<u>Overview:</u> Stake the location and elevation of a line created from 2 points with elevations. Horizontal and vertical offsets can be used.

- Use the AutoCAD C3D instructions "Creating and Exporting Survey Points" starting at Step 1. Create points that you need to make a line for staking (ex. pipe inlet and pipe outlet). Use the Properties to review the Northing, Easting and Elevation for each point to make sure they are correct.
- Determine the details of any Control Points that you will need. They can be linked from the original survey or from a coordinate text file of control points that has been uploaded to the Trimble unit.

<u>Equipment:</u> Trimble TSC3, Total station or GNSS receiver, Trimble Access v2015.22

Setting up & Stakeout Lines

These instructions are based on a *Stakeout.txt* file already having been uploaded to the survey controller.

<u>Start a New Job</u>
1. Turn the TSC3 controller on by <u>pressing</u> the green power button.

2. <u>Press</u> the **Trimble** button 🌀 or <u>Click</u> *Start… Trimble Access*.
3. <u>Click</u> *General Survey*
4. <u>Click</u> on *Jobs… New Job*
5. <u>Input</u> the new *Job name*,
6. Set Template as ***nrcs-gps (or nrcs-tstat for a Total Station)***
7. <u>Click</u> *Linked Files….*
8. <u>Select</u> the file with your exported survey points. E.g. ***Stakeout.txt***.
9. <u>Click</u> Accept.

<u>Key In Lines based on Points</u>
10. <u>Click</u> *Key In…*
11. <u>Lines…</u>
12. <u>Line Name</u>: *Enter a name for the line (E.g. Pipe)*
13. <u>Method:</u> Two Points
14. <u>Start:</u> *Right Arrow to select List*
15. If linked points do not appear, <u>Click</u> Filter and <u>checkmark</u> *Linked File Points*. Accept
16. <u>Click</u> on the name of the first point for the line (E.g. Pipe Inlet)
17. <u>Click</u> Accept
18. <u>End Point:</u> *Right Arrow to select List*
19. <u>Click</u> on the name of the Last point for the line (E.g. Pipe Outlet)
20. <u>Click</u> Accept
21. <u>Click</u> Calc
22. <u>Click</u> Store
23. <u>Click</u> Esc to get back to the General Survey Screen

Stakeout Lines using Station & Offset
24. Click *Stakeout...*
25. *Lines...*
26. Line Name: *Right Arrow to select List*
27. Select the name of the line you created from the list
28. Click Accept
29. Stake: *Station/offset from line*
    i. Page 2/2 allows you to change the Station Interval, H. Offset and V. Offset
    ii. Station Interval: for staking pipes every 20 ft works well
    iii. H. Offset: horizontal offset is used when you need to offset the original location of the line left or right a specified distance (E.g. if the pipe alignment was moved 10 left of the original location during construction)
    iv. V. Offset: vertical offset allows you to raise or lower the line from the original location
    v. Click Enter
    vi. Click Start
    vii. Orientation is relative to the line as looking in the direction of **increasing** stationing.
    viii. When staking a line make sure to be on the correct stationing by going forward or backwards along the line until it displays 0.0 AND make sure to go left or right until it displays 0.0
    ix. Once Target is at acceptable location click accept.
    x. Input As-staked Name E.g {SO1004 } for StakeOut and a Code. Click Enter
    xi. Click Store
    xii. Select next point from list and repeat by using the Sta + or Sta- to change the stationing, or just input the station value that you want to be at.
30. When done with Stakeout Press ESC.

Stakeout to the nearest location along the line
31. Click *Stakeout...*
32. *Lines...*
33. Line Name: *Right Arrow to select List*
34. Select the name of the line from the list
35. Click Accept
36. Stake: *To the line*
37. The display shows you the station you are at and the cut or fill. Click Measure if you want to save surveyed point.
38. When done with Stakeout Press ESC.

Recheck Control Points
39. Before ending the survey, **return to the control points** and take a 2nd shot on those points. Compare the coordinates to the earlier results.

Quit out of Survey as normal.