

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:

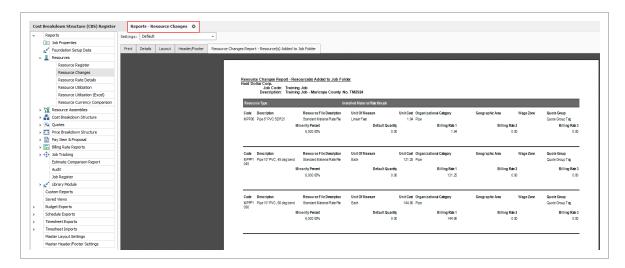
- Run reports from the Reports menu
- Create and run reports from register forms

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

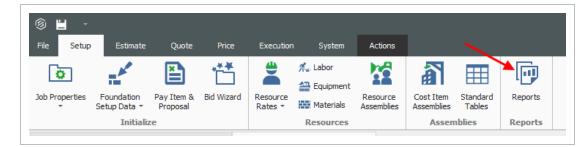
The following steps take you through a brief overview of the Reports menu and how you can access it.

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

TIP You can access the Reports menu from the Setup, Estimate, Quote, Price, and Execution tabs.

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	-	r
Print	Details	Layout	Header/Footer	
	t 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	Format.	
	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

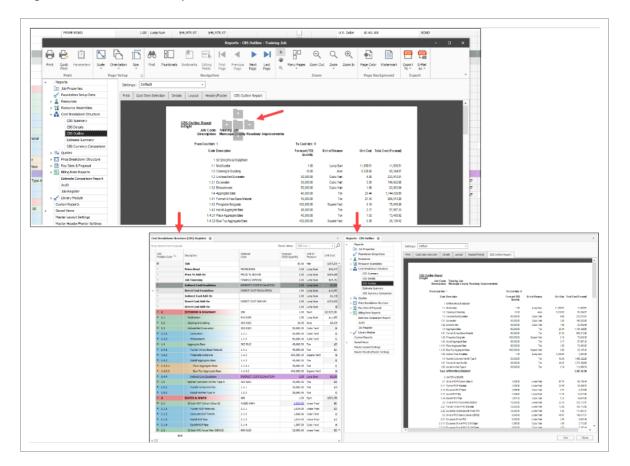
The Print tab includes three options for printing output: Print to Printer, Export to File, and Preview. Export file outputs include PDF, Excel, text, and more.

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.

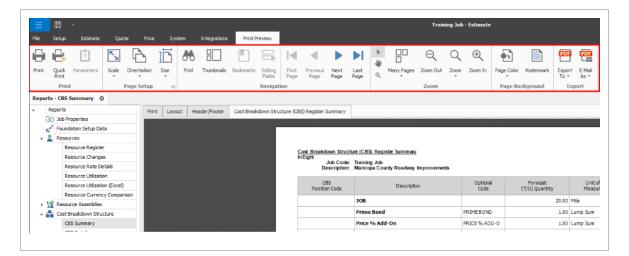
	Print Details Layout	Header/Footer Resour	ce Assembly Register Summ	ary								
3 Job Properties												
Foundation Setup Data												
> 🙎 Resources												
 Resource Assemblies 				mbly Register Summary								
Resource Assembly Register Resource Assembly Utilization			InEight Jo Desc	Codes Training Job ription: Maricopa County Roadway Im	provements							
Resource Assembly Currency Com												_
🗸 💼 Cost Breakdown Structure			Code	Description	Resource File Description	Quantity	Unit of Measure	Unit Cost	Total Cost	Currency	Organizational Category	Geogra
CBS Summer y			CCONC	Concrete Crew	Standard Assembly Fi	4.00	Hour	\$375.03	4777.00	U.S.Dollar	Concrete	
CBS Details												
CBS Outline			CGRADE	Grading Crew	Standard Assembly FI	1.00		\$234.73		U.S. Dollar	Earthwork	
Estimate Summary			CMAINT	Equipment Maintenance	Standard Assembly FI	1.00	Each	\$23.00	\$23.00	U.S.Dollar	Mechanic	
CBS Currency Comparison			CPAVE	Paving Crew	Standard Assembly Fil	1.00	Hour	\$476.24	\$476.24	U.S.Dollar	Asphalt	
> 强 Quotes			CPIPE	Pipe Crew	Standard Assembly Fil	1.00	Hour	\$343.54	\$343.54	U.S.Dollar	Pipe	
Price Breakdown Structure			CPIPEM	Pipe Fitting Assembly (with material)	Standard Assembly Fil	1.00	Each	\$410.82	\$410.82	U.S.Dollar	Pipe	
v 🖹 Pay Item & Proposal			CSCRAP	Scraper Crew	Standard Assembly FI	1.00	Hour	\$1,111.21	\$1,111,21	U.S.Dollar	Earthwork	
Standard Proposal DOT Proposal			CTRUCK	Truck Excavate-Load-Haul Crev	Standard Assembly Fi		Hour	\$618.72			Earthwork	
										U.S.Dollar		
Pay Item Summary Pay Item Currency Comparison			CIWELD	Welding Crew	Standard Assembly N	1.00		\$248.64		U.S.Dollar	Welder	
Pay Item Price Dreakdown			MASPH	Asphalt Material Assembly (with yiel	Standard Assembly Fil	1.00	Ton	\$29.45	\$29,45	U.S.Dollar	Asphalt	
Biling Rate Reports			MEORM	Concrete Forming Assembly	Standard Assembly Fil	1.00	Square Feet	\$28.88	\$28.88	U.S.Dollar	Concrete	
Estimate Comparison Report			OD8	DozerD8-Operated	Standard Assembly Fi	1.00	Hour	\$204.22	\$204.22	U.S. Dollar	Earthwork	
Audit			OGRAD14G	Grader 14G - Operated	Standard Assembly Fil	1.00	Hour	\$90.82	\$90,82	U.S. Dollar	Earthwork	
Job Register			OSCRAP623	Scraper 623 - Operated	Standard Assembly FI	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 h	iere to group							Saved view	own: CBS view 1		20						
CBS Position C	ode 🖦 Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Subject Cost	Subject Cost Rate	WBS: CEAS (Civil Engineering Account Co System) Description	ode Resource As Quantity		burs Duration						
	308	20.00) Mile	\$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	U 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		D Luno Sun	\$2,000.00	\$2,000.00	\$115,957.12	1.7	LABOR INCREASE									
	Direct Cost Escalation		Lump Sum	\$10,957.12	\$10,957.12			LABOR INCREASE									
	Indirect Cost Add-On		Ump Sum	\$2,319.14	62,319,14	\$115,957,12	20	LABOR SETUP OVERHEAD									
	Direct Cost Add-On		Ump Sum	\$105,000.0		ve Current View		LABOR SETUP OVERHEAD									
+	Direct Cost Add-On		Lump Sum		lype a name for the proups, and column												
□ 1	SITEWORK & ROADWAY		0 Each	\$2,927,301	ame so that you cr	in recall them later	while in this	PAVEMENT WORK		0.00							
+ 1.1	Mobilization		D Lump Sum	\$11,509.2	eyece.			MOBILIZATION		0.00							
+ 1.2	Clearing & Grubbing		Arre		/iew name: RSSN			CLEARING		0.00							
+ 131	Unclassified Excavation Excavation		Cubic Yard Cubic Yard	\$4.1	Save as Locked (COMMON EXCAVATION COMMON EXCAVATION		0.00							
+ 1.3.2			Cubic Yard	\$1.0	of the report of	ew in the Saved Vi control	eva section	EMBANKMENT		0.00							
E 1.4	Aggregate Base	45,000.00		\$25.		OK	Cancel	UNTREATED BASE		0.00							
+ 141		45.000.00		\$21.54				BUY MATERIAL		0.00							
+ 142	Priedziede Subdrade	Reports - CBS view 1 0 ~ Reports 1 Jub Properties * Foundation Setu ~ Resources Resources	p Data	Settings: Print C		out Header,Foo	* Cost Break	iown Structure (CBS) Register C	CBS view 1								
+ 142	Pregrade Subgrade	Reports Sob Properties Sob Properties Sob Properties Sob Properties Resources Resource Resource Chi Resource Lti	p Data gister anges te Details lizaton			out Header,Foo		Cost Breakdown Structure (C InEight Job Codes Train	1951 Register CBS view			_			_	_	
+ 142	Prind side Subg ook	Reports Sob Properties Sob Properties Sob Properties Sob Resources Resources Re Resource Re Re Resource Re Re Resource Re Re Resource Re Re	p Data gister angeo te Details lization lization (Excel) mency Comparis	Print		aut Header/Foo		Cost Breakdown Structure (C InEight Job Code: Train Description: Mari	:BSI Register CBS view			_					
+ 142	Prieziski Suziski		p Data gister anges te Details lization lization (Excel) rrency Comparise biles	Print		out Header/Foo		Cost Breakdown Structure (C InEight Job Codes Train	1951 Register CBS view	/ Improvemen	Optic	nai c	Porecast (7/0) Quantity	Unit of Measure	Unit Cost	Total Cest (Forecast)	Subje
+ 142	Prezisile Suzzisle	✓ Raports Construction	p Data gister angeo te Details lization (Excel) mency Compariso blea Sinuchure	Print		out Header/Foo		Cost Breakdown Structure (C InEight Job Codes Train Descriptions Maris	1991 Register CBS view ning Job isope County Roadway Descriptio	/ Improvemen		ndi t	Porecast (7/0) Quantity 20.10	Measure	Unit Cest \$307,635.45	Total Cest (Forecast) \$6,152,713.07	Subje
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+ 142	Prezisek Subgrade	■ Bagenit ■ Bagenit ■ Bagenit ■ Samonis ■ Samonis	p Data geter anppes le Detals leadon (Excel) mency Comparise bles Situcture cool situcture cool rison Report	n Rege		urt Heador, Foo		Carl Developer Stream 1 Description Description Pastion Code Person Person Person Description Person Description Person Description Desc	BBL Rewinker CBS view mrg. Job togo Courry Roadway Description is & Add-On Financing rect Cost Esculation rect Cost Add-On et Cost Add-On et Cost Add-On et Cost Add-On et Cost Add-On	y Improvemen	PRIMEBOND RAMEBOND PRICE % ADD-ON INGRECT COST ESC DIRECT COST ESC DIRECT COST ADD DIRECT COST ADD DIRECT COST ADD	CALATION NUATION	(7/0) Quentity 20.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Measure Mile Lump Sam Lump Sam Lump Sam Lump Sam Lump Sam Lump Sam Lump Sam Each	\$307,635.65 \$46,075.57 \$294,080.10 \$24,763.92 \$2,000.00 \$10,957.12 \$2,319.14 \$105,000.00 \$0.00 \$0.00	(Forecas) \$6,152,713.07 \$46,575.57 \$294,686.10 \$24,753.92 \$2,000.00 \$10,857.12 \$2,315.14 \$105,600.00 \$1,057.12 \$2,315.14	\$1 \$1
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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.

Rep	orts	- CBS view 1 🛛					
¥	Re	ports		Previous			1
	6	Job Properties	Settings:	Previous		•	
	2	Foundation Setup Data	Print	Grid Options	Layout	Header/Footer	
>	2	Resources	Philit		Layout	neader/r ooter	
>	2	Resource Assemblies	Settings:	Default	1		•
¥	÷	Cost Breakdown Structure					
		CBS Summary					
		CBS Details	Fields			^	Page Header
		CBS Outline	√ Rep	ort			[Date Printed]
		Estimate Summary					
		CBS Currency Comparison	P	age #			
>		Quotes	P	ge # of Page	s #		
>	23	Price Breakdown Structure		ate Printed			
~		Pay Item & Proposal	· / ·	die Fillieu			
		Standard Proposal	י / ו	ime Printed			
		DOT Proposal	Ι/ ι	lser Name			Report Header (first page only)
		Pay Item Summary					[Report Title] [Company Name]
		Pay Item Currency Comparison		ersion			Job Code: [Job Code] Description: [Job Description]
		Pay Item Price Breakdown	F	eport Title			beschpton [505 beschpton]
>		Billing Rate Reports					
		Estimate Comparison Report	· ·	Company Name	:		
		Audit	I	mage			
		Job Register	v lob	Overview			Depart Franks (astrong ask)
>	n*	Library Module					Report Footer (last page only)
	Cu	istom Reports	1	ob Code			[Job Created by]
¥	Sa	ved Views	1	ob Description			
¥		Cost Breakdown Structure (CBS) R		1.5			
		CBS view 1	, I	ob Currency			
		Cost Source View - Less Unassi	1	ob Status			
		My view		ob Created by			
		My WBS View4		ob-created by			Page Footer
		My WBS View5	√ Job	Tags			- oge i ootei
		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.

Rep	orts	* Settings	Previous							
۵.	Job Properties	Seconga								
n**	Foundation Setup Data	Print	Grid Options	Layout	Header/Footer	Cost Break	lown Structure (CBS) Reg	ister CBS view 1		
> 🚊 I	Resources									
> 🐕 I	Resource Assemblies									
v 🖶 (Cost Breakdown Structure						6/16/2022			
	CBS Summary							CRO Desiste	CREwine	
	CBS Details						Cost Breakdown Struct InEight		CDS VIEW 1	
	CBS Outline						Job Code: Description:	Training Job Maricopa County	Roadway Improvements	
	Estimate Summary									
	CBS Currency Comparison						CBS		Description	Optiona
> 🙈 (Quotes						Position Code		Description	Code
> 🔼 🛙	Price Breakdown Structure							ЈОВ		
v 🗎 i	Pay Item & Proposal							Prime Bond		
	Standard Proposal									PRIMEBOND
	DOT Proposal							Price % Add-Or		PRICE % ADD-ON

9.1.3.3 REPORT LAYOUT SETTINGS

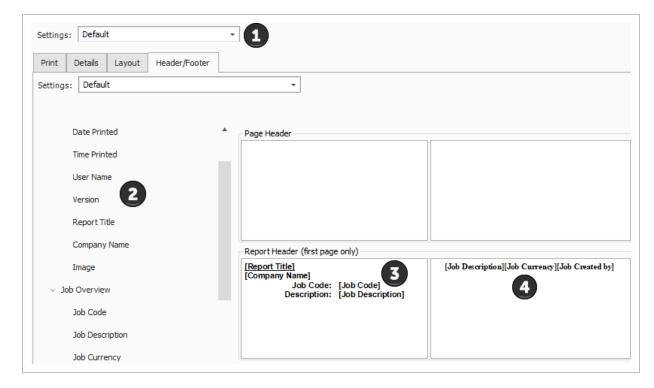
Many of the InEight Estimate adjustable reports include formatting options for the general layout of the report, located under the Layout tab of the report's output settings. Settings for the report include: Orientation, Margins, Font, and Number Format.

Print Details	Layout Header/Footer				
Orientation Portrait Landscape	etter	• •	Margins Left: 0.50	Top: 0.50 -	Header: 0.25 • Right: 0.50 •
Font			-Number Format	Bottom:	Footer:
Header Level 1: Detail Level 1:	Arial Narrow, 8, Bold Arial Narrow, 8, Regular	•••	Cost summary:	Decimal Precision	Significant Figures
Header Level 2: Detail Level 2:	Arial Narrow, 8, Bold Arial Narrow, 8, Regular	•••	Unit cost: Quantity: Percent:	2 2 2	
			Use currency	ds separator / symbol alues as blank	
			Currency: As-	Entered	•

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.

men une	r Sheet Cost Basis Minorit	y Setup Puel Cost 3xb	Folder Tegs Pr	ing Schedule	Cash Flow Equips	nent Heinlere	nce Benchmerking	Merreles																
entification																								
Location:	2-10 MP 100 to MP 120				itway and General Engl																			
City:				Ergineer: Do	enple Engineer Fred 3	ores.																		
County:	Maricopia			Owners Ha	ricapa Caurey	÷			Cost Ereskdaw							°	O # AC640						INF	і бнт 😥
Countrys	United States +	Job Properties 0						_	Desi	to Code: Train cription: Maria ecation: 1-10 T Hd Date: 1/6/2	ting Job Cope County P	Coactiveay Impo	ACTERS			-								ope County - Tom Si
States	Araona +	Overview Court Sheet	Cost Desk	Hinarity Setup	Puel Cost Job Polde	Tata Pit	ing Schedule Cechi	floo Calarter	B	id Date: 1/6/2	MP 100 to MP K020 3:00 PM	120	_	_									Owner: Maria	cope County ton Si
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	1/5/2020 +	Tep 3				Teg 15				STENOXKE NO	DADWAT	200	_	10.54	1	LAT.M. 1 M. 10				040 (304/467		1.0	73,239.04	300-00 1,000
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		Tep 5:				-				need: 200/9797	VORK LIRCADINAY)													
	Example Prime Contractor 1 -		Contract # 5532	-		Teg 18			Delay Property	ise: Arri	owni Codla	Cost Canic		Teg 1	Tagit	Tag 3	Таря	,	ing 7					
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res Estinate				-	-				Durbait Pay Rul	ine: Vitaj	ge Scale 1 135 (0)	Wage Beals 2		1 4 5 5 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Resource Mark Ris	Resource Pay His	Default Shift Anangemente	Vot Rut	Sec. 1	Shifts Cay	Days/Volk 5.0			
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			New Teg			Teg 23:												-	1000		10,040,440			

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/Foot	ter		
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	Tag 2	[Company Name] Job Code: [Job Code]		
🕞 Quotes	Tag 3	Job Code: [Job Code] Description: [Job Description]		
Price Breakdown Structure	Tag 4			
Pay Item & Proposal				
Biling 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	Tag 9	[Date Printed] [Time Printed]	Copyright @022 InEight Inc. All Rights Reserved.	[Page # of Pages #
Master Layout Settings	Tag 10	[Date Finited][Time Finited]	copyright wazz incigint inc. All highs hese yeu.	Fage + O Fages +
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 🔪 — 🗆 🗙
✓ Repo	2	
	Header/Footer w Logo	Name: Resource Rate Details option 1
Pi	Header/Footer w Logo - Lundy	
P	InEight Header/Footer w Logo	
	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	
		^
		<i>~</i>
ignature Block:		
		Include Signature Line
] Submitted By		Include Title Line
		✓ Include Date Line

9.1.3.6 SAVE OUTPUT SETTINGS

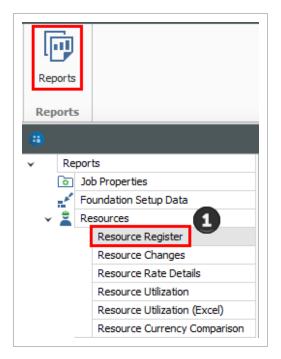
Once you've configured your settings for the report, you can save them as a custom version of that report.

✓ 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
- 🗸 🚢	4							
			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) Select cost i	items to print	from the re	aister 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 - Resource Utilization				
✓ Re	ports 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	- Fhit Setungs				
	Resource Utilization	Printer: \\HDAZPrintServ.harddollar.local\Main 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	Layout	Header/Foot	ter		
	t to Printe	r				
-Print S	Gettings —					
Prin	ter: \\HD	AZPrintServ	.harddollar.loc	al∦Main Office	Ch	ange
	ort to File					
-Expor	t Settings -					
File:						
		4				
Form	at: PDF F	ile	~	Options		
	-					
Prev	3					

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

Print Details	Layout Header/Footer	4			
Orientation Orientation Portrait Candscape	t (Letter, Landscape) tter	•	Margins Left: 0.50 🗣	Top: 0.50 🔹	Header: 0.25 • Right: 0.50 •
Font			- Number Format -	Bottom: 0.50	Footer: 0.25
Header Level 1: Detail Level 1: Header Level 2:	Arial Narrow, 8, Bold Arial Narrow, 8, Regular Arial Narrow, 8, Bold	•••	Cost summary: Unit cost:	Decimal Precision 2 2	Significant Figures
Detail Level 2:	Arial Narrow, 8, Regular		Quantity: Percent:	2 2	
			Use currency	-	Ŧ

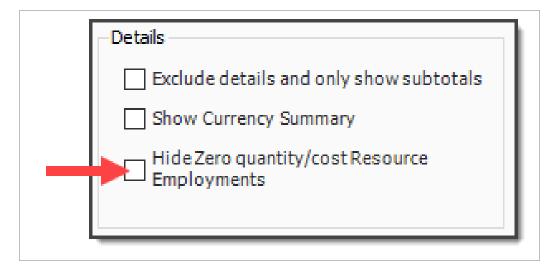
5. Move to the Header / Footer tab. Remove the default **Report Title** from the first page Header only and enter **Resource Utilization** in the center Report Header box as a title that will appear on the first page only.

Print	Details	Layout	Header/Fo	oter		
Settin	gs: Defau	ult		•		
# f	. 🗈 😵) 🔟	Insert Field 🝷			
Page I	leader					
Repor	t Header (fir	st page or	nly)	5		
[Repo	rt Title] pany Name] Job (Code: [J	nly) ob Code] ob Description		Reso	urce 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



- 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

TIP 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	

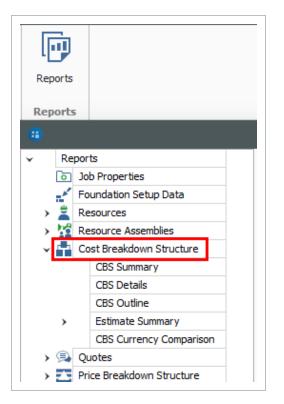
• For this example, you will not make any selections under Columns or Details

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	

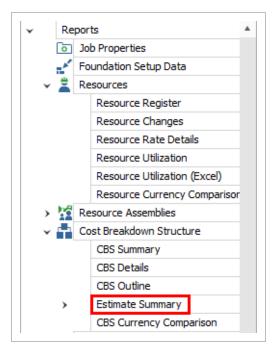
- This is just one of many ways to organize and adjust your report.
- 11. Click **Run** to run the report.
 - This report can be helpful for seeing your utilization hours, broken down by regular time and overtime hours
- 12. Click the red **X** to close this page and open the Construction Equipment page.
- 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/F	ooter
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 ~ Cost item production field 2: Man-Hours/UM ~	 Construction Equipment Rented Construction Equipment Installed Material
Cost item text field: Currency \checkmark	Installed Equipment Supplies
Employment text field: Currency ~	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		-	
#	. 🔯 🛞 🔤 Ind	sert Field 🔹	, L	

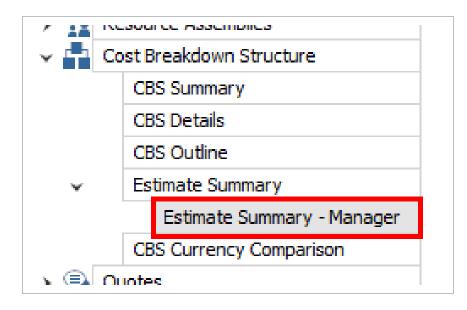
11. Select the **Save disk** icon to save the new settings.

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

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

Save New Settings	; –	- 🗆	×
Name:	Estimate Sumr	nary - Mana	iger
	OK	Ca	incel

• 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

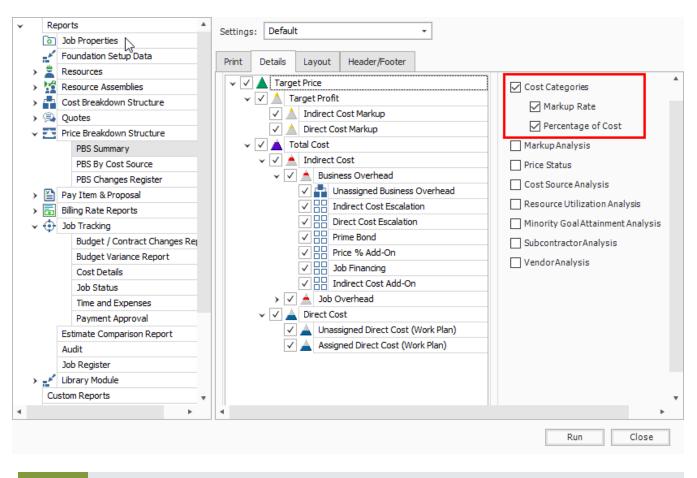
9.1.4.7 PBS SUMMARY

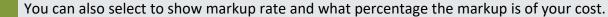
Under the Price Breakdown Structure Report node, the PBS Summary Report gives a good overview of how your price breaks down by cost category. This provides a high-level overview that is cost category driven, providing information based on the total value of the project.

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 💽 🕅	¶loy ⊂l v v Access0	ontrolExport.xlsx ⑦ No Label ~	aul Trippi 🎑		- 0	×
> 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 - \vdots \times \checkmark f_x Ribbon 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	_
> Constant of the second secon			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 0.0			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
413(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.

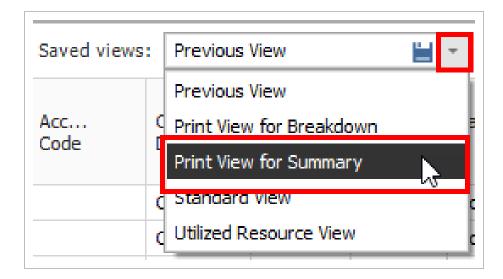
The following step by step example will walk you through creating a custom register report on resource utilization and saving it as a Saved View.

STEP BY STEP – CREATE A REGISTER REPORT

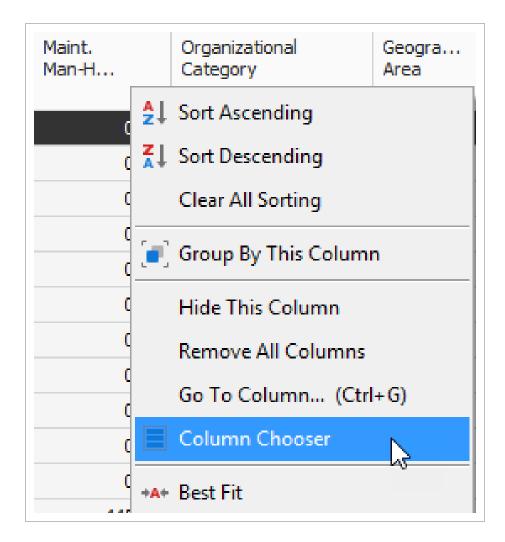
1. Open the Training Job and select Setup tab, then select the Resource Rates drop-down list.

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	ze		🐔 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 \$109,544.88 Mobilization 1.00 Lump Sum \$109,544.08 Mobilization 1.00 Lump Sum \$109,544.08 Mobilization 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 \$0.00 \$50,000</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

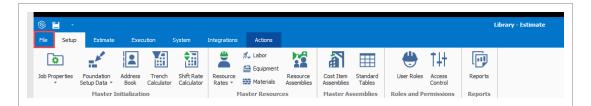
As you build an estimate, you may want to reuse pay items, cost items, or resources from a previous estimate. When you plan to reuse the majority of content within a job, you can simply make a copy of the existing job.

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	
ile		Setup	Estimate	System	Developer Tools	Integrations	Actions			
	Print		New	Сору	Link Field	14	rin -			
ą	Previe	ew	🛞 Delete	📄 Paste	📇 UnLink Field					
X	Expor	rt to Excel	}< Cut	+ Fill Dowr	1	Expand / Collapse 👻	Copy data from another Job			
	Pri	int	1	Edit	Workbook	View	Tools			
lob	Reg	ister	Job Prope	erties	Foundation Setup	Data Register	0			
rag	g colur	mnsl								
	g colur Utiliz	Sele zed	ct the source j columns here t							
		zed Drag			<u>1</u>	Project Name	Organization	Is Template	Notes	Project Notes
	Utiliz	zed Drag	columns here t	to group	<u> </u>	Project Name MLQ Project 42	-		Notes	Project Notes
	Utiliz	zed Drag	columns here t	to group	<u> </u>	-	-			-
	Utiliz E	Sele Drag	columns here t Code MLQ-APIM-Tes	to group st9 1	<u> </u>	-	S100000 - InEig			-
	Utiliz	zed Drag	columns here t Code MLQ-APIM-Tes MLQ-Template	to group st9 1 3		-	S100000 - InEig S100000 - InEig			-
)rag	Utiliz E	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			Project 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.

🛞 💾 🕘					
File Setup	Estimate	Execution	System	Actions	
🖶 Print	🕂 New	ें, Close	Ē	1	
neview	🛞 Delete				
Export to Excel	ें: Load		Create Template from Job		
Print	Ec	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.

Nev	N	emplate 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 Training 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	×	8)				Job Register			
Step 1: What would you like to do?		Dra	g columns here to group				Find: [Search For] Saved vi	ews: Prev	ious View	•
Create a new job:		Ŀ	Code	<u>1.</u>	Is Template	In Use	Description	Status	Schedule	Location
New Code:		->	099KL		✓		Sample Training Job	Bidding	Microsoft Proj	90th Street
Description:		Ι.	E101 - Training Job KL				Sample Training Job	Bidding	Microsoft Proj	90th Street
Idd to existing job:			Smal Project Template KL		✓		Sample Training Job	Bidding	Microsoft Proj	90th Street
0 0	Net > Carcel	4		4					OK 5	Cancel

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											
Print	•	New	ें: Close	13,	ה	F											
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	Register (100		The state of the s											
)rganizat	tion			×	Drag c	columns here to gra	up						s	aved views:	Previous V	iew	-)
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 Energy		Bidding	ng Microsoft Proj	I-10 MP 100 to MP Phoenix	Maricopa @Geo	@Geo	United S	
	v child org				Т	[1-Inf		Bide		Bidding	dding Microsoft Proj I-10 MP 100 to MP	Phoenix	Maricopa	@Geo	United Sta		
	Inc Sub Org	1			Т	C2-OandG					Bidding	Microsoft Proj				Farah	Afghanis
Repl																	
✓ SA1		Corporatio	n														
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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.

orguna	atio	n >	Dr	Drag columns here to group							
lame				Code	<u>i</u>	In Use	Descrip				
S100	000 -	PKS Inc		t11			- (
			- 7								
P	PKS Inc Sub Org 1			T1-En			at Energy				
R	epM1	8		T2-OandG							
~ S	A 100	0 - Corporation									
~	SB	2000 - Energy									
	>	SC2002 - Oil, Gas & Chemical									
	\rightarrow	SC2003 - Power									
	>	SC2004 - Industrial									
>	_										
> >	SB	SC2004 - Industrial									
	SB: SB	SC2004 - Industrial 3000 - Infrastructure									
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>	SB SB SB	SC2004 - Industrial 3000 - Infrastructure 4000 - Mining 5000 - Other		Σ		0	(

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

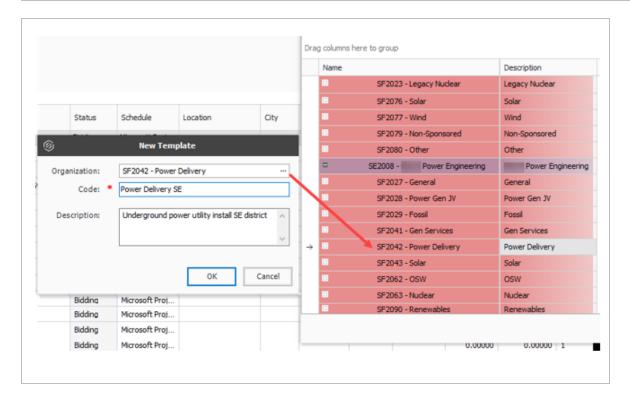
- 1. Click File to open the Backstage View.
- 2. Select Archive / Restore.
 - Several options appear for archiving and restoring your jobs, templates, and library
- 3. Select Archive Template.
 - The Template Register appears
- 4. Select the Small Project Template [your initials] template you previously 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 l	here to group	, 🖂
Name		Description
-	SE2007 - Power Constructors	Power Constructors
	SF2023 - Nuclear	Nuclear
	SF2072 - Fossil	Fossi
	SF2073 - Nudear	Nuclear
1	SF2075 - Carbon Capture	Carbon Capture
	SF2076 - Solar	Solar
	SF2077 - Wind	Wind
	SF2079 - Non-Sponsored	Non-Sponsored
	SF2080 - Other	Other
-	SE2008 - Power Engineering	Power Engineering
1	SF2027 - General	General
	SF2028 - Power Gen JV	Power Gen JV
	SF2029 - Fossil	Fossil
	SF2041 - Gen Services	Gen Services
	SF2042 - Power Delivery	Power Delivery
	SF2043 - Solar	Solar
3	SF2062 - OSW	OSW
3	SF2063 - Nuclear	Nuclear
	SF2089 - Geospatial	Geospatial
		Cancel

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.

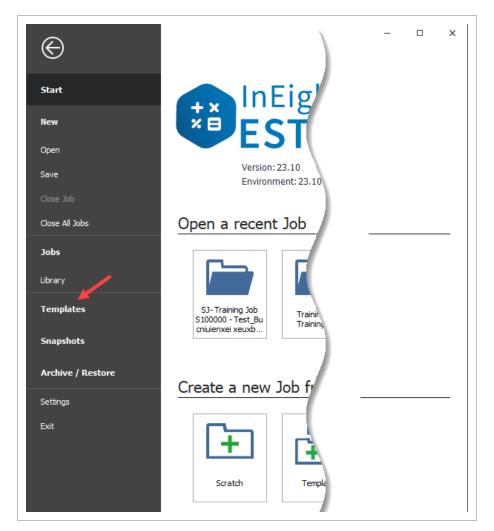


Estimators with the appropriate Estimate/template permissions in Suite Administration > Roles and Permissions > Master Data Libraries > **Estimate**, can use the templates in which they are assigned to in their designated OBS node.

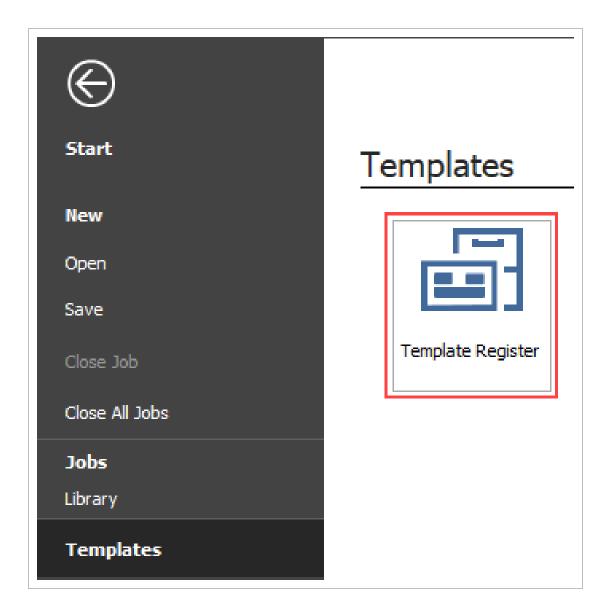
\equiv $\widehat{}$ Suite administration / Roles and permissions
Roles and permissions > Edit role
Estimate
🗹 💽 Edit estimate library 📐
🗹 Use templates 🕂
✓
🗹 💽 Edit template
 Delete template

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							
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.

6		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**.

					Organization Register - Libr	ra ry G
System	Integrations	Actions	Actions			
Close :	Ē		Drag columns	here to group		× Enter text to search
	Create Templat	e	Name		Description	
dit	Tools			SE2008 - Power Engineering	Power Engineering	
л	TOOIS			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	
C	ode: *			SF2043 - Solar	Solar	
Descrip	tion:			SF2062 - OSW	OSW	
			•	SF2063 - Nuclear	Nuclear	
			× 🗉	SF2089 - Geospatial	Geospatial	
				SF2090 - Renewables	Renewables	
		OK Can	ncel	SF2091 - Hydrogen	Hydrogen	
				SF2102 - Food & Beverage	Food & Beverage	
Ŷ		asdfjkl		SF2103 - Carbon Capture	Carbon Capture	
2		zdfx		SF2114 - KEG Marketing & Propo	KEG Marketing & Proposals	
		its Illinois not Illinoise	-	SE2014 - Power Shared Servi	Power Shared Services	
				SF2053 - Power Shared Se	Power Shared Services/S Services	
		new template		SF6216 - Engineering Shared Ser	Engineering Shared Service	
		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.

Te	mplate Register 🛛				
Dra	g columns here to group	\$		New Template	
	Code	Organization:		SF2090 - Renewables	
\rightarrow	1109-T1	Code:	*		
	555				
	555-666	Description:			^
	AAA				~
	AL Proj not at root org				
	AL Template from Texas DOT				
	AL Template X			ОК	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.

🖇 💾 - Library - Estimate													
File Setup	Estimate	Exec	ution	System	Integrations	Actions							
P			甸		ŧ	🐔 Labor		2		4	†1+		
			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

9	Bid Wizard	×
Step 1: What would you	like to do?	
Oreate 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.

9	Bid Wizard		×
Step 2 of 5: What	should fill the new Job?		
⊖ Select pay items	from a source Job folder (or impor copy their corresponding cost item	t them from an electronic file), and opt s.	ionally,
Select cost items	from a source Job folder.		
		< Back Next >	Cancel
		S DOCK INCKL >	conter

- 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.

Job Properties	
 Copy from Master Job Properties 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

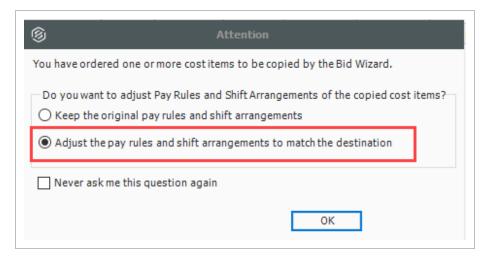
- The Job Register opens
- 12. Find and select Training Job.
- 13. Click **OK**.
 - This screen displays the cost items of the source job (Training Job). All items are automatically selected
- 14. Use the **Toggle Include All** button to exclude all selections.

S	tep 4	of 4: (Choose the	e source Cost I	tems to copy						
	Source	e Job: T	Training Job	•							
rag	g colum	ns here	to group		Find:	[Search For.]	Saved views:	Standard View	I	•
	Indu	de	CBS P ≞ C	Descr	Optional Code	Forec (T/O) Quan	Unit of Meas	Unit Cost	Total Cost (Fore	Curre	Accour 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.

		ure (CBS) Register 🛛			
ag	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 0 102	10.00	Acre
	□ 3	Unclassified Excavation	202 0 183	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							

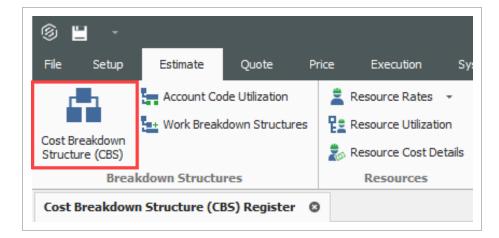
10.4 COPY ESTIMATE DATA USING EDIT COMMANDS

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		×
					盫		?
							^
							-
]	Save	ed views:	Standard View			•	

• 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	50	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

TIP 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.

+ 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

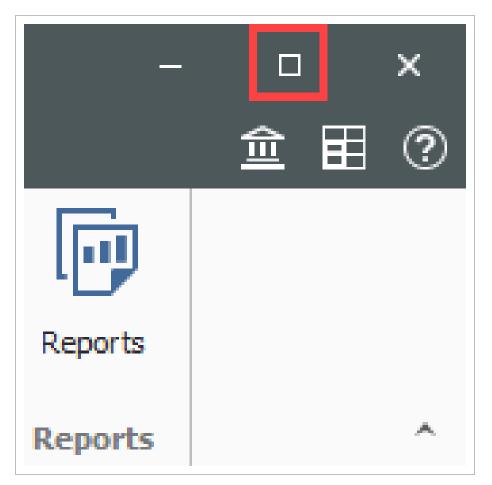
• You can see in the destination job's CBS that you've added the Aggregate Base cost item, along with its subordinate cost items and all cost and productivity detail

- 🗎 -								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 O							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		1.00	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	Instal 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	backnii Kor ripe			

- 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 orde Vizard.	red one or more cost i	tems, or just their	details, to be co	pied by the Bid
quantures:	to adjust cost items a ke adjustments	nd cost details ba	sed on the destir	nation
Make adju	stments according to	their quantity driv	ers and cost drive	ers
O Keep the o	to adjust Pay Rules a riginal pay rules and pay rules and shift ar	shift arrangement	s	
L Never ark	me this question agai			
1			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
/ E	5	Asphalt Concrete Hot Mix Type A		1.00	Each
+	5 5.1	Asphalt Concrete Hot Mix Type A Furnish & Haul Hot Mix	5.1	1.00 1.00	Each Ton
			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.

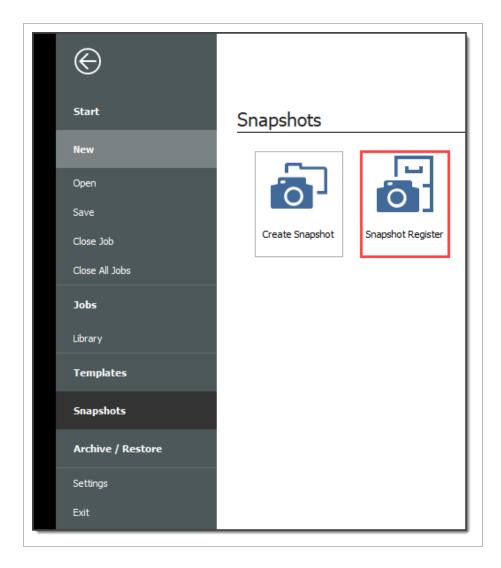
The Snapshot register has some additional columns as well. In addition to the Code, Description, Last Saved, and Version column, the Snapshot register contains all fields that are present on the Jobs register that provides you with an easier way to group, sort, filter, and find the jobs you need.

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	C. Load	ቭ Create Job Snapshot	7 .			Refresh		
Review	Edit	Celete All Job Snapshots	L'A	i i			w Job from Sr	anshot
Q FIENEW	Delete	-, C Delete All Job Shapshots			ear ter	- create Ne	w Job Irom Sr	apsnot
Print		Edit	V	liew			Tools	
Snapshot R	-							
Code	iere to group			Last Saved	Ve	ersion	In Use	Status
→ + E101 - Training Job KL		KL Sample Training Job		11/12/2019 2:2	3:1 19	9.2.0.27	✓	Bidding
+ Training Job		Training John Mariagan	a County No. TM2924 11/13/2019 7:40:1		0.1 10	9.2.0.27		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.

6	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 Ouse 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	aining 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?
<ad< td=""><td>d updated comment [E101 - Training Job KL_201911</td></ad<>	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	
截 Preview		ें: Edit	🔆 Delete All Job Snapshots		_			
		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**.

Code 📃		<u>=</u>	Description			Last Saved		Version	In Use	
÷	-	E101	- Training Job KL	Sample Training Job		11	/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

.3	4 Foot Diameter Manhole Furnish 4 ft Manhole Materials	800 0400 9.1	16.00 16.00	Each Each
		800 0400	16.00	Each
.3	Dauxilli 24 Inch PVC			
	Backfill 24 Inch PVC	8.3	4,520.00	Cubic Yard
.2	Furnish & Install 24 Inch PVC	8.2	3,000.00	Linear Feet
.1.2	Excavate 24 Inch PVC 6-10 ft Depth	8.1.2	3,610.00	Cubic Yard
.1.1	Excavate 24 Inch PVC 0-6 ft Depth	8.1.1	1,390.00	Cubic Yard
.1	Excavate 24 Inch PVC	8.1	3,000.00	Linear Feet
	24 Inch PVC Gravity Sewer (SDR35)	800 0330	3,000.00	Linear Feet
.2	Excavate-Install-Backfill 10 Inch PVC	7.2	12,000.00	Linear Feet
.1	Furnish 10 Inch PVC Materials	7.1	12,000.00	Linear Feet
	10 Inch PVC Force Main (SDR21)	800 0220	12,000.00	Linear Feet
.4	Backfill RCP Pipe	6.4	1,587.20	Cubic Yard
.3	Install RCP Pipe	6.3	1,024.00	Linear Feet
.2	Excavate RCP Trench	6.2	1,858.56	Cubic Yard
.1	Furnish RCP Materials	6.1	1,024.00	Linear Feet
	36 Inch RCP Culvert Class III	413(B) 0464	<u>1,024.00</u>	Linear Feet
.2	Install Hot Mix Type A	5.2	35,000.00	Ton
.1	Furnish & Haul Hot Mix	5.1	35,000.00	Ton
	Asphalt Concrete Hot Mix Type A	303 4263	35,000.00	Ton
.3.2	Blue Top Aggregate Base	4.3.2	400,000.00	Square Yard
.3.1	Place Aggregate Base	4.3.1	45,000.00	Ton
.3	Install Aggregate Base	4.3	45,000.00	Ton
.2	Finegrade Subgrade	4.2	400,000.00	Square Yard
.1	Furnish & Haul Base Material	4.1	45,000.00	Ton
	Aggregate Base	303 5912	45,000.00	Ton
	Direct Cost Add-On	DIRECT COST ADD-ON	1.00	Lump Sum
	General Expense	GENERAL EXPENSE	1.00	Lump Sum
	Job Management & Equipment	JOB MANAGEMENT & E	1.00	Lump Sum
	Indirect Cost Add-On	INDIRECT COST ADD-ON	1.00	Lump Sum
	Direct Cost Escalation	DIRECT COST ESCALAT	1.00	Lump Sum
	Indirect Cost Escalation	INDIRECT COST ESCAL	1.00	Lump Sum
on Code 🚊	Description	Optional Code	Forecast (T/O) Quantity	Unit of Measure
	1 2 3 3.1 3.2 1 2 1 2 3 4 4 1 2 3 4 4 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1	Indirect Cost EscalationDirect Cost EscalationIndirect Cost Add-OnJob Management & EquipmentGeneral ExpenseDirect Cost Add-OnAggregate Base1Furnish & Haul Base Material2Finegrade Subgrade3Job Management & Equipment6Aggregate Base1Furnish & Haul Base Material2Finegrade Subgrade3.1Place Aggregate Base3.2Blue Top Aggregate Base3.2Blue Top Aggregate Base3.2Blue Top Aggregate Base3.2Sof Inch RCP Culvert Class III1Furnish & Haul Hot Mix2Install Hot Mix Type A33Install RCP Pipe4Backfill RCP Pipe11Furnish 10 Inch PVC Materials2Excavate Install-Backfill 10 Inch PVC1Excavate 24 Inch PVC 0-6 ft Depth1.1Excavate 24 Inch PVC 6-10 ft Depth	Description Code Indirect Cost Escalation INDIRECT COST ESCAL Direct Cost Escalation DIRECT COST ESCALAT Indirect Cost Add-On INDIRECT COST ESCALAT Job Management & Equipment JOB MANAGEMENT & E General Expense GENERAL EXPENSE Direct Cost Add-On DIRECT COST ADD-ON Aggregate Base 303 5912 1 Furnish & Haul Base Material 4.1 2 Finegrade Subgrade 4.2 3.1 Place Aggregate Base 4.3.1 3.2 Blue Top Aggregate Base 4.3.2 Install Aggregate Hase 5.1 1 2 Install Hot Mix Type A 5.2 36 Inch RCP Culvert Class III 413(B) 0464 1 Furnish RCP Materials 6.1 2 Install RCP Pipe 6.3 3 Istall RCP Pipe 6.4 3 Istall RCP Pipe 6.4 1 Furnish 10 Inch PVC Materials 7.1 2 Excavate Install-Backfill 10 Inch PVC 7.2 24 Inch PVC Gravity Sewer (SDR35) 800 0330 1	Description Code (T/0) Quantity Indirect Cost Escalation INDIRECT COST ESCAL 1.00 Direct Cost Escalation DIRECT COST ESCAL 1.00 Indirect Cost Add-On INDIRECT COST ESCALAT 1.00 Job Management & Equipment JOB MANAGEMENT & E 1.00 General Expense GENERAL EXPENSE 1.00 Direct Cost Add-On DIRECT COST ADD-ON 1.00 Aggregate Base 303 5912 45,000.00 1 Furnish & Haul Base Material 4.1 45,000.00 2 Finegrade Subgrade 4.2 400,000.00 3.1 Place Aggregate Base 4.3.1 45,000.00 3.2 Blue Top Aggregate Base 4.3.2 400,000.00 3.2 Blue Top Aggregate Base 4.3.2 400,000.00 3.2 Blue Top Aggregate Base 4.3.1 45,000.00 3.2 Install Hot Mix Type A 5.2 35,000.00 3.4 Furnish & Haul Hot Mix 5.1 35,000.00 3.4 Furnish RCP Materials 6.1 1.024.00 1 Furnish RCP Materials 6.1 1.024.00 2 Install RCP Pipe 6.4 1.024.00 3 Install RCP Pipe 6.4 <td< td=""></td<>

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 – WORKBOOK 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 workbook 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 💽 🛱	ウ・ C・・・	CBS Export	1 41	crobat Q	Search I Share 모 Comments
Calibri laste V v V	• 11 • = = = ₽₽ U • A^ A = = = ₽ •	Text → ECC \$ + % 9 Fo	onditional Formatting * rmat as Table * III Styles * Styles	Cells Editi	2 🗲 🖻 🥥
1 • : :	🛛 🗸 🏑 🗸 🗸 🗸 🗸 🗸 🕹				
	В				
CBS Position Code	Description	Forecast (T/O)	Unit of Measure 💌	Unit Cost 💌	Total 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 02/1 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.

	Labor Construction Equipment Rented Cons		struction Equipment Installed Material			Installed Equipment	Supplies	Unique		
g	columns he	re to gr	oup							
	Resource 들		Description			t of asure				
	+ LC1 + LC2		Carpenter Appre	ntice	594.37	Hou	ır			
			Carpenter Journe	1,188.73 Hour		ır				
	+ LC3		Carpenter Forem	594.37	Hou	ır				
	+ LF1		Finisher Apprenti	inisher Apprentice		Hour				
	+ LF2 Finisher		Finisher	594.37	Hour					
			Finisher Foreman		0.00	Hou	ır			
	+ LIW1		Iron Worker	594.37 Hour		ır				
	+ LIW2 + LL1		Iron Worker Fore	0.00	Hou	ır				
			Labor Apprentice	0.00 H		ır				
	+ LL2		Laborer		8,963.73	Hou	ır			
	+ LL3		Labor Foreman		721.33	Hou	ır			
	+ LMECH		Mechanic		418.44	Hou	ır			
	+ LO1		Operator Class 1		1,800.00	Hou	ır			
	+ L <mark>O</mark> 2		Operator Class 2		4,019.73	Hou	ır			
	+ LO3		Operator Class 3		889.33	Hou	ır			
	+ L <mark>O4</mark>		Operator Forema	n	1,421.77	Hou	ır			
	+ LREM 01 + LREM 05		Principal Eng/Scie	0.00	Hou	ır				
			Field Technican		0.00	Hou	ır			
	+ LSPE		Project Engineer		800.00	Hou	Ir			
	+ LSSEC		Secretary		800.00	Hou	Ir			
	+ LSSUPT	Г	Project Superinte	ndent	800.00	Hou	Ir			
	+ LT1		Teamster		3,056.77	Hou	Ir			
	+ LT2		Teamster Forema	n	0.00	Hou	Ir			
	+ LWD		Welder		0.00	Hou	Ir			
•	LWDA		Welder Apprentic	e	0.00	Hou	ır			

- 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

2 3 4 5 6 7 8 9	Carpenter Apprentice Carpenter Journeyman Carpenter Foreman Finisher Apprentice Finisher Foreman Iron Worker Iron Worker Foreman Labor Apprentice	594.3650794 0 594.3650794	Hour Hour Hour Hour Hour
3 4 5 6 7 8 9	Carpenter Foreman Finisher Apprentice Finisher Finisher Foreman Iron Worker Iron Worker Foreman	594.3650794 0 594.3650794 0 594.3650794	Hour Hour Hour Hour
4 5 6 7 8 9	Finisher Apprentice Finisher Finisher Foreman Iron Worker Iron Worker Foreman	0 594.3650794 0 594.3650794	Hour Hour Hour
5 6 7 8 9	Finisher Finisher Foreman Iron Worker Iron Worker Foreman	594.3650794 0 594.3650794	Hour Hour
6 7 8 9	Finisher Foreman Iron Worker Iron Worker Foreman	0 594.3650794	Hour
7 8 9	Iron Worker Iron Worker Foreman	594.3650794	
8 9	Iron Worker Foreman		Hour
9		0	
-	Labor Appropriate	-	Hour
	Labor Apprentice	0	Hour
10	Laborer	8963.733879	Hour
11	Labor Foreman	721.3333333	Hour
2	Mechanic	418.4398946	Hour
3	Operator Class 1	1800	Hour
4	Operator Class 2	4019.732279	Hour
15	Operator Class 3	889.3333333	Hour
6	Operator Foreman	1421.768	Hour
17	Principal Eng/Scientist	0	Hour
8	Field Technican	0	Hour
9	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			

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

11.2 LINKING TO THE JOB WORKBOOK

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, and then click on the **Workbook** icon in the Workbook section.



The embedded Job Workbook for the job opens.

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File Home Insert Pa	ge Layout Formulas Data	Review View			
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New Open Save Save As	Quick Print Print Undo Redo Print Preview	Encrypt with Document Password Properties			
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A	В	D D		E	
	Click to go to: Haul Cost Calculator	Worksheet description: Determine unit haul costs by cost category by entering variables such as distance, tonnage conversion and more.			
	Hauler Calculator	Know the quantity and use hours of cycle haulers by entering your equipment and route cycle variables.			
	Haul Take Off	Enter cycle routes, variables and number of work shifts to determine haul quantities, number of haulers required, units per load, and cycle and shift information.			
Take Off & Analysis Worksheets	Production Rate Calculator	Calculate total work quantities, total work hours, and the composite hourly production rate for a crew working across multiple sites by entering the quantity and production rate for each work location.			
	Asphalt Mix Designer	Get quantities of raw bin materials by entering the asphalt mix design by bin percentage, aggregate gradations, and the quantity of bituminous concrete.			
	Bridge Take Off	The quantity of Portland Cement Concrete and the form area square footage are automatically calculated when you enter variables for abutment, deck, appurtenance, and bent quantities and dimensions.			
	Water Take Off	Enter gailons and hours per load, hours per shift and list of water haul activities to produce the total gailons of water, total loads, hours and shifts, and total gailons and hours needed per load.			
	<u>Curb Take Off</u>	Using variables such as curb cross-section, length dimensions, concrete volume/lineal feet of curb, concrete waste percentage and hours/shift, the system automatically calculates the quantity of curb, total crew hours, and quantity of Portland Cement Concrete.			
	Excavation Take Off	If you know the excavation locations and dimensions, you can easily determine the total excavation locations, area, and quantity.			
Table of Contents:	Asphalt Lay Calculator Contents A Haul Cost B Hauler Calcula	Enter asphalt lift dimensions, mix density (proctor), and liquid asphalt content to determine asphalt tonnane net lift, asphalt tonnane and Asphalt Cement quantity. for C Haul Take Off D Production Rate (1)			•

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 lets you to make quick work of complex chores to perform workbook-based take-off or formula-driven analysis.

6	36 Inch RCP Culvert Class III	413(B) 0464	1,024.00 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**.
- 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:



Concrete Foundation 1.00 CY

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	ake-off	
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



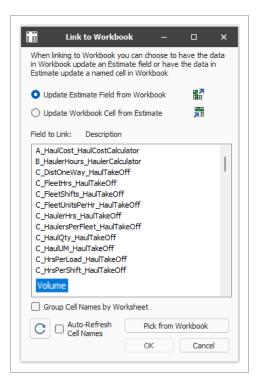
6. InEight Estimate will only link to named fields in Excel. Click in the field you want to name (B6), then click in the Field Name window and type **Volume**.

Vo	Volume 🔹 👝 🗙 🤇								
	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	Jop	- Estimate		
Execution		System	Integrations	Actions	More Acti	ions			
n	•	Indent	👗 Link Field	📲 Cost Item			🔁 Assembly	2	Resource
	+	Outdent	Unlink Field	🔚 Subordina	te Cost Iten	n	🔁 Subordinate	Assembly	💈 Resource Asse
Suspended				🕂 Dependen	nt Cost Item				
			Workbook				Insert		
						_			Fi
		Optional Code		Forecast (T/O) Quantity			t of asure	Unit Cost	Total Cost (Forecast)
		06420			1.00	Lun	np Sum	\$2,100.00	\$2,100.0
		08210			1.00	Lun	np Sum	\$1,000.00	\$1,000.0
		09640			1.00	Lun	no Sum	\$1.800.00	\$1,800.0
		12510			1.00	Ľ	Open		
		15300			1.00	Ð	<u>N</u> ew		
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osts		UNASSIGN	IED		1.00	M	UnLink from Ex		
		UNASSIGN	IED		1.00	-	 Indent		
		UNASSIGN	IED		1.00	-	Outdent		
		UNASSIGN	IED		1.00	,			
					1.00		Insert		
the Water					1.00		Insert Subordin		
					1.00		Insert Depende	_	
					1.00		Insert Cost Item		
					1.00	2	Insert Cost Item	Assembly as	<u>S</u> ubordinate
						3	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).



- 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.

Integrations	Actions M	/lore Acti	200					
-	Resource Utilizati	on	E		=	Ł		ات م
Resources *	Resource Employ	ments	Wor	kbook T	Schedule *	Cash Flow	Indirect Cost Items	E
	Resources			Open J	ob Workbo	ok		ire
			R	Update	e Current Jo	b From Worl	dook	
			N	Update	e All Open J	obs From Wo	orkbook	L
Unit Cost	Total Cost	Curren	贉	Update	e Workbook	From Curre	nt Job	
onic cost	(Forecast)	Curren	#	Update	e Workbook	s From All O	pen Jobs	
\$291,477.2	\$5,829,544.22	U.S. D	° ¹ 😣	Delete	Broken Linl	s in All Oper	n Jobs	
\$46,879.9	\$46,879.95	U.S. D	ollar			-		
\$293,219.53	\$293,219.53	U.S. D	ollar					

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	Schedule:		Microsoft Proje	ct -	Alwa	ays use Plug Day	s when updating Es	timate from the	schedule			
chedule C	urrency:		U.S. Dollar	•								
Cost Item	Roll Up											
Autor	natically cal	culate Plug Days	when rolling u	p cost items for s	cheduling purp	ooses						
 @ L(ongest sche	مسم مبيدة الماسة										
9 -	singesterente	uuleu uays amo	ng all rolled up	costitems								
0	-	ed days for all r	-									
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	\checkmark	
+ 2	Clearing & Grubbing	\checkmark	
□ 3	Unclassified Excavation	\checkmark	\checkmark
+ 3.1	Excavation		
+ 3.2	Embankment		
□ 4	Aggregate Base	\checkmark	
+ 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.

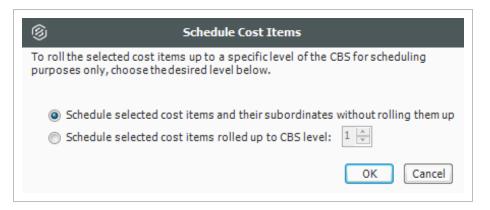
TIP

To schedule all cost items, highlight the JOB row

Co	st Breakdown Struct	ure (CBS) Register 💿		Open	
Dra	g columns here to group			<u>N</u> ew	or]
	CBS -		-	Delete	_
	Position Code	Description	8	Cu <u>t</u>	thedule ID
\rightarrow	+ 1	Mobilization	-	Copy	D.0000011
	+ 2	Clearing & Grubbing	Ē	Paste	0.0000012
	∃ 3	Unclassified Excavation	+	<u>Fill Down</u>	0.0000013
	+ 3.1	Excavation	8	Link these fields to Excel	0.0000014
	+ 3.2	Embankment	8	UnLink from Excel	0.0000015
		Aggregate Base	l÷.	Indent	0.0000016
	+ 4.1	Furnish & Haul Base Material	+	Outdent	0.0000017
	+ 4.2	Finegrade Subgrade	·=	Insert	0.0000018
	E 4.3	Install Aggregate Base		Insert Subordinate	0.0000019
	+ 4.3.1	Place Aggregate Base		Insert Dependent Cost Item	0.0000020
	+ 4.3.2	Blue Top Aggregate Base	귿	Insert Cost Item Assembly	0.0000021
	5	Asphalt Concrete Hot Mix Type A	귿	Insert Cost Item Assembly as Subordinate	0.0000022
	+ 5.1	Furnish & Haul Hot Mix	网	Split	0.0000023
ß	+ 5.2	Install Hot Mix Type A	_		0.0000024
	E 6	36 Inch RCP Culvert Class III	2	Insert Resource	0.0000025
	+ 6.1	Furnish RCP Materials	10	Ins <u>e</u> rt Resource Assembly	0.0000026
	+ 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 (SDR21)	e la		D.0000030
				Calculate Plug Days	2.0000004
	10	b		Subtotal Calculator	
۹.				Add Quote	_

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 Struct	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-0	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)

FILE		TASK	RESOURCE REPORT PROJECT V	/IEW FOR	MAT			Bhavna Gu	pta - 🖸 🗗
ant	P	aste	Microsoft Sans ▼ 9 ▼ 0× 25× 50× 75 B I U ☆ ► A ▼ ₹ ₹	🛛 👼 🌹 Mark	on Track 👻	Manually Auto	task 🔹		Scroll
hart	-	- V			ect Links	Schedule Schedule	Milestor		to Task 💵 🍷
iew		Clipboard	Font G	Schedule		Tasks	Insert	Properties	Editing
	0	01 - CBS Position Code V	Description	Duration 👻	Start 🚽	Finish	January 1 12/15 1/12		May 1 .
0		-	⊿ JOB	45 days?	Mon 2/3/20	Fri 4/3/20			
1		1	Mobilization	10 days?	Mon 2/3/2) Fri 2/14/20			
2		2	Clearing & Grubbing	10 days?	Mon 2/3/2) Fri 2/14/20			
3		3	Unclassified Excavation	1 day?	Mon 2/3/2	Mon 2/3/20		1	
4		2 4	⊿ Aggregate Base	45 days?	Mon 2/3/2) Fri 4/3/20			
5		4.1	Furnish & Haul Base Material	45 days?	Mon 2/3/2	Fri 4/3/20			
6		4.2	Finegrade Subgrade	40 days?	Mon 2/3/2) Fri 3/27/20			
7		4.3	▲ Install Aggregate Base	40 days?	Mon 2/3/2) Fri 3/27/20			
8		4.3.1	Place Aggregate Base	30 days?	Mon 2/3/2	Fri 3/13/20			
9	_	4.3.2	Blue Top Aggregate Base	40 days?	Mon 2/3/2				
10		5	Asphalt Concrete Hot Mix Type A	29.17 days?	Mon 2/3/2				
11 12		5.1	Furnish & Haul Hot Mix	29.17 days?	Mon 2/3/2				
12	_	5.2	Install Hot Mix Type A	23.33 days?	Mon 2/3/2				
13	_	6	▲ 36 Inch RCP Culvert Class III	9.92 days?	Mon 2/3/2				
14		6.1	Furnish RCP Materials	5 days?	Mon 2/3/2				
15		6.2	Excavate RCP Trench	4.65 days?	Mon 2/3/2				
16		6.3	Install RCP Pipe	4.1 days?	Mon 2/3/2				
17		6.4	Backfill RCP Pipe	9.92 days?	Mon 2/3/2) Fri 2/14/20			
								-	
						Þ	4		

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

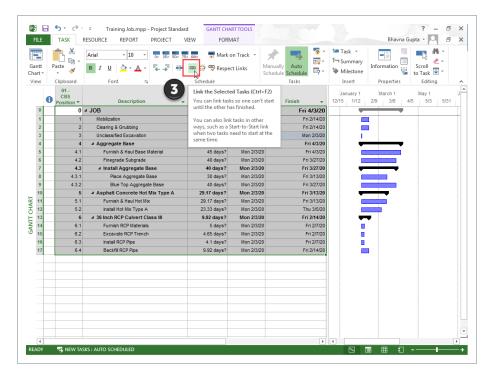
Data Type Microsoft Project InEight Estimate

Update InEight Estimate from Microsoft 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 1	More Acti	ons			ing Job - Estimal
		unt Code Utilization k Breakdown Structures	Resources	esource Utilization esource Cost Details esource Employments	Workbook	Schedule	Cash Flo	w Indirect Cost Item	 Job Final Price % Prime Bo 	Add On Price Bre	akdown
	Breakdown S	tructures	Res	ources	Workbook	📑 Oper	n MS Pro	ject	Cost		Overhead and Pr
Cos	st Breakdown Struct	ure (CBS) Register 🖇	•			🧬 Upda	ate Estim	nate from Proje	ct		
Drag	g columns here to group					🧬 Upda	ate Proje	ct from Estima	te		
	CBS Position Code 🖳	Description		Optional Code		Expo		of MS Project measure	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	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	\$294,433.42
	+	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	YAY	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 Cost 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

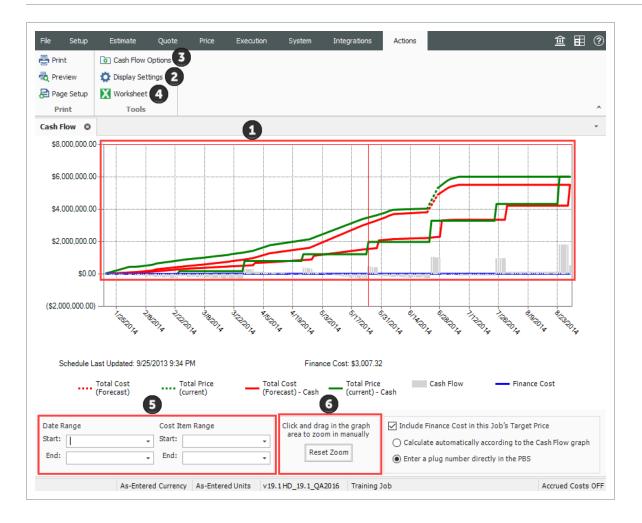
The Cash Flow form provides a graphical representation of the cash flow and resource utilization of your project, so you can quickly assess financing and resource needs.

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	Price	Execution	System	Integration	IS				É		?
ō	-		***		Labor	1	a		P				
Job Properties	Foundation Setup Data *	Pay Item 8 Proposal	Bid Wizard	Resource	Equipment Materials	Resource Assemblies	Cost Item Assemblies	Standard Tables	Reports				
	Initiali	ze			Resources		Assen	ıblies	Reports				^
Cash Flow	Job Prope	erties Ø											-
Overview S	ecurity Cov	er Sheet	Cost Basis	Minority Setup	Fuel Cost	Job Tracking	Job Folde	r Tags 🛛 🤇	Competitors	Pricing	Schedule	-	٠
At the e Every m Every Every	mitted to the o nd of the job onth on this da 1 days 2	ay 25	Amour Retain Spr Averag	je calendar day it of each billing age is released: ead revenue usi je calendar day it of each invoid	g that is withh ing the same C s elapsed from	eld by owner a At the end of ti On a specific d Cost Curves as n receipt of inv	s retainage: ne job ate: the contribut oice to paym	ent: 35	5.00 %	5			
Every m	onth on this da			age is released ntractors and ve	endors:	the end of the a specific dat	·		•				
			⊠ App eve	oly cash timing r n if their cost s	rules for all pro ource is not se	ocurable cost c et to "Quote"?	ategories (no	on labor and	l equipment),				
Average ann Reporting Perio	ual interest rat	e earned (w		/hen cost excee ceeds cost):	ds [%	Pay Quantit Forecast (T	(0) Quantity				
										ОК	(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.

Cash Flow	Job	Properties 🛛											-
Overview	Security	Cover Sheet	Cost Basis	Minority Setup	Fuel Cost	Job Tracking	Job Folder Tags	Competitors	Pricing	Schedule	Cash Flow	Е - 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	st Basis Minority	Setup Fuel Cost	Job Tracking	Job Folder Tags	Competitors	Pricing	Schedule	Cash Flov	
Revenue timing 2						-			
Bills are submitted to the owner:	Average caler	dar days elapsed fro	m billing to collect	tion:	25 days	s			
○ At the end of the job	Amount of ea	Amount of each billing that is withheld by owner as retainage: 5.00 %							
Every month on this day 10	Retainage is r	eleased: 💿	At the end of the	job					
O Every 1 weeks		0	On a specific date	e:	•				
O Every 1 days	Spread rev	enue using 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	
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

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

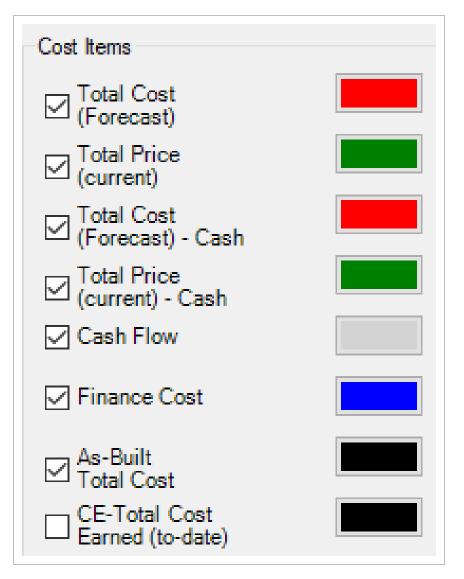
13.3.1.1 CASH FLOW DISPLAY SET UP

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

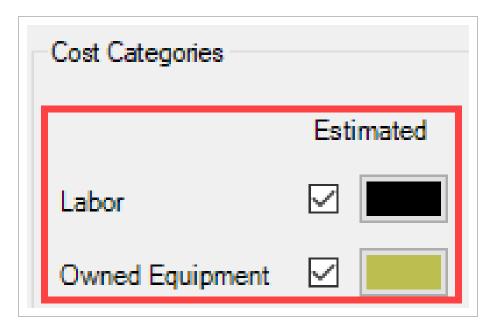
STEP BY STEP – CASH FLOW DISPLAY SETTINGS SET UP

- 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

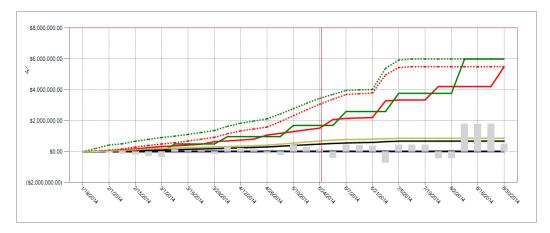
• Finance Cost



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.

				1.		<i></i>	-	<i>.</i>	4110014
		Thurs	day, D	ecemb	er 27,	, 2018			· · · · · · · · · · · · · · · · · · ·
	4		Febr	ruary 2	2014			►	
	SU	MO	TU	WE	ΤН	FR	SA		
	26	27	28	29	30	31	1		
	2	3	4	5	6	7	8		
	9	10	11	12	13	14	15		otal Cost
	16	17	18	19	20	21	22		Forecast) - C
	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			
	Labor					Description		\sim
~	Owned Equipment				-	This job's utilized All Library resour		
eriod Week ~	Rented Equipment				Value	Qty Cost	AB Qtv	AB Co 1
Cost Items	Supplies				Dozer D8			
Total Cost (Forecast)	Materials				Dump Fees			
Total Price	Subcontract				Excavator 225 Excavator 245			
Total Cost (Forecast) - Cash	Fees				Feeder Controls			-
Total Price	Allowance				Finisher Flatbed Truck			—
Cash Flow	Custom Category1				Form Materials			, ,
Finance Cost	Undefined				Quantity:	Cost:		
As-Built Total Cost					None \checkmark	None	\sim	
CE-Total Cost					As-Built Quantity: None V	As-Built Cos None	et. V	

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
	This job's utilized resources All Library resources	

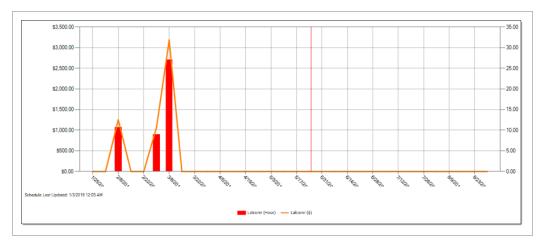
- 6. From the resulting list of Values, select **Laborer**.
- 7. Click in the **Qty** field for the selected value and select a color of your choice.
 - In this case the Qty represents the work hours for your Laborer resource
- 8. Click in the **Cost** field for the selected value and select a different 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				
	UnLink from Ex	cel				
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)	<mark>35.00</mark>
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

<u> </u>	alculate quantity of ETDT required to alculate total duration of haul using q			w		
		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	
Resul	ts					
	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	Integration	s	Actions			1
ue (Delta) Reso	ource Fields	🛓 Ed	lit Resource P	eriods	🚮 Trench Calo	culator
ue (Delta) Cost	Item Fields	E In	sert Subordin	ate	🔝 Shift / Rate	Calculator
		∦ Br	eak Cost Allo	ation Link		
				Тоо	ls	
d O					Trench Calcu	lator
t (T/O) Qty:	Unit of Measu	ire:	Unit Cost:		Total Cost:	Currenc
1.00	Each			\$1.74		.74 U.S. D

- 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).

6									
A	ctions								
Dra	g columns here to group			Find: [Searc	h 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 🍰 🖸 е	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.

	12,1,0,0	Julp Wall	21,000,00	oquarereet
	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	2500	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	p									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
[+ 641 0 100		1	10	Mobilization	1.00	Lump Sum	\$386,800.00	\$386,800.0	10.00	8.00	\$0.00	\$0.00
	+ 201 0102		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.
+ 501(A) 1306		10	100	Structural Excavation & Backfill	800.00	Cubic Yard	\$30.00	\$24,000.00	0.00	0.00	\$0.00	\$0.
+ 506(A) 1322		11	110	Steel Reinforcement	0,000.00	Pound	\$1.60	\$48,000.00	0.00	0.00	\$1.50	\$1.
+ 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) 13	322							
Description:	Steel Rei	nforcement							
Quantity									
Lock Quantity:	Pay Quantity	: Fore	cast (T/O) Qty:	Unit of M	leasure:	Qty Variance:	Qty Variance %:	Qty Variance Group:	
	3	0,000.00	30,000.00	Pound	-	0.00	0.00	Even Run	
rice									
Lock Price:	Unit Price Pre	ecision: Unit	Price:	Total Pri	:e:	Currency:	Payment	Method: % Marg	jin:
	2		\$1.60		\$48,000.00	U.S. Dollar	 Unit Price 	• • •0.	.80
Overview Earni	ings Rules	Tags / User Def	ined Fields						
Alarm Limits					ssignments -				
		Minimum	Max	imum	ccount: 13	30			đ
Percentage of Job		0.00	6	0.00					
Unit Price		\$1.00		\$1.50					

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	- n-			

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.

		d Proposal
Reports	▲ Settings: Default	
Job Properties		1
Foundation Setup Data	Print Details Layout Header/Footer	
Resources	Pay Item Numbers	
Resource Register		Filter by currency: No Filter
Resource Changes	Show Line Number	Term for Document
Resource Rate Details	Show Pay Item Number	Proposal/Bid
Resource Utilization		○ Tender
Resource Utilization (Excel)	Show these fields above the pay items:	
Resource Currency Compariso	🗌 Job Code 🔄 Job City	O Custom
Resource Assemblies	Job Description Job County	Show
Cost Breakdown Structure	Bid Date Job State	Show Subtotals
Quotes	Bid Time Job Country	Show Running Totals
Price Breakdown Structure	☐ JobLocation	
Pay Item & Proposal		
Standard Proposal		Show Suspended Items
DOT Proposal	Include	Unit Price Precision
Pay Item Summary	☐ Include Cover Sheet	Truncate values based on decimal precision
Pay Item Currency Comparison		
Pay Item Price Breakdown		 Do 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		
General	Decimal Precision	
Decimal Precision	Cost Summary Precision 2	
Fax Mail		
Account Code Settings	Unit Cost Precision 2	
• Network		
···· Deployment Mode	Quantity Precision 2	
···· SQL Security		
	Short Percent Precision 2	
- Attachment Settings		
Timesheet Warehouse Settings	Long Percent Precision 2	
Licenses		
Currency	Currency Rate Precision 5	

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.

	Cur	rrent	Target	Forecast	Variance]						Balanced Unit	Current Unit
Price:	\$6,430,844	1.00 \$	6,430,805.34	\$6,444,775.04	\$38.66	сит					Pri	ce: \$6.34	\$6.34
Profit:	\$631,62	9.85	\$631,591.19	\$695,313.98	\$63,722.79	сит				<u> </u>	Pro	fit: \$0.80	\$0.80
Margin%:		9.82	9.82	10.79	\$69,141.39	сит					Total Co	st: \$5.54	\$5.54
						_				<u> </u>	Business Overhe	ad: \$0.33	
										<u> </u>	Job Overhe	ad: \$0.49	
										📥 Una	assigned Direct Co	ost: \$0.00	
										<u> </u>	Assigned Direct C	ost: \$4.73	
Day The	is here to group	adu	Daw	Line			Dave		Dauadi		Linit Drice	Total Drice	F
													F
Pay Ite Number	em L	Lodk Price	Row Number =	Line Number	Description		Pay Quantity	Unit of Measure	Roundi Precisio		Unit Price (current)	Total Price (current)	F
Number + 641	em L Fr P 1 0 100		Row Number ៉	Number 1 10	Mobilization		Quantity 1.00	Unit of Measure Lump Sum			(current) \$18,300.00	(current) \$18,300.00	F
Number + 641 + 201	em L P P 1 0100 1 0102		Row Number	Number 1 10 2 20	Mobilization Clearing & Gr	-	Quantity 1.00 10.00	Unit of Measure Lump Sum Acre		n -2 2	(current) \$18,300.00 \$5,833.93	(current) \$18,300.00 \$58,339.30	F
Number + 641 + 201 + 202	em L P Fr P 1 0100 1 0102 2 0183		Row 🛓	Number 1 10 2 20 3 30	Mobilization Clearing & Gr Unclassified R	Excavation	Quantity 1.00 10.00 50,000.00	Unit of Measure Lump Sum Acre Cubic Yard		n ⁷ -2 2 2	(current) \$18,300.00 \$5,833.93 \$6.34	(current) \$18,300.00 \$58,339.30 \$317,000.00	F
Number + 641 + 201 + 202 + 303	em L P 1 0100 1 1 0102 2 2 0183 3 3 5912 2		Row Number	Number 1 10 2 20 3 30 4 40	Mobilization Clearing & Gr Unclassified B Aggregate B	Excavation	Quantity 1.00 10.00 50,000.00 40,000.00	Unit of Measure Lump Sum Acre Cubic Yard Ton		n -2 2 2 2	(current) \$18,300.00 \$5,833.93 \$6.34 \$26.73	(current) \$18,300.00 \$58,339.30 \$317,000.00 \$1,069,200.00	F
Number + 641 + 201 + 202 + 303 + 303	em L L rr P 1 0100 1 0102 2 0183 3 5912 3 4263		Row Number 🖹	Number 1 10 2 20 3 30 4 40 5 50	Mobilization Clearing & Gr Unclassified B Aggregate B Asphalt Conc	Excavation ase crete Hot Mix Type A	Quantity 1.00 10.00 50,000.00 40,000.00 38,000.00	Unit of Measure Lump Sum Acre Cubic Yard Ton Ton		n -2 2 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 \$1,553,820.00	F
Number + 641 + 201 + 201 + 303 + 303 + 413	em r P P 10100 10100 20183 20183 20183 20183 20183 20183 20183 20183 20183 20183 20183 20183 20183 20184 201		Row Number	Number 1 10 2 20 3 30 4 40 5 50 6 60	Mobilization Clearing & Gr Unclassified B Aggregate B Asphalt Conc 36 Inch RC	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	Unit of Measure Lump Sum Acre Cubic Yard Ton Ton Linear Feet		-2 2 2 2 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	(current) \$18,300.00 \$58,339.30 \$317,000.00 \$1,069,200.00 \$1,553,820.00 \$122,960.00	F
Number + 641 + 201 + 202 + 303 + 303 + 413 + 800	em r L 0100 L 0102 L 0102 L 0103 L 0102 L 0103 L 0		Row Number	Number 1 10 2 20 3 30 4 40 5 50 6 60 7 70	Mobilization Clearing & Gr Unclassified I Aggregate B Asphalt Conc 36 Inch RC 10 Inch PVC	Excavation ase orete Hot Mix Type A P Culvert Class III Force Main (SDR21)	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 Linear Feet		n -2 2 2 2 2 2 2 2 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 \$11,069,200.00 \$1,553,820.00 \$122,960.00 \$346,920.00	F
Number + 641 + 201 + 202 + 303 + 303 + 413 + 800 + 800	em r P P 10100 10100 20183 20183 20183 20183 20183 20183 20183 20183 20183 20183 20183 20183 20183 20184 201		Row Number	Number 1 10 2 20 3 30 4 40 5 50 6 60	Mobilization Clearing & Gr Unclassified B Aggregate B Asphalt Conc 36 Inch RC 10 Inch PVC 24 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	Unit of Measure Lump Sum Acre Cubic Yard Ton Ton Linear Feet Linear Feet Linear Feet		-2 2 2 2 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 \$63.84	(current) \$18,300.00 \$58,339.30 \$317,000.00 \$1,069,200.00 \$1,553,820.00 \$122,960.00	F

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	сит						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 types of payment methods to choose from:

- Unit Price
- Fixed Final Pay
- Time and Expense

				oposal Register	Pay Item Recor				
ay Item Number								Line Number:	
Description	unclassi	fied Excavation						Alternate:	
								Suspend:	
Quantity				-					
Lock Quantity:		y: Fore 50,000.00		it of Measure: Qi ubic Yard 👻	ty Variance: Qty Vari 0.00	iance %: Qty Variance Group: 0.00 Even Run			
		50,000.00	50,000.00	JDIC Yard +	0.00	Even Run			
rice	Unit Price Pr	- deleter	D.1	tal Price: C		Devenent Mathada Dr. Mandar			
Lock Price:	2	ecision: Unit	Price: To \$8.50			Payment Method: % Margin: Unit Price - 52.62			
	-			\$123,000.00	J.J. Dollar	A Type Name	1		
Overview E	Earnings Rules	Tags / User De	fined Fields			Fixed Final Price			
Alarm Limits				Assignments					
		Minimum	Maximun	Account: 1122	,	Time & Expenses Unit Price			
Percentage of .	Job:	0.00	0.00	1		Unit Price			
Unit Pr	rice:	\$0.00	\$0.00	1					
				-					
Proposal Layou	ut Settings								
Insert Subtotal	l after this Pay I	tem? 🔲 Sub	total Description:			×			
							1		
Notes									
							OK Cancel	New < Prev	Next >

15.4.1 UNIT PRICE

Unit Price is the default payment method. This option multiplies the unit price with the pay quantity to calculate the total price.

15.4.2 FIXED FINAL PRICE

Fixed Final Price has two applications:

- Include a price for Allowance type pay items.
- Accurately calculate the over/under run pay items that are paid as if they were lump sum items.

15.4.2.1 ALLOWANCE TYPE PAY ITEMS

Allowance type pay items, sometimes referred to as contingency items, is where the owner provides a pay item and includes their own price for the item to be used by the contractor when completing the bid form. The pay item value becomes part of the proposal where the price for this item is included in the total bid amount and is frequently used by the owner as an allowance for scopes of work that might or might not be used, enabling owners to include in the total value of those items in their budget/contract amount for the project.

To identify a pay item as an allowance item, select **Fixed Final Pay**, and then enter the allowance amount of the pay item, for example \$10,000.

+	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

You can then lock the \$10,000 pay item so its value does not change when auto-pricing the proposal. Note that the issue now is having a pay item with \$10,000 of price and no assigned costs. Assuming you did not want to add any overhead and profit dollars to the \$10,000 pay item, in the CBS create and assign a cost item to this pay item and then enter a plug cost of \$10,000. The cost category used should be a category that will not be used in a direct or indirect cost markup item, so the markup can be calculated on the other costs in the job. The price of \$10,000 is included in the proposal but is offset by the \$10,000 of cost in a cost category that will not be used in any markup for overhead or profit.

15.4.2.2 CALCULATION OF OVER/UNDER RUN PAY ITEMS USING FIXED FINAL PAY METHOD

The Fixed Final Pay method is used 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 (i.e., Superstructure Bridge of 10,000 CY) and you must enter a unit price against the 10,000 CY.

However, if the specifications states that this pay item will not be measured for payment and must be paid as if it were a lump sum item, but your quantity takeoff reveals that you will actually install more

or less than the 10,000 CY. For example, your takeoff came to 12,000 CY and you entered the Forecast (TO) Quantity with the 12,000 CY.

In the CBS, the cost of this work is calculated based on the 12,000 CY. Typically, in a quantity underrun/overrun situation, Estimate can help you decide how best to price out these items. In this case, you cannot take advantage of the overrun situation. Using the Fixed Final Pay method with a quantity variance, Estimate can prorate the unit price of the item that will be paid for 10,000 CY, while still accounting for the cost to install all 12,000 CY

The following example shows where you have an overrun normally. It shows that you have the CBS direct cost as \$4.00 times 12000 CY for \$48,000. 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.

	Description	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
+ 1000	Removal of Underground Storage Tanks	2.00	2.00	Each	Unit Price	\$12,504.82	\$25,009.64	\$15,833.35	\$12,480
+ 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
+ 1200 0100	Toll Booth	1.00	1.00	Each	Unit Price	\$29,665.47	\$29,665.47	\$25,269.40	\$29,652
+ 1500 0100	Guardrail Type 2	1,000.00	1,000.00	Linear Feet	Unit Price	\$27.29	\$27,290.00	\$24,004.60	\$27
+ 1500 0200	Guardrail Type 3A	200.00	200.00	Linear Feet	Unit Price	\$35.25	\$7,050.00	\$6,201.19	\$35
1600 0230	Type 4 Signs	1,000.00	1,000.00	Square Feet	Unit Price	\$14.78	\$14,780.00	\$13,002.49	\$14
+ 11	Contingency Pay item	1.00	1.00	Each	Fixed Final Price	\$10,000.00	\$10,000.00	\$0.00	\$0
	- 11		1.00	Each				1	0

When you change the payment method to **Fixed Final Price**, the CBS cost of \$48,000 now shows. Then when you price out the pay item, you get a \$48,000 return.

	Enter Pay Ite	Superstructure Bridge	10,000.00	12,000.00		Fixed Final Price	\$10,000.00		\$48,009.19	\$6.6
+ 11	1	Contingency Pay item	1.00	1.00	Each F	Fixed Final Price	\$10,000.00	\$10,000.00	\$0.00	\$0.0
+ 10	600 0230	Type 4 Signs	1,000.00	1,000.00	Square Feet	Unit Price	\$14.78	\$14,780.00	\$13,002.49	\$14.7
+ 15	500 0200	Guardrail Type 3A	200.00	200.00	Linear Feet	Unit Price	\$35.25	\$7,050.00	\$6,201.19	\$35.2
+ 15	500 0 100	Guardrail Type 2	1,000.00	1,000.00	Linear Feet	Unit Price	\$27.29	\$27,290.00	\$24,004.60	\$27.3
+ 13	200 0100	Toll Booth	1.00	1.00	Each	Unit Price	\$29,665.47	\$29,665.47	\$25,269.39	\$29,649.2
+ 10	010	Disposal of Contaminated Soil	800.00	800.00	Cubic Yard	Unit Price	\$25.96	\$20,768.00	\$13,721.50	\$25.9
+ 10	000	Removal of Underground Storage Tanks	2.00	2.00	Each	Unit Price	\$12,504.82	\$25,009.64	\$15,833.35	\$12,475.3
+ 70	00	Process Equipment	1.00	1.00	Each	Unit Price	\$1,920,341.67	\$1,920,341.67	\$1,600,195.72	\$1,919,807.
Pay It Numb		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)

15.4.3 TIME AND EXPENSE

The Time and Expense payment method is used to designate pay items that should be Cost plus pay items when the estimate is published to InEight Control. When the estimate is published to Control, the Time and Expense payment items become Cost plus pay items in Control.

15.4.3.3 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

15.4.3.4 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	Treest	Economia	Variance	1						Balanced	Linik d	C	
	-		Target	Forecast					-	_		Balanced	Unit	Current Un	nit
Price:	\$6,430,8	\$05.34 \$	6,430,805.34	\$6,376,898.78	\$0.00				A	•	Price	: \$1	8.87	\$18.8	88
Profit:	\$631	591.19	\$631,591.19	\$627,437.72	\$4,153.47	ADD			A		Profit	: \$	1.95	\$1.9	97
Margin%:		9.82	9.82	9.84	\$1,265.13	сит					Total Cost	: \$1	6.91	\$16.9	91
						-			<u></u>	Bu	usiness Overhead	: \$	1.01		
									<u></u>		Job Overhead	: \$	0.95		
										Unass	signed Direct Cost	: \$	0.00		
									4	Ass	signed Direct Cost	- \$1	4.95		
ag column	is here to grou	ıp													Fi
Pay Ite	em	Lock	Lock	Row	Line	Descriptio	Pay Ouantity		Forecast (T/C Quantity		Unit of U	Init Price	Total P		Ur
	em Fr		Lock Price	Row =1	Line Number	Descriptio	Pay Quantity		Quantity		Unit of U		Total P (curren		Ur
Pay Ite Number	em er 1 0 100	Lock		Row Number =	Number 10		Quantity	ubbing	Quantity)	Unit of U Measure (Init Price current)	Total P (curren \$18	nt)	Fir (b
Pay Ite Number + 641	em er 1 0100 1 0102	Lock		Number -	Number 10 20	Mobilizatio	Quantity 1.0	ubbing Excavation	Quantity) 1.00 10.00	Unit of U Measure (Lump Sum	Init Price current) \$18,300.00	Total P (curren \$18 \$59	nt) 8,300.00	Ur
Pay Ite Number + 641 + 201 + 202	em er 1 0100 1 0102	Lock		Number = 1 2 3	Number 10 20	Mobilizatio	Quantity 1.0 10.0	xcavation	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	Total P (curren \$18 \$58 \$315	nt) 8,300.00 8,360.00	Ur
Pay Ite Number + 641 + 201 + 202	em er 1 0100 1 0102 2 0183 3 5912	Lock		Number == 1 2 3	Number 10 20 30	Mobilizatio Clearing 8 Unclassifie Aggregate	Quantity 1.1 10.1 50,000.1 40,000.1	xcavation	Quantity 50,0	2) 1.00 10.00 100.00	Unit of U Measure ((Lump Sum Acre Cubic Yard Ton	Init Price current) \$18,300.00 \$5,836.00 \$6.30	Total P (curren \$18 \$59 \$315 \$755	nt) 8,300.00 8,360.00 5,000.00	Ur
Pay Ite Number + 641 + 201 + 202 + 303 + 303	em er 1 0100 1 0102 2 0183 3 5912	Lock		Number == 1 2 3 4 5	Number 10 20 30 40	Mobilizatio Clearing & Unclassifie Aggregate Asphalt Cl	Quantity 1.1 50,000.1 40,000.1 Type A 38,000.0	excavation ase	Quantity 50,0 45,0 35,0	2) 1.00 10.00 200.00 200.00	Unit of U Measure ((Lump Sum Acre Cubic Yard Ton	Init Price current) \$18,300.00 \$5,836.00 \$6.30 \$18.88	Total P (curren \$18 \$58 \$31! \$75! \$1,904	nt) 8,300.00 8,360.00 5,000.00 5,200.00	Ur

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 Re	ecap - Cop	y of Train	ing Job					×	Item	Recap - 303 591	2 Aggregate E	Base	
	0	Current	Target	Forecast	Variance]					Balanced	Unit Cun	rrent Unit
Price:	\$6,428,8	344.70	\$6,430,805.34	\$6,442,775.74	\$1,960.64	ADD				Pri	ce: \$	18.87	\$26.73
Profit:	\$629,	,630.55	\$631,591.19	\$693,314.68	\$61,723.49	сит			1	Pro	fit: :	\$1.95	\$9.82
Margin%:		9.79	9.82	10.76	\$67,142.09	сит				Total Co	st: \$	16.91	\$16.91
									۸.	Business Overhe	ad: st	\$1.01	
									۸.	Job Overhe	ad: s	\$0.95	
									📥 Un	assigned Direct Co	ost: \$	\$0.00	
									A	Assigned Direct Co	ost: \$:	14.95	
ag columns l Pay Item Number	1	ip Lock Quantity	Lock Price	Row	Line Number	Description	Pay Quantity	Forecast Quantity	(T/O)	Assigned Direct Co Unit of Measure	Unit Price (current)	Total Price (current)	e Uni
Pay Item		Lock		Row E	Number	Description Mobilization			(T/O)	Unit of Measure	Unit Price	Total Price (current)	e Uni (bai
Pay Item Number	0100	Lock		Number 🖳	Number		Quantity		(T/O)	Unit of Measure 0 Lump Sum	Unit Price (current)	Total Price (current) \$18,3	(ba)
Pay Item Number + 6410	0100 0102	Lock Quantity		Number = 1	Number 10	Mobilization	Quantity 1.00	Quantity	(T/O)	Unit of Measure 0 Lump Sum 0 Acre	Unit Price (current) \$18,300.00	Total Price (current) \$18,30 \$58,30	e Uni (ba 100.00
Pay Item Number + 6410 + 2010 + 2020	0100 0102 0183	Lock Quantity		Number 1 2 3	Number 10 20	Mobilization Clearing & Grubbing	Quantity 1.00 10.00	Quantity	(T/O) 1.0 10.0	Unit of Measure 0 Lump Sum 0 Acre 0 Cubic Yard	Unit Price (current) \$18,300.00 \$5,834.00	Total Price (current) \$18,30 \$58,30 \$315,00	e Uni (bai 140.00
Pay Item Number + 6410 + 2010 + 2020 + 3035 + 3034	0100 0102 0183 5912 4263	Lock Quantity		Number E	Number 10 20 30	Mobilization Clearing & Grubbing Unclassified Excavation Aggregate Base Asphalt Concrete Hot Mix Type A	Quantity 1.00 10.00 50,000.00	Quantity	(T/O) 1.0 10.0 50,000.0	Unit of Measure 0 Lump Sum 0 Acre 0 Cubic Yard 0 Ton	Unit Price (current) \$18,300.00 \$5,834.00 \$6.30	Total Price (current) \$18,3 \$58,3 \$315,0 \$1,069,2	e Uni (ba 00.00 140.00 00.00
Number + 6410 + 2010 + 2020 + 3035 + 3034	0100 0102 0183 5912	Lock Quantity		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	(T/O) 1.0 10.0 50,000.0 45,000.0 35,000.0	Unit of Measure 0 Lump Sum 0 Acre 0 Cubic Yard 0 Ton	Unit Price (current) \$18,300.00 \$5,834.00 \$6.30 \$26.73	Total Price (current) \$18,3 \$58,3 \$315,00 \$1,069,20 \$1,553,80	e [(100.00) 140.00) 100.00 100.00

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 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:	413	B) 0464								
	Description:	36 1	nch RCP Culver	t Class III							
Quar	ntity										
Loc	ck Quantity:	Pay Qua	antity:	Forecast (T/	0) Qty:	Unit of	Measure:	Qty Variance: Q	ty Variance %	: Qty Variance Gro	up:
			1,000.00	L	³ 1,024.00	Linear F	eet ·	• 24.00	2.40	Over Run	
rice	-	-		-							
L	ock Price:	Unit Pri	ce Precision:	Unit Price:		Total Pr	ice:	Currency:	Payment	t Method: %	Margin:
		2			\$100.00		\$100,000.	00 U.S. Dollar	+ Unit Pric	ce 🔹	22.83
	erview Earr	nings Rule ings Rule		er Defined Fie ned Earnings (gned Earnings (Foreca	ast)		
Jse	-	ings Rule	s? Assig	ned Earnings (% Ar			Unassi % 0.00	gned Earnings (Foreca Amount: \$0.00	ast)		
Jse	e Default Carni	to group	s? Assig	ned Earnings (% Ar	(Forecast) mount:		%	Amount:	Unit of Measure	Earnings %	Earnings Timing
Jse	g columns here	to group	S? Assig 100.0	ned Earnings (% Ar	(Forecast) mount: .400.00	Co	% 0.00	Amount: \$0.00 Forecast	Unit of Measure	Earnings % 100.00	Timing
Jse	e Default Carni g columns here CBS Position Code	to group	S? Assig 100.0	ned Earnings (% Ar 00 \$102, P Culvert Cla	(Forecast) mount: .400.00	Co	% 0.00 btional de 3(B) 0464	Amount: \$0.00 Forecast (T/O) Quantity	Unit of Measure	-	Timing Percent Complete
rag	e Default carni g columns here CBS Position Code 6	to group	S? Assig 100.0 Description 36 Inch RCI	ned Earnings (% Ar 00 \$102, P Culvert Cla Materials	(Forecast) mount: .400.00	Co 41	% 0.00 htional de 3(B) 0464 1	Amount: \$0.00 Forecast (T/O) Quantity <u>1,024.00</u>	Unit of Measure Linear Feet Linear Feet	100.00	Timing Percent Complete Percent Complete
rag	e Default carni g columns here CBS Position Code 6.1	to group	Assig Assig Description 36 Inch RCI Furnish RCP (ned Earnings (% Ar 00 \$102, P Culvert Cla Materials P Trench	(Forecast) mount: .400.00	41 6.	% 0.00 otional de 3(B) 0464 1 2	Amount: \$0.00 Forecast (T/O) Quantity <u>1,024.00</u> 1,024.00	Unit of Measure Linear Feet Linear Feet	100.00 49.58	Timing Percent Complete 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 Strue	cture (CBS) Register	Pay Item & Propos	al Register	Pay Item I	Record ©				
Pay 1	Item Number: *	413(B) 0464								
	Description:	36 Inch RCP Culvert Class II	I							
Quar	ntity									
Loc	ck Quantity: Pay	Quantity: Forecas	t (T/O) Qty: Unit of I	Measure:	Qty Variance: Q	ty Variance %:	Qty Variance Gro	up:		
		1,000.00	1,024.00 Linear F	eet 👻	24.00	2.40	Over Run			
Price										
L	ock Price: Uni	t Price Precision: Unit Pri	ce: Total Pr	ce:	Currency:	Payment	Method: %	Margin:		
	2		\$100.00	\$100,000.00	U.S. Dollar	 Unit Price 	e •	22.83		
Ove	erview Earnings	Rules Tags / User Define	d Fields							
llca	e Default Earnings	Assigned Earn	ings (Forecast)	Unassign	ed Earnings (Foreca	st)				
030	e Deraut Lannings	×ues:%	Amount:	%	Amount:					
		100.00	102,400.00	0.00	\$0.00					
Drag	g columns here to g	roup								
	CBS Position Code 🗎	Description	Op Co		Forecast (T/O) Quantity	Unit of Measure	Earnings %	Earnings Timing	Ear (Fo	nings Amount recast)
	6.1	Furnish RCP Materials	6.1	L	1,024.00	Linear Feet	0.00	Percent Complete		\$0.
	6.2	Excavate RCP Trench	6.2	2	1,858.56	Cubic Yard	0.00	Percent Complete		\$0.
	6.3	Install RCP Pipe	6.3	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.

15.7 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.

15.7.1 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		

15.7.2 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 S	ietup	Estimate	Quote	Price	Execution	System	Actions	s More	e Actions				
Cost Break	down	Account Co	de Utilization down Structures	22	Resource Rates - Resource Utilization Resource Cost Deta	Wor	rkbook	Schedule	Cash Flow	Price Breakdown Structure (PBS)	Direct Markup	Alternate Scenario: BASE -	Reports
		down Structu	res		Resources	Wor	kbook	Sch	edule		d 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.

③ File	Setup	Estimate	Quote	Price	Execution	ob - Estimate System				≘⊞	×
	•	-	Ľ	***		🕵 Labor 🏭 Equipment				P	
Job			Pay Item & Proposal	Bid Wizard	Resource Rates *	Materials	Resource Assemblies	Cost Item Assemblies	Standard Tables	Reports	
		Initialize				Resources		Assen	nblies	Reports	
Jot	Properties	0									*
Joł	Folder Tags	Competitors	Pricing	Schedule	Cash Flow	Equipment Ma	intenance	Benchmarking	Alternate	es 🔺	Þ
				_		1					7
Dra	g columns here		0	-	Find: [Search F		Saved vie		Cost	-	
Dra	Code 1	Description	2	-		Total Cost (Added)	Total Cost (Suspended	Total)	
Dra	Code	Description BASE	2	-	Active 3	Total Cost (Added)	Total Cost (Suspended	5 Total (Net 0	Cost Change) 6		
Dra	Code 1 BASE ROCK1	Description BASE Rock Excaca	2 ation	-	Active 3	Total Cost (Added) \$84,000.00	Total Cost (Suspended	5 Total (Net 0	Cost Change) 6		
	Code	Description BASE	2 ation	-	Active 3	Total Cost (Added)	Total Cost (Suspended	5 Total (Net 0	Cost Change) 6		
→	Code 1 BASE ROCK1	Description BASE Rock Excaca	2 ation	-	Active 3	Total Cost (Added) \$84,000.00	Total Cost (Suspended	5 Total (Net 0	Cost Change) 6		
	Code 1 BASE ROCK1	Description BASE Rock Excaca	2 ation	-	Active 3	Total Cost (Added) \$84,000.00	Total Cost (Suspended	5 Total (Net 0	Cost Change) 6		
	Code 1 BASE ROCK1 test 1	Description BASE Rock Excaca testing 1	2 ation	-	Active 3	Total Cost (Added) \$84,000.00	Total Cost (Suspended	5 Total (Net 0	Cost Change) 6		
	Code 1 BASE ROCK1 test 1	Description BASE Rock Excaca	2 ation	-	Active 3	Total Cost (Added) \$84,000.00	Total Cost (Suspended	5 Total (Net 0	Cost Change) 6		

15.7.3 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

					lion	Description: Rock Excave	* ROCK2	le: '
							ems Cost Items	y Ite
t (Added): \$1	Total Cost (Add						red to Alternate	signe
	evious View	Saved views: Pre	Find: [Search For]				olumns here to group	ag co
	Hours	rs.	lours		Optional Code	cription	CBS Position Code ⊨ Description	P
Days (Duration	(Total)	n-Duration driven)	(Duration driven)	(T/O) Quantity	Looe			
(Duration	(Total) 142.86	n-Duration driven) 44.00	(Duration driven) 142.86	(T/O) Quantity 50,000.00	3.1	avation, trudis		
(Duration	(Total)	n-Duration driven) 44.00				avation, trudia	nded by Alternate	
(Duration	(Total) 142.86	n-Duration driven) 44.00 Tor				avation, trucks		ipen
(Duration	(Total) 142.86 stal Cost (Suspend	n-Duration driven) 44.00 Tor	142.86 Find: [Search For]	50,000.00 Forecast			nded by Alternate	
(Duration 42.86 spended): \$1- Days (Duration	(Total) 142.86 etal Cost (Suspend evious View Hours	n-Duration driven) 44.00 Saved views: Pre rs	142.86 Find: [Search For]	50,000.00 Forecast	3.1 Optional		nded by Alternate 2 olumns here to group 285 Position Code	ag co Pt
(Duration 42.86 spended): \$1- Days (Duration	(Total) 142.86 stal Cost (Suspend evious View Hours (Total)	n-Duration driven) 44.00 To 	142.86 Find: [Search For] Hours [Duration driven]	50,000.00 Forecast (T/O) Quantity	3.1 Optional Code	scription	nded by Alternate 2 olumns here to group 285 Position Code 🚡 Description	
(Duration 42.86 spended): \$1- Days (Duration	(Total) 142.86 stal Cost (Suspend evious View Hours (Total)	n-Duration driven) 44.00 To 	142.86 Find: [Search For] Hours [Duration driven]	50,000.00 Forecast (T/O) Quantity	3.1 Optional Code	scription	nded by Alternate 2 olumns here to group 285 Position Code 🚡 Description	

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**.

Cost Item Summary 🚊 Detail : \$0.					🐈 Plug	: \$28.00	ς	
Co	st C	Category	Uni	t Cost	Total Cost			
¥	То	tal			\$28.00	\$84,000	.00	
	>	Labor			\$0.00	\$0	.00	
	>	Owned Equipm	ent		\$0.00	\$0.00		
	>	Rented Equipm	ent	\$0.00		\$0.00		
	>	Supplies Materials			\$0.00	\$0.00 \$0.00		
	>				\$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	.00	
		Subcontrac	t Bond		\$0.00	\$0	.00	
		Undefined 9	Subcontract		\$0.00	\$0	.00	
	>	Fees			\$0.00	\$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 Description: 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.

NOTE

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		✓

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.

Suspended status is the default status for alternate items.

15. Then select the **ROCK1** scenario. Once done, click **OK**. The Suspend check box fields is no longer checked for Rock Excavation.

Alternate Scenario:	
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).

Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency	Alternate	Alternate Description	Suspended by Alternate	Suspend
Unclassified [scavation	50,000.00	Cubic Yard	\$9.95	\$497,466.56	U.S. Dollar	BASE +	BASE		
Excavation, scrapers	50,000.00	Cubic Yard	\$3.00	\$149,922.88	U.S. Dollar	BASE	BASE		
Excavation, trucks	50,000.00	Cubic Yard	\$3.59	\$179,550.75	U.S. Dollar	BASE	BASE		
Rock Excavation	3,000.00	Cubic Yard	\$28.00	\$84,000.00	U.S. Dollar	ROCK1	Rock Excacat		
								-	
	Excavation, trucks	Excavation, scrapers 50,000.00 Excavation, trucks 50,000.00	Excavation, scrapers 50,000.00 Cubic Yard Excavation, trucks 50,000.00 Cubic Yard	Excavation, scrapers 50,000.00 Cubic Yard \$3.00 Excavation, trucks 50,000.00 Cubic Yard \$3.59	Excavation, scrapers 50,000.00 Cubic Yard \$3.00 \$149,922.88 Excavation, trucks 50,000.00 Cubic Yard \$3.59 \$179,550.75	Excavation, scrapers 50,000.00 Cubic Yard \$3.00 \$149,922.88 U.S. Dollar Excavation, trucks \$0,000.00 Cubic Yard \$3.59 \$179,550.75 U.S. Dollar	Excavation, scrapers 50,000.00 Cubic Yard \$3.00 \$149,922.88 U.S. Dollar BASE Excavation, trucks 50,000.00 Cubic Yard \$3.59 \$179,550.75 U.S. Dollar BASE	Excavation, scrapers 50,000.00 Cubic Yard \$3.00 \$149,922.88 U.S. Dollar BASE BASE Excavation, trucks 50,000.00 Cubic Yard \$3.59 \$179,550.75 U.S. Dollar BASE BASE	Excavation, scrapers 50,000.00 Cubic Yard \$3.00 \$149,922.80 U.S. Dollar BASE BASE BASE Excavation, trucks 50,000.00 Cubic Yard \$3.59 \$179,550.75 U.S. Dollar BASE BASE

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.

BS Position Code 🖭 🕇	Description	Forecast (T/O) Quantity	Unit Cost	Total Cost (Forecast)	Alternate	Alternate Description	Suspended by Alternate	Suspend
3	Unclassified Exc vation	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'.

15.7.4 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 🗎	-	Code	Resource Assembly	Description	Quantity (Less Waste)	Waste % Add-on	Quantity	Unit of Measure	Productivity Factor	Work Hours	Pay Hours	Unit Cost
+	1	ETWT		Water Truck			1.00	Each	1.00	44.00	44.00	\$29.60
+	2	ED8		Dozer D8			1.00	Each	1.00	142.86	142.86	\$173.60
+	3	ECOMP1		Compactor Smooth			1.00	Each	1.00	142.86	142.86	\$36.4
+	4	ECOMP2		Compactor Sheeps			1.00	Each	1.00	142.86	142.86	\$61.6
+	5	LL2		Laborer			1.00	Each	1.00	142.86	142.86	\$26.3
+	6	LO4		Operator Foreman			1.00	Each	1.00	142.86	71.43	\$35.7
+	7	EG14G		Grader 14G			1.00	Each	1.00	142.86	142.86	\$60.2
+	8	LO2		Operator Class 2			5.00	Each	1.00	714.29	714.29	\$28.0
+	9	EL950		Loader 950			1.00	Each	1.00	142.86	142.86	\$60.3
+	10	ETDT		Dump Truck			5.00	Each	1.00	714.29	714.29	\$102.2
+	11	LT1		Teamster			5.00	Each	1.00	714.29	714.29	\$30.6

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 Cost:	Total Cost:	Currency:
		~
\$9.95	\$497,466.56	U.S. Dollar
\$3.59	\$179,550.75	U.S. Dollar 👻
Pay Quantity:	Cost Source:	Alternate:
50,000.00	Detail 🗸	BASE -
		×
	Ob D is	
	\$9.95 \$3.59 Pay Quantity:	\$9.95 \$497,466.56 \$3.59 \$179,550.75 Pay Quantity: Cost Source:

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

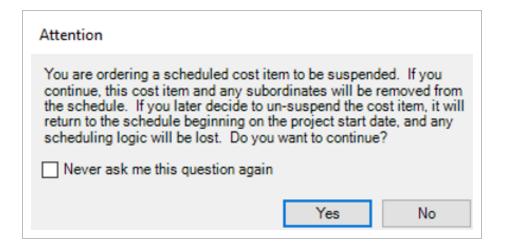
18. For **Excavation**, truck, add a new Alternate by click on the Alternate field and selecting the **new** icon.

BASE	🕀 r BASE	
M 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	on Option Code
Suspended by Alternate	
Drag columns here to group	
CBS Position Code 🖭 Descripti	on Option Code
3.1 Excavati	ion, scrapers 3.1
→ A	

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		

15.7.4.1 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.

15.7.4.2 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.

15.7.4.3 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.

15.7.4.4 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!

15.8 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	s
		TOTAL	AMOUNT OF	n n n ć	
AITERNAT	E CONSTRUCTION ITEMS	TOTAL	AMOUNT OF	F BID: \$	
ALTERNATI	E CONSTRUCTION ITEMS		AMOUNT OF		
ALTERNATI Pay Item #					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	۸
	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 Iter 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	Unclassified 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	3(8) 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
+ 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	0		15	150	Removal of Underground Storage Tanks	2.00	Each	U.S. Dollar	BASE	BASE
+ 101	10		16	160	Disposal of Contaminated Soil	800.00	Cubic Yard	U.S. Dollar	BASE	BASE
+ 120	00 0100		17	170	Toll Booth	1.00	Each	U.S. Dollar	BASE	BASE
+ 1500	0 0 1 0 0		18	180	Guardrail Type 2	1,000.00	Linear Feet	U.S. Dollar	BASE	BASE
+ 1500	0 0200		19	190	Guardrail Type 3A	200.00	Linear Feet	U.S. Dollar	BASE	BASE
+ 160	00 0230		20	200	Type 4 Signs	1,000.00	Square Fe	U.S. Dollar	BASE	BASE
+ CO1	1		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 R	ecord O		
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 Se	tup Estimate	Quote P	rice Execu	tion System	Actions		
Pay Item & Proposal	Lock Cost Items Co Pricing Competitors Pay Items	PI	rice Breakdown Itructure (PBS) Overhea	Direct Markup Indirect Mark Data Map d and Profit	-	BASE+ ALT 3	
	kdown Structure (CE Recap - Training Jol		Pay Item a	& Proposal Regis	iter O	ALT 3 ROCK1: Rock Excacation ROCK2: Rock Excavation	
Price:	Current	Target \$6,834,120.16	Forecast		ADD	test 1: testing 1 OK Ca	ncel

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 Number	Lock Price	Row 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	0.00
+ 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(B) 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	9.99
+ 800 0330		8	80	24 Inch PVC Gravity Sewer (SDR35)	\$63.73	\$191,190.00	\$19,149.92	10.02
+ 800 0400		9	90	4 Foot Diameter Manhole	\$4,557.94	\$72,927.04	\$7,297.96	10.01
+ 501(A) 1306		10	100	Structural Excavation & Backfill	\$27.88	\$22,304.00	\$2,235.53	10.02
+ 506(A) 1322		11	110	Steel Reinforcement	\$1.79	\$53,700.00	\$5,259.72	9.80
+ 503(A) 1313		12	120	Retaining Wall	\$536.21	\$455,778.50	\$45,676.40	10.02
+ 600 0300		13	130	Paint Existing Steel Bridge Struct	\$101,279.27	\$101,279.27	\$10,163.56	10.04
+ 700		14	140	Process Equipment	\$1,949,552	\$1,949,552.96	\$194,662.95	9.99
+ 1000		15	150	Removal of Underground Storage Tanks	\$13,363.93	\$26,727.86	\$2,710.77	10.14
+ 1010		16	160	Disposal of Contaminated Soil	\$30.51	\$24,408.00	\$2,479.23	10.16
+ 1200 0100		17	170	Toll Booth	\$31,068.28	\$31,068.28	\$3,103.76	9.99
+ 1500 0100		18	180	Guardrail Type 2	\$28.96	\$28,960.00	\$2,886.42	9.97
+ 1500 0200		19	190	Guardrail Type 3A	\$37.41	\$7,482.00	\$746.33	9.98
+ 1600 0230		20	200	Type 4 Signs	\$15.69	\$15,690.00	\$1,566.81	9.99
+ CO1		21	21	Realignment of Water Line	\$0.00	\$0.00	\$0.00	0.00
+ [Enter Pay I		22	22	Security Guard Booth	\$31,068.28	\$31,068.28	\$3,103.76	9,99

15.8.1 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.

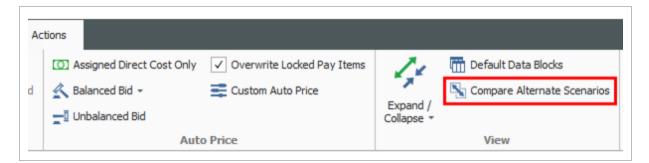
For example, if you have defined Alternate Scenarios 1, 2 and 3, you may wish to price each of them separately, and price any combination of them, and/or you may wish to price the combination of all three.

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.

Pay Item Number	Lock Price	Row Number ⊨	Line Number	Description	Unit Price T (current)	Total Price (current)	Unit Price (BASE+ALT 3)	Total Price (BASE+ALT 3)	Total Profit (current)
► 201 0102		2	20	Clearing & Grubbing	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
F 202 0183		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) 046	4	6	60	36 Inch RCP Culvert Class III	\$86.61	\$86,610.00	\$86.59	\$86,590.00	\$8,672.3
800 0220		7	70	10 Inch PVC Force Main (SDR21)	\$29.81	\$357,720.00	\$29.80	\$357,600.00	\$35,796.9
F 800 0330		8	80	24 Inch PVC Gravity Sewer (SDR35)	\$63.74	\$191,220.00	\$63.73	\$191,190.00	\$19,142.0
800 0400		9	90	4 Foot Diameter Manhole	\$4,558.81	\$72,940.96	\$4,557.94	\$72,927.04	\$7,299.8
+ 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 0 100		18	180	Guardrail Type 2	\$28.97	\$28,970.00	\$28.96	\$28,960.00	\$2,895.6
► 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
F (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 Item 8 Number	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)
+ 201 0 102		2	20	Clearing & Grubbing	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
+ 202 0183		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
+ 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
+ 800 0400		9	90	4 Foot Diameter Manhole	\$4,558.81	\$72,940.96	\$4,557.94	\$72,927.04	\$7,299.8
+ 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	\$2,895.6
+ 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
		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!

15.9 BILLING RATES

In Estimate, revenue can be forecasted in multiple ways. It is common for contractors to use the Pay Item & Proposal register to assign estimated costs to pay items and submit a price by filling out the owners bid form. However, for projects that do not use pay items, such as a time and material contracts or cost reimbursable type projects, Billing Rates can be used to easily estimate the price of the work for the project owner.

A billing rate is defined as how much the Contractor is charging the client to utilize resources from the Resource Rate Register. The billing rate can also be viewed as how much money a client is expected to pay for utilizing one of the resources for a specified amount of time. It is 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 method to price projects utilizing various markup strategies with clear visibility into various costs that drive the markup amounts. It is important for contractors to be able to:

- Apply various costs that drive markups.
- Apply billing rate gains (difference between contractor's cost versus 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 appropriately pricing projects, contractors can now create and view a variety of Billing Rate reports such as:

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

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!

15.10 BILLING RATES REPORTS OVERVIEW

There are multiple reports you can run to view resource costs, billing rates, and mark-ups that you can choose to provide to your customer. You could also use these reports to view your markup margins prior to submitting to your customer.

To locate the project reports, select the **Setup** tab, and then select **Reports**.

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			Initial	ize		R	esouro	es	Assen	nblies	Reports	
Cost	Bre	akdo	wn Structure	(CBS) Regist	er R	eports ©						*
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>	2	Reso	urces									
>	22	Reso	urce Assemblie	s								
>	-	Cost	Breakdown Str	ucture								
>		Quot	es									
>		Price	Breakdown Str	ructure								
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~	.	Billing	Rate Reports									
		В	illing Rate Sum	mary								
		E	stimate Details	with Billing Rate	es							
		Μ	largin Analysis									
		R	esource Price L	List								
			ate Compariso	n Report								
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			Register									
			ht Schedule Co	ost Risk (xlsx)								
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15.10.1 BILLING RATE SUMMARY REPORT

The Billing Rate Summary report shows cost items and include cost category details.

From the Reports window, select Billing Rate Reports.

Total Billin Amou	Billing Unit Rate	Cuatom Category1	Allowance	Fees	Subcontract	Supplies	Materials	Rented Equipment	Owned Equipment	Labor
318.3	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
636.4		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	636.49

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

CBS Position Code	Description	Labor	Owned Equipment	Rented Equipment	Materiale	Supplies	Subcontract	Fees	Allowance	Custom Category1	Billing Unit Rate	Total Billing Amoun
28	Carpenter work	318.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	318.75	318.7
		318.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
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		
Indirect Total		636.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		636.4
	Direct Cost Markup	85,875.59	78,408.62	529.38	270,092.55	2,054.54	15,448.00	13,503.13	80.00	48.00		466,049.9
		85,875.59	78,408.62	529.38	270,092.58	2,084.84	15,448.00	13,503.13	80.00	48.00		
	Indirect Cost Markup	10,729.02	5,662.75	160.00	65.52	96.00	0.00	83.28	160.00	640.00		17,596.5
		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		483,646.4
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		484,282.9

15.10.2 ESTIMATE DETAILS WITH BILLING RATES 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	Billing Total Amour
28	LC1	Carpenter work Carpenter Apprentice		\$39.84 Hour	8.00	\$318.7
	201	oupenter opprentee	TOTAL	000.01	8.00	\$318.7
		TOTAL - Carpenter work			8.00	\$318.7
29		Fabrication Work				
	LWDA	Welder Apprentice		\$39.72 Hour	8.00	\$317.7
			TOTAL		8.00	\$317.7
		TOTAL - Fabrication Work			8.00	\$317.7
GRAND TOTAL					16.00	\$636.4

15.10.2.1 COST ITEM SUMMARY DETAILS

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 might have been extra work and a percentage of the work would apply that the owner approves. The Billing reports lists these details for the owner.

The following image shows cost item 3.1 with the adjustment. To see the adjustment, select the **Actions** tab, and then in the **View** section, set the **Display Billing Rate** toggle to show the Billing Rate columns.

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

Split Defaul	t Display Bi	arent Information ling Rate			Resource Fields Cost Item Fields	2	Edit Resource	Periods	Trench Calcul	
Edit		Vi	ew					Tools		
Cost Breakdown	Structure (CBS)	Register	Cost Item R	ecord O	Dependent Co	st Ite	m Record	Price Brea	kdown Struct	ure Ma
CBS Code:	Optional Code:	Description:								
PI Assignment:	202 0183 3.1 PI Line Number:	Unclassified Ex Excavation PI Description: Unclassified Ex								
Cost Item Summar	30 ry 🍃 Detail : \$:			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 Equ	ipment	\$2.38	\$119,150.00	\$119,150.00	0.00		\$0.00	\$3.02	\$150,819.62	\$137,108.75
Rented Equ	upment	\$0.00	\$0.00	\$0.00	0.00		\$0.00	\$0.00	\$0.00	\$0.00

In the Billing Rates report shown at the bottom of the image, you can view the 3.1 cost item estimate details.

Job Pro	operties	Setu	ngs: Pre	vious		•					
	ation Setup Data	Print	Cost I	tem Selection	Details	Layout Header/Fo	oter				
Resour	rces										
Resour	ce Assemblies		Print a cor	tiguous range	of cost ite	ms:					
Cost Br	reakdown Structure		From:	3.1			-				
CB	S Summary		To:	3.1			•	Roll-up to C	BS Level -1		
> CB	S Details		10.								
> CB	S Outline		Calastaas		North State	egister below:					
Est	imate Summary	0	Select cos	t items to prin	t from the r	egister below:					
CB	S Currency Comparison					Find:	[Search For]	S	aved views: Previous	View	~
Quotes	s							Optional		Unit of	
Price B	reakdown Structure									Measure	
Pay Ite	em & Proposal	\rightarrow									
🚡 Billing F	Rate Reports					Price % Add-On		PRICE % A			
Billi	ng Rate Summary										
Est	imate Details with Billing Rat					Indirect Cost Escalatio		INDIRECT			
Ma	rgin Analysis										
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	ob Code: Copy of Training cription: Training Job - M Resource Code [unty No. T	M2924			ing Unitof ate Measure		Utilization Count		Billin Total Amou
.1	LL2 L LMECH M LO1 CO LO2 CO LO4 CO ECOMP1 CO ECOMP2 CO ED8 CO EG14G CO ES621 S	Excavation Laborer Vechanic Operator Class Operator Foren Compactor Sin Compactor Sin Compactor Sh Dozer D8 Grader 14G Scraper 621	2 nan tooth Drum			\$27 \$32 \$33 \$41 \$70 \$199 \$698 \$196	.64 Hour .60 Hour .66 Hour .67 Hour .86 Hour .84 Hour .64 Hour .23 Hour .30 Hour		125.00 75.00 500.00 62.50 125.00 125.00 125.00 125.00 250.00		\$3,954.9 \$2,070.0 \$16,330.0 \$16,840.3 \$2,679.1 \$5,232.5 \$8,855.0 \$24,955.0 \$8,653.7 \$46,575.0
		Scraper 623 Nater Truck			тот	\$34	.05 Hour .04 Hour		250.00 125.00		\$36,512.5 \$4,255.0 \$17,691.3 \$194,604.6 \$194,604.6

15.10.2.2 DEPENDENT COST ITEM BILLING WORK DETAILS

You can use dependent cost items with billing work. For example, the contractor might 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.

BB Position Code: Description: Direct Cost Add-On Billing Breakdown Description Allocation Description Currency Cost Category Subject Billing Rate Amount Cost Category Subject Billing Amount Cost Category V Total Start Start Start Start Description U.S. Dollar Start Start Start Cost Category Start Start Cost Category Start Start Start Cost Category Start Start Cost Category Start Start Cost Category Start Start Cost Category Start S	\$102,	al Cost: ,676.52 BA Billing Amount \$84,307.07
Perceription Dependency Cost Categorization Allocation Find: [Search For] ··· Saved vi Perceription Currency Total Cost (Forecast) Account Cade Tag 1 Tag 1 Tag 1 Labor State St	5	Billing Amount
rag columns here to group Find: [Search For] Saved vi Description Currency Total Cost (Forecast) Account Code Tag 1 Tag 1 Tag Contingency U.S. Dollar \$102,676,52	5	Amount
Description Currency Total Cost (Forecast) Account Code Tag Tag Total \$\$,762,525.20 1.4 Contingency U.S. Dollar \$102,656,52 Labor \$843,070.69 10.0	5	Amount
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Contingency U.S. Dollar \$102,676,52 > Labor \$943,070.69 10.0		\$04,307.07
	1	\$84,307.07
Vined Equipment \$1,022,102.02 0.0)	\$0.00
Rented Equipment \$7,303.47 0.0)	\$0.00
> Supplies \$26,971.87 0.0)	\$0.00
> Materials \$3,572,899.79 0.0)	\$0.00
> Subcontract \$107,115.00 0.0)	\$0.00
> Fees \$180,021.76 0.0)	\$0.00
> Allowance \$1,000.00 0.0)	\$0.00
Custom Category1 \$1,660.00 0.0	•	\$0.00
Undefined \$0.00 0.0	• (\$0.00

The Estimate Details with Billing Rates can include the dependent cost item with billing work.

керон	a -	Se	ttings	: Previ	ous											
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- Fou	undation Setup Data	Pri	int	Cost Ite	m Selection	Details	Layout	Header/Fe	ooter		6					
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- E	Billing Rate Summary				1		Mobilizatio	n			64101	00		Lump Sum	U.S. Dollar	
– U	Estimate Details with Billing Rat				2		Clearing &	Grubbing			201 01	02		Acre	U.S. Dollar	7
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1	Job Code: Copy of Training Description: Training Job - Ma		Count	No. TM	2924											
CBS Position	Resource Code De	scription							lling Ur Rate M				Utilization Count		Billi Total Amou	
0.10	Dir	ect Cost	t Add-O	1												
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	то	TAL - Di	rect Co	st Add-On		101	AL								\$84,307 \$84,307	
CDAND TOT																
GRAND TOT	AL														\$84,307	01

15.10.3 MARGIN ANALYSIS REPORT

The Margin Analysis report is beneficial for showing 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										
	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										
	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 W	lork				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

15.10.4 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.

Markup for Direct Costs shows in the PBS form.

	Direct Co	st Markup								\$62	.0,483.	29 BASE
cription	Dependency	Allocation					Bill	ling Breakdown				
columns	here to group			ed views	Previous View	v -	Cos	t Category	Subject Billing Amount	Rate		Billing Amount
Descript	tion		(Forecast)	Account Code	Cost Curve	Total Billing Amount	~ [Total	\$5,813,390.7	7 10.00		\$581,339.08
Direct O	ost Markup		\$620,483.29		Linear	\$581,339.08		> Labor	\$838,467.8			\$83,846.78
							μ.	 Owned Equipment 	\$1,024,251.6			\$102,425.17
							1	 Rented Equipment 	\$7,279.0			\$727.90
								> Supplies	\$26,971.8			\$2,697.19
								> Materials	\$3,624,066.5			\$362,406.65
								> Subcontract	\$107,115.0			\$10,711.50
				6				> Fees	\$182,578.8			\$18,257.89
								> Allowance	\$1,000.0			\$100.00
								Custom Category1	\$1,660.0		÷	\$166.00
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The fee total of the additional markup shows in the Billing Rate Summary report.

	b Code: Copy of Trainin cription: Training Job - N	g Job faricopa No. TM2924											
CBS Position Code	Description	Forecast Unit of (T/O) Quantity Measure	Labor	Owned Equipment	Rented Equipment	Materiala	Supplies	Subcontract	Fees	Allowance	Custom Category1	Billing Unit Rate	Total Billing Amount
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	194,604.65
Direct Total			43,785.03	150,819.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00		194,604.65
	Direct Cost Markup		83,846.78	102,425.17	727.90	382,408.85	2,697.19	10,711.50	18,257.89	100.00	165.00		581,339.08
Fees 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		581,339.08
Report Total			127,631.81	253,244.79	727.90	362,406.65	2,697.19	10,711.50	18,257.89	100.00	166.00		775,943.73

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.

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O Its standard (using STDE	l deviations from the norm VP method) exceeds:	0.0 🗘 0	.5 🗘 1.0	•						
Don't benchmark items with fewer than	0 🔹 historical data poin	ts								

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**.

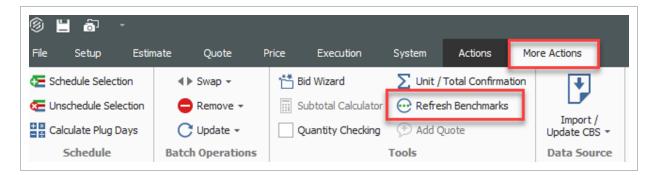
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16.1.3 BENCHMARKING GRAPH

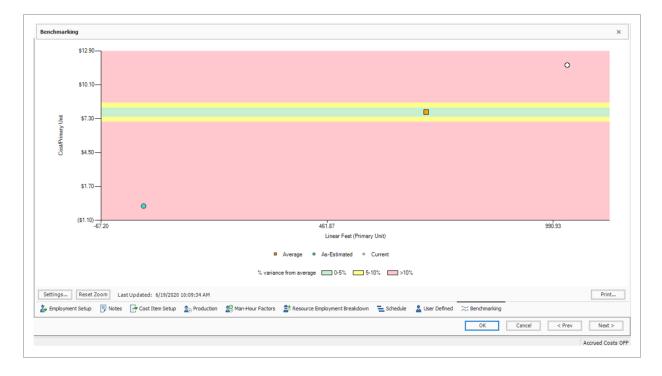
The defaults for the benchmarking graph are defined on the **Job Properties - Benchmarking** form, but on the Cost Item Record - Benchmarking form you have the ability to override the default criteria in order to expand or contract the amount of historical data being used to calculate benchmark values 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.

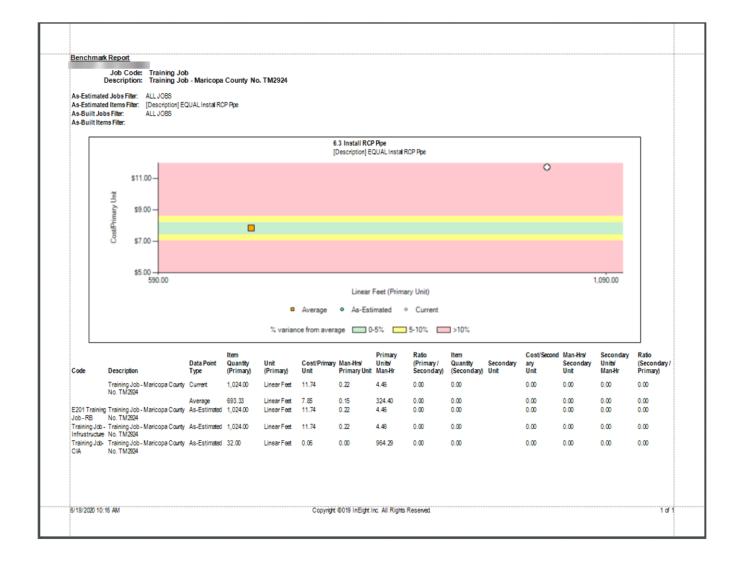
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8. To zoom in on a portion of the graph, click and drag across the portion of the graph that you want to enlarge. To view the entire graph again, click Reset Zoom.



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**.

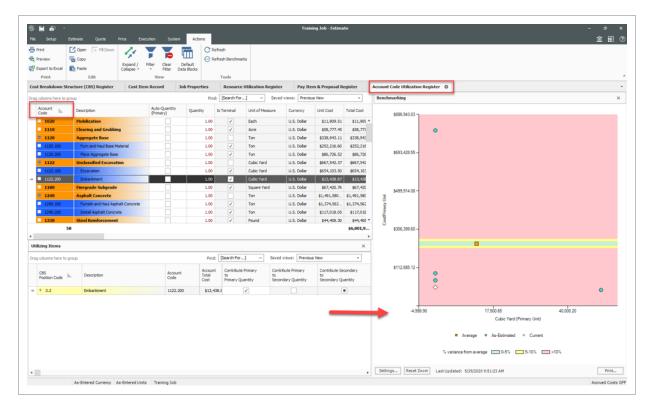
The Benchmarking portion of the form is similar to the **Benchmarking** data block on the Cost Item Record, with the following exceptions:

- 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:

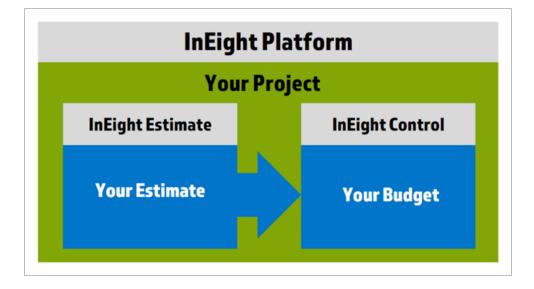
- Align Estimate data with Platform data in preparation for publishing the estimate
- Conform the estimate to publish successfully
- Publish the estimate to a project in Platform
- Review to confirm successful publishing of the estimate

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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Steel Structure Training Job 105091 / Pr	oject details			Job Proper	rties ©						
projects & organizations > Edit project	DETAILS INFORM	AATION ATTRIBUTES		Overview	Cover Shee	t Cost Basis	Minority Setup	Fuel Cost	Job Folder Tags	Pricing	Schedule
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Add project image Minimum of 540px x 360px	Steel Structure Training Job	New	•								
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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.

File	Setup	Estimate	Quote	Price	System	Integrations	Actions	More	Actions									侴	Ħ
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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 Ca	ancel	Save
				-
- EX(ernal project ID 🕜	Notes		
10	5091			
* Sta	itus			
ure Training Job	• •			
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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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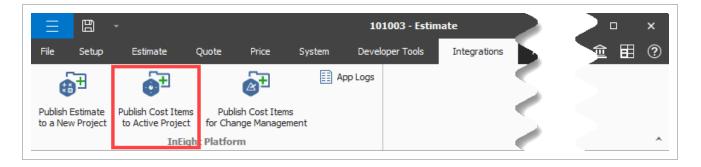
When you publish an estimate to a new project, all cost items, pay items, and change orders that may already exist in the project are removed.

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**.

	Lev	Time	Domain 📃	Area	Message	ExceptionMessage	ExceptionType	Route	CorrelationId
<u>Details</u>	Error	2024/09/04 12:07:34 PM	Core	AccountingLedgerAsy	[DEADLETTER] Syntax	Syntax error at position 13 in 'ineightsuit	Microsoft.OData.ODataException		92c99f07-6c86-48b6-ad1c-7d37aa76
<u>Details</u>	Error	2024/09/04 11:58:43 AM	Control	SchedulerWorker.Sche	Failed to initiate Proce	The added or subtracted value results in	ArgumentOutOfRangeException		7ac70fde-7257-402d-97c5-d7b5f4219
<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
<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 11:47:08 AM	Core	DynamicEntityRefresh	Initiating the EntityRefr				cffff563-07b6-4a40-88ad-2155aa743
<u>Details</u>	Warn	2024/09/04 11:47:08 AM	Core	DynamicEntityRefresh	Initiating the EntityRefr				cffff563-07b6-4a40-88ad-2155aa743
<u>Details</u>	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
<u>Details</u>	Warn	2024/09/04 11:41:17 AM	Core	InEight.Core.Services	Imported 0 of 1 Accou				321ed968-e41e-4dc7-a711-cfb72df7d
Details	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