

Section 7

Vector PDF

Vector PDF Entry Overview

This tutorial illustrates how to digitize a job using the information found in a vector PDF. A vector PDF is one that contains line data from a CAD, or similar, file. A vector PDF can be identified by the color of the border when the image is imported into Sitework 4D; a green outline represents a vector PDF, while a red outline represents a standard raster PDF. Remember: green for go, red for no.

Data Entry Sequence

The following is the suggested data entry sequence when entering a takeoff using a PDF file.

Import and Scale PDF File

- Start a New Job
- Import the PDF
- Scale the Image

Vectorizing and Transferring Data

- Vectorize PDF
- Transfer Existing Lines
- Transfer Design Lines

Verifying the Scale

- Select known distance
- Length/Area to verify scale

Assigning Elevations

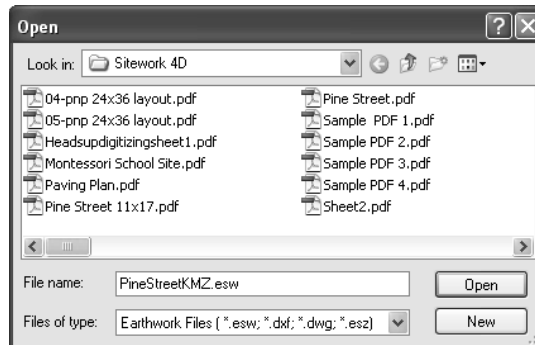
- Line Editor
- Increment Snap
- Elevation Snap

Lesson 1 - Importing and Scaling

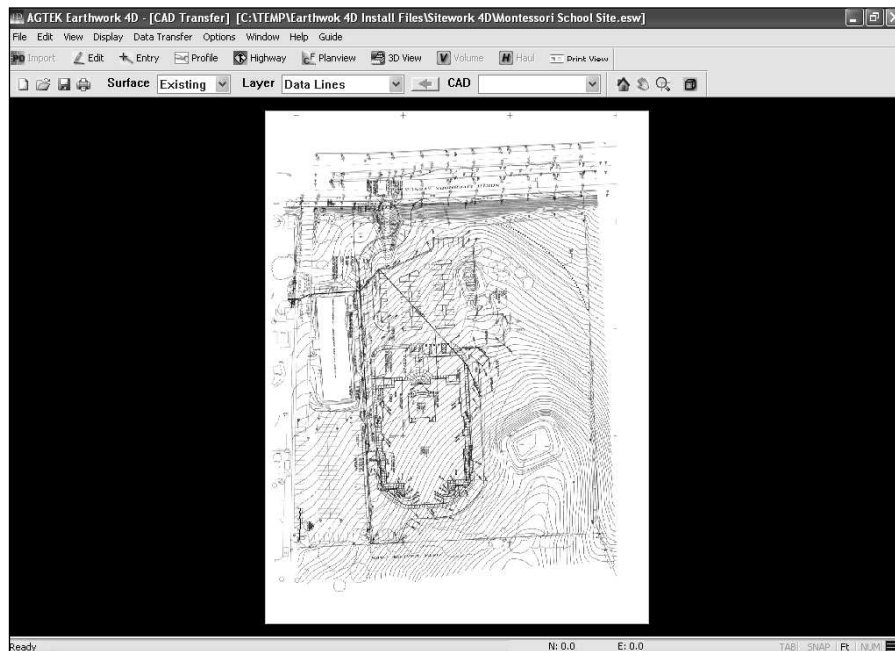
This lesson covers the importing and scaling of a vector PDF. Training videos discussing vector PDFs can be found at <http://www.agtek.com/trainingvideos.asp>. It is recommended to watch the training videos before beginning the tutorial.

Start a New Job.

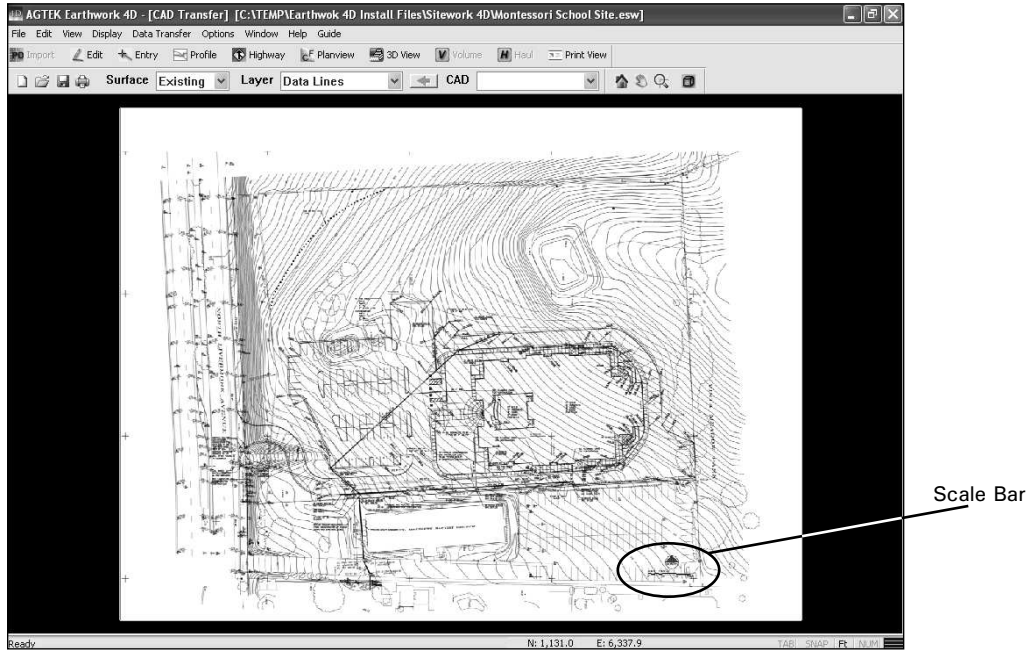
1. Double click the Sitework 4D shortcut on the desktop. The open dialog displays.



2. Select the "Montessori School Site.pdf" file and click **Open**.
3. The PDF is imported into the Data Transfer Mode with a green outline, signifying a vector PDF. A vector PDF contains the information necessary for the program to vectorize the data, and create line work similar to a CAD file. The information is divided into layers based on line color and thickness. A red outline signifies a raster PDF which can not be vectorized and must be entered manually.

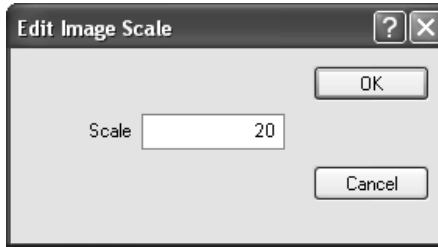


4. Rotate the image pressing the **L** key twice to rotate the image counter-clockwise into the proper alignment. The **R** key will rotate the image clock-wise. Your screen should appear similar to the illustration below.

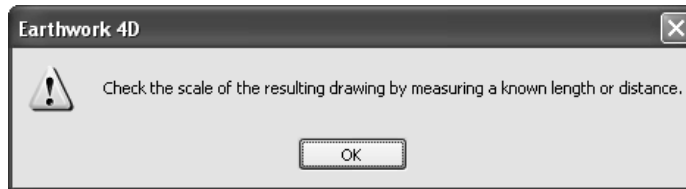


Scaling the PDF

1. Zoom in to the lower-right section of the PDF and locate the scale bar. In this example the scale is 1:20 feet.
2. Select **Data Transfer > Image Scale** and the Edit Image Scale dialog box is displayed.



3. Enter "20" for the scale and click **OK**.



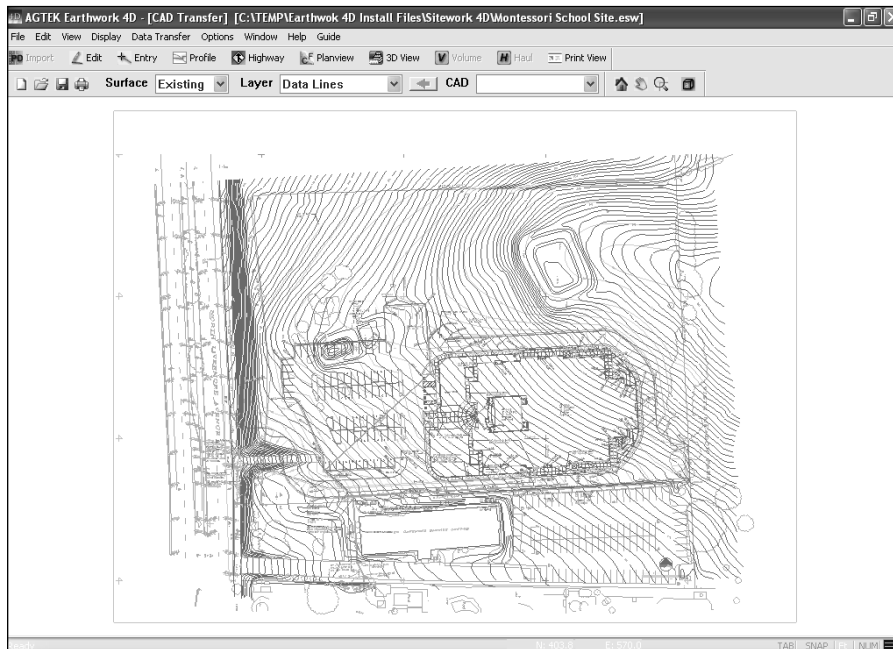
4. A dialog box is displayed advising you to verify the scale of a drawing by measuring a known distance. Click **OK**.

Lesson 2 - Vectorizing and Transferring Data

When you vectorize a file using AGTEK software, annotation lines are created and separated into layers depending line weight and color of the original file i.e.; red, black, and blue lines would all be in different layers (Layer 1, Layer 2, etc...).

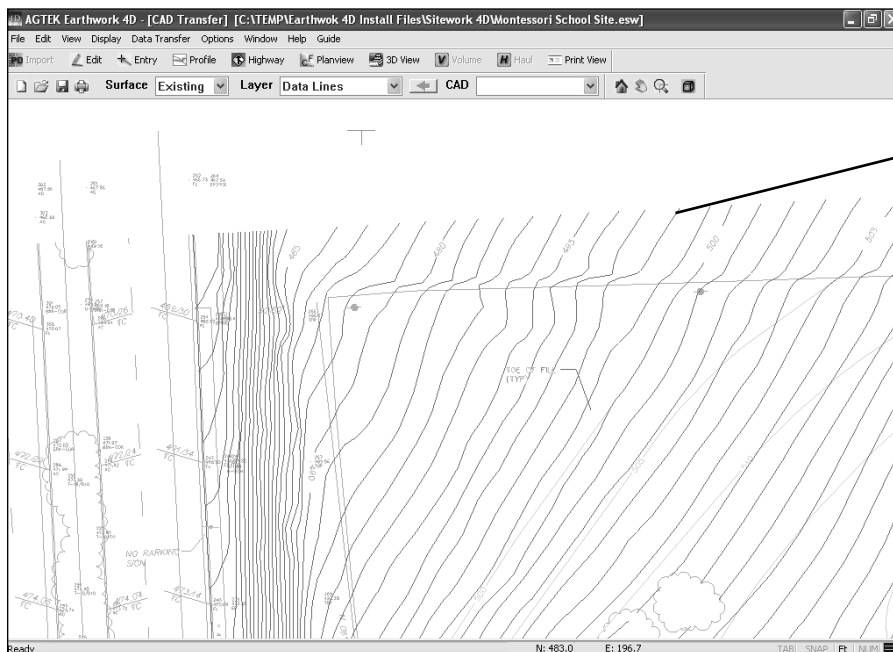
1. Since this is a vector PDF, which has line data from a CAD file, we can vectorize the data by selecting **Data Transfer > Vectorize**.
2. When complete, vectorized lines are laid over the image. To turn off the background image, select **Display > Bitmap**, or by pressing the **T** key. Your screen should appear similar to the illustration below.

Some files vectorize better than others. You may want to transfer data that vectorizes well, and trace the data that doesn't manually.



This screen shot has been zoomed into the upper-left side of the job.

3. Zoom into the drawing and select one of the gray Existing contour lines.

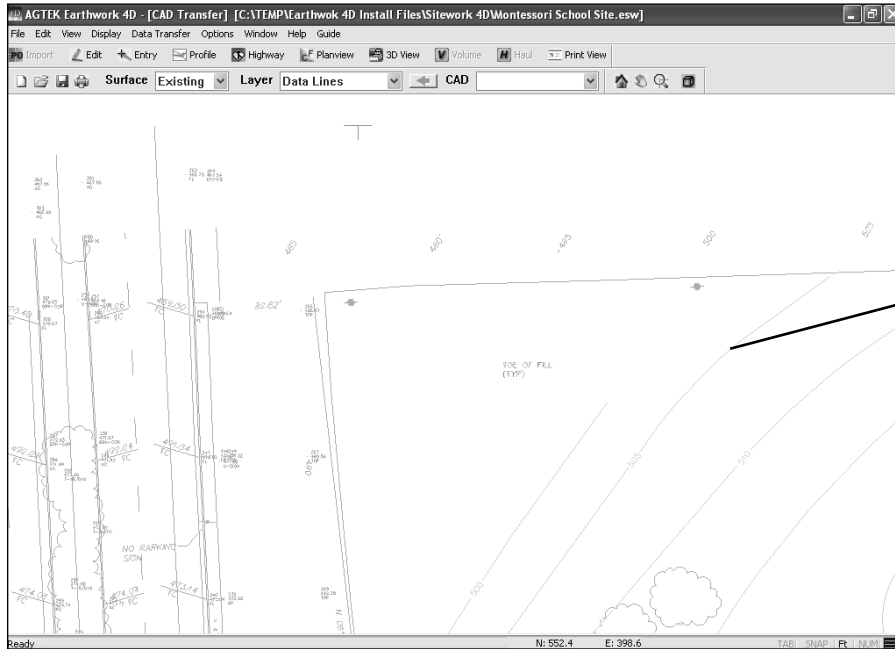


Existing Contour Line

When existing contours are dashed, and can be separated into their own layer (same weight, color, etc...) Sitework 4D will automatically join them, eliminating the gaps.

4. Right-click and select **Send to Existing**. Since there are no elevations assigned, all lines are sent to the annotation layer.
5. Select a Design line. Right-click and select **Send to Design**. Continue sending data to the Design layer until all useful information is transferred.

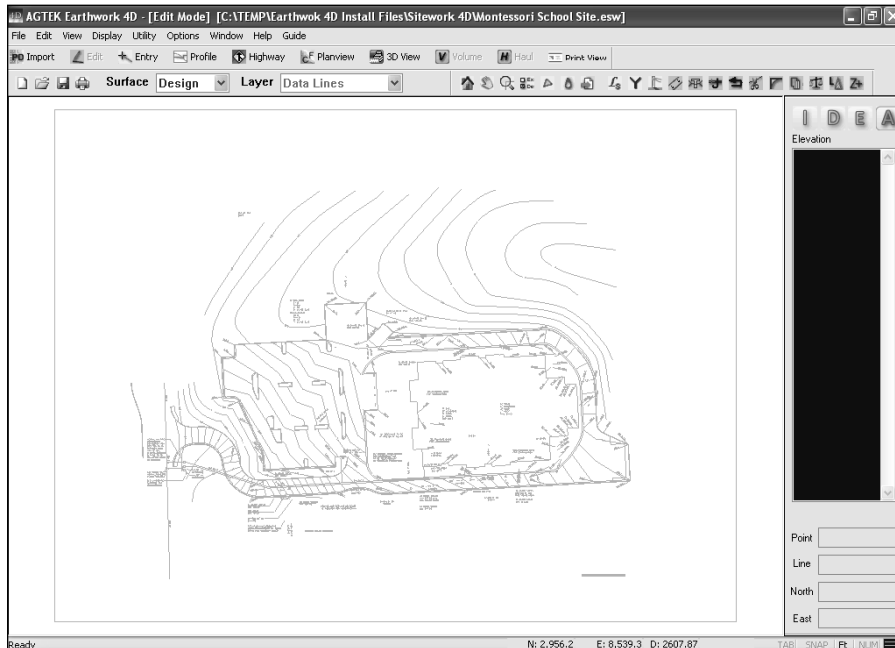
This screen shot has been zoomed into the upper-left side of the job.



Lesson 3 - Verifying the Scale



1. Click the **Edit Mode** button to switch modes and press the **Home** key to zoom out and center the job. Your screen should appear similar to the illustration below.

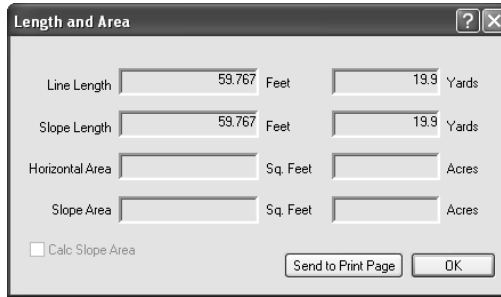


2. Press the **T** key to turn the PDF back on.
3. Zoom in to the lower-right portion of the job and locate the scale bar.
4. Select a line that runs the length of the scale bar.



5. Click the **Length/Area** button on the toolbar and the Length and Area dialog box displays. The Line Length should be approximately 60 feet, confirming that the scale is correct. Keep in mind PDF files are not as accurate as CAD files.

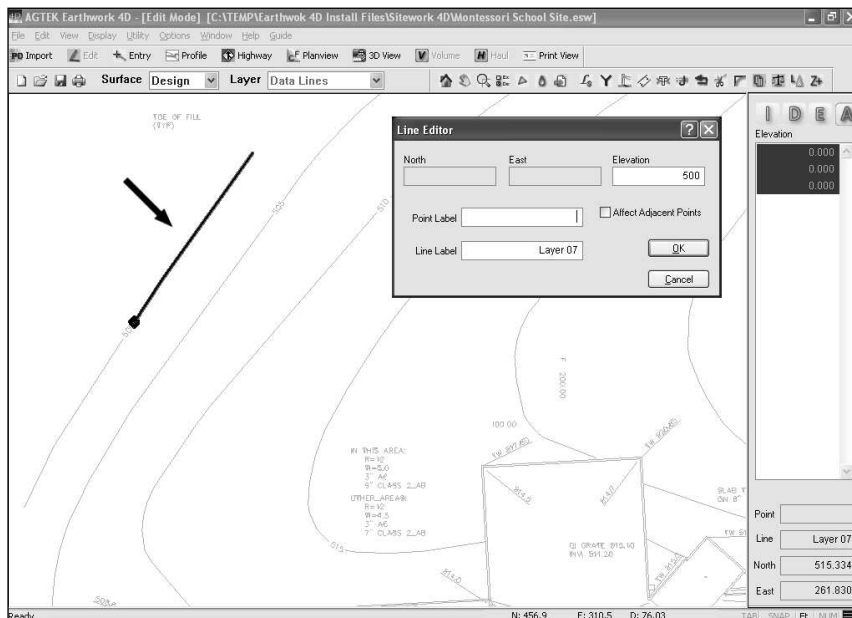
If the scale is incorrect, see page A-70 for directions on rescaling a PDF file.



Lesson 4 - Assigning Elevations

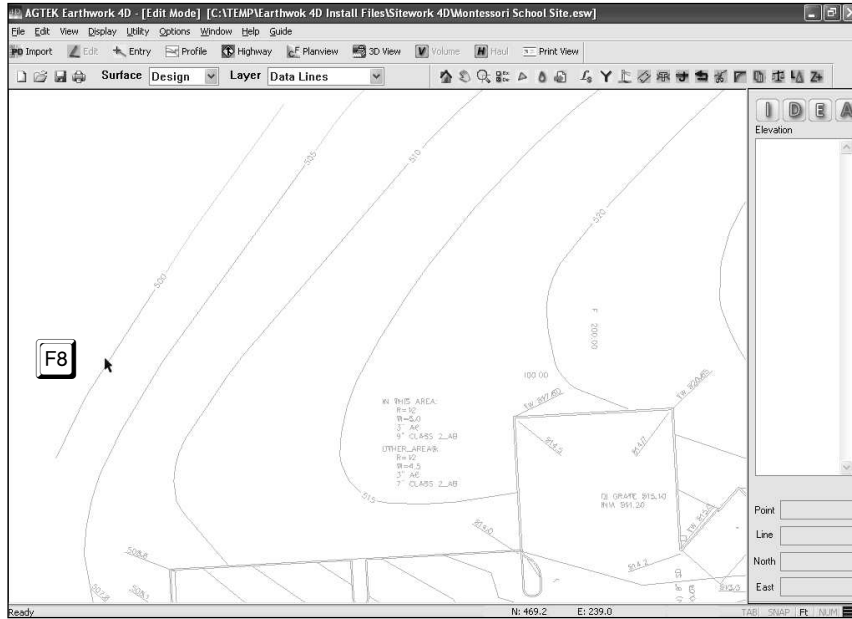
1. Turn off the PDF by pressing the **T** key. This will make the annotation lines easier to read.
2. Zoom into the top-left portion of the job and select the 500 contour line. Enter "500" using the keyboard and the Line Editor dialog will display. Click **OK**.

Vectorized design lines are sometimes segmented. They can be joined to create a single line. For information on joining lines, see page 3-13.



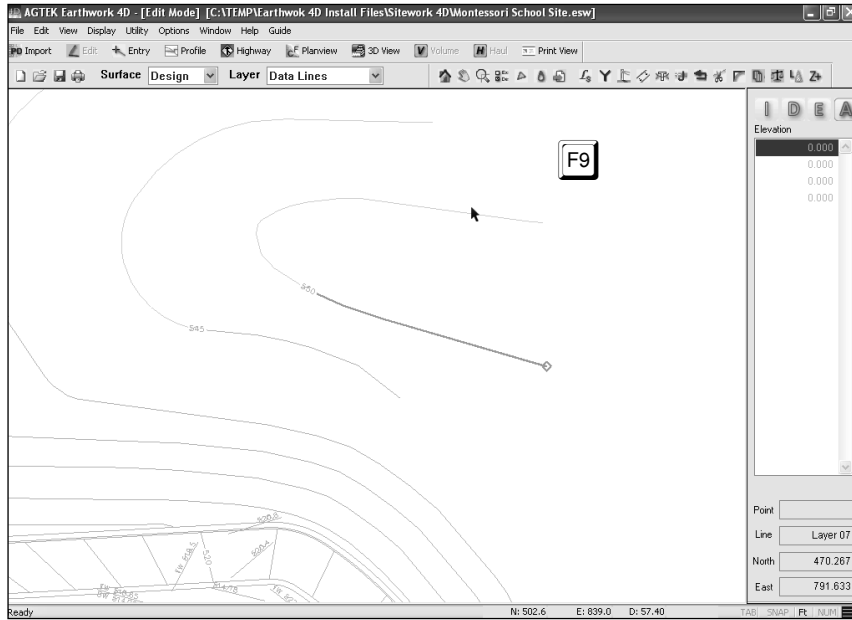
3. Select the 505 contour and enter "505" using the keyboard and the Line Editor dialog will display. Click **OK**.
4. Press the **ESC** key to clear all selections.
5. Position your arrow over the "500" contour, BUT DO NOT CLICK. Press the **F8** key.

Increment snap increases/decreases the elevation of the last line and assigns that elevation to the current line. It will continue until you press ESC or select something by clicking the mouse.



6. Position your arrow over the "505" contour, BUT DO NOT CLICK. Press the **F8** key. This will enable Increment Snap. The current interval can be seen at the bottom left of the program window.
7. Continue using the Increment Snap to assign the rest of the elevations at the top of the slope. The increment, in this case 5 feet, and direction, up or down - this case up, is determined by the first two lines selected. In the case the first two lines selected were 500 and 505, so following lines will be assigned ascending elevations in 5 foot increments.

8. When complete, select annotated portion of the 550 contour line on the right side of the job. Position your arrow over the blue portion of the "550" contour line (data line) BUT DO NOT CLICK. Press the **F9** key. The elevation from the selected 550 data line will be assigned to the indicated annotation line.



9. Continue using the same technique to assign the rest of the Design contour lines. The Existing contour lines can also be entered using the same techniques.

It is not uncommon for jobs to be spread across multiple PDFs. In this case, you will need to align PDFs to data that has already been entered. For information on aligning multiple PDFs please see page A-70 in the appendix.

For more information on completing the job; adding Sectional Areas/Report Regions, Perimeters, Stripping, etc., please see the CAD Tutorial beginning on page 3-1. There area also training videos available at <http://www.agtek.com/trainingvideos.asp>. It is advised that you watch the corresponding training videos before completing the tutorials.

