

EEBACS USER GUIDE 1.0

Chapter 2 - Design Module

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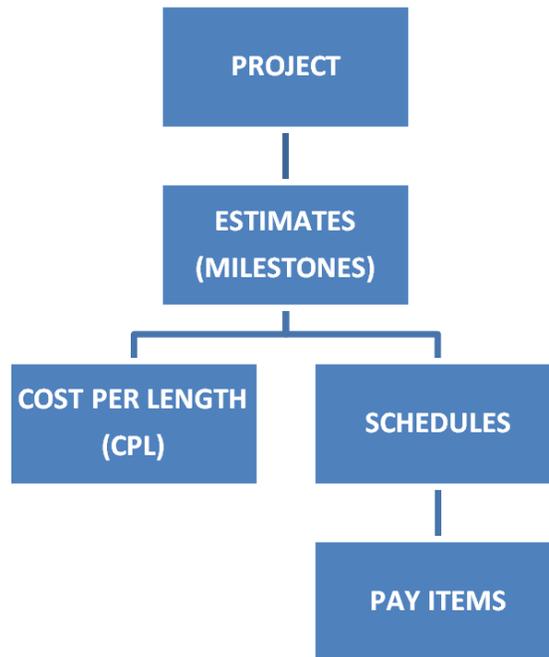
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2.1 Introduction

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.



2.1.1 Project Creation

Submit the EEBACS-005 form to the 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, and which estimate and schedule is to be copied. **Note that projects may not be copied from a different FP version.**

Follow the Division's numbering and naming convention.

2.1.2 Navigation

The list of projects in EEBACS is extensive. Navigation 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.

2.1.2.1 Home page navigation

The Home page (or tab) is reached upon logging into the program. The home page allows navigation by either:

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

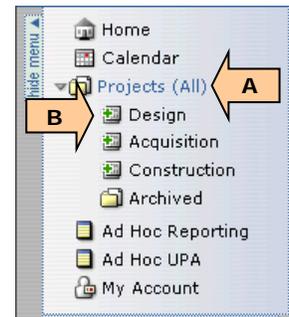
The screenshot shows the EEBACS Home page interface. On the left, a sidebar contains navigation links: Home, Calendar, Projects (All), Design, Acquisition, Construction, Archived, Ad Hoc Reporting, Ad Hoc UPA, and My Account. Below these are 'Users Online' and '(1) Government'. The main content area is titled 'Home' and includes an 'Announcements' section (empty) and a 'Recent Items' section listing various project and estimate entries. A calendar for January 2009 is visible on the right, with an arrow labeled 'B' pointing to the 31st. An arrow labeled 'A' points to the 'Design' link in the sidebar. The top of the page shows the Federal Highway Administration logo, the EEBACS title, and the date/time: Wednesday, January 14, 2009 | 10:30 am | Logout User: Designer powered by simplicity.

2.1.2.2 Side bar navigation

The most commonly used categories on the sidebar are "Project All" and "Design". This shows 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 estimates for all projects.

Format and navigation in the estimate list is identical in both "Design" and "Projects All" screens (see example in the following section).



2.1.2.3 Estimate list navigation

- Filters data by the constraints selected;
- Next page shows the next 20 projects; and
- Indicates sequence of project being viewed and total number of projects in the system.

Central Federal Lands HD
Eastern Federal Lands HD
Western Federal Lands HD

Partner Agency: NPS, FWS, USFS, BIA, DOD

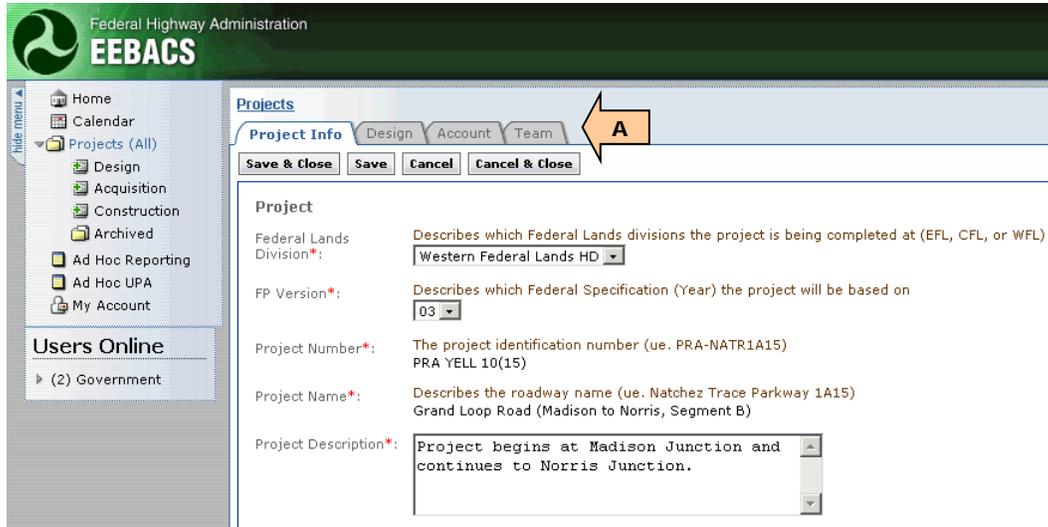
State(s): [select]

State	Project Number	Project Name	Complete	Quick Links
CO	20071126	EEBACS Team Test	70%	cur
AL	ABT - 0001	AB Test - 0001	100% Estimate	cur
AL	ABT - 0002	AB Test - 0002(Copy)	100% Estimate	cur
AL	ABT - 0003	AB Test - 0003(Copy)	Amendment A1	cur
AL	ABT - 0004	AB Test - 0004(Copy)	100% Estimate	cur
DC	ACOT 2801	Aquisition Cut Over Test	75% PS&E	cur
AR	AR HSH 9-1(1)	NEW Project Nov 5, 2008	99.5% Estimate	cur
AR	AR HSH 9-1(1a)(Copy to Metric)	NEW Project Nov 5, 2008(Copy)	99% Estimate	cur
CO	CO PFH JOHN 1(2)	John - Large Test	100% Estimate	cur
CA	CA PFH BRENDA 1(2)	Brenda - Large Test	100% Estimate	cur
CA	CA PFH HSH 110(10)	Heidi Large Test	100% Estimate	cur
CA	CA PFH HSH 200(1)	US Customary to Metric Test - clean data	95% Estimate	cur
CA	CA Test 998	Test Sept 9, 2008 for Julie	Amendment A004	cur
CA	CA Test 999	Test September 9, 2008	100% Estimate	cur
CA	CA Test 999-1 (Copy partial)	Test September 9, 2008 (Copy partial)	100% Estimate	cur
CA	CA Test 999-2 (Copy All)	Test September 9, 2008 (Copy All)	Amendment Amendment 02	cur
CA	CA Test 999-3 (Copy ALL)	Miscellaneous Testing	100% Estimate	cur
CO	CO PRA HEIDI 333(1)	MINI TEST FOR CONSTRUCTION	100% PS&E	cur
CO	CO PRA HEIDI 333(1A)	MINI TEST FOR CONSTRUCTION	100% PS&E	cur
CO	CO PRA LINDEN 333(5)	MINI TEST FOR CONSTRUCTION	100% PS&E	cur

2.1.2.4 Project tab navigation

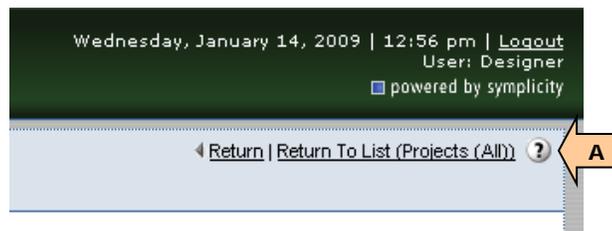
Once a project is selected, use the tabs to access module sub-activities.

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



2.1.2.5 Return to last screen or list navigation

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

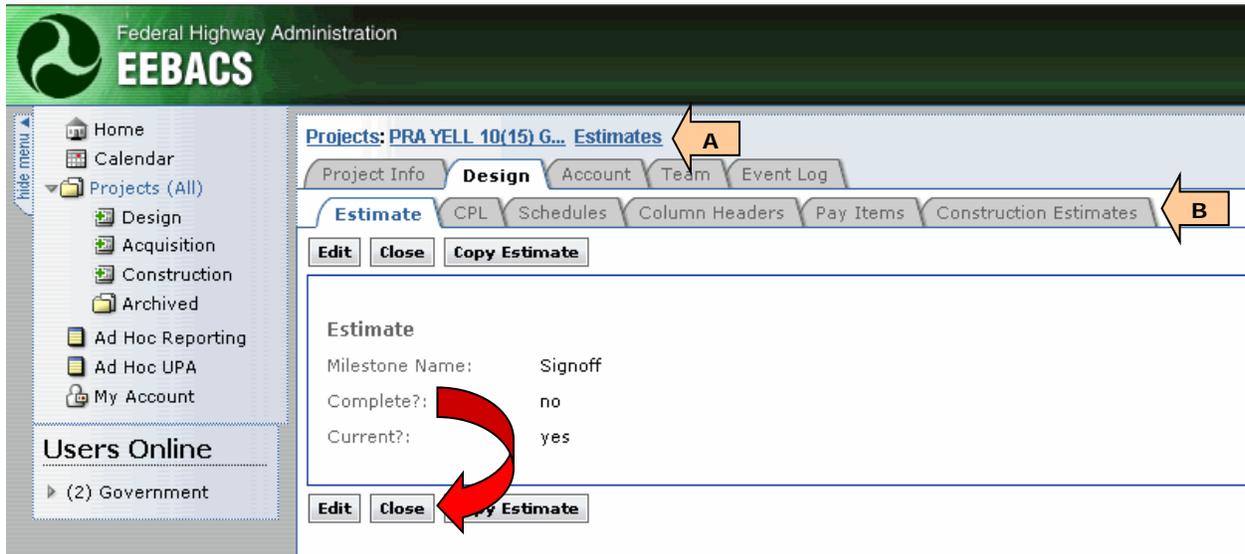


Note: Do not use the browser "back" button to return to the last screen.

2.1.2.6 Within project navigation

- A. Returns to selected function;
- B. Navigation can also be accomplished by using the 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 expected screen when in a tab? Try selecting the "Close" icon. EEBACS saves the last sub-screen viewed when last in the tab.

2.1.2.7 Master Pay Item navigation

- A. Search Filter. Single or multiple pay items may be found 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.

Federal Highway Administration
EEBACS

Wednesday, January 21, 2009 | 12:13 pm | Logout
User: Designer
powered by simplicity

Home
Calendar
Projects (All)
Design
Acquisition
Construction
Archived
Ad Hoc Reporting
Ad Hoc UPA
My Account

Users Online
▶ (1) Contract Staff
▶ (1) Government

Estimates: P-LH
Return | Return To List (Design)

Project Info Design Account Team
Estimate CPL Schedules Column Headers Pay Items Construction Estimates
Project Pay Items Add Master Pay Item Default BHUP Settings Advanced Search

Search Filters:
Keywords: _____ Show selected all
Pay Item Number: _____
Apply Search

Items 1-20 of 3883
Jump 1 150 200 250 300 400 500 550 600 900 [all] Next >

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

Items 1-20 of 3883
Jump 1 Next >

2.2 Projects

General information about the project is stored on the Project Info, Account, and Team tabs. Estimates are created and edited under the Design tab, described in Section 2.3.

2.2.1 Project Information

Project Info

Design

Account

Team

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 EEBACS Design Component Lead.

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

- 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.;

The screenshot shows the 'Project Info' 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
- Density:** Rural
- Terrain:** Rolling
- Partner Agency:** NPS
- Federal Land:** Yellowstone National Park
- Funding Source(s):** PRA, NPS, PFH, PLH, PFP, FWS, IRR, ERFO, OMAD
- FLMA Number:** 54337 101/43943
- Status:** Design

- D. Funding source(s) included in the project;
- E. 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
- F. To exit the screen, select either Save & Close or Cancel & Close. Save stores the recent edits while Cancel returns to View mode.

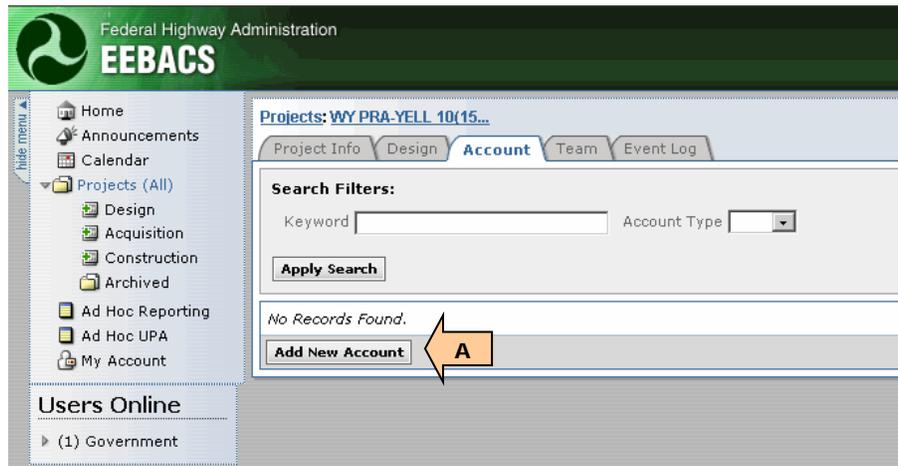
Note: Changing units (US Customary ⇔ Metric) will automatically convert any data previously entered (pay item descriptions, pay units, quantities, and unit prices) as defined by conversion factors.

2.2.2 Account

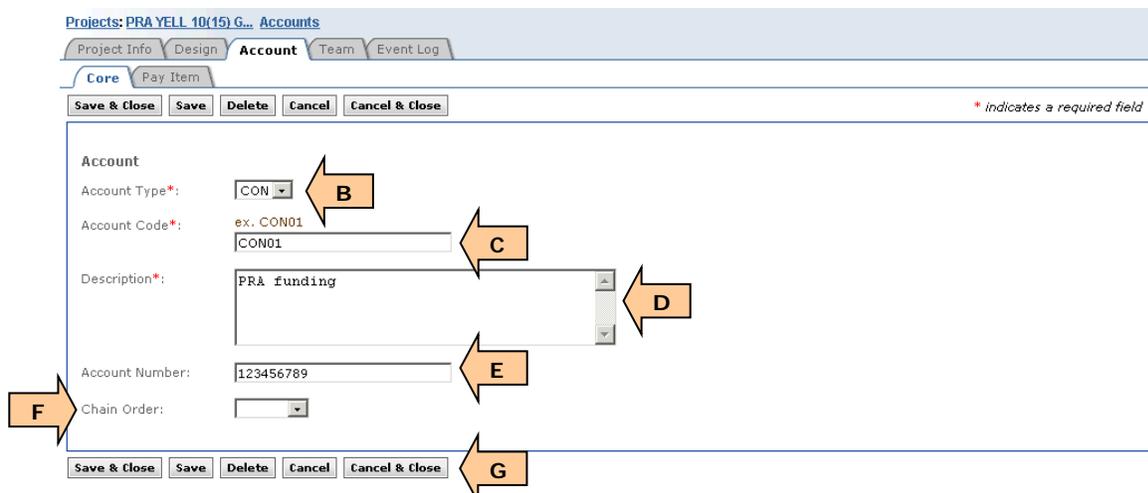


The account tab allows input of one or multiple account numbers. Sometimes projects have multiple funding sources and require schedules, pay items or quantities within pay items to be assigned a specific account number. Even if the project has only one Account, that Account number must be added here.

- 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 or according to Division procedures;
and
- G. Select the appropriate command to exit the screen.



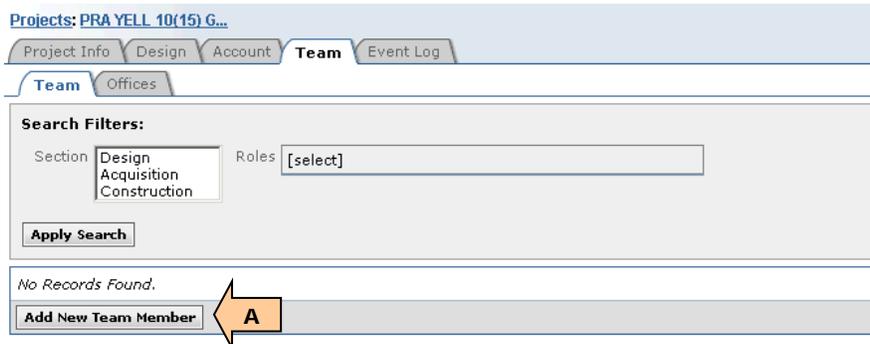
2.2.3 Team

Project Info Design Account **Team**

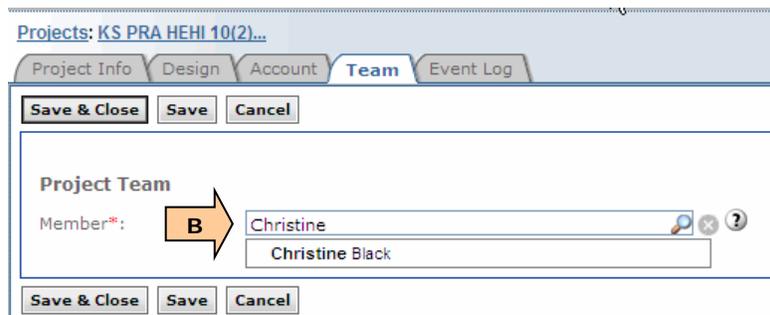
The team tab allows assignment and archive of project team members.

2.2.3.1 Add Team Member (Assign Project Role)

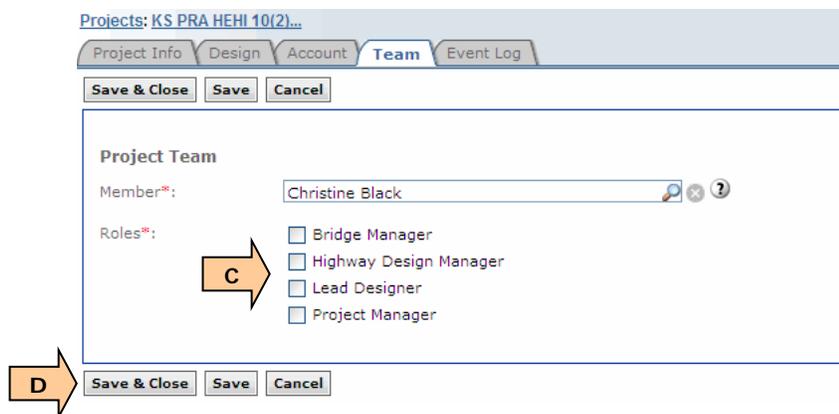
- A. Select the “Add New Team Member” icon to access assignment screen;



- B. 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. (Only enabled users appear in the list);



- C. 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 the local EEBACS Division Administrator; and
- D. Select the “Save and Close” icon.



2.2.3.2 Archive Team Member (Archive Project Role)

Archive former team members. This is particularly important for A/E Staff and Construction Contractors, since this removes their access to this project. Archiving Government users and Contract staff on the project team member may reduce their rights within this project. The following is an example of a populated team roster:

- A. "Edit" project team member to be deleted

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

- B. "Delete" project team member

- C. Confirm to delete (archive) project team member. This cannot be undone. If needed, the team member can be added again (made a current team member) with a project role.

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.

- D. Use the search filters to find archived users
- E. Select appropriate status for archived user. Normally select "Active" status.

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

Project Info Design Account **Team**

Current Members **Archived Members**

Search Filters:

Keyword Held Position Until to

Roles Status Active Frozen Removed

Items 1-1 of 1

Member ▼	Held Position Until ▲	Role(s)	Status ▼
Julee McTaggart	07-13-2010 6:24 pm	Bridge Manager	Active ▼

Items 1-1 of 1

↑ E

2.3 Estimates

Project Info

Design

Account

Team

The "Design" tab allows access to a majority of the estimating functions. Development of the Independent Government Estimates (IGEs) occurs under this tab. 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

Estimate List

2.3.1 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. Choose icon to view, edit, copy, or delete an estimate; or use the button to 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.

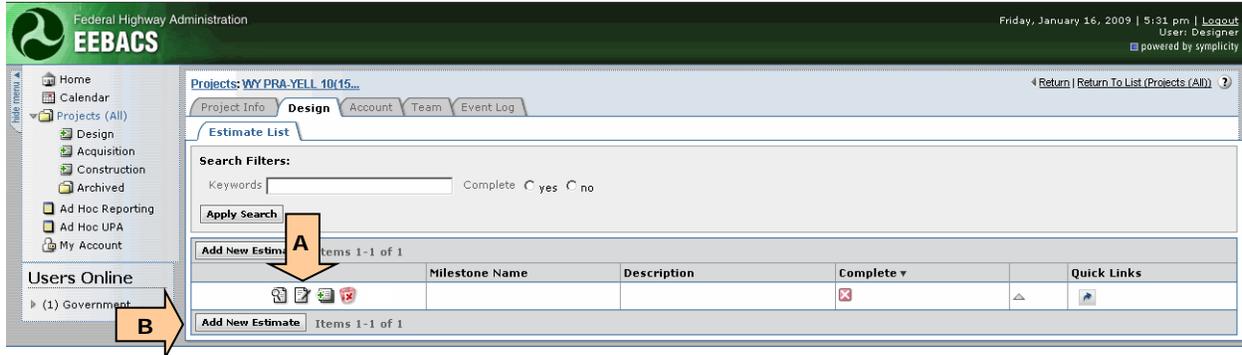
To change the status, go to the "Estimate" tab;

- C. Indicates whether the estimate is current ("cur" appears in the column) or not. It is extremely important to have a "current" estimate. The current estimate milestone shows 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 provides direct access to the Cost per Length (CPL), Schedules, Column Headers, Pay Items, or Construction Estimate tabs.

The screenshot displays the EEBACS software interface. At the top, it shows the Federal Highway Administration logo and the text "EBBACS". The date and time are "Friday, January 16, 2009 | 5:31 pm". The user is logged in as "User: Designer". The main navigation bar includes tabs for "Project Info", "Design", "Account", and "Team". The "Design" tab is active, and the "Estimate List" sub-tab is selected. Below the navigation bar, there are search filters for "Keywords" and "Complete" (yes/no). A table of estimates is shown with columns for "Milestone Name", "Description", "Complete", and "Quick Links". Arrows labeled A, B, C, and D point to specific UI elements: A points to the "Add New Estimate" button, B points to the "Complete" column header, C points to the "Quick Links" column header, and D points to the "Quick Links" dropdown menu.

2.3.1.1 Adding New Estimate

- A. When opening the Estimate List for the first time, select the edit icon in the placeholder estimate; and
- B. For subsequent added estimates select the "Add New Estimate" button.

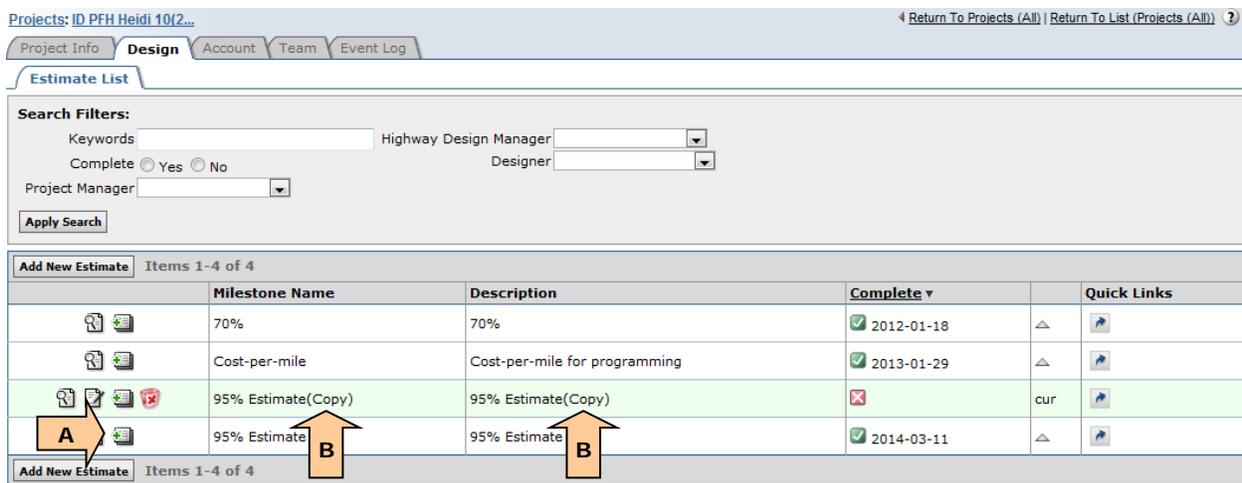


This selection advances the program to the "Estimate" tab (See Section 2.3.2).

2.3.1.2 Copy Estimate

The copy icon creates 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.



2.3.1.3 Edit Previously Created Estimate

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

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

Project Info **Design** Account Team Event Log

Estimate List

Search Filters:

Keywords Highway Design Manager

Complete yes no Designer

Project Manager

Apply Search

Add New Estimate Items 1-2 of 2

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

Add New Estimate Items 1-2 of 2

This selection advances the program to the “Estimate” tab (See Section 2.3.2).

2.3.1.4 View Previously Created Estimate

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

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

Project Info **Design** Account Team Event Log

Estimate List

Search Filters:

Keywords Highway Design Manager

Complete yes no Designer

Project Manager

Apply Search

Add New Estimate Items 1-2 of 2

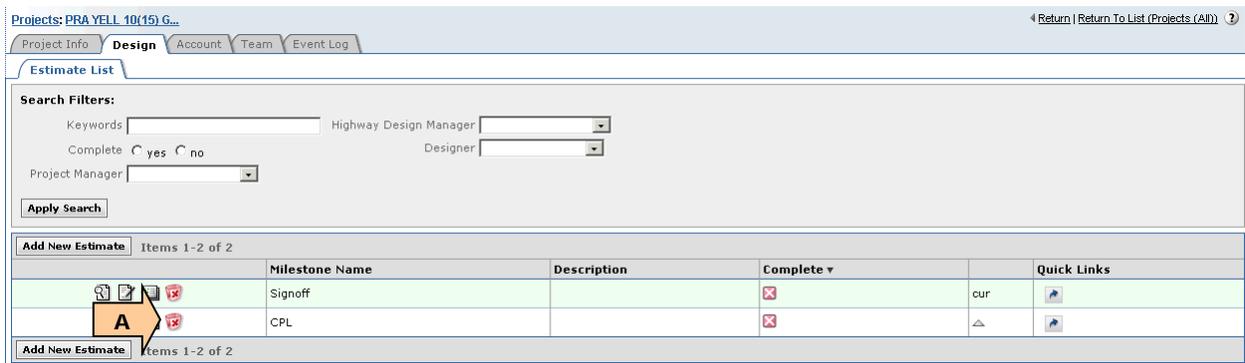
	Milestone Name	Description	Complete ▾		Quick Links
	CPL		2009-06-05	▲	▶
A ▶	Signoff		✖	cur	▶

Add New Estimate Items 1-2 of 2

This selection advances the program to the “Estimate” tab (See Section 2.3.2).

2.3.1.5 Delete Previously Created Estimate

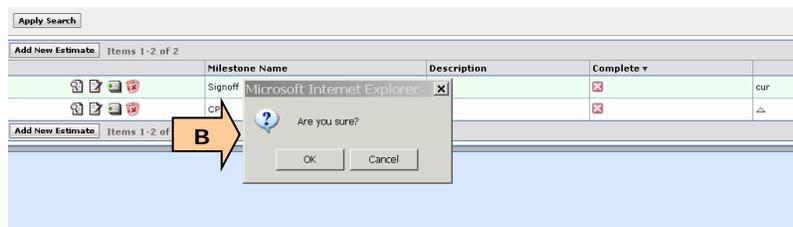
A. To delete a previously created estimate, select the delete icon.



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

2.3.2 Estimate



Under the “Estimate” tab modify the estimate name (use 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, plus additional description/details, if 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 EEBACS software interface for the 'Estimate' tab. The main content area displays a form for creating or editing an estimate. The form includes the following fields and controls:

- Milestone Name*:** A text input field containing 'P-I-H'. An arrow labeled 'A' points to this field.
- Description:** A text area containing 'This estimate was developed for the plan-in-hand.' An arrow labeled 'B' points to this field.
- Complete*:** A radio button group with 'yes' and 'no' options. The 'no' option is selected.
- Current*:** A radio button group with 'yes' and 'no' options. The 'yes' option is selected.
- Complete/Current Status:** An arrow labeled 'C' points to the radio button groups.
- Buttons:** At the bottom of the form, there are buttons for 'Save & Close', 'Save', 'Delete', 'Cancel', 'Cancel & Close', and 'Copy Estimate'. An arrow labeled 'D' points to these buttons.

A warning message at the top of the form states: 'This project is currently missing the following role(s): Bridge Manager. You can correct this by adding the missing roles on the Team Tab.' An 'Estimate Info' sidebar on the right shows the creation and modification dates and the user 'Designer'.

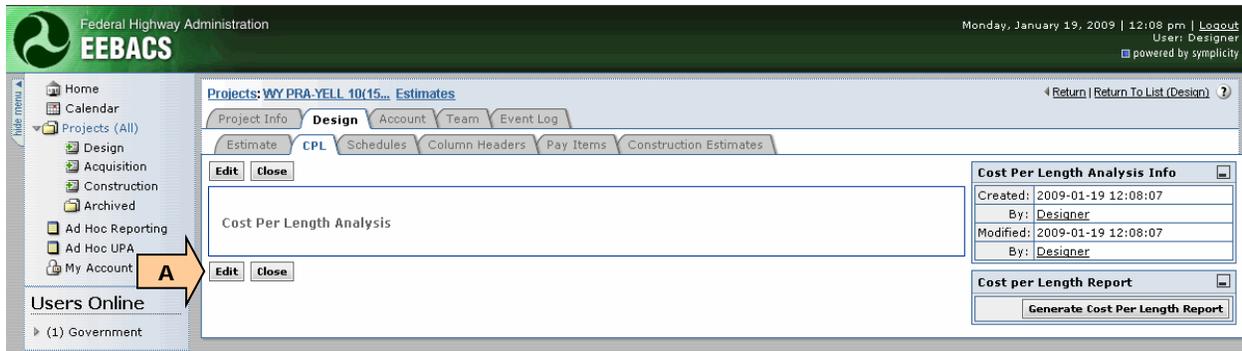
- ⚡ Prior to generating the engineer’s estimate report and the summary of quantities for formal PS&E distribution, the milestone estimate should be marked as complete, with the completion date added.

2.3.3 CPL (Cost per Length)

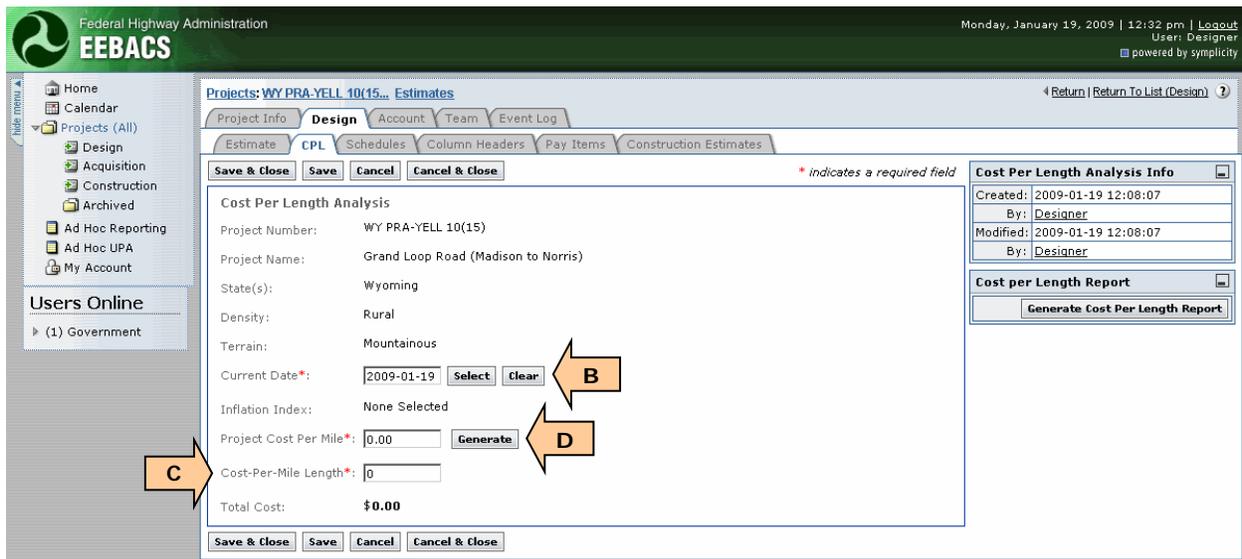


The “CPL” tab allows development of estimates using “comparable” past projects costs. Data is taken from bid history. This estimating method requires a length (miles/kilometers) of project and knowledge of past projects with similar work. If knowledge of past projects is lacking; consult your supervisor 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;
 C. Input project length; and
 D. To determine the project cost per length, select the “Generate” button.



- E. Use the search filters to limit the projects to be considered. 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 index for the project. The inflated costs will populate the table in bold text 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 to 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 Division policy; and
- K. Select a command to continue with the program.

Cost Per Length

Search Filters:

Keywords:

State:

Construction Type:

Schedule Length: to

Density:

Terrain:

Award Date: 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 \$2,446,785.71	<input type="checkbox"/> \$5,479,357.14 \$5,479,357.14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$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 \$30,913,660.71	<input type="checkbox"/> \$3,568,937.50 \$3,568,937.50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$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 \$15,068,252.31	<input checked="" type="checkbox"/> \$10,684,492.37 \$17,598,427.38	<input checked="" type="checkbox"/> \$10,816,325.19 \$17,815,569.22	<input type="checkbox"/> \$12,276,758.40 \$20,221,048.76	<input type="checkbox"/> \$14,462,374.05 \$23,820,976.29	\$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 \$0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$13,727,654.90	R	Mountainous	Rural
MT	A	MT PFH 59-1 (1)	BEARTOOTH HIGHWAY	Feb 23, 2004	64.71%	4.978	<input checked="" type="checkbox"/> \$2,057,899.68 \$3,389,566.56	<input type="checkbox"/> \$2,135,944.05 \$3,518,113.45	<input type="checkbox"/> \$2,252,352.75 \$3,709,850.22	<input type="checkbox"/> \$2,833,305.76 \$4,666,737.91	<input type="checkbox"/>	\$11,212,212.00	R	Mountainous	Rural
MT	A	MT PFH 29-1 (1)	LAKESIDE TO NELSON	Dec 12, 2003	93.1%	3.195	<input type="checkbox"/> \$312,018.42 \$602,507.57	<input type="checkbox"/> \$404,735.45 \$781,544.15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$996,898.85	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"/> \$8,946,371.9 \$17,275,44	<input type="checkbox"/> \$9,069,909.09 \$17,513,994.45	<input type="checkbox"/> \$12,074,923.55 \$23,316,677.38	<input type="checkbox"/> \$13,219,305.79 \$25,526,479.47	<input type="checkbox"/>	\$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 \$0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$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: Inflation: Save & Close Cancel

💡 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).

💡 There are a number of inflation indexes available in EEBACS for use when doing a unit price check. The inflation indices adjust prices from award date to the latest available inflation index in EEBACS. Typically use an index for the project State or a State in close proximity to the project. If there is no State index select indexes created by data from the Bureau of Labor and Statistics (BLS Non-Residential Construction PPI) where inflation of work and materials are tracked on all non-residential construction, or the Federal Highway index (National Highway CCI) where inflation on highway

construction costs are tracked. The BLS index is adjusted monthly and the National Highway index is adjusted quarterly. Of these two, for typical roadway projects, use the National Highway CCI.

- 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.

Federal Highway Administration
EEBACS

Monday, January 19, 2009 | 12:40 pm | Logout
User: Designer
powered by simplicity

Projects: **WY PRA-YELL 10(15) Estimates** [Return](#) | [Return To List \(Design\)](#)

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

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

Save & Close | **Save** | **Cancel** | **Cancel & Close** * indicates a required field

Cost Per Length Analysis

Project Number: WY PRA-YELL 10(15)
Project Name: Grand Loop Road (Madison to Norris)
State(s): Wyoming
Density: Rural
Terrain: Mountainous
Current Date*: 2009-01-19 **Select** **Clear**
Inflation Index: Washington DOT CCI
Project Cost Per Mile*: 13500000 **Generate**
Cost-Per-Mile Length*: 10
Total Cost: **\$135000000.**

Cost Per Length Analysis Info

Created: 2009-01-19 12:08:07
By: Designer
Modified: 2009-01-19 12:08:07
By: Designer

Cost per Length Report

Generate Cost Per Length Report

Save & Close | **Save** | **Cancel** | **Cancel & Close**

2.3.4 Schedules

Project Info | **Design** | Account | Team

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

Add New Schedule

Generate Cost Per Length Report

Create single or multiple schedules for an estimate within the “Schedules” tab.

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

Federal Highway Administration
EEBACS

Monday, January 19, 2009 | 1:15 pm | Logout
User: Designer
powered by simplicity

Estimates: **P-I-H** [Return](#) | [Return To List \(Design\)](#)

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

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

No Records Found.

Add New Schedule

Users Online

► (1) Government
► (1) Staff

B. An existing schedule may be copied within the project's estimate. Select either 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. 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. An "alternate" schedule is selected when soliciting prices for multiples schedules (and NO Options are included in the advertisement).

The screenshot shows the 'Schedule' form with the following fields and annotations:

- Copy Existing:** A dropdown menu with the instruction "Pick a schedule from which you'd like to copy data". An orange arrow labeled 'B' points to this field.
- Schedule Type*:** A dropdown menu.
- Schedule Letter*:** A dropdown menu.
- Construction Type*:** A dropdown menu with the instruction "Describes the type of construction for the project (i.e. Mill 2"/Overlay 4)".
- Schedule Description*:** A text area with the instruction "Describes the type of work being performed on the project (i.e. Grading, Base, Pavement)".
- Schedule Termini*:** A text area with the instruction "Describes the beginning and ending location of the project (i.e. From Milepost -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 showing "0 miles".
- Lane Miles:** A text input field.
- Bridge(s):** A button labeled "Add Bridge".

- Schedule Letter – Attaches an alpha designator (A-Z) to the schedule. Consult supervisor for local Division 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 EEBACS Design Component Lead;
- 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 0020 or 0100 depending on the amount of pay items;
- Line Item Increment Number – Defines the spacing between line item numbers. A value of 20 is recommended. 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.

2.3.4.1 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. Input the schedule length 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 the 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 'Schedules' form with the following fields and buttons:

- Buttons:** Save & Close, Save, Cancel
- Navigation:** Project Info, Design, Account, Team, Event Log, Estimate, CPL, Schedules, Column Headers, Pay Items, Construction Estimates
- Form Fields:**
 - Copy Existing: Pick a schedule from which you'd like to copy data
 - Schedule Type*
 - Schedule Letter*
 - Construction Type*: Describes the type of construction for the project (i.e. Mill 2"/Overlay 4")
 - Schedule Description*: Describes the type of work being performed on the project (i.e. Grading, Base, Pavement)
 - Schedule Termini*: Describes the beginning and ending location of the project (i.e. From Milepost 349.7 to I-40)
 - CPM Days:
 - Line Item Starting Number*
 - Line Item Increment Number*
 - GIS Route(s): Add GIS Route (Arrow A)
 - Schedule Length: 0 miles (Arrow B)
 - Lane Miles:
 - Bridge(s): Add Bridge (Arrow C)
- Footer:** Save & Close, Save, Cancel (Arrow D)

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

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

The screenshot shows a software interface for adding a GIS Route. At the top left, there is a field for "Line Item Increment Number*" with a dropdown arrow. Below it is a section titled "GIS Route(s):" containing a form. The form fields include: "GIS Route*" (text), "Length*" (text) with "miles" next to it, "Construction Type*" (dropdown), "GIS Milepost Start" (text), "GIS Milepost End" (text), "Parking Lot Area" (text) with "SQYD" next to it, "Lat Begin of Project" (text), "Long Begin of Project" (text), "Lat End of Project" (text), "Long End of Project" (text), "Termini" (dropdown), and "Comment" (text). A bracket on the right side of the form groups the fields from "GIS Route*" down to "Long End of Project", with an arrow labeled "E" pointing to it. At the bottom left of the form is a button labeled "Add GIS Route" with an arrow labeled "F" pointing to it. At the bottom right is a button labeled "Remove GIS Route" with an arrow labeled "G" pointing to it. Below the form is a "Schedule Length:" field with a text input and "miles" next to it.

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

- H. Data for required fields may be determined according to the GIS Appendix;
- I. Opens additional data fields to input data for an additional bridge;
- J. Input bridge length; and
- K. Deletes the bridge data inputted.

The screenshot shows a software interface for adding a Bridge. At the top left, there is a field for "Lane Miles:" with a text input. Below it is a section titled "Bridge(s):" containing a form. The form fields include: "Bridge Identification" (text), "GIS Route" (text), "Bridge Construction Type" (dropdown), "Bridge Size (area)" (text) with "SQFT" next to it, "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" next to it, and "Remove Bridge" (button). A bracket on the right side of the form groups the fields from "Bridge Identification" down to "Bridge Long End", with an arrow labeled "H" pointing to it. At the bottom left of the form is a button labeled "Add Bridge" with an arrow labeled "I" pointing to it. At the bottom right is a button labeled "Remove Bridge" with an arrow labeled "K" pointing to it. Below the form are buttons for "Save & Close", "Save", and "Cancel".

2.3.5 Column Headers

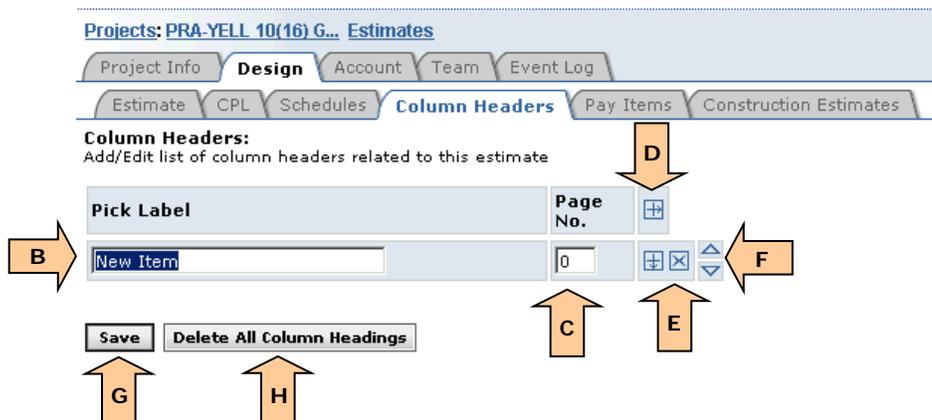


Establish column headers for the Summary of Quantity plan sheet (or report) in the "Column Headers" tab. A maximum of 26 columns are available. Consult your supervisor for the Division format.

- 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 local Division policy. If no sheet number reference is required, enter a space;
- 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 but will need to be reassigned to another column.



2.3.6 Pay Items



Add, edit, and delete project pay items and create temporary pay items in the “Pay Items” tab for an estimate or schedules.

2.3.6.1 Project Pay Items



The “Project Pay Items” tabs allow access to the master pay items (see Section 2.3.6.2 for more details), adding 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 local Division 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.

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

Project Info Design Account Team Event Log

Estimate CPL Schedules Column Headers Pay Items Construction Estimates

Save & Close Save **Delete** Cancel & Close Save & Previous Save & Next View Previous View Next

Pay Item #: 15705-0500 Pay Item Description: SOIL EROSION CONTROL, TEMPORARY CULVERT PIPE
Pay Item Type: N Pay Item (U.S. Units): LNFT

Design Pay Item

Supplemental Description:

Schedule*: A B **A**

Pay Item Type*: N

Contract Quantity*: yes no

Bid Decimal*: 0

- B. Before pay items are included, this screen will indicate “No Records Found”;
- C. Select “Add Temporary Pay Item” icon when a pay item is not available in the master pay item list and is needed immediately. (See Section 2.3.6.3);
- D. Select “Add Master Pay Item” icon when adding pay items to an estimate (See Section 2.3.6.2); and
- E. Select “Update All Line Numbers” icon when pay items are added, deleted, or reordered in an estimate (See Section 2.3.6.6).

Federal Highway Administration
EEBACS

Estimates: P-I-H

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

Users Online

(1) Contract Staff **B**

(1) Government

No Records Found.

Add Temporary Pay Item **C** Add Master Pay Items **D** Update All Line Numbers **E**

2.3.6.2 Add Master Pay Item



Add pay items to an estimate with the “Add Master Pay Item” tab. Only pay items from the project’s assigned FP will be shown.

- 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	SOYD
	63318-1000	SNOWPOLE HO	N	EACH
	63319-0000	POST SLEEVE	N	EACH
	63401-0000	PAVEMENT MARKINGS, TYPE B, SOLID	N	LNFT
	63401-0100	PAVEMENT MARKINGS, TYPE A, SOLID	N	LNFT
	63401-0200	PAVEMENT MARKINGS, TYPE A, BROKEN	N	LNFT
	63401-0300	PAVEMENT MARKINGS, TYPE B, SOLID	N	LNFT

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

If an item cannot be found in the table, place a request to add a new pay item with the EEBACS Division Administrator. See <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

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		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"/>

Add Temporary Pay Item | Add Master Pay Items | Update All Line Numbers | Items 1-12 of 12

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

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	

2.3.6.3 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' section of the software interface. At the top, there are tabs for 'Project Info', 'Design', 'Account', 'Team', and 'Event Log'. Below these are tabs for 'Estimate', 'CPL', 'Schedules', 'Column Headers', 'Pay Items', and 'Construction Estimates'. Under the 'Pay Items' tab, there are sub-tabs for 'Project Pay Items', 'Add Master Pay Item', and 'Advanced Search'. The main area contains a 'Search Filters' section with fields for 'Keywords', 'Total Price', 'Schedule', 'Unit Price', and 'Complete' (with radio buttons for 'yes' and 'no'). An 'Apply Search' button is located below the search filters. Below the search filters, it says 'No Records Found.' At the bottom of the section, there are 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 Section 2.3.6.4 for further instructions on how to populate pay item data fields.

The screenshot shows the 'Temporary Pay Item' form. The form has a title 'Temporary Pay Item' and a dropdown menu for 'Temporary Pay Item:'. Below this, there are several fields:

- Pay Item**: Temp Pay Item #. Enter the 5 digits to be used for the Pay Item Number. (Field B)
- Pay Item #**: 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)**: 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). (Field C)
- Pay Item Type***: (Dropdown menu)
- Pay Unit (U.S. Units)**: For the unique pay item number a description of the payment measurement reflecting U.S. customary measure (i.e. Linear feet). (Field D)

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

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

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	

2.3.6.4 Editing a Pay Item

Use the edit function to populate the pay item data fields including those dealing with cost of the work item.

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

Federal Highway Administration
EEBACS

Estimates: P-H

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	MOBILIZATION	LPSM	\$0.00	ALL	\$0.00	no	BHUP CBUP
15201-0000		N	CONSTRUCTION SURVEY AND STAKING	LPSM	\$0.00	ALL	\$0.00	no	BHUP CBUP
15301-0010		N	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM	\$0.00	ALL	\$0.00	no	BHUP CBUP
15401-0000		N	CONTRACTOR TESTING	LPSM	\$0.00	ALL	\$0.00	no	BHUP CBUP
15501-0000		N	CONSTRUCTION SCHEDULE	LPSM	\$0.00	ALL	\$0.00	no	BHUP CBUP
15705-0100		N	SOIL EROSION CONTROL, SILT FENCE	LNFT	\$0.00	0	\$0.00	no	BHUP CBUP
15705-0500		N	SOIL EROSION CONTROL, TEMPORARY CULVERT PIPE	LNFT	\$0.00	0	\$0.00	no	BHUP CBUP
20101-0000		N	CLEARING AND GRUBBING	ACRE	\$0.00	0.0	\$0.00	no	BHUP CBUP
20220-1000		N	REMOVAL, INDIVIDUAL TREE	EACH	\$0.00	0	\$0.00	no	BHUP CBUP
20401-0000		N	ROADWAY EXCAVATION	CUYD	\$0.00	0	\$0.00	no	BHUP CBUP
30101-2000		NM	AGGREGATE BASE GRADING D	TON	\$0.00	0	\$0.00	no	BHUP CBUP
40101-0100		NR	SUPERPAVE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, <0.3 MILLION ESAL	TON	\$0.00	0	\$0.00	no	BHUP CBUP
63302-0000		N	SIGN SYSTEM	SQFT	\$0.00	0	\$0.00	no	BHUP CBUP
63401-0100		N	PAVEMENT MARKINGS, TYPE A, SOLID	LNFT	\$0.00	0	\$0.00	no	BHUP CBUP
63401-0100		N	PAVEMENT MARKINGS, TYPE A, SOLID	LNFT	\$0.00	0	\$0.00	no	BHUP CBUP
63401-0200		N	PAVEMENT MARKINGS, TYPE A, BROKEN	LNFT	\$0.00	0	\$0.00	no	BHUP CBUP

Special Consideration: Pay Item 15101-0000 Mobilization. This pay item does not require a "Unit Price". Unit price is computed using the "Construction Estimate" tab as described in Section 2.3.9. 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 screenshot shows a software interface with two columns: 'Column Headings' and 'CONSTR Account*'. The 'Column Headings' column has a dropdown menu currently set to '[none]'. The 'CONSTR Account*' column contains two rows of input fields. Each row has a 'Quantity*' field with a percentage sign and an 'Account*' dropdown menu. The first row has '80' in the quantity field and 'CON01 Account #1' in the account dropdown. The second row has '20' in the quantity field and 'CON02 Account #2' in the account dropdown. A 'Delete' button is located between the two rows. A red arrow points from the text 'Fill in % assigned to each account' to the percentage fields in both rows.

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 the 'Design Pay Items' form. The form is titled 'Estimates: P.L.H Design Pay Items' and includes a navigation bar with tabs for 'Project Info', 'Design', 'Account', 'Team', and 'Event Log'. The 'Design' tab is active, and the 'Pay Items' sub-tab is selected. A warning message at the top states: 'This item has not yet been completed. Please edit and save to complete'. The form contains the following fields and sections:

- 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 Info:** Created: 2009-01-21 16:49:52, By: Designer, Modified: 2009-01-21 16:49:52, By: Designer.
- Pay Item:** Pay Item #: 15201-0000, Pay Item Description (US Customary): CONSTRUCTION SURVEY AND STAKING, Pay Item Type: N, U.S. Pay Units: LPSM, Standard Specifications FP Year: 03, Federal Lands Division: Eastern Federal Lands HD, Comments: Added missing number.
- UPA Report:** Generate UPA Report button.
- Design Pay Item:** Supplemental Description: [empty], Schedule*: A, Pay Item Type*: N, Contract Quantity*: yes no.
- Column Headings & Accounts:** Column Heading: [none], Quantity*: 100 %, Account*: con01 account 1, Add Account button, Column Heading Total: 100.
- Unit Price:** 0.00, BHUP, CBUP buttons.
- Remarks:** [empty], (maximum characters: 4000) 4000 remaining.
- Total Price:** \$0.00.
- Summary of Quantity Remarks:** [empty], (maximum characters: 4000) 4000 remaining.

Annotations D, E, B, and C point to the 'Users Online' sidebar, the 'Pay Item Type' dropdown, the 'Pay Item Description' field, and the 'Supplemental Description' field, respectively.

- G. 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;
- H. 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);
- I. 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.
- J. Add Account. If needed multiple accounts may be added. Divide the quantity accordingly;
- K. Column Heading Total. Indicates the total quantity of one or more accounts for that column heading; and
- L. 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 G-J).

The screenshot shows the EEBACS Design Pay Items interface. The main form is titled 'Design Pay Items' and contains the following fields and actions:

- Pay Item #:** 15201-0000
- Pay Item Description:** CONSTRUCTION SURVEY AND STAKING
- Pay Item Type:** N
- Pay Unit (U.S. Units):** LPSM
- Supplemental Description:** [none]
- Schedule*:** A (checked)
- Pay Item Type*:** N
- Contract Quantity*:** Yes (checked)
- Column Headings & Accounts:**
 - Column Heading:** [none]
 - Column Headings:** [none], Plan & Profile, Tabulation of Drainage, Temporary Traffic Control, Permanent Traffic Control
 - Account*:** CON01 PRA funding, CON02 Additional funding provided by the Friends of Scenic Highways
 - Quantity*:** 100 %
 - Account*:** con01 account 1
 - Add Account** button
 - Column Heading Total:** 100
- Unit Prices:** 0.00
- Remarks:** [text area]
- Total Price:** \$0.00
- Summary of Quantity Remarks:** [text area]

Callouts G-L point to specific elements: G points to the Column Headings pick list; H points to the Quantity field; I points to the Account* pick list; J points to the Add Account button; K points to the Column Heading Total field; L points to the Add Column Heading button.

- M. 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 to use the BHUP or CBUP to document how the price was determined;
- N. 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.*);
- O. Total price. This number is calculated by EEBACS (unit price x total quantity = total price);
- P. 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
- Q. Select a command to continue with the program.

The screenshot shows the EEBACS Design Pay Items screen. The interface includes a navigation menu on the left, a top header with the EEBACS logo and user information, and a main content area with various form fields and buttons. Callouts M, N, O, P, and Q are placed over the screen to highlight specific areas:

- M** points to the Unit Price field, which has dropdown buttons for BHUP and CBUP.
- N** points to the Remarks field.
- O** points to the Total Price field, which displays \$0.00.
- P** points to the Summary of Quantity Remarks field.
- Q** points to the bottom navigation buttons, including Save & Close, Save, Delete, Cancel, Cancel & Close, Save & Previous, Save & Next, View Previous, and View Next.

The main form area contains the following information:

Pay Item #: 15201-0000 Pay Item Description: CONSTRUCTION SURVEY AND STAKING
 Pay Item Type: N Pay Unit (U.S. Units): LPSM

Design Pay Item

Supplemental Description: [Dropdown]

Schedule*: A

Pay Item Type*: N

Contract Quantity*: yes no

Column Headings & Accounts

Column Heading: [Dropdown] CONSTR Account*

Quantity*: 100 %

Account*: con01 account 1

Add Account

Column Heading Total: 100

Add Column Heading

Unit Price: 0.00 [BHUP] [CBUP]

Remarks: [Text Area]

Total Price: \$0.00

Summary of Quantity Remarks: [Text Area]

Buttons: Save & Close, Save, Delete, Cancel, Cancel & Close, Save & Previous, Save & Next, View Previous, View Next

2.3.6.5 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.

2.3.6.6 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.

2.3.6.7 Batch Options

The batch option button performs the following:

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

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

2.3.7 Determining Unit Prices

For each pay item determine a unit price in order to develop a total price for the estimate. Two methods of developing a unit price for a pay item are available: bid history and cost-based.

2.3.7.1 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.

Set the default BHUP settings before completing the bid history unit price analyses. Fill out the desired fields. The "Keywords:" field searches within the Project Number and Project name fields. The state, construction type, density (urban or rural), award date range, and terrain may also be set. A specific inflation index may also be set. Be sure to select the "Save" button when exiting.

The screenshot shows the 'Default BHUP Settings' form within a software application. The form is titled 'Default BHUP Setting' and includes several input fields and dropdown menus. A note indicates that an asterisk (*) denotes a required field. The form is set against a background of a web application interface with various navigation tabs.

Default BHUP Setting

Keywords:

State(s):

Construction Type(s):

Density:

Award Date: to

Terrain:

Inflation Index:

Default BHUP Setting Info

Created: 06-20-2014 14:37:58
By: Heidi Hirsbrunner
Modified: 06-20-2014 14:37:58
By: Heidi Hirsbrunner

If a BHUP analysis was already completed for a pay item before the default BHUP settings were set, these settings will be ignored.

- 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 web application interface for configuring a 'Design Pay Item'. The interface includes a navigation menu on the left, a top header with the EEBACS logo and date, and a main content area with various form fields. A red circle highlights the 'BHUP' icon in the 'Unit Price' field, with an orange arrow labeled 'A' pointing to it. The 'Unit Price' field contains the value '0.00'. Other fields include 'Supplemental Description', 'Schedule' (set to 'A'), 'Pay Item Type' (set to 'N'), and 'Column Headings & Accounts' section with a table for 'CONSTR Account*'. The table has columns for 'Quantity' (100) and 'Account' (cond1 account 1). A 'Generate UPA Report' button is visible in the bottom right corner.

- B. Use search filters to display projects with similar traits.
- C. Select "Use Crosswalk" to include projects with previous FP pay items. Pay items from a previous FP appear with bold text. The accompanying description is the description from the previous FP.
- D. The "Clear" button clears all search information except the pay item number. Selected projects will remain.
- E. The "Reset" button changes the search settings to match the default BHUP settings. Selected projects will remain.
- F. Select the "apply search" icon to populate the listing with projects using the selected parameters;

The screenshot shows the "Bid History Analysis" window. At the top, a yellow banner displays a warning icon and the text: "20703-0000 GEOGRID", "Pay Item Type:N Pay Unit:SQYD", and "Quantity:1,500". Below this is the "Search Filters:" section. It contains several input fields: "Pay Item Number" (20703-0000), "Keywords", "Quantity" (with a "to" field), "State" (a dropdown menu), "Construction Type" (a dropdown menu), "Density" (a dropdown menu), "Terrain" (a dropdown menu), and "Award Date" (2002 to 2014). There are also radio buttons for "Show Selected Only?" (Yes/Ignore) and "Use Crosswalk?" (Yes/Ignore). At the bottom of the search filters are three buttons: "apply search", "clear", and "reset". Below the search filters is a "Results" section showing "Items 1-10 of 18" and a "Jump 1" dropdown with a "Next >" link. Orange callout boxes labeled A through F point to specific elements: A points to the yellow banner, B points to the "Density" dropdown, C points to the "Use Crosswalk?" radio buttons, D points to the "clear" button, E points to the "reset" button, and F points to the "apply search" button.

- G. 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 E);
- H. For more bid history on the pay item, select either screen "jump" or "next". To select bid prices from multiple screens, select "update" (see Step F) to save selections on the current screen before going to the next screen; otherwise they will not be saved;
- I. Select from the pick list inflation factors developed by various state and federal agencies. Choose an entry close to the project area (See Section 2.3.3);
- J. Select the "update" icon to populate the "Avg., Max., and Min. calculated prices. If additional unit prices are selected or deselected, update the values;
- K. Select the average (recommended), minimum, or maximum historical unit bid price to populate the "unit price used" for the item;
- L. Optionally, edit (round the average unit price from step E above) or input a unit price;
- M. Describe factors taken into consideration in developing the unit price. These remarks will carry forward to the pay item screen; and
- N. Select a command to continue with the program.

Bid History Analysis

20703-0000 GEOGRID
Pay Item Type:N Pay Unit:SQYD
Quantity:1,500

Search Filters:
[apply search] [clear] [reset]

Results: Items 1-10 of 18

State	Pay Item #	Description	Sched	Project Number	Award Date	Inflation Rate	Qty	Low 1	Low 2	Low 3	Low 4	Low 5	Total Amt	Construction Type	Terrain	Density
CA	20703-0000	Geomembrane	A	PFH HSH Metric 03	Feb 27, 2014	0%	2,631	<input checked="" type="checkbox"/> \$8.36 \$8.36					\$5,459,103.00	40902 AC Construction 5/8	Mountainous	Rural
CA	20703-0000	Geogrid, biaxial	A	PFH HSH Metric 03	Feb 27, 2014	0%	5,262	<input checked="" type="checkbox"/> \$33.45 \$33.45					\$5,459,103.00	40902 AC Construction 5/8	Mountainous	Rural
AZ	20703-0000	GEOGRID	A	AZ HSH FP14	Sep 18, 2013	0%	3,000	<input checked="" type="checkbox"/> \$2.78 \$2.78					\$1,638,590.96	40306 Mill 4 + Ovly 4-inches	Rolling	Rural
CA	20703-0000	Geomembrane	A	PFH HSH 114-1(3) (Co...	Mar 07, 2013	0%	2,631	<input checked="" type="checkbox"/> \$83.61 \$83.61					\$23,729,705.60	40902 AC Construction 5/8	Mountainous	Rural
CA	20703-0000	Geogrid, biaxial	A	PFH HSH 114-1(3) (Co...	Mar 07, 2013	0%	2,622	<input checked="" type="checkbox"/> \$83.61 \$83.61					\$23,729,705.60	40902 AC Construction 5/8	Mountainous	Rural
WA	20703-0000	GEOGRID, UNIAXIAL	A	WA PRA MORA 13(4)	Jul 15, 2011	-7.69%	30,111	<input type="checkbox"/> \$3.70 \$3.42					\$2,322,367.90	40106 Asphalt concrete patch full depth	Mountainous	Rural
CO	20703-0000	GEOGRID, BIAXIAL	B	ROMO 10(4)	Dec 12, 2006	-23.92%	28,106	<input type="checkbox"/> \$2.72 \$2.07					\$10,193,005.00	3 (archived)	Mountainous	Rural
CA	20703-0000	GEOGRID, BIAXIAL	A	PFH 119-2(4)	Jan 20, 2006	-23.92%	29,302	<input checked="" type="checkbox"/> \$11.71 \$8.91	<input type="checkbox"/> \$5.02 \$3.82	<input type="checkbox"/> \$4.43 \$3.37			\$15,494,923.75	R (archived)	Mountainous	Rural
AK	20703-0000	GEOGRID, BIAXIAL	A	AK PRA-DENA 10(21) & 10(...	Jun 07, 2005	-19.27%	2,990	<input type="checkbox"/> \$3.00 \$2.42	<input type="checkbox"/> \$0.35 \$0.28	<input type="checkbox"/> \$2.00 \$1.61	<input type="checkbox"/> \$8.00 \$6.46		\$1,124,900.00	3 (archived)	Rolling	Rural
CA	20703-0000	GEOGRID, BIAXIAL	A	ERFO/PRA SEQU 10(7)	Jan 16, 2005	0.13%	9,568	<input checked="" type="checkbox"/> \$4.18 \$4.19	<input checked="" type="checkbox"/> \$15.05 \$15.07	<input type="checkbox"/> \$7.53 \$7.54	<input type="checkbox"/> \$4.60 \$4.61		\$1,981,104.00	R (archived)	Mountainous	Rural

8 Bid Picked Avg: \$30.21 Max: \$84.46 Min: \$2.78 [update]

Unit Price Used 30.00 Remark Select projects of similar traits. Inflation California High: [Save & Close]

- O. 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.

Unit Price: 30.00 **BHUP**

Remarks: Select projects of similar traits.
(maximum characters: 4000) 3966 remaining.

Quantity: 1,500

Total Price: \$45,000.00

Summary of Quantity
Remarks:
(maximum characters: 4000) 4000 remaining.

Buttons: Save & Close, Save, Delete, Cancel, Cancel & Close, Save & Previous, Save & Next, View Previous, View Next

2.3.7.2 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.

Federal Highway Administration
EEBACS

Monday, February 16, 2009 | 1:46 pm | Logout
User: Designer
powered by simplicity

Estimates: P.L.H. Design Pay Items

Project Info: Design Account Team Event Log

Estimate CPL Schedules Column Headers Pay Items Construction Estimates

This item has not yet been completed. Please edit and save to complete.

Save & Close Save Delete Cancel Cancel & Close Save & Previous Save & Next View Previous View Next

Pay Item #: 20401-0000 Pay Item Description: ROADWAY EXCAVATION
Pay Item Type: N Pay Unit (U.S. Units): CUYD

Design Pay Item Info

Created: 2009-01-21 17:03:48
By: Designer
Modified: 2009-02-21 17:03:48
By: Designer

Design Pay Item

Supplemental Description:

Schedule*: A

Pay Item Type*: N

Contract Quantity*: yes no

Bid Decimal*: 0

Column Headings & Accounts

Column Heading: D: Plan & Profile

Quantity*: 10000
Account*: CON01 PRA funding
Column Heading Total: 10,000

Unit Price: 0.00 **BHUP** **CBUP**

Remarks:

(maximum characters: 4000) 4000 remaining.

Quantity*: 10,000

Total Price: \$0.00

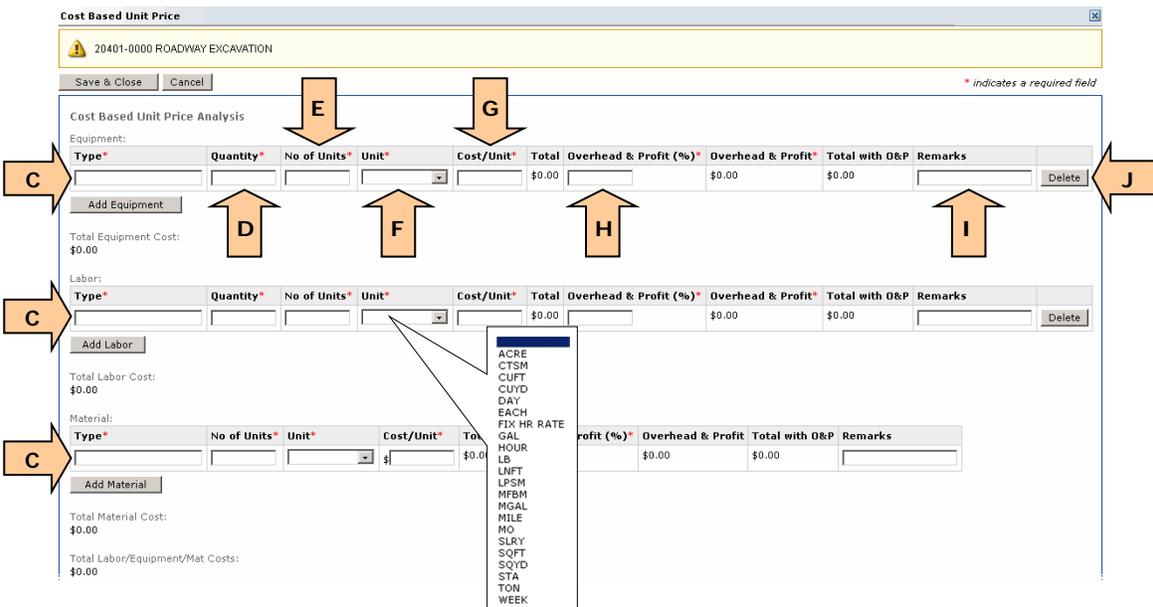
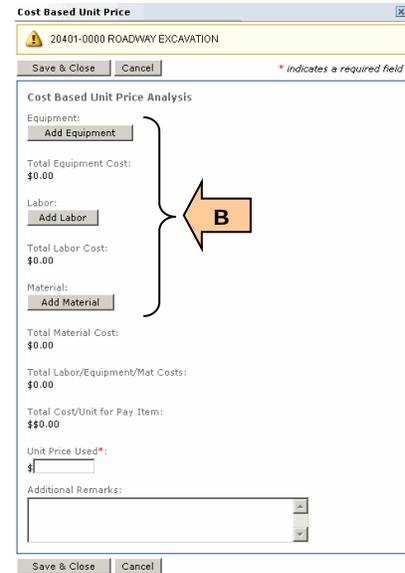
Summary of Quantity
Remarks:
(maximum characters: 4000) 4000 remaining.

Buttons: Save & Close, Save, Delete, Cancel, Cancel & Close, Save & Previous, Save & Next, View Previous, View Next

Users Online
(1) Government

UPA Report
Generate UPA Report

- B. Select an appropriate analysis sub-function to begin developing a unit price.
- C. 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.);
- D. 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;
- E. 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*;
- F. Unit. Select the appropriate unit from the pick-list (hour, day, ton, etc.);
- G. 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 local Division procedures;
- H. 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;
- I. Remarks. Describe how costs were determined for that specific item; and
- J. Select the Delete button if that line item is no longer relevant.



- K. Total Cost (Equipment, Labor, or Material). Automatic summation of all types for that component of work;
- L. Total Cost of Equipment, Labor, and Material. Automatic summation of all components of work;
- M. 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;
- N. Unit Price Used. Input a unit price to carry forward to the pay item tab to calculate the final pay item cost;
- O. Remarks. Describe how costs were determined for the pay item; and
- P. Select a command to continue with the program.

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

- R. 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	CLYD	\$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

2.3.8 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 roughness quality incentives.

A [Materials Incentive Spreadsheet](#) has been developed to assist in developing the material QUP.

2.3.8.1 Adding Material Quality Incentives

At this time QUP process should only be used for material quality incentives. Do **NOT** use this process for roughness or smoothness 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 2.3.6.4 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.

Design Pay Item

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

Supplemental Description:

Schedule*: A

Pay Item Type*: **NR** NR NR

Contract Quantity*: Yes No

Bid Decimal*: 0

Column Headings & Accounts

Column Heading	CONSTR Account*	Quantity	Price
C7:surfacing summary		6,757	\$675,700.00
	CON01	6,523	\$652,300.00
	CON02	234	\$23,400.00
Column Heading Total:		6,757	

Unit Price: 100.00 **A**

Remarks:

Quantity: 6,757

Total Price: \$675,700.00

Summary of Quantity Remarks:

A Quality Unit Price Analysis worksheet will appear:

B. Pay Item Type. **Always** select from the pick list QM (Material incentive);

Warning: Do NOT select QS or QR pay item types (roughness or smoothness incentives). Roughness quality incentives will be added as other incentives according to Section 2.3.8.2.

C. Incentive (%). Input the maximum pay factor. Values are inputted as percentages (1.05 pay factor would be inputted as 5%).

D. Unit Price Used. Unit price is calculated from the incentive %. Do not change ;

E. Remarks. Input applicable remarks to document data selection; and

F. Select a command to continue with the program.

The screenshot shows the 'Quality Unit Price' dialog box. At the top, there are three buttons: 'save and close', 'save and go to list', and 'close'. Below this is the 'Quality Unit Price Analysis' section. It contains the following fields and values:

- 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
- Pay Item Type*: QM (indicated by callout B)
- Unit Price: \$100.00
- Incentive (%): 5 (indicated by callout C)
- Incentive Unit Price: \$5.00
- Unit Price Used*: \$5.00 (indicated by callout D)
- Remarks: Price based on maximum 1.05 pay factor (indicated by callout E)

At the bottom of the dialog box, there are three buttons: 'save and close', 'save and go to list', and 'close' (indicated by callout F). A status bar at the bottom indicates '(maximum characters: 4000) 4000 remaining'.

💡 If the parent item unit price is updated, either edit the QUP item unit price or delete the QUP and redo.

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%

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:

Apply Search

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	
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.

Save & Close Save Delete Cancel Cancel & Close

Construction Estimate
 Schedule*: A

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

Item 15101 Mobilization
 Calculated*: 17.0% \$ 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

Construction Estimate Info
 Created: 06-18-2009 11:45:57
 By: Heidi Hirsbrunner
 Modified: 12-21-2011 11:29:19
 By: Heidi Hirsbrunner

Design EE Report
 EE Report (A) (Jun 24, 2009 03:26 pm)

2.3.8.2 Adding All Other Incentives

Use this method for adding all incentives, except material quality. This process is identical as adding normal pay items.

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

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 Total Price

Schedule A Complete Yes No

Unit Price

<input type="checkbox"/>	<input type="button" value="Add Temporary Pay Item"/>	<input type="button" value="Add Master Pay Items"/>	<input type="button" value="Update All Line Numbers"/>	<input type="button" value="Batch Options"/>	Items 1-6 of 6					
<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	\$526,300.00	ALL	\$526,300.00	yes	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	20101-0000	A	N	CLEARING AND GRUBBING	ACRE	\$28,000.00	56.0	\$1,568,000.00	yes	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<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	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/> <input type="button" value="QUP"/>
<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="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	55501-0000	A	N	STRUCTURAL STEEL	LPSM	\$575,000.00	ALL	\$575,000.00	yes	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<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	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>

Items 1-6 of 6



2.3.8.2.1 Roughness and Smoothness Quality Incentives

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

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 Total Price

Schedule A Complete Yes No

Unit Price

<input type="checkbox"/>	<input type="button" value="Add Temporary Pay Item"/>	<input type="button" value="Add Master Pay Items"/>	<input type="button" value="Update All Line Numbers"/>	<input type="button" value="Batch Options"/>	Items 1-6 of 6					
<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	\$526,300.00	ALL	\$526,300.00	yes	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	20101-0000	A	N	CLEARING AND GRUBBING	ACRE	\$28,000.00	56.0	\$1,568,000.00	yes	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<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	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/> <input type="button" value="QUP"/>
<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="button" value="BHUP"/> <input type="button" value="CBUP"/>
<input type="checkbox"/>	55501-0000	A	N	STRUCTURAL STEEL	LPSM	\$575,000.00	ALL	\$575,000.00	yes	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>
<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	<input type="button" value="BHUP"/> <input type="button" value="CBUP"/>

Items 1-6 of 6

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

- A. Supplemental Description. Enter supplemental description, including the pay item number associated with the incentive
- 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 roughness or smoothness formula. Do NOT use BHUP or CBUP for roughness or smoothness pay items
- H. Summary of Quantity Remarks. Leave blank. Roughness and smoothness incentive pay item will NOT appear on the Summary of Quantity
- I. Save & Close

The screenshot shows the EEBACS web application interface for editing a Design Pay Item. The form is titled 'Design Pay Item' and contains the following sections and fields:

- 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, Pay Item 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) [A]
- Schedule*:** A [B]
- Pay Item Type*:** DI [C]
- Contract Quantity*:** Yes No [D]
- Column Headings & Accounts:**
 - Column Headings:** [none] [E]
 - CONSTR Account*:**
 - Quantity*: 75 % [F]
 - Account*: CON01 PRA funding [F]
 - Quantity*: 25 % [F]
 - Account*: CON02 ARRA funding [F]
 - Column Heading Total: 100
- Unit Price:** \$6185.82 [G], BHUP, CBUP
- Remarks:** Used smoothness formula: .05 x lanemiles x 32,700 (paving 22.132 lanemiles) [G]
- Total Price:** \$36,185.82
- Summary of Quantity Remarks:** [H]
- Buttons:** Save & Close, Save, Delete, Cancel, Cancel & Close, Save & Previous, Save & Next, View Previous, View Next [I]

The DI pay item is now added to the Project Pay Item list. These roughness and smoothness 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"/>	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	\$526,300.00	ALL	\$526,300.00	yes	<input type="button" value="BHUP"/>	<input type="button" value="CBUP"/>
<input type="checkbox"/>	20101-0000	A	N	CLEARING AND GRUBBING	ACRE	\$28,000.00	56.0	\$1,568,000.00	yes	<input type="button" value="BHUP"/>	<input type="button" value="CBUP"/>
<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	<input type="button" value="BHUP"/>	<input type="button" value="CBUP"/> <input type="button" value="QUP"/>
<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="button" value="BHUP"/>	<input type="button" value="CBUP"/>
<input type="checkbox"/>	40199-0001	A	DI	INCENTIVE, SMOOTHNESS (for 40101-0100 pay item)	LPSM	\$36,185.82	ALL	\$36,185.82	yes	<input type="button" value="BHUP"/>	<input type="button" value="CBUP"/>
<input type="checkbox"/>	55501-0000	A	N	STRUCTURAL STEEL	LPSM	\$575,000.00	ALL	\$575,000.00	yes	<input type="button" value="BHUP"/>	<input type="button" value="CBUP"/>
<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	<input type="button" value="BHUP"/>	<input type="button" value="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 roughness and smoothness quality incentives:

- J. Roughness and Smoothness items will appear as "Other Incentives."
- K. In the interim, Roughness and Smoothness 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*: \$ 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

Estimated Quality Material Incentive:

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

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

Other Estimated Incentive: **J**

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

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
					\$575,000.00	

2.3.8.2.2 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. This pay item is intended to allow added contingencies for undefined work items and anticipated additional design elements at the early phases of design (see local 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 Design Pay Item. The interface is annotated with letters A through H pointing to specific fields and buttons:

- A:** Points to the Supplemental Description field, which contains "(Early completion)".
- B:** Points to the Schedule field, which has "A" selected.
- C:** Points to the Pay Item Type dropdown, which is set to "DI".
- D:** Points to the Column Heading dropdown, which is set to "[none]".
- E:** Points to the Quantity and Account fields in the Column Headings & Accounts section. The Quantity is "20" and the Account is "CON01 PRA funding".
- F:** Points to the Unit Price field, which is set to "1500.00".
- G:** Points to the Summary of Quantity Remarks field, which is empty.
- H:** Points to the Save & Close button at the bottom of the screen.

The summary table at the bottom of the screen shows the following data:

Column Headings	Quantity	Price
Column Headings	20	\$30,000.00
Accounts		
CON01	20	\$30,000.00

Additional information from the interface includes: Pay Item #: 99903-0000, Pay Item Description: PERFORMANCE INCENTIVES, Pay Item Type: DI, Pay Unit (U.S. Units): DAY, and Unit Price: 1500.00. The total price is \$30,000.00.

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:

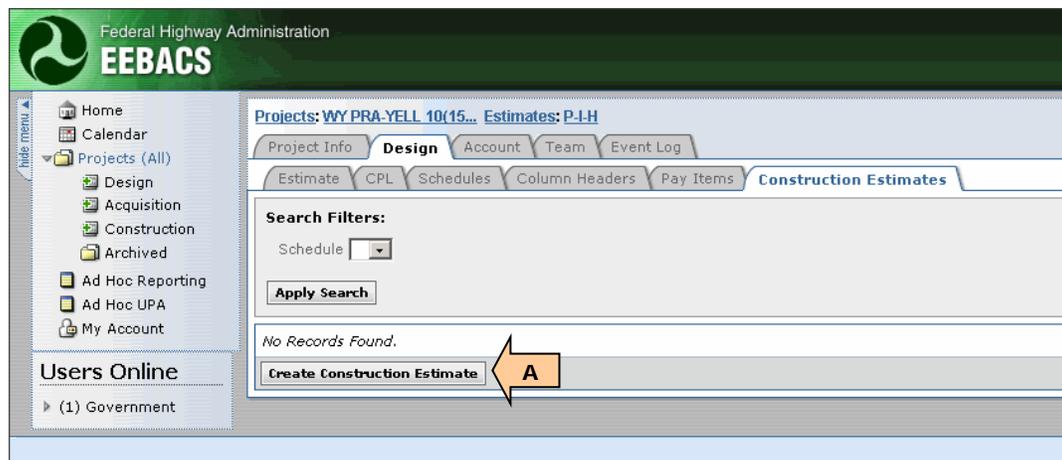
Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
40199-0001	INCENTIVE, SMOOTHNESS (for 40101-0100 pay item)	All	LPSM	\$36,185.82	\$36,185.82
99903-0000	PERFORMANCE INCENTIVES (Early completion)	20	DAY	\$1,500.00	\$30,000.00
					\$66,185.82

2.3.9 Construction Estimate



Develop a construction estimate for every schedule created. The Construction Estimate tab:

- Totals all pay items (except mobilization);
 - Calculates mobilization by either a percentage of the total for other items of work, or from 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.



- B. 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;
 - C. 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;
 - D. 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 C & D:** Once the "Used" fields have been have saved, if this Estimate page is updated, either the "Used" value in C or D must be hand-entered for the values to be recalculated.
- E. Input relevant remarks that describes unique aspects of the calculations; and
 - F. Select a command to continue with the program.

The screenshot displays the EEBACS software interface for a construction estimate. The top navigation bar includes 'Federal Highway Administration', 'EEBACS', and the date 'Thursday, December 22, 2011'. The main window shows the 'Construction Estimates' section for project 'NE DRA TEST 4044'. A sidebar on the right contains 'Construction Estimate Info' with creation and modification dates and user names.

Key fields and tables are highlighted with red arrows:

- B:** Points to the 'Schedule' dropdown menu.
- C:** Points to the 'Used*' field for 'Item 15101 Mobilization', which is currently set to '\$721320.00'.
- D:** Points to the 'Used*' field for 'Estimate Total of Bid Items', which is currently set to '\$5000000.00'.
- E:** Points to the 'Remarks' text area.
- F:** Points to the 'Save & Close' button at the bottom left.

Two tables are visible in the interface:

Pay Item #	Description	Quantity	U.S. Pay Units	Unit Price	Total Price
40101-0200	AGGREGATE BASE (Quality)	6,056	Q_TON	\$1.50	\$9,084.00
40101-0400	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
					\$57,484.00

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	\$9,821.00	\$9,821.00
99904-0000	PARTNERING	All	LPSM	\$5,000.00	\$5,000.00
					\$44,398.60

- G. 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;
- H. Reports may be generated from this screen. See Section 2.3.9.1 for more details;
- I. Incentive values are automatically populated;
- Note:** Due to the interim process for adding roughness and smoothness quality incentives, these incentives will be shown as "Other Estimated Incentives."
- J. Items designated as contract quantity are listed; and
- K. Select a command to continue with the program.

Construction Estimate

Schedule*:

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

Item 15101 Mobilization

Calculated*: \$ 651,252.00

Used*:

Estimate Total of Bid Items

Calculated: \$4,992,932.00

Used*:

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
					\$57,484.00

Estimated Quality Smoothness Incentive:

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
					\$44,398.60

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
					\$63,000.00

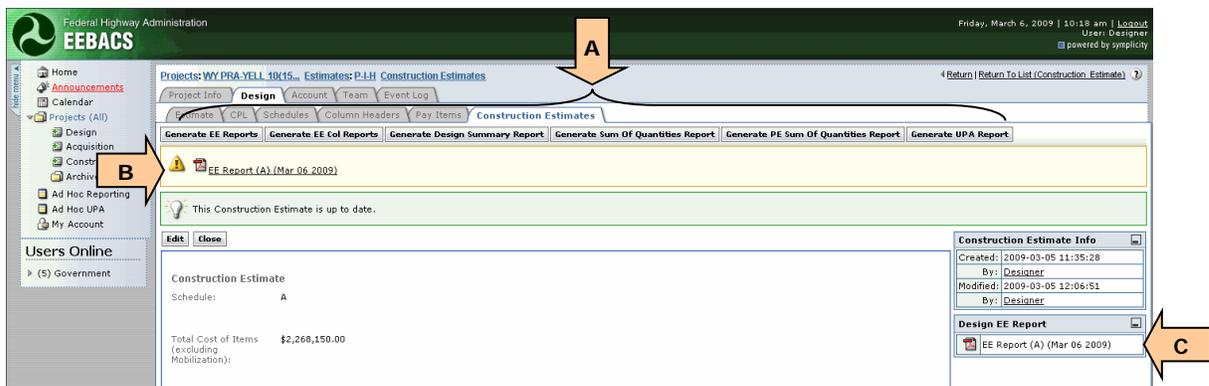
2.3.9.1 Reports

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

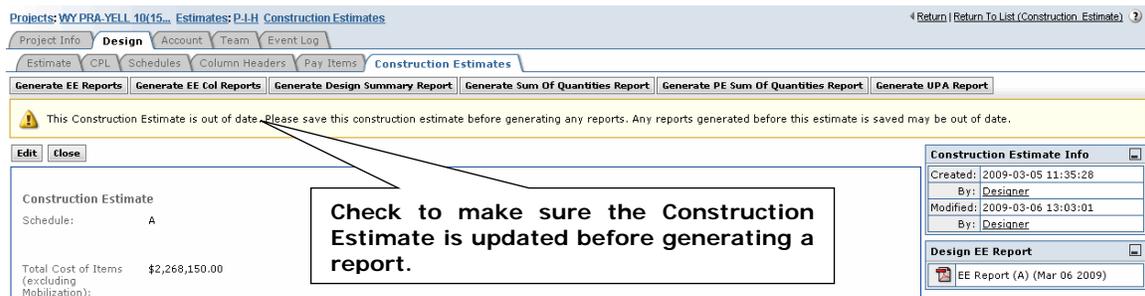
Reports for the Design module can only be generated from the Construction Estimate tab. It is important for reports that the Construction Estimate be up-to-date.

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 2.3.2).

- 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.



2.3.9.1.1 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>
Estimated Quality Material Incentive: \$57,484.00						
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

2.3.9.1.2 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
Project Name: Rough Mountain Highway	PM: Dan VanGilder	Summary
FLMA No: Pkge #54545	Designer: Spencer Beale	Schedule Type: Base
State: NE County: Buffalo		Milestone: 100% PS&E
Federal Land: Designer Refuge		Date Complete: In Progress
Schedule Construction Type: 40202 Overlay <=		FP: 03 US Customary
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>
Estimated Quality Material Incentive: \$57,484.00					
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

Total Estimated Incentives:	\$57,484.00
Total Estimated Construction Cost:	\$4,309,164.00

Total estimated construction cost for column only.

Summary of Quantity column heading (based on plan sections)

EEBACS User Guide 1.0

2-63

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

2.3.9.1.3 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)	Pklot 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

2.3.9.1.4 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 import the PDF or XLS files into the plan set. The PDF format can be used to review the data, prior to importing the CSV format into the plans. 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 Typical Section	D Plan & Profile	E Tabulation of Drainage	F Temporary Traffic Control	G Permanent Traffic Control	0	0	0	0	0	0	0	0			0
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	
A0060	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, +0.3 MILLION ESAL	TON	10,000														10,000	
A0160	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-I-H, Date Completed: In Progress, Report Date: 03/06/09

2.3.9.1.5 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).

Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description													Estimated Quantities	Remarks And/Or Determination of Estimated Quantity	
				C Typical Section	D Plan & Profile	E Tabulation of Drainage	F Temporary Traffic Control	G Permanent Traffic Control	0	0	0	0	0	0	0	0			0
A0010	15101-0000	MOBILIZATION	LPSM															ALL	
		Acct CC001																	
A0020	15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM															ALL	Quantity based on 2.3 tons per cubic meter.
		Acct CC001																	
A0030	15301-0010	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM															ALL	
		Acct CC001																	
A0040	15401-0000	CONTRACTOR TESTING	LPSM															ALL	
		Acct CC001																	
A0050	15501-0000	CONSTRUCTION SCHEDULE	LPSM															ALL	
		Acct CC001																	
A0060	15705-0100	SOIL EROSION CONTROL SILT FENCE	LNFT		3,000													3,000	
		Acct CC001			1,000														
A0070	15705-0500	SOIL EROSION CONTROL TEMPORARY CULVERT PIPE	LNFT		500													500	
		Acct CC001			500														
A0080	20101-0000	CLEARING AND GRUBBING	ACRE		10.0													10.0	Contract Quantity
		Acct CC001			4.8														
A0090	20220-1000	REMOVAL, INDIVIDUAL TREE	EACH		20													20	
		Acct CC001			20														
A0100	20401-0000	ROADWAY EXCAVATION	CUYD				40,000											40,000	
		Acct CC001					40,000												
A0110	30101-2000	AGGREGATE BASE GRADING D	TON	20,000														20,000	
		Acct CC001		20,000															

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

2.3.9.1.6 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	
A		Project No: WY PRA-YELL 10(15) Project Name: Grand Loop Road (Madison to Norris) FLMA No:			Schedule(s): A Schedule Type(s): Alternate			Milestone: P-I-H Date Complete: In Progress						
		Pay Item No. 15201-0000		Pay Item Type N	Description CONSTRUCTION SURVEY AND STAKING			Quantity ALL	Unit LPSM	Unit Price Used \$240,000.00		B Amount 6,000.00		
C		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 Quantities: ALL Award Dates: From 2003 to 2009 States: WY													Inflation Index: Oregon Highway CCI Schedule Construction Type: Terrain: 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).

- E. Pay item data including unit price;
- F. Values used in determining the unit price;
- G. Filters selected in determining the unit price; and
- H. Summary of values used in determining the unit price.

Cost Based Unit Price									
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:									
Report Date: 03/06/09 12 out of 23									
E	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.									
G	Equipment								
Type	Quantity	No. Units	Unit	Cost/Unit	Total	Overhead & Profit	Total Cost	Remarks	
No Equipment Costs Found									
Labor									
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		
H									

Example of Non-BHUP:

Bid History Unit Price Analysis						
Project No: PRA YELL 10(15)			Schedule(s): A		Milestone: Signoff	
Project Name: Grand Loop Road (Madison to Norris, Segment B)			Schedule Type(s): Base		Date Complete: In Progress	
FLMA No: 54337 101/43943						
Report Date: 06/16/09 12 out of 24						
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.						

2.3.9.2 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; follow the Division procedures to promote the project to Acquisitions to continue the EEBACS process. A promoted project 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 displays the EEBACS web application interface. The top navigation bar includes the EEBACS logo, the text 'Federal Highway Administration', and the date 'Thursday, March 5, 2009 | 4:22 pm | Logout'. The main content area shows a project summary for 'WY PRA YELL 10/15 - Estimates: P.H.' with tabs for 'Project Info', 'Design', 'Account', 'Team', and 'Event Log'. Below this, there are tabs for 'Estimate', 'CPL', 'Schedules', 'Column Headers', 'Pay Items', and 'Construction Estimates'. A search filter section is visible, followed by a table with the following data:

Create Construction Estimate	Promote To Acquisition	Items 1-1 of 1
Schedule Letter		
A	\$2,495,000.00	\$262,000.00
		\$2,757,000.00
		Up To Date

An orange arrow labeled 'A' points to the 'Promote To Acquisition' button in the table.

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

2.4 Design Module Technical Support

2.4.1 Consultants

Contact your COTR for assistance with this program.

2.4.2 Government personnel

To set up a user account, fill out the appropriate EEBACS User Account form and email according to the instructions in the form.

For assistance in using or trouble-shooting this module contact the Division Design component lead or EEBACS Administrator shown in [Section 1.12](#).

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