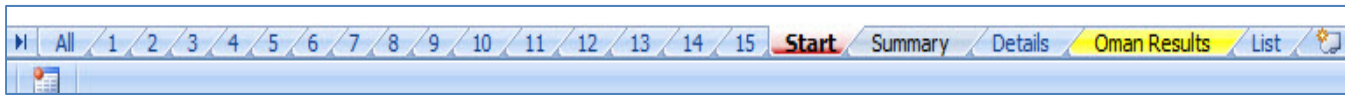# Using the Excel file "Multiple Des Template"
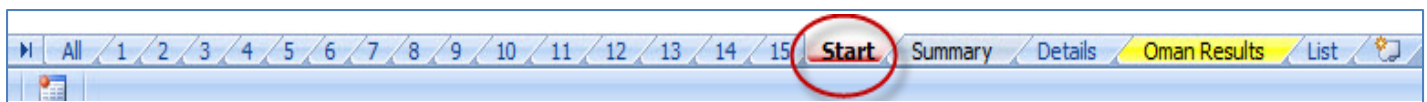
Part 1: Entering Data

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 green cells.
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 **allow macros**, then enter the project data in the "Start" sheet.

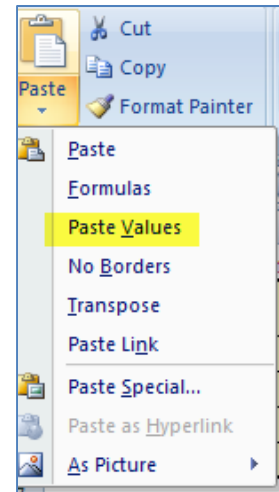2) You can fill green cells only and the data is linked to other sheets:

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

Sort Item No.				Contract: , Des. #:			Reset Data	
Drop Down List by Description	Drop Down List by Item No.	Transfer Items No. From This Column	Enter Item Number	Linked Description (Protected) Red if Suppl. Required	Enter Supplemental Description (Mandatory for Green Cells)	Enter Quantity	Unit (Linked)	

You can use either Drop Down List menu (sorted by Description, or by Item No.). Then click on "Transfer Item No. From This Column".

<u>Important</u>: If you are copying Item Numbers or Quantities from different files, then make sure to past the data using: **Paste Values**.

4) Each item number is linked and it should populate the Description and Unit columns.
However, if:
- The Item Number cell is filled with **green color**, then the item is new and replaced an old one in CES.
- The Item Number cell is filled with **gray color**, then it is repeated within the same Des number
- The Description is in **red font**, then supplemental description is required.

<u>Warning</u>: If an item number is not recognized or linked, then it will not be recognized by CES either. Make sure to put the correct number before exporting the data to Oman.
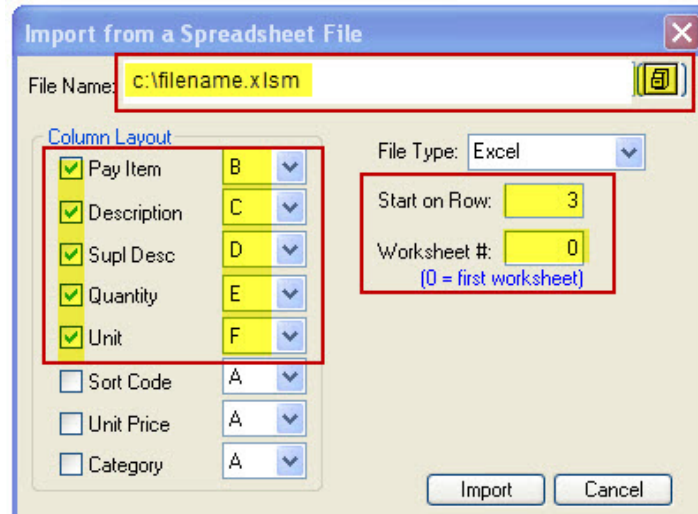
5) After entering the data for all des numbers, open the sheet "**All**" and click on "**Refresh Data**"

	A	B	C	D	E	F	G	H
	178 By: John Smith		I-65 Project from I-865 to SR 32	Contract: 4xxxx , C Dist.	Number of Des: 4	Letting: 12/2/2012	Refresh Data	
Line	Item		Description	Supplemental Description	Total Quantity	Unit	# of Occurance	
1	105-06845		CONSTRUCTION ENGINEERING		1	LS	3	You can copy the c
2	110-01001		MOBILIZATION AND DEMOBILIZATION		1	LS	3	Open the file "Estir
3	201-52370		CLEARING RIGHT OF WAY		1	LS	1	
4	202-02240		PAVEMENT REMOVAL		10050	SYS	1	1) **Item Number** i
5	202-51328		PRESENT STRUCTURE, REMOVE PORTIONS		1	LS	1	List and will not l
6	202-51330		PRESENT STRUCTURE, REMOVE		1	LS	1	2) **Item Number** c
7	202-74035		SIGN, REMOVE		20	EACH	1	3) **Item Descripti**
8	202-74055		OVERHEAD SIGN STRUCTURE, BOX TRUSS, REMOV		5	EACH	1	
9	202-85996		LIGHT STANDARD AND MAST ARM, REMOVE		2	EACH	1	To import this shee
10	202-90413		SLOPEWALL, CONCRETE, 4 IN, REMOVE		400	SYS	1	Open the project fil
11	202-93741		GUARDRAIL END TREATMENT, REMOVE		15	EACH	1	Select: **Import Pav**

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

6) Save the file, and keep it with *xlsm* extension. Otherwise all macros became disabled.

7) Now, import into Oman the data using the following layout:

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

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

9) Back to the Excel template and click on "**Oman Result**" sheet, then click on the button "**Paste Data from Oman**".

10) Only green columns are editable.

Paste Data from Oman	*PAY ITEM*	Description	Clear All Selected x	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, REMO		2.00	EACH	$401.00		$401.00				
	202-90413	SLOPEWALL, CONCRETE, 4 IN, REMOVE		400	S.Y.	$59.00		$59.00				

11) Save both files, Excel and Oman.

Part 2: 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.

								AH	AI	AJ	AK	AL
Paste Data from Oman	***PAY ITEM***	**Description**	**Clear All Selected x**		**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				
	202-85996	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*)

4

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, <u>but without</u> 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:

New Des % = Original % / Total % = Original % / 60%

- Method 1 Solution using Oman price of $50k: New Des % *($50k)

- Method 2 Solution using 5% of the $400k: New Des % * (5% * 400k) = 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.

					1) Original Data From Oman		2) Data Without Selected LS Items			3) After Distributing Selected LS Items		
Estimator:	**John Smith**		**Contract:**	**4xxxx**								
	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	$2,239,723.04	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	MOBILIZATION AND DEMOBILIZATION	Yes	Yes	$606,825.68	3 of 4 Des	Manual Percentage was distributed proportionally to 3 Des using each Des %	4.0%
105-06845	CONSTRUCTION ENGINEERING	Yes	Yes	$24,269.77	3 of 4 Des	Oman Price was distributed proportionally to 3 Des using each Des %	
201-52370	CLEARING RIGHT OF WAY	Yes	Yes	$47,271.03	1 of 4 Des	Oman Price was distributed proportionally to 1 Des using each Des %	
801-06775	MAINTAINING TRAFFIC	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 warming per Des. If a quantity cell is filled with light red, then there is an error. See the last column to the right.

					Colored Cells:	When a selected LS item is not in every Des in this contract						
Detail Of Items Per Each Des (Not To Be Exported to Oman)					Reset 1	Reset 2	Reset 3	Reset 4	Reset 5	Reset 6	Reset 7	Reset 8

			# of Warnings				3	1				
Refresh Data	Clear All Filters	Filter LS Items	# of Items		29	21	114	39				
# of Items:	Selected LS Items in Yellow		% Without LS		14.8%	6.2%	77.5%	1.5%				
178			% After Dist. LS		14.7%	6.2%	77.6%	1.5%				

Item	Description	Total Quantity	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			Reset Data	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
	REINFORCED CONCRETE BRIDGE							

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.

Import from a Spreadsheet File

File Name: c:\filename.xlsm

Column Layout
- ☑ Pay Item   B
- ☑ Description   C
- ☑ Supl Desc   D
- ☑ Quantity   E
- ☑ Unit   F
- ☐ Sort Code   A
- ☑ Unit Price   I
- ☐ Category   A

File Type: Excel

Start on Row: 3

Worksheet #: 1
(0 = first worksheet)

Import   Cancel

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