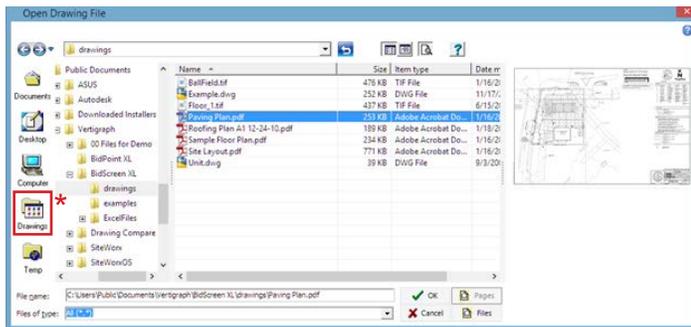


BidScreen XL, when added to Microsoft Excel, measures items from drawing files directly into any Excel workbook cell. Use any Excel workbook to organize the takeoff and estimate. Feel free to modify any of the workbooks installed to **Example Workbooks** under the **BidScreen XL** folder on the Window's list of programs.

Step 1) Load a single PDF drawing file to an Excel workbook at the BidScreen XL tab and set the scale



Click **Load Drawing** to select a drawing file.



A collection of sample drawing files are available by clicking on the ***Drawings** icon. These sample drawings are also found at C:\Users\Public\Documents\Vertigraph\BidScreen XL\drawings. Let's start by loading **Paving Plan.pdf** which is a single page raster type PDF drawing file. Here, click on the **Paving Plan.pdf** drawing and when the drawing is previewed on the right side, click the **OK** button to display.

□ Moving quickly around the paving plan is essential. To zoom, use the scroll wheel on the mouse. Once zoomed in, move around the image by holding down the **Ctrl** keyboard key or mouse scroll wheel while dragging the mouse. The mouse pointer indicates zoom  or pan mode . The **Zoom to selection** and **Restore to full size** commands found in the Zoom section of the toolbar are useful.

 Practice zooming and moving around this displayed drawing.

□ To add this drawing to the Excel workbook, click the green checkmark in the top right hand corner of the window . The red X cancels the operation and the drawing will not be loaded. After clicking the green checkmark, a message appears that autoscale is recommended. Click **OK** and the scale box appears.

□ Using ***AutoScale**, instead of selecting from the list, aids in setting the proper scale. On this **Paving Plan.pdf** drawing file, navigate and zoom to the scale legend at the top right hand corner of the drawing . With Autoscale you'll single click on the start and end point of this line. After clicking the second point, enter the distance in decimal feet of 40 and click **OK**. The scale ***factor** used to calculate measurements is now displayed. Please note that the true scale factor for English scales is the reciprocal of the scale times 12. A true 1:20 scale will have a factor of 240, a true 1/8 scale will have a factor of 96.



□ After setting the scale, the drawing is loaded to your Excel workbook and you'll return to the spreadsheet. The drawing is no longer displayed but it reappears by clicking any takeoff command. The list of all drawings loaded to this workbook are shown on the Drawing list box in the center of the

toolbar . The active drawing, noted in the drawing box, may be changed at any time when multiple drawings are loaded. Again, to view the active drawing, simply click on any takeoff command from the BidScreen XL toolbar (i.e. Count, Lengths or Area). To close the window without changes, click the red X  found in the top right corner.

Please Note – While the drawing is displayed, do not press the **Esc** key on the keyboard. Some earlier versions of Excel will deactivate the BidScreen XL add-in application when the **Esc** key is pressed.

Step 2) Measuring items from the loaded drawing file

To measure item(s) from the active drawing, click on the cell where you want the measurement recorded and then select the type of measurement:



The drawing displays after clicking on the takeoff command. From the **Paving Plan.pdf** drawing, takeoff the area of the 7” concrete located at the top right hand corner of the drawing. As you takeoff this area by clicking points, use the **Arc** command to draw curved lines. After clicking one point, activate the **Arc** command for any curved line by pressing the keyboard shortcut keys **Alt+A**, click on the apex of the curve and then the point where the line straightens. For this raster type PDF drawing, you’ll click on pixels on the screen to measure items. For greater accuracy and speed, do not trace along a line. Simply click on the line wherever there is a change in direction and use the **Arc** command as needed. If you make a mistake, delete the last point(s) by clicking on the black **X** found at the Takeoff section of the toolbar or press the **Backspace** keyboard key. When done measuring, accept the changes by clicking the green checkmark  in the top right corner.

Lengths are measured two different ways 1) Section lengths or 2) Continuous lengths. Many users measure all lengths as continuous lengths. If used however, a section line is a two point line (no arcs or curves) where the first click is the start of the line and the second click is the end point. The count value, which is displayed on the toolbar, will always be an even number when done with a section line. A continuous length can have many points and curves. To end one continuous length and start a new one, press the **Enter** keyboard key.

When measuring areas, the **Enter** keyboard key closes one area so you can start anew. When recording the area measurement to a cell, the perimeter length of the area with any deducts is also calculated. To record the area’s perimeter length, move to a new cell, select the **Continuous Length** takeoff command and record the area’s perimeter by clicking the green checkmark .

When measuring, the toolbar ribbon and the right mouse button popup menu show the available commands. To learn about the toolbar commands, click on the small question mark in the top right hand corner of the window , move the mouse pointer over the command icon on the toolbar and click on the command to get an explanation. Additionally, when viewing the drawing, if you have any questions whatsoever regarding BidScreen XL, PRESS THE F1 KEYBOARD KEY. Learn the various commands on the toolbar ribbon and those found on the right mouse popup menu. Try using the shortcut keyboard keys, which are disclosed to the right side of the right mouse button pop-up menu. Also, use help command as needed. Measure areas and lengths into different cells and use the **Arc** command to digitize around curves. With practice you’ll gain speed and confidence in performing the takeoff with BidScreen XL.

Step 3) Reviewing, Editing and Printing the Colored Coded Takeoffs

When done measuring, click the green checkmark in the top right corner of the window to record the value into Excel . A red cell comment is recorded in the top right hand corner of the cell. When clicking on a cell with a red cell comment, the takeoff measurement type (**TO Type**) and scale are disclosed on the right side of the BidScreen XL toolbar.



To view the color coded takeoff, simply click on the Count, Section Length, Continuous Length or Area command that pertains to the **TO Type**. After viewing the drawing, accept any changes by clicking the green checkmark or discard the changes with the red X .

- A collection of line, color, point, and area styles are available for selection from the drop down list box at the Styles section of the toolbar. Change the color of the takeoff by selecting from this list. The available styles on the list box are created by adding styles at the Add/Edit/Delete Styles command.
- Any color coded takeoff item can be modified by first selecting the displayed item and then clicking the right mouse button to delete, copy, move and edit the item. When done editing, right click the mouse to cancel the edit and selection mode.
- To print multiple color coded takeoff measurements, click the first cell and then hold down the **Ctrl** keyboard key as you click on other cells with red cell comments from the same drawing. Once the cells are selected, click **Print** .

Step 4) Understanding the differences between raster and vector drawing files

The **Paving Plan.pdf** we've been working with is a raster type PDF drawing. BidScreen XL also works with vector images such as vector type PDF drawings and AutoCAD DWG drawing files. Knowing the differences between raster and vector drawings are helpful in understand BidScreen XL's capabilities.

A raster image is a tiny grid of pixels. A pixel is defined as a point of color. More pixels per inch means higher resolution. Photos and scanned images are always raster images. Raster images will have the following file extensions: TIF, BMP, JPG, PNG, and sometimes PDF depending on how the PDF drawing was created. When viewing a drawing with BidScreen XL, the top right corner of the drawing, under the toolbar ribbon, displays the drawing type. All raster drawings are noted as **Raster** or **PDF** in BidScreen XL.

When measuring items from raster drawings, the estimator clicks on tiny pixels on-screen and BidScreen XL calculates the measurements based on the distance between pixels and the scale factor.

A vector drawing is much different than a raster image; and a vector drawing is not rendered by using pixels organized in a tiny grid like a raster image.

Computer Aided Design Programs, such as AutoCAD create vector drawings that are rendered by displaying objects, which are known as "entities". The various entities are organized by logical layers. These entities are then created by a list of points. Various attributes are assigned to these layers, entities, and points through the CAD software. Generally, the layer attributes define the color, line style, and line width. The entity attributes include the type of entity – which may be point, line, polyline, polygon, or text. And the point attributes provide the x,y,z position of the point.

When a PDF drawing is created through the CAD program, the PDF drawing usually maintains the layers, entities and points defined in the CAD file. Some, but not all, attributes may also be recorded to this PDF file. With BidScreen XL whenever a PDF file has more than one layer, it is deemed a vector type PDF file.

Vector drawings are noted in BidScreen XL as **PDF Vector** or **CAD** in the top right corner of the drawing under the toolbar. Vector type PDF drawings will have a **Vector PDF** section added to the BidScreen XL toolbar. An AutoCAD drawing, which are always vector, will have a **CAD** section added to the BidScreen XL toolbar. When measuring items from vector drawings, you're able to isolate design layers and eliminate all non-relevant information found on the image. Additionally, you're able to select the vector entity or snap to the points in the entity to obtain exact measurements when working with PDF vector and AutoCAD drawings.

Step 5) Working with a multi-page vector type PDF file

Next, we demonstrate loading pages from a multiple page vector type PDF file.

- Click the **Load Drawing** icon and browse to the **Multi-Page Vector.PDF file**.



Each page requiring a takeoff must be loaded. There are two options when loading pages from a multipage file: **1)** scroll through the **Page*** numbers and load each page one by one or **2)** load all pages in the file.

To demonstrate loading a single page, click on the drawing file, a preview of page 1 is displayed, scroll through the **Page*** number displayed at the bottom and when you have a preview of the desired page 2, click **OK** and only page 2 will load. After loading page 2, click the green checkmark

and set the scale to 1/8" Architectural. You can autoscale, using the snap to entity point command, with 3 feet being the width of any single doorway entrance.

To load all pages, click on the **Manage Project/Drawings** command then the **Drawings** tab and select **Load...**, click on the same file name, and at the preview, change the page number to any unopened page, then click the **Pages** button.

After loading all pages, the scale must be set for each page. Pages can be eliminated from the list by hiding the page and a more useful description, rather than the file name and page number, can be associated with each drawing at the **Manage Project/Drawings | Drawings** tab. Notes can be also recorded to each drawing here.

In this example, after loading all pages, click on page 1 and hide this page from the list by clicking on the **Hidden** checkbox under the **Description** box. Click on page 4 and 5 and hide these pages also. Click on page 3, then click the Scale command on the toolbar and set the scale to 1/8" architectural. Again, if auto-scaling from a PDF vector file, use the snap to entity point command noted below before clicking on the first point. Next, provide a better description of the drawing by clicking on page 2 from the list and in the **Description:** box type in "**Floor Plan 3rd Level**". Click on Page 3, and type in the **Description:** box "**Finish Plan 1st Level**". After we hide unwanted pages, describe the drawings and set the scale, click the green checkmark to return to the Excel spreadsheet.

You'll notice that the list of drawings loaded, and not hidden, are now available for selection at the BidScreen XL tab.

Step 6) Working with vector type drawings

First, show the layer list.



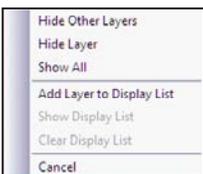
Vector drawings are organized in layers. The list of layers is displayed on the left side of the window when this command is on. The width of the layer list on the left side is changed by dragging the mouse over the list's right edge.

An individual layer can be turned on or off by clicking the layer's light bulb. All layers can be turned off by clicking the white (i.e. off) light bulb on the top of the list. Clicking the yellow, (i.e. on) light bulb at the top of the layers list turns on all layers.

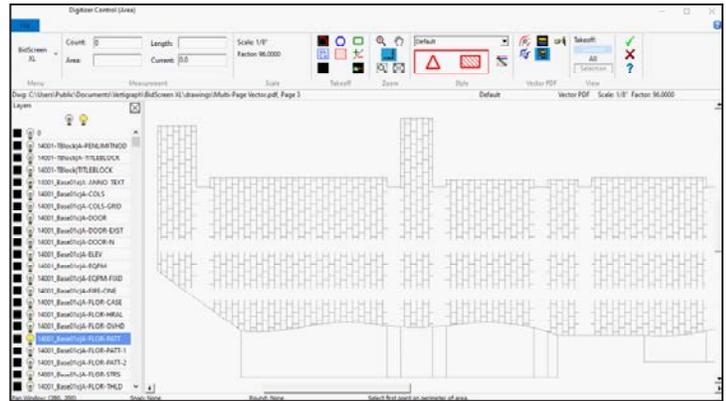
When all layers are turned on, it may be easier to select a layer from the drawing rather than turning on and off the many layers on the list. To select a layer from the drawing, click the **Select Layers** command



Zoom in and move the square selection box overtop a point in any line or area. Area points are found at the corners, line points are always found at the beginning and end of the line. In this example, move the square selection box over a point in the tiled area and when the line is highlighted, right click the mouse and select **Hide Other Layers** from the pop up menu.



If done correctly, only the tiled area should display. Practice turning on and off the various layers from the drawing. **IMPORTANT:** after selecting the desired layer, you must turn off the **Select Layers** command before measuring.



□ When the desired area layer is displayed, click the **snap to entity point** command on the toolbar.



When measuring an area or length with **snap to entity point** turned on, you'll snap to the points in the entity to obtain much more accurate measurements. Again, practice snapping to the points as you click and use the Arc command. The select entity command measures the entire length of the entity with a single click.

A couple other final items of note: First, when working with AutoCAD DWG files, scales are not used. Instead the drawing unit must be a defined. And lastly, if you add drawings to your Excel template by mistake, you can remove these drawings and takeoff measurements from the Excel workbook by clicking on **Menu | Create Template** at the BidScreen XL tab.

Again, as you use BidScreen XL, you'll gain speed and confidence in your abilities. If you have any issues whatsoever, please contact Vertigraph:

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US and Canada 800-989-4243
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The entire Vertigraph team wishes you success and the best of everything in using BidScreen XL.