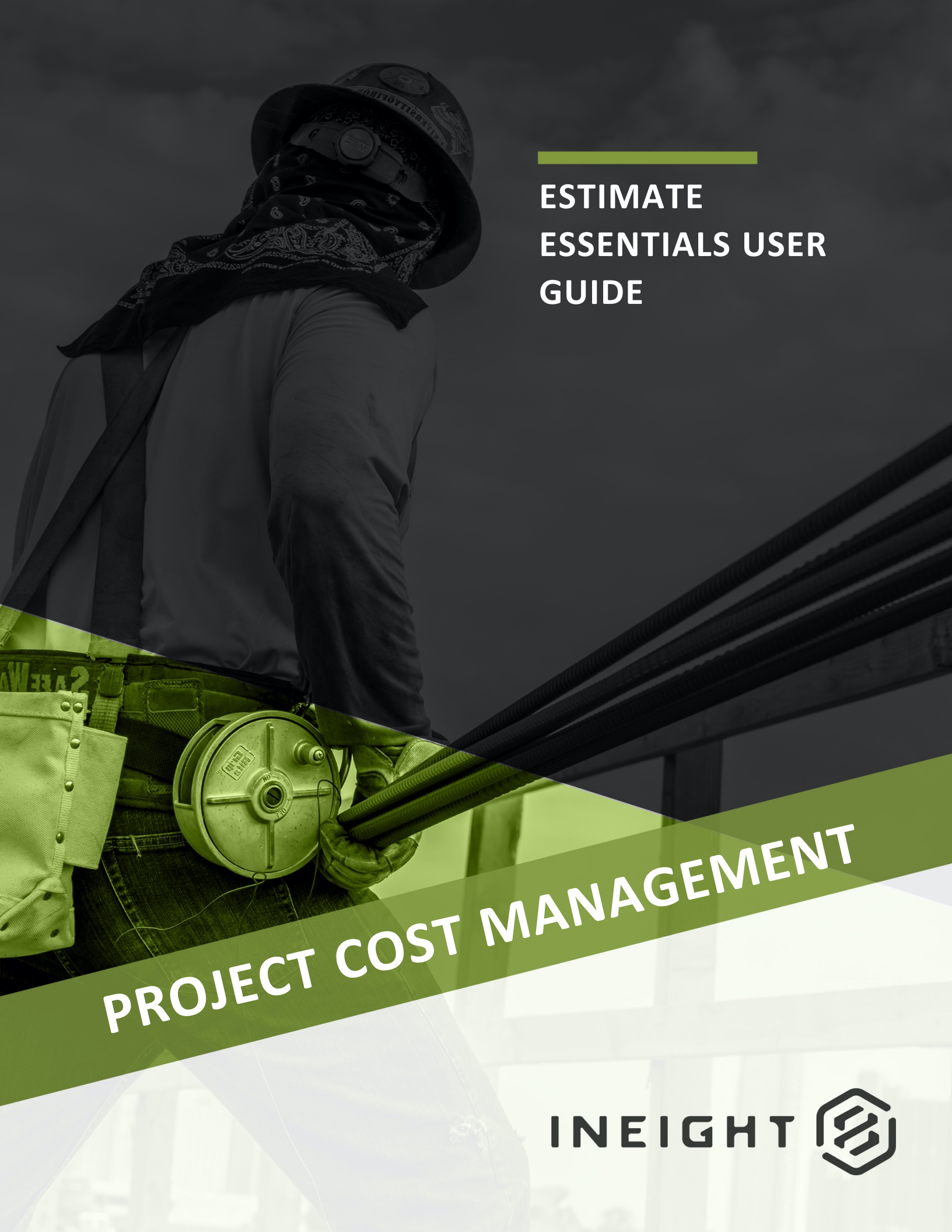

ESTIMATE ESSENTIALS USER GUIDE

PROJECT COST MANAGEMENT

INEIGHT

Release 22.10
Last Updated: 13 February 2023

CONTENTS

STEP-BY-STEP PROCEDURES

EXERCISES

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INTRODUCTION

Course Description

This course covers the concepts and functionality you need to know in order to use the InEight Estimate software successfully. As a result, you will be able to build cost estimates and bid proposals with precision and efficiency.

Course Objectives

As a result of this course, you will be able to use the InEight Estimate software to:

- Construct and modify cost estimates
- Calculate profit and finalize bid proposals

How to Use this Manual

This training manual serves as the working guide during the *E101 Essentials of Project Modeling and Estimating* instructor-led course. The first seven lessons of this document follow a natural progression of putting an estimate together, from set up of a project to finalization of a bid. The remaining lessons cover additional functionality that will help you build and review your project estimate more effectively.

Lessons

The following lessons are covered in this course:

Course Lessons	
Lesson	Topic
Lesson 1	Estimating Core Concepts
Lesson 2	General Navigation
Lesson 3	Library Setup
Lesson 4	Project Setup
Lesson 5	Estimate Direct Costs
Lesson 6	Estimate Indirect Costs
Lesson 7	Finalize the Estimate

Lesson Format

This manual is designed to be a “hands on” learning guide. As such, each lesson is organized into sections:

Section	Description
Objectives	Specify what you will learn in each lesson.
Topics	Organize the subject matter, with explanations of key concepts and terms.
Step by Steps	Walk you through the “mechanics” of how to perform specific functions in the software. For each step by step, you will use the Training Job that comes pre-loaded in the InEight Estimate Estimating software.
Exercises	Allow you to practice and reinforce what you learn. For each exercise, you will use the Training Job that comes pre-loaded in the InEight Estimate Estimating software.
Review	Asks you questions to check what you have learned within each lesson.

Call-Outs

Throughout the document, you will also find important call-out banners.

TIP	Tips are for important notes and information you want to remember.

NOTE Notes are for critical information you need to know.

Ongoing Use

This manual is also designed to be a comprehensive reference guide you can use outside of the classroom and revisit as needed. Each lesson is compartmentalized so that you can refer back to each lesson as needed.

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LESSON 1 – ESTIMATING CORE CONCEPTS

Lesson Duration: 30 Minutes

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the estimating process in InEight Estimate
- Explain key terms and concepts

Lesson Topics

1.1 OVERVIEW OF THE ESTIMATING PROCESS

The estimating process typically progresses through the following five steps. If you are an Owner you may not take part in all five of these steps, but may instead do a few in an iterative process as you progress through stage gate approval phases.

1. Enter project details.

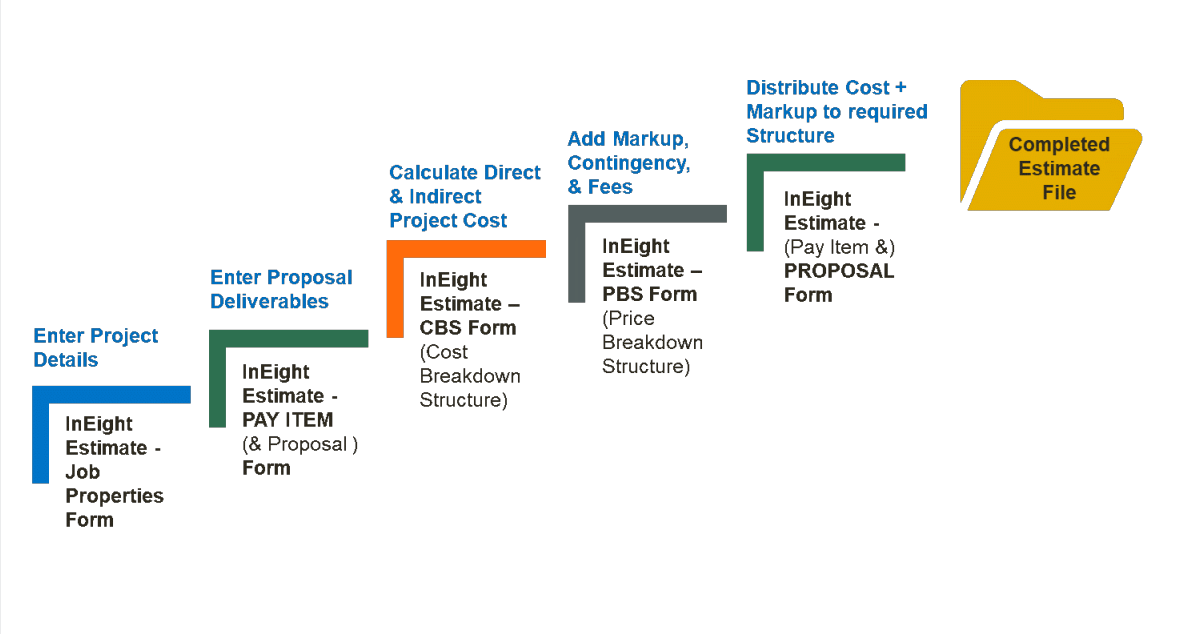
2. Enter proposal deliverables.

3. Calculate Direct & Indirect Project Cost.

4. Add Markup, Contingency, & Fees.

5. Distribute Cost + Markup to required structure.

The below table displays how these five steps correspond with specific forms in InEight Estimate:



Note the forms used in InEight Estimate to accomplish the steps above:

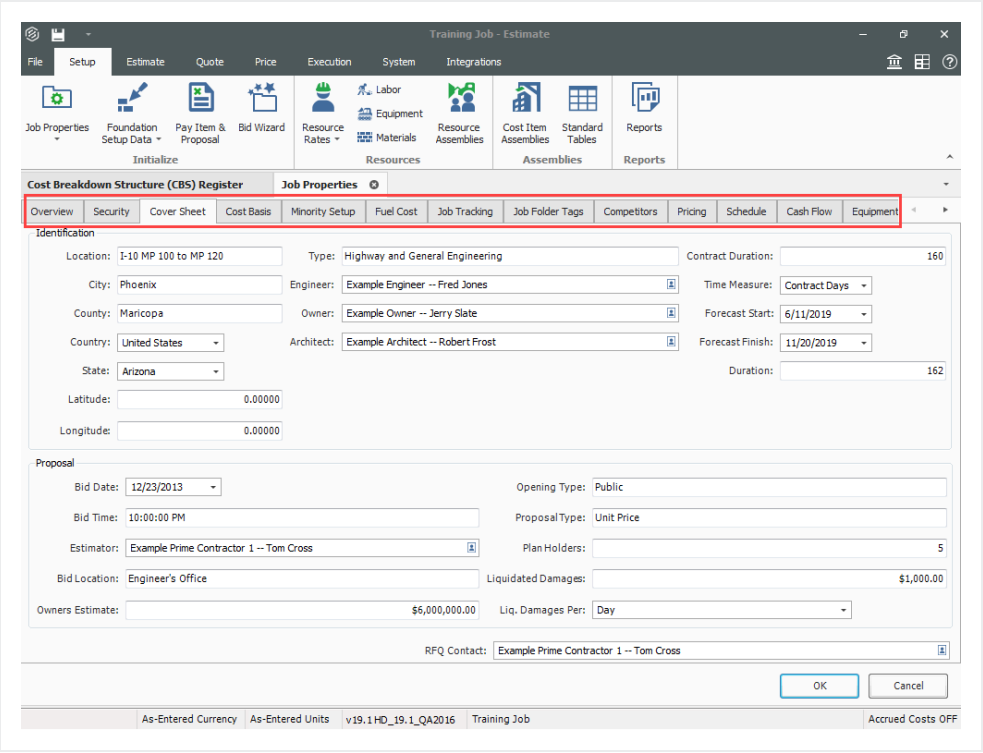
- Job Properties
- Pay Item & Proposal
- CBS (Cost Breakdown Structure)
- PBS (Price Breakdown Structure)

The rest of this section walks you through an overview of each step in the process and its corresponding form in InEight Estimate.

Step 1 – Enter Project Details

When you decide to estimate a new project, the first step is to create a new estimate and set it up with the general project details. In InEight Estimate, you'll enter basic information and project specific settings in the Job Properties form from the Setup tab.

The Job Properties form is organized into tabs to help you keep track of all the basic information and settings for the project. It begins with the Overview tab. You will move from left to right entering your project specific information and adjusting any settings that differ from the default.

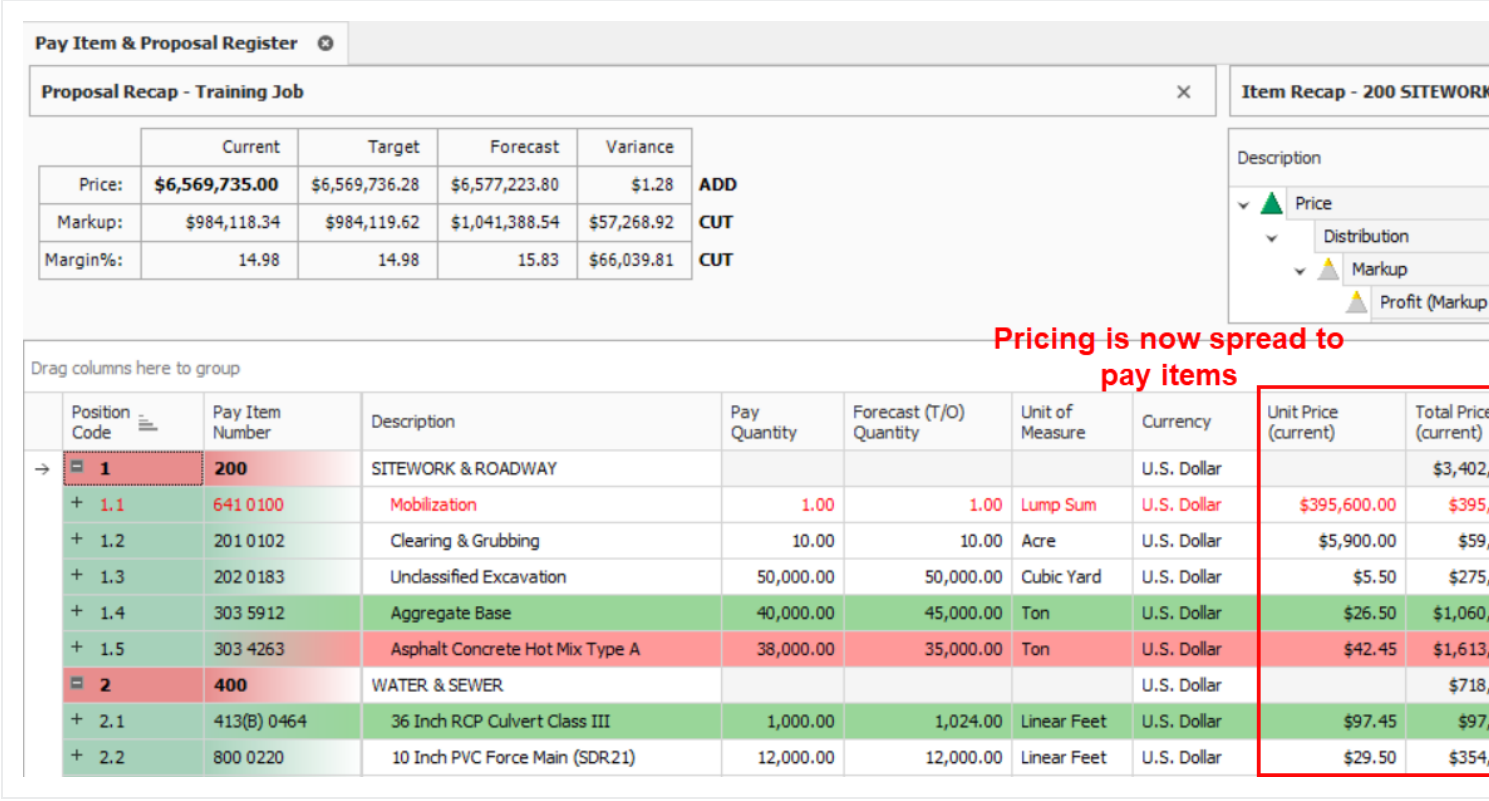


Step 2 – Enter Proposal Deliverables

For Contractors who are submitting a proposal to a client, this step enables you to enter the client provided deliverables clients are requesting pricing for. Most Owners will skip this step unless there is a need to track various funding sources or prepare for internal or external company billing.

In InEight Estimate this list of items is recorded in the Pay Item & Proposal Register on the Setup tab.

• Notice that your pay items have no pricing when first entered because you have yet to figure out costs. You will come back to this form later in the process to distribute your costs and markup.



	Current	Target	Forecast	Variance	
Price:	$6,569,735.00	$6,569,736.28	$6,577,223.80	$1.28	ADD
Markup:	$984,118.34	$984,119.62	$1,041,388.54	$57,268.92	CUT
Margin%:	14.98	14.98	15.83	$66,039.81	CUT

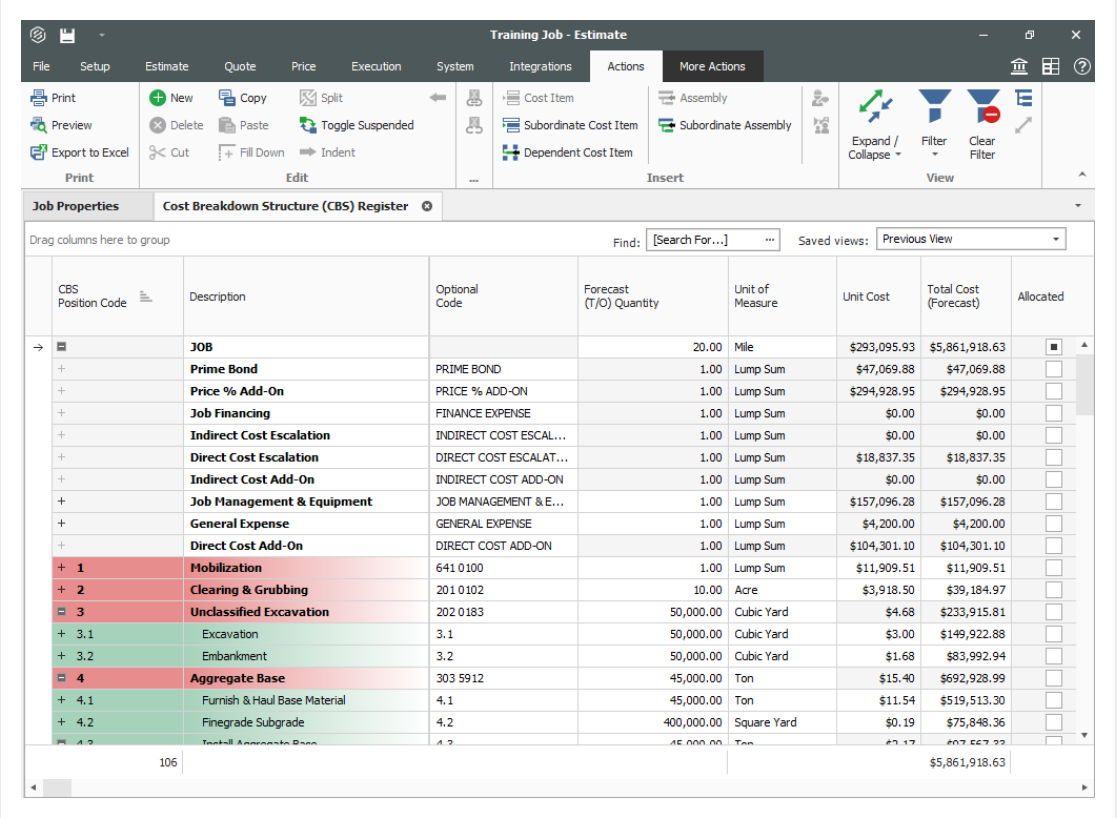
Position Code	Pay Item Number	Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Measure	Currency	Unit Price (current)	Total Price (current)
1	200	SITEWORK & ROADWAY				U.S. Dollar		$3,402,
1.1	641 0100	Mobilization	1.00	1.00	Lump Sum	U.S. Dollar	$395,600.00	$395,
1.2	201 0102	Clearing & Grubbing	10.00	10.00	Acre	U.S. Dollar	$5,900.00	$59,
1.3	202 0183	Unclassified Excavation	50,000.00	50,000.00	Cubic Yard	U.S. Dollar	$5.50	$275,
1.4	303 5912	Aggregate Base	40,000.00	45,000.00	Ton	U.S. Dollar	$26.50	$1,060,
1.5	303 4263	Asphalt Concrete Hot Mix Type A	38,000.00	35,000.00	Ton	U.S. Dollar	$42.45	$1,613,
2	400	WATER & SEWER				U.S. Dollar		$718,
2.1	413(B) 0464	36 Inch RCP Culvert Class III	1,000.00	1,024.00	Linear Feet	U.S. Dollar	$97.45	$97,
2.2	800 0220	10 Inch PVC Force Main (SDR21)	12,000.00	12,000.00	Linear Feet	U.S. Dollar	$29.50	$354,

Step 3 – Calculate Direct & Indirect Project Cost

Once you've set up your estimate, you will perform take-offs and cost analysis to determine the total estimated cost to complete the entire scope of work.

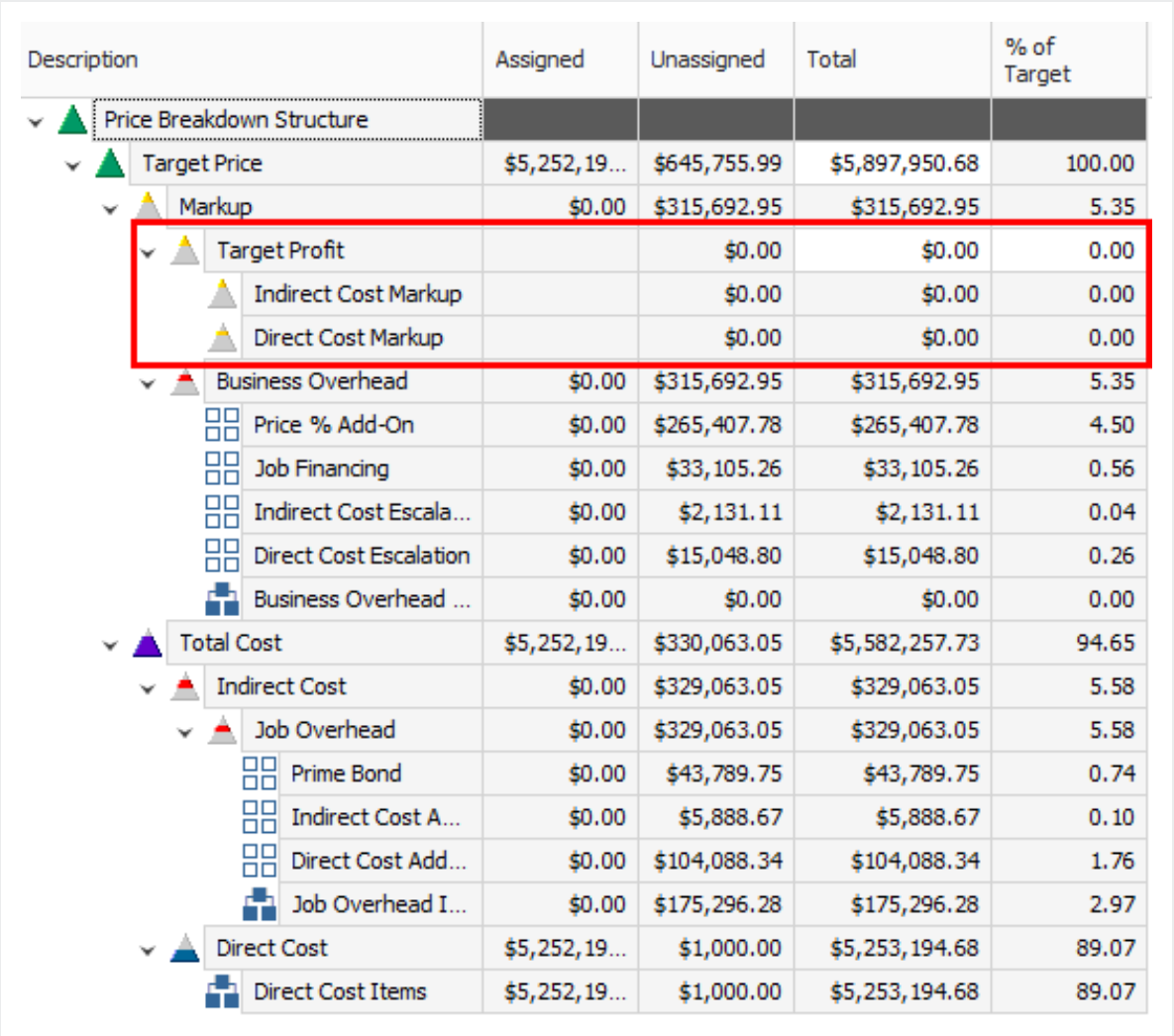
The **Cost Breakdown Structure (CBS**) **Register** is the main form where you will do your cost estimating.

- It is the hierarchy of work activities that make up the estimate
- Each row in the CBS represents a work activity and is called a cost item



Step 4 – Add Markup, Contingency, & Fees

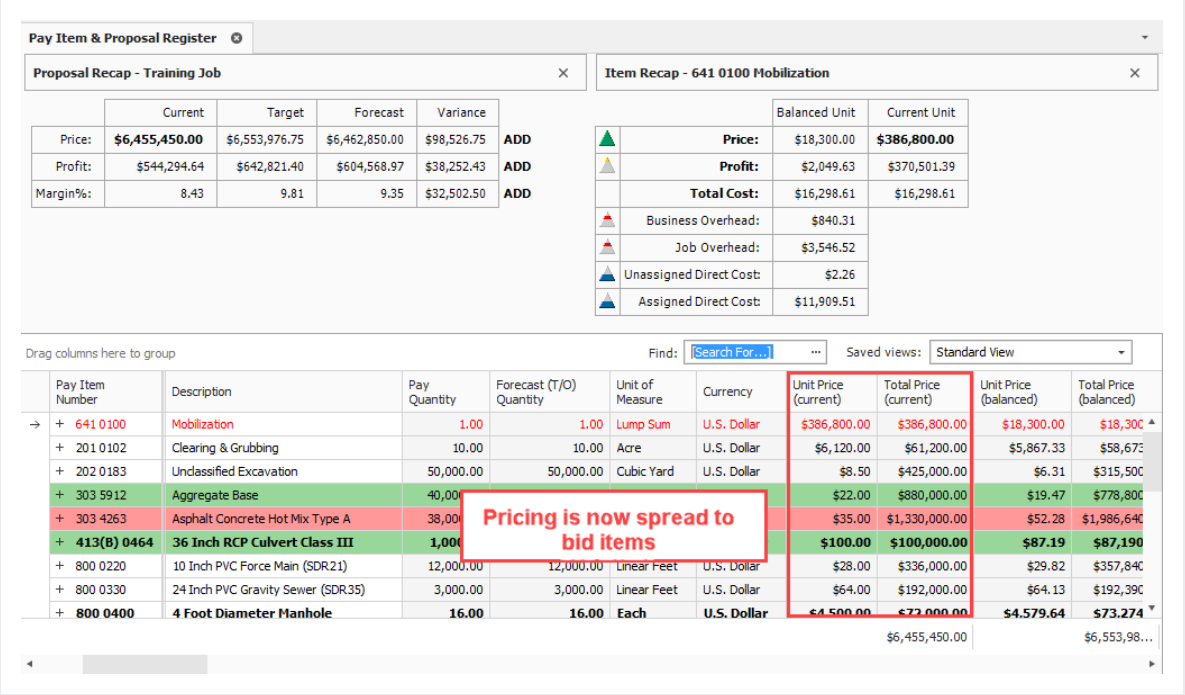
Once you have estimated all project costs, you may need to add markup, contingency or other fees and define the job's profit in the Price Breakdown Structure form.



Description	Assigned	Unassigned	Total	% of Target
Price Breakdown Structure				
Target Price	$5,252,19...	$645,755.99	$5,897,950.68	100.00
Markup	$0.00	$315,692.95	$315,692.95	5.35
Target Profit		$0.00	$0.00	0.00
Indirect Cost Markup		$0.00	$0.00	0.00
Direct Cost Markup		$0.00	$0.00	0.00
Business Overhead	$0.00	$315,692.95	$315,692.95	5.35
Price % Add-On	$0.00	$265,407.78	$265,407.78	4.50
Job Financing	$0.00	$33,105.26	$33,105.26	0.56
Indirect Cost Escala...	$0.00	$2,131.11	$2,131.11	0.04
Direct Cost Escalation	$0.00	$15,048.80	$15,048.80	0.26
Business Overhead ...	$0.00	$0.00	$0.00	0.00
Total Cost	$5,252,19...	$330,063.05	$5,582,257.73	94.65
Indirect Cost	$0.00	$329,063.05	$329,063.05	5.58
Job Overhead	$0.00	$329,063.05	$329,063.05	5.58
Prime Bond	$0.00	$43,789.75	$43,789.75	0.74
Indirect Cost A...	$0.00	$5,888.67	$5,888.67	0.10
Direct Cost Add...	$0.00	$104,088.34	$104,088.34	1.76
Job Overhead I...	$0.00	$175,296.28	$175,296.28	2.97
Direct Cost	$5,252,19...	$1,000.00	$5,253,194.68	89.07
Direct Cost Items	$5,252,19...	$1,000.00	$5,253,194.68	89.07

Step 5 – Distribute Cost + Markup to required Structure

You now have a target price or total estimated value that you can spread to your required project deliverables, back in the Pay Item & Proposal form. InEight Estimate has tools within this form to help automatically distribute your cost, overhead and all markups to the listed items.



1.2 KEY CONCEPTS AND TERMS

To help you get started in InEight Estimate, you should know a few key terms:

- Job Folder
- Library
- Form
- Cost Item
- Pay Item
- Resource
- Assembly

1.2.1 Job Folder

Job folders hold all the information for an individual project estimate. It is possible to import master data into a job folder, but when you work in a job folder it is independent, meaning any activity performed in that folder will not affect any other jobs and will not affect the library.

TIP When moving back and forth between jobs, make sure to always double-check that you are in the right job.

1.2.2 Library

The Library is a storehouse for master data, such as:

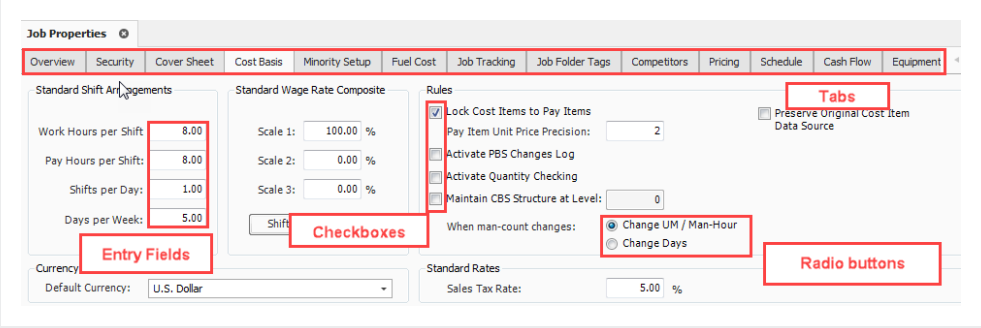
- Labor, equipment, and material unit cost rates
- Standard account codes
- Units of measure

When you create a new job from scratch, default data and settings copy from the Library into your new job folder, except for the resource rates. Multiple list of resource rates can be maintained in the library so you must select which rates to populate a new estimate with. Four tag fields are available to filter the resource rates you bring into an estimate from the master library. For example, you may select a subset of your labor rates based on the geographical location of the project.

1.2.3 Form

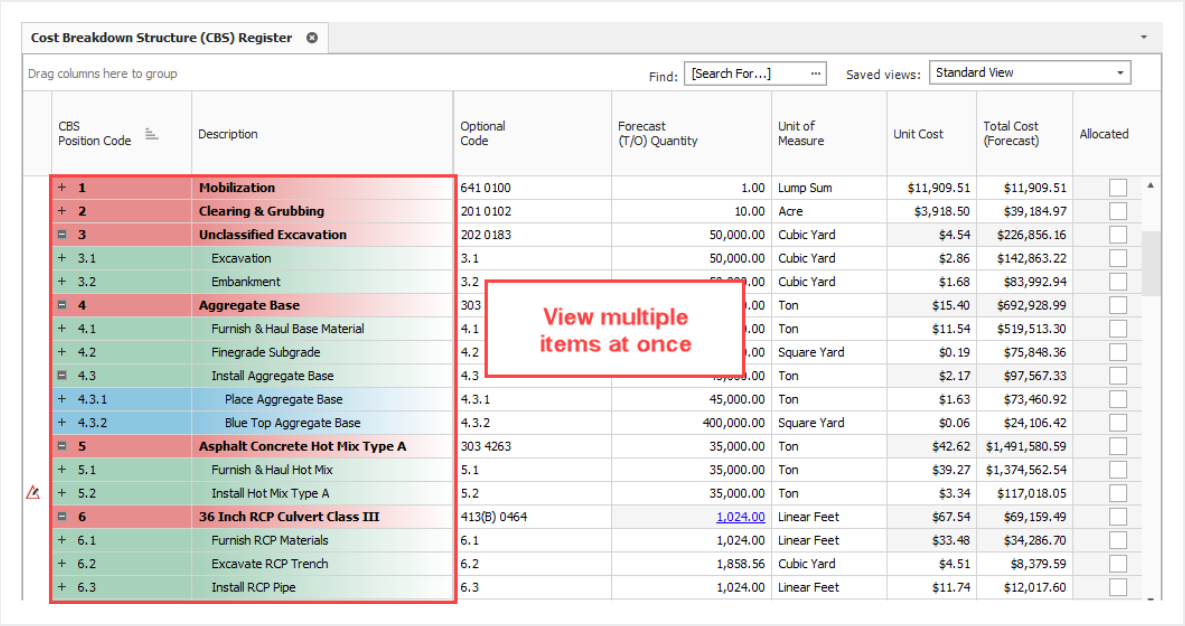
Any screen you open in InEight Estimate is considered a Form. There are three types of forms: Standard, Register, and Record forms.

Standard Forms resemble typical data entry forms with fields available to fill in key project information. They also may contain radio buttons or checkboxes to define settings for the job.



TIP InEight Estimate uses tabs to group and organize entry fields and settings in a logical way, so that the information is easy to access.

Register Forms have a grid format of rows and columns, giving it a spreadsheet look and feel. Register forms allow you to see information for multiple items at once. The Cost Breakdown Structure (CBS) Register is an example of a register form.

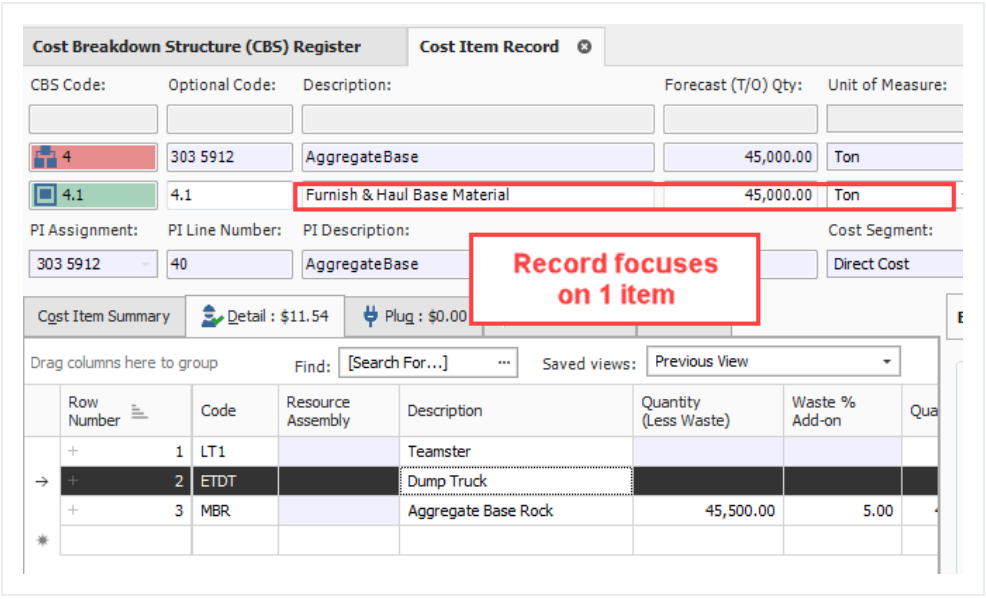


CBS Position Code	Description	Optional Code	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Allocated
1	**Mobilization**	641 0100	1.00	Lump Sum	$11,909.51	$11,909.51	
2	**Clearing & Grubbing**	201 0102	10.00	Acre	$3,918.50	$39,184.97	
3	**Unclassified Excavation**	202 0183	50,000.00	Cubic Yard	$4.54	$226,856.16	
3.1	Excavation	3.1	50,000.00	Cubic Yard	$2.86	$142,863.22	
3.2	Embankment	3.2	[illegible].00	Cubic Yard	$1.68	$83,992.94	
4	**Aggregate Base**	303	[illegible].00	Ton	$15.40	$692,928.99	
4.1	Furnish & Haul Base Material	4.1	[illegible].00	Ton	$11.54	$519,513.30	
4.2	Finegrade Subgrade	4.2	[illegible].00	Square Yard	$0.19	$75,848.36	
4.3	Install Aggregate Base	4.3	[illegible].00	Ton	$2.17	$97,567.33	
4.3.1	Place Aggregate Base	4.3.1	45,000.00	Ton	$1.63	$73,460.92	
4.3.2	Blue Top Aggregate Base	4.3.2	400,000.00	Square Yard	$0.06	$24,106.42	
5	**Asphalt Concrete Hot Mix Type A**	303 4263	35,000.00	Ton	$42.62	$1,491,580.59	
5.1	Furnish & Haul Hot Mix	5.1	35,000.00	Ton	$39.27	$1,374,562.54	
5.2	Install Hot Mix Type A	5.2	35,000.00	Ton	$3.34	$117,018.05	
6	**36 Inch RCP Culvert Class III**	413(B) 0464	1,024.00	Linear Feet	$67.54	$69,159.49	
6.1	Furnish RCP Materials	6.1	1,024.00	Linear Feet	$33.48	$34,286.70	
6.2	Excavate RCP Trench	6.2	1,858.56	Cubic Yard	$4.51	$8,379.59	
6.3	Install RCP Pipe	6.3	1,024.00	Linear Feet	$11.74	$12,017.60	

In a register form, you can open a **Record** for individual items you want to drill into.

TIP The Tab key is the best way to move among fields in InEight Estimate (instead of the Enter key).

The below figure displays a Cost Item Record accessed by double clicking on that item on the Cost Breakdown Structure (CBS) Register.



1.2.4 Cost Item

Cost items are the individual cost-related activities that make up the project. Cost items are organized into a hierarchy in the Cost Breakdown Structure (CBS) Register. Each row in the CBS is considered a cost item.

CBS Position Code	Description	Optional Code	Forecast (T/O) Quantity	Unit of Measure	Unit Cost
+ **1**	**Mobilization**	641 0100	1.00	Lump Sum	$11,909.51
+ **2**	**Clearing & Grubbing**	201 0102	10.00	Acre	$3,918.50
− **3**	**Unclassified Excavation**	202 0183	50,000.00	Cubic Yard	$4.68
+ 3.1	Excavation	3.1	50,000.00	Cubic Yard	$3.00
+ 3.2	Embankment	3.2	50,000.00	Cubic Yard	$1.68
− **4**	**Aggregate Base**	303 5912	45,000.00	Ton	$15.40
+ 4.1	Furnish & Haul Base Material	4.1	45,000.00	Ton	$11.54
+ 4.2	Finegrade Subgrade	4.2	400,000.00	Square Yard	$0.19
− 4.3	Install Aggregate Base	4.3	45,000.00	Ton	$2.17
+ 4.3.1	Place Aggregate Base	4.3.1	45,000.00	Ton	$1.63
+ 4.3.2	Blue Top Aggregate Base	4.3.2	400,000.00	Square Yard	$0.06

1.2.5 Pay Item

Pay items typically represent the owner required deliverables a contractor must submit pricing for. Pay items are used to distribute the cost calculated in the Cost Breakdown Structure, with all markup, including any fees or contingencies calculated in the Price Breakdown Structure. This allows the total estimate value to be distributed to a structure that is different than the CBS. Pay Items are

predominantly used by contractors to prepare a bid sheet. Owners may use pay items to identify funding sources or for various reporting needs.

Position Code	Pay Item Number	Description	Pay Quantity	Forecast (T/O) Quantity
1	**200**	SITEWORK & ROADWAY		
1.1	641 0100	Mobilization	1.00	
1.2	201 0102	Clearing & Grubbing	10.00	
1.3	202 0183	Unclassified Excavation	50,000.00	50,0
1.4	303 5912	Aggregate Base	40,000.00	45,0
1.5	303 4263	Asphalt Concrete Hot Mix Type A	38,000.00	35,0
2	**400**	WATER & SEWER		
2.1	413(B) 0464	36 Inch RCP Culvert Class III	1,000.00	1,0
2.2	800 0220	10 Inch PVC Force Main (SDR21)	12,000.00	12,0

1.2.6 Resource

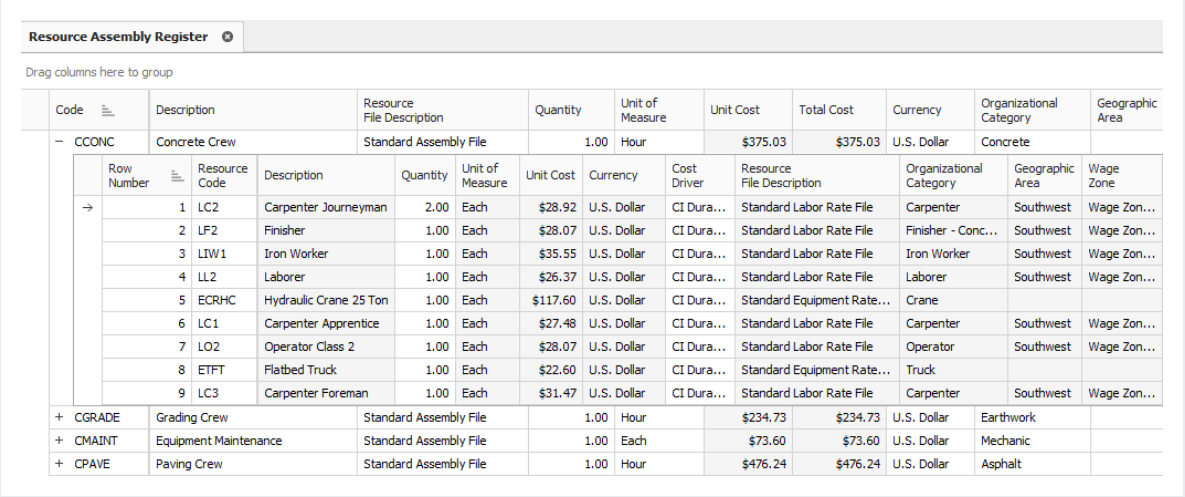
Resources are the building blocks of a detailed cost estimate.

Resources are the people, equipment, material, and supplies needed to complete the project. Resources are employed to cost items to develop an estimate, and are organized into seven categories or types:

1. Labor
2. Construction Equipment
3. Rented Construction Equipment
4. Installed Equipment
5. Installed Materials
6. Supplies
7. Unique

1.2.7 Resource Assembly

A **Resource Assembly** is a group of resources that are often used together. For example, for civil work, you may group together an operator foreman, operator, and laborer, along with a loader and excavator. When estimating, you can employ this assembly which includes all of the pre-selected resources.



Resource Assembly Register

Drag columns here to group

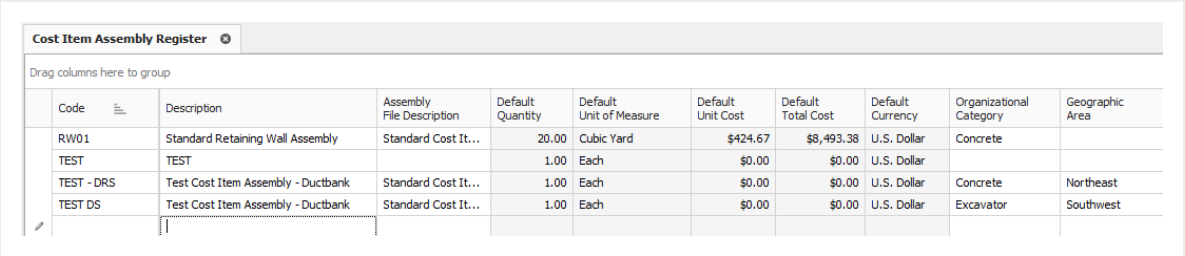
Code	Description	Resource File Description	Quantity	Unit of Measure	Unit Cost	Total Cost	Currency	Organizational Category	Geographic Area
− CCONC	Concrete Crew	Standard Assembly File	1.00	Hour	$375.03	$375.03	U.S. Dollar	Concrete	

Row Number	Resource Code	Description	Quantity	Unit of Measure	Unit Cost	Currency	Cost Driver	Resource File Description	Organizational Category	Geographic Area	Wage Zone
→ 1	LC2	Carpenter Journeyman	2.00	Each	$28.92	U.S. Dollar	CI Dura...	Standard Labor Rate File	Carpenter	Southwest	Wage Zon...
2	LF2	Finisher	1.00	Each	$28.07	U.S. Dollar	CI Dura...	Standard Labor Rate File	Finisher - Conc...	Southwest	Wage Zon...
3	LIW1	Iron Worker	1.00	Each	$35.55	U.S. Dollar	CI Dura...	Standard Labor Rate File	Iron Worker	Southwest	Wage Zon...
4	LL2	Laborer	1.00	Each	$26.37	U.S. Dollar	CI Dura...	Standard Labor Rate File	Laborer	Southwest	Wage Zon...
5	ECRHC	Hydraulic Crane 25 Ton	1.00	Each	$117.60	U.S. Dollar	CI Dura...	Standard Equipment Rate...	Crane		
6	LC1	Carpenter Apprentice	1.00	Each	$27.48	U.S. Dollar	CI Dura...	Standard Labor Rate File	Carpenter	Southwest	Wage Zon...
7	LO2	Operator Class 2	1.00	Each	$28.07	U.S. Dollar	CI Dura...	Standard Labor Rate File	Operator	Southwest	Wage Zon...
8	ETFT	Flatbed Truck	1.00	Each	$22.60	U.S. Dollar	CI Dura...	Standard Equipment Rate...	Truck		
9	LC3	Carpenter Foreman	1.00	Each	$31.47	U.S. Dollar	CI Dura...	Standard Labor Rate File	Carpenter	Southwest	Wage Zon...

+ CGRADE	Grading Crew	Standard Assembly File	1.00	Hour	$234.73	$234.73	U.S. Dollar	Earthwork
+ CMAINT	Equipment Maintenance	Standard Assembly File	1.00	Each	$73.60	$73.60	U.S. Dollar	Mechanic
+ CPAVE	Paving Crew	Standard Assembly File	1.00	Hour	$476.24	$476.24	U.S. Dollar	Asphalt

1.2.8 Cost Item Assembly

A **Cost Item Assembly** is a predefined group of cost items that has cost based on estimator inputs to a set of questions. Cost item assemblies provide parameter-driven estimating and can also refer to reference tables. They allow companies to create intelligent construction systems to automatically estimate various scopes of work, based upon a user providing specification and dimension variables.



Cost Item Assembly Register

Drag columns here to group

Code	Description	Assembly File Description	Default Quantity	Default Unit of Measure	Default Unit Cost	Default Total Cost	Default Currency	Organizational Category	Geographic Area
RW01	Standard Retaining Wall Assembly	Standard Cost It...	20.00	Cubic Yard	$424.67	$8,493.38	U.S. Dollar	Concrete	
TEST	TEST		1.00	Each	$0.00	$0.00	U.S. Dollar		
TEST - DRS	Test Cost Item Assembly - Ductbank	Standard Cost It...	1.00	Each	$0.00	$0.00	U.S. Dollar	Concrete	Northeast
TEST DS	Test Cost Item Assembly - Ductbank	Standard Cost It...	1.00	Each	$0.00	$0.00	U.S. Dollar	Excavator	Southwest

Lesson 1 Review

1. Which InEight Estimate form is used to enter basic information about the job as well as define our cost basis?
    a. Pay Item & Proposal
    b. Job Properties
    c. Library
    d. Job Folder

---

2. All default data and settings copy from the Library into your new job folder *except*:
    a. Labor rates
    b. Equipment rates
    c. Material rates
    d. All of the above

---

3. These are considered the “building blocks” of the job – you employ them to cost items to develop your estimate.
    a. Assemblies
    b. Pay Items
    c. Resources
    d. Forms

Lesson 1 Summary

As a result of this lesson, you can:

- Explain the estimating process in InEight Estimate
- Explain key terms and concepts

LESSON 2 – GENERAL NAVIGATION

Lesson Duration: 45 Minutes

Lesson Objectives

After completing this lesson, you will be able to:

- Navigate the InEight Estimate system interface
- Navigate system settings
- Manage columns in InEight Estimate registers

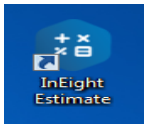
Lesson Topics

2.1 GENERAL NAVIGATION

This section explores the layout of InEight Estimate.

Step by Step — Launch InEight Estimate

1. From the Windows desktop, locate the **InEight Estimate shortcut** icon.



2. Double click on the icon, or right click and select Open.

> **TIP** If you can't find the InEight Estimate shortcut icon, you can also launch InEight Estimate from the Windows Start menu.

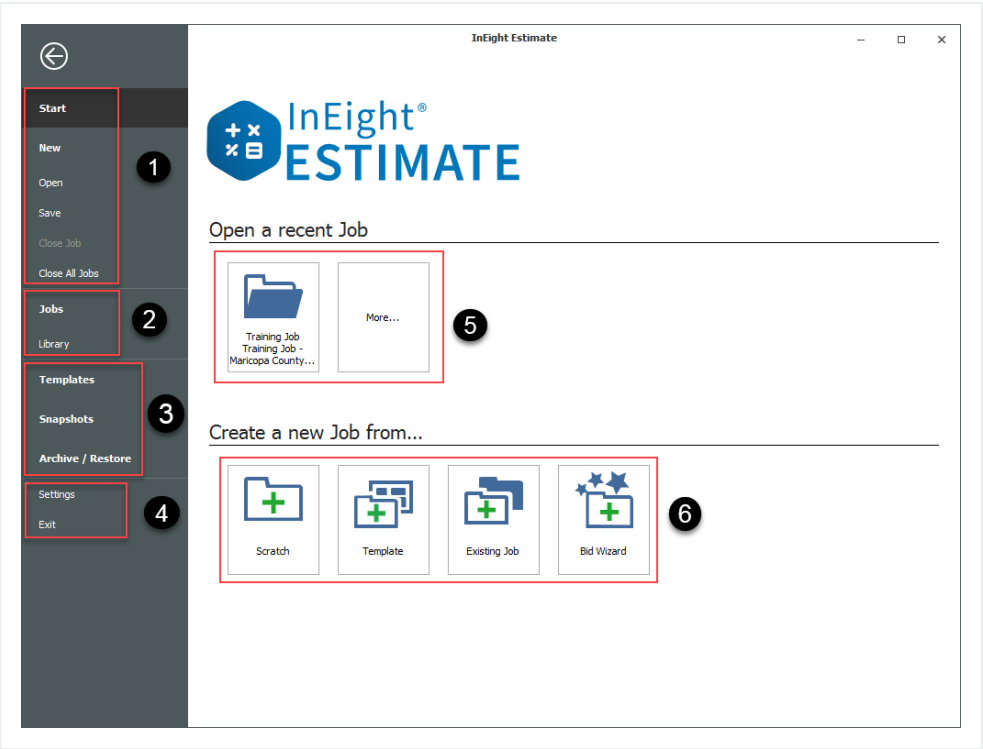
2.1.1 Backstage View

InEight Estimate opens to the Backstage view. You can also get to the Backstage view from other tabs, by selecting the File tab.

Section	Description
Section 1	From the Start page you have the option to create, open or save a project, or close all jobs that are open.
Section 2	You access the Library or open the Jobs page to go to the Job Register, Compare Jobs, delete a job, or do a Primavera Batch Sync.
Section 3	• Templates allows you to create Job templates. • You can create job snapshots or access previously created snapshots in the Snapshot Register. • You can also archive or back up and restore job folders.
Section 4	Settings allows you to customize options such as General settings, Account Code settings, Timesheet Warehouse settings, Licenses and Currency settings.
Section 5	From the Open a recent Job section of the Start page, you can open the Training

Section	Description
	job or click More to open your list of jobs.
Section 6	You have the option of creating a new job from scratch, a template, from an existing job, or using the Bid Wizard.

2.1.2 Overview – Backstage View



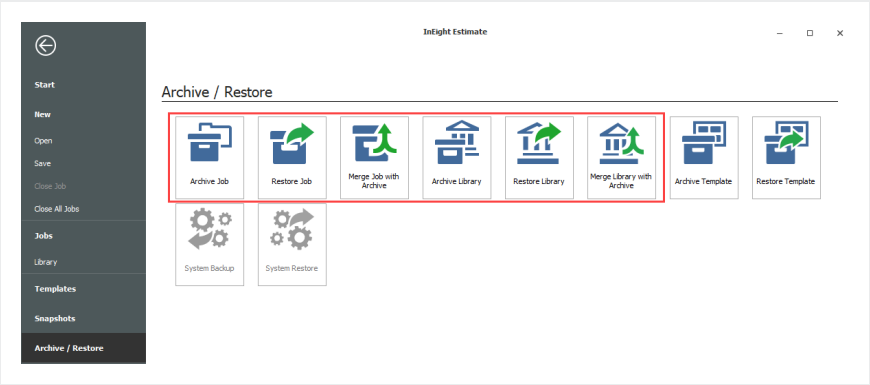
2.1.2.1 Archive / Restore

From the Backstage View, you can back up and restore your jobs using the Archive/Restore feature.

Step by Step — Archive and Restore a Job

1. Click **File** to open the Backstage View.
2. Select **Archive / Restore**.

- Several options appear for archiving and restoring your jobs and library



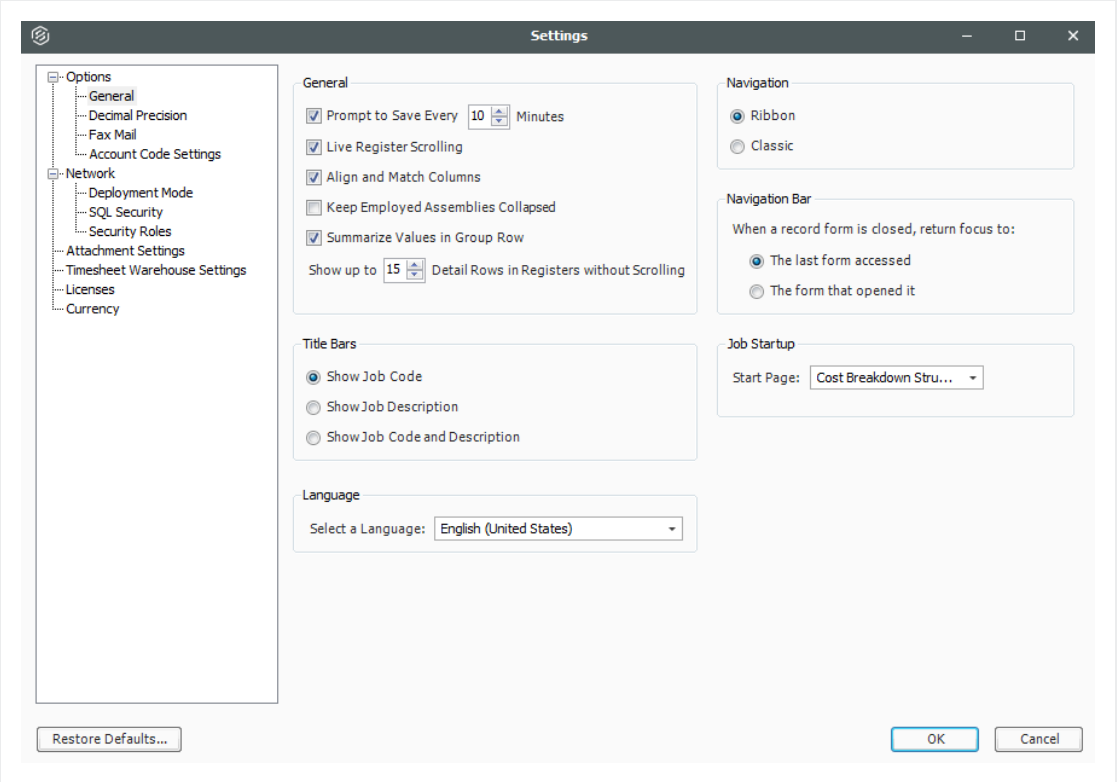
3. Select **Archive Job**.
    - The Job Register appears
4. Select the **Training Job**, then click **OK**.
5. When prompted to include attachments, click **Yes**.
    - The Save As window appears
6. Browse to where you want to save the job, then click **Save**.
7. To restore the job, select **Restore Job Archive** from the Archive / Restore page of the Backstage View.
8. Browse to the archived job and select it.
9. Click **Open**.
    - If the job already exists, a prompt will appear asking if you want to overwrite it
        - To overwrite it, select **Yes**
        - If you select **No**, you will be prompted to save it under a new Job Code

2.1.2.2 Settings

From the **Settings** in the Backstage view, you can adjust some system settings:

- General Settings
- Default Job Start page
- Decimal Precision
- Currency

- Account Code Settings



2.1.2.3 Prompt to Save

An important setting to visit in the Tools menu is **Prompt to Save**. InEight Estimate does not automatically save your work. Instead, it will prompt you to save as often as you specify in the general settings.

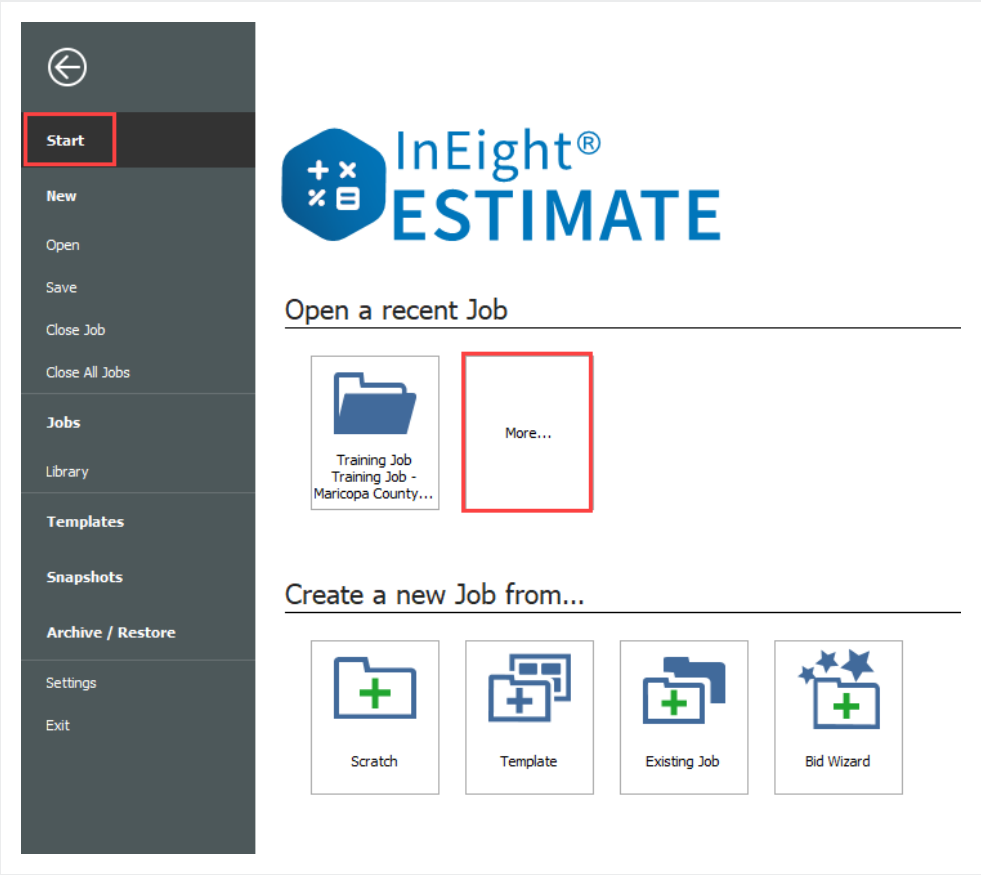
2.1.2.4 Decimal Precision

The **Decimal Precision** setting is also helpful. This is where you can specify the way your numbers display in the system. For example, you may want your costs to display to the hundredth decimal place (2), and your quantities to display as whole numbers with nothing to the right of the decimal (0).

TIP	Changing decimal precision does not affect the way your numbers are calculated.

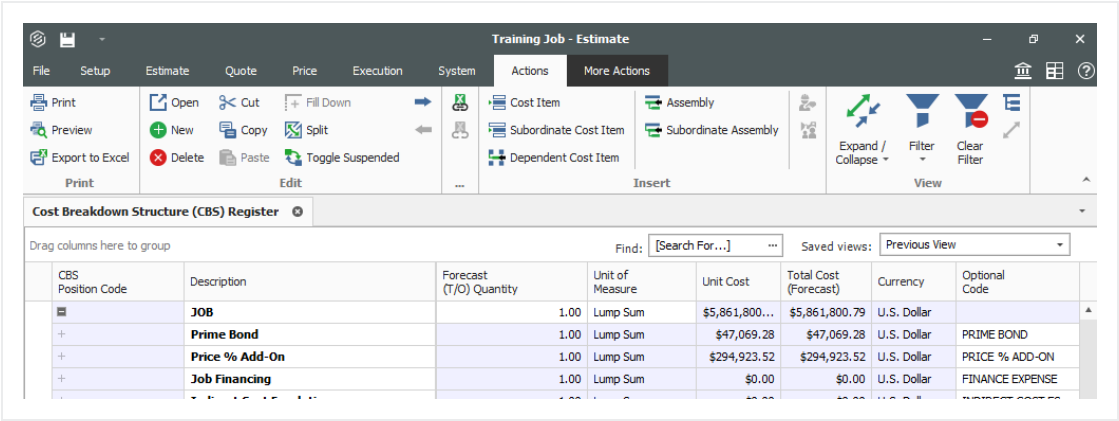
2.1.3 Open a Job Folder

From the Backstage view, you can open a job folder by selecting **Start**. This opens the Start page, where if you see your job, simply click on it to open it. If it's not showing, click on **More**… and select the job from the Job Register. The Job Register is the form that lists all of your existing job folders so you can select the one you need.

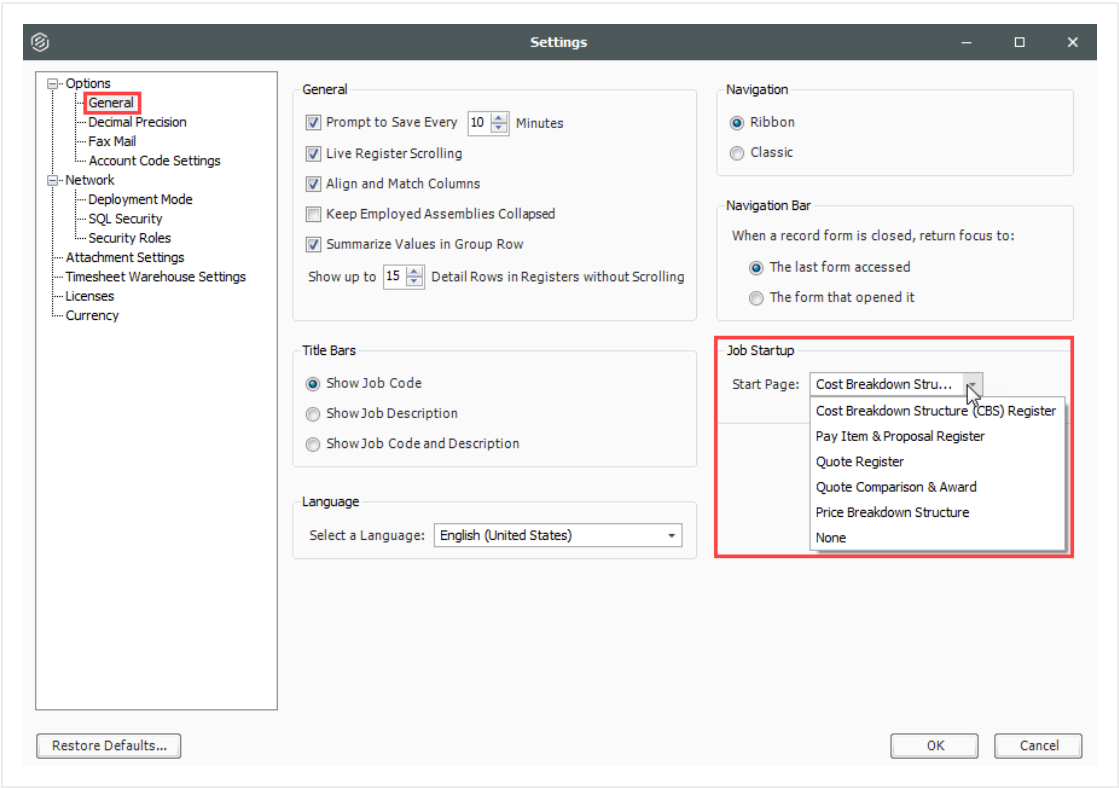


Step by Step — Open a Job Folder

1. From the Backstage view, under the **Open a recent Job** section, double click on your **job**.
2. The job folder opens by default to the Cost Breakdown Structure Register.



You can change the default form that opens when you start up a job. From the Backstage view, click on **Settings** to change the Job Startup > Start Page settings.

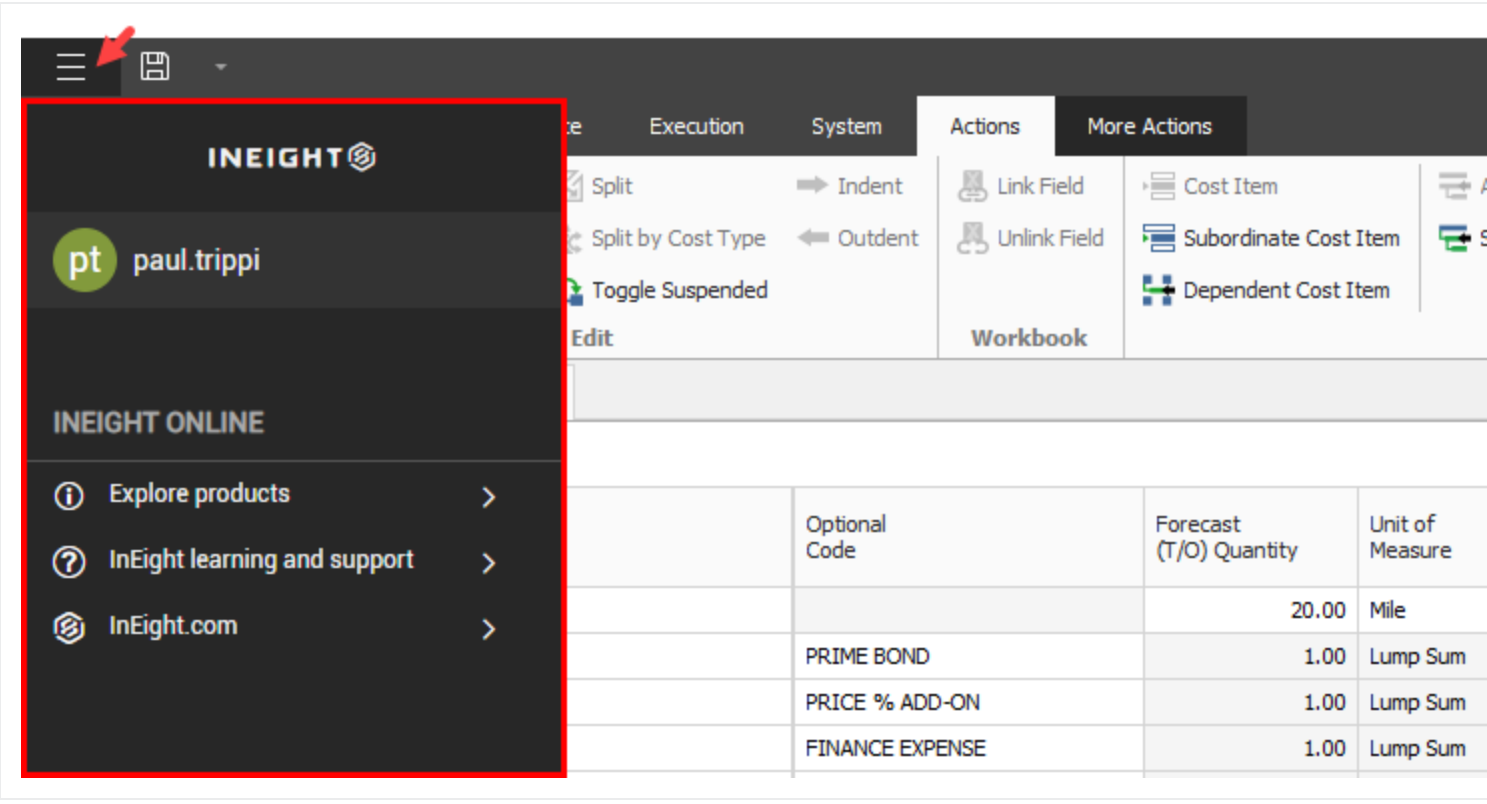


2.1.4 Common Navigation

Access the common navigation slide-out panel by selecting the main menu located on the top left side of the Estimate page. This feature provides a common navigation user experience that is shared

amongst all InEight products. The primary intent of this navigation menu is to provide a consistent InEight product experience, with similar Project Suite graphical interfaces, while working within multiple InEight products.

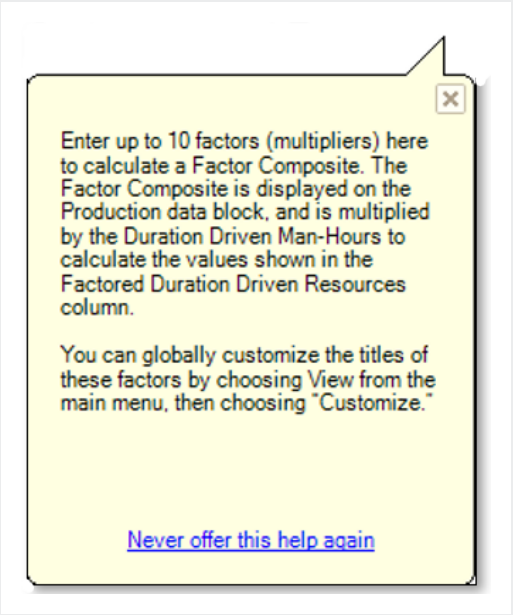
Estimate's on-premise software is authenticated by your Windows login credentials, which is shown below the main menu.



2.1.5 Help Bubbles

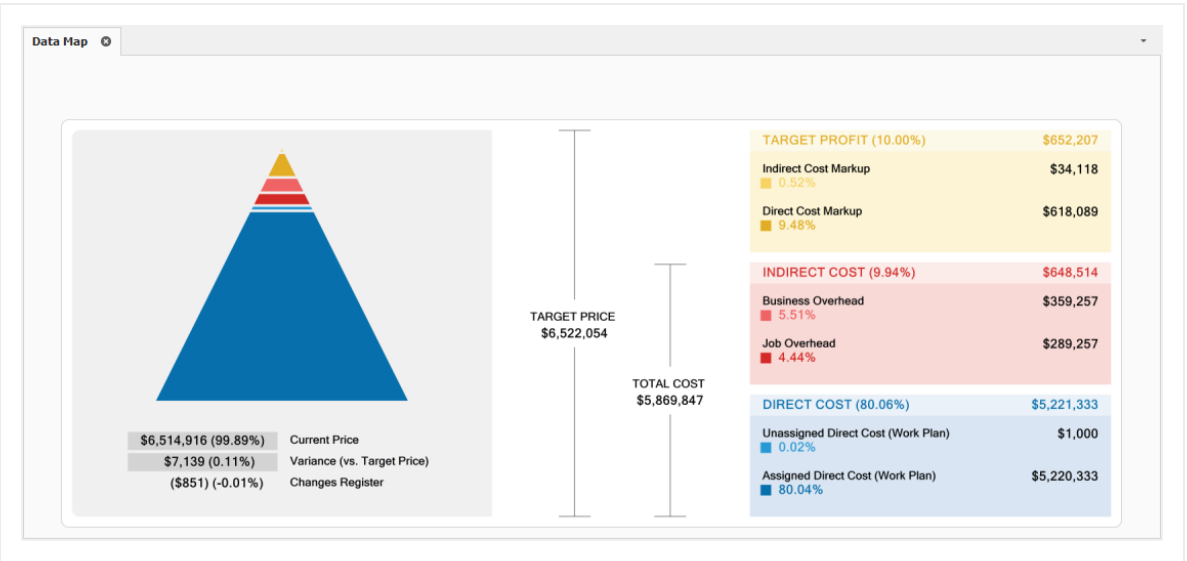
Help bubbles appear at various times in InEight Estimate, including the first time you open InEight Estimate. These messages contain important information to clarify key functions in the system.

You can dismiss the message until the next time by closing it with the X in the corner or dismiss it permanently by clicking the **Never offer this help again** link.



2.1.6 Data Map

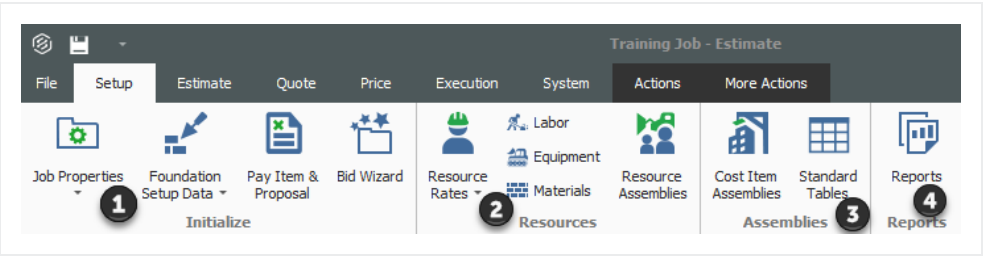
Found in the Price tab, the Data Map is a great way to view a high level summary of your estimate and can be accessed at any time during the estimating process. You can see totals of direct costs, indirect costs, profit, and overall bid price.



2.1.7 InEight Estimate Layout

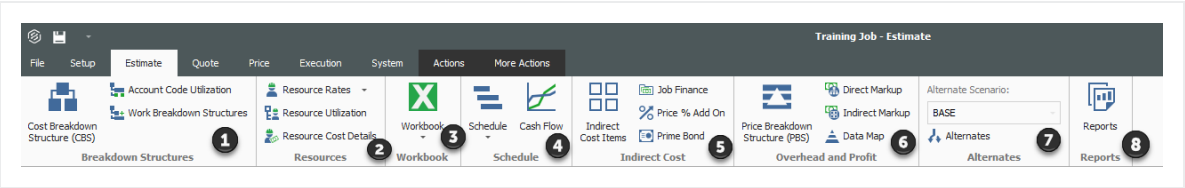
The layout of InEight Estimate is workflow based. You will move from left to right on the tabs as you enter your data for the project and work on developing your estimate.

2.1.8 Overview - Setup Tab



Section		Description
1	Initialize	From the initialize section, you can access the following registers. Job Properties is where you enter the basic project details. Foundation Setup Data is where you populate all account codes and validated fields. The Pay item & Proposal Register provides an alternate structure to distribute estimated values. Bid Wizard helps automate the process of setting up estimates by copying information that already exists in other jobs.
2	Resources	In the Resources section, Resource Rates opens the Resource Rate Register, where detail costs for labor, equipment and material is stored. The Resource Assemblies opens the Resource Assembly Register, where you create a combination of resources as an assembly and reuse it as needed in multiple cost items.
3	Assemblies	You can create a Cost Item Assembly to automatically estimate different scopes of work based on input values. Standard tables – allow you to create tables of reference data that can be accessed in any cost item assembly.
4	Reports	The Reports section is available from any tab. Depending on the tab you access it from will bring you to reports specific to that tabs data. Here you will find reports on resources such as Resources Changes, Resource Utilization, and Resource Cost Details.

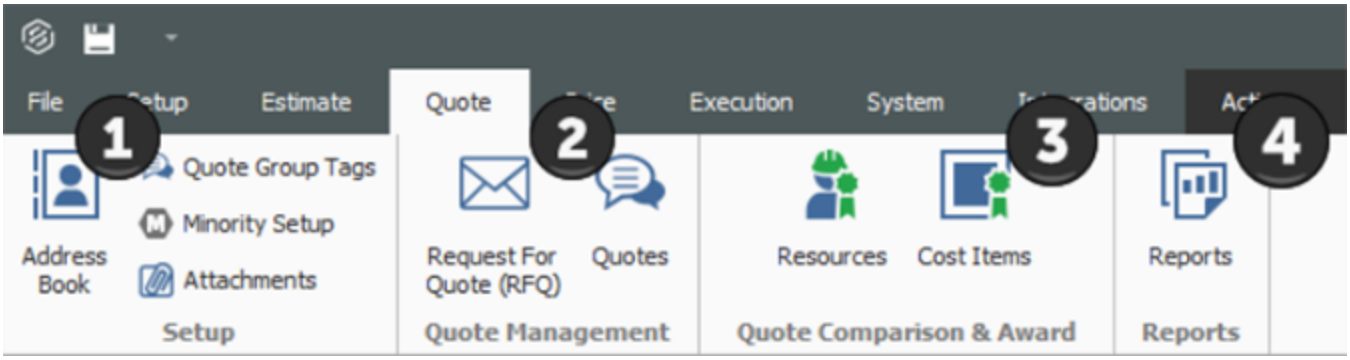
2.1.9 Overview – Estimate Tab



Section		Description
1	Breakdown Structures	From the Breakdown Structures section in the Estimate tab you can access the Cost Breakdown Structure (CBS) Register, Account Code Utilization Register, and Work Breakdown Structures (WBS) Register.
2	Resources	Resource Rate Register is where you create or modify the rate charged for labor, material and equipment resources. Different views of the Resource Rate register such as Resource Utilization and Resource Cost Details are available from the Resources section.
3	Excel Workbook	InEight Estimate's integration with Microsoft Excel is a two-way integration that allows you to update register fields in Estimate with data contained in an Excel workbook, and update Excel cells with data contained in a register field in Estimate. This is where you open the embed excel workbook which is maintained as part of the estimate job folder and where you preform the sync functions to send values back and forth.
4	Schedule	From the Schedule icon, you can access bi-directional integration with Microsoft Project and Oracle Primavera. The Cash Flow graph displays the projected cash flow of your project, along with the job financing expense, individual cost category costs and resource utilization.
5	Indirect Cost Items	Indirect Cost Items filters the CBS register to display cost items that contain overhead costs that are not directly associated with any particular deliverable items. Clicking on % Price Add on or Prime Bond opens up these individual records.
6	Overhead and Profit	Price Breakdown Structure (PBS) Register is a visual run-down of the costs and profit that make up your Target Price. You can access the Direct and Indirect Markup records or see totals of direct costs, indirect

Section		Description
		costs, profit and overall bid price summarized in a Data Map.
7	Alternates	Alternates are used to define alternate scenarios in order to assess the impact of those scenarios.
8	Reports	From the Reports section, you can run reports on CBS Summary, CBS Details, CBS Outline, CBS Estimate Summary, CBS Currency Comparison.

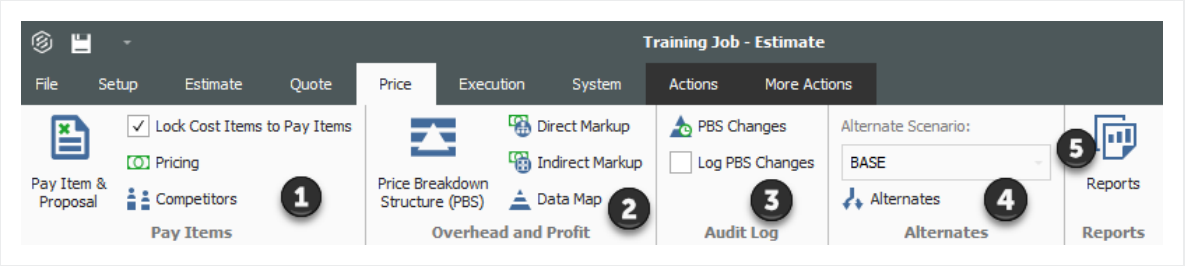
2.1.10 Overview – Quote Tab



Section		Description
1	Setup	Quotes are organized using Address book, Quote Group Tags, Minority Setup and attachments in the Setup section. Address book stores and maintains all information pertaining to subcontractors, vendors, architects/engineers, etc. that you work with regularly. The Minority Setup tab within Job Properties stores information about the agency that authorizes the status of Minority Enterprises along with their different types. You can use Quote Group Tags to group together multiple resources or cost items that will be sent in a single request for quote package to solicited contractors or vendors..
2	Quote Management	Quote Management allows you to access the Requests for Quote (RFQs) register and Quotes. Request for Quotes (RFQs) are invitations to sellers, requesting that they submit pricing to provide services, equipment or material based on the line items and resources included in your estimate. The Quote Register stores all of the quote

Section		Description
		responses you receive for that job.
3	Quote Comparison & Award	The Quote Comparison & Award section allows you to perform comparative analysis across all the quotes you've received. You can view a comparison of submitted pricing by resources or cost items.
4	Reports	From the Reports section in Quotes you can run reports on Quote Summary, Quote Record, Compare & Award, and Minority Participation.

2.1.11 Overview – Price Tab

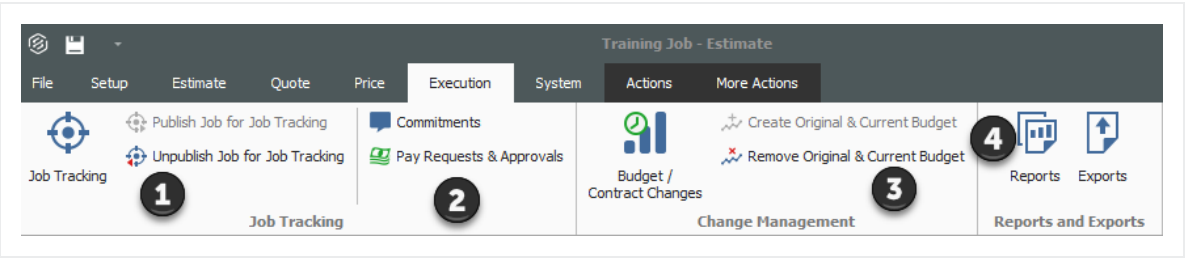


Section		Description
1	Pay Items	From the Pay Items section you can lock Cost items to Pay items and access the Pay item & Proposal register. Under Pricing in Job Properties, you can set up how the tool calculates profit and spreads pricing to your pay items. In the Competitors section, you can keep track of companies that have submitted bids as well as record and track competitor bid prices.
2	Overhead and Profit	The Price Breakdown Structure (PBS) Register is a visual run-down of the costs and profit that make up your Target Price. You can access the Direct and Indirect Markup records or see totals of direct costs, indirect costs, profit and overall bid price summarized in a Data Map.
3	Audit Log	You can access the PBS Changes register (which logs any changes that effect the Target Price) and turn on/off logging PBS changes..
4	Alternates	Alternates are used to define alternate scenarios in order to assess the impact of those scenarios on the total estimate value.

Section		Description
5	Reports	From the Reports section in the Price tab, you can generate reports for Standard Proposal, DOT Proposal, Pay Item Summary, Pay Item Currency Comparison, Pay Item Price Breakdown.

2.1.12 Overview – Execution Tab

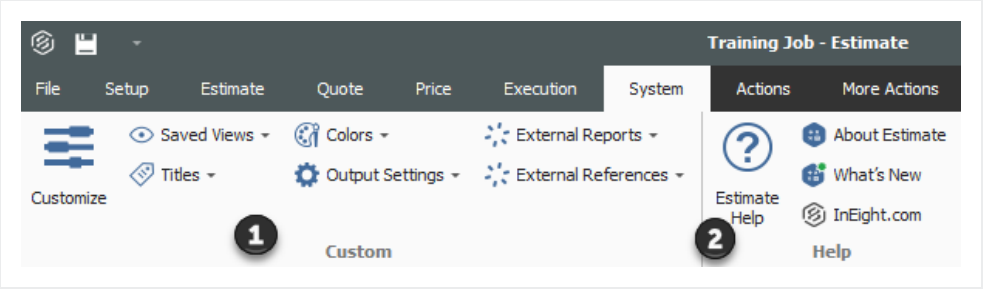
The Execution Tab is for Customers who are utilizing the Job Tracking functionality within InEight Estimate. InEight Control users can disregard this tab.



Section		Description
1	Job Tracking	You can customize the titles and colors for different fields. You can export and import saved Views, Titles, Colors and Output Settings. You can customize reports generated by Estimate using External reports. External References allows you to open external programs with Estimate.
2	Overhead & Profit	Commitments tracks how much of the current budget has been committed for expenditure. Pay Requests and Approvals automatically calculates earned revenue to provide the data you need to bill your client, as well as approve invoices from your suppliers and subcontractors.
3	Change Management	Budget/Contract Changes is the only way to change current budget or add a pay item after the project has been released for execution and the Original Budget locked.

Section		Description
		Create Original & Current Budget sets the original and current budget for the project. These should be equal when you initially create it (at the beginning of project execution). Current budget is the only thing that can change after execution. Remove Original & Current Budget removes original and current budget values.
4	Reports and Exports	From the Reports icon, you can run multiple reports on the project. Exports can export budget file, schedule, and timesheet to many different formats.

2.1.13 Overview - System Tab



Section		Description
1	Custom	You can customize the titles and colors for different fields. You can export and import saved Views, Titles, Colors and Output Settings. You can customize reports generated by Estimate using External reports. External References allows you to open external programs with Estimate.
2	Help	You can access a comprehensive help system from the Help menu. You can get information about the Estimate Version and all new updates about the different versions.

2.1.14 Library

Click on the Library icon and the Library opens in its own window.

Users with sufficient security can access master information available in the Library.

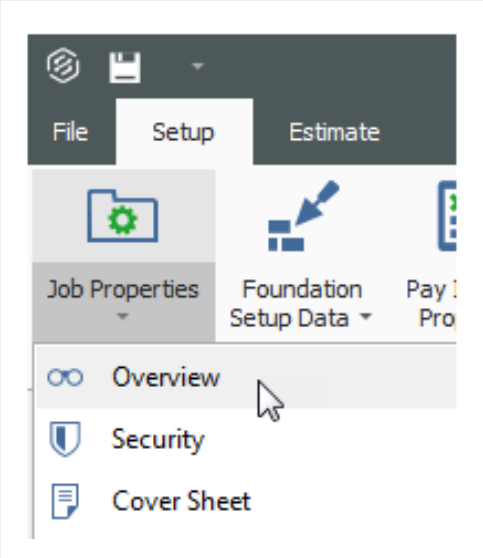
TIP *The Library is covered in greater detail in "3.1 Library Overview" on page 67*

2.1.15 Open Forms

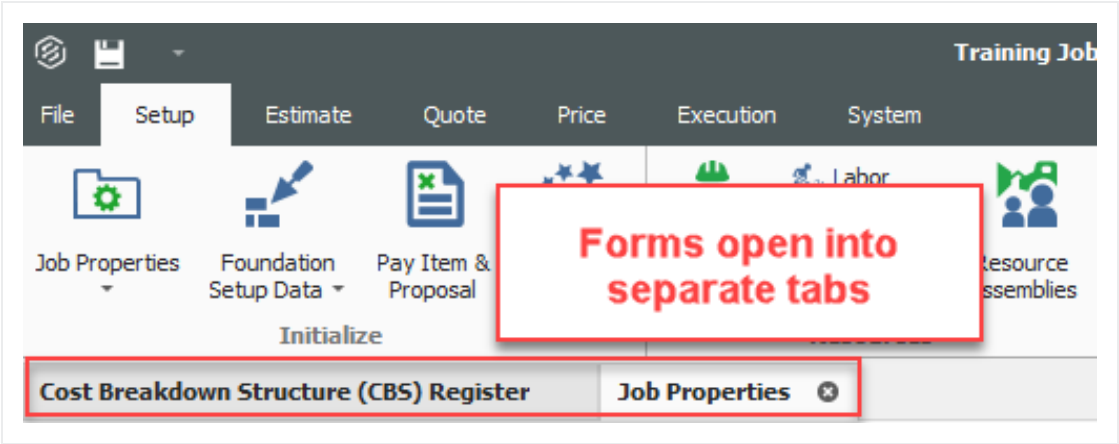
The following steps assume you already opened the Training Job.

Step by Step — Open Forms

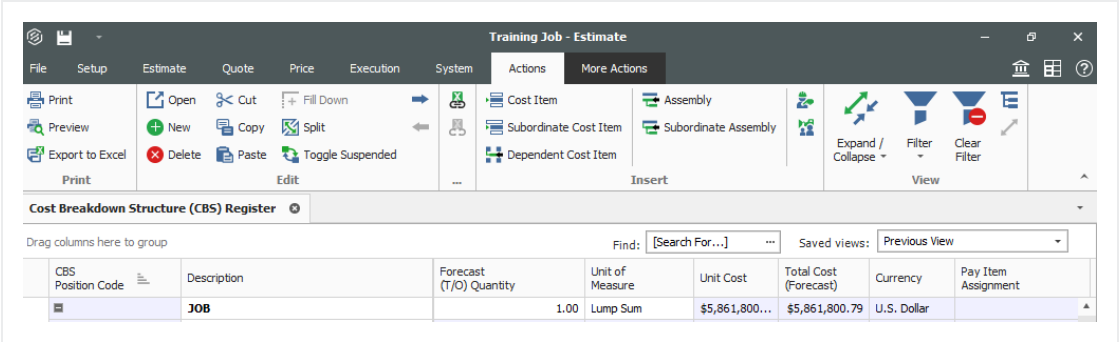
1. Click on the **Setup** tab.
2. In the Initialize section of the Setup tab, click on the **drop-down menu** for Job Properties.
3. Select **Overview** to open the Job Properties form.

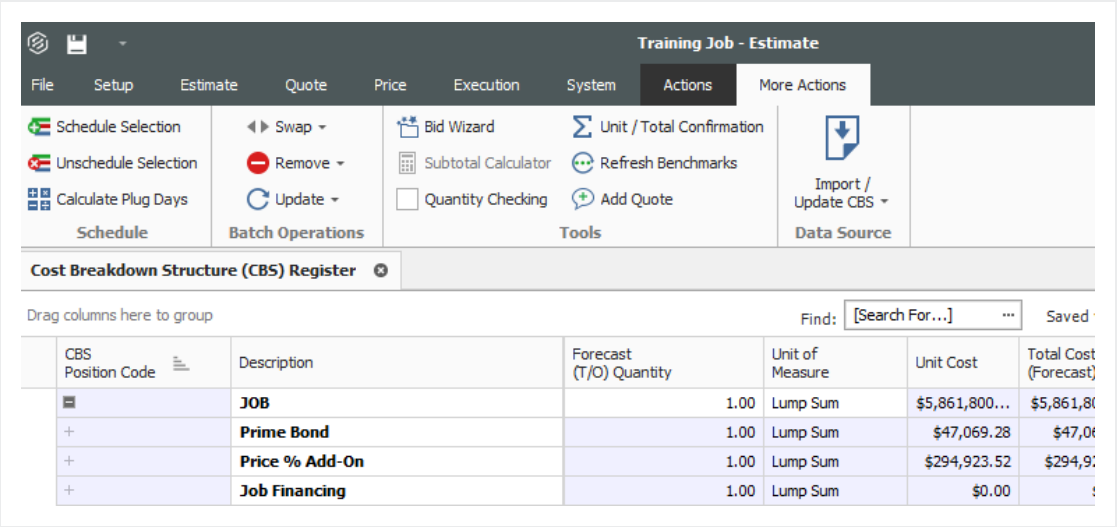


- Notice that each form opens in its own tab within the active job folder



- You can tab between these forms as you are working in InEight Estimate
- Once you are in a register, the Actions and More Actions tabs are available to you. The options available are contextual to that register





2.2 SYSTEM SETTINGS

From the Backstage View, you can access system settings. System settings contain options and settings that effect the entire InEight Estimate system. These settings include:

- General settings (options)
- Network settings
- Attachment settings
- Licensing information and settings
- Currency settings

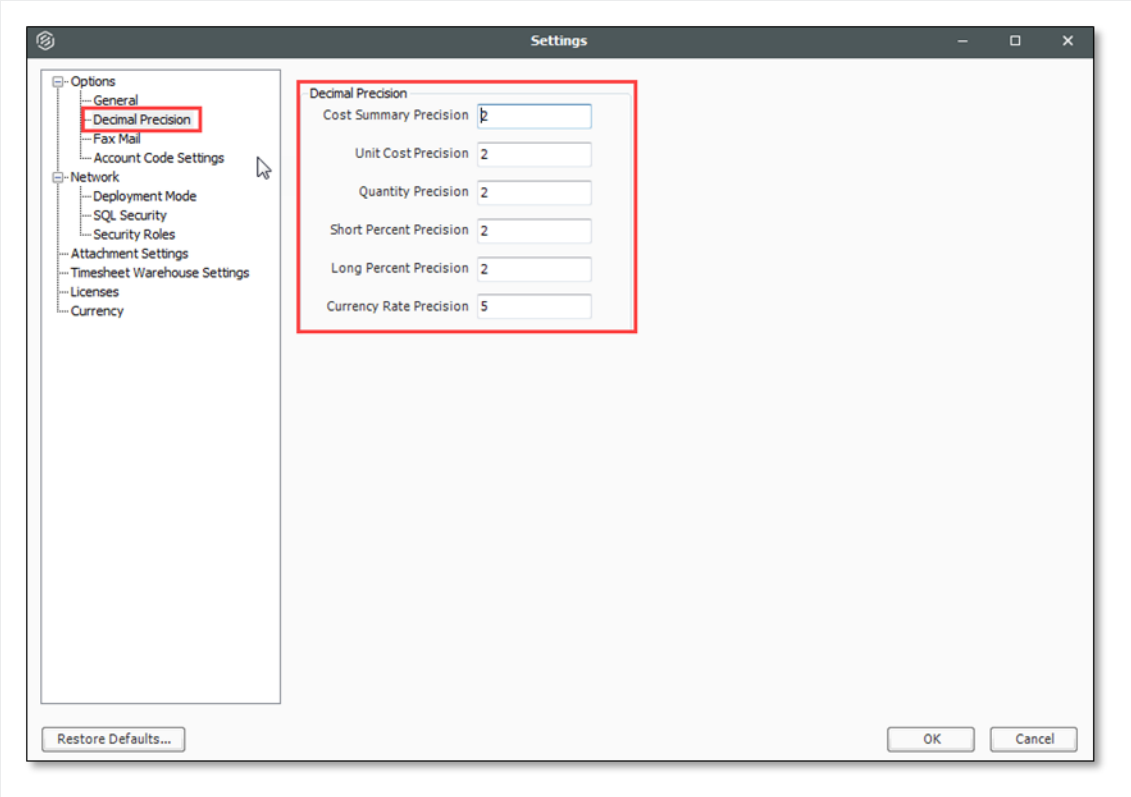
The following step by step walks you through configuring general settings (options).

Step by Step — Decimal Precision

1. With InEight Estimate open, click on the **File** tab to go to the Backstage view.
2. Select **Settings**.
3. Select **General** under Options in the node tree on the left.
4. To activate Prompt to Save, select the **Prompt to Save** checkbox.
5. Select how often you want to be prompted (in minutes).

6. Select **Decimal Precision** in the tree on the left.
7. Review the default settings.

> **TIP** Units of Measure will default to English, and Currency will default to U.S. Dollar.



2.3 COLUMNS

Within each register, you can move, sort, filter and group your columns to view the information the way you need to see it.

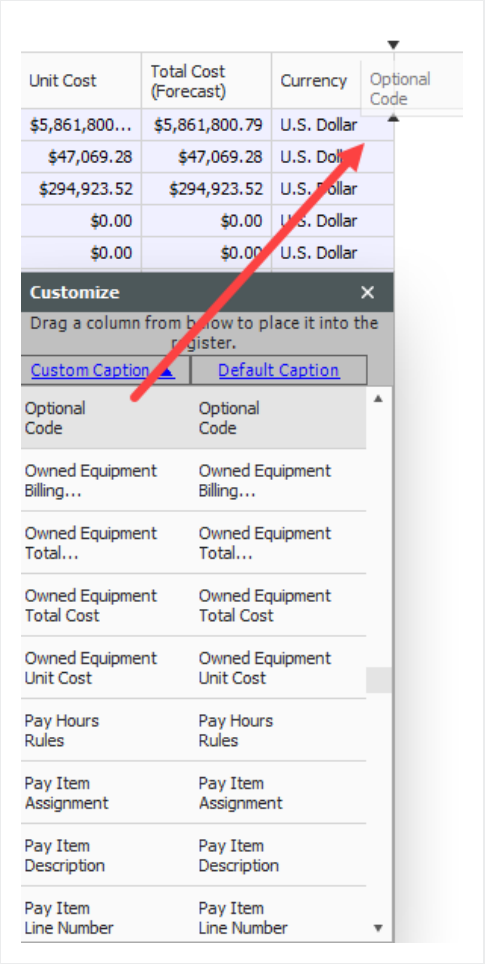
2.3.1 Move Columns

You can move columns by selecting a column header and using drag-and-drop. If there are columns on the register that you don’t use, you can hide and unhide them from view, as needed.

Step by Step — Move Columns

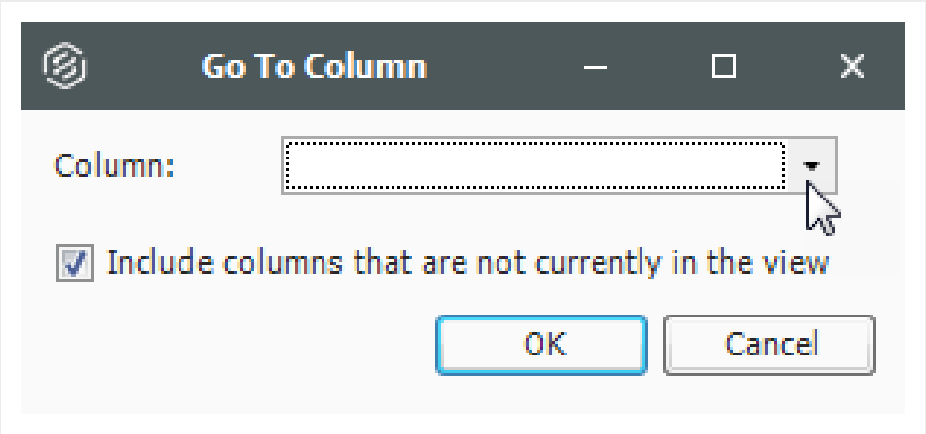
1. In the CBS, click on the **Currency** column header and drag the column to the left, dropping it to the right of the Description column.
2. Hide the **Optional Code** column by dragging the Optional Code column header down until a black X appears, then let go.

   - The Optional Code is now hidden from view
   - To unhide a column, right click on any column header and select **Column Chooser**; a Customization window appears, which contains all the hidden columns in that register
3. Find the **column** you want to unhide and drag-and-drop it to the location where you want it to go.



- You can also unhide a column using the Go To Column feature

4. Right click on a **column** header and select **Go To Column**.
5. Click on the **drop-down menu** and select the column you want to unhide.



6. Click **OK**.

2.3.2 Sort and Filter Columns

You can sort and filter your columns to drill down to specific information.

Step by Step — Sort Columns

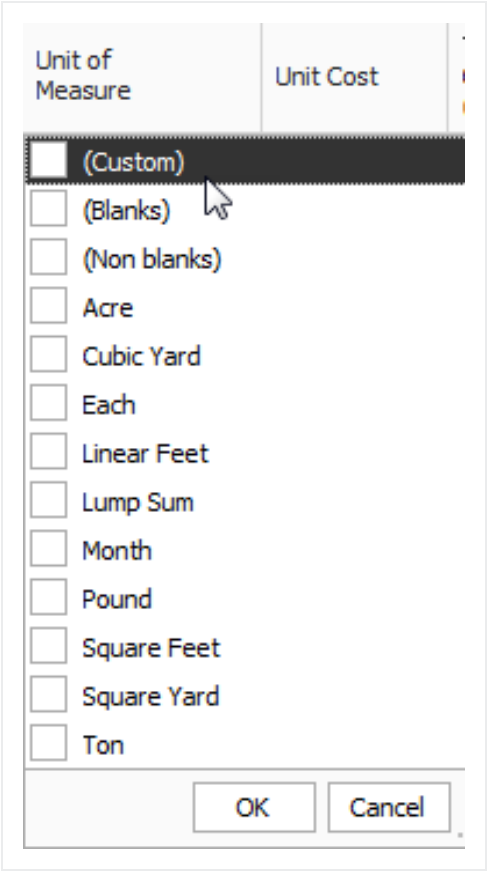
You can sort on any column by clicking once on the column header.

1. In the CBS Register, click on the **Total Cost (Forecast)** column to sort the column in ascending order (e.g., 1 to 10, A to Z).
2. Click the **Total Cost (Forecast)** column a second time to sort in descending order (e.g.,10 to 1, Z to A).

TIP Use Ctrl-click to unsort a column and reset it to its original state.

Step by Step — Filter Columns

1. In the CBS, hover over the **Unit of Measure** column header for the filter icon to appear.
2. Click on the **filter** icon in the Unit of Measure column to select a filter value.
    - From the filter list, you can select any of the values defined for that column or you can use one of the predefined values (Custom, Blanks, Non blanks).



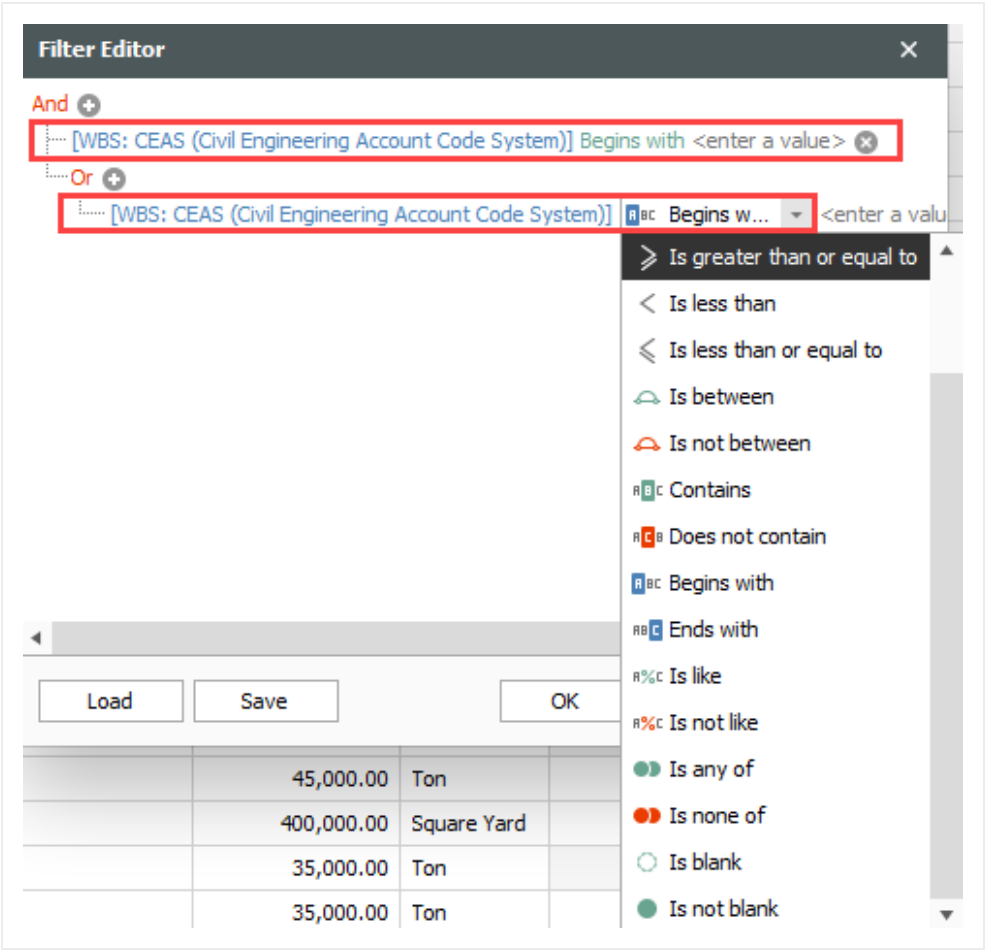
3. Make your selection, then click **OK**.
4. To clear the filter, click on the **red X** at the bottom of the form or click on the filter icon on the header of the column you filtered and select **(All)**, then click **OK**.

2.3.2.1 Filter Editor Overview

The Filter Editor displays conditions and groups as a tree branching system.

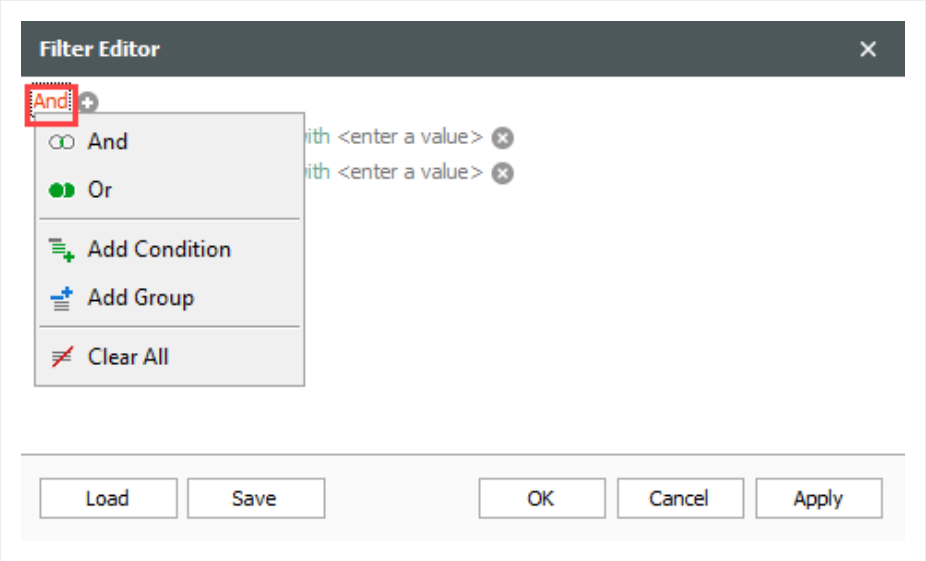
The Filter Editor grouping feature allows you to increase the amount of *And/Or* statements that originated from the first selected And statement. When you add a new Group, a new Condition is automatically added to that Group.

With each additional Condition statement, you will need to select an operator and a value in order for your customized filter to take effect on your chosen column. Many new operators have been added to this version as shown in the screenshot below:



Step by Step — Filter Editor

1. In the CBS, hover over the **Unit of Measure** column header for the filter icon to appear.
2. Click the **filter** icon in the Unit of Measure column to select a filter value.
3. Select the **Filter Editor** button. The Filter Editor data box appears.
    - By default, an **And** statement is created with a **Begins with** operator and a blank value.
4. Select your preferred operator and then enter in your preferred value.
5. To add additional *And/Or* statements, select the word **And** in the top left corner. A drop down appears.



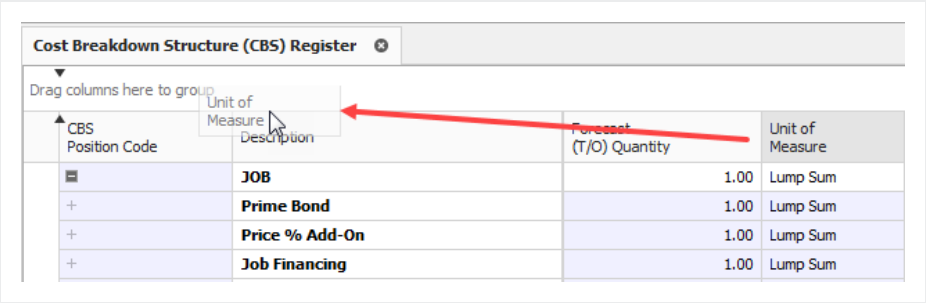
6. Choose which *And/Or* statement to add and then select the **preferred operator**.
7. Enter in your **preferred value** to complete your additional statement.
8. Select the **X** to delete a single statement.
9. Select the **And** statement in the top left corner to begin clearing all *And/Or* statements.
10. From the drop down, select the option **Clear All**.
11. Once done, select **Apply** and then click **OK**.

2.3.3 Group Columns

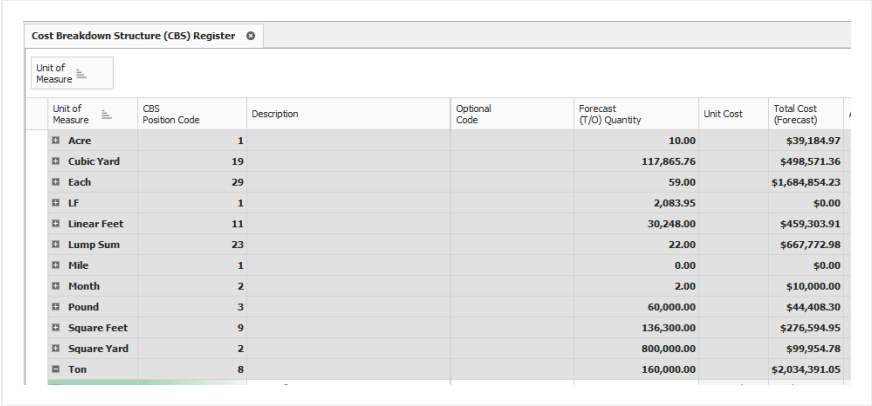
Sometimes you may want to organize your information into groups. Instead of filtering your information down to one value (e.g., unit of measure = Ton), you can look at your information with a separate group for each value (e.g., a group for Tons, a group for Cubic Feet, etc.).

Step by Step — Group Columns

1. From the CBS register, group the Unit of Measure column by dragging it into the grouping area (where it says “Drag columns here to group”).



- Notice that the cost items in the register are now grouped together by their units of measure, and each group of cost items is subtotalled by costs, hours, quantities, etc.



2. To ungroup, right click in the grouping area and select **Clear Grouping**
   - The column returns to its original location

> **TIP** You can group by more than one column to have multiple grouping levels.

2.3.4 Saved Views

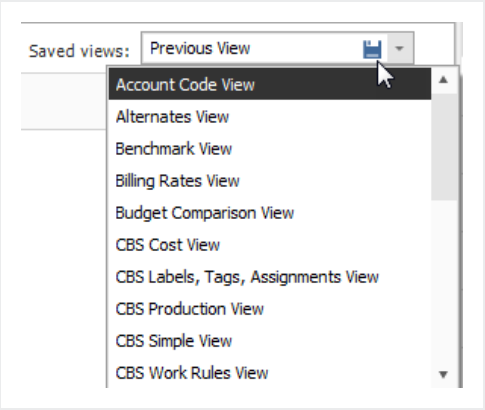
Once you have set up a view the way you like it, you can save the view so you won't have to configure it again later. InEight Estimate also comes with some pre-built views to help you organize the screen the way you want to see it.

Views are accessed from the **Saved Views** menu in the top right portion of a register.

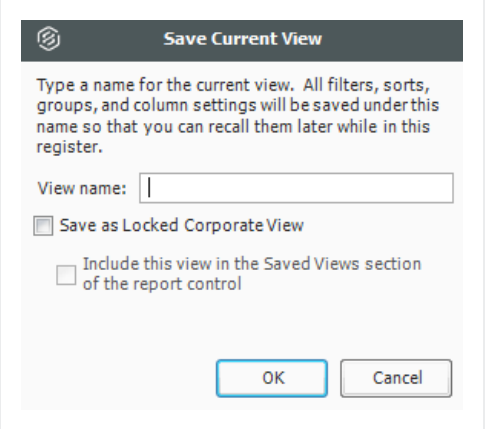
The following steps assume you have made changes to your register view and want to save it for future use.

Step by Step — Create a Saved View

1. In the CBS register, click on the **Saved Views** drop-down menu and the Save disc icon appears.



2. Click on the **Save disc** icon.
    - The Save Current View window appears



3. Enter the **View Name**, then select **OK**.
    - The new view displays in the drop-down menu

TIP Saved views are user-specific; you will only see your own saved views when you are logged in.

2.4 FIND FEATURE

The Find feature lets you search across all columns in the register with a single operation. The matching results are then highlighted in yellow. A scroll bar annotation is provided to indicate the rows in the grid containing matches. This lets you easily navigate to the search results in the register.

The Find feature also includes the flexibility to perform more precise searches using various syntax in the search bar. The Find search bar shows the currently selected and total number of search results.

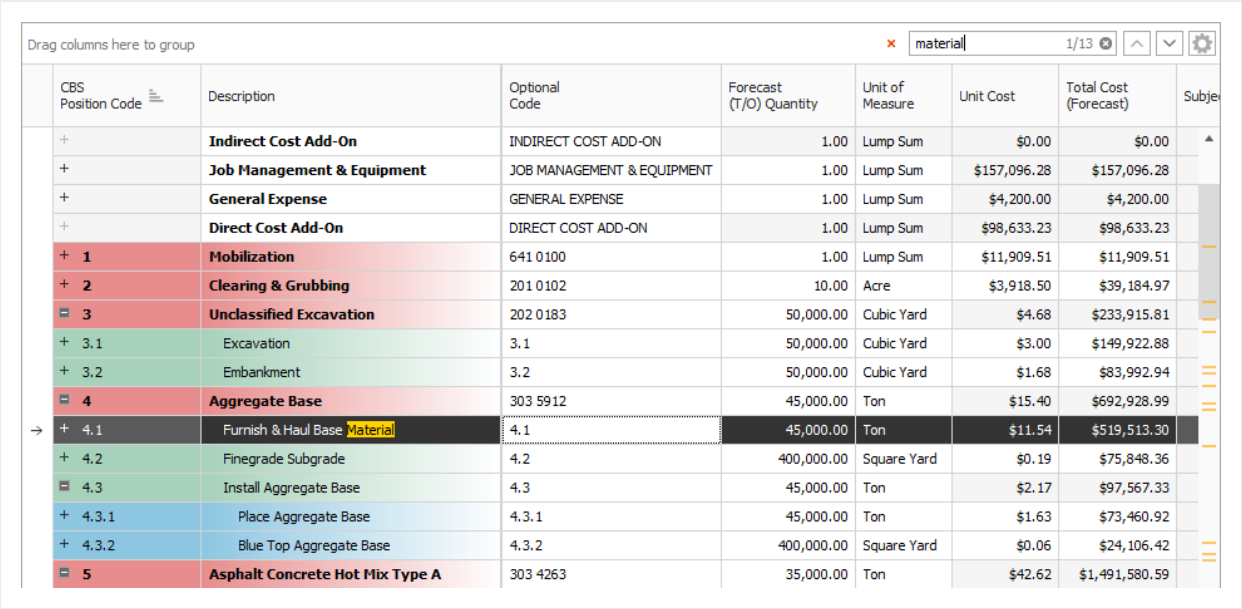
NOTE If you type in two words, such as **total cost**, the grid considers them as individual conditions and selects records that contain either **total** or **cost**.

Search Syntax	Example
+	To find records that contain both search terms like **total cost**, type **+** before the second word. For example: **total +cost**.
-	Type **-** to exclude records that contain a specific word, for example: **total-cost**. You can combine different operators. Use **+** and **-** to select records that contain both **pay** and **item**, excluding records that contain **assignment**. For example: **pay +item -assignment**.
"quotes"	To search for a string that contains a space character, you need to enclose this string in quotation marks. For example: **"total cost"**.
:	To search against a specific column, type the first letters of the column's display name plus a colon character. For example: **optional: unassigned**. Now the grid displays records containing **unassigned** in the **optional code** column.

If you add another column-specific condition, the grid joins them using the **+** logical operator. Then the record shows the result that matches both options. The same happens when you join a column-specific condition with the one applied to all columns. An example of this search criteria looks like this: **optional: unassigned +"pay item"**.

Step by Step — Find Feature

1. From the Cost Breakdown Structure (CBS) Register, bring up the Find feature using **CTRL+F**.
2. In the search bar, type in **Materials**.
3. When all the searches are highlighted in yellow, use the **up** or **down** arrows to the right of the search bar to navigate to the next search result in the register.



CBS Position Code	Description	Optional Code	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)
	Indirect Cost Add-On	INDIRECT COST ADD-ON	1.00	Lump Sum	$0.00	$0.00
	Job Management & Equipment	JOB MANAGEMENT & EQUIPMENT	1.00	Lump Sum	$157,096.28	$157,096.28
	General Expense	GENERAL EXPENSE	1.00	Lump Sum	$4,200.00	$4,200.00
	Direct Cost Add-On	DIRECT COST ADD-ON	1.00	Lump Sum	$98,633.23	$98,633.23
1	**Mobilization**	641 0100	1.00	Lump Sum	$11,909.51	$11,909.51
2	**Clearing & Grubbing**	201 0102	10.00	Acre	$3,918.50	$39,184.97
3	**Unclassified Excavation**	202 0183	50,000.00	Cubic Yard	$4.68	$233,915.81
3.1	Excavation	3.1	50,000.00	Cubic Yard	$3.00	$149,922.88
3.2	Embankment	3.2	50,000.00	Cubic Yard	$1.68	$83,992.94
4	**Aggregate Base**	303 5912	45,000.00	Ton	$15.40	$692,928.99
4.1	Furnish & Haul Base Material	4.1	45,000.00	Ton	$11.54	$519,513.30
4.2	Finegrade Subgrade	4.2	400,000.00	Square Yard	$0.19	$75,848.36
4.3	Install Aggregate Base	4.3	45,000.00	Ton	$2.17	$97,567.33
4.3.1	Place Aggregate Base	4.3.1	45,000.00	Ton	$1.63	$73,460.92
4.3.2	Blue Top Aggregate Base	4.3.2	400,000.00	Square Yard	$0.06	$24,106.42
5	**Asphalt Concrete Hot Mix Type A**	303 4263	35,000.00	Ton	$42.62	$1,491,580.59

4. To add the Find feature to the register functions header, select the **Options** icon to the far right of the search bar. Then select **Always Expanded**.
5. To search in a specific column only, select the **Options** icon to the far right of the search bar. Then select **Search in Selected Column Only**. Search a specific term in your selected column.
6. To close the Find functionality, click the **Close** icon to the left of the search bar. You can also hold down the **Shift** key and then select the **F3** key to use this feature.

NOTE A drop-down can be used to see a list of previous searches.

Lesson 2 Review

1. The _____ is a great way to get a summary view of your bid. You can see totals of direct costs, indirect costs, profit and the overall bid price.
    a. Job Folder
    b. Data Map
    c. System tab
    d. Resource Rate Register

---

2. You can group by more than one column to have multiple grouping levels.
    1. True
    2. False

---

3. Display settings for Units of Measure, Currency, and Colors can be adjusted from the _____ tab.
    a. Setup
    b. Estimate
    c. System
    d. Help

Lesson 2 Summary

As a result of this lesson, you can:

- Navigate the InEight Estimate system interface
- Navigate system settings
- Manage columns in InEight Estimate registers

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LESSON 3 – LIBRARY SETUP

Lesson Duration: 60 minutes

Lesson Objectives

After completing this lesson, you will be able to use the following forms and explain their purpose:

- Library Job Properties
- Library Foundation Setup Data Register
- Library Resource Rate Register
- Library Assembly Register

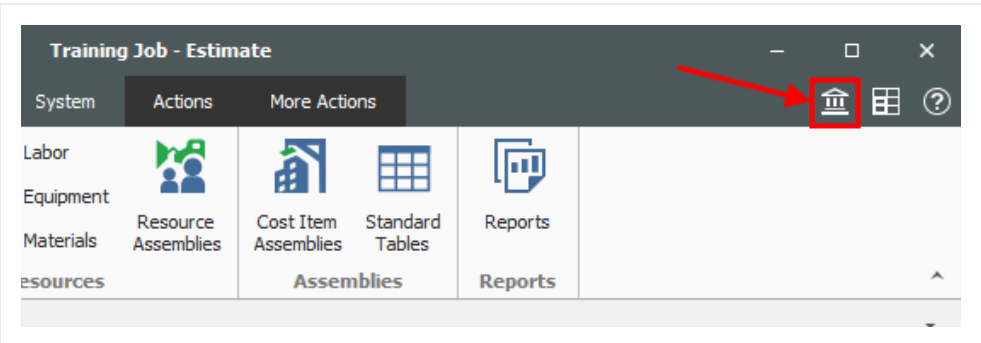
Lesson Topics

3.1 LIBRARY OVERVIEW

The Library is where you set up and maintain master information that imports into your projects, including resource rates, tags, units of measure, cost item assemblies, and master breakdown structures. It is also where security roles and permissions are configured.

You access the Library from the Backstage view in Estimate. Click on the **Library** link to open.

You can also access the Library by clicking on the Library icon, when on the InEight Estimate landing page.



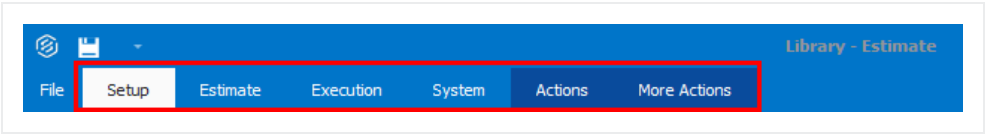
When the Library opens, you see ribbons available under the main menu tabs. Each Menu tab has unique sections which hold the necessary forms. In this lesson you will learn about each tab and their components.

3.1.1 Library Tabs

The Library has six tabs which organizes the forms under sections. The tabs are:

- Setup
- Estimate
- Execution
- System

The Actions and More Actions tabs appear when you open a register and contain functions for the register you have active.



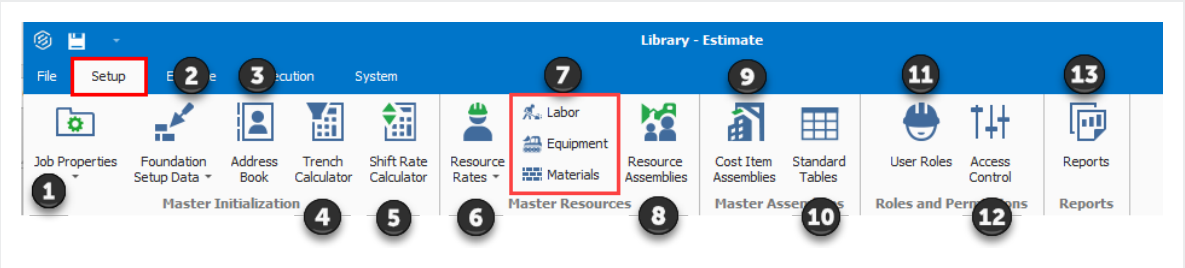
3.1.1.1 Setup Tab

Overview - Setup Tab

	Name	Description
1	Job Properties	The job properties maintained in the library will serve as the default settings for any new estimate that is created from scratch. When creating a new job it will inherit all the job properties set in the master library.
2	Foundation Setup Data	A master set of account codes, tags, and units of measure. When a new folder is created, the master set is automatically copied from the Library to the new folder.
3	Address Book	Used to store and maintain all information pertaining to the companies with whom you work and contact regularly (subcontractors, vendors, architects, etc.).
4	Trench	Stores and maintains common trench configurations that are used from

Overview - Setup Tab (continued)

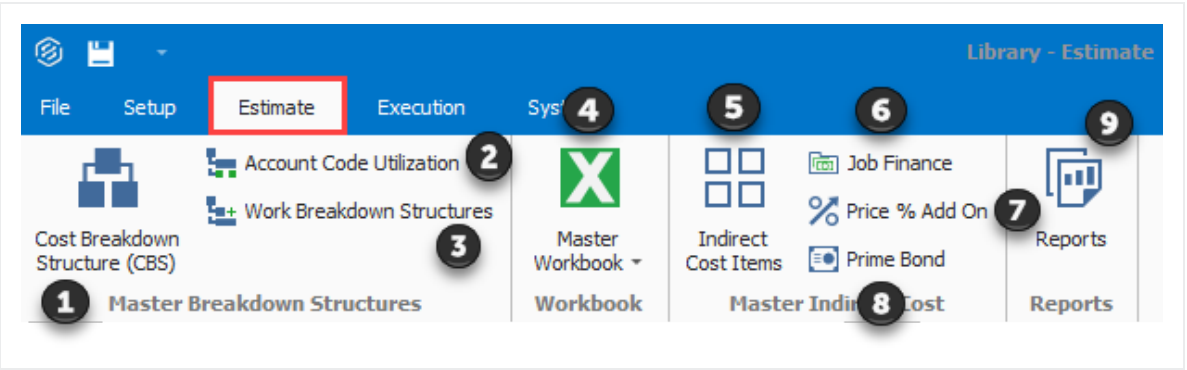
	Name	Description
	Calculator	project to project.
5	Shift Rate Calculator	Allows you to set up shift rate configurations that you can access at the project level.
6	Resource Rates	Opens the Library Resource Rate Register where you can create and edit all resources and resource cost details available for import into your projects.
7	Most Used Resources	For quick access to the Labor, Equipment and Materials tabs of the Master Resource Rate Register.
8	Resource Assemblies	Takes you to the Library Resource Assembly Register where you can set up resource assemblies to import into individual projects.
9	Cost Item Assemblies	Cost Item Assemblies are predictive models to quickly and accurately estimate elements of a job that can be repetitive in nature on the job or from job to job.
10	Standard Tables	The Standard Tables are used to create and/or list job-level table data that is accessible by any of the Cost Item Assemblies that exist in a job. The Standard Table Record allows the user to create and or modify a Table record. The Standard Table Register lists all the job level tables created / available in the project.
11	User Roles	Opens the Register where you assign users to a role which can include the forms, tabs and menu commands to which each role has access. The user names that are used when setting up your User Profiles come from Active Directory, and they are the user names that each user uses when logging onto his/her personal computer.
12	Access Control	Allows you to customize your system permissions by restricting destinations or commands that only designated roles should have access to.
13	Reports	Opens the Reports window, where you can access all system reports and configure the default report settings.



3.1.1.2 Estimate Tab

Overview - Estimate Tab

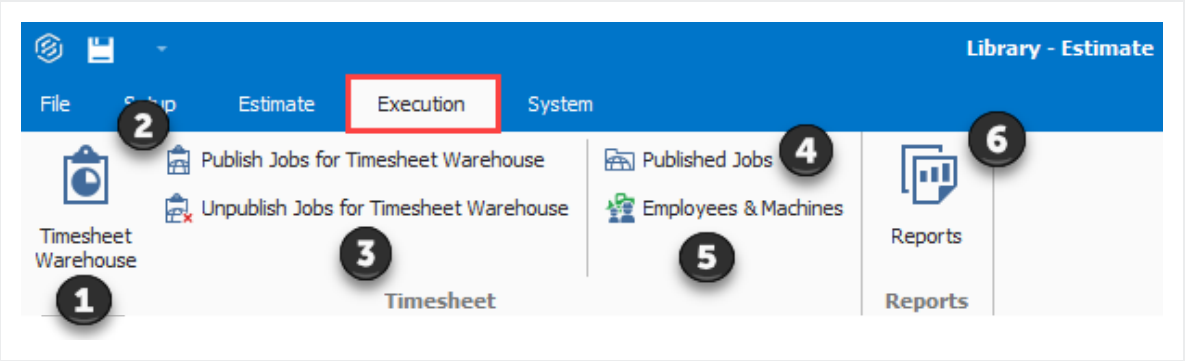
	Name	Description
1	Cost Breakdown Structure (CBS)	Opens the Library Cost Break Structure register, where you can define the CBS that will automatically import when a new project is created.
2	Account Code Utilization	Used to roll estimate line items into an account code hierarchy and benchmark against historical projects in a way that is consistent across projects.
3	Work Breakdown Structures	Opens the Library Work Break Structure register, where you can define additional Work Breakdown Structures that will automatically import when a new project is created.
4	Master Workbook	Opens the master Microsoft Excel template which will be embed into each new estimate job folder. The cells in the embed excel workbook can be linked to send information to or from InEight Estimate Fields.
5	Indirect Cost Items	Takes you to the Library Cost Breakdown Structure Register where you can edit and define indirect cost items.
6	Job Finance	Takes you to the Library Cost Breakdown Structure Register where you can edit the Job Financing cost item.
7	Price % Add On	Takes you to the Price % Add On record, where you can define the price % add to be included in the Library CBS.
8	Prime Bond	Opens to the Library Prime Bond record where you can define the bond tables that will import automatically when a new project is created.
9	Reports	Opens the Reports window, where you can access all system reports and configure their report settings.



3.1.1.3 Execution Tab

Overview - Execution Tab

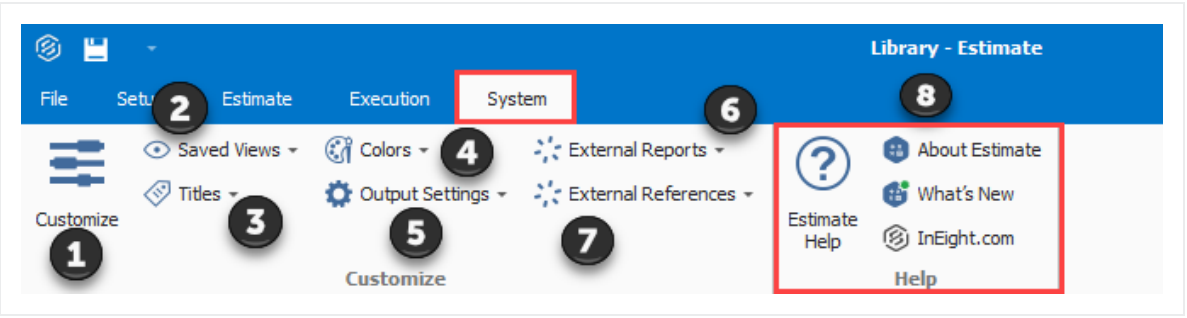
Name		Description
1	Timesheet Warehouse	Used to document for any period of time (day, week, month, etc.) the employees and machines employed on a cost item (tracked by Account, Phase or CBS Code), how many hours they are employed and optionally, the quantity of work they accomplish.
2	Publish Jobs for Timesheet Warehouse	Links to the Job Register to publish jobs from the Timesheet Warehouse.
3	Unpublished Jobs for Timesheet Warehouse	Opens up a list for to view the unpublished jobs from the Timesheet Warehouse.
4	Published Jobs	Opens to a Register to show the published jobs from the Timesheet Warehouse.
4	Employees & Machines	Opens a register which list all of your company's employees and machines, including their identification number and other associated codes.
5	Reports	Opens the Reports window, where you can access all system reports and configure their report settings.



3.1.1.4 System Tab

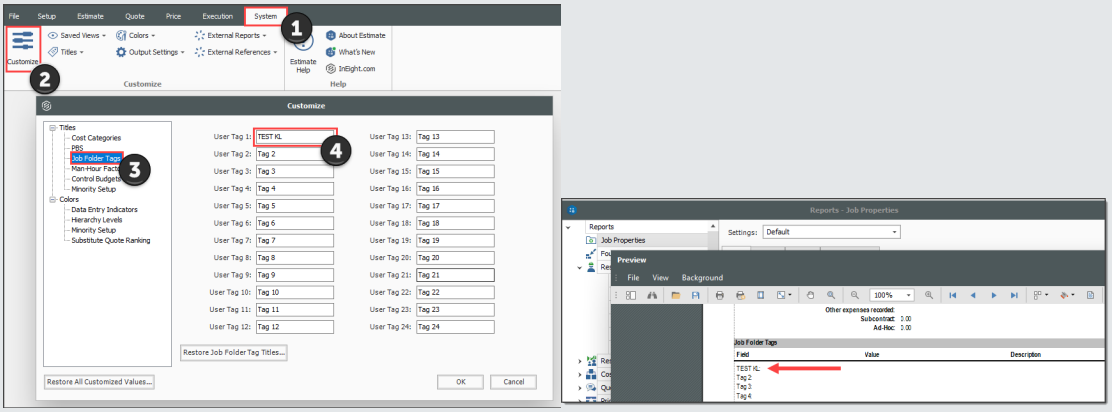
Overview - System Tab

Name		Description
1	Customize	Window to customize the field titles that are displayed throughout various screens in the system, including all cost category titles, user-defined Tags, and more.
2	Saved Views	Allows you to save your views onto a disk or load from a disk.
3	Titles	Allows you to save titles onto a disk or load from a disk.
4	Colors	Allows you to save your colors onto a disk or load from a disk.
5	Output Settings	Allows you to save your output settings onto a disk or load from a disk.
6	External Reports	Menu to not only generate reports created by Estimate, but also to open programs, folders, documents, reports, or Internet resources with the associated program.
7	External References	Allows you to open programs, folders, documents, reports, or Internet resources with the associated program.
8	Help Section	Offers you links to Estimate's general Help menu, information about Estimate (i.e., version number, system information, tech support, etc.), What's New in the new version, and InEight's external website.



TIP

Customized Job Folder Tags match the view of the fields in the Job Properties form.



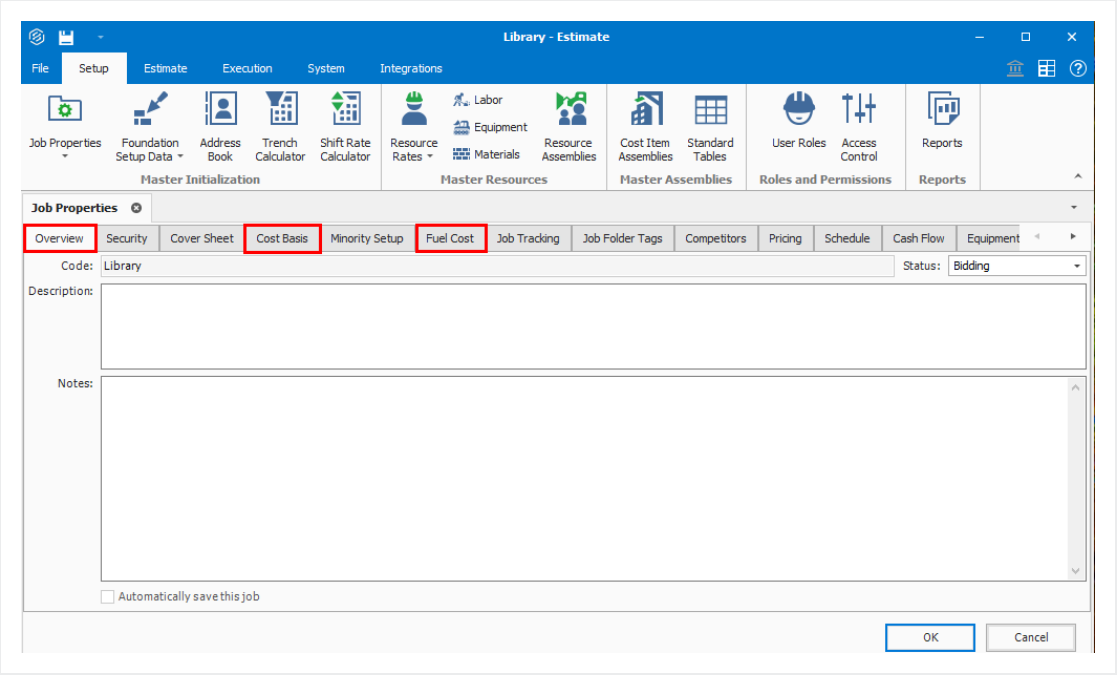
3.2 LIBRARY JOB PROPERTIES

The Library Job Properties form serves as a template for new jobs. Some of the tabs on the Library Job Properties form hold basic settings that will require a default selection which will apply to all new jobs created from scratch. Time can be saved when utilizing Library Job Properties, because the data and settings you fill out will be automatically imported into a new job. Once imported, these settings can be changed at the job level if necessary.

It may be helpful to complete the following tabs / fields at the Library level:

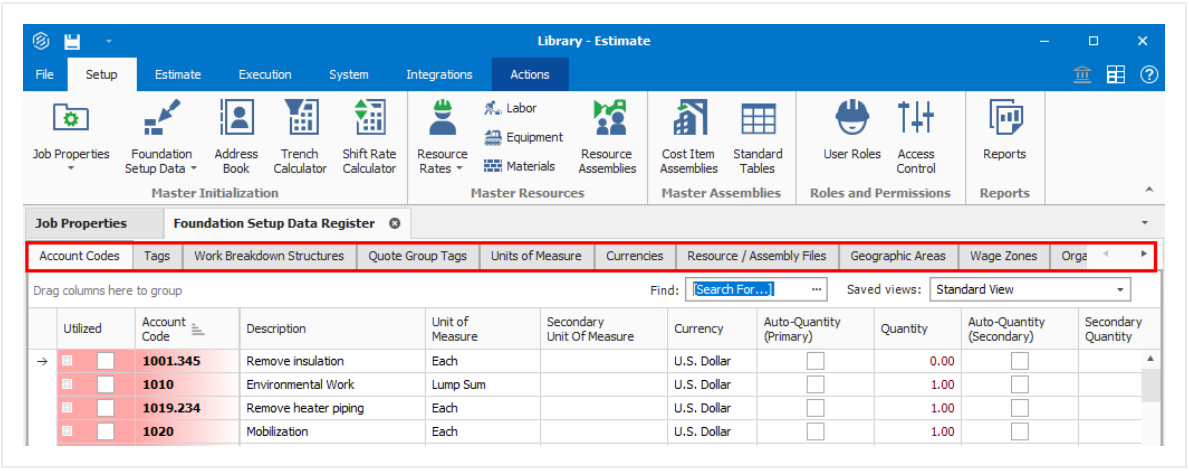
- **Overview Tab Notes Field**: Filling out the Notes section at the Library level would be helpful for any instructions or reminders that you want to display on all projects' Job Properties form. For example, "Always double check currency exchange rates"
- **Cost Basis Tab**: Shift arrangements may or may not be standard across all projects, as well as wage rates and scales. The cost basis default rules should be established within the library.
- **Fuel Cost Tab**: Entering a default fuel cost here will factor with the utilization of your equipment

to be included in your equipment rates



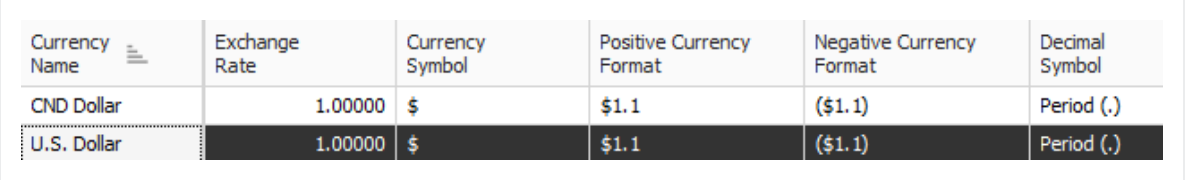
3.3 LIBRARY FOUNDATION SETUP DATA

Foundation Setup Data is where all drop-down options within Estimate fields are stored. These can serve as category labels, alternate structures or validated tag fields. The different validated fields are organized into tabs on this form.



You should be aware of these category labels:

Category Labels	
Name	Definition
Account Codes	These codes will be set up on the back end and will help you compare your cost and production rates to similar cost items in past projects.
Tags	Some tags are already set up for you. Additional tags can be created and used to group and filter your items.
Work Breakdown Structures	Use this format when you need to have multiple variations and summary reports of an estimate. WBS retains the same relationships between items as in the original estimate and only changes the view and how items are arranged in hierarchy.
Units of Measure	These are standardized to relate to one another by a conversion factor. If you need to create a new unit of measure, you will need to reference it to a base unit of measure and can include a conversion factor to allow you to convert back and forth between English and Metric.
Currencies	The default currency is set to U.S. Dollar, but you can also enter the exchange rate for other currencies (such as Canadian) so you can estimate with whatever currency you need. Multiple currencies can be used in the same project. The system base currency can be changed from USD in the backstage view settings, but is a global change for the entire estimate environment.



Currency Name	Exchange Rate	Currency Symbol	Positive Currency Format	Negative Currency Format	Decimal Symbol
CND Dollar	1.00000	$	$1.1	($1.1)	Period (.)
U.S. Dollar	1.00000	$	$1.1	($1.1)	Period (.)

When you create a new job folder, all category labels defined in the Library Foundation Setup Data Register will be copied to the new job folder automatically.

3.4 RESOURCES

VIDEO | **Create a Unique Resource**

InEight Estimate refers to labor, equipment and material items as Resources. You will use these resources as the basic building blocks used to detail the costs in your estimates.

InEight Estimate organizes resources into seven types:

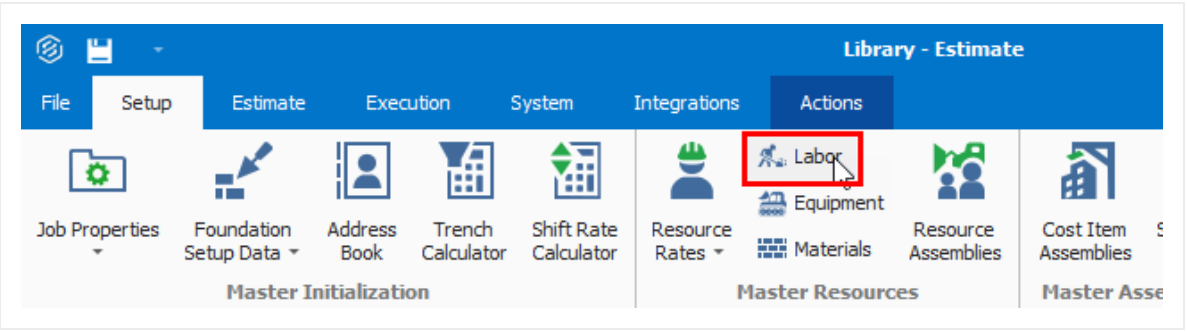
Resources	
Name	Description
Labor	The human resources that perform direct or indirect work. Direct labor is typically classified by trade (e.g., pipefitters, electricians, iron workers) and title (e.g., foreman, journeyman, laborer).
Construction Equipment	Owned construction equipment.
Rented Construction Equipment	Construction equipment rented from a third party.
Installed Materials	Materials that will remain installed on site after the project is completed, (e.g., concrete, piping, aggregate).
Installed Equipment	Equipment that will remain installed on site after the project is completed, (e.g., boilers, heat exchangers, vessels, cooling towers).
Supplies	Expendable items that will not be permanently installed (e.g., small tools, consumables).
Unique	Resources that are of a “unique” nature and do not fit well into the other types (e.g., dump fees, hauling charges and equipment rented by the month).

After creating a new job folder, you can import a filtered set of resources from the Library into the new project. This is done on the Cost Basis tab of the Job Properties form.

In the following section, you will learn more about the resources stored in your Library in the Library Resource Rate Register.

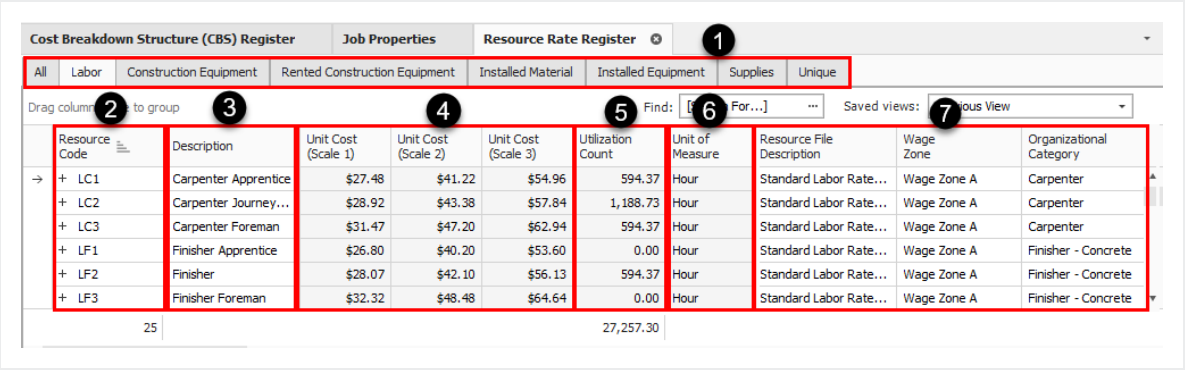
3.4.1 Library Resource Rate Register

To open the Library Resource Rate Register, select **Labor** from the **Master Resources** ribbon.



Overview – Library Resource Rate Register

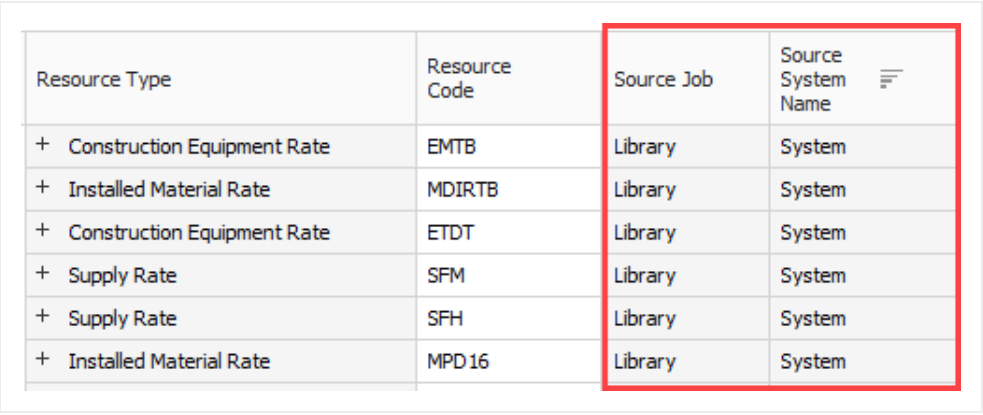
	Name	Description
1	Tabs	There are tabs along the top of the form for each of the seven resource types, in addition to an *All* tab that holds the resources of all types. • Notice that you are on the Labor Tab
2	Resource Code	Each record (or row in the register) represents a single resource.
3	Description	The Description provides more detail about the resource.
4	Resource Rate per Unit	This is the resource cost per unit.
5	Utilization Count	Tells you how many units of that resource are being used in the job.
6	Unit of Measure	Each resource is defined with a Unit of Measure.
7	Register	This register includes columns for the resource attribute categories so you can filter and group your resources.



Source Job and Source System name fields

The Source Job field provides visibility into the jobs from which the data may have originated from.

The Source System Name helps to see the source of the data when integrating with other systems.



TIP Resource rate add and search tips:

- You cannot add new resources on the All tab.
- You can search for resources in the Resource Rate Register using the 'Find' field.

Next you will take a look at the different types of resources and how the differ when we drill into resource rate records from each category.

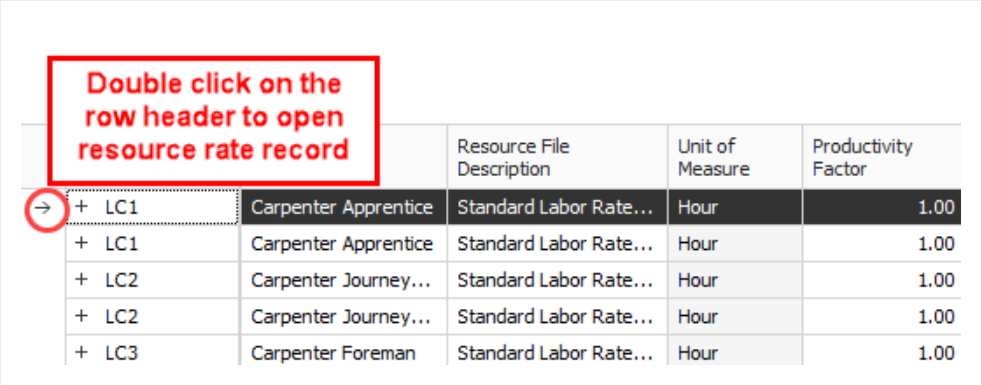
3.4.2 Labor Resources

Looking at your Labor resources more closely, you will see all the Resource Codes for the Labor resources begin with an L. This is a best practice for naming and organizing your resources, but you can

also use another organizational method of your choice.

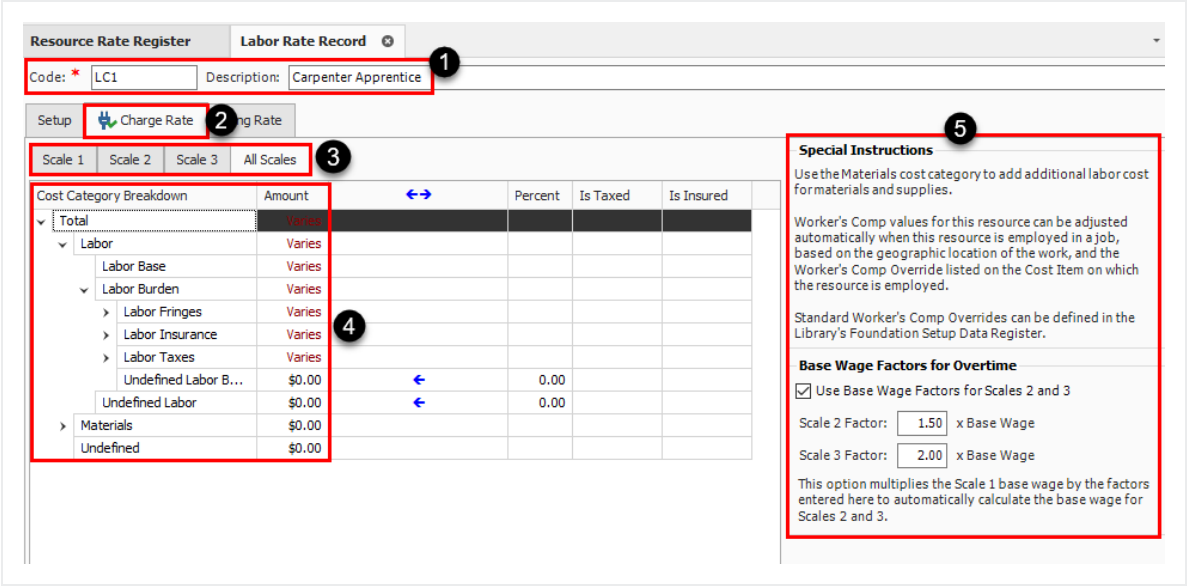
3.4.3 Resource Rate Record

If you need to add cost to a resource, adjust a rate, or just view a more detailed breakdown, you can open the resource's rate record. From the Library Resource Rate Register, double click on the row header for the resource you need to view in greater detail.

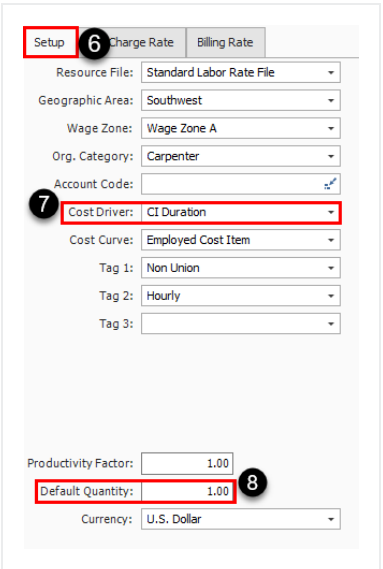


Overview – Resource Rate Record

	Name	Description
1	Record	The record references the resource you are editing.
2	Charge Rate	The Charge Rate tab is the tab the record defaults to and is where you define the cost of the resource.
3	Scale Buttons	The Scale buttons only show up on labor resources. They are used for defining regular time, overtime and double time rates for the resource.
4	Cost Category Breakdown	The Cost Category Breakdown is where you enter the costs for the resource. The categories will depend on what type of resource it is (e.g., equipment resources will have equipment cost categories and materials will have material cost categories).
5	Special Instructions / Base Wage Factors	The right side of the record will have additional options to help you define the rate. These options change depending on what type of resource it is.



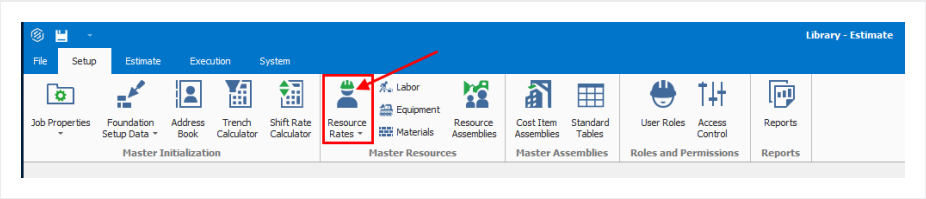
	Name	Description
6	Setup	There is also a Setup tab where you can define the resource's attributes an a few other settings. These attributes are used for filtering which resource rates to load into a new estimate.
7	Cost Driver	Labor resources default Cost Driver is CI Duration which means their costs are driven by time.
8	Default Quantity	The Default Quantity is typically set to 1 for most cases if you are bringing in the resource you are using at least one.



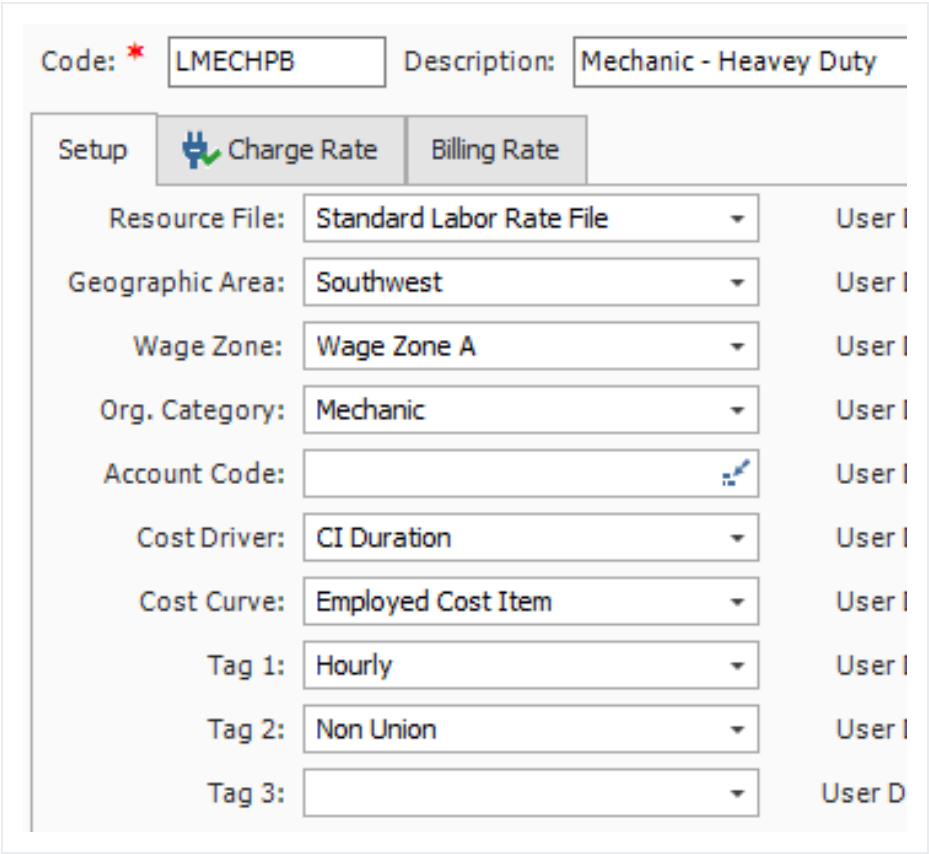
The following steps walk you through how to create a new labor resource.

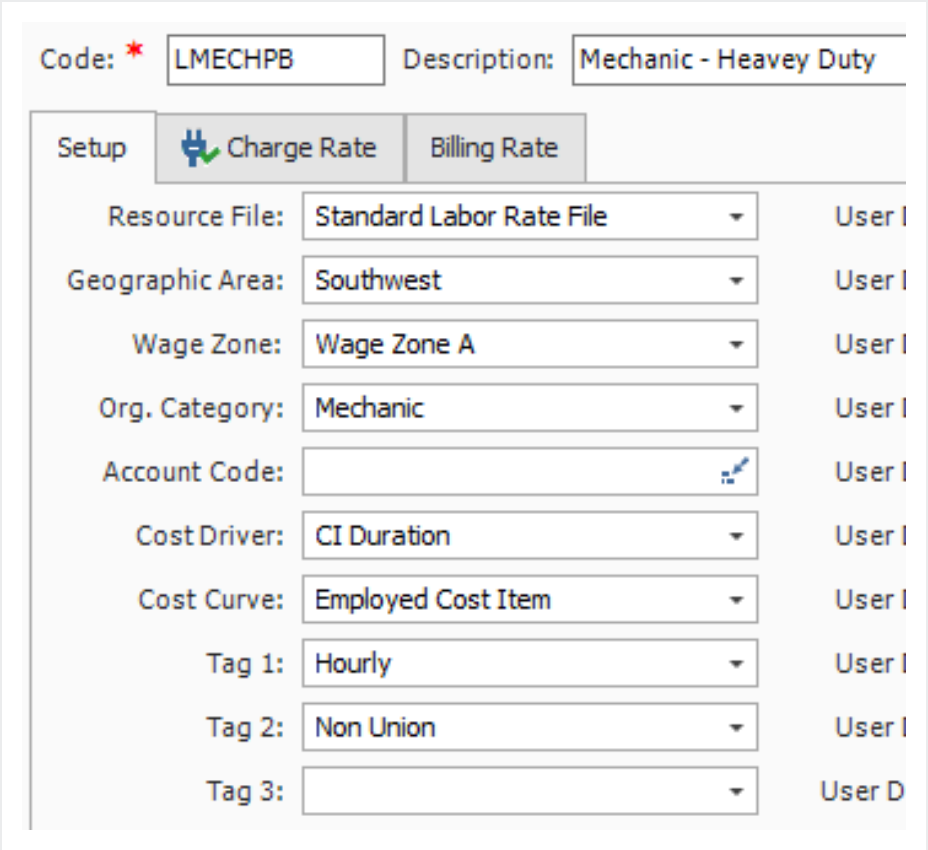
Step by Step — Create a Labor Resource

1. From the Library landing page, on the Setup tab, click on **Resource Rates** from the Master Resources section.



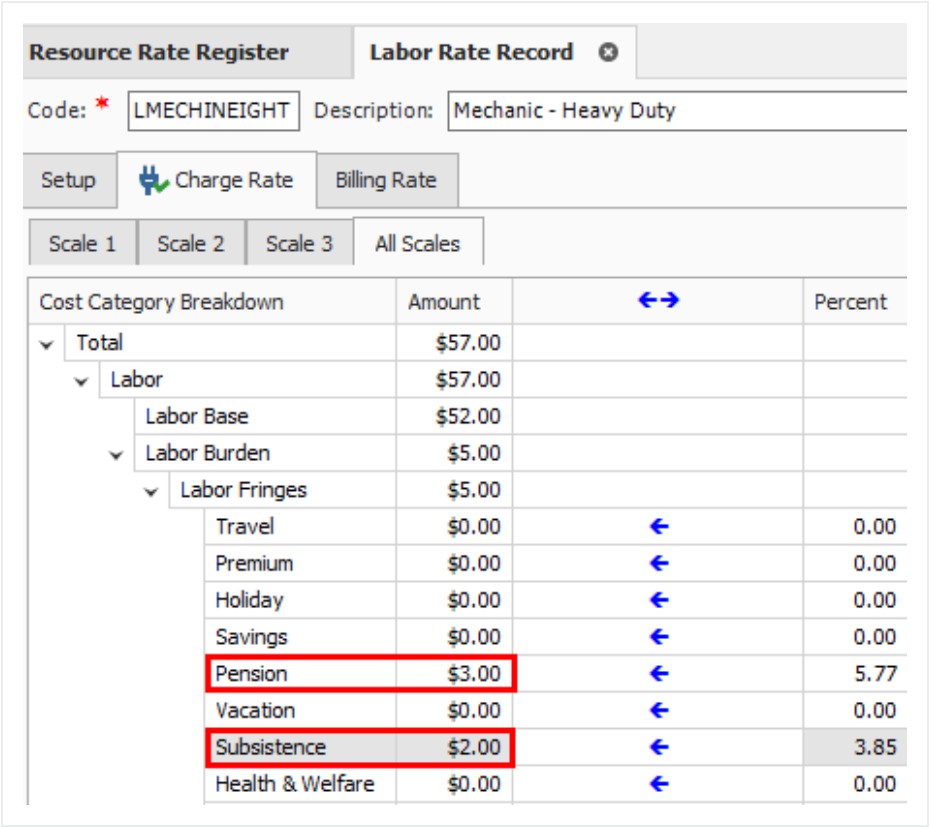
   - The Library Resource Rate Register opens
2. Select the **Labor** tab.
3. Right click on any row header and select **New**.
   - A new Labor Rate Record displays
4. In the Code field, type **L + [your initials]**.
5. Press the **Tab** key.
6. Fill in the Description field.
7. Click on the resource's **Setup** tab and select **Standard Labor Rate File** from the Resource File drop-down list.
8. Select a **location** for the Geographic Area.
9. Select **Wage Zone** A for Wage Zone.
10. Select a **labor type** for the Organizational Category.
11. For Tag 2, select a **code**.


Code: *
LMECHPB
Description:
Mechanic - Heavey Duty
Setup
Charge Rate
Billing Rate
Resource File:
Standard Labor Rate File
Geographic Area:
Southwest
Wage Zone:
Wage Zone A
Org. Category:
Mechanic
Account Code:
Cost Driver:
CI Duration
Cost Curve:
Employed Cost Item
Tag 1:
Hourly
Tag 2:
Non Union
Tag 3:
User I
User D

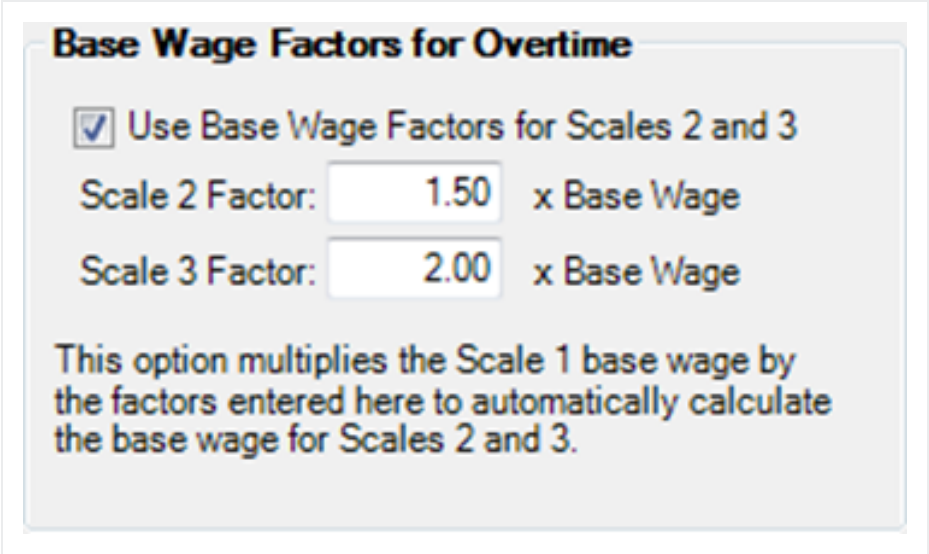


12. For Tag 1, select a **code**.
13. On the Charge Rate tab, enter a **dollar value** for your Labor Base.
14. Expand Labor Burden and under Labor Fringes, type in a **dollar value** for Pension and

Subsistence.



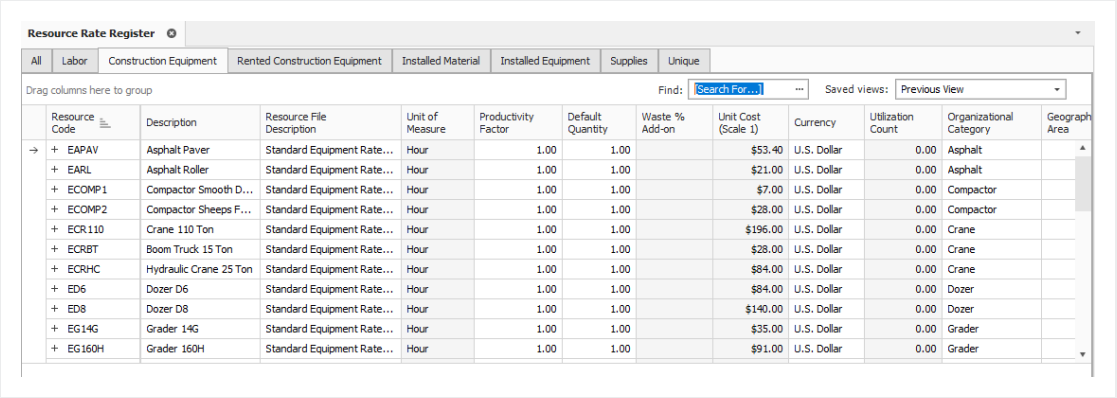
15. Define an overtime and double-time rate for the resource. Select the **checkbox** for Use Base Wage Factors for Scales 2 and 3.
16. Set the Scale 2 Factor to **1.50** x Base Wage and Scale 3 Factor to **2.00** x Base Wage.



17. Click **OK**, to close the record.

3.4.4 Construction Equipment Resources

- Similar to Labor Resources, Construction Equipment Resources are also duration driven resources by default
- They contain cost categories for ownership and operation costs



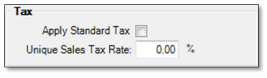
Resource Code	Description	Resource File Description	Unit of Measure	Productivity Factor	Default Quantity	Waste % Add-on	Unit Cost (Scale 1)	Currency	Utilization Count	Organizational Category	Geograph Area
EAPAV	Asphalt Paver	Standard Equipment Rate...	Hour	1.00	1.00		$53.40	U.S. Dollar	0.00	Asphalt	
EARL	Asphalt Roller	Standard Equipment Rate...	Hour	1.00	1.00		$21.00	U.S. Dollar	0.00	Asphalt	
ECOMP1	Compactor Smooth D...	Standard Equipment Rate...	Hour	1.00	1.00		$7.00	U.S. Dollar	0.00	Compactor	
ECOMP2	Compactor Sheeps F...	Standard Equipment Rate...	Hour	1.00	1.00		$28.00	U.S. Dollar	0.00	Compactor	
ECR110	Crane 110 Ton	Standard Equipment Rate...	Hour	1.00	1.00		$196.00	U.S. Dollar	0.00	Crane	
ECRBT	Boom Truck 15 Ton	Standard Equipment Rate...	Hour	1.00	1.00		$28.00	U.S. Dollar	0.00	Crane	
ECRHC	Hydraulic Crane 25 Ton	Standard Equipment Rate...	Hour	1.00	1.00		$84.00	U.S. Dollar	0.00	Crane	
ED6	Dozer D6	Standard Equipment Rate...	Hour	1.00	1.00		$84.00	U.S. Dollar	0.00	Dozer	
ED8	Dozer D8	Standard Equipment Rate...	Hour	1.00	1.00		$140.00	U.S. Dollar	0.00	Dozer	
EG14G	Grader 14G	Standard Equipment Rate...	Hour	1.00	1.00		$35.00	U.S. Dollar	0.00	Grader	
EG160H	Grader 160H	Standard Equipment Rate...	Hour	1.00	1.00		$91.00	U.S. Dollar	0.00	Grader	

These resources are the fleet of construction equipment that you own.

3.4.5 Rented Equipment Resources

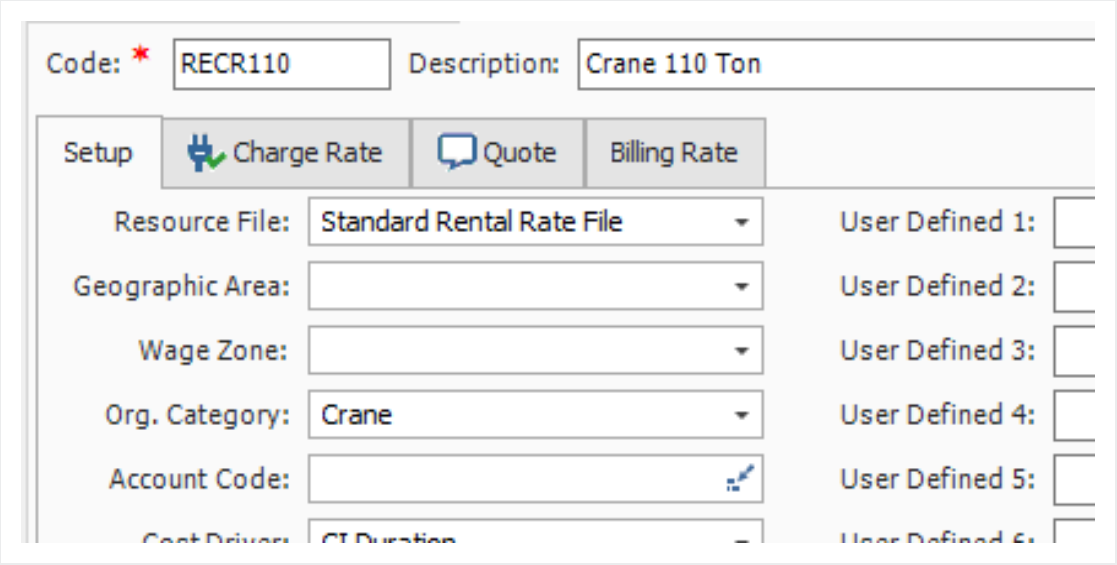
These resources represent the construction equipment that you rent.

- Rented Equipment Resources are also duration driven resources by default
- Contain cost categories for rental and operation cost as well as additional fees
- On the Rental Construction Equipment Record, you will notice a new tab named Quote
    - Quotes will be discussed in detail in *Lesson 8 – Quote Management*
- You will also note the Tax section. You can check the box to Apply Standard Tax, which pulls the Sales Tax percentage defined on the Cost Basis tab in Job Properties, or you can manually specify a unique sales tax rate



Step by Step — Create a Rental Equipment Resource

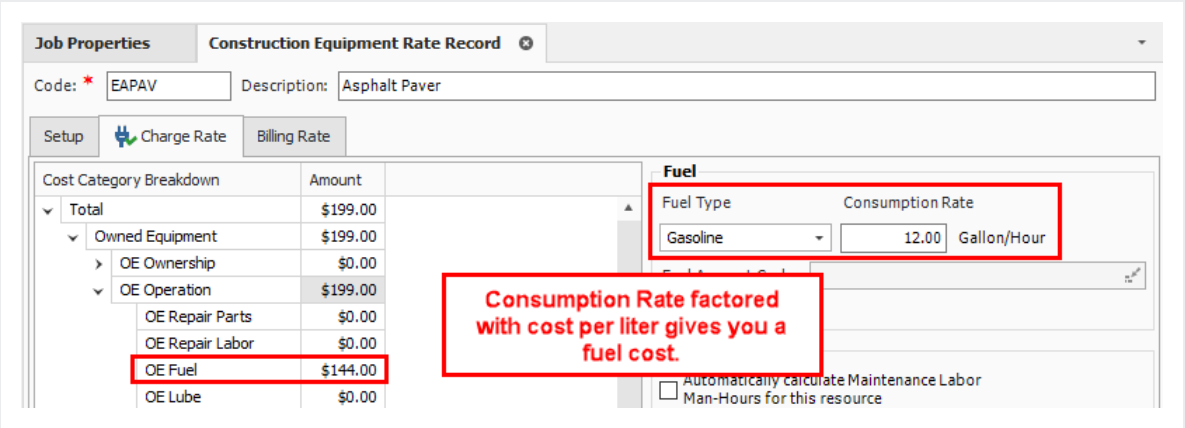
1. Open the Library Resource Rates Register.
2. Select the **Rented Construction Equipment** tab.
3. Right click on any row header and choose **New**; a new Installed Rented Equipment Rate Record displays.
4. In the Code field, type **RECR + [your initials]**, then press **Tab**.
5. In the Description field, type **Crane 110 Ton**.
6. Click on the resource's **Setup** tab and select **Standard Rental Rate File** from the Resource File drop-down list.
7. Select a **resource** from the Organizational Category drop-down list.



8. Move back to the Charge Rate tab to follow the step by step on the next page.

3.4.6 Equipment Consumption Rates

The Construction Equipment and Rented Construction Equipment Resource Rate Records include consumption rates that will factor with the fuel cost you define on the **Library Job Properties** > **Fuel Cost** tab to give a fuel cost for your equipment rate.



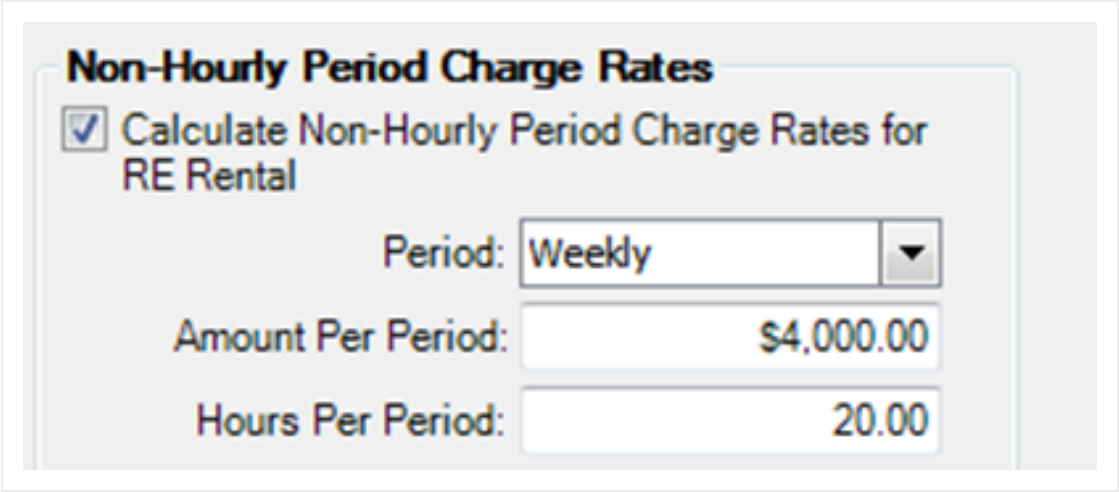
The below figure shows where consumption rates are defined on the Construction Equipment Resource Rate Record.

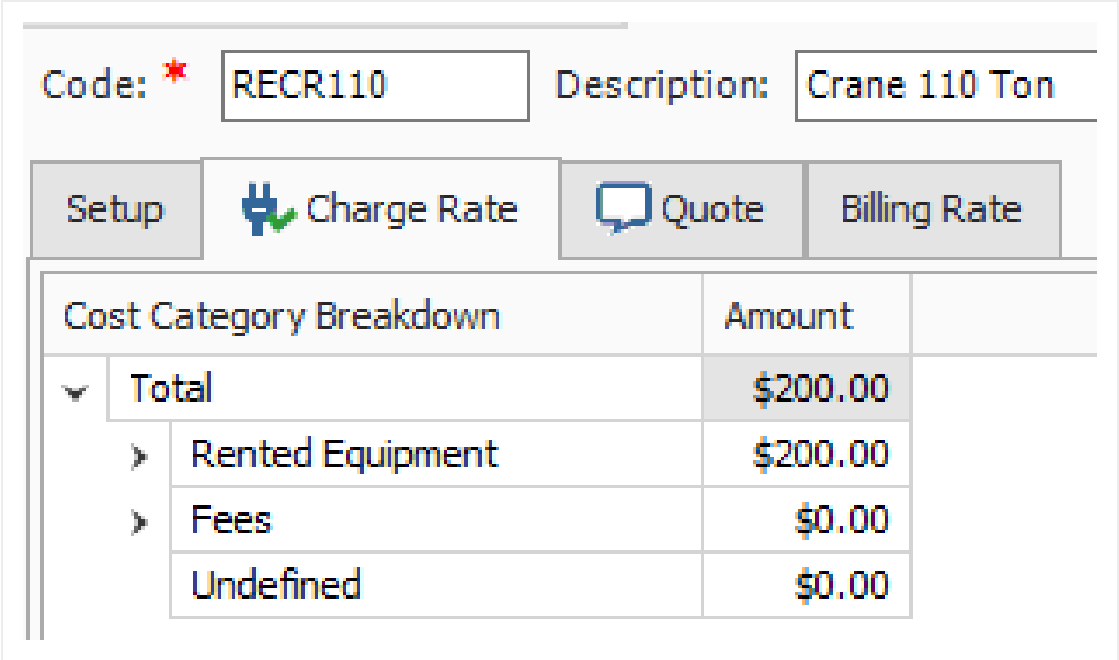
3.4.7 Non-Hourly Rate Calculator

For owned and rented construction equipment, the rate entered must be hourly. If your rate is weekly or monthly, you can use the Non-Hourly Rate Calculator on the Construction Equipment Resource Record to come up with the hourly rate.

Step by Step — Non-Hourly Rate Calculator

1. Refer back to your last entry's rate amount. Under Non-Hourly Period Charge Rates on the right, check the **Calculate Non-Hourly Period Charge Rates** checkbox.
2. On the resulting prompt, click **OK**.
3. In the Period field, select **Weekly**.
4. In the Amount Per Period field, type in a **number value**.
5. Type in a **number of hours** in the Hours Per Period field.



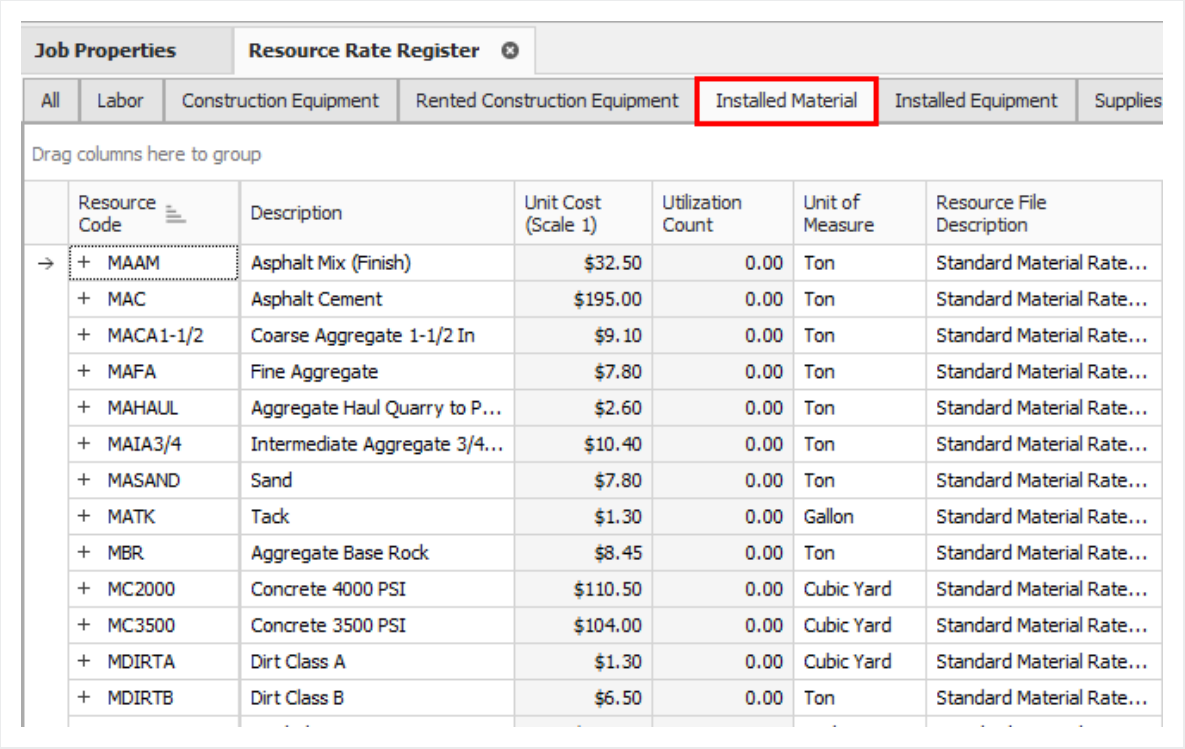


6. Click **OK** to close the record.

3.4.8 Installed Materials, Installed Equipment & Supplies Resources

- Comparing the Installed Material & Equipment resources to those covered so far, you will note that the unit of measure is not Hour for materials, but it is specific to the kind of material. It is a quantity-driven resource, as opposed to duration-driven like your labor and equipment resources

- You will also note the tax field can pull your standard tax settings from the Cost Basis tab in Job Properties, or a unique sales tax rate can be manually entered in each record
- On record for these resource types, you will notice a new tab named Quote. This tab shows up here because you may have to shop around and get quotes for these resources
    - Quotes will be discussed in detail in *Lesson 8 – Quote Management*
- In the Setup tab you will see a field named Waste % Add-on. Here you can account for approximate waste percentages
- Cost categories will differ on each type of resource record



Resource Code	Description	Unit Cost (Scale 1)	Utilization Count	Unit of Measure	Resource File Description
+ MAAM	Asphalt Mix (Finish)	$32.50	0.00	Ton	Standard Material Rate...
+ MAC	Asphalt Cement	$195.00	0.00	Ton	Standard Material Rate...
+ MACA1-1/2	Coarse Aggregate 1-1/2 In	$9.10	0.00	Ton	Standard Material Rate...
+ MAFA	Fine Aggregate	$7.80	0.00	Ton	Standard Material Rate...
+ MAHAUL	Aggregate Haul Quarry to P...	$2.60	0.00	Ton	Standard Material Rate...
+ MAIA3/4	Intermediate Aggregate 3/4...	$10.40	0.00	Ton	Standard Material Rate...
+ MASAND	Sand	$7.80	0.00	Ton	Standard Material Rate...
+ MATK	Tack	$1.30	0.00	Gallon	Standard Material Rate...
+ MBR	Aggregate Base Rock	$8.45	0.00	Ton	Standard Material Rate...
+ MC2000	Concrete 4000 PSI	$110.50	0.00	Cubic Yard	Standard Material Rate...
+ MC3500	Concrete 3500 PSI	$104.00	0.00	Cubic Yard	Standard Material Rate...
+ MDIRTA	Dirt Class A	$1.30	0.00	Cubic Yard	Standard Material Rate...
+ MDIRTB	Dirt Class B	$6.50	0.00	Ton	Standard Material Rate...

Above is an example of the Installed Material tab in the Library Resource Rate Register.

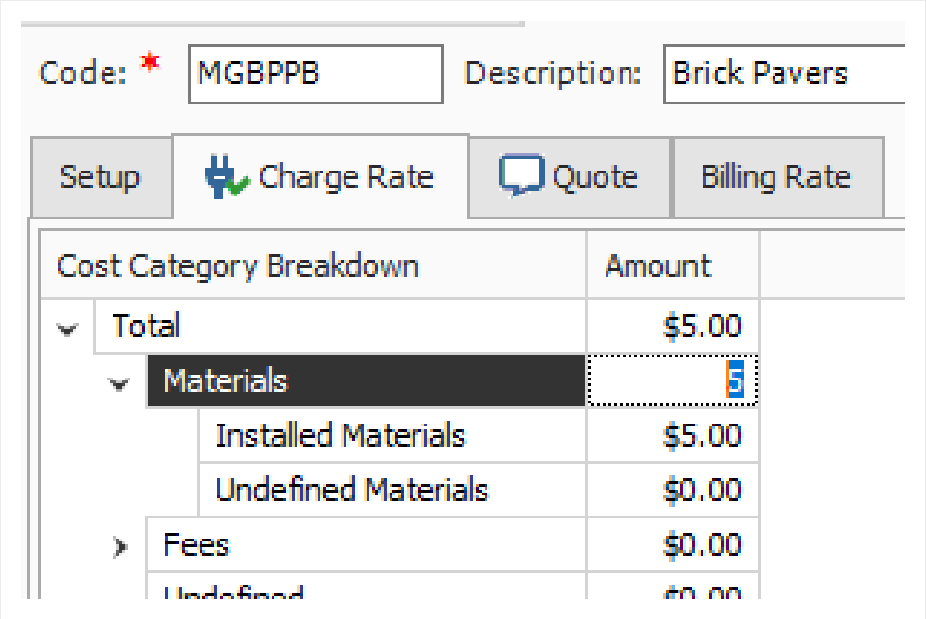
The following steps walk you through how to create a new material resource in InEight Estimate.

Step by Step — Create an Installed Material Resource

1. Select **Resource Rates** from the Library landing page.
    - The Resource Rate Register displays
2. Select the **Installed Material** tab.
3. Right click on any row header and select **New** from the drop-down menu.

- A new Installed Material Rate Record displays

4. In the Code field, type **MGBP + [your initials],** then press **Tab.**
5. In the Description field, type **Brick Pavers**.
6. Select a **unit of measure** from the Unit of Measure drop-down list.
7. On the resource's Setup tab, under Resource File select **Standard Material Rate File**.
8. On the Charge Rate tab, expand Materials and enter a **number value** in the Installed Materials Amount field.



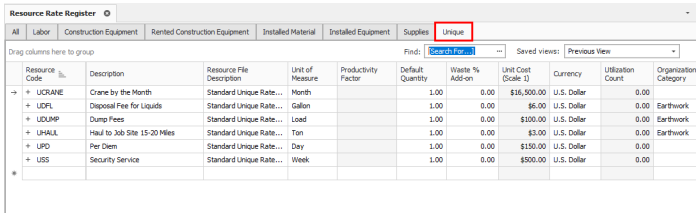
9. Click **OK** to finish adding this resource.

3.4.9 Unique Resources

The Unique resource type is a catch-all and can be used for anything from dump fees and security to creating subcontractors as a resource.

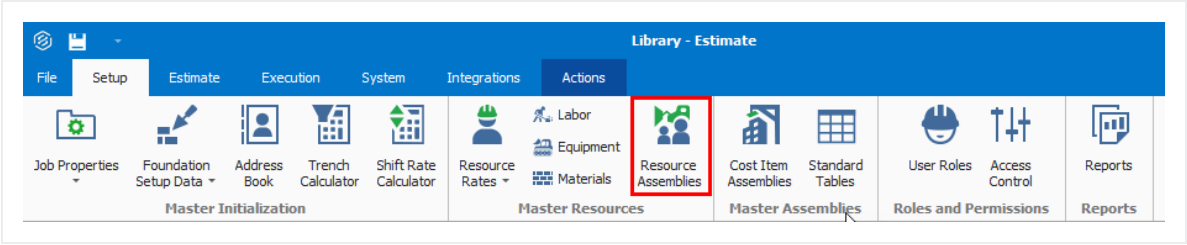
- The Unique resources are the only resources that have all cost categories available, as well as all units of measure
- You will also note the tax field which can pull your standard tax settings from the Cost Basis tab in Job Properties, or a unique sales tax rate can be manually entered in each record

- Quotes will be discussed in detail in *Lesson 8 – Quote Management*



3.5 RESOURCE ASSEMBLIES

A Resource Assembly is a group of resources. You can create an assembly once and then reuse it as needed in multiple cost items whenever the same combination of resources is needed.



The most common use for an assembly is to group labor resources into crews (e.g., Pipe Crew, Concrete Crew); however, any resource (equipment, materials, etc.) may be grouped into an assembly. Utilizing assemblies allows you to estimate faster, since you can add and manage an entire group of resources at once.

You can create assemblies in the Library and import them into job folders the same way you import resources.

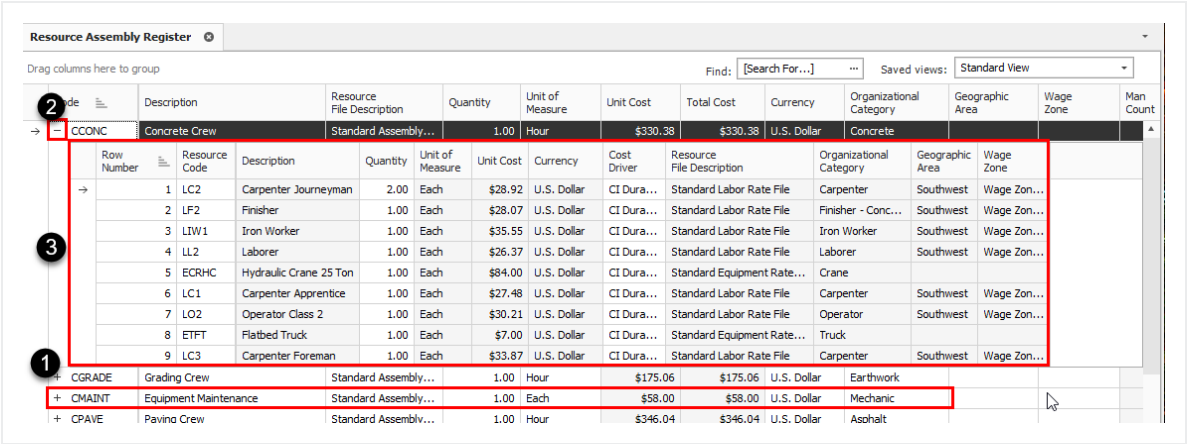
3.5.1 Library Resource Assembly Register

To open the Library Resource Assembly Register, select the **Library** icon, then select **Resource Assemblies** from the Master Resources section of the Setup tab.

Overview – Library Resource Assembly Register

Section	Description
1	Each row in the register represents a single resource assembly and is defined with

Section	Description
	an Assembly Code and Assembly Description.
2	Each assembly can be expanded by clicking the plus ⊞ icon next to its Assembly Code.
3	Expanding an assembly reveals the list of resources that make up that assembly. • Best practice for creating Assembly codes is to use C for Crew Assemblies, M for Material Assemblies, etc., however you can have labor, equipment, and materials in the same assembly



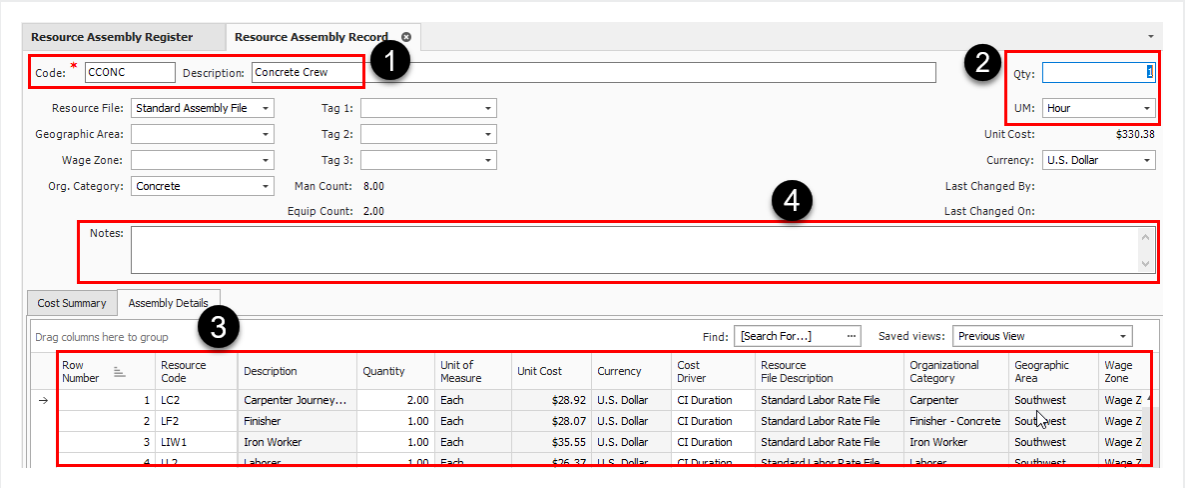
3.5.2 Resource Assembly Record

To open an existing Resource Assembly Record, right click on the row header of an assembly (row) on the Resource Assembly Register and select Open.

Overview – Resource Assembly Record

	Name	Description
1	Assembly Code and Description	Each assembly is defined with an assembly Code and an assembly Description.
2	Quantity and Unit of Measure	Each assembly has a quantity and unit of measure. The default is 1 EA. For crew assemblies with all hourly duration driven resources, it is a best practice to change the Qty to Hour, so that when used on a cost item, it

Name		Description
		will show you the assembly's unit cost per hour.
3	Assembly Details	The rows in the Assembly Details register represent the resources that make up the resource assembly.
4	Notes	An area where the estimators make notes for records related to the resource assemblies for work orders which is commonly performed by a type of crew.



3.5.2.1 Productivity Rate Indicator in the CBS Register

The Productivity Indicator shows the field that contains the as-entered value and is driving the estimate for that cost item. This appears as an arrow aligned to the left of the cell as shown below.

Being able to see productivity drivers on the CBS register makes it easier to review and modify the estimate as a whole while reducing the potential to accidentally overwrite a manually entered data.

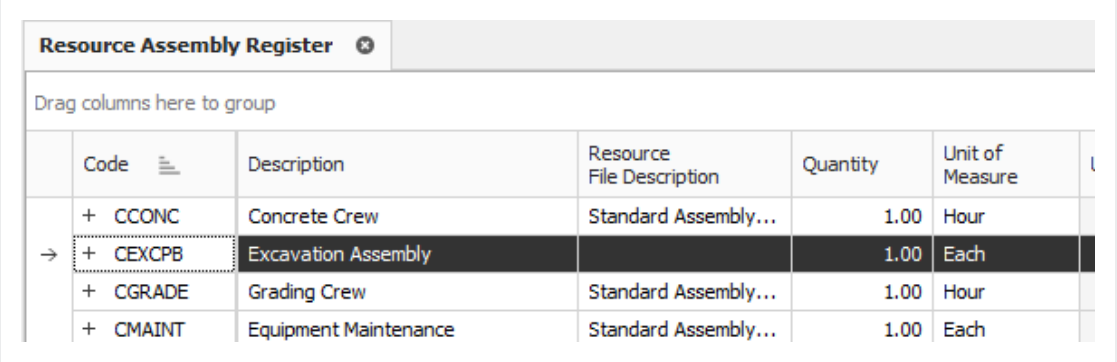
Follow the step by step below to create a Resource Assembly.

Step by Step — Create a Resource Assembly

1. From the Library landing page, under the Master Resources section of the Setup tab, select **Resource Assemblies**.
    - The Resource Assembly Register is shown.
2. Right click on any **row header** and select **New** from the drop-down menu.
    - A new Resource Assembly Record is shown.
3. In the Code field, type **CEXC + [your initials]** as the unique code for the assembly.
4. Add a **description** in the Description field.
5. In the Assembly Details register at the bottom of the screen, click in the **Resource Code** column in the first blank row, and then select the **Resource** icon that appears in the cell.
6. On the Labor tab of the resulting register, select the resource with the Description: **LL2Laborer** and click **OK** to add this resource to the assembly.
7. Add two additional resources.

    TIP You can use the Ctrl and Shift keys to select multiple resources at once.

8. Click **OK** to save and close the new assembly.



Exercise 3.1 — Create Resources & Resource Assemblies

In this exercise, you will practice creating resources and assemblies in the InEight Estimate Library. In the Library Resource Rate Register, create resources with the following variables:

Labor Resource

Resource Code	LSFA	**Wage Zone**	Wage Zone A
Resource Description	Field Administrator	**Organizational Category**	Supervision
Geographic Area	Southwest	**Scale 1 Labor Base**	$33.45
Scale 1 Premium	2 percent	**Scale 1 Subsistence**	$0.47
Resource File		Standard Labor Rate File	

Select the checkbox for **Use Base Wage Factors for Scales 2 and 3**.
Scale 2 Factor: 1.50 x Base Wage. **Scale 3 Factor:** 2.00 x Base Wage.

Rented Construction Equipment Resource

Rented Construction Equipment Resource			
Resource Code	RPW3000	**RE Rental Amount**	$3.40
Resource Description	Pressure Washer 3000 PSI	**Organizational Category**	Clean & Inspect
Resource File		Standard Rental Rate File	
Installed Material Resource			
Resource Code	MCCB	**Installed Materials Amount**	$300.00
Resource Description	Pre-Cast Concrete Catch Basin	**Organizational Category**	Concrete
Resource File		Standard Material Rate File	
Unit of Measure		Each	

Uncheck the box for **Apply Standard Tax** and enter a **Unique Sales Tax Rate:** 6%

In the Library Resource Assembly Rate Register, create resource assemblies with the following codes, descriptions, and resources

Assembly #1

Assembly Code	CBRIDGE
Assembly Description	Bridge Crew
Resource File	Standard Assembly File
Unit of Measure	Hour

Select **Wage Zone A Labor** Resources for this Assembly.

Resources on Assembly	Resource Description	Resource Quantity
LC3	Carpenter Foreman	1
LL2	Laborer	2
LF2	Finisher	1
LC2	Carpenter Journeyman	2

Assembly #2

Assembly Code	CRIPRAP
Assembly Description	Rip Rap Replacement Crew
Resource File	Standard Assembly File
Unite of Measure	Hour

Select **Wage Zone A Labor** Resources for this Assembly.

Resources on Assembly	Resource Description	Resource Quantity
LT2	Teamster Foreman	.5
LO3	Operator Class 3	1
LL2	Laborer	2
EX510	Backhoe JD 510	1

Assembly #2 (continued)

ETPU	Pickup	1
EL950	Loader 950	1

You should end up with the following results

Resource Code	Resource File Description	Organizational Category	Geographic Area	Wage Zone	Description	Unit of Measure
LSFA	Standard Labor Rate File	Supervision	Southwest		Field Administrator	Hour

Scale	Total	Labor	Labor Base	Labor Burden	Labor Fringes
1	$33.92	$33.92	$33.45	$0.47	$0.47
2	$50.18	$50.18	$50.18	$0.00	$0.00
3	$66.90	$66.90	$66.90	$0.00	$0.00

Resource Code	Description	Resource File Description	Unit of Measure	Unit Cost (Scale 1)	Currency	Organizational Category
RPW3000	Pressure Washer 3000 PSI	Standard Rental Rate File	Hour	$3.40	U.S. Dollar	Clean & Inspect

Total	Rented Equipment	RE Rental	RE Rent Expense	RE Overhead	RE Finance Expense	RE Insurance	RE License	RE
$3.40	$3.40	$3.40	$0.00	$0.00	$0.00	$0.00	$0.00	

Resource Code	Description	Resource File Description	Unit of Measure	Unit Cost (Scale 1)	Currency	Organizational Category
MCCB	Pre-Cast Concrete Catch Basin	Standard Material Rate File	Each	$318.00	U.S. Dollar	Concrete

Total	Materials	Installed Materials	Undefined Materials	Fees	Sales Taxes	Undefined Fees	Undefined	Billing Rate	Billing Marku
$318.00	$300.00	$0.00	$300.00	$18.00	$18.00	$0.00	$0.00	$318.00	

Drag columns here to group Find: [Search For...] Saved views: Previous View

Assembly Code	Assembly Description	Resource File Description	Quantity	Unit of Measure	Unit Cost	Total Cost	Currency	Organizational Category	Geographic Area	Wa Zo
CBRIDGE	Bridge Crew	Standard Assembly File	1.00	Hour	$170.11	$170.11	U.S. Dollar			

Row Number	Resource Code	Description	Quantity	Unit of Measure	Unit Cost	Currency	Cost Driver	Resource File Description	Organizational Category	Geographic Area	Wage Zone
1	LC2	Carpenter Journeyman	2.00	Each	$28.92	U.S. Dollar	CI Duration	Standard Labor Rate File	Carpenter	Southwest	Wage Zone A
2	LC3	Carpenter Foreman	1.00	Each	$31.47	U.S. Dollar	CI Duration	Standard Labor Rate File	Carpenter	Southwest	Wage Zone A
3	LF2	Finisher	1.00	Each	$28.07	U.S. Dollar	CI Duration	Standard Labor Rate File	Finisher - Concrete	Southwest	Wage Zone A
4	LL2	Laborer	2.00	Each	$26.37	U.S. Dollar	CI Duration	Standard Labor Rate File	Laborer	Southwest	Wage Zone A

Code	Description	Resource File Description	Quantity	Unit of Measure	Unit Cost	Total Cost	Currency	Organizational Category	Geographic Area	Wage Zone
GRIPRAP	Rip Rap Replacement Crew	Standard Assembly...	1.00	Hour	$152.89	$152.89	U.S. Dollar			

Row Number	Resource Code	Description	Quantity	Unit of Measure	Unit Cost	Currency	Cost Driver	Resource File Description	Organizational Category	Geographic Area	Wage Zone
1	LL2	Laborer	2.00	Each	$26.37	U.S. Dollar	CI Duration	Standard Labor Rate File	Laborer	Southwest	Wage Zon...
2	LO3	Operator Class 3	1.00	Each	$30.62	U.S. Dollar	CI Duration	Standard Labor Rate File	Operator	Southwest	Wage Zon...
3	LT2	Teamster Foreman	0.50	Each	$32.32	U.S. Dollar	CI Duration	Standard Labor Rate File	Truck Driver - Teamster	Southwest	Wage Zon...
4	EL950	Loader 950	1.00	Each	$14.18	U.S. Dollar	CI Duration	Standard Equipment Rate...	Loader		
5	ETPU	Pickup	1.00	Each	$4.20	U.S. Dollar	CI Duration	Standard Equipment Rate...	Truck		
6	EX510	Backhoe JD 510	1.00	Each	$35.00	U.S. Dollar	CI Duration	Standard Equipment Rate...	Excavator		

Congratulations, you have completed this exercise!

3.6 IMPORTING RESOURCES

The following procedures inform you how to setup resources in InEight Estimate from an excel sheet.

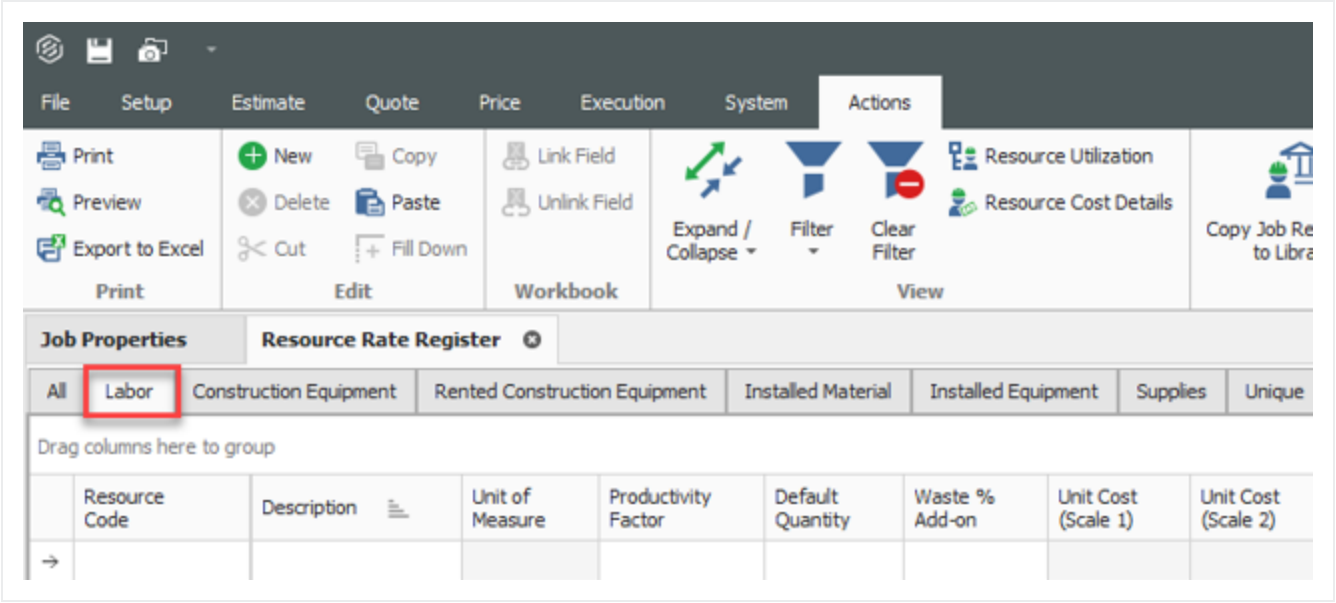
NOTE Use of this lesson will draw from other sections of InEight Estimating Manual. Basic understanding of the Sort, Group, Filter, Excel integration functionality in InEight Estimate is required.

3.6.1 Open Resource Rate Register

You can create resources within the Resource Rate Register. This is the location to build out the structure of those resources.

Step by Step — Opening the Labor tab

1. Open the Job Folder or Library that you're going to be working in.
2. From the Ribbon, select the **Setup** tab.
3. Under the Resources section, select **Resource Rates**. The Resource Rate Register opens.
4. Select the tab you want to add resources to.



The layout of this register and excel file is up to the organization and the decisions that are made during the detail design phase. A basic excel file will be provided to your organization as a starting point to work from. If that can't be located, you can easily build one utilizing the views within InEight Estimate.

3.6.1.1 Creating A Labor Saved View - Resource Rate Register

You can create a view to mirror both the register and excel sheets to easily bring information back and forth from the two applications.

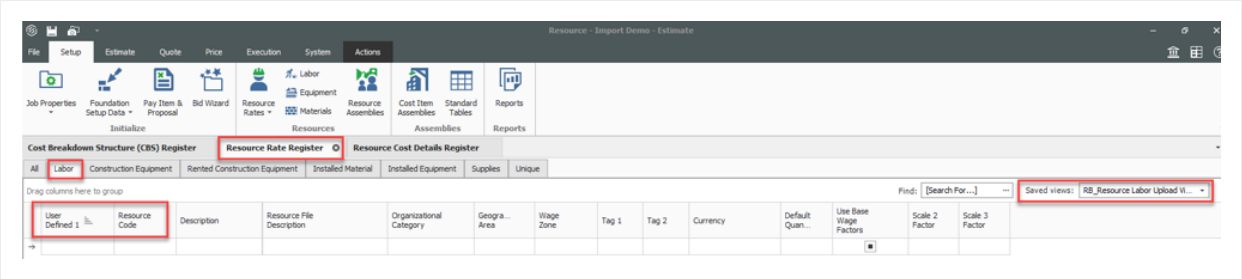
Example of columns:

- User Defined 1
- Resource Code
- Description
- Resource File Description - Validated field
- Geographic Area - Validated field
- Wage Zone - Validated field
- Organizational Category - Validated field
- Tag 1 - Validated field
- Tag 2 - Validated field
- Currency - Validated field

- Default Quantity
- Use Base Wage Factors - Scale Factors
- Scale Factor 2 - Scale Factors
- Scale Factor 3 - Scale Factors

NOTE For more information on Validated Tags field, see Validated Tags topic. Scale Factors aren't required if you are manually applying rates to each cost category scale.

The view should appear as shown below with **User Defined 1** in the first column. This field is used for sorting and arranging data accurately moving between Estimate and Excel. You are not limited to UDF 1 and can choose to utilize a field of their choice for sorting.



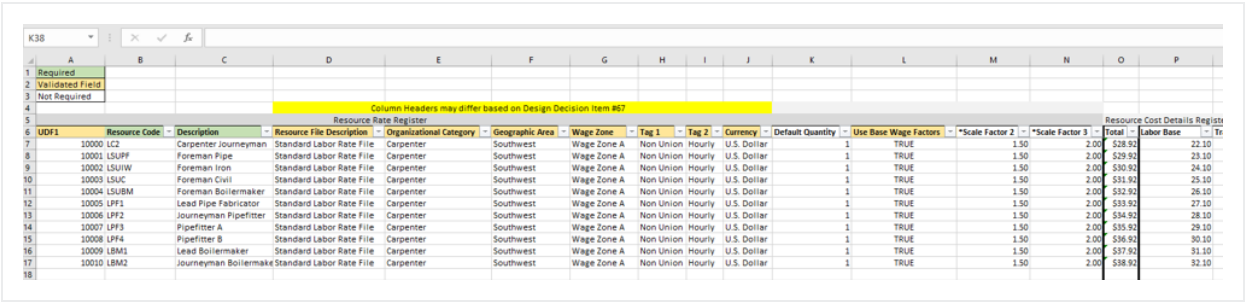
3.6.2 Setting up the excel file

Go to the Excel sheet and make sure the information in the columns shown in the screenshot are filled out. Basic concepts to keep in mind regarding the excel file:

Sort Code - This column needs to have a high sequential number such as **10000**. This is very important to assign as it will help us authenticate all the labor rates.

Resource Code - A unique Naming convention to be assigned to every labor resource. In this example we have all labor resource starting with a **L** followed by the letters that represent the resource description.

Labor Base - The base wage of the labor resource is entered here. Estimate does not allow **$** sign to be pasted, which is why the cells for the Base column are formatted to **Number**.

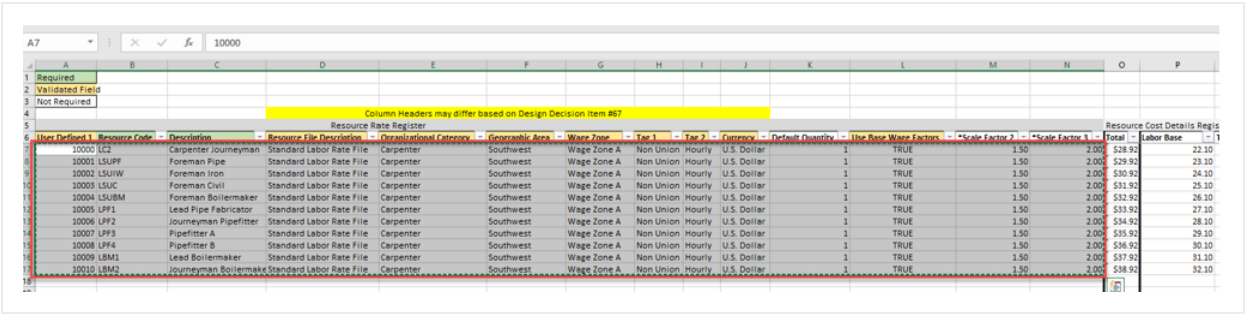


3.6.2.2 Creating the resource

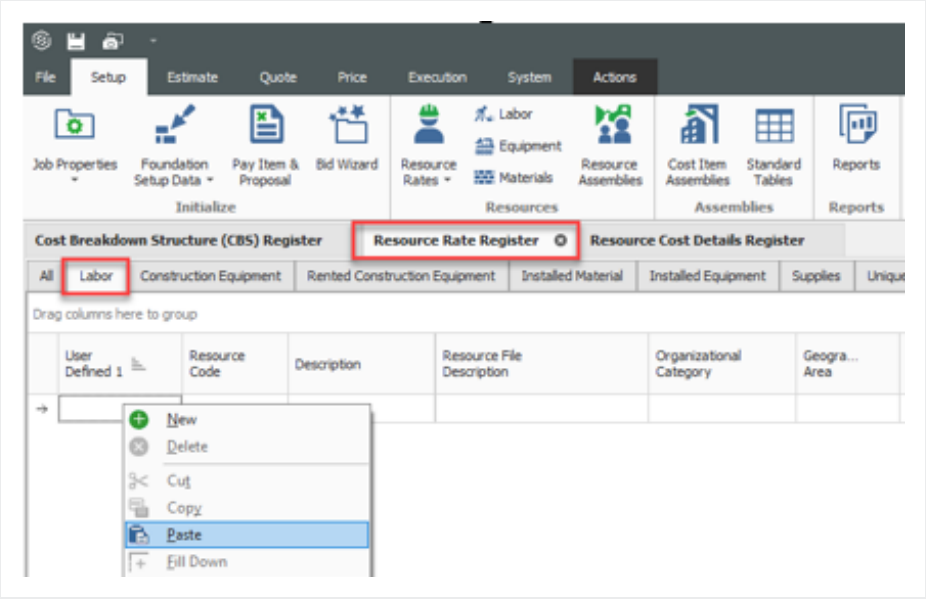
Follow this procedure once you have information filled out in excel.

Step by Step — Creating the Resource

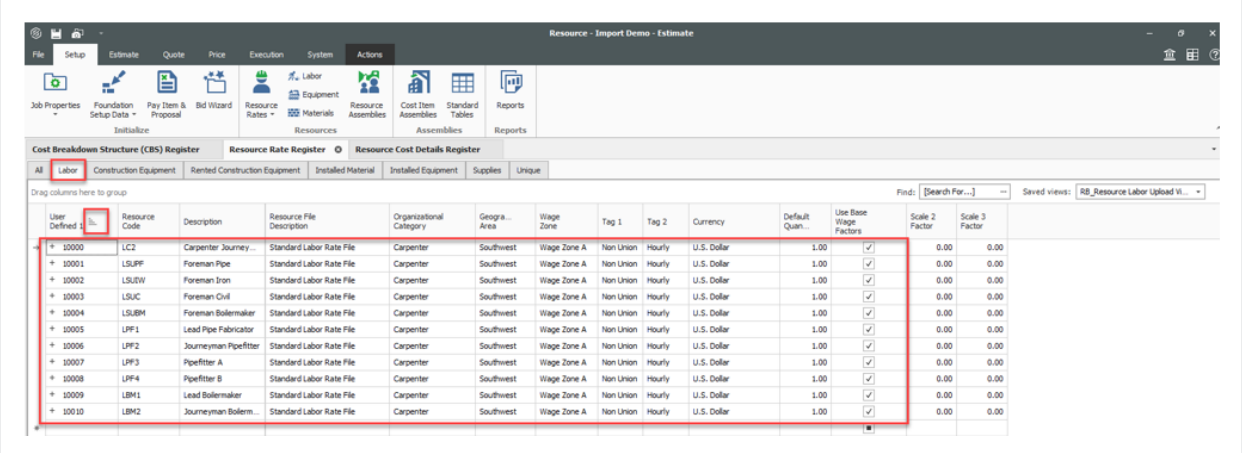
1. Open the excel file.
2. Sort the sheet by sequential number in the **Sort Code** field.
3. Highlight the cells you want to bring into the estimate.
4. Copy the cells using right click and selecting **Copy** from the context menu.



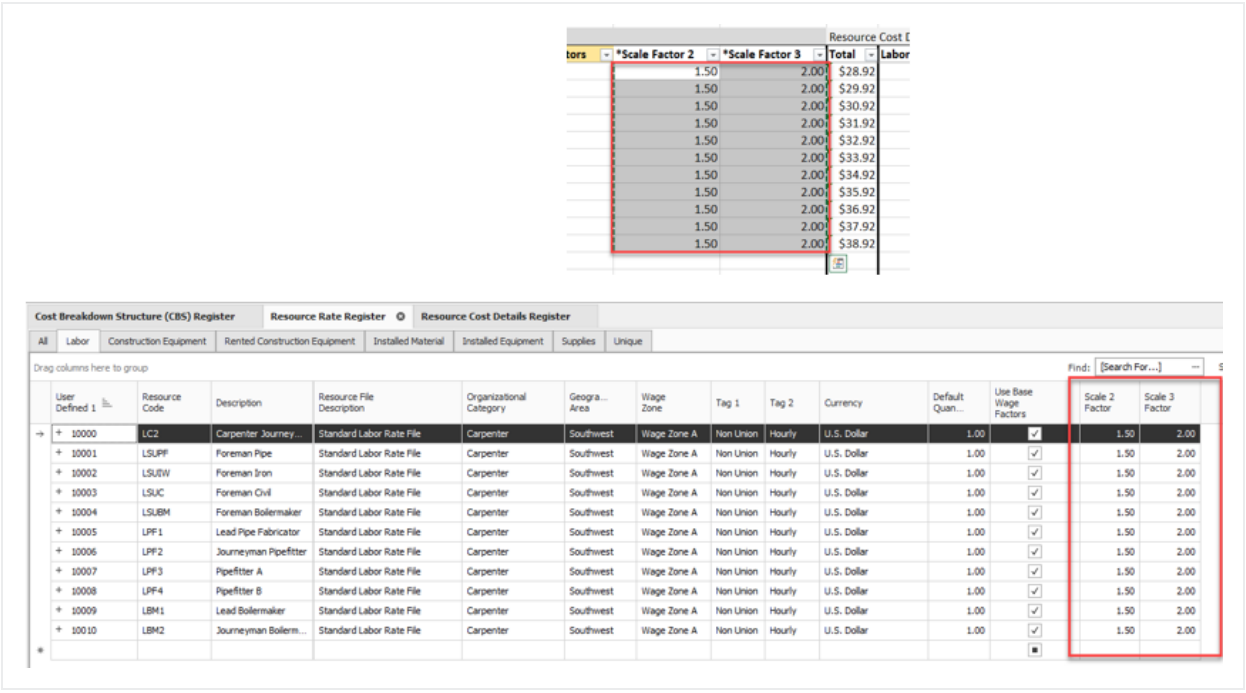
5. Open Estimate to the **Resource Rate Register**.
6. Select the **User Defined 1** column in the Labor tab of the Resource Rate Register.



7. Right click the empty cell and select **Paste** from the context menu. A pop up will appear asking **Are you sure you want to insert the selected values?**
8. Select **Yes** to confirm inserting the selected values.
9. The cells you copied from the excel sheet are now copied into the Resource Rate Register. The Sort code data is pasted in the User defined 1 column. Resource Code & Resource description data is pasted as well.



10. **NOTE** For Make sure the sorting is on User Defined 1 column. This allows us to see the information being sorted similar to our data in excel file. Base Wage Factors need to be flagged to turn on with the check box. Your first copy and paste should have activated them. You need to copy and paste again in order to apply the factors.



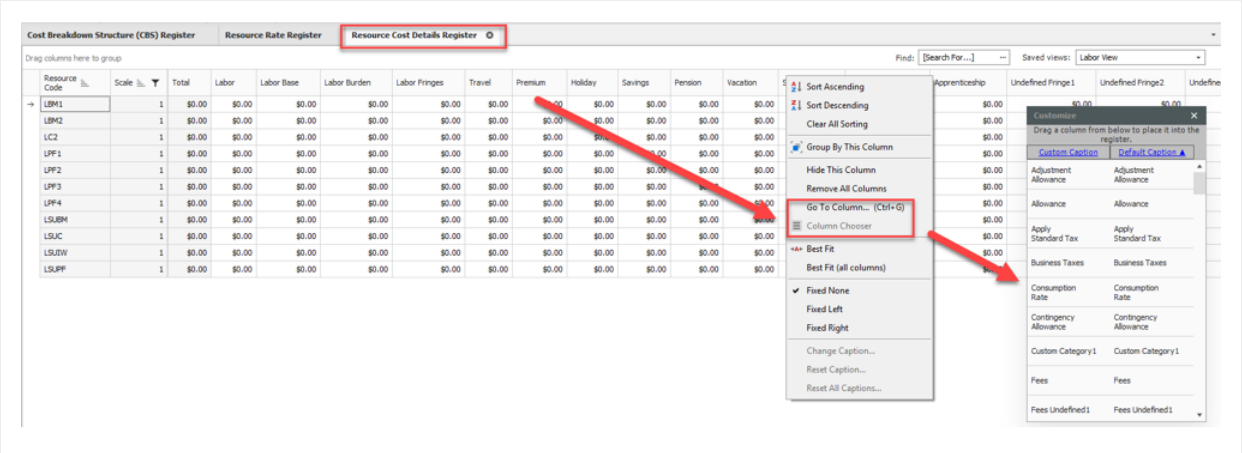
3.6.2.3 Resource Cost Details

Labor resources are now in the system a user can apply rates to those resources.

Step by Step — Resource Cost Detail

1. From the Ribbon, select the **Actions** tab.
2. Under the View section, select the Resource **Cost Details** option. The **Resource Cost Details Register** opens.
3. **NOTE** Create a view to mirror the accompanying excel sheet or create one to bring in the associated resource cost in the details register.

4. From the Saved views drop down, select the **Labor** view to filter down to only labor resources.
5. Right click a column header and select **Column Chooser**.
6. Drag and drop the columns into the view identified below.



Example of columns – The level of detail and utilization of specific cost categories is a decision for each organization:

- User Defined 1 - Non editable fields from resource rates register
- Resource Code - Non editable fields from resource rates register
- Description - Non editable fields from resource rates register
- Resource File Description - Non editable fields from resource rates register
- Geographic Area - Non editable fields from resource rates register
- Wage Zone - Non editable fields from resource rates register
- Organizational Category - Non editable fields from resource rates register
- Scale - Non editable fields from resource rates register
- Labor Base
- Travel
- Premium
- Holiday
- Savings
- Pension
- Vacation

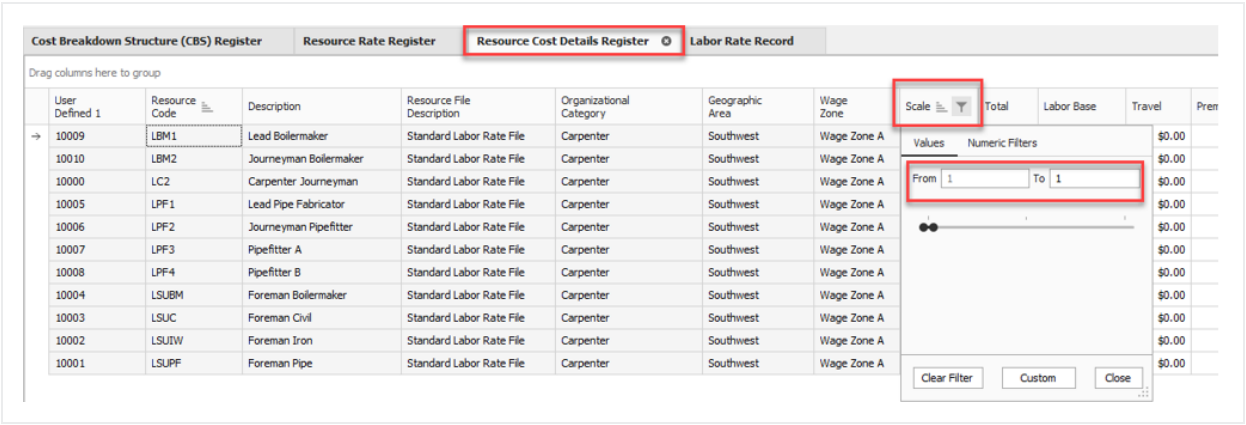
- Subsistence
- Health & Welfare
- Apprenticeship
- Undefined Fringe 1
- Undefined Fringe 2
- Undefined Labor Fringes
- Bodily Injury & Property Damage
- Workers Compensation
- Undefined Insurance1
- Undefined Insurance2
- Undefined Labor Insurance
- FICA
- FUTA
- SUTA
- Undefined Tax1
- Undefined Labor Taxes
- Undefined Labor Burden
- Undefined Labor
- Construction Supplies
- Undefined Materials
- Undefined
- Billing Rate
- Billing Rate Markup
- Billing Rate Markup %

3.6.3 Filter/Sort/Paste - Resource Cost Details Register

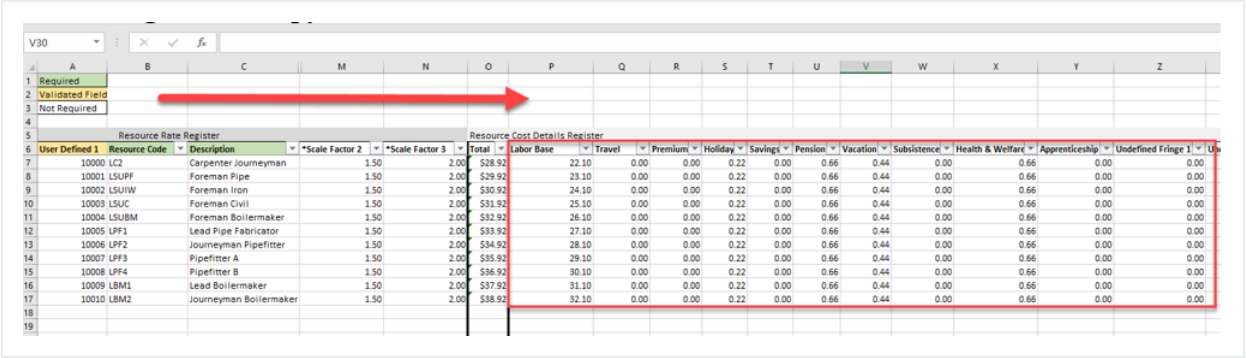
The Labor upload view brings in the columns required to enter Labor base, burdens etc. Every Labor resource has three rows created with Scales 1,2,3. The Scale Column is used to setup Straight time, Over time, Double time.

Step by Step — Filter Resource Cost Detail Register

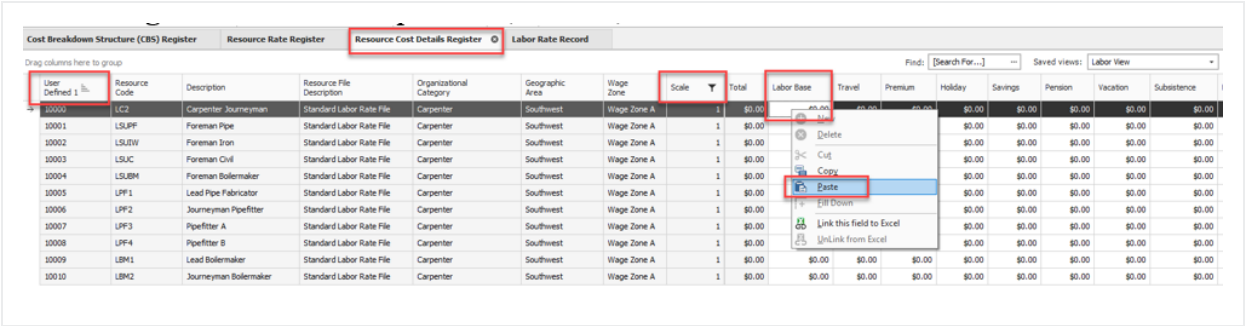
1. From the Scale column header, click the filter icon..
2. Set the From and To values to **1**.



3. Back on the excel spreadsheet, highlight the base rates to bring in.
4. Right click and select **Copy** in the context menu.



5. Go to Estimate. Right click and select **Paste** from the context menu.



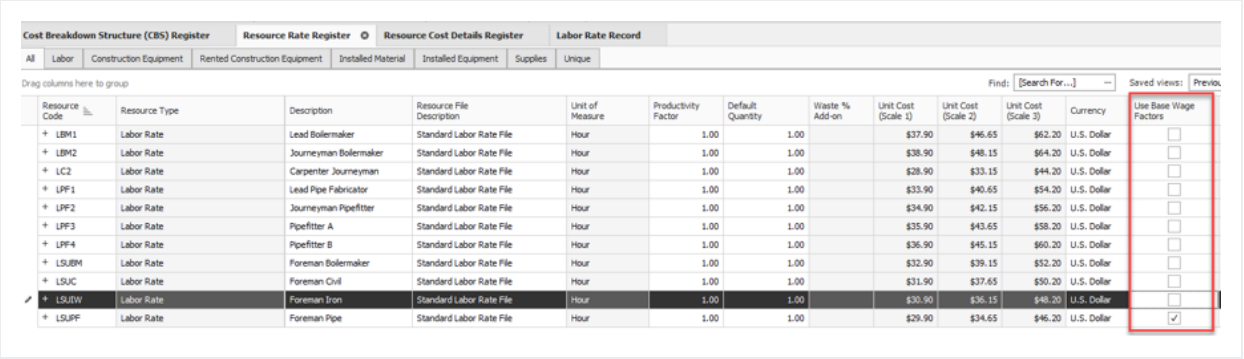
6. You will be prompted with a **Are you sure you want to insert these values?** message as before. Select **Yes** to continue.

3.6.4 Manual Set-Up of Scales 2 & 3 – Optional

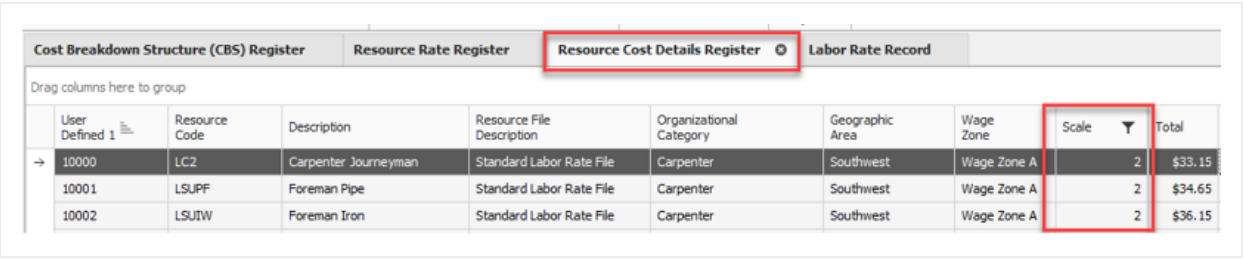
If the organization wants to have more in-depth cost details for each scale rather than using scale factors the same procedure will be utilized to copy Labor burden, fringes, and other add-ons to setup Scale 2 & Scale 3.

NOTE	For Base Wage Factor Columns will not be active if your organization is using method 2.

3.6.4.4 Resource Rate Register

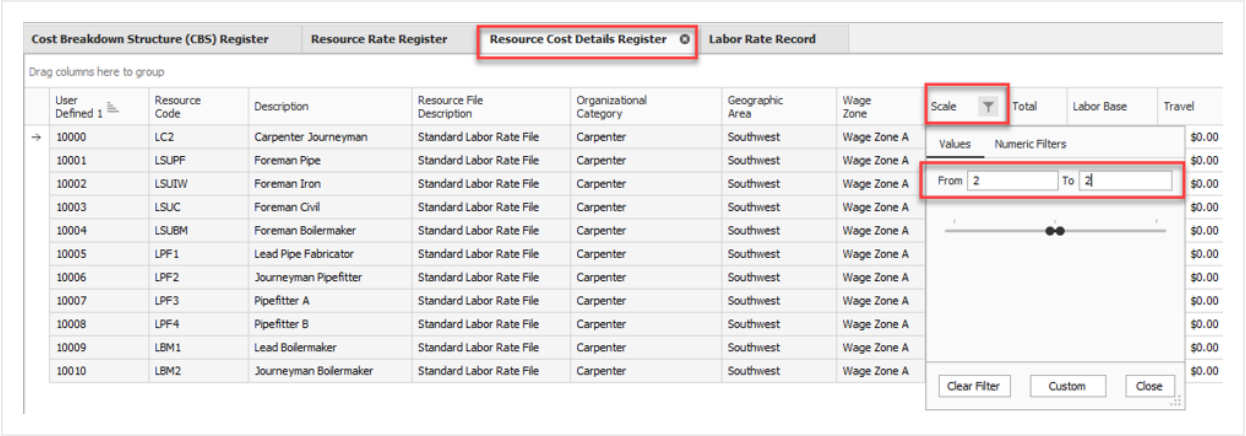


3.6.4.5 Resource Cost Details Register

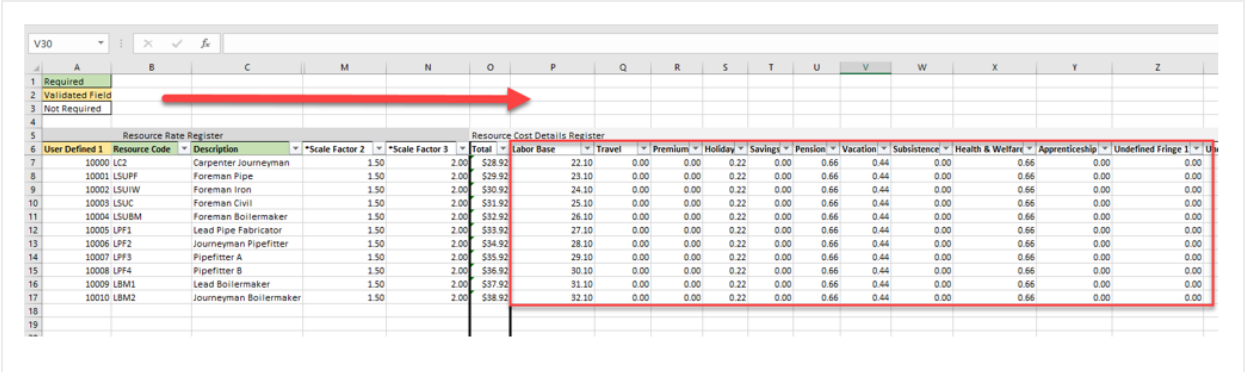


Step by Step — Manual Setup of Scales

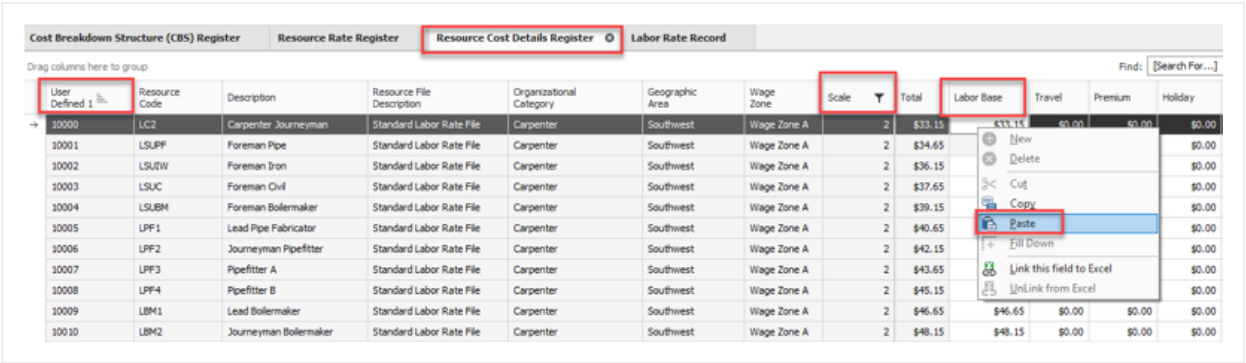
1. From the Scale column header, click the filter icon..
2. Set the From and To values to **2**.



3. Back on the excel spreadsheet, highlight the base rates to bring in.
4. Right click and select **Copy** in the context menu.



5. Go to Estimate. Right click and select **Paste** from the context menu.



6. You will be prompted with a **Are you sure you want to insert these values?** message as before. Select **Yes** to continue.
7. Follow the same procedure for scale 3.

3.6.4.6 Non Labor Resource Setup

The same principles can be applied for the other resource types within InEight Estimate. This procedure covers installed material, but can also be used for the other six resource types.

3.6.5 Creating A Materials Saved View - Resource Rate Register

Create a view to mirror both the register and excel sheets to easily bring information back and forth from the two applications.

Example of columns

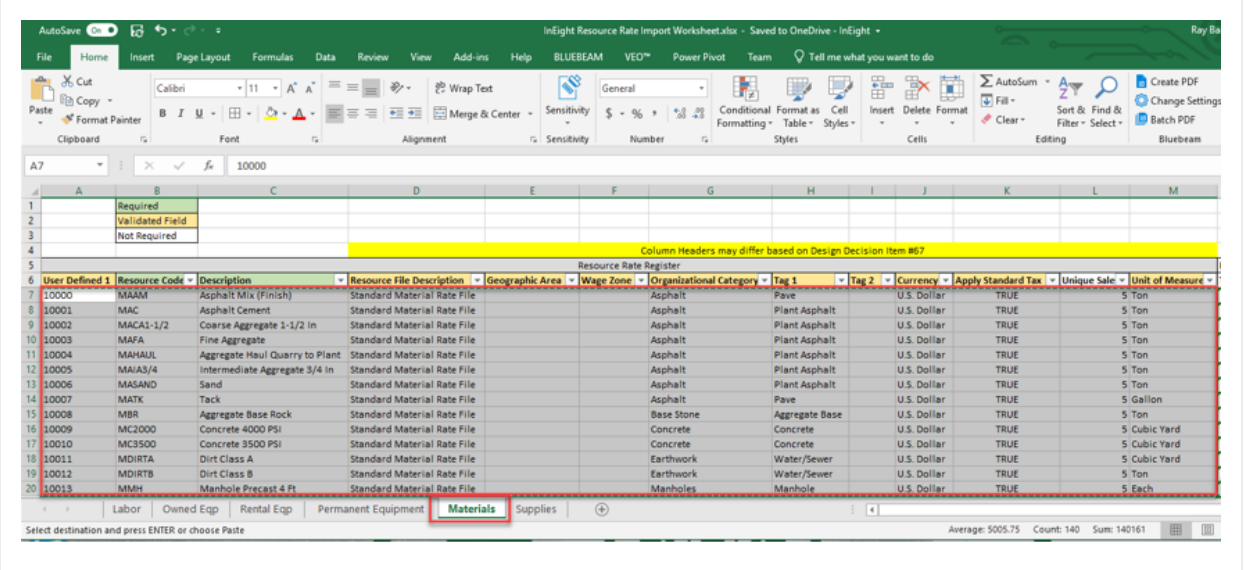
- User Defined 1
- Resource Code
- Description
- Resource File Description - Validated Tag field
- Geographic Area - Validated Tag field
- Wage Zone - Validated Tag field
- Organizational Category - Validated Tag field
- Tag 1 - Validated Tag field
- Tag 2 - Validated Tag field
- Currency - Validated Tag field
- Apply Standard Tax - Validated Tag field
- Unique Sales Tax
- Unit of Measure - Validated Tag field

3.6.6 Creating A Material Resource

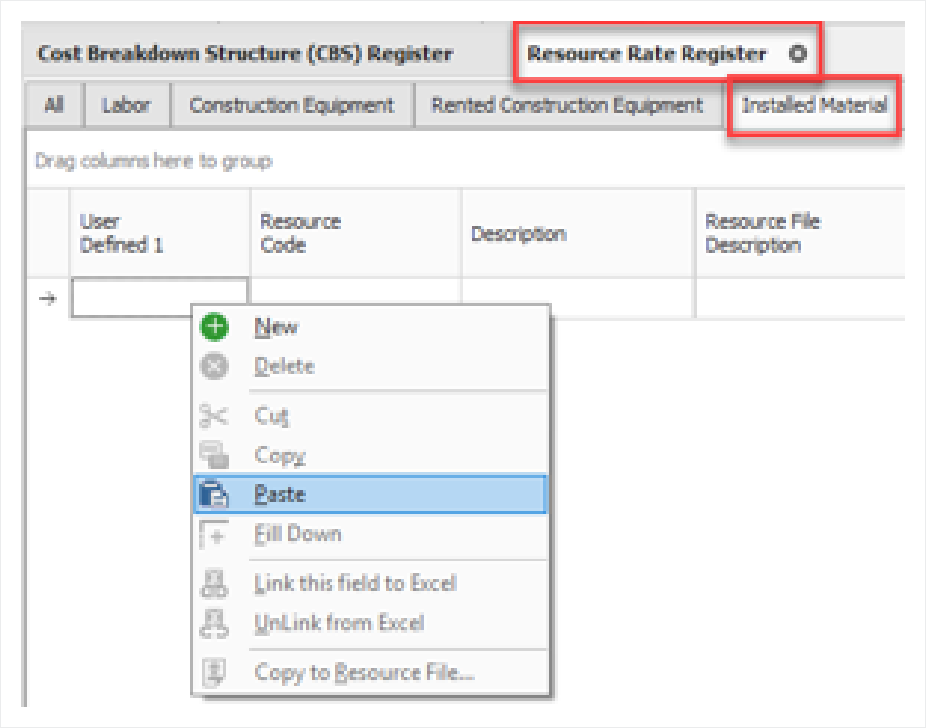
Follow the step by step once you have information filled out in excel.

Step by Step — Creating the Resource

1. Open the excel file.
2. Sort the sheet by sequential number in the **Sort Code** field.
3. Highlight the cells you want to bring into the estimate.
4. Copy the cells using right click and selecting **Copy** from the context menu.



5. Open Estimate to the **Resource Rate Register**.
6. Select the **User Defined 1** column in the Installed Material tab of the Resource Rate Register.



7. Right click the empty cell and select **Paste** from the context menu. A pop up will appear asking **Are you sure you want to insert the selected values?**
8. You will be prompted with a **Are you sure you want to insert these values?** message. Click **Yes** to continue.

3.6.7 Create A Material Saved View - Resource Cost Details Register

Installed Material Resources are now in the system. You can apply rates to those resources. Create a view to mirror the accompanying excel sheet or create one to bring in the associated resource cost in the details register.

Step by Step — Material Saved View

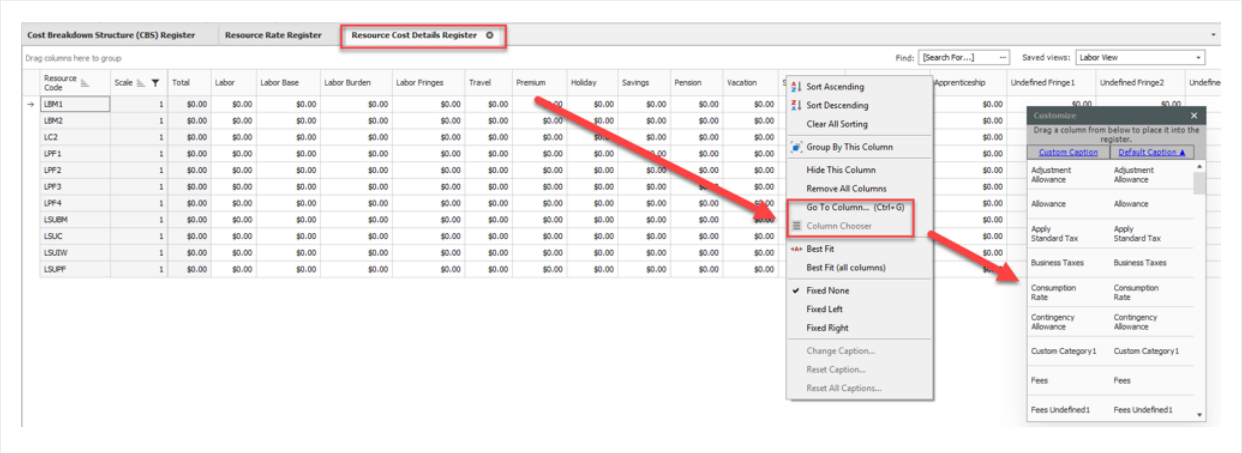
1. From the Ribbon, select the **Actions** tab.
2. Under the View section, select the Resource **Cost Details** option. The **Resource Cost Details Register** opens.

3. NOTE Create a view to mirror the accompanying excel sheet or create one to bring in the associated resource cost in the details register.

4. From the Saved views drop down, select the **Installed material** view to filter down to only material resources.

5. Right click a column header and select **Column Chooser**.

6. Drag and drop the columns into the view identified below.



Example of columns – The level of detail and utilization of specific cost categories is a decision for each organization:

- User Defined 1 - Non editable fields from resource rates register
- Resource Code - Non editable fields from resource rates register
- Description - Non editable fields from resource rates register
- Resource File Description - Non editable fields from resource rates register
- Geographic Area - Non editable fields from resource rates register
- Wage Zone - Non editable fields from resource rates register
- Organizational Category - Non editable fields from resource rates register
- Unit of Measure - Non editable fields from resource rates register
- Currency - Non editable fields from resource rates register
- Total - Non editable fields from resource rates register
- Installed Materials
- Undefined Materials
- Sales Taxes

- Undefined Fees
- Undefined
- Billing Rate
- Billing Rate Markup
- Billing Rate Markup %

3.7 QUANTITY CHECKING

The Quantity Checking feature allows you to compare the quantity of a superior cost item to the sum of its relevant subordinate cost item quantities. This setting enables the use of the **Quantity Check** and **Quantity Warning** columns in the Cost Breakdown Structure. The use of these columns can assist in confirming whether or not your quantities are correct.

NOTE The subordinate cost item quantities need to have the same unit of measure as the superior cost item before you are able to choose the Quantity Check column.

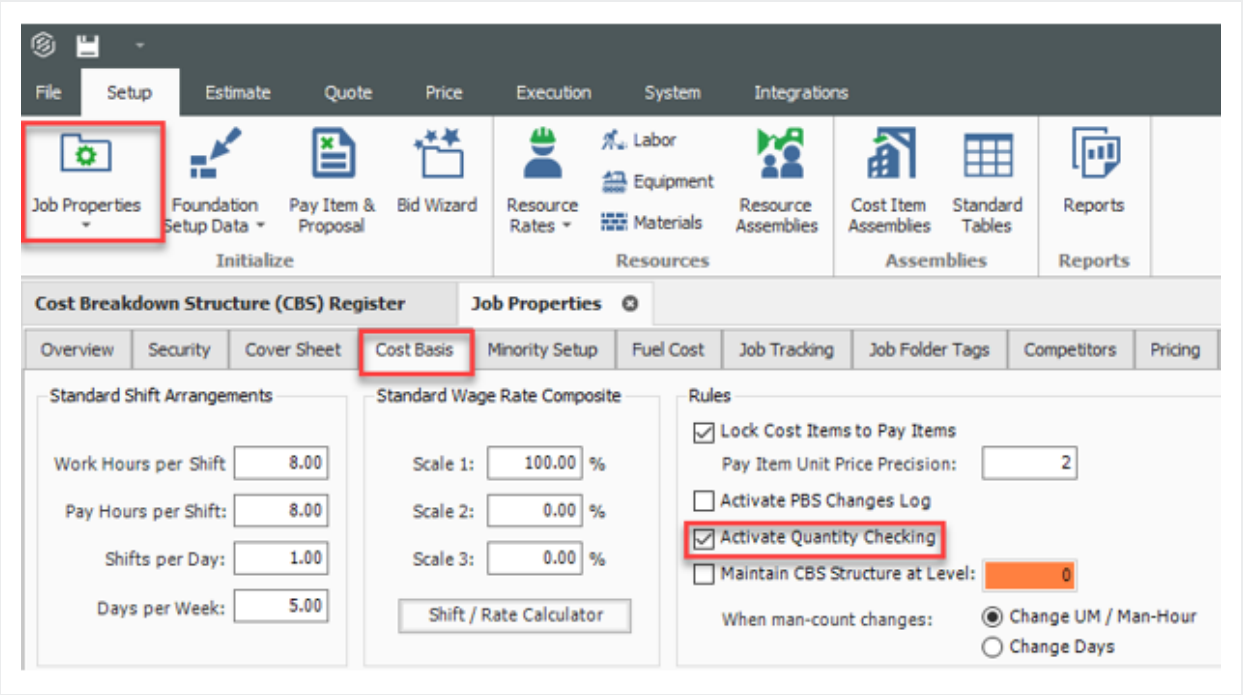
In the example below, break a concrete pour cost item into four subordinate parts. The Forecast (T/O) Quantity of the superior item will be 156875.00 tons of concrete. Start by dividing each of the four parts into 35000.00 tons each. Once you have broken out this concrete pour, determine if you need a fifth pour or if you should distribute the remaining quantity to the four pours. The factors you keep in mind are the trips and time involved in the extra pour vs capacity of equipment.

Step by Step — Quantity Checking

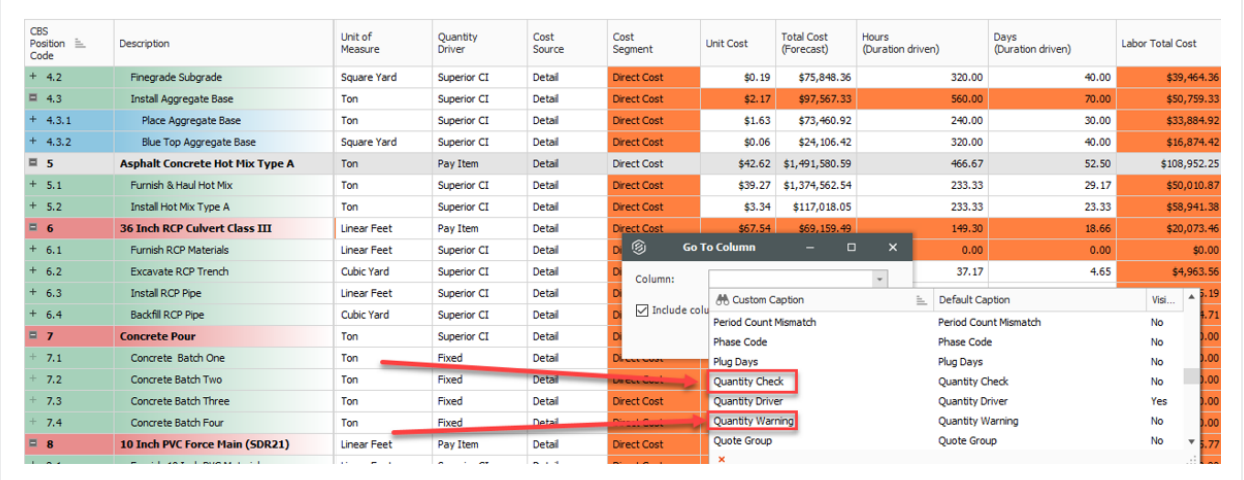
1. From the Ribbon, select the **Setup** tab.
2. Under the section Initialize, select **Job Properties**. Then select the **Cost Basis** tab.

   NOTE Quantity checking starts by turning the feature on in the Job Properties. If you want to have quantity checking turned on for all jobs in Estimate, then this setting needs to be turned on in the **Master Job Properties**. The Master Job Properties is located in the **Library**.

3. From the Rules data box, select the **Activate Quantity Checking** check box.

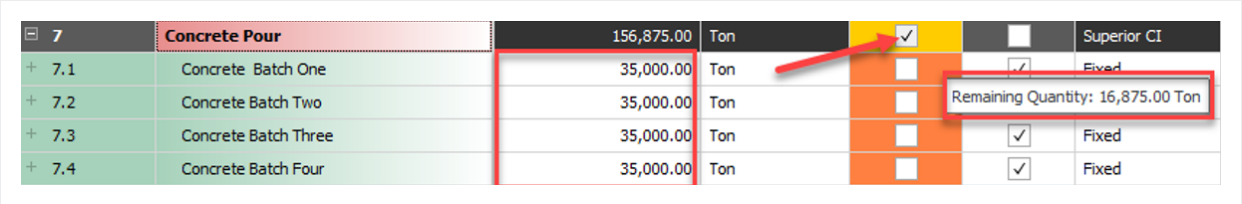


4. Next bring a couple of columns into your view on the Cost Breakdown Structure (CBS) Register. Right click on the column header and choose **Go To Column**.
5. The Go To Column dialog box appears. Have the **Include columns that are not currently in the view** check box selected.



6. Click **OK** when you have selected your preferred columns.

   Next, toggle the check box for the **Quantity Check** column.



7. NOTE As you check Quantity Check for the four batches of Concrete, the superior cost item Quantity Warning turns yellow. This is indicating a quantity warning. Hover your mouse over the superior cost item Quantity Warning column. Then, an overlay message appears showing the quantity discrepancy. Apply this discrepancy to the Subordinate cost items. That way, the superior cost item with be the sum of the parts.

8. The remaining quantity is 16875.00 tons which does not warrant a fifth pour.

Lesson 3 Review

1. When you create a new job folder, all category labels defined in the Library Foundation Setup Data Register will be copied to the new job folder automatically.
    a. True
    b. False
2. This resource type is a catch-all and can be used for anything from dump fees and security to creating subcontractors as a resource.
    a. Installed Materials
    b. Unique
    c. Labor
    d. Construction Equipment
3. The Construction Equipment and Rented Construction Equipment Resource Rate Records include consumption rates that will factor with the fuel cost you define where?
    a. Library Foundation Setup Data
    b. Library Resource Rates
    c. Job Properties
    d. Cost Breakdown Structure

Lesson 3 Summary

As a result of this lesson, you can define, adjust and explain:

- Library Job Properties
- Library Foundation Setup Data Register
- Library Resource Rate Register
- Library Assembly Register

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LESSON 4 – PROJECT SETUP

Lesson Duration: 45 minutes

Lesson Objectives

After completing this lesson, you will be able to:

- Create a new project
- Enter Job Properties
- Create pay items in the Pay Item & Proposal Register

Lesson Topics

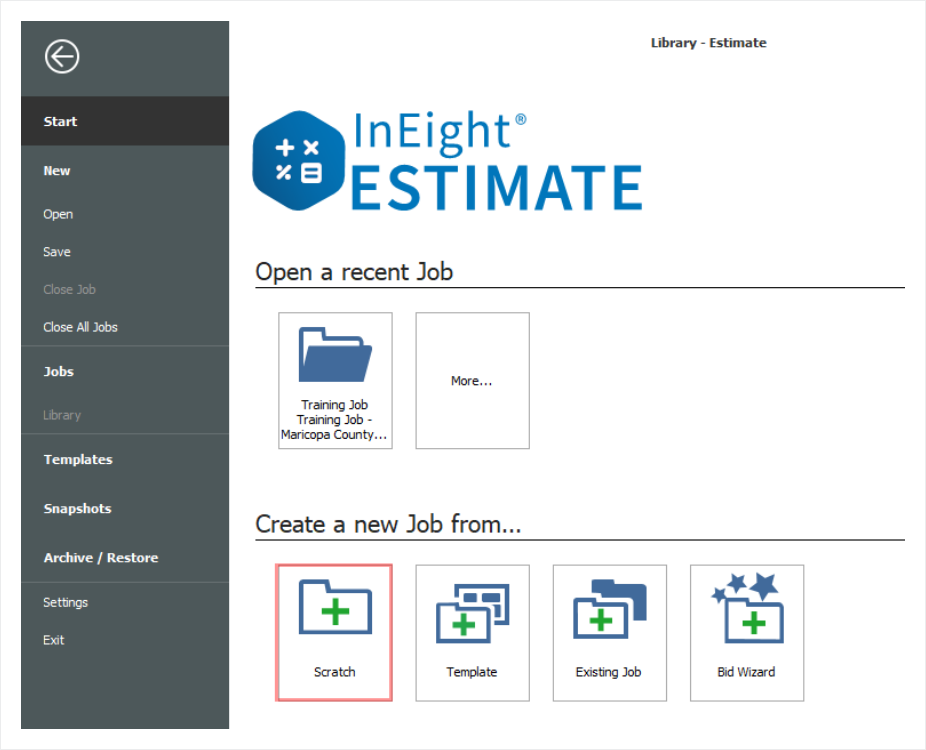
4.1 JOB CREATION

As discussed in Lesson 1, a job folder contains all pertinent information for a single project, and it is independent from any other job. When you create a new job folder, all your estimating and managing of the project will be stored in that folder.

First, you will create a new job from scratch.

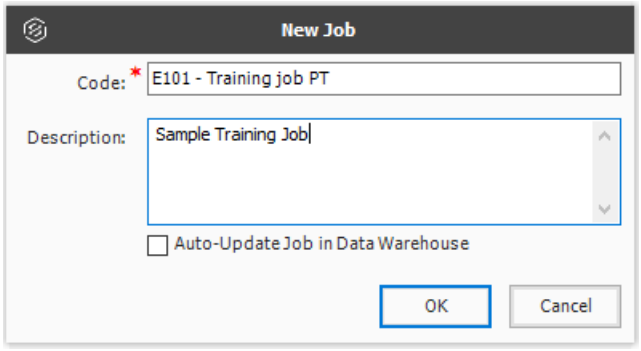
Step by Step — Create a New Job

1. From the InEight Estimate Backstage view, under the Create a new Job from… section, select **Scratch**, or select **New** > **Scratch** from the left sidebar menu.



2. On the New Job dialog, name the **Code** field.
    - The Job Code must be unique to differentiate between projects
3. Type in a **description** in the Description field.

4. When you create a new job, you can choose to auto-update the job in Connected Analytics. You do not need to manually select the Connected Analytics option to auto-update it.



5. Click **OK** to create the new project.

4.2 JOB PROPERTIES

When you create a new project, the **Job Properties** form automatically displays. This is where you can enter basic information about the project. To open the Job Properties form at any other time, on the InEight Estimate landing page, select the **Setup** tab and click **Job Properties**.

4.2.1 Overview Tab

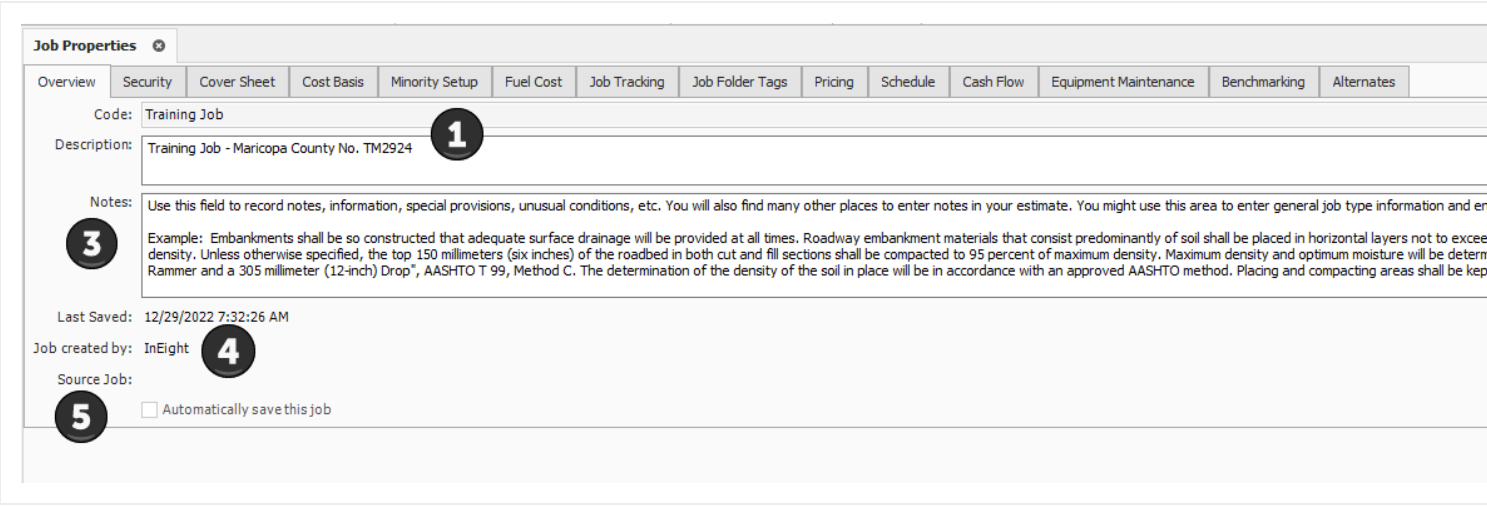
The Job Properties form opens to the Overview tab.

Overview – Overview Tab

	Name	Description
1	Job Code and Description	Contain the information you entered on the New Job dialog. • The Description can be changed at any time if necessary • The Code cannot be changed
2	Status	Indicates where in the process this project is (e.g., Bidding, Awarded, etc.) • When searching for jobs in the Job Folders list, you can filter and sort jobs by their status • These job statuses can be adjusted to fit your company requirements in the Jobs Register, Tools Menu, Job Statuses.

Overview – Overview Tab (continued)

Name		Description
3	Notes	Used to document project specifics. • Information in this field is created in InEight Estimate and it is not integrated with other programs
4	Job created by	Indicates the user or entity that initially created the job.
5	Source Job	The name of the original job that the job was copied from.



NOTE When you copy a job, the new job shows the name of the person who created the copied job, and the name of the source job the job was copied from.

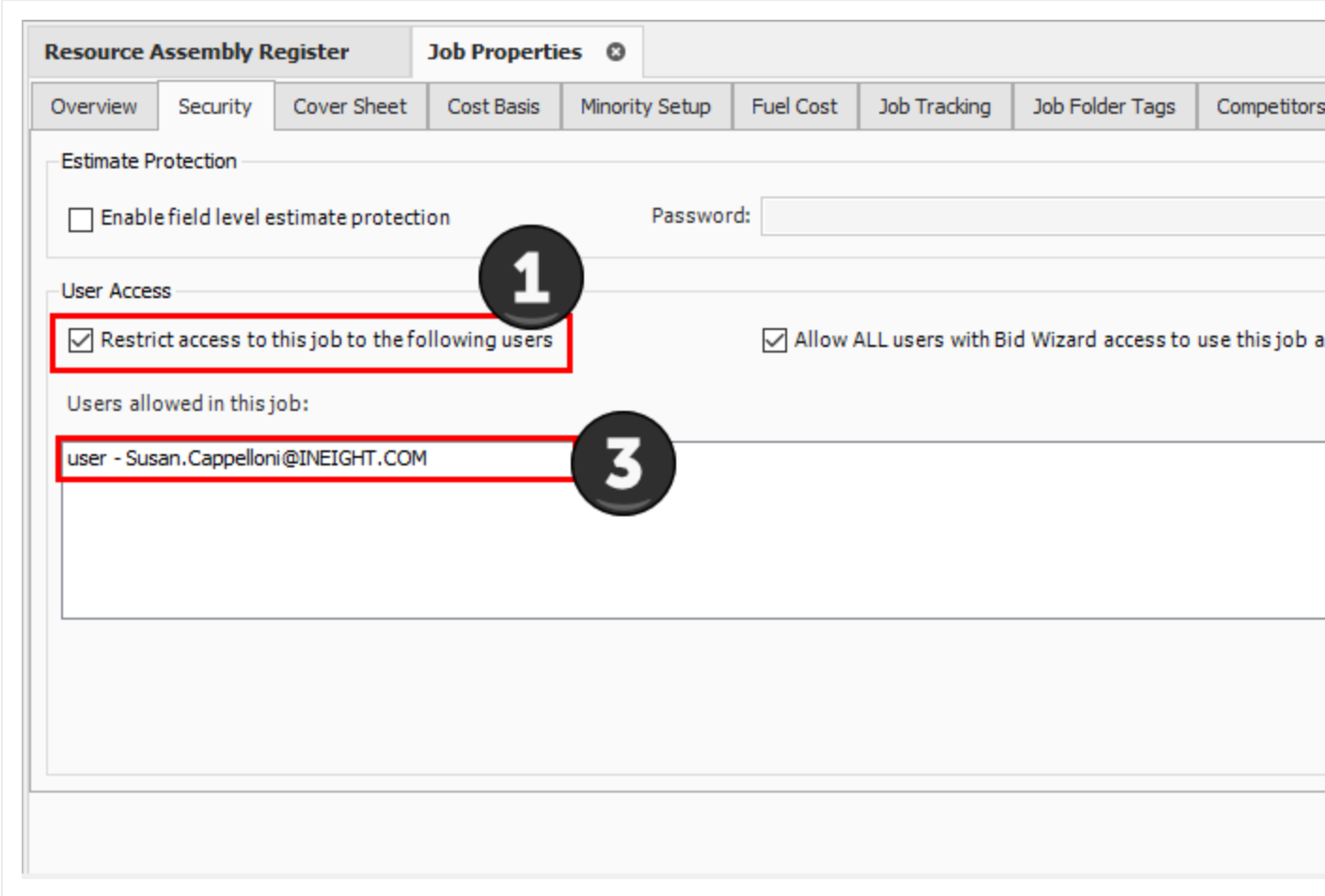
4.2.2 Security Tab

When you set up the job, you can secure it so only those working on the estimate will have access. You can adjust security at the field level or at the job level.

The following steps walk you through how to set up security. For now, you will leave the Security tab as is without making any specific selections; however, the following steps guide you through making any security changes when needed in the future.

Step by Step — Set Up Job Level Security

1. On the Job Properties > Security tab, select the **Restrict access to this Job…** check box.
    - Notice the checkbox to “Allow ALL users with Bid Wizard access to use this job as a source” is checked by default. Make sure to keep this checked as well
2. Click the **Add Users / Groups** button to add users.
3. In the Select Users or Groups dialog, type the **email addresses** for those that need access and then click **OK**.
    - If you don’t know the email address, you can type the name of the user, and click the Check Names box to find the appropriate user



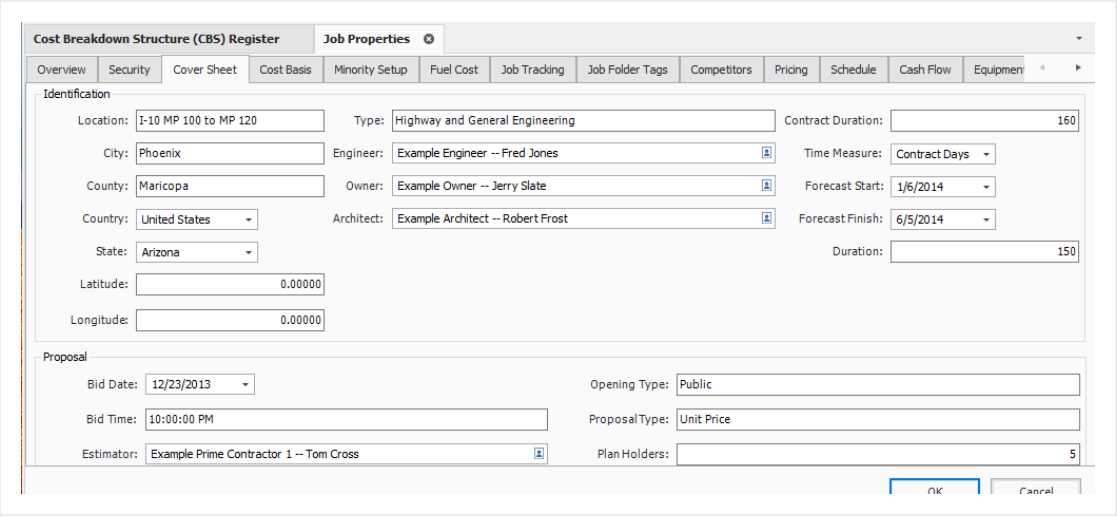
- The job can now only be opened by those listed under Users allowed in this job

4.2.3 Cover Sheet Tab

The Cover Sheet tab is where you can define much of the general information about the project. It includes fields to identify the job's location, contacts, and bid details.

The following fields are available:

- Job Location
- City, County, Country, Province/State
- Job Type
- Engineer
- Owner
- Architect
- Forecast Start and Forecast Finish
- Bid Date and Bid Time
- Bid Location
- Estimator
- Opening Type and Proposal Type
- Liquidated Damages (if applicable)



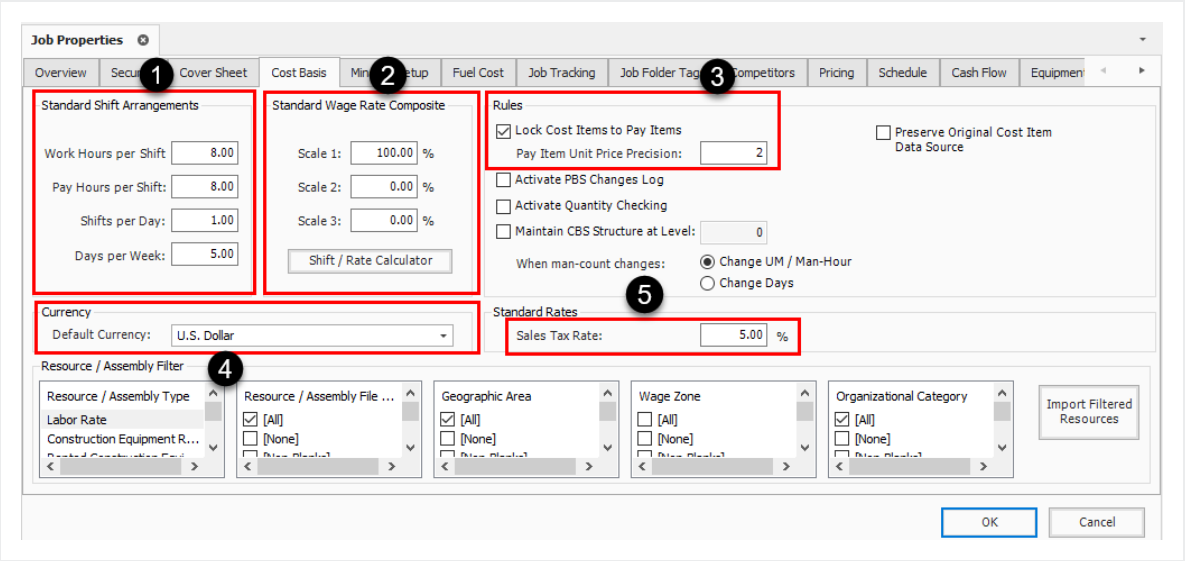
The fields on this tab can be helpful for historical reference and job classification. It is good practice to complete as many of these fields as possible, so you can reference and find the project later. These fields can be updated as needed at any time.

4.2.4 Cost Basis Tab

The Cost Basis tab has some important settings that will affect how costs are calculated in your estimate. The settings reviewed below are the ones you need to consider.

	Name	Description
1	Standard Shift Arrangements	The default standard shift arrangements are set up as 8 hours per shift, 1 shift per day, and 5 days per week; this can be changed if a project requires a different standard shift arrangement.
2	Standard Wage Rate Composite:	Allows you to indicate what percentage of your labor hours will be regular time (Scale 1), overtime (Scale 2) or double time (Scale 3). You can enter these percentages manually, or you can use the Shift Rate Calculator to obtain a more accurate figure.
3	Lock Cost Items to Pay Items:	For this sample job, you will check this box. When Cost Items are locked to Pay Items, your level 1 estimate structure is controlled by your list of pay items.
4	Default Currency:	The default will be set to U.S. Dollar, but this can be changed if needed.
5	Sales Tax Rate:	This field is not required but may be used to automatically apply a sales tax to all your material and rental items. The default is set to zero.

Cost Basis Tab Overview

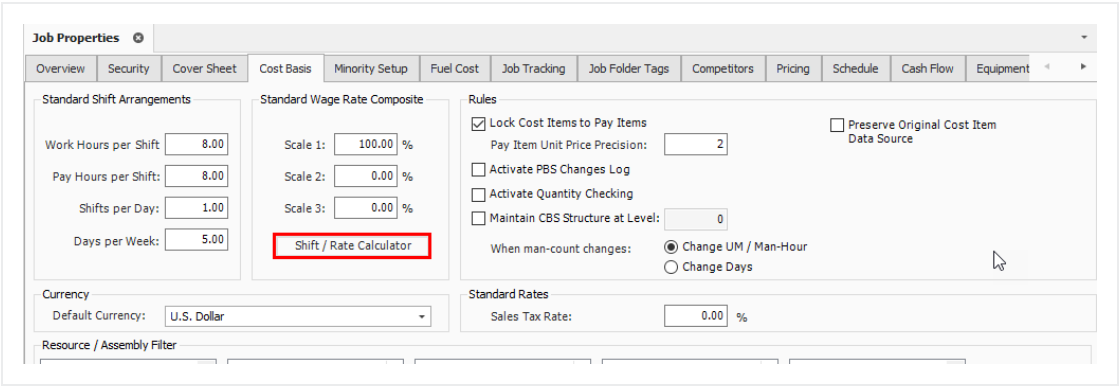


4.2.5 Shift Rate Calculator

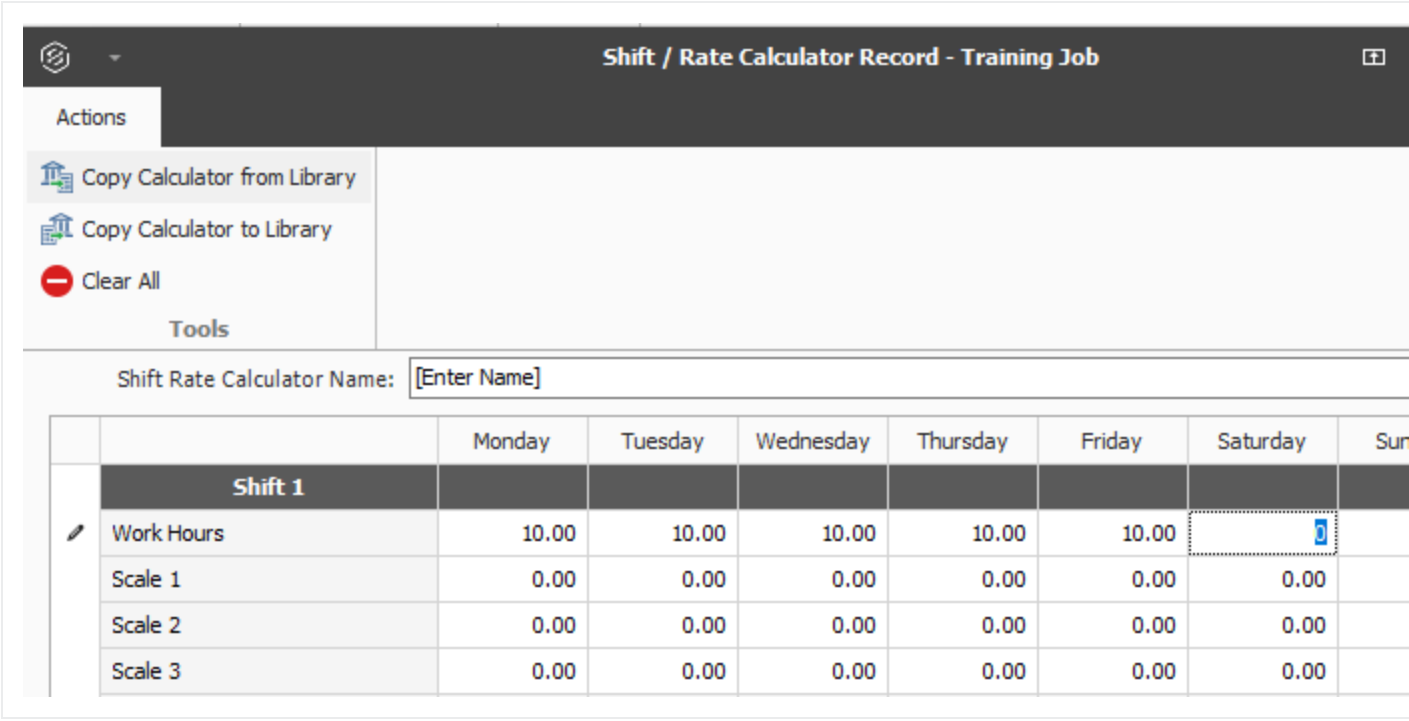
Take a closer look at calculating your shift rates using the Shift Rate Calculator. For this example, you will walk through setting up 2 shifts for your project.

Step by Step — Shift Rate Calculator

1. On the Job Properties > Cost Basis tab, select the **Shift Rate Calculator** button.



2. For Shift 1, type a **number value** of hours in the **Monday through Friday Work Hours** fields.
    - You can enter up to three shifts for the project
3. For Shift 1, type a **number value** of hours in the **Scale 1** fields.
    - Scale 1 will be your regular time and Scale 2 will be any overtime

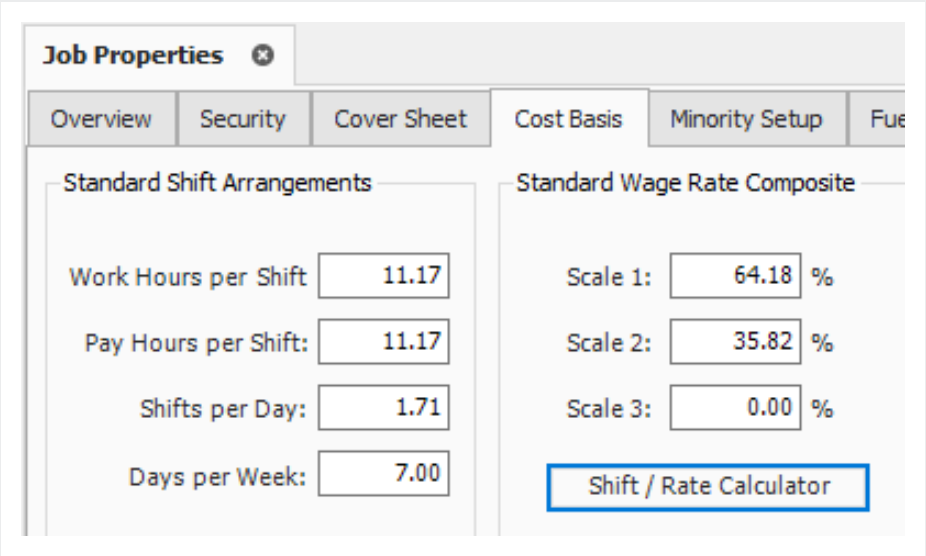


	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sun
Shift 1							
Work Hours	10.00	10.00	10.00	10.00	10.00	0	
Scale 1	0.00	0.00	0.00	0.00	0.00	0.00	
Scale 2	0.00	0.00	0.00	0.00	0.00	0.00	
Scale 3	0.00	0.00	0.00	0.00	0.00	0.00	

4. Enter a **number value** for hours in the **Scale 2** fields (just Monday through Friday).
5. For Shift 2, type a **number value** for hours as you did above in Step 3.
6. Click **OK**.

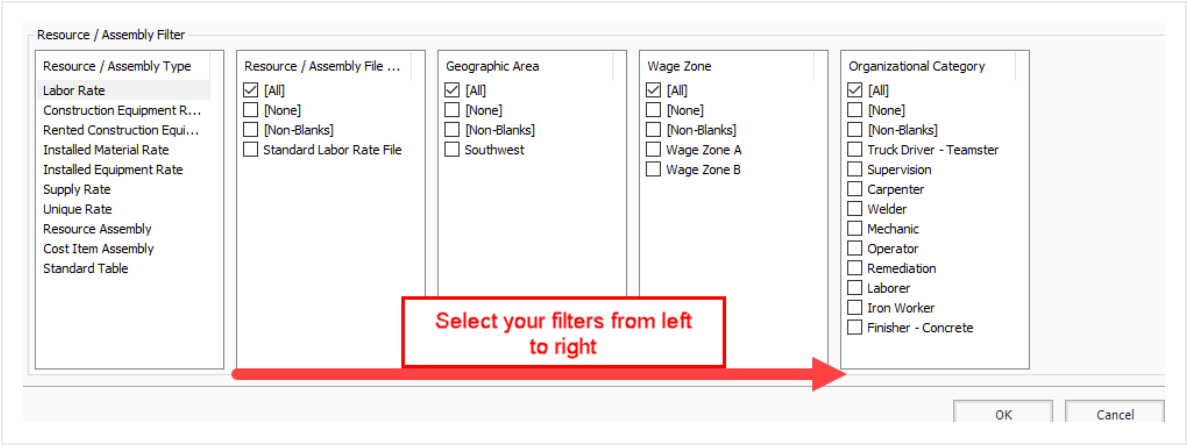
Shift 2							
Work Hours	12.00	12.00	12.00	12.00	12.00	0.00	0.00
Scale 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scale 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scale 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00

- Now you have a blended shift arrangement, and your labor rates are a blend of 64.18% straight-time and 35.82% overtime



4.2.6 Import Filtered Resources

You may have noticed the bottom portion of your Cost Basis tab called the Resource Filter.



The Resource Filter portion of the Cost Basis tab is the most important part of Job Properties. You use it to import your labor, equipment, and materials from the Library. Until you import filtered resources, you have no resources (labor, equipment, materials) in your project.

Updated resource rates can be imported into the Library on a regular basis. It is important to update and have the “Latest & Greatest” rates available to import into your estimates.

You will import the rates you need using a set of four filters called Resource Attributes. Especially for labor rates, filtering by these attributes allows you to pare down the master list to just the resources you need.

Each of the resource filter categories are open for use as determined best by your business. The following are examples of common uses:

Resource Attribute Filters	
Name	**Description**
Resource File Description	This attribute can be used to designate the rate type or the year to which the rates pertain.
Geographic Area	This attribute is used to designate regions, cities, or provinces based on geographical location of a project.
Wage Zone	This attribute is typically used specifically for labor resources. For example, it may designate the trade and union agreements your labor resources belong to.
Organizational Category	This attribute can be used to designate what trade or work type your resources pertain to.

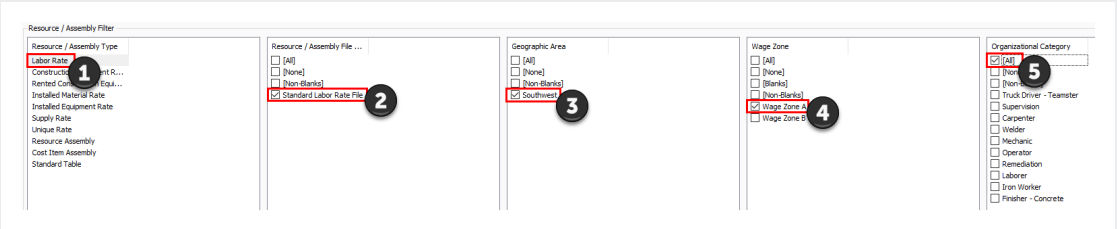
Resource filters become more specific from left to right, so it makes sense to start with Resource File Description and end with Organizational Category. The geographic area, wage zone and organizational category attribute titles can be changed to meet your business needs for filtering resources.

TIP	You can sort the filter lists by clicking on the filter category titles.

The following steps walk through using the Resource Filter to import resources.

Step by Step — Import Filtered Resources

1. In your job, go to the **Job Properties > Cost Basis** tab, select the **Labor Rate** resource type.
2. Under Resource File Description, select **Standard Labor Rate File**.
3. For Geographic Area, select **Southwest**.
4. For Wage Zone (Work Center), select **Wage Zone A**.
5. For Organizational Category, select **All**.



6. Select the **Construction Equipment** resource type.
7. Select the **Import Filtered Resources** button to bring your selected resources into the job.

NOTE You must select “Import Filtered Resources” to import your resources. Clicking OK on the Job Properties form will not import your resources.

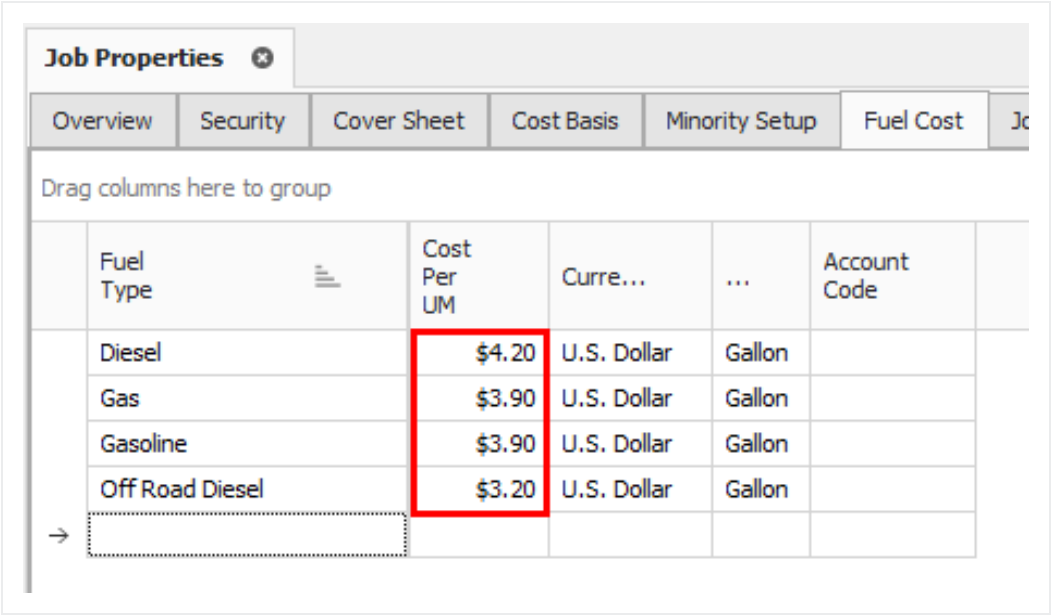
4.2.7 Fuel Cost Tab

On this tab you can enter the cost for fuel (or other energy sources). These unit cost will be multiplied by the consumption rates entered on each equipment record to define the fuel operating cost of each piece of equipment. The Cost per UM fields default to $0.00.

Step by Step — Enter Fuel Costs

1. In your job, open the **Job Properties** > **Fuel Cost** tab.
2. In Cost Per UM column, enter a **dollar amount** into the following:
    - Diesel
    - Gas & Gasoline

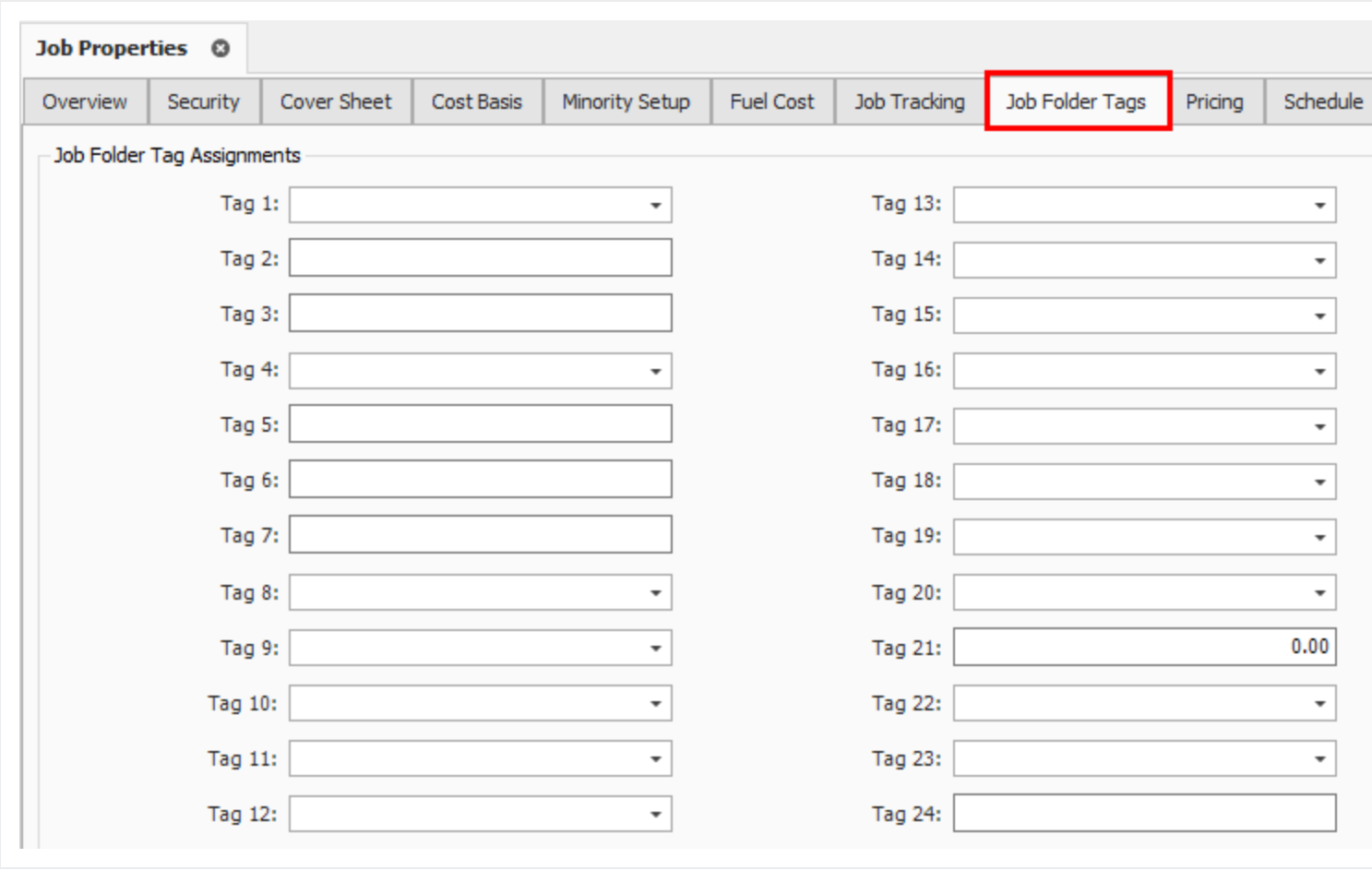
- Off Road Diesel



3. Currency should read U.S. Dollar and UM should read Gallon.

4.2.8 Job Folder Tags Tab

On this tab, you can enter tag fields to label your project, so you can reference it later.



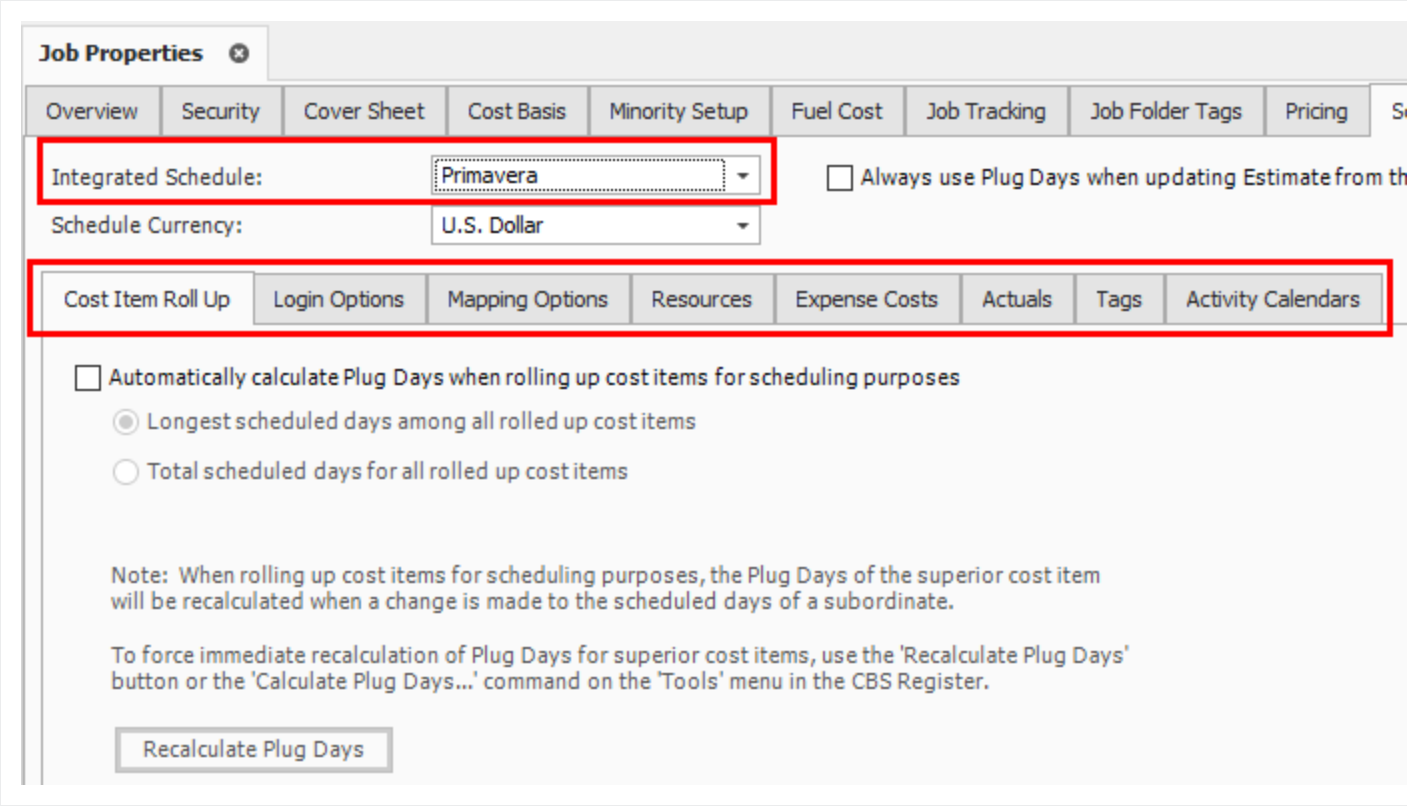
Many of these fields are validated fields, meaning you can choose from options in a drop-down list. The names of these tags and the drop-down values are defined at a master level within the Library Foundation Setup Data. Some job folder tags are setup to be date fields or numerical fields. These tags are used to sort and filter the job register as well as for selecting which past estimates to utilize for benchmarking.

4.2.9 Schedule Tab

The Schedule tab is used to define the scheduling options for the integration between InEight Estimate Primavera or Microsoft Project. The settings you define here determine what information is sent to your scheduling tool, and how it will be structured.

- At the top of the Schedule tab, the Integrated Schedule can be set to Primavera or Microsoft Project or Manual
- You will need to confirm the proper settings are defined on each of the Schedule sub-tabs. These

settings are defined in detail in *Lesson 12 – Schedule Integration*



4.2.10 Other Job Properties Tabs

There are several additional tabs on the Job Properties form. The other tabs will not be discussed here because they are either used for project controls, or they will be covered at another time.

Other Job Properties Tabs	
Name	**Function**
Minority Setup	Used to set up minority participation goals (for example, DBE or MBE) and you want to track minority participation goal attainment status during the bid process,
Job Tracking	Used to select the code that will be used when tracking job progress, define the planned production calculation, define the percent complete calculation, define the forecast methods, and define markup rates for calculating earned revenue on Time and Expense pay items.

Other Job Properties Tabs	
Pricing	Used to define how you want the Balanced Unit Price for each of the job's pay items to be calculated when using the AutoPrice feature. You can also choose form several options in determining how markup is defined.
Cash Flow	Defines the cash flow rules (payment terms) that are used in the calculation of Job Financing and cost/revenue realization to generate the curves that display on the Cash Flow form.
Equipment Maintenance	Used to define the calculation of maintenance labor man-hours based on equipment utilization, to capture the impact on total man-hours when changes are made that affect the job's total value.
Benchmarking	Used to establish the historical data to be used for benchmarking the current job, and to define the default benchmark graph display and calculations.
Alternates	Used to define Alternate Scenarios, to assess the impact of those scenarios.

Exercise 4.1 — Define Job Properties

In this exercise, you will continue to define your Job Properties from in the E101 training job you have created. Complete the following steps:

1. On the Cover Sheet tab, fill out the following fields:

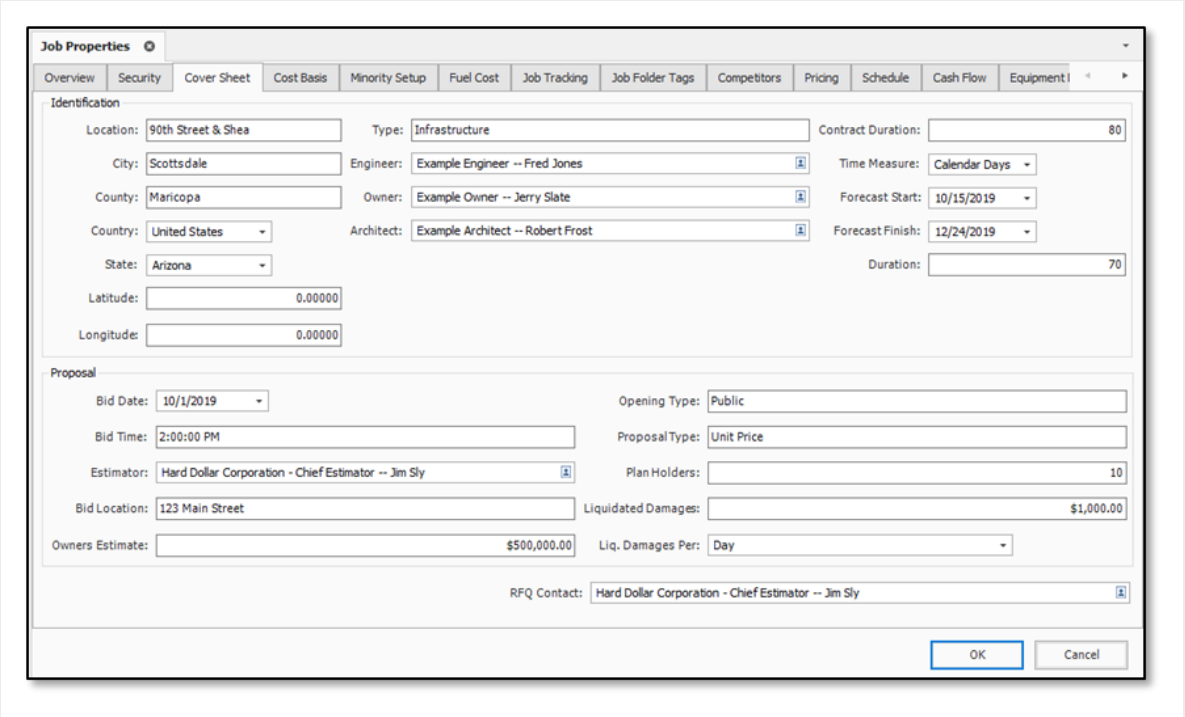
Job Location	90th Street & Shea
City	Scottsdale
County	Maricopa
Country	United States
State	Arizona
Type	Infrastructure
Engineer	Fred Jones
Owner	Jerry Slate
Architect	Robert Frost
Contract Duration	80
Time Measure	Calendar Days
Forecast Start	October 15, 2019
Duration (days)	70
Bid Date and Bid Time	10/1/2019 2:00 PM
Estimator	Jim Sly
Bid Location	123 Main Street
Owner's Estimate	$500,000.00
Opening Type	Public
Proposal Type	Unit Price
Plan Holders	10
Liquidated Damages	$1000.00 Per Day
RFQ Contact	Jim Sly

2. On the Cost Basis tab:

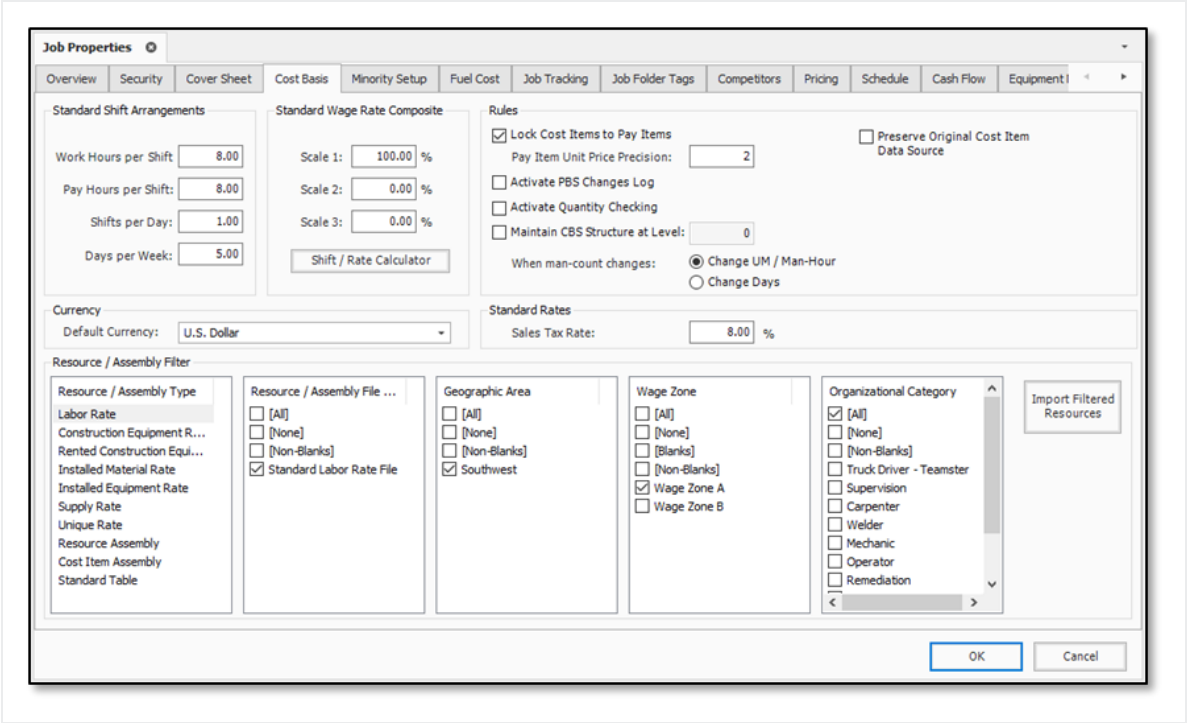
- Ensure the **Shift Arrangement** is 8 hours a day, 5 days a week
- Ensure the **Wage Composite** is set to 100% Scale 1
- Ensure the **Sales Tax** is set to 8%

You should end up with the following results

The following Cover Sheet properties are defined:



The following Cost Basis settings are defined:



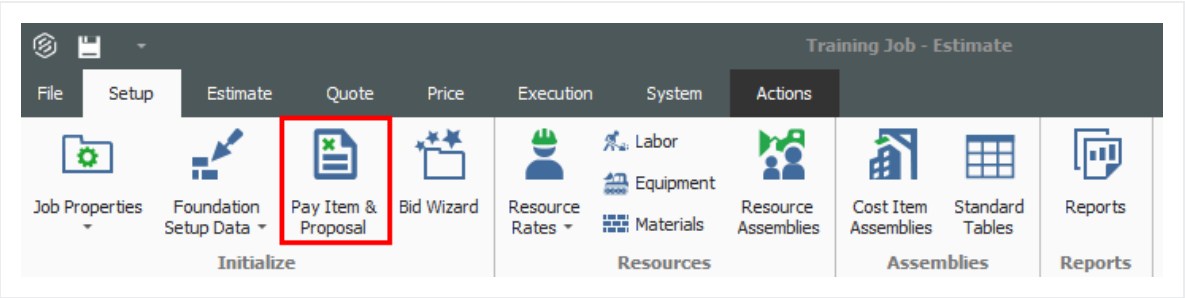
Congratulations, you have completed this exercise!

4.3 PAY ITEM CREATION

Pay items typically represent the owner required deliverables a contractor must submit pricing for. Within InEight Estimate, pay items are used to distribute the cost calculated in the Cost Breakdown Structure and all markup, fees or contingency calculated in the Price Breakdown Structure to a list of defined items. This allows the total estimate value to be distributed to a structure that is different then the CBS. Pay Items are predominantly used by Contractors to prepare a bid sheet. Owners may use pay items to identify funding sources or for various reporting needs.

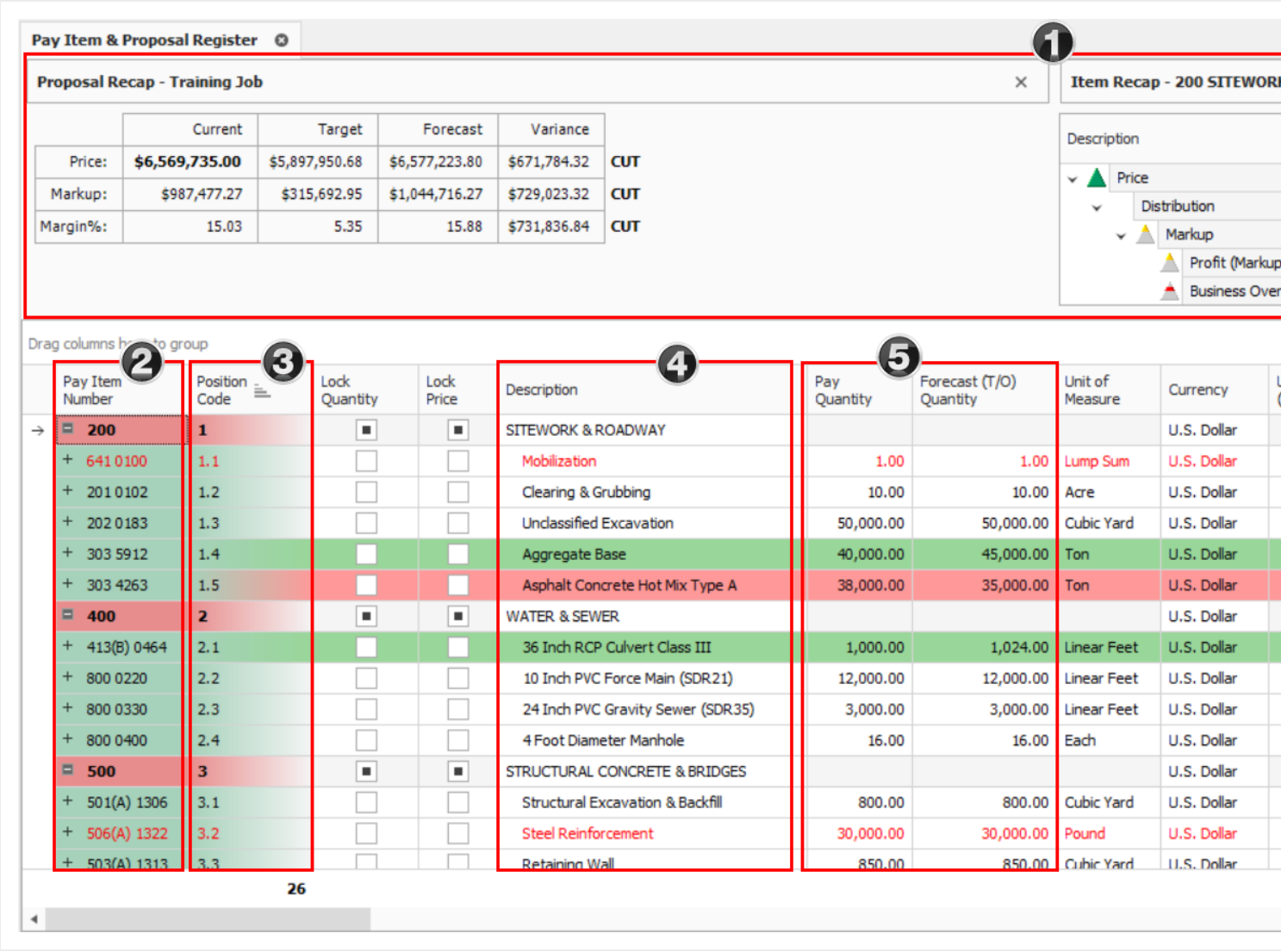
Many Bid Forms are organized by grouping bid items for related scopes of work. Pay items within the Pay Item and Proposal screen can be grouped in a hierarchy by utilizing the Position Code column.

You can create pay items in the Pay Item & Proposal Register. Access this form by selecting the **Setup** tab > **Pay Item & Proposal**.



	Name	Description
1	Proposal and Item Recaps	Related to pricing during bid close-out. You can disregard them at this time.
2	Pay Item Number	Represents the bid item number from the client (if they give you one) or can be a number you specify. This field is alpha-numeric
3	Position Code	Controls the way pay items can be grouped, and provide you with an efficient way to sort.
4	Description	You can enter a pay item description.
5	Pay Quantity and Forecast (T/O) Quantity	The Pay Quantity is the quantity provided by the client. The Forecast (T/O) Quantity is your measured quantity for the item.

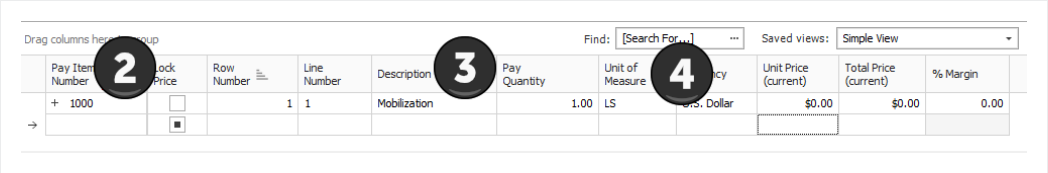
4.3.1 Overview – Pay Item & Proposal Register



Step by Step — Create a Pay Item

1. Open your job and select **Setup** tab **>Pay Item & Proposal** from the InEight Estimate landing page.
    - The Pay Item & Proposal Register displays
2. In the Pay Item Number column, in the first blank row, type a **number value**.

3. Use the Tab key to move to the Description column and type a **description**.
4. Leave the Pay Quantity at 1.00 and change the Unit of Measure to **LS (Lump Sum)**.
    - The Forecast (T/O) Quantity will auto populate to match your pay quantity, but can be changed later
    - You can tab to the next row to create additional pay items if needed



4.3.2 Pay Item Prices by Category

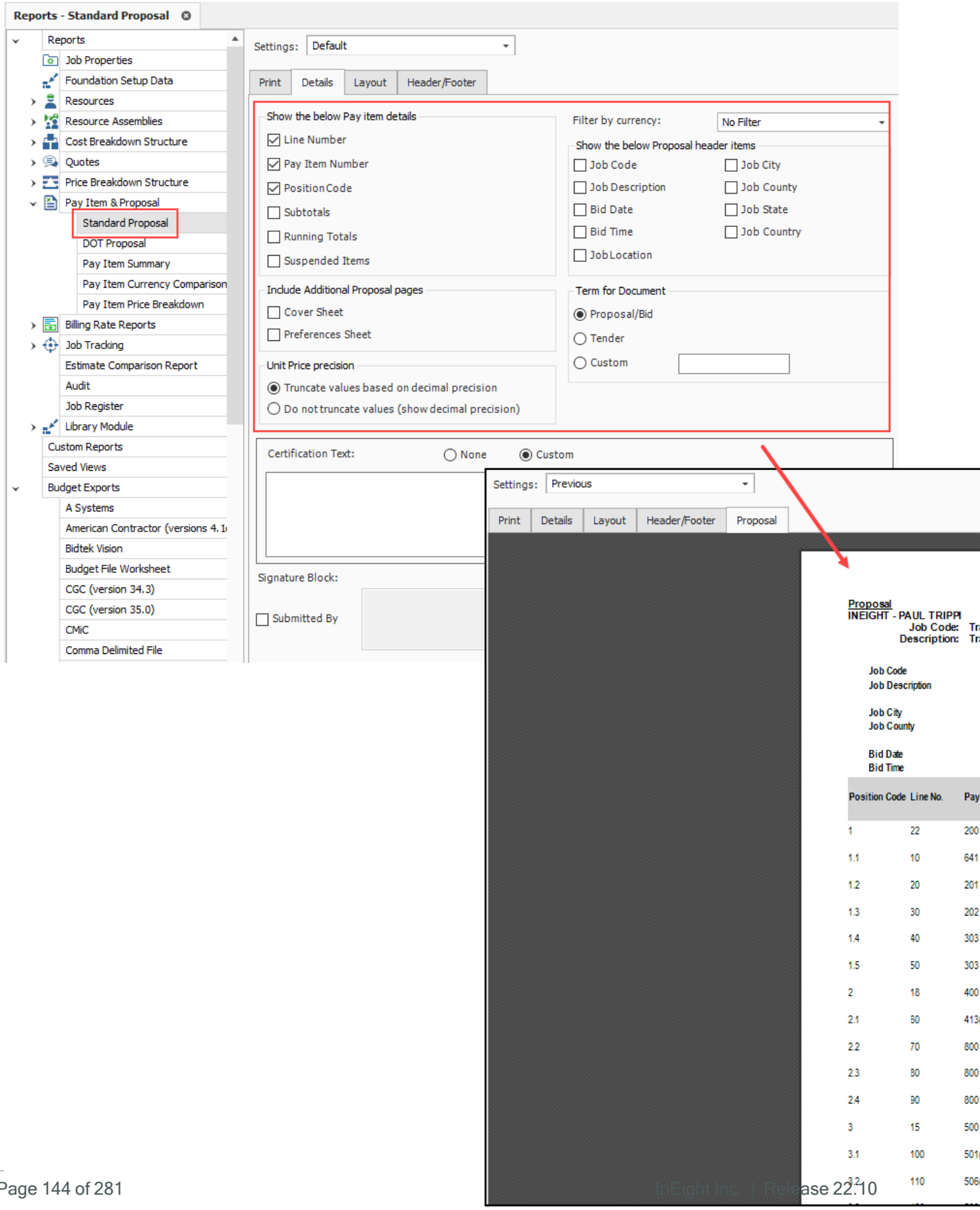
Owners are increasingly requiring more information from contractors as part of their bid submissions. Many times, this is a further breakdown of a bid price such as separating the price of an item based on its labor cost, material cost or man-hours. Select columns in the Pay Item & Proposal register enable users to summarize their pay item prices by up to 10 price categories.

In addition to seeing the price by category, these additional columns also give users better visibility into how the price is established, including columns for the total cost, total distribution, total markup and markup percent. These new columns make it easier to verify that the distribution of unassigned cost and markup are calculated as intended by the estimator.

Pay Item Number	Position Code	Lock Quantity	Lock Price	Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Measure	Currency	LABOR Cost
200	**1**	■	■	SITEWORK & ROADWAY				U.S. Dollar	$291,828
641 0100	1.1			Mobilization	1.00	1.00	Lump Sum	U.S. Dollar	$2,449
201 0102	1.2			Clearing & Grubbing	10.00	10.00	Acre	U.S. Dollar	$14,880
202 0183	1.3			Unclassified Excavation	50,000.00	50,000.00	Cubic Yard	U.S. Dollar	$62,230
303 5912	1.4			Aggregate Base	40,000.00	45,000.00	Ton	U.S. Dollar	$99,794
303 4263	1.5			Asphalt Concrete Hot Mix Type A	38,000.00	35,000.00	Ton	U.S. Dollar	$112,473
400	**2**	■	■	WATER & SEWER				U.S. Dollar	$128,895
413(B) 0464	2.1			36 Inch RCP Culvert Class III	1,000.00	1,024.00	Linear Feet	U.S. Dollar	$19,602

4.3.3 Standard Proposal report

The Pay Item Standard Proposal report is located in Execution > Reports > Pay Item & Proposal > **Standard Proposal**, and is intended to be used as a bid form, and distributed to other clients, partners, and contractors. In the Details box below, you can determine which key fields you want included and shown on your standard proposal report.


Reports - Standard Proposal
Reports
Job Properties
Foundation Setup Data
Resources
Resource Assemblies
Cost Breakdown Structure
Quotes
Price Breakdown Structure
Pay Item & Proposal
Standard Proposal
DOT Proposal
Pay Item Summary
Pay Item Currency Comparison
Pay Item Price Breakdown
Billing Rate Reports
Job Tracking
Estimate Comparison Report
Audit
Job Register
Library Module
Custom Reports
Saved Views
Budget Exports
A Systems
American Contractor (versions 4.1
Bidtek Vision
Budget File Worksheet
CGC (version 34.3)
CGC (version 35.0)
CMiC
Comma Delimited File
Settings: Default
Print
Details
Layout
Header/Footer
Show the below Pay item details
Line Number
Pay Item Number
Position Code
Subtotals
Running Totals
Suspended Items
Filter by currency:
No Filter
Show the below Proposal header items
Job Code
Job Description
Bid Date
Bid Time
Job Location
Job City
Job County
Job State
Job Country
Include Additional Proposal pages
Cover Sheet
Preferences Sheet
Term for Document
Proposal/Bid
Tender
Custom
Unit Price precision
Truncate values based on decimal precision
Do not truncate values (show decimal precision)
Certification Text:
None
Custom
Signature Block:
Submitted By
Settings: Previous
Print
Details
Layout
Header/Footer
Proposal
Proposal
INEIGHT - PAUL TRIPPI
Job Code:
Description:
Job Code
Job Description
Job City
Job County
Bid Date
Bid Time
Position Code
Line No.
Pay
1 22 200
1.1 10 641
1.2 20 201
1.3 30 202
1.4 40 303
1.5 50 303
2 18 400
2.1 60 413
2.2 70 800
2.3 80 800
2.4 90 800
3 15 500
3.1 100 501
3.2 110 506

Exercise 4.2 — Create Pay Items

In this exercise, you will practice creating pay items in the Pay Item & Proposal Register by adding subordinates to the Sitework & Roadway pay item. Complete the following steps, using a job of your own.

Position Code	Pay Item Number	Description	Pay Quantity	Unit of Measure
1	2000	SITEWORK & ROADWAY		
1.1	641 0100	Mobilization	1	LS
1.2	201 0102	Clearing & Grubbing	10	Acre
1.3	202 0183	Unclassified Excavation	50,000	CY

You should end up with the following results

Position Code	Pay Item Number	Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Measure
1	**200**	SITEWORK & ROADWAY			
+ 1.1	641 0100	Mobilization	1.00	1.00	Lump Sum
+ 1.2	201 0102	Clearing & Grubbing	10.00	10.00	Acre
+ 1.3	202 0183	Unclassified Excavation	50,000.00	50,000.00	Cubic Yard

Congratulations, you have completed this exercise!

Lesson 4 Review

1. This is where you enter basic information about the job as well as define your cost basis.
    a. Pay Item & Proposal
    b. Job Properties
    c. Library
    d. Job Folder

---

2. On the Job Properties form, this tab is where you enter information such as the start date, bid date, job type and location.
    a. Overview
    b. Cover Sheet
    c. Cost Basis
    d. Foundation Setup Data

---

3. These are the project deliverables; anything the owner agrees to measure and pay for.
    a. Cost Items
    b. Resources
    c. Target Price
    d. Pay Items

Lesson 4 Summary

As a result of this lesson, you can:

- Create a new job
- Enter Job Properties
- Create pay items in the Pay Item & Proposal Register

LESSON 5 – DIRECT COSTS

Lesson Duration: 30 Minutes

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the estimating process in InEight Estimate
- Explain key terms and concepts

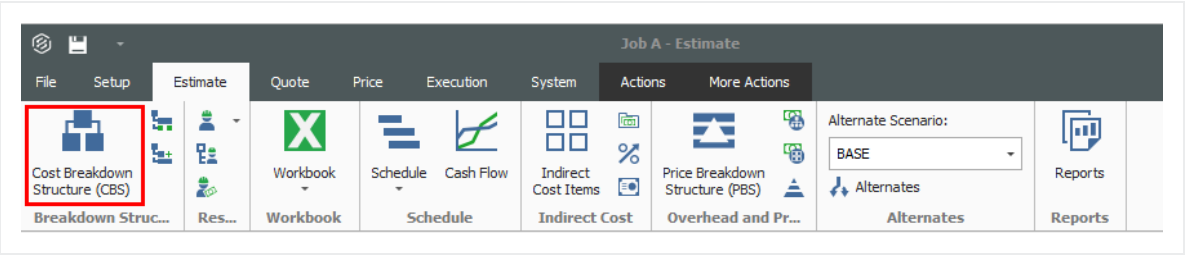
Lesson Topics

5.1 COST BREAKDOWN STRUCTURES

The Cost Breakdown Structure (CBS) is the main form where you will do your cost estimating.

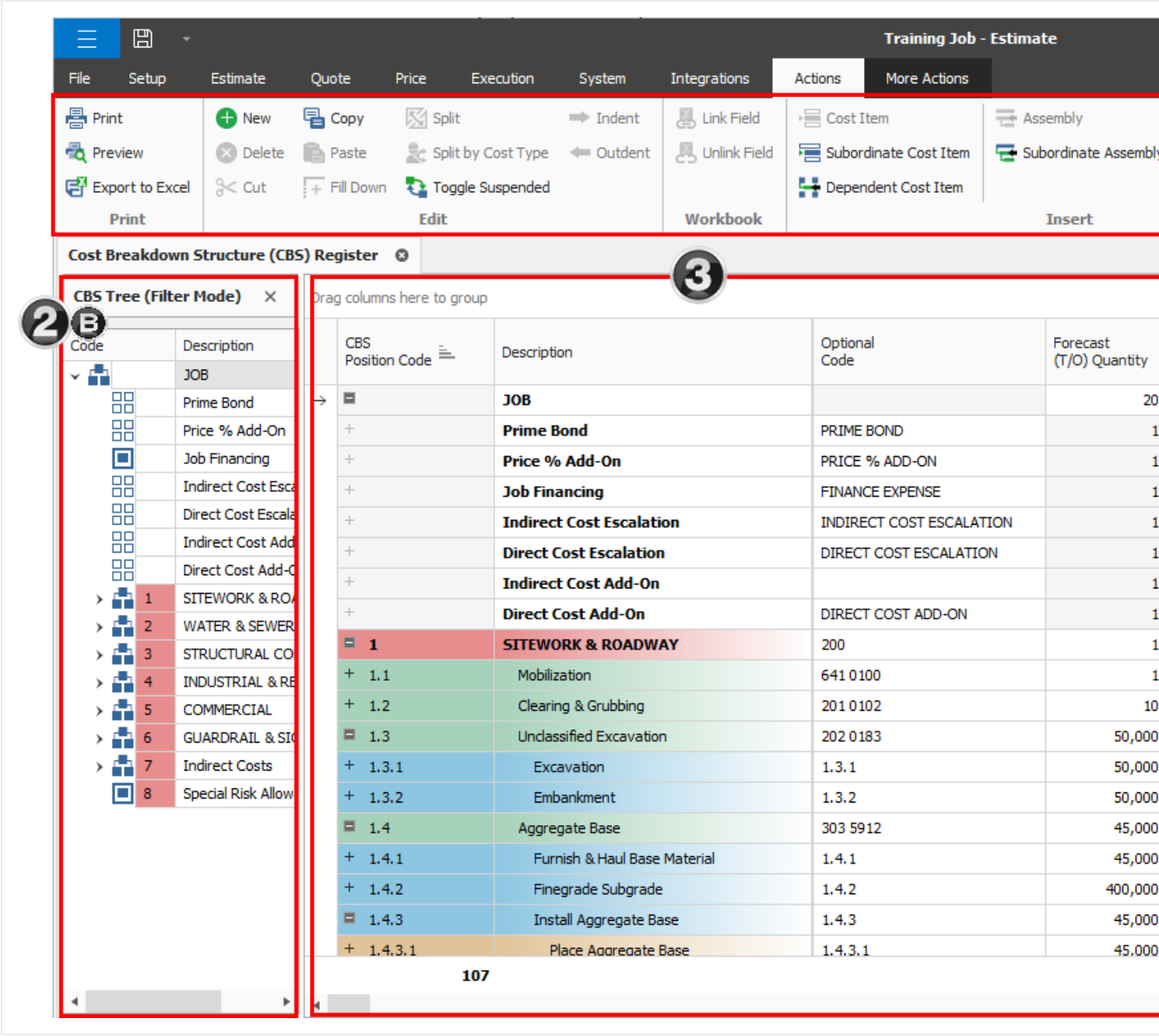
- It is the hierarchy of work activities that make up the estimate
- Each row in the CBS represents a work activity or organizing category and is called a cost item

To access the Cost Breakdown Structure, from the InEight Estimate landing page select the **Estimate** tab, then under the Breakdown Structure section select **Cost Breakdown Structure (CBS)**.



Overview – Cost Breakdown Structure (CBS) Register

	Name	Description
1	Actions Menu	Shortcut icons allow you to edit cost items and import items from other sources such as Excel.
2A	CBS Tree Filter Mode (drop-down)	The CBS Tree filter shows the CBS hierarchy and is used to quickly help filter cost items, instead of scrolling the CBS to locate certain cost items. The CBS Tree Filter lets you choose between a filter mode or a new navigation mode.
2B	CBS Tree Filter or Navigation Mode	Both Filter and Navigation modes on the left side of the page provides you with the visibility of your entire CBS structure, as well as giving you the option to navigate and filter throughout the CBS estimate. The Cost Item record can also be tiled next to the tree to make navigating and filtering possible, while viewing all the cost item record details at the same time.
3	Left CBS register	This side of the register contains all of the estimate activities (cost items) that you create or import, organized into a parent-child hierarchy.
4	Right CBS register	This side of the register contains numerous columns for cost detail, production values, and user-defined tags and fields.



5.1.1 Cost Item Terminology

The CBS contains both direct and indirect costs.

- **Direct Cost Items** contain costs that pertain directly to the deliverables of the project. Therefore, direct cost items are typically assigned to pay items

- **Indirect Cost Items** contain overhead costs that are not directly associated with particular deliverable items but contribute to the total cost of the project (e.g., supervision, site office, safety supplies, bid securities). Occasionally an indirect cost item may be assigned to a pay item (e.g., Mobilization costs that are indirect but assigned to a Mobilization pay item).

InEight Estimate uses various terms to describe the parent-child relationships of the multiple levels in the CBS:

Terms	Description
Superior	A Superior cost item has subordinate (child) items below it that determine hours and costs.
Subordinate	A Subordinate cost item is a child to a Superior cost item.
Terminal	A Terminal cost item has no subordinate items. Resources, costs, and production can only be added at the terminal cost item level.

NOTE A Terminal cost item may or may not be a subordinate.

The levels of the CBS are referred to as Level 1, Level 2, etc., as you drill down in the structure. As costs are defined on the terminal items, the sum of the terminal cost items roll up to the superior cost items.

TIP A superior cost item can have no costs of its own; its costs are strictly the rolled-up total from the subordinate cost items below it.

You can use superior cost items as buckets for organizing your work.

As hours and costs are defined on the terminal items, the sum of the terminal cost items roll up to the superior cost items.

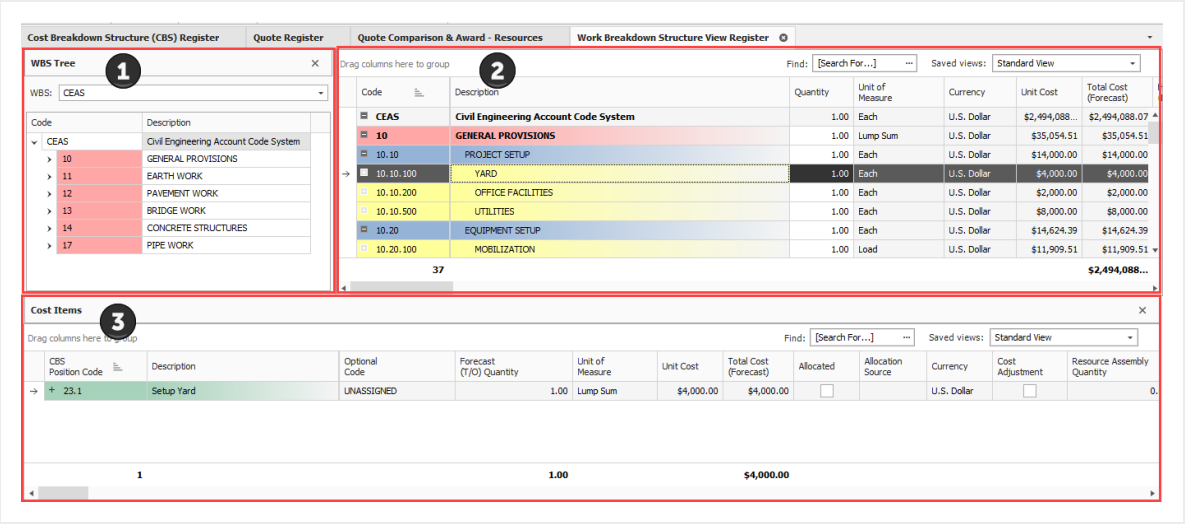
5.1.2 Work Breakdown Structures

The Work Breakdown Structure (WBS) allows you to reorganize the estimate using different formats such as Construction Specifications Institute (CSI) MasterFormat or UniFormat. WBS formats are used when you need multiple variations and summary reports of an estimate. The WBS retains the same relationships between items as in the original estimate while only changing the view and items arrangement in the WBS hierarchy.

To view the Work Breakdown Structure View Register, in the Ribbon select the tab **Estimate > Work Breakdown Structures**.

Overview – Work Breakdown Structure (WBS) View Register

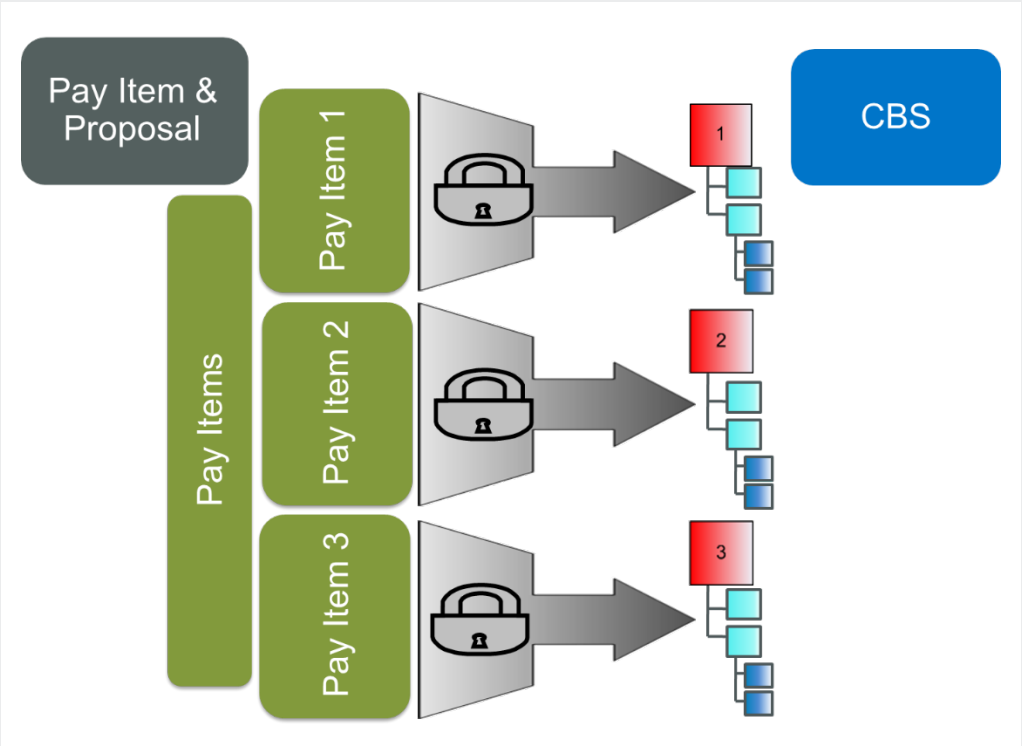
Name		Description
1	WBS Tree	Use the WBS Tree to filter to a particular WBS item.
2	WBS Grid	When a specific WBS item is selected in the WBS Tree, all subordinate WBS items display in the WBS grid.
3	Cost Items	The Cost Items associated with the WBS subordinate in the WBS Grid displays in this data block.



5.1.3 Locked vs. Unlocked Approach

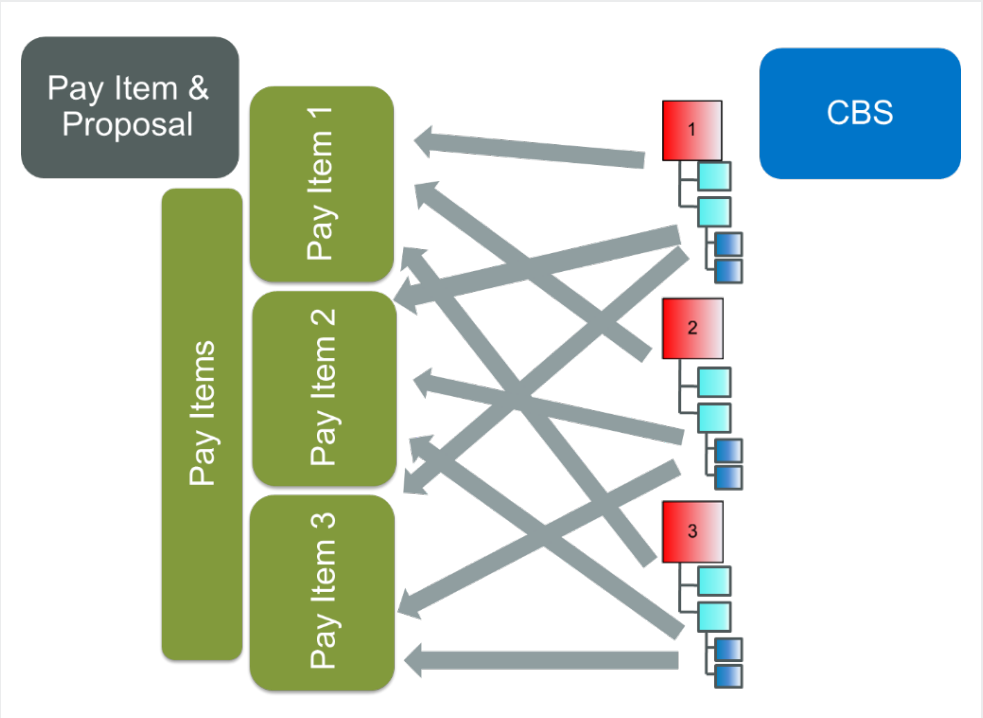
There are two basic approaches to structuring your cost items and pay items. You can choose to work in a “locked approach” or an “unlocked approach.”

In a locked approach, level one cost items are automatically created and assigned to pay items. This locked approach works well when pay items adequately represent the work plan. Subordinate cost items inherit the pay item assignment of superior cost items.

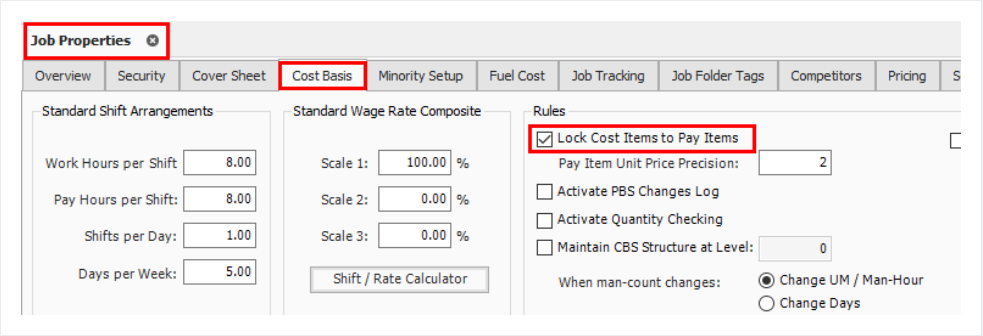


NOTE If the Lock Cost Items to Pay Item rule is checked in Job Properties, InEight Estimate will automatically create level 1 cost items in the CBS Register for each of your pay items.

The unlocked approach may work better when the pay items do not adequately represent the work plan. You can then assign your cost items to your pay items in any arrangement. Companies looking to standardize the way they estimate and use templates will want to use this approach as it allows you to dictate the cost breakdown structure. Owners will also typically use the unlocked approach since pay items are not necessary to their estimating process.

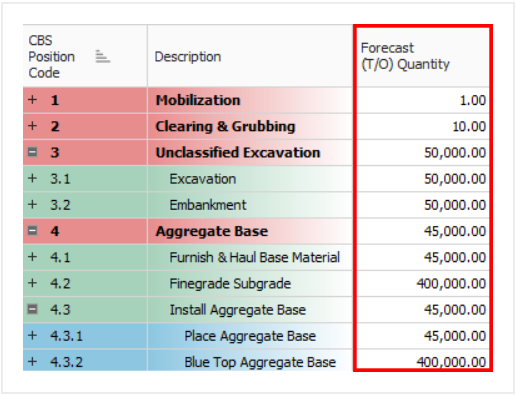


The option of working in a locked approach vs. an unlocked approach is available in the Job Properties Form, on the Cost Basis tab under the Rules section. By selecting the checkbox for Lock Cost items to Pay Item, you are choosing to work in a locked approach.



5.1.4 Take-Off Quantities

In the Cost Breakdown Structure, estimated quantities are entered into the Forecast (T/O) Quantity field with a corresponding unit of measure. The quantity will default to 1 each when you create a new cost item and should be updated to reflect the work being estimated.



CBS Position Code	Description	Forecast (T/O) Quantity
+ 1	**Mobilization**	1.00
+ 2	**Clearing & Grubbing**	10.00
− 3	**Unclassified Excavation**	50,000.00
+ 3.1	Excavation	50,000.00
+ 3.2	Embankment	50,000.00
− 4	**Aggregate Base**	45,000.00
+ 4.1	Furnish & Haul Base Material	45,000.00
+ 4.2	Finegrade Subgrade	400,000.00
− 4.3	Install Aggregate Base	45,000.00
+ 4.3.1	Place Aggregate Base	45,000.00
+ 4.3.2	Blue Top Aggregate Base	400,000.00

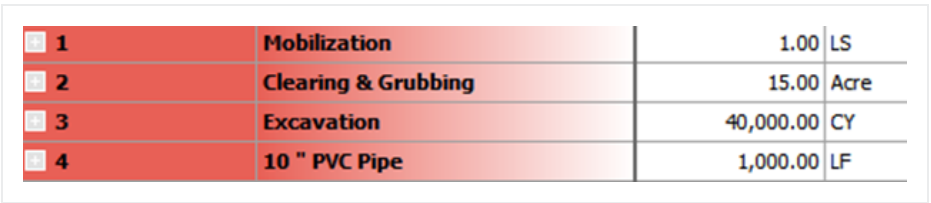
NOTE Forecast (T/O) Quantities are only used for your cost items in the CBS Register. Pay Quantities are used for final pricing in the PBS and Pay Item & Proposal forms.

Because the training project is a “locked” job, you already have level 1 cost items, and their default take-off quantities are populated from their corresponding pay item quantities.

The following step by step walks you through adjusting the default take-off quantities on a couple of your cost items.

Step by Step — Adjust Take-Off Quantities

1. In your job, from the InEight Estimate landing page, on the Estimate tab, select **Cost Breakdown Structure (CBS)**.
    - For each cost item, you can enter the T/O quantity, followed by the unit of measure in the next column
2. For this example, add a **number value** per acre and a **number value** to Excavation with the UoM to CY.



1	**Mobilization**	1.00	LS
2	**Clearing & Grubbing**	15.00	Acre
3	**Excavation**	40,000.00	CY
4	**10 " PVC Pipe**	1,000.00	LF

5.2 COST ITEM CREATION

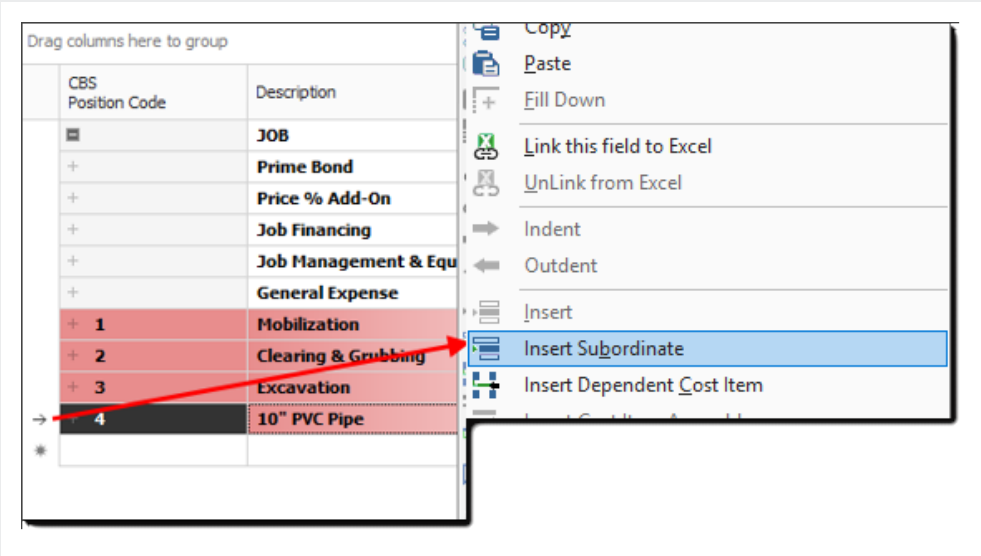
During estimate development, you will create new cost items to break down your work into specific activities. You can create superior and subordinate cost items as needed to organize your work.

5.2.1 Insert Subordinate Cost Item

You can add subordinate cost items in two different ways:

Option 1

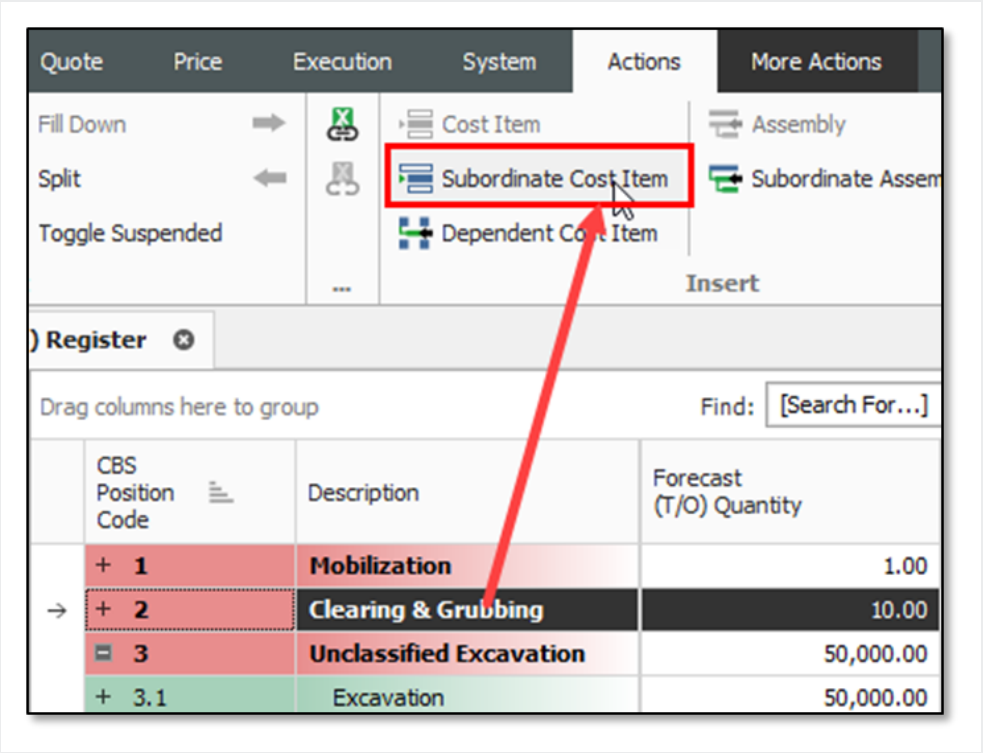
Right-click on the row header of the superior cost item and select **Insert Subordinate.**



The row header is considered the far left edge of the CBS row where the small arrow appear appears above. It is used to open records and perform actions on items instead of clicking on cells within the row which will allow you to directly type into the selected cell.

Option 2

Click on the **Subordinate Cost Item** icon on the Cost Breakdown Structure (CBS) Register toolbar.

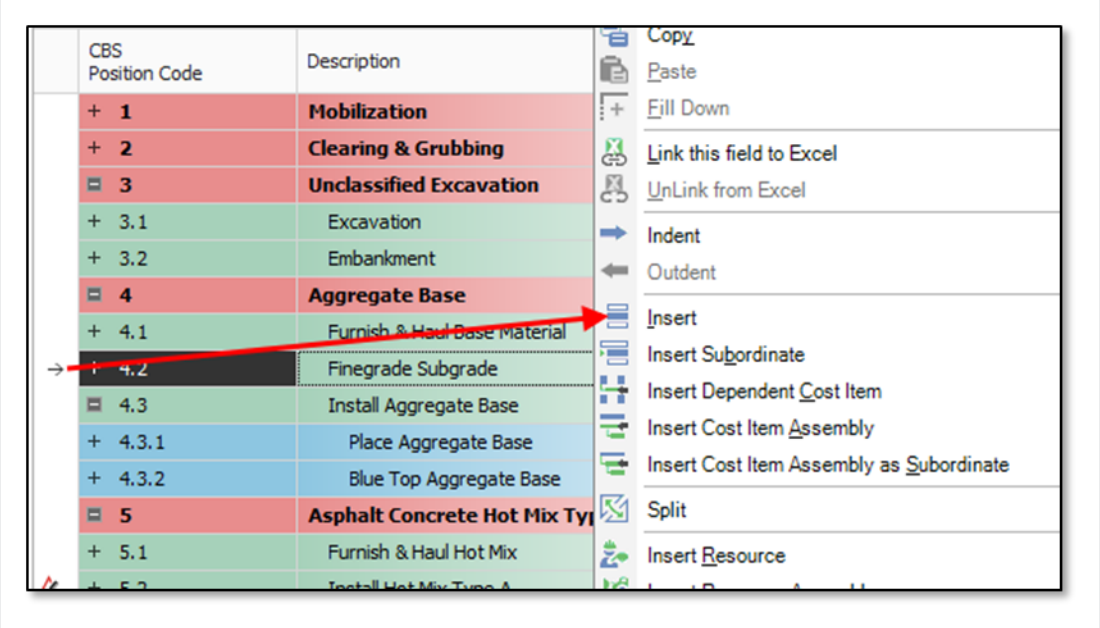


5.2.2 Insert Cost Item

You can add cost items at the same level in two different ways.

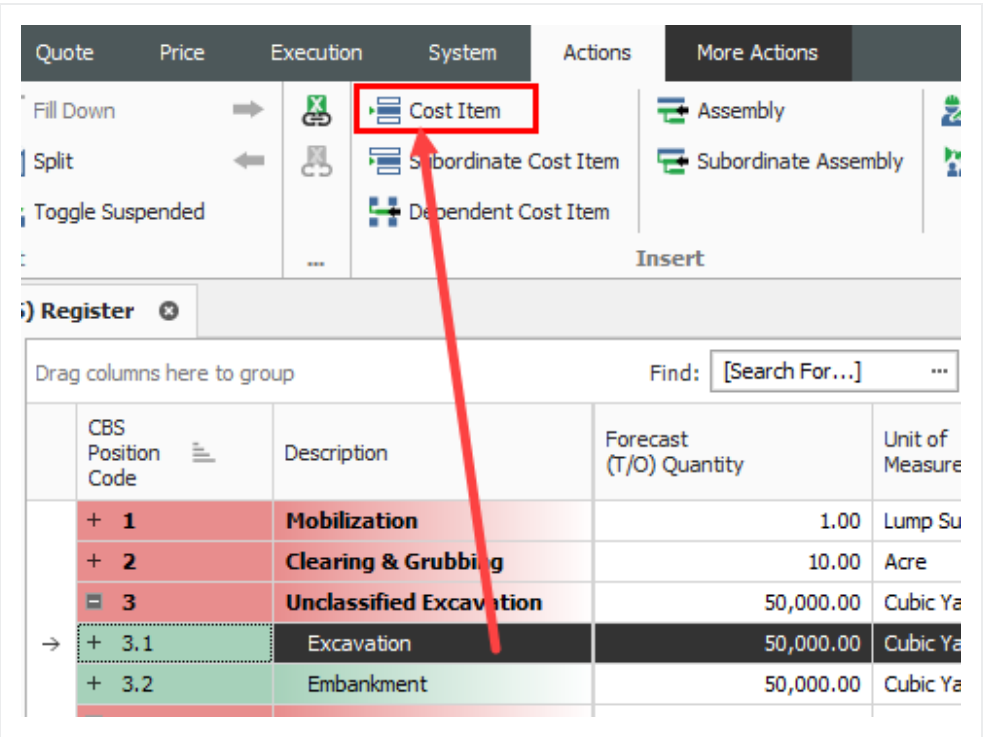
Option 1

Right click on the row header of the superior cost item and select **Insert.**



Option 2

Click on the **Cost Item** icon on the Cost Breakdown Structure (CBS) Register toolbar.

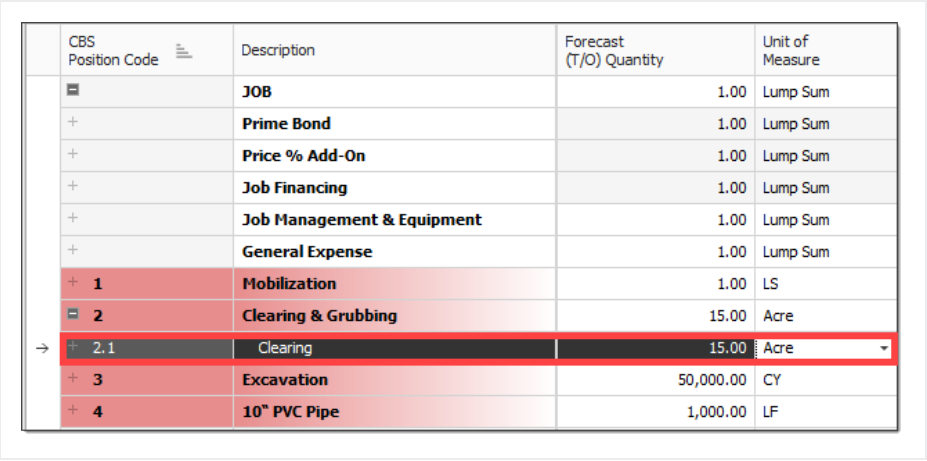


Because the project you are working in is a “locked” job (where cost items are locked to pay items), your CBS Register will already have level 1 cost items representing each of your pay items, and each cost item will be assigned to its corresponding pay item.

The following step by step walks you through creating a subordinate (child) cost item for one of your level-one cost items.

Step by Step — Create a Subordinate Cost Item

1. In your job, from the InEight Estimate landing page, on the Estimate tab, select **Cost Breakdown Structure (CBS)**.
2. Right click on a cost item and select **Insert Subordinate**.
    - This creates a new, subordinate cost item below your selected cost item
3. For the subordinate cost item, enter a Description.
4. Add a quantity and select your Unit of Measure.



CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure
	JOB	1.00	Lump Sum
	Prime Bond	1.00	Lump Sum
	Price % Add-On	1.00	Lump Sum
	Job Financing	1.00	Lump Sum
	Job Management & Equipment	1.00	Lump Sum
	General Expense	1.00	Lump Sum
1	**Mobilization**	1.00	LS
2	**Clearing & Grubbing**	15.00	Acre
2.1	Clearing	15.00	Acre
3	**Excavation**	50,000.00	CY
4	**10" PVC Pipe**	1,000.00	LF

TIP You can create a subordinate at the same level, by right clicking on an equal-level cost item and selecting **Insert**.

5.2.3 Move Cost Items

As you develop your estimate, you may need to move cost items around in the Cost Breakdown Structure. To move a cost item:

1. Select the row header of the cost item you wish to move. If you select a superior cost item, it will bring the subordinates along with it.
2. Drag and drop the cost item to the right place in your structure. Notice one of two cursor symbols appears:

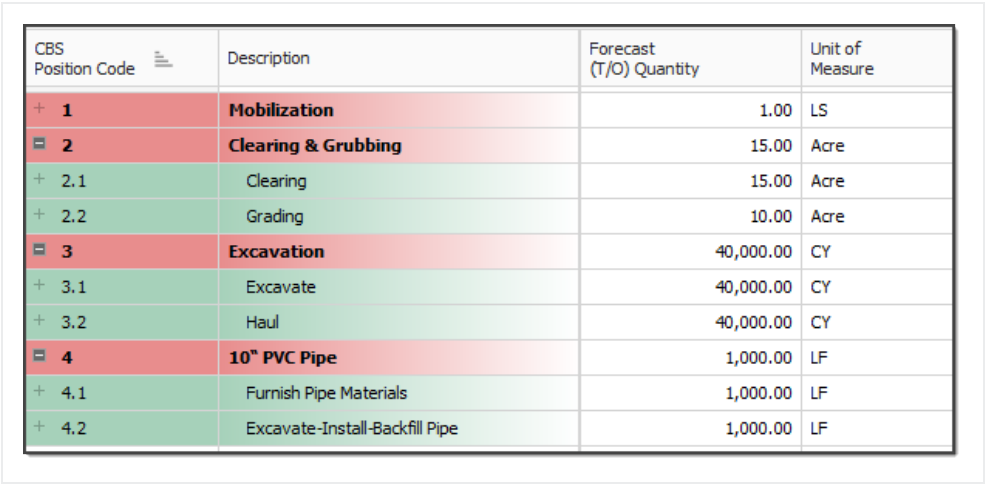
The symbol with three equal bars will drop the cost item at the same level as the cost item you drop it on.	
The symbol with a subordinate bar will make the cost item become a subordinate to the one you drop it on.	

Exercise 5.1 — Create Cost Items

In this exercise, you will practice creating additional cost items. Create the following cost items, using your E101 – Training Job:

Code	Description	Forecast (T/O) Quantity	Unit of Measure
2.2	Grading	10	Acre
3.1	Excavate	40,000	CY
3.2	Haul	40,000	CY
4.1	Furnish Pipe Materials	1,000	LF
4.2	Excavate-Install-Backfill Pipe	1,000	LF

You should end up with the following results



CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure
1	**Mobilization**	1.00	LS
2	**Clearing & Grubbing**	15.00	Acre
2.1	Clearing	15.00	Acre
2.2	Grading	10.00	Acre
3	**Excavation**	40,000.00	CY
3.1	Excavate	40,000.00	CY
3.2	Haul	40,000.00	CY
4	**10" PVC Pipe**	1,000.00	LF
4.1	Furnish Pipe Materials	1,000.00	LF
4.2	Excavate-Install-Backfill Pipe	1,000.00	LF

Congratulations, you have completed this exercise!

5.3 COSTS AND PRODUCTION

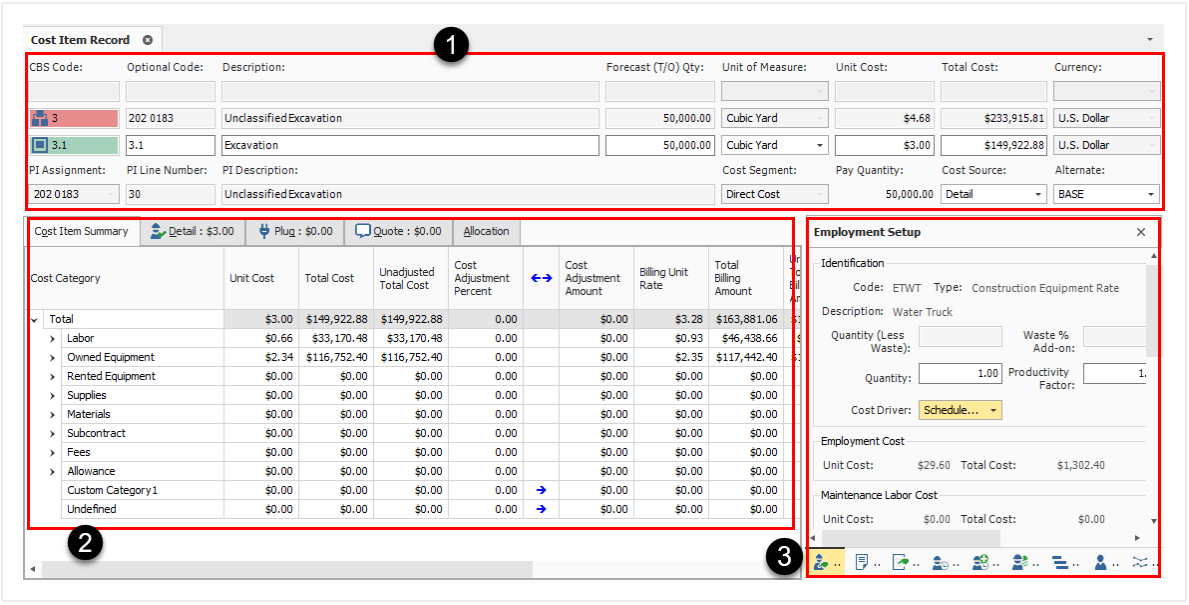
For the cost items you've created, you can now add their costs and production. All information for a cost item is contained in a Cost Item Record.

5.3.1 Cost Item Record

You can open the Cost Item Record by either double clicking on a cost item row header, or right clicking and selecting **Open**.

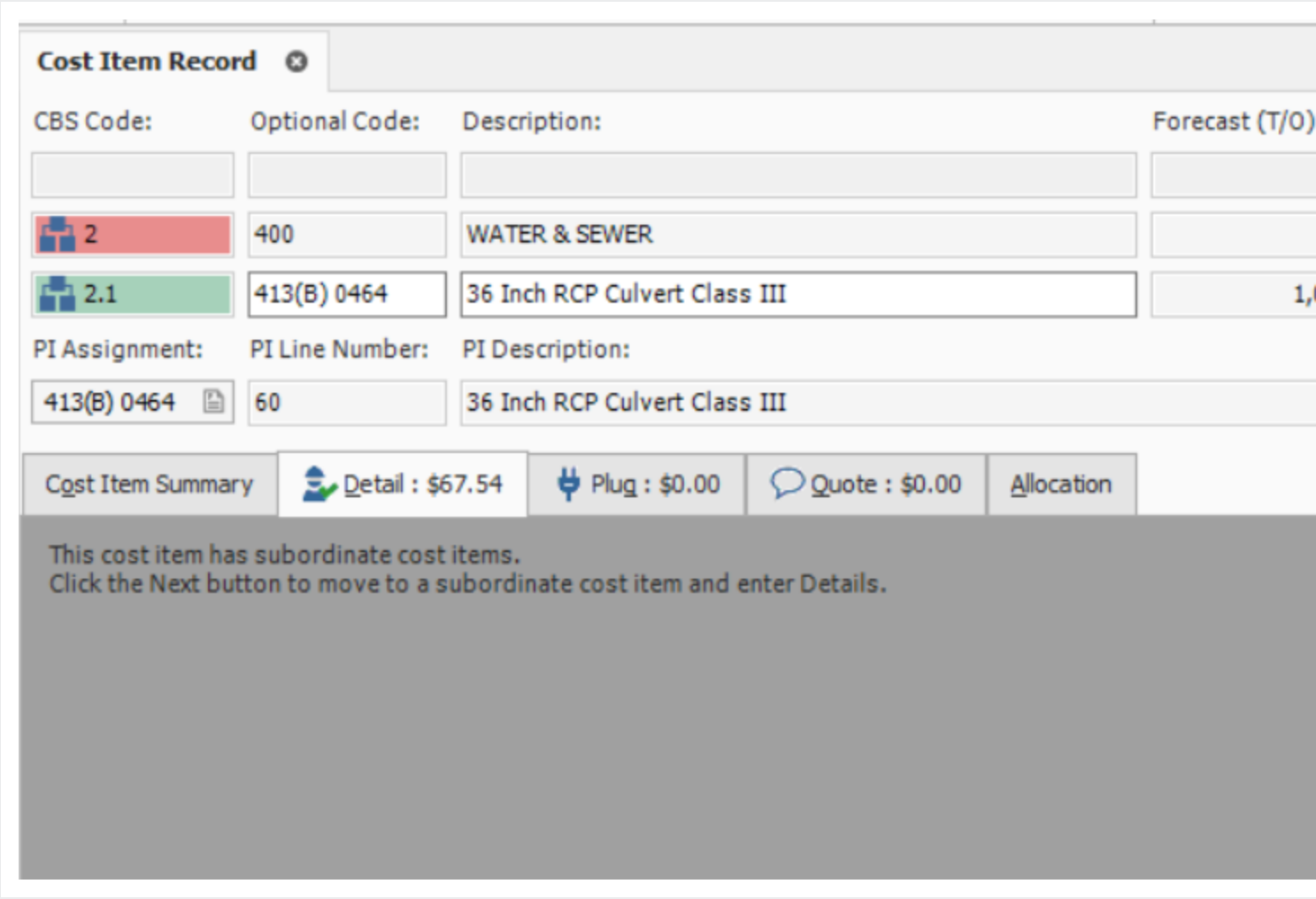
Cost Item Record Overview

	Name	Description
1	Cost Item Header Information	Provides general information about the cost item. It displays the cost item's take-off quantity, Unit of Measure, and Cost. It also indicates what Cost Source is being used. The Cost Segment drop-down is used to differentiate estimated costs in the Direct Costs, Job Overhead or Business overhead categories.
2	Costing Area	Section where costs are defined. There are three ways to enter costs: Detail, Plug, and Quote. The Cost Summary tab summarizes whatever costs are defined. Under the Cost Segment drop down, you can choose
3	Data Blocks	Contains a set of tabs for entering additional information including production, shift arrangements, man-hour factors, notes, and scheduling information.



5.3.2 Cost Segments

The Direct Costs, Job Overhead, and Business Overhead cost segments helps to classify the scope of work so you can report on direct vs indirect costs, and accurately control how markup is spread throughout your bid. This differentiation is necessary to effectively price work based on the risk profile of each segment of cost.

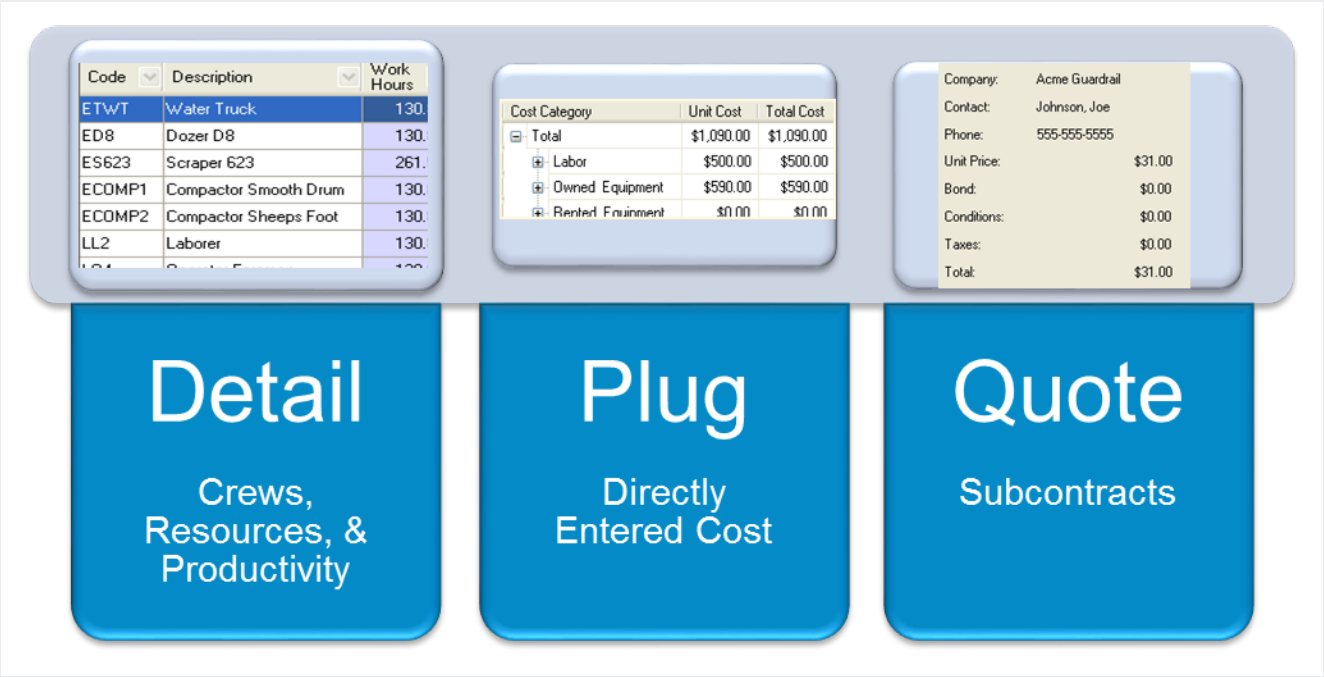


5.3.3 Cost Sources

You can define costs on a cost item in one of three ways, called Cost Sources:

Tab	Description
Detail	This is the recommended costing method, where labor, equipment, and material resources are defined, along with productivity, to determine costs.
Plug	This method allows you to enter a unit or total cost directly, without needing to enter resources or production. **This should rarely be used**, but does have a couple of use cases: • Place holder value until you get more information (from subcontractors or

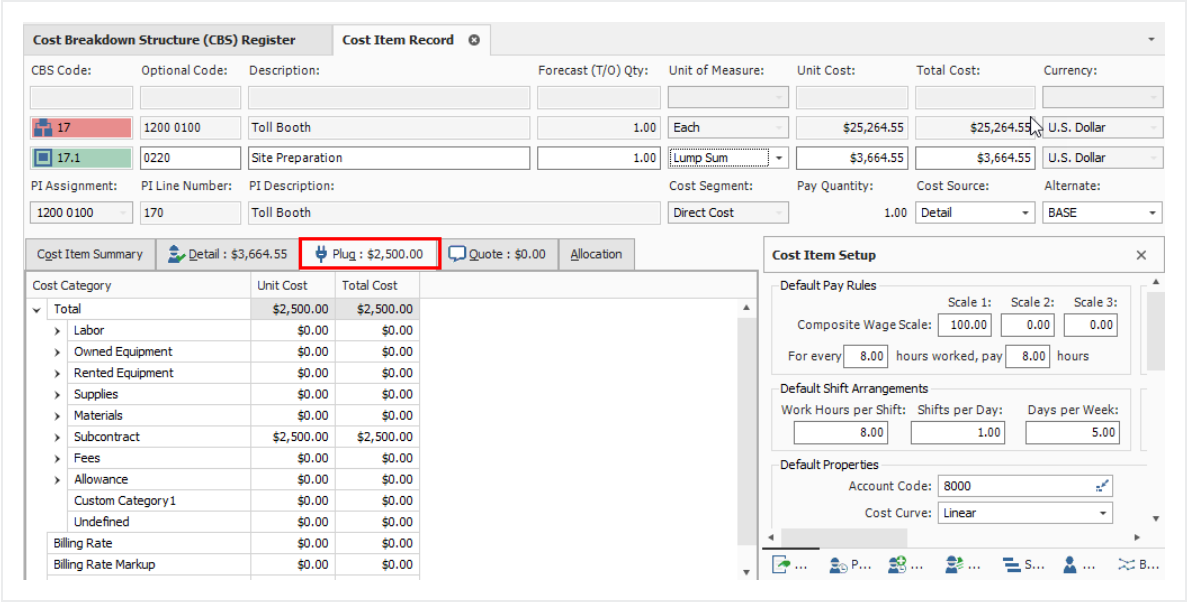
Tab	Description
	designers) • For preliminary estimates when limited information is available
Quote	The Quote cost source is for contractors, subcontractors or vendor quotes. • Creating and managing quotes is covered in *Lesson - Quote Management*



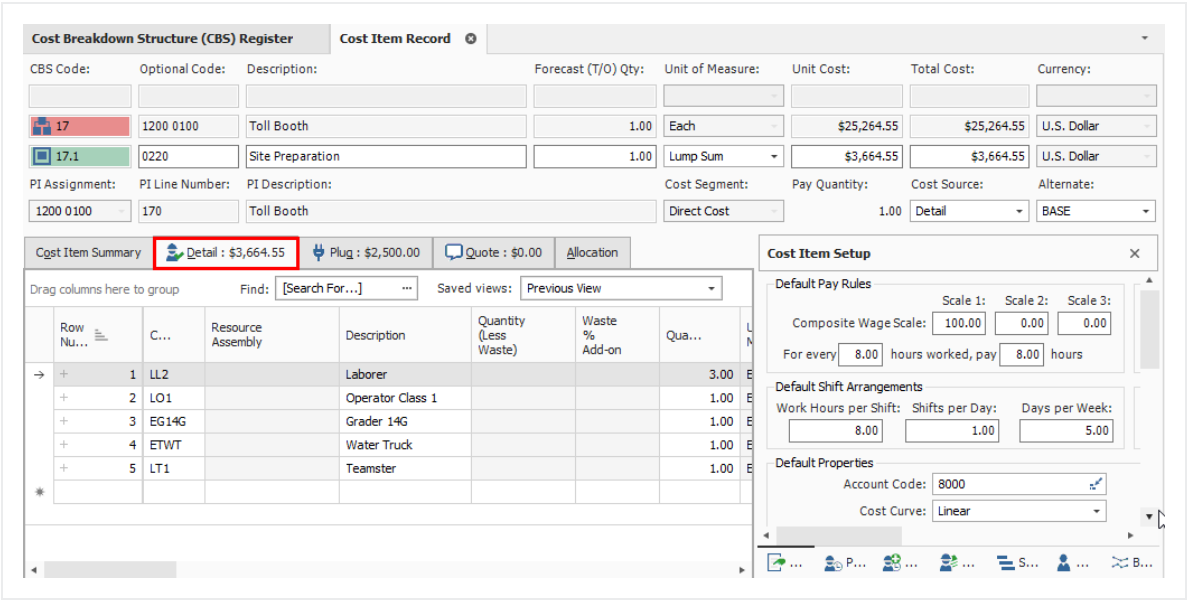
On each Cost Item Record, InEight Estimate gives you the option to define both Plug and Detail values on each respective tab.

5.3.3.1 Plug Tab

The Plug tab allows user to input unit or total cost to any of the listed cost categories which can be customized based on company requirements.

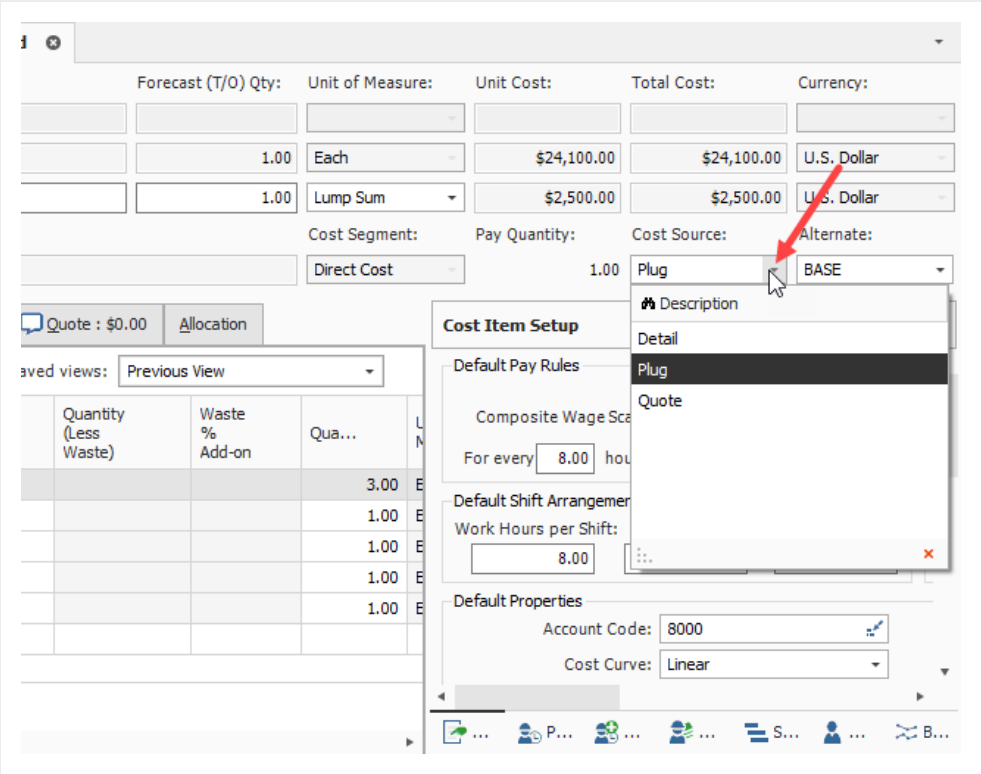


5.3.3.2 Detail Tab



Entering both a detailed and plug cost allows you to define costs at a higher summary level initially (Plug tab), and then define more detail as the estimating process progresses (Detail tab). You can review and compare your plug and detail values by toggling between tabs, but your cost item will only contribute the total cost from one of the tabs based on which cost source is selected.

You control which cost is used by selecting **Detail** or **Plug** in the Cost Source field on the Cost Item Record.



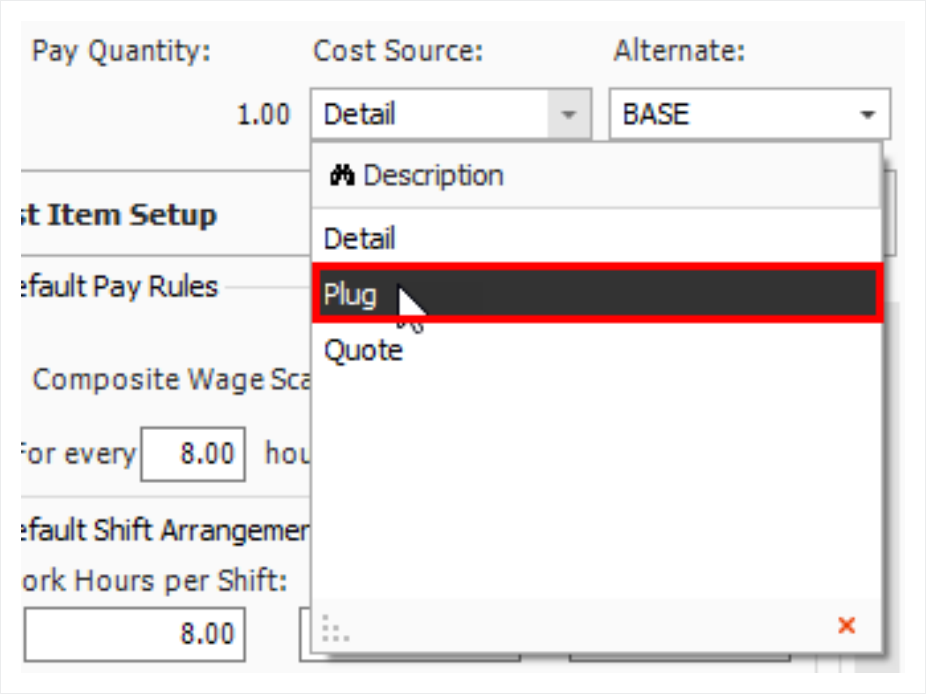
TIP The Quote Cost Source can only be selected from the Quote Comparison & Award form. See Lesson 8 – Quote Comparison.

5.3.4 Plug Costs

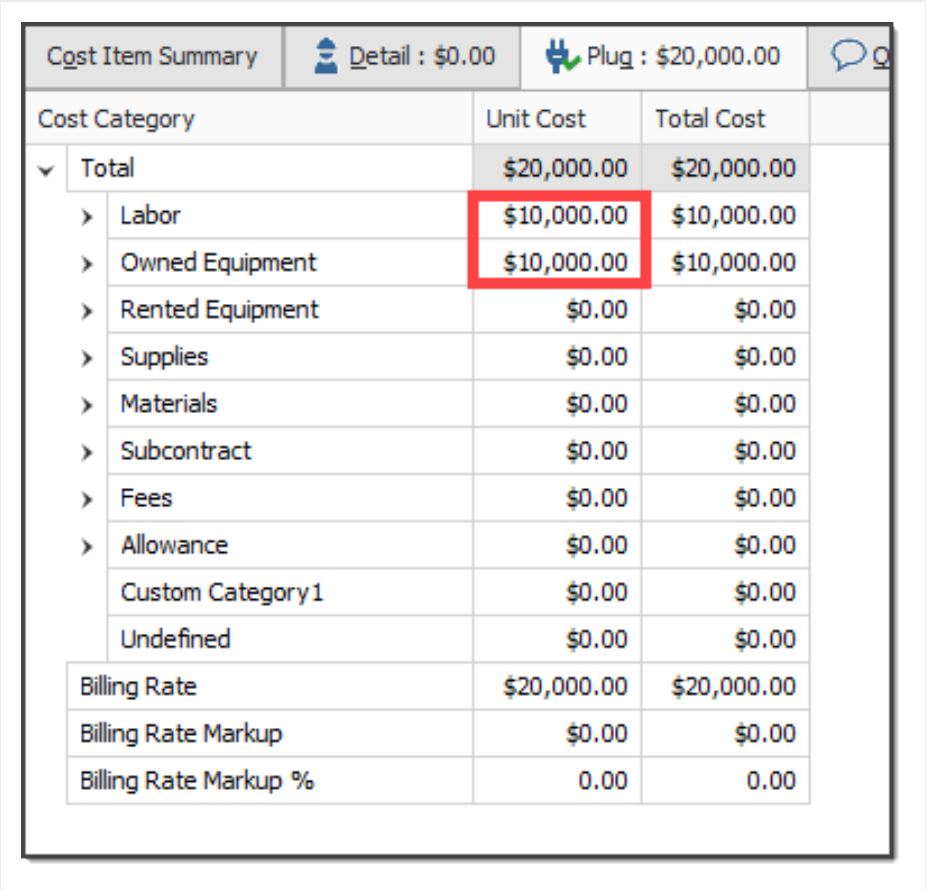
The following steps walk you through defining a plug cost on a cost item.

Step by Step — Define a Plugged Cost

1. In your job, from the InEight Estimate landing page, on the Estimate tab, select **Cost Breakdown Structure (CBS)**.
2. Right click on the **row header** for a cost itemand select **Open**.
3. In the **Cost Source** drop-down field select **Plug**.



4. In the left section of the Cost Item, select the **Plug** tab.
    - This gives you the list of all cost categories, where you can enter either a Unit or Total Cost
5. Click in the **Labor Unit Cost** field and enter a **numeric value**. Click in the **Owned Equipment Unit Cost** field and enter a **numeric value**.



- The Total Cost for the cost item should now auto-calculate to be $20,000.00

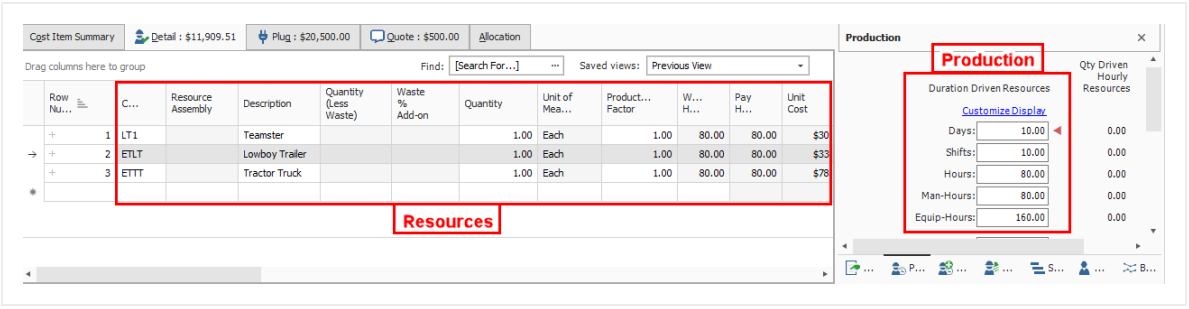
5.3.5 Detail Costs

The **Detail** cost method is also defined on the Cost Item Record. On the Detail tab, you can add resources (labor, equipment, and material) and define production.

On the Production tab (right side of screen), define production by entering one of the following:

- A duration, or
- A unit per duration, or
- A duration per unit

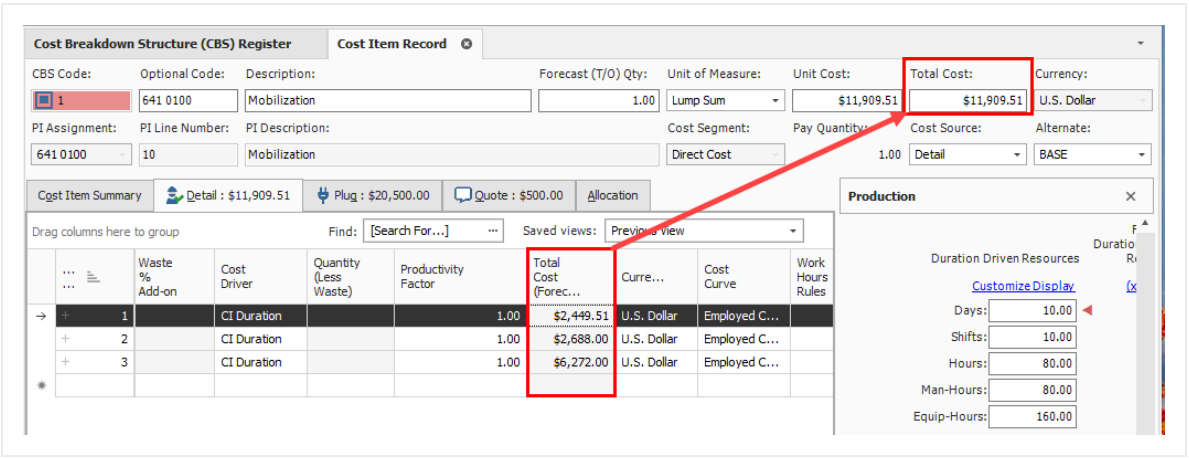
When you enter a production value, all the other production fields will auto-fill based on what you entered.



The hours defined on the Production tab drive the labor and equipment resources you employ on the left, multiplying their unit costs by the production hours.

When you employ material resources, their costs are driven by the quantity you enter into the quantity field.

The Total Cost of each resource is added together to give you the Total Cost for the cost item.

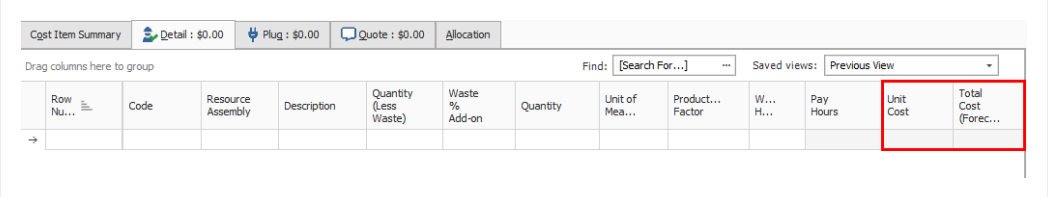


5.3.5.3 Add Cost Detail

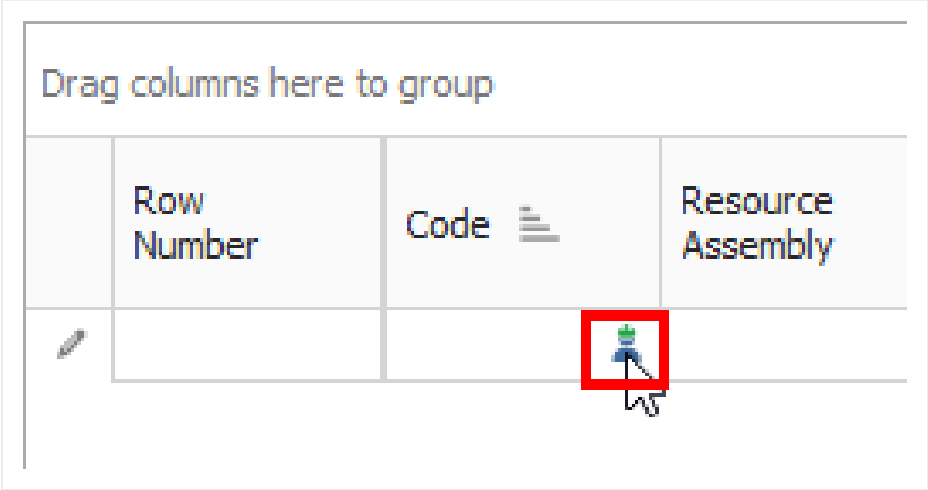
The following steps walk you through adding resources and production on a cost item.

Step by Step — Add Cost Detail

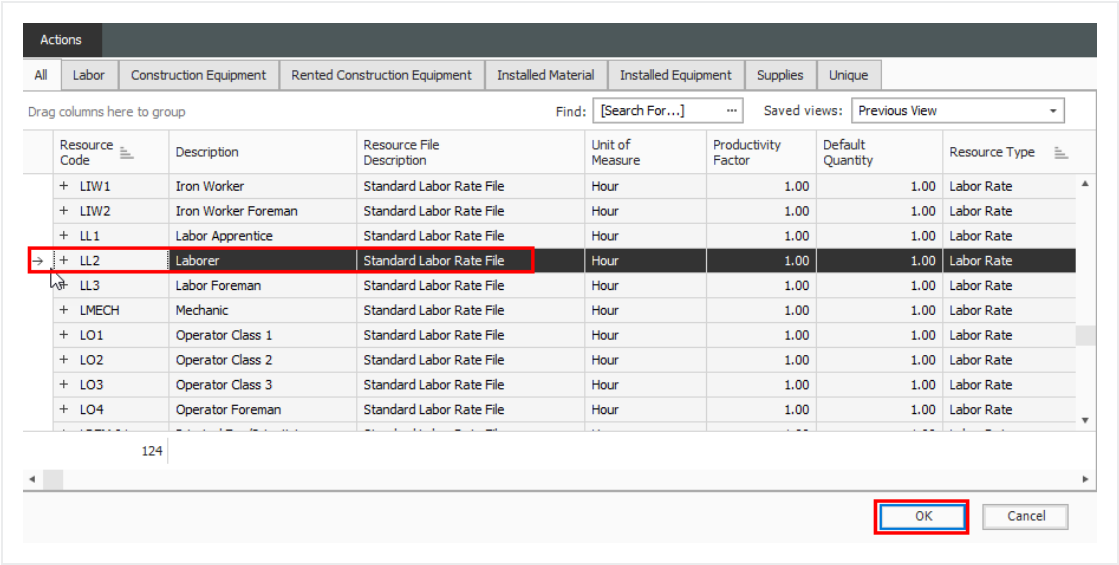
1. Using your job, from the InEight Estimate landing page, on the Estimate tab, select **Cost Breakdown Structure (CBS)**.
2. Right click on the **row header** for a cost item and select **Open**.
3. Select the **Detail** tab.
    - Notice there is no cost on the Detail tab since no cost detail is defined



4. A blank row is available to define your costs. With your cursor in the code field, click the **Resource Selection** icon to open the Resource Selection Register.

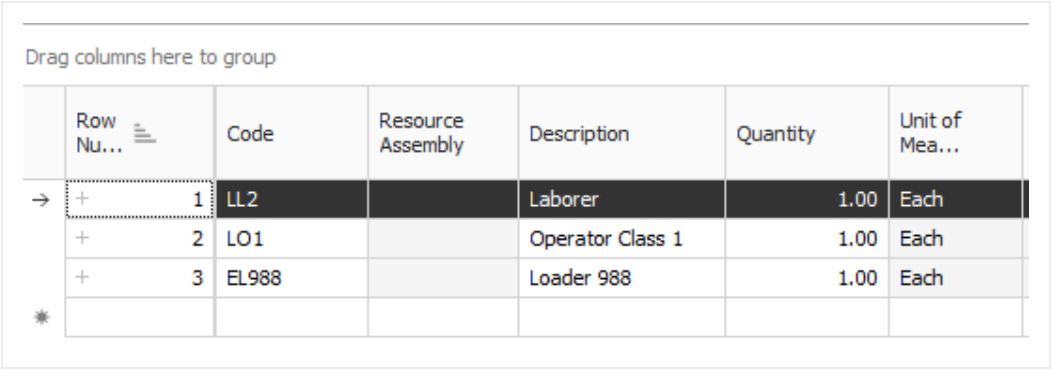


5. On the **Labor** tab, select a **labor resource**.
6. Select **OK**.

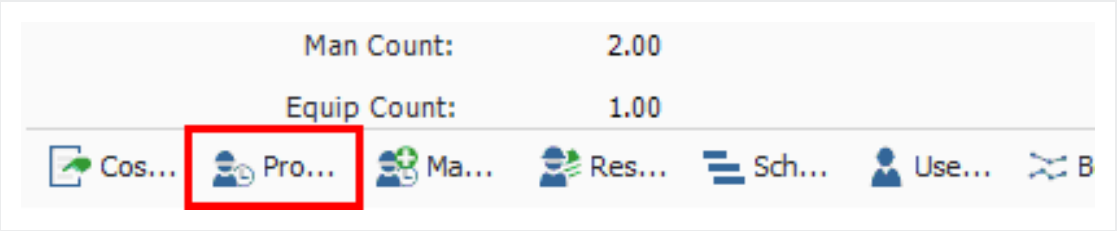


- The labor resource you selected is now employed on the cost item

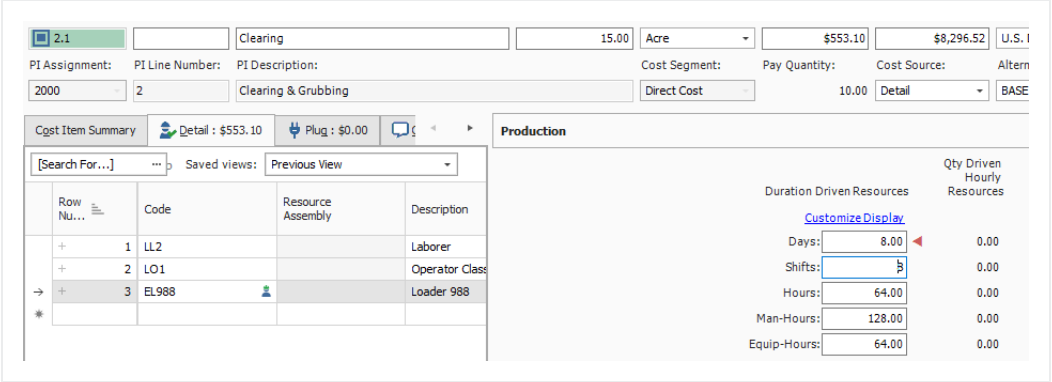
7. In the new blank row, click in the **Code** field and click on the **Resource Selection** icon to open the Resource Selection Register.
8. Select the **Labor** tab, then select a **labor resource**.
9. Click **OK**.
10. In the new blank row, click in the **Code** field and click on the **Construction Equipment** tab, then select an **equipment resource**.
11. Click **OK**.



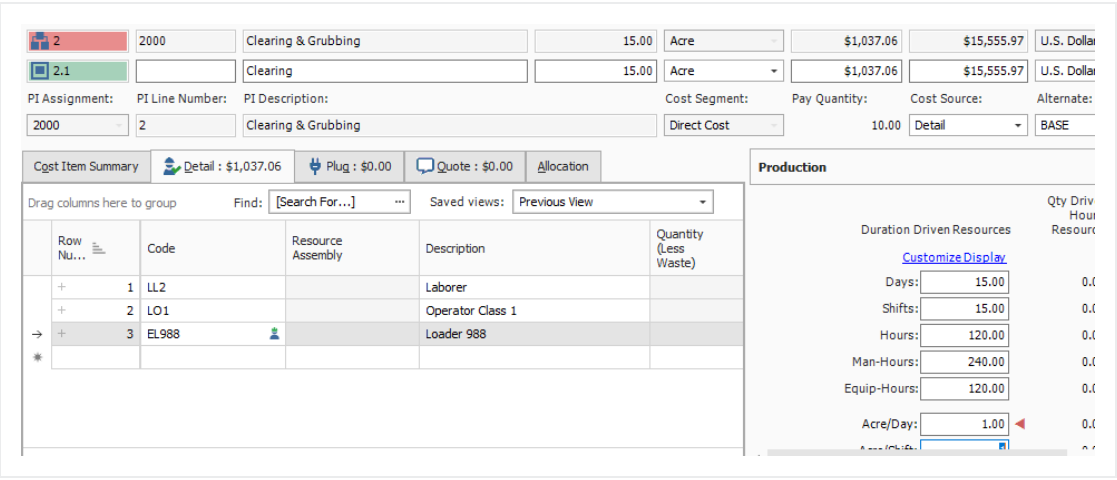
12. Because these are duration-based resources, you need to enter a Production value. From the lower-right section of the form, select the **Production** tab.



13. Enter a **numeric value** in the Days field, then press **Tab**.
    - Notice the red arrow indicating where production was defined
    - Notice that the Total Cost of the cost item is defined, based on the resources and productivity you defined



14. Next, adjust the production by entering a **numeric value** in the Acre/Day field.

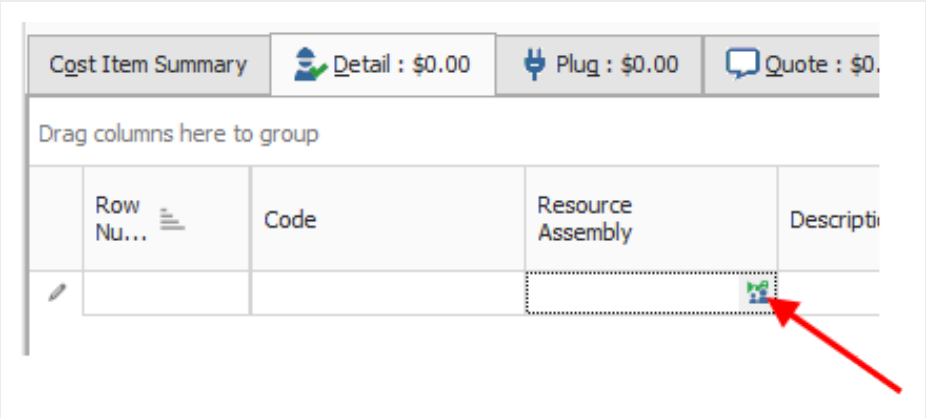


15. Click **OK** to close the record.

5.3.5.4 Add Assembly

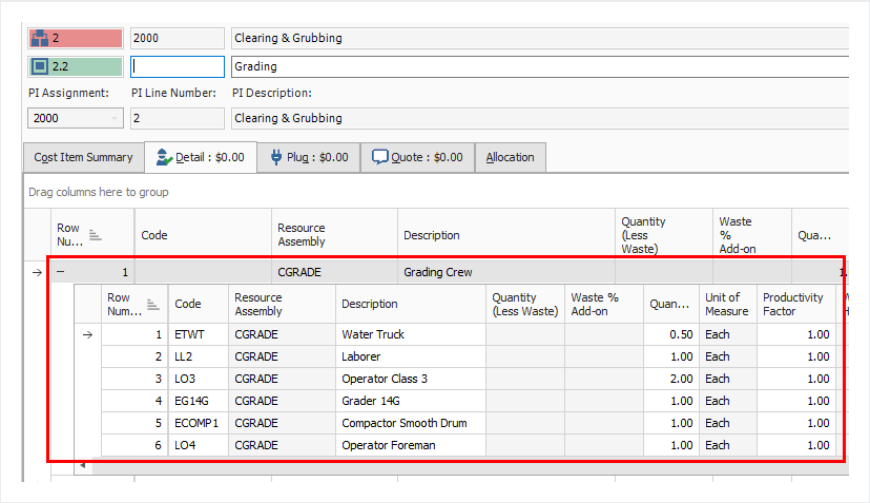
Step by Step — Define Cost Detail by Adding an Assembly

1. Using your job, from the InEight Estimate landing page, on the Estimate tab, select **Cost Breakdown Structure (CBS)**.
2. Right click on the row header for a cost item and select **Open**.
3. Select the **Detail** tab.
    - A blank row is available to define your costs
4. With your cursor in the Resource Assembly field, click the **Resource Assembly Selection** icon to open the Resource Assembly Selection Register.

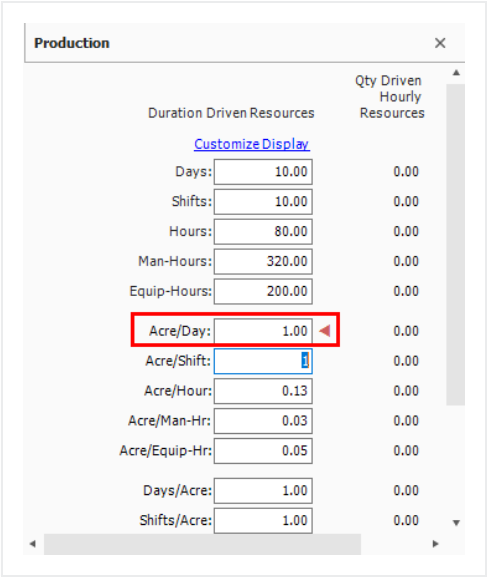


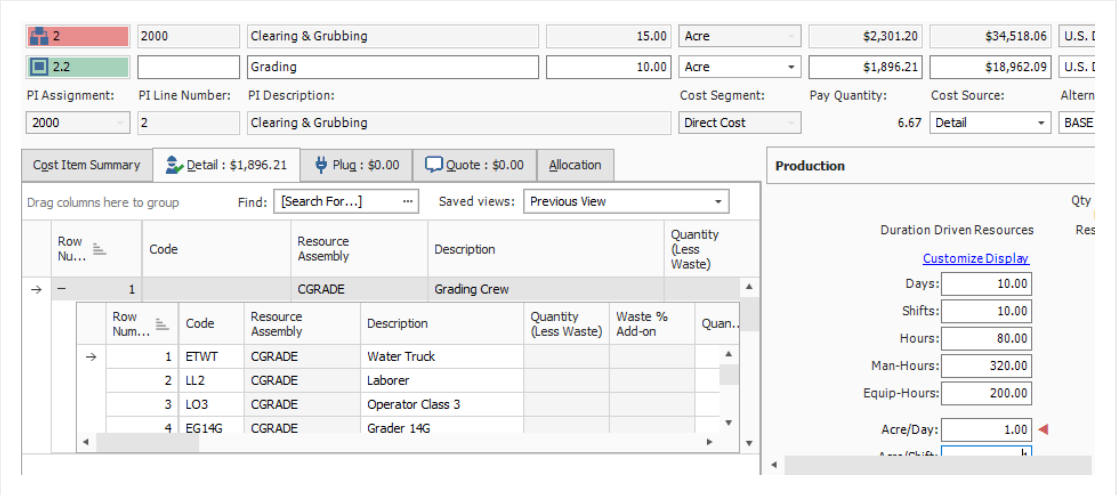
5. Select a **labor assembly**, then select **OK**.

- The assembly you selected is now employed on the cost item



6. Because this crew includes duration-based resources, you need to enter a Production value. Select the **Production** tab.
7. Enter a **numeric value** in the Acre/Day field, then press **Tab**.





- Notice the Total Cost of the cost item is defined, based on the resources included in the assembly and the productivity you defined

Exercise 5.2 — Define Cost Detail

For cost items you create in InEight Estimate, you need to add resources, assemblies and production to define their costs. In this exercise, you will practice defining cost details. Complete the following steps, using your E101 – Training Job:

Add the following resources to 3.1 Excavate cost item

Code	Description	Quantity
LO1	Operator Class 1	1
LL2	Laborer	2
LL3	Labor Foreman	1
EX225	Excavator 225	1
CY/Hour	**400**	

Add the following resources to 3.2 Haul cost item

Code	Description	Quantity
LO1	Operator Class 1	1
LL2	Laborer	2
LL3	Labor Foreman	1
LT1	Teamster	1
EL950	Loader 950	1
ETDT	Dump Truck	1
EX225	Excavator 225	1

Add the following production value to cost item

CY/Hour	400

Add the following resources to 4.1 Furnish Pipe Materials cost item

Code	Description	Quantity
MPP10	Pipe 10” PVC SDR21	1,000 with 5% Waste % Add-on = 1,050 LF

Add the following assembly to 4.2 Excavate-Install-Backfill Pipe cost item

Resource Assembly	Description	Quantity
CPIPE	Pipe Crew	1

Add the following production value to cost item

Days	3

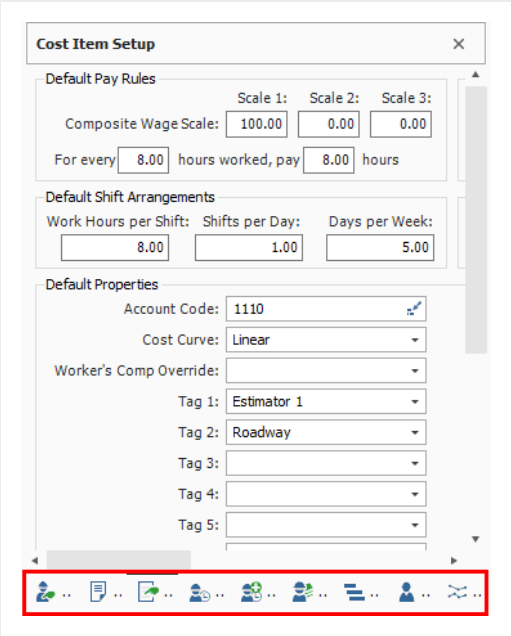
You should end up with the following results

CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)
+ **1**	**Mobilization**	1.00	Lump Sum	$20,000.00	$20,000.00
− **2**	**Clearing & Grubbing**	15.00	Acre	$2,301.20	$34,518.06
+ 2.1	Clearing	15.00	Acre	$1,037.06	$15,555.97
+ 2.2	Grading	10.00	Acre	$1,896.21	$18,962.09
− **3**	**Excavation**	40,000.00	CY	$1.52	$60,723.96
+ 3.1	Excavate	40,000.00	CY	$0.51	$20,587.04
+ 3.2	Haul	40,000.00	CY	$1.00	$40,136.93
− **4**	**10" PVC Pipe**	1,000.00	LF	$11.89	$11,893.33
+ 4.1	Furnish Pipe Materials	1,000.00	LF	$3.54	$3,538.08
+ 4.2	Excavate-Install-Backfill Pipe	1,000.00	LF	$8.36	$8,355.25

Congratulations, you have completed this exercise!

5.4 COST ITEM DETAILS

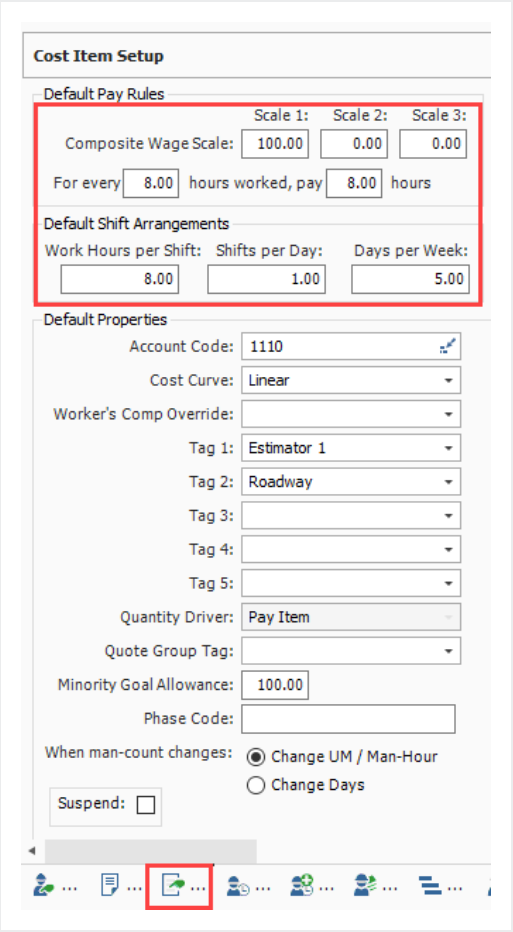
The Cost Item Record contains other tabs (called Data Blocks) in addition to the Production tab, for storing and calculating information specific to that cost item.



You can add to or adjust the information on these tabs as needed, based on the cost item's circumstances. In this section, you will review three of the tabs (in addition to the Production tab) you will likely use most often: Cost Item Setup, Notes, and Man-Hour Factors.

5.4.1 Cost Item Setup

On the data block where the Production tab was found, there is also a Cost Item Setup tab where you can adjust wage scale and shift arrangements for a specific cost item.



The composite wage scale and work and pay hours are used in the calculation of the cost of employed labor resources. The data reported on the Default Pay Rules tab is, by default, the composite wage scale and work and pay hours defined on the Job Properties - Cost Basis tab for the current job.

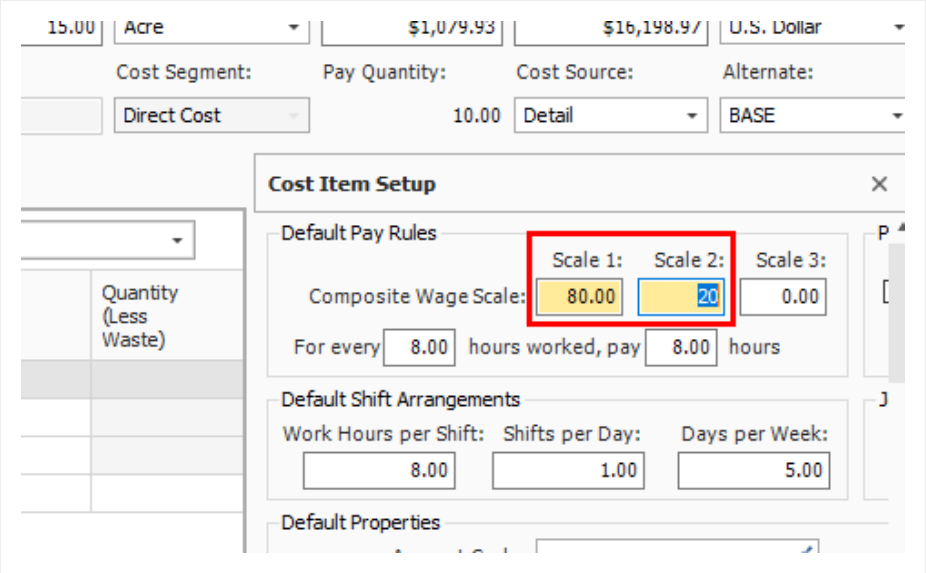
These settings can be modified from the default on a cost item-by-cost item basis.

The Pay Rules for cost items can also be defined or modified on the Cost Breakdown Structure (CBS) Register in the Scale 1, Scale 2, Scale 3, Work Hours Rules, and/or Pay Hours Rules columns in the row of the subject cost item.

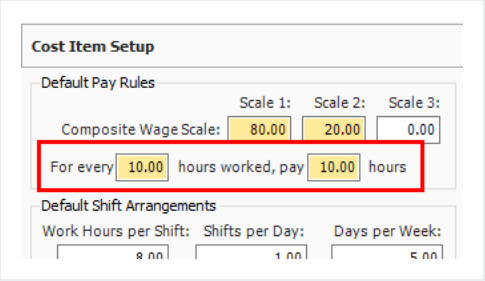
Step by Step — Adjust Shift Arrangements

1. Using your job, from the InEight Estimate landing page, on the Estimate tab, select **Cost Breakdown Structure (CBS)**.
2. Right click on the row header for a cost item and select **Open**.

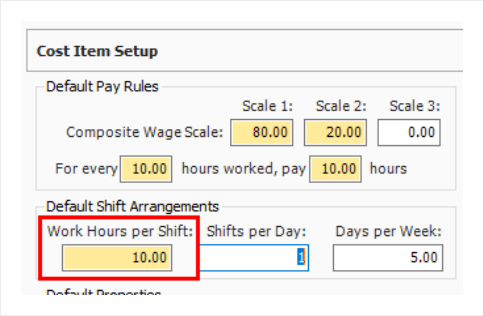
3. Select the **Cost Item Setup** tab in the lower-right portion of the form (the tab name may be abbreviated).
4. In the Default Pay Rules data block, adjust your wage scale to a **numeric value** for Scales 1 and 2.



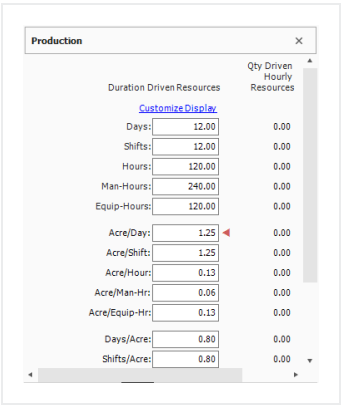
5. Under the Composite Wage Scale, adjust the hours so that for every **10** hours worked, pay **10** hours.



6. In the **Default Shift Arrangements** data block, change the Work Hours per Shift to **10**. Leave Shifts per Day at **1** and Days per Week at **5**.



- Notice that your hours did not change on the cost item (they will remain constant)
- However, if you go back to the Production tab, you will also see that it automatically adjusted your other production values based on the new settings



5.4.2 Notes

On the Cost Item Record, you can enter any cost item-specific instructions, parameters, or general information on the Notes tab. Below are a few examples of the kinds of notes you might enter:

- **For a Hauling cost item**: *There should be very little waste. If so, we can spread it out in the right of way at MP 111*
- **For a Structural Excavation and Backfill item**: *The backfill cannot be the native material. Have to use clean base rock*
- **For an Underground Pipe cost item**: *The average depth is close to 10 ft.*

TIP You can use the Notes tab to reference cost item changes (e.g., changing shift arrangements, changing a resource rate).

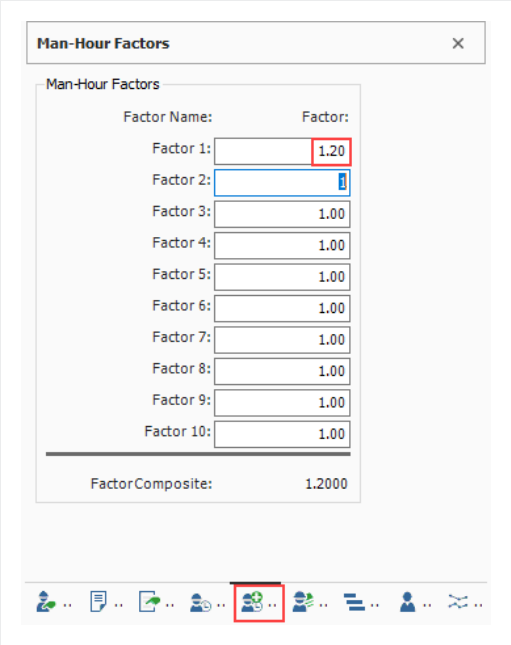
5.4.3 Man-Hour Factors

For items that have known risks or potential resource concerns, you can apply a Man-Hour Factor to take those risks into consideration.

Man-Hour factors are applied on the Man-Hour Factors tab on the Cost Item Record. Factors are applied in relation to 1, where slower production is greater than 1 and faster production is less than 1.

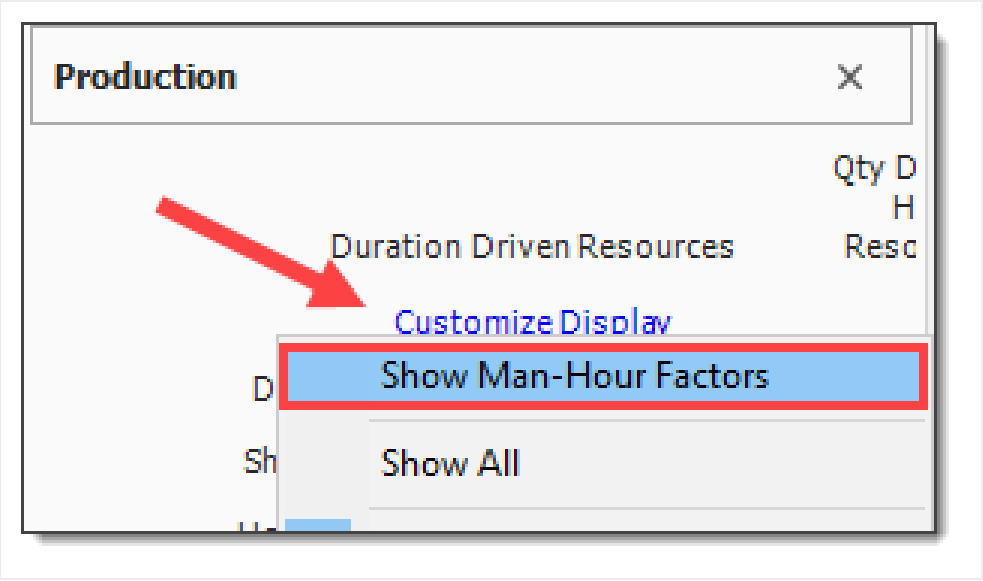
TIP	Man-Hour Factors affect both Labor and Equipment Hours.

For example, if you predict production to be 20% slower due to weather concerns, you would type 1.2 in the weather factor field.



Even after defining a Man-Hour Factor, the Production tab will still display the original Production values.

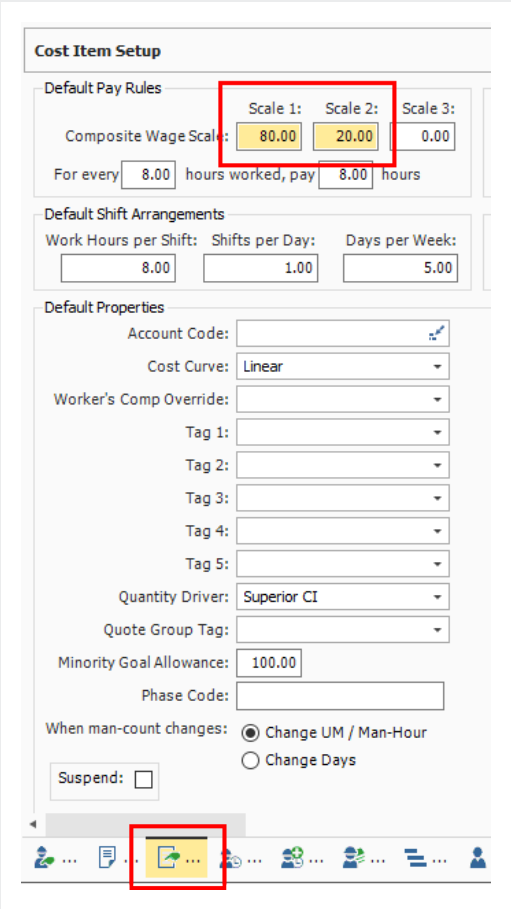
- To see the factored Production values, click the **Customize Display** link on the **Production** tab and select **Show Man-Hour Factors**
- Both original and factored production are then displayed on the Production tab



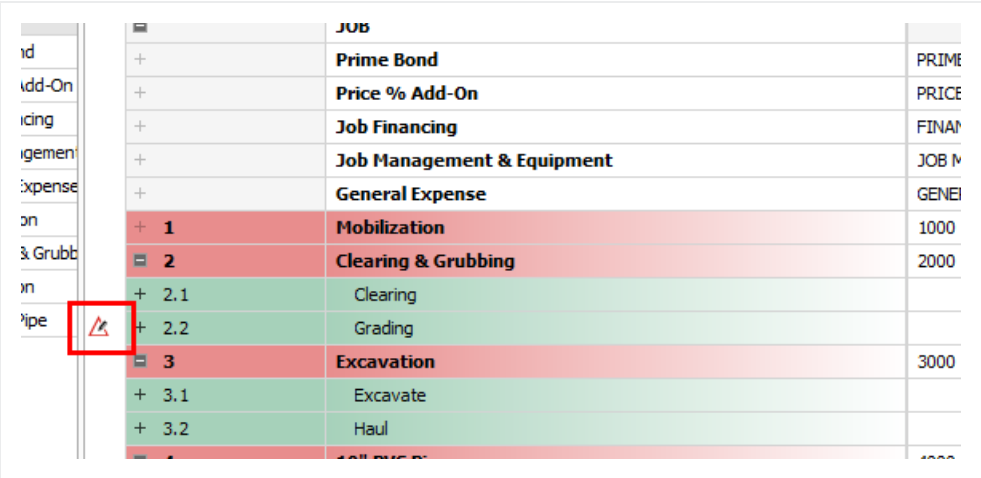
TIP You can apply Man-Hour Factors to multiple cost items at once by Multi-Editing selected cost items on the CBS Register.

5.4.4 Unique Identifier

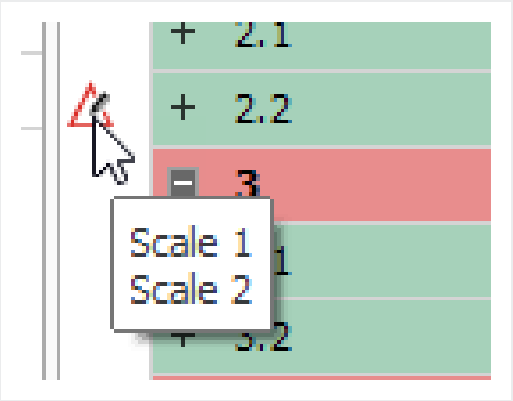
You may have noticed when you made changes on the Cost Item Setup tab, that the fields you changed and the Cost Item Setup tab became highlighted, indicating they were altered from their original state.



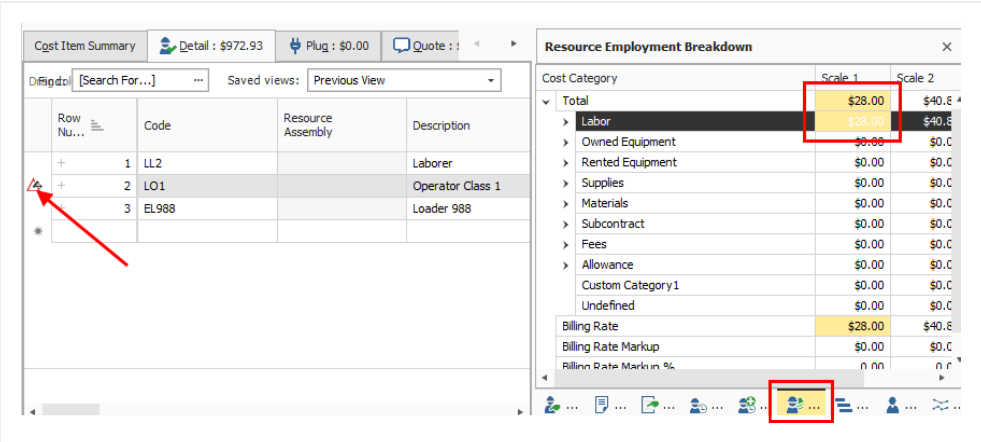
On the CBS Register, the cost item you edited now has a Unique Identifier in the row header indicating the cost item was altered from the default values set in the project job properties or in the project library of resources rates.



If you hover over the identifier, a pop-up menu appears indicating what data points were changed.

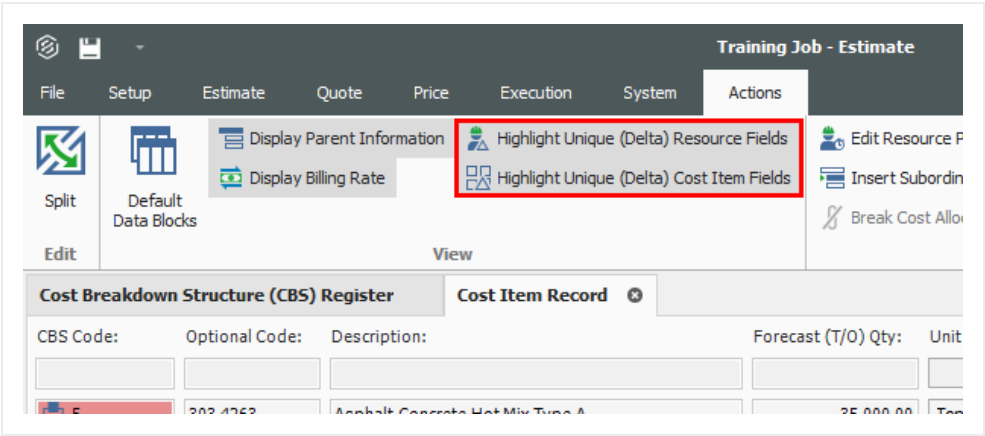


This same identifier will show up for resources as well, if you make changes to the employed resource's cost to be different than the original resource rate imported from the Resource Rate Register.



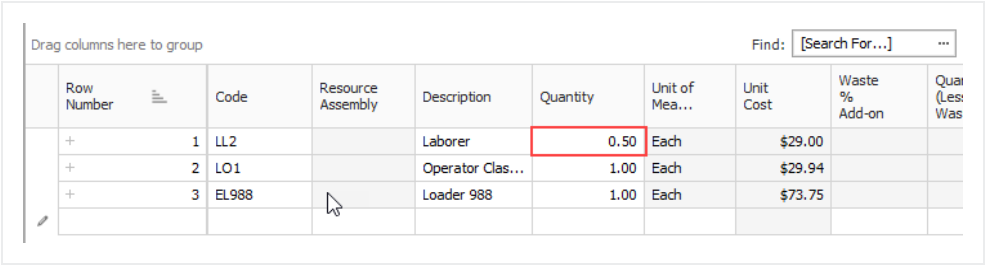
5.4.4.1 Highlight Unique (Delta) Toggle

You can turn the highlighting of unique resource and cost item fields off and on from the Actions menu of the Cost Item Record, under the View section.

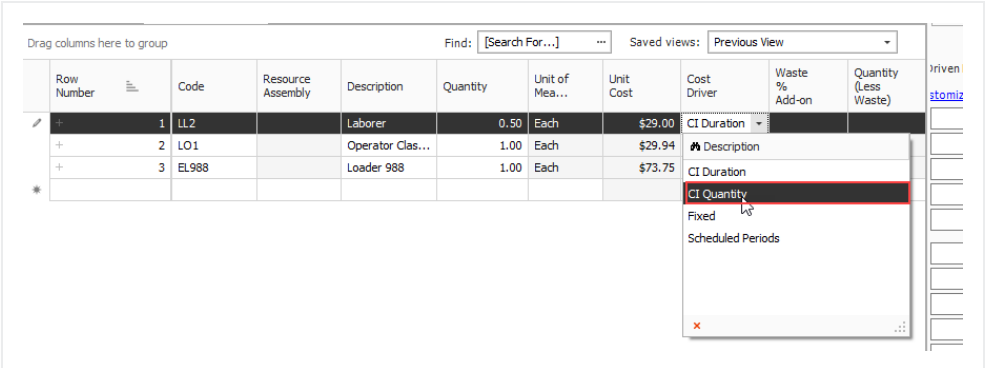


5.4.5 Cost Drivers

Each type of resource has a default cost driver. For example, Labor resources are duration driven so the cost driver is CI Duration, meaning their costs are driven by the duration of the cost item. If you want an Operator to only be assigned to a specific cost item or work activity for half the time, you can change its quantity to .5 and it will be driven by half of the cost item's hours.

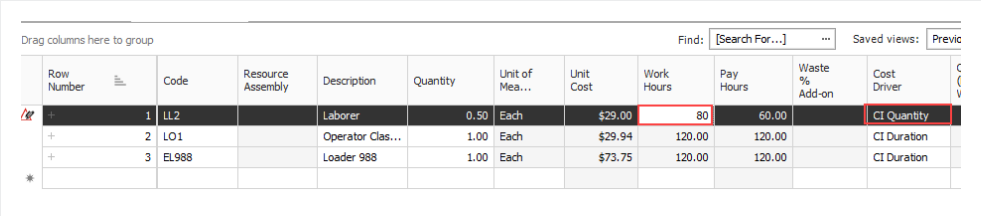


To enter work hours manually for the employed resource, you can change the Cost Driver option to CI Quantity or Fixed.

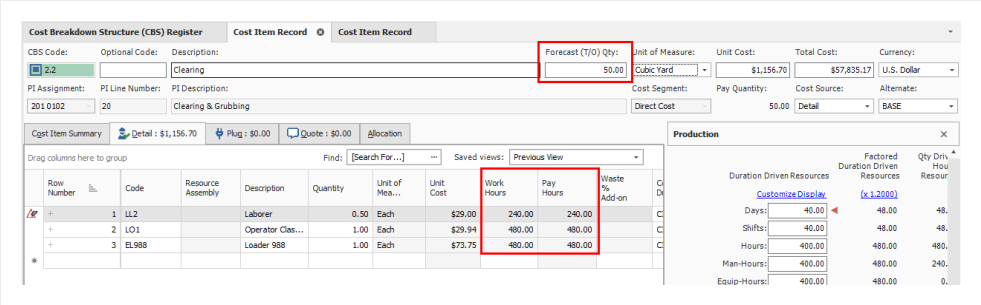


With CI Quantity as your cost driver for the Operator, you can adjust the Work Hours manually, where previously that column was read-only.

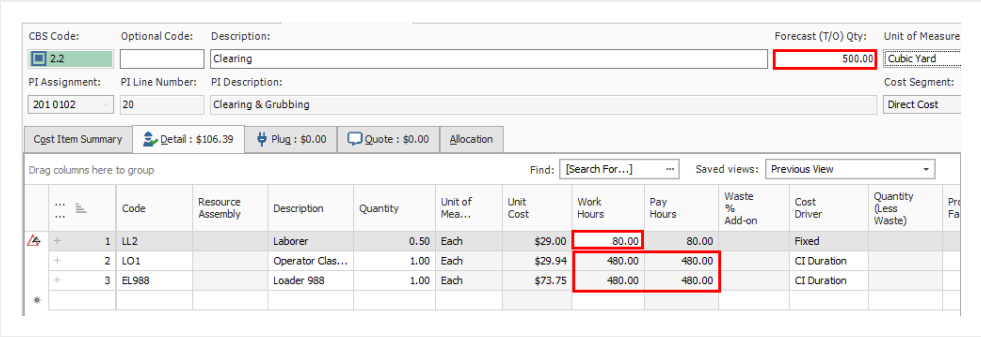
Let's say you want your Operator to work specifically 80 hours.



However, since the resource is now quantity driven, if you change the Forecast (T/O) Quantity to 50 you will see that the work hours will still adjust from 12 to 40.



If you want it set at 80 hours no matter what changes you make to your quantity, you can change the cost driver to Fixed. Then when you change the Forecast Quantity to 500, the work hours for the Operator will not change and will remain at 80 hours as shown below.

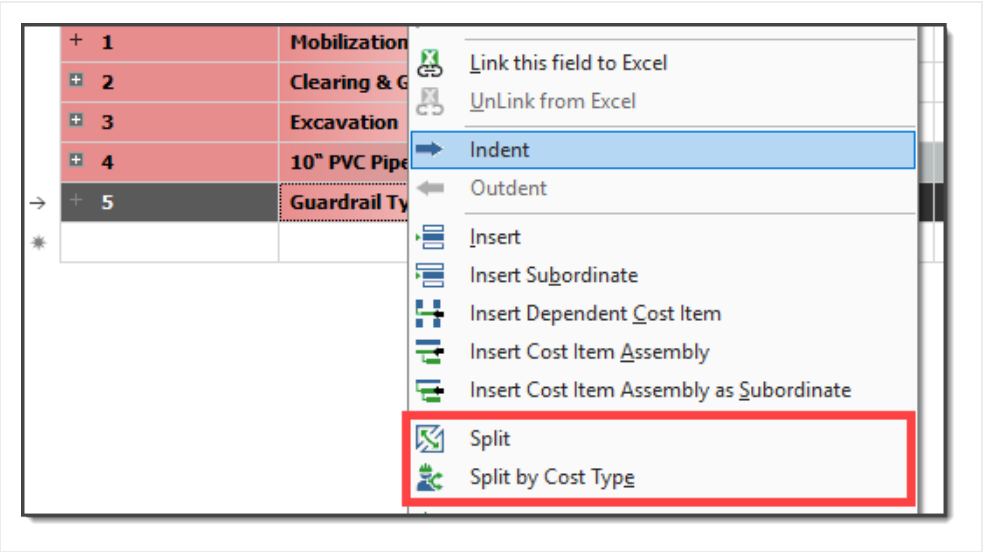


If you followed along and made any adjustments to cost item 2.1 Clearing, change the Cost Driver for the Operator resource back to **CI Duration** and the Work Hours back to **100**.

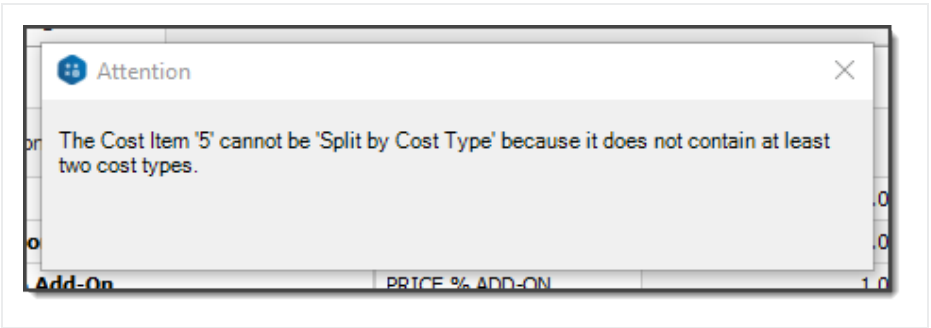
5.4.5.2 Split by Cost Type

It is common for an estimate to progress through multiple levels of detail. Often a high-level estimate for a particular scope of work consists of a single cost item inclusive of the entire cost of that work in a single line item. As the estimate is further refined, more detail is added and at times it can become necessary to split a cost item by the four main types of costs that make it up, such as separating the material cost from the installation cost.

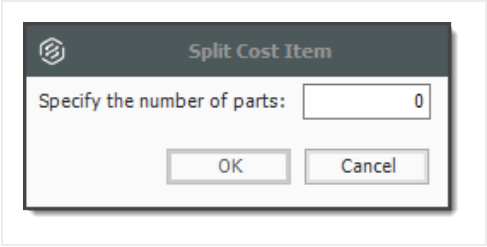
The Split by Cost Type feature gives you the ability to select a cost item or a collection of cost items, and then separate any of the labor, equipment, material, or subcontract costs into separate cost items.



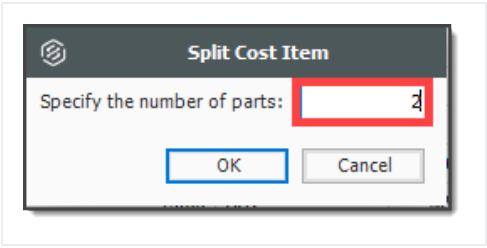
- Right click on a new Cost Item under Guardrail Type 2, and select **Split by Cost Item**. You can use this option if there at least two types. If not, you will get this pop-up:



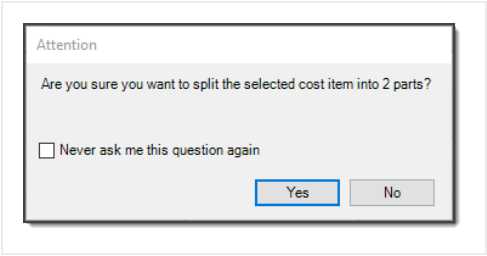
Alternatively, click on **Split**.



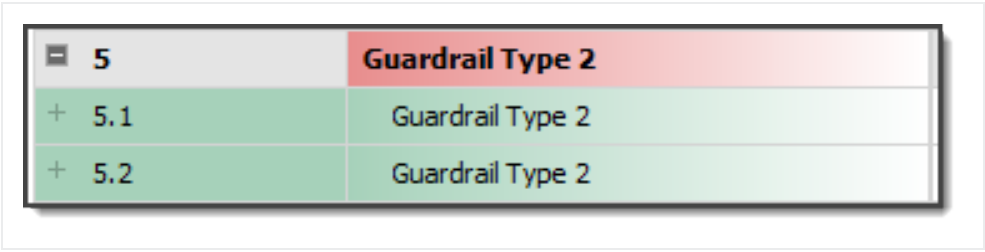
- Enter the number of parts to split and click OK



- You will be asked if you want to proceed. If so, click Yes



The end-result will automatically add subordinate rows which you can now edit.



5.4.6 Suspend Cost Items

The Suspend feature allows you to turn cost items on and off in order to perform “what-if?” analysis or evaluate alternative approaches to the work.

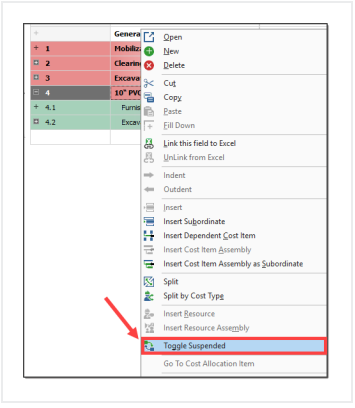
A cost item can be suspended in InEight Estimate for various reasons including the following:

- Manually suspended cost items
- Suspended parent
- Parent with cost source that is not Detail (plugged or quoted)
- Parent cost item with a zero quantity
- Pay item is suspended
- Allocated cost items
- Alternate scenarios:
    - Overridden by another alternate
    - Alternative is not active

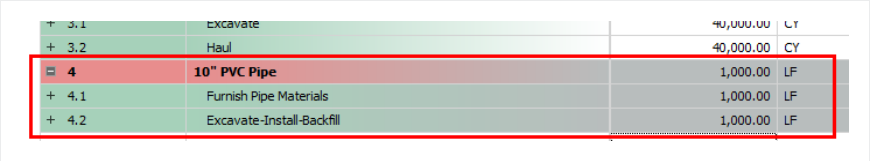
Suspended cost items do not contribute any cost to the job's total value. Suspended items can be un-suspended at anytime in order to be included in the total project value.

Step by Step — Suspend a Cost Item

1. On the **Cost Breakdown Structure (CBS) Register**, select a **cost item**.
2. Right click on the selection and select **Toggle Suspended** from the menu.
    - You can also select Toggle Suspended under the Edit section of the Actions tab up above
    - You can also suspend cost items by checking the Suspend checkbox on the Cost Item Setup tab of a cost item record



    - If a superior cost item is suspended, its subordinate cost items are automatically suspended as well



- The costs associated with these cost items will no longer contribute to the estimate

5.4.6.3 Editable Man-Hour Factors in Suspended Cost Items

You can edit Man-Hour Factors for a suspended cost item by creating and maintaining cost items, including Man-Hour Factors. This can be accomplished in a suspended state while having the scope of work included in your estimate. The cost to contribute is excluded from the scope of work until you are ready to make it part of your estimate.

5.4.6.4 Unsuspend a Cost Item

Follow the step by step below to unsuspend a cost item.

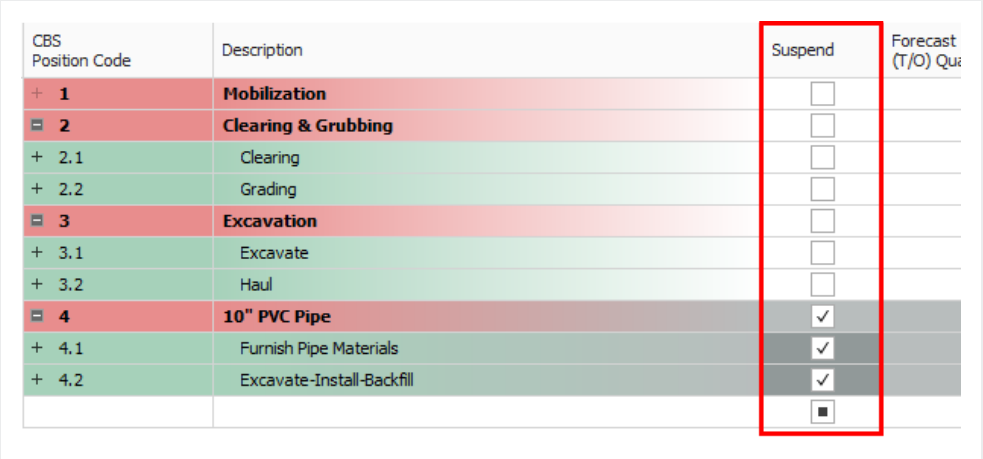
Step by Step — Unsuspend a Cost Item

1. On the Cost Breakdown Structure (CBS) Register, select a **cost item**.
2. Right click on the selection and choose **Toggle Suspended**.

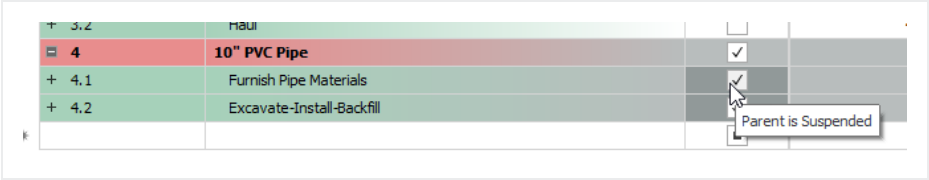
- You can also select Toggle Suspended from the Edit section of the Actions tab
- You can also unsuspend cost items by unchecking the Suspend checkbox on the Cost Item Setup tab of a cost item record

5.4.6.5 Suspend Column

Within the CBS Register, the Suspend column indicates which cost items are suspended.



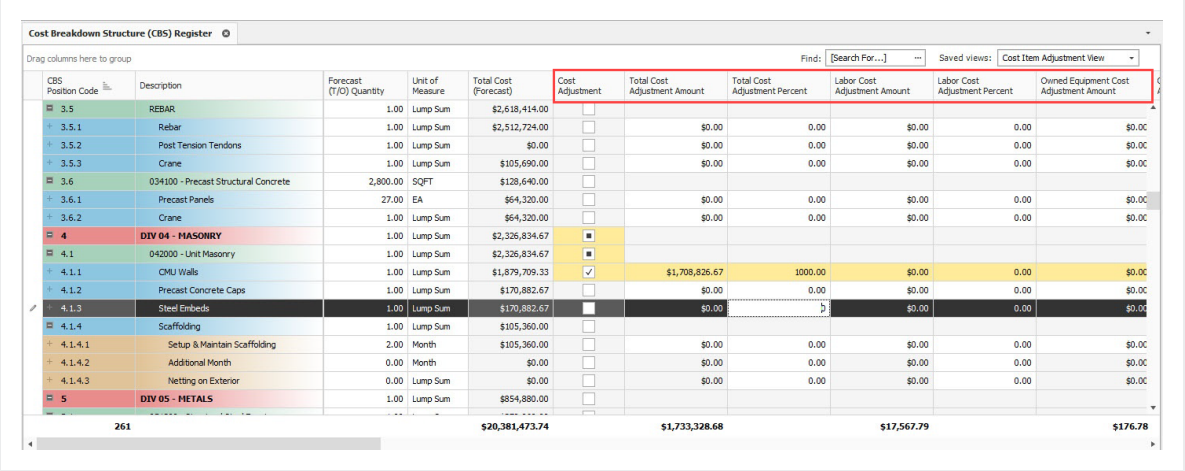
- Hover over the checkmarks to see why the cost item is suspended



- You can suspend and unsuspend cost items by checking and unchecking the checkboxes in the Suspend column as well

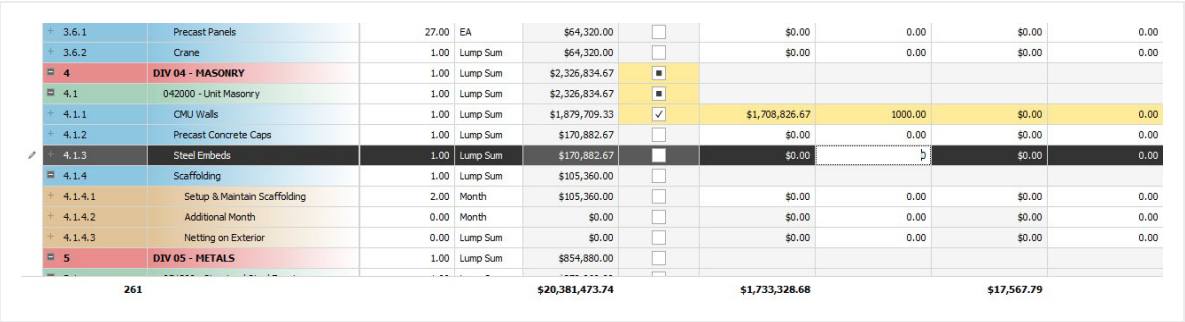
5.4.7 Adding Cost Adjustments

Total Cost and Billing Adjustments can now be made in the CBS register which can be viewed either from the Standard view of the CBS register, or a saved view affiliated with change.



Adjustment fields have been added to the CBS to view and modify the adjustment amount and adjustment percent without going into each individual cost item.

Any adjustment made to the Adjustment Amount fields on the CBS register will then have the Adjustment Percent field automatically calculated. Changes made to those fields will be highlighted in yellow signifying an adjustment has been made.



Other adjustments fields in the CBS register include the many adjustments fields that have been added to the **Billing Rates View**.

A new Saved view called **Cost Item Adjustment View** has been added to the Cost Breakdown Structure.

Exercise 5.3 — Manage Cost Item Details

In this exercise, you will practice making adjustments to your cost item details. Complete the following steps, using your E101 – Training Job:

1. Open the Cost Item Record for cost item **2.2 Grading**.

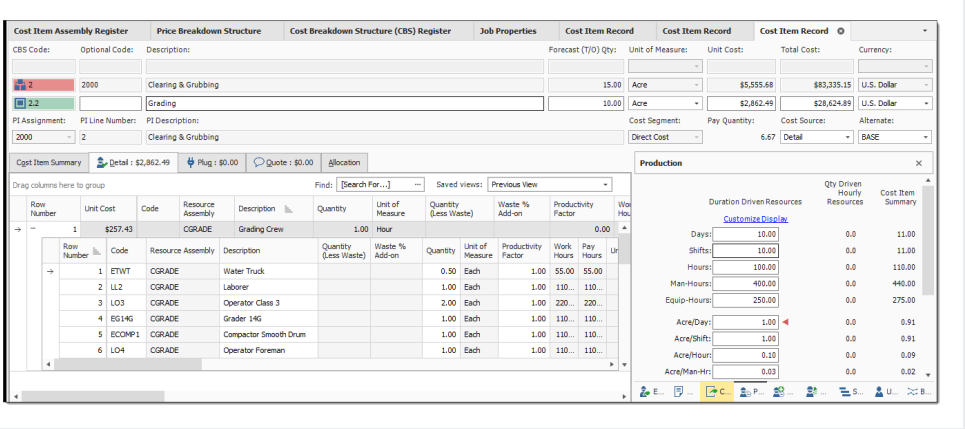
2. From the **Cost Item Setup tab**, change the Composite Wage Scale to **80%** Scale 1, **20%** Scale 2.

3. Change the Default Shift Arrangements to **10** Work Hours per Shift, **1** Shift per Day, **5** Days per Week. Also adjust for every **10** hours worked, pay **10** hours.

4. From the **Man-Hour Factors** tab, apply a Man-Hour Factor of **1.1** to the same cost item.

5. On the **Notes** tab, type **Added man-hour factor due to hard soil conditions**.

You should end up with the following results for 2.2 Grading



Congratulations, you have completed this exercise!

Lesson 5 Review

1. Resources, costs, and production can only be added to what type of cost item?
    a. Superior
    b. Terminal
    c. Parent

---

2. What Cost Source is used for defining resources and production?
    a. Plug
    b. Detail
    c. Quote

---

3. On the Cost Item Record, what tab is used for changing the cost item's Default Shift Arrangements?
    a. Cost Item Setup
    b. Production
    c. Man-Hour Factors
    d. Notes

Lesson 5 Summary

As a result of this lesson, you can:

- Explain the Cost Breakdown Structure and its purpose
- Create cost items
- Add costs and production
- Manage cost item details

LESSON 6 – INDIRECT COSTS

Lesson Duration: 45 Minutes

Lesson Objectives

After completing this lesson, you will be able to:

- Explain how indirect costs are defined in InEight Estimate
- Estimate default indirect cost items
- Estimate user-defined indirect cost items

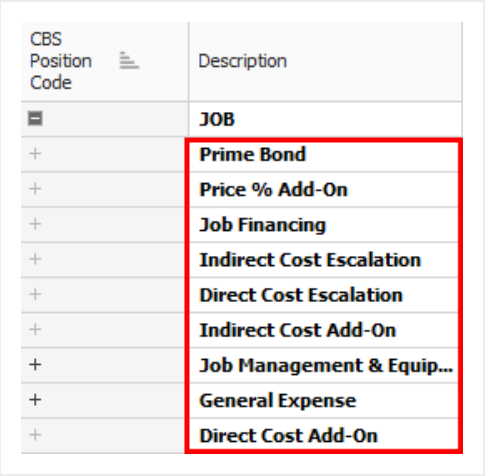
Lesson Topics

6.1 INDIRECT COSTS OVERVIEW

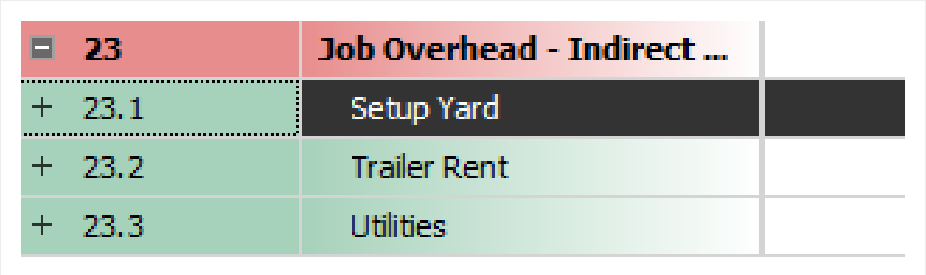
Indirect costs such as the cost of prime bond, mobilization, or site supplies are typically overhead costs that are not directly associated with a particular project deliverable but contribute to the total cost of the project. However, indirect costs can be assigned to a pay items. This gives you the flexibility to more accurately control the cost basis of bid items and strategically price the work to maximize cost recovery and profit.

Once your direct costs are defined, you can add indirect project costs. Estimate provides two ways you can create indirect costs:

1. **Default Indirect Cost Items**: These are pre-built cost items created by InEight Estimate, located at the top of the CBS Register.



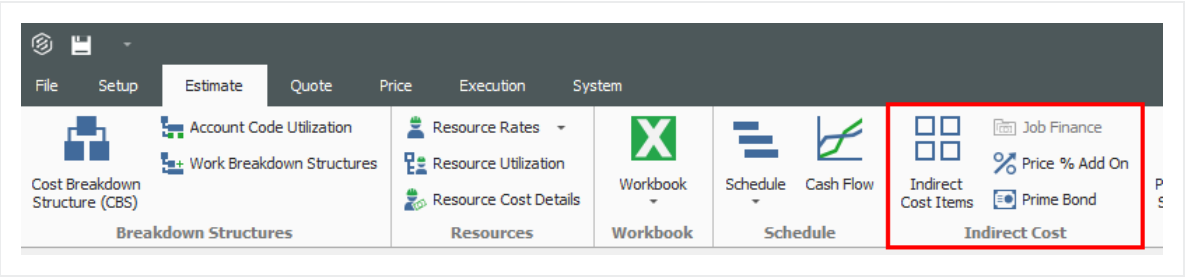
2. **User-Defined Indirect Cost Items**: Any cost item you create in the CBS Register that is not assigned to a pay item is considered indirect cost.



> **TIP** The Cost Breakdown Structure (CBS) located in the Library under the Estimate tab, Master Breakdown Structures section, controls which of the default indirect cost items to copy into new job folders.

6.1.1 Navigation to Indirect Costs

From the Estimate tab of the InEight Estimate landing page, you can quickly access indirect costs from the Indirect Cost section.



- Select Indirect Cost Items to open the Cost Breakdown Structure Register filtered to only your indirect costs
- You can select Prime Bond, Price % Add On, and Job Financing to access those indirects

The following section takes a closer look at the default indirect cost items.

6.2 DEFAULT INDIRECT COST ITEMS

InEight Estimate contains various default cost items to help you calculate your indirect costs.

6.2.1 Independent Indirect Cost Items

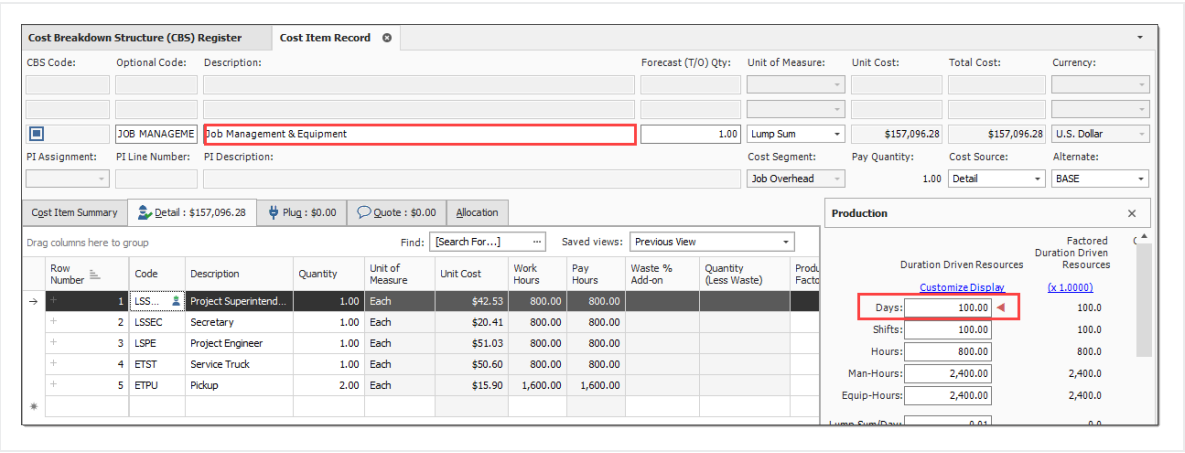
Independent indirect cost items function very much like the direct cost items you defined previously:

- Job Management & Equipment
- General Expense

6.2.1.1 Job Management & Equipment

The sample Job Management & Equipment Record below shows that you can add resources and production just like in your direct cost items. Supervisory staff resources were added, and the

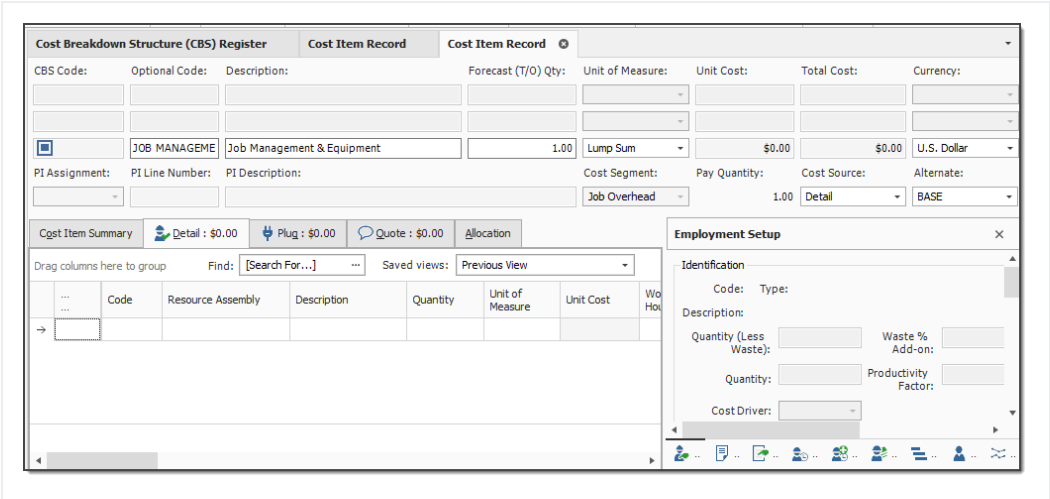
production duration is set to 100 days.



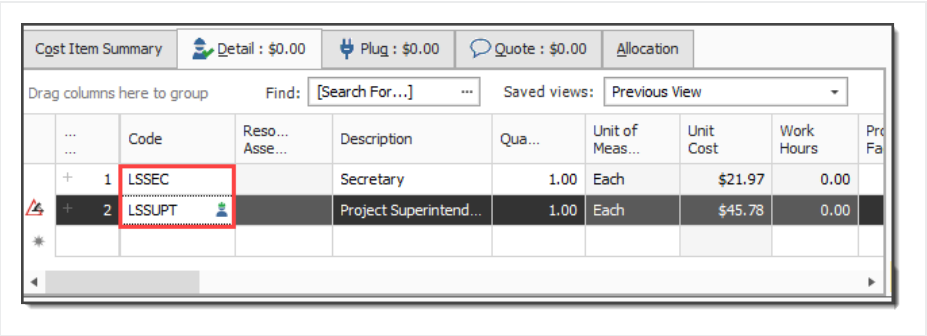
The following Step by Step walks you through defining resources and costs for your Job Management & Equipment indirect cost item.

Step by Step — Add Job Management & Equipment Costs

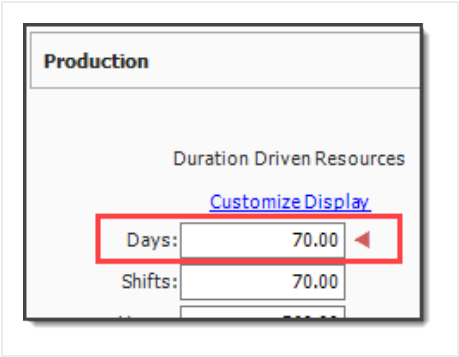
1. In your job, from the InEight Estimate landing page, select the **Estimate** tab.
2. Select **Cost Breakdown Structure (CBS)**.
3. Double click on the **Job Management & Equipment** row header.
    - You can see that this record looks like the direct cost item records that you have been working with thus far in the CBS



4. Here you will add a **labor resource** by clicking in the Code column and selecting the **icon**.



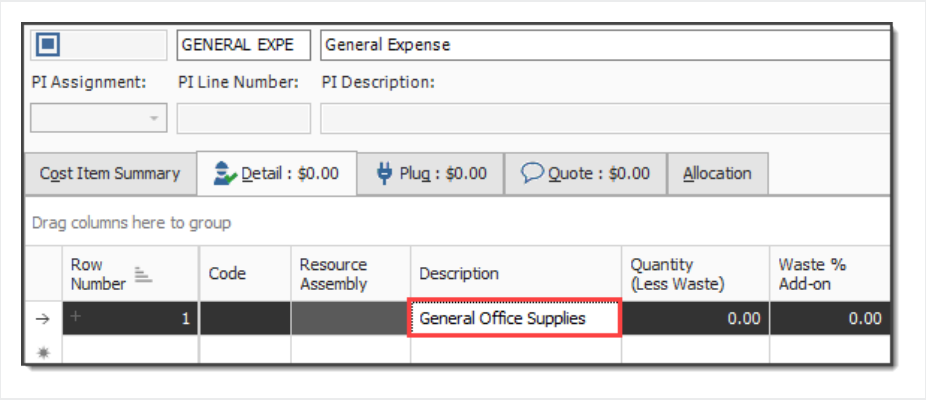
5. Select the **Production** tab.
6. Enter a **numeric value** in the Days field.
    - This represents the length of the job



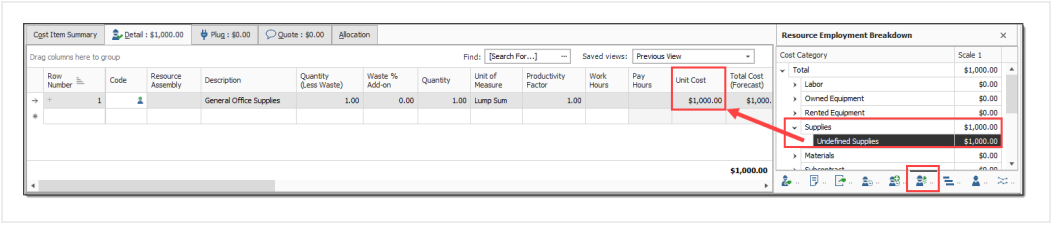
7. Click **OK** to close the record.

Step by Step — Add General Expense Costs

1. In your job, from the InEight Estimate landing page, select the **Estimate** tab.
2. Select **Cost Breakdown Structure (CBS)**.
3. Right click on the **General Expense** row header and select **Open**.
    - The General Expense cost item record also looks identical to a direct cost item record
    - You could add existing resources here, but in this case, you will create an ad hoc resource
4. Type in a **description** the Description column.



5. Enter a **number** in the Quantity field.
6. For the Unit of Measure field, select a **Unit of Measure** from the drop down.
7. Click on (highlight) that **row**, and then click the **Resource Employment Breakdown** tab.
8. Enter a **number** in the Undefined Supplies cost category.
    - The amount entered automatically fills into the unit and total cost columns



> **TIP** You are only allowed to enter information in the Resource Cost Breakdown if the resource row is selected, otherwise fields will not display.

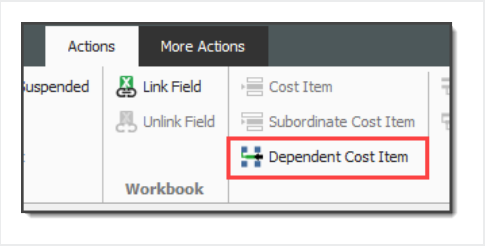
9. Click **OK** to close the record.

6.2.2 Dependent Indirect Cost Items

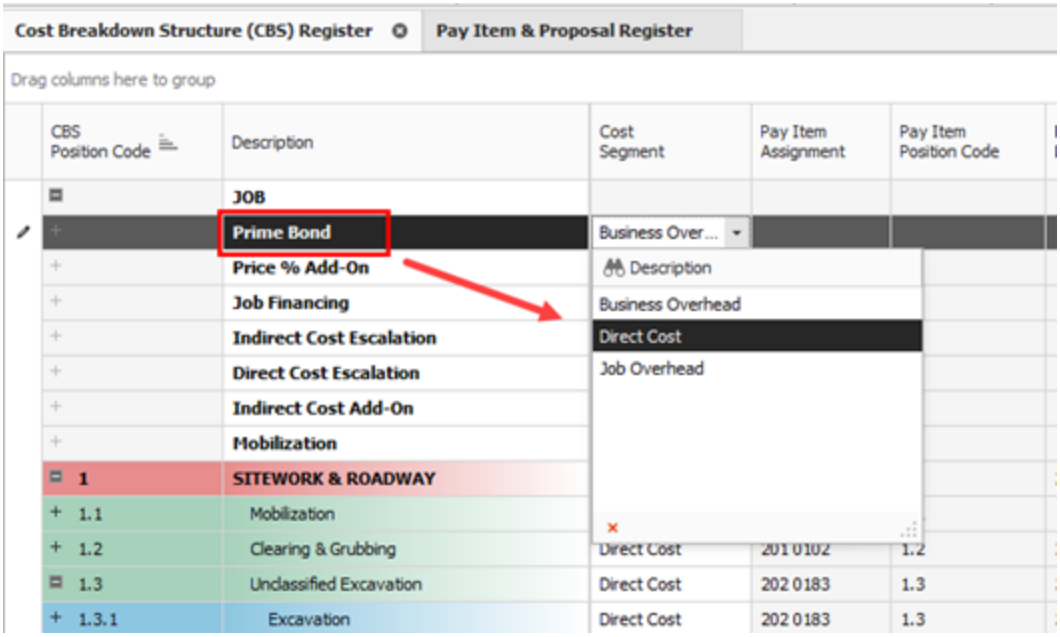
The other default indirect cost items are **dependent indirect cost items**, meaning their costs depend on other costs, prices or hours. They include:

- Direct and Indirect Cost Add-On
- Direct and Indirect Cost Escalation
- Prime Bond
- Price % Add-On

- Job Financing
- Man-Hour Add-On



It's possible to assign any assigned or dependent cost Item to any of the 3 cost segments and provides greater control over where costs exist in the Price Breakdown Structure (PBS).



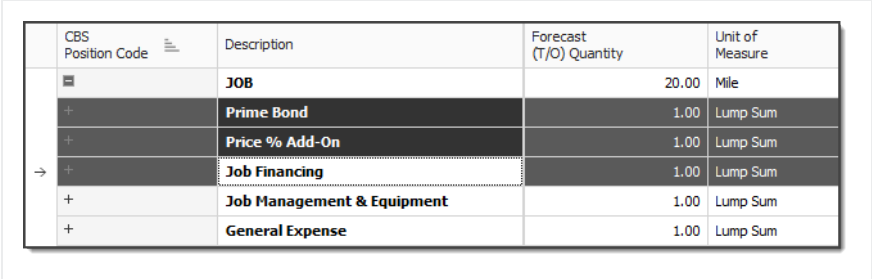
6.2.2.2 Default Dependent Cost Item Deletion

NOTE If you need to use additional dependent cost items, you can create your own, but you must delete all the existing default dependent cost items first.

The following steps walk you through deleting your existing default indirect costs so you can create your own.

Step by Step — Delete Existing Default Dependent Cost Items

1. In your job, from the InEight Estimate landing page, select the **Estimate** tab.
2. Select **Cost Breakdown Structure (CBS)**.
3. Select an indirect cost item by clicking on its **row header**.
4. Press and hold the **Shift** key while selecting **another indirect cost item**.
    - All your dependent indirect cost items are now selected



CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure
⊟	**JOB**	20.00	Mile
+	**Prime Bond**	1.00	Lump Sum
+	**Price % Add-On**	1.00	Lump Sum
→ +	**Job Financing**	1.00	Lump Sum
+	**Job Management & Equipment**	1.00	Lump Sum
+	**General Expense**	1.00	Lump Sum

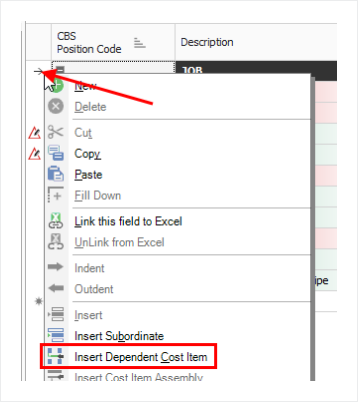
5. Right click on the selection and select **Delete**.
6. Select **Yes** to confirm you want to delete the selected cost items.
    - Your indirect cost items are now deleted

6.2.2.3 Prime Bond

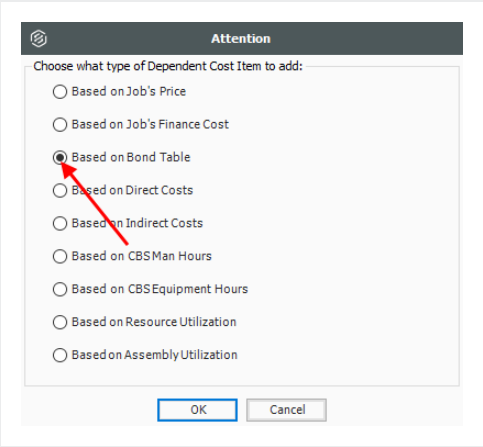
The following steps walk you through adding and defining your prime bond for the job.

Step by Step — Define Prime Bond

1. In your job, from the InEight Estimate landing page, select the **Estimate** tab.
2. Select **Cost Breakdown Structure (CBS)**.
3. Right click on the **row header** for any cost item and select **Insert Dependent Cost Item**.

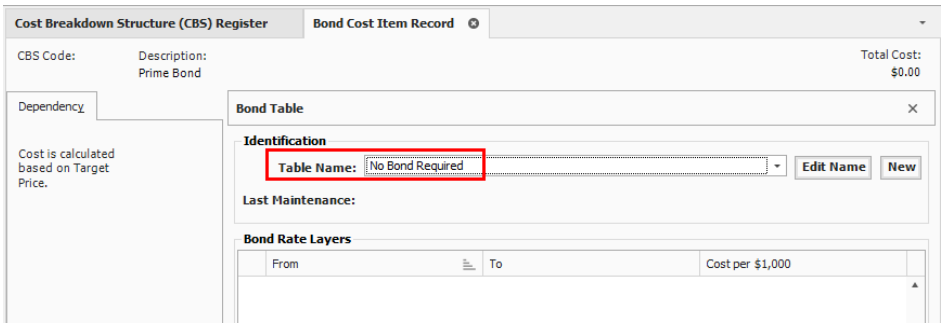


4. On the resulting Attention prompt, select **Based on Bond Table**.

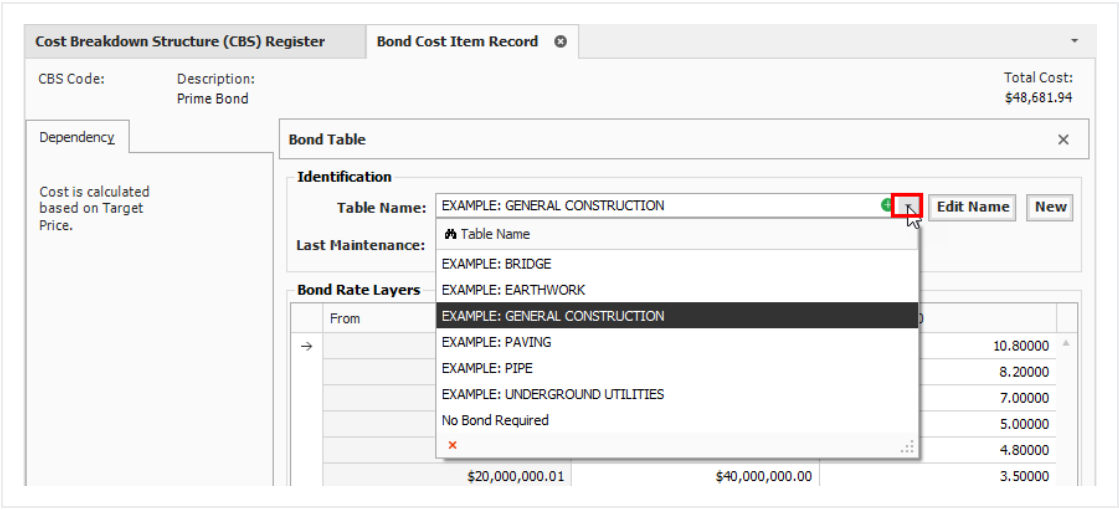


5. Click **OK**.
    - The Prime Bond indirect cost item now displays at the top of your CBS
6. Right click on the Prime Bond row header and select **Open**.
    - Prime Bond represents the insurance for the job
    - This is an irregular form and uses bond rate tables
        - The form's Bond Table Name defaults to No Bond Required until a saved Bond Table

Name is chosen



7. Use the Table Name drop-down to choose **EXAMPLE: GENERAL CONSTRUCTION**



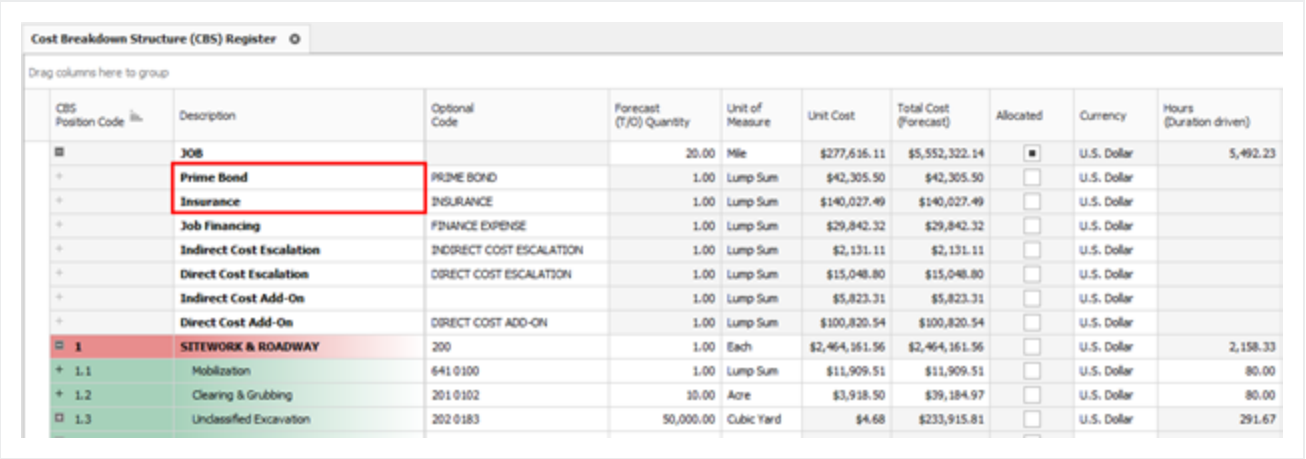
8. Click **OK** to close the record.

- The Prime Bond indirect cost item is now added to your CBS

Multiple bond rate dependent items

For certain projects, it may be desirable to calculate costs for bond or insurance premiums based upon multiple different rate tables. It is now possible to add multiple bond/rate table based dependent items in the CBS.

For example, in addition to having a prime bond, the job may also require insurance coverage where the premium is calculated using a rate table-based approach. This can now be accomplished by adding another Bond/Rate-table based dependent cost item to the job.



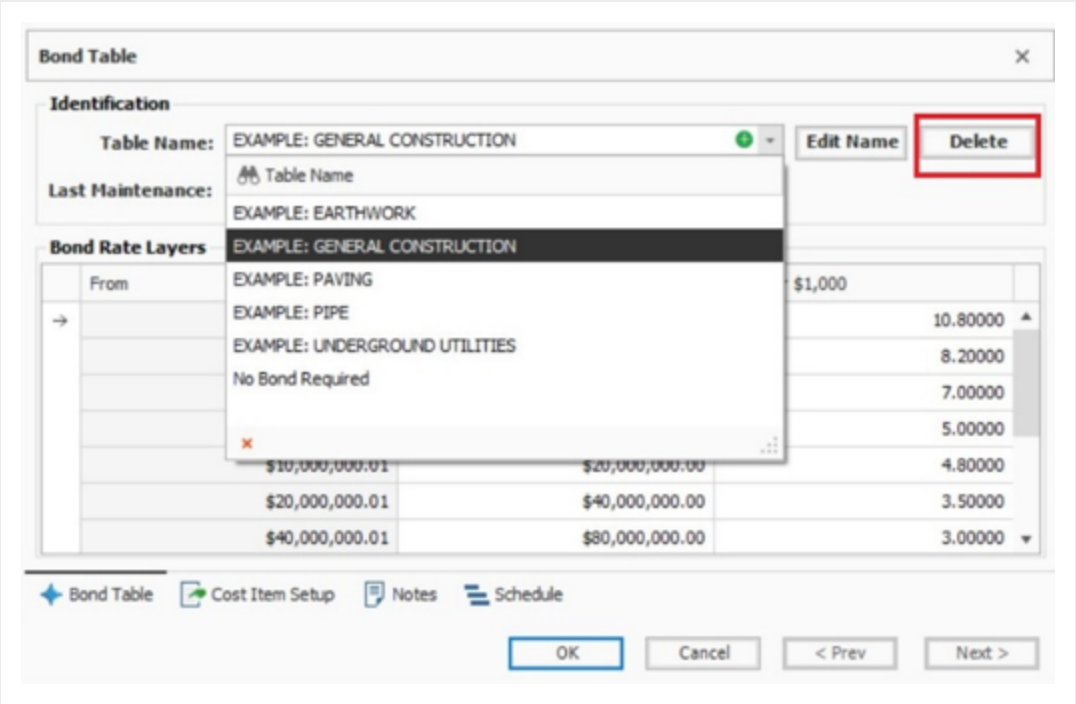
Cost Breakdown Structure (CBS) Register

Drag columns here to group

CBS Position Code	Description	Optional Code	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Allocated	Currency	Hours (Duration driven)
	JOB		20.00	Mile	$277,616.11	$5,552,322.14	■	U.S. Dollar	5,492.23
	Prime Bond	PRIME BOND	1.00	Lump Sum	$42,305.50	$42,305.50		U.S. Dollar	
	Insurance	INSURANCE	1.00	Lump Sum	$140,027.49	$140,027.49		U.S. Dollar	
	Job Financing	FINANCE EXPENSE	1.00	Lump Sum	$29,842.32	$29,842.32		U.S. Dollar	
	Indirect Cost Escalation	INDIRECT COST ESCALATION	1.00	Lump Sum	$2,131.11	$2,131.11		U.S. Dollar	
	Direct Cost Escalation	DIRECT COST ESCALATION	1.00	Lump Sum	$15,048.80	$15,048.80		U.S. Dollar	
	Indirect Cost Add-On		1.00	Lump Sum	$5,823.31	$5,823.31		U.S. Dollar	
	Direct Cost Add-On	DIRECT COST ADD-ON	1.00	Lump Sum	$100,820.54	$100,820.54		U.S. Dollar	
1	**SITEWORK & ROADWAY**	200	1.00	Each	$2,464,161.56	$2,464,161.56		U.S. Dollar	2,158.33
1.1	Mobilization	641 0100	1.00	Lump Sum	$11,909.51	$11,909.51		U.S. Dollar	80.00
1.2	Clearing & Grubbing	201 0102	10.00	Acre	$3,918.50	$39,184.97		U.S. Dollar	80.00
1.3	Unclassified Excavation	202 0183	50,000.00	Cubic Yard	$4.68	$233,915.81		U.S. Dollar	291.67

Deleting Bond Tables

Delete bond tables that are not applicable to your estimate by selecting them and then clicking the **Delete** button. You can customize the Bond Table window to only view the tables that are relevant to your estimate from the Table Name drop-down list.

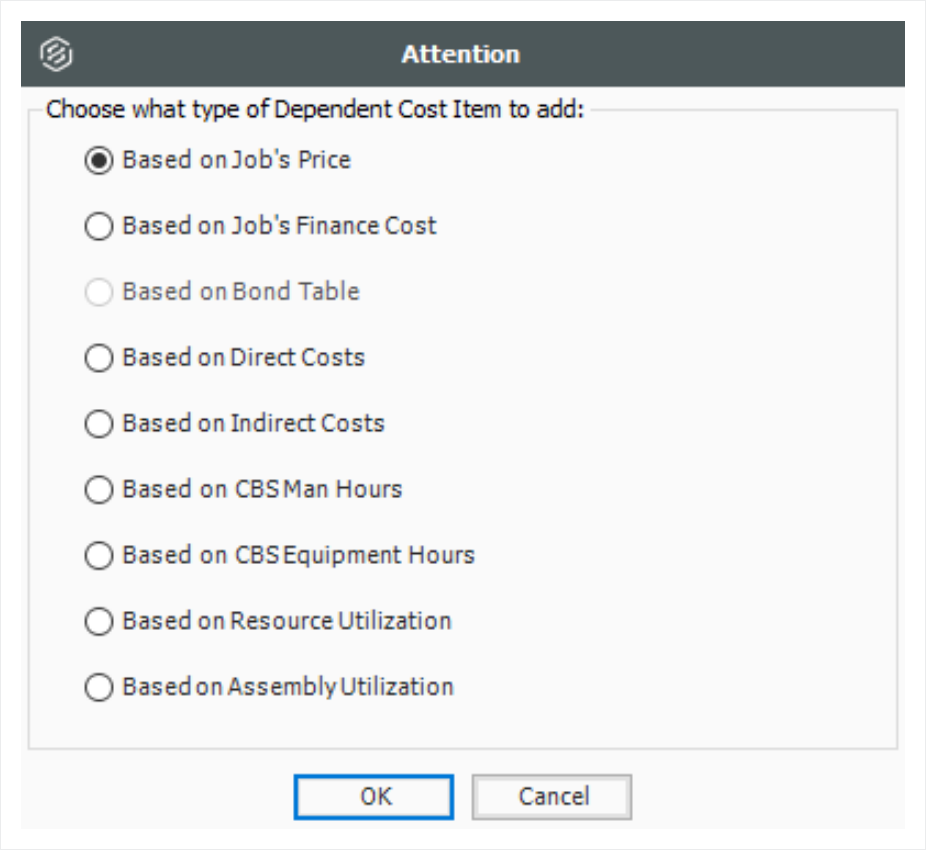


6.2.2.4 Price % Add-On

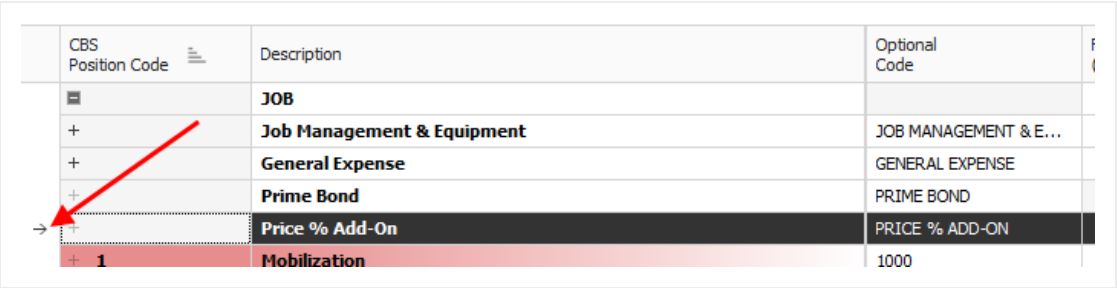
The following steps walk you through defining the Price % Add-On.

Step by Step — Define a Price % Add-On

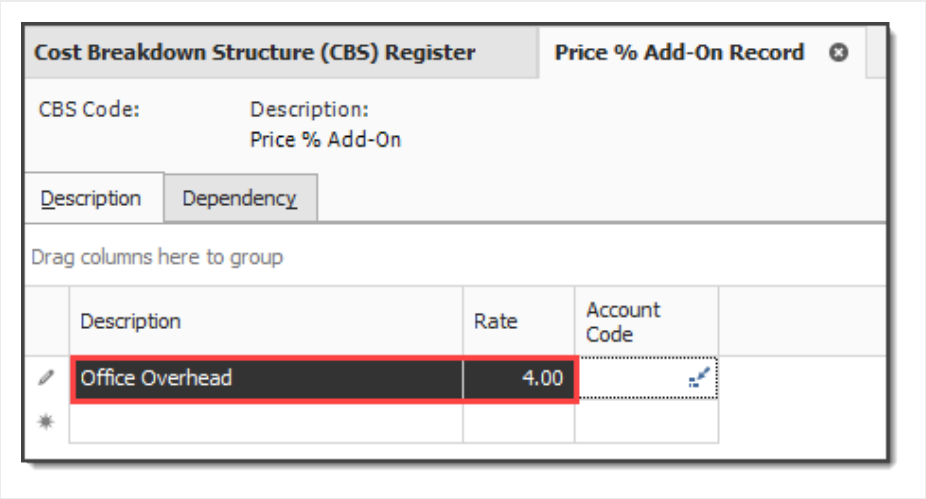
1. From the Cost Breakdown Structure (CBS) Register, right click on the **row header** for any cost item and select **Insert Dependent Cost Item**.
2. On the resulting Attention prompt, select **Based on Job's Price**.



3. Click **OK**.
4. Double click on the **Price % Add On** row header to open the record.



5. The Price % Add-on Record opens to the **Description** tab. Type a **description** in the Description field and enter a **numeric value** for rate.



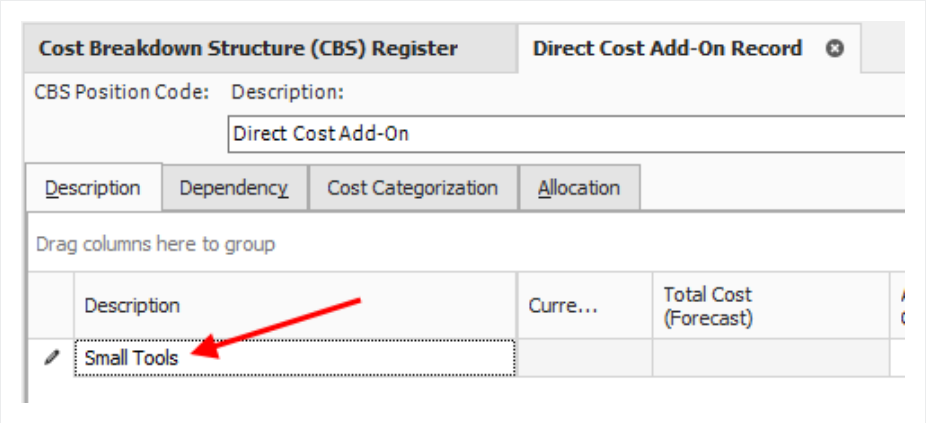
6. Click **OK** to close the record.

6.2.2.5 Direct Cost Add-On

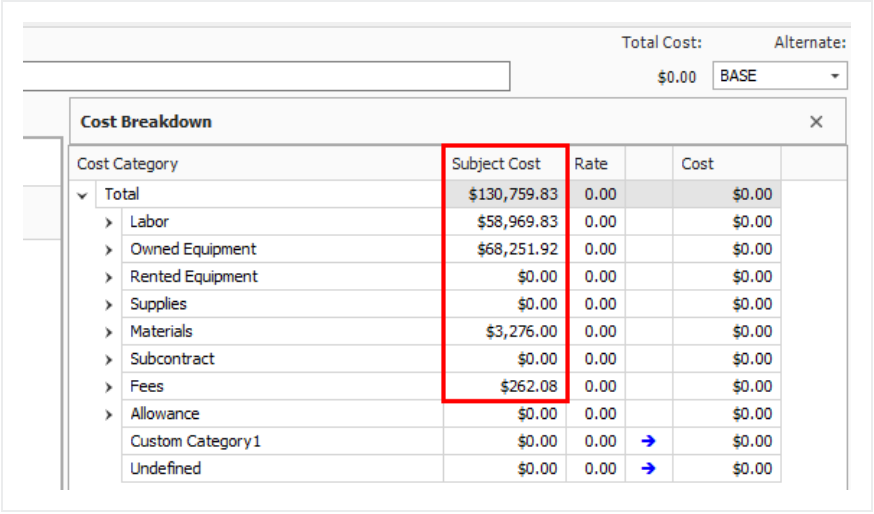
The following steps walk you through creating a Direct Cost Add-On dependent cost item.

Step by Step — Define a Direct Cost Add-On

1. From the Cost Breakdown Structure (CBS) Register, right click on the **row header** for any cost item and select **Insert Dependent Cost Item**.
2. On the resulting Attention prompt, select **Based on Direct Costs**.
3. Click **OK**.
4. Double click on the **Direct Cost Add-On** row header.
5. On the Description tab, type a **description** in the Description column.

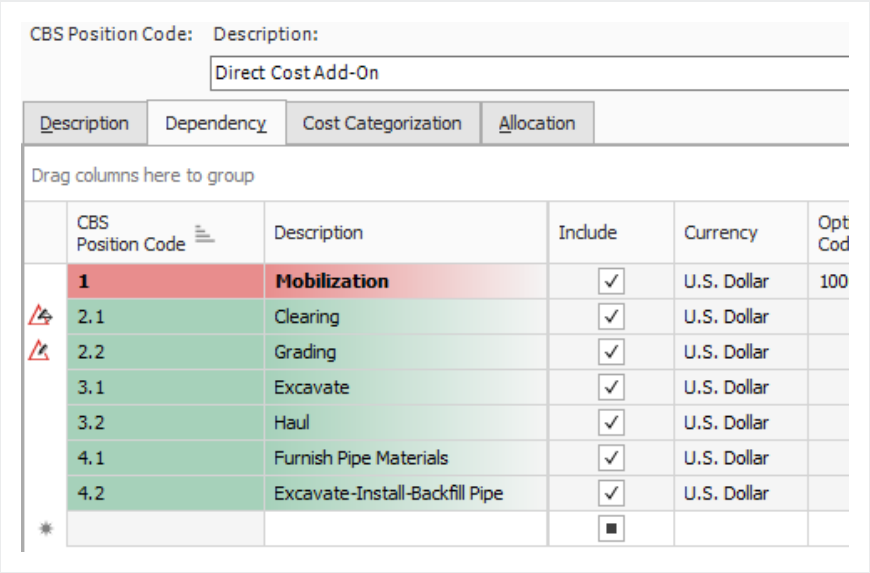


6. Press the **Tab** key (you can define additional rows for other add-on costs as needed).
   - The Dependency Cost Breakdown appears on the right
   - The **Subject Cost** is the cost that the cost item depends on, based on what is defined on the cost item's Dependency tab



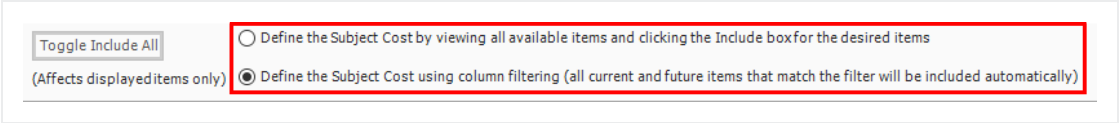
7. Click on the **Dependency** tab to see what contributes to your subject cost.

- These are the cost items on which this Direct Cost Add-On depends

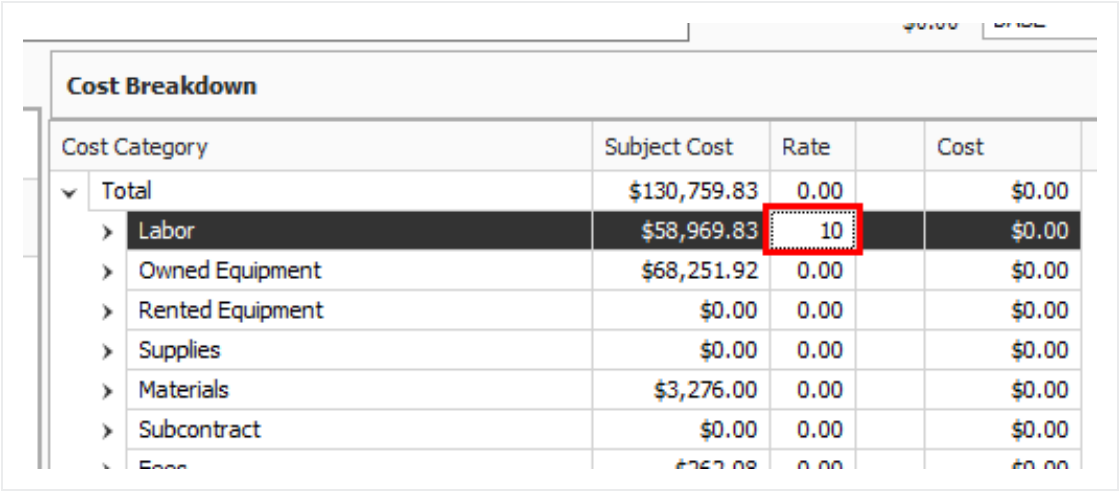


- There are a couple of options at the bottom to control how dependency items are selected. By default, the bottom radio button is selected
  - The bottom radio button allows you to use column filtering to control what items are included
  - The top button allows you to manually select the cost items you would like to include

8. For this activity, leave the default (lower) button selected.



9. Click on the **Description** tab, where you can define an add-on Rate (percentage) or Cost at any of the cost category levels in the Dependency Cost Breakdown on the right side of the record.
   - You can also add a rate at the Total level to have it apply to all your cost categories
10. Enter a **numeric value** in the Rate field at the Labor cost category level, then press **Tab**.



11. Click **OK** to close the record.

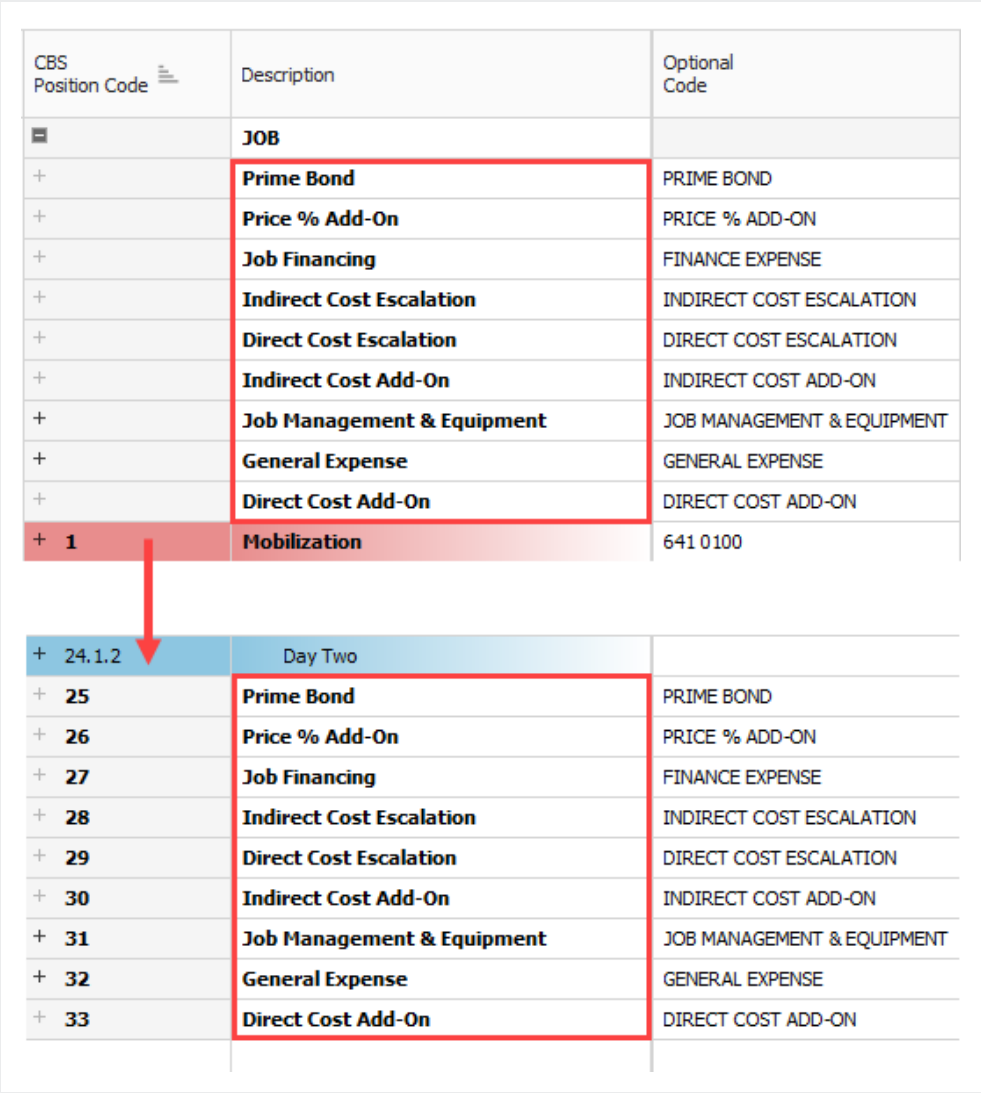
6.2.2.6 Repositioning Dependent Cost Items

Repositioning dependent cost items creates a simpler way to manage the hierarchy of your project by placing items of more importance ahead of other line items.

Since dependent cost items can now be repositioned, a Position Code field has been added with the functionality similar to column remaining the same. The below listed dependent cost item fields are now exposed in the CBS register so you can more easily see the various percentages used in dependent items.

- Subject Cost
- Subject Cost Rate
- Subject Billing Amount
- Subject Billing Rate

These columns can also be found in the new saved view **Bid Review**.



CBS Position Code	Description	Optional Code
	JOB	
	Prime Bond	PRIME BOND
	Price % Add-On	PRICE % ADD-ON
	Job Financing	FINANCE EXPENSE
	Indirect Cost Escalation	INDIRECT COST ESCALATION
	Direct Cost Escalation	DIRECT COST ESCALATION
	Indirect Cost Add-On	INDIRECT COST ADD-ON
	Job Management & Equipment	JOB MANAGEMENT & EQUIPMENT
	General Expense	GENERAL EXPENSE
	Direct Cost Add-On	DIRECT COST ADD-ON
1	**Mobilization**	641 0100
24.1.2	Day Two	
25	**Prime Bond**	PRIME BOND
26	**Price % Add-On**	PRICE % ADD-ON
27	**Job Financing**	FINANCE EXPENSE
28	**Indirect Cost Escalation**	INDIRECT COST ESCALATION
29	**Direct Cost Escalation**	DIRECT COST ESCALATION
30	**Indirect Cost Add-On**	INDIRECT COST ADD-ON
31	**Job Management & Equipment**	JOB MANAGEMENT & EQUIPMENT
32	**General Expense**	GENERAL EXPENSE
33	**Direct Cost Add-On**	DIRECT COST ADD-ON

6.3 USER-DEFINED INDIRECT COST ITEMS

You may prefer to create your own indirect cost items. You create user-defined indirect cost items the same way you create direct cost items. The only difference is that your indirect cost items will not be assigned to pay items. One advantage of creating your own indirect cost items is the ability to create a parent-child structure for your indirect costs.

Here is an example of user-defined indirect cost items, expanded to show their employed resources:

CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)
5	**Indirect Cost**	1.00	Each	$10,584.36	$10,584.36
5.1	Head Office	1.00	Each	$370.32	$370.32

		Description	Quantity	Unit of Measure	Work Hours	Pay Hours	Unit Cost	Total Cost (Forecast)
→	1	Head Office Project ...	1.00	Each	8.00	8.00	$46.29	$370.32

5.2	Field Office	1.00	Each				$1,775.04	$1,775.04

		Description	Quantity	Unit of Measure	Work Hours	Pay Hours	Unit Cost	Total Cost (Forecast)
	1	Field Office Clerk	1.00	Each	4.00	4.00	$38.00	$152.00
	2	Field Office Safety M...	1.00	Each	8.00	8.00	$62.38	$499.04
	3	Field Office Site Supe...	1.00	Each	16.00	16.00	$70.25	$1,124.00

5.3	Site Facilities	1.00	Each				$905.00	$905.00

		Description	Quantity	Unit of Measure	Work Hours	Pay Hours	Unit Cost	Total Cost (Forecast)
→	1	Field Office Telephone	0.50	Month			$250.00	$125.00
	2	Field Office Trailer	1.00	Each	0.00	0.00	$5.94	$0.00
	3	Pick Up Truck	1.00	Each	80.00	80.00	$9.75	$780.00

5.4	Misc. Expenses	1.00	Each				$2,765.00	$2,765.00
5.5	Supervision	1.00	Each				$4,769.00	$4,769.00

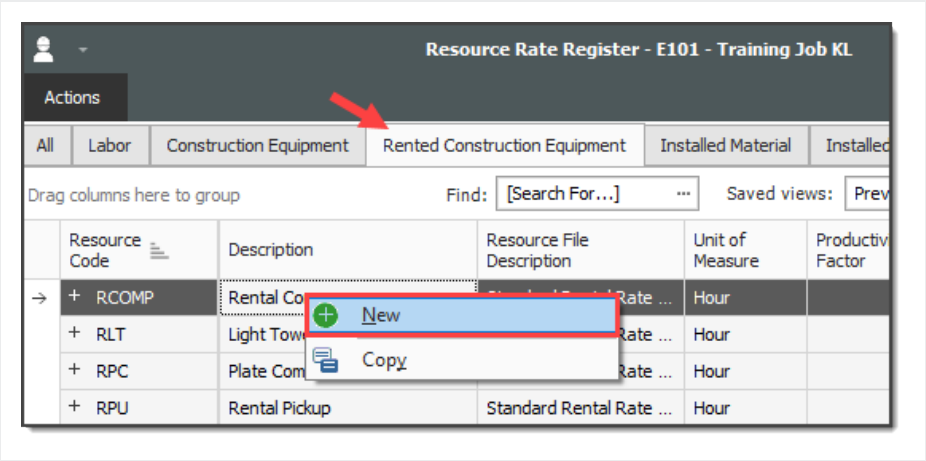
Step by Step — Add User-Defined Indirect Cost Items

1. At the bottom of your CBS, create an indirect cost item with a Forecast (T/O) Quantity of **1** and a Unit of Measure of **Each**.
2. Add two subordinates under the new cost item and name both. For the first subordinate cost item, set it to **1 Each**. Set the second to **1 Lump Sum**.

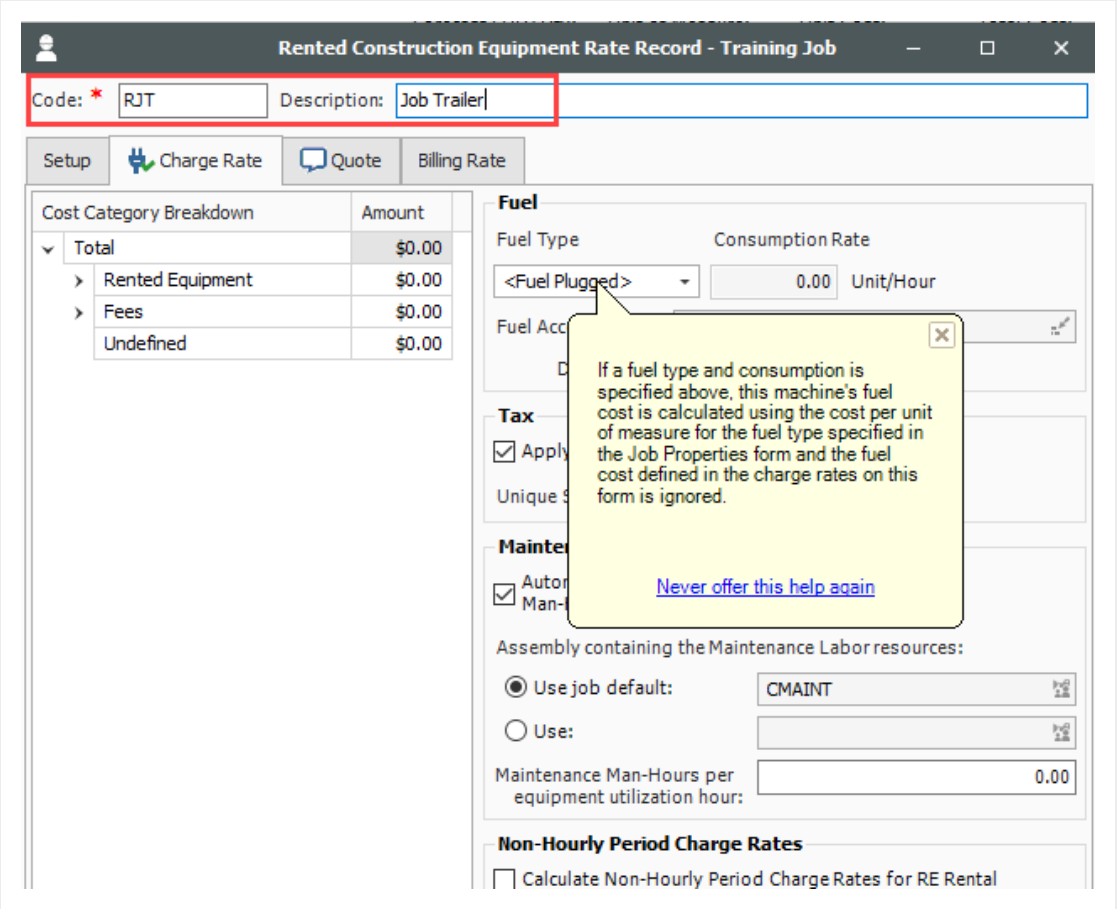
5	**Job Overhead**	1.00	Each
5.1	Job Trailer	1.00	Each
5.2	Utilities	1.00	Lump Sum

3. Open the first subordinate cost item by double clicking on the **row header**.
   - Assuming there is nothing for this subordinate indirect cost item in your Resource Rate Register, you will create this resource “on the fly”

4. In the Detail grid, click on the **Resource Register** icon in the Code field as if you were going to select from the Resource Rate Register.
5. On the Resource Rate Register, click the **Rented Construction Equipment** tab.
6. Right click on one of the line items and select **New** to add a new resource.

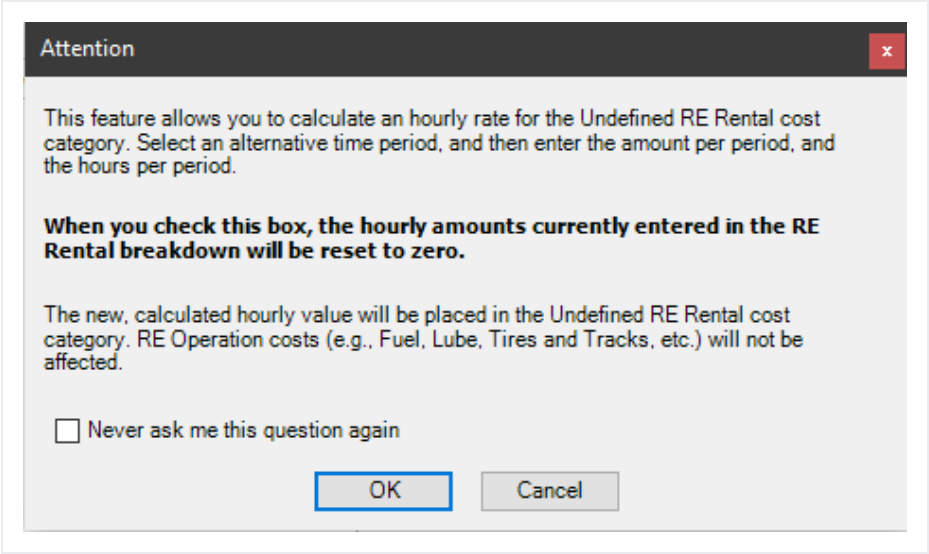


7. Enter a Resource Code of **RJT** for the Rented Construction Equipment Resource.
8. In the Description field, type in a **description**.



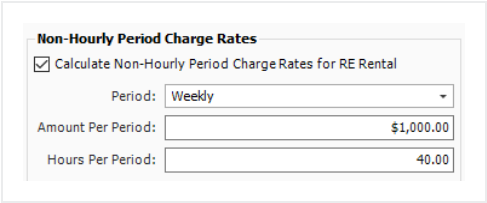
- You do not need to enter Fuel, but the Job Trailer's cost is given to you at a charge per week, so you will use the Non-Hourly Period Charge Rates to figure out the hourly cost

9. Select the **Calculate Non-Hourly Period Charge Rates for RE Rental** checkbox; this will allow you to edit the fields below the checkbox. A pop-up box will appear.
10. Click **OK** on the resulting prompt.

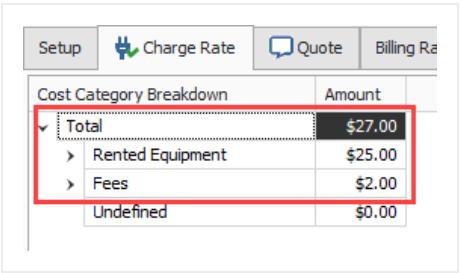


TIP You may need to expand the resource record to see all of the fields to fill out.

11. Select **Weekly** as the Period, and type **1,000** as the Amount Per Period.
12. Since the Period is Weekly, type **40** in the Hours Per Period field.

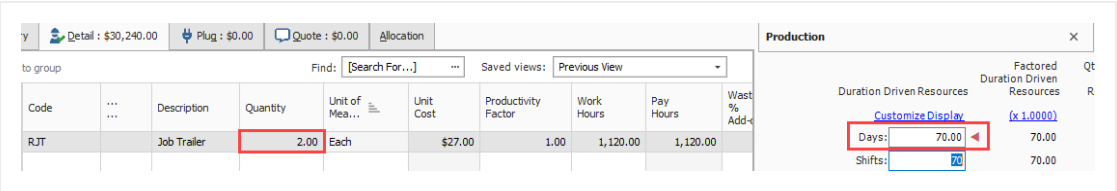


13. Press the **Tab** key so the change takes effect on your Cost Category Breakdown (on the left).
    - Now you can see that Estimate auto-filled the Rented Equipment category, as well as your Standard Sales Tax under Fees in the Cost Category Breakdown, to equal a total amount per hour



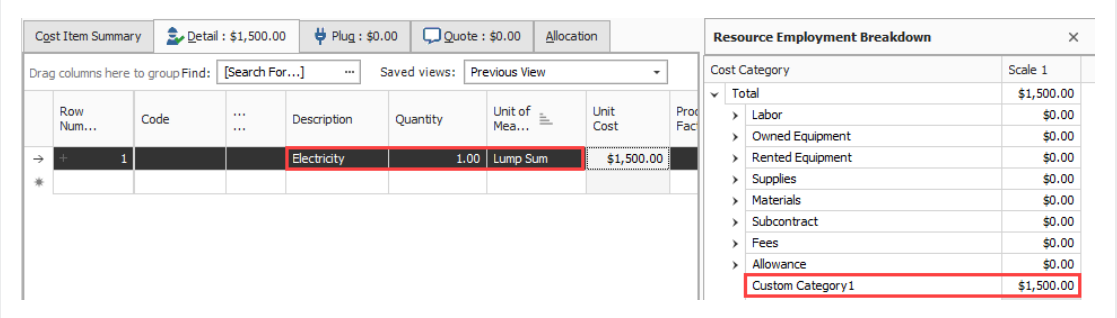
14. Click **OK** to close the Resource Rate Record.

15. Select the **new resource** you created, then click **OK** to return to the Cost Item Record.
16. On the Cost Item Record, adjust the quantity of **first subordinate cost item** you created, assuming you will have multiples of this item on site.
17. Finally, adjust your production by entering the **duration** of the job.



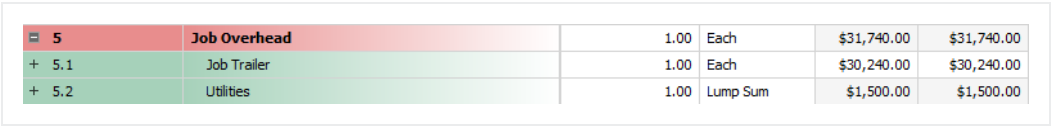
18. Click **OK** to close the record.
19. On the CBS register, select the **Utilities** cost item by double clicking on the **row header**.
20. Create another ad hoc resource on this cost item which will be **1Lump Sum**.

21. Finally, go to the **Resource Employment Breakdown** tab and enter your **forecasted cost** for the duration of the jobin the Custom Category1 row.



22. Click **OK** to close the record.

- Your user-defined indirect cost items now contain production and costs



− 5	**Job Overhead**	1.00	Each	$31,740.00	$31,740.00
+ 5.1	Job Trailer	1.00	Each	$30,240.00	$30,240.00
+ 5.2	Utilities	1.00	Lump Sum	$1,500.00	$1,500.00

6.4 COST ALLOCATION

The **Cost Item Record - Allocation** tab lets you to spread costs from a single Cost Item Record to one or more other cost items in the Cost Breakdown Structure (CBS) Register.

- **Allocation Item** - The cost item to be allocated, where you define the quantities, resource employments and the logic that determines how to allocate the item throughout the bid.
- **Allocation Target** - A cost item to be the recipient of allocated cost, as defined within the Allocation Item. There may be one or many Allocation Targets for one Allocation Item.
- **Distribution** - A read-only cost item in the CBS representing an Allocation Target's proportional share of the Allocation Item.

You can choose from several methods to determine specifically where and how much cost to spread:

- **Quantity** - Specify the amount of the Allocation Item to be spread to each Allocation Target.
- **Proportionately based on another field** - Allocate proportionately by one of many available cost item values, usually based on time or cost.
- **Percentage** - Specify the percentage of the Allocation Item to spread to each Allocation Target.
- **Unit Cost** - Use the unit cost from the Allocation Item and the quantity of each Allocation Target to drive the Forecast (T/O) Quantity of the Allocation Item.

Cost Item Allocation is a good means of spreading costs throughout a bid for the purpose of determining appropriate bid prices. You can then compare unit price in **Quote Comparison & Award**.

NOTE Only Level 1 cost items can be allocated, including Add-On and Escalation dependent cost items. A subordinate cost item cannot be allocated, and a cost item that is assigned to a pay item cannot be allocated.

6.4.1 Cost Allocation

With Cost Item Allocation, you can track the cost of one broad cost item by distributing the cost of that item to other cost items, so that the cost can be tracked on a more detailed level. This gives better visibility into the cost that makes up an item. For example, you can spread ST&S from one cost item to multiple cost items that will use ST&S.

Imagine that a large portion of your scope of work for the job you are bidding has concrete. You face the options of batching your own raw materials or purchasing the materials from a supplier. You can use cost allocation to create the cost of a batch plant and allocate it to different items, and then compare this unit cost to the unit cost of purchasing the materials from a supplier.

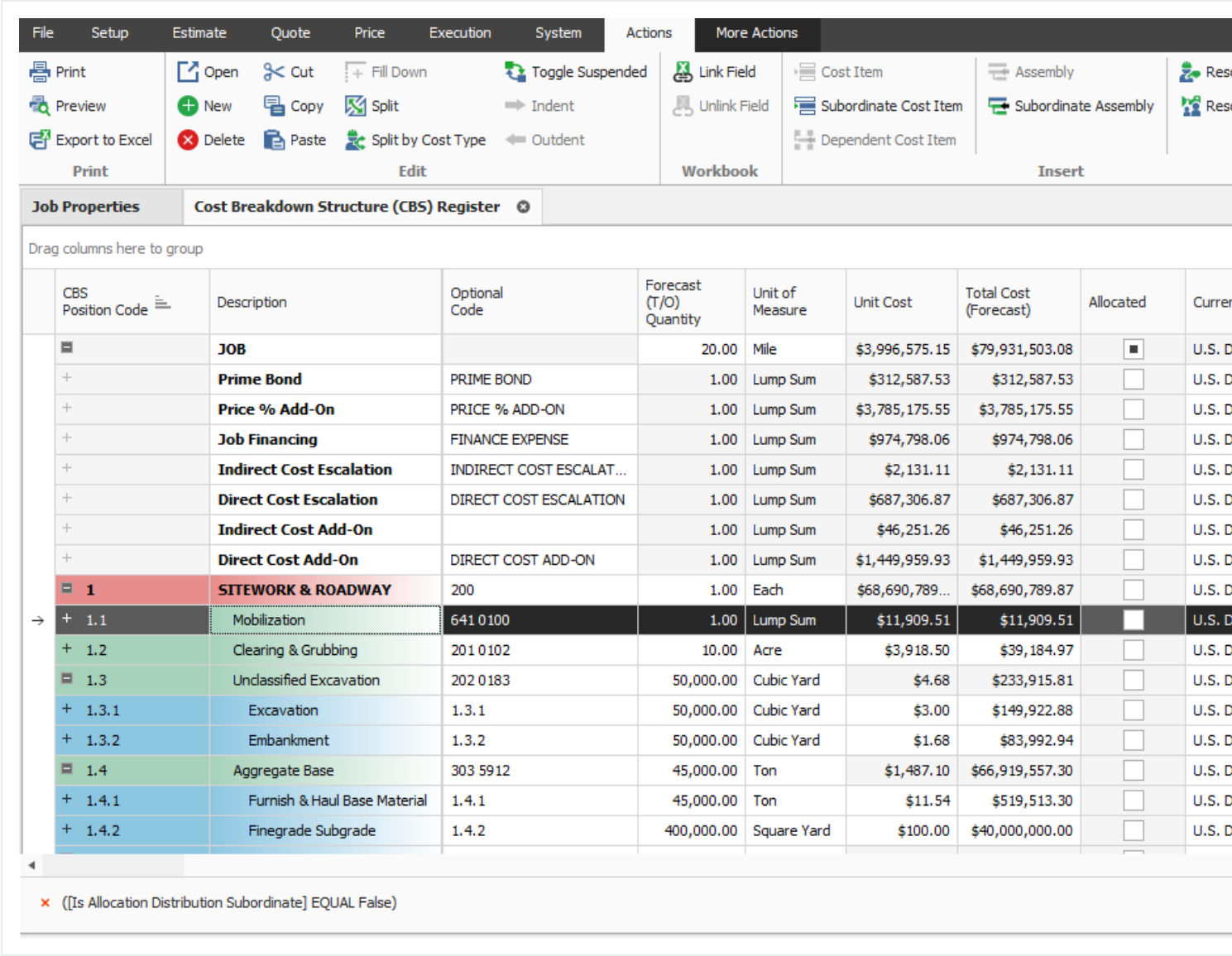
The Allocation tab allows you to spread costs from an Allocation Item to one or more Allocation Target (s).

NOTE In the Allocation Target list, the **[Unit of Measure] Quantity** column caption displays the Unit of Measure of the Allocation Item. For instance, if the Allocation Item's Unit of Measure is **Cubic Yards (CY)**, then the caption displayed for this column is **CY** Quantity.

A Distribution cost item is created as a read-only subordinate cost item under each Allocation Target. It is copied proportionally with the quantity/cost defined to each different item in CBS.

6.4.2 View Filter Excludes Cost Item Allocation Details

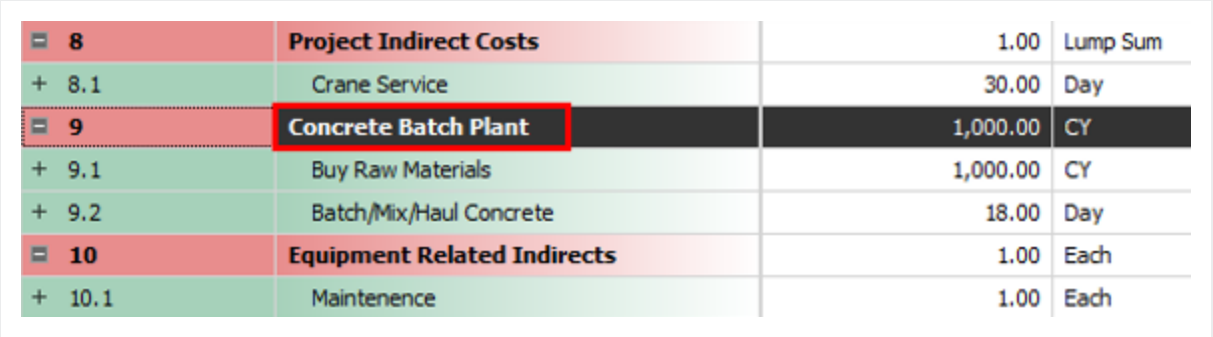
A View Filter option is added to show only the level 1 cost item distribution in the allocation destinations to provide you with a clear and comprehensive view of the CBS register, especially when there are many allocations. When you are allocating cost items, the allocations are created in the destination cost item by creating a copy of the entire allocated cost items structure. This filter allows you to simplify the view by displaying only the parent level allocation cost item.



CBS Position Code	Description	Optional Code	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Allocated	Currer
	JOB		20.00	Mile	$3,996,575.15	$79,931,503.08	■	U.S. D
	Prime Bond	PRIME BOND	1.00	Lump Sum	$312,587.53	$312,587.53		U.S. D
	Price % Add-On	PRICE % ADD-ON	1.00	Lump Sum	$3,785,175.55	$3,785,175.55		U.S. D
	Job Financing	FINANCE EXPENSE	1.00	Lump Sum	$974,798.06	$974,798.06		U.S. D
	Indirect Cost Escalation	INDIRECT COST ESCALAT...	1.00	Lump Sum	$2,131.11	$2,131.11		U.S. D
	Direct Cost Escalation	DIRECT COST ESCALATION	1.00	Lump Sum	$687,306.87	$687,306.87		U.S. D
	Indirect Cost Add-On		1.00	Lump Sum	$46,251.26	$46,251.26		U.S. D
	Direct Cost Add-On	DIRECT COST ADD-ON	1.00	Lump Sum	$1,449,959.93	$1,449,959.93		U.S. D
1	**SITEWORK & ROADWAY**	200	1.00	Each	$68,690,789...	$68,690,789.87		U.S. D
1.1	Mobilization	641 0100	1.00	Lump Sum	$11,909.51	$11,909.51		U.S. D
1.2	Clearing & Grubbing	201 0102	10.00	Acre	$3,918.50	$39,184.97		U.S. D
1.3	Unclassified Excavation	202 0183	50,000.00	Cubic Yard	$4.68	$233,915.81		U.S. D
1.3.1	Excavation	1.3.1	50,000.00	Cubic Yard	$3.00	$149,922.88		U.S. D
1.3.2	Embankment	1.3.2	50,000.00	Cubic Yard	$1.68	$83,992.94		U.S. D
1.4	Aggregate Base	303 5912	45,000.00	Ton	$1,487.10	$66,919,557.30		U.S. D
1.4.1	Furnish & Haul Base Material	1.4.1	45,000.00	Ton	$11.54	$519,513.30		U.S. D
1.4.2	Finegrade Subgrade	1.4.2	400,000.00	Square Yard	$100.00	$40,000,000.00		U.S. D

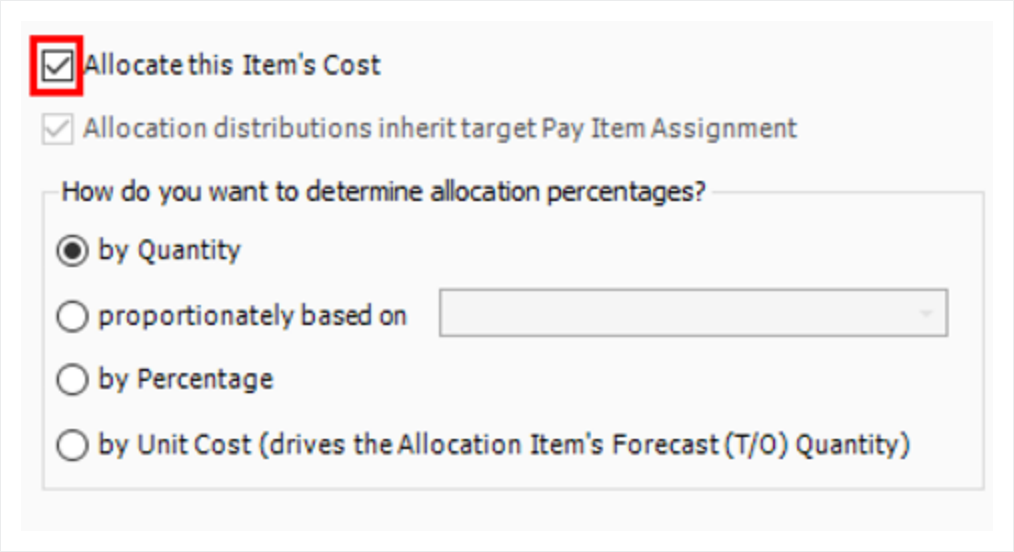
Step by Step — Cost Allocation

1. From the Ribbon, select the **Estimate** tab.
2. Under the Breakdown Structures section, select **Cost Breakdown Structure (CBS)**. The Cost Breakdown Structure Register opens.
3. Select the **Concrete Batch Plant** cost item.

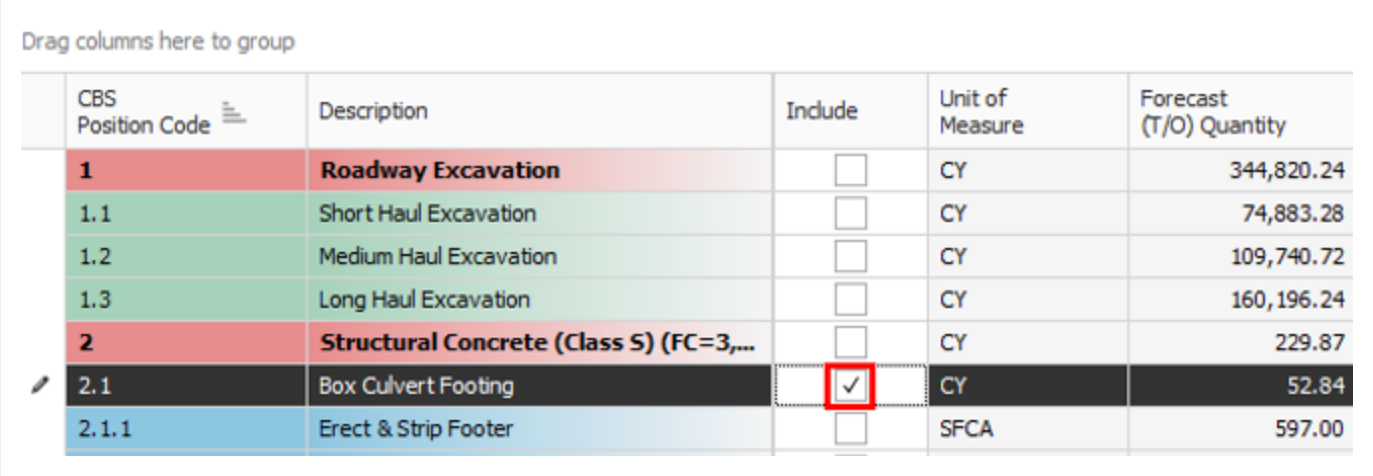


⊟ 8	**Project Indirect Costs**	1.00	Lump Sum
+ 8.1	Crane Service	30.00	Day
⊟ 9	**Concrete Batch Plant**	1,000.00	CY
+ 9.1	Buy Raw Materials	1,000.00	CY
+ 9.2	Batch/Mix/Haul Concrete	18.00	Day
⊟ 10	**Equipment Related Indirects**	1.00	Each
+ 10.1	Maintenence	1.00	Each

4. From the Ribbon, select the Actions tab. Under the Edit section, select **Open**. The Cost Item Record opens.
5. Select the **Allocation** tab.
6. Check the box for **Allocate this Item's Cost**. Keep the **By Quantity** option selected.

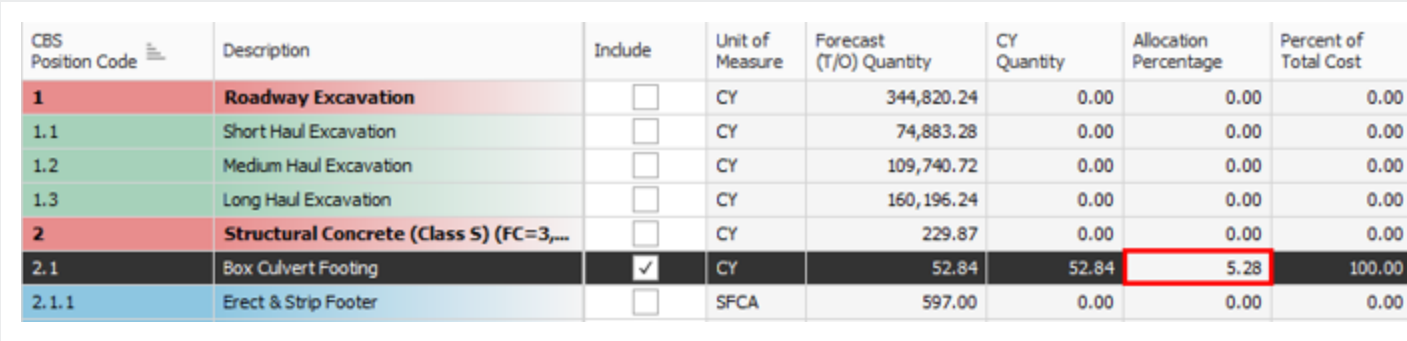


7. Check the **Include** box for the cost item **Box Culvert Footing** to allocate cost to it.


Drag columns here to group

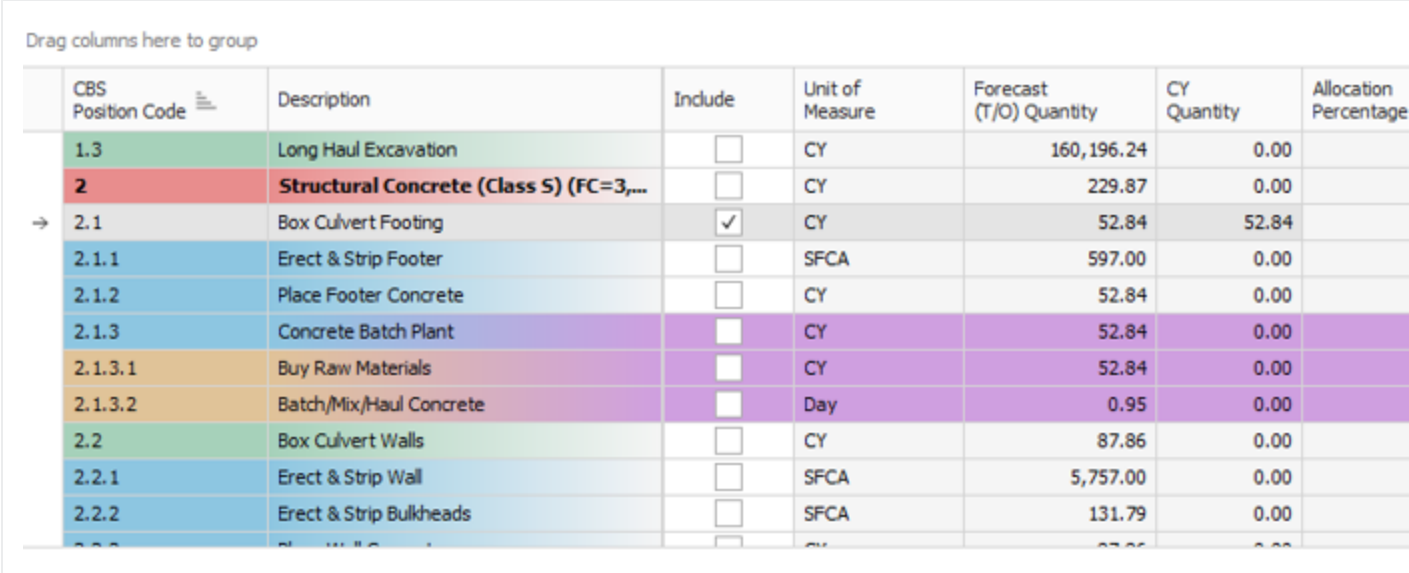
CBS Position Code	Description	Include	Unit of Measure	Forecast (T/O) Quantity
1	**Roadway Excavation**	☐	CY	344,820.24
1.1	Short Haul Excavation	☐	CY	74,883.28
1.2	Medium Haul Excavation	☐	CY	109,740.72
1.3	Long Haul Excavation	☐	CY	160,196.24
2	**Structural Concrete (Class S) (FC=3,...**	☐	CY	229.87
2.1	Box Culvert Footing	☑	CY	52.84
2.1.1	Erect & Strip Footer	☐	SFCA	597.00

NOTE Take note of the **Allocation Percentage** and **Total Cost to be Allocated** columns. This shows the percent of the total allocation qty allocated to that cost item and the total cost to be allocated to that item (notice that is the total cost of the Concrete Batch Plant).



CBS Position Code	Description	Include	Unit of Measure	Forecast (T/O) Quantity	CY Quantity	Allocation Percentage	Percent of Total Cost
1	**Roadway Excavation**	☐	CY	344,820.24	0.00	0.00	0.00
1.1	Short Haul Excavation	☐	CY	74,883.28	0.00	0.00	0.00
1.2	Medium Haul Excavation	☐	CY	109,740.72	0.00	0.00	0.00
1.3	Long Haul Excavation	☐	CY	160,196.24	0.00	0.00	0.00
2	**Structural Concrete (Class S) (FC=3,...**	☐	CY	229.87	0.00	0.00	0.00
2.1	Box Culvert Footing	☑	CY	52.84	52.84	5.28	100.00
2.1.1	Erect & Strip Footer	☐	SFCA	597.00	0.00	0.00	0.00

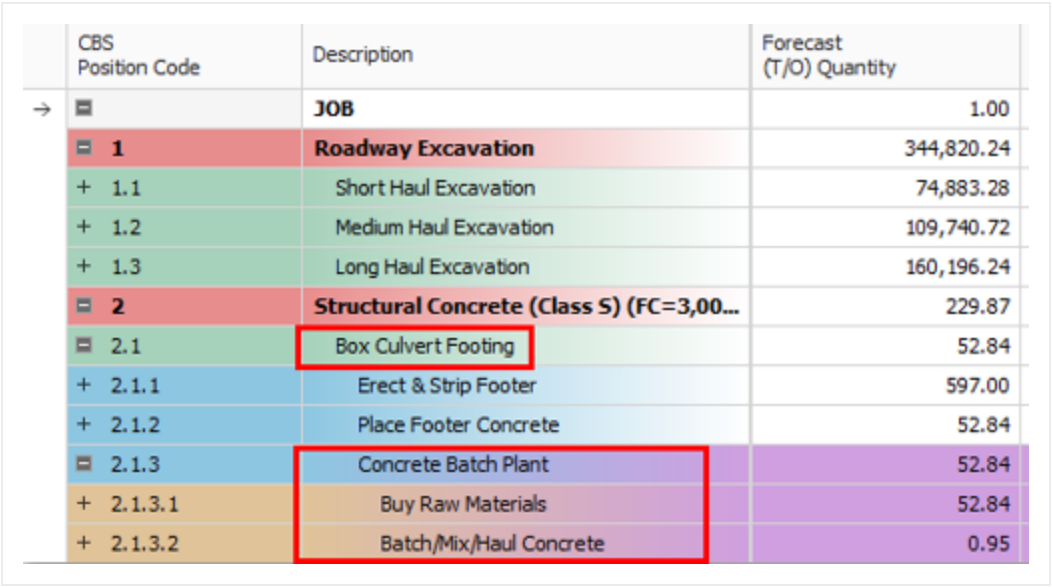
8. The **Box Culvert Footing** item just gained all of the **Concrete Batch Plant's** distribution cost items (highlighted in purple). Navigate back to the **CBS Register**.



Drag columns here to group

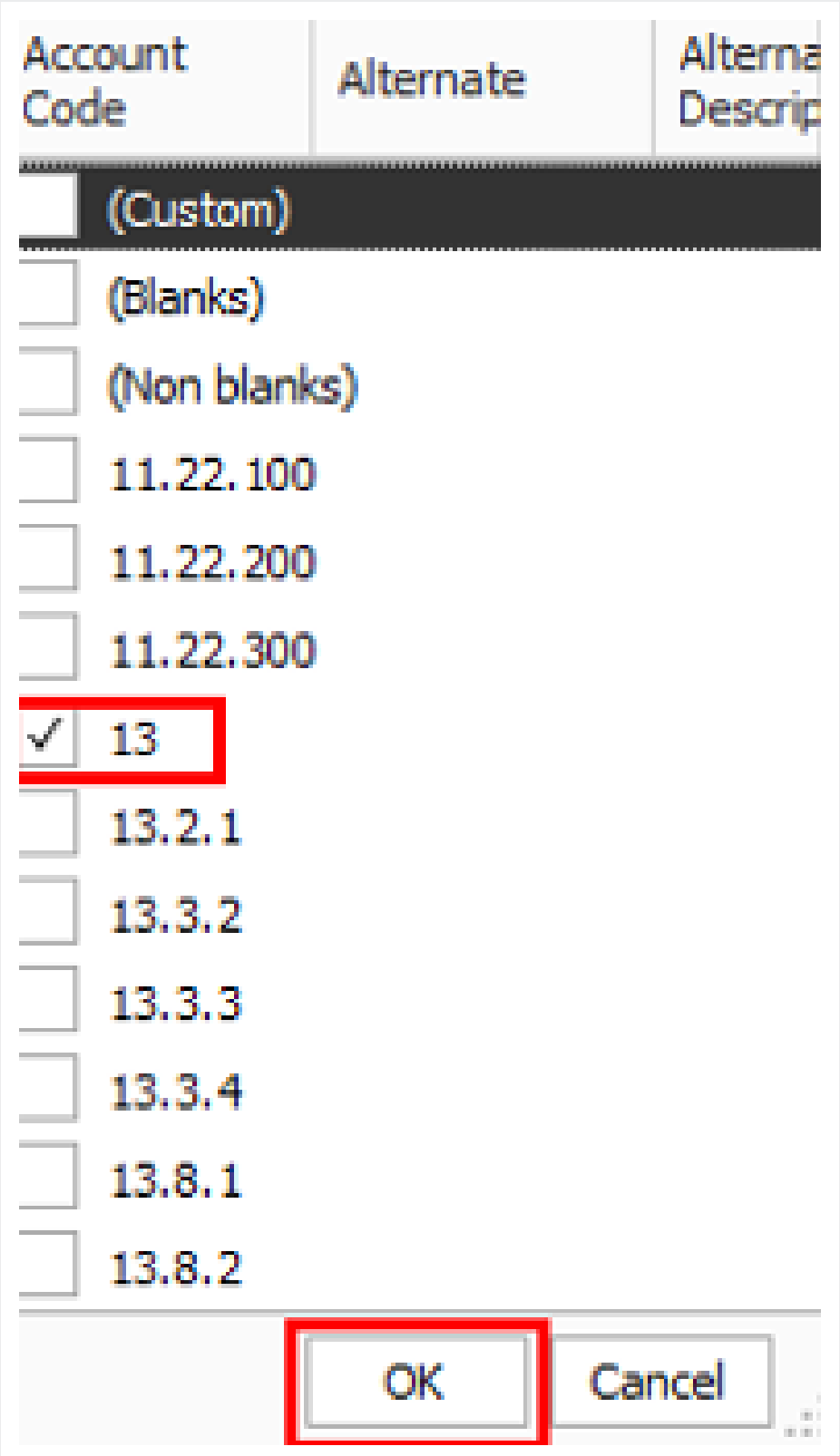
CBS Position Code	Description	Include	Unit of Measure	Forecast (T/O) Quantity	CY Quantity	Allocation Percentage
1.3	Long Haul Excavation	☐	CY	160,196.24	0.00	
2	**Structural Concrete (Class S) (FC=3,...**	☐	CY	229.87	0.00	
→ 2.1	Box Culvert Footing	☑	CY	52.84	52.84	
2.1.1	Erect & Strip Footer	☐	SFCA	597.00	0.00	
2.1.2	Place Footer Concrete	☐	CY	52.84	0.00	
2.1.3	Concrete Batch Plant	☐	CY	52.84	0.00	
2.1.3.1	Buy Raw Materials	☐	CY	52.84	0.00	
2.1.3.2	Batch/Mix/Haul Concrete	☐	Day	0.95	0.00	
2.2	Box Culvert Walls	☐	CY	87.86	0.00	
2.2.1	Erect & Strip Wall	☐	SFCA	5,757.00	0.00	
2.2.2	Erect & Strip Bulkheads	☐	SFCA	131.79	0.00	

9. Find the **Box Culvert** Footing cost item. The distribution cost items are added as its subordinates.

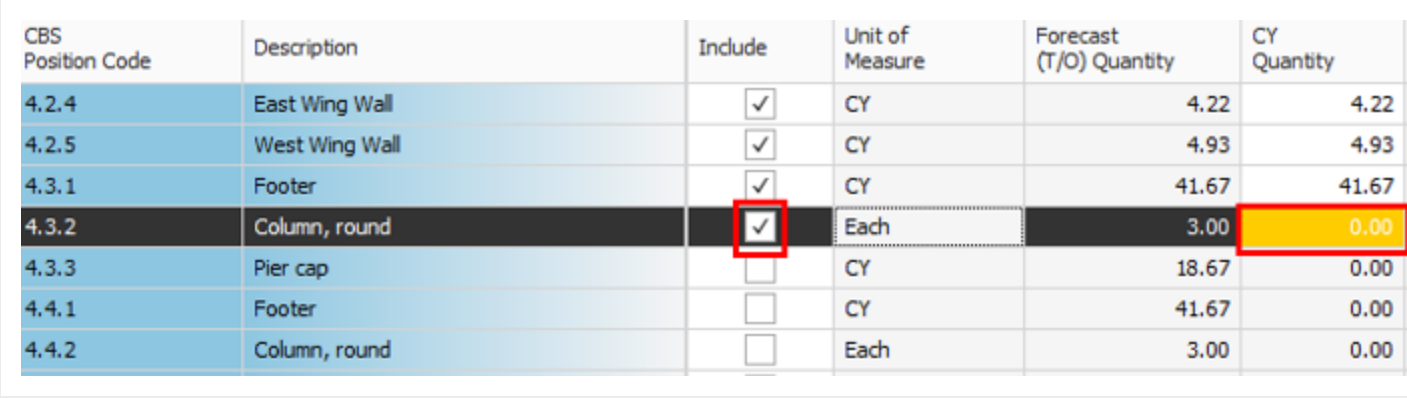


CBS Position Code	Description	Forecast (T/O) Quantity
→ ⊟	**JOB**	1.00
⊟ **1**	**Roadway Excavation**	344,820.24
+ 1.1	Short Haul Excavation	74,883.28
+ 1.2	Medium Haul Excavation	109,740.72
+ 1.3	Long Haul Excavation	160,196.24
⊟ **2**	**Structural Concrete (Class S) (FC=3,00...**	229.87
⊟ 2.1	Box Culvert Footing	52.84
+ 2.1.1	Erect & Strip Footer	597.00
+ 2.1.2	Place Footer Concrete	52.84
⊟ 2.1.3	Concrete Batch Plant	52.84
+ 2.1.3.1	Buy Raw Materials	52.84
+ 2.1.3.2	Batch/Mix/Haul Concrete	0.95

10. In the Cost Item Record, check the **Include** box for the cost items, **Box Culvert Walls** and **Box Culvert Deck**.
11. In the Account Code column, click on the **Filter** icon. Filter to account code **13** for all of the concrete items. Once done, click OK.

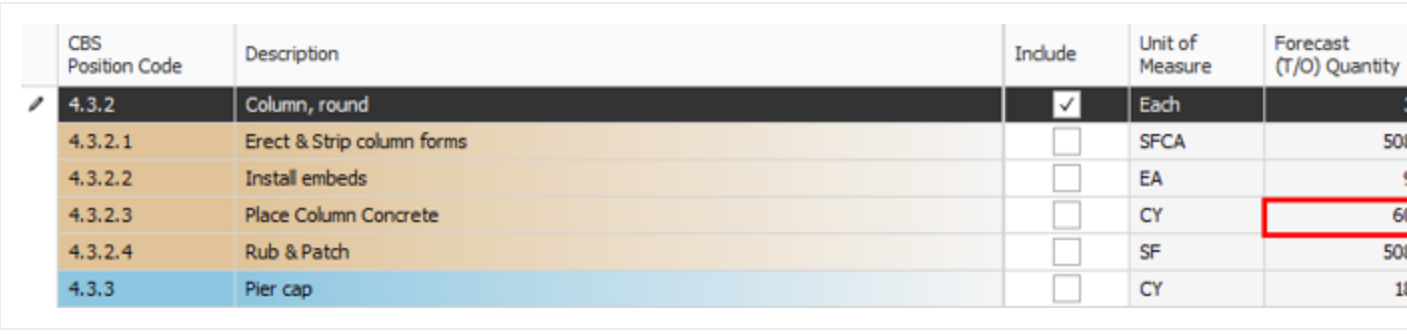

Account Code
Alternate
Alterna
Descrip
(Custom)
(Blanks)
(Non blanks)
11.22.100
11.22.200
11.22.300
13
13.2.1
13.3.2
13.3.3
13.3.4
13.8.1
13.8.2
OK
Cancel

12. Select the **Erect and Strip Deck** code, hold **<Shift>**, and select the Footer code to muli-select all of the codes in between. Then, tight click and select **Toggle Included**.
13. Check the **Include** box in the Include column for the cost item **Column, round**. The **CY Quantity** is now highlighted yellow. This is because this cost item's UoM is **Each** and not **CY**.



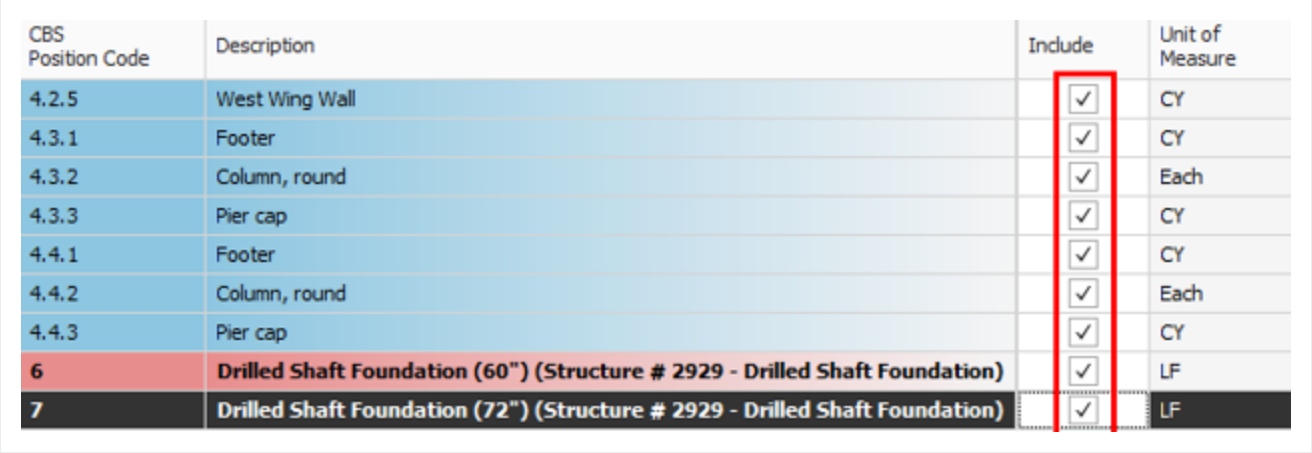
CBS Position Code	Description	Include	Unit of Measure	Forecast (T/O) Quantity	CY Quantity
4.2.4	East Wing Wall	☑	CY	4.22	4.22
4.2.5	West Wing Wall	☑	CY	4.93	4.93
4.3.1	Footer	☑	CY	41.67	41.67
4.3.2	Column, round	☑	Each	3.00	0.00
4.3.3	Pier cap	☐	CY	18.67	0.00
4.4.1	Footer	☐	CY	41.67	0.00
4.4.2	Column, round	☐	Each	3.00	0.00

14. Right click on the Account Code column, and select **Clear Filter** from the context menu.
15. Under the cost item **Column, round**, the subordinate cost item **Place Column Concrete** has a UoM of **CY**. Manually enter that cost item's Forecast (T/O) Quantity into the Column, round's **CY Quantity** field.



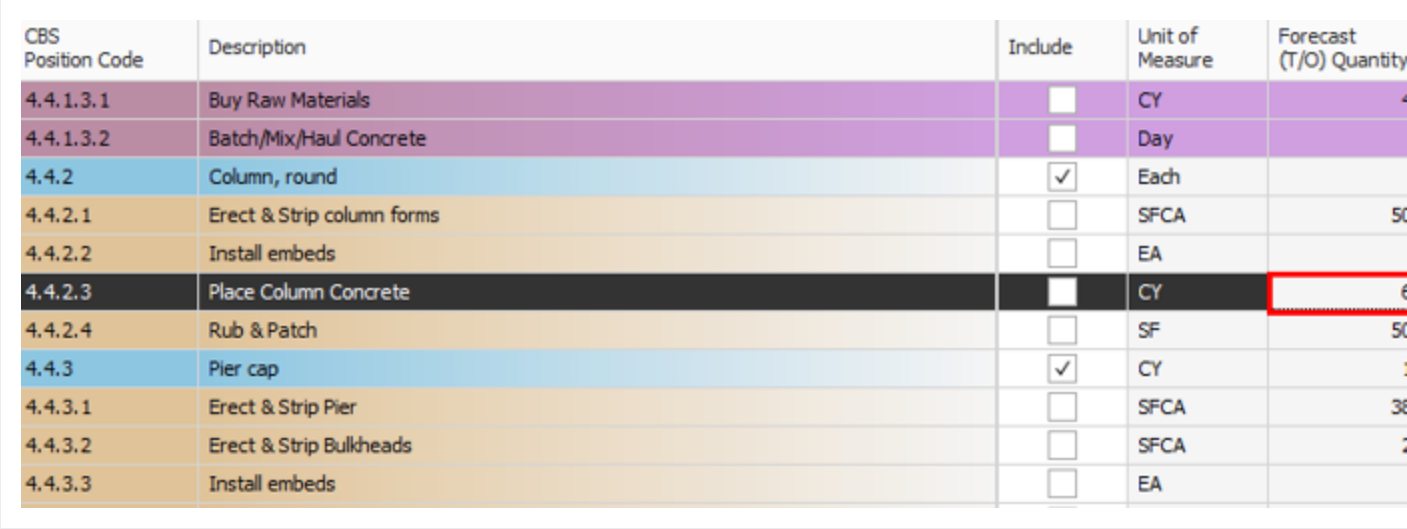
CBS Position Code	Description	Include	Unit of Measure	Forecast (T/O) Quantity
4.3.2	Column, round	☑	Each	
4.3.2.1	Erect & Strip column forms	☐	SFCA	50
4.3.2.2	Install embeds	☐	EA	
4.3.2.3	Place Column Concrete	☐	CY	6
4.3.2.4	Rub & Patch	☐	SF	50
4.3.3	Pier cap	☐	CY	1

16. Select the Account Code filter and reselect the option **13**.
17. In the Include column, check the **Include** box for all of the remaining cost items with this filter. Then, remove the Account Code filter.



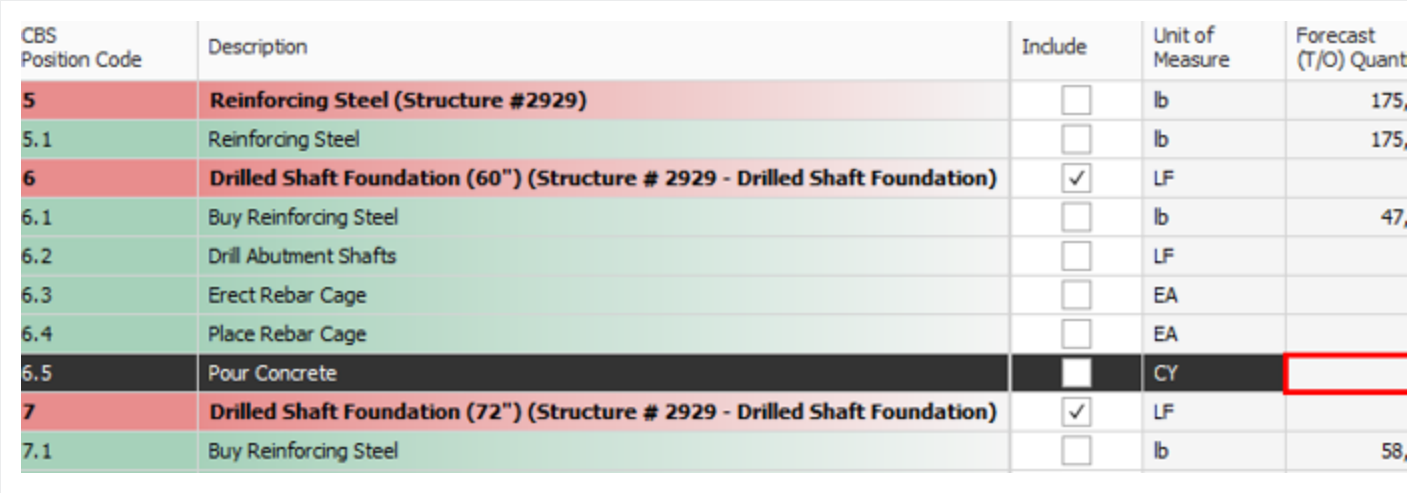
CBS Position Code	Description	Include	Unit of Measure
4.2.5	West Wing Wall	✓	CY
4.3.1	Footer	✓	CY
4.3.2	Column, round	✓	Each
4.3.3	Pier cap	✓	CY
4.4.1	Footer	✓	CY
4.4.2	Column, round	✓	Each
4.4.3	Pier cap	✓	CY
6	**Drilled Shaft Foundation (60") (Structure # 2929 - Drilled Shaft Foundation)**	✓	LF
7	**Drilled Shaft Foundation (72") (Structure # 2929 - Drilled Shaft Foundation)**	✓	LF

18. Fix the CY quantity for the other **Column, round** cost item.



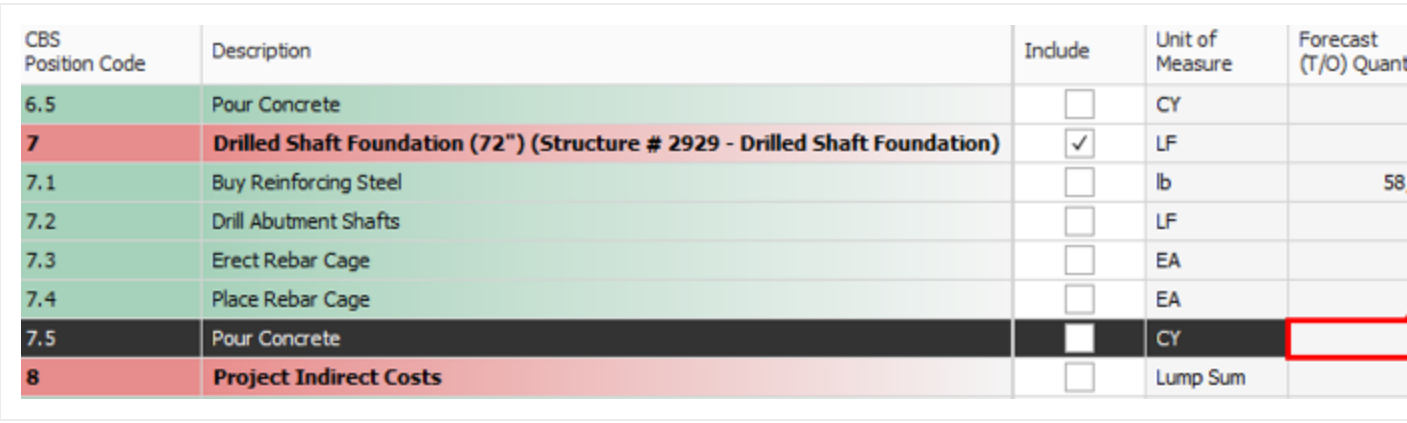
CBS Position Code	Description	Include	Unit of Measure	Forecast (T/O) Quantity
4.4.1.3.1	Buy Raw Materials		CY	
4.4.1.3.2	Batch/Mix/Haul Concrete		Day	
4.4.2	Column, round	✓	Each	
4.4.2.1	Erect & Strip column forms		SFCA	5
4.4.2.2	Install embeds		EA	
4.4.2.3	Place Column Concrete		CY	
4.4.2.4	Rub & Patch		SF	5
4.4.3	Pier cap	✓	CY	
4.4.3.1	Erect & Strip Pier		SFCA	3
4.4.3.2	Erect & Strip Bulkheads		SFCA	
4.4.3.3	Install embeds		EA	

19. Fix the CY quantity for the **Drilled Shaft Foundation (60")** cost item.



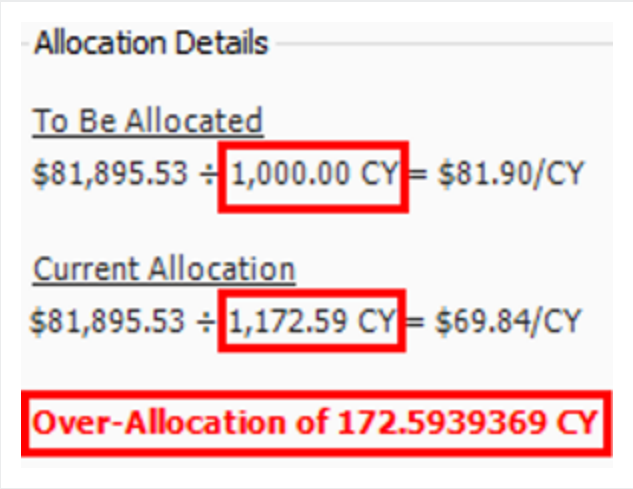
CBS Position Code	Description	Include	Unit of Measure	Forecast (T/O) Quant
5	**Reinforcing Steel (Structure #2929)**	☐	lb	175,
5.1	Reinforcing Steel	☐	lb	175,
6	**Drilled Shaft Foundation (60") (Structure # 2929 - Drilled Shaft Foundation)**	☑	LF	
6.1	Buy Reinforcing Steel	☐	lb	47,
6.2	Drill Abutment Shafts	☐	LF	
6.3	Erect Rebar Cage	☐	EA	
6.4	Place Rebar Cage	☐	EA	
6.5	Pour Concrete	☐	CY	
7	**Drilled Shaft Foundation (72") (Structure # 2929 - Drilled Shaft Foundation)**	☑	LF	
7.1	Buy Reinforcing Steel	☐	lb	58,

20. 20. Fix the CY quantity for the **Drilled Shaft Foundation (72")** cost item.



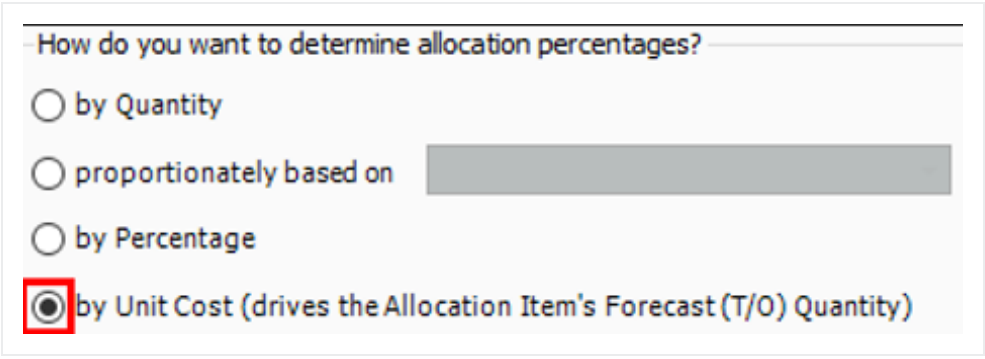
CBS Position Code	Description	Include	Unit of Measure	Forecast (T/O) Quant
6.5	Pour Concrete	☐	CY	
7	**Drilled Shaft Foundation (72") (Structure # 2929 - Drilled Shaft Foundation)**	☑	LF	
7.1	Buy Reinforcing Steel	☐	lb	58
7.2	Drill Abutment Shafts	☐	LF	
7.3	Erect Rebar Cage	☐	EA	
7.4	Place Rebar Cage	☐	EA	
7.5	Pour Concrete	☐	CY	
8	**Project Indirect Costs**	☐	Lump Sum	

21. Notice in the **Allocation Details** section, that we have over-allocated this cost item. The **Concrete Batch Plant** quantity is 1,000 CY, whereas we have allocated 1,172.59 CY.



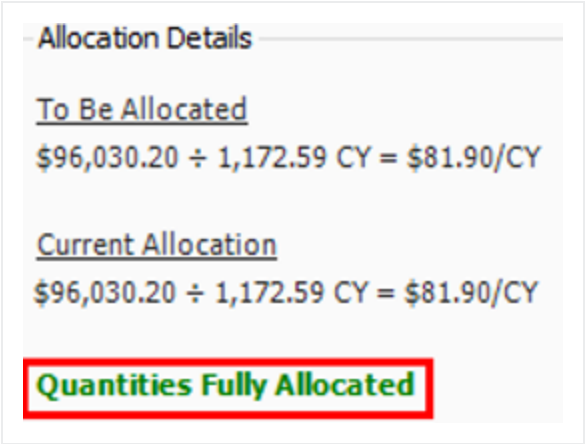
6.4.3 Cost Allocation to By Unit Cost

Having an under allocation or over allocation is ok, but it can be fixed by updating the Forecast (T/O) Quantity of the **Concrete Batch Plant**. To do this, change the cost allocation to **by Unit Cost**.

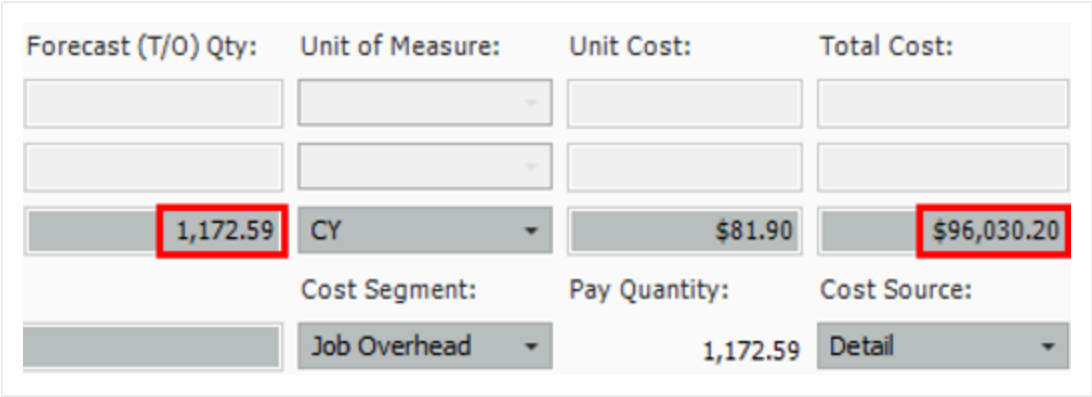


Step by Step — Cost Allocation by Unit Cost

1. Change the cost allocation to **by Unit Cost**. When the Attention dialog box appears, click **Yes** to continue.
2. Now the **Allocation Details** warning states the quantities are fully allocated.



3. Notice also that the Forecast (T/O) Quantity of the **Concrete Batch Plant** has updated to 1,172.59 CY to match the allocated quantity, and the Total Cost has updated to $96,030.20 to keep the unit cost at the original $81.90/CY.



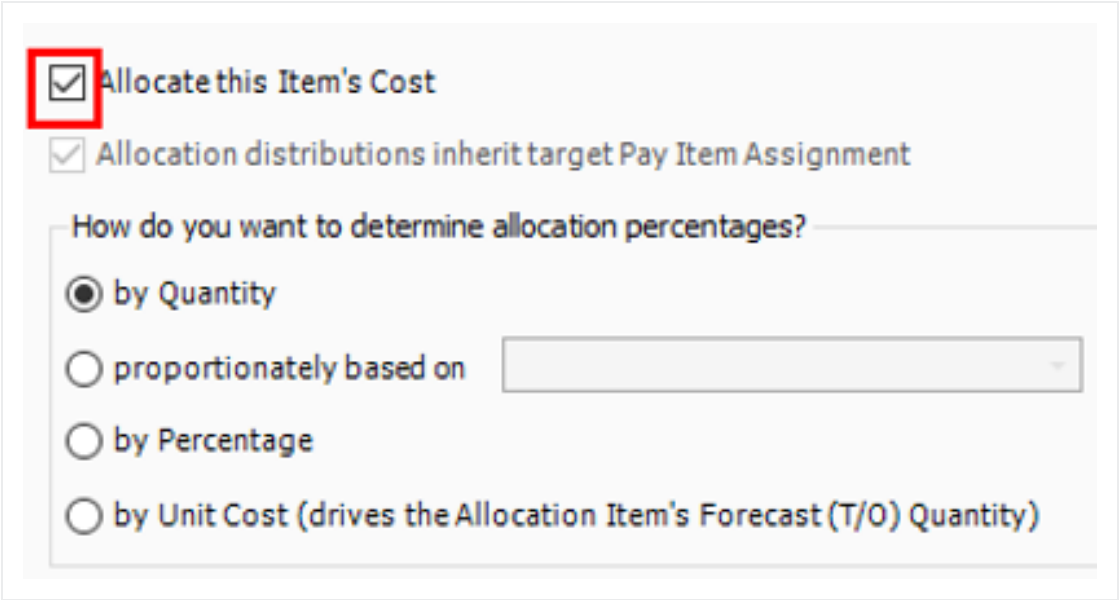
4. Return to the CBS Register. The distributed cost items all have a unit cost of $81.90.

CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)
	JOB	1.00	Lump Sum	$1,121,620...	$1,121,620.
1	**Roadway Excavation**	344,820.24	CY	$1.55	$535,419.
1.1	Short Haul Excavation	74,883.28	CY	$0.58	$43,695.
1.2	Medium Haul Excavation	109,740.72	CY	$0.81	$88,620.
1.3	Long Haul Excavation	160,196.24	CY	$2.52	$403,103.
2	**Structural Concrete (Class S) (FC=3,00...**	229.87	CY	$377.25	$86,719.
2.1	Box Culvert Footing	52.84	CY	$209.15	$11,051.
2.1.1	Erect & Strip Footer	597.00	SFCA	$10.26	$6,123.
2.1.2	Place Footer Concrete	52.84	CY	$11.37	$600.
2.1.3	Concrete Batch Plant	52.84	CY	$81.90	$4,327.
2.1.3.1	Buy Raw Materials	52.84	CY	$35.62	$1,882.

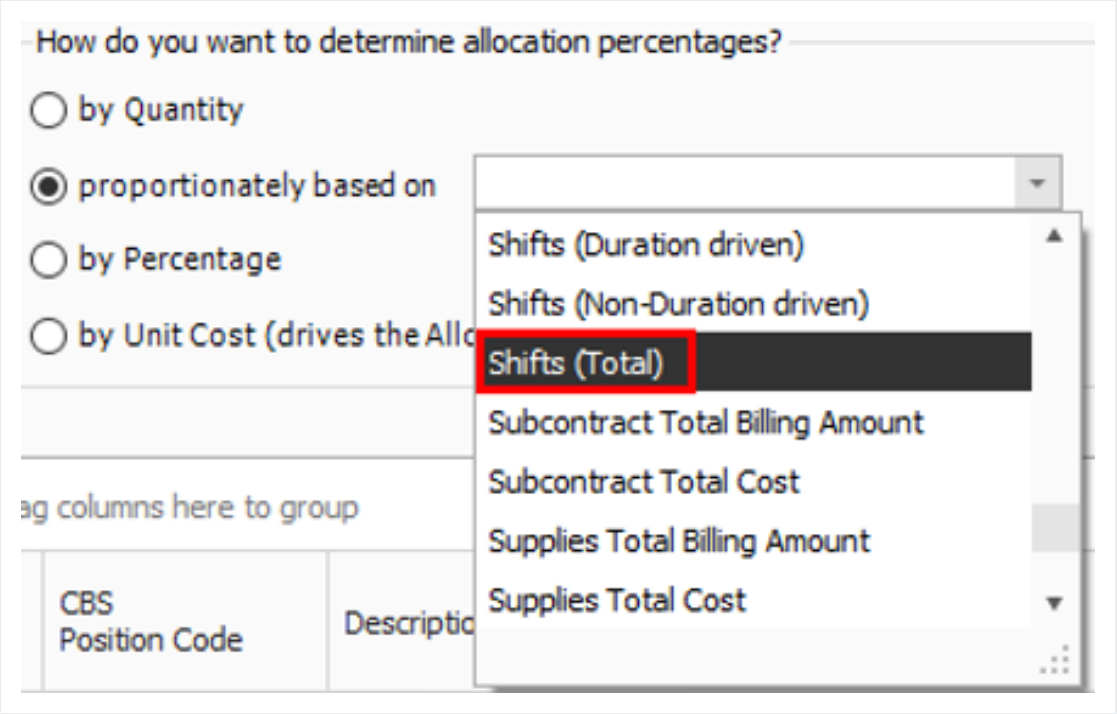
5. The original “Concrete Batch Plant” cost item has a total cost of $96,030.20.

8.1	Crane Service	30.00	Day	$1,871.89	$56,156.73	U.S. Dollar
9	**Concrete Batch Plant**	1,172.59	CY	$81.90	$96,030.20	U.S. Dollar
9.1	Buy Raw Materials	1,172.59	CY	$35.62	$41,765.74	U.S. Dollar
9.2	Batch/Mix/Haul Concrete	21.11	Day	$2,570.96	$54,264.46	U.S. Dollar

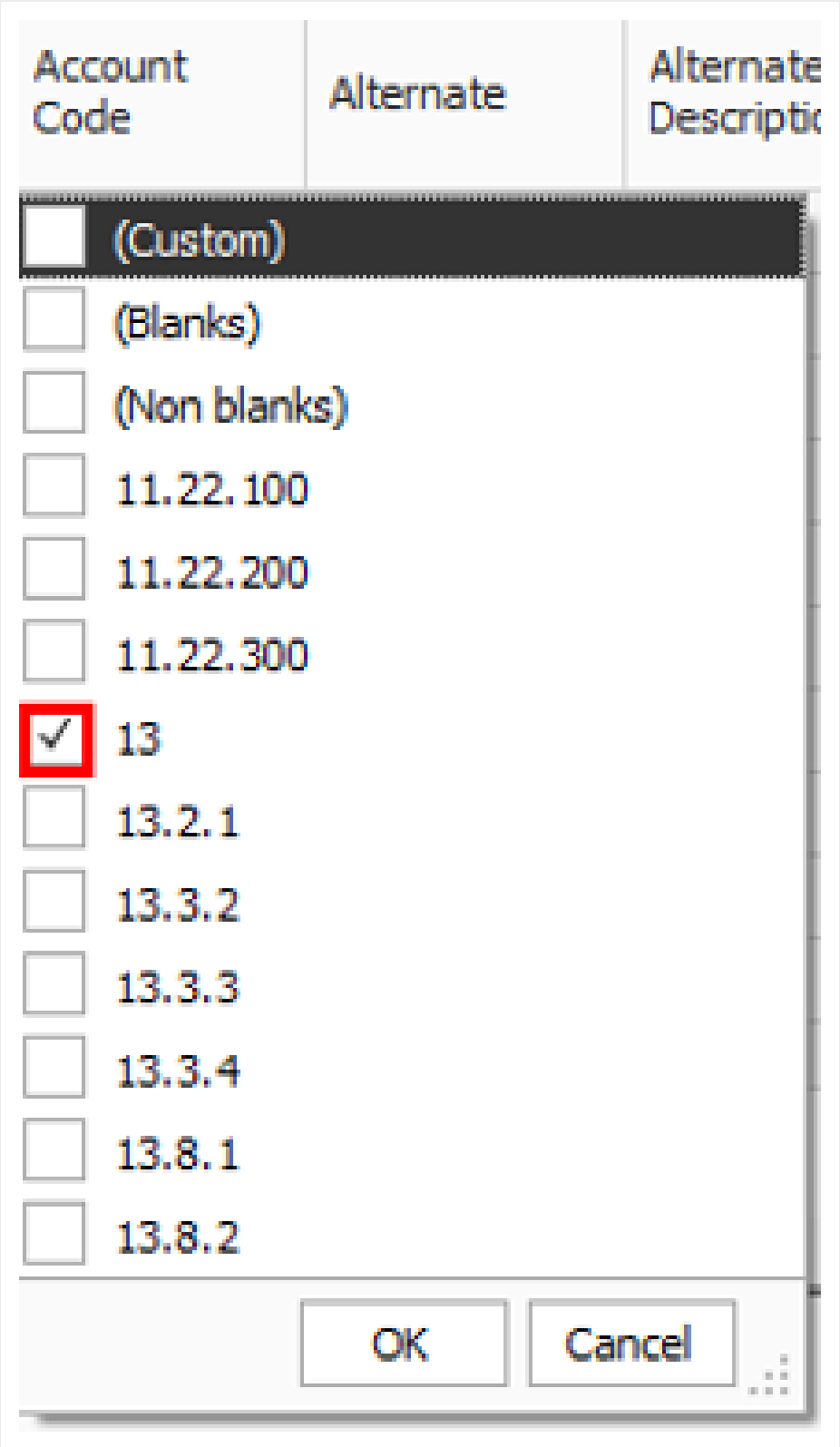
6. Navigate to the CBS Register. Double click the **Project Indirect Costs** cost item to open it.
7. Select the **Allocation** tab. Check the box for **Allocate this Item’s Cost**.



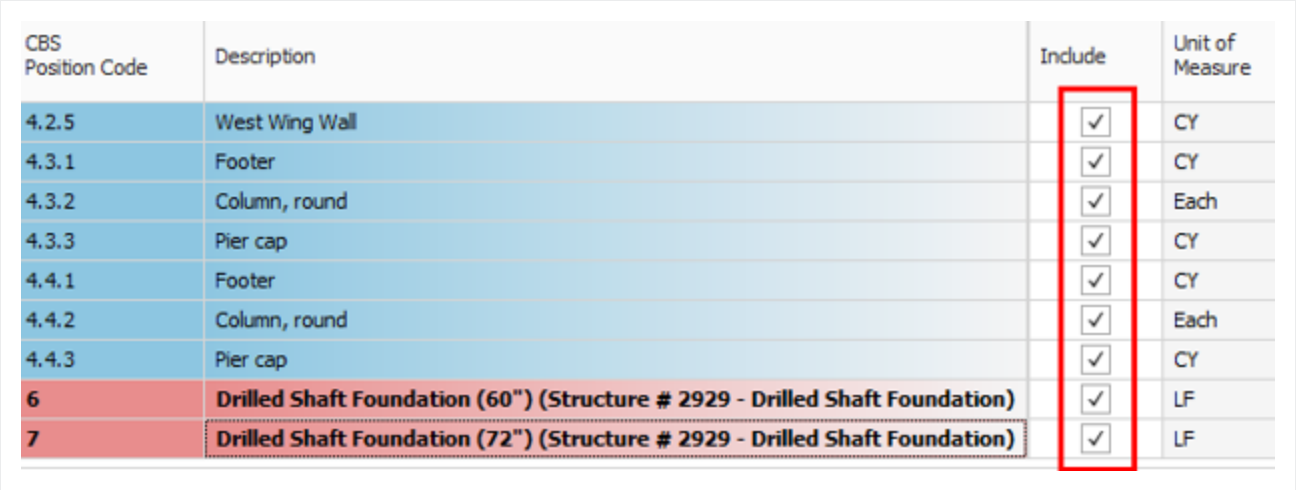
8. Select the **proportionately based on** radio button. From the drop down, select **Shifts (Total)**.



9. Filter the Account Code column to **13**. Once done, click **OK**.


Account Code
Alternate
Alternate Descriptic
(Custom)
(Blanks)
(Non blanks)
11.22.100
11.22.200
11.22.300
13
13.2.1
13.3.2
13.3.3
13.3.4
13.8.1
13.8.2
OK
Cancel

10. Select all of the cost items. Then, right click on the selected cost items and select **Toggle included**. Ensure that all of the **Included** boxes are checked.



CBS Position Code	Description	Include	Unit of Measure
4.2.5	West Wing Wall	☑	CY
4.3.1	Footer	☑	CY
4.3.2	Column, round	☑	Each
4.3.3	Pier cap	☑	CY
4.4.1	Footer	☑	CY
4.4.2	Column, round	☑	Each
4.4.3	Pier cap	☑	CY
6	**Drilled Shaft Foundation (60") (Structure # 2929 - Drilled Shaft Foundation)**	☑	LF
7	**Drilled Shaft Foundation (72") (Structure # 2929 - Drilled Shaft Foundation)**	☑	LF

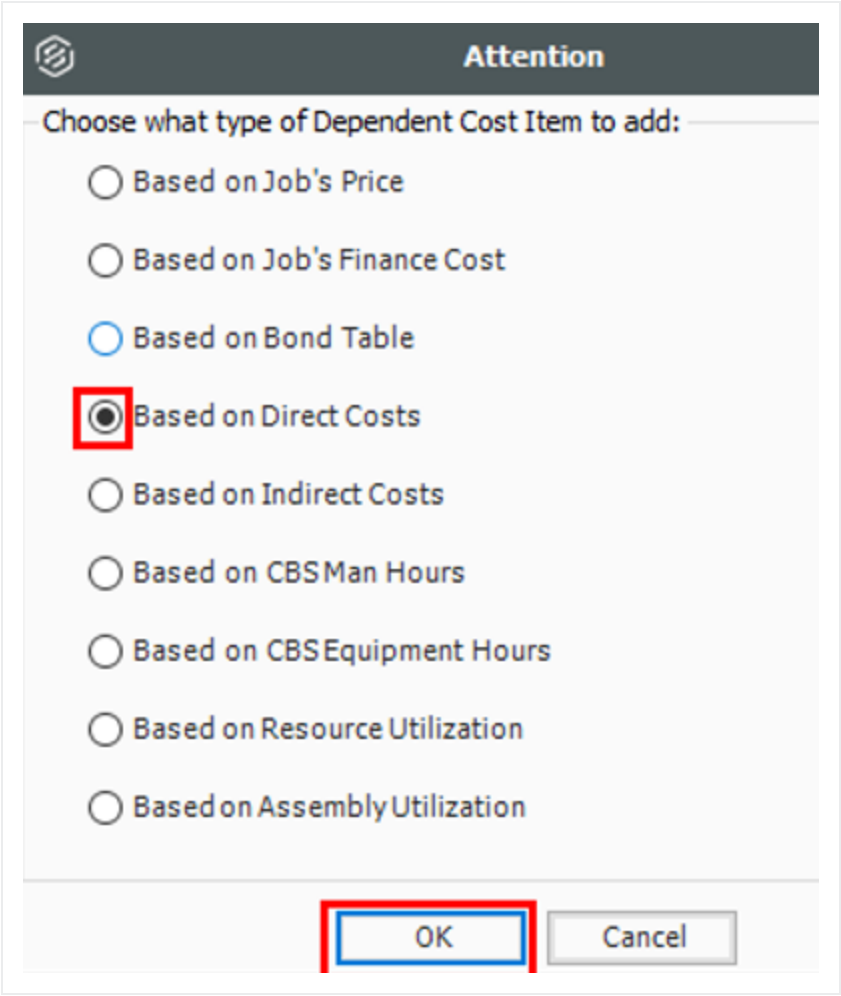
11. On the CBS Register, verify that all of the items have cost items distributed proportionately by shifts.

CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure
+ 2.2.3	Place Wall Concrete	87.86	CY
+ 2.2.4	Rub & Patch	922.51	SF
− 2.2.5	Project Indirect Costs	0.29	Lump Sum
+ 2.2.5.1	Crane Service	8.67	Day
− 2.3	Box Culvert Deck	48.53	CY
+ 2.3.1	Erect & Strip Deck	1,310.21	SFCA
+ 2.3.2	Place Deck Concrete	48.53	CY
− 2.3.3	Project Indirect Costs	0.06	Lump Sum
+ 2.3.3.1	Crane Service	1.87	Day
− 2.4	Box Culvert Wing Walls	40.65	CY
+ 2.4.1	Erect & Strip Footings	563.67	SFCA
+ 2.4.2	Erect & Strip Wingwalls	1,067.56	SFCA
+ 2.4.3	Place Wing Wall Concrete	40.65	CY
− 2.4.4	Project Indirect Costs	0.16	Lump Sum
+ 2.4.4.1	Crane Service	4.82	Day
− **3**	**Reinforcing Steel (CBC Extn at STA 395...**	35,372.00	lb
+ 3.1	Reinforcing Steel	35,372.00	lb
− **4**	**Structural Concrete (Class S) (FC=3,50...**	306.00	CY
− 4.1	Abutment 1 (south)	84.00	CY
− 4.1.1	Footer	44.44	CY
+ 4.1.1.1	Erect & Strip Footer	300.00	SFCA
+ 4.1.1.2	Place Footer Concrete	48.88	CY
− 4.1.1.3	Project Indirect Costs	0.03	Lump Sum
+ 4.1.1.3.1	Crane Service	0.91	Day

6.5 DEPENDENT COST ITEM ALLOCATION

Step by Step — Dependent Cost Item Allocation

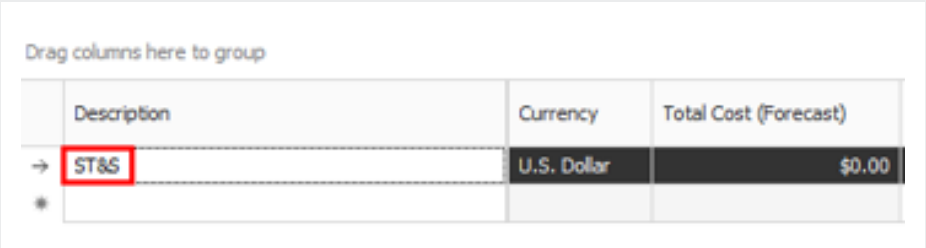
1. From the CBS Register, right click on the first cost item and select **Insert Dependent Cost Item** from the context menu.
2. When the Attention dialog box shows, select **Based on Direct Costs**. Once done, click **OK**.



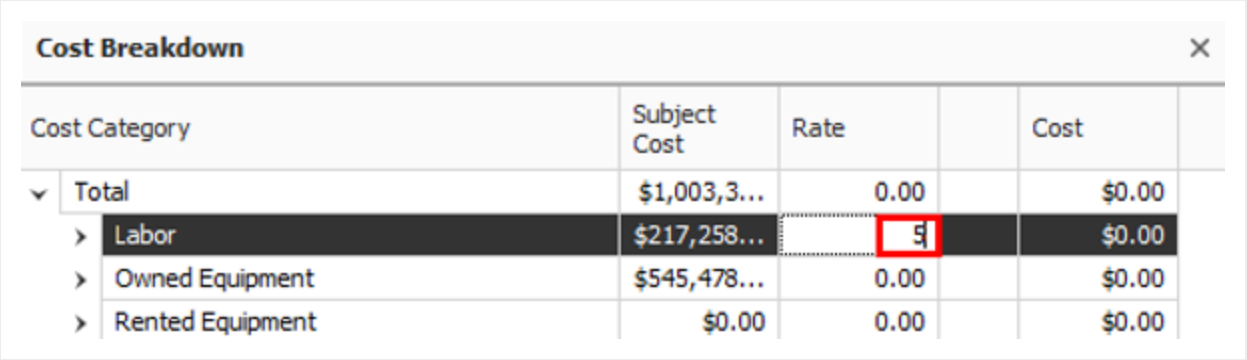
3. Find your new cost item. Then double click to open the cost item record.

8	**Project Indirect Costs**	1.00	Lump Sum	$56,156.73	
+ 8.1	Crane Service	30.00	Day	$1,871.89	
9	**Concrete Batch Plant**	1,172.59	CY	$81.90	
+ 9.1	Buy Raw Materials	1,172.59	CY	$35.62	
+ 9.2	Batch/Mix/Haul Concrete	21.11	Day	$2,570.96	
10	**Equipment Related Indirects**	1.00	Each	$76,467.24	
+ 10.1	Maintenence	1.00	Each	$76,467.24	
	Direct Cost Add-On	1.00	Lump Sum	$0.00	

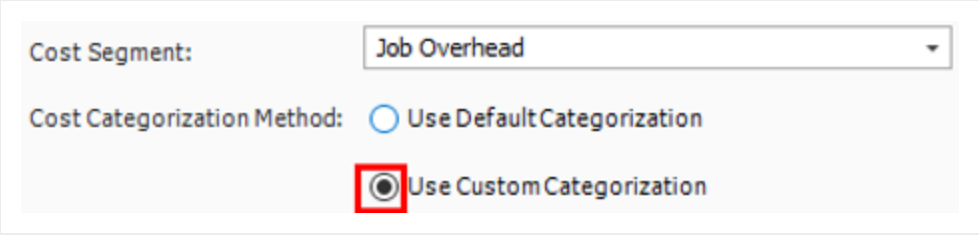
4. In the CBS Position Code Description, enter the description **Small Tools & Supplies**.
5. Enter in the cost item, “ST&S”.



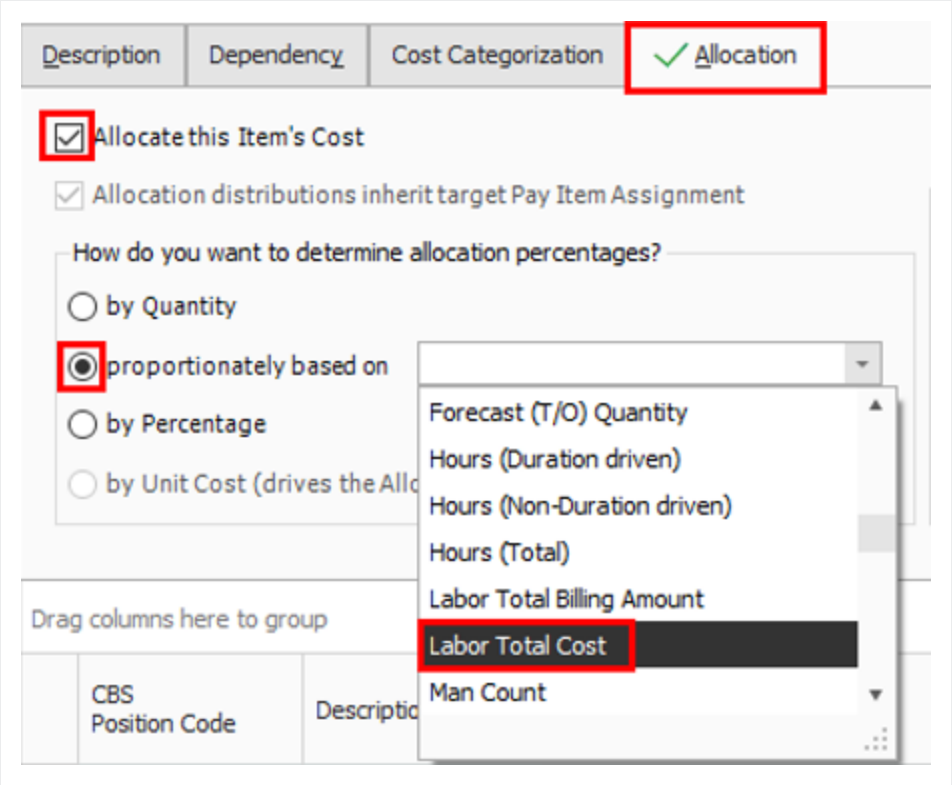
6. In the Cost Breakdown default data block, set the labor rate as **5%.**



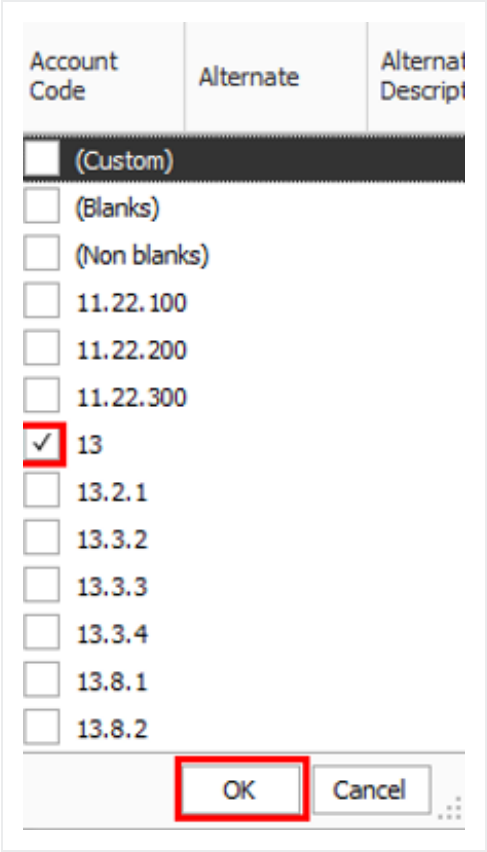
7. In the Cost Item Record, select the **Cost Categorization** tab.
8. Under the Cost Categorization Method, select the **Use Custom Categorization** radio button.



9. Find the **Supplies** Cost Category and check the box next to **Supplies**.
10. Select the **Allocation** tab. Then, check the box for **Allocate this Item's Cost**.
11. Select the **proportionately based on** radio button. From the drop down, select **Labor Total Cost**.



12. In the Cost Item Record, filter the **Account Code** column to **13**. Once you are done selecting the filter, click **OK**.



13. In the Cost Item Record, check the **Include** box in the Include column for every cost item.
14. Return to the CBS Register. The ST&S is distributed to all of the selected cost items.

CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)
	JOB	1.00	Lump Sum	$1,132,483...	$1,132,483.91
	Small Tools & Supplies	1.00	Lump Sum	$10,862.95	$10,862.95
1	**Roadway Excavation**	344,820.24	CY	$1.55	$535,419.74
1.1	Short Haul Excavation	74,883.28	CY	$0.58	$43,695.89
1.2	Medium Haul Excavation	109,740.72	CY	$0.81	$88,620.58
1.3	Long Haul Excavation	160,196.24	CY	$2.52	$403,103.26
2	**Structural Concrete (Class S) (FC=3,00...**	229.87	CY	$429.05	$98,628.03
2.1	Box Culvert Footing	52.84	CY	$136.60	$7,218.11
2.1.1	Erect & Strip Footer	597.00	SFCA	$10.26	$6,123.68
2.1.2	Place Footer Concrete	52.84	CY	$11.37	$600.65
2.1.3	Small Tools & Supplies	0.05	Lump Sum	$10,862.95	$493.77
2.2	Box Culvert Walls	87.86	CY	$572.99	$50,341.83
2.2.1	Erect & Strip Wall	5,757.00	SFCA	$5.13	$29,525.99
2.2.2	Erect & Strip Bulkheads	131.79	SFCA	$15.39	$2,027.69
2.2.3	Place Wall Concrete	87.86	CY	$17.05	$1,498.08
2.2.4	Rub & Patch	922.51	SF	$0.61	$561.08
2.2.5	Project Indirect Costs	0.29	Lump Sum	$56,156.73	$16,235.20
2.2.5.1	Crane Service	8.67	Day	$1,871.89	$16,235.20
2.2.6	Small Tools & Supplies	0.05	Lump Sum	$10,862.95	$493.77
2.3	Box Culvert Deck	48.53	CY	$237.72	$11,535.59
2.3.1	Erect & Strip Deck	1,310.21	SFCA	$5.13	$6,719.68
2.3.2	Place Deck Concrete	48.53	CY	$17.05	$827.43
2.3.3	Project Indirect Costs	0.06	Lump Sum	$56,156.73	$3,494.71
2.3.3.1	Crane Service	1.87	Day	$1,871.89	$3,494.71
2.3.4	Small Tools & Supplies	0.05	Lump Sum	$10,862.95	$493.77
2.4	Box Culvert Wing Walls	40.65	CY	$726.51	$29,532.50
2.4.1	Erect & Strip Footings	563.67	SFCA	$5.13	$2,890.88
2.4.2	Erect & Strip Wingwalls	1,067.56	SFCA	$15.39	$16,425.66
2.4.3	Place Wing Wall Concrete	40.65	CY	$17.05	$693.13
2.4.4	Project Indirect Costs	0.16	Lump Sum	$56,156.73	$9,029.05
2.4.4.1	Crane Service	4.82	Day	$1,871.89	$9,029.05
2.4.5	Small Tools & Supplies	0.05	Lump Sum	$10,862.95	$493.77
3	**Reinforcing Steel (CBC Extn at STA 395...**	35,372.00	lb	$0.73	$25,750.82

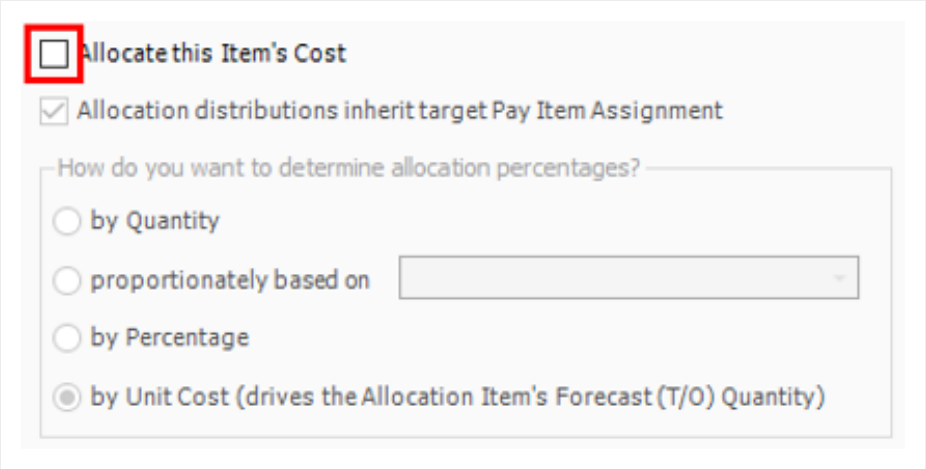
6.5.1 Turning Off Cost Allocation

If you determine that you no longer want to spread the cost of an Allocation Item, you can turn off cost allocation for that cost item. The logic that you created to spread the costs are retained, so you can easily turn it back on later.

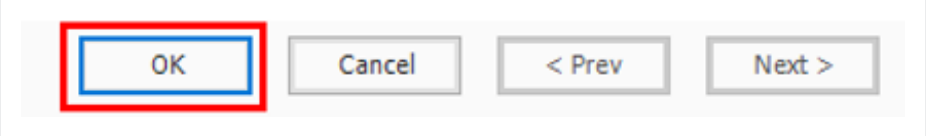
NOTE Distributions cannot exist in the CBS when a job is published for Job Tracking. To remove Distributions, either break the Cost Allocation link or uncheck the **Allocate this Item's Cost** check box on the **Cost Item Record - Allocation** tab.

Step by Step — Turning Off Cost Allocation

1. From the CBS Register, select the **Concrete Batch Plant** Cost Item Record.
2. From the Ribbon, select the **Actions** tab. Under the Edit section, select **Open**. The Cost Item Record opens.
3. Select the **Allocation** tab. Uncheck the box for **Allocate this Item's Cost**.



4. Once done, click **OK** to return to the CBS Register.



5. All of the distribution cost items are gone, but the quantity and the total cost of the **Concrete Batch Plant** has not changed.

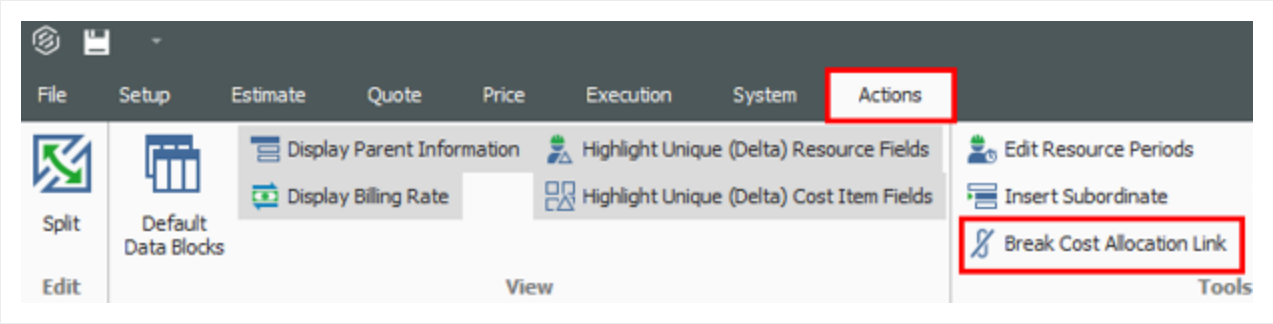
CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
⊟ 8	**Project Indirect Costs**	1.00	Lump Sum	$56,156.73	$56,156.73	U.S. Dollar
+ 8.1	Crane Service	30.00	Day	$1,871.89	$56,156.73	U.S. Dollar
⊟ 9	**Concrete Batch Plant**	1,172.59	CY	$81.90	$96,030.20	U.S. Dollar
+ 9.1	Buy Raw Materials	1,172.59	CY	$35.62	$41,765.74	U.S. Dollar
+ 9.2	Batch/Mix/Haul Concrete	21.11	Day	$2,570.96	$54,264.46	U.S. Dollar
⊟ 10	**Equipment Related Indirects**	1.00	Each	$76,467.24	$76,467.24	U.S. Dollar
+ 10.1	Maintenence	1.00	Each	$76,467.24	$76,467.24	U.S. Dollar

6.5.2 Breaking a Cost Allocation Link

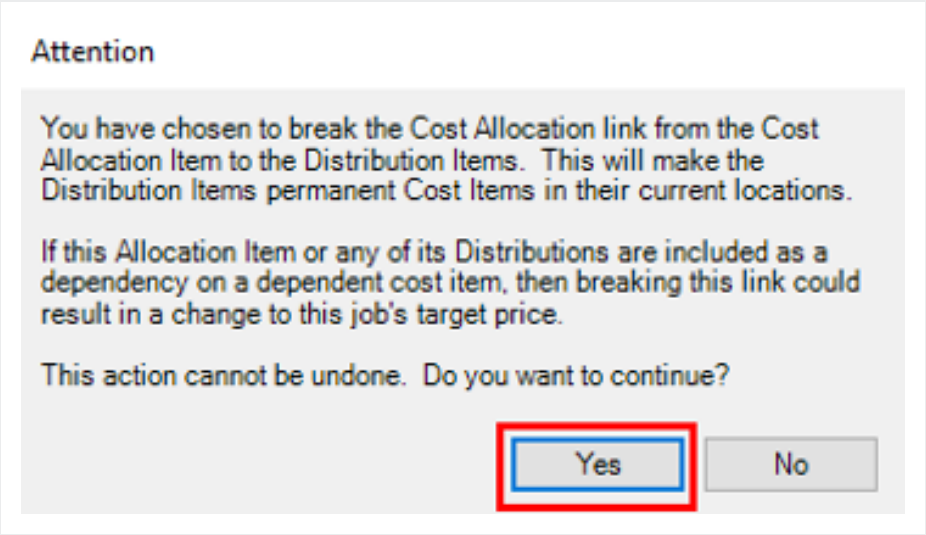
To make a Distribution a permanent part of the CBS, and permit its costs and quantities to be directly editable under the cost item(s) to which it has been distributed, break the Cost Allocation link.

Step by Step — Breaking a Cost Allocation Link

1. From the CBS Register, select the **Project Indirect Costs** Cost Item Record.
2. From the Ribbon, select the **Actions** tab. Under the Edit section, select **Open**. The Cost Item Record opens.
3. Select the **Allocation** tab. Then go to the CBS Register in the record.
4. Select the cost item with a Cost Allocation Link. Then from the Ribbon, select the **Actions** tab.
5. Under Tools, select **Break Cost Allocation Link**.



6. When the Attention dialog box shows, click **Yes** to continue.

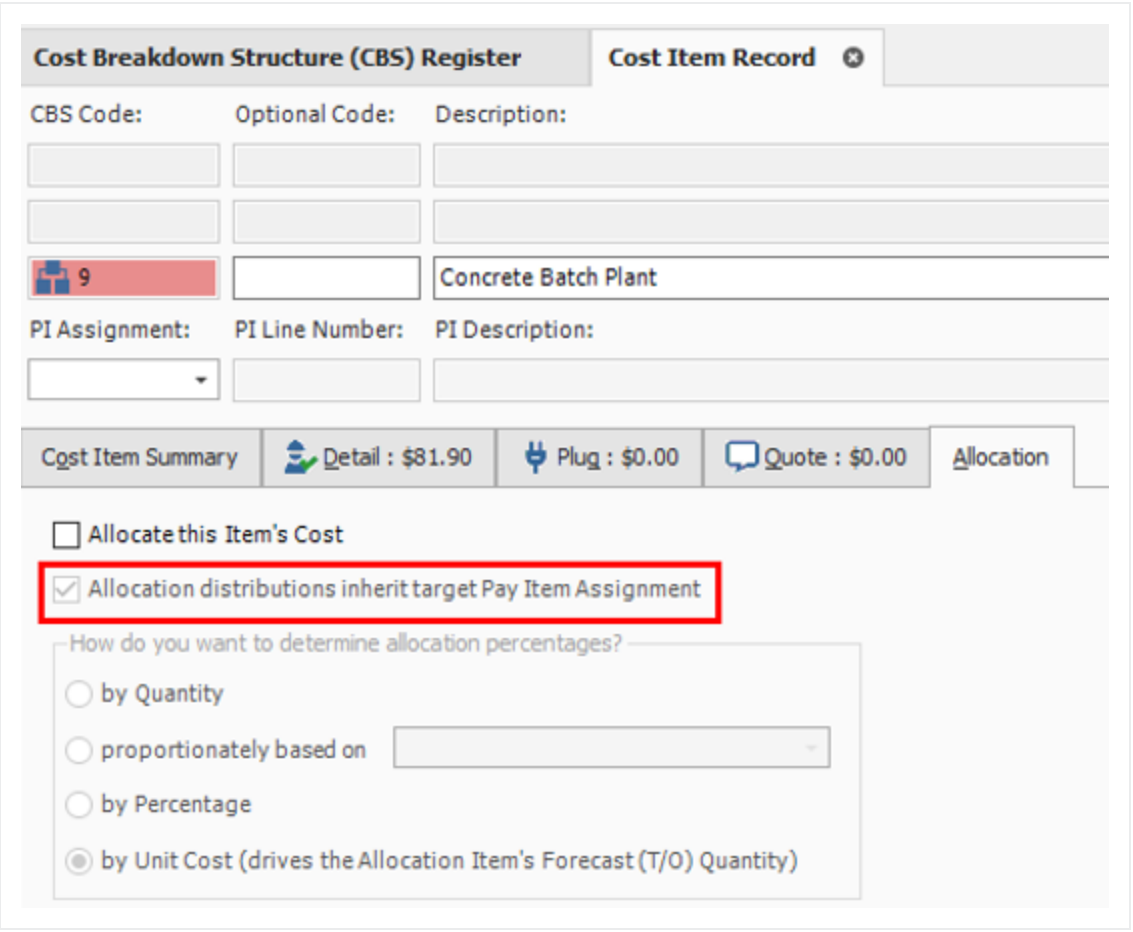


7. The original cost item still exists and is now becomes editable. All the distribution cost items are now editable as well. They are now permanent items and are no longer highlighted in purple either.

− 6	**Drilled Shaft Foundation (60") (Struct...**	306.00	LF
+ 6.1	Buy Reinforcing Steel	47,482.52	lb
+ 6.2	Drill Abutment Shafts	306.00	LF
+ 6.3	Erect Rebar Cage	4.00	EA
+ 6.4	Place Rebar Cage	4.00	EA
+ 6.5	Pour Concrete	222.53	CY
− 6.6	Project Indirect Costs	0.03	Lump Sum
+ 6.6.1	Crane Service	0.82	Day
− 7	**Drilled Shaft Foundation (72") (Struct...**	300.00	LF
+ 7.1	Buy Reinforcing Steel	58,189.36	lb
+ 7.2	Drill Abutment Shafts	300.00	LF
+ 7.3	Erect Rebar Cage	4.00	EA
+ 7.4	Place Rebar Cage	4.00	EA
+ 7.5	Pour Concrete	314.16	CY
− 7.6	Project Indirect Costs	0.04	Lump Sum
+ 7.6.1	Crane Service	1.15	Day
− 8	**Project Indirect Costs**	1.00	Lump Sum
+ 8.1	Crane Service	30	Day
− 9	**Concrete Batch Plant**	1,172.59	CY
+ 9.1	Buy Raw Materials	1,172.59	CY

6.5.3 Pay Item Assignment for Allocation Distribution in an Unlocked Job

In the **Cost Item Record - Allocation** tab, the check box **Allocation distributions inherit target Pay Item Assignment** was added. When the check box is selected in an unlocked job, the system uses the same allocation distribution for the cost item's costs anytime the cost item is copied and added to a job. For a locked job, this is the normal system behavior. This option is always selected and cannot be edited.


Cost Breakdown Structure (CBS) Register
Cost Item Record
CBS Code:
Optional Code:
Description:
9
Concrete Batch Plant
PI Assignment:
PI Line Number:
PI Description:
Cost Item Summary
Detail : $81.90
Plug : $0.00
Quote : $0.00
Allocation
Allocate this Item's Cost
Allocation distributions inherit target Pay Item Assignment
How do you want to determine allocation percentages?
by Quantity
proportionately based on
by Percentage
by Unit Cost (drives the Allocation Item's Forecast (T/O) Quantity)

Exercise 6.1 — Define Indirect Costs

In this exercise, you will practice entering Indirect Costs. Complete the following steps, using the E101 – Training Job:

1. Double click on the **Price % Add On** row header.

2. You already have Office Overhead as your first line item. In the next blank row type **Corporate Insurance** in the Description field and enter a rate of **.10**.

3. Click **OK** to close the record.

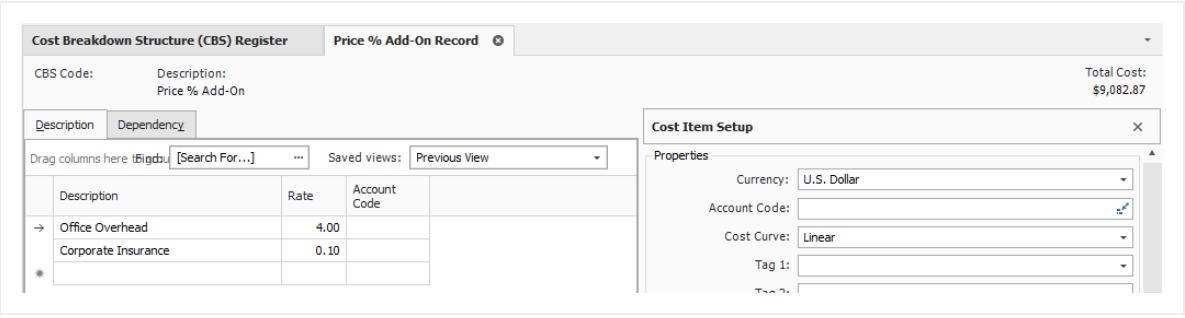
4. Double click on the **Direct Cost Add-On** row header.

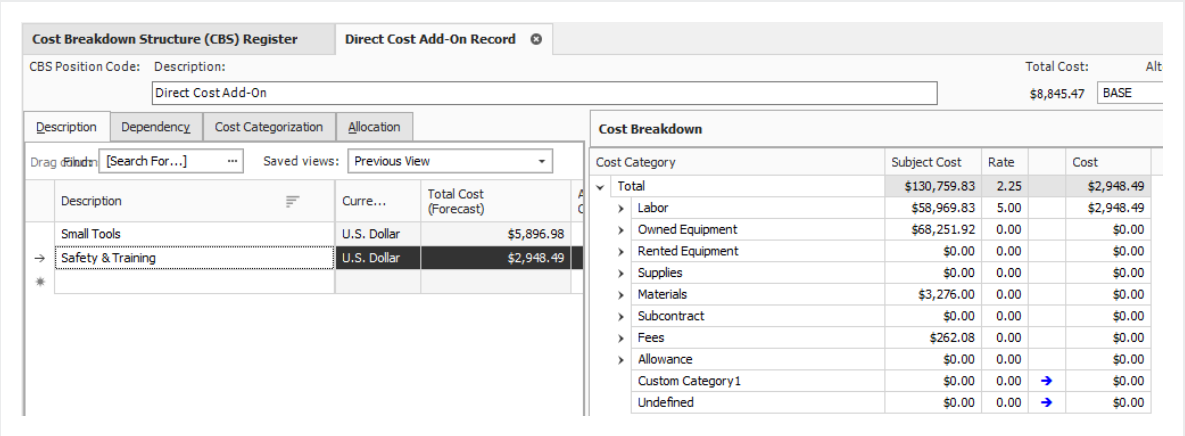
5. You already have Small Tools as your first line item. On the Description tab, type **Safety & Training** in the next blank row's Description field, then press **Tab**.

6. The Dependency Cost Breakdown appears on the right. Enter a rate of **5** for Labor Costs only.

7. Click **OK** to close the record.

You should end up with the following results





Congratulations, you have completed this exercise!

Lesson 6 Review

1. Default indirect costs are pre-built _____ _____ created by InEight Estimate, located within the CBS Register.
    a. billing rates
    b. cost items
    c. pay items

---

2. By default, any cost item you create in the CBS Register that is not assigned to a pay item is considered indirect cost.
    a. True
    b. False

---

3. The cost segment field in the CBS is used to indicate:
    a. Whether your costs will be considered job overhead, business overhead, or direct cost.
    b. The source of your costs (Detail, Plug or Quote).
    c. What pay item your cost item is assigned to.

Lesson 6 Summary

As a result of this lesson, you can:

- Explain how indirect costs are defined in InEight Estimate
- Estimate default indirect cost items
- Estimate user-defined indirect cost items

LESSON 7 – FINALIZE THE ESTIMATE

This lesson is primarily suited towards contractors who must add profit or markup to their total estimated cost, which will be submitted in the form of a bid or proposal. Most owners can divert from this lesson as it's more geared towards adding profit and markup. There are a few use cases in which an owner may wish to use the price breakdown structure. For example: to add risk, contingency, or reserves if it is preferred, these are not shown directly in the budget line items. The price breakdown structure also provides a summary level review of the total estimate and is a great reference during estimate reviews.

Lesson Duration: 45 Minutes

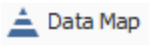
Lesson Objectives

After completing this lesson, you will be able to:

- Add job markup (profit)
- Use tools on the PBS form to review your estimate
- Spread Target Price over pay items
- Make bid adjustments

Lesson Topics

7.1 JOB MARKUP (PROFIT)

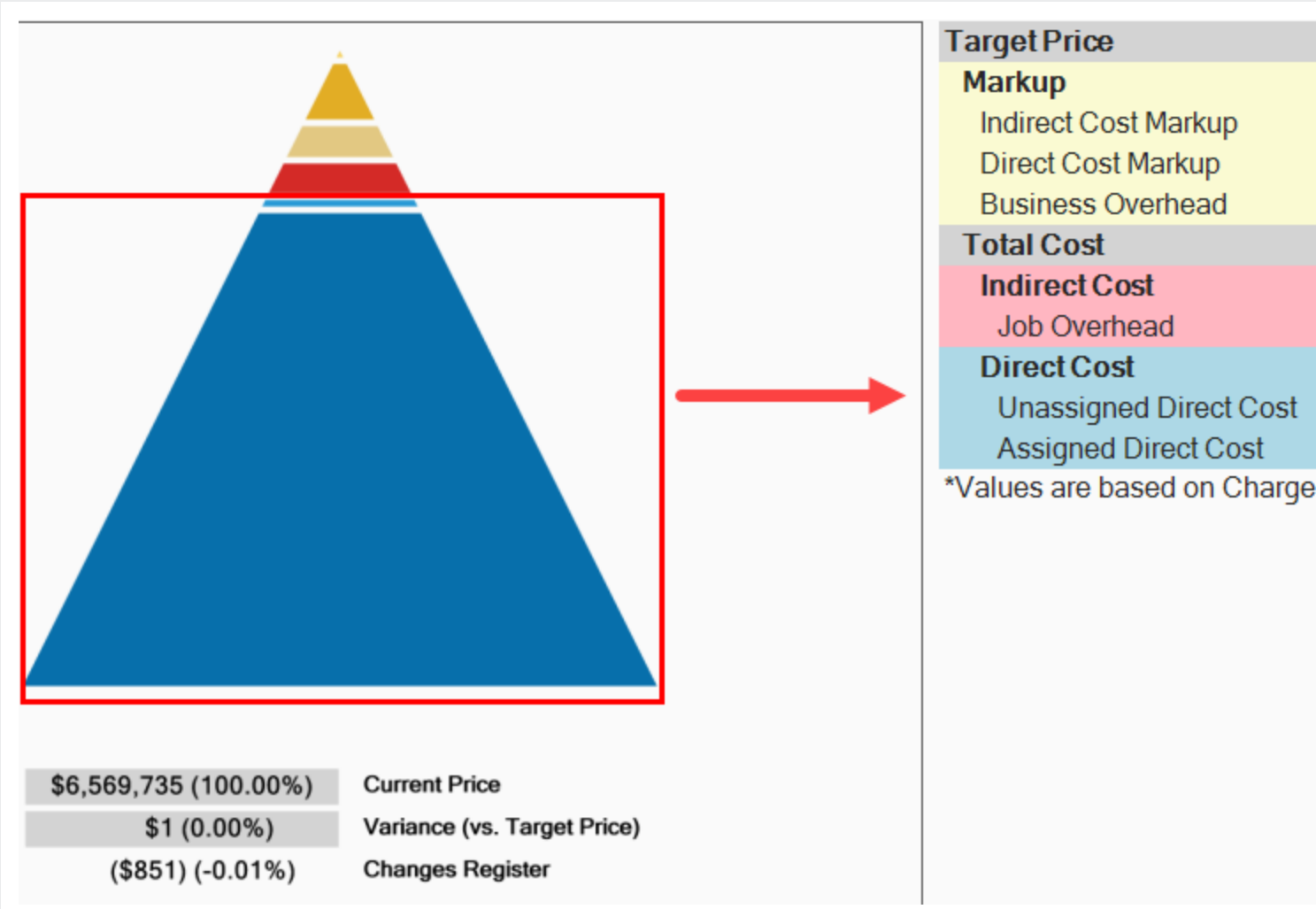
On the Data Map  notice how the different segments within the pyramid coincide with the percentage amounts that make up Direct Costs, Indirect Costs and Target Profit. Illustrations below show how the Data Map values correspond to the values that make up the cost and profit.

To open the Data Map, select the Price tab, then Data Map from the Overhead and Profit section.

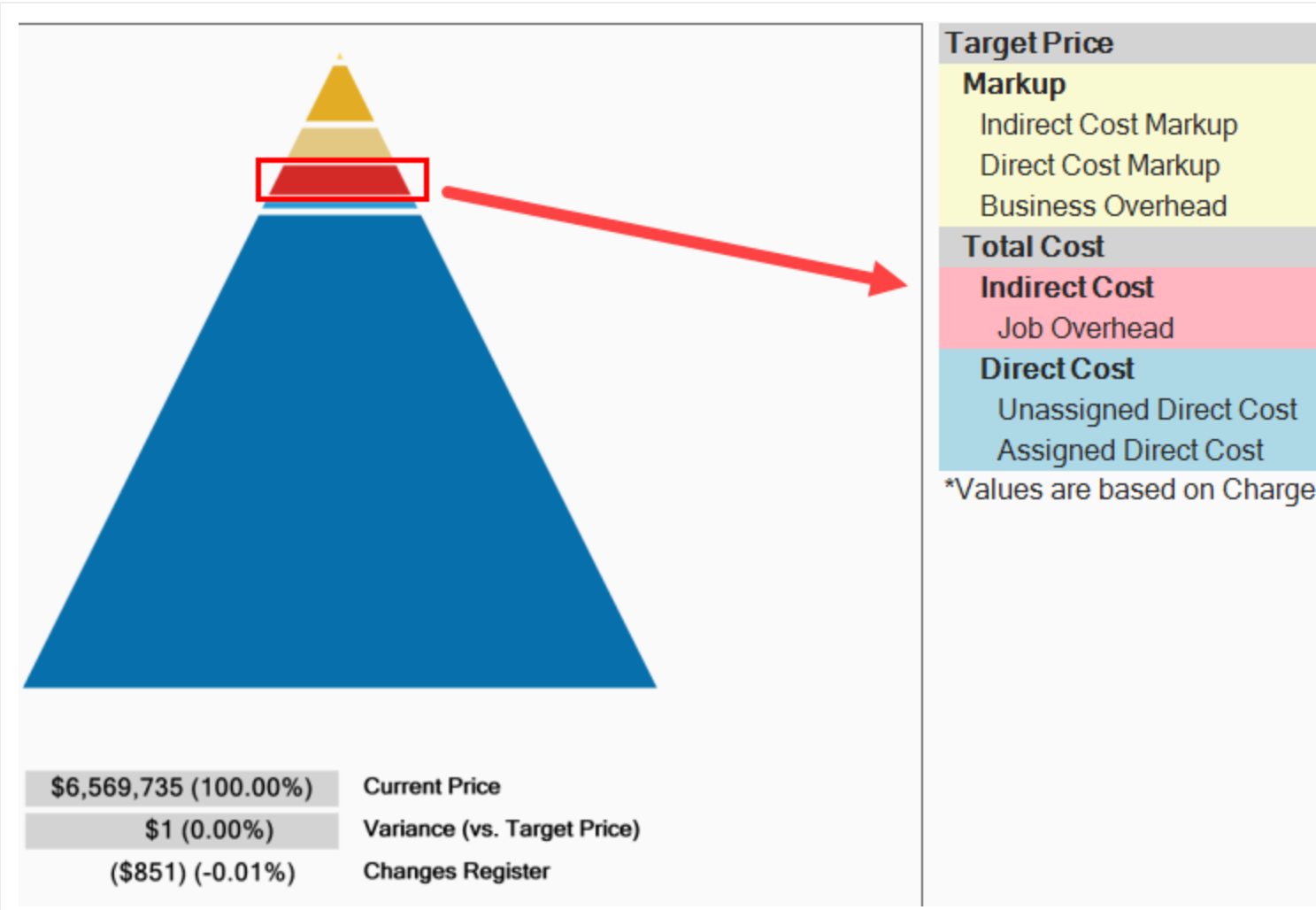
7.1.1 Target Price

For contractors building the price of your project is like building a pyramid. The foundation of your price consists of the direct costs of the job.

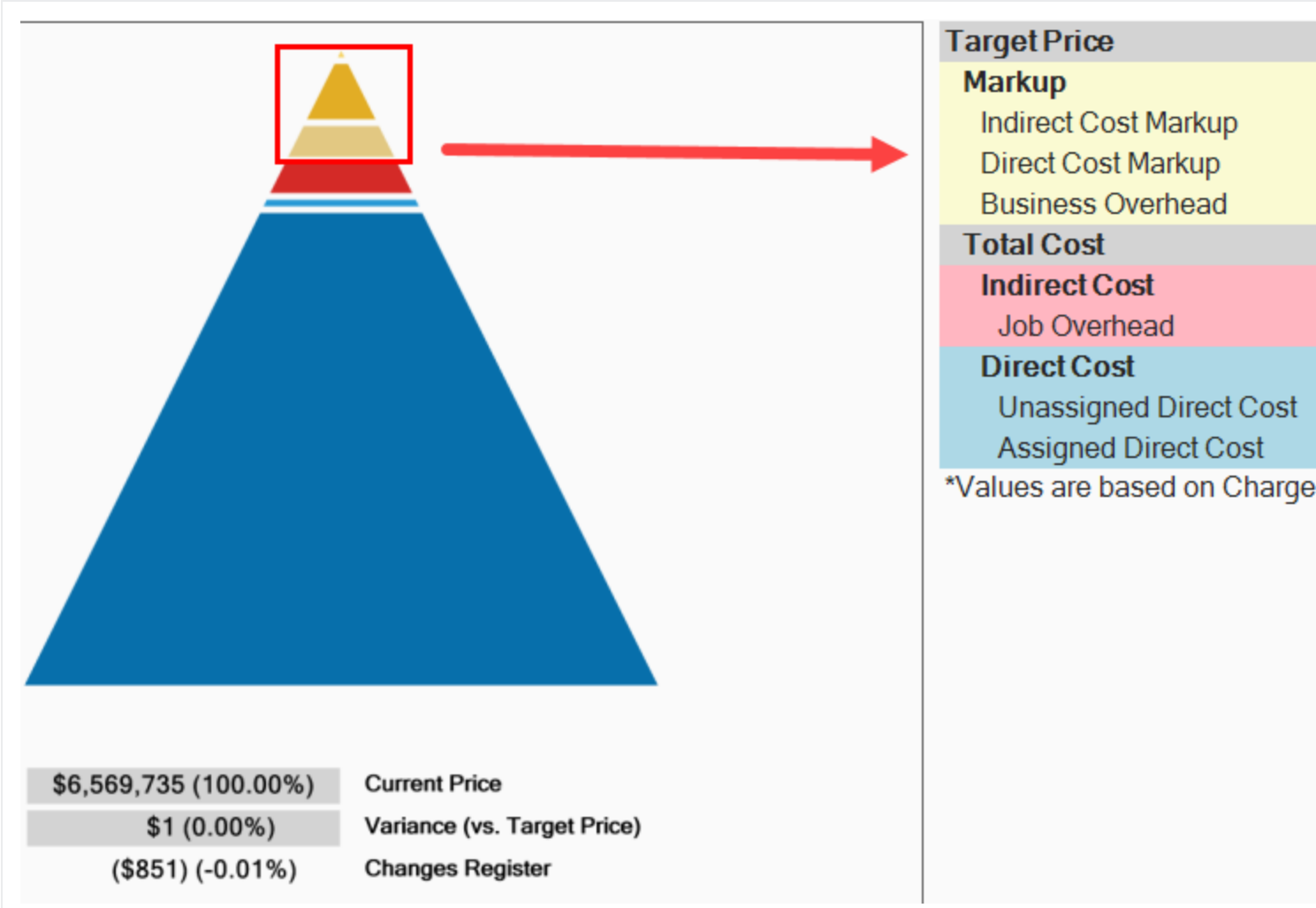
The images below represent a default examples.



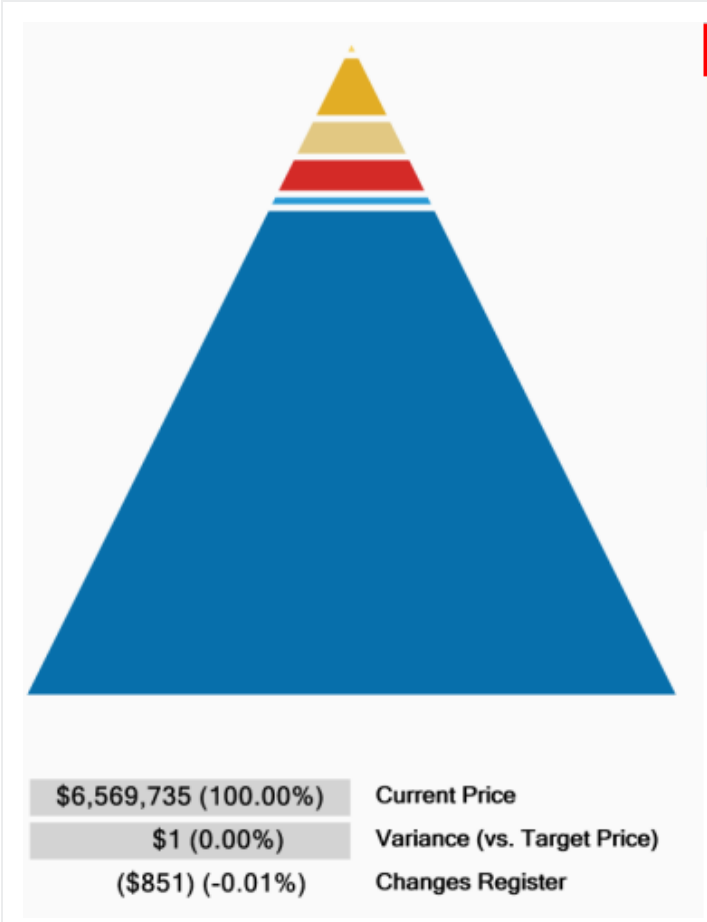
On top of your direct costs, you can decide if costs with a cost segment of business overhead should be indirect costs or markup. You estimate your direct and indirect costs in the CBS Register.



At the top of the pyramid you add an amount for profit. You add profit in the Price Breakdown Structure (PBS) form. There is a very small block at the top of the Data Map, which comprises 0.22% of Indirect Cost Markup.



The total of the direct cost, indirect cost, and profit in the project is referred to in InEight Estimate as the Target Price. This is the final price that you want to submit as your proposal.



Target Price
- **Markup**
  - Indirect Cost Markup
  - Direct Cost Markup
  - Business Overhead
- **Total Cost**
  - **Indirect Cost**
    - Job Overhead
  - **Direct Cost**
    - Unassigned Direct Cost
    - Assigned Direct Cost

*Values are based on Charge Rates

7.1.2 Price Breakdown Structure

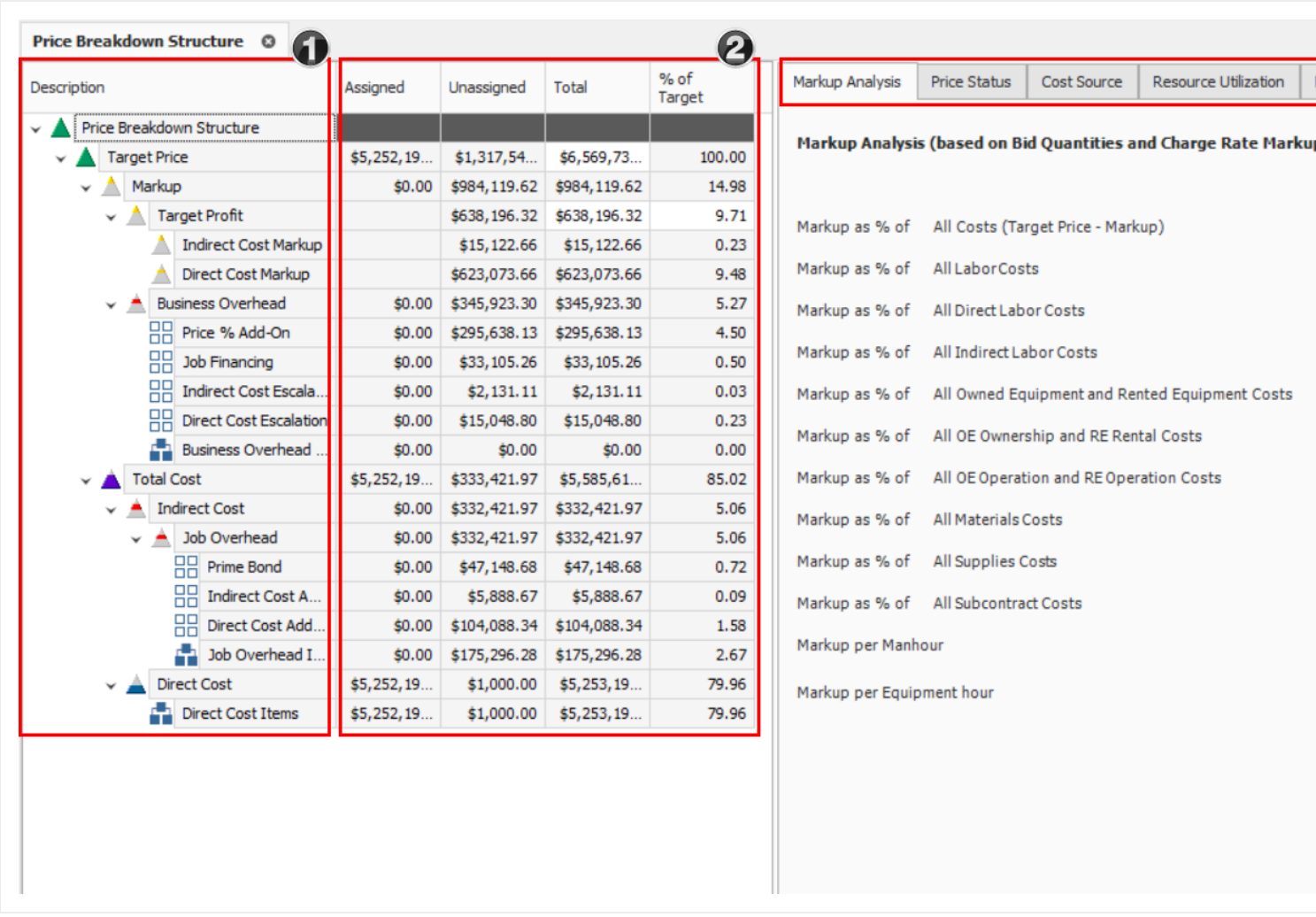
As you already practiced, your direct and indirect costs are estimated in the CBS. Your project's profit needs to be defined in the Price Breakdown Structure (PBS) form.

The main purpose of the Price Breakdown Structure (PBS) is to add markup (profit) to the estimate. The Price Breakdown Structure is a visual run-down of the costs and profit that make up your Target Price. It helps you analyze how your costs contribute to the price you are targeting, including the amount of profit you would like to include.

You can open the PBS from the InEight Estimate landing page by selecting the **Price** tab, then **Price Breakdown Structure (PBS)** from the Overhead and Profit section.

Overview – Price Breakdown Structure

	Name	Definition
1	PBS Description	The left side of the screen displays several cost classifications: • Target Profit • Business Overhead • Job Overhead • Direct Cost
2	Various Columns	The Assigned and Unassigned columns show which costs are either assigned or not assigned to pay items. Unassigned costs are spread back to pay items based on the distribution logic set in Job Properties > Pricing. The Total columns represents a summation of both columns. Each layer displays with an amount, and the percentage of the Target Price that this amount represents.
3	PBS Menu	The right side of the screen holds several tabbed pages of information. This information is useful in analyzing the job at a summary level.
4	Refresh Data	To ensure that you are always reviewing the most up-to-date factors and ratios, click the Refresh Summary Data button whenever you are reviewing the data.



TIP All costs in the Price Breakdown Structure are based on pay quantities (not forecast take-off quantities).

7.1.3 Markup vs. Margin

Let's look at the difference between Markup and Margin.

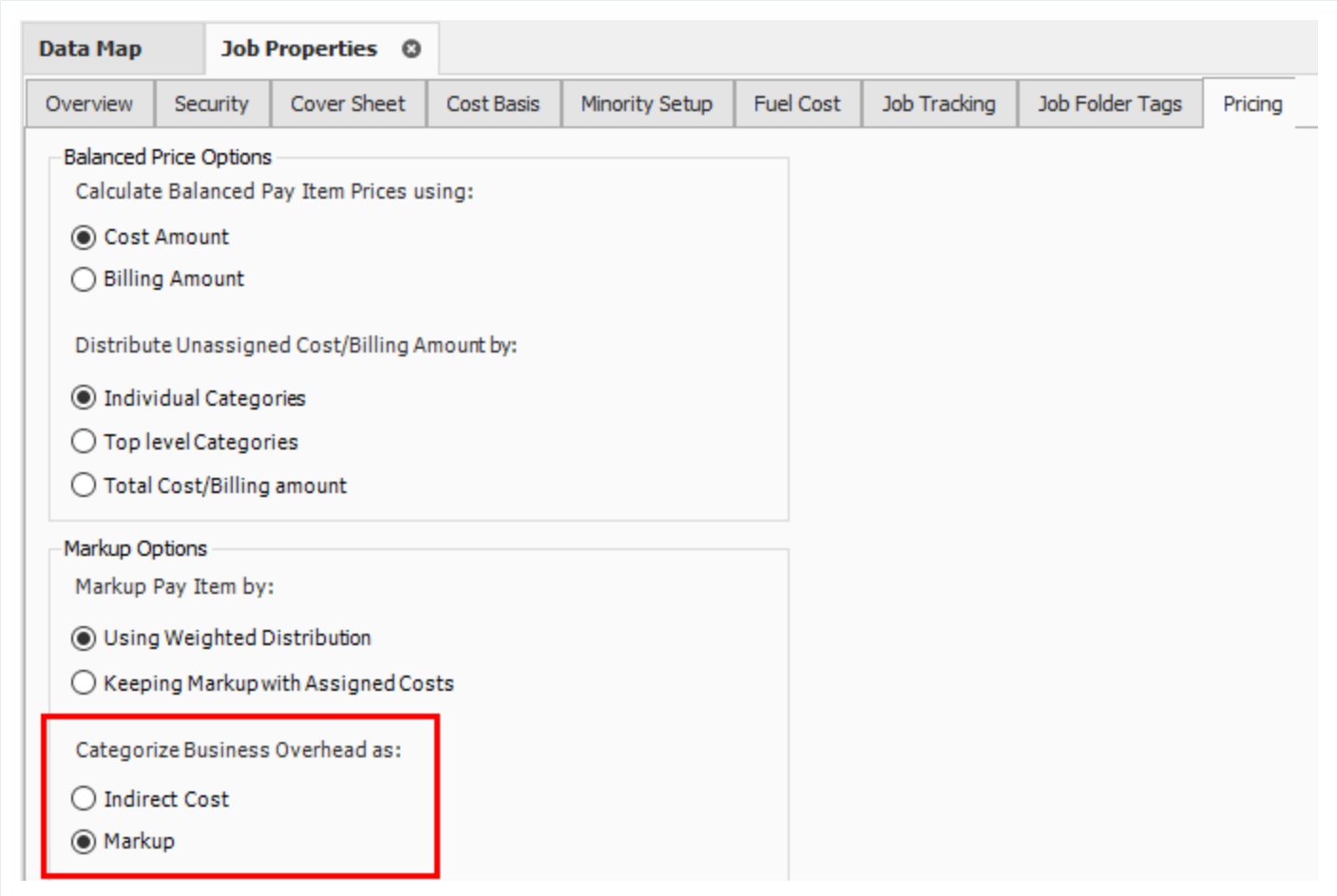
- Markup is a function of cost, while margin is a function of price
- Markup indicates how much you are marking up the cost
- Margin indicates what percentage of your price the markup represents

The percentages on the main PBS screen are margin, so you can see what percentage each category in the PBS represents compared to the total price. If you enter 10% in the Target Profit field, your profit will be 10% margin of your total price.

Description	Assigned	Unassigned	Total	% of Target
Price Breakdown Structure				
Target Price	$5,252,19...	$1,317,54...	$6,569,73...	100.00
Markup	$0.00	$984,119.62	$984,119.62	14.98
Target Profit		$638,196.32	$638,196.32	9.71
Business Overhead	$0.00	$345,923.30	$345,923.30	5.27
Total Cost	$5,252,19...	$333,421.97	$5,585,61...	85.02

When you open the Direct or Indirect Markup Records, the Rate percentage there indicates markup of the cost. If you enter 10% markup on $100, the markup will be $10.

Within Job Properties, you can choose if costs with a cost segment of business overhead should be indirect costs or markup. If selecting markup, then Business Overhead will be spread within the Markup category of the Price Breakdown Structure. The Total Markup will be the sum of Target Profit and all Items categorized as Business Overhead.



This lets you see the true total cost of the job, including the total markup inclusive of the business overhead. You can also create cost items and categorize them as business overhead, then possibly include overhead costs such as estimating or home office expenses. This provides you with added flexibility in marking up your job.

7.1.4 Define Profit

Before you define profit, review the PBS. You estimated your direct cost items, and you also estimated some indirect cost items in the CBS. You can view your direct and indirect cost totals on the Price Breakdown Structure. Notice you have not defined profit yet.

Description	Assigned	Unassigned	Total	% of Target
Price Breakdown Structure				
Target Price	$5,252,19...	$645,755.99	$5,897,950.68	100.00
Markup	$0.00	$315,692.95	$315,692.95	5.35
Target Profit		$0.00	$0.00	0.00
Indirect Cost Markup		$0.00	$0.00	0.00
Direct Cost Markup		$0.00	$0.00	0.00
Business Overhead	$0.00	$315,692.95	$315,692.95	5.35
Price % Add-On	$0.00	$265,407.78	$265,407.78	4.50
Job Financing	$0.00	$33,105.26	$33,105.26	0.56
Indirect Cost Escala...	$0.00	$2,131.11	$2,131.11	0.04
Direct Cost Escalation	$0.00	$15,048.80	$15,048.80	0.26
Business Overhead ...	$0.00	$0.00	$0.00	0.00
Total Cost	$5,252,19...	$330,063.05	$5,582,257.73	94.65
Indirect Cost	$0.00	$329,063.05	$329,063.05	5.58
Job Overhead	$0.00	$329,063.05	$329,063.05	5.58
Prime Bond	$0.00	$43,789.75	$43,789.75	0.74
Indirect Cost A...	$0.00	$5,888.67	$5,888.67	0.10
Direct Cost Add...	$0.00	$104,088.34	$104,088.34	1.76
Job Overhead I...	$0.00	$175,296.28	$175,296.28	2.97
Direct Cost	$5,252,19...	$1,000.00	$5,253,194.68	89.07
Direct Cost Items	$5,252,19...	$1,000.00	$5,253,194.68	89.07

You can define profit by entering a profit percentage directly on the PBS, or by modifying the Direct or Indirect Cost Markup Records.

The following steps walk you through plugging a Target Profit percentage directly on the PBS form.

7.1.4.1 Profit as a Percentage of Target Price

Step by Step — Add Profit as a Percentage of Target Price

1. Open your job in InEight Estimate.
2. From the InEight Estimate landing page, select the **Price** tab.
3. Select **Price Breakdown Structure (PBS)** from the Overhead and Profit section.
4. On the Target Profit row, enter a **numeric value** in the **%** of Target Price column, then press **Tab**.

   Notice that entering that Target Profit has the following effects, once you tab off the field:

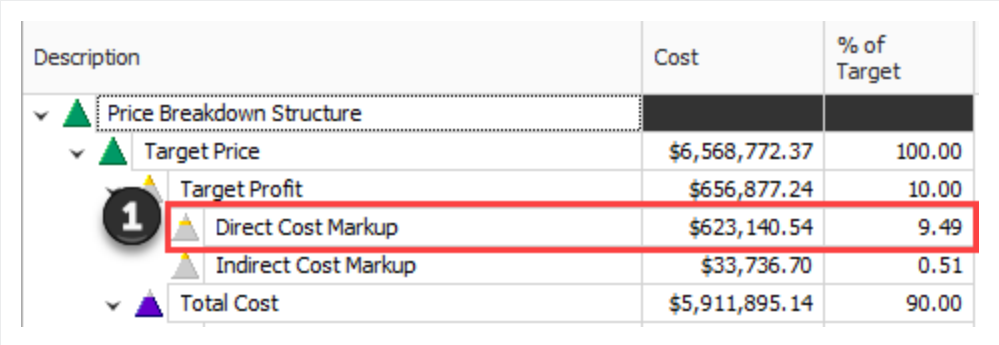
   - Your Target Price increases
   - Indirect and Direct Cost Markup values automatically have amounts pushed down to them
   - The amounts for both Prime Bond and Price % Add-On increase, as they are based on a percentage of the Target Price
   - Direct Cost and Job Overhead amounts don't change, but their % of Target Price changes

7.1.4.2 Profit Through Direct Cost Markup Record

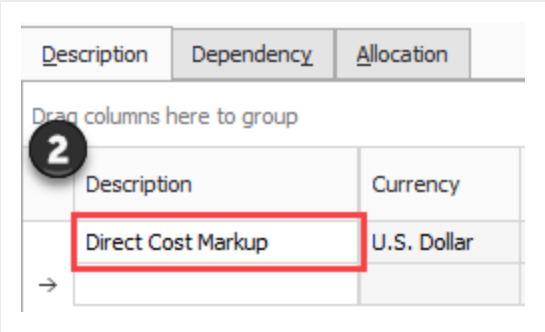
The following steps walk you through how to add profit as markup on the Direct Cost Markup record.

Step by Step — Modify the Direct Cost Markup Record

1. On the Price Breakdown Structure (PBS) form, double click on the **Direct Cost Markup** row.

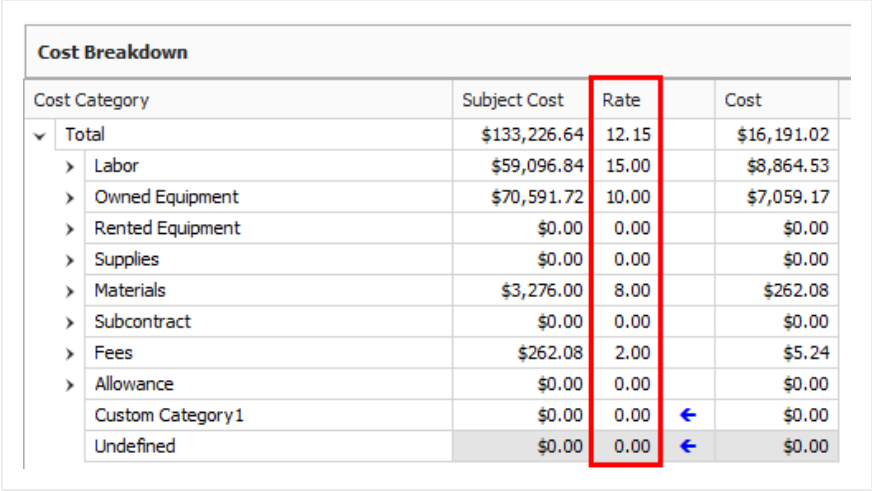


2. In the Markup Cost Item Record, override the Default entry with **Direct Cost Markup** in the Description field.



3. In the Rate column on the Dependency Cost Breakdown, a numeric value for your rates in the Labor Cost , Owned Equipment, Materials, and Fees categories. Reset the other categories back to **0**.

   - Notice the average rate rolls up at the Total cost category level

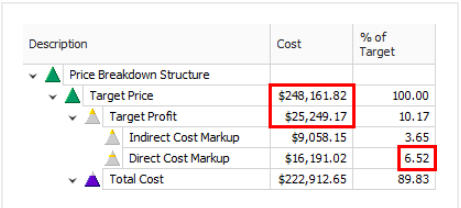


Cost Breakdown

Cost Category	Subject Cost	Rate		Cost
Total	$133,226.64	12.15		$16,191.02
Labor	$59,096.84	15.00		$8,864.53
Owned Equipment	$70,591.72	10.00		$7,059.17
Rented Equipment	$0.00	0.00		$0.00
Supplies	$0.00	0.00		$0.00
Materials	$3,276.00	8.00		$262.08
Subcontract	$0.00	0.00		$0.00
Fees	$262.08	2.00		$5.24
Allowance	$0.00	0.00		$0.00
Custom Category1	$0.00	0.00	←	$0.00
Undefined	$0.00	0.00	←	$0.00

4. Click **OK** to save your changes and return to the PBS.

   - The Direct Cost Markup now is a different percentage of the Target Price, and the Target Profit and Target Price have changed



Description	Cost	% of Target
Price Breakdown Structure		
Target Price	$248,161.82	100.00
Target Profit	$25,249.17	10.17
Indirect Cost Markup	$9,058.15	3.65
Direct Cost Markup	$16,191.02	6.52
Total Cost	$222,912.65	89.83

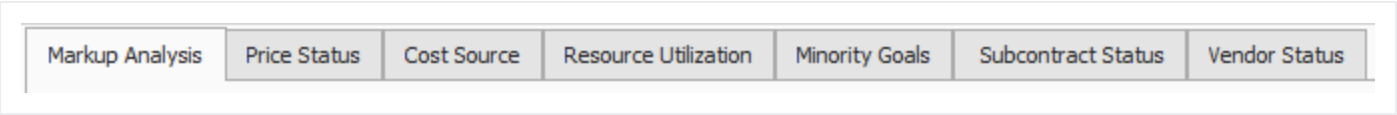
5. Click the **Refresh Summary Data** button on the PBS to see the changes reflected.

7.2 COST ESTIMATE AUDIT/REVIEW

InEight Estimate offers built-in reports to double check your estimate and review different aspects of your project, including material costs, quotes, man-hours and production.

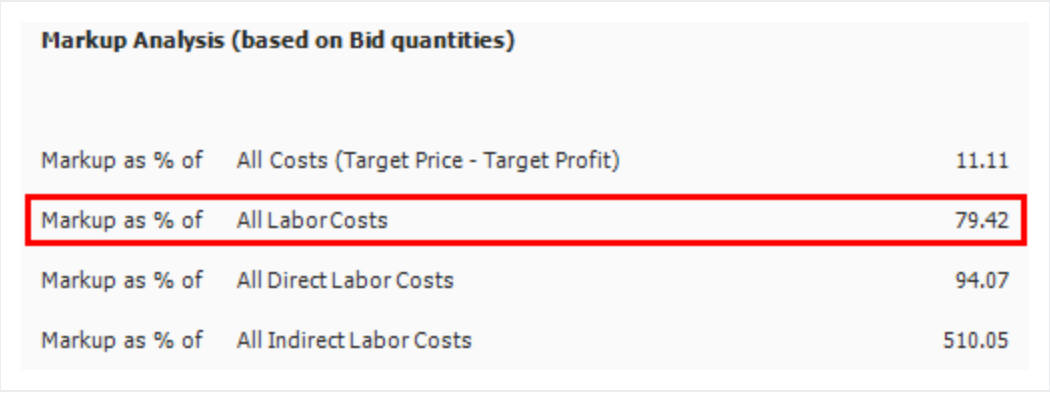
7.2.1 Price Breakdown Structure Tabs

The purpose of the tabs on the Price Breakdown Structure is to assist with estimate reviews.



7.2.1.1 Markup Analysis

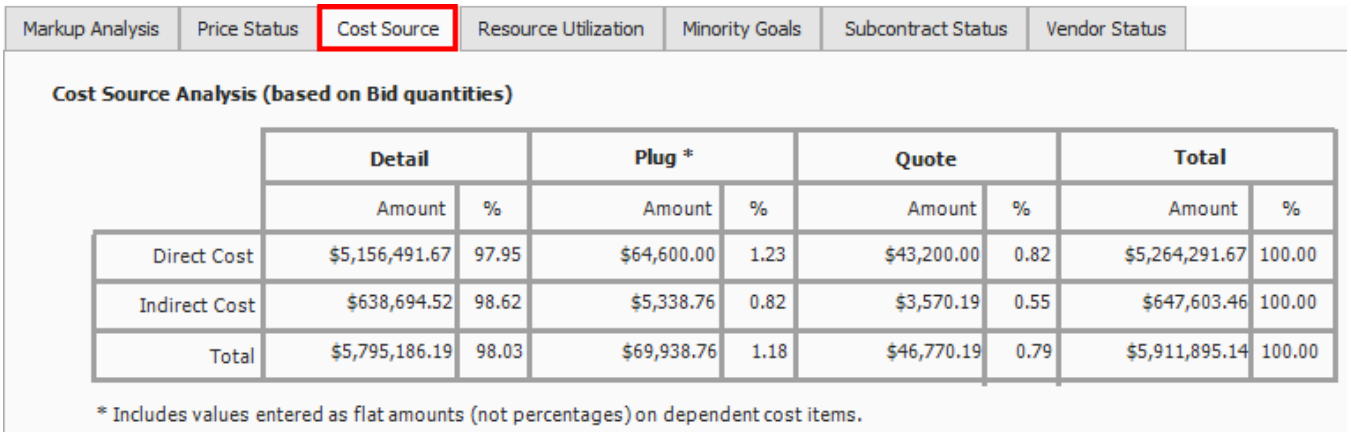
On this tab, you can compare your profit to your costs for labor, subcontract and other cost groupings. By seeing the ratios of your markup compared to your different cost categories, you can gauge if you have the right balance of costs in your estimate.



For example, if your markup is more than 100% of your Labor cost, it may indicate that you don't have enough labor cost in your estimate to cover the work, which could indicate labor cost overruns during execution that would eat into your profit margin.

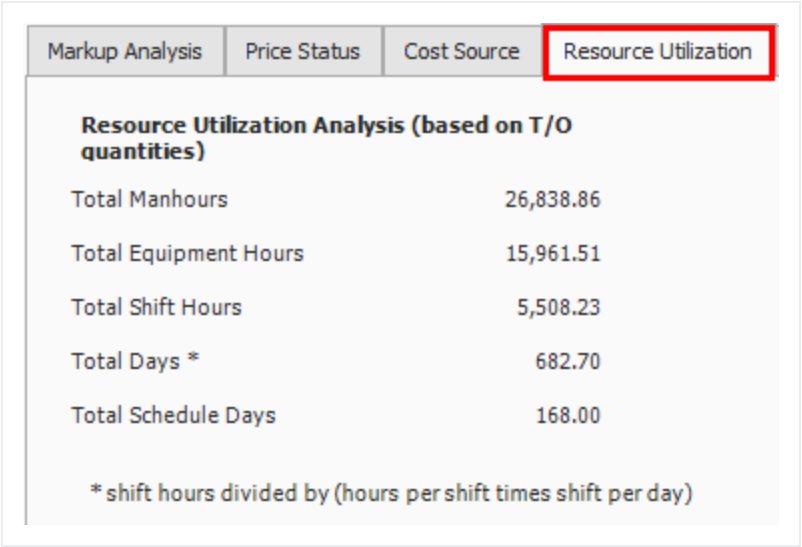
7.2.1.2 Cost Source

The Cost Source tab shows the breakdown of Detail, Plug and Quote cost sources, as well as the amounts and percentages of each that are attributable to Direct and Indirect cost. Your Plug cost source should be the lowest percentage.



7.2.1.3 Resource Utilization

The Resource Utilization tab shows a breakdown of the man-hours and equipment hours utilized on the job, based on take-off quantities.

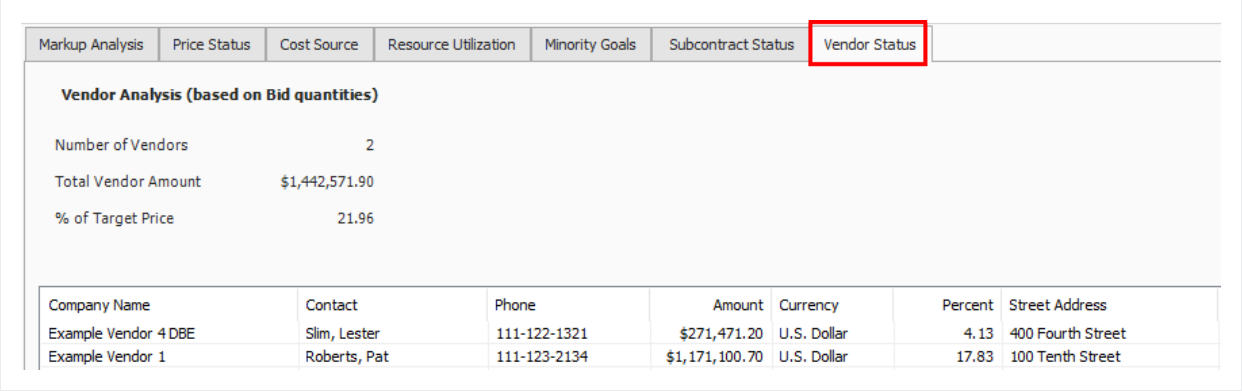


7.2.1.4 Subcontract Status

The Subcontract Status tab displays a breakdown of subcontractor amounts, costs, and percentages for quoted cost items. This is a good place to review how much of your estimate is subcontracted.

7.2.1.5 Vendor Status

The Vendor Status tab displays a breakdown of vendor information, including amounts and percentages of the Target Price represented by vendors. This is a good place to review how much of your estimate costs come from vendor quotes.



7.3 SPREAD TARGET PRICE OVER PAY ITEMS

In the Cost Breakdown Structure you generated your direct and indirect costs, and in the Price Breakdown Structure you added profit to come up with a Target Price for the bid, but you still haven't decided how to spread the Target Price over your pay items.

In Lesson 4 you created pay items for the project in the Pay Item & Proposal Register. You can now go back to the Pay Item & Proposal Register to distribute your Target Price over those pay items.

7.3.1 Current Price vs. Target Price

In InEight Estimate, Current Price means the total price that is currently assigned on your pay items. Open the Pay Item & Proposal Register to see what the Current Price is for your pay items (Price > Pay Item & Proposal).

At this point there is no pricing on your pay items, so your Current Price is $0.00. This is because you have not yet spread your Target Price (the total of your cost and profit) over your pay items.

Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Meas...	Unit Price (cu...	Total Price (current)
+ Mobiliation	1.00	1.00	Each	$0.00	$0.00
+ Clearing and Grubbing	10.00	15.00	Acre	$0.00	$0.00
+ Excavation	50,000.00	40,000.00	CY	$0.00	$0.00
+ 10 " PVC Pipe	1,000.00	1,000.00	LF	$0.00	$0.00

7.3.2 Proposal Recap

On the Pay Item & Proposal Register, there is a Proposal Recap table where you can compare your Current Price to your Target Price to see if there is any variance.

Proposal Recap - Training Job

	Current	Target	Forecast	Variance	
Price:	**$6,455,450.00**	$6,506,904.35	$6,462,850.00	$51,454.35	**ADD**
Profit:	$599,221.88	$650,676.22	$655,858.61	$5,182.39	**CUT**
Margin%:	9.28	10.00	10.15	$10,653.01	**CUT**

Ideally, you want to add pricing to your pay items until your Current Price equals your Target Price, so that your Variance equals zero. That way you know you are covering all your costs and getting the profit you want.

Notice the Variance column will indicate if you need to ADD or CUT pricing on your pay items to hit your Target Price.

7.3.3 Spread the Target Price

For lump sum contracts, spreading the Target Price may be as simple as spreading it to a single pay item that represents the entire project. However, most jobs will have at least a few pay items defined by the owner, and Unit Price contracts will have many pay items.

There are two main ways to distribute pricing onto your pay items:

1. Define pay item prices manually, by entering a unit or total price, or a margin percentage.
2. Use InEight Estimate's AutoPrice feature to distribute pricing automatically.

7.3.4 Define Pricing for Pay Items Manually

First, you will walk through the process of defining pricing manually. This method requires filling in each item's price based solely on your own judgment.

Step by Step — Define Pricing Manually

1. From the InEight Estimate landing page, select the **Price** tab.
2. Select **Pay Item & Proposal** from the Pay Items section.
    - Review the Proposal Recap and determine where adds or cuts are needed. If your Current Price is $0.00, you need to add the entire Target Price to your pay items

	Current	Target	Forecast	Variance	
Price:	**$0.00**	$248,161.82	$0.00	$248,161.82	**ADD**
Profit:	($222,912.65)	$25,249.17	($219,532.90)	$244,782.07	**ADD**
Margin%:	0.00	10.17	0.00	$244,399.25	**ADD**

3. Select a **pay item**.
    - Notice at the top-right of your register you have an Item Recap to tell you what the direct cost, overhead and profit would be for the Civil Work pay item if it was balanced

Item Recap - 1000 Mobilization

	Balanced Unit	Current Unit
Price:	$31,225.08	**$0.00**
Profit:	$3,216.65	($28,008.43)
Total Cost:	$28,008.43	$28,008.43
Business Overhead:	$1,929.76	
Job Overhead:	$6,078.66	
Unassigned Direct Cost:	$0.00	
Assigned Direct Cost:	$20,000.00	

4. First, define pricing manually. In the **Total Price (current) field** for your selected pay item, enter a **dollar amount**.

Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Meas...	Unit Price (current)	Total Price (current)
Mobilization	1.00	1.00	Lump Sum	$20,000.00	$20,000.00

5. Use Go to Column (<Ctrl> - G) to find the **% Margin** column, bring it in next to the Total Price (current) column, and adjust your % Margin amount as needed.

Pay Item Number	Description	Pay Qua...	Forecast (T/O) Quantity	Unit of Meas...	Curre...	Unit Price (current)	Total Price (current)	% Margin
+ 1000	Mobilization	1.00	1.00	Lump Sum	U.S. Dollar	$20,000.00	$20,000.00	-40.04
+ 2000	Clearing & Grubbing	10.00	15.00	Acre	U.S. Dollar	$4,705.04	$47,050.40	5.00
+ 3000	Excavation	50,000.00	40,000.00	CY	U.S. Dollar	$0.00	$0.00	0.00
+ 4000	10" PVC Pipe	1,000.00	1,000.00	LF	U.S. Dollar	$0.00	$0.00	0.00

7.3.5 Use AutoPrice to Balance and Hit the Target Total

Perhaps you want to get a head start and have InEight Estimate spread your Target Price proportionately over your pay items for you. This can be done using the InEight Estimate AutoPrice

feature.

TIP Once distributed, you will still have the ability to adjust your pricing on pay items manually as needed.

Look at how you can use the AutoPrice feature.

Step by Step — Use AutoPrice to Balance and Hit the Target Total

1. Open the your job in InEight Estimate.
2. From the InEight Estimate landing page, select the **Price** tab.
3. Click on **Pay Item & Proposal** to open the Pay Item & Proposal Register.
4. On the Pay Item & Proposal Register menu, choose **Actions > Balanced Bid > Hit Target Total.**
5. Review the Proposal Recap and see that the Variance is now $0.00. Now that the job is balanced, you can see that the Current Price and the Target Price are the same, indicating that the costs and profit are spread proportionately over your pay items.

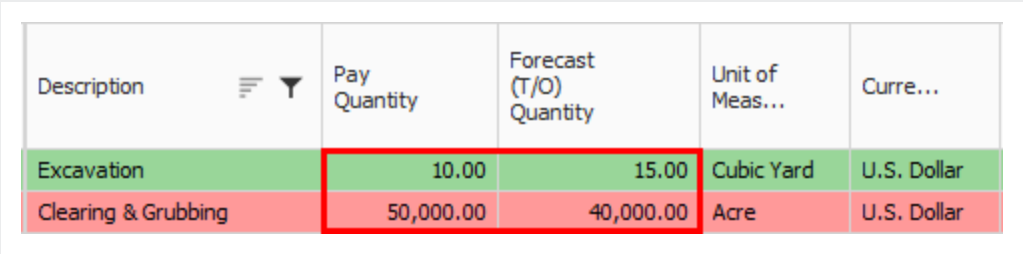
7.3.6 Use AutoPrice to Unbalance and Hit the Target Total

The Autoprice to Unbalance feature in InEight Estimate can automatically distribute profit to account for your over- and underrun items.

InEight Estimate will take profit from your underrun and put it on your overrun by using the Actions > Unbalanced > Hit Target Total feature. The purpose is to maximize your profit by spreading it strategically between these items.

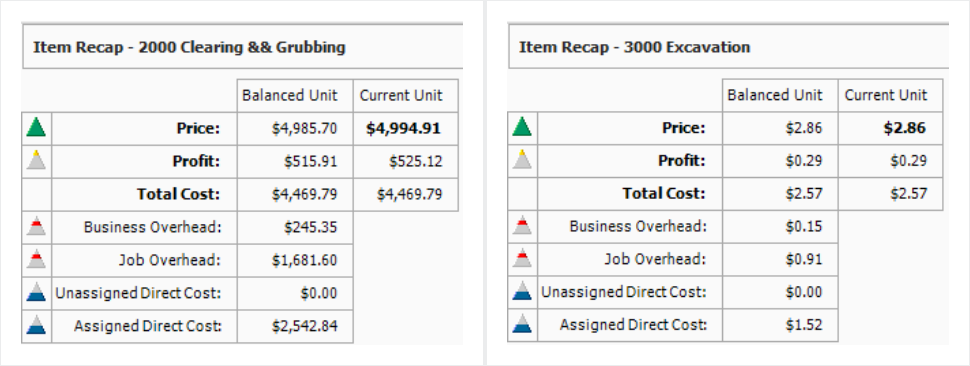
Step by Step — Unbalance Hit Target Total

1. You may encounter overrun and/or underrun items in the Pay Item & Proposal Register of your job.



Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Meas...	Curre...
Excavation	10.00	15.00	Cubic Yard	U.S. Dollar
Clearing & Grubbing	50,000.00	40,000.00	Acre	U.S. Dollar

2. If you do, highlight the row for each item to view it's current balanced item recap.



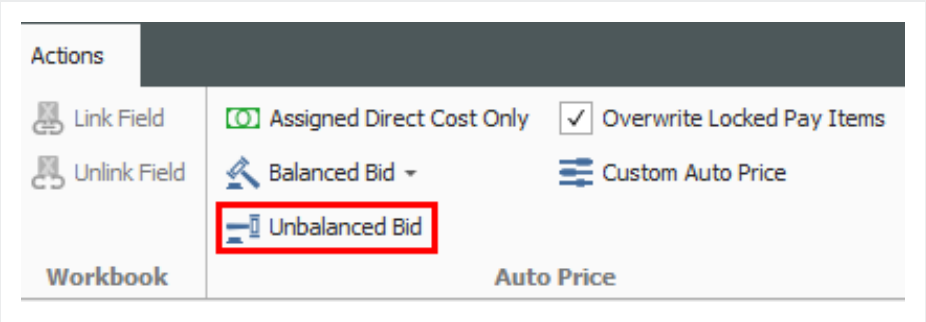
Item Recap - 2000 Clearing && Grubbing

	Balanced Unit	Current Unit
Price:	$4,985.70	**$4,994.91**
Profit:	$515.91	$525.12
Total Cost:	$4,469.79	$4,469.79
Business Overhead:	$245.35	
Job Overhead:	$1,681.60	
Unassigned Direct Cost:	$0.00	
Assigned Direct Cost:	$2,542.84	

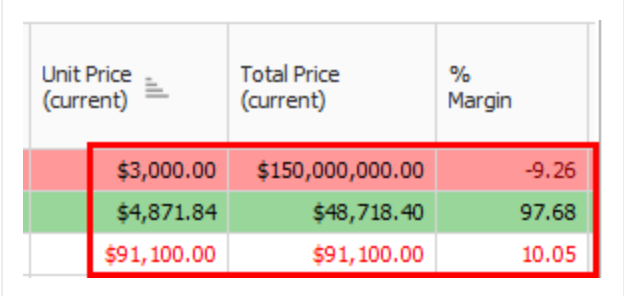
Item Recap - 3000 Excavation

	Balanced Unit	Current Unit
Price:	$2.86	**$2.86**
Profit:	$0.29	$0.29
Total Cost:	$2.57	$2.57
Business Overhead:	$0.15	
Job Overhead:	$0.91	
Unassigned Direct Cost:	$0.00	
Assigned Direct Cost:	$1.52	

3. On the Pay Item & Proposal Register menu, choose **Actions > Unbalanced Bid**.

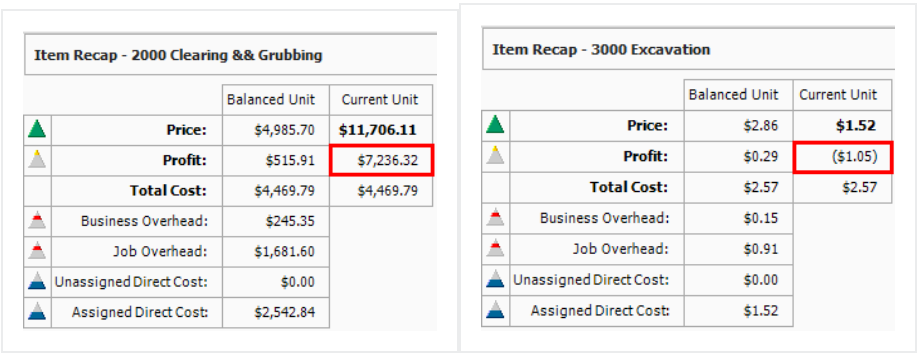


- You will see the changes reflected and how the profit was spread to your overrun and underrun items



Unit Price (current)	Total Price (current)	% Margin
$3,000.00	$150,000,000.00	-9.26
$4,871.84	$48,718.40	97.68
$91,100.00	$91,100.00	10.05

- In the example shown, highlighting each item will show that all your overhead and profit from Excavation was put onto Clearing & Grubbing.



Item Recap - 2000 Clearing && Grubbing

	Balanced Unit	Current Unit
Price:	$4,985.70	**$11,706.11**
Profit:	$515.91	$7,236.32
Total Cost:	$4,469.79	$4,469.79
Business Overhead:	$245.35	
Job Overhead:	$1,681.60	
Unassigned Direct Cost:	$0.00	
Assigned Direct Cost:	$2,542.84	

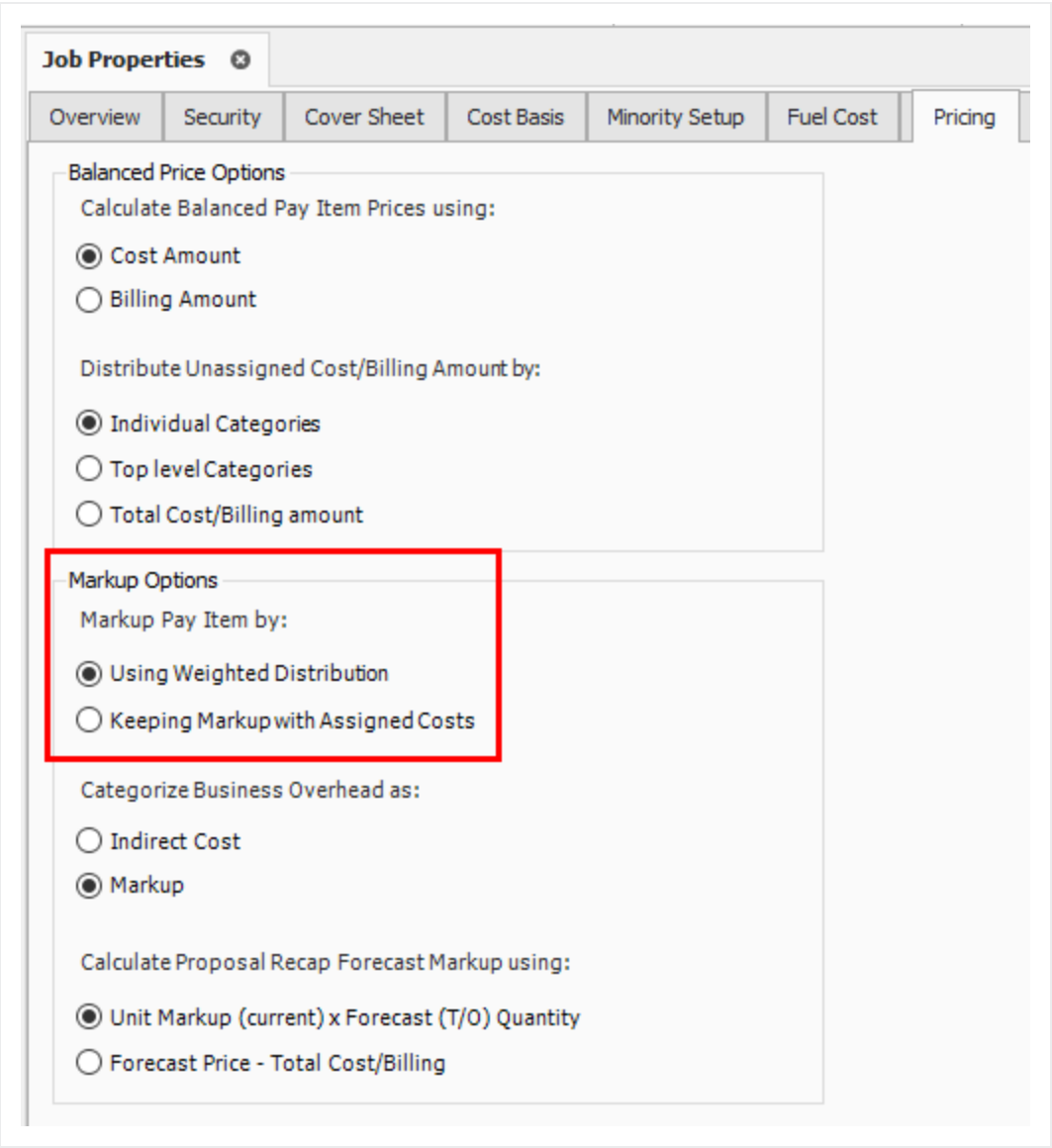
Item Recap - 3000 Excavation

	Balanced Unit	Current Unit
Price:	$2.86	**$1.52**
Profit:	$0.29	($1.05)
Total Cost:	$2.57	$2.57
Business Overhead:	$0.15	
Job Overhead:	$0.91	
Unassigned Direct Cost:	$0.00	
Assigned Direct Cost:	$1.52	

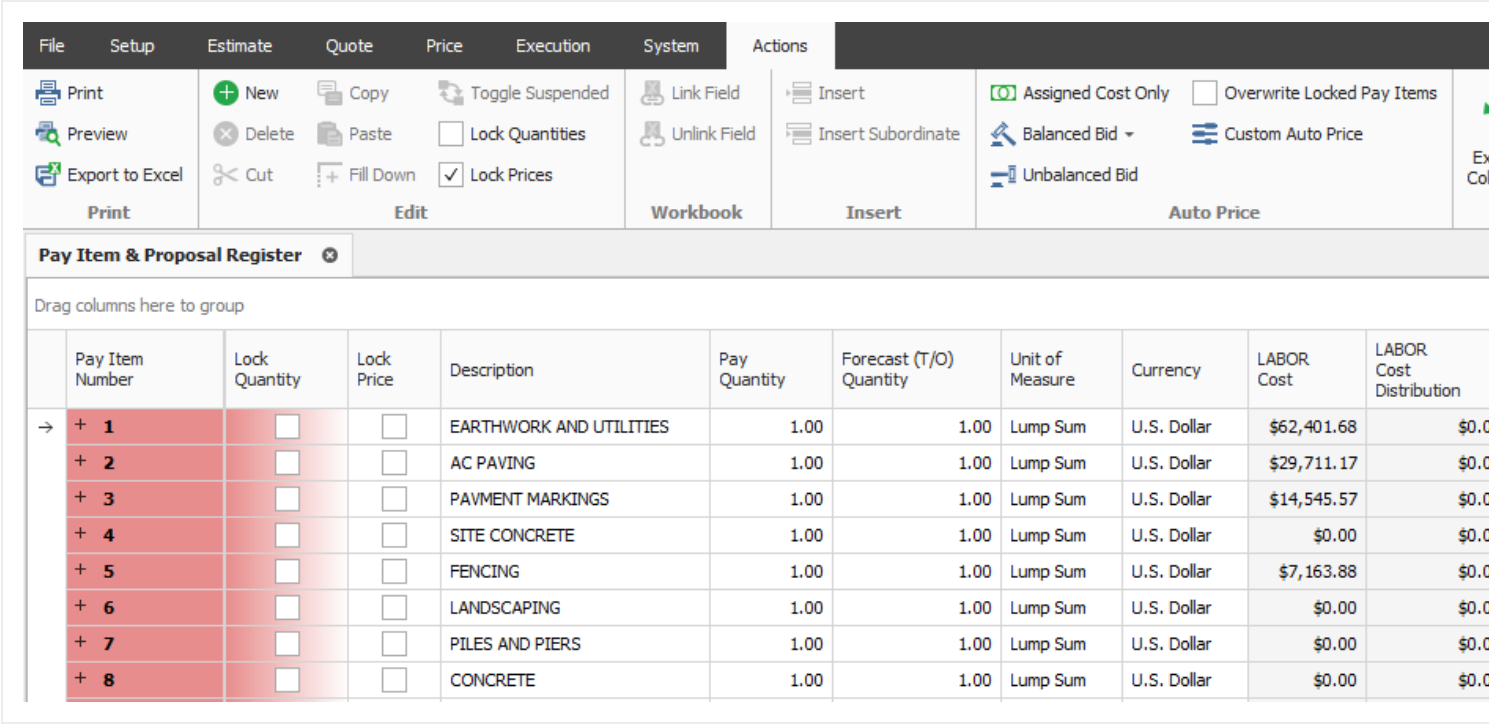
7.4 SELECTIVE PAY ITEM MARKUP

Estimate has a streamlined process to estimate the cost of a project and price the work to ensure all unassigned costs and markup are included in the final price of the project. For markup to be spread to pay items, a weighted distribution method is used as determined in the Job Properties, Pricing tab. It might be desirable for markup percentages to not be distributed, but rather directly applied to the costs assigned to any particular pay item.

This option can be set to keep markup with assigned costs for establishing a pay item price.



Additionally, this option can be used to isolate the markup and apply it only to specific pay items. The following is an example of a dependent cost item being used to mark up the labor of select site work pay items by 25%.



Pay Item Number	Lock Quantity	Lock Price	Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Measure	Currency	LABOR Cost	LABOR Cost Distribution
+ 1	☐	☐	EARTHWORK AND UTILITIES	1.00	1.00	Lump Sum	U.S. Dollar	$62,401.68	$0.0
+ 2	☐	☐	AC PAVING	1.00	1.00	Lump Sum	U.S. Dollar	$29,711.17	$0.0
+ 3	☐	☐	PAVMENT MARKINGS	1.00	1.00	Lump Sum	U.S. Dollar	$14,545.57	$0.0
+ 4	☐	☐	SITE CONCRETE	1.00	1.00	Lump Sum	U.S. Dollar	$0.00	$0.0
+ 5	☐	☐	FENCING	1.00	1.00	Lump Sum	U.S. Dollar	$7,163.88	$0.0
+ 6	☐	☐	LANDSCAPING	1.00	1.00	Lump Sum	U.S. Dollar	$0.00	$0.0
+ 7	☐	☐	PILES AND PIERS	1.00	1.00	Lump Sum	U.S. Dollar	$0.00	$0.0
+ 8	☐	☐	CONCRETE	1.00	1.00	Lump Sum	U.S. Dollar	$0.00	$0.0

Exercise 7.1 — Manually Price Pay Items

To finalize your bid proposal, you will apply final pricing (costs and profit) to your pay items either manually or using the AutoPrice tool. In this exercise, you will practice entering prices manually for your pay items. Complete the following steps, using your E101 – Training Job.

1. Continue manually pricing items in the Pay Item & Proposal Register.

2. Type **2.75** in the Unit Price (current) column for pay item Unclassified Excavation.

3. Type **2** in the % Margin field for pay item 4000 – 10" PVC Pipe.

4. Check your variance to see if you need to add or cut your current pricing to hit your Target Price.

You should end up with the following results

Pay Item Number	Row Nu...	Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Meas...	Unit Price (current)	Total Price (current)	% Margin
+ 1000	1	Mobilization	1.00	1.00	Lump Sum	$20,000.00	$20,000.00	-40.04
+ 2000	2	Clearing & Grubbing	10.00	15.00	Acre	$4,705.04	$47,050.40	5.00
+ 3000	3	Excavation	50,000.00	40,000.00	CY	$2.75	$137,500.00	6.44
+ 4000	4	10" PVC Pipe	1,000.00	1,000.00	LF	$22.00	$22,000.00	1.99

According to the Proposal Recap, you need to add $21,611.42 to reach your Target Price.

Proposal Recap - E101 - Training Job PB2

	Current	Target	Forecast	Variance	
Price:	**$226,550.40**	$248,161.82	$222,575.60	$21,611.42	**ADD**
Profit:	$3,637.75	$25,249.17	$3,042.70	$22,206.47	**ADD**
Margin%:	1.61	10.17	1.37	$21,823.65	**ADD**

Congratulations, you have completed this exercise!

7.5 BID ADJUSTMENTS

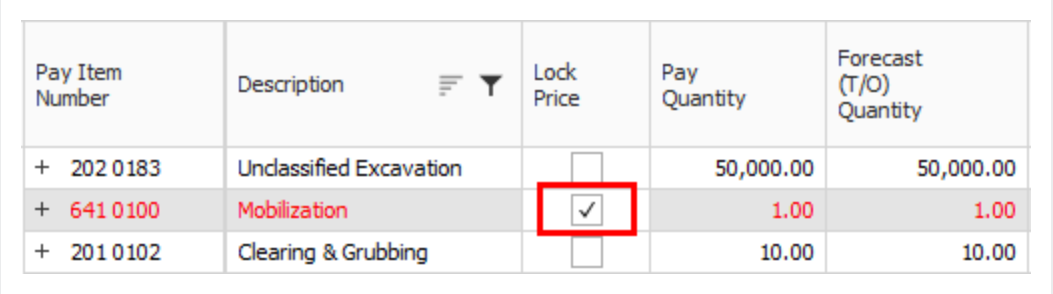
Often you will want to continue adjusting certain pay items and then rebalance to hit the target total.

7.5.1 Lock Price

You can lock down a pay item price and it will not factor in future rebalancing.

Step by Step — Lock Price

1. Select the **Lock Price** checkbox on an item's row.



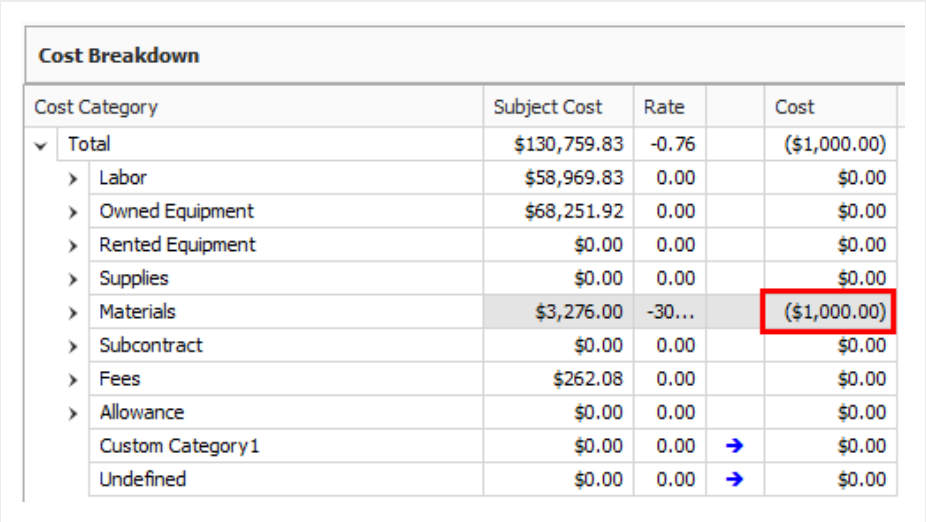
Pay Item Number	Description	Lock Price	Pay Quantity	Forecast (T/O) Quantity
+ 202 0183	Unclassified Excavation	☐	50,000.00	50,000.00
+ 641 0100	Mobilization	☑	1.00	1.00
+ 201 0102	Clearing & Grubbing	☐	10.00	10.00

2. After making further adjustments in the next step by step, you will return to the Pay Item & Proposal to rebalance.
    - You can continue to adjust at previous levels aside from solely in the Pay Item & Proposal Register
    - For example, you could make a last-minute adjustment in the PBS or CBS. You can make adjustments anywhere, but for this example an adjustment will be made in the Direct Cost Add-On record at the CBS level

Step by Step — Make Last Minute Bid Adjustments

1. With your job open, select the **Estimate** tab.
2. Click on **Cost Breakdown Structure** to open the CBS.
3. Double click on the row header to open the **Direct Cost Add-On** dependent cost item record.

4. Under the Description tab on the left, click in the blank row under the **Description column**.
5. Type in a **description**.
6. Make the adjustment by typing a **numeric value** in the **Cost column** of the Materials Cost category under the Cost Breakdown section on the right.



Cost Breakdown

Cost Category	Subject Cost	Rate		Cost
Total	$130,759.83	-0.76		($1,000.00)
Labor	$58,969.83	0.00		$0.00
Owned Equipment	$68,251.92	0.00		$0.00
Rented Equipment	$0.00	0.00		$0.00
Supplies	$0.00	0.00		$0.00
Materials	$3,276.00	-30...		($1,000.00)
Subcontract	$0.00	0.00		$0.00
Fees	$262.08	0.00		$0.00
Allowance	$0.00	0.00		$0.00
Custom Category 1	$0.00	0.00	→	$0.00
Undefined	$0.00	0.00	→	$0.00

- To make a cut, enter a negative value, i.e. -1000

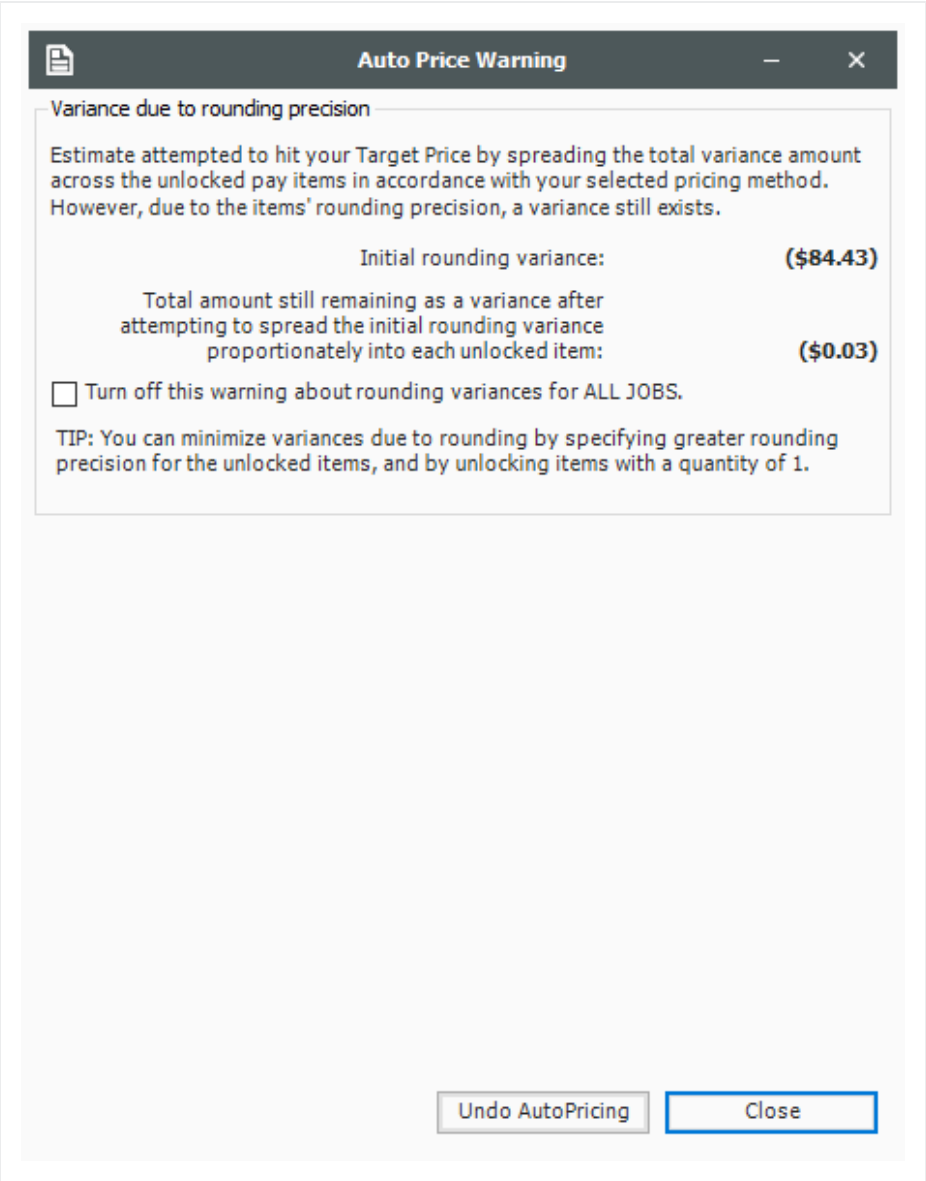
7. Press the **Tab** key, and your adjustment will be reflected on the left-hand side.

Description | Dependency | Cost Categorization | Allocation

Drag columns here to group

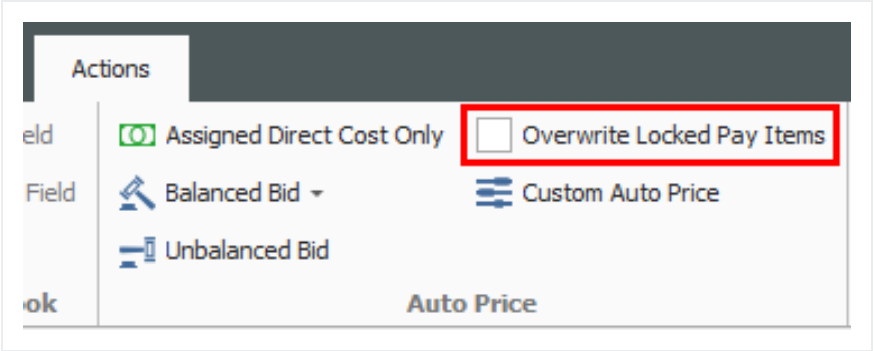
	Description	Curre...	Total Cost (Forecast)	Ac Co
	Small Tools	U.S. Dollar	$5,896.98	
	Safety & Training	U.S. Dollar	$2,948.49	
→	Cut	U.S. Dollar	($1,000.00)	

8. Finally, return to the **Pay Item & Proposal**.
9. On the **Actions** menu, select **Balanced Bid > Hit Target Total**.
10. An Auto Price Warning may display, informing you of rounding variances. After reading the details, click the **Close** button.



- Note on the proposal recap that a variance may still exists because there are limited number of pay items to spread the rounding error over
- Note that the locked item did not adjust, but the other pay items were updated
- Note that you can overwrite locked items for spreading your price by checking the

Overwrite Locked Pay Items option on the Actions menu



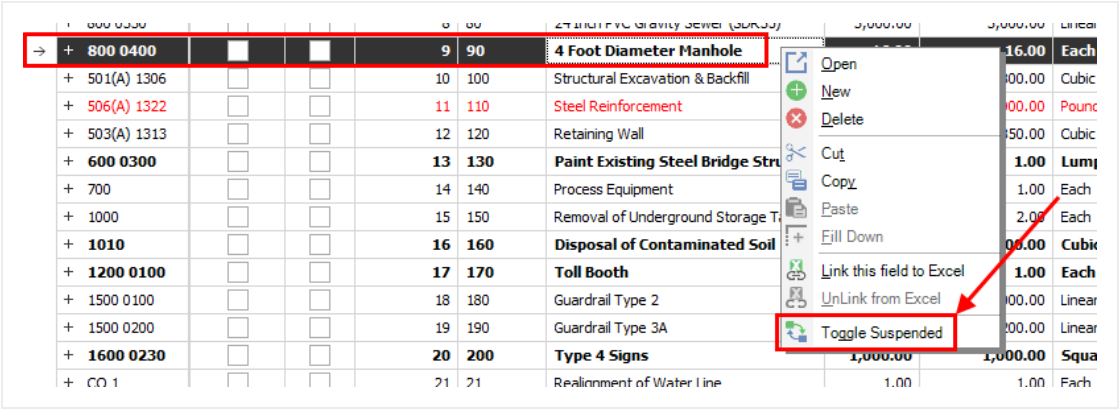
7.5.2 Suspend Pay Items

Like suspending cost items in the CBS Register, you can suspend pay items in the Pay Item & Proposal Register. Suspending a pay item causes it to no longer contribute quantities and pricing to the estimate.

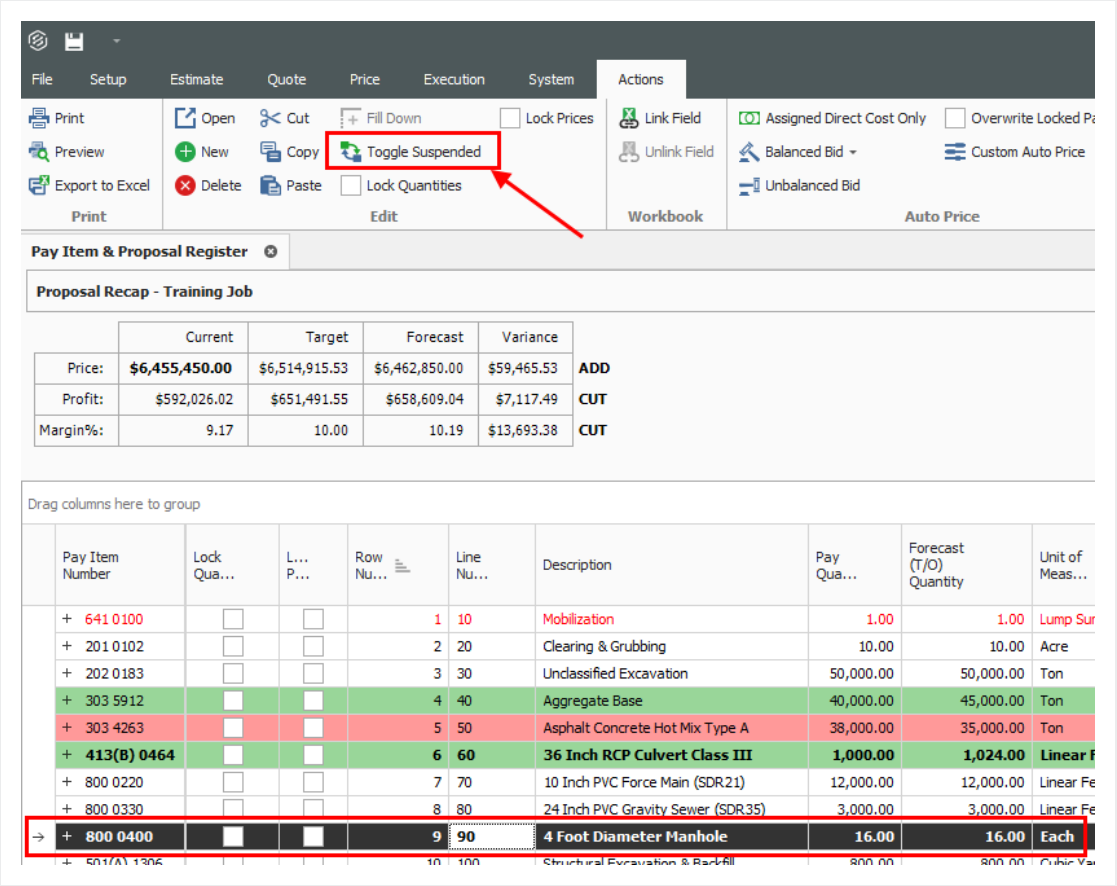
This can be helpful when considering alternate items on a bid submission. Should the client decide to not require a pay item, you can suspend it, causing the pay item and any of its assigned cost items to no longer contribute any cost or price. It will no longer show up on your bid and no longer contribute to the overall total price.

You can suspend/unsuspend pay items in one of three ways:

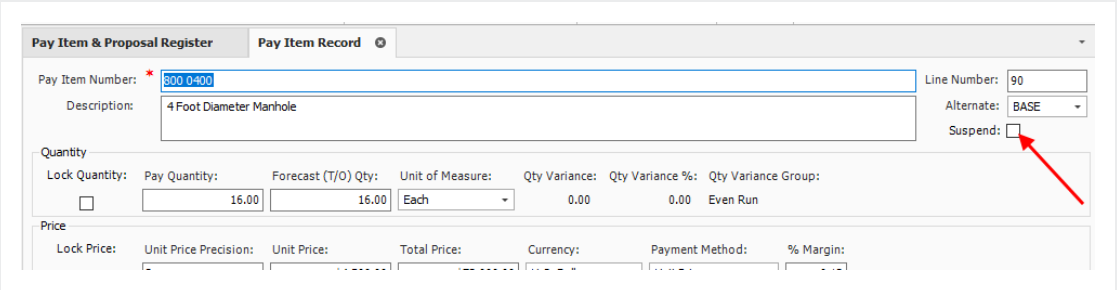
- Right click on the pay item and select Toggle Suspended



- Select the pay item and click Toggle Suspended under the Edit section of the Actions Tab



- Open the pay item record and checking/unchecking the Suspend box



Lesson 7 Review

1. Markup is a function of cost, while margin is a function of _____.
    a. billing
    b. price
    c. job overhead
    d. indirect costs

---

2. When adding profit, it must be the same amount for direct and indirect costs.
    a. True
    b. False

---

3. What options do you have to enter profit on the PBS?
    a. % Mark-Up, % Margin, and Fixed Dollar Amount
    b. % Mark-Up or % Margin
    c. Fixed Dollar Amount Only

---

4. Once distributed, you still can adjust your pricing on pay items manually as needed.
    a. True
    b. False

Lesson 7 Summary

As a result of this lesson, you can:

- Add job markup (profit)
- Use tools on the PBS form to review your estimate
- Spread Target Price over pay items
- Make bid adjustments