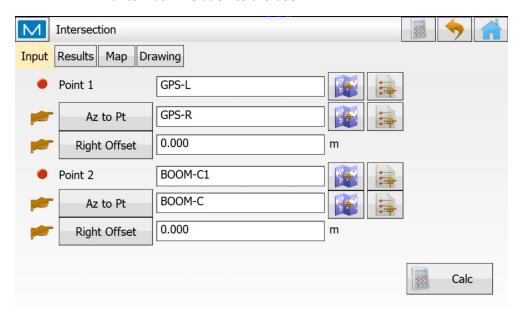
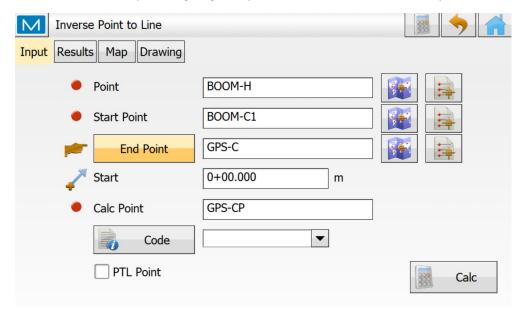
First need to find the point that is the intersection of GPS-L to GPS-R and the centre of the bucket or stick to centre of the boom near the boom pin.

- Calculate > Offsets > Intersection.
- Enter the below points (BOOM-C1 is centre of bucket or stick and BOOM-C is the centre of the boom near the boom pin)
- Name this point GPS-C as it is the centre measurement between the two GPS antennas in-relation to the boom.



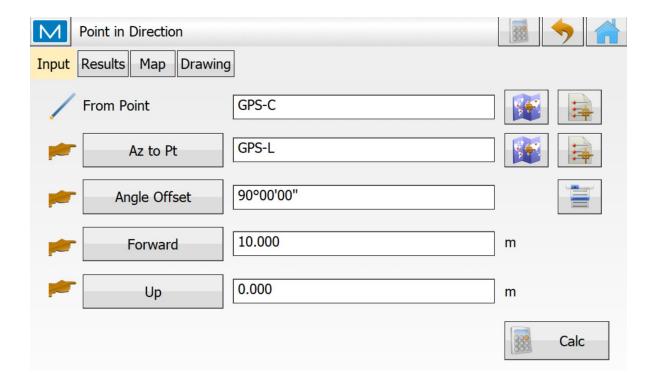
To correctly find the behind and left measurements, the BOOM-H (height measurement that is taken from the centre of the boom pin) needs to be intersected with the BOOM-C and BOOM-C1 measurements.

- Calculate > Inverse > Pt to Line
- Enter the below points and name the Calc Point BOOM-CP for Boom centre pin as this point is going to represent the centre of the boom pin in all 3 axis.



The last calculated point is the GPS-MBIAS point that is a point that is perpendicular to the GPS-L to GPS-R line at the GPS-C point.

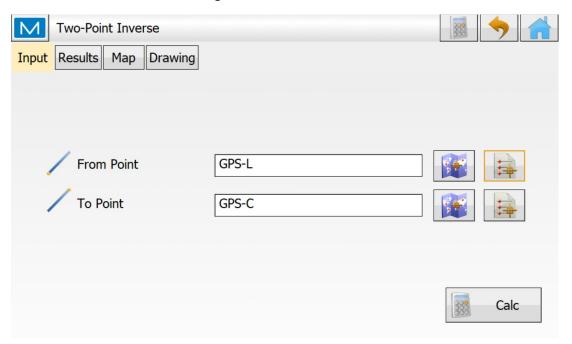
- Calculate > Point in Direction
- Enter the below points and name the calculated point GPS-MBIAS
- Any distance can be used for the forward measurement, so long as the field has a measurement otherwise it can not compute.
- The Angle Offset must be 90°



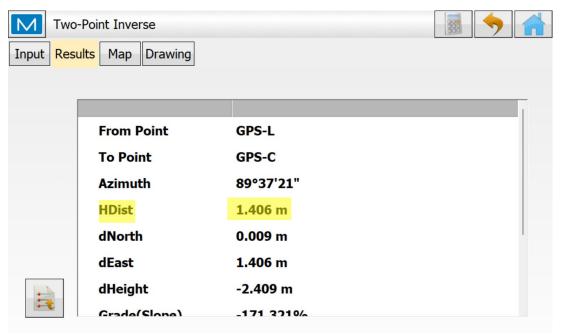
Now to calculate the required measurements, Right, Behind, Height and MBIAS.

Right

- Calculate > Inverse > Point to Point
- Enter the following.

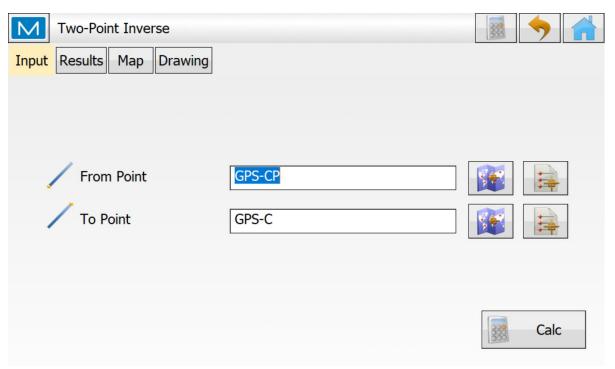


- The measurement that is needed is Hdist
- Remembering that this number is always negative unless the main GPS antenna is to the right of the GPS-C

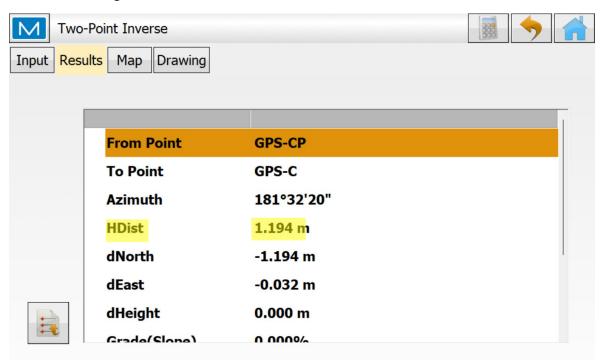


Behind

- Calculate > Inverse > Point to Point
- Enter the following.

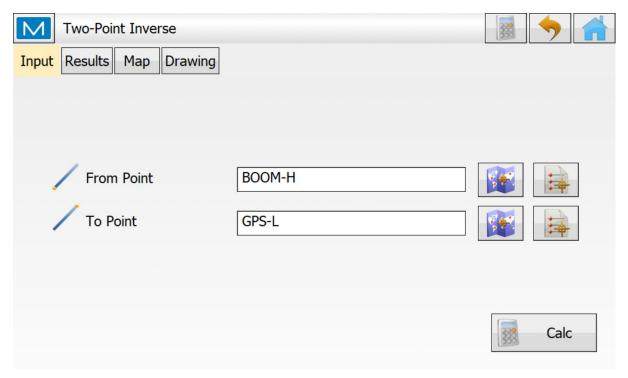


Again, the HDist is the measurement needed.

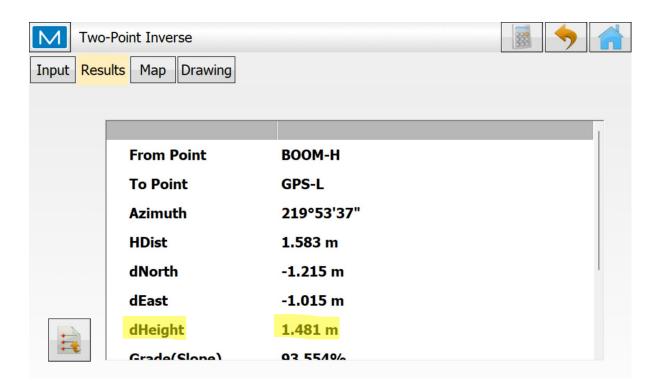


Height

- Calculate > Inverse > Point to Point
- Enter the following.

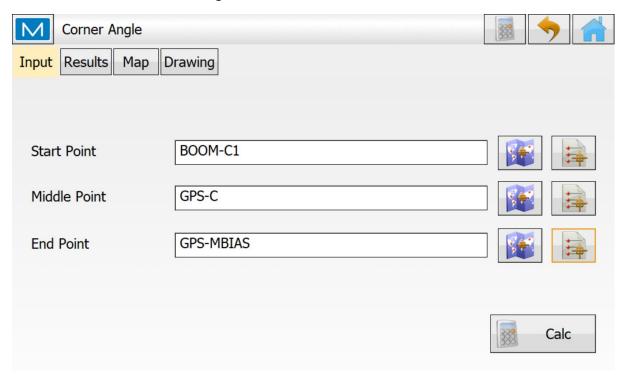


• The measurement required is dHeight, this measurement should be positive.

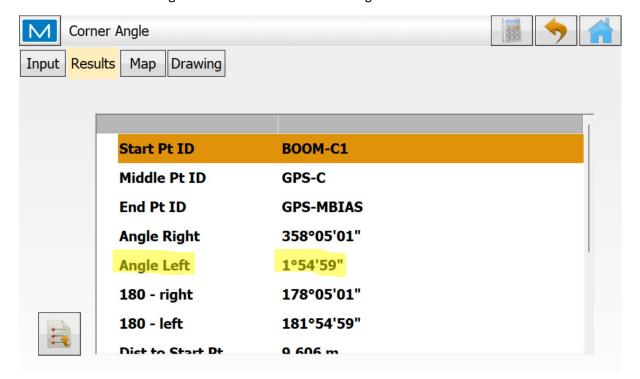


MBIAS

- Calculate > Angles > Corner Angle
- Enter the following.



- The measurement that's needed in this example is Angle Left.
- Is this case the GPS-R is closest to the BOOM-C1 so the small angle is to the left of GPS-C.
- This being the case the MBIAS will be a negative measurement.



This angle is given in degrees, minutes, seconds and needs to be converted to decimal degrees.

The easiest way to do this is to sue an online calculator. However, the formular is as follows:

$$dd = d + m/60 + s/3600$$

Using the above measurement as an example.

The above is the calculated MBIAS.