

PROJECT COST MANAGEMENT



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INTERMEDIATE 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:

- Review and report on project information
- Integrate with MS Excel and scheduling software (MS Project or Oracle Primavera)
- Manage quotes and use additional time-saving tools

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	Торіс
Lesson 9	Reporting
Lesson 10	Data Reproduction
Lesson 11	Excel Integration
Lesson 12	Schedule Integration
Lesson 13	Cash Flow
Lesson 14	InEight Estimate Calculators
Lesson 15	Cost Item Assemblies

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 9 – REPORTING

LESSON DURATION: 30 MINUTES

LESSON OBJECTIVES

After completing this lesson, you will be able to:

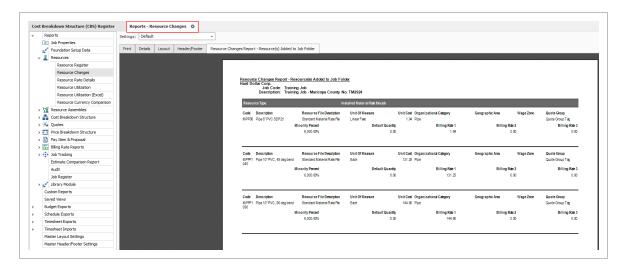
- Run reports from the Reports menu
- Create and run reports from register forms

9.1 REPORTS MENU

InEight Estimate provides a lot of out of the box reports, referred to as "canned" or "system" reports, that can help you review and analyze your estimate.

9.1.1 NON-MODAL REPORT DIALOG BOX

The Reports dialog is docked along with the other forms and registers. You can continue to work with your estimate without being forced to close the Reports dialog box.



If the report becomes undocked, the job code shows in the reports dialog box header.

9.1.2 ADJUSTABLE REPORTS

Most of the reports within InEight Estimate can be adjusted to output the specific data and reporting format you need. Each report has its own set of output settings for configuring and formatting the report.

All InEight Estimate adjustable reports are accessed from the Reports menu. You may even run the same report multiple times and choose different output settings based on what you want to see or who the intended audience is.

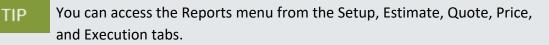
For example, you may choose to run the CBS Details Report several times to satisfy different needs or for different audiences, and include or exclude specific data depending on what you or the report recipients want to see.

- For a group of *estimators*, you may want to run a CBS Details Report that shows all cost and productivity data for a job
- For *field personnel,* you may want to run a CBS Details Report that shows no cost data, but all production and resource data
- Finally, for *executive management*, you may want to run a CBS Details Report that shows summary level information only

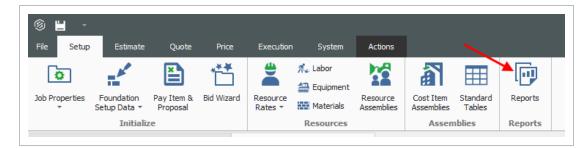
The following steps take you through a brief overview of the Reports menu and how you can access it.

STEP BY STEP – GETTING TO THE REPORTS MENU

- 1. Open the Training Job, and select Setup tab.
 - You access the Reports menu by clicking on the Reports icon



2. Select **Reports**.



3. Here you select the Report of your choice. For this example, select the first option, **Job Properties**.

6	Job Properties	Setti
	Foundation Setup Data Resources	Print
	Resource Register	OP
	Resource Changes	Drin
	Resource Rate Details	PIII
	Resource Utilization	P
	Recourse Utilization (Excel)	

- You will see a split screen with the reports available on the left side bar
- The side bar on the left of the Reports form contains a "tree" of all InEight Estimate adjustable reports

8	Reports - Job Proj
Reports Job Properties	Settings: Default -
Foundation Setup Data	Print Details Layout Header/Footer
✓	
Resource Register	O Print to Printer
Resource Changes	Print Settings
Resource Rate Details	
Resource Utilization	Printer: Adobe PDF
Resource Utilization (Excel)	
Resource Currency Comparison	
Resource Assemblies	
> 🕋 Cost Breakdown Structure	
> 🗐 Quotes	
Price Breakdown Structure	○ Export to File
Pay Item & Proposal	Export Settings
> 🚡 Billing Rate Reports	rila.
> 💮 Job Tracking	File:

• On the right, when you select a report node on the left, note that it displays the Output Settings on the right side of the form, from which the report settings can be adjusted and the report can then be run

Reports	Settings: Default
Job Properties	Settings: Default -
Foundation Setup Data	Print Details Layout Header/Footer
🖌 🗮 Resources	
Resource Register	O Print to Printer
Resource Changes	Print Settings
Resource Rate Details	
Resource Utilization	Printer: Adobe PDF Change
Resource Utilization (Excel)	
Resource Currency Comparison	
Resource Assemblies	
Cost Breakdown Structure	
Quotes	
Price Breakdown Structure	○ Export to File
Pay Item & Proposal	Export Settings
Billing Rate Reports	File
> 💮 Job Tracking	File:
Estimate Comparison Report	Format: PDF File V Options
Audit	
Job Register	

4. Each report has a Print tab, a Layout tab and a Header/ Footer tab specific to that report.

Setting	s: Defau	lt		-
Print	Details	Layout	Header/Footer	
∩ Prin	it to Printer			

• There are also Master Layout Settings and Master Header/Footer Settings located at the bottom of the left-hand side bar tree. Here you can define settings that will apply to all

reports

	Estimate Comparison Report	Format: PDF File	 Options
	Audit	Tornati Part an	
	Job Register		
>	Library Module		
	Custom Reports		
	Saved Views		
	Budget Exports	Preview	
	Schedule Exports		
	Timesheet Exports		
	Timesheet Imports		
	Master Layout Settings		
	Master Header/Footer Settings		

9.1.3 OUTPUT SETTINGS

This section provides a more detailed explanation of the output setting tabs.

9.1.3.1 REPORT PRINTING OPTIONS

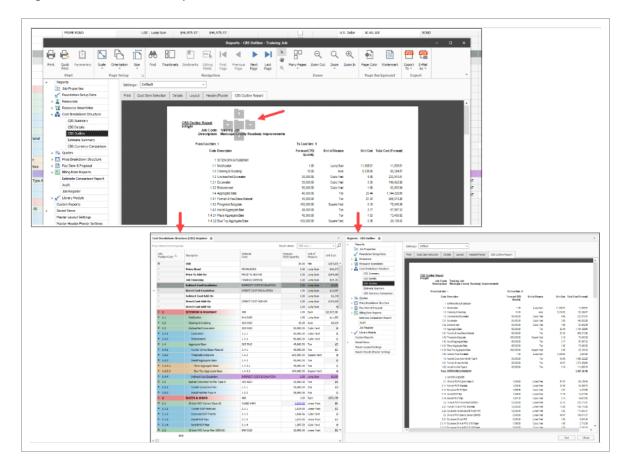
The Print tab includes three options for printing output: Print to Printer, Export to File, and Preview. Export file outputs include PDF, Excel, text, and more.

PRINT PREVIEW

The Reports print previews opens in its own tab in the Report Dialog. This lets you keep the report open while continuing to use other parts of the application.

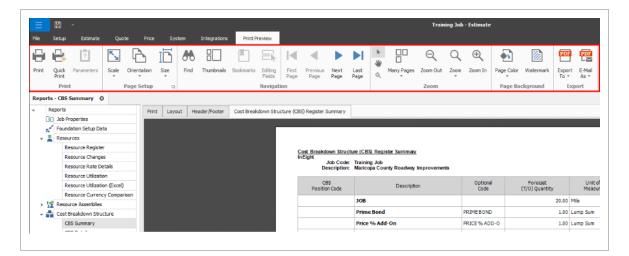
Reports	Print Details Layout	Header/Footer Resource	e Assembly Register Summ	ary								
3ob Properties												
Foundation Setup Data												
> 🙎 Resources												
Resource Assemblies			Resource Asse	mbly Register Summary								
Resource Assembly Register			InEight Joi	Code: Training Job								
Resource Assembly Utilization			Desc	ription: Maricopa County Roadway Im	provements							
Resource Assembly Currency Com					Resource		Unit of				Organizational	Geogra
Cost Breakdown Structure			Code	Description	File Description	Quantity	Measure	Unit Cost	Total Cost	Currency	Category	Area
CBS Summery CBS Details			CCONC	Concrete Crew	Standard Assembly Fi	1.00	Hour	\$375.03	\$375.03	U.S.Dollar	Concrete	
CBS Details			CGRADE	Grading Crev	Standard Assembly Fil	1.00	Hour	\$234.73	\$234.73	U.S.Dollar	Earthwork	
Estimate Summary			CMAINT	Equipment Maintenance	Standard Assembly Fil	1.00		\$23.00		U.S.Dollar	Mechanic	
CES Currency Comparison												
> S Ountes			CPAVE	Paving Crew	Standard Assembly Fil	1.00		\$476.24		U.S.Dollar	Asphalt	
> The Breakdown Structure			CPIPE	Pipe Crew	Standard Assembly Fil	1.00	Hour	\$343.54	\$343.54	U.S.Dollar	Pipe	
Pay Item & Proposal			CPIPEM	Pipe Fitting Assembly (with material)	Standard Assembly Fil	1.00	Each	\$410.82	\$410.82	U.S. Dollar	Pipe	
Standard Proposal			CSCRAP	Scraper Crew	Standard Assembly Fil	1.00	Hour	\$1,111.21	\$1,111.21	U.S.Dollar	Earthwork	
DOT Proposal			CTRUCK	Truck Excavate-Load-Haul Crew	Standard Assembly Fil	1.00	Hour	\$618.72	\$618.72	U.S.Dollar	Earthwork	
Pay Item Summary			CWELD	Welding Crew	Standard Assembly N	1.00	Each	\$248.64	\$248.54	U.S.Dollar	Welder	
Pay Item Currency Comparison			MASRH	Asphalt Material Assembly (with yiel	Owner and Assessment of State	1.00	Tau	\$29.45	#10.45	U.S.Dollar	Asphalt	_
Pay Item Price Breakdown			MEGRM		Standard Assembly Fi		SquareFeet	\$28.88		U.S.Dollar		
> 🔣 Billing Rate Reports				Concrete Forming Assembly							Concrete	
Estimate Comparison Report			008	DozerD8 - Operated	Standard Assembly Fi	1.00		\$204.22	\$204.22	U.S. Dollar	Earthwork	
Audit			OGRAD14G	Grader 14G - Operated	Standard Assembly FI	1.00	Hour	\$90.82	\$90.82	U.S.Dollar	Earthwork	
Job Register			OSCRAP623	Scraper 623 - Operated	Standard Assembly PI	1.00	Hour	\$157.62	\$157.62	U.S.Dollar	Earthwork	
> 💒 Library Module				14								
Custom Reports												
Saved Views												
Master Layout Settings												
Master Header/Pooter Settings												

You can also undock and float a report on a different form, or you can tile it side by side with another register to view and compare them.



PRINT PREVIEW RIBBON

The Print Preview menu is displayed on its own ribbon. Menu commands are shown in the ribbon as a contextual Print Preview menu when navigating to Reports > Print > Preview > **Run**.



9.1.3.2 APPLY CUSTOM LAYOUTS AND HEADERS/FOOTERS TO REGISTER REPORTS

You can apply custom Layouts and header/footers to register based reports. Upon saving a view in any register, select the option to save it as a corporate view and include the view in the reports dialog box.

g columns here to gro	oup							Seved views:	CBS view 1	- 0						
CBS Position Code 🖮	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Subject Cost	Subject Cost Rate	MBS: CEAS (Civil Engineering Account Code System) Description	Resource Assembly Quantity	Hours (Duration						
	308	20.00	Nie	\$307,635.65	\$6,152,713.07											
	Prime Bond	1.00	Lump Sum	\$46,975.57	\$46,975.57			SOND								
	Price % Add-On	1.00	Lump Sum	\$294,080.10	\$294,080.30			TAXES								
	Job Financing	1.00	Lump Sum	\$24,763.92	\$24,763.92			FEES								
+	Indirect Cost Escalation	1.00	Lunp Sum	\$2,000.00	\$2,000.00	\$115,957.12	1.7	2 LABOR INCREASE								
	Direct Cost Escalation	1.00	Lump Sum	\$10,957.12	\$10,957.12			LABOR INCREASE								
	Indirect Cost Add-On	1.00	Lump Sum	\$2,319.14		\$115,957,17	2.0	0 LABOR SETUP OVERHEAD								
	Direct Cost Add-On	1.00	Lump Sum	\$105,000.0	ଞ୍ଚ ଲେ	ve Current View		5 LABOR SETUP OVERHEAD								
+	Direct Cost Add-On		Lump Sum		Type a name for the proups, and column											
P 1	SITEWORK & ROADWAY		Each	\$2,927,361	name so that you ci	an recall them late	r while in this	PAVEMENT WORK	0.0							
+ 1.1	Mobilization		Lump Sum	\$11,909.2				MOBILIZATION	0.0							
+ 1.2	Clearing & Grubbing		Acre		View name: 2355			CLEARING	0.0							
□ 1.3	Unclassified Excervation		Cubic Yard		Save as Locked (COMMON EXCAVATION	0.0							
+ 13.1	Excavation		Cubic Yard	\$3.1	Include this vi	iew in the Saved VI control	ievs section	COMMON EXCAVATION	0.0							
+ 132	Embankment Aggregate Base	\$0,000.00	Cubic Yard	\$1.1		OK	Cancel	EMBANKMENT UNTREATED BASE	0.0							
+ 141	Aggregate Base Furnish & Haul Base Material	45,000.00		\$25	PRO LAN	OK	Cancel	BUY MATERIAL	0.0							
+ 142	Portan a Hau case Material Prinegrade Subgrade	45,000.00	Titer	\$21.54	1000 0.00			BUT MATERIAL	0.0							
		Reports - CBS view 1 0 Reports 10 Job Properties 10 Resources		Settings: Print 0		out Header,For	• Cost Break	down Structure (CBS) Register CBS (view 1							
		Reports Sob Properties set Sob Properties set Resources Resource Rei Resource Chi Resource Util	gister anges te Details ization			out Header,For	_	Cost Dreakdown Structure (CBS) InEight Job Code: Treining	Register CBS view 1							
		Reports Sob Properties Sob Properties Sob Properties Sob Properties Sob Properties Resource Nat	gister anges Ite Details Ization Ization (Excel) mency Compariso	Print 0		out Header,For	_	Cost. Breakdown Structure (CBS) InEight Job Code: Training Description: Maricop	Register CBS view 1 Job a County Roadway Improves	nonts		Tourse	1 mit of		Total Cost	
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When selecting a Saved View from the Reports register you can use the Print tab to customize the printing preferences, use the Grid Options tab to change the font type/size, use the Layout tab to modify the design style, and use the Header/Footer tab to insert a header and footer to your report.

Repor	ts -	CBS view 1 O					
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× (T	Cost Breakdown Structure					
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		CBS Currency Comparison		age #			
> 9	3	Quotes	P	ge # of Page	es #		
>	-	Price Breakdown Structure		ate Printed			
~ [Ð	Pay Item & Proposal					
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		DOT Proposal	U U	ser Name			Report Header (first page only)
		Pay Item Summary					[Report Title] [Company Name]
		Pay Item Currency Comparison	V V	ersion			Job Code: [Job Code] Description: [Job Description]
		Pay Item Price Breakdown	R	eport Title			
> [Billing Rate Reports		ompany Name			
		Estimate Comparison Report		ompany Name			
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		Job Register	√ Job	Overview			Report Footer (last page only)
	-	Library Module					
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		test 12345678					

When you click on the Run button it will create a new register-style report. You can modify the layout or header/footer directly in this register. You can also toggle between any of the four other tabs to make modifications and see the changes on the saved view report.

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> 🔍 Q	uotes						Position Code		Description	Code
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9.1.3.3 REPORT LAYOUT SETTINGS

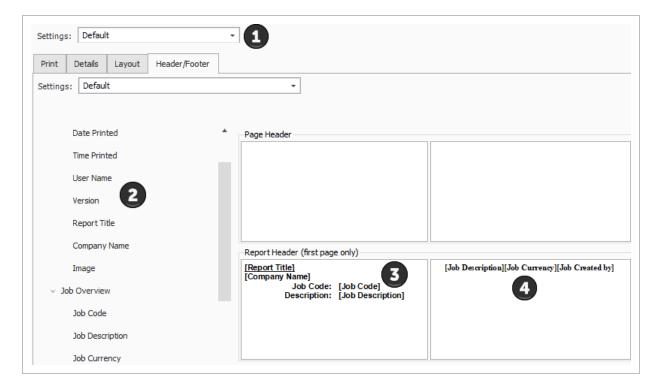
Many of the InEight Estimate adjustable reports include formatting options for the general layout of the report, located under the Layout tab of the report's output settings. Settings for the report include: Orientation, Margins, Font, and Number Format.

Print Details	Layout Header/Footer				
Settings: Def Orientation Portrait Landscape Paper Size:	ault (Letter)	•	Margins Left: 0.50	Top: 0.50 💽	Header: 0.25 -
Font			-Number Format	Bottom: 0.50	Footer: 0.25
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			Use thousan Use currency	ds separator	

9.1.3.4 REPORT HEADER/FOOTER SETTINGS

Many of the InEight Estimate adjustable reports include the option to define and insert headers and footers into the report. You can add information to the left, middle, or right of the header and footer sections of the report.

- 1. Once you define headers and footers, you can save them for use on other reports.
- 2. You can add page, time, and date stamps as needed, as well as images (e.g., company logo).
- 3. You can also use brackets to have it "stamp" the report with the Job Code and Job Description.
- 4. You can enter your own information as desired.



COVER SHEET FIELDS AND JOB FOLDER TAGS

In addition to the existing job code and job description tags in Job Properties, you can use the Cover Sheet fields and Job Folder tags for your headers and footers in all standard reports.

Additional tag values such as contract numbers, work order numbers, PO numbers, company logos, or any other tag fields can also be included. These additions help you customize headers and footers to give the recipients more transparency in the reports.

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chy:		Drgineer: Domple Drgineer P		1												
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Country: United States *				InEight Job Co	de: Training Job	te Roadaux kra		_		PO#AC668						і БНТ 🛞
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A Header and Footer field menu exists to the left of the Page Header and Page Footer grid, for all standard reports. This lets you choose which fields from Job Folder Tags and the Cover sheet to include in your report.

Reports	Print Details Layout Header/Fo	oter		
Job Properties				
Foundation Setup Data				
Resources	Fields	^ ≜ Page Header		
Resource Register				
Resource Changes	> Report			
Resource Rate Details	> Job Overview			
Resource Utilization				
Resource Utilization (Excel)	 Job Tags 			
Resource Currency Comparison	Tag 1	Report Header (first page only)		
Resource Assemblies	Tag 2	[Report Title] [Company Name]	[User Name]	
🚔 Cost Breakdown Structure	109 2	Job Code: [Job Code] Description: [Job Description]		
🔍 Quotes	Tag 3	Description: [Job Description]		
Price Breakdown Structure	Tag 4			
Pay Item & Proposal	-			
Billing Rate Reports	Tag 5	Report Footer (last page only)		
Estimate Comparison Report	Tag 6	[Company Name]		
Audit				
Job Register	Tag 7			
Library Module	Tag 8			
Custom Reports	Tag 9	Page Footer	1	
Saved Views	i ag s	[Date Printed] [Time Printed]	Copyright 0022 InEight Inc. All Rights Reserved.	[Page # of Pages #
Master Layout Settings	Tag 10	ferrer i ment france i ment	ang yagan anang mang na Ali Pigina Pinaka Kut	a não e con nãos e
Master Header/Footer Settings	Tag 11			
				Run Close

You can customize your header and footer layout settings, save them, and re-use them in other reports.

Settings:	Default	
Print D	etails Layout Header/Foo	ter
Settings:	Default	
	Custom	
	Default	
Fields	1	Save New Settings 🔪 — 🗆 🗙
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	LibraryJobProperties	OK Cancel
D	LibraryJobProperties2	· · · · · · · · · · · · · · · · · · ·
		Report little

9.1.3.5 REPORT DETAIL SETTINGS

Most reports have a Details tab with various options to configure what information is included on the report.

rint Details Layout Header/Footer				
Show the below Pay item details	Filter by currency:	No Filter 👻		
✓ Line Number	-Show the below Proposal	header items		
✓ Pay Item Number	🗌 Job Code	Job City		
Position Code	Job Description	Job County		
Subtotals	Bid Date	Job State		
Running Totals	Bid Time	Job Country		
Suspended Items	JobLocation			
Include Additional Proposal pages	Term for Document			
Cover Sheet	Proposal/Bid			
Preferences Sheet	○ Tender			
Unit Price precision	O Custom			
Truncate values based on decimal precision				
\bigcirc Do not truncate values (show decimal precision)				
Certification Text: O None O Cu	stom			
		^		
ignature Block:				
		Include Signature Line		
] Submitted By		Include Title Line		
		✓ Include Date Line		

9.1.3.6 SAVE OUTPUT SETTINGS

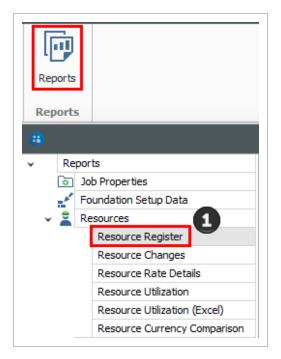
Once you've configured your settings for the report, you can save them as a custom version of that report.

✓ R	eports	A Se	ttings: Estim	ate Summary	- Foreman		Alternate Sc	enario:
0	Job Properties						BASE	
	Foundation Setup Data	Pri	int Cost Ite	m Selection	Details	Layout Hea	ader/Footer	1
- 🗸 🚢	Resources							
	Resource Register	Print a contiguous range of cost items:						
	Resource Changes		From:	5.1			-	
	Resource Rate Details							
	Resource Utilization		To:	6.2				•
	Resource Utilization (Excel)							
	Resource Currency Comparison		O Select cost items to print from the register below:					
-> 😭	Resource Assemblies		Select cost items to print from the register below:					
	Resource Assemblies			como co princ	nominere	gister below.		
¥ 🗖	Resource Assemblies Cost Breakdown Structure	Dra	g columns here		Find:]	Saved
× 🖬	•	Dra	-	to group		-]	Saved
~	Cost Breakdown Structure		-		Find:	-]	Saved
×	Cost Breakdown Structure CBS Summary		ig columns here	to group	Find:	[Search For]]	Saved
~ ii	Cost Breakdown Structure CBS Summary CBS Details	→	ig columns here	to group	Find:	[Search For Description Prime Bond		Saved
~ i	Cost Breakdown Structure CBS Summary CBS Details CBS Outline	→	ig columns here	to group	Find:	[Search For]		Saved

The following steps walk you through configuring the settings and formatting for two different reports.

STEP BY STEP – CONFIGURE REPORT OUTPUT SETTINGS (REPORT 1)

1. Open the Training Job and select Setup >Report>Resources.



2. Under Resources on the left side bar, select **Resource Utilization**.

•					Reports - Res	ource Utilizat	tion
r Re ি	ports Job Properties	Settings:	Defau	t		•	
_ <u>_</u>	Foundation Setup Data Resources	Print	Details	Layout	Header/Footer		
	Resource Register	O Print	to Printe	r			
	Resource Changes Resource Rate Details	-Print Se	ettings —				
	Resource Utilization	Print	er: \\HD	AZPrintServ	∕.harddollar.local\M	ain Office	Change
	Resource Utilization (Excel) Resource Currency Comparison						

3. On the Print tab there are three options. A best practice is to always set to **Preview** so you can review before printing.

Print	Details t to Printe	Layout	Header/Foo	ter		
-Print S	Settings —					
Prin	ter: \\HD	AZPrintServ	/.harddollar.loo	al∖Main Offic	e	Change
-	ort to File t Settings					
File: Form	at: PDF F	ile	~	Options		

4. On the Layout tab you can make adjustments based on your preferences.

	Layout Header/Footer 4	Margins	Тор:	Header:
Orientation O Portrait O Landscape Paper Size: Le	tter	Left:	0.50	0.25 •
Font		-Number Format	Bottom:	Footer: 0.25
Header Level 1: Detail Level 1:	Arial Narrow, 8, Bold · Arial Narrow, 8, Regular ·			Significant Figures
Header Level 2: Detail Level 2:	Arial Narrow, 8, Bold · Arial Narrow, 8, Regular ·	Quantity:	2 2 2	□ 1 □ 1 □ 1

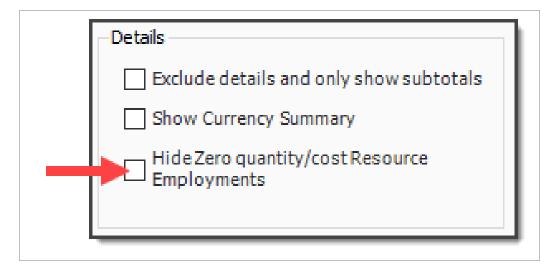
5. Move to the Header / Footer tab. Remove the default **Report Title** from the first page Header only and enter **Resource Utilization** in the center Report Header box as a title that will appear on the first page only.

Print	Details	Layout	Header/Foo	ter		
Settir	ngs: Defau	ult		•		
# (§ 🔯 😵) 🔟	Insert Field 👻			
Page	Header					
Repor	t Header (fir	st page or	nly)	5		
[Repo	pany name] Job (Code: [J		5	Resou	rce Utilization

- 6. Go to the **Details** tab, and you can see the details and options you can select to customize and adjust the report.
- 7. For this navigation, you will not Filter by currency; leave the selection as **No Filter**.
- 8. Under Report Type, choose the first option, **Resource Utilization Summary**.

Settings: Default 6	*
Print Details Layout	Header/Footer
Filter by currency:	No Filter
Report Type	
Resource Utilization S	ummary 8
Resource Utilization St	ummary with Employed Cost Items

 You can choose to select the Hide Zero quantity/cost Resources Employments Details box if you prefer to have your printed report not show any resources that have a dollar value of zero TIP



- You can choose if you want the report at a summary level, or if you want it to reference your cost items when you are looking at a resource
- If you choose Resource Utilization Summary with Employed Cost Items, it adds CBS position to the structure of the report
- You would select this if you wanted to see cost items and resources by the cost item

The Details settings are "sticky" features, meaning they default to what was selected the last time.

- 9. You can use grouping to group by different tags and user-defined fields. Most of them are related to the Resource Rate Register, for example: Geographic Area, Organizational Category, Wage Zone, etc. For this example, group by **Resource Organizational Category**.
- 10. Next, you can choose the resources you want to see. For this example, select the **Labor** and **Construction Equipment** Resource Types.

oup By	Resource Type
Insert page breaks between the outerm ups	🔽 Labor
Resource Organizational Category	Construction Equipment
	Rented Construction Equipment
< no field selected >	Installed Material
< no field selected >	Installed Equipment
< no field selected >	Supplies
	Unique Unique
< no field selected > V	
< no field selected > V	

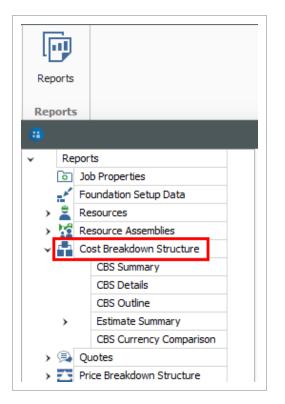
• For this example, you will not make any selections under Columns or Details

Columns	Details
Show Currency column	Exclude details and only show subtotals
Show plug rate for non-hourly resources	Show Currency Summary
Show tax separately from plug rate for non-hourly resources	
Show hours for non-hourly duration driven resources	

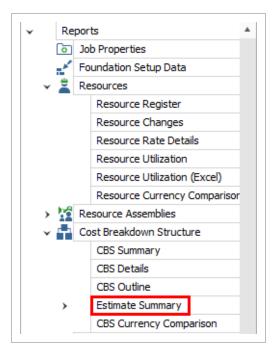
- This is just one of many ways to organize and adjust your report.
- 11. Click **Run** to run the report.
 - This report can be helpful for seeing your utilization hours, broken down by regular time and overtime hours
- 12. Click the red **X** to close this page and open the Construction Equipment page.
- 13. Click the red **X** to close the Construction Equipment report.

STEP BY STEP – CONFIGURE REPORT OUTPUT SETTINGS (REPORT 2)

1. Open the **Training Job** and select **Setup** >**Reports**, then expand the **Cost Breakdown Structure** node.



2. Under Cost Breakdown Structure on the left side bar, select Estimate Summary.



3. Along with the Print, Details, Layout, and Header / Footer tabs, there is an additional tab called **Cost Item Selection**. Select this tab.

Setting	s: Default		•	Alternate Sco	enario
Print	Cost Item Selection	Details	Layout	Header/Footer	

- 4. The Cost Item Selection tab allows you to report on a selection of cost items:
 - Print a contiguous range of cost items: Allows you to print a series of cost items in a row. In this case, print just items: select 4.1 in the From field and 4.3.2 in the To field.
 - Select cost items to print from the register below: Allows you to use column filters to select the cost items to include in the report; leave this button unselected.
- 5. You can roll up your cost items to a certain CBS level for the report as well, depending on the level of detail you need.
- 6. On the **Details** tab, select **Days** for Cost item production field 1, and **Man-Hours / UM** for Cost item production field 2 (this report allows you to report on two production values).
- 7. Under **Resource Types**, uncheck all of the boxes except **Labor**, **ConstructionEquipment**, and **Installed Material**.

Print Cost Item Selection Details Layout Header/Fo	poter
Filter by currency: No Filter General Group by: No Group Show Suspended Items Notes Awardee	Resource Employments Print Resource Employment Details Print resources in row number order Print resources in alphabetical order Print resource costs Print hours for hourly resources
When filtering, only include terminal cost items in total	Resource Types Ad-hoc Employments Labor
Cost item production field 1: Days \checkmark Cost item production field 2: Man-Hours/UM \checkmark	 Construction Equipment Rented Construction Equipment Installed Material
Cost item text field: Currency \checkmark	Installed Equipment Supplies
Employment text field: Currency \checkmark	Unique Resource Assemblies

- 8. Leave the rest of the settings at their defaults, then select the **Header / Footer** tab.
- 9. In the center **Page Footer** field delete the existing text, then type **Confidential –Internal Use Only**.

Page Footer		
[Date Printed] [Time Printed]	Confidential - Internal Use Only	[Page # of Pages #]

10. To save the settings you've configured, click on the **Settings** drop-down arrow above the output setting tabs.

Print	Cost Item Selection	Details	Layout	Header/Footer
Settin	gs: Default		-	
## 6	🛛 🔽 😗 💶 🗠 In:	sert Field 🔹	, L	

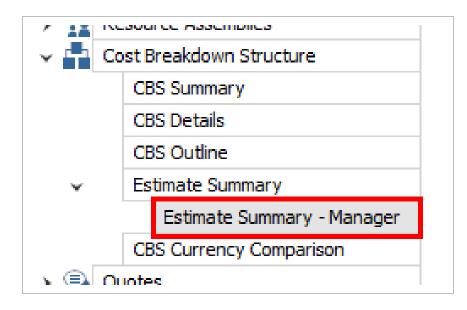
11. Select the **Save disk** icon to save the new settings.

	· · ·		
Settings:	Default	-	
കിട	Custom	2	
# 🕂 🛙	Default		
Page Heade	21		

- 12. Type Estimate Summary Manager.
- 13. Click **OK**.

Save New Settings	;	—		×
Name:	Estimate Su	ummary	- Manage	Ч
	OK		Canc	el

• Notice that a custom version of the report now displays under Estimate Summary on the Reports tree on the left



9.1.4 HELPFUL REPORTS

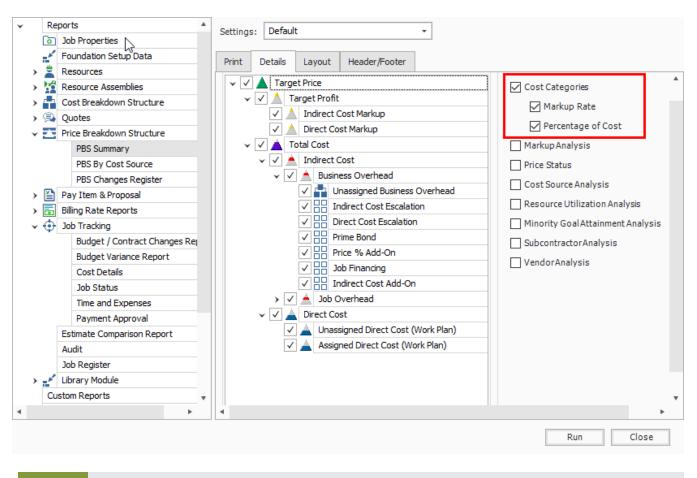
9.1.4.7 PBS SUMMARY

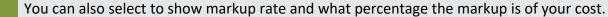
Under the Price Breakdown Structure Report node, the PBS Summary Report gives a good overview of how your price breaks down by cost category. This provides a high-level overview that is cost category driven, providing information based on the total value of the project.

When selecting your settings on the Details tab, a best practice is to select and include:

- Cost Categories
- Markup Rate
- Percentage of Cost

This allows you to see your costs and markup broken out by cost category.





9.1.5 ACCESS CONTROL

You can use the Access Control report to audit user permissions, command access, and various restrictions without having to search through the Access Control register for this information.

TIP

F	Leports A			in the difference of the sector							
B	Job Properties	File	name C:\Users\Paul	Downloads AccessControlExport.xlsx							
	Foundation Setup Data	AutoSave 💽 🗗 🖓 V 🖓 V 👻 🔹 AccessControlExport.xlsx 🕲 No Label V 🖉 Paul Trippi 🏟 🖬 🗕 🗆 X									
> 1	Resources			a -	ontrolexportxisx () No Label V / P	au mppi 🏽		- 0			
> 1	Resource Assemblies	F	ile Home In	sert Page Layout Formulas [ata Review View Automate Help		🖓 Comn	nents 🛛 🖻 Sh	are ~		
->-	Cost Breakdown Structure										
, G	Quotes	C1		🔀 🗸 🏑 🖉 📈 Kibbon Name					~		
> E	Price Breakdown Structure		А	В	с	D	E	F			
> [Pay Item & Proposal		Type	Category	Ribbon Name			Account Adr	ninistr		
> 🐻	Biling Rate Reports	2	Command								
_	Estimate Comparison Report	3	Command								
	Audit	4	Command								
	Job Register	5	Command	Bond Cost Item Record	Actions > View > Default Data Blocks						
	InEight Schedule Cost Risk (xlsx)	6	Command	Bond Cost Item Record	N/A						
~ -	Library Module	7	Command	Cash Flow	Actions > Print > Page Setup				_		
	Master Job Properties		Command	Cash Flow	Actions > Print > Preview				_		
	Master Foundation Setup Data		Command	Cash Flow	Actions > Print > Print				_		
,			Command	Cash Flow	Actions > Tools > Cash Flow Options	No	No	No	_		
,	Master Resource Assembly Rec		Command	Cash Flow	Actions > Tools > Display Settings	No	No	No	_		
			Command	Cash Flow	Actions > Tools > Worksheet	No	No	No	_		
	Access Control (Excel)		Command	Cash Flow	N/A				_		
	55165 Hells (6516 /)	-	Command	Cash Flow	N/A	No	No	No	_		
	Custom Reports	_	Command	Column Captions	(Context Menu) > Change Caption				_		
5	Saved Views		Command	Column Captions	(Context Menu) > Reset All Captions				_		
	•	-	Command	Column Captions	(Context Menu) > Reset Caption				_		
_		18	Command	Connected Analytics	Actions > Tools > Auto-Update						

9.1.6 STANDARD PROPOSAL

Located under the Pay Item & Proposal report node, the Standard Proposal report can be used for contractors required to submit a pricing proposal to a client. It lists all the pay items with the client provided quantities and your final pricing. You can include subtotals (defined on the Pay Item & Proposal Register), cover sheet information, and a signature block.

		Training J Training J	ob ob - Maricopa County No. TM2924			
Position Code	Line No.	Pay Item No.	Proposa Description Subtotal Description	Quantity Unit of Measure	Unit Price	Total Price
1	22	200	SITEWORK & ROADWAY			3,402,700.00
1.1	10	641 0100	Mobilization	1.00 Lump Sum	395,600	395,600.00
1.2	20	201 0102	Clearing & Grubbing	10.00 Acre	5,900.00	59,000.00
1.3	30	202 0183	Unclassified Excavation	50,000.00 Cubic Yard	5.50	275,000.00
1.4	40	303 5912	Aggregate Bæe	40,000.00 Ton	26.50	1,060,000.00
1.5	50	303 4263	Asphalt Concrete Hot Mix Type A	38,000.00 Tan	42.45	1,613,100.00
2	18	400	WATER & SEWER			718,550.00
2.1	60	413(B) 0464	36 Inch RCP Culvert Class III	1,000.00 Linear Feet	97.45	97,450.00
2.2	70	800 0220	10 Inch PVC Force Main (SDR21)	12,000.00 Linear Feet	29.50	354,000.00

9.1.7 CBS DETAILS

Under the Cost Breakdown Structure report node, the CBS Details report can be a helpful report for bid review. On the Details tab you can include or not include any of the information contained in the CBS Register, including cost items with production, costs by category, shift arrangements, resources, and notes.

	Item: 1		To	Cost Item: 0.10							
		(Coat Item						Unit	and Total Costs by Catego	IV
CBS Position Code	CI Description	Cost Source	Forecast (T/O) Quantity UM		Unit Cost Total (Cost Lab	or Owned Equipment F	lented Equipmen			Subcontract
	Mobilization	Detail	1.00 Lump	Sum	11,909.51 11,90	9.51 2,449 2,449		0.0			0.00
Pay Item Assignm Default Properties:	Added \$500 Contingency Allo ent: 541 0100 (Mobilization) Account Code	Cost Curve	are required	Tag 2	Tag 3	Tag 4	Tag t				
	1020 Optional Code 641 0100	Linear Phase Code	Estimator 1 Owner's Qty. 1.00	Roadway Quote Group	Quantity Driver Pay Item	Minority Allow 100.00%	WC Override				
Default Pay Rules:	Wage Scale 1 100.00	Wage Scale 2 0.00	Wage Scale 3 0.00	Resource Work Hra 8.00	Resource Pay Hrs 8.00	Default Shift Arrangements	Work Hra/Shift 8.00		Shifta/Day 1.00	Daya/Week 5.00	
Production:											
Duration	Days 10.00	Shifta 10.00	Hours Man-Hour 80.00 80.0		Cost / Duration	Cost/Day 1,190.95	Coat/Shift 1,190.95	Cost/Hour 148.87	Cost/Man-Hr. 148.87	Cost/Equip-Hr. 74.43	
		UWShift	UWHour UWMan-H	r UWEquip-Hr	Duration / UM	Dave/UM	Shifa/UM	Hours/UM	Man-Hra/UM	Equip-Hra/UM	

9.1.8 AUDIT

Under the Job Tracking node, the Audit Report is a very important report to run during estimate review to make sure you didn't leave anything out of the estimate. It checks for a number of potential errors in the estimate, including:

- Zero Price Pay Items
- Zero-value cost items
- Pay items without Cost Items assigned
- Resources with a quantity of zero

EXERCISE 9.1 – RUN A SYSTEM REPORT

You can adjust InEight Estimate system reports to report on the particular information you need. Complete the following steps to configure and run the Pay Item Summary report, using the Training Job:

- 1. From the Reports window, expand the Pay Item & Proposal report node.
- 2. On the Reports tree, select **Pay Item Summary**.
- 3. On the Details tab, select a Pay Item Range from 303 4263 800 0220.
- 4. Choose to Include Assigned Cost Items.
- 5. Show Costs As: Unit.
- 6. Include Profit Analysis columns and Include Pay Item Price columns
- 7. Run the report.

You should end up with the following results

	From Item: 303 4263			To the	m: 800 0220						
	Pay/Cost Item			1010		Unit O	oat by Catego	ory			
Code	Description	Quantity UM	Assigned Direct Cost	Labor	Owned Equipment	Rented Equipment	Materials	Supplies	Subcontract	Fees	Allowanc
303 4263	Asphalt Concrete Hot Mix Type A	38,000.00 Ton	42.62	3.11	6.43	0.00	31.50	0.00	0.00	1.58	0.0
	5 Asphalt Concrete Hot Mix Type A	38,000.00 Ton	1,619,430.35	3.11	6.43	0.00	31.50	0.00	0.00	1.58	0.0
	5.1 Furnish & Haul Hot Mix	38,000.00 Ton	1,492,382,18	1.43	4.77	0.00	31.50	0.00	0.00	1.58	0.0
	5.2 Install Hot Mix Type A	38,000.00 Ton	127,048.17	1.68	1.66	0.00	0.00	0.00	0.00	0.00	0.0
13(B) 0464	36 Inch RCP Culvert Class III	1,000.00 Linear Feet	66.42	19.60	13.48	0.93	30.82	0.00	0.00	1.59	0.0
	6 36 Inch RCP Culvert Class III	1,000.00 Linear Feet	66,416.79	19.60	13.48	0.93	30.82	0.00	0.00	1.59	0.0
	6.1 Furnish RCP Materials	1,000.00 Linear Feet	32,361.33	0.00	0.00	0.00	30.82	0.00	0.00	1.54	0.0
	6.2 Excavate RCP Trench	1,815.00 Cubic Yard	8,183.20	4.85	3.34	0.00	0.00	0.00	0.00	0.00	0.
	6.3 Install RCP Pipe	1,000.00 Linear Feet	11,735.94	6.45	5.29	0.00	0.00	0.00	0.00	0.00	0.
	6.4 Backfill RCP Pipe	1,550.00 Cubic Yard	14,138.32	8.31	4.86	0.93	0.00	0.00	0.00	0.05	0.0
	SUBTOTAL: SITEWORK & ROADWAY		1,685,847.14	137,894.00	257,768.56	926.90	1,227,820.31	0.00	0.00	61,437.36	0.0
00 0220	10 Inch PVC Force Main (SDR21)	12,000.00 Linear Feet	22.51	4.56	4.72	0.00	12.60	0.00	0.00	0.63	0.0
	7 10 Inch PVC Force Main (SDR21)	12,000.00 Linear Feet	270,163.37	4.56	4.72	0.00	12.60	0.00	0.00	0.63	0.0
	7.1 Furnish 10 Inch PVC Materials	12,000.00 Linear Feet	158,760.00	0.00	0.00	0.00	12.60	0.00	0.00	0.63	0.0
	7.2 Excavate-Install-Backfill 10 Inch PVC	12,000.00 Linear Feet	111,403.37	4.56	4.72	0.00	0.00	0.00	0.00	0.00	0.

Congratulations, you have completed this exercise!

9.2 REGISTER REPORTS

At any time, you can print a report of the data in the currently displayed register using the Print or Preview option available from the Actions tab for the register you are in.

I 🗄 -					_	
File Setup	Estimate	Quote	Price	Execution	System	Actions
🖶 Print	🕂 New	📲 Сору	🛒 Spl	it	🗰 Indent	📕 Link Field
🗟 Preview	🛞 Delete	Paste	🚉 Spl	it by Cost Type	🖛 Outdent	📇 Unlink Fie
🛃 Export to Excel	S< Cut	+ Fill Down	🎝 То	ggle Suspended		
Print			Edit			Workbook
Cost Breakdown	Structure (CB	S) Register	0			
CBS Tree (Filter I	1ode)	×	Drag	columns here to	group	

The data that prints is the data currently displayed on the register form. The report will print whatever columns are displayed on the register; if you have customized the display in the register, the report prints that data. In other words, register reports are entirely customizable.

By creating Saved Views, you can report the data on a register form in several different variations.

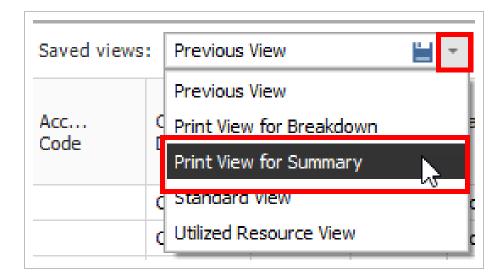
The following step by step example will walk you through creating a custom register report on resource utilization and saving it as a Saved View.

STEP BY STEP – CREATE A REGISTER REPORT

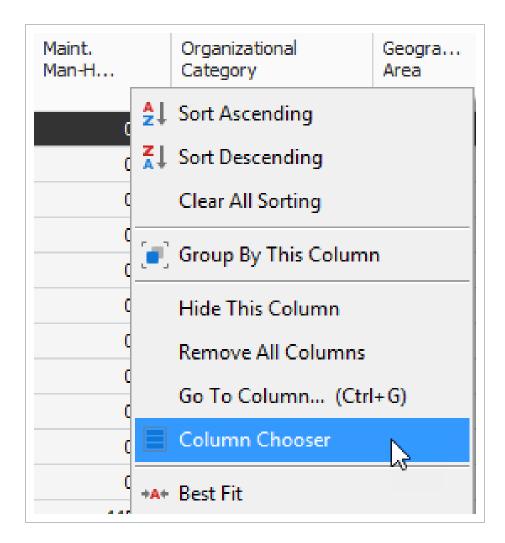
1. Open the Training Job and select Setup tab, then select the Resource Rates drop-down list.

File	Estimate	Quote	Price	Execution System	
٥	-		***	Labor	â
Job Properties	Foundation Setup Data 👻	Pay Item & Proposal	Bid Wizard	Resource Rates Materials Assemblies	Cost Ite Assembli
	Initializ	.e		🐔 Labor	Ass
				🔐 Construction Equipment	
				hented Construction Equipment	
				Installed Materials	
				🎭 Installed Equipment	
				候 Supplies	
				🚋 Unique	
				-	_

- 2. From the drop-down list, select Labor.
- 3. From your Saved Views drop down menu on the Resource Rate Register, select the **Print View** for Summary view.



- 4. Notice this view includes utilization hours
- 5. Right-click on a column header and select **Column Chooser**.



- 6. From the Customization window, drag-and-drop the Minority Percent, Unique Sales Tax, (Scale 2), and Maint. Man-Hour Factor columns into the register.
- 7. Close the Customize window.
- 8. Sort the **Utilization Count** column by clicking on the column header twice so that you see the bars descending.

• This sorts your items so the most utilized resources are at the top

	source de	Utilization Count	₁₁	Maint. Man-H	Organizational Category
ł	LL2		8,946.59	0.00	Laborer
+	LO2		4,734.02	0.00	Operator
+	LT1		3,611.05	0.00	Truck Driver - Team
+	LO1		1,640.00	0.00	Operator
+	LO4		1,484.63	0.00	Operator
+	LC2		1,188.73	0.00	Carpenter
+	LO3		889.33	0.00	Operator
+	LSSUPT		800.00	0.00	Supervision
+	LSSEC		800.00	0.00	Supervision
+	LSPE		800.00	0.00	Supervision
+	LL3		721.33	0.00	Laborer
+	LIW1		594.37	0.00	Iron Worker

- 9. Click on the **Saved Views** drop-down menu and select the **Save disc**¹ icon to save the view.
- 10. Name the view Labor Utilization View, and then click OK to save the customized view.
- 11. From the **Actions** menu, select **Preview** to review the report before printing.

	NEIGHT - PAUL TRIPPI E101 - Training Job KLSample Training Job								
Resource Code	Description	Utilization Count	Unit of Measure	Unique Sales Tax	Minority Percent	Maint. Man-Hour Factor			
L01	Operator Class 1	680.00	Hour	0.00	0.00	0.0			
LL2	Laborer	590.00	Hour	0.00	0.00	0.0			
LSSUPT	Project Superintendent	560.00	Hour	0.00	0.00	0.0			
LSSEC	Secretary	560.00	Hour	0.00	0.00	0.0			
L03	Operator Class 3	220.00	Hour	0.00	0.00	0.0			
LL3	Labor Foreman	200.00	Hour	0.00	0.00	0.0			
L04	Operator Foreman	110.00	Hour	0.00	0.00	0.0			
LT1	Teamster	100.00	Hour	0.00	0.00	0.0			

9.2.1 REGISTER REPORT OUTPUT SETTINGS

Within the Preview for a register report, there are several options to choose from to configure the output of your report.

9.2.1.1 PAGE SETUP

While in the Preview mode, selecting **File > Page Setup** provides setup options for the page format:

- Page Size (legal, letter, etc.)
- Paper Width & Height
- Orientation (portrait or landscape)
- Page Margins (left, right, top, bottom)

9.2.1.2 EXPORTING TO DOCUMENT

Using the Export function allows you to identify a Print range, Image quality, Password Security, and more. Selecting **File > Export Document** prints an Adobe Acrobat (*.pdf) report.

EXERCISE 9.2 – CREATE A CUSTOM REGISTER REPORT

You can configure the columns in your registers for reporting and run your own custom reports. Complete the following steps to configure and run a report from the CBS Register, using the Training Job:

- 1. Select Estimate>Cost Breakdown Structure (CBS).
- 2. Under Saved Views, Select CBS Simple View.
- 3. Hide the **Optional Code column**.
- 4. Add back in the Man-Hours (Total) and Man-Hours / UM columns.
- 5. Now add back in the Labor Total Cost, Owned Equipment Total Cost, and Materials Total Cost categories for reviewing the estimate.
- 6. Save the View (create your own name for the view).
- 7. Select **Preview** to view the report.

You should end up with the following results

I raining Job - Maricopa Co	Forecast (T/O) Quantity	Unit of Measure	Man-Hours (Total)	Unit Cost	Labor Total Cost	Total Cost (Forecast)	Man-Hours otal incl. Maintenan	ied Equipment Total	Man-Hours/ UM	Materials Total Cost	Currency
JOB	20.00	Mile	27,993.15	\$306,883.14	\$907,442.76	\$6,137,662.81	28,438.44	\$1,062,750.40		\$3,393,700.70	U.S. Dollar
Prime Bond	1.00	Lump Sum		\$48,686.14	\$0.00	\$48,686.14		\$0.00		\$0.00	U.S. Dollar
Price % Add-On	1.00	Lump Sum		\$309,475.27	\$0.00	\$309,475.27		\$0.00		\$0.00	U.S. Dollar
Job Financing	1.00	Lump Sum		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	U.S. Dollar
Indirect Cost Escalation	1.00	Lump Sum		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	U.S. Dollar
Direct Cost Escalation	1.00	Lump Sum		\$11,026.79	\$12,026.79	\$11,026.79		\$0.00		(\$1,000.00)	U.S. Dollar
Indirect Cost Add-On	1.00	Lump Sum		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	U.S. Dollar
Job Management & Equipment	1.00	Lump Sum	2,400.00	\$157,096.28	\$91,176.28	\$157,096.28	2,400.00	\$65,920.00	2,400.00	\$0.00	U.S. Dollar
GeneralExpense	1.00	Lump Sum	0.00	\$4,200.00	\$0.00	\$4,200.00	0.00	\$0.00	0.00	\$0.00	U.S. Dollar
Direct Cost Add-On	1.00	Lump Sum		\$109,544.08	\$15,676.56	\$109,544.08		\$19,450.89		\$66,546.70	U.S. Dollar
Mobilization	1.00	Lump Sum	0.00	\$75,000.00	\$50,000.00	\$75,000.00	0.00	\$0.00	0.00	\$25,000.00	U.S. Dollar
Clearing & Grubbing	10.00	Acre	0.00	\$0.00	\$0.00	\$0.00	0.00	\$0.00	0.00	\$0.00	U.S. Dollar
Unclassified Excavation	50,000.00	Cubic Yard	3,964.29	\$9.95	\$110,467.00	\$497,466.56	4,115.48	\$302,999.56	0.08	\$0.00	U.S. Dollar
Excavation, scrapers	50,000.00	Cubic Yard	1,250.00	\$3.00	\$33,170.48	\$149,922.88	1,325.00	\$116,752.40	0.03	\$0.00	U.S. Dollar
	Description DOB DOB Prime Bond Price % Add-On Job Financing Indirect Cost Escalation Direct Cost Escalation Cost Escalation Indirect Cost Add-On Dob Management & Equipment General Expense Direct Cost Add-On Mobilization Clearing & Grubbing Unclassified Excavation	Description Forecast (T/O) Quantity D0B 20.00 Prime Bond 1.00 Price % Add-On 1.00 Job Financing 1.00 Direct Cost Escalation 1.00 Direct Cost Escalation 1.00 Direct Cost Add-On 1.00 Dob Management & Equipment 1.00 Direct Cost Add-On 1.00 Direct Cost Add-On 1.00 Clearing & Grubbing 1.00 Unclassified Excavation 50,000.00	Description (T/O) Quantity 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 Financing 1.00 Lump Sum Direct Cost Escalation 1.00 Lump Sum Job Management & Equipment 1.00 Lump Sum Job Management & Equipment 1.00 Lump Sum Direct Cost Add-On 1.00 Lump Sum General Expense 1.00 Lump Sum Direct Cost Add-On 1.00 Lump Sum Clearing & Grubbing 1.00 Acre Unclassified Excavation 50,000.00 Cubi Yard	Description Forecast (T/O) Quantity Unit of Measure Man-Hours (Total) 108 20.00 Mile 27,993.15 Prime Bond 1.00 Lump Sum 100 Price % Add-On 1.00 Lump Sum 100 Job Financing 1.00 Lump Sum 100 Indirect Cost Escalation 1.00 Lump Sum 100 Direct Cost Escalation 1.00 Lump Sum 2,400.00 General Expense 1.00 Lump Sum 0.00 Direct Cost Add-On 1.00 Lump Sum 0.00 Clearing & Grubbing 1.00 Lump Sum 0.00 Direct Cost Add-On 1.00 Lump Sum 0.00 Clearing & Grubbing 1.00 Lump Sum 0.00 Unclassified Excavation 50,000.00 Cubic Yard 3,964.29	Description Forecast (T(7)) Quantity Unit of Measure Man-Hours (Total) Unit Cost JOB 20.00 Mile 27,993.15 \$306,883.14 Prime Bond 1.00 Lump Sum \$48,686.14 Price % Add-On 1.00 Lump Sum \$309,475.27 Job Financing 1.00 Lump Sum \$0.00 Indirect Cost Escalation 1.00 Lump Sum \$11,026.79 Indirect Cost Escalation 1.00 Lump Sum \$11,026.79 Indirect Cost Add-On 1.00 Lump Sum \$10,00 Dob Management & Equipment 1.00 Lump Sum \$109,544.88 General Expense 1.00 Lump Sum \$109,544.08 Mobilization 1.00 Lump Sum \$0.00 \$75,00.00 Clearing & Grubbing 10.00 Aree 0.00 \$9.05 <td>Description Forecast (T/0) Quantity Unit of Measure Man-Hours (Total) Unit Cost Labor Total Cost JOB 20.00 Mile 27,993.15 \$306,883.14 \$907,442.76 Prime Bond 1.00 Lump Sum \$48,686.14 \$0.00 Price % Add-On 1.00 Lump Sum \$309,475.27 \$0.00 Job Financing 1.00 Lump Sum \$0.00 \$0.00 Indirect Cost Escalation 1.00 Lump Sum \$0.00 \$0.00 Direct Cost Escalation 1.00 Lump Sum \$0.00 \$0.00 Direct Cost Escalation 1.00 Lump Sum \$11,026.79 \$12,026.79 Indirect Cost Add-On 1.00 Lump Sum \$0.00 \$0.00 Dob Management & Equipment 1.00 Lump Sum \$0.00 \$0.00 Direct Cost Add-On 1.00 Lump Sum \$0.00 \$0.00 Direct Cost Add-On 1.00 Lump Sum \$0.00 \$0.00 Direct Cost Add-On 1.00 Lump Sum \$0.00 \$50,00.00<</td> <td>Description Forecast (T/O) Quantity Unit of Measure Man-Hours (Total) Unit Cost Labor Total Cost (Forecast) Total Cost (Forecast) 10B 20.00 Mile 27,993.15 \$306,883.14 \$907,442.76 \$6,137,662.81 Prime Bond 1.00 Lump Sum \$48,686.14 \$0.00 \$48,686.14 Price % Add-On 1.00 Lump Sum \$309,475.27 \$0.00 \$40,686.14 Price % Add-On 1.00 Lump Sum \$0.00 \$0.00 \$0.00 Indirect Cost Escalation 1.00 Lump Sum \$0.00 \$0.00 \$0.00 Direct Cost Escalation 1.00 Lump Sum \$11,026.79 \$12,026.79 \$11,026.79 Indirect Cost Escalation 1.00 Lump Sum \$0.00 \$0.00 \$0.00 Dob Management & Equipment 1.00 Lump Sum \$10,056.28 \$91,176.28 \$157,096.28 General Expense 1.00 Lump Sum \$0.00 \$4,200.00 \$4,200.00 Direct Cost Add-On 1.00 Lump Sum \$109,544.08</td> <td>Description Forecast (T/O) Quantity Unit of Measure Man-Hours (Total) Unit Cost Labor Total Cost Total Cost (Forecast) Man-Hours ballind.Maintenan JOB 20.00 Mile 27,993.15 \$306,883.14 \$907,442.76 \$6,137,622.81 28,438.44 Prime Bond 1.00 Lump Sum \$48,686.14 \$0.00 \$48,686.14 \$0.00 \$48,686.14 \$0.00 \$48,686.14 \$0.00 \$10.0 Lump Sum \$309,475.27 \$0.00<td>Description Forecast (T/O) Quantity Unit of Measure Man-Hours (Total) Unit Cost Labor Total Cost (Forecast) Total Cost (Forecast) Man-Hours balindl.Maintenan ed Equipment Total JOB 20.00 Mile 27,993.15 \$306,883.14 \$907,442.76 \$6,137,652.81 28,438.44 \$1,062,750.40 Prime Bond 1.00 Lump Sum \$48,686.14 \$0.00 \$48,686.14 \$0.00 Price % Add-On 1.00 Lump Sum \$309,475.27 \$0.00 \$309,475.27 \$0.00 Job Financing 1.00 Lump Sum \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Indirect Cost Escalation 1.00 Lump Sum \$11,026.79 \$11,026.79 \$11,026.79 \$0.00 Dob Management & Equipment 1.00 Lump Sum \$0.00 \$0.00 \$0.00 \$0.00 General Expense 1.00 Lump Sum \$10,026.79 \$11,026.79 \$11,026.79 \$2,400.00 \$0.00 Dob Management & Equipment 1.00 Lump Sum \$0.00 \$0.00 \$0.00</td><td>Description Forecast (T/O) Quantity Unit of Measure Man-Hours (Total) Unit Cost Labor Total Cost Total Cost (Forecast) Man-Hours tal incl. 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Cost Breakdown Structure (CBS) Register

Congratulations, you have completed this exercise!

LESSON 9 REVIEW

- 1. The ______ Report gives a good overview of how your price breakdowns by cost category.
 - a. Estimate Summary
 - b. PBS Summary
 - C. Audit
- 2. The ______ Report is a very important report to run during bid review to make sure you didn't leave anything out of the estimate.
 - a. CBS Details
 - b. Audit
 - C. Pay Item Summary
- 3. A best practice is to always set your Print output setting to **Preview** so you can review before printing.
 - a. True
 - b. False

LESSON 9 SUMMARY

As a result of this lesson, you can:

- Run reports from the Report menu
- Create and run reports from register forms



LESSON 10 – DATA REPRODUCTION

LESSON DURATION: 20 MINUTES

LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Create a job from an existing job or template
- Create a template
- Reproduce estimate data using the Bid Wizard
- Reproduce estimate data using copy/paste
- Add cost items to a job using the CBS Bid Wizard
- Utilize the Snapshot function

10.1 COPY AN EXISTING JOB

As you build an estimate, you may want to reuse pay items, cost items, or resources from a previous estimate. When you plan to reuse the majority of content within a job, you can simply make a copy of the existing job.

Using the **Create a new Job from... Existing Job** option on the Backstage View creates an exact replica of the existing job, including the job's properties, pay items, cost items, and resources.

The following Step by Step walks you through how to make a copy of an existing job.

STEP BY STEP – COPY AN EXISTING JOB

1. Click the **File** tab on the **Estimate** landing page.



2. From the left side panel, select **New**, then select **Existing Job**.

\odot	Library - Estimate
Start	Create a new Job from
New	
Open	
Save	
Close Job	Scratch Template Existing Job Bid Wizard Archive Snapshot Primavera US Cost
Close All Jobs	
Jobs	
Library	
Templates	
Snapshots	
Archive / Restore	
Settings	
Exit	

3. The Job Register displays a list of your existing projects; select the Training Job and click **OK**.

- 4. On the New Job dialog, click the **ellipses** and select a Core Project.
- 5. In the Code field, type **Infra Job Copy** with your initials.
- 6. To copy the cost details from the existing job to the new job, verify that the **Copy Cost Details** checkbox is selected
 - If you wanted to copy just the cost item structure without cost details, you would uncheck the box.
- 7. Uncheck the check for copying the PBS Changes Log, Copy Quotes and Auto-Update Job in Connected Analytics.
- 8. Click **OK** to create the new job.

8		New Job from '190002-1'
Core Project:	*	104257
Code:	*	Infra Job Copy
Description:		Infra Job Copy
		~
		Copy Cost Details
		Copy PBS Changes Log
		Copy Quotes
		Auto-Update Job in Connected Analytics
		OK Cancel

The new job opens with the Job Properties form active, so you can begin to modify the new job as needed. If you look through the tabs on the Job Properties form, you will find that it looks exactly like the job from which it was copied. Other forms, such as the Pay Item & Proposal Register and the CBS Register, also look the same in both jobs until you make modifications in one job or the other. This is a very easy method for creating a new job, and it is a good choice if you want to copy an entire job. However, if you want to pick and choose which parts of a job to duplicate, the Bid Wizard is a better choice.

10.2 TEMPLATES

Job Templates provide you the ability to maintain a list of template jobs that can be used to create new jobs. As your company grows and increases the number of projects, the need to standardize the estimating process increases to ensure consistency and reduce the chance of information being overlooked.

In InEight Estimate you can create job folders and store them in a separate register as templates. This allows you to store cost items in master templates separate from the jobs in your Job Register.

You can copy the template's foundation setup data, such as account codes, tags, work breakdown structures, and work group tags to your estimate. In Setup > Foundation Setup Data > **Copy data from another Job**, select a template job to copy its foundation data.

=		8 -						Libra	ary - Estimat	
File		Setup	Estimate	System	Developer Tools	Integrations	Actions			
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d,	Previe	ew	🛞 Delete	🔁 Paste	📇 UnLink Field					
8	Expor	rt to Excel	}< Cut	+ Fill Down	1	Expand / Collapse 👻	Copy data from another Job			
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Job	Reg	jister	Job Prope	erties	Foundation Setu	Data Register	0			
rag	g colu	imns l							Job Register	
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)rag		zed Drag		-	È.	Project Name	Organization	Is Template	Notes	Project Notes
	Utiliz	zed Drag	columns here t	to group	2	Project Name MLQ Project 42	-	Is Template		Project Notes
	Utiliz	zed Drag	columns here t	to group	<u>in</u>	-	-	Is Template		-
	Utiliz	imns zed Drag	columns here t Code MLQ-APIM-Tes	to group st9 :1		-	S100000 - InEig	Is Template	Notes	-
	Utiliz	sele zed Drag	columns here t Code MLQ-APIM-Tes MLQ-Template	to group st9 :1 :3		-	S100000 - InEig S100000 - InEig	Is Template	Notes	-
	Utiliz	mns Sele Drag	columns here t Code MLQ-APIM-Tes MLQ-Template MLQ-Template	to group st9 :1 :3 :4		-	S100000 - InEig S100000 - InEig Testing Org	Is Template	Notes	-

The Copy data from another Job action includes jobs marked as Is Template.

You can create templates from scratch or from existing job folders. The following steps walk you through how to create a new template from an existing job folder.

STEP BY STEP – CREATE A TEMPLATE

- 1. Click the **File** tab on the Estimate landing page.
- 2. From the left side panel, select **Templates**.
- 3. Under Templates, select the Template Register.

\bigotimes	
Start	Templates
New	
Open	
Save	
Close Job	Template Register
Close All Jobs	

4. From the Actions tab, select Create Template from Job.

I 🗧 🗧					
File Setup	Estimate	Execution	System	Actions	
Print	New	ें, Close	Ē	1	
neview	🛞 Delete				
Export to Excel	ें, Load		Create Template from Job	2	
Print	Ed	lit	Tools		

- The Job Register opens for you to select the source job for the template
- Assume that you want to make a template from your E101 Training Job
- 5. Select the E101 Training Job with your initials, then click OK.

ag columns here to group			Find: [Search For]	Sa	ved views: Previo	us View	•
Code	<u>h.</u>	In Use	Description	Status	Schedule	Location	City
E101 - Training Job KL			Sample Training Job	Bidding	Microsoft Proj	90th Street & Shea	Scotts.
Training Job			Training Job - Maricopa County No. TM2	Bidding	Microsoft Proj	I-10 MP 100 to MP	Phoenia

NOTE You cannot create templates from jobs that are published to Job Tracking.

• The New Template From Job 'Training Job' with your initials prompt appears.

🛞 New	Template from Job 'Training Job'
Organization: Code: *	S100000 - PKS Inc
	 ✓ Copy Cost Details ✓ Copy PBS Changes Log ✓ Copy Quotes
	OK Cancel

6. Click the ellipsis to the right of the Organization field.

8		New Template
Organization: Code:	*	S 100000 - PKS Inc
Code:	-	
Description:		
		~
		OK Cancel

The Organization Register Library opens.

- 7. In the Organization Register Library, select an organization and then click OK.
- 8. In the Code field, type Small Project Template[your initials].
 - Leave Copy Cost Details and Copy PBS Changes Log checked
- 9. Click **OK**.
 - The new template is created and opens to the Job Properties form
 - You can add the description in addition to the code for any new job you are creating from a template. This description is later added to the Overview tab of the new job on the Job Properties form

Overview	Security	Cover Sheet	Cost Basis	Minority Setup	Fuel Cost	Job Tracking			
Code:	099KL								
Description:	Sample Tra	aining Job 🛛 ┥		•					

• Back in the Templates Register, you can see the new template created

ile	Setup	Estimate	Execution	System		Actions		
b,	Print Preview Export to Excel		en 🤾 Load w 🤾 Close	Create Templ from Job	ate			
	Print	• • •	Edit	Tools				
e	nplate Registe	r 0						
ag	g columns here to	group						
	Code		<u>1</u>	In Use	De	escription	Status	Schedule
	Smal Project Ter	molate Kl.		V	s	mple Training Job	Bidding	Microsoft Proj

• Similar to copying an existing job, you can create a new job from a template from the New menu in the Backstage View.



• You can also create a new job from a template from the New menu in the Bid Wizard.



- 10. Select Add to existing job
- 11. From Select Source Job, click the **dropdown** arrow
- 12. Click Next
- 13. Select a job that is shown as having a Template
- 14. Click **OK**

Bid Wizard	×	9				Job Register			
tep 1: What would you like to do?		Drag columns here to group				Find: [Search For] ··· Saved v	ews: Previ	ious View	•
Create a new job:		Code	<u>1.</u>	Is Template	In Use	Description	Status	Schedule	Location
New Code:		→ 099KL		✓		Sample Training Job	Bidding	Microsoft Proj	90th Street
Description:		E101 - Training Job KL				Sample Training Job	Bidding	Microsoft Proj	90th Street
dd to existing job: [Select Source Job]		Smal Project Template		 Image: A start of the start of		Sample Training Job	Bidding	Microsoft Proj	90th Street
0 0	Net 2 Cancel	4		4				ок	

10.2.1 OBS FILTER TREE

The Template register's organization tree filter shows the templates assigned to a selected organization.

	- 1								Librar	y - Estimate							
ie Se	tup Est	timate	System	Integral	tions	Actions											
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ame						Code	-	In Use	Descript		Status	Schedule	Location	City	County	State	Country
S100000	0 - Inc							In use	Descript	ion			Location	City	County	State	Country
HVT	24.5					MLQ-SUPPORTCASE					Class 3	Microsoft Proj					
HVT	childorg1				N	MLQ-SUPPORTCASE	1-1		Perf	SQL Bulk Copy	Class 3	Microsoft Proj					
May	10th hvt				t	:11					Bidding	Microsoft Proj					
MR 0	ORG_01				Т	ſ1-En			at Energ	IY	Bidding	Microsoft Proj	I-10 MP 100 to MP	Phoenix	Maricopa	@Geo	United St
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Just like the job register, the list of templates is filtered based on the selected organization. The primary difference between the OBS tree filter in the job and template registers is that estimates are associated with projects in the job register, and projects belong to an organization. In the template register, templates belong to an organization.

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lame				Code	£	In Use	Descrip				
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			- 7				-15				
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	epM)			T2-OandG							
~ S/	A 100	0 - Corporation									
~	SB	2000 - Energy									
	>	SC2002 - Oil, Gas & Chemical									
	>	SC2003 - Power									
	>	SC2004 - Industrial									
>	SB	3000 - Infrastructure									
>	SB	4000 - Mining									
>	SB	5000 - Other									
>	SB	6000 - Home Office									
	_										
				Σ	0)					
					3						

10.2.2 ARCHIVE AND RESTORE TEMPLATES

The templates feature gives you the ability to archive and restore templates, enabling templates to become portable. You can move templates between different environments. You can also backup the templates similarly to the Jobs Archive and Restore function.

STEP BY STEP – ARCHIVE AND RESTORE A TEMPLATE

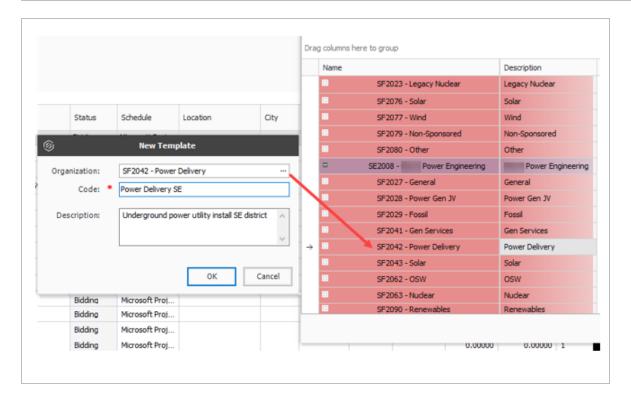
- 1. Click File to open the Backstage View.
- 2. Select Archive / Restore.
 - Several options appear for archiving and restoring your jobs, templates, and library
- 3. Select Archive Template.
 - The Template Register appears
- 4. Select the Small Project Template [your initials] template you previously made, 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. Select **Restore Template** from the Archive / Restore page of the Backstage View to begin restoring the template.
- 8. Browse to the archived template and select it.
- 9. Click **Open**.
 - If the template 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 Template Code

You can assign templates to specific organizational nodes in the OBS, grant permissions, and control user access for templates.

tions		Organization Register - Library	
columns I	here to group	, in the second s	\vee
Name		Description	
•	SE2007 - Power Constructors	Power Constructors	
	SF2023 - Nuclear	Nudear	
	SF2072 - Fossil	Fossi	
	SF2073 - Nuclear	Nuclear	
	SF2075 - Carbon Capture	Carbon Capture	
	SF2076 - Solar	Solar	
	SF2077 - Wind	Wind	
	SF2079 - Non-Sponsored	Non-Sponsored	
	SF2080 - Other	Other	
-	SE2008 - Power Engineering	Power Engineering	
	SF2027 - General	General	
	SF2028 - Power Gen JV	Power Gen JV	
	SF2029 - Fossil	Fossi	
	SF2041 - Gen Services	Gen Services	
	SF2042 - Power Delivery	Power Delivery	
	SF2043 - Solar	Solar	
	SF2062 - OSW	OSW	
	SF2063 - Nudear	Nuclear	
	SF2089 - Geospatial	Geospatial	
		Canc	

For example, you can assign a template to a specific node level in the OBS that is specific to Power Delivery. The OBS node structure assignment is useful for assigning estimators access to designated templates as determined by an Estimate administrator.



Estimators with the appropriate Estimate/template permissions in Suite Administration > Roles and Permissions > Master Data Libraries > **Estimate**, can use the templates in which they are assigned to in their designated OBS node.

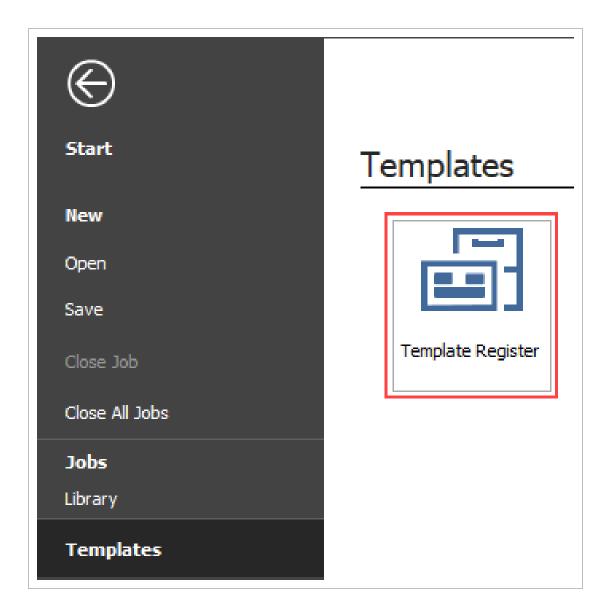
\equiv $\widehat{\mathbf{a}}$ Suite administration / Roles and permissions
Roles and permissions > Edit role
Estimate
🗹 💽 Edit estimate library 📐
🗹 Use templates 🕂
✓
✓ Edit template
Delete template

STEP BY STEP – ASSIGN TEMPLATE TO OBS

1. Open the **Training Job**, then select the **Templates**.



2. Select Template Register.



3. Select New.

File	Setup	Estimate	System	Integ	rations	Actions			
8	Print	🕀 New	Close		<u>-</u>				
	Preview	🚫 Delete		6					
eð	Export to Excel	als Load			Template m Job				
	Print	Ec	lit	т	ools				
Те	mplate Registe	r ©							
Drag	g columns here to	group	6		New	Template			
	Code		Organizat	ion:	S100000 ·	- PKS Inc			Status
÷	1109-T1		Co	ode: *					Bidding
	555		_						Bidding
	555-666		Descript	ion:				\sim	Bidding
	AAA							~	Bidding
	AL Proj	-							Bidding
	AL Template fro	m Texas DOT					ок	Cancel	Bidding
	AL Template X						<u>on</u>	Cancer	Bidding
	Test Te	mplate - Toda	Y						Bidding
	Fest ter	mplate - Today	y 2			-			Bidding
	IL Template from	DOT 1-h				Illinois			Bidding

4. Click the **ellipsis** to the right of the Organization field.

9		New Template
Organization: Code:	*	S 100000 - PKS Inc
Description:		
		OK Cancel

The Organization Register Library opens.

5. In the Organization Register Library, select **SF2090-Renewables**, and then click **OK**.

					Organizati	on Register - Librar	ry	
System	Integrations	Actions	Actions					
ः, Close	Ē		Drag colun	nns here to group			× Enter text to search	
	Create Templat	e	Nam	e	Description			
lit	Tools		•	SE2008 - Power Engineering	Power Engineerin	g		
inc.	10013			SF2027 - General	General			
				SF2028 - Power Gen JV	Power Gen JV			
				SF2029 - Fossil	Fossil			
				SF2041 - Gen Services	Gen Services			
Organizat		00 - PKS Inc		SF2042 - Power Delivery	Power Delivery			
Co	ode: *			SF2043 - Solar	Solar			
Descript	tion:			SF2062 - OSW	OSW			
				SF2063 - Nuclear	Nuclear			
			× 🗉	SF2089 - Geospatial	Geospatial			
				SF2090 - Renewables	Renewables			
		OK Can	cel 🗉	SF2091 - Hydrogen	Hydrogen			
				SF2102 - Food & Beverage	Food & Beverage			
у		asdfjkl		SF2103 - Carbon Capture	Carbon Capture			
2		zdfx		SF2114 - KEG Marketing & Propo	KEG Marketing & Propos	als		
		its Illinois not Illinoise	-	SE2014 - Power Shared Servi	Power Shared Se	vices		
				SF2053 - Power Shared Se	Power Shared Se	vices/S Services		
		new template		SF6216 - Engineering Shared Ser	Engineering Shared Ser	vice		
		new temp		SE2018 - Power	Power			
		new temp					OK	Cancel
Org		new temp						

The new template will be set at the SF2090-Renewables node in the OBS. Users assigned to the SF2090-Renewables level or above in the OBS will be permitted to use this template when creating estimates.

6. The next step will be to create a new template code and a description to complete the new template creation process.

Те	mplate Register 🛛				
Dra	g columns here to group	9		New Template	
	Code	Organization:		SF2090 - Renewables	
÷	1109-T1	Code:	*		
	555				
	555-666	Description:			\sim
	AAA				~
	AL Proj not at root org				
	AL Template from Texas DOT				
	AL Template X			OK	Cancel

What's next: After the template is created you can start to create estimates using a template.

10.3 BID WIZARD

InEight Estimate's Bid Wizard is a powerful tool that can help automate the process of setting up estimates by copying information that already exists in other InEight Estimate job folders. The Bid Wizard can be used to create new projects, create a new job from an existing template, or to add to projects that are already underway.

Rather than copying every part of an existing job, the Bid Wizard gives you more flexibility and control over which parts of a job you want to duplicate, e.g., pay items or cost items or both.

In most cases you will be copying cost items, but if you have a project with pay items that are commonly used, you can copy them into a new project. If you select pay items, you will be able to select cost items as well.

The following Step by Step walks you through how you can use the Bid Wizard to create a new job by importing pay items and their associated costs from an existing job.

STEP BY STEP – USE THE BID WIZARD

1. To open the Bid Wizard, click the File tab on the Estimate landing page.

I 🗄 🗧 🚽	🗿 📙 🕘 Library - Estimate												
File Setup	Estimate	Exec	ution	System	Integrations	Actions							
P			甸		ŧ	🐔 Labor		2		4	11+		
			881	1881		📇 Equipment	I Ă	# 1		G	1.11	· ل_•	
Job Properties	Foundation Setup Data 👻	Address Book	Trench Calculator	Shift Rate Calculator	Resource Rates *	Materials	Resource Assemblies	Cost Item Assemblies	Standard Tables	User Roles	Access Control	Reports	
	Master I	nitializatio	on			laster Resourc	es	Master As	semblies	Roles and Pe	rmissions	Reports	

2. From the left side panel, select **New**, then select **Bid Wizard**.

©	Library - Estimate
Start	Create a new Job from
New	
Open	
Save	
Close Job	Scratch Template Existing Job Bid Wizard Archive Snapshot Primavera US Cost
Close All Jobs	
Jobs	
Library	
Templates	
Snapshots	
Archive / Restore	
Settings	
Exit	

• The Bid Wizard – Step 1 dialog displays

0	Bid Wizard	×
Step 1: What would you	like to do?	
• Create a new job:		
New Code:		
Description:		
○ Add to existing job:	[Select Source Job]	
		Next > Cancel



Notice that you can either create a new project or add to an existing project.

- 3. Type **E101 Bid Wizard** (with your initials) in the New Code field.
- 4. Type **Bid Wizard Example** in the Description field.
- 5. Click the **Next** button.
 - The Bid Wizard Step 2 dialog displays
- 6. Choose Select cost items and click Next.

should fill the new Job?		
		onally,
from a source Job folder.		
	< Back Next >	Cancel
	from a source Job folder (or imp copy their corresponding cost ite	from a source Job folder (or import them from an electronic file), and optic copy their corresponding cost items. from a source Job folder.

- The Bid Wizard Step 3 of 4 dialog displays
- You use this step to indicate which source you want to pull your setup data from (the library or your source job)
- 7. For all selections, select **Copy from source job**.
- 8. Check the Also copy all non-utilized resources checkbox.
- 9. Select **Copy from source job** under Unassigned Cost Items and Markup, and the **Copy Markup** box is automatically selected.

Step 3 of 4: What would you like to do?	
Job Properties O Copy from Master Job Properties O Copy from source job	Job Properties contains the Overview, Security, Cover Sheet, Cost Basis, Minority Setup and Fuel Cost for the job.
Foundation Setup Data O Copy from Master Foundation Setup Data O Copy from source job	Foundation Setup Data contains the Account Codes, Tags, Quote Group Tags, Units of Measure, Currencies, Resource / Assembly Files, Geographic Areas, Wage Zones, Organization Categories and Weather Tags.
Resources and Resource Assemblies Copy utilized Resources and Resource Assemblies from source job I Also copy all non-utilized resources	Resources and Resource Assemblies that are utilized by Cost Items in the source job(s) are copied by default. Optionally, all Resources and Resource Assemblies can be copied from the source job(s) into the new job.
Unassigned Cost Items and Markup Copy from Master CBS Opy from sourcejob Copy Markup	Unassigned Cost Items are those cost items in the CBS that are not assigned to specific pay items, including Prime Bond, Job Financing, General Expense, and others.
Workbook O Copy from Library O Copy from sourcejob	The workbook contains data that is used to link fields in Estimate to cells in Excel. The workbook containing the data that you want to use for linking with Excel can be copied from the Library or the source job.

- 10. Click Next.
 - The Bid Wizard Step 4 of 4 dialog displays
- 11. Click the **Source Job** drop-down arrow.

6			Bid Wiza	ard			o x
Step 4 of 4	I: Choose the so	ource Cost	Items to copy.				
Source Job:	: [Select Source Job] -					
Drag columns he	re to group		Find: [Search Fo	r] !	Saved views:	Standard View	•
Include	CBS Position Code	🚊 Descri	iption			Optional Code	Forecast (T/O) Quant

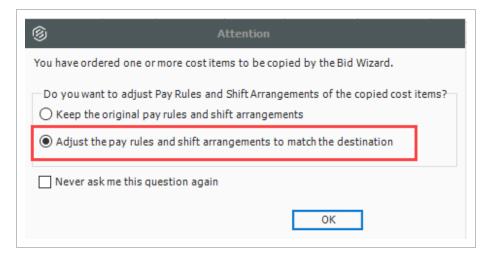
- The Job Register opens
- 12. Find and select Training Job.
- 13. Click OK.
 - This screen displays the cost items of the source job (Training Job). All items are automatically selected
- 14. Use the **Toggle Include All** button to exclude all selections.

S	itep 4	of 4:	Choose the	source Cost I	tems to copy	I.					
	Source	e Job: 1	Training Job	•							
rag	g colum	ins here	to group		Find	[Search For.]	Saved views:	Standard View	1	•
	Inclu	de	CBS P ≞ C	Descr	Optional Code	Forec (T/O) Quan	Unit of Meas	Unit Cost	Total Cost (Fore	Curre	Accoun Code
÷			1	Mobilization	641 0 100	1.00	Lump Sum	\$11,909.51	\$11,909.51	U.S. Dollar	1020
			2	Clearing &	201 0 102	10.00	Acre	\$3,793.70	\$37,936.97	U.S. Dollar	1110
			3	Unclassifie	202 0 183	50,000.00	Cubic Yard	\$4.79	\$239,582.64	U.S. Dollar	1122
			3.1	Excavat	3.1	38,227.74	Cubic Meter	\$3.90	\$149,236.48	U.S. Dollar	1122.1
			3.2	Embank	3.2	42,432.79	Cubic Meter	\$2.13	\$90,346.16	U.S. Dollar	1122.2
			4	Aggregate	303 5912	45,000.00	Ton	\$15.15	\$681,696.99	U.S. Dollar	1120
			4.1	Furnish	4.1	45,000.00	Ton	\$11.54	\$519,513.30	U.S. Dollar	1120.1
			4.2	Finegra	4.2	400,000.00	Square Yard	\$0.18	\$73,352.36	U.S. Dollar	1180
			4.3	Install A	4.3	45,000.00	Ton	\$1.97	\$88,831.33	U.S. Dollar	1120
	÷		4.3.1	Place	4.3.1	45,000.00	Ton	\$1.55	\$69,716.92	U.S. Dollar	1120.2

- 15. Select the checkboxes to include **Mobilization**, **Clearing & Grubbing**, and **Unclassified Excavation**.
- 16. Notice that when selecting Unclassified Excavation, that cost item's subordinates are automatically selected

5	Step -	4 of 4:	Choose the	e source Cost	tems to copy	1.					
	Sourc	e Job:	Training Job	•							
Dra	g colur	nns here	to group		Find	: [Search For.]	Saved views:	Standard View	1	•
	Inclu	ide	CBS P	Descr	Optional Code	Forec (T/O) Quan	Unit of Meas	Unit Cost	Total Cost (Fore	Curre	Account Code
		\checkmark	1	Mobilization	641 0 100	1.00	Lump Sum	\$11,909.51	\$11,909.51	U.S. Dollar	1020
		~	2	Clearing &	201 0 102	10.00	Acre	\$3,793.70	\$37,936.97	U.S. Dollar	1110
ı		\checkmark	3	Unclassifie	202 0 183	50,000.00	Cubic Yard	\$4.79	\$239,582.64	U.S. Dollar	1122
		\checkmark	3.1	Excavat	3.1	38,227.74	Cubic Meter	\$3.90	\$149,236.48	U.S. Dollar	1122.1
		\checkmark	3.2	Embank	3.2	42,432.79	Cubic Meter	\$2.13	\$90,346.16	U.S. Dollar	1122.2
1			4	Aggregate	303 5912	45,000.00	Ton	\$15.15	\$681,696.99	U.S. Dollar	1120
	÷		4.1	Furnish	4.1	45,000.00	Ton	\$11.54	\$519,513.30	U.S. Dollar	1120.1
			4.2	Finegra	4.2	400,000.00	Square Yard	\$0.18	\$73,352.36	U.S. Dollar	1180
			4.3	Install A	4.3	45,000.00	Ton	\$1.97	\$88,831.33	U.S. Dollar	1120
			4.3.1	Place	4.3.1	45,000.00	Ton	\$1.55	\$69,716.92	U.S. Dollar	1120.2
•											Þ

- 17. Click **Finish** to add the new job.
 - An Attention prompt appears asking, "Do you want to adjust Pay Rules and Shift Arrangements of the copied cost items?"
 - Typically, you will want to use the shifts and payment rules of your new destination job.
- 18. Select Adjust the pay rules and shift arrangements to match the destination.



19. Click **OK**.

- A help bubble appears letting you know the job has been created, and that you can use the ribbon tabs on the Estimate landing page to open any form
- 20. Close the help bubble by selecting the **X** in the upper right corner.



21. Open the **Estimate > CBS** to see the three cost items that were brought in.

a	g columns here to group				
	CBS Position Code 😑	Description	Really Optional Code	Forecast (T/O) Quantity	Unit of Measure
÷		ЈОВ		1.00	Lump Sum
	+	Prime Bond	PRIME BOND	1.00	Lump Sum
	+	Price % Add-On	PRICE % ADD-ON	1.00	Lump Sum
	+	Job Financing	FINANCE EXPENSE	1.00	Lump Sum
	+	Indirect Cost Escalation	INDIRECT COST ESCAL	1.00	Lump Sum
	+	Direct Cost Escalation	DIRECT COST ESCALAT	1.00	Lump Sum
	+	Indirect Cost Add-On	INDIRECT COST ADD-ON	1.00	Lump Sum
	+	Job Management & Equipment	JOB MANAGEMENT & E	1.00	Lump Sum
	+	General Expense	GENERAL EXPENSE	1.00	Lump Sum
	+	Direct Cost Add-On	DIRECT COST ADD-ON	1.00	Lump Sum
	+ 1	Mobilization	641 0 100	1.00	Lump Sum
	+ 2	Clearing & Grubbing	201 0102	10.00	Acre
	□ 3	Unclassified Excavation	202 0183	50,000.00	Cubic Yard
	+ 3.1	Excavation	3.1	38,227.74	Cubic Meter
	+ 3.2	Embankment	3.2	42,432.79	Cubic Meter

10.3.1 BID WIZARD UPDATES

While using the Bid Wizard, the Include option is left unchecked by default. A filter is applied to bring in pay items when using the Bid Wizard. The Toggle Include All button only selects the filtered list of items instead of all items.

When the filter criteria is modified, the selected items remain checked even if some of the items might not be visible in the view. When the view is changed, the selected items remain checked.

Tags and UDF fields are included in the **Bid Wizard Selection** register for the cost items and Pay Item & Proposal selection registers. This lets you filter the list of cost items based on a tag or UDF.

When you select the **Toggle Select All** button, only filtered items are included which allow you to include scopes of work relevant to your estimate without having to manually select all items needed.

nag-c	colun	ns hen	to-group				Sa	red views: Stan	dand Wew	- ,
1	Indu	se.	Pay Item Number	Tag 8	Tag 9	Tag 10	User Defined 1	User Defined 2	User Defined 3	Us
1	• [1	501(A) 1306				EarthWork			
4	•	*	506(A) 1322							
+	÷	*	503(A) 1313				Special Constructi			
1	•	$\overline{\mathbf{v}}$	600 0.300							

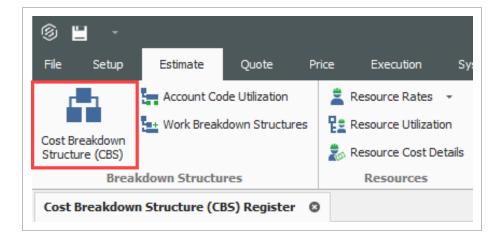
10.4 COPY ESTIMATE DATA USING EDIT COMMANDS

While the Bid Wizard is an efficient way to copy cost history into new projects, you may prefer to use edit commands such as copy and paste to bring cost history into your estimate.

To copy and paste cost history from one job to another, it is beneficial to see the jobs side by side. The following steps walk you through the process.

STEP BY STEP – COPY ESTIMATE DATA USING EDIT COMMANDS

- 1. Click the **File** tab from the Estimate landing page and open the **E101 Bid Wizard** job you just created.
- 2. Open the **Training Job** (if you do not still have it open).
- 3. Make sure the CBS is open for both jobs by going to the Estimate menu and selecting **Cost Breakdown Structure (CBS)**.



4. Since you have both jobs open and they are in their own application window, align them to be side by side by using the **minimize icons** of each job or utilizing Windows align functionality.

			-	ð		×
				盦	▦	?
						^
						-
Saved	views:	Standard View			•	
lv F	lours		Hours			

• Note that the window caption identifies the CBS Register for each job

9 💾 -										® 💾 -							
ile Setup Estina	te Quote P		System Integ		Actions More A	tions		愈目		File Setup Estima	e Quote i			Actions	More Actions		盒⊞
ost Breakdown tructure (CBS)		Schedule Cash Flow	Indirect Cost Items	Price Break Structure	BASE	e Scenario: mates	Reports			Cost Breakdown Structure (CBS)	* X Workbook	Schedule Cash Flow	Indirect %	Breakdown ture (PBS)	Alternate Scenario: BASE Alternates	- Reports	
ireakdown Struc R	es Workbook	Schedule	Indirect Cost	Overhea	d and Pr	Alternates	Reports		^	Breakdown Struc Re	s Workbook	Schedule	Indirect Cost Ove	rhead and Pr	Alternates	Reports	
ost Breakdown Structu	re (CBS) Register 🛛	>							-	Cost Breakdown Structur	e (CBS) Register	0					
rag columns here to group				Find: [S	earch For] ···	Saved views:	Previous View	-		Drag columns here to group			Find	[Search For]	Saved views: S	tandard View	
CBS Position Code	Description		Really Optional Code		ecast O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	AJ	CBS Position Code	Description		Really Optional Code	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Porecast)
> =	308				20.0	Mie	\$3,633,147	\$72,662,954		→ ■	308				1.00 Lump Sum	\$5,643,071	\$5,643,071.88
	Prime Bond		PRIME BOND		1.0	Lump Sum	\$47,119.07	\$47,119.07			Prime Bond		PRIME BOND		1.00 Lump Sum	\$5,492.11	\$5,492.11
	Price % Add-On		PRICE % ADD-ON		1.0	Lump Sum	\$295,371.61	\$295,371.61	L .		Price % Add-On		PRICE % ADD-ON		1.00 Lump Sum	\$23,005.49	\$23,005.49
	Job Financing		FINANCE EXPENSE		1.0	Lump Sum	\$0.00	\$0.00	b		Job Financing		FINANCE EXPENSE		1.00 Lump Sum	\$0.00	\$0.00
	Indirect Cost Esca	lation	INDIRECT COST ES	CAL	1.0	Lump Sum	\$0.00	\$0.00			Indirect Cost Esca	lation	INDIRECT COST ESCAL		1.00 Lump Sum	\$0.00	\$0.00
	Direct Cost Escala	tion	DIRECT COST ESCA	LAT	1.0	Lump Sum	\$19,131.77	\$19,131.77	2		Direct Cost Escala	tion	DIRECT COST ESCALAT		1.00 Lump Sum	\$0.00	\$0.00
	Indirect Cost Add-	On	INDIRECT COST AD	D-ON	1.0	Lump Sum	\$59,476.54	\$59,476.54	٤		Indirect Cost Add	-On	INDIRECT COST ADD-ON		1.00 Lump Sum	\$3,280.16	\$3,280.16
+	Job Management	& Equipment	JOB MANAGEMENT	8.E	1.0	Lump Sum	\$125,896.28	\$125,896.28	8	+	Job Management	& Equipment	JOB MANAGEMENT & E		1.00 Lump Sum	\$125,896.28	\$125,896.28
+	General Expense		GENERAL EXPENSE		1.0	Lump Sum	\$4,200.00	\$4,200.00	0	+	General Expense		GENERAL EXPENSE		1.00 Lump Sum	\$4,200.00	\$4,200.00
	Direct Cost Add-O	•	DIRECT COST ADD-	ON	1.0	Lump Sum	\$104,203.16	\$104,203.16	5		Direct Cost Add-0	n	DIRECT COST ADD-ON		1.00 Lump Sum	\$5,788.58	\$5,788.58
+ 1	Mobilization		641.0100		2.0	Lump Sum	\$11,909.51	\$23,819.02		+ 1	Mobilization		641.0100		1.00 Lump Sum	\$11,909.51	\$11,909.5
+ 2	Clearing & Grubbin	19	2010102		10.0	Acre	\$3,793.70	\$37,936.97	7	+ 2	Clearing & Grubbi	ng	201 0102		10.00 Acre	\$3,793.70	\$37,936.93
□ 3	Unclassified Excav	ation	202 0 183		50,000.0	Cubic Yard	\$4.94	\$246,901.12	2	□ 3	Unclassified Excar	vation	202 0183	S	0,000.00 Cubic Yard	\$4.79	\$239,582.64
+ 3.1	Excavation		3.1		38,227.7	Cubic Meter	\$4.10	\$156,554.96	5	+ 3.1	Excavation		3.1	3	3,227.74 Cubic Meter	\$3.90	\$149,236.48
+ 3.2	Embankment		3.2		42,432.7	Cubic Meter	\$2.13	\$90,346.16	5	+ 3.2	Embankment		3.2	4	2,432.79 Cubic Meter	\$2.13	\$90,346.10
a 4	Appregate Base		303 5912		45,000.0	Ten	\$15.15	\$681,696,99									

5. On the CBS of the Training Job, click the row header on cost item **4 – Aggregate Base** and press **Ctrl+C** to copy the cost item.

÷	□ 4	Aggregate Base	303 5912
	+ 4.1	Furnish & Haul Base Material	4.1
	+ 4.2	Finegrade Subgrade	4.2
	4.3	Install Aggregate Base	4.3
	+ 4.3.1	Place Aggregate Base	4.3.1
	+ 4.3.2	Blue Top Aggregate Base	4.3.2

When you copy a superior cost item, all of its subordinates are automatically copied.

6. On the CBS of the E101 Bid Wizard job, click the row header on the first blank register row, and press **Ctrl+V** to paste the cost item.

TIP

+ 1	Mobilization	641 0 100	1.00	Lump Sum
+ 2	Clearing & Grubbing	201 0102	10.00	Acre
□ 3	Unclassified Excavation	202 0183	50,000.00	Cubic Yard
+ 3.1	Excavation	3.1	38,227.74	Cubic Meter
+ 3.2	Embankment	3.2	42,432.79	Cubic Meter

7. On the Attention dialog, select **Adjust the pay rules and shift arrangements to match the destination** and click **OK**.

6	Attention
	dered one or more cost items to be copied and inserted as subordinates to Item at CBS Position Code <job>.</job>
⊖ Keep th	nt to adjust Pay Rules and Shift Arrangements of the copied cost items? e original pay rules and shift arrangements the pay rules and shift arrangements to match the destination
Never a	sk me this question again OK Cancel

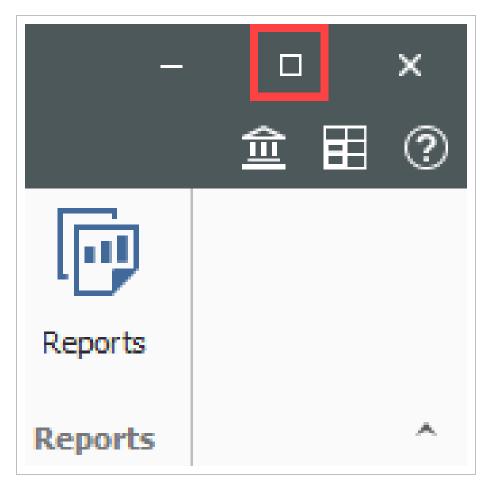
• You can see in the destination job's CBS that you've added the Aggregate Base cost item, along with its subordinate cost items and all cost and productivity detail

- 🗎 -								9 💾 -						
e Setup Estim	ate Quote Price Execution		s Actions More Act	ons		金田(File Setup Estimat	e Quote Price Execution		Actions More Act	tions		愈囲
at Breakdown ucture (CBS)		Indirect Price	Breakdown cture (PBS)	Scenario: nates	Reports		s	Cost Breakdown Structure (CBS)	Workbook Schedule Cash Flow	Indirect %	Alternation	e Scenario: mates	Reports	
eakdown Struc R	tes Workbook Schedule	Indirect Cost Ove	erhead and Pr	Alternates	Reports		^ E	Breakdown Struc Re	s Workbook Schedule	Indirect Cost Ove	head and Pr	Alternates	Reports	
st Breakdown Structs	ure (CBS) Register 0							Cost Breakdown Structur	e (CBS) Register O					
g columns here to group		Find	: [Search For]	Saved views:	Previous View	•	D	rag columns here to group		Find:	[Search For] ···	Saved views: S	tandard View	
CBS Position Code	Description	Really Optional Code	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	A	CBS Position Code	Description	Really Optional Code	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)
•	308		20.00	Mie	\$3,633,147	\$72,662,954		•	308		1.00	Lump Sum	\$14,870,33	\$14,870,33
	Prime Bond	PRIME BOND	1.00	Lump Sum	\$47,119.07	\$47,119.07			Prime Bond	PRIME BOND	1.00	Lump Sum	\$12,328.94	\$12,328
	Price % Add-On	PRICE % ADD-ON	1.00	Lump Sum	\$295,371.61	\$295,371.61			Price % Add-On	PRICE % ADD-ON	1.00	Lump Sum	\$60,524.65	\$60,524
	Job Financing	FINANCE EXPENSE	1.00	Lump Sum	\$0.00	\$0.00			Job Financing	FINANCE EXPENSE	1.00	Lump Sum	\$0.00	\$0
	Indirect Cost Escalation	INDIRECT COST ESCAL	1.00	Lump Sum	\$0.00	\$0.00			Indirect Cost Escalation	INDIRECT COST ESCAL	1.00	Lump Sum	\$0.00	\$0
	Direct Cost Escalation	DIRECT COST ESCALAT	1.00	Lump Sum	\$19,131.77	\$19,131.77			Direct Cost Escalation	DIRECT COST ESCALAT	1.00	Lump Sum	\$0.00	\$0
	Indirect Cost Add-On	INDIRECT COST ADD-ON	1.00	Lump Sum	\$59,476.54	\$59,476.54			Indirect Cost Add-On	INDIRECT COST ADD-ON	1.00	Lump Sum	\$11,005.99	\$11,005
+	Job Hanagement & Equipment	JOB MANAGEMENT & E	1.00	Lump Sum	\$125,896.28	\$125,896.28		+	Job Management & Equipment	JOB MANAGEMENT & E	1.00	Lump Sum	\$125,896.28	\$125,890
+	General Expense	GENERAL EXPENSE	1.00	Lump Sum	\$4,200.00	\$4,200.00		+	General Expense	GENERAL EXPENSE	1.00	Lump Sum	\$4,200.00	\$4,200
	Direct Cost Add-On	DIRECT COST ADD-ON	1.00	Lump Sum	\$104,203.16	\$104,203.16			Direct Cost Add-On	DIRECT COST ADD-ON	1.00	Lump Sum	\$19,422.52	\$19,422
+ 1	Mobilization	641 0100	2.00	Lump Sum	\$11,909.51	\$23,819.02		+ 1	Hobilization	641.0100	1.00	Lump Sum	\$11,909.51	\$11,909
+ 2	Clearing & Grubbing	201 0102	10.00	Acre	\$3,793.70	\$37,936.97		+ 2	Clearing & Grubbing	201 0 102	10.00	Acre	\$3,793.70	\$37,936
□ 3	Unclassified Excavation	202 0183	50,000.00	Cubic Yard	\$4.94	\$246,901.12		□ 3	Unclassified Excavation	202 0183	50,000.00	Cubic Yard	\$4.79	\$239,582
+ 3.1	Excavation	3.1	38,227.74	Cubic Meter	\$4.10	\$156,554.96		+ 3.1	Excavation	3.1	38,227.74	Cubic Meter	\$3.90	\$149,236
+ 3.2	Embankment	3.2	42,432.79	Cubic Meter	\$2.13	\$90,346.16		+ 3.2	Embankment	3.2	42,432.79	Cubic Meter	\$2.13	\$90,346
□ 4	Aggregate Base	303 5912	45,000.00	Ton	\$15.15	\$681,696.99	1	→ □ 4	Aggregate Base	303 5912	45,000.00	Ton	\$15.15	\$681,696
+ 4.1	Furnish & Haul Base Material	4.1	45,000.00	Ton	\$11.54	\$519,513.30		+ 4.1	Furnish & Haul Base Material	4.1	45,000.00	Ton	\$11.54	\$519,513
+ 4.2	Pinegrade Subgrade	4.2	400,000.00	Square Yard	\$0.18	\$73,352.36		+ 4.2	Pinegrade Subgrade	4.2	400,000.00	Square Yard	\$0.18	\$73,352
E 4.3	Instal Aggregate Base	4.3	45,000.00	Ton	\$1.97	\$88,831.33		4.3	Install Aggregate Base	4.3	45,000.00	Ton	\$1.97	\$88,831
+ 4.3.1	Place Aggregate Base	4.3.1	45,000.00	Ton	\$1.55	\$69,716.92		+ 4.3.1	Place Aggregate Base	4.3.1	45,000.00	Ton	\$1.55	\$69,716
+ 4.3.2	Blue Top Aggregate Base	4.3.2	400,000.00	Square Yard	\$0.05	\$19,114.42		+ 4.3.2	Blue Top Aggregate Base	4.3.2	400,000.00	Square Yard	\$0.05	\$19,114
= 5	Asphalt Concrete Hot Mix Type A	303 4263	35,000.00	Ton	\$42.62	\$1,491,580,59	11.	*					_	

TIP You can also drag and drop cost items from one CBS to another instead of copying and pasting.

TIP Copied cost items are considered Job Overhead until they are assigned to a pay item

8. To go back to your full screen view of the E101 Bid Wizard job, select the maximize icon.



10.5 CBS BID WIZARD

You can also use the Bid Wizard to add cost items while you are in the CBS Register. The following steps walk through using the CBS Bid Wizard.

STEP BY STEP – USE THE CBS BID WIZARD

- 1. Click the File tab from the Estimate landing page and open the E101 Bid Wizard job you created.
- 2. From the Estimate tab, select Cost Breakdown Structure (CBS).
- 3. Create a new cost item by typing **New** in the Description column on the bottom row of the CBS
- 4. Highlight the **New** row.

		New			Each
÷	4.3.2	Blue Top Aggregate Base	4.3.2	400,000.00	Square Yard
+	4.3.1	Place Aggregate Base	4.3.1	45,000.00	Ton
	4.3	Install Aggregate Base	4.3	45,000.00	Ton
+	4.2	Finegrade Subgrade	4.2	400,000.00	Square Yard
+	4.1	Furnish & Haul Base Material	4.1	45,000.00	Ton
	4	Aggregate Base	303 5912	45,000.00	Ton

5. To open the CBS Bid Wizard, click the **Bid Wizard** icon on the **More Actions** tab.

© 🛯	-									
File	Setup	Estimate	Quote	Price	Execution	System	Integrations	Actions	More Actions	
🗲 Sch	edule Selection	1	∢⊧ Swap -	* ** E	Bid Wizard	∑ Unit /	Total Confirmation			+
🕢 Uns	chedule Selecti	ion	😑 Remove 👻		Subtotal Calculator	💮 Refre	sh Benchmarks			
te al	culate Plug Day	s	C Update +		Quantity Checking	🕀 Add 🗘	juote	Add Level On Cost Items		Import / Update CBS +
1	Schedule	B	atch Operations	5		Tools			Data Source	

- The Bid Wizard window opens
- 6. Click in the **Source Job** column on the New cost item row.

New	1.00	Each	[Select Source J 👻
Blue Top Aggregate Base	400,000.00	Square Yard	[Select Source Job]
Place Aggregate Base	45,000.00	Ton	[Select Source Job]

- 7. From the Source Job drop-down list, select **Training Job**.
- 8. Scroll to the right of the Source Job column and click in the **Source CBS Position Code** column on the New Cost item row.
 - A source CBS Register window appears
- 9. Select CBS position code 5 Asphalt Concrete Hot Mix Type A from the register.

n cay	g co	lumns here to group	Find: [Search For]	··· Saved views:	Previous View	•
		3S osition Code ៉	Description	Really Optional Code	Unit of Measure	Forecast (T/O) Quantit
	÷	4.2	Finegrade Subgrade	4.2	Square Yard	
		4.3	Install Aggregate Base	4.3	Ton	
	Ð	4.3.1	Place Aggregate Base	4.3.1	Ton	
		4.3.2	Blue Top Aggregate Base	4.3.2	Square Yard	
÷		5	Asphalt Concrete Hot Mix Type A	303 4263	Ton	
	Ð	5.1	Furnish & Haul Hot Mix	5.1	Ton	
	Ð	5.2	Install Hot Mix Type A	5.2	Ton	
		6	36 Inch RCP Culvert Class III	413(B) 0464	Linear Feet	
	Ð	6.1	Furnish RCP Materials	6.1	Linear Feet	
	Ð	6.2	Excavate RCP Trench	6.2	Cubic Yard	
	H	6.3	Install RCP Pipe	6.3	Linear Feet	
			Backfill RCP Pipe	6.4	Cubic Yard	
	œ	6.4	backilli KGF Fipe			

- 10. Click **OK**.
- 11. Click **Finish** on the Bid Wizard.
 - An Attention prompt displays, asking if you want to make adjustments
 - Keep the default options selected: Make Adjustments according to their quantity drivers and cost drivers and Adjust the pay rules and shift arrangements to match the destination
- 12. Click **OK**.

	Attention
'ou have ordered Vizard.	one or more cost items, or just their details, to be copied by the Bid
quantures:	djust cost items and cost details based on the destination
O Do not make	adjustments
Make adjustm	ents according to their quantity drivers and cost drivers
Do you want to a	djust Pay Rules and Shift Arrangements of the copied cost items?
Keep the orig	nal pay rules and shift arrangements
Adjust the pay	rules and shift arrangements to match the destination
Never ask me	this question again
	OK Cancel

- You can see that cost item 5 and its subordinates are now imported into your existing job.
- You could choose a new name for the cost item, or name it Asphalt Concrete Hot Mix Type A to match the original cost item

	4.3	Install Aggregate Base	4.3	45,000.00	Ton
	+ 4.3.1	Place Aggregate Base	4.3.1	45,000.00	Ton
	+ 4.3.2	Blue Top Aggregate Base	4.3.2	400,000.00	Square Yard
/	5	Asphalt Concrete Hot Mix Type A		1.00	Each
1	5 5 5 5 5	Asphalt Concrete Hot Mix Type A Furnish & Haul Hot Mix	5.1	1.00 1.00	Each Ton
1			5.1 5.2		

10.6 SNAPSHOTS

A job snapshot is a copy of an estimate that provides read-only access to the job as it existed at a specific point in time. You can now filter the Snapshot register to jobs containing snapshots.

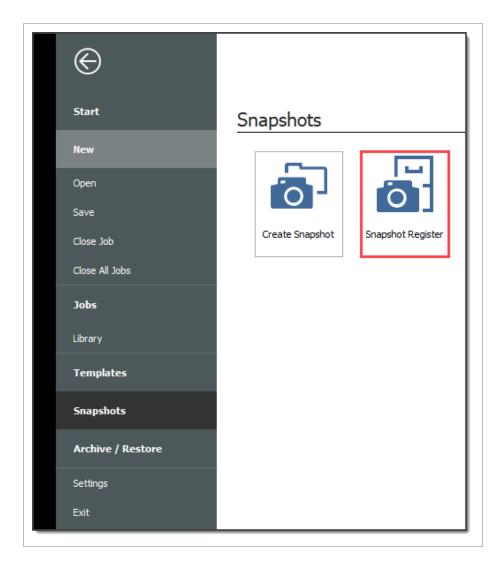
The Snapshot register has some additional columns as well. In addition to the Code, Description, Last Saved, and Version column, the Snapshot register contains all fields that are present on the Jobs register that provides you with an easier way to group, sort, filter, and find the jobs you need.

10.6.1 SNAPSHOT REGISTER

The Snapshot Register is where you will view individual snapshots for specific jobs.

STEP BY STEP – SNAPSHOT REGISTER

- 1. Click the File tab to open the Backstage View. In the panel, select Snapshots.
- 2. From the Snapshots form, select the **Snapshot Register** tab.



3. To view individual snapshots for specific jobs, click the is icon next to the desired job to display the list of snapshots.

> +		
	E101 - Training Job KL	Sample Training Job
+	Training Job	Training Job - Maricopa County No. TM2924

10.6.2 CREATING A NEW JOB SNAPSHOT

STEP BY STEP – CREATE A NEW JOB SNAPSHOT

You can create a Job Snapshot from an existing Job.

1. From the Snapshots form, select the **Create Snapshot** tab.

📑 Print	ें: Load	🐻 Create Job Snapshot	14			C Refresh		
neview	- Edit	Delete All Job Snapshots	× .			🖆 Create N	ew Job from S	apshot
	Pelete			er to Jobs Snapshots	Clear Filter			
Print		Edit	×	liew			Tools	
Snapshot Ro	-							
Code 📃		Description		Last Version In Use		In Use	Status	
→ + E101 - Training Job KL		KL Sample Training Job		11/12/2019	9 2:23:1	19.2.0.27	✓	Bidding
+ Training Job			a County No. TM2924 11/13/2019 7:40:1 19.2.0.27				Bidding	

2. If an existing job is open select **Save**, if you haven't already done so.

9	Attention							
Unsaved data will not be stored in the snapshot. Save the job before taking a snapshot?								
E101	- Training Job KL							
	OK Cancel Unselect All							

- 3. A New Job Snapshot [Job Code Here] dialog box appears. From there, you can add a Snapshot comment.
 - If you want to Include all Attachments that have been stored in the Job Folder with this Snapshot, select the check box, otherwise uncheck the box.
 - If you want to Use Job's current User Access restrictions for this Snapshot, select this radio button.
 - If you want to Remove User Access restrictions for this Snapshot and allow read-only access to all users, select this radio button
 - If you want to Specify User Access restrictions for this Snapshot (default selection), select this option
 - Then use the Add and Remove buttons to specify user access using Active Directory.

9	New Job Snapshot [E101 - Training Job KL] — 🗆 🗙
Job:	E101 - Training J Job Description: Sample Training Job
Snapshot Comment:	<add comment="" here=""></add>
\rightarrow	Include all Attachments that have been stored in the Job Folder with this Snapshot
	User Access O Use Job's current User Access restrictions for this Snapshot Remove all User Access restrictions for this Snapshot Specify User Access restrictions for this Snapshot User - karen.loftus@ineight.com user - paul.trippi@ineight.com Remove
	OK Cancel

(Users with current access to the job default onto the list.)

- 4. Click OK to create the snapshot.
- 5. A pop-up indicates when the snapshot has been created.

Success!
Successfully created Job Snapshot for Job: 'E101 - Training Job KL'.
Never offer this help again
ОК

10.6.3 EDITING A JOB SNAPSHOT

STEP BY STEP – EDIT A JOB SNAPSHOT

- 1. From the Snapshot Register, click the 🖩 icon next to the desired job to display snapshots.
- 2. Right-click on the individual snapshot you want to edit and select Edit.

÷	-	E101	- Trainin	g Job KL	Sample Training Job	
			Snapsh	ot Comment		Date
	+		<	<u>L</u> oad		11/13
		Traini	ing	<u>E</u> dit		
			്	<u>D</u> elete		
			c e r	Create No	ew Job from Snapshot	
_	_		_			

- 3. The same sort of dialog box opens up as when you created the Snapshot. In this case, from the Edit Job Snapshot [Job Code Here] dialog box, modify the Snapshot Comment and the User Access options as needed.
 - If you want to Include all Attachments that have been stored in the Job Folder with this Snapshot, select the check box. Otherwise, uncheck the box
 - If you want to Use Job's current User Access restrictions for this Snapshot, select this radio button
 - If you want to Remove User Access restrictions for this Snapshot and allow read-only access to all users, select this radio button
 - If you want to Specify User Access restrictions for this Snapshot (default selection), select this option
 - Then use the Add and Remove buttons to specify user access using Active Directory. (Users with current access to the job default onto the list.)
- 4. Click **OK** to update the snapshot.

10.6.4 DELETING A JOB SNAPSHOT

STEP BY STEP – DELETE A JOB SNAPSHOT

- 1. From the Snapshot Register, click the 🖩 icon next to the desired job to display snapshots.
- 2. Right-click on the individual snapshot you want to delete snapshots from and select **Delete**.

	Co	de		<u>=</u>	Descriptio	n				
÷	-	E101	- Trainir	ng Job KL	Sample Tr	Sample Training Job				
			Snapsh	not Comme	ent	1	Date Crea			
		÷	<add i<="" td=""><td>indated.co Lo Ed</td><td></td><td></td><td><u>11/13/2</u>01 201</td></add>	indated.co Lo Ed			<u>11/13/2</u> 01 201			
	+ Training Job		_	lete						
				<u>C</u> r	eate New Job	from Snapsho	t			

3. Click OK

6	Delete Job Snapshot
Are you	sure you want to delete this Job Snapshot?
<ada< td=""><td>d updated comment [E101 - Training Job KL_201911</td></ada<>	d updated comment [E101 - Training Job KL_201911
	OK Cancel Unselect All

Alternatively, you can delete all Job Snapshots by clicking **Delete All Job Snapshots** from the Actions tab.

© 💾								
File	Setu	p Estin	nate	Execution	Syste	m	Action	ns
📑 Print		ें: Load	ò	Create Job Snap	shot		14	
载 Preview		ें: Edit	🔆 Delete All Job Snapshots		apshots	_		
		鹶 Delete					pand / apse *	Filter to with Sna
Print				Edit				View
Snapsho	ot Re	gister O						

10.6.5 LOADING A JOB SNAPSHOT

When you load an existing Snapshot, it loads into Estimate as any other job.

STEP BY STEP – LOAD A JOB SNAPSHOT

- 1. Click the File tab to open the Backstage View, then select **Snapshots**.
- 2. From the Snapshots form, select the **Snapshot Register** tab.
- 3. On the Snapshot Register, click the e icon next to the desired job to display the list of snapshots.
- 4. Right-click on the individual snapshot you want to load and select **Load**.

	Co	de	<u>=</u>	Description		La Sa	st wed		Version	In Use
÷	-	E101	- Training Job KL	Sample Training Job			/13/20:	19 8:25:3	19.2.0.27	✓
			Snapshot Comment	<u> </u>	Date Created			Version		
			<add com<="" td="" updated=""><td>ment here></td><td>11/13/2019 3:3</td><td>1:54</td><td>PM</td><td>19.2.0.27</td><td></td><td></td></add>	ment here>	11/13/2019 3:3	1:54	PM	19.2.0.27		
		\rightarrow	Comment #2		11/13/2019 3:5	0.00	Load	10 2 0 27		_
	+	Train	ing Job	Training Job - Maricopa Co	unty No. TM292		Edit			
					8	<u>D</u> elet	e			
						c P	<u>C</u> reat	e New Job f	rom Snapsho	ot

To identify a snapshot in Estimate as a read-only snapshot:

- The job name is preceded by the label SNAPSHOT: centered on the top of the toolbar
- A red banner shows the specific snapshot information at the bottom of the screen

NOTE A snapshot can be modified, but it cannot be saved as it is read-only.

Print	🚯 New 🖳 Copy	100	Split	⇒ Indent	息 Link Field	- Cost Item		Assembly	÷	esource			E CBS Tre	<u>血</u>	: ⊞ (
		-							-		4	T To			
Preview	🔕 Delete Paste		Split by Cost Type	- Outdent	Junlink Field	Subordinate C		Subordinate Ass	emoly 22 K	esource Assembly	Expand /	Filter Clear	Expand	CBS Tree	
Export to Ex	ccel 🔆 Cut 🛛 🕂 Fill Dov	_	Toggle Suspended			Dependent Co	st Item				Collapse *	 Filter 			
Print		E	dit		Workbook			Insert				View			
ost Breakdo	wn Structure (CBS) Registe	r O													
BS Tree (Fil	ter Mode)	× D	rag columns here to g	roup						Find: Searc	h For]	Saved view	vs: Previous	View	-
ode	Description		CBS .				Forecast	Unit of		Total Cost		Allocation		Cost	Option
- 1	JOB		Position Code	. Descrip	otion		(T/O) Quantity	Measure	Unit Cost	(Forecast)	Allocated	Source	Currency	Adjustment	Code
88	Prime Bond		→ ■	JOB			20.00	Mile	\$292,094.58	\$5,841,891.55			U.S. Dollar		
88	Price % Add-On		+	Prime	Bond		1.00	Lump Sum	\$46,950.91	\$46,950.91			U.S. Dollar		PRIME
	Job Financing		+	Price	% Add-On		1.00	Lump Sum	\$293,858.20	\$293,858.20			U.S. Dollar		PRICE
88	Indirect Cost Escalation		+	Job Fi	nancing		1.00	Lump Sum	\$0.00	\$0.00			U.S. Dollar		FINAN
88	Direct Cost Escalation		+	Indire	ct Cost Escalatio	n	1.00	Lump Sum	\$0.00	\$0.00			U.S. Dollar		INDIR
88	Indirect Cost Add-On		+	Direct	Cost Escalation		1.00	Lump Sum	\$0.00	\$0.00			U.S. Dollar		DIREC
	Job Management & Equipment	t	+	Indire	ct Cost Add-On		1.00	Lump Sum	\$0.00	\$0.00			U.S. Dollar		INDIR
	General Expense		+	Job M	anagement & Eg	uipment	1.00	Lump Sum	\$157.096.28	\$157.096.28			U.S. Dollar		JOB M
88	Direct Cost Add-On		+	Gener	ral Expense		1.00	Lumo Sum	\$4,200.00	\$4,200.00			U.S. Dollar		GENER
 1 2 	Mobilization Clearing & Grubbing		+	Direct	t Cost Add-On		1.00	Lumo Sum	\$104.301.10	\$104.301.10			U.S. Dollar		DIREC
> = 3	Lindassified Excavation		+ 1	Mobili	ization		1.00	Lump Sum	\$11.909.51	\$11,909.51			U.S. Dollar	✓	641.01
→ 4	Aggregate Base		+ 2	Cleari	ng & Grubbing			Acre	\$3,918.50				U.S. Dollar		201.0
> - 5	Asphalt Concrete Hot Mix Ty		= 3		ssified Excavation	n	50,000.00		\$4.68				U.S. Dollar		202.01
> 🚔 6	36 Inch RCP Culvert Class III		+ 3.1	Exca	avation		50,000.00	Cubic Yard	\$3.00	\$149,922.88			U.S. Dollar		3.1
> 📫 7	10 Inch PVC Force Main (SD		+ 3.2	Emb	ankment		50,000.00	Cubic Yard	\$1.68				U.S. Dollar		3.2
> 🚔 8	24 Inch PVC Gravity Sewer (4	Aggre	gate Base		45,000.00		\$15.40				U.S. Dollar		303 59
> 📫 9	4 Foot Diameter Manhole		+ 4.1		ish & Haul Base Mat	terial	45,000.00		\$11.54				U.S. Dollar		4.1
> 💼 10	Structural Excavation & Backf	1	+ 4.2		grade Subgrade			Square Yard	\$0.19				U.S. Dollar		4.2
> 🕋 11	Steel Reinforcement		_												
> 📫 12	Retaining Wall	Ŧ		106						\$5,841,891					

EXERCISE 10.1 – DATA REPRODUCTION

Now that you have learned how to utilize the Bid Wizard, complete the following steps using the Bid Wizard and Copy & Paste features.

- 1. Open the Bid Wizard by clicking the Bid Wizard icon from the More Actions tab.
- 2. Choose the **Create a new job** radio button.
- 3. Type **BW Exercise** (with your initials) in the **New Code** field and type **Exercise** in the Description field.
- 4. Choose Select cost items.
- 5. For all selections, choose **Copy from source job**.
- 6. Select the Also copy all non-utilized resources checkbox.
- 7. Select **Copy from source job** under Unassigned Cost Items and Markup, and the Copy Markup box is automatically selected.
- 8. Find and select **Training Job** and click **OK**.
- 9. Use the Toggle Include All button to exclude all selections.
- 10. Select the checkboxes to include **Cost Items 4-7**.
- 11. Click **Finish** to add the new job.
- 12. Select Adjust the pay rules and shift arrangements to match the destination.
- 13. Open the **CBS** to see the cost items that were brought in.

14. Open the Infra Job Copy with your initials that you created earlier in this lesson.

15. Copy **Cost items 8 and 9** and paste them into the BW Exercise job.

You should end up with the following results

CBS Position Code	Description	Optional Code	Forecast (T/O) Quantity	Unit of Measure
+	Indirect Cost Escalation	INDIRECT COST ESCAL	1.00	Lump Sum
+	Direct Cost Escalation	DIRECT COST ESCALAT	1.00	Lump Sum
+	Indirect Cost Add-On	INDIRECT COST ADD-ON	1.00	Lump Sum
+	Job Management & Equipment	JOB MANAGEMENT & E	1.00	Lump Sum
+	General Expense	GENERAL EXPENSE	1.00	Lump Sum
+	Direct Cost Add-On	DIRECT COST ADD-ON	1.00	Lump Sum
1	Aggregate Base	303 5912	45,000.00	Ton
+ 1.1	Furnish & Haul Base Material	4.1	45,000.00	Ton
+ 1.2	Finegrade Subgrade	4.2	400,000.00	Square Yard
■ 1.3	Install Aggregate Base	4.3	45,000.00	Ton
+ 1.3.1	Place Aggregate Base	4.3.1	45,000.00	Ton
+ 1.3.2	Blue Top Aggregate Base	4.3.2	400,000.00	Square Yard
2	Asphalt Concrete Hot Mix Type A	303 4263	35,000.00	Ton
+ 2.1	Furnish & Haul Hot Mix	5.1	35,000.00	Ton
+ 2.2	Install Hot Mix Type A	5.2	35,000.00	Ton
3	36 Inch RCP Culvert Class III	413(B) 0464	<u>1,024.00</u>	Linear Feet
+ 3.1	Furnish RCP Materials	6.1	1,024.00	Linear Feet
+ 3.2	Excavate RCP Trench	6.2	1,858.56	Cubic Yard
+ 3.3	Install RCP Pipe	6.3	1,024.00	Linear Feet
+ 3.4	Backfill RCP Pipe	6.4	1,587.20	Cubic Yard
□ 4	10 Inch PVC Force Main (SDR21)	800 0220	12,000.00	Linear Feet
+ 4.1	Furnish 10 Inch PVC Materials	7.1	12,000.00	Linear Feet
+ 4.2	Excavate-Install-Backfill 10 Inch PVC	7.2	12,000.00	Linear Feet
5	24 Inch PVC Gravity Sewer (SDR35)	800 0330	3,000.00	Linear Feet
□ 5.1	Excavate 24 Inch PVC	8.1	3,000.00	Linear Feet
+ 5.1.1	Excavate 24 Inch PVC 0-6 ft Depth	8.1.1	1,390.00	Cubic Yard
+ 5.1.2	Excavate 24 Inch PVC 6-10 ft Depth	8.1.2	3,610.00	Cubic Yard
+ 5.2	Furnish & Install 24 Inch PVC	8.2	3,000.00	Linear Feet
+ 5.3	Backfill 24 Inch PVC	8.3	4,520.00	Cubic Yard
= 6	4 Foot Diameter Manhole	800 0400	16.00	Each
+ 6.1	Furnish 4 ft Manhole Materials	9.1	16.00	Each
+ 6.2	Excavate-Install-Backfill Manhole	9.2	16.00	Each

Congratulations, you have completed this exercise!

LESSON 10 REVIEW

- 1. From the New option on the Backstage View, which of the following options are available for creating a new job? (Select all that apply)
 - a. Scratch
 - b. Template
 - C. Import
 - d. Existing Job
 - e. Historic
 - f. Bid Wizard
- 2. Which of the following job reproduction options lets you pick and choose which cost items you want to import into your new job?
 - a. Template
 - b. Bid Wizard
 - C. Existing Job
 - d. Archive
- 3. Which of the following options allows you to add cost items from another project when working in the CBS Register?
 - a. Bid Wizard
 - b. CBS Bid Wizard
 - C. Template
 - d. Existing Job

LESSON 10 SUMMARY

As a result of this lesson, you can:

- · Create a job from an existing job or template
- Create a template

- Reproduce estimate data using the Bid Wizard
- Reproduce estimate data using copy/paste
- Add cost items to a job using the CBS Bid Wizard
- Utilize the Snapshot function

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LESSON 11 – EXCEL INTEGRATION

LESSON DURATION: 20 MINUTES

LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Export data from InEight Estimate to Excel
- Link a field in InEight Estimate to Excel
- Update a linked InEight Estimate field with Excel data

11.1 EXPORT TO EXCEL

InEight Estimate's integration with Microsoft Excel includes a two-way integration that allows you to update register fields in InEight Estimate with data contained in an Excel workbook, and update Excel cells with data contained in a register column in InEight Estimate.

InEight Estimate includes a worksheet export that makes it easy to transfer data out of InEight Estimate register forms to Microsoft Excel spreadsheets. This feature makes it faster and easier to send data from an InEight Estimate register to a spreadsheet, analyze it, modify it, and customize it for any other uses.

The Export to Excel feature is available on all register forms in the system and allows you to export the data currently displayed on a register form to an Excel worksheet.

STEP BY STEP – EXPORT DATA TO AN EXCEL WORKBOOK

- 1. Open the **Training** Job and from the Estimate tab, open the **CBS Register**.
- 2. From the Actions tab, select **Export to Excel**.

File Setup	Estimate	Quote	Price	Execution	System	Integrations	Actions
Print	+ New	🖥 Сору	🛒 Spi	lit	🖛 Outdent	🚇 Link Field	→ 🗮 Cost
截 Preview	🗴 Delete	🔁 Paste	🔁 Το	ggle Suspended		📇 Unlink Field	🔚 Subo
🚰 Export to Excel	}< Cut	+ Fill Down	➡ Inc	dent			🕂 Depe
Print			Edit			Workbook	

- 3. On the Export spreadsheet to... dialog, browse to the location (folder) in your system where you want to save the workbook, enter **CBS Export** in the File name field, and click **Save**.
 - The workbook is saved to that location with the specified file name, and Excel automatically launches and displays the workbook

• Notice that the columns are formatted, with column headers and filtering turned on

AutoSave 💽 🛱	· · ·	CBS Export			Karen Loftus 🖻 — 🗆 🗙
File Home Ins	ert Page Layout Formulas	Data Review	View Help A	crobat 🔉	Search 🖻 Share 🖓 Comments
× ≪ 🗄 ·		\$ - % 9 👿 Fo	onditional Formatting + irmat as Table + ell Styles + Styles	Cells Edition	
1 • :	🗙 🖌 🎜 Quote Group				
(A					
CBS Position Code	Description	Forecast (T/O) 💌	Unit of Measure 💌	Unit Cost 💌 1	otal Cost (Forecast) 💌 Currency 💌 Qu
	JOB	20.00	Mile	\$292,316.18	\$5,846,323.66 U.S. Dollar
	Prime Bond	1.00	Lump Sum	\$46,974.12	\$46,974.12 U.S. Dollar
	Price % Add-On	1.00	Lump Sum	\$294,067.09	\$294,067.09 U.S. Dollar
	Job Financing	1.00	Lump Sum	\$0.00	\$0.00 U.S. Dollar
	Indirect Cost Escalation	1.00	Lump Sum	\$0.00	\$0.00 U.S. Dollar
	Direct Cost Escalation	1.00	Lump Sum	\$0.00	\$0.00 U.S. Dollar
	Indirect Cost Add-On	1.00	Lump Sum	\$0.00	\$0.00 U.S. Dollar
	Job Management & Equipment	1.00	Lump Sum	\$157,096.28	\$157,096.28 U.S. Dollar
	General Expense	1.00	Lump Sum	\$4,200.00	\$4,200.00 U.S. Dollar
	Direct Cost Add-On	1.00	Lump Sum	\$104,301.10	\$104,301.10 U.S. Dollar
1	Mobilization	1.00	Lump Sum	\$11,909.51	\$11,909.51 U.S. Dollar
2	Clearing & Grubbing	10.00	Acre	\$3,918.50	\$39,184.97 U.S. Dollar
3	Unclassified Excavation	50,000.00	Cubic Yard	\$4.68	\$233,915.81 U.S. Dollar
4	Aggregate Base	45,000.00	Ton	\$15.40	\$692,928.99 U.S. Dollar
5	Asphalt Concrete Hot Mix Type A	35,000.00	Ton	\$42.62	\$1,491,580.59 U.S. Dollar
5.1	Furnish & Haul Hot Mix	35,000.00	Ton	\$39.27	\$1,374,562.54 U.S. Dollar
5.2	Install Hot Mix Type A	35,000.00	Ton	\$3.34	\$117,018.05 U.S. Dollar
6	36 Inch RCP Culvert Class III	1,024.00	Linear Feet	\$67.54	\$69,159.49 U.S. Dollar
6.1	Furnish RCP Materials	1,024.00	Linear Feet	\$33.48	\$34,286.70 U.S. Dollar
6.2	Excavate RCP Trench	1,858.56	Cubic Yard	\$4.51	\$8,379.59 U.S. Dollar
6.3	Install RCP Pipe	1 02/ 00	Linear Feet	\$11.74	\$12.017.60 U.S. Dollar

11.1.1 CELL SELECT

To copy and paste data in InEight Estimate or to Excel, you can use a feature called Cell Select. Walk through the following steps to learn how to copy specific fields in InEight Estimate to an Excel Spreadsheet.

STEP BY STEP – CELL SELECT

- 1. Open the **Training** Job and from the Setup tab, open the **Resource Rate Register**.
- 2. Select the Labor tab.
- 3. Select **Print View for Summary** from your Saved Views drop-down menu.
- 4. From the top-right corner, select the **Cell Select** icon, (next to the Help icon).

- This puts you in "cell-select" mode, so you can select cells to copy in the same way you would in Excel.
- 5. With the Cell Select icon active, highlight all information in the **Description**, **Utilization Count** and **Unit of Measurecolumns** for all Labor resources.

Re CC + + + + + + + + + + + + + + + + + +	esource ode interview inte	-	Description Carpenter Appren Carpenter Journey Carpenter Forema Finisher Apprentice Finisher Finisher Foreman Iron Worker Iron Worker Labor Apprentice Laborer	yman n e	Utilization Count 594.37 1,188.73 594.37 0.00 594.37 0.00 594.37 0.00	Hour Hour Hour Hour Hour Hour Hour			
+ + + + + + + + + + + + + + + + + + +	LC1 LC2 LC3 LF1 LF2 LF3 LIW1 LIW2 LIW2 LL1 LL2 LL3		Carpenter Apprent Carpenter Journey Carpenter Forema Finisher Apprentice Finisher Finisher Foreman Iron Worker Iron Worker Labor Apprentice Laborer	tice yman n e	Count 594.37 1,188.73 594.37 0.00 594.37 0.00 594.37 0.00	Measure Hour Hour Hour Hour Hour Hour Hour Hour			
+ + + + + + + + + + + + + + + + + + + +	LC2 LC3 LF1 LF2 LF3 LIW1 LIW2 LIW2 LL1 LL2 LL2		Carpenter Journey Carpenter Forema Finisher Apprentice Finisher Finisher Foreman Iron Worker Iron Worker Labor Apprentice Laborer	yman n e	1,188.73 594.37 0.00 594.37 0.00 594.37 0.00 0.00	Hour Hour Hour Hour Hour Hour Hour			
+ + + + + + + + + + + + + + + + + + + +	LC3 LF1 LF2 LF3 LIW1 LIW2 LIW2 LL1 LL2 LL3		Carpenter Forema Finisher Apprentice Finisher Finisher Foreman Iron Worker Iron Worker Foren Labor Apprentice Laborer	e	594.37 0.00 594.37 0.00 594.37 0.00 0.00	Hour Hour Hour Hour Hour Hour			
+ + + + + + + +	LF1 LF2 LF3 LIW1 LIW2 LL1 LL2 LL3		Finisher Apprentice Finisher Finisher Foreman Iron Worker Iron Worker Forem Labor Apprentice Laborer	e	0.00 594.37 0.00 594.37 0.00 0.00	Hour Hour Hour Hour Hour Hour			
+ + + + + + +	LF2 LF3 LIW1 LIW2 LL1 LL2 LL3		Finisher Finisher Foreman Iron Worker Iron Worker Foren Labor Apprentice Laborer		594.37 0.00 594.37 0.00 0.00	Hour Hour Hour Hour Hour			
+++++++++++++++++++++++++++++++++++++++	LF3 LIW1 LIW2 LL1 LL2 LL3		Finisher Foreman Iron Worker Iron Worker Foren Labor Apprentice Laborer	nan	0.00 594.37 0.00 0.00	Hour Hour Hour Hour			
+ + + +	LIW1 LIW2 LL1 LL2 LL3		Iron Worker Iron Worker Foren Labor Apprentice Laborer	nan	594.37 0.00 0.00	Hour Hour Hour			
+ + + +	LIW2 LL1 LL2 LL3		Iron Worker Foren Labor Apprentice Laborer	nan	0.00	Hour Hour			
+ + +	LL1 LL2 LL3		Labor Apprentice Laborer	nan	0.00	Hour	_		
+++++	LL2 LL3		Laborer						
+	LL3								
+			Labor Courses		8,963.73	Hour			
	LAND OF L		Labor Foreman		721.33	Hour			
+	LMECH		Mechanic		418.44	Hour			
	LO1		Operator Class 1		1,800.00	Hour			
+	LO2		Operator Class 2		4,019.73	Hour			
+	LO3		Operator Class 3		889.33	Hour			
+	LO4		Operator Foreman	1	1,421.77	Hour			
+	LREM 01	1	Principal Eng/Scien	itist	0.00	Hour			
+	LREM 05	5	Field Technican		0.00	Hour			
+	LSPE		Project Engineer		800.00	Hour			
+	LSSEC		Secretary		800.00	Hour			
+	LSSUPT		Project Superinten	ndent	800.00	Hour			
+	LT1		Teamster		3,056.77	Hour			
+	LT2		Teamster Foreman	1	0.00	Hour			
+	LWD		Welder		0.00	Hour			
	LWDA		Welder Apprentice	:	0.00	Hour			

- 6. Right click on the selection and select **Copy**.
- 7. Open an Excel spreadsheet, right click in the A1 field and select Paste Special, choosing CSV as the Source.

- 8. Click **OK**.
 - The fields you copied from InEight Estimate paste into the spreadsheet

1	A	В	С
1	Carpenter Apprentice	594.3650794	Hour
2	Carpenter Journeyman	1188.730159	Hour
3	Carpenter Foreman	594.3650794	Hour
4	Finisher Apprentice	0	Hour
5	Finisher	594.3650794	Hour
6	Finisher Foreman	0	Hour
7	Iron Worker	594.3650794	Hour
8	Iron Worker Foreman	0	Hour
9	Labor Apprentice	0	Hour
10	Laborer	8963.733879	Hour
11	Labor Foreman	721.3333333	Hour
12	Mechanic	418.4398946	Hour
13	Operator Class 1	1800	Hour
14	Operator Class 2	4019.732279	Hour
15	Operator Class 3	889.3333333	Hour
16	Operator Foreman	1421.768	Hour
17	Principal Eng/Scientist	0	Hour
18	Field Technican	0	Hour
19	Project Engineer	800	Hour
20	Secretary	800	Hour
21	Project Superintendent	800	Hour
22	Teamster	3056.768	Hour
23	Teamster Foreman	0	Hour
24	Welder	0	Hour
25	Welder Apprentice	0	Hour
26			
	< → Sheet1	(\pm)	

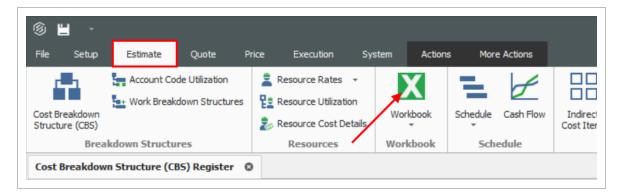
• To turn off the Cell Select, simply click the Cell Select Icon again and it deselects

11.2 LINKING TO EXCEL

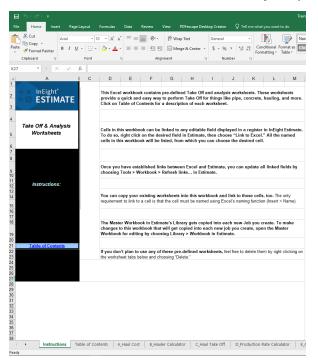
11.2.1 INEIGHT ESTIMATE WORKBOOK

Every job has its own Excel workbook embedded within it for doing side calculations and take-offs. You can link your calculations to fields in InEight Estimate to automatically update them into your estimate. When you create a new job from scratch, the Library Master Workbook is copied to create a new embedded Excel workbook for the job.

The workbook comes with some pre-defined take-off and analysis worksheets, or you can create your own. Simply open the appropriate worksheet, plug in your values, and Excel will calculate your results. To open your job's workbook, select the Estimate tab, then click on the Workbook icon under the Workbook section.



• The embedded Excel workbook for the job opens.



11.2.2 LINKING TO AND FROM EXCEL

InEight Estimate's linking capabilities with Excel can be done in one of two ways. A field in InEight Estimate can be populated with a value from Excel, or a cell in Excel can be populated with the data from an InEight Estimate field. This two-way linking functionality allows you to make quick work of complex chores to perform spreadsheet-based take-off or formula-driven analysis.

6	36 Inch RCP Culvert Class III	413(B) 0464	<u>1,024.00</u>	Linear Feet
⊦ 6.1	Furnish RCP Materials	6.1	1,024.00	Linear Feet
+ 6.2	Excavate RCP Trench	6.2	1,858.56	Cubic Yard

The following example walks through how to link a simple take-off calculation into InEight Estimate from Excel. It is a take-off to determine the size of a concrete foundation.

STEP BY STEP – LINK ESTIMATE TO EXCEL

- 1. Open the Training Job and from the Estimate tab, open the CBS Register.
- 2. For this example, create a new cost item in the blank row at the bottom of the CBS register and name it **Concrete Foundation**.

Concrete Foundation	1.00	CY

- 3. Open the job's Excel workbook from the Estimate tab, by selecting the Workbook icon.
- 4. In the workbook, create a new worksheet named **Concrete Take-off** and enter the following fields:

1	Α	В	С	D	E	F	G
1	Concrete 7	Take-off					
2							
3	Length	10	yards				
4	Width	10	yards				
5	Height	0.5	yards				
6							
7							
8							
9							
10							
11							
12							
	4 F	Instruc	tions	Table of Co	ntents	Concrete T	ake-Off

5. Create a new row to calculate the total cubic yards by factoring the length, width, and height quantities.

	Α	В	С
1	Concrete T		
2			
3	Length	10	yards
4	Width	10	yards
5	Height	0.5	yards
6	Volume	=sum(B3*E	84*B5)
7			

Your Volume Total should be 50 cubic yards

	А	В	С
1	Concrete T	ake-off	
2			
3	Length	10	yards
4	Width	10	yards
	Height	0.5	yards
6	Volume	50	CY
7			

6. InEight Estimate will only link to named fields in Excel. Click in the field you want to name (B6), then click in the Field Name window and type **Volume**.

Vo	olume		×
	А	В	С
1	Concrete T	ake-off	
2			
3	Length	10	yards
4	Width	10	yards
5	Height	0.5	yards
6	Volume	50	CY
7			

- 7. Go back to the CBS Register and right click on the Concrete Foundation cost item **Forecast (T/O) Quantity** field.
- 8. From the resulting right click menu, select Link this field to Excel.
 - You can also link the field by selecting the field and then selecting Link Field from the Actions tab

		Training Job - Estimate				
Execution	System	Integrations	Actions	More Action:	s	
'n	🗭 Indent	👗 Link Field	• 🗮 Cost Item	1	- Assembly	🇞 Resource
	🖛 Outdent	🖧 Unlink Field	🔚 Subordina	ate Cost Item	🔁 Subordinate Assembly	Resource Assem
Suspended			🕂 Depender	nt Cost Item		
		Workbook			Insert	

						Find
	Optional Code	Forecast (T/O) Quantity		it of asure	Unit Cost	Total Cost (Forecast)
	06420	1.00	Lur	np Sum	\$2,100.00	\$2,100.00
	08210	1.00	Lur	np Sum	\$1,000.00	\$1,000.00
	09640	1.00		no Sum	\$1,800.00	\$1.800.00
	12510	1.00	Ľ	<u>O</u> pen		
	15300	1.00	Ð	<u>N</u> ew		
	16510	1.00	\otimes	<u>D</u> elete		
	1500 0100	1,000.00	℅	Cu <u>t</u>		
	1500 0200	200.00	믭	Cop <u>v</u>		
	1600 0230	1,000.00	Ð	<u>P</u> aste		
e	CO1	1.00	+	Fill Down		
	UNASSIGNED DIRECT C	1.00	Å	Link this field to	Excel	
osts	UNASSIGNED	1.00	M	UnLink from Ex		
	UNASSIGNED	1.00	-	Indent		
	UNASSIGNED	1.00	-			
	UNASSIGNED	1.00	_	Outdent		
		1.00		Insert		
the Water		1.00		Insert Su <u>b</u> ordin	ate	
		1.00		Insert Depende	nt <u>C</u> ost Item	
		1.00	7	Insert Cost Iten	n <u>A</u> ssembly	
		1.00	긑	Insert Cost Iten	n Assembly as <u>S</u>	ubordinate
			15	Split		
	-					

- 9. On the Link to Excel dialog, select the **Update InEight Estimate field from Excel** radio button.
- 10. In the Field to link window, select **Volume** (you may need to click the Refresh is button for the field name to display).

				×
When linking to E Excel update an E Estimate update	stimate field	or have the		ta in
Update Estim	ate Field from	Excel	Ø	
O Update Excel	Cell from Estin	mate	63	
Field to Link: F	orecast (T/O)	Quantity		
O_Item1VoICY_S O_Item2VoICY_S O_Item3AreaSF O_Item3AreaSF O_Item4AreaSF_ O_Item4VoICY_S O_Item5VoICY_S O_Item5VoICY_S O_TotAreaSF_St O_TotAreaSF_St	StructuralConci StructuralConci StructuralConci StructuralConci StructuralConci StructuralConci StructuralConci tructuralConci ructuralConci	cTakeOff TakeOff TakeOff TakeOff CTakeOff TakeOff CTakeOff TakeOff TakeOff TakeOff		<
Prorate to Sup Group Cell Na				
	mes by works	sneet		
C Cell Na	efresh	Pick fro	m Excel	
- Cell Iva	inies			

- 11. Click **OK**.
 - The Forecast Quantity field for Concrete now is linked to the Volume field in Excel and populates with the take-off quantity (50)

CBS	Description	Forecast	Unit of
Position Code 📒		(T/O) Quantity	Measure
+ 26	Concrete Foundation	<u>50.00</u>	CY

11.2.3 UPDATE LINKS

When data in InEight Estimate or Excel changes, you can quickly update all links, in just the currently active job or in all open jobs. Simply select one of the following options from the Workbook drop-down list on the Estimate tab.

Estir	mate Quote P	Price Execution	Syste	m Actio	ns Mor	e Actions		
Acc	ount Code Utilization	Resource Rates	-	X		-		
+ Wo	rk Breakdown Structures	Resource Utilizatio	n		_			
		and Resource Cost Det	tails	Workbook	Schedule *	Cash Flow	Indirect Cost Items	
akdown Structures Resources			X Open	Open Job Workbook			in	
n Struc	ture (CBS) Register (0		🚰 Updat	e Current Jo	b From Worl	kbook	
e to group	0			🙀 Updat	e All Open J	lobs From We	orkbook	
de 🗎 Description			Option Code			nt Job		
	JOB			🎒 Updat	e Workbool	ks From All O	pen Jobs	
	Prime Bond		PRIME	😣 Delete	Broken Lin	ks in All Oper	n Jobs	
	Price % Add-On		PRICE	% ADD-ON			1.00 Lt	

LESSON 11 REVIEW

- 1. The Export to Excel feature is available on all register forms in the system and allows you to export the data currently displayed on a register form to an Excel worksheet.
 - a. True
 - b. False
- 2. In order to link an Excel field to InEight Estimate, the Excel field must be:
 - a. Named
 - b. Highlighted
 - C. Tagged
 - d. Selected

LESSON 11 SUMMARY

As a result of this lesson, you can:

- Export data from InEight Estimate to Excel
- Link a field in InEight Estimate to Excel
- Update a linked InEight Estimate field with Excel data

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LESSON 12 – SCHEDULE INTEGRATION

LESSON DURATION: 45 MINUTES

LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Set up scheduling options
- Update schedule from InEight Estimate
- Update InEight Estimate from schedule
- Manage changes between estimate and schedule

12.1 MICROSOFT PROJECT

12.1.1 SET UP SCHEDULING OPTIONS

Prior to sending information from InEight Estimate to Microsoft Project, you need to make sure the proper settings are in place.

12.1.1.1 JOB PROPERTIES SCHEDULE TAB

Microsoft Project scheduling options are configured on the Schedule tab of the Job Properties form.

- At the top of the Schedule tab, the Integrated Schedule must be set to Microsoft Project
- As a default, the Always use Plug Days when updating InEight Estimate from the schedule checkbox is not selected (on a job by job basis, this box can be checked later for jobs in which an estimator does not want updates from Microsoft Project to change the duration and therefore the cost of your cost items in InEight Estimate)

verview	Security	Cover Sheet	Cost Basis	Minority Setup	Fuel Cost	Job Tracking	Job Folder Tags	Competitors	Pricing	Schedule	Cash Flow	Equipme
ntegrated	tegrated Schedule: Microsoft Project		ct -	Alwa	ays use Plug Day	s when updating Es	timate from the	schedule				
chedule C	urrency:		U.S. Dollar	•								
Cost Item	Roll Up											
Automatically calculate Plug Days when rolling up cost items for scheduling purposes												
Automatically calculate ring bays when folling up cost items for scheduling purposes (a) Longest scheduled days among all rolled up cost items												
Total scheduled days for all rolled up cost items												
0	-		-									
0	-		-									
To Note:	otal schedul : When rolli	ed days for all r	olled up cost it	ems 9 purposes, the Pl			em					
Note: will b	otal schedul : When rolli e recalculat	ed days for all r ng up cost items ed when a chang	olled up cost it s for scheduling ge is made to th	ems 9 purposes, the Pl 1e scheduled days	of a subordi	nate.						
Note: will b	tal schedul When rollin e recalculat rce immedia	ed days for all r ng up cost items ed when a chang ite recalculation	olled up cost it s for scheduling je is made to th of Plug Days fo	ems 9 purposes, the Pl	of a subordi	nate. Recalculate Plug						
Note: will b To fo butto	tal schedul When rollin e recalculat rce immedia	ed days for all r ng up cost items ed when a chang ite recalculation Iculate Plug Day	olled up cost it s for scheduling je is made to th of Plug Days fo	ems 9 purposes, the Pl he scheduled days or superior cost it	of a subordi	nate. Recalculate Plug						

12.1.2 SCHEDULE COST ITEMS

Before you can integrate with Microsoft Project, your cost items need to be marked as Scheduled in InEight Estimate. This is done on the Cost Breakdown Structure (CBS) Register. From your Saved Views drop-down list in the CBS, the Schedule Setup View displays all of your schedule-related columns. There are a couple to keep in mind when you schedule your items:

- Scheduled: This column tells you which of your items are selected to be included in your Microsoft Project schedule.
- **Roll Up Schedule**: This column lets you check a box to roll up your estimate to the selected level when it imports into Microsoft Project.

In the below example, notice that all of the cost items are scheduled, but the subordinates for Unclassified Excavation will be rolled up to the superior level.

CBS Position Code 📒	Description	Scheduled	Roll Up Schedule
+ 1	Mobilization	✓	
+ 2	Clearing & Grubbing	✓	
3	Unclassified Excavation	✓	\checkmark
+ 3.1	Excavation		
+ 3.2	Embankment		
□ 4	Aggregate Base	✓	
+ 4.1	Furnish & Haul Base Material	✓	
+ 4.2	Finegrade Subgrade	✓	
4.3	Install Aggregate Base	✓	

The following steps walk you through scheduling your cost items.

STEP BY STEP – SCHEDULE A COST ITEM IN INEIGHT ESTIMATE

- 1. In the **Training Job**, from the Estimate tab, select **Cost Breakdown Structure**.
- 2. In the Saved Views drop-down list, select **Schedule Setup View**.

Saved views:	Schedule Setup View	-

- In the Scheduled column, you can select the checkbox for each cost item that you want to schedule
- If a cost item has subordinate cost items below it, you will only be able to check the superior cost item, which will automatically schedule the subordinate cost items along with it

- Roll Up CBS Scheduled Description Position Code Schedule JOB \checkmark Prime Bond Price % Add-On + + Job Financing + Indirect Cost Escalation Direct Cost Escalation ++Indirect Cost Add-On +**Job Management & Equipment** +General Expense Direct Cost Add-On ++ 1 Mobilization ~ + 2 **Clearing & Grubbing** √ \checkmark **3** Unclassified Excavation + 3.1 Excavation \checkmark ~ + 3.2 Embankment **4** Aggregate Base Furnish & Haul Base Material + 4.1 + 4.2 Finegrade Subgrade
- 3. Select the **Mobilization**, **Clearing & Grubbing**, and **Unclassified Excavation** cost items, then press **Tab**.

STEP BY STEP – SCHEDULE A GROUP OF COST ITEMS IN INEIGHT ESTIMATE

- 1. In the Training Job, from the Estimate tab, select Cost Breakdown Structure.
- 2. From the Saved Views drop-down list, select **Schedule Setup View**.
 - To schedule multiple cost items, you can highlight the row for each cost item that you want to schedule, using the Shift and Ctrl keys to select multiple rows.
- 3. Select additional cost items 4-Aggregate base, 5- Asphalt Concrete Hot Mix, and 6- 36-inch RCP Culvert Class.

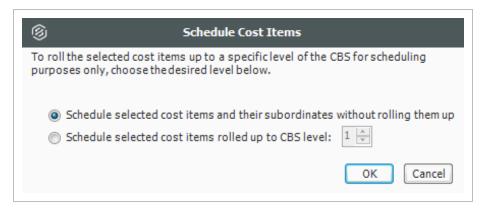
TIP

To schedule all cost items, highlight the JOB row

Co	st Breakdown Struct	ure (CBS) Register 🛛		Open		
Dra	g columns here to group		•	New	pr]	
			8	<u>D</u> elete		
	CBS Position Code	Description	8	Cu <u>t</u>	:hedule ID	
\rightarrow	+ 1	Mobilization	-	Copy	D.0000011	
	+ 2	Clearing & Grubbing	Ē	Paste	D.0000012	
	∃ 3	Unclassified Excavation	+	<u>Fill Down</u>	D.0000013	
	+ 3.1	Excavation	8	Link these fields to Excel	D.0000014	
	+ 3.2	Embankment	8	UnLink from Excel	D.0000015	
		Aggregate Base	⇒	Indent	D.0000016	
	+ 4.1	Furnish & Haul Base Material	-	Outdent	D.0000017	
	+ 4.2	Finegrade Subgrade	· 居	Insert	D.0000018	
	E 4.3	Install Aggregate Base		Insert Subordinate	D.0000019	
	+ 4.3.1	Place Aggregate Base	H	Insert Dependent Cost Item	0.0000020	
	+ 4.3.2	Blue Top Aggregate Base		Insert Cost Item Assembly	D.0000021	
	5	Asphalt Concrete Hot Mix Type A	긑	Insert Cost Item Assembly as Subordinate	0.0000022	
	+ 5.1	Furnish & Haul Hot Mix	M		D.0000023	
	+ 5.2	Install Hot Mix Type A	_		D.0000024	
	6	36 Inch RCP Culvert Class III	2	Insert <u>R</u> esource	0.0000025	
	+ 6.1	Furnish RCP Materials	1	Ins <u>e</u> rt Resource Assembly	D.0000026	
	+ 6.2	Excavate RCP Trench	2	Toggle Suspended	D.0000027	
	+ 6.3	Install RCP Pipe		Go To Cost Allocation Item	D.0000028	
	+ 6.4	Backfill RCP Pipe		Schedule Selection	D.0000029	
	□ 7	10 Inch PVC Force Main (5DR21)			D.0000030	
	1 74			Calculate Plug Days		
	10	16		Subtotal Calculator		
۹.				Subtotal Calculator	_	

4. Right click on the selected rows and select Schedule Selection.

- On the Schedule Cost Items dialog, you can select whether or not you want to roll up the selected cost items to a specific level of the CBS for scheduling purposes
- 5. Select Schedule selected cost items and their subordinates without rolling them up, then click OK.



• Your scheduled cost items will import into Microsoft Project the next time you update Microsoft Project from InEight Estimate.

12.1.2.2 ROLL UP SCHEDULE

For cost item 3 – Unclassified Excavation, your scheduler does not need all of your estimate details and wants to roll up your cost items to a higher level when they import into the Microsoft Project schedule.

Follow the steps below to learn how to roll up your cost items for the schedule.

STEP BY STEP – ROLL UP SCHEDULE

- 1. In the **Training Job**, from the Estimate tab select **Cost Breakdown Structure**.
- 2. From the Saved Views drop-down list, select **Schedule Setup View**.
 - Review your cost items to decide which cost items need to be rolled up
- 3. Select the Roll Up Schedule checkbox on the Unclassified Excavation cost item.

CBS Position Code 🗎	Description	Scheduled	Roll Up Schedule
+ 1	Mobilization	✓	
+ 2	Clearing & Grubbing	✓	
□ 3	Unclassified Excavation	✓	✓
+ 3.1	Excavation		
+ 3.2	Embankment		
□ 4	Aggregate Base	✓	
+ 4.1	Furnish & Haul Base Material	✓	
+ 4.2	Finegrade Subgrade	✓	
■ 4.3	Install Aggregate Base	✓	
+ 4.3.1	Place Aggregate Base	✓	
+ 4.3.2	Blue Top Aggregate Base	✓	

12.1.3 UPDATE MICROSOFT PROJECT FROM INEIGHT ESTIMATE

Now that you have set up your schedule to integrate with Microsoft Project in Job Properties and scheduled your cost items in the CBS, you are ready to send your project information to Microsoft Project.

When you first update Microsoft Project from InEight Estimate, Microsoft Project will create a new project automatically and load it with the following information from InEight Estimate:

Da	Data Sent from InEight Estimate to Microsoft Project								
Data Type	InEight Estimate	Microsoft Project							
Project Data	Job Code	Project Name							
Activity Data	CBS Position Code	01 - CBS Position Code							
	Description	Description							
	Days (Duration Driven)	Duration							
Cost Data	Cost Category Total Cost	Cost Category (custom text columns)							

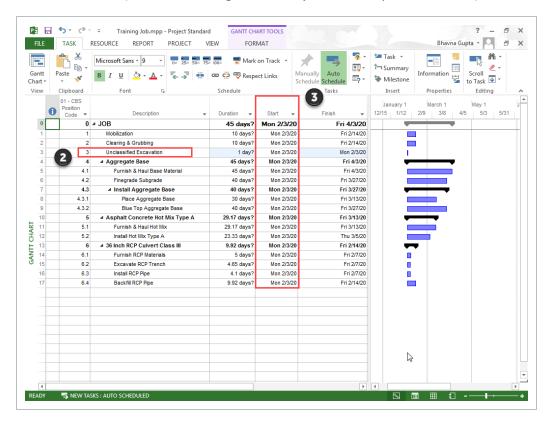
The following steps walk you through updating Microsoft Project from InEight Estimate to create a new schedule.

STEP BY STEP – UPDATE MS PROJECT FROM INEIGHT ESTIMATE

1. From the Estimate tab, select **Schedule>Update Project from InEight Estimate**.

File		ate Quote Pr	ice Execution	System Int	egrations 4	Actions More	Actions		110	ing Job - Estima
		unt Code Utilization Breakdown Structures	Resources	urce Utilization urce Cost Details urce Employments	Workbook	Ŧ	Flow Indirec Cost Ite	t Price %	Add On Price Bre Structur	
C •		ire (CBS) Register		ces	WORKDOOK	Open MS	1			overnedu dilu Pi
	st breakdown Structi	ire (CDS) Register @				🦉 Update E	timate from Pro	ject		
)ra	g columns here to group					🧬 🛛 Update P	roject from Estin	nate		
	CBS Position Code 🚞	Description		Optional Code		Export Co	py of MS Projec	t File	Total Cost (Forecast)	Subject Cost
÷	•	JOB				20.	00 Mile	\$294,138.13	\$5,882,762.51	
	+	Prime Bond		PRIME BOND		1.	00 Lump Sum	\$47,148.68	\$47,148.68	
	+	Price % Add-On		PRICE % ADD-ON	I	1.0	00 Lump Sum	\$295,638.13	\$295,638.13	
	+	Job Financing		FINANCE EXPENSE	E	1.0	00 Lump Sum	\$33,105.26	\$33,105.26	
	+	Indirect Cost Escala	tion	INDIRECT COST E	SCALATION	1.0	00 Lump Sum	\$2,131.11	\$2,131.11	
	+	Direct Cost Escalatio	n	DIRECT COST ESC	CALATION	1.0	00 Lump Sum	\$15,048.80	\$15,048.80	
+ Indirect Cost Add-On		n			1.	00 Lump Sum	\$5,888.67	\$5,888.67	\$294,433.4	
	+	Direct Cost Add-On		DIRECT COST ADD	D-ON	1.0	00 Lump Sum	\$104,088.34	\$104,088.34	\$5,204,417.2
	□ 1	SITEWORK & ROADV	YAY	200		1.	00 Each	\$2,464,161.56	\$2,464,161.56	
	+ 1.1	Mobilization		641 0 100		1.0	00 Lump Sum	\$11,909.51	\$11,909.51	

- Your job automatically opens in Microsoft Project
- The Work Breakdown Structure Layout displays for the project
- You can see the breakdown structure imported from InEight Estimate with durations, rolled up as specified by the Roll Up Schedule option in InEight Estimate
- Initially, the start date for your activities is the start date defined on the Job Properties > Cover Sheet tab (these will change as activity relationships are defined)



12.1.4 UPDATE INEIGHT ESTIMATE FROM MICROSOFT PROJECT

You can also bring information back from Microsoft Project into InEight Estimate. When you update InEight Estimate from Microsoft Project, the following information updates:

Update InEight Estimate from Microsoft Project

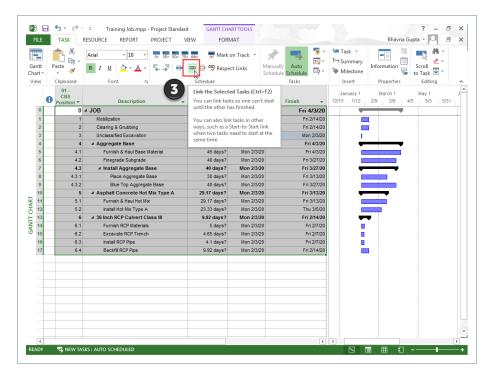
Data Type Microsoft Project InEight Estimate

Update InEigh	nt Estimate from M	licrosoft Project
Activity Data	Start Dates	Start Dates
	Finish Dates	Finish Dates
	Hours	Hours

Walk through the following steps to practice updating InEight Estimate from Microsoft Project. You will create a scheduling relationship in Microsoft Project and then import the updated dates and relationships into InEight Estimate.

STEP BY STEP – UPDATE INEIGHT ESTIMATE FROM MS PROJECT

- 1. Open your version of the **Training Job** project in Microsoft Project.
 - In the real world, it is likely that you would have overlapping activities or your activities would be out of order, however for this example you will link all activities from finish to start
- 2. Click on the Link Tasks icon to link all activities.



• Ensure the Auto Schedule button is selected

3. To update InEight Estimate with this change, go back to InEight Estimate and from the Estimate tab, select **Schedule>Update InEight Estimate from Project**.

File		ate Quote P	rice Execution	System Int	tegrations /	Actions M	lore Acti	ons		Train	ing Job - Estima
		unt Code Utilization Breakdown Structures	Resources	esource Utilization esource Cost Details esource Employments	Workbook	Schedule	Cash Flo	w Indirect Cost Items	Constant Con	Add On Price Bre	akdown
	Breakdown St	tructures	Res	ources	Workbook	🔯 Open	MS Pro	ject	Cost		Overhead and Pr
Cos	st Breakdown Structu	ıre (CBS) Register 🛛 🖗)			🚰 Updat	te Estim	ate from Proje	:t		
Drag	g columns here to group					🧬 Updat	te Proje	ct from Estimat	e		
	CBS Position Code 😑	Description		Optional Code		Expor		of MS Project F	ile t	Total Cost (Forecast)	Subject Cost
÷	•	ЈОВ					20.00	Mile	\$294,138.13	\$5,882,762.51	
	+	Prime Bond		PRIME BOND			1.00	Lump Sum	\$47,148.68	\$47,148.68	
	+	Price % Add-On		PRICE % ADD-ON	4		1.00	Lump Sum	\$295,638.13	\$295,638.13	
	+	Job Financing		FINANCE EXPENS	E		1.00	Lump Sum	\$33,105.26	\$33,105.26	
	+	Indirect Cost Escala	tion	INDIRECT COST E	SCALATION		1.00	Lump Sum	\$2,131.11	\$2,131.11	
	+	Direct Cost Escalation	n	DIRECT COST ESC	CALATION		1.00	Lump Sum	\$15,048.80	\$15,048.80	
	+	Indirect Cost Add-0	n				1.00	Lump Sum	\$5,888.67	\$5,888.67	\$294,433.43
	+	Direct Cost Add-On		DIRECT COST AD	D-ON		1.00	Lump Sum	\$104,088.34	\$104,088.34	\$5,204,417.24
	□ 1	SITEWORK & ROAD	VAY	200			1.00	Each	\$2,464,161.56	\$2,464,161.56	
	+ 1.1	Mobilization		641 0 100			1.00	Lump Sum	\$11,909.51	\$11,909.51	

• On the Schedule Setup View, you can see the Start and Finish dates updated from MS Project.

CBS Position Code 📒	Description	Start	Finish	Early Start	Early Finish	Late Start	Late Finish
+ 1	Mobilization	2/3/2020	2/14/2020	2/3/2020	2/14/2020	2/3/2020	2/14/2020
+ 2	Clearing & Grubbing	2/17/2020	2/28/2020	2/17/2020	2/28/2020	2/17/2020	2/28/2020
3	Unclassified Excavation	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020
+ 3.1	Excavation	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020
+ 3.2	Embankment	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020
□ 4	Aggregate Base	3/3/2020	10/5/2020	3/3/2020	10/5/2020	3/3/2020	10/5/2020
+ 4.1	Furnish & Haul Base Material	3/3/2020	5/4/2020	3/3/2020	5/4/2020	3/3/2020	5/4/2020
+ 4.2	Finegrade Subgrade	5/5/2020	6/29/2020	5/5/2020	6/29/2020	5/5/2020	6/29/2020
■ 4.3	Install Aggregate Base	6/30/2020	10/5/2020	6/30/2020	10/5/2020	6/30/2020	10/5/2020
+ 4.3.1	Place Aggregate Base	6/30/2020	8/10/2020	6/30/2020	8/10/2020	6/30/2020	8/10/2020
+ 4.3.2	Blue Top Aggregate Base	8/11/2020	10/5/2020	8/11/2020	10/5/2020	8/11/2020	10/5/2020
5	Asphalt Concrete Hot Mix Type A	10/6/2020	12/17/2020	10/6/2020	12/17/2020	10/6/2020	12/17/202
+ 5.1	Furnish & Haul Hot Mix	10/6/2020	11/16/2020	10/6/2020	11/16/2020	10/6/2020	11/16/202
+ 5.2	Install Hot Mix Type A	11/16/2020	12/17/2020	11/16/2020	12/17/2020	11/16/2020	12/17/202
6	36 Inch RCP Culvert Class III	12/17/2020	1/20/2021	12/17/2020	1/20/2021	12/17/2020	1/20/2021
+ 6.1	Furnish RCP Materials	12/17/2020	12/24/2020	12/17/2020	12/24/2020	12/17/2020	12/24/202
+ 6.2	Excavate RCP Trench	12/24/2020	12/31/2020	12/24/2020	12/31/2020	12/24/2020	12/31/202
+ 6.3	Install RCP Pipe	12/31/2020	1/6/2021	12/31/2020	1/6/2021	12/31/2020	1/6/2021
+ 6.4	Backfill RCP Pipe	1/6/2021	1/20/2021	1/6/2021	1/20/2021	1/6/2021	1/20/2021

12.1.5 EXPORT COPY OF MS PROJECT FILE

If your project's schedule is integrated with MS Project, you can export a copy of your MS Project file. This can be advantageous if a preliminary schedule is needed for a starting point schedule, as the project goes into execution. Recreating the schedule from scratch can be time consuming and error prone, as the existing schedule details might not be properly captured in the beginning stages.

File		ate Quote P ount Code Utilization	rice Executio	on System Int Resource Utilization	tegrations	Actions More			o Finance		- 🖓 Dir
	st Breakdown ucture (CBS)	k Breakdown Structures	Resources	Resource Cost Details Resource Employments	Workbook	Schedule Cash	Flow Indirect Cost Ite	et	ce % Add me Bond	d On Price Bre Structure	
	Breakdown S	tructures	R	esources	Workbook	Dpen MS	Project	C	ost	(Overhead and P
Cos	st Breakdown Struct	ure (CBS) Register 🛛 🖗	•			Update Es	timate from Pro	oject			
ra	g columns here to group					🧬 Update Pr	oject from Estin	nate			
	CBS Position Code	Description		Optional Code		Export Co	py of MS Projec	t File		otal Cost Forecast)	Subject Cost
÷	•	ЈОВ				20.0	0 Mile	\$294,13	38.13	\$5,882,762.51	
	+	Prime Bond		PRIME BOND		1.0	0 Lump Sum	\$47,14	18.68	\$47,148.68	
	+	Price % Add-On		PRICE % ADD-ON	4	1.0	0 Lump Sum	\$295,63	38.13	\$295,638.13	
	+	Job Financing		FINANCE EXPENS	E	1.0	0 Lump Sum	\$33,10	05.26	\$33,105.26	
	+	Indirect Cost Escala	tion	INDIRECT COST E	ESCALATION	1.0	0 Lump Sum	\$2,13	31.11	\$2,131.11	
	+	Direct Cost Escalation	n	DIRECT COST ES	CALATION	1.0	0 Lump Sum	\$15,04	18.80	\$15,048.80	
	+	Indirect Cost Add-0	n			1.0	0 Lump Sum	\$5,88	88.67	\$5,888.67	\$294,433.4
	+	Direct Cost Add-On		DIRECT COST AD	D-ON	1.0	0 Lump Sum	\$104,08	38.34	\$104,088.34	\$5,204,417.2
	□ 1	SITEWORK & ROAD	VAY	200		1.0	0 Each	\$2,464,16	51.56	\$2,464,161.56	
	+ 1.1	Mobilization		641 0 100		1.0	0 Lump Sum	\$11,90	09.51	\$11,909.51	

12.1.6 MANAGE CHANGES BETWEEN ESTIMATE AND SCHEDULE

As changes to scope, resources, and costs come up in your estimate, and changes to relationships and dates occur in the schedule, you can continue updating your estimate and schedule as needed.

12.1.6.3 PLUG DAYS

The Schedule Plug Days option allows you to define the duration in the schedule separate from the duration defined for your cost items on the Production tab. For example, your 10" PVC Pipe activity may have extra days in the schedule due to the delivery date of the pipe material, but you don't want those extra days to drive the costs in your estimate, since your crews won't be working on the activity on those extra days.

TIP

All superior cost items are hard-coded to use Schedule Plug Days.

STEP BY STEP – SCHEDULE PLUG DAYS

- 1. Look at the Days (Duration driven) column in the CBS where it shows 4.65 days for Excavate RCP Trench.
- 2. Make sure the **Schedule Plug Days** checkbox is selected on the Excavate RCP Trench cost item, and then enter a Plug Days duration for the number of days the item will be scheduled in Microsoft Project (**7** days).

CBS Position Code 🗎	Description	Days (Duration driven)	Schedule Plug Days	Plug Days
6	36 Inch RCP Culvert Class III	18.66	\checkmark	26.01
+ 6.1	Furnish RCP Materials	0.00	\checkmark	5.00
+ 6.2	Excavate RCP Trench	4.65	\checkmark	7.00
+ 6.3	Install RCP Pipe	4.10		4.4
+ 6.4	Backfill RCP Pipe	9.92		9.92

• This allows you to maintain your duration of 4.65 days in the estimate and 7 days in the schedule.

Any duration changes made in Project will import into InEight Estimate as Plug Days automatically so that they can be reviewed by the estimator before making any changes to production in InEight Estimate.

12.1.6.4 UPDATE MICROSOFT PROJECT WITH INEIGHT ESTIMATE CHANGES

The following steps will walk you through updating the schedule with a scope change in your estimate.

STEP BY STEP – UPDATE MS PROJECT WITH INEIGHT ESTIMATE CHANGES

- 1. In the InEight Estimate Training Job, from the Estimate tab, select Cost Breakdown Structure.
 - In this scenario, there is a scope change for your Excavation requiring you to change all of your quantities
- 2. Change the quantity in the Forecast (T/O) Quantity field in the CBS as specified below.

	Quantity Change for Co	st Item	
CBS Code	Description	Old Quantity	New Quantity
5	Asphalt Concrete Hot Mix Type A	35,000	25,000

- As you make your changes, take note of how your duration changes in the **Days (Duration driven)** column for these items.
- If prompted about changing Total or Unit Cost, select **Change TOTAL cost**, so that your unit costs stay intact

3 Attention
You have changed the quantity for a cost item that already contains costs. Would you like the TOTAL cost to change or the UNIT cost?
 Change TOTAL cost Change UNIT cost
Deactivate this confirmation for quantity changes FOR ALL JOBS and ALWAYS change the TOTAL cost
To re-activate this confirmation, choose Tools > Activate Unit/Total Confirmation for Quantity Changes.
ОК

- 3. From the Estimate tab, select **Schedule>Update Projectfrom InEight Estimate** to send the changed hours to Microsoft Project.
- 4. Go back to the **Training Job** in Microsoft Project.
 - The Microsoft Project scheduled duration should have changed from 4.65 days to 7 days to match the updated duration in InEight Estimate for Excavate RCP Trench
 - You can also see that the days for Asphalt Concrete Hot Mix Type A and its subordinates

e	01 - CBS Position Code •	Description -	Duration 👻	Start 👻	Finish 👻
0	0	⊿ JOB	239.51 days?	Mon 2/3/20	Fri 1/1/21
1	1	Mobilization	10 days?	Mon 2/3/20	Fri 2/14/20
2	2	Clearing & Grubbing	10 days?	Mon 2/17/20	Fri 2/28/20
3	3	Unclassified Excavation	1 day?	Mon 3/2/20	Mon 3/2/20
4	4	⊿ Aggregate Base	155 days?	Tue 3/3/20	Mon 10/5/20
5	4.1	Furnish & Haul Base Material	45 days?	Tue 3/3/20	Mon 5/4/20
6	4.2	Finegrade Subgrade	40 days?	Tue 5/5/20	Mon 6/29/20
7	4.3	Install Aggregate Base	70 days?	Tue 6/30/20	Mon 10/5/20
8	4.3.1	Place Aggregate Base	30 days?	Tue 6/30/20	Mon 8/10/20
9	4.3.2	Blue Top Aggregate Base	40 days?	Tue 8/11/20	Mon 10/5/20
10	5	Asphalt Concrete Hot Mix Type A	37.5 days?	Tue 10/6/20	Thu 11/26/20
11	5.1	Furnish & Haul Hot Mix	20.83 days?	Tue 10/6/20	Tue 11/3/20
12	5.2	Install Hot Mix Type A	16.67 days?	Tue 11/3/20	Thu 11/26/20
13	6	▲ 36 Inch RCP Culvert Class III	26.01 days?	Thu 11/26/20	Fri 1/1/21
14	6.1	Furnish RCP Materials	5 days?	Thu 11/26/20	Thu 12/3/20
15	6.2	Excavate RCP Trench	7 days?	Thu 12/3/20	Mon 12/14/20
16	6.3	Install RCP Pipe	4.1 days?	Mon 12/14/20	Fri 12/18/20
17	6.4	Backfill RCP Pipe	9.92 days?	Fri 12/18/20	Fri 1/1/21

adjusted because you adjusted the Forecast T/O Quantity in InEight Estimate

5. Your Start and Finish dates are different now. In InEight Estimate, from the Estimate tab, select **Schedule >Update InEight Estimate from Project** to update InEight Estimate with the new dates.

CBS Position Code 🗎	Description	Start	Finish	Early Start	Early Finish	Late Start	Late Finish
+ 2	Clearing & Grubbing	2/17/2020	2/28/2020	2/17/2020	2/28/2020	2/17/2020	2/28/2020
3	Unclassified Excavation	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020
+ 3.1	Excavation	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020
+ 3.2	Embankment	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020	3/2/2020
⊒ 4	Aggregate Base	3/3/2020	10/5/2020	3/3/2020	10/5/2020	3/3/2020	10/5/2020
+ 4.1	Furnish & Haul Base Material	3/3/2020	5/4/2020	3/3/2020	5/4/2020	3/3/2020	5/4/2020
+ 4.2	Finegrade Subgrade	5/5/2020	6/29/2020	5/5/2020	6/29/2020	5/5/2020	6/29/2020
4.3	Install Aggregate Base	6/30/2020	10/5/2020	6/30/2020	10/5/2020	6/30/2020	10/5/2020
+ 4.3.1	Place Aggregate Base	6/30/2020	8/10/2020	6/30/2020	8/10/2020	6/30/2020	8/10/2020
+ 4.3.2	Blue Top Aggregate Base	8/11/2020	10/5/2020	8/11/2020	10/5/2020	8/11/2020	10/5/2020
5	Asphalt Concrete Hot Mix Type A	10/6/2020	11/26/2020	10/6/2020	11/26/2020	10/6/2020	11/26/2020
+ 5.1	Furnish & Haul Hot Mix	10/6/2020	11/3/2020	10/6/2020	11/3/2020	10/6/2020	11/3/2020
+ 5.2	Install Hot Mix Type A	11/3/2020	11/26/2020	11/3/2020	11/26/2020	11/3/2020	11/26/2020
6	36 Inch RCP Culvert Class III	11/26/2020	1/1/2021	11/26/2020	1/1/2021	11/26/2020	1/1/2021
+ 6.1	Furnish RCP Materials	11/26/2020	12/3/2020	11/26/2020	12/3/2020	11/26/2020	12/3/2020
+ 6.2	Excavate RCP Trench	12/3/2020	12/14/2020	12/3/2020	12/14/2020	12/3/2020	12/14/2020
+ 6.3	Install RCP Pipe	12/14/2020	12/18/2020	12/14/2020	12/18/2020	12/14/2020	12/18/2020
+ 6.4	Backfill RCP Pipe	12/18/2020	1/1/2021	12/18/2020	1/1/2021	12/18/2020	1/1/2021

LESSON 12 REVIEW

- 1. Under the Job Properties > Schedule tab, which setting can be enabled to account for plugged costs (e.g., for subcontractors)?
 - a. Resource price/unit
 - b. Expense Costs
 - c. Schedule ID
 - d. Actuals
- 2. For InEight Estimate schedule integration with Primavera, which of the following can be sent from your estimate to the schedule? (Select all that apply)
 - a. Activity data
 - b. Cash Flow graphs
 - c. Resource data
 - d. Cost data
 - e. Price data
- 3. The Schedule Plug Days option allows you to define the duration in the schedule separate from the duration defined for your cost items on the Production tab.
 - a. True
 - b. False

LESSON 12 SUMMARY

As a result of this lesson, you can:

- Set up scheduling options
- Update Schedule from InEight Estimate
- Update InEight Estimate from Schedule
- Manage changes between estimate and schedule

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LESSON 13 – CASH FLOW

LESSON DURATION: 25 MINUTES

LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Interpret cash flow and resource utilization on the Cash Flow graph
- Select Cash Flow Options
- Change Cash Flow Display Settings

13.1 CASH FLOW OVERVIEW

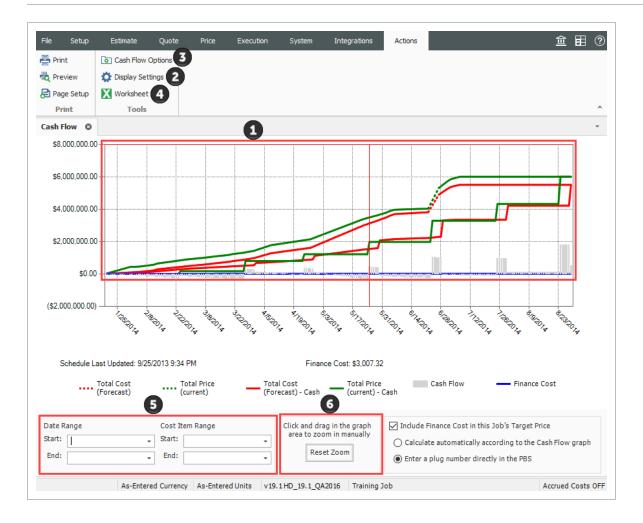
The Cash Flow form provides a graphical representation of the cash flow and resource utilization of your project, so you can quickly assess financing and resource needs.

You can open the Cash Flow form by selecting the **Estimate** tab from the Estimate landing page, then selecting **Cash Flow** from the Schedule section.

In order to generate a cash flow curve the estimate must be populated with schedule dates either directly from integration with Primavera, Microsoft project, or input manually.

Section	Description
1	 The graph displays the projected cash flow of your project, along with job financing expense, individual cost category costs and resource utilization. The x-axis measures time The left y-axis measures amounts The right y-axis measures quantities (when resource utilization is displayed) All graphs depicted on the Cash Flow form can be displayed based on Pay Quantity or Forecast (T/O) Quantity
2	 Click on the Display Settings icon to indicate what to display on the graph. You can display total costs and price or specific cost categories You can also set the display settings to report on Resource Utilization
3	Click on the Cash Flow Options icon to specify revenue timing, cost timing, and cost of money.
4	Click the Excel icon to export the numerical data represented on the graph into an Excel spreadsheet where you can run additional analysis.
5	You can filter the Cash Flow graph by date range or by a range of cost items.
6	Click and drag over the graph to zoom in on a particular section. Click the Reset Zoom button to restore the graph to its original state.

Overview - Cash Flow Form



13.2 CASH FLOW OPTIONS

The Cash Flow Options are used to define the cash flow rules (revenue timing, cost timing, cost of money, and quantities) needed to calculate the finance expense and cash flow for your project.

Cash flow rules (revenue timing, cost timing, cost of money, and quantities) describe how cash flow occurs between a contractor and a client, and between contractors or owners and vendors/subcontractors. Cash flow is then calculated based on both the earning and payment terms you specify, and the job's schedule and pay item prices.

To open the Cash Flow Options, click on the **Cash Flow Options** icon in the Tools section of the Actions tab.

TIP

You can also access Cash Flow Options from the Setup > Job Properties > Cash Flow tab.

- 1. **Revenue timing**: Revenue is the amount of money actually paid to a contractor by the client for the completion of project deliverables. This section contains options to specify when and how often payment is recieved.
- 2. **Cost Timing**: Cost is the amount of money expended to complete the scope of the project. This section contains options to specify when and how often you pay contractors, subcontractors and vendors.

NOTE To include any of your costs in your cash flow (including indirect costs), they need to be scheduled

- 3. **Cost of Money:** Represents the financing cost to fund the project. This section contains fields to specify interest rates you pay for the money you borrow, and interest rates you earn for money invested, to determine a total Finance Cost.
- 4. **Quantities:** Allows you to calculate cash flow based on pay quantities or forecast (T/O) quantities.
- 5. **Dates:** By default, the scheduled Early Start and Early Finish dates of each cost item (and its resource employments) as listed in the CBS Register, provide the timing of the expenses, revenue, and costs that show up on the Cash Flow graph. You have the option to base cash flow timing on Start/Finish dates or Late Start/Finish dates.

File Setup	Estimate	Quote	e Price	Execution	System	Integration	IS						?
6			***	ء 👙	Labor		5						
Job Properties	Foundation	Pay Item	& Bid Wizard	Resource	Equipment	Resource Assemblies	Cost Item Assemblies	Standard Tables	Reports				
Ť	Setup Data 🔻 Initiali	Proposal		Rates - 🖷	Resources	Assemblies	Assemblies		Reports				^
Cash Flow	Job Prope	erties ©											-
Overview	Security Cov	ver Sheet	Cost Basis	Minority Setup	Fuel Cost	Job Tracking	Job Folde	er Tags	Competitors	Pricing	Schedule	-	×
Revenue timin													
_	bmitted to the o	owner:		ge calendar day		-		E	30 day	s			
-	end of the job			nt of each billing age is released:	-		-	L	5.00 %				
	month on this d		Retain	age is released.		At the end of t On a specific d			•				
O Every				ead revenue us	-			King Coat I					
O Every	1 days			ead revenue us	ing the same (Lost Curves as	the contribut	ting Cost I	tems				
Cost timina	2												
Bills are rec and vendor	eived from sub	contractors	Avera	ge calendar day	s elapsed froi	m receipt of inv	oice to paym	ient: 35	5 days				
	end of the job			nt of each invoi		at is withheld b	y you as reta	ainage:	5.00 %				
Every r	month on this d	ay 25		age is released ntractors and ve	endors:	the end of the	·						
OEvery	1 weeks				() Or	n a specific dat	e:		*				
O Every	1 days			oly cash timing i in if their cost s	ules for all pro ource is not s	ocurable cost o et to "Ouote"?	ategories (no	on labor an	d equipment),				
Cost of money	3						Quan	tities 4					
Average an	nual interest rat	te paid to b	orrow money (v	vhen cost excee	ds [8.00	o/	Pay Quanti	ty				
Average an	nual interest rat	te earned (w	hen revenue ex	ceeds cost):	[2.00	%	Forecast (1	T/O) Quantity				
Reporting Peri	iods						Dates	5					
Period setti	ing for cash flov	v: Day	•				Ea	rly Start / F	inish -				
									_				_
									L	OK		ancel	

13.2.0.1 CASH FLOW OPTIONS SET UP

The following steps walk you defining settings on the Cash Flow Options form.

STEP BY STEP – CASH FLOW OPTIONS SETUP

1. In the E101 – Training Job, from the Estimate tab, select Setup >Job Properties >Cash Flow.

ash Flow	Job	Properties 🛛											*
Overview	Security	Cover Sheet	Cost Basis	Minority Setup	Fuel Cost	Job Tracking	Job Folder Tags	Competitors	Pricing	Schedule	Cash Flow	E 4	Þ

- You will see the default options already there
- You will adjust a few of those options
- 2. Change your Revenue timing to **Every month on the 10th**.

• The average calendar days from billing to collection should be set to 25 days

Overview Security Cover Sheet Co	ost Basis	Minority Setup	Pricing	Schedule	Cash Flov				
levenue timing 2	_						-		
Bills are submitted to the owner:	Aver	age calendar days	elapsed fron	n billing to collec	tion:	25 day	s		
○ At the end of the job	Amo	unt of each billing	that is withh	eld by owner as i	retainage:	5.00 %			
Every month on this day 10	Reta	inage is released:	(ھ	At the end of the	job				
O Every 1 weeks			\bigcirc	On a specific dat	e:	•			
O Every 1 days	🗌 Sp	pread revenue usir	ng the same (Cost Curves as th	e contributing Cos	t Items			

- 3. For Cost timing, bills are received from subcontractors and vendors Every month on the 25th.
 - Average calendar days elapsed from receipt of invoice to payment should be set to 30 days

Cost timing 3	
Bills are received from subcontractors	Average calendar days elapsed from receipt of invoice to payment: 30 days
and vendors: At the end of the job Every month on this day 25 Every 1 weeks	Amount of each invoice received that is withheld by you as retainage: 5.00 % Retainage is released to subcontractors and vendors: On a specific date:
O Every 1 days	Apply cash timing rules for all procurable cost categories (non labor and equipment), even if their cost source is not set to "Quote"?

4. For Cost of money, enter **10%** for the Average annual interest rate paid to borrow money (when cost exceeds revenue) and **2%** for Average annual interest rate earned (when revenue exceeds cost).

Cost of money Average annual interest rate paid to borrow money (when cost exceeds	10.00 %
Average annual interest rate earned (when revenue exceeds cost):	2.00 %

5. Leave all remaining options as originally defaulted.

13.3 CASH FLOW DISPLAY SETTINGS

13.3.1 COST ITEMS AND COST CATEGORIES

The Cash Flow Display Settings allow you to control what information displays on the Cash Flow graph. To open the Display Settings click on the **Actions > Display Settings** • icon in the Tools section.

Overview - Cash Flow Display Settings - Cost Items and Cost Categories

Section	Description
1	You can save your display settings for future use.
2	Select how the graph measures the timing of your cash flow. Options include: Day, Week, Month, Quarter, and Year.
3	 Under the Cost Items section, you can select: Total Cost (Forecast): The total cost of your scheduled cost items, based on when your costs are accrued (when your cost items are scheduled). This is displayed as a dashed line on the graph Total Price (current): The total revenue of your pay items, based on when the revenue is earned (when your cost items are scheduled). This is displayed as a dashed line on the graph Total Cost (Forecast) - Cash: The total cost of your scheduled cost items, reflecting the cost timing you specify in the Cash Flow Options. This is displayed as a solid line on the graph Total Price (current) - Cash: The total revenue of the pay items, reflecting the revenue timing you specify in the Cash Flow Options. This is displayed as a solid line on the graph Cash Flow: Displays the difference between your Total Cost - Cash and Total Price - Cash values, so you can see if you are making or losing money Finance Cost: Displays the Cost of Money amount calculated from the settings you specify in the Cash Flow Options
4	You can check the Estimated box for any specific cost categories you need to display.

• The other check boxes are used for InEight Estimate Performance

ettings: Default	Cost Categories				Resources				
] Display this text 1 ustom report title		Estimated	As-Built	Planned To Date	Resource Utilization				
	Labor				Summarize resources by:	Resource	е Туре		\sim
2	Owned Equipment						utilized re y resource		
eriod Day ~	Rented Equipment				Value	Qty	Cost	AB Qty	AB Cos
Cost Items	Supplies				Labor				
☐ Total Cost (Forecast)	Materials				Construction Equipment Rented Construction Eq Installed Material				
Total Price	Subcontract				Installed Equipment				
☐ Total Cost (Forecast) - Cash	Fees				Supply				
☐ Total Price (current) - Cash	Allowance								
Cash Flow	Custom Category1								
Finance Cost	Undefined				Quantity:	Cos	t		
As-Built Total Cost		4			None V As-Built Quantity:	Nor As-	ne Built Cost:	\sim	
CE-Total Cost Earned (to-date)					None ~	Nor		\sim	

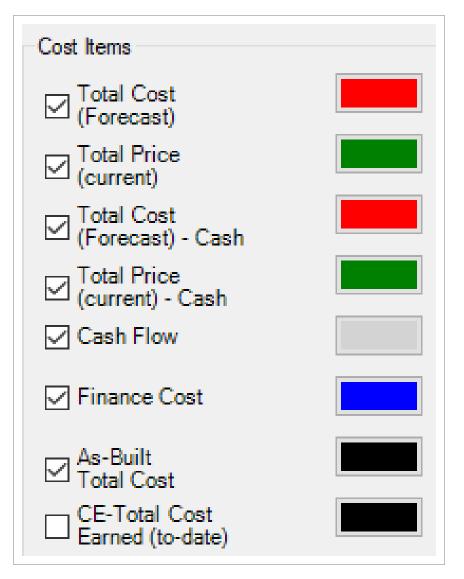
13.3.1.1 CASH FLOW DISPLAY SET UP

The following steps walk you through setting up your Cash Flow Display Settings.

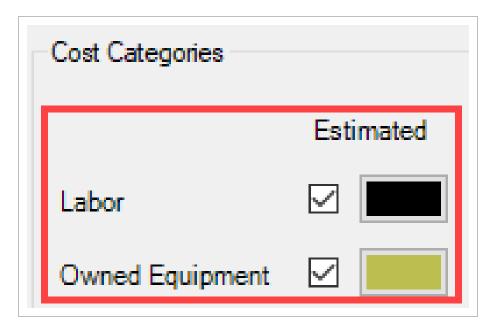
STEP BY STEP – CASH FLOW DISPLAY SETTINGS SET UP

- 1. In the E101 Training Job, from the Estimate tab, select Cash Flow from the Schedule section.
- 2. On the Actions tab, select Display Settings to open the Display Settings window.
- 3. From the Period drop-down list, select **Week**.
- 4. Under the Cost Items section, make sure the following are selected:
 - Total Cost (Forecast)
 - Total Price (Forecast)
 - Total Cost (Forecast) Cash
 - Total Price (Forecast) Cash
 - Cash Flow

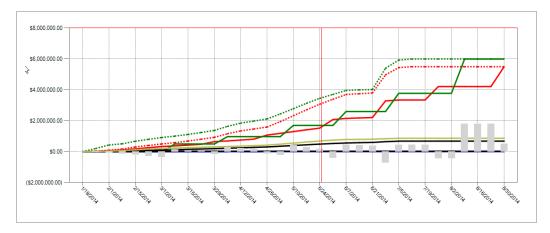
• Finance Cost



5. Under the **Cost Categories** section, check the **Estimated** checkbox for the Labor and Owned Equipment categories.



- 6. Click **OK** to close the Display Settings window.
 - Your Total Cost (Forecast) displays as a dashed red line, indicating your accrued costs based on when your cost items are scheduled and the assigned cost curves for each cost item.
 - Your Total Price (current) displays as a dashed green line, indicating the revenue you've earned, based on the timing of your pay items
 - Your Total Cost (Forecast) Cash displays as a solid red line, indicating your costs, based on when your cost items are scheduled *and* the cost timing defined in Cash Flow Options
 - Your Total Price (current) Cash displays as a solid green line, indicating your revenue, based on the timing of your pay items *and* the revenue timing defined in Cash Flow Options
 - Your Cash Flow displays grey bars indicating when your cash flow is negative or positive



• Your Finance Cost displays as a blue line on the graph

7. To filter your graph by date range, click on the **Start** drop-down arrow - and select a start date of your date range filter.

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	23	24	25	26	27	28	1		
	2	3	4	5	6	7	8		
Date Ra				Clear					
Start:	2/3/2014	ł		Ŧ	Start:				-
End:				-	End:				-
						<u> </u>			

8. Click on the **End** drop-down arrow - and select an end date of your date range filter.

- Your graph now only includes your cost items that fall within the specified date range
- 9. To remove the filter, click in the **Start** field and press the **Backspace** key.
- 10. Do the same for the End field.

13.3.2 RESOURCE UTILIZATION

You can also use the Cash Flow graph to report on resource utilization. For example, you may want to run a report that displays a work hours curve for a particular labor trade or to see the peak usage times for a particular piece of heavy equipment.

You can run resource utilization graphs based off of any of the following:

- Resource Type
- Resource Code
- Description
- Organizational Category
- Tag 1, 2, and 3
- Quote Group
- Account Code and Cost Item Account Code
- Fuel Type

You set up your resource utilization settings from the same Display Settings window you use for setting up Cash Flow, **Display Settings** • in the Tools section of the Actions menu.

ettings: Previous	Cost Categories				Resources			
Display this text as a custom report title:		Estimated	As-Built	Planned To Date	Resource Utilization			
A	Labor				Summarize resources by:	Description		\sim
~	Owned Equipment				-	This job's utilized i All Library resourc		
Settings: Previous Settings: Previous Estimated As-Built Planned Planned Display this text as a custom report title: Labor Image: Comparison of the comparison of t	Qty Cost	AB Qty	AB Co '					
Cost Items	Supplies							
☐ Total Cost (Forecast)	Materials				Dump Truck		_	
	Subcontract							
	Fees							
	Allowance							-
	Custom Category1				Form Materials			>
Finance Cost	Undefined					Cost:		
As-Built					None 🗸	None	\sim	
CE-Total Cost						As-Built Cost None	~	

13.3.2.2 RESOURCE UTILIZATION DISPLAY SET UP

The following steps walk you through setting up your Cash Flow graph to report on Resource Utilization.

STEP BY STEP – RESOURCE UTILIZATION DISPLAY SETUP

- 1. In the E101 Training Job, from the Estimate tab, select CashFlow from the Schedule section.
- 2. On the Actions tab, select **Display Settings** to open the Display Settings window.
- 3. Make sure the all checkboxes are unchecked under the Cost Items and Cost Categories sections.
- 4. Under the Resources section, check the **Resource Utilization** checkbox.
- 5. From the Summarize resources by drop-down list, select **Description**.

Resources		
Resource Utilization		
Summarize resources by:	Description	\sim
Get data from:	This job's utilized resources	
0	All Library resources	

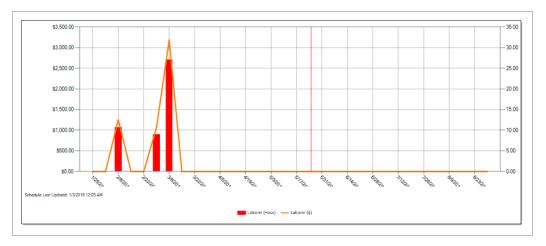
- 6. From the resulting list of Values, select **Laborer**.
- 7. Click in the **Qty** field for the selected value and select a color of your choice.
 - In this case the Qty represents the work hours for your Laborer resource
- 8. Click in the **Cost** field for the selected value and select a different color of your choice.

Get data from:	_		utilized re y resource		
Value		Qty	Cost	AB Qty	AB Co
Laborer					

9. From the **Quantity and Cost** drop down lists, you can select how your quantities and costs will display on the graph. In this case select the Quantity to display as a **Bar** and Cost to display as a **Line**.

Value	Qty	Cost	AB Qty	AB Co 🔨
Labor Foreman				
Laborer Loader 950				_
Lowboy Trailer				
Manhole Precast 4 Ft				
<				,
Quantity:	Cost:			
Bar 🗸	Line		\sim	

- 10. Click **OK** to close the Display Settings window.
 - The graph now displays the utilization of your Laborer resource, showing the work hours and costs used over time



The graphs displayed on the Cash Flow form are based on the estimated cost of each cost item and its resource employments (in the case of resource utilization).

LESSON 13 REVIEW

- 1. Under what cash flow form can you set up your revenue and cost timing?
 - a. Cash Flow Options
 - b. Display Settings
 - C. Worksheet
 - d. Page Setup
- 2. By default, the red dashed line on the Cash Flow graph represents the:
 - a. Total Cost (Forecast)
 - b. Total Price (current)
 - C. Total Cost (Forecast) Cash
 - d. Total Price (current) Cash
- 3. In the Cash Flow Display Settings, Resource Utilization allows you to view a graphical summarization of your resources by which of the following? (Select all that apply)
 - a. Resource File Description
 - b. Resource Type
 - C. Resource Code
 - d. Description
 - e. Wage Zone
 - f. Organizational Category

LESSON 13 SUMMARY

As a result of this lesson, you can:

- Interpret cash flow and resource utilization on the Cash Flow graph
- Select Cash Flow Options
- Change Cash Flow Display Settings



LESSON 14 – INEIGHT ESTIMATE CALCULATORS

LESSON DURATION: 20 MINUTES

LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use the Haul Calculator
- Use the Trench Calculator
- Use the In-Field Calculator

14.1 HAUL CALCULATOR

The **Haul Calculator** allows you to enter the specifics of up to three haul routes (distance, travel speed, etc.). Once entered, you can either:

- Calculate the number of trucks required to complete the haul in a set amount of time, or
- Calculate how long it will take to complete the haul with a set number of trucks

The following activity walks step by step through using the Haul Calculator to calculate the number of trucks needed for a cost item.

STEP BY STEP – HAUL CALCULATOR - CALCULATE QUANTITY OF TRUCKS

- 1. Open the Training Job and from the Estimate tab, select Cost Breakdown Structure.
- 2. Open cost item 4.1 Furnish & Haul Base Material.
- 3. On the Cost Item Record, click the **Detail tab**.
- 4. Right click on the ETDT Dump Truck row header and select Open Haul Calculator.

Cost	Item Summary	🥏 <u>D</u> etai	l : \$11.54	🔱 Plug : \$0	.00	Quote : \$0.00
Orag o	columns here to g	roup				
	Row Number 🗎	Code	Resource	e Assembly	De	scription
-	+ 1	LT1			Te	amster
→ [-	+ 2	ETDT			Du	imp Truck
Ľ	<u>O</u> pen				Ag	gregate Base Rock
⊗	<u>D</u> elete					
8<	Cu <u>t</u>					
٦	Cop <u>v</u>		- L			
ē	<u>P</u> aste		- L			
+	Fill Down		- L			
<u>R</u>	Link this field to	Excel				
	Delete Cut Copy Paste					
2.	Insert <u>R</u> esource	е				
12	Insert Resource	e <u>A</u> ssembly	,			
.	Open <u>H</u> aul Cale	culator				
۵,	Edit Resource	Periods				

5. On the Haul Calculator, select the **Calculate quantity of ETDT required to complete haul in duration entered below** radio button. (ETDT is the resource code for the Dump Truck you selected.)

9	Haul Calculator Record - Training Job	×
Calculate quantity of the second s	f ETDT required to complete haul in duration entered below	
○ Calculate total dura	ion of haulusing quantity of ETDT entered below	

- 6. For the Haul Distance, type 5.
- 7. Enter an Average Payload (Ton) of 30.
- 8. For Load Time (Minutes), type 3.
- 9. Enter a Travel Speed Full of 35 Mile/Hour.
- 10. For Dump Time (Minutes), type 2.

- 11. Enter a Travel Speed Empty of 45 Mile/Hour. Notice this calculates a cycle time of 20.24.
- 12. Enter a Work Efficiency of 90 percent.

	Route 1
Quantity (Ton)	45,000.00
Haul Distance - One Way (Mile)	5.00
Average Payload (Ton)	30.00
_	
Total Loads	1,500.00
Load Time (Minutes)	3.00
Travel Speed Full (Mile/Hour)	35.00
Dump Time (Minutes)	2.00
Travel Speed Empty (Mile/Hour)	45.00
Cycle Time (Minutes)	20.24
Work Efficiency (%)	90.00
Total Hauler Hours	562.17
Hours Per Shift	8.00

• The calculator shows a result of 1.56 concurrent haulers

Results					
Quantity of resource ETDT	1.56	0.00	0.00	1.56	Concurrent Haulers
Total duration (Hours)	0.00	0.00	0.00	360.00	Hours
				ОК	Cancel

- 13. Click **OK**.
- 14. Your cost item now shows a quantity of 1.56. Round up the Quantity to **2**. Also, adjust the Teamster Quantity to **2** (if needed).

Row Number 🗎		Code	Resource Assembly	Description	Quantity (Less Waste)	Waste % Add-on	Quantity	Unit of Measure
+	1	LT1		Teamster			2.00	Each
+	2	ETDT		Dump Truck			2.00	Each
+	3	MBR		Aggregate Base Rock	45,500.00	5.00	47,775.00	Ton

STEP BY STEP – HAUL CALCULATOR - CALCULATE TOTAL DURATION

- 1. Open the Training Job and from the Estimate tab, select Cost Breakdown Structure.
- 2. Open cost item 4.1 Furnish & Haul Base Material.
- 3. On the Cost Item Record, click the **Detail** tab.
- 4. Change your Teamster and Dump Truck quantities back to **2 each**.
- 5. Right click on the ETDT Dump Truck row header and select Open Haul Calculator.
- 6. On the Haul Calculator, select the **Calculate total duration of haul using quantity of ETDT entered below** radio button.
 - With the previous information you entered still there, the calculator calculates a total duration of 281.08 hours

) Calculate quantity of ETDT required to Calculate total duration of haul using					
	Route 1	Route 2	Route 3	TOTAL	
Quantity (Ton)	45,000.00	0.00	0.00	45,000.00	Ton
Haul Distance - One Way (Mile)	5.00	0.00	0.00	5.00	Mile
Average Payload (Ton)	30.00	0.00	0.00	30.00	Ton
Total Loads	1,500.00	0.00	0.00	1,500.00	
Load Time (Minutes)	3.00	0.00	0.00	3.00	Minutes
Travel Speed Full (Mile/Hour)	35.00	0.00	0.00	35.00	Mile/Hour
Dump Time (Minutes)	2.00	0.00	0.00	2.00	Minutes
Travel Speed Empty (Mile/Hour)	45.00	0.00	0.00	45.00	Mile/Hour
Cycle Time (Minutes)	20.24	0.00	0.00	20.24	Minutes
Work Efficiency (%)	90.00	100.00	100.00	90.00	%
Total Hauler Hours	562.17	0.00	0.00	562.17	Hours
Hours Per Shift	8.00	8.00	8.00	8.00	
lesults					
Quantity of resource ETDT	0.00	0.00	0.00	2.00	Concurrent Hauler
Total duration (Hours)	281.08	0.00	0.00	281.08	Hours

- 7. Click **OK**.
 - The Hours field on the Production tab updated to 281.08
 - Your ETDT Dump Truck quantity remains at 2

14.2 TRENCH CALCULATOR

The **Trench Calculator** allows you to quickly calculate trench, pipe, and bedding values. You can perform pipe-related take-off by defining the details of the trench (e.g., length, depth, width, hinge elevation, backslope, and swell factor), the pipe (diameter, elevation, and waste factor), and up to four beddings.

With this information, the Trench Calculator can automatically calculate:

- Total excavation volume (neat-line)
- Total excavation volume (including swell/shrinkage)

- Total pipe to purchase
- Lift Volume (for up to four beddings)
- Lift Weight (for up to four beddings)

You can use these calculations to define certain cost item setup data:

- You can use the Total Excavation Volume that is calculated as the quantity of the cost item
- You can use the Total pipe to purchase calculation as the quantity of a resource (e.g., pipe) that has been employed to the cost item
- You can use the Lift Volume or Lift Weight that is calculated as the quantity of a resource employed to the cost item in either cubic yards or tons
- You can click the Toggle English / Metric button at the bottom of the dialog to switch between the English and Metric systems for entering data
- TIP You can access the Trench Calculator from the Actions tab of a Cost Item Record
- NOTE When copying cost items in a job or from job to job, the Trench Calculator variable data is included with the data being copied. When a cost item is copied to the clipboard, Trench Calculator variable data is also included.

14.2.1 TRENCH CALCULATOR - TRENCH TAB

The following steps walk through using the Trench Calculator to take-off excavation volume.

STEP BY STEP – TRENCH CALCULATOR - TRENCH

- 1. Open the **Training Job** and from the Estimate tab, select **Cost Breakdown Structure**.
- 2. Create a new cost item from the bottom row of your CBS and call it **24**" **Pipe**.
- 3. Add the following three subordinates and update their Units of Measure:
 - Excavate Trench: CY
 - Install Pipe: LF
 - Backfill Trench: CY
- 4. Open the Excavate Trench Cost Item Record. Add the following resources:

- LL2 Laborer 1
- LO2 Operator Class 2 1
- EX245 Excavator 245 1
- 5. Adjust the Production to: **100 CY/Hour**.

_		_					1					_
Drag	columns Firede	[Se	earch For]	··· Saved views	: Previous View	-		Days:	0.00		0.00	1
Row Number 🖮		T	Code	Resource Assembly	Description	Quantity		Shifts:	0.00		0.00	
	Number —					(Less Waste)		Hours:	0.01		0.00	
	+	1	LL2 LO2		Laborer			Man-Hours:	0.02		0.00	
	+	2	EX245		Operator Class 2 Excavator 245			Equip-Hours:	0.01		0.00	
÷		-	1					CY/Day:	800.00		0.00	
								CY/Shift:	800.00		0.00	
								CY/Hour:	100.00	<	0.00	
								CY/Man-Hr:	50.00		0.00	. '
							4				0.00	•

6. On the Cost Item Record's Actions tab, select Trench Calculator.

System Integrat	ons Actions	1
ue (Delta) Resource Fields	🚊 Edit Resource Periods	Trench Calculator
ue (Delta) Cost Item Fields	E Insert Subordinate	🔝 Shift / Rate Calculator
	🖇 Break Cost Allocation Li	ink
	1	Tools
'd ©		Trench Calculator
t (T/O) Qty: Unit of Me	asure: Unit Cost:	Total Cost: Currenc
	~	
	\$1.74	4 \$1.74 U.S. Do

- 7. For Trench Length, type 1000.00 feet.
- 8. For Trench Width (at the bottom) type 4.00 feet.
- 9. Enter a Trench Depth of 10.00 feet.
- 10. Enter a Hinge Elevation of 5.00 feet.
- 11. Enter a **Backslope** of **45** degrees.
- 12. Define the Material Swell/Shrinkage Factor (fraction expressed as a decimal) at .10.
 - You can select either a "neat-line" total volume or include swell/shrinkage
- 13. Select the "Total excavated volume (including swell/shrinkage)" checkbox.

🖗 Trenc	h Calculator
	Trench Pipe Beddings
	- Variables
	Trench length: 1000.00 feet
	Trench width (at bottom): 4.00 feet
	Trench depth: 10.00 feet
	Hinge elevation: 5.00 feet
	Backslope: 45.00 degrees
	Material swell/shrinkage 0.10 (decimal)
	Results Z,407.41 CY Use this volume as the quantity on this cost item □ Total excavated volume (including swell/shrinkage): 2,648.15 CY Use this volume as the quantity on this cost item □
Save Configuration to Library Load Configuration from Library	Toggle English / Metric OK Cancel

- 14. Click **Save Configuration to Library** and save the Trench calculator as **Trench Example** with your initials.
- 15. Click **OK**.

14.2.2 TRENCH CALCULATOR - PIPE TAB

You can also use the Trench Calculator to take off how much piping and bedding you need for the trench.

STEP BY STEP – TRENCH CALCULATOR - PIPE

- 1. On the CBS Register, adjust the Forecast T/O Quantity for the Install Pipe cost item to **1000** LF.
 - Assume this quantity is based off manual take-off calculations you already did
- 2. Open the Install Pipe Cost Item Record.
- 3. Add the Resource Assembly of **CPIPE Pipe Crew** and adjust the production to **300** LF / Day.

- 4. On the Cost Item Record's Actions tab, select **Trench Calculator**.
- 5. Select Load Configuration from Library.
- 6. Select Trench Example (with your initials).

3									
A	ctions								
Dra	g columns here to group			Find: [Sear	ch For]	S	aved views:	Standard View	•
	Name	Comments	Pipe Diameter	UM	Pipe Type	Pipe Class	Agency	Last Changed	Last Char
\rightarrow	New Trench Configuration (bla		0.00	inches					
	24" PVC Sewer at 10' Deep (1)		26.00	inches				7/29/2009 2:13:19 PM	wmfarr
	Trench Example PB		0.00	inches				2/15/2019 11:59:52 AM	Paul.Ben

- 7. Click **OK**.
- 8. On the Trench Calculator, select the Pipe tab.
- 9. Enter the following for the size and position of the pipe:
 - Pipe exterior diameter: 26.00 inches
 - Pipe center elevation (from bottom): 19.00 inches
 - Waste factor: **10**%
- 10. Click on the resource icon to pull up the Resource Rate Register.
- 11. Select the Installed Material tab.
- 12. Select MPP24 Pipe 24" PVC SDR35, then click OK.
 - The Pipe variables you entered should match the following image:

Use Total Pipe To Purchase as the quantity on this resource (on this cost item):

- 13. Click **Save Configuration to Library** and save the Trench calculator as **Trench Example** with your initials.
- 14. When prompted to overwrite the existing saved file, click **Yes**.
- 15. Click **OK** to close the Trench Calculator.

14.2.3 TRENCH CALCULATOR - BEDDINGS TAB

The following steps walk you using the Trench Calculator to calculate bedding take-offs.

STEP BY STEP – TRENCH CALCULATOR - BEDDINGS

- 1. Back on the CBS Register, adjust the Forecast T/O Quantity for **Backfill Trench** to **2300** CY, based on manual calculations.
- 2. Open the **Backfill Trench** Cost Item Record.
- 3. Add the following resources:

- LL2 Laborer 3
- LO2 Operator Class 2 1
- RPC Plate Compactor 1
- EL950 Loader 950 1
- 4. Adjust the Production to **160** CY/Day.
- 5. From the Cost Item Record's Actions tab, select Trench Calculator.
- 6. Select Load Configuration from Library
- 7. Select **Trench Example** (with your initials), then click **OK**.
- 8. On the Trench Calculator, select the **Beddings** tab.
- 9. On the Beddings tab, you can define up to four beddings to backfill the trench
 - The variables you enter will determine how much bedding you need
- 10. Enter the following variables for each bedding:

	Bedding Lift 1	Bedding Lift 2	Bedding Lift 3
Elevation (from trench floor)	6.00	38.00	76.00
Additional material needed	5.00	5.00	5.00
Conversion factor	1.60	1.70	1.60

- Under Results, you can match each of the Bedding Lifts with a material resource, by selecting the **resource** icon and selecting the resource you want to employ from the Material tab
- 11. Selecting the resource from the Tons selection field, select the following materials for each bedding:

	Resource Code	Resource Description
Bedding Lift 1	MASAND	Sand
Bedding Lift 2	MAFA	Fine Aggregate
Bedding Lift 3	MACA1-1/2	Coarse Aggregate

Trend	h Calculator
	Trench Pipe Beddings
	● Bedding Lift 1 ◯ Bedding Lift 2 ◯ Bedding Lift 3 ◯ Bedding Lift 4
	Variables
	Elevation (from trench floor): 6.00 inches
	Additional material needed to 5.00 %
	Conversion factor (TON per CY): 1.60
	Results
	Lift Volume: 77.78 CY
(1993年1993年1999)	Use Lift Volume as the quantity on this resource (on this cost item):
	Lift Weight: 124.44 Tons
	Use Lift Weight as the quantity on this resource (on this cost item):
Save Configuration to Library Load Configuration from Library	Toggle English / Metric OK Cancel

12. Click **OK**.

• Note that the pipe and bedding materials are added to the cost item with their quantities

Row Number ៉ 🝸	Code	Resource Assembly	Description	Quantity (Less Waste)	Waste % Add-on	Quantity	Unit of Measure
+ 1	LL2		Laborer			3.00	Each
+ 2	LO2		Operator Class 2			1.00	Each
+ 3	RPC		Plate Compactor			1.00	Each
+ 4	EL950		Loader 950			1.00	Each
+ 5	MASAND		Sand	124.44	0.00	124.44	Ton
+ 6	MAFA		Fine Aggregate	593.66	0.00	593.66	Ton
+ 7	MACA1		Coarse Aggregate	3,327.59	0.00	3,327.59	Ton

EXERCISE 14.1 – TRENCH CALCULATOR

In this exercise, you will practice using the Trench Calculator to take-off piping and bedding materials. Complete the following steps:

- 1. In the Training Job, create a new cost item called Underground Pipe.
- 2. Give the cost item a quantity and unit of measure of **1640 Linear Feet**.
- 3. Open the new cost item and open the **Trench Calculator**.
- 4. On the Trench tab, enter the variables for the trench:

Trench length	1000 feet	
Trench width (at bottom)	4 feet	
Trench depth	10 feet	
Hinge elevation	5 feet	
Backslope	45 degrees	
Material swell/shrinkage factor	0.10 (decimal)	

- Do NOT check the box to bring in volume shrinkage.
- 5. Select the MPR36 material resource from the drop-down Results list.
- 6. On the **Beddings** tab, enter bedding variables.

Bedding lift 1	
Elevation (from trench floor)	6 inches
Additional material needed to compensate for compaction	5.00%
Conversions factor (Ton per CY)	1.3
Bedding material resource (Tons)	MASAND

Bedding lift 2	
Elevation (from trench floor)	38 inches
Additional material needed to compensate for compaction	5.00%
Conversions factor (Ton per CY)	1.1
Bedding material resource (Tons)	MAFA

Bedding lift 3	
Elevation (from trench floor)	76 inches
Additional material needed to compensate for compaction	5.00%
Conversions factor (Ton per CY)	1.1
Bedding material resource (Tons)	MACA1-1/2

7. Select **OK** and confirm that the pipe material and bedding materials populated the cost item.

You should end up with the following results

Cos	st Breakdown	Structure	(CBS) I	Register	Cost	Item Record 🛛									*
CBS	S Code:	Optional C	ode:	Description				Forec	ast (T/O) Qty:	Unit of Measure	: L	Jnit Cost:	Total Cost:	Currency:	
											~				
											~				
	26			Undergrou	nd Pipe				1,640.00	LF	•	\$34.59	\$56,734.45	U.S. Dollar	
PI A	Assignment:	PI Line Nur	nber:	PI Descripti	ion:					Cost Segment:	F	ay Quantity:	Cost Source:	Alternate:	
	Ψ.									Job Overhead	*	1,640.00	Detail +	BASE	
Co	ost Item Summar	у 🍰 🖸	tail : \$3	4.59 🗳	Plug : \$0.00	0 Quote : \$0.00	Allocation				Prod	uction			×
Drag	g columns here	to group			F	Find: [Search For]	··· Saved v	views: Previou	ıs View	•				Qty Driver Hourly	
	Row Number 🖮	Code	R	esource Asse	mbly	Description	Quantity (Less Waste)	Waste % Add-on	Quantity	Unit of Measure		Durati	ion Driven Resources	Resource	
	+	1 MPR36				Pipe RCP 36 In	1,000.00	0.00	-,	Linear Feet		D	ays: 0.00	0.00	,
→	+	2 MASAN 3 MAFA	D			Sand Fine Aggregate	101.11 384.13	0.00				Sh	ifts: 0.00	0.00	
7	+	4 MACA				Coarse Aggregate	2,153,15	0.00				Ho	ours: 0.00	• 0.00	
*		_										Man-Ho	ours: 0.00	0.00	(
												Equip-Ho	ours: 0.00	0.00	6
											4	LF/I	Day: 0.00	0.00) ►
4										Þ			<u>6</u> 28 ⊉	≞≜	×
												ОК Са	ancel < Prev	Next	>

Congratulations, you have completed this exercise!

14.3 IN-FIELD CALCULATOR

You can use the In-field Calculator to do simple mathematical calculations in any numeric field on records, registers, and tree lists. You use this calculator much like an Excel workbook field, by inserting the cursor in the field where you want to perform a calculation, then pressing the "=" key, followed by a valid arithmetic expression. To display the calculated result, you press the tab key. The resulting value is stored without the arithmetic expression used to calculate the value.

The following steps walk through using the In-field Calculator to calculate the area of how much sandblasting is needed for painting the steel bridge structure specified in the Training Job.

NOTE

The resulting field value is stored without the arithmetic expression used to calculate the value.

STEP BY STEP – IN-FIELD CALCULATOR

- 1. Open the Training Job and from the Estimate tab, select Cost Breakdown Structure.
- 2. Scroll to find cost item 13.3 Sandblast.
- 3. Click in the Forecast (T/O) Quantity field.

1 12,1,0,0	Julip Wali	21,000,00	oquarereet
1 3	Paint Existing Steel Bridge Structure	1.00	Lump Sum
+ 13.1	Setup Equipment	1.00	Lump Sum
+ 13.2	Wash-Remove-Dispose of Water	25.000.00	Square Feet
+ 13.3	Sandblast	<u>2500</u>	Square Feet
+ 13.4	Apply Primer	25,000.00	Square Feet
+ 13.5	Paint Top Coat	25,000.00	Square Feet

4. Press the = key, then type **10*250**.

	13	Paint Existing Steel Bridge Structure	1.00	Lump Sum
+	13.1	Setup Equipment	1.00	Lump Sum
+	13.2	Wash-Remove-Dispose of Water	25,000.00	Square Feet
+	13.3	Sandblast	=10*250	Square Feet
+	13.4	Apply Primer	25,000.00	Square Feet

5. Press the **Tab** key and it calculates the result.

LESSON 14 REVIEW

- 1. The Haul calculator allows you to:
 - a. Calculate the number of trucks required to complete the haul in a set amount of time
 - b. Calculate how long it will take to complete the haul with a set number of trucks
 - C. Neither
 - d. Both

2. The Trench Calculator allows you to quickly calculate ______ values.

- a. Trench
- b. Pipe
- C. Bedding
- d. All of the above
- 3. For the in-field calculator, what symbol needs to be at the beginning of the math equation for it to calculate?
 - a. +
 - b. –
 - C. =
 - d. (

LESSON 14 SUMMARY

As a result of this lesson, you can:

- Use the Haul Calculator
- Use the Trench Calculator
- Use the In-Field Calculator



LESSON 15 – ADVANCED PRICING

LESSON DURATION: 40 MINUTES

LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use advanced pricing options including: alarm limits, subtotals, rounding precision, and Fixed Final Price
- Create and compare alternates for cost items and pay items
- Use Billing Rates

15.1 ALARM LIMITS

The Alarm Limits lets you establish limits to specific pay items to make sure the pricing is within certain limits, i.e. percentage or unit price. The Alarm Limits do not do any calculations. It informs you if either of the limit types are outside the range. If outside the limits, the row is then colored red.

For example, when pricing Mobilization, there can be limits as to the amount that can be entered and how soon to receive payment. In the screen shot below, you can enter up to 10% of the contract price and receive that amount when 5 or 10% of the work is completed.

Pay Item and Proposal register:

ag	columns here to grou	ip.									Find	: [Search For] Sav
	Pay Item Number	Lock Price	Row Number	Line Number	Description	Pay Quantity	Unit of Measure	Unit Price (current)	Total Price (current)	% Job Max. Alarm		Unit Price Nax. Alarm	Unit Price Min. Alarm
ŀ	+ 641 0 100		1	10	Mobilization	1.00	Lump Sum	\$386,800.00	\$386,800.00	10.00	8.00	\$0.00	\$0.00
	+ 201 0 102		2	20	Clearing & Grubbing	10.00	Acre	\$6,120.00	\$61,200.00	0.00	0.00	\$0.00	\$0.00
	+ 202 0183		3	30	Unclassified Excavation	50,000.00	Cubic Yard	\$8.50	\$425,000.00	0.00	0.00	\$0.00	\$0.00

In this case, the limits are between 8 and 10%. The row is colored red to indicate that the Unit Price is not within the percentage limits.

The screen shot below is the record view for Mobilization.

Pay Item Number: *	641 0 100							
Description:	Mobilization							
Quantity								
Lock Quantity: Pa	y Quantity:	Forecast (T/O) Q	ty: Unit o	f Measure:	Qty Variance:	Qty Variance %:	Qty Variance	Group:
	1.00		1.00 Lump	Sum 🝷	0.00	0.00	Even Run	
Price								
Lock Price: Ur	nit Price Precision:	Unit Price:	Total F	Price:	Currency:	Payment I	Method:	% Margin:
-2		\$386,80	00.00	\$386,800.00	U.S. Dollar	 Unit Price 	-	95.80
Overview Earning	s Rules Tags / U	ser Defined Fields						
Alarm Limits				Assignments				
G	Mini	mum	Maximum	Account: 10)20			d.
Percentage of Job:		8.00	10.00					
Unit Price:	\$	0.00	\$0.00	4				

The following is an example for Steel Reinforcement as a Unit Price range.

columns here to gro	up									Fin	d: [Search For	.]
Pay Item Number	Lock Price	Row Number ៉	Line Number	Description	Pay Quantity	Unit of Measure	Unit Price (current)	Total Price (current)	% Job Max. Alarm	% Job Min. Alarm	Unit Price Max. Alarm	Unit Price Min. Alarm
+ 800 0400		9	90	4 Foot Diameter Manhole	16.00	Each	\$4,500.00	\$72,000.00	0.00	0.00	\$0.00	\$0.0
+ 501(A) 1306		10	100	Structural Excavation & Backfill	800.00	Cubic Yard	\$30.00	\$24,000.00	0.00	0.00	\$0.00	\$0.0
+ 506(A) 1322		11	110	Steel Reinforcement	20,000.00	Pound	\$1.60	\$48,000.00	0.00	0.00	\$1.50	\$1.0
+ 503(A) 1313		12	120	Retaining Wall	850.00	Cubic Yard	\$535.00	\$454,750.00	0.00	0.00	\$0.00	\$0.

Based on the screen shots, the Unit Price is not within the \$1.00 to \$1.50 range. It is \$1.60.

The record view is now shown.

ay Item Number:	* 506(A) 1322						
Description:	Steel Reinforce	ment					
Quantity							
Lock Quantity:	Pay Quantity:	Forecast (T/	0) Qty: U	Init of Measure:	Qty Variance:	Qty Variance %:	Qty Variance Group:
	30,000	.00 3	0,000.00 P	ound	• 0.00	0.00	Even Run
Price							
Lock Price:	Unit Price Precisio	n: Unit Price:	Т	otal Price:	Currency:	Payment	Method: % Margin:
	2		\$1.60	\$48,000.	00 U.S. Dollar	 Unit Price 	e • -0.80
Overview Earni	ings Rules Tags	/ User Defined Fiel	ds				
Alarm Limits				Assignmen	s		
	Μ	inimum	Maximu	um Account:	1330		d.
Percentage of Job	:	0.00	0.0	00			
Unit Price		\$1.00	\$1.5	50			
		·····					

15.2 SUBTOTALS

The subtotal feature is for situations where the Owner wanted subtotals on the proposal form of pay item groups.

The following screen shot is using the supplied Subtotal register view:

	to g											
Row Number 🖿		Pay Item Internet Number	Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Measure	Unit Price (current)	Total Price (current)	Subtotal	Subtotal Description	Subtotal Amount	Running Subtotal Amount
+	1	641 0 100	Mobilization	1.00	1.00	Lump Sum	\$386,800.00	\$386,800.00				
+	2	201 0 102	Clearing & Grubbing	10.00	10.00	Acre	\$6,120.00	\$61,200.00				
+	3	202 0183	Unclassified Excavation	50,000.00	50,000.00	Cubic Yard	\$8.50	\$425,000.00				
+	4	303 5912	Aggregate Base	40,000.00	45,000.00	Ton	\$22.00	\$880,000.00				
+	5	303 4263	Asphalt Concrete Hot Mix Type A	38,000.00	35,000.00	Ton	\$35.00	\$1,330,000.00				
+	6	413(B) 0464	36 Inch RCP Culvert Class III	1,000.00	1,024.00	Linear Feet	\$100.00	\$100,000.00	V	SUBTOTAL: SITEWORK & ROADWAY	\$3,183,000	\$3,183,000
+	7	800 0220	10 Inch PVC Force Main (SDR21)	12,000.00	12,000.00	Linear Feet	\$28.00	\$336,000.00				
+	8	800 0330	24 Inch PVC Gravity Sewer (SDR35)	3,000.00	3,000.00	Linear Feet	\$64.00	\$192,000.00				
+	9	800 0400	4 Foot Diameter Manhole	16.00	16.00	Each	\$4,500.00	\$72,000.00	v	SUBTOTAL: WATER & SEWER	\$600,000.00	\$3,783,000
+	10	501(A) 1306	Structural Excavation & Backfill	800.00	800.00	Cubic Yard	\$30.00	\$24,000.00	<u> </u>			

From the Subtotal column, the last item in the subtotal group is where the box is checked. Once the box is checked, then a description may be entered. After the box is checked, the **Subtotal Amount** and **Running Subtotal Amounts** are then displayed in a bold font.

In our standard Proposal Report, there is an option to printout the subtotals.

	Reports - Standard Proposal
Reports	Settings: Default
Job Properties	
Foundation Setup Data	Print Details Layout Header/Footer
Resources	Pay Item Numbers
Resource Register	Filter by currency: No Filter
Resource Changes	Show Line Number
Resource Rate Details	✓ Show Pay Item Number ● Proposal/Bid
Resource Utilization	
Resource Utilization (Excel)	Show these helds above the pay items:
Resource Currency Comparison	☐ Job Code ☐ Job City
Resource Assemblies	Job Description Job County Show
Cost Breakdown Structure	☐ Bid Date ☐ Job State
Quotes	Bid Time Job Country Show Running Totals
Price Breakdown Structure	☐ JobLocation
Pay Item & Proposal	
Standard Proposal	Show Suspended Items
DOT Proposal	- Include
Pay Item Summary	Include Cover Sheet
Pay Item Currency Comparison	
Pay Item Price Breakdown	Include Preferences Sheet O not truncate values (show decimal precision)

EXERCISE 15.1 – SUBTOTAL VIEW

Go to the Pay Item & Proposal Subtotal view to view subtotals.

- 1. In the Training Job, add an additional subtotal on the pricing page of your estimate to appear after Unclassified Excavation.
- 2. Add the subtotal with the description "SUBTOTAL: EARTHWORK" in the Pay Item & Proposal register.
- 3. Run the Standard Proposal report with subtotals showing.

Congratulations, you have completed this exercise!

15.3 ROUNDING PRECISION

Rounding Precision lets you change the decimal position of the Unit Prices instead of manually entering the values.

You can preset the Unit Price decimals, then using this feature, round up or down the decimals. The job's default Unit Price decimal is set to 2.

There are two decimal selections to understand. In the **Settings** form from the Backstage View, Decimal Precision lets you to calculate how many decimals to display.

	Settings
- Options	Participanting
General	Decimal Precision
Decimal Precision	Cost Summary Precision 2
Fax Mail	
Account Code Settings	Unit Cost Precision 2
Network	
Deployment Mode	Quantity Precision 2
SOL Security	
	Short Percent Precision 2
Attachment Settings	
- Timesheet Warehouse Settings	Long Percent Precision 2
Licenses	
	Currency Rate Precision 5
Currency	

In the **Cost Basis** form from Job Properties, use the Unit Price decimal to calculate the Total Price.

Cost Break	down Strue	cture (CBS) Reg	gister	Pay Item & Prop	osal Regist	er	Pay I	tem Record	Job Properti	es Ø
Overview	Security	Cover Sheet	Cost Basis	Minority Setup	Fuel Cost	Job Tra	icking	Job Folder Tag	S Competitors	Pricin
Standard S	Shift Arrange	ments	Standard W	age Rate Compositi			t Itama	to Pay Items		
Work Hou	urs per Shift	8.00	Scale 1	: 100.00 %	Ĭ	Pay Item	Unit Pri	ice Precision:	2	
	irs per Shift:		Scale 2					nges Log / Checking		
	fts per Day:		Scale 3			Maintain	CBS Str	ucture at Level:	0	
Day	s per Week:	5.00	Shift	/ Rate Calculator		When ma	in-count	changes:	Change UM / M Change Days	an-Hou

In the following screen shot, the Rounding Precision column is set to 2 for each pay item with the exception of Mobilization, which was changed to -2. The -2 means to the nearest \$100.

	Curr	rent	Target	Forecas	Variance]						Balanced Unit	Current Unit
Price:	\$6,430,844	.00 \$	6,430,805.34	\$6,444,775.04	\$38.66	сит					Pri	ce: \$6.34	\$6.34
Profit:	\$631,629	.85	\$631,591.19	\$695,313.98	\$63,722.79	сит					Pro	fit: \$0.80	\$0.80
Margin%:	9	.82	9.82	10.79	\$69,141.39	сит					Total Co	st: \$5.54	\$5.54
						_			1	•	Business Overhe	ad: \$0.33	
									1	•	Job Overhe	ad: \$0.49	1
										Una	ssigned Direct Co	ost: \$0.00	1
										A 4	ssigned Direct C	ost: \$4.73	1
Day Ite	im La	ock	Pow	Line			Pav	Unit of	Poundin	0	Linit Price	Total Price	
Pay Ite Number		ock rice	Row =	Line Number	Description		Pay Quantity	Unit of Measure	Roundin		Unit Price (current)	Total Price (current)	F
	r Pr		Row Number ៉		Description			Unit of Measure					ł
Number	r Pr L 0100		Row Number =	Number		rubbing	Quantity	Unit of Measure Lump Sum		ĩ	(current)	(current)	ł
Number + 641 + 201	r Pr L 0100		Row Number 😐	Number 1 10	Mobilization	-	Quantity 1.00	Unit of Measure Lump Sum Acre		1 -2	(current) \$18,300.00 \$5,833.93	(current) \$18,300.00	1
Number + 641 + 201 + 202	r Pr I 0100 I 0102		Row 🖭	Number 1 10 2 20	Mobilization Clearing & G	Excavation	Quantity 1.00 10.00	Unit of Measure Lump Sum Acre Cubic Yard		-2 2	(current) \$18,300.00 \$5,833.93 \$6.34	(current) \$18,300.00 \$58,339.30	1
Number + 641 + 201 + 202	r Pr 1 0100 2 1 0102 2 2 0183 2 3 5912 2		Row Number 🖿	Number 1 10 2 20 3 30	Mobilization Clearing & G Undassified Aggregate B	Excavation	Quantity 1.00 10.00 50,000.00	Unit of Measure Lump Sum Acre Cubic Yard Ton		-2 2 2	(current) \$18,300.00 \$5,833.93 \$6.34 \$26.73	(current) \$18,300.00 \$58,339.30 \$317,000.00	•
Number + 641 + 201 + 202 + 303 + 303	r Pr 1 0100 2 1 0102 2 2 0183 2 3 5912 2		Row Number =	Number 1 10 2 20 3 30 4 40	Mobilization Clearing & G Undassified Aggregate B Asphalt Con	Excavation	Quantity 1.00 10.00 50,000.00 40,000.00 38,000.00	Unit of Measure Lump Sum Acre Cubic Yard Ton		-2 2 2 2	(current) \$18,300.00 \$5,833.93 \$6.34 \$26.73 \$40.89	(current) \$18,300.00 \$58,339.30 \$317,000.00 \$1,069,200.00	•
Number + 641 + 201 + 202 + 303 + 303	r Pr 1 0100 0 1 0102 0 20183 0 3 5912 0 3 4263 0 3 (B) 0464 0		Row Number	Number 1 10 2 20 3 30 4 40 5 50	Mobilization Clearing & G Undassified Aggregate B Asphalt Coni 36 Inch RC	Excavation ase crete Hot Mix Type A	Quantity 1.00 10.00 50,000.00 40,000.00 38,000.00 1,000.00	Unit of Measure Lump Sum Acre Cubic Yard Ton Ton		-2 2 2 2 2	(current) \$18,300.00 \$5,833.93 \$6.34 \$26.73 \$40.89 \$122.96	(current) \$18,300.00 \$58,339.30 \$317,000.00 \$1,069,200.00 \$1,553,820.00	,
Number + 641 + 201 + 303 + 303 + 413 + 800	r Pr 1 0100 0 1 0102 0 20183 0 3 5912 0 3 4263 0 3 (B) 0464 0		Row humber	Number 1 10 2 20 3 30 4 40 5 50 6 60	Mobilization Clearing & G Undassified Aggregate B Asphalt Com 36 Inch RC 10 Inch PVC	Excavation ase crete Hot Mix Type A P Culvert Class III	Quantity 1.00 10.00 50,000.00 40,000.00 38,000.00 1,000.00 12,000.00	Unit of Measure Lump Sum Acre Cubic Yard Ton Ton Linear Feet		-2 2 2 2 2 2 2 2 2 2 2	(current) \$18,300.00 \$5,833.93 \$6.34 \$26.73 \$40.89 \$122.96 \$28.91	(current) \$18,300.00 \$58,339.30 \$317,000.00 \$1,069,200.00 \$1,553,820.00 \$122,960.00	

Change the 2 and 3 pay item row's Rounding Precision to 0 and 1. The Unit Price changed accordingly. In doing so, you are moving the decimal to show tenth, zero, ten dollars, or in the Mobilizations case to the nearest \$100.

	down Struc					ster O Job							
Proposal R	lecap - Copy	y of Tra	ining Job							×	Item	Recap - 303 426	53 Asphalt Concre
	С	Current	Target	Forecast	Variance								Balanced Ur
Price:	\$6,428,8	44.70	\$6,430,805.34	\$6,442,775.74	\$1,960.64	ADD						Pri	ice: \$50.
Profit:	\$629,6	630.55	\$631,591.19	\$693,314.68	\$61,723.49	СОТ					1	Pro	ofit: \$4.
Margin%:		9.79	9.82	10.76	\$67,142.09	сит						Total Co	ost: \$45.
											<u></u>	Business Overhe	ead: \$2.
											<u></u>	Job Overhe	ad: \$1.
											🛋 Un	assigned Direct C	ost: \$0.
											_	assigned Direct C Assigned Direct C	
Pay Iten Number		P Lock Price	Row Number	Line Number	Description			ay uantity	Unit of Measure	Round Precisi	ing	Assigned Direct C Unit Price (current)	Total Price (current)
Pay Iten	n	Lock	Row Number =	Number 1 10	Description Mobilization						ling on -2	Unit Price (current) \$18,300.00	ost: \$40.
Pay Iten Number	n 0100	Lock	Row Number ==-	Number		ubbing		uantity	Measure Lump Sum		ing on	Unit Price (current) \$18,300.00	Total Price (current)
Pay Iten Number + 641	m 0100 0102	Lock	Row 🛌 Number	Number 1 10	Mobilization			uantity 1.00 10.00	Measure Lump Sum		ling on -2	Unit Price (current) \$18,300.00 \$5,834.00	Total Price (current) \$18,300.00
Pay Iten Number + 6410 + 2010	n 0100 0102 0183	Lock	Row E	Number 1 10 2 20	Mobilization Clearing & Gr	xcavation		uantity 1.00 10.00	Measure Lump Sum		ling on -2	Unit Price (current) \$18,300.00 \$5,834.00 \$6.30	ost: \$40. Total Price (current) \$18,300.00 \$58,340.00 \$58,340.00
Pay Iten Number + 641 + 2010 + 2020 + 303	n 0100 0102 0183	Lock	Row http://www.second.com/second/seco	Number 1 10 2 20 3 30	Mobilization Clearing & Gr Unclassified E Aggregate Ba	xcavation	Q	uantity 1.00 10.00 50,000.00	Measure Lump Sum Acre cubic Yard		ling on -2 0	Unit Price (current) \$18,300.00 \$5,834.00 \$6.30 \$26.73	ost: \$40. Total Price (current) \$18,300.00 \$58,340.00 \$315,000.00
Pay Iten Number + 641 + 201 + 202 + 303 + 303	m 0100 0102 0183 5912	Lock	Row Number	Number 1 10 2 20 3 30 4 40	Mobilization Clearing & Gr Unclassified E Aggregate Ba Asphalt Conc	ixcavation ise	Q e A	uantity 1.00 10.00 50,000.00 40,000.00 38,000.00	Measure Lump Sum Acre cubic Yard Ton		ling ion -2 0 1	Unit Price (current) \$18,300.00 \$5,834.00 \$6.30 \$26.73 \$40.89	ost: \$40.1 Total Price (current) \$18,300.00 \$58,340.00 \$315,000.00 \$10,69,200.00 \$1,069,200.00

EXERCISE 15.2 – ADVANCED PRICING

SCENARIO: Using the Training Job, do the following to get ready for your bid closeout meeting with your manger:

- 1. Set up rounding precision so all prices round to whole numbers (no decimals).
- 2. Add subtotals based on the owner's specifications.
- 3. Add an indicator to show if your unit price for Unclassified Excavation goes over \$18/cubic yard.

Congratulations, you have completed this exercise!

15.4 PAYMENT METHODS

There are three different Payment Methods:

- Unit Price
- Fixed Final Pay
- Time and Expense

Pay Item Number:	202 0183		
Description:	Unclassified Excavation		
Quantity			
	Pay Quantity: Forecast (T/O) Qty:	Unit of Measure: Oty Variance:	Qty Variance %: Qty Variance Group:
	50,000.00 50,000.00		0.00 Even Run
Price			
Lock Price:	Unit Price Precision: Unit Price:	Total Price: Currency:	Payment Method: % Margin:
	1 \$6.30	\$315,000.00 U.S. Dollar	Unit Price 12.05
Overview Earn	ngs Rules Tags / User Defined Fields		A Type Name
Alarm Limits		Assignments	Fixed Final Price
	Minimum Max	imum Account: 1122	Time & Expenses
Percentage of Job		0.00	Unit Price
-			
Unit Price	\$0.00	\$0.00	
Proposal Layout Se	Hings		
	-	-	
Insert Subtotal ar	ter this Pay Item? Subtotal Description	c	×

The Unit Price is the default Payment Method. This option multiplies the Unit Price to the Pay Quantity to calculate the Total Price.

The Fixed Final Pay method has two applications:

- display contingency type pay items.
- accurately calculate the over/under run pay items that are paid as if they were lump sum items.

Contingency type pay items is where the owner provided the pay item and entered their own value. This becomes part of the proposal where it may or may not be used. To identify this type of pay item, select the **Fixed Final Pay** method, as displayed in the following screen shot. Then, enter \$10,000 for example.

+	11		21	21	Contingency Pay item	1.00	Each	\$10,000.00	\$10,000.00	Fixed Final Price
+	1600 0230		20	200	Type 4 Signs	1,000.00	Square Feet	\$14.78	\$14,780.00	Unit Price
+	1500 0200		19	190	Guardrail Type 3A	200.00	Linear Feet	\$35.25	\$7,050.00	Unit Price
+	1500 0100		18	180	Guardrail Type 2	1,000.00	Linear Feet	\$27.29	\$27,290.00	Unit Price
+	1200 0100		17	170	Toll Booth	1.00	Each	\$29,665.47	\$29,665.47	Unit Price
+	1010		16	160	Disposal of Contaminated Soil	800.00	Cubic Yard	\$25.96	\$20,768.00	Unit Price
+	1000		15	150	Removal of Underground Storage Tanks	2.00	Each	\$12,504.82	\$25,009.64	Unit Price
+	700		14	140	Process Equipment	1.00	Each	\$1,920,341.67	\$1,920,341.67	Unit Price
+	600 0300		13	130	Paint Existing Steel Bridge Structure	1.00	Lump Sum	\$102,683.94	\$102,683.94	Unit Price
+	503(A) 1313		12	120	Retaining Wall	850.00	Cubic Yard	\$539.91	\$458,923.50	Unit Price
	ay Item umber	Lock Price	Row Number	Line Number	Description	Pay Quantity	Unit of Measure	Unit Price (current)	Total Price (current)	Payment Method

If this were a real pay item, lock the \$10,000 because it must be part of the proposal. However, then the issue is how to account for any costs, overhead, or profit to this Pay Item. Assuming you did not want to add any overhead and profit dollars to the \$10,000, enter a plug source of \$10,000 in the CBS. This offsets the Price of \$10,000 but charges the \$10,000 to a Cost Category that won't be used in any overhead of profit dollars. Now, the \$10,000 is not markup.

The second application the Fixed Final Pay method has is to accurately calculate the over/under run pay items that are paid as if they were lump sum items. An issue occurs where a pay item is provided with a quantity, such as a Superstructure Bridge of 10,000 CY, and you must enter a Unit Price against the 10,000 CY.

However, the fine print says that this Pay Item can not be measured and can be paid as if it was a Lump Sum item, but your quantity takeoff convinced you that you use more or less than the 10,000 CY. Say your takeoff came to 12,000 CY and you entered the Forecast (TO) Quantity with the 12,000 CY.

Now the CBS is calculated on the 12,000 CY. Now normally in an over/run quantity, InEight Estimate can help you decide how best to price out these items. In this case, you cannot take advantage of this situation. The system converts that total cost based on the 12,000 CY. However, you divide by the 10,000 CY to give a different Unit Cost in the Pay Item and Proposal form. This way, when you get paid, you get the cost as developed in the CBS.

The following screen shot shows the situation where you have an overrun normally. In this example, you developed the CBS direct cost as \$4.00 times 12000 CY for \$48,000. (the system shows more accuracy). Notice the direct costs of \$40,000 and the balanced unit of \$5.51. This is the normal calculation if this was a true overrun pay item.

Pay Item		Pay	Forecast (T/O)	Unit of	Payment	Unit Price	Total Price	Total Direct Cost	Unit Price
Number	Description	Quantity	Quantity	Measure	Method	(current)	(current)	(bid qty)	(balanced)
+ 700	Process Equipment	1.00	1.00	Each	Unit Price	\$1,920,341.67	\$1,920,341.67	\$1,600,196.19	\$1,919,910.0
+ 1000	Removal of Underground Storage Tanks	2.00	2.00	Each	Unit Price	\$12,504.82	\$25,009.64	\$15,833.35	\$12,480.9
+ 1010	Disposal of Contaminated Soil	800.00	800.00	Cubic Yard	Unit Price	\$25.96	\$20,768.0 <mark>0</mark>	\$13,721.50	\$25.9
+ 1200 0100	Toll Booth	1.00	1.00	Each	Unit Price	\$29,665.47	\$29,665.47	\$25,269.40	\$29,652.3
+ 1500 0100	Guardrail Type 2	1,000.00	1,000.00	Linear Feet	Unit Price	\$27.29	\$27,290.00	\$24,004.60	\$27.2
+ 1500 0200	Guardrail Type 3A	200.00	200.00	Linear Feet	Unit Price	\$35.25	\$7,050.00	\$6,201.19	\$35.2
+ 1600 0230	Type 4 Signs	1,000.00	1,000.00	Square Feet	Unit Price	\$14.78	\$14,780.00	\$13,002.49	\$14.7
1000 0230									

When you change the Payment Method to **Fixed Final Pay**, the CBS cost of \$48,000 is now shown. Then when you price out the pay item, you get your \$48,000 return.

Pay Item Number	Description	Pay Quantity	Forecast (T/O) Quantity	Unit of Measure	Payment Method	Unit Price (current)	Total Price (current)	Total Direct Cost (bid qty)	Unit Price (balanced)
+ 700	Process Equipment	1.00	1.00	Each	Unit Price	\$1,920,341.67	\$1,920,341.67	\$1,600,195.72	\$1,919,807.3
+ 1000	Removal of Underground Storage Tanks	2.00	2.00	Each	Unit Price	\$12,504.82	\$25,009.64	\$15,833.35	\$12,475.3
+ 1010	Disposal of Contaminated Soil	800.00	800.00	Cubic Yard	Unit Price	\$25.96	\$20,768.00	\$13,721.50	\$25.9
+ 1200 0100	Toll Booth	1.00	1.00	Each	Unit Price	\$29,665.47	\$29,665.47	\$25,269.39	\$29,649.2
+ 1500 0 100	Guardrail Type 2	1,000.00	1,000.00	Linear Feet	Unit Price	\$27.29	\$27,290.00	\$24,004.60	\$27.2
+ 1500 0200	Guardrail Type 3A	200.00	200.00	Linear Feet	Unit Price	\$35.25	\$7,050.00	\$6,201.19	\$35.2
+ 1600 0230	Type 4 Signs	1,000.00	1,000.00	Square Feet	Unit Price	\$14.78	\$14,780.00	\$13,002.49	\$14.7
+ 11	Contingency Pay item	1.00	1.00	Each	Fixed Final Price	\$10,000.00	\$10,000.00	\$0.00	\$0.0
+ [Enter Pay Ite	Superstructure Bridge	10,000.00	12,000.00	CY	Fixed Final Price	\$0.00	\$0.00	\$48,009.19	\$6.6

Now for the Time and Expense payment method. This option is used with the Job Tracking form. Each resource type can enter a Billing rate. For Force Account/Time and Material/Time and Expense work, by changing the pay item to this method, the actual costs are entered in the Job Tracking form. Then there is an Excel report that lists the actual costs using the Billing rates, plus the profit entered in the Job Tracking tab in the Job Properties form.

15.4.0.1 CRITICAL THINKING - FIXED FINAL PRICE

SCENARIO: You are estimating a reinforced concrete bridge job. For the "Superstructure Concrete" pay item, the owner provides a quantity of 1000 cubic yards, but in the fine print you read "This pay item will be paid as if it were a lump sum item; there will be no measurement of the cubic yards."

You have already done the takeoff and measured 1200 cubic yards for the Superstructure Concrete and estimated the unit cost, but you know, based on the owner's fine print, you will only get paid based on the 1000 cubic yards the owner specified, leaving 200 cubic yards on the table that you won't get paid for.

If this were a unit price item, normally you would get paid based on your pay item price, by taking the unit cost from the CBS, adding overhead and profit, then multiplying that unit price by the quantity. But since this is being treated like a lump sum, you will only get paid based on the 1000 cubic yards instead of the 1200 you measured.

HOW CAN YOU STILL GET PAID BASED ON THE TOTAL COST YOU DEVELOPED FOR THIS ITEM IN THE CBS?

- A. Add more profit to the pay item to cover the loss in cost.
- B. Come up with the pay item's total price, based on the total cost you determined from 1200 cubic yards, then divide it by the pay quantity (1000 cubic yards) to come up with the unit price.
- C. Come up with the pay item's unit price, then multiply it by the forecast quantity (1200 cubic yards) to come up with the total price.

View the following page for feedback

15.4.0.2 CRITICAL THINKING - FIXED FINAL PRICE

FEEDBACK

HOW CAN YOU STILL GET PAID BASED ON THE TOTAL COST YOU DEVELOPED FOR THIS ITEM IN THE CBS?

A. Add more profit to the pay item to cover the loss in cost.

You could do this, but it would make less profit available for other items.

B. Come up with the pay item's total price, based on the total cost you determined from 1200 cubic yards, then divide it by the pay quantity (1000 cubic yards) to come up with the unit price.

This is a great approach. This ensures you account for all the cost you came up with in the CBS. When you divide it by the pay quantity, you will have a higher unit price that covers the overruning quantity you measured.

C. Come up with the pay item's unit price, then multiply it by the forecast quantity (1200 cubic yards) to come up with the total price.

This is exactly what would occur if this were a normal unit price item and the owner had agreed to pay you based on the measured quantity. Since the owner is treating this like a lump sun, you will only get paid based on 1000 cubic yards and miss out on 200 cubic yards' worth of cost.

15.5 UNBALANCED PRICING

The pay items are provided along with the Pay Quantities. If the pay items are to be measured and paid on the final measured quantity, then we can provide information to price the pay items to maximize the return. Some specifications are written that if an over/under pay item runs a certain percent, then the Unit Price is negotiated. Now, understanding this, you can forecast the final revenue result.

The following screen shot shows a typical over and under run situation. The overrun quantities are shown in green and the underrun is shown in red. I have balanced priced the job where all pay items are using their Balanced Unit Price. In the Variance box, the Profit row, there is an ADD of \$4153 dollars.

	(Current	Target	Forecast	Variance	1						Balanced I	Unit C	Current Un	nit
Price:	\$6,430,8	05.34 \$	5,430,805.34	\$6,376,898.78	\$0.00						Price		8.87	\$18.8	
Profit:			\$631,591.19	\$627,437.72	\$4,153.47	ADD					Profit		1.95	\$1.9	_
										-					
Margin%:		9.82	9.82	9.84	\$1,265.13	сит					Total Cost:	: \$1	6.91	\$16.9	91
								1	<u></u>	Bu	usiness Overhead	: \$	1.01		
									<u></u>		Job Overhead	: \$	0.95		
									A	Unass	igned Direct Cost	: \$	0.00		
										Ass	signed Direct Cost	: \$14	4.95		
ag column	s here to grou	ιp									•				Fi
Pay Ite	m	Lock	Lock Price	Row	Line Number	Descript	Pay Quantity	ption	Forecast (T/C Quantity))	Unit of U	Init Price	Total Pr	rice	Ur
Pay Ite	em r			Row Number		Descript	Pay Quantity 1.00		Quantity		Unit of U		(curren	rice	Ur
Pay Ite Number	r I 0100	Lock		Row E	Number 10	Mobilizat	Quantity		Quantity	1.00	Unit of U Measure (o	Init Price current)	(curren \$18	rice nt)	Fi Ur (b
Pay Ite Number + 641	m r L 0100 L 0102	Lock		Number =1	Number 10 20	Mobilizat	Quantity 1.00	ation	Quantity	1.00 10.00	Unit of U Measure (o Lump Sum	Init Price current) \$18,300.00	(curren \$18 \$58	rice nt) 8,300.00	Ur
Pay Ite Number + 641 + 201 + 202	m r L 0100 L 0102	Lock		Number = 1 2 3	Number 10 20	Mobilizat Clearing Unclassif	Quantity 1.00 10.00	ation ng & Grubbing	Quantity 50,0	1.00 10.00	Unit of U Measure ((Lump Sum Acre Cubic Yard	Init Price current) \$18,300.00 \$5,836.00	(curren \$18 \$58 \$315	Price nt) 8,300.00 8,360.00	Ur
Pay Ite Number + 641 + 201 + 202	m r 1 0100 1 0102 2 0183 3 5912	Lock Quantity		Number == 1 2 3	Number 10 20 30	Mobilizat Clearing Unclassit Aggrega	Quantity 1.00 10.00 50,000.00 40,000.00	ation ng & Grubbing sified Excavation	Quantity 50,0	1.00 10.00	Unit of U Measure U Lump Sum Acre Cubic Yard Ton	Init Price current) \$18,300.00 \$5,836.00 \$6.30	(curren \$18 \$58 \$315 \$755	rice nt) 8,300.00 8,360.00 5,000.00	Ur
Pay Ite Number + 641 + 201 + 202 + 303 + 303	m r 1 0100 1 0102 2 0183 3 5912	Lock Quantity		Number == 1 2 3 4 5	Number 10 20 30 40	Mobilizat Clearing Unclassit Aggrega Asphalt	Quantity 1.00 10.00 50,000.00 40,000.00 A 38,000.00	ation ing & Grubbing sified Excavation gate Base	Quantity 50,0 45,0 35,0	1.00 10.00 00.00 000.00	Unit of U Measure U Lump Sum Acre Cubic Yard Ton	Init Price current) \$18,300.00 \$5,836.00 \$6.30 \$18.68	(curren \$18 \$58 \$315 \$755 \$1,904	Price ht) 8,300.00 8,360.00 5,000.00 5,200.00	U

This means that if your Forecast Quantities become the final measure amount, I lose the \$4153 dollars. This is the difference between the Target Profit and the Forecast Profit. The issue is the underrun quantity is priced at its Balanced Price, meaning there is 3000 Ton that I will not be paid for if my 35000 Ton is what I am expecting.

Now, I will use the system's Unbalanced feature to price all the pay items. See the following screen shot.

Proposal R	ecap - Cop	y of Trai	ning Job					× It	em Recap - 303 59	12 Aggregate B	ase	
	(Current	Target	Forecast	Variance]				Balanced	Unit Current U	Unit
Price:	\$6,428,8	844.70	\$6,430,805.34	\$6,442,775.74	\$1,960.64	ADD			Pr	ice: \$1	8.87 \$26	.73
Profit:	\$629,	,630.55	\$631,591.19	\$693,314.68	\$61,723.49	сит			Pr	ofit: \$	1.95 \$	9.82
1argin%:		9.79	9.82	10.76	\$67,142.09	сит			Total C	ost: \$1	6.91 \$16	5.91
									Business Overh	ead: \$	1.01	
									Job Overh	ead: \$	0.95	
									Unassigned Direct C	ost: \$	0.00	
									Assigned Direct (lost \$1	4.95	
Pay Item Number		up Lock Quantity	Lock Price	Row E	Line Number	Description	Pay Quantity	Forecast (T/O Quantity	_	Unit Price (current)	4.95 Total Price (current)	Un
Pay Item		Lock		Row E	Number	Description Mobilization) Unit of	Unit Price	Total Price	Fir Un (bi
Pay Item Number	0100	Lock		Number -	Number		Quantity	Quantity) Unit of Measure	Unit Price (current)	Total Price (current)	Un (bi
Pay Item Number + 6410	0100 0102	Lock		Number 1	Number 10	Mobilization	Quantity 1.00	Quantity) Unit of Measure 1.00 Lump Sum	Unit Price (current) \$18,300.00	Total Price (current) \$18,300.00	Un (b)
Pay Item Number + 6410 + 2010 + 2020	0100 0102 0183	Lock		Number 1 2 3	Number 10 20	Mobilization Clearing & Grubbing	Quantity 1.00 10.00	Quantity 50,0) Unit of Measure 1.00 Lump Sum 10.00 Acre	Unit Price (current) \$18,300.00 \$5,834.00	Total Price (current) \$18,300.00 \$58,340.00	
Pay Item Number + 6410 + 2010 + 2020	0100 0102 0183 5912	Lock		Number E	Number 10 20 30	Mobilization Clearing & Grubbing Unclassified Excavation	Quantity 1.00 10.00 50,000.00	Quantity 50,0 45,0) Unit of Measure 1.00 Lump Sum 10.00 Acre 00.00 Cubic Yard	Unit Price (current) \$18,300.00 \$5,834.00 \$6-30 \$25:73	Total Price (current) \$18,300.00 \$58,340.00 \$315,000.00	
Pay Item Number + 6410 + 2010 + 2020 + 303 4	0100 0102 0183 5912	Lock		Number - 1 2 3 4 5	Number 10 20 30 40	Mobilization Clearing & Grubbing Unclassified Excavation Aggregate Base	Quantity 1.00 10.00 50,000.00 40,000.00	Quantity 50,0 45,0 35,0) Unit of Measure 1.00 Lump Sum 10.00 Acre 00.00 Cubic Yard 00.00 Ton	Unit Price (current) \$18,300.00 \$5,834.00 \$6.30 \$26.73 \$40.89	Total Price (current) \$18,300.00 \$58,340.00 \$315,000.00 \$1,069,200.00 \$1,553,820.00	

What the Unbalanced Autoprice did was to price out the underrun with it's Direct Cost only. The overhead and profit share of the underrun was spread proportionately to the overrun items. The underrun was priced lower than normal and the Overrun items were price higher than normal.

Now look at the Variance block and see the Profit row where it now says CUT, meaning if my forecast quantities in up being the final measured quantities, I will pick up an additional \$61,723 dollars in profit.

The CUT simple allows you to decide if you want to keep the final Proposal price as shown, or to CUT the \$61,000 OR ANY PORTION of it from the final Proposal amount to get the job believing your Forecast Quantities is the final measured quantities. Of course you can enter any preferred Unit Price.

15.6 BID PRICING USING BILLING RATES

For Cost Reimbursable or time and expense type projects it might be necessary to produce a bid proposal based on the billing rates used in the estimate. Choose to price your bid items in the job using a target price based on either charge rates or billing rates plus a distribution of unassigned costs and markup.

≡ File	Set.		Quote	Pric	e Executio	in Systen	m Actions			Training J	ob - Estimate			
Pr	review	Open Item Edit	pand / apse *	Saved Viev Billing Rat Charge R Billing Rat Charge R	te 👻	ste				Price Breakdown Structure	0			
		ecap - Training Jo							×	Description	Assigned Billing	Unassigned Biling	Total Billing	% of Target
		Current		Target	Forecast	Variance]			✓ ▲ Price Breakdown Structure				
-	Price:	\$6,569,735.00	\$6,569,7	-	\$6,577,223.80	\$1.28	ADD			🗸 🔺 Target Price	\$5,485,362.52	\$1,200,158.69	\$6,685,521.21	100.0
	arkup:	\$984,118.34			\$1,041,388.54	\$57,268.92	CUT			🗸 🛕 Markup	\$0.00	\$823,664.72	\$823,664.72	12.3
_			\$904,							🗸 🛕 Target Profit	\$0.00	\$470,869.46	\$470,869.46	7.0
٩ar	gin%:	14.98		14.98	15.83	\$66,039.81	CUT			Indirect Cos	st Markup \$0.00	\$28,191,77	\$28,191,77	0.4
			-								3c1-lainap	420,151.77	420/2020	0.
										Direct Cost			\$442,677.68	6.6
										Direct Cost	Markup \$0.00 tead \$0.00	\$442,677.68		6.
										Direct Cost	Markup \$0.00 tead \$0.00	\$442,677.68 \$352,795.26	\$442,677.68	6.0 5.1
rag	columns	here to group	1				Saved views:	Standard View	م	Direct Cost Direct Cost Direct Cost Direct Overh Price % Add Direct % Add Direc	Markup \$0.00 lead \$0.00 d-On \$0.00	\$442,677.68 \$352,795.26 \$295,638.13	\$442,677.68 \$352,795.26	6.0 5.1 4.4
_				Lock	Lock	Provide line	Saved views:			Direct Cost	Markup \$0.00 nead \$0.00 d-On \$0.00 ng \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26	\$442,677.68 \$352,795.26 \$295,638.13	6.0 5.1 4.4
	columns Position Code			Lock Quantity	Lock Price	Description	Saved views:	Standard View Pay Quantity	Forecast (T/O) Quantity	Direct Cost	Markup \$0.00 nead \$0.00 d-On \$0.00 ng \$0.00 st Escalation \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26	6.0 5.1 4.4 0.1
	Position	- Pay Item				Description SITEWORK &		Pay	Forecast (T/O)	Direct Cost Direct Cost Direct Cost Direct Cost Direct Cost Direct Cost	Markup \$0.00 nead \$0.00 d-On \$0.00 ng \$0.00 st Escalation \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55	6.0 5.0 4.0 0.0
	Position Code	Pay Item Number		Quantity	Price		ROADWAY	Pay	Forecast (T/O) Quantity	Direct Cost	Markup \$0.00 ead \$0.00 d-On \$0.00 ng \$0.00 st Escalation \$0.00 Escalation \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32	6. 5. 4. 0. 0. 0.
	Position Code 1	Pay Item Number 200		Quantity	Price	SITEWORK &	ROADWAY	Pay Quantity	Forecast (T/O) Quantity	Direct Cost	Markup \$0.00 ead \$0.00 d-On \$0.00 ng \$0.00 st Escalation \$0.00 Escalation \$0.00 verhead Items \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$376,493.97	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00	6. 5. 4. 0. 0. 0. 87.
	Position Code 1 + 1.1	Pay Item Number 200 641 0100		Quantity	Price	SITEWORK & Mobilization Clearing &	ROADWAY	Pay Quantity 1.00	Forecast (T/O) Quantity		Markup \$0.00 lead \$0.00 d-On \$0.00 d-On \$0.00 st Escalation \$0.00 Escalation \$0.00 exerteed Items \$0.00 \$5,485,362.52 \$0.00 exerteed \$0.00 exerteed \$0.00 exerteed \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$376,493.97 \$375,493.97	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$5,861,856.49	6. 5. 4. 0. 0. 0. 87. 5.
	Position Code 1 + 1.1 + 1.2 + 1.3	Pay Item Number 200 641 0100 201 0102		Quantity	Price	SITEWORK & Mobilization Clearing & Unclassified	ROADWAY 1 Grubbing d Excavation	Pay Quantity 1.00 10.00 50,000.00	Forecast (T/O) Quantity		Markup \$0.00 lead \$0.00 d-On \$0.00 d-On \$0.00 st Escalation \$0.00 Escalation \$0.00 exerteed Items \$0.00 \$5,485,962.52 \$0.00 exerteed \$0.00 exerteed \$0.00 exerteed \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$376,493.97 \$375,493.97 \$375,493.97	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$5,861,856.49 \$375,493.97	6.0 5.1 0.1 0.1 0.1 87.1 5.1
	Position Code + 1.1 + 1.2 + 1.3 + 1.4	Pay Item Number 200 641 0100 201 0102 202 0183 303 5912		Quantity	Price	SITEWORK & Mobilization Clearing & Unclassified Aggregate	ROADWAY 1 Grubbing d Excavation Base	Pay Quantity 1.00 10.00 50,000.00	Forecast (T/O) Quantity 1 10 50,000 45,000	Direct Cost Direct Co	Markup \$0.00 lead \$0.00 d-On \$0.00 d-On \$0.00 st Escalation \$0.00 Escalation \$0.00 exerteed Items \$0.00 \$5,485,962.52 \$0.00 exerteed \$0.00 exerteed \$0.00 exerteed \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$376,493.97 \$375,493.97 \$375,493.97 \$375,493.97	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$5,861,856.49 \$375,493.97 \$375,493.97	6.4 5.7 0.4 0.1 0.1 0.1 87.1 5.1 5.1
	Position Code + 1.1 + 1.2 + 1.3 + 1.4 + 1.5	Pay Item Number 200 641 0100 201 0102 202 0183 303 5912 303 4263		Quantity	Price	SITEWORK & Mobilization Clearing & Unclassified Aggregate Asphalt Co	ROADWAY Grubbing Excavation Base ncrete Hot Mix Type A	Pay Quantity 1.00 10.00 50,000.00	Forecast (T/O) Quantity	Direct Cost Direct Co	Markup \$0.00 lead \$0.00 d-On \$0.00 d-Cn \$0.00 st Escalation \$0.00 Escalation \$0.00 extended Items \$0.00 \$5,485,302.52 \$0.00 extended Items \$0.00 add \$0.00 extended Items \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$376,493.97 \$375,493.97 \$375,493.97 \$477,148.68 \$6,851.25	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$5,861,856.49 \$375,493.97 \$375,493.97 \$47,148.68	6.4 5. 0. 0. 0. 87.4 5.4 5.4 0.
- - - - -	Position Code + 1.1 + 1.2 + 1.3 + 1.4 + 1.5 2	 Pay Item Number 200 641 0100 201 0102 202 0183 303 5912 303 4263 400 		Quantity	Price	SITEWORK & Mobilization Clearing & Unclassified Aggregate Asphalt Co WATER & SEV	ROADWAY Grubbing d Excavation Base Base Marete Hot Mix Type A WER	Pay Quantity 1.00 10.00 50,000.00 40,000.00 38,000.00	Forecast (T/O) Quantity 1 10 50,000 45,000 35,000	Direct Cost Direct Co	Markup \$0.00 ead \$0.00 d-On \$0.00 d-On \$0.00 org \$0.00 st Escalation \$0.00 Escalation \$0.00 verhead Items \$0.00 \$\$7,453,302.52 \$0.00 ead \$0.00 ond \$0.00 cst Add-On \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$21,968.32 \$0.00 \$376,493.97 \$375,493.97 \$375,493.97 \$477,148.68 \$6,851.25 \$109,727.25	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,068.32 \$0.00 \$5,861,856.49 \$375,493.97 \$375,493.97 \$47,148.68 \$6,851.25	6.4 5.7 0.4 0.4 0.4 0.4 87.4 5.4 5.4 5.4 0.7 0.1 0.1
	Position Code + 1.1 + 1.2 + 1.3 + 1.4 + 1.5	Pay Item Number 200 641 0100 201 0102 202 0183 303 5912 303 4263		Quantity	Price	SITEWORK & Mobilization Clearing & Unclassifier Aggregate Asphalt Co WATER & SEV 36 Inch RC	ROADWAY Grubbing Excavation Base ncrete Hot Mix Type A	Pay Quantity 1.00 10.00 50,000.00	Forecast (T/O) Quantity 1 10 50,000 45,000	Direct Cost Direct Co	Markup \$0.00 ead \$0.00 d-On \$0.00 d-On \$0.00 ng \$0.00 st Escalation \$0.00 Escalation \$0.00 verhead Items \$0.00 st St, 485,362,52 \$0.00 and \$0.00 cost Add-On \$0.00	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$21,068.32 \$21,068.32 \$21,068.32 \$21,068.32 \$21,068.32 \$21,068.32 \$21,068.32 \$375,493.97 \$375,493.97 \$477,448.68 \$6,851.25 \$109,727.25 \$211,766.79	\$442,677.68 \$352,795.26 \$295,638.13 \$33,105.26 \$2,983.55 \$21,066.32 \$0.00 \$5,861,856.49 \$375,493.97 \$375,493.97 \$477,148.68 \$65,851.25 \$109,727.25	

15.7 EARNINGS RULES

The Earnings Rules let you decide how much can be paid where certain work is completed. The cost items assigned to the pay items are where you can decide when to ask for payment.

The application is used in the Job Tracking form. The Earnings Rules also determine how the Cash Flow curve is generated.

In the following screen shot, the record for 36 inch RCP Culvert Class III from the Training Job is open.

		*								
ay 1	Item Number:	41	3(B) 0464							
	Description:	36	inch RCP Culver	t Class III						
Qua	ntity									
Lo	ck Quantity:	Pay Q	uantity:	Forecast (T/O) Qty:	Unit of Me	asure:	Qty Variance:	Qty Variance 9	%: Qty Variance Gro	up:
			1,000.00	31,024.00	Linear Fee	et 🔹	24.00	2.4	0 Over Run	
Price										
L	ock Price:	Unit P	rice Precision:	Unit Price:	Total Price		Currency:	Payme	nt Method: %	Margin:
		2		\$100.00	\$	100,000.00	U.S. Dollar	✓ Unit P	rice 🔹	22.83
Ove	erview Earn	ings Ru	les Tags / Us	er Defined Fields						
Use	e Default Carnir	ngs Ru	les?	ned Earnings (Forecast) % Amount: 00 \$102,400.00		Unassign % 0.00	ed Earnings (Fored Amount: \$0.00	cast)		
Drag	g columns here	to grou	ıp							
	CBS Position Code	<u>.</u>	Description		Optio Code		Forecast T/O) Quantity	Unit of Measure	Earnings %	Earnings Timing
	6		36 Inch RC	Culvert Class III	413(8	3) 0464	1,024.00	Linear Feet	100.00	Percent Complete
\rightarrow	6.1		Furnish RCP N	Materials	6.1		1,024.00	Linear Feet	49.58	Percent Complete
	6.2		Excavate RC	P Trench	6.2		1,858.56	6 Cubic Yard	12.12	Percent Complete
	6.3		Install RCP Pi	pe	6.3		1,024.00	Linear Feet	17.38	Percent Complete
	6.4		Backfill RCP P		6.4		1,587.20	0 Cubic Yard	20.93	Percent Complete

By default, the cost items in the Earnings % column are calculated based on the cost distribution. In this case where all the Materials are furnished and completed the Excavatzion, you have earned \$49.58 and \$12.12 for a total of 61.7% revenue.

There may be times when you can only receive revenue when you have only completed the Backfill of the Pipe. In that case I can uncheck the **Use Default Earnings Rules** box, as seen in the previous screen shot, and enter 100%. You can then decide when to account for the revenue by changing the **Earnings Timing**.

The following screen shot show this option.

ost I	Breakdown Stru	cture (CBS) Register	Pay Item & Pr	roposal Registe	r Pay Item F	Record ©			
Pay I	item Number: *	413(B) 0464							
	Description:	36 Inch RCP Culvert Cla	ass III						
Quar	ntity								
Loc	tk Quantity: Pay	Quantity: Fo	recast (T/O) Qty: Un	it of Measure:	Qty Variance: Qt	ty Variance %	: Qty Variance Gro	up:	
		1,000.00	1,024.00 Lir	near Feet	24.00	2.40	Over Run		
Price									
L	ock Price: Un	it Price Precision: Un	it Price: To	tal Price:	Currency:	Paymen	t Method: %	Margin:	
	2		\$100.00	\$100,000.0	00 U.S. Dollar		ce 🔹	22.83	
Ove	rview Earnings	Rules Tags / User D	efined Fields						
	Default Earnings	Assigned	Earnings (Forecast)	Unassig	ned Earnings (Foreca	st)			
Use	Derault Carnings	Kulesr%	Amount:	%	Amount:				
		100.00	\$102,400.00	0.00	\$0.00				
Drag	g columns here to g	roup							
	CBS Position Code 😑	Description		Optional Code	Forecast (T/O) Quantity	Unit of Measure	Earnings %	Earnings Timing	Earnings Amount (Forecast)
	6.1	Furnish RCP Mate	erials	6.1	1,024.00	Linear Feet	0.00	Percent Complete	\$0.
	6.2	Excavate RCP Tr	ench	6.2	1,858.56	Cubic Yard	0.00	Percent Complete	\$0.
	6.3	Install RCP Pipe		6.3	1,024.00	Linear Feet	0.00	Percent Complete	\$0.
	6.4	Backfill RCP Pipe		6.4	1,587.20	Cubic Yard	100.00	Finish -	\$102,400.

Another example is when you can get full payment for material on hand, such as Precast Girders. Then you can choose the start for the Earnings Timing. This way, the Cash Flow shows costs and revenue occurring at the start of the item.

15.8 ALTERNATE SCENARIOS

The Alternate scenarios feature allows a contractor to effectively evaluate multiple approaches to an estimate, and quickly identify the most cost efficient way of performing the proposed work. Both owners and contractors need more visibility to see the impact of changes made to the assumption made on the cost model.

For example, a contractor might want to estimate the cost of hauling excavation material using a scraper hauling machine(s). Alternatively, a contractor may want to compare the cost of loading and hauling that same excavation material with a loader truck(s). You should be able to estimate both approaches quickly and switch between various scenarios.

Owners are increasingly requiring contractors to provide alternative items within the bid proposal. Contractors should consider the cost impact of alternative estimate approaches, while also contemplating how to effectively price their work.

The primary purpose for using Alternate Scenarios is to create 'What If' type of scenarios to gain a better view of estimating 'like' situations. By defining Alternates, you have the ability to compare multiple scenarios within an estimate, in which you can suspend or unsuspend various records.

TIP Manually suspending and unsuspending items can be time consuming and error prone, and can require maintenance of several versions of the estimate. Creating Alternate Scenarios is a solution to this problem.

15.8.1 BASE ALTERNATE

Base Alternate refers to your base or anchor estimate and is part of the estimate's cost.

CBS Pos ≞_ Code	Description	Forecast (T/O) Quantity	Unit of Mea	Unit Cost	Total Cost (Forecast)	Alternate	Alternate Description	Suspended by Alternate	Suspend
=	JOB	20.00	Mile	\$298,546.40	\$5,970,927.99	BASE	BASE		
+	Prime Bond	1.00	Lump Sum	\$47,745.51	\$47,745.51	BASE	BASE		
+	Price % Add-On	1.00	Lump Sum	\$301,009.62	\$301,009.62	BASE	BASE		
+	Job Financing	1.00	Lump Sum	\$0.00	\$0.00	BASE	BASE		
+	Indirect Cost Escalat	1.00	Lump Sum	\$0.00	\$0.00	BASE	BASE		
+	Direct Cost Escalation	1.00	Lump Sum	\$11,026.79	\$11,026.79	BASE	BASE		
+	Indirect Cost Add-On	1.00	Lump Sum	\$0.00	\$0.00	BASE	BASE		
+	Job Management &	1.00	Lump Sum	\$157,096.28	\$157,096.28	BASE	BASE		
÷	General Expense	1.00	Lump Sum	\$4,200.00	\$4,200.00	BASE	BASE		
+	Direct Cost Add-On	1.00	Lump Sum	\$106,459.21	\$106,459.21	BASE	BASE		
+ 1	Mobilization	1.00	Lump Sum	\$75,000.00	\$75,000.00	BASE	BASE		
+ 2	Clearing & Grubbing	10.00	Acre	\$0.00	\$0.00	BASE	BASE		
3	Unclassified Excavati	50,000.00	Cubic Yard	\$6.36	\$317,915.81	BASE	BASE		
+ 3.1	Excavation, scrapers	50,000.00	Cubic Yard	\$3.00	\$149,922.88	BASE	BASE		

15.8.2 ALTERNATES RECORDS

Alternate records are used to define alternate scenarios so that you can assess the impact of those scenarios.

To access the Alternates form select the Estimate tab. Under the Alternates section, select Alternates.

File Setup Estimate	Quote P	rrice Execution Sy	stem Action	s More Actions			
	ode Utilization	Resource Rates +	Workbook	Schedule Cash Flow	Price Breakdown Structure (PBS)	Alternate Scenario: BASE -	Reports
Breakdown Struc	ures	Resources	Workbook	Schedule	Overhead and Profit	Alternates	Reports

This action opens up the Alternate Record Details form.

Names	Description
1. Code	Code of Alternate Scenario.
2. Description	Description of Alternate Scenario.
3. Active	Determines if Alternate Scenario is active within CBS or not.
4. Total Cost (Added)	When Alternate is set to active, it will not be suspended, and its CBS Total Cost will be added to the estimate's Total Cost Forecast. Below example shows the full \$84,000 will be

Names	Description
	included in the estimate.
5. Total Cost (Suspended)	When Alternate is set to active, Total Cost Suspended will be \$0 because alternate is active part of bid.
6. Total Cost (Net Change)	Difference between Total Cost Added and Total Cost Suspended.

[ò	. *		***	2	🐔 Labor 🔐 Equipment				P	
lob F		Foundation Setup Data 🔻	Pay Item & Proposal	Bid Wizard	Resource Rates *	Materials	Resource Assemblies	Cost Item Assemblies	Standard Tables	Reports	
		Initializ	e			Resources		Assen	ıblies	Reports	
Job	Properties	0									,
Job	Folder Tags	Competitors	s Pricing	Schedule	Cash Flow	Equipment Ma	aintenance	Benchmarking	Alternat	es 🔹	Þ
Drag	columns here	to group		Fi	ind: [Search i	For] …	Saved vie	ws: Previous	s View	•	
	Code 1	Description	2	А		Total Cost (Added)	Total Cost (Suspended	5 Total (Net C	Cost Change) 6		
	BASE	BASE			\checkmark			_			
	ROCK1	Rock Excad	cation		✓	\$84,000.00		\$0.00	\$84,000.00		
	test 1	testing 1				\$0.00		\$0.00	\$0.00		
÷											
		1									

15.8.3 ALTERNATES RECORD DETAILS

Drill down into an Alternate Record to view and edit its attributes. The Alternate Record details form provides you with a way to setup rules for auto suspending and unsuspending groups of cost items.

Names	Description
1. Assigned to Alternate	Code of Alternate Scenario.
2. Suspended by	Description of Alternate Scenario.

Alternate

de: • ROCK2	D	escription	Rock Excavat	lion					Active:
ay Items Cost Items									
ssigned to Alternate	1							Total Cost (Add	ded): \$179,550
rag columns here to grou	~					Find: Search For] Saved views: Pr	evious View	
CBS Position Code	Description			Optional Code	Forecast (T/O) Quantity	Hours (Duration driven)	Hours (Non-Duration driven)	Hours (Total)	Days (Duration driver
→ 3.2	Excavation, trucks			3.1	50,000.00	142.86	44.00	142.86	
snewled by Alternate	-						Te	stal Cost (Suspend	(ed): \$140.022
	0							otal Cost (Suspend	led): \$149,922
	0					Find: [Search For			ied): \$149,922 -
spended by Alternate	0			Optional Code	Forecast (T/O) Quantity	Find: [Search For Hours (Duration driven)			* Days
rap columns here to grou CBS Position Code 3.1	0					Hours (Duration driven)] Saved views: Pr Hours	evious View Hours (Total)	•
ag columns here to grou CBS Position Code	2 Description			Code	(T/O) Quantity	Hours (Duration driven)	I Saved views: Pr Hours (Non-Duration driven)	evious View Hours (Total)	* Days
ag columns here to grou	2 Description			Code	(T/O) Quantity	Hours (Duration driven)	I Saved views: Pr Hours (Non-Duration driven)	evious View Hours (Total)	* Days
CBS Position Code	2 Description			Code	(T/O) Quantity	Hours (Duration driven)	I Saved views: Pr Hours (Non-Duration driven)	evious View Hours (Total)	led): \$149,922 - Days

STEP BY STEP – CREATE ALTERNATE SCENARIO IN CBS

- 1. From the Ribbon, select the Estimate tab.
- 2. Select Cost Breakdown Structure (CBS). The Cost Breakdown Structure (CBS) Register opens.
- 3. Using the Unclassified Excavation cost item, type in **Rock Excavation** as a new subordinate.
- 4. Then type in **3000** in the Forecast T/O Quantity column.
- 5. Under the Unit of Measure column, select Cubic Yard.

3	Unclassified Excavation	50,000.00	Cubic Yard
+ 3.1	Excavation	50,000.00	Cubic Yard
+ 3.2	Embankment	50,000.00	Cubic Yard
+ 3.3	Rock Excavation	3,000.00	Cubic Yard

- 6. Double click the Rock Excavation cost item to open the cost item's record.
- 7. Select the **Plug** tab. Under the Subcontract section click into the Unit Cost field for the Subcontract Price.
- 8. Type **\$28.00** in the Plug Unit Cost column for the Subcontract Price. Once done, click **OK**.

C	ost 1	Item Summary	🚊 <u>D</u> etail : \$0.0	.00 4 Plug : \$28.00				
Co	st C	Category	Uni	Total Cos	t			
¥	То	tal			\$28.00	\$84,000	.00	
	>	Labor			\$0.00	\$0	0.00	
	>	Owned Equipm	ent		\$0.00	\$0	0.00	
	>	Rented Equipm	ent		\$0.00	\$0.00		
	>	Supplies		\$0.00		\$0.00 \$0.00		
	>	Materials			\$0.00			
	¥	Subcontract			\$28.00	\$84,000.00		
		Subcontrac	t Price		\$28.00	\$84,000	.00	
		Subcontrac	t Conditions		\$0.00	\$0	.00	
		Subcontrac	t Taxes		\$0.00	\$0	0.00	
		Subcontrac	t Bond		\$0.00	\$0	.00	
		Undefined S	Subcontract		\$0.00	\$0	.00	
	>	Fees			\$0.00	\$0	0.00	

- 9. On the CBS Register, change your Saved Views to Alternates View.
- 10. Select the Rock Excavation cost item. Under the Alternate column, select the drop down arrow, and then select the **Add** icon. This will open up a new form to create a new Alternate record.

BASE	🕀 🕑 BASE	
A Code	Description	Active
BASE	BASE	Yes
×		

11. Type **ROCK1** in the Code field, and type **Rock Excavation** in the Description field. Once done, click **OK**.

9		
Code: *	ROCK1 Descriptio	on: Rock Excacation
Pay Items	Cost Items	

12. An Attention message will appear alerting you the item will be suspended once you move off the field.

Attention							
You are ordering a scheduled cost item to be suspended. If you continue, this cost item and any subordinates will be removed from the schedule. If you later decide to un-suspend the cost item, it will return to the schedule beginning on the project start date, and any scheduling logic will be lost. Do you want to continue?							
Never ask me this question again							
Yes No							

13. Select **Yes**. You see the Rock Excavation item is now in suspended status.

Description	Forecast (T/O) Quantity	Unit Cost	Total Cost (Forecast)	Currency	Alternate	Suspended by Alternate	Suspend
Rock Excavation	3,000.00	\$28.00	\$84,000.00	U.S. Dollar	BASE		✓

NOTE Suspended status is the default status for alternate items.

- 14. In order to activate this alternate item, select the **Estimate** tab in the Ribbon and go the **Alternate Scenario** drop down in the Alternates section.
- 15. Then select the **ROCK1** scenario. Once done, click **OK**. The Suspend check box fields is no longer checked for Rock Excavation.

Alternate Scenario:	i i i
BASE	- '
(Select All)	
✓ BASE	-
ROCK1: Rock Excacati	on
test 1: testing 1	-
ОК	Cancel

NOTE Alternate Scenario's BASE and ROCK1 are now both included in the Total Cost Forecast in your estimate. This is also known as additive type of alternate, meaning that when it's active it will be added to the estimate. When Alternate Scenario Base + ROCK1 are both checked, the cost item assigned to the ROCK1 alternate is included in the Total Cost (Forecast).

CBS Position Code 😑 🕇	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency	Alternate	Alternate Description	Suspended by Alternate	Suspend
3	Unclassified (xcavation	50,000.00	Cubic Yard	\$9.95	\$497,466.56	U.S. Dollar	BASE +	BASE		
+ 3.1	Excavation, scrapers	50,000.00	Cubic Yard	\$3.00	\$149,922.88	U.S. Dollar	BASE	BASE		
+ 3.2	Excavation, trucks	50,000.00	Cubic Yard	\$3.59	\$179,550.75	U.S. Dollar	BASE	BASE		
+ 3.4	Rock Excavation	3,000.00	Cubic Yard	\$28.00	\$84,000.00	U.S. Dollar	ROCK1	Rock Excacat		
									=	

16. When only the Base Alternate Scenario is checked, the cost item assigned to the ROCK1 alternate is NOT included in the Total Cost (Forecast). Only base alternates are including the estimate's cost.

CBS Position Code 🖹 🕇	Description	Forecast (T/O) Quantity	Unit Cost	Total Cost (Forecast)	Alternate	Alternate Description	Suspended by Alternate	Suspend
3	Unclassified Exceptation	50,000.00	\$8.27	\$413,466.56	BASE +	BASE		
+ 3.1	Excavation, scrapers	50,000.00	\$3.00	\$149,922.88	BASE	BASE		
+ 3.2	Excavation, trucks	50,000.00	\$3.59	\$179,550.75	BASE	BASE		
+ 3.4	Rock Excavation	3,000.00	\$28.00	\$84,000.00	ROCK1	Rock Excacat		✓
4		100,000.00		\$329,473.62				

TIP When a cost item is assigned to an alternate, it's then considered an alternate item in the estimate and does not contribute to the job's cost until the alternate is 'activated'.

15.8.4 ASSIGNING MULTIPLE COST ITEMS TO ONE ALTERNATE

Any number of cost items can be assigned to a single alternate item. The alternate feature can be used to quickly suspend and unsuspend groups of items. Another manner in which alternates can be used would be to consider two different approaches to completing the same scope of work. In this case the activation of an alternate would replace the preselected cost items.

Imagine you are a contractor and want to assign an Alternate Scenario to your 3.2 Excavation Trucks cost item, and at the same time automatically suspend your 3.1 Excavation Scrapers cost item. You need an Alternate Scenario view showing what would happen when you suspend Excavation Scrapers, but want to keep your Excavation Trucks active. You'd like to evaluate this pricing scenario, especially your Total Cost Forecast.

STEP BY STEP – MULTIPLE COST ITEMS TO AN ALTERNATE

- 1. From the Ribbon, select the **Estimate** tab.
- 2. Select Cost Breakdown Structure (CBS). The Cost Breakdown Structure (CBS) Register opens.
- 3. Create a copy of cost item Excavation and rename it **Excavation, scrapers.**
- 4. Rename the original Excavation cost item to **Excavation, trucks**.
- 5. Under the Unit of Measure column, select **Cubic Yard**.

□ 3	Unclassified Excavation	50,000.00
+ 3.1	Excavation, scrapers	50,000.00
+ 3.2	Excavation, trucks	50,000.00
+ 3.3	Embankment	50,000.00
+ 3.4	Rock Excavation	3,000.00

- 6. Double click to open the cost item Excavation, trucks.
- 7. Add a new Construction Equipment Resource: code ETDT Dump Truck, then select OK.
- 8. Add a new Construction Equipment Resource: code EL950 Loader 950, select OK.
- 9. Change the quantity of ETDT Dump Truck to 5.
- 10. Add a new Labor Resource: code LT1 Teamster, then select OK.
- 11. Change the quantity for LT1 Teamster to 5.
- 12. Remove resources ES621 Scraper 621, ES623 Scraper 623, L01 Operator Class 1.
- 13. Change the quantity for LO2 Operator Class to 5.
- 14. Change the Cubic Yard/Day to **2800** on the Production tab.
- 15. Your results should look like this:

Row Number 🗎	Co	ode	Resource Assembly	Description	Quantity (Less Waste)	Waste % Add-on	Quantity	Unit of Measure	Productivity Factor	Work Hours	Pay Hours	Unit Cost
+	1 ET	TWT		Water Truck			1.00	Each	1.00	44.00	44.00	\$29.6
+	2 ED	08		Dozer D8			1.00	Each	1.00	142.86	142.86	\$173.0
+	3 EC	COMP1		Compactor Smooth			1.00	Each	1.00	142.86	142.86	\$36.4
+	4 EC	COMP2		Compactor Sheeps			1.00	Each	1.00	142.86	142.86	\$61.6
+	5 LL:	.2		Laborer			1.00	Each	1.00	142.86	142.86	\$26.
+	6 LO	04		Operator Foreman			1.00	Each	1.00	142.86	71.43	\$35.
+	7 EG	G14G		Grader 14G			1.00	Each	1.00	142.86	142.86	\$60.
+	8 LO	02		Operator Class 2			5.00	Each	1.00	714.29	714.29	\$28.
+	9 EL	.950		Loader 950			1.00	Each	1.00	142.86	142.86	\$60.
+	10 ET	TDT		Dump Truck			5.00	Each	1.00	714.29	714.29	\$102.
+	11 LT	1		Teamster			5.00	Each	1.00	714.29	714.29	\$30.

16. The Unit and Total Cost are now recalculated. Once you are done with all your changes, click **OK** to return to the CBS register.

Unit of Measure:	Unit Cost:	Total Cost:	Currency:
			~
Cubic Yard	\$9.95	\$497,466.56	U.S. Dollar
Cubic Yard 🚽	\$3.59	\$179,550.75	U.S. Dollar 👻
Cost Segment:	Pay Quantity:	Cost Source:	Alternate:
Direct Cost	50,000.00	Detail 🗸	BASE -
			×
		Oby Driv	A

17. Your Excavation, truck cost item is now worth \$3.59 a Cubic Yard, while your Excavation, scraper cost item is worth \$3.00 a Cubic Yard.

CBS Position Code 🗎	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
□ 3	Unclassified Excavation	50,000.00	Cubic Yard	\$9.95	\$497,466.56	U.S. Dollar
+ 3.1	Excavation, scrapers	50,000.00	Cubic Yard	\$3.00	\$149,922.88	U.S. Dollar
+ 3.2	Excavation, trucks	50,000.00	Cubic Yard	\$3.59	\$179,550.75	U.S. Dollar

NOTE In order to make these two cost items mutually exclusive, meaning that you want one or the other in the bid, you can set this up via an alternate item. You can set this up so that one is automatically suspended, while the other is active

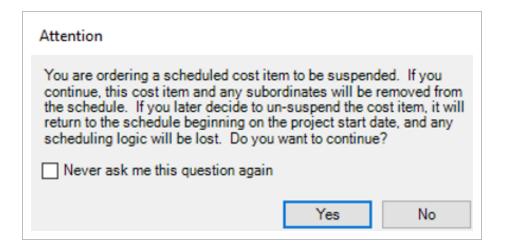
18. For **Excavation**, **truck**, add a new Alternate by click on the Alternate field and selecting the **new** icon.

BASE	🖶 🖌 BASE	
A Code	Description	Active
ALT 3	ALT 3	Yes
BASE	BASE	Yes
ROCK1	Rock Excacation	Yes

- 19. Type **ROCK2** in the Code.
- 20. Type in **Trucking Excavation** for the description.
- 21. Click on the Cost Items tab. In the CBS Position Code field, select the **Excavation, scrapers**. Excavation, scrapers will now be suspended when Alternate Excavation, trucks is active.

9		
Code: * ROCK2	Description: Rock	Excavation
Pay Items Cost Items		
Assigned to Alternate		
Drag columns here to group		
CBS Position Code	Description	Optional Code
4		
Suspended by Alternate		
CBS Position Code	Description	Optional Code
3.1	Excavation, scrapers	3.1
→ ^		

22. An Attention message will appear alerting you the item will be suspended once you move off the field. Select **Yes** to continue. On the CBS Register, you now see that **Excavation**, **trucks** is suspended while Excavation, scrapers is activated.



- 23. In order to activate this alternate item, select the **Estimate** tab in the Ribbon and go the **Alternate Scenario** drop down in the Alternates section.
- 24. Then select the **ROCK2** scenario. Once done, click **OK**.

Alternate Scenario:
BASE + ROCK2: Rock
(Select All)
BASE
ALT 3
ROCK1: Rock Excacation
✓ ROCK2: Rock Excavation
test 1: testing 1
OK Cancel

25. The trucks cost item is now active and scrapers has automatically been suspended. Now the Suspended by Alternate column is checked for cost item **Excavation, trucks**.

CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency	Alternate		Suspended by Alternate	Suspend
□ 3	Unclassified Excavation	50,000.00	Cubic Yard	\$6.95	\$347,543.68	U.S. Dollar	BASE	BASE		
+ 3.1	Excavation, scrapers	50,000.00	Cubic Yard	\$3.00	\$149,922.88	U.S. Dollar	BASE	BASE	✓	✓
+ 3.2	Excavation, trucks	50,000.00	Cubic Yard	\$3.59	\$179,550.75	U.S. Dollar	ROCK2	Rock Excavat		

15.8.4.1 CRITICAL THINKING - ALTERNATE SCENARIO (OWNER)

SCENARIO: Carla, an estimator at Genco Power is developing an estimate for upcoming maintenance work at one of Genco's power plants. She wants to explore two different options for removing and replacing a feed water system.

In one approach, she assumes that crews will be able to increase access to the work area by cutting a large access way through the wall of the metal building. This would allow for easier access to the feed water system that needs replacing. Parts and materials could be staged nearby outdoors and hoisted into position as they're needed. Also, crews would be able to access the work area more readily, streamlining operations.

She also uses another approach, in which Engineering won't approve plans for increased access by cutting through the building's wall. In this case, the replacement of the feed water system will be more tedious, as workers will need to wind their way through existing plant infrastructure to access the area in which they will be working. This has a pronounced effect on the crews' productivity and their ability to transport and stage materials to the area where the work will be performed.

WHICH OF THE FOLLOWING WOULD BE THE BEST WAY FOR CARLA TO ESTIMATE BOTH OPTIONS IN INEIGHT ESTIMATE?

- A. Create cost items for both options and use the Suspend feature to toggle between them.
- B. Use the Snapshot feature to create a second version of the estimate with the second option estimated. You can compare the original estimate to the snapshot copy of the estimate containing the alternate option.
- C. Create the second option in the same estimate and assign different alternate scenario records to each option respectively. Control whether the pay item is included using the Alternate Scenario drop-down.

View the following page for feedback.

15.8.4.2 CRITICAL THINKING - ALTERNATE SCENARIO (OWNER)

FEEDBACK

WHICH OF THE FOLLOWING WOULD BE THE BEST WAY FOR CARLA TO ESTIMATE BOTH OPTIONS IN INEIGHT ESTIMATE?

A. Create cost items for both options and use the Suspend feature to toggle between them.

Suspending cost items removes it from the estimate effectively, but this process is more cumbersome, since you have to suspend each item manually and re- price each time.

B. Use the Snapshot feature to create a second version of the estimate with the second option estimated. You can compare the original estimate to the snapshot copy of the estimate containing the alternate option.

This gives you nice visibility of the two versions of the estimate side by side but is a bit laborious to develop and manage.

C. Create the second option in the same estimate and assign different alternate scenario records to each option respectively. Control whether the pay item is included using the Alternate Scenario drop-down.

This is the most efficient approach. The Alternate Scenarios drop-down makes it easy to select and de-select alternates, with a few clicks.

15.8.4.3 CRITICAL THINKING - ALTERNATE SCENARIO (CONTRACTOR)

SCENARIO: James, an estimator at ADOT, is about to send a project he estimated out for proposal when he receives word from the environmental technician that the site being developed includes contaminated soil. He decides to include "Removal of contaminated soil" as an alternate to see if he can get the cost covered by the contractor.

YOU ARE THE CONTRACTOR SEEKING TO WIN THE CONTRACT. WHICH OF THE FOLLOWING WOULD BE THE BEST OPTION FOR DEVELOPING AN ALTERNATE ESTIMATE FOR THE CONTAMINATED SOIL?

- A. Add the "Removal of contaminated soil" pay item, then estimate the contaminated soil in the CBS and assign it to the pay item. Use the Suspend feature to toggle the pay item on and off, repricing the estimate each time.
- B. Use the Snapshot feature to create a second version of the estimate with the "Removal of contaminated soil" pay item and estimate included. You can compare the original estimate to the snapshot copy of the estimate containing the alternate.
- C. Add the "Removal of contaminated soil" pay item, then estimate the contaminated soil in the CBS and assign it to the pay item. Control whether the pay item is included using the Alternate Scenario drop-down.

View the following page for feedback.

15.8.4.4 CRITICAL THINKING - ALTERNATE SCENARIO (CONTRACTOR)

FEEDBACK

WHICH OF THE FOLLOWING WOULD BE THE BEST OPTION FOR DEVELOPING AN ALTERNATE ESTIMATE FOR THE CONTAMINATED SOIL?

A. Add the "Removal of contaminated soil" pay item, then estimate the contaminated soil in the CBS and assign it to the pay item. Use the Suspend feature to toggle the pay item on and off, repricing the estimate each time.

Suspending the pay item removes it from the estimate effectively, but this process is more cumbersome, since you have to suspend each item manually and reprice each time.

B. Use the Snapshot feature to create a second version of the estimate with the "Removal of contaminated soil" pay item and estimate included. You can compare the original estimate to the snapshot copy of the estimate containing the alternate.

This gives you nice visibility of the two versions of the estimate side by side but is a bit laborious to develop and manage.

C. Add the "Removal of contaminated soil" pay item, then estimate the contaminated soil in the CBS and assign it to the pay item. Control whether the pay item is included using the Alternate Scenario drop-down.

This is the most efficient approach. The Alternate Scenarios drop-down makes it easy to select and deselect alternates, and the pricing updates automatically. This is the easiest way to toggle between scenarios with a few clicks.

EXERCISE 15.3 – ALTERNATE SCENARIO

SCENARIO: You are a contractor estimating a job for the owner, DECK Corp. Along with the base items of the proposal, DECK Corp has decided to include a security guard toll booth as an alternate item in the award of the contract as well.

The request for the alternate, as indicated below, is more of a "would like to have", to give DECK Corp the option if it falls within their budget.

- Using the Training Job, create an alternate scenario for the Toll Both.
- Assign the alternate scenario to your Toll Booth cost items.
- Assign the alternate scenario to your Toll Booth pay item.
- Establish pricing for your Toll Both alternative scenarios.

Congratulations, you have completed this exercise!

15.9 PAY ITEM ALTERNATES

An Alternate Scenario is a set of active Alternates that can also be used with Pay Items. It's reasonable for the owner to include pay items as alternates within a job. The owner will most likely base the bid selection criteria primarily on the base bid items, but may also include alternate items in addition.

The contractor will want to understand the cost impact of an alternate if it is awarded. Contractors may not know ahead of time which combination of alternates an owner may choose to award. This feature will help the contactor understand how to spread markup to various bid item prices using different scenarios. This permits easy comparisons between different scenarios.

Imagine you are a contractor and bidding a job where the owner has included a security guard booth pay item as an alternate item in the job. The owner bases the base bid selection criteria on the base bid items, however, the owner elects to include alternate items in the award of the contract too. You as the contractor need to add the new security guard toll booth pay item to analyze the cost impact of adding this alternate, among other scenarios.

TIP Suspending an item is the same as 'Deducting' an item.

The owner's bid could look like this below, where the first eight pay items are base pay items. The last Toll Booth pay item is the owner's Alternate. All items the owner is requesting to see in the contractor's bid.

The one Alternate Construction item below represents a bid item the owner would like to have as part of the bid as well. However, this one alternate is more of a 'would like to have'. The Alternate item(s) help to give the owner the option to accept the Alternates if it still falls within the owner's budget.

Pay Item #	Description	Qty	UofM	Unit Price	Amount
503(A) 1313	Retaining Wall	850	CY	\$	\$
600 0300	Paint Existing Steel Bridge Structure	1	LS	\$	\$
700	Process Equipment	1	EA	\$	\$
1000	Removal of Underground Storage Tanks	2	EA	\$	vis
1010	Disposal of Contaminated Soil	800	CY	\$	\$
1500 0100	Guardrail Type 2	1,000	LF	\$	\$
1500 0200	Guardrail Type 3A	200	LF	\$	\$
1600 0230	Type 4 Signs	1.000	SF	\$	s
	CONSTRUCTION ITEMS	TOTAL	AMOUNT OF	- biD: 3	
ALTERNATE					
ALTERNATE		LE OF U	NIT PRICES	5	
		Qty	NIT PRICES	5 Unit Price	Amount
Pay Item #	SCHEDU	Qty	NIT PRICES		Amount

STEP BY STEP – CREATE PAY ITEM AND PROPOSAL ALTERNATE SCENARIO

- 1. From the Ribbon, select the **Price** tab.
- 2. Under the Pay Items section, select **Pay Item & Proposal**. The Pay Item & Proposal Register opens.
- 3. Select the Saved Views drop down arrow and select Alternates View.

Saved views:	Alternates View 💾 👻	
	Alternates View	*
	Balanced Price Comparison View	
	Breakdown Cost Comparison View	
	Previous View	
	Price Comparison View	
	Price Unbalancing View	
	Profit Comparison View	
	Quantity Variance Comparison View	
	Simple View	
	Standard View	*

4. At the bottom of the register, create a new pay item labeled as **Security Guard Booth** in the Description field. Then in the Pay Item Number field, type in **SG1**.

Pay Item Number	Lock Price	Row Number	Line Number	Description	Pay Quantity	Unit of Measure	Currency	Alternate	Alternate Description
+ 201 0102		2	20	Clearing & Grubbing	10.00	Acre	U.S. Dollar	BASE	BASE
+ 202 0183		3	30	Undassified Excavation	50,000.00	Cubic Yard	U.S. Dollar	BASE	BASE
+ 303 5912		4	40	Aggregate Base	40,000.00	Ton	U.S. Dollar	BASE	BASE
+ 303 4263		5	50	Asphalt Concrete Hot Mix Type A	38,000.00	Ton	U.S. Dollar	BASE	BASE
+ 413(B) 0464		6	60	36 Inch RCP Culvert Class III	1,000.00	Linear Feet	U.S. Dollar	BASE	BASE
+ 800 0220		7	70	10 Inch PVC Force Main (SDR21)	12,000.00	Linear Feet	U.S. Dollar	BASE	BASE
+ 800 0330		8	80	24 Inch PVC Gravity Sewer (SDR.35)	3,000.00	Linear Feet	U.S. Dollar	BASE	BASE
F 800 0400		9	90	4 Foot Diameter Manhole	16.00	Each	U.S. Dollar	BASE	BASE
+ 501(A) 1306		10	100	Structural Excavation & Backfill	800.00	Cubic Yard	U.S. Dollar	BASE	BASE
506(A) 1322		11	110	Steel Reinforcement	30,000.00	Pound	U.S. Dollar	BASE	BASE
+ 503(A) 1313		12	120	Retaining Wall	850.00	Cubic Yard	U.S. Dollar	BASE	BASE
600 0300		13	130	Paint Existing Steel Bridge Struct	1.00	Lump Sum	U.S. Dollar	BASE	BASE
+ 700		14	140	Process Equipment	1.00	Each	U.S. Dollar	BASE	BASE
+ 1000		15	150	Removal of Underground Storage Tanks	2.00	Each	U.S. Dollar	BASE	BASE
+ 1010		16	160	Disposal of Contaminated Soil	800.00	Cubic Yard	U.S. Dollar	BASE	BASE
1200 0100		17	170	Toll Booth	1.00	Each	U.S. Dollar	BASE	BASE
► 1500 0 100		18	180	Guardrail Type 2	1,000.00	Linear Feet	U.S. Dollar	BASE	BASE
+ 1500 0200		19	190	Guardrail Type 3A	200.00	Linear Feet	U.S. Dollar	BASE	BASE
+ 1600 0230		20	200	Type 4 Signs	1,000.00	Square Fe	U.S. Dollar	BASE	BASE
+ CO1		21	21	Realignment of Water Line	1.00	Each	U.S. Dollar	BASE	BASE
+ SG1		22	22	Security Guard Booth	1.00	Each	U.S. Dollar	BASE	BASE

- 5. Now create a new Alternate for the Security Guard Booth pay item using the same steps for your new cost item.
- 6. Click in the Alternates field for the Security Guard Booth Alternate. Select the **add** icon. An Alternate Record opens.
- 7. In the Code field, type in code **ALT3**.
- 8. In the Description field type in **Security Guard Booth Alternate**.

Alternate Record 💿	
Code: * ALT 3	Description: Security Guard Booth

9. Go into the CBS and copy all of the subordinate cost items for the existing **Toll Booth** cost item. (We will assume the same Toll Booth resources are needed for a Security Guard Booth).

	17	Toll Booth	1.00	Each	\$25,264.55
+	17.1	Site Preparation	1.00	Lump Sum	\$3,664.55
+	17.2	Concrete Reinforcement	1.00	Lump Sum	\$1,500.00
+	17.3	Cast in Place Concrete	1.00	Lump Sum	\$3,500.00
+	17.4	Concrete Masonry Units	1.00	Lump Sum	\$2,900.00
+	17.5	Paneling	1.00	Lump Sum	\$2,100.00
+	17.6	Wood Doors	1.00	Lump Sum	\$1,000.00
+	17.7	Wood Flooring	1.00	Lump Sum	\$1,800.00
+	17.8	Office Furniture	1.00	Lump Sum	\$2,100.00
+	17.9	Fire Protection Piping	1.00	Lump Sum	\$3,300.00
+	17.10	Interior Luminaires	1.00	Lump Sum	\$3,400.00

10. Paste the copied cost items into the new **Security Guard Booth** cost item you just created in the PIP.

=	22	Security Guard Booth	1.00	Each	\$25,264.55
+	22.1	Site Preparation	1.00	Lump Sum	\$3,664.55
+	22.2	Concrete Reinforcement	1.00	Lump Sum	\$1,500.00
+	22.3	Cast in Place Concrete	1.00	Lump Sum	\$3,500.00
+	22.4	Concrete Masonry Units	1.00	Lump Sum	\$2,900.00
÷	22.5	Paneling	1.00	Lump Sum	\$2,100.00
+	22.6	Wood Doors	1.00	Lump Sum	\$1,000.00
+	22.7	Wood Flooring	1.00	Lump Sum	\$1,800.00
+	22.8	Office Furniture	1.00	Lump Sum	\$2,100.00
+	22.9	Fire Protection Piping	1.00	Lump Sum	\$3,300.00
+	22.10	Interior Luminaires	1.00	Lump Sum	\$3,400.00

11. The cost items have all been automatically suspended in the CBS. This is because the Security Guard Booth pay item is suspended as well

CBS Position Code 🖹 🕇	Description	Forecast (T/O) Quantity	Unit Cost	Total Cost (Forecast)	Suspended by Alternate	Suspend
22	Security Guard Booth	1.00	\$25,264.55	\$25,264.55		✓
+ 22.1	Site Preparation	1.00	\$3,664.55	\$3,664.55		✓
+ 22.2	Concrete Reinforcement	1.00	\$1,500.00	\$1,500.00		✓
+ 22.3	Cast in Place Concrete	1.00	\$3,500.00	\$3,500.00		✓
+ 22.4	Concrete Masonry Units	1.00	\$2,900.00	\$2,900.00		✓
+ 22.5	Paneling	1.00	\$2,100.00	\$2,100.00		✓
+ 22.6	Wood Doors	1.00	\$1,000.00	\$1,000.00		✓
+ 22.7	Wood Flooring	1.00	\$1,800.00	\$1,800.00		✓
+ 22.8	Office Furniture	1.00	\$2,100.00	\$2,100.00		✓
22.9	Fire Protection Piping	1.00	\$3,300.00	\$3,300.00		✓
+ 22.10	Interior Luminaires	1.00	\$3,400.00	\$3,400.00		✓

12. In the Pay Item & Proposal Register, activate alternate pay item Security Guard Booth by selecting **Alternate Scenario Base + ALT3** at that top of the form.

File Set	tup Estimate	Quote Pr	rice Execu	tion System	Actions	
	✓ Lock Cost Items	to Pay Items		🝓 Direct Markup	PBS Changes	Alternate Scenario:
_	O Pricing			🔞 Indirect Mark	up Log PBS Chang	
Pay Item & Proposal	Competitors		ice Breakdown tructure (PBS)	📥 Data Map		(Select All)
	Pay Items		Overhea	d and Profit	Audit Log	BASE
Cost Break	down Structure (Cl	85) Register	ster O	ALT 3 ROCK1: Rock Excacation		
Proposal F	Recap - Training Jol	ROCK2: Rock Excavation				
	Current Target Forecast Variance					test 1: testing 1
Price:	\$6,337,826.19	\$6,834,120.16	\$6,279,104.35	\$496,293.97	ADD	OK Cancel

13. The **Security Guard Booth** is now activated. You can now see that all of the pay items have been priced including the Security Guard Booth Alternate pay item.

NOTE You may need to establish your pay item price first if a price does not yet exist

- 14. From the register, select the **Actions** tab. Then under the Auto Price section, select the **Balance Bid** drop down.
- 15. Select the option Hit Target Goal in order to auto price the job. Now all of the pay items have been priced, including the Security Guard Booth Alternate pay item.

Pay Item Lock Row Line Number Price Number Line Number		Description	Unit Price (current)	Total Price T (current)	Total Profit (current)	% Margin		
+ 201 0102		2	20	Clearing & Grubbing	\$0.00	\$0.00	\$0.00	0.0
+ 202 0183		3	30	Unclassified Excavation	\$0.00	\$0.00	\$0.00	0.00
+ 303 5912		4	40	Aggregate Base	\$19.52	\$780,800.00	\$78,216.54	10.02
+ 303 4263		5	50	Asphalt Concrete Hot Mix Type A	\$52.80	\$2,006,400.00	\$200,601.14	10.00
+ 413(8) 0464		6	60	36 Inch RCP Culvert Class III	\$86.59	\$86,590.00	\$8,669.56	10.01
+ 800 0220		7	70	10 Inch PVC Force Main (SDR21)	\$29.80	\$357,600.00	\$35,731.53	9.95
+ 800 0330		8	80	24 Inch PVC Gravity Sewer (SDR35)	\$63.73	\$191,190.00	\$19,149.92	10.03
+ 800 0400	9 90		4 Foot Diameter Manhole	\$4,557.94	\$72,927.04	\$7,297.96	10.0	
+ 501(A) 1306		10	100	Structural Excavation & Backfill	\$27.88	\$22,304.00	\$2,235.53	10.0
+ 506(A) 1322		11 110		Steel Reinforcement	\$1.79	\$53,700.00	\$5,259.72	9.8
+ 503(A) 1313		12 120		Retaining Wall	\$536.21	\$455,778.50	\$45,676.40	10.0
+ 600 0300	300 13 130		Paint Existing Steel Bridge Struct	\$101,279.27	\$101,279.27	\$10,163.56	10.0	
+ 700		14	140	Process Equipment	\$1,949,552	\$1,949,552.96	\$194,662.95	9.9
+ 1000		15	150	Removal of Underground Storage Tanks	\$13,363.93	\$26,727.86	\$2,710.77	10.1
+ 1010		16	160	Disposal of Contaminated Soil	\$30.51	\$24,408.00	\$2,479.23	10.1
+ 1200 0100		17	170	Toll Booth	\$31,068.28	\$31,068.28	\$3,103.76	9.9
+ 1500 0100		18	180	Guardrail Type 2	\$28.96	\$28,960.00	\$2,886.42	9.9
+ 1500 0200		19	190	Guardrail Type 3A	\$37.41	\$7,482.00	\$746.33	9.9
+ 1600 0230		20	200	Type 4 Signs	\$15.69	\$15,690.00	\$1,566.81	9.9
+ CO1		21	21	Realignment of Water Line	\$0.00	\$0.00	\$0.00	0.0
+ [Enter Pay I		22	22	Security Guard Booth	\$31,068.28	\$31,068.28	\$3,103.76	9.9

15.9.1 COMPARE ALTERNATE SCENARIOS

You can price and analyze the impact of each Alternate Scenario to the estimate's Total Price on the Pay Item & Proposal Register. This is after the Alternate Scenarios have been defined, assigned, and activated.

Each Alternate and combination of Alternates represents a different scenario, and prices need to be established for every scenario that you want to compare.

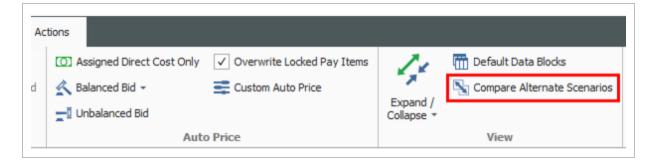
For example, if you have defined Alternate Scenarios 1, 2 and 3, you may wish to price each of them separately, and price any combination of them, and/or you may wish to price the combination of all three.

TIP

Be sure to establish bid prices for every alternate or combination of alternates.

STEP BY STEP – COMPARE ALTERNATE SCENARIOS

- 1. From the Ribbon, select the **Price** tab.
- 2. Under the Pay Items section, select **Pay Item & Proposal**. The Pay Item & Proposal Register opens.
- On the Pay Item & Proposal Register, select the Actions tab. Under the View section, select Compare Alternative Scenarios. This action performs a comparison among the various Alternative Scenarios you've priced so far.



4. After selecting Compare Alternative Scenarios, new columns appear on the pay item form. These columns show a comparison of the base bid, plus Alternate Scenarios that have been priced so far.

	r Item nber	Lock Price	Number 🖹	Line Number	Description	Unit Price T (current)	Total Price (current)	(BASE+ALT 3)	Total Price (BASE+ALT 3)	Total Profit (current)
+ ;	201 0 102		2	20	Clearing & Grubbing	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
+ ;	202 0 183		3	30	Unclassified Excavation	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
+ :	303 5912		4	40	Aggregate Base	\$19.52	\$780,800.00	\$19.52	\$780,800.00	\$78,103.3
+ ;	303 4263		5	50	Asphalt Concrete Hot Mix Type A	\$52.80	\$2,006,400.00	\$52.80	\$2,006,400.00	\$200,421.8
+ •	413(B) 0464		6	60	36 Inch RCP Culvert Class III	\$86.61	\$86,610.00	\$86.59	\$86,590.00	\$8,672.3
+ 1	800 0220		7	70	10 Inch PVC Force Main (SDR21)	\$29.81	\$357,720.00	\$29.80	\$357,600.00	\$35,796.9
+ (800 0330		8	80	24 Inch PVC Gravity Sewer (SDR35)	\$63.74	\$191,220.00	\$63.73	\$191,190.00	\$19,142.0
+ 1	800 0400		9	90	4 Foot Diameter Manhole	\$4,558.81	\$72,940.96	\$4,557.94	\$72,927.04	\$7,299.8
+ 1	501(A) 1306		10	100	Structural Excavation & Backfill	\$27.88	\$22,304.00	\$27.88	\$22,304.00	\$2,231.2
+	506(A) 1322		11	110	Steel Reinforcement	\$1.79	\$53,700.00	\$1.79	\$53,700.00	\$5,257.7
+ (503(A) 1313		12	120	Retaining Wall	\$536.35	\$455,897.50	\$536.21	\$455,778.50	\$45,689.1
+ (600 0300		13	130	Paint Existing Steel Bridge Struct	\$101,314.33	\$101,314.33	\$101,279.27	\$101,279.27	\$10,167.9
+ ;	700		14	140	Process Equipment	\$1,949,681	\$1,949,681.16	\$1,949,552.96	\$1,949,552.96	\$194,688.7
+	1000		15	150	Removal of Underground Storage Tanks	\$13,367.94	\$26,735.88	\$13,363.93	\$26,727.86	\$2,711.8
+ ;	1010		16	160	Disposal of Contaminated Soil	\$30.52	\$24,416.00	\$30.51	\$24,408.00	\$2,481.9
+	1200 0100		17	170	Toll Booth	\$31,071.32	\$31,071.32	\$31,068.28	\$31,068.28	\$3,104.2
+	1500 0100		18	180	Guardrail Type 2	\$28.97	\$28,970.00	\$28.96	\$28,960.00	\$2,895.0
+	1500 0200		19	190	Guardrail Type 3A	\$37.41	\$7,482.00	\$37.41	\$7,482.00	\$746.1
+ ;	1600 0230		20	200	Type 4 Signs	\$15.69	\$15,690.00	\$15.69	\$15,690.00	\$1,566.4
+ (CO1		21	21	Realignment of Water Line	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
+	Enter Pay I		22	22	Security Guard Booth	\$0.00	\$0.00	\$31,068.28	\$31,068.28	\$0.0

5. The current scenario base price Total Price is \$6,307,253.15, however the Alternate Price scenario for the additional Security Guard Booth is \$6,337,826.19

Pay I Numi	Iten 3 ber	Lock Price	Row Number	Line Number	Description	Unit Price (current)	Total Price (current)	Unit Price (BASE+ALT 3)	Total Price (BASE+ALT 3)	Total Profit (current)
+ 2	010102		2	20	Clearing & Grubbing	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
+ 2	02 0 183		3	30	Unclassified Excavation	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
+ 3	03 5912		4	40	Aggregate Base	\$19.52	\$780,800.00	\$19.52	\$780,800.00	\$78,103.3
+ 3	03 4263		5	50	Asphalt Concrete Hot Mix Type A	\$52.80	\$2,006,400.00	\$52.80	\$2,006,400.00	\$200,421.8
+ 4	13(B) 0464		6	60	36 Inch RCP Culvert Class III	\$86.61	\$86,610.00	\$86.59	\$86,590.00	\$8,672.3
+ 8	00 0220		7	70	10 Inch PVC Force Main (SDR21)	\$29.81	\$357,720.00	\$29.80	\$357,600.00	\$35,796.9
+ 8	00 0330		8	80	24 Inch PVC Gravity Sewer (SDR35)	\$63.74	\$191,220.00	\$63.73	\$191,190.00	\$19,142.0
+ 8	300 0400		9	90	4 Foot Diameter Manhole	\$4,558.81	\$72,940.96	\$4,557.94	\$72,927.04	\$7,299.8
+ 5	01(A) 1306		10	100	Structural Excavation & Backfill	\$27.88	\$22,304.00	\$27.88	\$22,304.00	\$2,231.2
+ 5	06(A) 1322		11	110	Steel Reinforcement	\$1.79	\$53,700.00	\$1.79	\$53,700.00	\$5,257.7
+ 5	03(A) 1313		12	120	Retaining Wall	\$536.35	\$455,897.50	\$536.21	\$455,778.50	\$45,689.1
+ 6	500 0300		13	130	Paint Existing Steel Bridge Struct	\$101,314.33	\$101,314.33	\$101,279.27	\$101,279.27	\$10,167.9
+ 7	00		14	140	Process Equipment	\$1,949,681	\$1,949,681.16	\$1,949,552.96	\$1,949,552.96	\$194,688.7
+ 1	000		15	150	Removal of Underground Storage Tanks	\$13,367.94	\$26,735.88	\$13,363.93	\$26,727.86	\$2,711.8
+ 1	1010		16	160	Disposal of Contaminated Soil	\$30.52	\$24,416.00	\$30.51	\$24,408.00	\$2,481.9
+ 1	200 0100		17	170	Toll Booth	\$31,071.32	\$31,071.32	\$31,068.28	\$31,068.28	\$3,104.2
+ 1	500 0 100		18	180	Guardrail Type 2	\$28.97	\$28,970.00	\$28.96	\$28,960.00	\$2,895.6
+ 1	500 0200		19	190	Guardrail Type 3A	\$37.41	\$7,482.00	\$37.41	\$7,482.00	\$746.1
+ 1	600 0230		20	200	Type 4 Signs	\$15.69	\$15,690.00	\$15.69	\$15,690.00	\$1,566.4
+ 0	01		21	21	Realignment of Water Line	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
+ ()	Enter Pay I		22	22	Security Guard Booth	\$0.00	\$0.00	\$31,068.28	\$31,068.28	\$0.0
			22				\$6,307,253.15		\$6,337,826.19	\$630,442.6

EXERCISE 15.4 – ALTERNATE SCENARIO

SCENARIO: You are a contractor estimating a job for the owner, DECK Corp. Along with the base items of the proposal, DECK Corp has decided to include a security guard toll booth as an alternate item in the award of the contract as well.

The request for the alternate, as indicated below, is more of a "would like to have", to give DECK Corp the option if it falls within their budget.

- Using the Training Job, create an alternate scenario for the Toll Both.
- Assign the alternate scenario to your Toll Booth cost items.
- Assign the alternate scenario to your Toll Booth pay item.
- Establish pricing for your Toll Both alternative scenarios.

Congratulations, you have completed this exercise!

15.10 BILLING RATES

In Estimate, the Billing Rate is defined as how much the Contractor is charging your client to utilize one of your resources within the Resource Rate Register. The billing rate can also be viewed as how much money that your client is expected to pay for utilizing one of the resources for a specified amount of time. It's important for you as a contractor to have a way to more quickly see your charge rate to compare against what you will ultimately bill your client, also known as your Billing Rate.

Contractors need a reliable way to price projects utilizing various markup strategies with clear visibility into various costs that drive the markup amounts. It's important for contractors to be able to:

- Apply various costs that drive markups
- Apply billing rate gains (difference between contractor's cost vs billing rates/client cost)
- Have clear visibility into the true margin based on both cost and billing rates
- · Compare the cost and billing rates within the CBS

As a result of properly pricing projects, contractors can now create and view various Billing Rate Reports showing:

- A summary of billing rates in lieu of the cost rates for a client to see, Estimate Summary reports
- Cost item breakdown that shows associated cost categories, billing unit rates, and total billing amounts, **Billing Rate Summary**
- An analysis of reources and their margins, utilization counts and billing amounts, Margin Analysis report

15.10.1 CHARGE RATE

The Charge Rate is the contractor's cost for a resource. These costs include actual labor, any types of fringes, labor taxes plus insurances, and more. These costs are all tracked within the Charge Rate's Cost Category Breakdown in a resource rate. The charge rate is not a cost to the client and does not include any profit, markup or overhead. Charge Rates can be setup for a resource by going to the Setup tab and selecting Resource Rates. Then opening a resource rate record, and selecting the **Charge Rate** tab.

Resource Rate Register La								abor Rate Record 🛛				
Cod	le: '	•	LC1		cript	ion:	Carp	enter Appre	ntice			
Se	tup		🐈 Charge	Rate	Bi	ling F	Rate					
S	cale	1	Scale 2	Scale	3	All	Scales	;				
Co	st C	ate	gory Breakd	own			Amou	int				
¥	То	tal					\$2	7.48				
> Labor				bor				\$27.48				
> Materials						\$0.00						
Undefined						Ś	0.00					

15.10.2 BILLING RATES SETUP

Billing Rates have 3 scales where you can determine the appropriate billing and markups rates.

- Scale 1 regular time
- Scale 2 overtime
- Scale 3 double time

You can enter a billing rate markup as a dollar amount in the **Billing Rate Markup** field or as a percentage in the **Billing Rate Markup %** field. After double clicking a resource rate, you will see the resource record.

File Setup	Estima	te Quote	Price	Execution	System		
٦	-		***		🐔 Labor 🏭 Equipment		
Job Properties	Foundation Setup Data		Bid Wizard	Resource Rates *	Materials	Resource Assemblies	
	Initi	alize			Resources	🐔 Labor	
Resource Rate	e Register	Labor R	ate Record	0			ction Equipment Construction Equipment
Code: * LC1		Description:	Carpenter App	prentice			Materials
Setup 👯 🤅	Charge Rate	Billing Rate				 Installed Supplies 	Equipment
		Scale 1	Sca	le 2	Scale 3	🐌 Unique	
Charge Rate:		\$27.48		\$41.22	\$54	.96	
Billing Rate:		\$39.84		\$57.70	\$76.	94	
Billing Rate Ma	rkup:	\$12.37		\$16.49	\$21.	98	
Billing Rate Ma	kup %	45.00	4	40.00 <	40.	00 🔺	

The Billing Rate tab includes the following fields.

Name	Description
1. Charge Rate	The amount of money it costs a contractor to occupy a resource. Also known as the contractor's cost.
2. Billing Rate	The amount a contractor charges a client to utilize a resource rate. The billing rate can also be viewed as how much money the client is expected to pay for utilizing one of those resources for a specified amount of time.
3. Billing Rate Markup	The dollar value amount of profit added to the charge rate that a contractor generally determines. This can include certain contractor fees that the contractor has deemed to include.
4. Billing Rate	The percent dollar value amount of profit

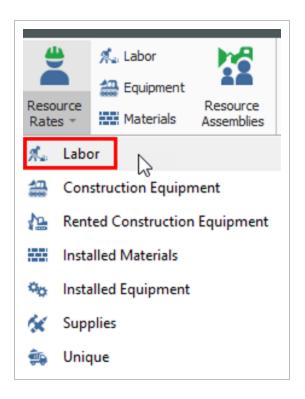
Name	Description
Markup %	added to the charge rate that a contractor generally determines. This can include certain contractor fees that the contractor has deemed to include.

The below example shows a contractor's Charge Rate of \$27.48 in Scale 1. The Billing Rate Markup is 45% of the \$27.48 Charge Rate, which is a \$12.37 Billing Rate Markup. The total Billing Rate is \$39.84, which is the price the contactor would charge a client.

Resource Rate Registe	er Labor F	Rate Record 🛛 🕲		
Code: * LC1	Description:	Carpenter Apprentice		
Setup 👯 Charge Ra	te Billing Rate			
1	Scale 1	Scale 2		Scale 3
Charge Rate:	\$27.48	\$41.22		\$54.96
Billing Rate: 2	\$39.84	\$41.22	[\$54.96
Billing Rate Markup:	\$12.37	\$0.00	[\$0.00
Billing Rate Markup %:	4 45.00	• 0.00	▲ [0

STEP BY STEP – BILLING RATE SETUP

- 1. Use the Training Job for this example. From the Ribbon, select the **Setup** tab.
- 2. Under the Resources tab, select the **Resource Rates** drop down arrow. Then select **Labor**. The Resource Rate Register opens to the Labor tab.



- 3. Select the **LW WELDERD** Welder Resource Code from the list. Then select the **Actions** tab. Under the Edit section, select **Open**.
- 4. After the Labor Rate Record opens, select the **Billing Rate** tab.



- 5. Change the **Billing Rate Markup** % to 15 for Scale 1, then tab out of the field.
 - The system automatically calculates the Billing Rate Markup field to \$6.38.
 - This represents 15% of the Charge Rate.
 - The Billing Rate is now equal to the Charge Rate plus 15%.

Resourc	e Rate Register	Labor Ra	ate Record 🛛	
Code: *	LWD	Description:	Velder	
Setup	🐈 Charge Rate	Billing Rate		
		Scale 1	Scale 2	Scale 3
Charge R	ate:	\$42.56	\$63.83	\$85.11
Billing Ra	ate:	\$48.94	\$89.37	\$119.15
Billing Ra	ate Markup:	\$6.38	\$25.53	\$34.04
Billing Ra	ate Markup %:	15.00	40.00 4	40.00

- 6. Change the Billing Rate Markup to \$14.68 for Scale 2.
 - The Billing Rate Markup % is now 23% and the Billing Rate is now \$78.51.
 - Scale 1 Charge Rate of \$42.56 plus (half of \$42.56) \$21.28 equals a Scale 2 rate of \$63.83.
 - Scale 2 rate of \$63.83 plus 23% equals a billing rate of \$78.51



15.10.3 COST VS. BILLING VIEW

The Detail tab in a Cost Item record lets you compare the Unit Cost (charge rate) against the client's Billing Unit Rate.

To view the Cost vs. Billing View within a Cost Item record, select a cost item record, click on the Detail tab, then select the **Billing Rates View**.

The Detail tab includes the following fields.

Name	Description
1. Unit Cost	This is the contractor's cost for this resource rate, also known as the Charge Rate.
2. Billing Unit Rate	The amount a contractor charges a client to utilize a resource rate, also known as the Billing Rate.
3. Total Cost (Forecast)	This is the Unit Cost multiplied by the number of hours utilized.
4. Total Billing Amount	This is the Billing Unit Rate multiplied by the number of hours utilized.

- Below is an example of how to view the Cost vs. Billing View when the Production Days are equal to 1.
- The Unit Cost (Charge Rate) and the Billing Unit Rate values both values derive from your Resource Rate.

Cos	t Item Summary	1	💁 <u>D</u> etail : \$219.8	3 🛱 Plug	<u>q</u> :\$0.00	Quote : \$0.0	0 <u>A</u> llocation			Production			×
rag	columns here t	o gro	oup	Find:	[Search Fo	r] …	Saved views: Cos	st vs. Billing View	-	Cus	tomize Display		
	Row Number 🖮		Productivity Factor	Work Hours	Pay Hours	Unit Cost	Billing Unit Rate	Total Cost (Forecast)	Total Billing Amount	Days: Shifts:	1.00	0.00	1.00
	+	1	1.00	8.00	8.00	\$27.48	\$39.84	4 \$219.83	\$318.75	Hours:	8.00	0.00	8.00
>						1	2	3	4	Man-Hours:	8.00	0.00	8.00
										Equip-Hours:	۵	0.00	0.00
										Each/Day:	1.00	0.00	1.00
										Each/Shift:	1.00	0.00	1.00
								\$219.83	\$318.75	Each/Hour:	0.13	0.00	0.13
									•	🚴 E 📑 N 💽 C 🌨 P.	. 🛃 😫 R	🔁 S	🚨 U 📚 B.

STEP BY STEP – CBS COST VS. BILLING VIEW

- 1. From the Ribbon, select the Estimate tab.
- 2. Select Cost Breakdown Structure (CBS). The Cost Breakdown Structure (CBS) Register opens.
- 3. Create a cost item called **Fabrication Work**. Double click on the new cost item to open it.
- 4. Select the **Detail** tab. Then select **LWD Welder** from the Code field.

Cos	st Item Summar	у	違 <u>D</u> et	ail :	\$0.00	🛱 Plu <u>g</u> : \$0.00) 🖵 <u>Q</u> u	ote : \$0.00	Allocation	
Drag	columns here	to g	oup							
	Row Number =		Code		Resourc	Resource Assembly		ı	Quantity	
I	+	1	LWDA	*			Welder Ap	prentice	1.00	
*										

5. Go to the **Production** default data block. In the **Days** field, enter in **1**.



6. You are now able to compare your **Total Cost** against the **Billing Rate**. Your Total Cost is \$226.96 for 8 hours, while you Total Billing rate to the client is \$317.74.

Cos	st Item Summar	у	🏂 <u>D</u> etail	: \$226.96	Plug : S	\$0.00	Qu	ote : \$0.00	<u>A</u> llocation				
Drag	columns here	to gr	roup										
	Row Number 🖹		Code Description Quanti		Quantity	,	Unit of Measure	Productivit Factor	y	Billing Unit Rate	Total Cost (Forecast)	Total Billing Amount	
	+	1	LWDA	Welder App	prentice		1.00	Each		1.00	\$39.72	\$226.96	\$317.74
÷													

15.10.4 BILLING RATE REPORTS

There are several reports you can run to view resource costs, billing rates, and mark-ups. Some of these reports you may choose to provide to your customer. Other reports, you may choose to use only as a way to view your markup margins prior to submitting to your customer.

To locate these reports, select the **Setup** tab. Then select **Reports**. From the Reports window, select **Billing Rate Reports**.

15.10.4.1 BILLING RATE SUMMARY REPORT

Total Billin Amou	Billing Unit Rate	Custom Category1	Allowance	Fees	Subcontract	Supplies	Materiale	Rented Equipment	Owned Equipment	Labor
318.7	318.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	318.75
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	318.75
317.3	317.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	317.74
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	317.74
636.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	635.49

The Billing Rate Summary report shows cost items including cost category details.

The end of the report shows you a total of your Direct and Indirect cost markups, and also includes a **Total Billing Amount** at the bottom far right.

CBS Position Code	Description	Labor	Owned Equipment	Rented Equipment	Materiale	Supplies	Subcontract	Feee	Allowance	Custom Category1	Billing Unit Rate	Total Billing Amount
28	Carpenter work	318.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	318.75	318.75
		318.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		I
29	Fabrication Work	317.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	317.74	317.74
		317.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		I
Indirect Total		636.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		636.49
	Direct Cost Markup	85,875.59	78,408.62	529.38	270,092.56	2,054.54	15,448.00	13,503.13	80.00	48.00		466,049.92
		85,875.59	78,408.62	529.38	270,092.58	2,084.84	15,448.00	13,503.13	80.00	48.00		I
	Indirect Cost Markup	10,729.02	5,662.75	160.00	65.52	96.00	0.00	83.28	160.00	640.00		17,596.58
		10,729.02	5,662.75	160.00	65.52	96.00	0.00	83.28	160.00	640.00		
Fees Total		96,604.60	84,071.37	689.38	270,158.08	2,160.64	15,448.00	13,586.41	240.00	688.00		483,646.48
Report Total		97,241.10	84.071.37	689.38	270,158.08	2,160.64	15,448.00	13,586.41	240.00	688.00		484,282.97

15.10.4.2 ESTIMATE DETAILS WITH BILLING RATE REPORT

The Estimate Details with Billing Rate report shows a selection of resources with associated billing rates and utilization counts.

CBS Position	Resource Code	Description		Billing Unitof UnitRate Measure	Utilization Count	Billin Total Amou
28	LC1	Carpenter work Carpenter Apprentice	TOTAL	\$39.84 Hour	8.00 8.00	\$318.7 \$318.7
		TOTAL - Carpenter work	10112		8.00	\$318.7
29	LWDA	Fabrication Work Welder Apprentice	TOTAL	\$39.72 Hour	8.00 8.00	\$317. \$317.
		TOTAL - Fabrication Work			8.00	\$317.
GRAND TOTAL					16.00	\$636

15.10.4.3 MARGIN ANALYSIS REPORT

The Margin Analysis report is beneficial for displaying both mark-up and margin values for selected resource rates.

CBS Position	Resource Code	Description		Unit Cost	Billing UnitRate		Utilization Count	Total Cost	Total Billing Amount	Mark-Up Amount	MarkUp %	Marg
28		Carpenter work									1 1	
	LC1	Carpenter Apprentice		\$27.48	\$39.84	Hour	8.00	\$219.83	\$318.75	\$98.92	45.00%	31.03
			TOTAL				8.00	\$219.83	\$318.75	\$98.92	45.00%	31.03
		TOTAL - Carpenter wor	k				8.00	\$219.83	\$318.75	\$98.92	45.00%	31.03
29		Fabrication Work									1 1	
	LWDA	Welder Apprentice		\$28.37	\$39.72	Hour	8.00	\$226.96	\$317.74	\$90.78	40.00%	28.57
			TOTAL				8.00	\$226.96	\$317.74	\$90.78	40.00%	28.57
		TOTAL - Fabrication We	ork				8.00	\$226.96	\$317.74	\$90.78	40.00%	28.57
GRAND TO	TAL						16.00	\$446.79	\$636.49	\$189.71	42,46%	29.80

EXERCISE 15.5 – BILLING RATES

SCENARIO: You are an estimator working for Hexco Civil, and your company has started work on the excavation and grading portion of a project for Health Choice hospital campus.

During this phase, the crew runs into underground storage tanks that have contaminated the soil.

Robert, the Health Choice engineer, requests "rather than detail out an estimate, we'll just do a time and materials agreement for this portion."

You agree on a 20% markup on your going rates for labor and equipment.

IN THE TRAINING JOB:

- 1. Make a copy of the Training Job.
- In the new job, apply billing rates to the resources employed on the subordinates of the "Removal of Underground Storage Tanks" and "Disposal of Contaminated Soil" cost items.
- 3. In the PBS, select the Charge Rate and Billing rate Saved View to compare your rates.
- 4. In Job Properties > Pricing, change the setting to Calculate Balanced Pay Item Prices using Billing Amount.
- 5. In the Pay Item & Proposal Register, note that your Target Price is now based on billing rates.
- Decide if you want to spread any addition overhead or profit to your "Removal of Underground Storage Tanks" and "Disposal of Contaminated Soil" pay items (or just leave them with their current billing rates.

Congratulations, you have completed this exercise!

15.11 BILLING RATES REPORTS OVERVIEW

15.11.1 COST ITEM SUMMARY

The Cost Item Summary tab in a Cost Item Record, allows the estimator to add additional costs to the Resource Billing rates by a percentage or amount. For example, there may have been extra work that a percentage would apply that the owner approves. The Billing reports then lists these for the owner.

The following screen shot shows cost item 3.1 with the adjustment. To see the adjustment, select the **Actions** tab and under the View section, use the **Display Billing Rate** toggle to display the Billing Rate columns.

Review the two columns Total Billing Amount and Unadjusted Total Billing Amount.

Split Default Data Bloc	🔁 Display Bi	arent Information ling Rate			Resource Fields Cost Item Fields	2	Edit Resource	Periods	Trench Calcu	
Edit		v	ew			10		Tools		
Cost Breakdown	Structure (CBS)	Register	Cost Item R	ecord O	Dependent Co	st Ite	m Record	Price Brea	kdown Struct	ure M
CBS Code:	Optional Code:	Description:								
3 3.1 PI Assignment:	202 0183 3.1 PI Line Number:	Unclassified Ex Excavation PI Description:								
202 0 183 -	30	Unclassified Ex	cavation							
Cost Item Summar	/ 🚖 <u>D</u> etail : \$	3.05 🗳 Plug	: \$0.00 🔎	Quote : \$0.00	Allocation					
Cost Category		Unit Cost	Total Cost	Unadjusted Total Cost	Cost Adjustment Percent	÷	Cost Adjustment Amount	Billing Unit Rate	Total Billing Amount	Unadjusted Total Billing Amount
✓ Total		\$3.05	\$152,320.48	\$152,320.48	0.00		\$0.00	\$3.89	\$194,604.65	\$176,913.32
> Labor		\$0.66	\$33,170.48	\$33,170.48	0.00		\$0.00	\$0.88	\$43,785.03	\$39,804.57
Owned Equi	pment	\$2.38	\$119,150.00	\$119,150.00	0.00		\$0.00	\$3.02	\$150,819.62	\$137,108.75
Rented Equi	pment	\$0.00	\$0.00	\$0.00	0.00		\$0.00	\$0.00	\$0.00	\$0.00

The following screen shot is the estimate details with Billing Rates report for the 3.1 cost item.

Reports		Se	ttings:	Previ	ous		-						
Job Pro	operties					1							
Found	ation Setup Data	Pr	int	Cost Ite	m Selection	Details	Layout Header	/Footer					
Resou	rces		Print	a conti	guous range	of cost ite	ems:						
Resou	rce Assemblies		_										
Cost B	reakdown Structure		Fro	om:	3.1			•					
CB	IS Summary		То	:	3.1			-		Roll-up to	CBS Level -1		
> CB	S Details												
> CB	IS Outline			rt cost i	tems to print	thom the	register below:						
Est	timate Summary) sele	u cost i	tenis to print	from the	register below.						
CB	S Currency Comparison						Fin	d: [Search F	or]		Saved views: Previous	View	Ť
🔍 Quote	s									Optional		Unit of	
Price B	Breakdown Structure											Measure	
🖺 Pay Ite	em & Proposal	\rightarrow											
🚡 Billing F	Rate Reports						Price % Add-On			PRICE 9			
Billi	ing Rate Summary												
Est	timate Details with Billing Ra	t					Indirect Cost Escale				T COST ESCALATION		
Ma	argin Analysis												
Re	source Price List						Direct Cost Escalati						
🕀 Job Tra	acking						Indirect Cost Add-C						
Estima	te Comparison Report						Job Management 8	Equipment					
A	ab Cade, Carry of Tesiais						General Expense				L EXPENSE		
	ob Code: Copy of Trainin scription: Training Job - I		County	No. TM	2924								
3S osition	Resource Code	Description	1					Billing Unitof itRate Measure	,		Utilization Count		Billin Total Amou
3.1	EG14G ES621 ES623 ETWT	Excavation Laborer Mechanic Operator CI Operator CO Operator Fo Compactor Dozer D8 Grader 14G Scraper 621 Scraper 623 Water Truck	ass 2 oreman Smooth I Sheeps F				\$ \$ \$	\$31.64 Hour \$27.60 Hour \$32.66 Hour \$42.87 Hour \$41.86 Hour \$41.86 Hour 199.64 Hour 199.64 Hour 186.30 Hour 186.30 Hour 186.40 Hour			125.00 75.00 500.00 62.50 125.00 125.00 125.00 250.00 250.00 125.00		\$3,954.5 \$2,070.0 \$16,840.3 \$2,679.1 \$5,2322 \$8,855.0 \$24,955.0 \$8,653.3 \$46,575.0 \$36,512.5 \$4,255.0 \$17,691.1
	Adjustment					тот	AL						\$17,691.3 \$194,604.6
													\$194,604.6

15.11.2 DEPENDENT COST ITEMS

You can use dependent cost items with billing work. For example, the Contractor may have an agreement with the Owner to add additional overhead costs as a percentage of the work or the Owner allows a contingency for unknown work.

The following screen shot is an example of using a dependent cost item with billing work.

Direct Cost Add-On Dependency Cost Categorizatio ag columns here to group	n <u>A</u> llocation	Find: N				Billi	ng Breakdown			\$102,	676.52 B
g columns here to group	n <u>A</u> llocation	Find: [S				Billi	- Production				
		Find: [Se				Dilli	ng Breakdown				
		1110. 00	arch For]		Saved vi	Cost	Category	Subject Billing Amount	Rate		Billing Amount
Description	Currency	Total Cost (Forecast)	Account Code	Tag 1	Tag	- 1	otal	\$5,762,525.20	1.46		\$84,307.0
Contingency	U.S. Dollar	\$102,676.52)	Labor	\$843,070.69	10.00		\$84,307.0
contangency	CIDI DOID	\$102,010.02				5	Owned Equipment	\$1,022,482.62	0.00		\$0.0
)	Rented Equipment	\$7,303.47	0.00		\$0.0
)	Supplies	\$26,971.87	0.00		\$0.0
)	Materials	\$3,572,899.79	0.00		\$0.0
)	Subcontract	\$107,115.00	0.00		\$0.0
)	Fees	\$180,021.76	0.00		\$0.0
						;	Allowance	\$1,000.00	0.00		\$0.0
							Custom Category1	\$1,660.00	0.00	÷	\$0.0
							Undefined	\$0.00	0.00	÷	\$0.0

The following screen shot is a sample report that includes the dependent cost item with billing work.

Reports		Se	ttings	: Prev	ious		*							
Job Pr	operties													
Found	ation Setup Data	Pr	int	Cost Ite	m Selection	Details	Layout	Header/F	ooter	L≥				
Resou	rces			nt a conti	guous range	of cost ite	ims:							
Re	source Register					or cost ite								
Re	source Changes		F	rom:	3.1				Ŧ					
Re	source Rate Details		Т	0:	3.1				~	Roll-up	o to CBS Level	-1		
Re	source Utilization													
Re	source Utilization (Excel)	0	Sel	ect cost i	items to print	t from the r	register belo	w:						
Re	source Currency Compariso		0 000								-	_		
Resou	rce Assemblies	Dra	ag colu	mns here	e to group			Find:	[Search For.	.]	Saved views:	Previous	View	•
Cost B	reakdown Structure		Ind	ude	CBS Position Co	de 🗄	Description		<u>1</u>	Optic			Unit of Measure	Currency
	reakdown Structure						Job Manag	ement & Ec	uipment	JOB	MANAGEMENT & EC	DUIPMENT	Lump Sum	U.S. Dollar
Pay It	em & Proposal		0	- H			General Ex				RAL EXPENSE		Lump Sum	U.S. Dollar
Billing I	Rate Reports	→		I			Direct Cost	Add-On		DIRE	CT COST ADD-ON		Lump Sum	U.S. Dollar
Bill	ing Rate Summary			П	1		Mobilization	1		641	0100		Lump Sum	U.S. Dollar
	timate Details with Billing Ra	t		H	2		Clearing &	Grubbina		201	0102		Acre	U.S. Dollar
J	voin Analysis ob Code: Copy of Trainin scription: Training Job - N		Count		12924									
BS osition	Resource	Description		,					lling Unitof Rate Measure		1	Utilization Count		Billin Total Amou
									include			o oversi		1010171100
10	Dependent	Direct Cos	t Add-O	n										\$84,307
						TO	TAL							\$84,307
	1	TOTAL - D	irect Co	ost Add-On										\$84,307
RAND TOTAL														\$84,307

15.11.3 ADDITIONAL MARKUP IN THE PBS FORM

Depending how the Resource Billing Rates are determined, to accommodate the Owner, a fee can be applied using the PBS form.

The screen shot is a sample markup for Direct Costs in the PBS form.

	Breakdown	Structure (0	BS) Register	Price Breakdown	Structure Marke	ip Cost Item R	ecord @						
S	Position Code	: Descriptio	n:								Т	otal Co	ost: Alter
		Direct Cos	t Markup								\$62	20,483	.29 BASE
jes	cription De	pendency	Allocation					В	Silling Breakdown			•	
aç	columns here	to group			ed vie	vs: Previous Vi	iew •	Co	ost Category	Subject Billing Amount	Rate		Billing Amount
	Description			(Forecast)	Account Code	Cost Curve	Total Billing Amount	-	Total	\$5,813,390.7	7 10.00		\$581,339.08
	Direct Cost Ma	arkup		\$620,483.29		Linear	\$581,339.08	Π.	> Labor	\$838,467.8	3 10.00		\$83,846.78
								μ.	 Owned Equipment 	\$1,024,251.6	5 10.00		\$102,425.17
									 Rented Equipment 	\$7,279.0	0 10.00		\$727.90
									> Supplies	\$26,971.8	7 10.00		\$2,697.19
									 Materials 	\$3,624,066.5	4 10.00		\$362,406.65
									> Subcontract	\$107,115.0	0 10.00		\$10,711.50
					5				> Fees	\$182,578.8	7 10.00		\$18,257.89
									 Allowance 	\$1,000.0	0 10.00		\$100.00
									Custom Category 1	\$1,660.0	0 10.00	÷	\$166.00
									Custom Category1 Undefined	\$1,660.0		÷ ;	\$166.00 \$0.00

The following screen shot is of a sample report that includes that fee total of the additional markup.

CBS Position Code	Description	Forecast Unit of (T/O) Quantity Measure	Labor	Owned Equipment	Rented Equipment	Materiale	Supplies	Subcontract	Fees	Allowance	Custom Category1	Billing Unit Rate	Total Billing Amoun
3.1	Excavation	50,000.00 Cubic Yard	0.88 43,785.03	3.02 150,819.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.89	194,604.6
Direct Total			43,785.03	150,819.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00		194,604
	Direct Cost Markup		83,845.78	102,425.17	727.90	352,405.65	2,697.19	10,711.50	18,257.89	100.00	165.00		581,339.0
Feee Total			83,846.78	102,425.17	727.90	362,406.65	2,697.19	10,711.50	18,257.89	100.00	166.00		581,339

LESSON 15 REVIEW

- 1. In what form do you apply sub totals, fixed final price, and rounding precision?
 - a. Pay Item & Proposal Register
 - b. Cost Breakdown Structure Register
 - C. Job Properties
 - d. Price Breakdown Structure
- 2. Where do you go to activate an Alternate scenario?
 - a. Customize section of the System tab
 - b. Initialize section of the Setup tab
 - c. Overhead and Profit section of the Estimate or Price tab
 - d. Alternates section of the Estimate or Price tab
- 3. Where do you go to set pay items to be based on billing rates?
 - a. Pay Item & Proposal Register
 - b. Cost Breakdown Structure Register
 - C. Job Properties
 - d. Foundation Setup Data

LESSON 15 SUMMARY

As a result of this lesson, you can:

- Use advanced pricing options including: alarm limits, subtotals, rounding precision, and Fixed Final Price
- Create and compare alternates for cost items and pay items
- Use Billing Rates

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LESSON 16 – BENCHMARKING

LESSON DURATION: 40 MINUTES

LESSON OBJECTIVES

After completing this lesson, you will be able to:

• Set up and use benchmarking to compare your job to past projects

16.1 BENCHMARKING OVERVIEW

Benchmarking is used to validate an estimate's cost and productivity values by comparing them to relevant historical data, specifically as-built and as-estimated information captured from past jobs in Estimate. Unit cost and unit man-hour benchmark data points are displayed graphically in relation to the current estimate.

NOTE When using the Estimate in the Cloud benchmarking feature, it requires the installation of Connected Analytics.

16.1.1 BENCHMARKING MASTER JOB PROPERTIES FORM

The **Master Job Properties - Benchmarking** form is used to establish the historical data to be used for benchmarking the current job, and to define the default benchmark graph display and calculations.

The Master Job Properties - Benchmarking form includes:

- Historical Data Source Select As-Estimated and As-Built data from the Data Warehouse.
- Default Cost Item Matching Criteria, Default Account Code Matching Criteria and Default Jobs Filter Define which cost items, account codes and jobs should be included.
- Benchmark Graph display Options Define the data to be represented on both the X-Axis and the Y-Axis of the graph.
- Calculate "Average" as- Define the calculation method as either Average or Weighted Avg (weighted by current Qty).
- Benchmark Select a benchmark value of Cost per Unit, Man-Hours / Unit, or Units / Man-Hour.
- Flag an item's variance relative to the benchmark data when Define the breakpoints for low, medium and high variance ranges.
- Don't benchmark items with fewer than <number> historical data points Designate the minimum number of data points needed to benchmark an item.
- NOTE The data in the Master Job Properties Benchmarking form is automatically copied to any newly created jobs. If all of the jobs that you create in Estimate will use the same rules, defining the data in the Master Job Properties form will save time when you create new job folders in Estimate.

In addition to the primary Forecast (T/O) Quantity and Unit of Measure on each cost item, Secondary Quantity and Secondary Unit fields in the Cost Item Record can be used to capture a meaningful, alternative quantity and unit on which to analyze As-estimated data.

You can establish the historical data to be used for benchmarking the current job, define the default benchmark graph display, and define high, low and medium variance ranges on the **Job Properties** - **Benchmarking** form.

STEP BY STEP – BENCHMARKING MASTER JOB PROPERTIES FORM

- 1. From the Backstage View, select **Library** from the left pane navigation.
- From the Ribbon, select the Setup tab. Under the section Master Initialization, select Job Properties. The Job Properties register opens.
- 3. On the Job Properties form, select the **Benchmarking** tab.
- 4. The **Historical Data Source** defaults to Data Warehouse. Select the historical data to use: **As-Estimated**, **As-Built**, or both.
- 5. To define **Default Cost Item Matching Criteria**, click the **Edit** button and define your criteria for matching cost items. You can select one or many fields and relate them using AND/OR logic.
- 6. To define **Default Account Code Matching Criteria**, click the **Edit** button and define your criteria for matching cost items. You can select one or many fields and relate them using AND/OR logic.

NOTE A matching benchmark data point will be excluded if its unit of measure type (e.g., area, length, etc.) is different than the unit of measure type of the matching item in the current estimate.

- 7. To filter the jobs to include, click the Edit button on the **Default Jobs Filter** and define your job filtering criteria.
- 8. Choose your Benchmark Graph Display Options:
 - Select the data to be represented on the X-Axis:
 - Date
 - Item Quantity (Primary)
 - Item Quantity (Secondary)
 - Ratio (Primary / Secondary)
 - Ratio (Secondary / Primary)

- Select the data to be represented on the Y-Axis:
 - \$ / Primary Unit
 - Man-Hrs / Primary Unit
 - Primary Units / Man-hr
 - \$ / Secondary Unit
 - Man-Hrs / Secondary Unit
 - Secondary Units / Man-hr
- 9. Define your average calculation method as either **Average** or **Weighted Avg (weighted by current Qty)**.
- 10. Define the **Benchmark** values that will be calculated from the historical data set by selecting **Cost per Unit**, **Man-Hours / Unit** and **Units / Man-Hour**.
- 11. Define the variance ranges to be used for flagging an item relative to the benchmark data:
 - To flag an item's variance from the average, select Its % variance from the average exceeds and choose the Low, Medium, and High percentages to flag (values are incremented by 1%).
 - To flag an item's standard deviations from the norm, select **Its standard deviations** from the norm (using SSTDEVP method) exceeds and choose the Low, Medium and High values to flag (values are incremented by .1).
- 12. To customize the display colors for the **Low**, **Medium** and **High** ranges, click on a color block and choose a different color.
- 13. To set a minimum number of benchmark data points required for an item to be benchmarked, select a number in the **Don't benchmark items with fewer than historical data points** field.
 - NOTE: The data in the Master Job Properties form is automatically copied to any newly created jobs. If all of the jobs that you create in Estimate will use the same data, descriptive information and rules, defining the data in the Master Job Properties form will save time when you create new job folders in Estimate.

® 💾 🚳 _*							Library	- Estimate		
File Setup Estimate Executi	on System									
✓ Setup Data ✓ Book C	Trench Shift Rate Calculator Rate	urce Is * Mai	uipment Resou Iterials Assemb	blies Assemblies	Standard Tables	User Ro	Control	Reports	5	
Master Initialization		Master F	Resources	Master A	ssemblies	Roles and	Permission:	s Report	S	
	Cost Basis Minority Setup	Fuel Cost	Job Tracking	Job Folder Tags	Competitors	Pricing	Schedule	Cash Flow	Equipment Maintenance	Benchmarking
Default Cost Item Matching Criteria:	Data Warehouse Edit [Account Code] EQ Edit	۲ I		Source: m Matching Criteria Code Matching Cri		-		•		
Default Jobs Filter:	Edit ALL JOBS	1	Default Jobs Filt	er:	Edit	ALL JOB	S			
Benchmark Graph Display Options:	X-Axis: Item Quantity (Prima O Weighted Avg (weight Man-Hours / Unit			Y-Axis: Cost	Primary Unit			×		
Flag an item's variance relative to the bencl () Its % variance	hmark data when: from the average exceeds:		ledium High							
Don't benchmark items with fewer than 0	+ historical data points	1								

16.1.2 BENCHMARKING JOB PROPERTIES FORM

The Job Properties - Benchmarking form is used to establish the historical data to be used for benchmarking the job, and to define the default benchmark graph display and calculations.

The Job Properties - Benchmarking form includes:

- Historical Data Source Select As-Estimated and As-Built data from the Data Warehouse.
- Default Cost Item Matching Criteria, Default Account Code Matching Criteria and Default Jobs Filter Define which cost items and which jobs should be included.
- Benchmark Graph display Options Define the data to be represented on both the X-Axis and the Y-Axis of the graph.
- Calculate "Average" as- Define the calculation method as either Average or Weighted Avg (weighted by current Qty).
- Benchmark Select a benchmark value of Cost per Unit, Man-Hours / Unit, or Units / Man-Hour.
- Flag an item's variance relative to the benchmark data when Define the breakpoints for low, medium and high variance ranges.

 Don't benchmark items with fewer than <number> historical data points - Designate the minimum number of data points needed to benchmark an item.

STEP BY STEP - OPENING THE JOB PROPERTIES FORM

- 1. On the Ribbon, select the **Setup** tab.
- 2. Under the Initialize section, select the **Job Properties** drop down arrow.
- 3. On the drop down list, select **Benchmarking**.

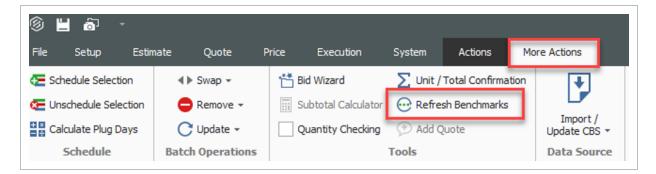
© 💾 🗟	-											Training	Job - Estin	mate	
File Setup	Estimat	te Quot	e Price	Execution	Syste	m									
Job Properties	Foundation Setup Data			d Resource	🖕 Labor 📑 Equipm	Resource	C	ast Item semblies	Standar Tables						
	Initia				Resourc		-		nblies	Reports					
Cost Breakdow	wn Structur	e (CBS) Reg	ister	Cost Item Reco	rd	Job Properties	5 0								
		over Sheet	Cost Basis	Minority Setup	Fuel Co	-	_	Job Fold	er Tags	Competitors	Pricing	Schedule	Cash Flo	w Equipment Maintenance	Benchmarking
As-Estimated						As-Built	-		-		-				-
Historical Dat	a Source:		Data Ware	house		Historical D	ata So	ource:		None			•		
Default Cost I	Item Matching	Criteria	Edit	[Description] EQU	A1	Default Cos	t Item	Matchin	o Criteria	Edit					
Derduit Cost 1	cent Procenting	g cinteria.	Colum	[Description] EQU	~ L	Derdale Cos			g encena	curent					
Default Accou	nt Code Mate	ching Criteria	: Edit	[Account Code] EC	QUAL	Default Acc	ount C	ode Mat	ching Crit	eria: Edit					
Default Jobs F	Filter:		Edit	ALL JOBS		Default Job	s Filte	r:		Edit	ALL JOB	s			
Benchmark Gra	ph Display O	ptions:	X-Axis: I	tem Quantity (Prima	ry)		•	Y-Axi	s: Cost/	Primary Unit			•		
Calculate "Aver	age" as: 🔘) Average	() We	ighted Avg (weigh	ted by cu	rrent Qty)									
Benchmark:	V	Cost per Un	nit 🔽 Mar	n-Hours / Unit	Units	/ Man-Hour									
Flag an item's v	variance relat	ive to the be	nchmark data	when:	Low	Medium	High								
	۲	Its % varian	ce from the a	verage exceeds:	0	5 💠 10	* *]							
	0	Its standard (using STDE)	deviations fr VP method) e	om the norm xceeds:	0.0 🗘	0.5 🔹 1.0	¢]							
Don't benchma	rk items with	fewer than	0 🌩 hi	storical data point	5										

16.1.3 BENCHMARKING GRAPH

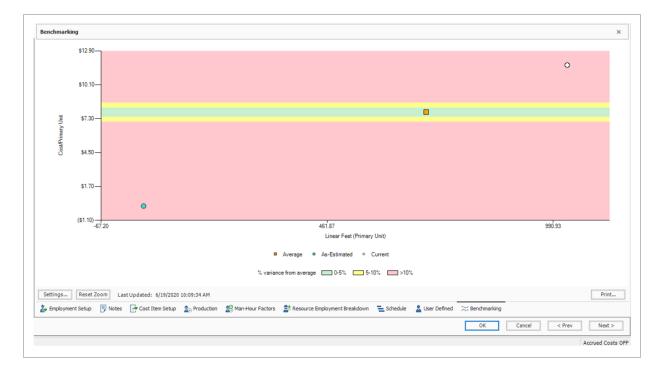
The defaults for the benchmarking graph are defined on the **Job Properties - Benchmarking** form, but on the Cost Item Record - Benchmarking form you have the ability to override the default criteria in order to expand or contract the amount of historical data being used to calculate benchmark values for a specific cost item. This way, you can filter the historical data sources to only the past jobs that are relevant to that cost item. Before starting this procedure, make sure to set up your default benchmarking options, as outlined in the Benchmarking Options topic.

STEP BY STEP – BENCHMARKING GRAPH

- 1. From the Ribbon, select the Estimate tab. Under Breakdown Structures, select **Cost Breakdown Structure (CBS)**.
- 2. On the Cost Breakdown Structure (CBS) Register, select the **More Actions** tab. Under the Tools section, select **Refresh Benchmarks**.



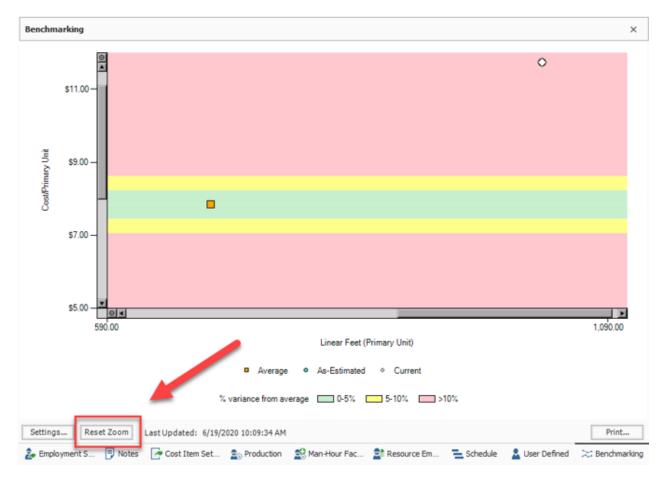
- 3. The Refresh Benchmarks dialog shows the Last refresh date and the number of Jobs matching filter criteria.
 - If the number of matching jobs is too large or too small, return to step 1 and expand or contract your filtering options.
 - If the number of matching jobs is acceptable, click Refresh Now to proceed.
- 4. Open the Cost Item Record of any preferred cost item.
- 5. Click on the **Benchmarking** default data block located in the lower right portion of the Cost Item Record.
- 6. The benchmarking graph shows the historical benchmark values for this cost item, along with the Current value, the Average value, and the variance ranges represented by each color. This information is calculated and displayed as specified on the Job Properties Benchmarking form.



- 7. To refine the values that contribute to this cost item's graph, click the Settings button to display the Settings dialog:
 - To override the job filter for this cost item, click the Edit button in the Override Jobs Filter field and define the filter to use for benchmarking this cost item.
 - To override the Display Options for this cost item, select the desired values from the X-Axis and Y-Axis drop-down boxes.
 - To override the list of jobs that contribute to the Included Historical Data for this cost item, use the Auto include all matching data points toggle to include all or exclude all, and select the individual Include check boxes for the jobs you want to include.
 - When you have completed your customizations for this cost item's benchmarking, click OK to save your changes and return to the Cost Item Record - Benchmarking form.

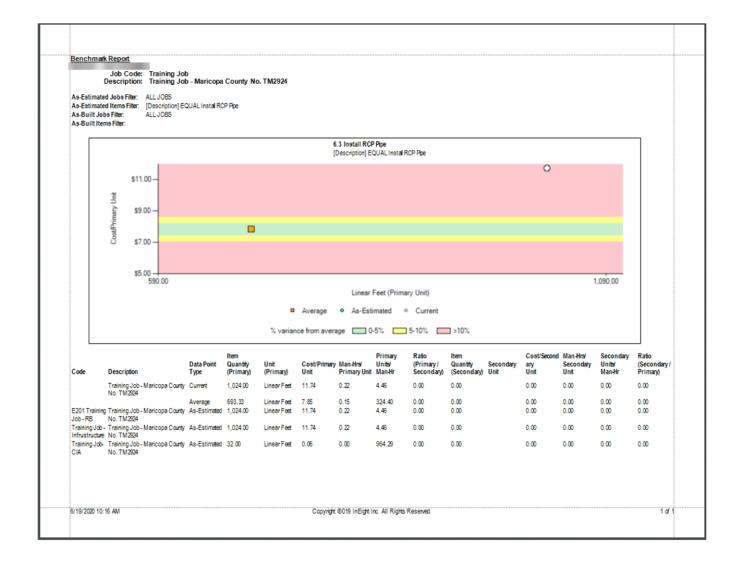
Override Jobs Filter: Edit NO OVERRIDE Lens Filter: [Description]EQUAL Install RCP Ppe Immersiter: Display Options: X-Asis: tem Quantity (Primary) Y Asis: Code In. Description Ind Induced Historical Data: Ind Ind		ription:		_	_	_		_		_	_	Forecast (T/O) Qty: Unit of Measure: Unit
Bhefited Jobs Filter: ALL JOBS Override Jobs Filter: Edf NO OVERRIDE Override Jobs Filter: Edf NO OVERRIDE Description: X-Asis: Item Filter: [Description]EQUAL Install RCP Pope Bisplay Options: X-Asis: Item Code Ind Induced Historical Data: Asis: Item Splay Ind Indiced Filter: Indice Indiced	-		Cost Ite	m '6.3' Ben) Job			- 🗆	×	
green 3db Propertie) ALL JOBS Override Jobs Pilter: Bell NO OVERRIDE Override Jobs Pilter: Bell Override Jobs Pilter: Bell NO OVERRIDE Display Optione: Display Optione: Override Jobs Pilter: Override Jobs Pilter: <td>As-E</td> <td>Estimated</td> <td></td> <td></td> <td>Ast</td> <td>Built</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1,024.00 Linear Feet ~</td>	As-E	Estimated			Ast	Built						1,024.00 Linear Feet ~
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8. To zoom in on a portion of the graph, click and drag across the portion of the graph that you want to enlarge. To view the entire graph again, click Reset Zoom.



9. To print a Benchmark Report, click the Print button, change any options as necessary on the Benchmark Report dialog, and click Run.

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16.1.4 ACCOUNT CODE UTILIZATION REGISTER

The Account Code Utilization Register is used to roll estimate line items into an account code hierarchy, with the ability to control which cost items contribute quantity to their parent, in order to benchmark against historical projects in a way that is consistent across projects.

The Account Code Utilization Register is similar to the **Cost Breakdown Structure (CBS)** and the **Master Cost Breakdown Structure (CBS)**, with the following exceptions:

• The rows in the Account Code Utilization Register represent Account Codes rather than individual Cost Items, so the tree structure reflects the Account Code hierarchy rather than the CBS hierarchy.

- The detail rows in the Account Code Utilization Register reflect a terminal Account Code's assigned Cost Items.
- The terminal rows in the Account Code Utilization Register represent each utilized Account Code in the CBS.
- If the Account Code's **Auto-Quantity** setting is set to **Yes**, then the Quantity of the terminal row is equal to the Quantity (Primary or Secondary) of all the cost items in the CBS with that assigned Account Code, and the cost items in the CBS employing resources with that assigned Account Code, provided that they have the same Unit of Measure type as the Account Code.
- Detail rows for each terminal row represent the cost items assigned to the terminal Account Code, including cost items employing resources that are assigned to the terminal Account Code.
- The Account Code Utilization Register can be filtered to display only terminal items by clicking the drop down arrow on the Is Terminal column and selecting Checked.
- When an Account Code is assigned to an employed resource, the resource's total Cost/Mhrs are removed from the Account Code associated with the cost item and placed, instead, in the Account Code assigned to the employed resource.

The parent-child hierarchy for Account Codes is based on the **Account Code Hierarchy Separator**, which is located from the Backstage View **Settings** under the **Options** drop down labeled as **Account Code Settings**. The Hierarchy Separator defines the parent-child relationship within the Account Code structure.

The Account Code Utilization Register is used primarily for analysis, and most of the columns are readonly. Most of these columns originate on the Account Codes tab in the **Foundation Setup Data Register** and the **Master Foundation Setup Data Register**. Modifying an editable column on this form has the same effect as modifying the same field on the Account Codes tab of the Foundation Setup Data Register or on the Account Record. For further information, see **Creating Account Codes**.

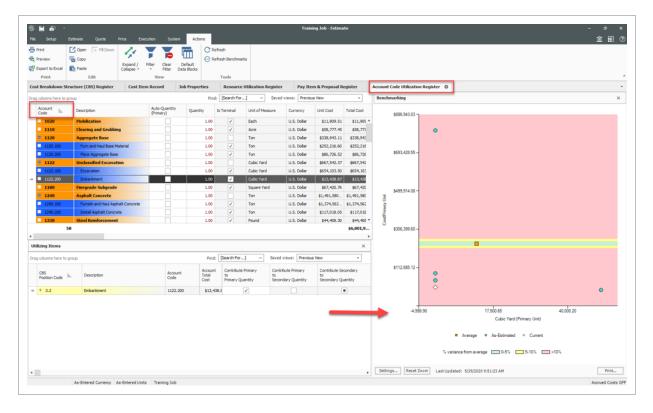
The Benchmarking portion of the form is similar to the **Benchmarking** data block on the Cost Item Record, with the following exceptions:

- The Item Matching criteria is always Account Code.
- Parent account codes will include all matching data points for their child account codes, based on the Hierarchy Separator.
- Account Code rows can be benchmarked at the terminal row level or at any superior row level in the Account Code Utilization Register, meaning that both current estimate values and benchmark values can be compared at any level since both include the values rolled up from their children.

16.1.4.1 OPENING THE ACCOUNT CODE UTILIZATION REGISTER

STEP BY STEP – OPENING THE ACCOUNT CODE UTILIZATION REGISTER

- 1. From the Backstage View, select **Library** from the left pane navigation.
- 2. From the Ribbon, select the **Estimate** tab.
- 3. Under the section Master Breakdown Structures, select **Account Code Utilization**. The Account Code Utilization Register opens.



EXERCISE 16.1 – BENCHMARKING SETUP

Your manager wants you to benchmark costs and man-hours against at least three past projects.

Help set up benchmarking accordingly. Be sure to:

- Use Default Account Code Matching Criteria
- Use Default Jobs Filter
- Benchmark Graph Display Options

Hints:

- The "Jobs matching filter criteria" indicates how many jobs it found a match for.
- A value of "0" means it didn't find a match and the learner would need to double check their benchmarking settings.

Congratulations, you have completed this exercise!

LESSON 16 REVIEW

- 1. Where do you set up benchmarking matching criteria and display options?
 - a. Foundation Setup Data
 - b. Job Properties
 - C. Cost Breakdown Structure Register
 - d. Resource Rate Register
- 2. How do you make sure benchmarking data is up to date in the CBS Register?
 - a. Update settings in the Job Properties > Benchmarking tab
 - b. Select Update Graph on the Cost Item Record
 - C. Save the job
 - d. Select Refresh Benchmarks from the More Actions menu in the CBS
- 3. How can you view the benchmarking graph for a cost item?
 - a. Select the Benchmarking tab in Job Properties
 - b. Select the Benchmarking saved view in the CBS register
 - C. Select the Benchmarking tab on a cost item record
 - d. Select the Benchmarking report from the Reports menu

LESSON 16 SUMMARY

As a result of this lesson, you can:

• Set up and use benchmarking to compare your job to past projects



LESSON 17 – CONFORM THE ESTIMATE

LESSON DURATION: 40 MINUTES

LESSON OBJECTIVES

After completing this lesson, you will be able to:

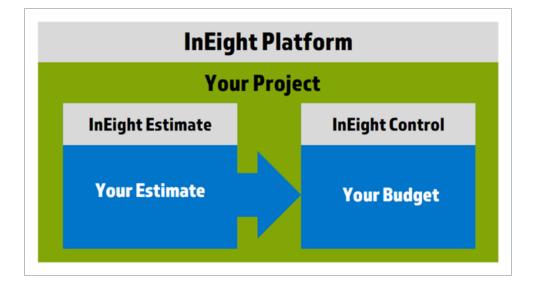
- Align Estimate data with Platform data in preparation for publishing the estimate
- Conform the estimate to publish successfully
- Publish the estimate to a project in Platform
- Review to confirm successful publishing of the estimate

17.1 CONFORM THE ESTIMATE

The project estimate is often used as a starting point for the project budget. The estimate needs to be conformed in preparation for project execution so there can be effective tracking, forecasting, and reporting.

When you create a job in InEight Estimate in the cloud, you connect it to a project in InEight Platform.

In Estimate, you can publish the conformed estimate to become the project budget in InEight Control.



To successfully publish the estimate for project execution, you must perform the following:

- Align the Estimate and Platform data.
- Conform the estimate.
- Publish the estimate to a project in Platform.
- Review the project to confirm successful publishing of the estimate.

For more information, download the following documents from the <u>Integrated Documents</u> page:

Estimate Integration to Cloud Platform and Control for more detailed information about Estimate integration to Platform.

<u>Prepping Control Budget for Various Interfaces</u> for detailed information about the preparation of a project budget for implementation in Control.

17.2 ALIGN ESTIMATE AND PLATFORM DATA

You can align the Estimate data with Platform data to prepare the job in Estimate for publishing. Alignment starts with creating a project in Platform, and then matching your estimate. For more information about creating a project in Platform, see <u>Project initiation</u>.

CREATE A PLATFORM PROJECT

- In Platform > Main menu > All projects & organizations, click the Add project icon to create a new project.
- 2. Enter the Project ID and External Project ID.
- 3. Enter a project name in the Name field. The name does not have to match the ID, or the project name in Estimate.
- 4. In Status, select **New** to execute the Publish Estimate to a New Project status. The budget becomes initialized when the status is set to New.
- 5. In Phase, select **Execution**.
- 6. Select an organization from the list.

Next, create the estimate (job) in Estimate. You must select the Platform project to associate the estimate to. Doing this updates the estimate with certain project details, such as notes, and location.

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After you match the Platform project and the job in Estimate, you must check that the following data matches between the two applications:

• Currency must match the project base currency for the project in Platform. Make sure the currency symbol descriptions match in both Estimate and Control. For example, AUS dollars in

Estimate must be AUS dollars in Control.

- Units of Measure names must exist in both Estimate and Platform.
- Account Code structure must be finalized to match Platform. Account codes are optional.
- Tags and User-defined fields from Estimate need to be configured at the organization or project level in Platform.
- Cost Categories.
- Pay Item related fields.

The following are key considerations when conforming the estimate:

- Summarizing estimate details into logical work groupings, such as combining costs, quantities, and work hours for work activities and resources.
- Breaking estimate structure into more detail (e.g., to track by area).
- Aligning the estimate data with an Account Code Structure.
- Conforming major materials from resources to cost items for better tracking.
- Moving, splitting, and combining cost items.
- Converting dependent cost items and cost item assemblies into standard cost items and resources.
- Addressing suspended cost items. Suspended cost items do not go over to Control.
- Converting ad-hoc resources to a library resource or a plug value against a cost item.
- Addressing productivity factors by updating in Estimate to reflect the actual budgeted man-hours that are required for the cost item in Control.
- Adding man-hours by creating a labor resource in Estimate or importing man-hours directly to Control (when necessary).
- Establishing tag values imported from Estimate in Platform at the organization level.
- Configuring key pay item fields to match Control.

For more detailed information about Estimate integration to Platform, see **Estimate Integration to Cloud Platform and Control**.

17.2.1 CONVERT DEPENDENT COST ITEM TO PLUG COST ITEM

You must convert a dependent cost item to plug cost item as part of conforming the estimate. You can do this in the CBS register of the estimate. For more information about dependent cost items, see

Dependent cost items.

CONVERT DEPENDENT COST ITEM TO PLUG COST ITEM

- 1. Create a new cost item at the bottom of the CBS, and then enter a description for the dependent cost item you're replacing.
- 2. Select a unit of measure.
- 3. Open both the dependent cost item and new cost item.
- 4. Change the new cost item's Cost Source to Plug.
- 5. Review the unit and total values in the dependent cost item's cost category fields.
- 6. Copy or enter those values into the same cost category fields of the new cost item's Plug tab.
- NOTE Make sure contingency is represented on its own cost item. Contingency should not be directly included in cost items where cost performance is required against budgeted rates.

17.3 CONFORMING USING OTHER BREAKDOWN STRUCTURES

It is more efficient to track progress on your projects by organizing your budget in a more consolidated and potentially different breakdown structure than how the job was estimated. Using account codes, tag field values, or a work breakdown structure are common ways of viewing the estimate in an alternate way. Most often one of these alternate views corresponds to the best way to structure the budget to track the work.

17.3.1 CONFORMING BY ACCOUNT CODES

You can organize your budget by conforming your Estimate CBS structure to match a standard account code structure.

17.3.2 STEPS

CONFORM YOUR ESTIMATE USING AN ACCOUNT CODE STRUCTURE

- 1. Open a copy of the job in Estimate job that used for reference.
- 2. In the CBS register, group by Account Code.
- 3. Create a new job in Estimate, where items from the original estimate will be copied to.
 - Assure that all job properties and settings match the original estimate file.
 - Create any initial structure that is needed to organize your cost structure, such as General Conditions, Direct Labor, Material and Subcontracts.
- 4. In the job with the grouped account codes, expand the first account code.
 - When there is only one cost item, copy and paste it into the applicable location in the conformance project.
 - For account codes with multiple cost items, add a parent cost item to the conformance project, and then copy and paste the cost items from the original estimate as subordinates.

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NOTE It's not required to have the account codes in Estimate, but using account codes in Estimate can help to ensure accurate benchmarking functionality.

17.4 PUBLISH TO PLATFORM PROJECT

When you are ready to publish the estimate, confirm that the project in Platform has the following settings:

- Phase Execution
- Status New

Project settings	Cancel	Save
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17.4.1 PUBLISH ESTIMATE TO A NEW PROJECT

To initialize a new control budget, publish the job in Estimate to become the project budget in Control, click the **Publish Estimate to a New Project** option in the Integrations tab.

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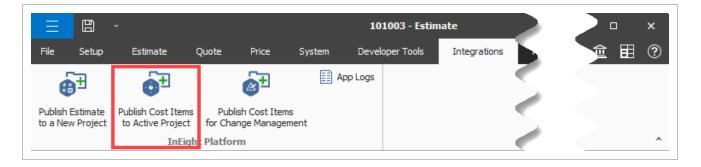
When you publish an estimate to a new project, all cost items, pay items, and change orders that may already exist in the project are removed.

When the integration process is successful, you receive an Import Success email.

17.4.2 PUBLISH COST ITEMS TO AN ACTIVE PROJECT

After an estimate has been published and progress is being tracked against a budget, it's not uncommon for new scope to be added to a project as the work progresses.

You can estimate the cost of this new scope using Estimate, and then publish the newly estimated costs to a project in execution by using the **Publish Cost Items to Active Project** option.



NOTE Prior to publishing the cost items, change the status of the Platform project to Active.

17.4.3 UNSUCCESSFUL IMPORTS

When there are errors during the import, the import is unsuccessful. An InEight Notification email is sent to you with a link to view the list of errors. Click the link shown under Summary to view the list of errors. You can also access the App Logs in Estimate > Integrations > **App Logs**.

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<u>Details</u>	Warn	2024/09/04 11:47:12 AM	Core	DynamicEntityRefresh	The Entity Refresh Req				cffff563-07b6-4a40-88ad-2155aa743
<u>Details</u>	Warn	2024/09/04 11:47:12 AM	Core	DynamicEntityRefresh	The Entity Refresh Req				cffff563-07b6-4a40-88ad-2155aa743
Details	Warn	2024/09/04 11:47:12 AM	Core	DynamicEntityRefresh	The Entity Refresh Req				cffff563-07b6-4a40-88ad-2155aa743
Details	Warn	2024/09/04 11:47:08 AM	Core	DynamicEntityRefresh	Initiating the EntityRefr				cffff563-07b6-4a40-88ad-2155aa743
Details	Warn	2024/09/04 11:47:08 AM	Core	DynamicEntityRefresh	Initiating the EntityRefr				cffff563-07b6-4a40-88ad-2155aa743
Details	Warn	2024/09/04 11:47:07 AM	Core	DynamicEntityRefresh	Initiating the EntityRefr				cffff563-07b6-4a40-88ad-2155aa743
Details	Error	2024/09/04 11:43:33 AM	Control	SchedulerWorker.Sche	Failed to initiate Proce	The added or subtracted value results in	ArgumentOutOfRangeException		097cc3fa-ccbf-4b0f-b6c7-1816ce121f
Details	Warn	2024/09/04 11:41:17 AM	Core	InEight.Core.Services	Imported 0 of 1 Accou				321ed968-e41e-4dc7-a711-cfb72df7d
etails	Warn	2024/09/04 11:41:17 AM	Core	InEight.Core.Services	Ignoring AccountingLe				321ed968-e41e-4dc7-a711-cfb72df7d
Details	Error	2024/09/04 11:28:31 AM	Control	SchedulerWorker.Sche	Failed to initiate Proce	The added or subtracted value results in	ArgumentOutOfRangeException		3141f105-426d-4c08-969f-f6799e0b5

Examples of failed import causes are:

- When a resource has more than 11 characters in front of the decimal. Cloud Platform only accepts 11 numeric character places before the decimal, and 11 numeric character places after the decimal.
- An account code assigned in Estimate that is not in the corporate list in project suite. The full import might fail because there is nothing to roll up into the account code.

NOTE To access the app logs, you must have the DevOps Admin role.

After resolving errors, you can republish the estimate. Republishing the estimate also removes all cost items, pay items, and change orders that were imported previously.

17.5 REVIEW PUBLISHED DATA IN CONTROL

After a successful import, you can review the published data in Control. To review the data, go to Control > Workspaces > Audit Log > **Import history**. You must manually refresh the import history to see the newly updated import history data.

REVIEW PUBLISHED DATA IN CONTROL

- 1. In your project's homepage, navigate to Control > Workspaces > Audit Log tab.
- 2. Select Import history in the left pane.
- 3. Select the **Pending** status for the newly imported line item.
- 4. Select the cost items you want to keep in Control.
- 5. Select Import.

NOTE You can't add any cost items in the CBS or activate any syncs during the import process.

6. Go to the Import history to view the import in process.

An email is sent to you that informs you whether the import succeeds or fails .

LESSON 17 REVIEW

- 1. Where would you go to review account codes and units of measure in InEight Estimate?
 - a. Pay Item & Proposal Register
 - b. Price Breakdown Structure
 - C. Job Properties
 - d. Foundation Setup Data
- 2. Which of the following needs to be converted when conforming the estimate?
 - a. Labor resources
 - b. Ad-hoc resources
 - C. Equipment resources
 - d. Supply resources
- 3. What phase does the project in InEight Platform need to be changed to prior to publishing the estimate?
 - a. Initiation
 - b. Construction
 - C. Pre-execution
 - d. Execution

LESSON 17 SUMMARY

As a result of this lesson, you can:

- Align Estimate data with Platform data in preparation for publishing the estimate
- · Conform the Estimate to publish successfully
- Publish the Estimate to a project in Platform
- Review to confirm successful publishing of the estimate