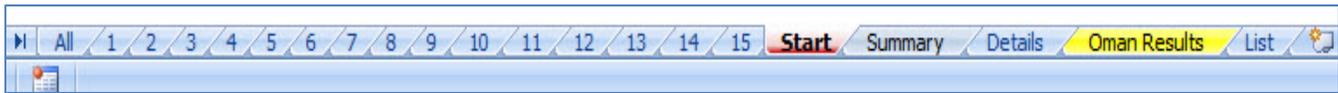


Using the Excel file “Multiple Des Template, Advanced” With Cost and Prices (Revised 6/22/2012)

Part 1: Entering Data



The template has sheets for up to 15 Des Numbers. Starting from left:

Sheet Number-Title	Sheet Content	Editable?
All	The first sheet that combines pay items from all Des numbers. This is the sheet to be imported into Oman to get unit prices for the whole contract	No
1 - 15	Fifteen sheets for 15 Des numbers. Users can enter the Item Numbers, The Supplements and the Quantities. The rest are linked.	Only in columns with green headings.
Start	The sheet where the project descriptions can be entered. The data entered is linked to all other sheets	Only in green cells.
Summary	To be used only after importing the unit prices from Oman. It shows that total amount per each des and more details.	No
Details	Shows in details the quantities of all items and how they are distributed per each Des. The data is linked, but can be filtered.	No
Oman Results	The data pasted from Oman showing unit prices for the contract. It is editable to allow users to change the unit price, and to select LS items to be distributed proportionally.	Yes
List	The official Pay Item List in CES that is updated once a month by INDOT.	No

- 1) Open the Excel file, and make sure to **enable macros** if you get this message on the top.



- 2) Enter the project data in the “**Start**” sheet. You can fill green cells only and the data is linked to other sheets:

Fill the green cells and the data will transfer to all sheets.			
Designer/Estimator:	John Smith	Using Pay Item List of: 4/27/2012 <input type="button" value="Clear All"/>	
Contract No.:	30222		
District:	C		
Letting:	12/02/12		
Description	I-65 Project from I-865 to SR 32		
	Description	Work Type	
Des. No. 1:	1111221	I 65 Project , Part 1	New Bridge
Des. No. 2:	1111222	I 65, Project, Part 2	New Bridge
Des. No. 3:	1111223	I 65, Project, Part 3	Added Travel Lanes

- 3) Now, open sheet #1 to enter the data for first Des number. **Only Columns with green headings** can be edited, the rest are linked and protected.

A	B	C		D	E	F	G
Trim Item Numbers	Sort Item No.	Contract: 30222 , Des. #: 1111221		Print Preview		Reset Data	Reset Format
Comments	Item Number	Item Description	Link Description and Unit to Current PI List	Supplemental Description	Enter Quantity	Unit	Warning? (Formulas, Protected)

The item numbers must be on this format ###-#####, for example: 726-92406. The “-“ in the middle must be typed and no space between, before or after the item number cell. The following buttons are on the top:

- **Trim Item Numbers:** Click on it to clean any extra spaces in the item number.
- **Sort Item No.:** To sort the item number column numerically.
- **Link Description and Unit to Current PI List:** By default, all item numbers are linked to the current pay item list. However, you could overwrite the links when you paste the data from another file or when you manually type. By clicking on the button, all links are back.
- **Reset Data:** This will clear all data in the green columns. However, links can be returned using the button above.
- **Reset Format:** This will return the original format in case of changes in font, color, lines..etc.

The last column is for any warning. Type of warnings that might appear in each sheet:

- **Item # Not Found:** The message will appear if the item number is not part of the latest Pay Item list published by INDOT which is part of this file and gets updated every few weeks. CES will only import item numbers that are part of the latest PI list.
- **Fix Item # Format:** if the item number is not typed correctly, missing a digit or has extra spaces.
- **Supp. Req:** when the item requires supplemental description, otherwise it will not be imported into CES.
- **Duplicate:** when an item number is used more than once in the same Des. It is ok if they have different supplemental description.
- **Total does not match. Identical Items, Same Des:** when an item number is used more than once in the same Des, but with same item description and supplemental description. They should be combined as one item, or add supplemental description to each. This warning can only be seen in the “Details” sheet.

Important Notes to Avoid Errors:

- If you are copying Item Numbers, Descriptions or Quantities from different files, then make sure to past the data using: **Paste Values**.
- It is strongly recommended that you **only enter the item number**, and let the Description and Unit columns to be linked. Otherwise, it would cause errors if items with same numbers are not completely identical in the description and the Unit columns. For example, Excel would use L.F.T as different from LFT.
- If the item number is not recognized and you get the message (*Item # Not Found*), then you can manually write the description and the unit until the item is approved by INDOT.

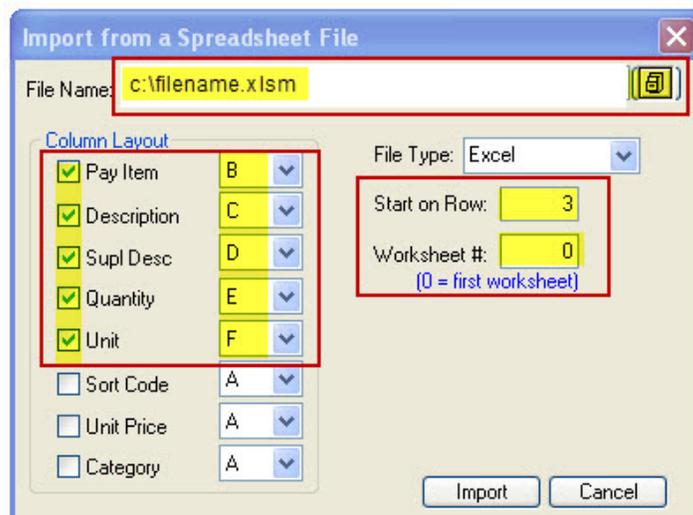


4) .After entering the data for all des numbers, open the sheet “All” and click on “Refresh Data”

A	B	C	D	E	F	G	H
178	By: John Smith	I-65 Project from I-865 to SR 32	Contract: 30222 , Dist: C	4 Des.,	Letting: 12/2/2012	Refresh Data	Print Preview
Lin	Item	Description	Supplemental Description	Total Quantity	Unit	# of Occurance	Warning?
1	105-06845	CONSTRUCTION ENGINEERING		1	LS	3	
2	110-01001	MOBILIZATION AND DEMOBILIZATION		1	LS	3	
3	201-52370	CLEARING RIGHT OF WAY		1	LS	1	
4	202-02240	PAVEMENT REMOVAL		10050	SYS	1	
5	202-51320	PRESENT STRUCTURE, REMOVE PORTIONS		1	LS	1	

This is the sheet that will be imported to Oman. It is the first sheet, or sheet 0

- 5) Save the file, and keep it with *xlsm* extension. Otherwise all macros became disabled.
- 6) Now, import into Oman the data using the following layout:



7) You can also click on the sheet “Details” which shows all items and how they were distributed in each Des. It also has a warning column like the other sheets, but with an extra warning in this sheet:

Total does not match. Identical Items, Same Des: when an item number is used more than once in the same Des, but with same item description and supplemental description. They should be combined as one item, or add supplemental description to each.

Item	Description	Total Quantity	Unit	Warning?	Des. 1	Des. 2	Des. 3	Des. 4
724-51925	STRUCTURAL EXPANSION JOINT, SS	198	LFT		100	98		
726-92406	BEARING ASSEMBLY, ELASTOMERIC	16	EACH		12	4		
801-08401	TEMPORARY TRAFFIC BARRIER, TYPE 2	9500	LFT	Total does not match. Identical Items, Same Des			8800	
808-06716	LINE, REMOVE	9800	LFT				9800	

Notice that total for the above item is 9500, but it shows 8800 in Des 3. This is because the same identical item was repeated more than once, and only the first one was linked.

Part 2: Getting Prices from Oman

After importing the data into Oman, use any method to get an estimate. Make sure the Unit Price, Extension columns are filled, and then do the following to transfer the data back to the Excel file:

- 1) Use Oman to get the unit prices for this contract. When it is done, click on the corner of the page, then on **Ctrl + C**, this would copy all data in the screen.

PAY ITEM	Description	Quantity	Unit	Unit Price	Extension	Comparison #1	Comparison #2	Comparison #3	Sector
105-06845	CONSTRUCTION ENGINEERING	1.00	L.S.	21,699.91	21,699.91	21,699.91	19,022.26	14,825.95	10
109-08359	LIQUIDATED DAMAGES	1.00	\$	1.00	1.00	1.00	1.00	1.00	10
109-08360	CONTRACT LIENS	1.00	\$	1.00	1.00	1.00	1.00	1.00	10

- 2) Back to the Excel template and click on **“Oman Result”** sheet, then click on the button **“Paste Data from Oman”**.

PAY ITEM	Description	Quantity	Unit	Unit Price	Put x to Select	Unit Price After	Method to be Used	Unit Price to Use

- 3) Only green columns are editable.

Paste Data from Oman	*PAY ITEM*	Description	Quantity	Unit	Unit Price	Put x to Select	Unit Price After	Method to be Used	Unit Price to Use	Enter LS %	LS Unit Price Manual %
	105-06845	CONSTRUCTION ENGINEERING	1	L.S.	\$24,269.77		\$24,269.77				
	110-01001	MOBILIZATION AND DEMOBILIZATION	1	L.S.	\$104,232.24		\$104,232.24				
	201-52370	CLEARING RIGHT OF WAY	1.00	L.S.	\$47,271.03		\$47,271.03				
	202-02240	PAVEMENT REMOVAL	10,050.00	S.Y.	\$7.51		\$7.51				
	202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	L.S.	\$949,288.28		\$949,288.28				
	202-51330	PRESENT STRUCTURE, REMOVE	1.00	L.S.	\$65,079.96		\$65,079.96				
	202-74035	SIGN, REMOVE	20.00	EACH	\$82.19		\$82.19				
	202-74055	OVERHEAD SIGN STRUCTURE, BOX TRUSS, R	5.00	EACH	\$3,035.57		\$3,035.57				
	202-85996	LIGHT STANDARD AND MAST ARM, REMOV	2.00	EACH	\$401.00		\$401.00				
	202-90413	SLOPEWALL, CONCRETE, 4 IN, REMOVE	400	S.Y.	\$59.00		\$59.00				

- 4) Save both files, Excel and Oman.

Part 3: Summary, Analyzing Data, Distributing LS items.

The unit prices imported from Oman are now distributed back to each Des number.

Click on any sheet (#1 – 15) that is filled with data and the columns on the right side are now linked with the unit prices imported from Oman for the whole contract:

D	E	F	G	H	I	J	K	W
				Reset Data	Reset Format	Results Back From Oman	\$2,264,717.53	Selected LS in Red
Enter Supplemental Description (Mandatory for Green Cells)	Enter Quantity	Unit (Linked)	Warning	Unit Price Used	This Des Total	Quantity for Contract	Contract Total	
	1	LS		\$10,462.36	\$10,462.36	1	\$31,387.08	
	1	LS		\$40,235.61	\$40,235.61	1	\$120,706.82	
	1	LS		\$84,198.99	\$84,198.99	1	\$84,198.99	
	37	CYS		\$53.89	\$1,993.93	141	\$7,598.49	
	32	EACH		\$11.90	\$380.80	126	\$1,499.40	
	222	SYS		\$79.56	\$17,662.32	848	\$67,466.88	
	1	EACH		\$1,433.70	\$1,433.70	2	\$2,867.40	
	325	CYS		\$483.39	\$157,101.75	325	\$157,101.75	
	175	CYS		\$405.97	\$71,044.75	175	\$71,044.75	
	44	CYS		\$490.15	\$21,566.60	44	\$21,566.60	
	24	HRS		\$769.22	\$18,461.28	24	\$18,461.28	

The quantity cells filled in blue color are for items that are in this Des number only.

Distributing LS Items:

The most common Lump Sum items on all contracts to be distributed are:

- Mobilization and demobilization
- Construction engineering
- Clearing right of way
- Maintaining traffic

By default, the unit price for each LS item is equally divided between all Des numbers that include it. However, users can chose to distribute proportionally the unit price from Oman or a manual percentage. The proportional distribution is according to the percentage of each Des in the whole contract without the selected LS item.

In order to distribute any LS item proportionally, user must select the LS item first in the “Oman Results” sheet, and select which method to use.

Paste Data from Oman	*PAY ITEM*	Description	Quantity	Unit	Unit Price	Put x to Select	Unit Price After	Method to be Used	Unit Price to Use	Enter LS %	LS Unit Price Manual %
	105-06845	CONSTRUCTION ENGINEERING	1	L.S.	\$24,269.77	x		Oman	\$24,269.77		
	110-01001	MOBILIZATION AND DEMOBILIZATION	1	L.S.	\$104,232.24	x		Manual %	\$606,825.68	4.0%	\$606,825.68
	201-52370	CLEARING RIGHT OF WAY	1.00	L.S.	\$47,271.03	x		Oman	\$47,271.03		
	202-02240	PAVEMENT REMOVAL	10,050.00	S.Y.	\$7.51		\$7.51				
	202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	L.S.	\$949,288.28		\$949,288.28				
	202-51330	PRESENT STRUCTURE, REMOVE	1.00	L.S.	\$65,079.96		\$65,079.96				
	202-74035	SIGN, REMOVE	20.00	EACH	\$82.19		\$82.19				
	202-74055	OVERHEAD SIGN STRUCTURE, BOX TRUSS, R	5.00	EACH	\$3,035.57		\$3,035.57				
	202-85986	LIGHT STANDARD AND MAST ARM REMOV	2.00	EACH	\$401.00		\$401.00				

- **Oman Method:** using the unit price from Oman. This will not change the contract final amount.
- **Manual % Method:** using a manual percentage for the item and this will change the contract final amount. (See next page to understand the calculation steps done in Excel)

How Distribution Calculations is Done in the Excel Template:

Example: If the total estimate of a contract is \$450k and one selected LS item to be distributed. The selected LS item is: **Construction Engineering**. The average bid history from Oman for this item in this contract is \$50k but applied to only three Des numbers out of 5 in this contract.

Item	Unit	Des 1	Des 2	Des 3	Des 4	Des 5
Construction Engineering	LS	1	1		1	

The default distribution is to divide the bid history of 50k between Des 1, 2 and 4 so each would have \$16,666.67. Or to use one of two methods:

- Method 1: Distribute the Oman unit price of 50k proportionally to each Des using each Des %.
- Method 2: Apply a manual percentage to be distributed proportionally to each Des using each Des %

To use either method, we have to find the Des % of each, but without the item to be distributed.

Original Contract Amount of \$450k – Selected LS item of \$50k = **\$400k**

	Des 1	Des 2	Des 3	Des 4	Des 5	Total
Total Estimate Per Des (without the LS)	\$80k	\$40k	\$100k	\$120k	\$60k	\$400k
Original % of Each Des	80k/400k= 20%	40k/400k= 10%	100k/400k 25%	120k/400k= 30%	60k/400k= 15%	20+10+30 = 60. This LS is applied to 60% of the contract.
Construction Engineering	1	1		1		

Since the selected LS item is applied to only 60% of the contract, then each original Des % would change to:

$$\text{New Des \%} = \text{Original \%} / \text{Total \%} = \text{Original \%} / 60\%$$

- Method 1 Solution using Oman price of \$50k: $\text{New Des \%} * (\$50k)$
- Method 2 Solution using 5% of the \$400k: $\text{New Des \%} * (5\% * 400k) = \text{New \%} * (20k)$

	Des 1	Des 2	Des 3	Des 4	Des 5	Total
Original % of Each Des	20%	10%	25%	30%	15%	100%
Construction Engineering	1	1		1		Applied to 60%
New % of Each Des	20%/60%= 33.3%	10%/60% = 16.67%		30%/60% = 50%		100%
Method 1: Distributing Oman Price	\$16,667.67	\$8,333.33		\$25,000.00		\$50,000.00
Method 2: Distributing 5%	\$6,666.67	\$3,333.33		\$10,000.00		\$20,000.00

Summary Sheet:

The summary sheet has two parts: one with summary for each Des. The other part is summary for the whole contract.

- **Part 1:** Shows the cost of each Des before and after distributing selected LS items in each Des. If no LS item is selected, then no proportional distribution is applied, and each LS item is divided equally.

Print Preview												
Estimator: John Smith		Contract: 4xxxx		1) Original Data From Oman		2) Data Without Selected LS Items			3) After Distributing Selected LS Items			
Des No.	Location	Number of Pay Items	# of All LS Items	Amount Per Des	Des % Orig.	# of Selected LS	Amount Per Des	Des % Used	Amount Per Selected LS	New Amount Per Des	Des % After	
1	1111221	I 65 Project , Part 1	29	7	\$2,282,557.09	14.9%	2	\$2,239,723.09	14.8%	\$94,612.79	\$2,334,335.88	14.7%
2	1111222	I 65, Project, Part 2	21	4	\$981,272.35	6.4%	2	\$938,438.35	6.2%	\$39,642.52	\$978,080.87	6.2%
3	1111223	I 65, Project, Part 3	114	6	\$11,851,562.59	77.2%	3	\$11,761,457.56	77.5%	\$544,111.16	\$12,305,568.72	77.6%
4	1111224	I 65,Traffic	39		\$231,022.90	1.5%		\$231,022.90	1.5%		\$231,022.90	1.5%
5												
6												

- **Part 2:** Summary for the whole contract showing the most common LS items, and if they are selected to be distributed.

Most Common LS Items to be Selected and Distributed:	Is it in this contract?	Selected ?	Unit Price Used	Item In:	Comment	% Used
110-01001	Yes	Yes	\$606,825.68	3 of 4 Des	Manual Percentage was distributed proportionally to 3 Des using each Des %	4.0%
105-06845	Yes	Yes	\$24,269.77	3 of 4 Des	Oman Price was distributed proportionally to 3 Des using each Des %	
201-52370	Yes	Yes	\$47,271.03	1 of 4 Des	Oman Price was distributed proportionally to 1 Des using each Des %	
801-06775	Yes	No	\$47,332.89	1 of 4 Des	Oman Price was distributed equally to 1 Des	
Distribution was done according to the Des % shown in column K						
Contract Data						
Estimator:	John Smith	Contract No.:	4xxxx	# of Des No. in this contract:	4	
Letting:	12/02/12	District:	C	# of Pay Items in this contract:	178 items ; 203 places	
Description:	I-65 Project from I-865 to SR 32					
# of All LS Items:	11 items ; 17 places	Amount of All Original LS Items:	\$2,145,913.69			
# of Selected LS Items:	3 items ; 7 places	# of Other LS Items:	8 items ; 10 places			
Amount of Selected LS Items:	\$678,366.48	Amount of Other LS Items:	\$1,970,140.65			
% of Selected LS Items:	4.5%	Contract Amount Without Selected LS:		\$15,170,641.90		
Original Contract Amount From Oman:				\$15,346,414.94		3.27%
Final Contract Amount After Distributing Selected LS Items:				\$15,849,008.38		

Detail Sheet:

It shows the pay items and quantities in each Des and which LS item is selected to be distributed. It also shows any warning per Des. If a quantity cell is filled with light red, then there is an error. See the last column to the right.

Detail Of Items Per Each Des (Not To Be Exported to Oman)				Colored Cells: When a selected LS item is not in every Des in this contract								
				Reset 1	Reset 2	Reset 3	Reset 4	Reset 5	Reset 6	Reset 7	Reset 8	
<input type="button" value="Refresh Data"/> <input type="button" value="Clear All Filters"/> <input type="button" value="Filter LS Items"/>				# of Warnings			3	1				
# of Items: Selected LS Items in Yellow				# of Items	29	21	114	39				
178				% Without LS	14.8%	6.2%	77.5%	1.5%				
				% After Dist. LS	14.7%	6.2%	77.6%	1.5%				
Item	Description	Total Quantit	Unit	Des. 1	Des. 2	Des. 3	Des. 4	Des. 5	Des. 6	Des. 7	Des. 8	
105-06845	105-06845 CONSTRUCTION ENGINEERING	1	LS	1	1	1						
110-01001	110-01001 MOBILIZATION AND DEMOBILIZATION	1	LS	1	1	1						
201-52370	201-52370 CLEARING RIGHT OF WAY	1	LS			1						
202-02240	202-02240 PAVEMENT REMOVAL	10050	SYS			10050						
202-51328	202-51328 PRESENT STRUCTURE, REMOVE PORTIONS	1	LS			1						
202-51330	202-51330 PRESENT STRUCTURE, REMOVE	1	LS	1								
202-74035	202-74035 SIGN, REMOVE	20	EACH					20				
202-74055	202-74055 OVERHEAD SIGN STRUCTURE, BOX TRUSS, REMOVE	5	EACH					5				

Note:

You can import a single Des with unit price into Oman, then export it to CES. For example, to import Des 1 which is in Sheet #1:

B	C	D	E	F	G	H	I	J	
Contract: 34001 , Des. #: 1173158						<input type="button" value="Reset Data"/>	<input type="button" value="Reset"/>	Results Back From Oman	\$2,264,717.53
Enter Item Number	Linked Description (Protected) Red if Suppl. Required	Enter Supplemental Description (Mandatory for Green Cells)	Enter Quantity	Unit (Linked)	Warning		Unit Price Used	This Des Total	
105-06845	CONSTRUCTION ENGINEERING		1	LS			\$10,462.36	\$10,462.36	
110-01001	MOBILIZATION AND DEMOBILIZATION		1	LS			\$40,235.61	\$40,235.61	
202-51330	PRESENT STRUCTURE, REMOVE		1	LS			\$84,198.99	\$84,198.99	
302-07455	DENSE GRADED SUBBASE		37	CYS			\$53.89	\$1,993.93	
602-06729	BARRIER DELINEATOR		32	EACH			\$11.90	\$380.80	

1. In Oman, create a project file for the Des.
2. Import the data as an excel file from the template and use the following layout. Notice the sheet number, and the Unit Price column.

