

Layout Parallel Terrace Alignments

Overview: Create an alignment for a new terrace from survey shots taken. Create and stakeout a parallel alignment based on the terrace alignment that was surveyed in the field.

Equipment: Trimble TSC3, Total station or GNSS receiver, Trimble Access v2015.22

Survey and Stakeout the Terrace Flaglines

Set up Instrument and start new job

1. Set up total station or GPS for surveying as normal.
2. Power on TSC3 and press the **Trimble** button to launch Trimble Access.
3. *General Survey...Jobs... New Job...*
4. Input a job name for this terrace stakeout survey.
5. Select the template for either GPS or Total station.
6. Click Accept.
7. Click Accept.

Begin Survey

8. Click on *Measure...*
 - a. For total station click *VX & S Series...*
 - b. For GPS click *IaRTN...*
9. *Measure Topo*
10. Continue with normal setup of survey and set a TBM or control point.

Layout the key terrace line without storing any points

(use **Stakeout - Points** and stake to any point to have it display elevations for layout purposes)

Survey the key terrace flagline and store points

11. Once you have the flags laid out and you feel the key line terrace won't change then proceed to survey each flag using **Measure Topo**.
Survey each flag for the terrace line using the appropriate point series
 - a. Point Name suggestions: 1000 for top terrace, 2000 for second terrace, 3000 for 3rd terrace, etc. Code suggestions: by appropriate terrace (T1, T2, T3)
The point series makes it easy to re-establish flags if necessary
The T1, T2, T3 label for point code make it for easy filtering in TDT
(If it is a big terrace job you could bring your laptop to the field to design this key terrace so you know that terrace design works)
 - b. Use the Map Screen to view the points surveyed, which end you started on, etc.

Create alignments from surveyed flagline

12. Once you have surveyed the key line terrace – Press *Key In....Alignments....*
13. Screen 1: In *Point Range* – Enter the point numbers that you surveyed for the key line terrace (Note: the first point will be the starting station on the alignment. E.g. *1044-1000* means the starting station for the alignment is at shot #1044. The points must be in order.)
Checkmark *Store Alignment...Alignment Name:* input a name (eg Smith T2)....
[Alignments are saved external to the job file so a descriptive name is helpful.]
14. Screen 2: *String name* = T2 (for terrace 2), *Start Station* = **0**, *Station Interval* = **50**
Press *Store.....*

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15. Press *Offset*....*H. Offset: enter the desired offset* (e.g. 132)....Press the *Right Pointing Arrow* to specify offset direction (left or right of the alignment looking towards increasing stationing)....
Alignment Name: input a name (eg. Smith T2 132 R) *String name* = T3 (for terrace 3),
Press *Enter*.... Press *Store*....Press *Esc*

Layout the offset terrace alignment

16. Click *Stakeout...Alignments...*
17. Select the name of the offset Alignment you just created (eg Smith T2 135R) Press *Next*.....
18. Screen 1: Dropdown *Stake:* = **Station on alignment**, *Station interval* = **50**.
Right Arrow Click *Station* to select stationing for staking from the **List** option (e.g. 0+00).
19. Screen 2: Leave *Horizontal* and *Vertical offsets* = **0**
20. Click *Stakeout* and Move to the target location to stake an alignment flag (Stake at 50 ft intervals 0, 50, 100, etc)
21. Once Alignment Flag is placed, click **Esc** (Don't store any shots on the second terrace until you know the line will work. At this point you are just putting flags in the ground)
22. Press *Sta+* to stake the next flag (at the 50 ft station interval)
Repeat Steps 21 – 23 until you have the terrace line laid out, then Press **ESC**
23. Check the terrace line to make sure the line will work without storing any points (Use **stakeout points** and stake to any point to have it display elevations for layout purposes)
24. When done with Stakeout Press **ESC**.
25. Once the flags are laid out and the terrace line won't change, proceed to survey each flag using *General Survey - Measure Points*. Survey each flag for the terrace line using the appropriate point series
 - a. Point Name: (1000 for top terrace, 2000 for second terrace, 3000 for 3rd terrace, etc)
Code: by appropriate terrace (T1, T2, T3)

Finish & Quit out of Survey

26. Switch to General Survey to take a topo shot on a known benchmark or control point as a final check.
27. When survey is completed, **Escape** to main menu, & click *Survey... End Survey*
28. Click **Yes** to Power down Instrument. Click **Ok** & Disconnect the power.
29. Click **Exit**. Click **Yes** to Power Off.