A	NR	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL	TON	\$100.00	6,757	\$675,700.00	yes	BHUP CBUP QUP
40101-0100	A	QM	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL (Quality)	Q_TON	\$5.00	6,757	\$33,785.00	yes	BHUP CBUP
55501-0000	A	N	STRUCTURAL STEEL	LPSM	\$575,000.00	ALL	\$575,000.00	yes	BHUP CBUP
60221-4800	A	N	24 FEET SPAN, 8 FEET RISE REINFORCED CONCRETE BOX CULVERT, SINGLE BARREL	LNFT	\$1,000.00	255	\$255,000.00	yes	BHUP CBUP

Summary page of Engineer's Estimate:

Estimate | CPL | Schedules | Column Headers | Pay Items | **Construction Estimates**

Generate EE Reports | Generate EE Col Reports | Generate Design Summary Report | Generate Sum Of Quantities Report | Generate PE Sum Of Quantities Report | Generate UPA Report

This Construction Estimate is up to date.

\* Indicates a required field

**Construction Estimate**  
 Schedule\*:

Total Cost of Items (excluding Mobilization): \$3,073,700.00

**Item 15101 Mobilization**  
 Calculated\*:  \$ 522,529.00  
 Used\*: \$526300.00

**Estimate Total of Bid Items**  
 Calculated: \$3,596,229.00  
 Used\*: \$ 3600000.00

Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
40101-0100	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL (Quality)	6,757	Q_TON	\$5.00	\$33,785.00
					\$33,785.00



### 2.5.8.2 Adding All Other Incentives

This method should be used for adding all incentive, except material quality. This process is exactly the same as adding normal pay items.

On project pay item list, select Add Master Pay Items:

The screenshot shows the 'Project Pay Items' interface. At the top, there are navigation tabs: Project Info, Design, Account, Team, Event Log. Below these are sub-tabs: Estimate, CPL, Schedules, Column Headers, Pay Items, Construction Estimates. The 'Pay Items' sub-tab is active. Below the sub-tabs is a search filter section with fields for Keywords, Total Price, Schedule (A), Complete (Yes/No), and Unit Price. An 'Apply Search' button is present. The main area contains a table with the following data:

Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Unit Price	Quantity	Total Price	Comp.	Options
15101-0000	A	N	MOBILIZATION	LPSM	\$526,300.00	ALL	\$526,300.00	yes	BHUP CBUP
20101-0000	A	N	CLEARING AND GRUBBING	ACRE	\$28,000.00	56.0	\$1,568,000.00	yes	BHUP CBUP
40101-0100	A	NR	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL	TON	\$100.00	6,757	\$675,700.00	yes	BHUP CBUP QUP
40101-0100	A	QM	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL (Quality)	Q_TON	\$5.00	6,757	\$33,785.00	yes	
55501-0000	A	N	STRUCTURAL STEEL	LPSM	\$575,000.00	ALL	\$575,000.00	yes	BHUP CBUP
60221-4800	A	N	24 FEET SPAN, 8 FEET RISE REINFORCED CONCRETE BOX CULVERT, SINGLE BARREL	LNFT	\$1,000.00	255	\$255,000.00	yes	BHUP CBUP

At the bottom of the table, there are buttons: Add Temporary Pay Item, Add Master Pay Items, Update All Line Numbers. A red arrow points to the 'Add Master Pay Items' button.

#### 2.5.8.2.1 Smoothness and Roughness Quality Incentives

A Pay Item Type of "NR" or "NS" suggests that a roughness or smoothness incentive may be needed.

The screenshot shows the same 'Project Pay Items' interface as above. In this view, a red circle highlights the 'NR' value in the 'Pay Item Type' column for the third row (Pay Item # 40101-0100).

Smoothness and roughness pay items can easily be found by entering key words on the Add Master Pay Item tab. Add appropriate smoothness or roughness item(s)

Projects: NE PRA TEST 105 P... Estimates: 100% [Return To Projects \(All\)](#) [Return To List \(Design\)](#)

Project Info | **Design** | Account | Team | Event Log

Estimate | CPL | Schedules | Column Headers | **Pay Items** | Construction Estimates

Project Pay Items | **Add Master Pay Item** | Advanced Search

**Search Filters:**

Keywords:  Show  selected  all

Pay Item Number:

Items 1-8 of 8 150 200 250 300 400 500 550 600 900 [all]

Options	Pay Item # ▼	Pay Item Description (US Customary) ▼	Pay Item Type ▼	U.S. Pay Units ▼
	40199-0001	INCENTIVE, SMOOTHNESS	DI	LPSM
	40199-0002	INCENTIVE, ROUGHNESS	DI	LPSM
	40299-0001	INCENTIVE, SMOOTHNESS	DI	LPSM
	40299-0002	INCENTIVE, ROUGHNESS	DI	LPSM
	50199-0001	INCENTIVE, SMOOTHNESS	DI	LPSM
	50199-0002	INCENTIVE, ROUGHNESS	DI	LPSM



Edit the smoothness or roughness pay item:

- A. Supplemental Description. Enter supplemental description, including the pay item number that the incentive is for
- B. Schedule. Select Schedule
- C. Pay item type. Do NOT change – it must remain DI
- D. Contract Quantity. Always select NO
- E. Column Heading. Should remain [none]
- F. Accounts. When needed, add accounts and divide the percent quantity between the accounts to match the original item breakdown
- G. Unit Price. Enter the Unit Price. The unit price should be the maximum incentive based on the smoothness or roughness formula. Do NOT use BHUP or CBUP for smoothness or roughness pay items
- H. Summary of Quantity Remarks. Leave blank. Smoothness and roughness incentive pay item will NOT appear on the Summary of Quantity
- I. Save & Close

The screenshot shows the EEBACS Design Pay Item form for project NE PRA TEST 105 P. The form is titled "Design Pay Item" and contains the following sections and callouts:

- Design Pay Item Info:** Created: 12-21-2011 11:42:45, By: Heidi Hirsbrunner, Modified: 12-21-2011 11:55:29, By: Heidi Hirsbrunner.
- Pay Item:** Pay Item # 40199-0001, Description (US Customary) INCENTIVE, SMOOTHNESS, Pay Item Type DI, U.S. Pay Units LPSM, Standard Specifications FP Year 03, Federal Lands Division Central Federal Lands.
- UPA Report:** Generate UPA Report button.
- Design Pay Item:** Pay Item #: 40199-0001, Pay Item Description: INCENTIVE, SMOOTHNESS, Pay Item Type: DI, Pay Unit (U.S. Units): LPSM.
- Supplemental Description:** (for 40101-0100 pay item) [Callout A]
- Schedule\*:**  A [Callout B]
- Pay Item Type\*:** DI [Callout C]
- Contract Quantity\*:**  Yes  No [Callout D]
- Column Headings & Accounts:**
  - Column Headings:** [none] [Callout E]
  - CONSTR Account\*:**
    - Quantity\*: 75 % [Callout F]
    - Account\*: CON01 PRA funding [Callout F]
    - Delete button
    - Quantity\*: 25 % [Callout F]
    - Account\*: CON02 ARRA funding [Callout F]
    - Delete button
    - Add Account button
    - Column Heading Total: 100
- Table:**

Column Headings	Quantity	Price
Column Headings	100	\$36,185.82
<b>Accounts</b>		
CON01	75	\$27,139.37
CON02	25	\$9,046.46
- Unit Price:** \$6185.82 [Callout G]
- Remarks:** Used smoothness formula: .05 x lanemiles x 32,700 (paving 22.132 lanemiles) [Callout H]
- Total Price:** \$36,185.82
- Summary of Quantity Remarks:** [Callout I]

The DI pay item is now added to the Project Pay Item list. These smoothness and roughness items will not be shown in the Summary of Quantity or Bid Schedule reports, but will be shown in the summary sheets of the Engineer's Estimate as "Other Incentives."

Projects: NE PRA TEST 105 P... Estimates: 100% Return To Projects (All) | Return To List (Design) ?

Project Info | **Design** | Account | Team | Event Log

Estimate | CPL | Schedules | Column Headers | **Pay Items** | Construction Estimates


Project Pay Items | Add Master Pay Item | Advanced Search

**Warning:** The following Construction Estimates are now out of date:  
Schedule A

**Search Filters:**  
 Keywords:  Total Price:    
 Schedule:  A Complete:  Yes  No  
 Unit Price:

Add Temporary Pay Item		Add Master Pay Items		Update All Line Numbers		Batch Options		Items 1-7 of 7			
<input type="checkbox"/>	<input type="checkbox"/>	Pay Item #	Sched	Pay Item Type	Pay Item Description (US Customary)	Units	Unit Price	Quantity	Total Price	Comp.	Options
<input type="checkbox"/>	<input type="checkbox"/>	15101-0000	A	N	MOBILIZATION	LPSM	\$526,300.00	ALL	\$526,300.00	yes	BHUP CBUP
<input type="checkbox"/>	<input type="checkbox"/>	20101-0000	A	N	CLEARING AND GRUBBING	ACRE	\$28,000.00	56.0	\$1,568,000.00	yes	BHUP CBUP
<input type="checkbox"/>	<input type="checkbox"/>	40101-0100	A	NR	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL	TON	\$100.00	6,757	\$675,700.00	yes	BHUP CBUP QUP
<input type="checkbox"/>	<input type="checkbox"/>	40101-0100	A	QM	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL (Quality)	Q_TON	\$5.00	6,757	\$33,785.00	yes	
<input type="checkbox"/>	<input type="checkbox"/>	40199-0001	A	DI	INCENTIVE, SMOOTHNESS (for 40101-0100 pay item)	LPSM	\$36,185.82	ALL	\$36,185.82	yes	BHUP CBUP
<input type="checkbox"/>	<input type="checkbox"/>	55501-0000	A	N	STRUCTURAL STEEL	LPSM	\$575,000.00	ALL	\$575,000.00	yes	BHUP CBUP
<input type="checkbox"/>	<input type="checkbox"/>	60221-4800	A	N	24 FEET SPAN, 8 FEET RISE REINFORCED CONCRETE BOX CULVERT, SINGLE BARREL	LNFT	\$1,000.00	255	\$255,000.00	yes	BHUP CBUP

Add Temporary Pay Item | Add Master Pay Items | Update All Line Numbers | Items 1-7 of 7



Summary page of Engineer's Estimate - Due to this necessary interim process for smoothness and roughness quality incentives:

- A. Smoothness and Roughness items will appear as "Other Incentives."
- B. In the interim, Smoothness and Roughness will NOT appear in the actual labeled sections

**Construction Estimate**

Schedule\*:

Total Cost of Items (excluding Mobilization): \$3,073,700.00

**Item 15101 Mobilization**

Calculated\*:  \$ 522,529.00

Used\*:

**Estimate Total of Bid Items**

Calculated: \$3,596,229.00

Used\*:

**Estimated Quality Material Incentive:**

Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
40101-0100	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL (Quality)	6,757	Q_TON	\$5.00	\$33,785.00
					<b>\$33,785.00</b>

**Estimated Quality Smoothness Incentive:** No Estimated Quality Smoothness Incentive **B**

**Estimated Quality Roughness Incentive:** No Estimated Quality Roughness Incentive **B**

**Other Estimated Incentive:** **A**

Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
40189-0001	INCENTIVE, SMOOTHNESS (for 40101-0100 pay item)	All	LPSM	\$36,185.82	\$36,185.82

**Total Estimated Incentive**

Calculated: \$69,970.82

**Total Estimated Construction Cost**

Calculated\*: \$3,669,970.82

Remarks:

**Contract Quantity Pay Items**

Contract Quantity Pay Items	Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
	55501-0000	STRUCTURAL STEEL	All	LPSM	\$575,000.00	\$575,000.00
						<b>\$575,000.00</b>

### 2.5.8.2.2 Partnering, performance incentives, asphalt/fuel escalation, etc.

These incentive pay items can easily be found by entering 999 in the Pay Item Number. Add appropriate pay item(s). Add appropriate incentive item(s):

Projects: NE PRA TEST 105 P... Estimates: 100% [Return To Projects \(All\)](#) [Return To List \(Design\)](#) ?

Project Info **Design** Account Team Event Log

Estimate CPL Schedules Column Headers **Pay Items** Construction Estimates

Project Pay Items **Add Master Pay Item** Advanced Search

**Search Filters:**

Keywords  Show  selected  all

Pay Item Number

150 200 250 300 400 500 550 600 900 [all]

Items 1-8 of 8

Options	Pay Item # ▼	Pay Item Description (US Customary) ▼	Pay Item Type ▼	U.S. Pay Units ▼
	99901-0000	PARTNERING	DI	LPSM
	99902-0000	PERFORMANCE INCENTIVES	DI	LPSM
	99903-0000	PERFORMANCE INCENTIVES	DI	DAY
	99904-0000	ASPHALT ESCALATION	DI	LPSM
	99905-0000	FUEL ESCALATION	DI	LPSM
	99920-0000	DESIGN CONTINGENCY	DI	LPSM



**Warning:** The Design Contingency pay item should **NOT** be included to the final engineer's estimate to be advertised. The intent of this pay item to allow the user to add contingencies for undefined work items and anticipated additional design elements at the early phases of design (see your Division procedures). All contingencies should be removed by the Final Design Phase (95%-100%).

Edit the added pay items:

- A. Enter supplemental description, including the pay item number that the incentive is for
- B. Select Schedule
- C. Pay item type. Do NOT change – it must remain DI
- D. Column Heading should remain [none]
- E. When needed, add accounts and divide the percent or quantity between the accounts.
- F. Enter the Unit Price.
- G. Leave blank. Incentive pay item will NOT appear on the Summary of Quantity
- H. Save & Close

The screenshot displays the EEBACS software interface for editing a pay item. The main form is titled "Design Pay Item" and contains the following sections and fields:

- Design Pay Item:**
  - Supplemental Description: (Early completion) [A]
  - Schedule\*:  A [B]
  - Pay Item Type\*: DI [C]
  - Contract Quantity\*:  Yes  No
  - Bid Decimal\*: 0 [D]
- Column Headings & Accounts:**
  - Column Heading: [none] [D]
  - CONSTR Account\*:
 

Quantity*	Account*	Delete
20	CON01 PRA funding	[Delete]

 [E]
  - Column Heading Total: 20
- Unit Price:** 1500.00 [F]
- Remarks:** (maximum characters: 4000) 4000 remaining.
- Quantity:** 20
- Total Price:** \$30,000.00
- Summary of Quantity Remarks:** (maximum characters: 4000) 4000 remaining. [G]

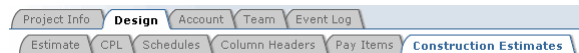
At the bottom of the form, there are several buttons: Save & Close, Save, Delete, Cancel, Cancel & Close, Save & Previous, Save & Next, View Previous, and View Next. An orange arrow labeled H points to the "Save & Close" button.

The DI pay item is now added to the Project Pay Item list. These 999 pay item incentives will not be shown in the Summary of Quantity or Bid Schedule reports, but will be shown in the summary sheets of the Engineer's Estimate as "Other Incentives."

Summary page of Engineer's Estimate:

Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
40199-0001	INCENTIVE, SMOOTHNESS (for 40101-0100 pay item)	All	LPSM	\$36,185.82	\$36,185.82
99903-0000	PERFORMANCE INCENTIVES (Early completion)	20	DAY	\$1,500.00	\$30,000.00
					\$66,185.82

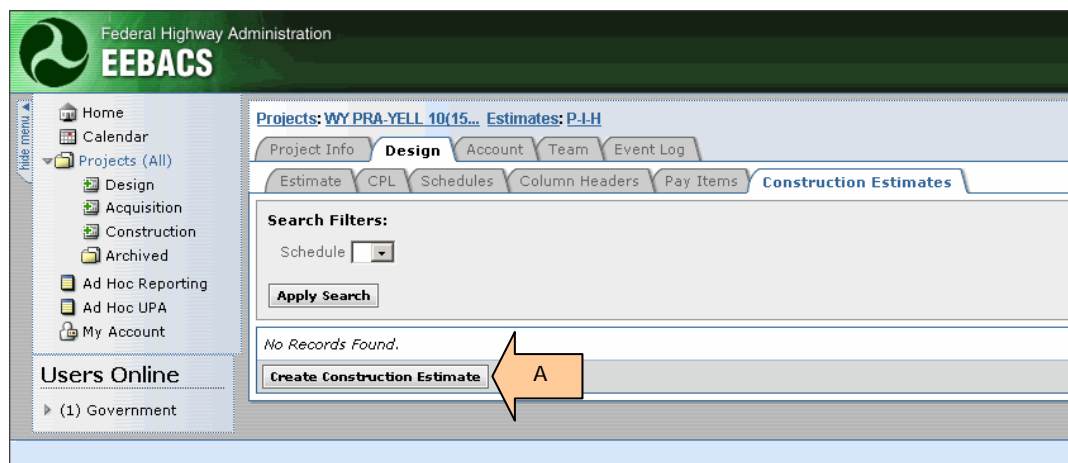
## 2.5.9 Construction Estimate



A construction estimate must be developed for every schedule created. The Construction Estimate tab:

- Totals all pay items (except mobilization);
- Calculation of mobilization by either a percentage of the total for other items of work or allows for user input;
- Shows all incentives and associated dollar amounts. Generates a total dollar amount for all incentives;
- Generates the total estimated construction cost (pay items, mobilization, and incentives) for the schedule;
- Shows all items designated as contract quantity; and
- Allows the generating of reports (EE, EE by Columns, Design Summary, Summary of Quantities, Project Engineer Summary of Quantities, and UPAs).

A. Select the Create Construction Estimate icon to access the subroutine.





- A. Select a schedule from the pick list. The program will calculate the total cost of items in the selected schedule excluding mobilization, list all incentives and contract quantity items;
  - B. Input mobilization as a calculated percentage of all items (excluding incentives). The percentage value may be overridden by inputting a dollar value in the "used" data field. The "used value" maybe used to round the mobilization price;
  - C. Upon entering a mobilization price, the total for all bid items will be calculated by the program. If desired, the calculated value may be rounded by inputting a dollar value in the "used" data field. Rounding the value will affect the dollar value used in mobilization;
- Warning for B & C:** Once the "Used" fields have been have saved, if this Estimate page is updated, either the "Used" value in B or C must be hand-entered for the values to be recalculated.
- D. Input relevant remarks that describes unique aspects of the calculations; and
  - E. Select a command to continue with the program.

The screenshot displays the EEBACS software interface for the 'Construction Estimates' module. The top navigation bar includes 'Project Info', 'Design', 'Account', 'Team', and 'Event Log'. The main content area is divided into several sections:

- Construction Estimate:** Features a 'Schedule' dropdown menu (labeled A) and a 'Total Cost of Items (excluding Mobilization)' field showing \$4,341,680.00.
- Item 15101 Mobilization:** Includes a 'Calculated\*' field with a percentage of 15.0% (labeled B) and a 'Used\*' field with a value of \$721320.00.
- Estimate Total of Bid Items:** Shows a 'Calculated' value of \$4,992,932.00 and a 'Used\*' field with a value of \$5000000.00 (labeled C).
- Estimated Quality Incentives:** Contains two tables. The first table lists 'Material Incentive' items with columns for 'Pay Item #', 'Description', 'Quantity', 'U.S. Pay Units', 'Unit Price', and 'Total Price'. The second table lists 'Other Estimated Incentive' items with similar columns.
- Remarks:** A text area for entering notes (labeled D).
- Contract Quantity Pay Items:** A table at the bottom showing 'Contract Quantity Pay Items' with columns for 'Pay Item #', 'Description', 'Quantity', 'U.S. Pay Units', 'Unit Price', and 'Total Price'.

At the bottom left, there is a 'Save & Close' button (labeled E) and other standard buttons like 'Save', 'Delete', and 'Cancel'.

- A. This window indicates the status of the schedule. Ensure the Construction Estimate is up-to-date before printing a schedule. A construction estimate could be out-of-date because: a new pay item was added, a quantity or unit price was edited, or a pay item incentive was adjusted;
  - B. Reports may be generated from this screen. See Subchapter 2.5.9.1 for more details;
  - C. Incentive values are automatically populated;
- Note:** Due to the interim process for adding smoothness and roughness quality incentives, these incentives will be shown as "Other Estimated Incentives."
- D. Items designated as contract quantity are listed; and
  - E. Select a command to continue with the program.

**Construction Estimate Info**

Created:	12-22-2011 11:43:07
By:	Heidi Hirsbrunner
Modified:	12-22-2011 12:18:51
By:	Heidi Hirsbrunner

**Construction Estimate**

Schedule\*:

Total Cost of Items (excluding Mobilization): \$4,341,680.00

**Item 15101 Mobilization**

Calculated\*: 15.0% \$ 651,252.00

Used\*: \$ 721320.00

**Estimate Total of Bid Items**

Calculated: \$4,992,932.00

Used\*: \$ 5000000.00

**Estimated Quality Material Incentives:**

Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
30101-0000	AGGREGATE BASE (Quality)	6,056	Q_TON	\$1.50	\$9,084.00
40101-0100	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL (State DOT mix allowed) (Quality)	8,800	Q_TON	\$5.50	\$48,400.00
					<b>\$57,484.00</b>

**Estimated Quality Smoothness Incentive:** No Estimated Quality Smoothness Incentive

**Estimated Quality Roughness Incentive:** No Estimated Quality Roughness Incentive

**Other Estimated Incentive:**

Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
50199-0001	INCENTIVE, SMOOTHNESS (for 40101-0100 pay item)	All	LPSM	\$35,577.60	\$35,577.60
50199-0001	INCENTIVE, SMOOTHNESS (for 50101-0100 pay item)	All	LPSM	\$3,821.00	\$3,821.00
99901-0000	PARTNERING	All	LPSM	\$5,000.00	\$5,000.00
					<b>\$44,398.60</b>

**Total Estimated Incentive**

Calculated: \$101,882.60

**Total Estimated Construction Cost**

Calculated\*: \$5,101,882.60

Remarks:

**Contract Quantity Pay Items**

Contract Quantity Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
55201-0200	STRUCTURAL CONCRETE, CLASS A (AE)	63	CUYD	\$1,000.00	\$63,000.00
					<b>\$63,000.00</b>

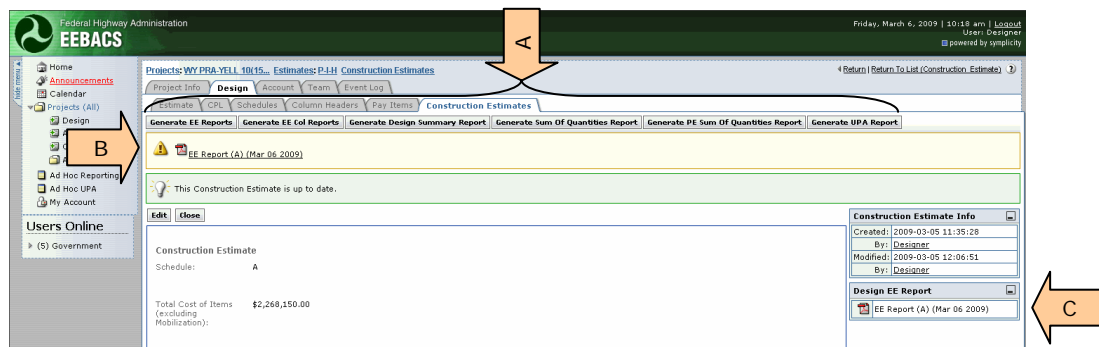
### 2.5.9.1 Reports

Generate EE Reports | Generate EE Col Reports | Generate Design Summary Report | Generate Sum Of Quantities Report | Generate PE Sum Of Quantities Report | Generate UPA Report

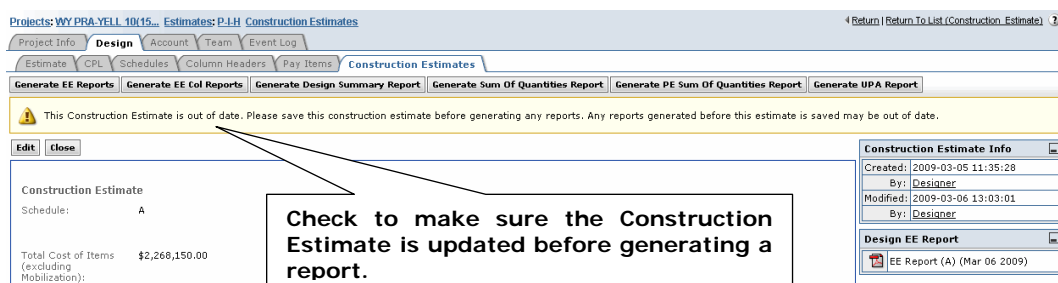
Reports for the Design module can only be generated from the Construction Estimate tab. It is important for reports that the Construction Estimate be up-to-date.

For formal PS&E distribution, the milestone estimate should be marked as complete, with the completion date added, prior to generating the reports (see Section 2.5.2).

- Select the desired report. The program will generate an Adobe Acrobat (PDF). The Summary of Quantities and the PE Summary of Quantities reports will also automatically generate Microsoft Excel (Excel), or Comma-Separated Values (CSV);
- Select the file for viewing, printing, or saving outside the program. Files of reports at the top of the screen are only available while in the screen or until another report is requested; and
- Select the file for viewing, printing, or saving outside the program. The most recent version of the report may be accessed through the right margin.



The last report generated is retained in the program. Adjustments to pay items, incentives, or other data will require the report to be generated again.



### 2.5.9.1.1 Generate EE Reports

Engineer's Estimate (EE) is a two-part report. The first part is a summary of schedule costs developed in the estimate. A combined (ALL) summary and a summary for each account number is generated when multiple account numbers are required.

#### ENGINEER'S ESTIMATE

Report Date: 12/22/11  
1 out of 4

Project No: NE PRA TEST 404(4)	Division: Central Federal Lands	Schedule: A
Project Name: Rough Mountain Highway	PM: Dan VanGilder	Schedule Type: Base
FLMA No: Pkge #54545	Designer: Spencer Beale	Milestone: 100% PS&E
State: NE County: Buffalo		Date Complete: In Progress
Federal Land: Designer Refuge		FP: 03 U/ Customary
Schedule Construction Type: 40202 Overlay <=		
2-inches		
Schedule Length: 13.217 miles		
CPM Days: 75		

**If an estimate is marked complete, the completion date will appear here**

ACCOUNT SUMMARY - ALL

Account No.	Description
CON01	PRA funding
CON02	Friends of NE Scenic Byways
Remarks: Awaiting additional ARRA funds	

**Contract Quantity Pay Items**

55201-0200 STRUCTURAL CONCRETE, CLASS A (AE)

**Estimated Total of Bid Items: \$5,063,000.00**

		<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
<b>Estimated Quality Material Incentive: \$57,484.00</b>					
30101-0000	AGGREGATE BASE (Quality)	6,056	Q_TON	\$1.50	\$9,084.00
40101-0100	SUPERPAVE PAVEMENT, 3 8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, -0.3 MILLION ESAL (State DOT mix allowed) (Quality)	8,800	Q_TON	\$5.50	\$48,400.00

**Estimated Quality Smoothness Incentive: \$0.00**  
No Quality Smoothness Incentive

**Estimated Quality Roughness Incentive: \$0.00**  
No Quality Roughness Incentive

**Other Estimated Incentives: \$44,398.60**

40199-0001	INCENTIVE, SMOOTHNESS (for 40101-0100 pay item)	All	LPSM	\$35,577.60	\$35,577.60
50199-0001	INCENTIVE, SMOOTHNESS (for 50101-0100 pay item)	All	LPSM	\$3,821.00	\$3,821.00
99901-0000	PARTNERING	All	LPSM	\$5,000.00	\$5,000.00

**Total Estimated Incentives: \$101,882.60**

**Total Estimated Construction Cost: \$5,164,882.60**

The second part is a listing of all pay items found in the bid schedule (excludes all incentive items).

ENGINEER'S ESTIMATE						
			Report Date: 12/22/11			
			4 out of 4			
Project No: NE PRA TEST 404(4)		Schedule: A		Milestone: 100% PS&E		
Project Name: Rough Mountain Highway		Schedule Type: Base		Date Complete: In Progress		
FLMA No: Pkge #54545						
Line Item Number	Pay Item No.	Description	Quantity	Unit	Unit Price	Amount
A0010	15101-0000	MOBILIZATION				
		Acct CON01	\$432,792.00			\$432,792.00
		Acct CON02	\$288,528.00			\$288,528.00
		Total	ALL	LPSM	\$721,320.00	\$721,320.00
A0110	15214-0000	SURVEY AND STAKING, MISCELLANEOUS				
		Acct CON01	\$2,700.00			\$2,700.00
		Acct CON02	\$24,300.00			\$24,300.00
		Total	ALL	LPSM	\$27,000.00	\$27,000.00
A0210	30101-0000	AGGREGATE BASE				
		Acct CON01	2,000			\$60,000.00
		Acct CON02	4,056			\$121,680.00
		Total	6,056	TON	\$30.00	\$181,680.00
A0410	40101-0100	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL (State DOT mix allowed)				
		Acct CON01	6,500			\$715,000.00
		Acct CON02	2,300			\$253,000.00
		Total	8,800	TON	\$110.00	\$968,000.00
A0710	50101-0100	REINFORCED RIGID PAVEMENT, 6-INCH DEPTH, TYPE A SMOOTHNESS				
		Acct CON01	33,000			\$3,102,000.00
		Total	33,000	SQYD	\$94.00	\$3,102,000.00
A0910	55201-0200	STRUCTURAL CONCRETE, CLASS A (AE)				
		Acct CON01	63			\$63,000.00
		Total	63	CUYD	\$1,000.00	\$63,000.00

### 2.5.9.1.2 Generate EE Column Reports

Engineer's Estimate Column report provides a summary by column (as found in the Summary of Quantity report) for all quantities listed in the column for that schedule. This type of report can be helpful when wanting to keep track of road costs (placed in one column), bridge costs (placed in another column), etc.

This report is also a two-part report. The first part is a summary of all costs found in a column for a schedule. A combined (ALL) summary and a summary for each account number is generated when multiple account numbers are required.

**ENGINEER'S ESTIMATE - Subtotal Amount for B4-B5:Surfacing Summary**

Report Date: 12/22/11  
1 out of 4

Project No: NE PRA TEST 404(4)	Division: Central Federal Lands	Schedule: A, Subtotal for B4-B5:Surfacing Summary
Project Name: Rough Mountain Highway	PM: Dan VanGilder	Schedule Type: Base
FLMA No: Pkge #54545	Designer: Spencer Beale	Milestone: 100% PS&E
State: NE County: Buffalo		Date Complete: In Progress
Federal Land: Designer Refuge		FP: 03 US Customary
Schedule Construction Type: 40202 Overlay <= 2-inches		
Schedule Length: 13.217 miles		
CPM Days: 75		

**ACCOUNT SUMMARY - ALL**

Account No.	Description
CON01	PRA funding
CON02	Friends of NE Scenic Byways
Remarks: Awaiting additional ARRA funds	

**Contract Quantity Pay Items**  
No Contract Quantity Pay Items

**Estimated Total of Bid Items: \$4,251,680.00**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
<b>Estimated Quality Material Incentive: \$57,484.00</b>				
30101-0000 AGGREGATE BASE (Quality)	6,056	Q_TON	\$1.50	\$9,084.00
40101-0100 SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL (State DOT mix allowed) (Quality)	8,800	Q_TON	\$5.50	\$48,400.00

**Estimated Quality Smoothness Incentive: \$0.00**  
No Quality Smoothness Incentive

**Estimated Quality Roughness Incentive: \$0.00**  
No Quality Roughness Incentive

**Other Estimated Incentives: \$0.00**  
No Other Incentive

<b>Total Estimated Incentives:</b>	<b>\$57,484.00</b>
<b>Total Estimated Construction Cost:</b>	<b>\$4,309,164.00</b>

**Total estimated construction cost for column only.**

**Summary of Quantity column heading (based on plan sections)**

The second part is a listing of all pay items (excluding incentives) within a given column.

**ENGINEER'S ESTIMATE - Subtotal Amount for B4-B5:Surfacing Summary**

Report Date: 12/22/11  
4 out of 4

Project No: NE PRA TEST 404(4)      Schedule: A, Subtotal for B4-B5:Surfacing      Milestone: 100% PS&E  
 Project Name: Rough Mountain Highway      Summary      Date Complete: In Progress  
 FLMA No: Pkge #54545      Schedule Type: Base

Line Item Number	Pay Item No.	Description	Quantity	Unit	Unit Price	Amount
A0210	30101-0000	AGGREGATE BASE				
		Acct CON01	2,000			\$60,000.00
		Acct CON02	4,056			\$121,680.00
		Total	6,056	TON	\$30.00	\$181,680.00
A0410	40101-0100	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL (State DOT mix allowed)				
		Acct CON01	6,500			\$715,000.00
		Acct CON02	2,300			\$253,000.00
		Total	8,800	TON	\$110.00	\$968,000.00
A0710	50101-0100	REINFORCED RIGID PAVEMENT, 6-INCH DEPTH, TYPE A SMOOTHNESS				
		Acct CON01	33,000			\$3,102,000.00
		Total	33,000	SQYD	\$94.00	\$3,102,000.00

### 2.5.9.1.3 Generate Design Summary Report

This report provides a schedule estimate summary of costs and summaries for each account. Summary is the total estimated construction cost (pay items and incentives).

#### Engineer's Estimate Design Summary Information

Report Date: 07/26/09  
1 out of 1

Project No: PRA YELL 10(15)      Division: Western Federal Lands HD      Milestone: Signoff  
 Project Name: Grand Loop Road (Madison to Norris, Segment B)      PM: Ninh Phan      Date Complete: In Progress  
 FLMA No: 54337 101/43943      Designer: Wade Johnson      FP: 03      US Customary  
 State: WY      County: Park, Teton      HDM: Stephen Chapman  
 Federal Land: Yellowstone National Park      COE:  
 Terrain: Rolling      Density: Rural      Bridge Mgr: Julee McTaggart

Schedule: A  
 Schedule Type: Base      Schedule Construction Type: 204 Overlay 2 - 4-inches  
 Schedule Estimate: \$1,923,600.00      Schedule Length: 8 miles  
     CON01      \$1,823,600.00 PRA funding      CPM days: 360  
     CON02      \$100,000.00 Friends of Yellowstone funding

Description: Grading, drainage, retaining walls, bridge, base, and pavement.  
 Remarks:

GIS Route	MP_Begin	MP_END	Begin Lat	Begin Long	End Lat	End Long	Length (mile)	Plot Area (sqyd)	Termini	Construction Type
10	5.000	13.000	37.8277936	-122.4986107	37.8332886	-122.483344	8	2,000	Madison Junction to Beryl Springs bridge	302 Mill 2 + Oviy 2-inches
Bridge ID	GIS Route	MP_Begin	MP_END	Begin Lat	Begin Long	End Lat	End Long	Length (ft)	Size (sqft)	Construction Type
1002	10	7.100	7.110	37.8341783	-122.4840021	37.8339406	-122.4845163	100.00	2,200	Deck Repair

### 2.5.9.1.4 Generate Sum of Quantities Report

The Summary of Quantities report reflects the table typically found in a plan set. The program generates a Comma-Separated Values (CSV) file for inclusion into the plan set. Table header "Summary of Quantities" is added along with sheet borders file using the import procedures included in the Summary of Quantities Appendix. **Note:** Do NOT use the PDF or XLS files for import into your plans. The PDF format can be used to review the data, prior to importing the CSV format into plans. For developing plan sheets, see [Appendix Developing Summary of Quantity Plan Sheets](#).

Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description													Estimated Quantities	Remarks And/Or Determination of Estimated Quantity
				C	D	E	F	G	0	0	0	0	0	0	0	0		
				Typical Section	Plan & Profile	Tabulation of Drainage	Temporary Traffic Control	Permanent Traffic Control	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12	Column 13	Bid Schedule	
A0010	15101-0000	MOBILIZATION	LPSM														ALL	
A0020	15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM														ALL	Quantity based on 2.3 tons per cubic meter.
A0030	15301-0010	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM														ALL	
A0040	15401-0000	CONTRACTOR TESTING	LPSM														ALL	
A0050	15501-0000	CONSTRUCTION SCHEDULE	LPSM														ALL	
A0090	15705-0100	SOIL EROSION CONTROL SILT FENCE	LNFT		3,000												3,000	
A0070	15705-0500	SOIL EROSION CONTROL TEMPORARY CULVERT PIPE	LNFT		500												500	
A0080	20101-0000	CLEARING AND GRUBBING	ACRE		10.0												10.0	Contract Quantity
A0090	20220-1000	REMOVAL, INDIVIDUAL TREE	EACH		20												20	
A0100	20401-0000	ROADWAY EXCAVATION	CUYD				40,000										40,000	
A0110	30101-2000	AGGREGATE BASE GRADING D	TON		20,000												20,000	
A0130	40101-0100	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, -0.5 MILLION ESAL	TON	10,000													10,000	
A0180	63302-0000	SIGN SYSTEM	SQFT					100									100	
A0170	63401-0100	PAVEMENT MARKINGS, TYPE A, SOLID (WHITE)	LNFT					40,000									40,000	
A0180	63401-0100	PAVEMENT MARKINGS, TYPE A, SOLID (YELLOW)	LNFT					20,000									20,000	
A0190	63401-0200	PAVEMENT MARKINGS, TYPE A, BROKEN (YELLOW)	LNFT					500									500	
A0200	63501-0000	TEMPORARY TRAFFIC CONTROL	LPSM														ALL	

Milestone: P-H, Date Completed: In Progress, Report Date: 03/06/09

### 2.5.9.1.5 Generate PE Sum of Quantities Report

The PE (Project Engineer) Sum (Summary) of Quantities report is similar to the Summary of Quantities report, but further describes quantities by accounts. This report can be extremely useful for the Project Engineer to easily see the project account splits. (This report is not included in the plan set).

Project Engineer's Summary of Quantities																			
Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description													Estimated Quantities	Remarks And/Or Determination of Estimated Quantity	
				C	D	E	F	G	0	0	0	0	0	0	0	0			0
				Typical Section	Plan & Profile	Tabulation of Drainage	Temporary Traffic Control	Permanent Traffic Control	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12	Column 13	Bid Schedule		
A0010	15101-0000	MOBILIZATION	LPSM														ALL		
		Acct C0N01																	5%
A0020	15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM														100%	Quantity based on 2.3 tons per cubic meter.	
		Acct C0N01																	0%
A0030	15301-0010	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM														ALL		
		Acct C0N01																	100%
A0040	15401-0000	CONTRACTOR TESTING	LPSM														ALL		
		Acct C0N01																	0%
A0050	15501-0000	CONSTRUCTION SCHEDULE	LPSM														ALL		
		Acct C0N01																	100%
A0090	15705-0100	SOIL EROSION CONTROL SILT FENCE	LNFT		3,000												3,000		
		Acct C0N01			1,000														1,000
A0070	15705-0500	SOIL EROSION CONTROL TEMPORARY CULVERT PIPE	LNFT		500												500		
		Acct C0N01			500														0
A0080	20101-0000	CLEARING AND GRUBBING	ACRE		10.0												10.0	Contract Quantity	
		Acct C0N01			4.8														4.8
A0090	20220-1000	REMOVAL, INDIVIDUAL TREE	EACH		20												20		
		Acct C0N01			20														20
A0100	20401-0000	ROADWAY EXCAVATION	CUYD				40,000										0		
		Acct C0N01					40,000												40,000
A0110	30101-2000	AGGREGATE BASE GRADING D	TON		20,000												20,000		
		Acct C0N01			20,000														20,000

Milestone: P-H, Date Completed: In Progress, Report Date: 03/06/09



### 2.5.9.1.6 Generate UPA Report

The Unit Price Analysis (UPA) Report is a summary of how all pay item costs were developed. UPA report format is dependent on how the cost was developed. Three types of reporting formats can be generated; Bid History Unit price (BHUP), Cost based Unit price (CBUP), or a Non-BHUP when costs are developed using methods outside of EEBACS. The following are examples of each report:

Example of Bid History Unit Price (BHUP):

- A. Pay item data including unit price determined through analyzing bid history;
- B. Values used in determining the unit price;
- C. Filters selected in determining the unit price; and
- D. Projects from bid history used in determining the unit price. Projects selected appear on the top of the listing followed by 2 pages (max) of projects that meet the filter criteria, most recent projects on top.

**Bid History Unit Price Analysis**

Report Date: 03/06/09  
2 out of 23

Project No: WY PRA-YELL 10(15)      Schedule(s): A      Milestone: P-I-H  
 Project Name: Grand Loop Road (Madison to Norris)      Schedule Type(s): Alternate      Date Complete: In Progress  
 FLMA No:

---

Pay Item No. 15201-0000      Pay Item Type N      Description CONSTRUCTION SURVEY AND STAKING      Quantity ALL      Unit LPSM      Unit Price Used \$240,000.00      Unit Price \$0.00

---

Picked: 3      Average: \$232,890.33      High: \$296,150.00      Low: \$189,536.00

Remarks: Selected projects of similar traits.

---

**Bid History Filters:**  
 Pay Item Number: 15201-0000      Inflation Index: Oregon Highway CCI  
 Quantities: ALL      Schedule Construction Type:  
 Award Dates: From 2003 to 2009      Terrain:  
 States: WY      Density:

Award Date	States	Pay Item No. Schedule	Pay Item Description Project	Inflation	Quantity	Low 1	Low 2	Low 3	Low 4	Low 5	Total Amount	Schedule Construction Type	Terrain	Density
05/26/04	WY	15201-0000	CONSTRUCTION SURVEY AND STAKING	18.46%	ALL	\$160,000.00					\$3,888,390.50	R	M	Rural
			C WY PRA-YELL 13(3)			\$189,536.00								
05/26/04	WY	15201-0000	CONSTRUCTION SURVEY AND STAKING	18.46%	ALL	\$250,000.00					\$12,182,751.00	R	M	Rural
			B WY PRA-YELL 13(3)			\$296,150.00								
07/03/03	WY	15201-0000	CONSTRUCTION SURVEY AND STAKING	41.99%	ALL	\$150,000.00	\$180,000.00				\$5,089,303.00	R	R	Rural
			A WY PRA-GRTE 13(1), WY PRA-GRTE 13(5), & WY PRA-GRTE 13(6)			\$212,985.00	\$255,582.00							
08/11/04	WY	15201-0000	CONSTRUCTION SURVEY AND STAKING	18.46%	ALL	\$15,000.00	\$30,000.00	\$27,500.00	\$40,470.00		\$1,198,434.25	B	M	Rural
			A WY PRA-GRTE 100(1), 209(1), & 225(1)			\$17,769.00	\$35,538.00	\$32,576.50	\$47,940.76					

Example of Cost Based Unit Price (CBUP).

- A. Pay item data including unit price;
- B. Values used in determining the unit price;
- C. Filters selected in determining the unit price; and
- D. Summary of values used in determining the unit price.

Cost Based Unit Price									
Project No: WY PRA-YELL 10(15)			Schedule(s): A			Report Date: 03/06/09 12 out of 23			
Project Name: Grand Loop Road (Madison to Norris)			Schedule Type(s): Alternate			Milestone: P-I-H Date Complete: In Progress			
FLMA No:									
<b>A</b>	Pay Item No. 20401-0000	Pay Item Type N	Description ROADWAY EXCAVATION	Quantity 40,000	Unit CUYD	Unit Price Used \$8.50	Amount \$340,000.00		
Total Equipment, Material, and Labor: \$116,610.00									
Total Cost/Pay Item Unit: \$116,610.00 CUYD									
Remarks: Equipment and labor time based on excavation of 40,000 cu yds with 4,000 cu yds going to waste.									
<b>B</b>									
<b>C</b>	Quantity	No. Units	Unit	Cost/Unit	Total	Overhead & Profit	Total Cost	Remarks	
No Equipment Costs Found									
<b>Labor</b>									
Type	Quantity	No. Units	Unit	Cost/Unit	Total	Overhead & Profit	Total Cost	Remarks	
Truck Driver	200	4	HOUR	\$40.00	\$32,000.00	15.00%	\$36,800.00	From Davis-Bacon Wage Rates	
General labor	80	1	HOUR	\$30.00	\$2,400.00	15.00%	\$2,760.00	From Davis-Bacon Wage Rates	
Loader operator	200	1	HOUR	\$45.00	\$9,000.00	15.00%	\$10,350.00	From Davis-Bacon Wage Rates	
Dozer operator	500	2	HOUR	\$35.00	\$35,000.00	15.00%	\$40,250.00	From Davis-Bacon Wage Rates	
Total							\$78,400.00		
Overhead & Profit							\$11,760.00		
Total with O&P							\$90,160.00		
<b>D</b>									

Example of Non-BHUP:

Bid History Unit Price Analysis						
Project No: PRA YELL 10(15)			Schedule(s): A		Report Date: 06/16/09 12 out of 24	
Project Name: Grand Loop Road (Madison to Norris, Segment B)			Schedule Type(s): Base		Milestone: Signoff Date Complete: In Progress	
FLMA No: 54337 101/43943						
Pay Item No. 40101-0100	Pay Item Type NR	Description SUPERPAVE PAVEMENT 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, ≈0.3 MILLION ESAL	Quantity 3,000	Unit TON	Unit Price Used \$45.00	Amount \$135,000.00
Picked: 0	Average: \$0.00	High: \$0.00	Low: \$0.00			
Remarks: Price quoted by Materials Engineer.						

### 2.5.9.2 Promote to Acquisitions

- A. Once the project estimate is “up-to-date” and marked as “complete” and the PS&E package is sent to Acquisitions. Coordinate with your Highway Design Manager and promote the project to Acquisitions to continue the EEBACS process. A project promoted can only be viewed. It must be released by Acquisitions if modifications to the estimate need to be made. Depending on the user’s roles, access into the Acquisition Amendment tab may be permitted. See appendix for [Pay Item Amendment](#) instructions.

The screenshot shows the EEBACS web application interface. The top navigation bar includes 'Home', 'Announcements', 'Calendar', 'Projects (All)', 'Design', 'Acquisition', 'Construction', 'Archived', 'Ad Hoc Reporting', 'Ad Hoc UPA', and 'My Account'. The main content area displays a table with columns: 'Schedule Letter', 'Estimate Total of Bid Items', 'Total Estimated Incentive', 'Total Estimated Construction Cost', and 'Up To Date'. The table contains one row with 'A' in the 'Schedule Letter' column, '\$2,495,000.00' in the 'Estimate Total of Bid Items' column, '\$262,000.00' in the 'Total Estimated Incentive' column, '\$2,757,000.00' in the 'Total Estimated Construction Cost' column, and a green checkmark in the 'Up To Date' column. An orange arrow labeled 'A' points to the 'Promote To Acquisition' button located below the table row.

Remember that projects cannot be promoted to Acquisitions with temporary pay items or with pay items that are not “complete”.

## **2.6 Design Module Technical Support**

### **2.6.1 Consultants**

Contact your COTR for assistance with this program.

### **2.6.2 Government personnel**

To set up a user account, fill out the appropriate EEBACS User Account form and email to your Division's Local IT helpdesk.

For assistance in using or trouble-shooting this module contact your Division's Design Module representative or Division's EEBACS Administrator.

To request new pay items be added to the Master Pay Item Table, fill out the Pay Item request form and forward to your Division's Pay Item Team representative.