

6C-1

# Item Trend Lookup and Adjustment of Unit Prices

iPDWeb Cost Estimating Manual Chapter 6C-1 Bid Items

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After the bid item list has been created (see **Chapter 6A-1 Adding Bid Items**) the bid items are ready to have pricing assigned. IPDWeb has been created with a tool that performs an analysis based on filtered data and provides a suggested price for the user to evaluate. These filters are initially assigned by the software and in most cases will provide sufficient data samples to allow for reasonable prices to be generated. The user can also manually adjust these filters to generate pricing when the software returns insufficient data samples or when the pricing needs to be fine-tuned.

When working with individual item filters it is important to understand the how the Estimate Trend Filter functions (see chapter 5 Trend Filters) in order to avoid the possibility of losing the work previously done on bid item filters when adjusting the Estimate Trend Filter. Notes and documents can also be added to each bid item providing documentation of the bid item process. This documentation is extremely important when the adjustments made to items have a significant impact on the estimate total. It allows for others reviewing the estimate to easily understand the though process and decisions that were used when building the estimate. The following chapter explains how to use the Item Trend Lookup, and the process for generating pricing for bid items.

This chapter contains the following sections:

Item Trend Lookup Screen: Layout Detail Description General layout details and descriptions.

Item Trend Lookup: Analysis of Data: How to analyze the data using the Item Trend Lookup

Roadway Example: Example showing price analysis of a roadway item

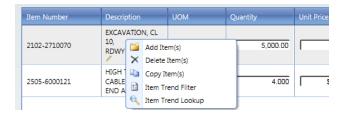
Bridge Example: Example showing price analysis of a bridge item

Manual Adjustment of Unit Price: Example showing how to manually adjust unit price and provide documentation explaining the reason for the changes.

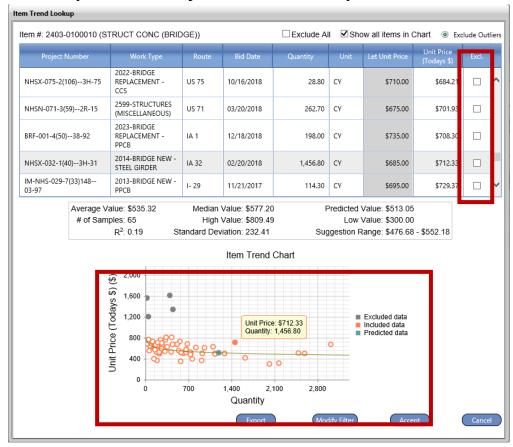
Non-Standard Bid Items: Explanation of Non-Standard Bid Items

Lump Sum Items: Explanation of Lump Sum Items

To access the Item Trend Lookup, select the desired item and right click then select the Item Trend Lookup

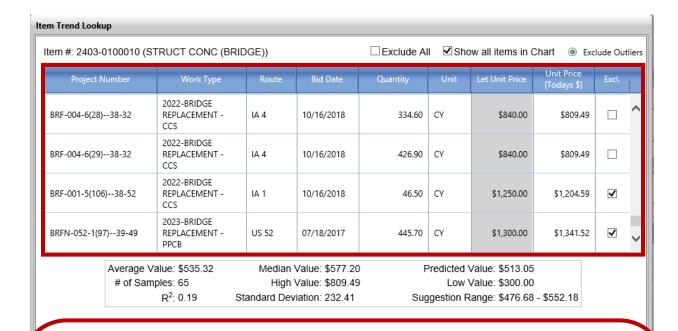


### Item Trend Lookup Screen: Layout Detail Description

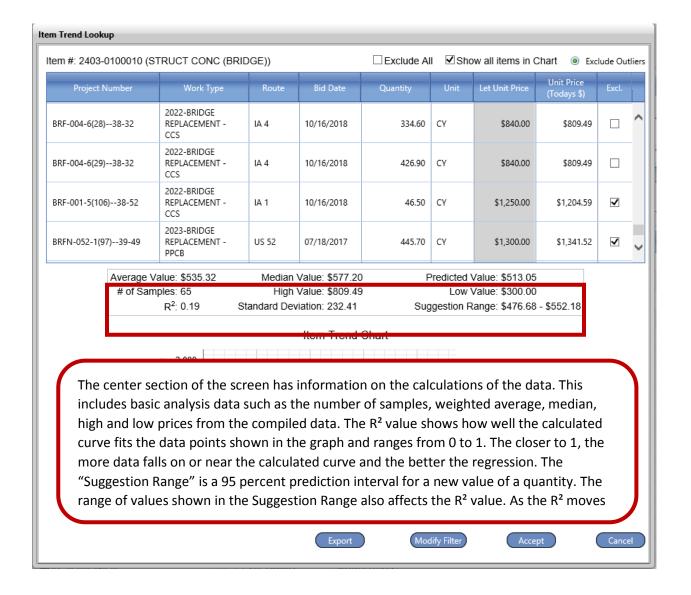


The "Item Trend Chart" displays the bid item information for each filtered project that was used in the regression analysis. The orange and grey dots represent a "sample" project data point. The orange dots are data points included in the regression analysis. The gray dots are outliers which are more than two standard deviations from the average price and have been automatically excluded from the regression analysis.

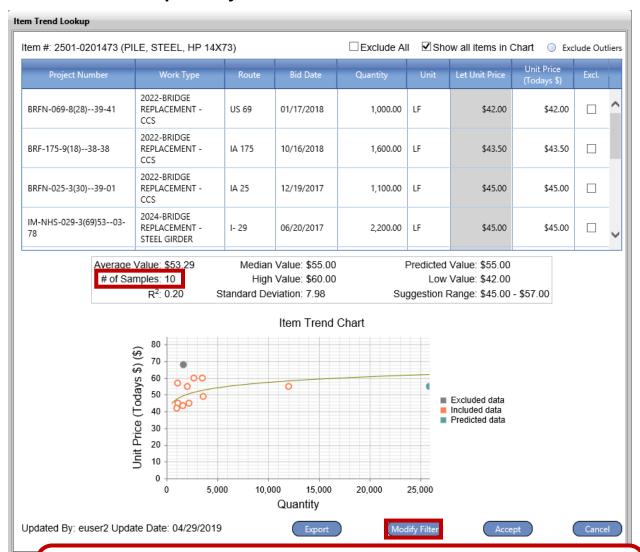
**Selecting an orange or grey dot with a single click** will highlight the applicable project in the table. **Double clicking on an orange dot** will exclude that item turning it grey and vice versa for a grey item. Items can also be excluded by **marking the excluded box** in the table above.



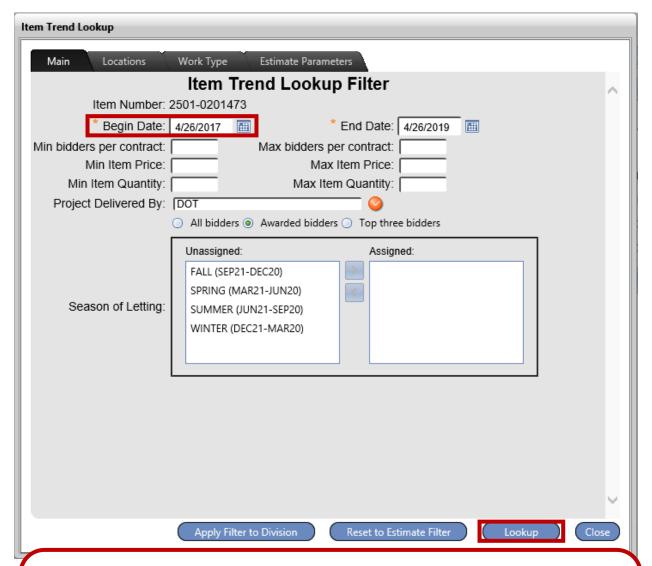
The top portion of the screen provides a table with project information and the data points that were included on the analysis chart. Projects can be individually excluded from the data analysis by clicking on the box in the exclude column or globally excluded by checking the exclude all box at the top. The information in the chart can be sorted in ascending or descending order by clicking on the header. This table also shows the let data and the let unit price. The column labeled Unit Price (Todays \$) shows the adjusted unit price in current dollars. NOTE: The unit price has already been modified for inflation and the Construction Cost Index (CCI) so no additional adjustments to the unit price are needed. This can cause the current unit price to be higher or lower than the let unit price. It is a good practice to review the Let Unit Price and Unit Price (Todays \$) when analyzing the price of a bid item. In rare occurrences the CCI calculation can cause the Today \$ unit price to be significantly higher or lower than the let unit price. This can occur to the pricing for recently let projects after the CCI has been updated in the system. When this occurs it is best to analyze the



#### Item Trend Lookup: Analysis of Data

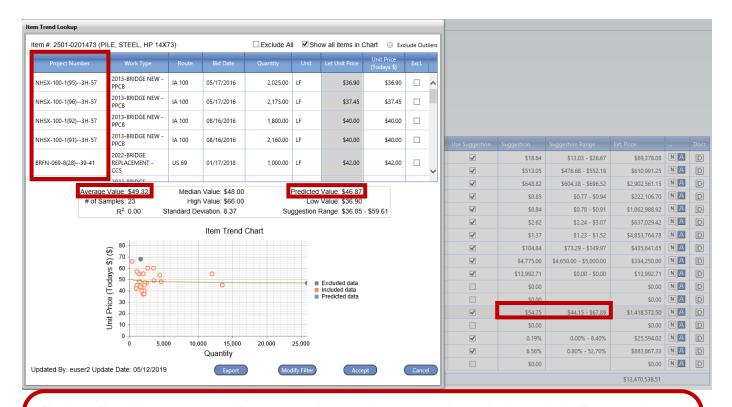


For this scenario, we are looking at item 2501-0201473 (PILE, STEEL, HP 14X73) which is one of the identified bid items containing 83% of the cost for this estimate. This bid item only has 10 samples. Increasing the number of samples will help to provide a better predicted value. This can be done by adjusting the bid item filters. To do this **left click on the "Modify Filter" button**.



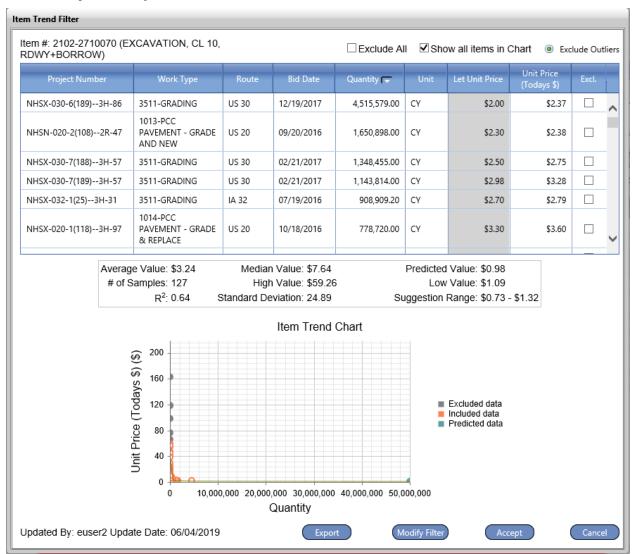
This will open the Item Trend Lookup screen. This screen is the same as the Estimate Trend Filter except any changes made will only affect the current bid item that has been selected. The quickest way to include more samples into the pricing calculation is to expand the "Begin Date" found in the Main tab. This can easily be done by adjusting the date back by 1 year in the Begin Date Box.

NOTE: The software assigns the End Date based on the date the estimate was created in the software and the Begin Date is set to 2 years ahead the End Date. Once this change has been made, click on the Lookup button to go back to the Item Trend Lookup screen.



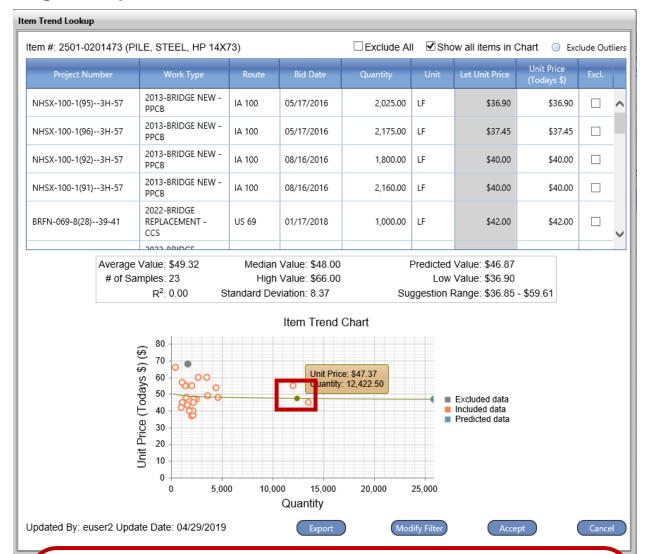
The Item Trend Lookup screen will re-appear showing the new samples and price analysis. The samples were increased from 10 to 23 and the new Predicted Value of \$46.87 is shown. The previous Suggested Price and Suggestion Range can still be referenced on the main screen for comparison. If sufficient data samples were not generated it would be necessary to enter into the Modify Filter screen again and further adjust the Begin Date. As shown in this example 23 samples have been generated and will now allow for the data and price to be analyzed further.

# **Roadway Example**

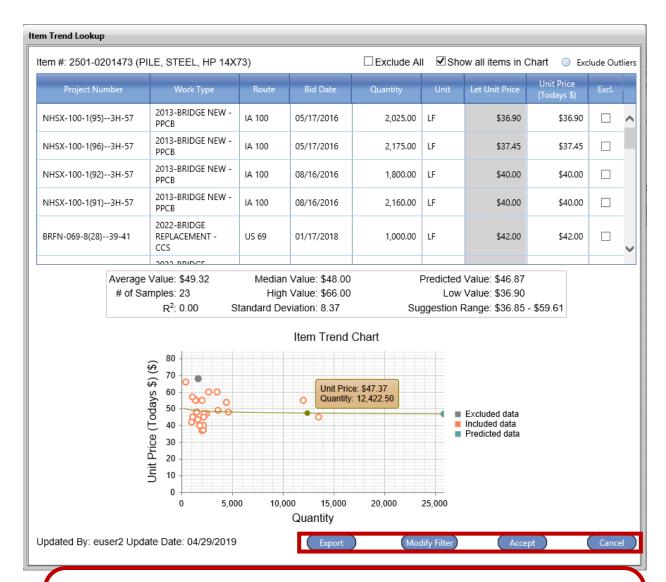


In certain scenarios the quantity may be extremely greater than any previous project totals and special care will need to be taken during the price analysis. In this scenario we have an Excavation Class 10 bid item with a quantity of 50,000,000 CY. This quantity is extremely higher than any past projects. The regression curve will continue to slope down towards zero and the software will then place the data point on the regression curve at the quantity of 50,000,000. This causes the predicted value to be \$0.98 per CY which is unrealistic for earthwork and will need to be further analyzed. When reviewing the price it is best to filter by the quantity and look at pricing for the projects with higher quantities. In this scenario we can see highest quantity projects range from \$2.00 to \$2.98. Using this information and estimator experience the price will need to be manually changed in the division bid item screen (see Manual Adjustment of Unit Price).

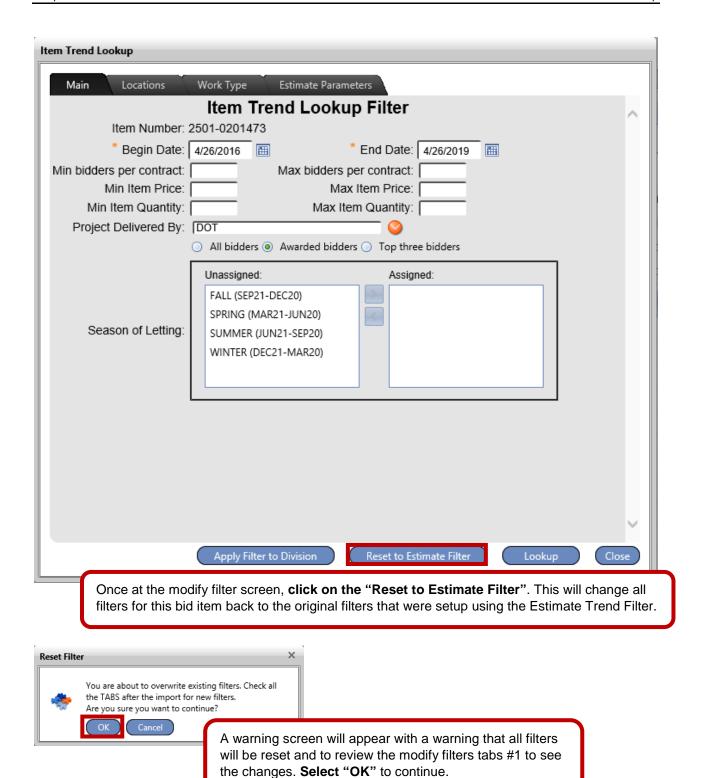
# **Bridge Example**

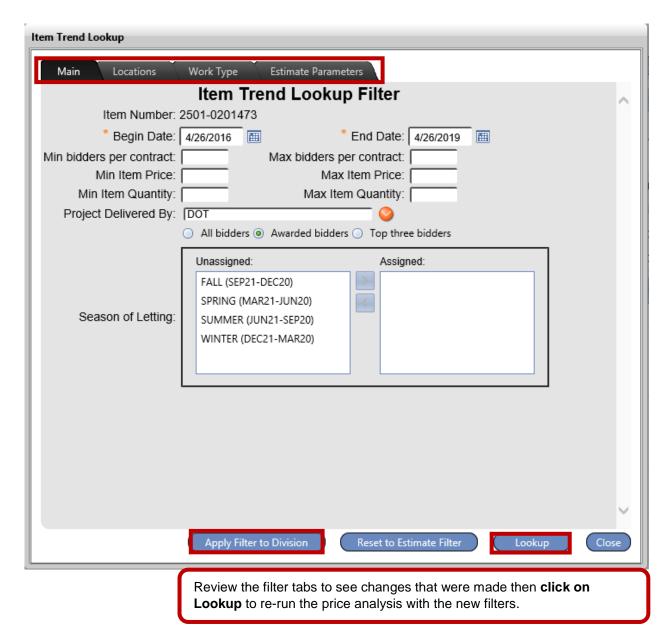


As shown in the graph above, the software has assigned a predicted value based on the regression curve, however there are not any previous samples that are close to the quantity for this bid item. In this situation the regression line is continuing to project outwards at a steady decrease until arriving at the bid item quantity. When this happens it is best to analyze the move the predicted value back to the nearest data points and then analyze the project data as well as the Average Value and Median Value. Pricing can vary for many reasons which can include project phasing, limited work space, or accelerated schedules. This information can be found through researching the plans of the data points shown or through estimator experience.



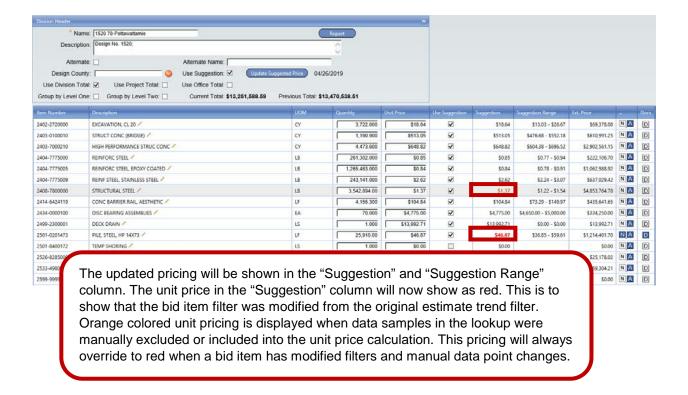
Once analysis of the pricing is complete, the data from the analysis can be exported to excel by **clicking on the "Export"** button. **Clicking on "Accept"** will update the estimate with updated pricing analysis shown in the Item Trend Chart. **Clicking on "Cancel"** will close the Item Trend Lookup and return the estimate using the original suggested price. **NOTE:** Clicking on Cancel will not reset any changes to the filters or the updated pricing analysis shown on the Item Trend Chart. This can be done by **clicking on "Modify Filter"** and returning to the filters screen.



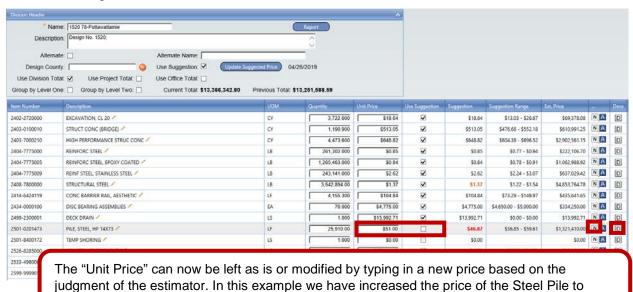




**NOTE:** It is also possible to override the estimate trend filter for the entire division by clicking **Apply Filter to Division** button. Extreme care should be used when using this button as all individual bid item data will be lost for all bid items in the estimate.



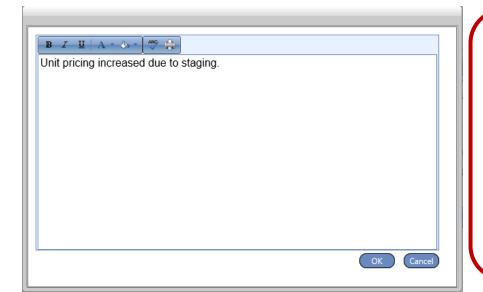
#### **Manual Adjustment of Unit Price**



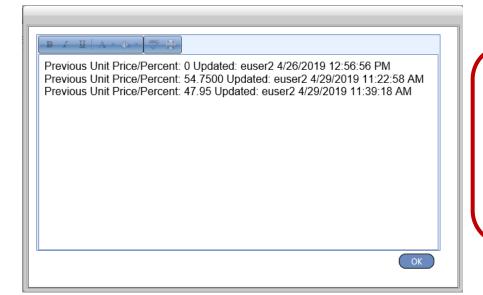


**NOTE:** Additional documentation explaining the changes to the unit price should be added in the form of Notes and/or attaching documents.

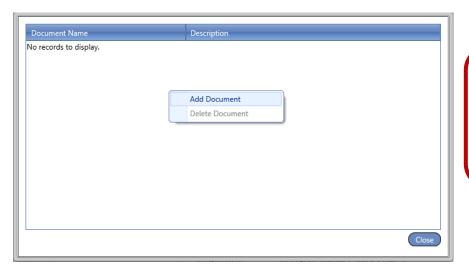
\$51.00 per LF. Typing in a unit price will automatically uncheck the "Use Suggestion" box.



Clicking on the "N" icon will open a Notes screen allowing for the estimator to document any changes or reasoning for the adjustments to bid item pricing. Once finished click on "OK". The "N" icon will change color from white to blue to show that notes have been added for this bid item.



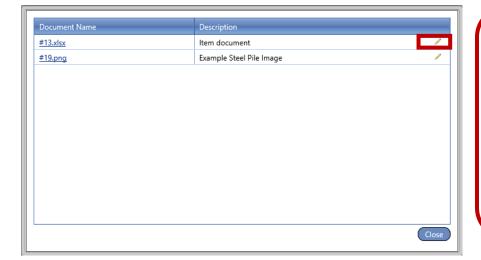
Clicking on the "A" icon will open an automated screen showing a log of all pricing changes made to the bid item. This information includes the previous bid price, the user who made the changes, and the date the changes were made.



Documents can also be attached to each bid item by clicking on the "D" icon in the Docs column. Once on the document screen right click to add or remove a document.



A document upload dialog box will appear allowing documents to be attached.



The description of uploaded documents can be changed by clicking on the pencil icon. Once Finished click on "Close". The "D" icon will now change color to blue to show that a document has been attached to this bid item.

#### **Non-Standard Bid Items**

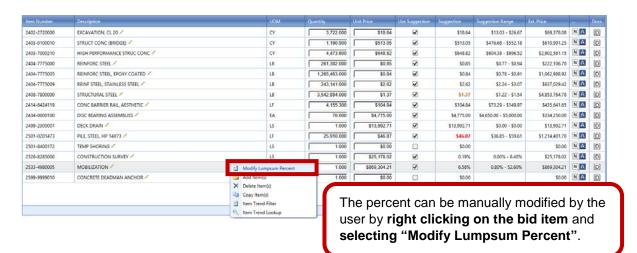


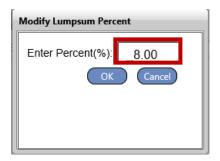
Many standard lump sum and all non-standard (2599-category) bid items will not be able to have a price calculated by the software. These are unique non-standard bid items on a project and it is up to the user to determine these costs. This can be gathered from previous projects, manufacturer literature, etc. Documentation explaining the basis of pricing for these items should be added to the notes and/or the documents tabs in the software.

# **Lump Sum Items**



Some lump sum items such as "2533-4980005 MOBILIZATION AND 2526-8285000 CONSTRUCTION SURVEY" are percentage based. These lump sum items are identified by having a LS as the unit of measure and a suggested price in percent in the software. The percentage used to calculate the mobilization cost is based on a percent cost of the total division cost, which includes the cost of the mobilization bid item. Analysis of this item is similar to standard bid items using the "Item Trend Lookup" feature with the one difference being the calculation is based on % of project rather than unit price. Further information on Percentage Based bid items can be found in Chapter 6-B Specialty Bid Items.





A pop up screen will appear allowing for the new percentage to be entered. Click on "OK" to accept the change and update the item in the estimate.

# **Chronology of Changes to iPDWeb Manual Section:**

**6C-1** Item Trend Lookup

DATE 08/16/2019

New.

DATE Revised

Description