

## Design Section Tools and Sewer Profiles

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On-line User's Manual

### DESIGN SECTION TOOLS

If you use the menu DPCOGO this program will load automatically Select Drafting -> Profiles -> Section tools.

To load Design Section Tools into your drawing (for AutoCAD or IntelliCAD) you may type at the command prompt: (load "/dpisec/dpsec") or you may select "load applications" from the "tools" pull down menu, or type: appload, then pick the file button. Find directory DPISec then select DPSEC.lsp. The file will then be placed in the "Files to load" box. Choose save list, this will keep the file there for future use. Click on the file to highlight it and choose LOAD. Design Section Tools are now loaded.

To begin Design Section Tools, type at the command prompt: DPSEC. The Design Section Tools dialog box will appear.

Enter the Horizontal and Vertical scale that you wish to use.

If you are going to draw or label Stations and Elevations you will need to create a coordinate system to use. Select the Define Profile UCS button and follow the on screen prompts. The Select UCS button may be used to change between the new UCS you defined and the World UCS.

Select the **draw option** by selecting an item from the Select draw option box. Options are: slope (3:1), ft./ft. (0.2), %grade (0.5), @ x y, Station and Elevation, Manhole, and Ellipse.

Select the **label option** by selecting an item from the Select label option box. Options are: slope (3:1), ft./ft. (0.2), %grade (0.5), Station and Elevation, or Elevation.

Select the **offset option** by selecting an item from the Select offset option box. You may construct an offset using either the horizontal or vertical scale.

Select the **Draw** button to draw with the desired option. Follow the on screen prompts. You may draw by entering the slope (3:1), ft./ft. (0.2), %grade (0.5), or Station and Elevation. Create a profile coordinate system and draw ground lines and sewer lines. Pick points on plan view for stationing (or type in station) and enter the elevation. Place and label a manhole by station and elevation.

Select the **Label** button to label with the desired option. Follow the on screen prompts. Select a line or polyline and Design Section Tools will label the slope (3:1), ft./ft. (0.0156'/ft), or %grade (0.05%). Pick a point and label a Station and Elevation, or just an Elevation. Place a manhole and Design Section Tools will label the station, rim elevation, and up to three invert elevations.

Select the **Offset** button to offset with the desired option. Follow the on screen prompts.

Select Cancel to end.

### NOTES

The leader arrow heads and extension are drawn using the "ltscale" variable as a factor. This is usually set to the scale of the drawing. If you wish to change the size of the arrow head and extension line change the "ltscale" variable by typing at the command prompt: LTSCALE and enter a new number.

Design Section Tools will label using the current text style. Be sure the text you want to use is current.

If you have defined a profile UCS be sure to return to the World UCS before using other routines.

Design Section Tools will use the current units precision settings when labeling. Set the precision for labeling by changing the Autocad precision. To do this type at the command prompt: DDUNITS. When Design Section Tools labels the horiz./vert. it will round the label to only whole or half numbers, an example would be: 3:1, 3.5:1, 4:1, 4.5:1 etc., this is done to avoid placing undesirable labels.

Manhole labels are written using the current text style and placed on layer DPSEC\_TXT.

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## SEWER PROFILES

If you use the menu DPCOGO.ICM (for IntelliCAD) this program will load automatically Select Drafting -> Profiles -> Sewer profiles.

To load Sewer Profiles into your drawing (for AutoCAD or IntelliCAD) you may type at the command prompt: (load "/dpisew/dpsewer") or you may select "load applications" from the "tools" pull down menu, or type: appload, then pick the file button. Find directory dpisew then select dpsewer.lsp. The file will then be placed in the "Files to load" box. Choose save list, this will keep the file there for future use. Click on the file to highlight it and choose LOAD. Sewer Profiles are now loaded.

To begin Sewer Profiles, type at the command prompt: DPSEWER. The Sewer Profiles dialog box will appear.

## PLACE STRUCTURE

Select an alignment (line, arc, or polyline) and place inlets, inlet manholes or manholes by station and offset. The blocks that are placed in the drawing are in the Dpsew directory and may be edited or redefined to meet your personal needs. Be sure to save a copy before you change them. The names must stay the same for the program to find them. When a structure is placed in the drawing a data block is also placed at the same point (dpstruct.dwg). The name, station and offset fields will be filled in automatically. You must fill in the rest of the data that you need (rim, inverts, pipe size, etc.). Type DDATTE at the command prompt, select the block and add or change any of the data. The alternate station and offset fields are to be used when a structure that is stationed along one alignment is the first structure along another alignment (a manhole at a street intersection for example). If this structure is selected first, the Draw profile and Write text commands will ask if you wish to use the alternate stationing.

**Edit Block Attributes**

Block: DPSTRUCT

Name	Prompt	Value
STRNAME	STRUCTURE NAME	MANHOLE, 4'DIA.,
OFFSET	OFFSET	0.00
STATION	STATION	175.00
EP	EP	
TC	RIM	750.20
INVOUT	INVERT OUT	744.625
SZ1	SIZE (inches or mm)	15
INVIN	INVERT IN	744.875
SZ2	SIZE (inches or mm)	12
INVOTH	OTHER INVERT	
SZ3	SIZE (inches or mm)	
ALTSTA	ALT STATION	
ALT OFF	ALT OFFSET	

Value:

? OK Cancel

### PLACE STRUCTURE MANUALLY

If you do not use the Place Structure command you will have to place the block (dpstruct.dwg) on each of the structures in the drawing using Autocad's, or Intellicad's DDINSERT command. Use Autocad's, or Intellicad's DDATTE command to edit all needed data in the block.

NOTE: After using the blocks, the layer DP\_STRUCTURE may be frozen to hide the data from being viewed in the drawing.

End sections or headwalls will have to be drawn by the user. Place the block (dpstruct.dwg) at the center of the structure. If the word END, HDWL, or HEADWALL appears in the structure description, a triangular shape will be drawn in the profile. Add the pipe diameter to the invert elevation for the rim elevation (the top of the end section or headwall).

### SELECT STRUCTURES

After all necessary data has been added to the block (dpstruct.dwg) You may select the blocks by picking any part of the visible data text. Select from left to right in the order that you wish to have the profile drawn, or you may select in the order that you wish the note to be written.

NOTE: Structures must be selected before a profile can be drawn, or a note written.

### CREATE PROFILE UCS

Before drawing a profile you will need to set up a profile coordinate system. Use the Create profile UCS button, select a known point, enter station and elevation of known point and a name for the UCS. Be sure the scales are set correctly.

### SELECT PROFILE UCS

The Select UCS button may be used for moving between the profile UCS and the plan (world) UCS.

### DRAW PROFILE

Select the Draw profile button and a profile is automatically drawn. If follow alignment is toggled on, the profile will be drawn along the alignment. If follow sewer is toggled on, the profile will start at the station of the first structure and measure the distance to the next structure. If the label buttons are toggled on the labels will appear on their own layers. The profile will be drawn on the current layer.

Notations will use the current units precision settings of the drawing, set them to the desired number of decimal places before drawing a profile. Labels will use the current text style.

NOTE: Pipe lengths are calculated from center to center of structure (the placement point for dpstruct.dwg) and are used to calculate the slope.

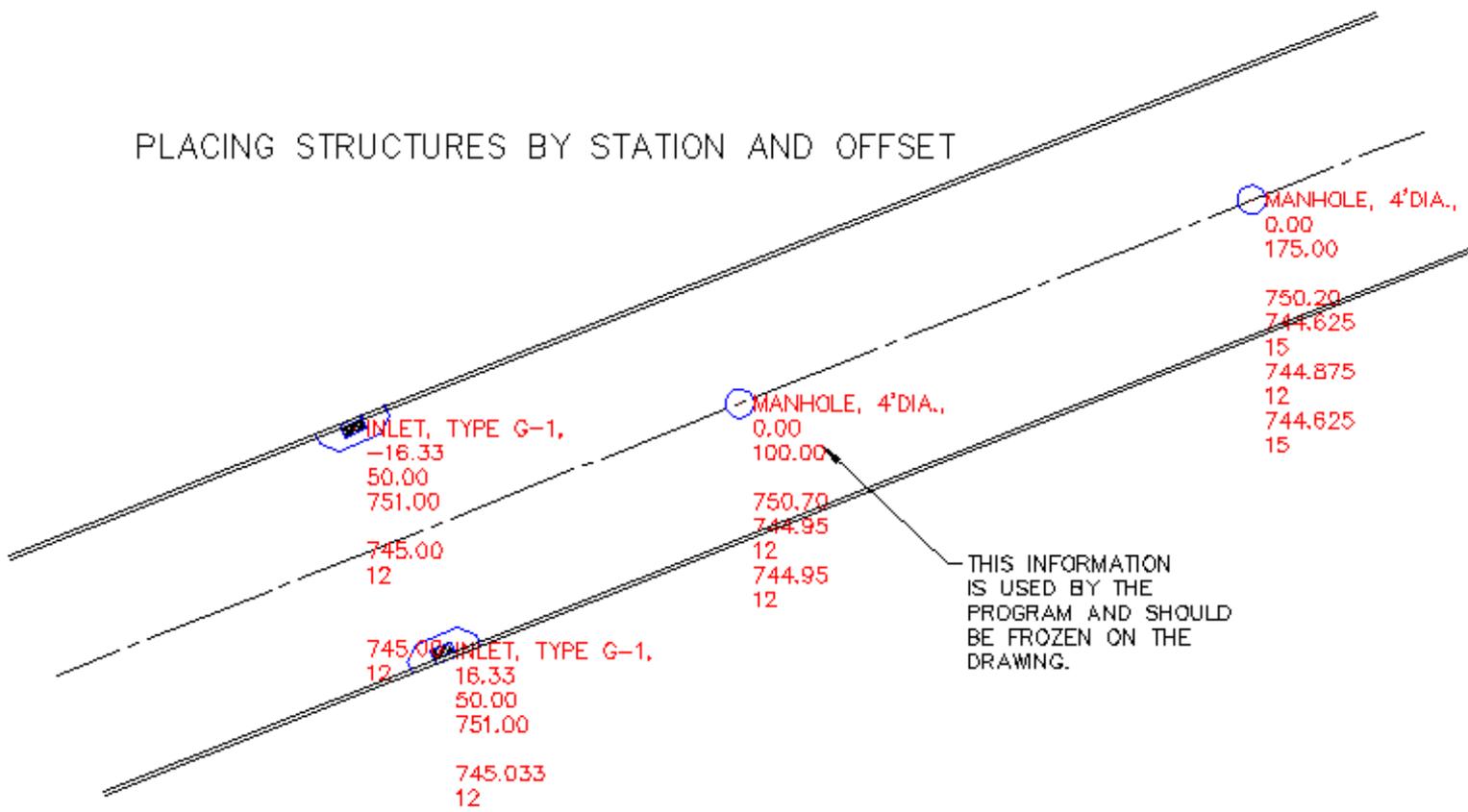
**WRITE TEXT**

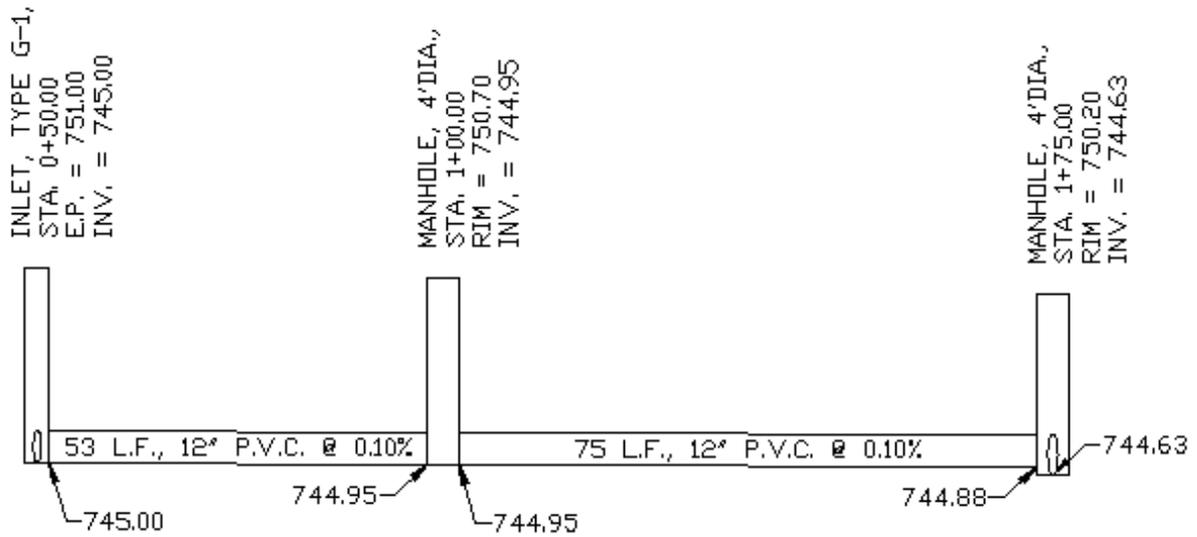
After one or more structures are selected the Write text command will write a text note of the structure which will be placed on the current layer. Text will be written with the current text style.

The note will be formatted as follows:

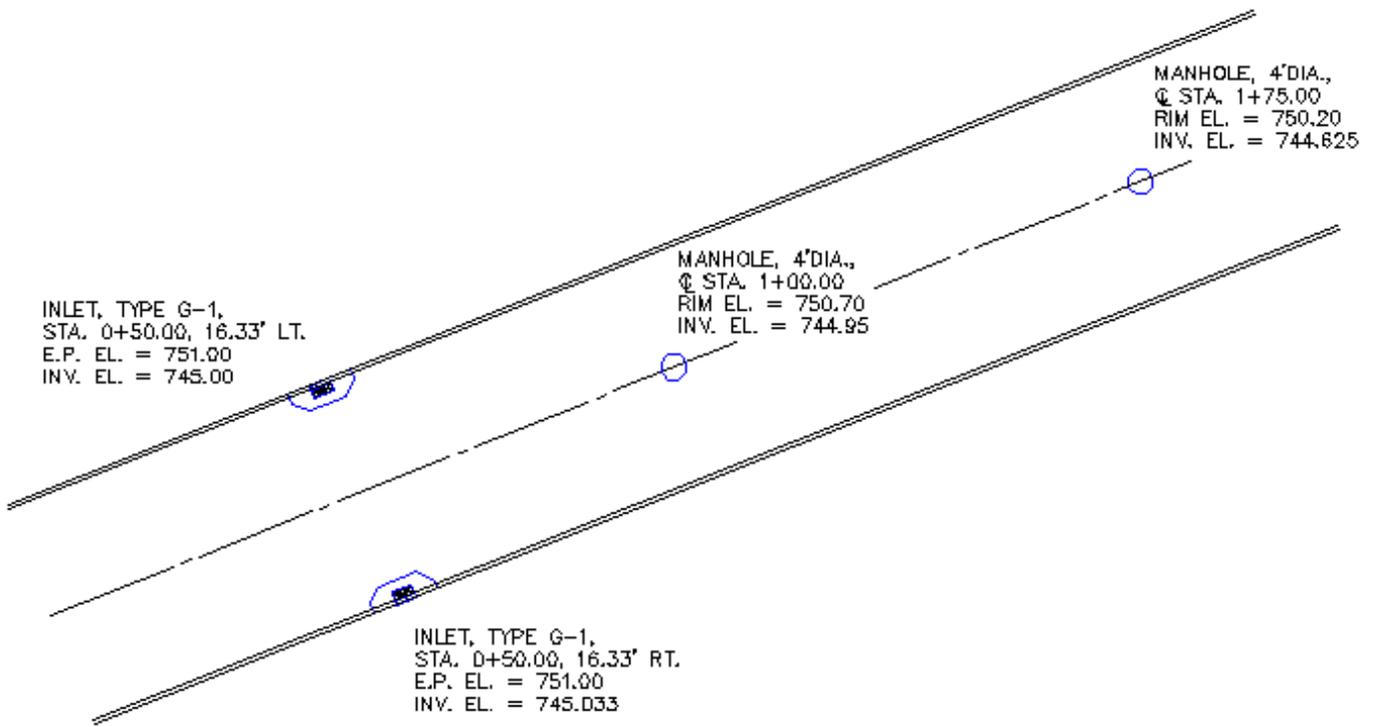
- NAME OF STRUCTURE
- STATION, OFFSET
- RIM (if manhole) E.P. (if inlet)
- INVERT OF STRUCTURE

PLACING STRUCTURES BY STATION AND OFFSET





This profile was generated automatically by selecting the desired structures in the plan above



These plan notes were generated automatically by selecting the desired structures in the plan above