

Creating Points from the Final Surfaces

The following instructions will guide you through creating points based on objects in your drawing or through a surface file. Many functions exist in Carlson that will create points in the CRD file. A few of those functions are: *Create Points from Entities*, *Draw Spots by Surface Model*, *Draw Locate Points – Screen Pick*, *Station Polyline*, and *Interpolate Points*. Carlson modules are displayed as {**Survey**}, main menus are displayed as [**Points**], and submenus and menu commands are displayed as <**Edit Points**>.

Pay special attention to the numbering of the final points. Careful selection of stakeout point numbers will save you time in the field. As a minimum, create points in a series above the original points (500 series, 1000 series, etc.)

- 1) Create a copy of the original crd file: {**Any Module**} → [**Points**] → <**CoorDinate File Utilities**>
- 2) In the window that opens, click “**Copy/Merge CRD File**”
- 3) The “Copy/Merge Coordinate File” box appears on the screen.
- 4) Click the “**Export Points from Current File**” button to copy points to another CRD.
- 5) Click the “**New**” tab
 - a. **Navigate** to your drawing folder
 - b. **Name** the new **CRD** as follows: JobName_Stakeout
 - c. Click “**Open**” when done
- 6) Merge Points Manager appears, the left side of the spreadsheet contains the points in the current crd.
- 7) In the point range box make sure that “**ALL**” is in the box.
- 8) Click “**Ok**” when done.
- 9) Click “**Open CRD File**”
- 10) **Double-click** the Stakeout CRD file created above
- 11) Click “**Exit**” to exit from the CRD file utilities window

Create Points Using “Entities to Points”

- 12) Create the line work that has vertexes at the locations that you want to create points at. The lines can be 3D polylines (best) or 2D polylines. Skip this step if the lines already exist.
- 13) Run the function to create points: {**Survey**} → [**COGO**] → <**Create Points from Entities**>

- 14) In the “Create Points from Entities” window, select the following options:
 - a. Click the “Select Symbol” button and pick “SPT10” from the list of symbols
 - b. Prompt for Elevations: **Checked**
 - c. Locate on Real Z Axis: **Checked**
 - d. Label Elevations: **Checked**
 - e. Point Numbers: **Checked**
 - f. Automatic Point Numbers: **Unchecked**
 - g. Starting Point Number: **number** (see note, page 1)
 - h. Description Settings: Set based on preferences (use Entity Layer... is not sure)
 - i. Separate Attribute Layers: **None**
 - j. Layer Name: **PNTS – Pro Pnts**
 - k. Press “**OK**” when done
- 15) In the “Entities to Points” window select the type of objects to use to create points. As a minimum, select the following:
 - a. Polylines
 - b. Lines
 - c. Arcs
 - d. Inserts
 - e. Leave “Avoid Duplicates with Existing Pts” checked
 - f. Press “**OK**” when done
- 16) **Select the objects** from step 1 to create points from
 - a. Press “**Enter**” when done selecting
- 17) An arrow appears to display the point that Carlson is creating. This may occur after step 16 or before depending on the description settings from step 12-h)
- 18) If prompted, **enter description** (depending on description choices from step 12-h)
- 19) **Enter/ verify the elevation** (displays elevation from object data, change if needed)
 - a. Press “**Enter**” to accept elevation or after typing in new elevation
- 20) Press “**Enter**” to accept the point number or change if needed
- 21) The arrow moves to the next point – **repeat** from step 16 until all points are created

Create Points Using “Draw Spots by Surface Model”

- 22) Run the function to create points: {**Civil - Design**} → [**3D Data**] → <**Spot Elevations By Surface Model**>
- 23) Type “**F**” for file and press “**Enter**”

- 24) Type in "**PNTS-Pro**" for the layer name and press "**Enter**"
- 25) Type "**Y**" to add the points to the crd file and press "**Enter**"
- 26) In the "Select Surface File" window, navigate to a **double-click** on the **proposed surface**
- 27) **Enter** the **starting point number** (see note on page 1 of this instructional sheet)
- 28) Type "**P**" for screen pick and press "**Enter**"
- 29) Note the "Spot Elevations" window that appears in the upper right
 - a. Move the cursor over the screen and the elevation reads from the surface file
- 30) **Click a point onscreen** at the location you want to add a point in the CRD file
 - a. OSNAPS can be very helpful
- 31) Press "**Enter**" when done selecting points to end the command