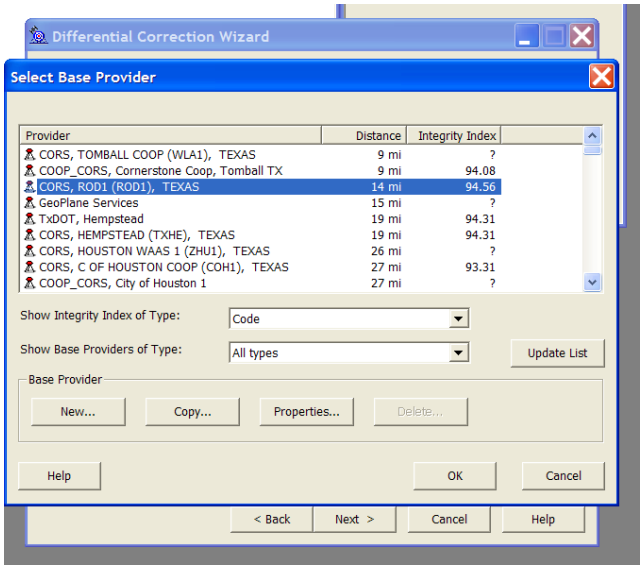
Sometimes the base provider Reference Coordinate does not match the NGS data sheet coordinate. This will cause your whole data set to have what appears to be a Grid Shift. Below is how you create a Reference Station with the correct NGS coordinates.

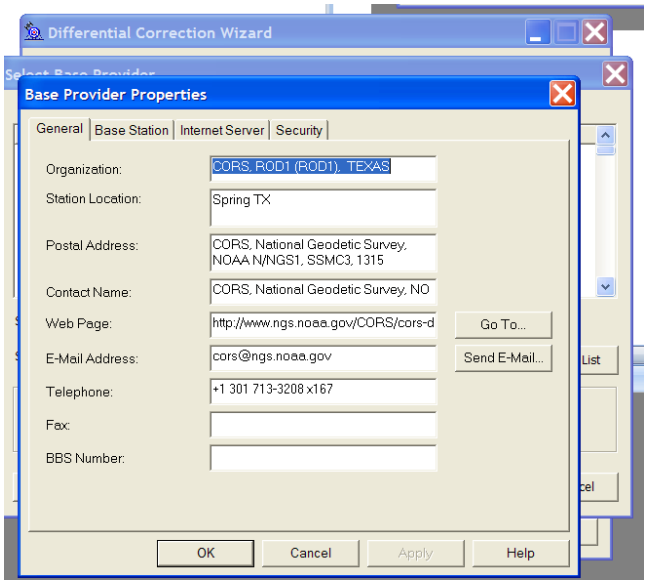
In the Differential processing screen…

Select the “Select” button – at base provider search (top of screen)

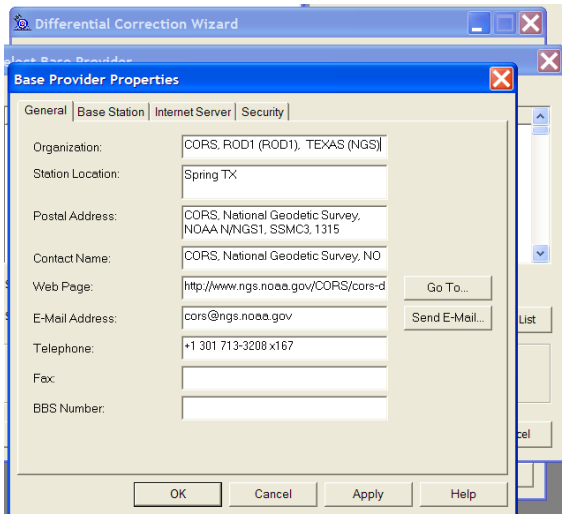
Highlight the reference station you wish to modify coordinates.



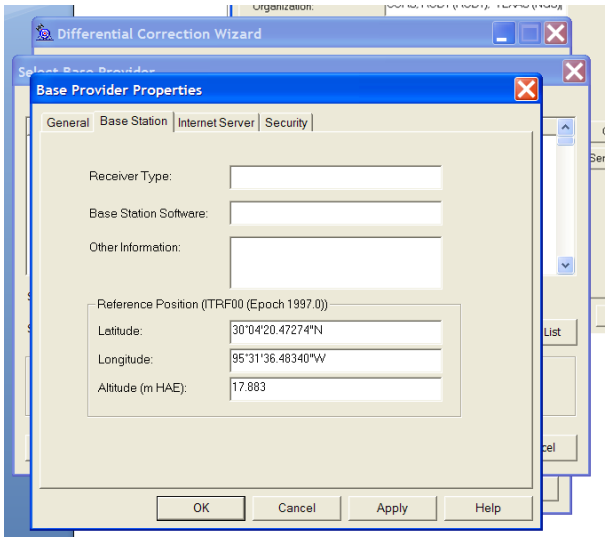
Select the “Copy…” button



Edit the name – I prefer to just add (NGS). This lets me know I have set the Reference Station with NGS coordinates.



Select the “Base Station” tab



Modify the coordinate to Match the NGS data sheet (see last page) (`NAD 83(CORS)- 30 04 20.45382(N) 095 31 36.45798(W) ADJUSTED and the Ellipsoid Height is 19.183 (meters))`. Note: The Altitude in the GPS height HAE in Meters. The GPS Height will almost always be less than the MSL. Note: If the CORS site datasheet does not publish a MSL height, use the Ellip Height. You may need to adjust the height to fit your local control (as in the screen shot above 17.883 better fit the vertical control on the project). If you are unsure about the vertical, do not change. Process your data, and see how a data point on a NGS benchmark compares.

Example if you have a MSL height is on the data sheet:

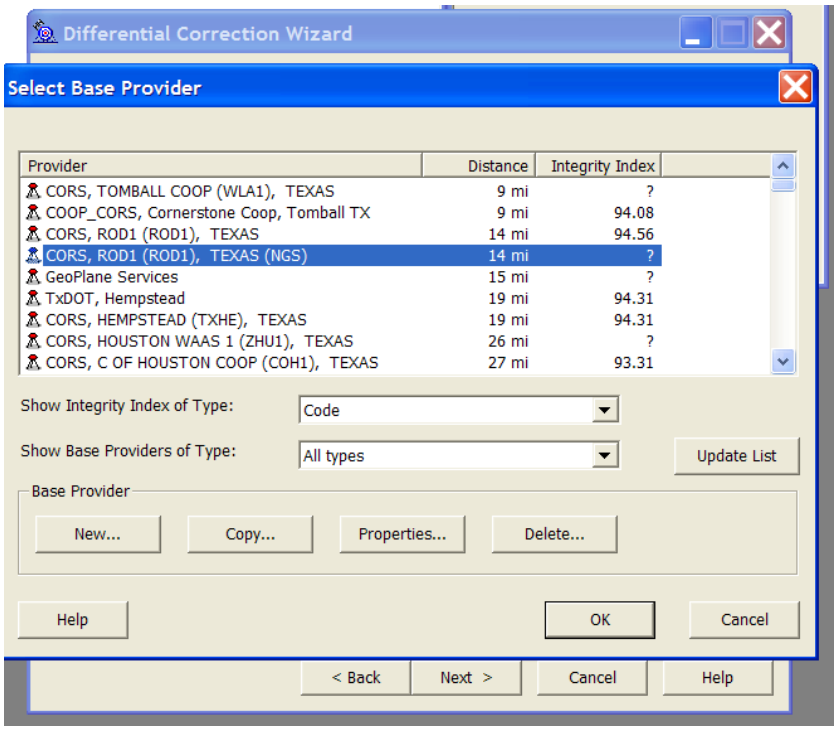
MSL = HAE – Geoid Therefore MSL = 19.183 – (-27.57) = 46.753

MSL Height = 46.753 meters

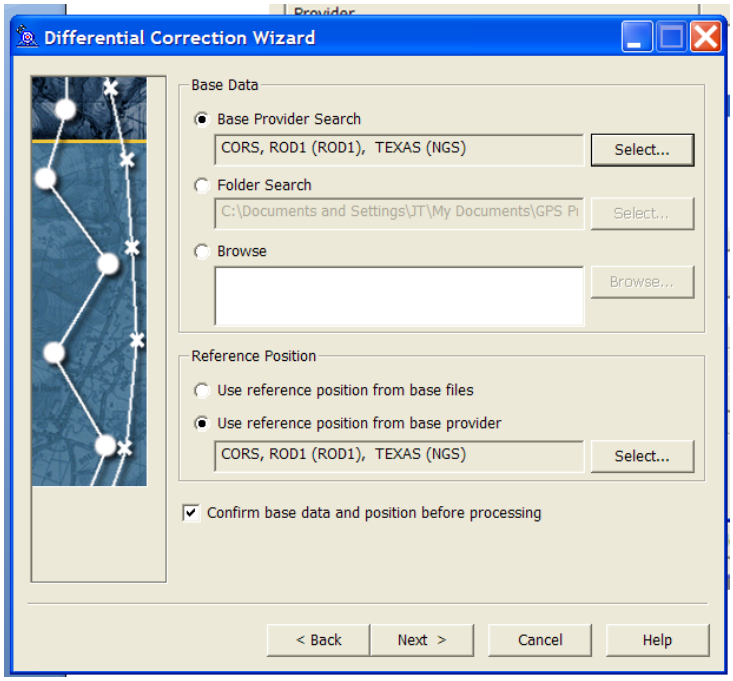
Geoid Height = -27.57 meters

Altitude (m HAE) = 19.183 meters

Select “Apply” button and then Select “OK” button



Now select the new reference station and select “OK”



Use the option “Use reference position from base provider”

Select “Next”

```
DATABASE =  ,PROGRAM = datasheet, VERSION = 7.87.1
1        National Geodetic Survey,   Retrieval Date = JUNE 17, 2011
 DJ8996 ***********************************************************************
 DJ8996  CORS         -  This is a GPS Continuously Operating Reference Station.
 DJ8996  DESIGNATION -  ROD1 CORS L1 PHASE CENTER
 DJ8996  CORS_ID     -  ROD1
 DJ8996  PID         -  DJ8996
 DJ8996  STATE/COUNTY-  TX/HARRIS
 DJ8996  USGS QUAD   -  TOMBALL (1979)
 DJ8996
 DJ8996                        *CURRENT SURVEY CONTROL
 DJ8996  ______________________________________________________________________
 DJ8996* NAD 83(CORS)-  30 04 20.45382(N)    095 31 36.45798(W)     ADJUSTED
 DJ8996* NAVD 88     -              **(meters)            **(feet)
 DJ8996  ______________________________________________________________________
 DJ8996  EPOCH DATE  -        2002.00
 DJ8996  X           -    -532,048.167 (meters)                    COMP
 DJ8996  Y           -  -5,498,578.044 (meters)                    COMP
 DJ8996  Z           -   3,177,326.362 (meters)                    COMP
 DJ8996  ELLIP HEIGHT-          19.183 (meters)          (01/??/08) ADJUSTED
 DJ8996  GEOID HEIGHT-         -27.57  (meters)                    GEOID09
 DJ8996  HORZ ORDER  -  SPECIAL (CORS)
 DJ8996  ELLP ORDER  -  SPECIAL (CORS)
 DJ8996
 DJ8996.ITRF positions are available for this station.
 DJ8996.The coordinates were established by GPS observations
 DJ8996.and adjusted by the National Geodetic Survey in January 2008.
 DJ8996.The coordinates are valid at the epoch date displayed above.
 DJ8996.The epoch date for horizontal control is a decimal equivalence
 DJ8996.of Year/Month/Day.
 DJ8996
 DJ8996
 DJ8996.The PID for the CORS ARP is DJ8995.
 DJ8996
 DJ8996.The XYZ, and position/ellipsoidal ht. are equivalent.
 DJ8996
 DJ8996.The ellipsoidal height was determined by GPS observations
 DJ8996.and is referenced to NAD 83.
 DJ8996
 DJ8996.The geoid height was determined by GEOID09.
 DJ8996
 DJ8996;                    North         East     Units Scale Factor Converg.
 DJ8996;SPC TXSC     - 4,253,120.448   934,806.042   MT  0.99994586   +1 42 05.6
 DJ8996;SPC TXSC     -13,953,779.34  3,066,942.82   sFT  0.99994586   +1 42 05.6
 DJ8996
 DJ8996!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DJ8996!SPC TXSC     -   0.99999699  x   0.99994586  =   0.99994285
 DJ8996
 DJ8996                           SUPERSEDED SURVEY CONTROL
 DJ8996
 DJ8996.No superseded survey control is available for this station.
 DJ8996
 DJ8996_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RTP5643329494(NAD 83)
 DJ8996_MARKER: STATION IS THE L1 PHASE CENTER OF THE GPS ANTENNA
 DJ8996
 DJ8996                           STATION DESCRIPTION
 DJ8996
 DJ8996'DESCRIBED BY NATIONAL GEODETIC SURVEY
 DJ8996'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 DJ8996'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 DJ8996'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DJ8996'   FTP CORS.NGS.NOAA.GOV: CORS/COORD  AND  CORS/STATION_LOG
 DJ8996'   HTTP://WWW.NGS.NOAA.GOV/CORS.

 *** retrieval complete.
 Elapsed Time = 00:00:01
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