Importing an AutoCAD Layout into Flexsim

Note: Capitalized words are typed into the AutoCAD command line at the bottom of the screen followed by the Enter key. The dash character (-) also needs to be typed when shown in front of a command (e.g. –LAYER).

In AutoCAD LT 2007:

1. Click on Model Tab at bottom of view.
2. Zoom to the extents of the entire drawing.
   a. ZOOM
   b. EXTENTS
3. Turn on all the layers
   a. LAYON
4. Unlock all the layers
   a. –LAYER
   b. UNLOCK
   c. Hit enter again to <select objects>
   d. ALL
   e. Hit enter key again to unlock selected objects
   f. Hit escape key to back out of layer command
5. Unthaw all layers
   a. LAYTHW
6. Delete nonessential objects from the drawing.
   a. Navigation tips
      i. Esc key to back out to a selection mode
      ii. Right-click on object, choose Properties to change attributes
      iii. Right-click in view to access last command, and recent commands
      iv. Panning (hand icon) plus mouse wheel for zooming is efficient
      v. In the command line, options enclosed in <> are chosen by pressing enter
   b. Object selection tips
      i. Ctrl +A to select all objects (except in response to command prompts)
      ii. When command line prompts you to "Select objects:"
         1. Type ALL and enter to select all objects
      iii. Hold Shift key down to add/remove to the current selection set
      iv. Click-drag-click to marquee select multiple objects
         1. drag left-to-right to select objects entirely within rectangle
         2. drag right-to-left to select objects partially within rectangle
   c. Filtering by object attributes
      i. Ctrl-A to select all objects first
      ii. FILTER
      iii. Clear List
      iv. Select Filter from drop down list
      v. Edit values if applicable
      vi. Add to List
      vii. Apply (only objects in the selection group matching the filter will remain selected).
   d. Changing properties of multiple objects simultaneously
      i. Select objects having a common attribute you want to change
      ii. PROPERTIES
      iii. Type in new attribute values
   e. Object and attributes tips
      i. Thickness should be 0
      ii. The color "White" with a black/white cube next to it is okay, but White 255 and Black 0 should be avoided because they disappear on some backgrounds.
      iii. Solids sometimes don't display in correct location
      iv. Remove hatching, dimensions, text with help of FILTER list.
      v. Change splines into arcs or straight lines because splines won't show in Flexsim.
   f. Isolating layers can help delete large groups of objects
      i. Select one object in the layer
      ii. LAYISO (to isolate the layer associated with the selected object)
      iii. Select all objects in the layer you want to delete

        iv.   Hit delete key

        v.   LAYUNISO (un-isolates the layer so that all layers are showing again)

7. Explode compound objects into their components
   a. EXPLODE
   b. ALL
   c. Hit enter again to finish selection
   d. Hit Yes button if prompted with popup warning.
   e. Repeat a through d until no more objects can be exploded.
8. Purge all unused layers, blocks etc. in the drawing
   a. –PURGE
   b. ALL
   c. Hit enter again to select all objects <*>
   d. NO
9. Merge all layers into one
   a. LAYMRG
   b. NAME
   c. Shift select all layers in popup list of layers, and click OK
   d. Wait for several minutes (maybe >5 minutes)
   e. Hit enter again to proceed to next question.
   f. NO
   g. Select layer 0 from popup list of layers, and click OK
   h. Approve by hitting OK when prompted.
10. Determine scale of drawing
    a. Select a long line in the drawing
    b. Right click on line and choose Properties
    c. Note the length of the line
       i. If it is something like 110'-7.46775" then the drawing scale is inches
       ii. Record the length so you can later verify your scale in Flexsim
11. Convert scale of drawing into Flexsim units
    a. SCALE
    b. ALL
    c. Hit enter again to finish object selection
    d. Select a point somewhere in lower left of drawing for the Base Point.
    e. Now type in scale factor based on conversion:
       i. For inches to Flexsim meters type 0.0254
       ii. For inches to Flexsim feet type 0.0833
       iii. For millimeters to Flexsim meters type 0.001
    f. Hit enter
    g. ZOOM
    h. EXTENTS
12. Select the part of the drawing that you want to import.
13. Cut selection to clipboard
    a. Ctrl +X
14. Select and delete everything else
    a. Ctrl +A
    b. Hit delete key
15. Paste back from clipboard into drawing at the origin
    a. Ctrl +V
    b. Type 0,0 then enter
    c. ZOOM
    d. EXTENTS
16. Set drawing units to decimal
    a. UNITS
    b. Select Decimal for the Type, and hit OK
17. Save as dxf file
    a. SAVEAS
    b. Select AutoCAD LT 2007 (*.dxf) for the file type
    c. Type file name
    d. Hit Save

In Flexsim:

18. In Ortho sidebar click on "More Settings…" button in View Settings panel
19. Click "Other" tab on popup View Settings window and <u>temporarily</u> expand clipping planes:
    a. Near Clipping Plane = -1000000
    b. Far Clipping Plane = 1000000
20. Drag VisualTool into model.
21. Double click VisualTool for Parameter edit window
22. For Visual Display field select "Imported Shape"
23. Temporarily set Minimum Magnification = 0
24. Temporarily set Maximum Distance = 10000000
25. For Model Filename browse and select your saved dxf file
26. Typically you will have to rotate VisualTool so the drawing lies flat in the XY plane (i.e set RX = -90)
27. Checking the "Luminous" box will show truer colors for the imported drawing.
28. Check "No Select" box to keep from accidentally moving the VisualTool later.
29. Click OK on Parameters window.
30. Verify the scale is correct by visually comparing the length of a Flexsim Conveyor object to the length you recorded in Step 10c.
31. Set near and far clipping plane values as close to zero as possible and still show the entire drawing when viewed from different angles.
32. Set minimum magnification and maximum distance values as desired.