

**Overview:** Create Points in Civil 3D for use in staking out a construction project. Export survey point coordinates from CAD to a text file. Create reports useful for stakeout.

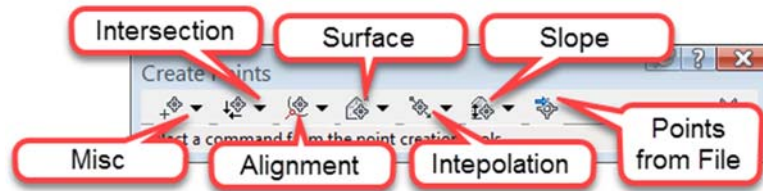
*Software:* AutoCAD Civil 3D 2018, NRCS C3D 2018 template

<b>Notation:</b> <u>Button to Press</u> <i>Displayed Text</i> <b>Icon</b> <u>Action</u> {Text to Enter} <u>Menu Item</u> ...
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### Creating new Staking Points into the Drawing

Click Home... Create Ground Data... Points... Points Creation Tools... to bring up the Create Points toolbar.

Or using the Points dropdown list and flyouts.



The toolbar contains many options from the following dropdown lists (in order):

- **Miscellaneous**
- **Intersection:** Creating Points at Intersections.
- **Alignment:** Creating Points Based on Horizontal Alignments.
- **Surface:** Creating Points Based on Surface Elevations.
- **Interpolation:** Creating Points by Interpolation.
- **Slope:** Creating Points Based on Slope.
- **Import Points:** our normal importing *Points from File* method.

Options worth exploring include:

*Misc: Automatic* – at all vertices of a feature line

*Misc: Along Line/Curve* – at specific distance from the start of a feature line

*Misc: Divide* – divides the object into specified number of segments.

*Misc: Measure* – at specified increments along the feature line.

*Surface: Random* – at user entered locations

*Surface: Polyline Vertices* – at polyline vertices (not for feature lines)

*Alignments: Measure Alignment*– at a specified distance from the start

*Alignments: At Alignment Geometry*– at alignment vertices

*Alignments: Profile Geometry Points* – along an alignment at profile grade breaks

Create all new points for staking using a Point Description that start with {z}. (e.g. z *CL top of fill*). This will put them in the *Staking* point group and will prevent them from affecting the OgnD surface.

Make sure all Point Groups are updated. In Toolspace> Prospector... Right-click *Point Groups*.. Click *Update*


## Creating & Exporting Survey Points

### Update staking point elevations to new revised surface elevation

Points that you've created can be updated to match an updated surface elevation.

1. Select the points.
2. Right-click... click *Elevations from Surface*.
3. Select the Surface to pull the elevation from (e.g. *Embankment*). Click **Ok**.

### Editing Points in a Group

4. In Toolspace> Prospector... *Point Groups*... Right-click *PR- Staking*... Click *Edit Points*... to open the Point Editor Panorama with only the Staking points.
5. Raw Descriptions can be change individually by clicking into the cell and inputting the correct description. Press Enter to accept the change.
6. Click dismiss  to close the Point Editor Panorama.
7. After editing any description make sure all Point Groups are updated. In Toolspace> Prospector... Right-click *Point Groups*.. Click *Update*

### Editing a User Defined Property – “Comment1”(Optional)

The “Comment1” user defined property is preset in the NRCS Template. This can be displayed in a Point Table that is formatted to utilize the Comment1 data.



8. Select a Survey Point in the CAD drawing.
9. Right-click *Properties*
10. Scroll down to the *Comment1* cell and input your information. Press **Enter**.

### Locking Points

Lock all points so that their location, elevation, and description cannot be changed

11. In Toolspace> Prospector... Right-click *Points*... Click *Lock*...

### Placing a Points Table into CAD- (Optional)

12. Click *Annotate...Labels & Tables...Add Tables...Add Point Table*...
13. Pulldown the Table Style to: *NameNEZD* or *NameNEZD with Comments*.  
“*Masked Background*” is an option.
14. Select the points using either the Point Group selection tool  or the Point selection tool .
15. Click **Ok** and click the location in CAD to place the table.
16. To change the Table Style, select the table, then click *Table... Modify... Table Properties*... and select a different Table style from the list.
17. Click **OK**. Press **ESC** when done.

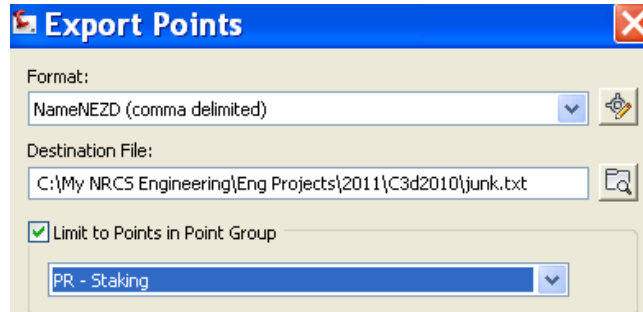
Point Table				
Pt. Name	Northing	Easting	Elevation	Description
1	20.00	0.00	1092.38	IP 1
113	53.90	17.98	1095.93	BM 1

## Creating & Exporting Survey Points

### Exporting Survey Points to file

Without headings:

18. In Toolspace> Prospector... *Point Groups...* Right-click *PR – Staking ...* Click *Export Points*.
19. Set *Format* to *NameNEZD*.
20. Checkmark *Limit to Point in Pt Group*. Set *Point Group* to *PR-Staking*.
21. Browse to a location for saving the output file and enter a filename. Click Open.
22. Click OK



```
1,20.0000,0.0000,1092.3820,IP 1
2,53.8756,17.9646,1095.9600,BM 1
18,-99.9870,0.0000,1086.9720,PIN *1
19,-199.9172,0.1279,1083.6730,PIN *2
113,53.9021,17.9786,1095.9290,BM 1
182,-721.2202,-47.1929,1084.4060,IP 2
183,-725.6905,-120.2933,1083.1470,TP 2
228,-725.6777,-120.0832,1083.1480,TP 2
```

With Headings:

23. In Toolspace> Toolbox... *Reports Manager.. Points...* Right Click *Points\_in\_CSV...* Click *Execute*
24. Checkmark the Point Groups to be exported. E.g. {*PR – Staking*}
25. Click OK
26. Microsoft Excel will open up the file.
27. Prepare, print, and save the file.

	A	B	C	D	E
1	Point Name	Northing (ft)	Easting (ft)	Elevation (ft)	Description
2					
3	1	20	0	1092.382	IP 1
4					
5	2	53.876	17.965	1095.96	BM 1
6					

### Other Reports

Toolspace...Toolbox...Reports Manager...

Profile... Incremental Station Elevation Difference Report (e.g. WW cut sheet)

Profile... PVI\_Station (e.g WW Profile grade breaks)

## Creating & Exporting Survey Points


Profile... Profiles\_in\_CSV (e.g WW Profile grade breaks)

Alignment... PI Station Report (e.g. for staking XYZ of alignments)

Points... Points in CSV (e.g. Output of Control Points, Staking points, etc)

Points...Points\_List (e.g. Output of Control Points, Staking points, etc)

Corridor...Sections Points Report (e.g. for XYZ of points on planned Cross sections)

Note: If the Toolbox reports don't work, use the Toolbox Editor  to redirect the command, replacing %ReportDir%\xsl with *C:\ProgramData\Autodesk\C3D 2018\enu\Data\Reports\xsl*.