

## Staking Out Grids

We once had a report of a System 500 customer who had won a contract to stake out the positions of hundreds of small bore-holes over a proposed landfill site. These bore-hole positions were at regular 20m grid spacings over the site. He was given the co-ordinates of the corners of this grid and was told to work out the co-ordinates for the rest of the points and then stake them out.

He computed the positions of all the bore-holes and transferred all the points into a job on the sensor. He then staked out all positions as individual points using the normal Point Stake Out routine.

However, with System 500 it is possible to stake out a grid such as this knowing the co-ordinates of only 2 points.

## The Grid Stake Out Routine

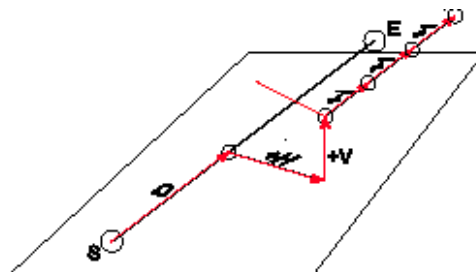
Choose the Stake Out type **Grid** in the **STAKE-OUT\ Grid** panel and the job in which the points are stored.

After entering the **STAKE-OUT\ Grid** panel, a line needs to be defined from 2 points. These 2 points are the points from which the grid of points will be constructed.



After defining the line, the parameters of the grid can be defined. The **Station Beg** parameter allows the distance to the first grid point along the reference line to be defined. The **Horz** and **Vert Offset** defines the horizontal and vertical offset from the reference

line to the first grid point. The **Station Inc** parameter allows the increment between grid points along the reference line to be defined - in this case, this is 20m.



SE - Defined Reference Line  
D - Distance to Station Begin  
H - Horizontal Offset  
V - Vertical Offset  
I - Increment

Upon returning to the **STAKE-OUT\ Grid** panel, the first point of the grid is selected to be staked out. The position of this point on the grid is shown at the top of the panel as

+XXXX.XXX+YYYY.YYY,

where **X** is the distance along the reference line and **Y** is the horizontal offset from the line.

This point can be staked out in the normal manner. If this point is then occupied, the suggested point ID for this point is as described above. If you wish to use a different point ID for this point press **SHIFT F3(PT ID)** to toggle between another point ID relating to the line, or press **SHIFT F3(PT ID)** again to use the current point ID as defined in the point ID template.

After having staked a point, you are then moved to the next point in the grid to be staked along the line.

## Stake Out the Next Line

When all grid points on that line have been staked out, then it is needed to stake out the next row of grid points -

in this case 20m to the right of the first row.

You have a choice - you can return to the start of the line again to stake out this row of grid points, but this would mean you would waste time walking back to the start. For this job it is more efficient to stake out the grid points in the second row in the reverse order to the first.

In the line definition panel, press **F5(PARAM)** again. Set the **Horz Offset** to 20m and set the **Station Inc** to be -20m which means these points will be staked out in the reverse direction.



Now press **F4(CURST)** which means that you will now stake out relative to the current station (the current station being the last grid point you have staked out).

## Skipping Points

It may be that it is not physically possible to stake out every grid point. It is therefore possible to "skip" points if necessary.

In the line definition panel, press **SHIFT** and then choose **F3(STAT+)** or **F4(STAT-)** to skip a point and move up or down to the next point.

## Remember

- The quickest and most efficient way to stake out a lot of points on a regular grid is to use **Grid** stake out.
- To construct the grid, only 2 points are needed.
- It is possible to stake out subsequent rows of points in opposite directions.