

USING TERRAIN ASSIST TO DESIGN INTERNATIONAL COURSES BY HOMEBOY

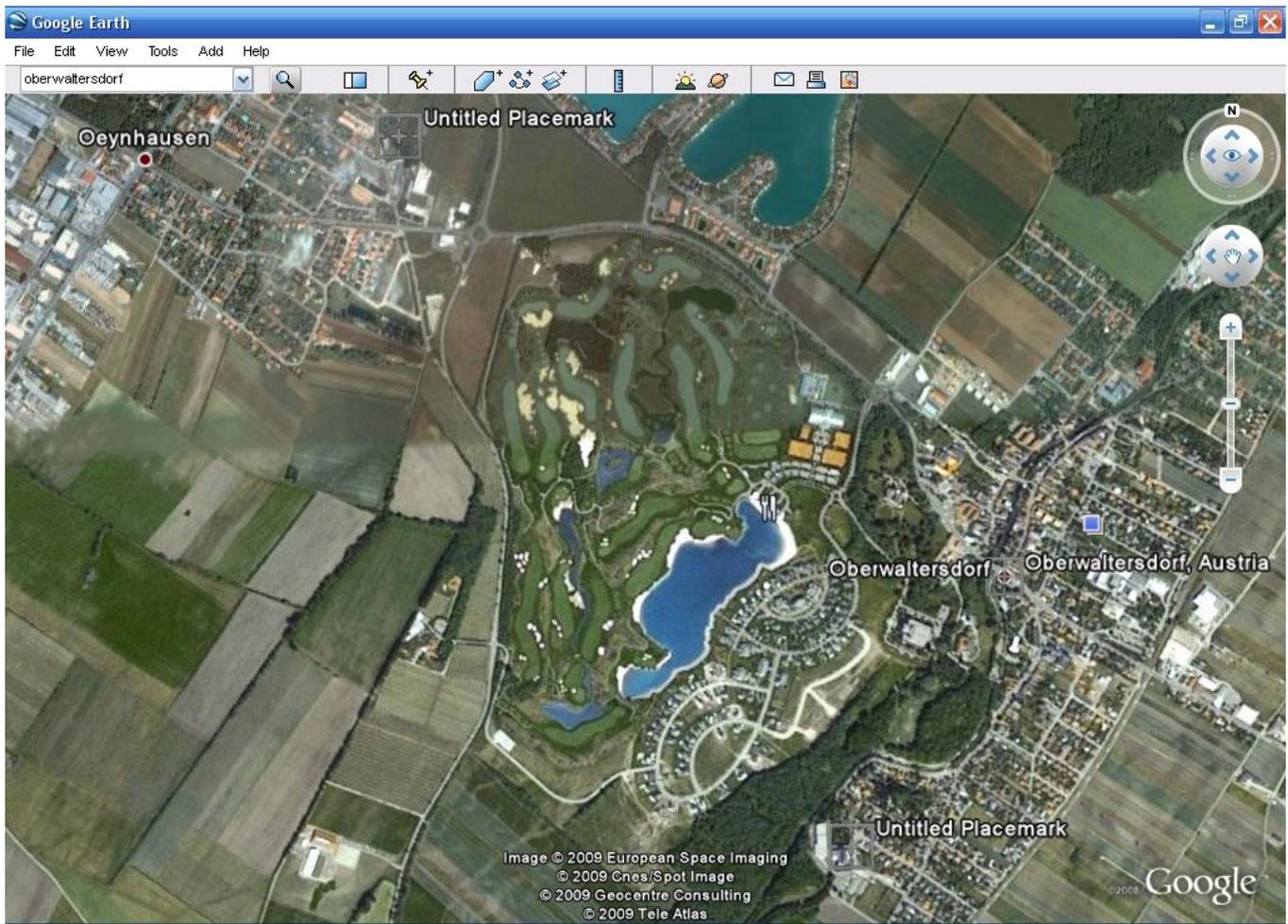
I've had a few requests to show how I lay out international courses with Terrain Assist, so here you go

The course I will use as an example is called Fontana Golf Club in Oberwaltersdorf, Austria. I find the course in Google Earth and then set placemarks as I explained in my Simplified TA Tutorial.

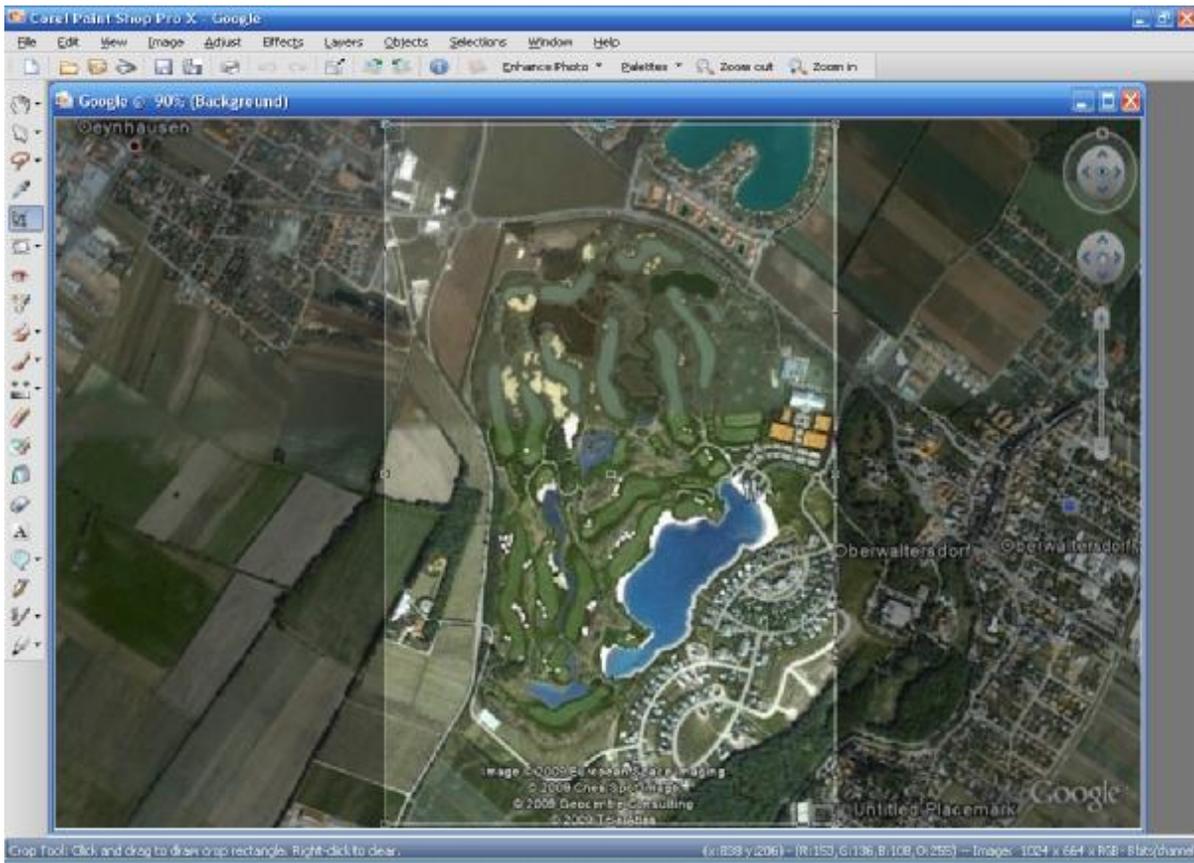
My placemarks are:

Top left: 47° 59' 10.01" N Bottom right: 47° 58' 10.04" N
 16° 18' 3.07" E 16° 19' 0.11" E

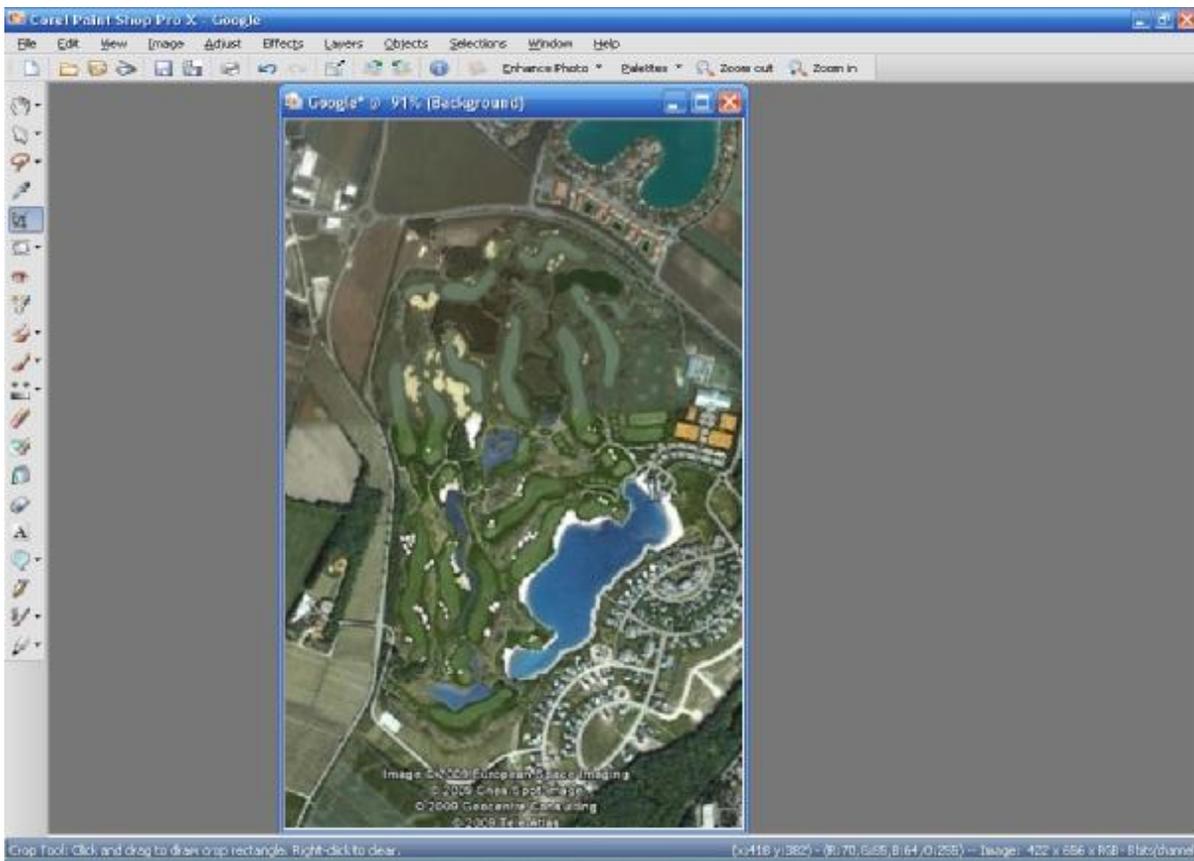
Try to set your placemarks as close to the rounded second because 3dem will not handle the decimals.



Then I save the image as a jpeg file. Then open up the file in PSP and crop the image to the placemarks.



And then save the resulting image as a .tga file. I call it Image.tga and save it to my Fontana data folder.



Now I need to get my elevation data. The data I use comes from NASA's Shuttle Radar Topography Mission (SRTM). According to NASA's SRTM website <http://www2.jpl.nasa.gov/srtm/>, SRTM was a specially modified radar system that flew onboard the Space Shuttle Endeavour during an 11-day mission in February of 2000. This mission created the most comprehensive high-resolution digital topographic database of the Earth. Pretty cool, huh?

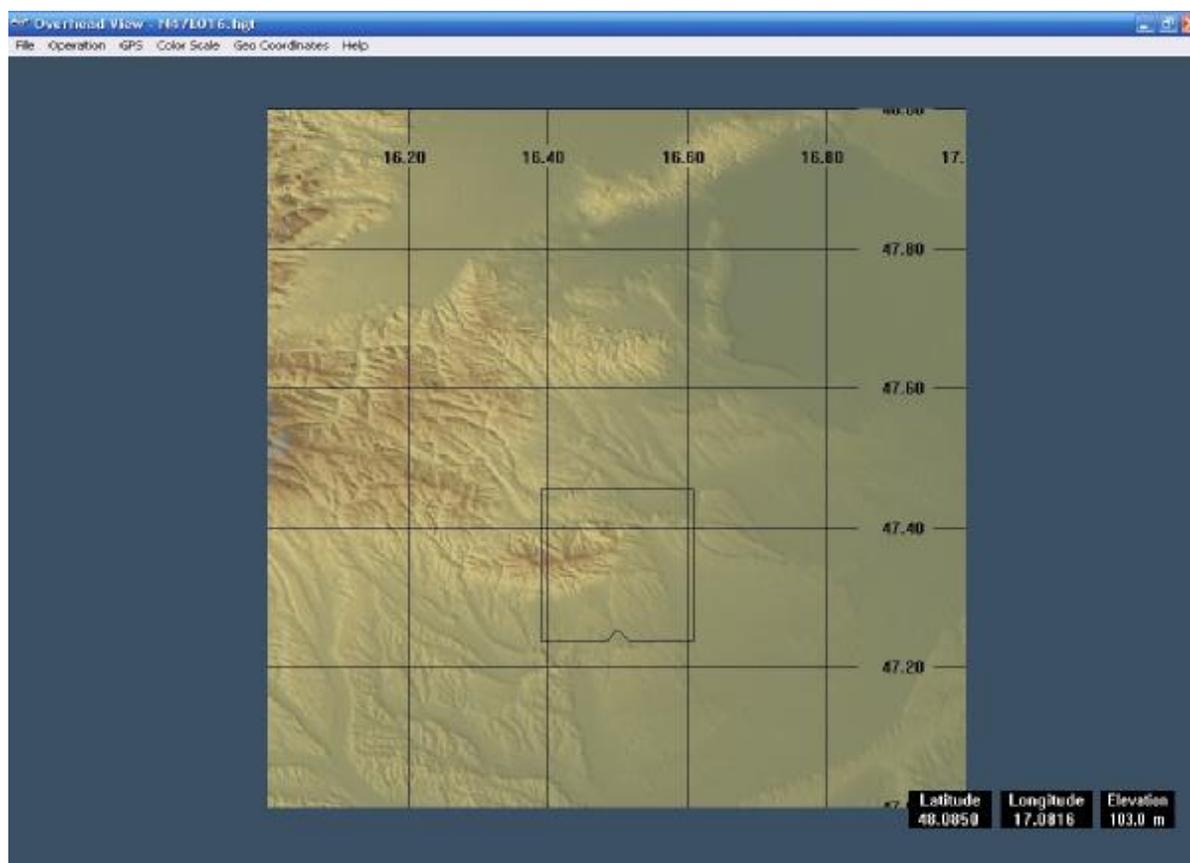
On the SRTM website, scroll down to the heading "SRTM V2 Released" and you'll find the data link: <http://dds.cr.usgs.gov/srtm/>

Go to Version 2_1 (the most updated data). SRTM1 is data for the United States with data sampled at one arc-second intervals in latitude and longitude. This is the same data that you will find at the seamless.usgs.gov website. SRTM3 is data for the rest of the world sampled at three arc-second intervals. This results in 90 metre data vs. the 30 metre data for the United States, so that means the elevation data will not be as detailed.

So, again, go to version2_1/ => SRTM3/ => Eurasia. You will then see a list of hundreds of zip files containing elevation data. They are sorted into one degree longitude and latitude tiles in "geographic" projection.

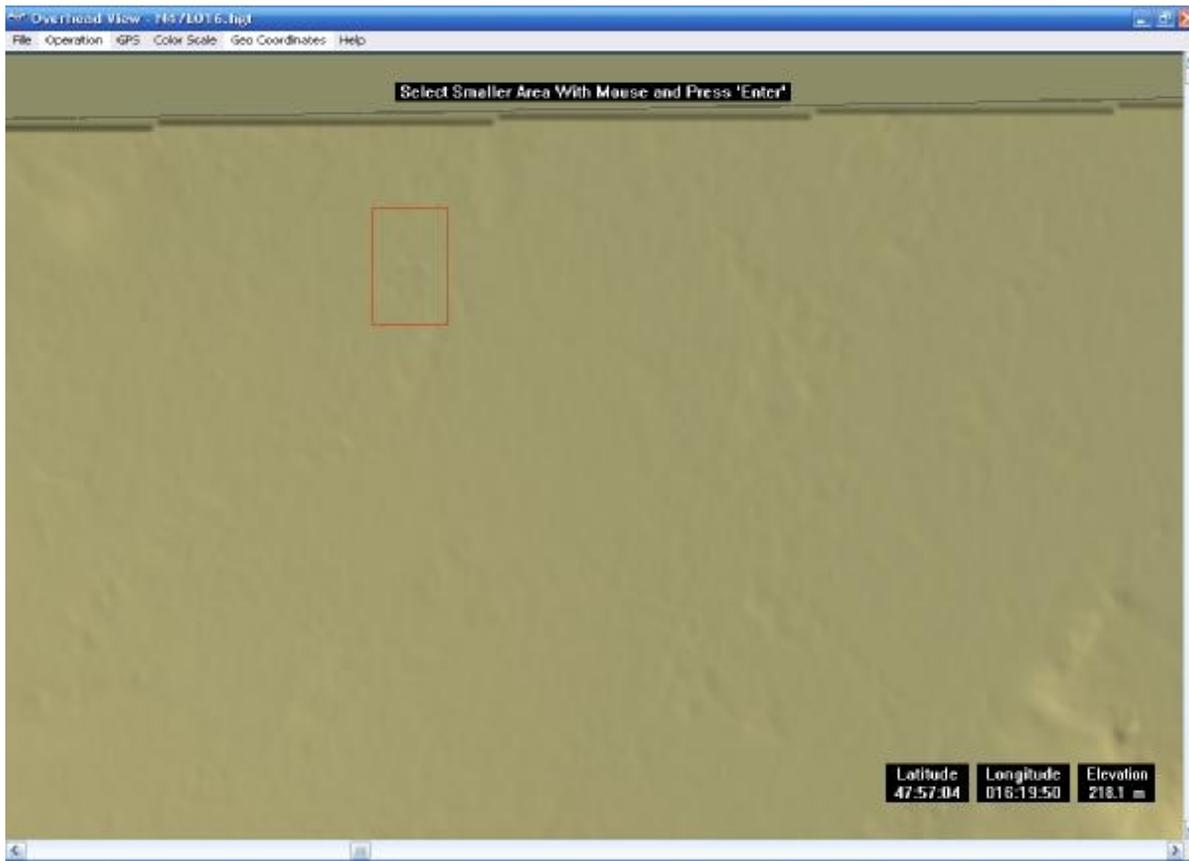
Based on my placemarks shown above, I download the file [N47E016.hgt.zip](#) I then extract the .hgt file to my Fontana data folder.

Open the data with 3dem (check SRTM data) and it will look like this:

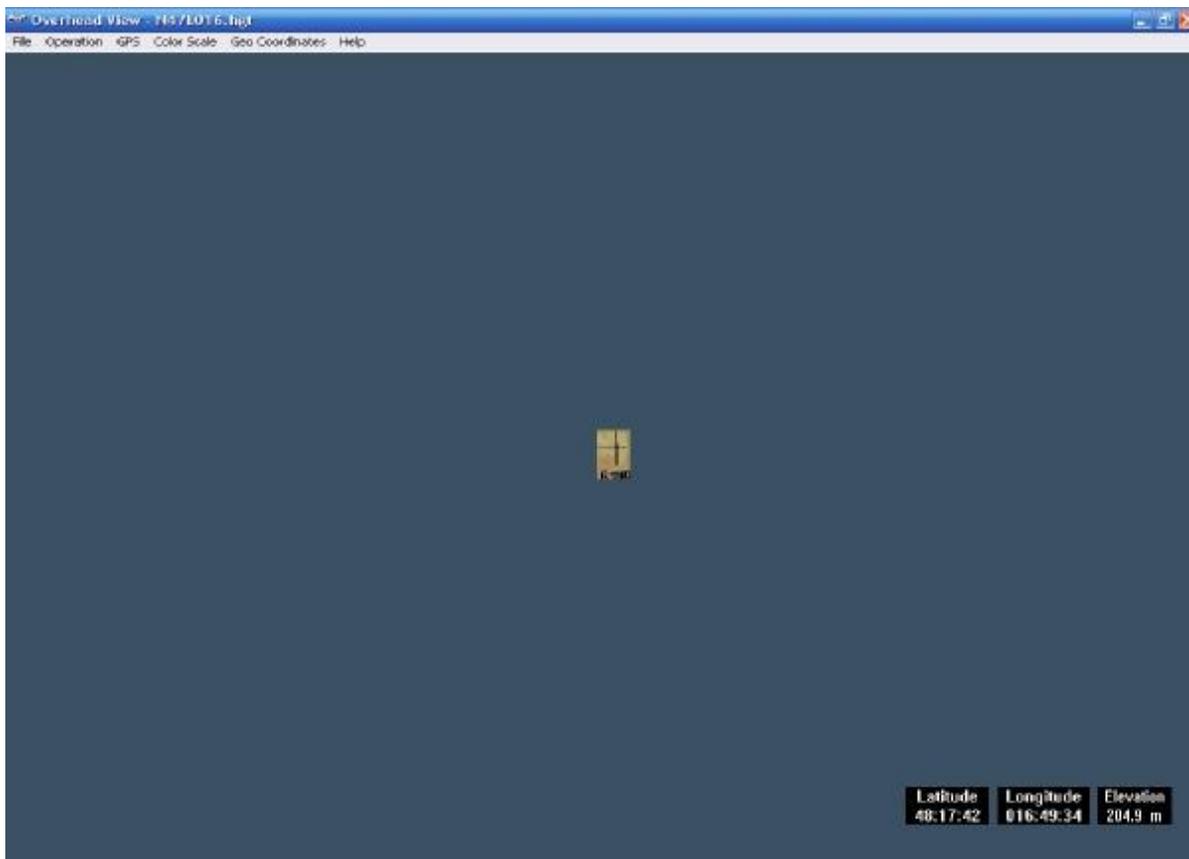


Now as explained in the Simplified TA Tutorial, convert to UTM projection. Go to Operation=>Change Projection=>Change UTM Ellipsoid ... make sure that you check NAD27 and hit OK. Go to Geo Coordinates and check Minutes of Degree (converting from decimal to degrees/minutes/seconds). Now go to Operation=>F6 Resize Overhead View and move the slider about 2/3 of the way across. The program will take a few moments to re-render the zoomed-in image.

Go to Operation=>F8 Select Smaller Area and find the top left corner of your plot. Click at that spot and then drag to the exact coordinates of the bottom right corner of your plot. Here is the box I drew to my exact coordinates:

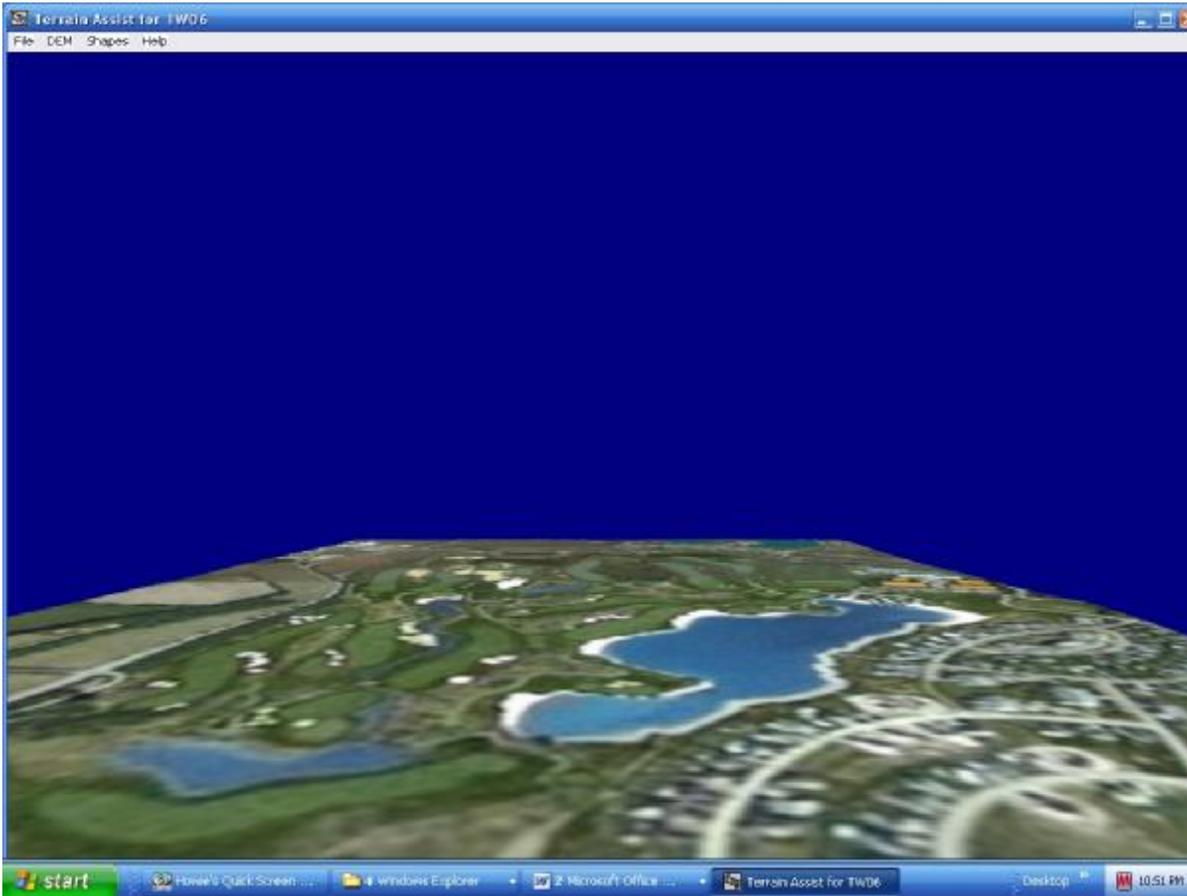


Hit enter and the program will re-size to the exact coordinates of your plot like this:



Now you just need to save the data. Go to File=>Save Terrain Matrix=>File Format ... select ASCII Text String and hit OK. So I'll save the file as Fontana DEM in my data folder. Now you have your DEM data and the orthoimagery for TA.

Open up TA and check SRTM, load the DEM and the image and here is the result (this is a pretty flat course with only about a 75 foot change in elevation).



Good luck ... now let's see some more international courses being designed!