# Using Survey Pro VRS

Setting up your Project:

Survey Pro cannot be started without a job being open. A welcome screen will open up when you first start Survey Pro and ask you if you want to open a recent job, open an existing job, or create a new job. Since the crews know how to open an existing job or create a new job I will touch on the new screens the VRS/GPS differences in setting up a new job.

When you create a new job, Survey Pro will jump through the usual screens except one.   Right after the screen with the *"Azimuth Type:"* and *"Units for Distances"* settings, Survey Pro (ver. 4.3) will ask if you want to use the last used coordinate system.
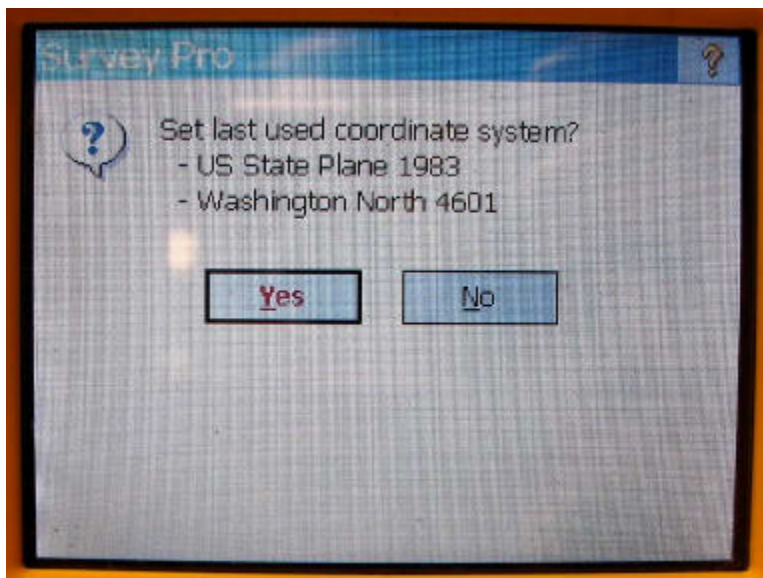

The last coordinate system should be:

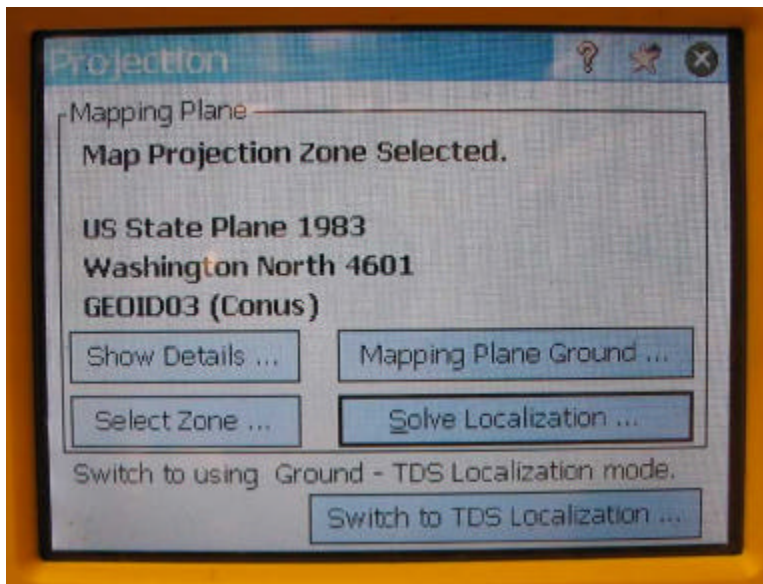-   US State Plane 1983
-   Washington North 4601

Select **"Yes"** if this is what comes up. If there is something different select **"No"**. In rare circumstances you might want something different. If that is the case select **"No"**. If you select **"No"** you will have to go in and set up your coordinate system manually after the job has been opened.

Once the job has been selected or created, switch to the GPS menu system (if you are not already in the GPS menu system) by tapping on the yellow instrument icon in the upper right hand corner of the screen and picking **"Switch to GPS"**.
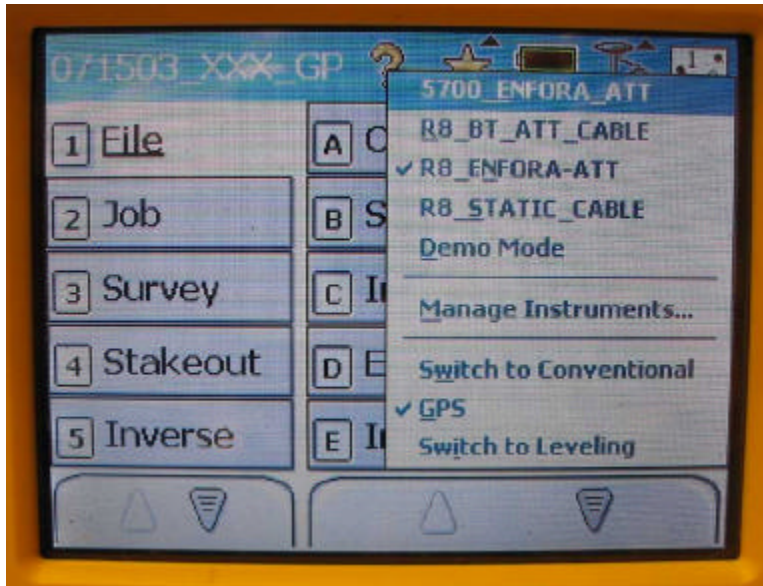
If you selected **"No"** in the "<u>Coordinate System</u>" query when you created your job or you when you opened up an existing job, you will need to go to the **"Projection"** settings under **"Survey"**:
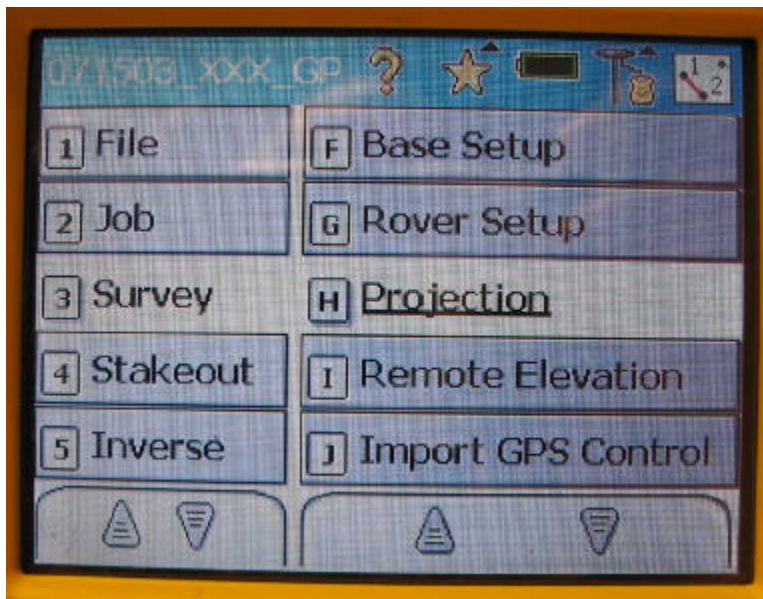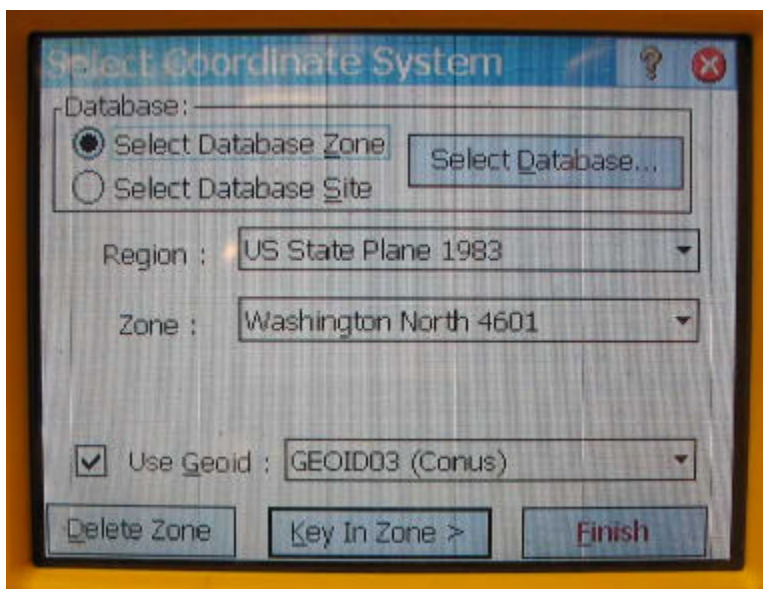
Here you can check the "*Map Projection Zone*" that is selected and edit it if needed. It should say:

> US State Plane 1983
> Washington North 4601
> Geoid03 (Conus)

If it does not you will need to select **"*Select Zone*"** and edit the settings so they are correct for you survey.


Select **"*Select Database Zone*"** and pick **"*US State Plane 1983*"** for your *Region:*, **"*Washington North 4601*"** for your *Zone:*, and **"*Geoid03 (Conus)*"** for your *Use Geoid:* (make sure the check box is checked for *Use Geoid:*).

Starting a VRS Survey:

To collect VRS coordinates you will need to start a GPS survey. To do this go to **"Survey"** and click on **"Start GPS Survey"**.
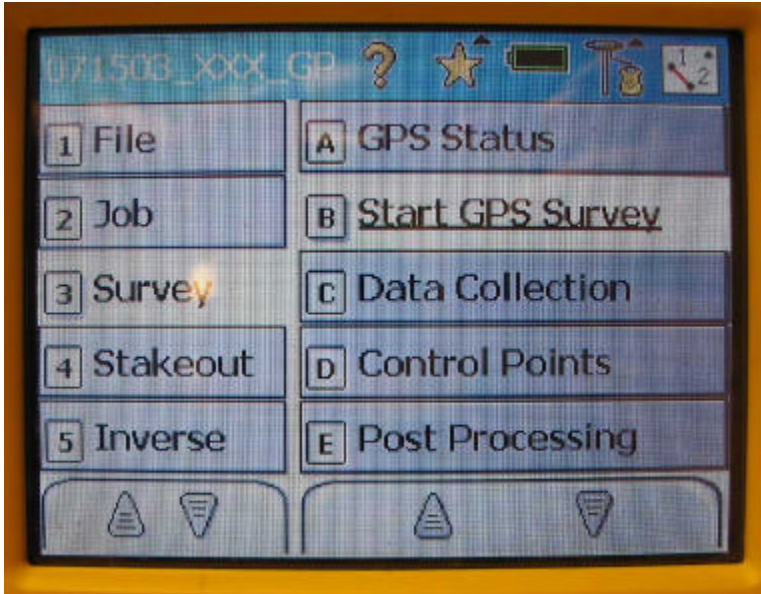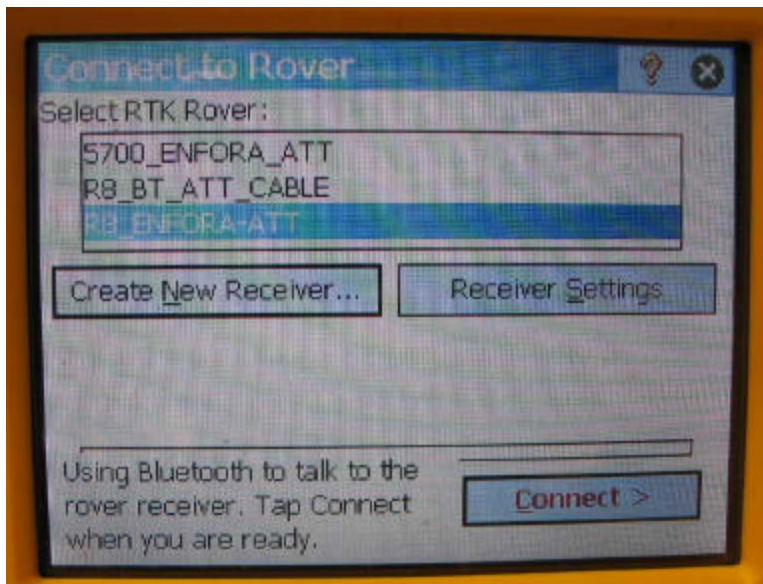

This brings you to the "*Start Survey Wizard*" screen. You have 3 choices here.
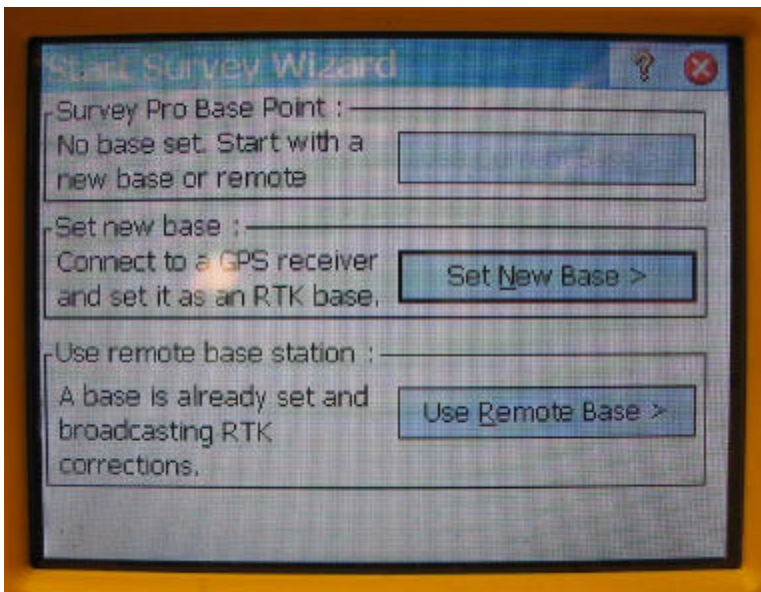
The first two are RTK using a base station you set up on your job site and the last is for VRS. Most of the time (99%) we will be using last selection **"Use remote base station"** since this is how to get your VRS corrections.

Clicking on **"Use Remote Base >"** brings you to "*Connect to Rover*" screen.

Select the correct GPS receiver. The GPS receiver should be configured for you already, but if you change equipment such as receiver, antenna, and/or cell phone (for example) you will need to select the correct configuration.

Once you have selected the correct one (the highlighted one) you will need to click on **"Connect >"** this will start the connecting process of the cell phone calling the internet and the program connecting with the NTRIP (VRS) servers.
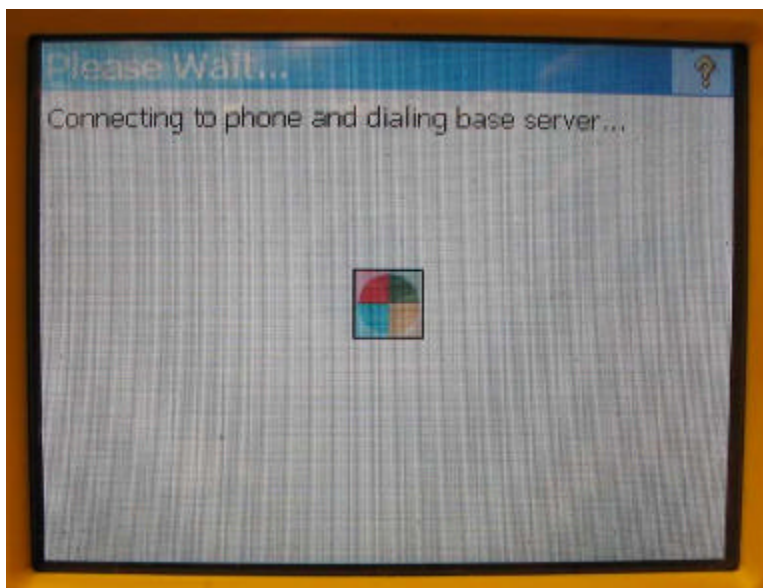
Once the phone gets connected and the NTRIP server sends you the list of VRS nodes the "*Connect to Receiver*" screen will display.

The VRS NTRIP service will be all most always **"PRSNVRS – Network – CMR+"** as this is the Western Washington VRS area network corrections. There might be times that you will use another service, but this will be rare.

Once you have the PRSNVRS service highlighted you need to type in your "*User Name:*" and "*Password:*" in uppercase. Then click on **"Connect >"**. This connects you to the VRS servers and will start the process of sending you the corrections. This process includes the "*Start Survey Wizard*" screen.
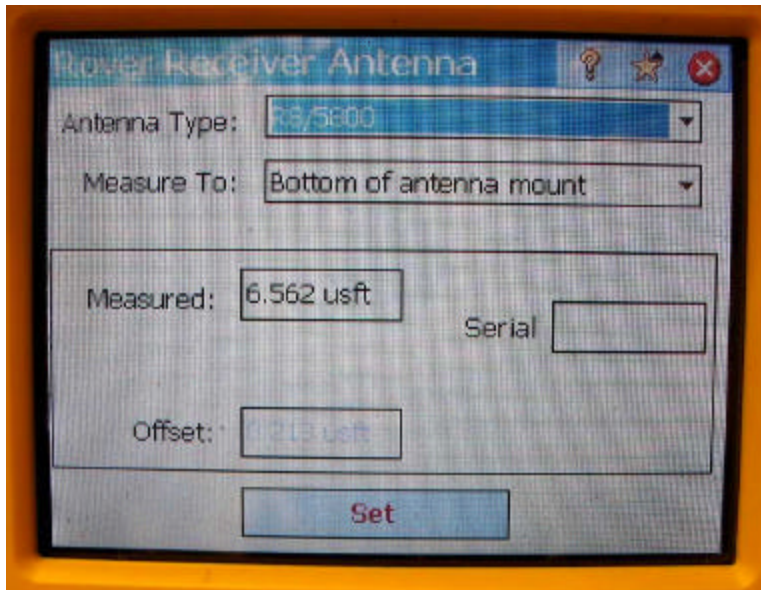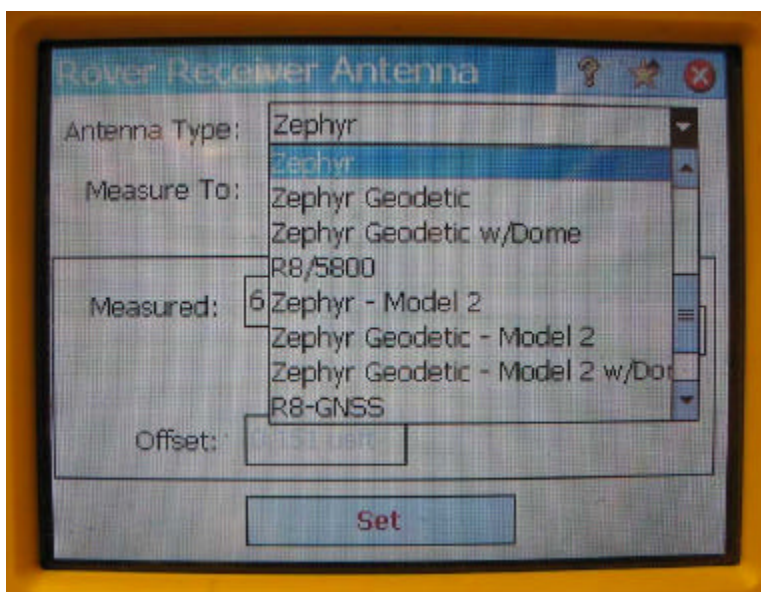

The "*Start Survey Wizard*" screen sets up your antenna type, and antenna height. Make sure you have the correct antenna type here. You will need to input your rod height in the "*Measured*" window. Just like the old collector you

can type in 2m and it will convert to 6.562usft. The above screen capture shows **"R8/5800"**. This will more likely be *"Zephyr"* since most of the other crews have the Trimble 5700 receiver and using the Zephyr antenna.

If you do not have the correct antenna type you will need to change this by clicking on the **"Setup HR"** icon.   This brings you to the "*Rover Receiver Antenna*" screen where you have a pull down menu called "*Antenna Type:*" with different antenna types to choose from. Also you need to make sure that the "*Measure To:*" setting is to the **"Bottom of the antenna mount".**
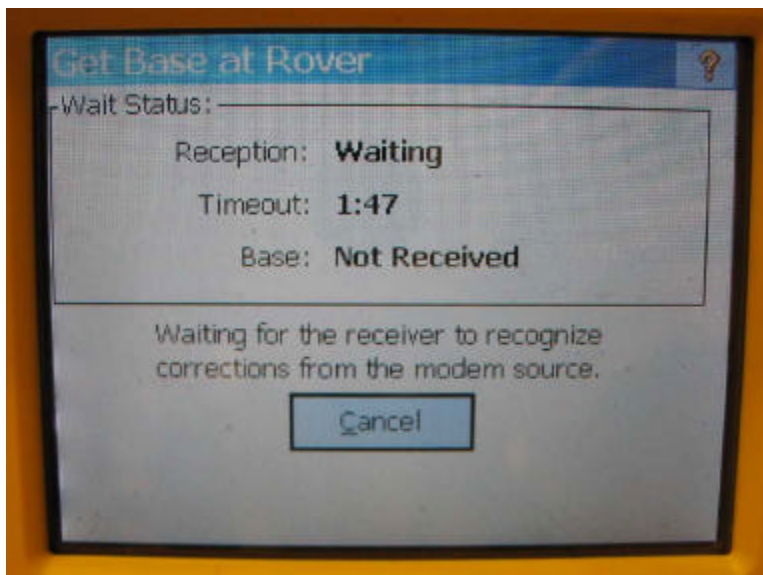

Make sure you pick the **"Zephyr"** type and **not** the **"Zephyr – Model 2"** type. **"Zephyr"** is the type we are currently using.

Once you have the antenna setting correct click on *"Set"*. This brings you back to the "*Start Survey Wizard*" screen. Your antenna and rod height should be correct now. If it is click on *"Set Rover >"*.


The "*Get Base at Rover*" screen should pop up. This is where Survey Pro sets up the "Virtual Base Station". If it does not set one up it will time out in about 2 min.

If it does set a base station it will continue on with the "*Start Survey Wizard*" and a screen will appear with the prompt asking if you have the "*Power Suspend Mode"* turned off. If "*Power Suspend Mode"* is turn on you will run the chance of the data collector turning off part way through your survey. If this happens you will lose your data you were collecting at the time.

You will need to click **"OK"** to go to the next screen.
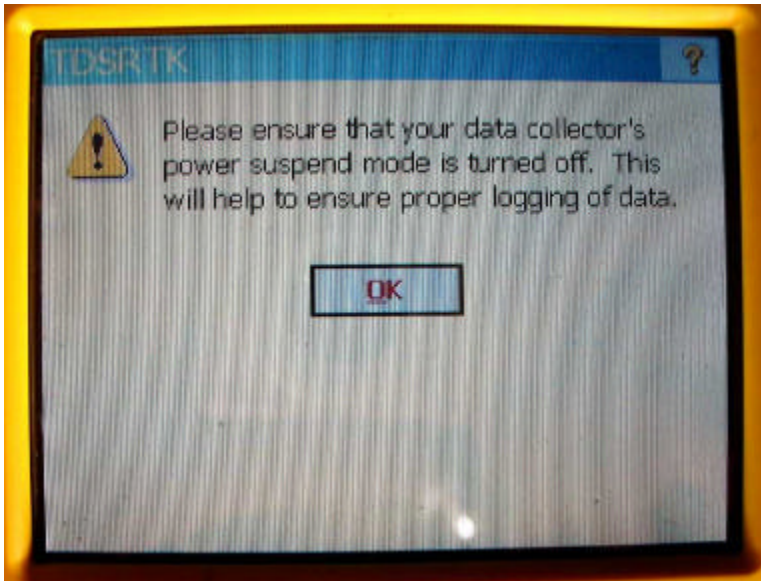
The next screen you should see is the "*Select Base Point Name*" screen.
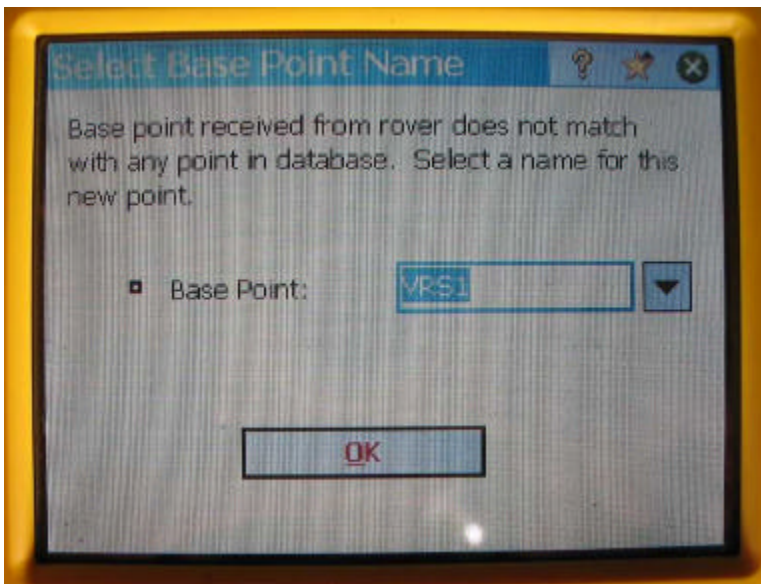
In this screen you name your "*Base Station Point*", Survey Pro defaults to VRS# (where the # is the next number, i.e. VRS1, VRS2, VRS3, etc.). I would suggest that you accept the default number as this will give you a good way of

differentiating between your "*Base Station Point*" that the system uses to calculate the corrections from and your measured coordinates. Be aware though that Survey Pro puts all this information in the RAW file and when you try to convert to a Field Book file it will not convert since the "*Base Station Point*" has alpha/numeric characters in its point name. Click **"OK"** to continue
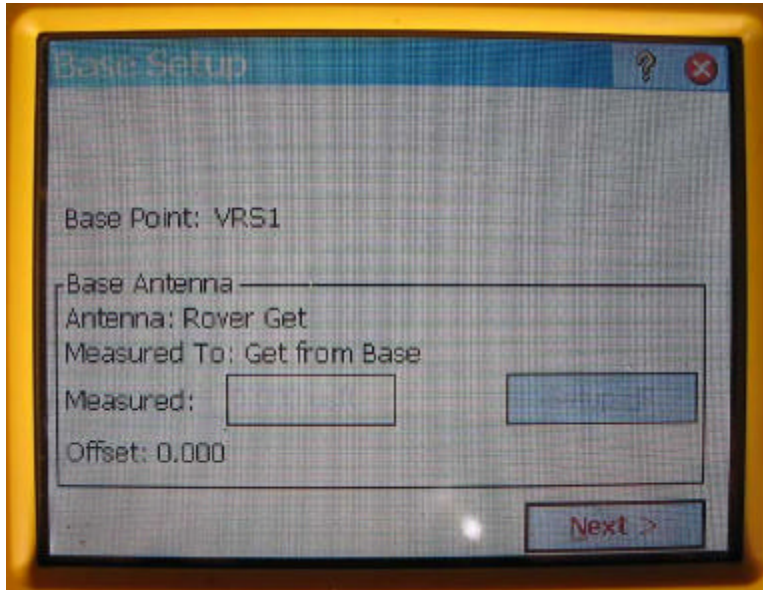

The next screen is the "*Base Station*" antenna type and measure up. You can not change this since the server sets this automatically. Click **"Next >"** to bring you to the "*Base Station*" coordinates (in Lat. and Long.) that the server set for you.
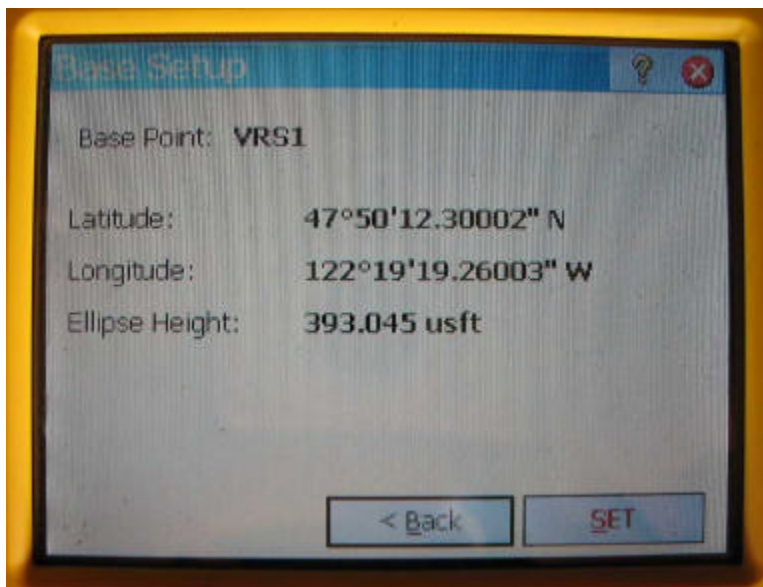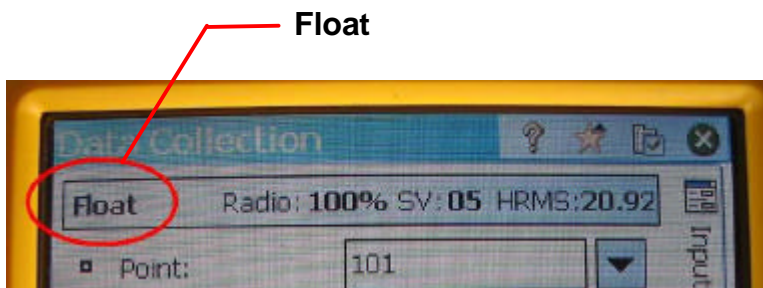

This is your "*Base Station*" reference position (in Lat. and Long.) to be stored in your job. Click **"Set"** to accept the remote "Base Station" position to continue on with the VRS survey.
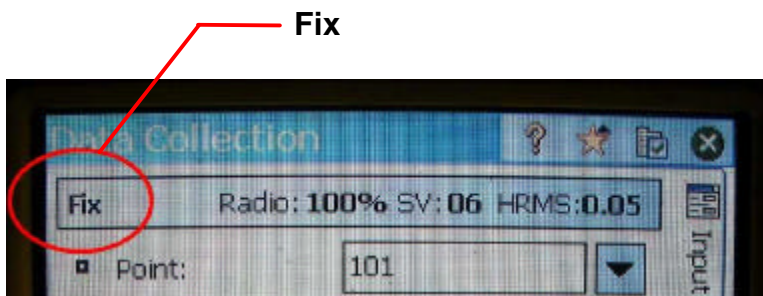
Collecting VRS Data:
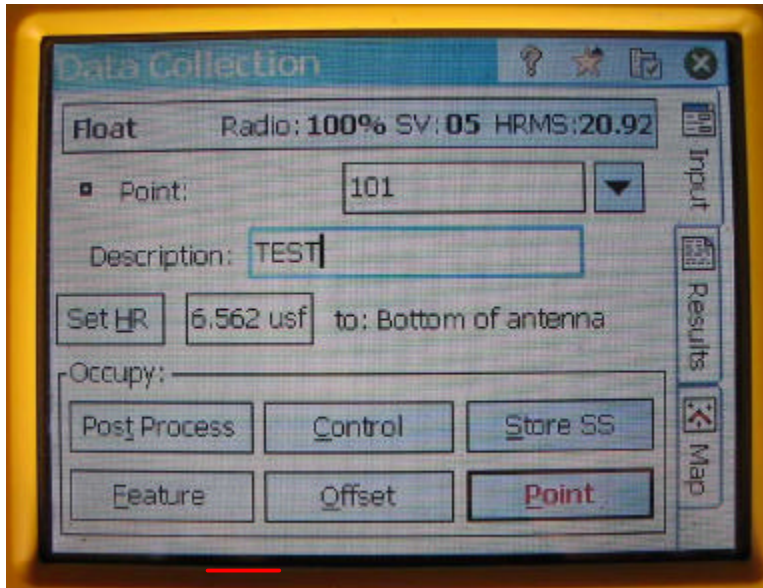
This screen is where you start measuring your coordinates. Before you start your measuring make sure your session is not in a "*Float*" solution.

Float

It should say "*Fix*" before you start measuring your point.

Fix

You can input your "*Point:*" number and "*Description:*" before or after you get a "Fix"ed solution, but you will need to input them before you start you measurements.
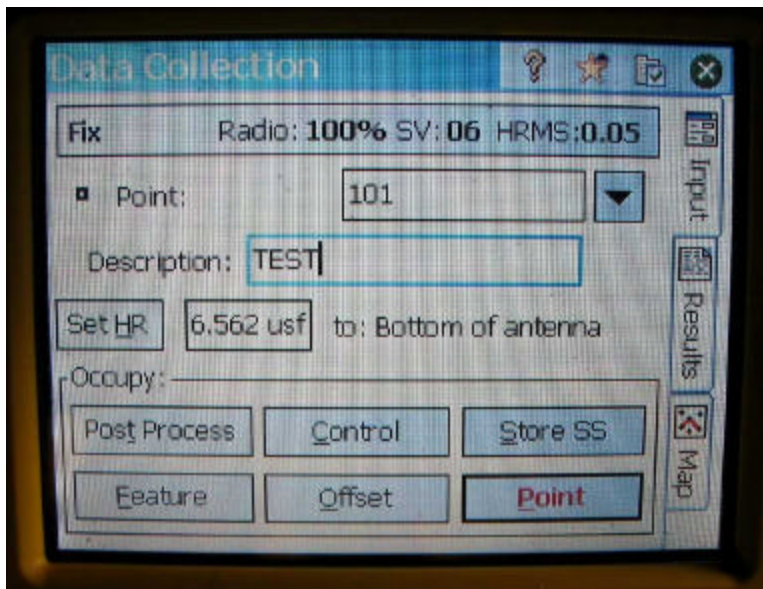

Once the session is "*Fix*"ed and you have your "*Point:*" number and "*Description:*" inputted correctly you can start you measurements. Click on **"Point"** to start your measurements. This will bring you to the "*Occupy Data Points*" screen.
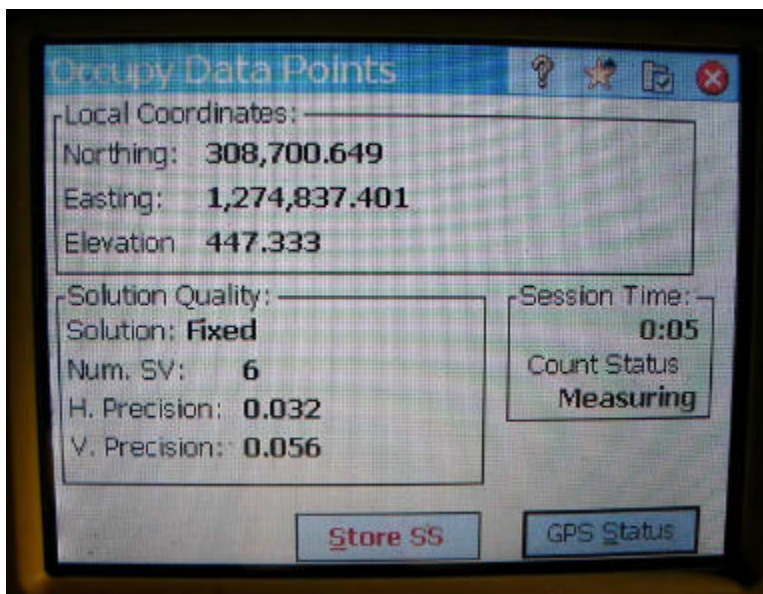
This screen will give you your "*Coordinates:*", your "*Solution Quality:*" and your "*Session Time:*". In this screen you are collecting data for the point you would like to store. As you measure you will see your "*Coordinates:*" and "*Solution Quality:*" bounce around a little. Normally after about 10 – 15 sec. they will settle down and not change much. Currently 15 – 30 sec. is giving us near the same

quality (both Hz, and Vert.) as the 3 min. occupation time does. Once you reach the 15 – 30 sec. time and your "*Solution Quality:*" is acceptable, click on **"Store SS"** to store your point.

Storing the point will default back to the "*Data Collection:*" screen. Here you can click on one of the side tabs and view your "*Results:*" or "*Map:*".
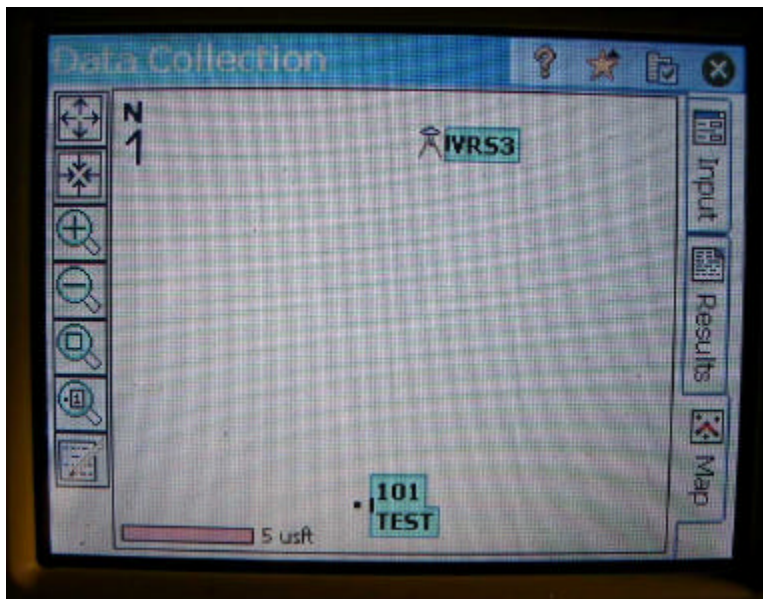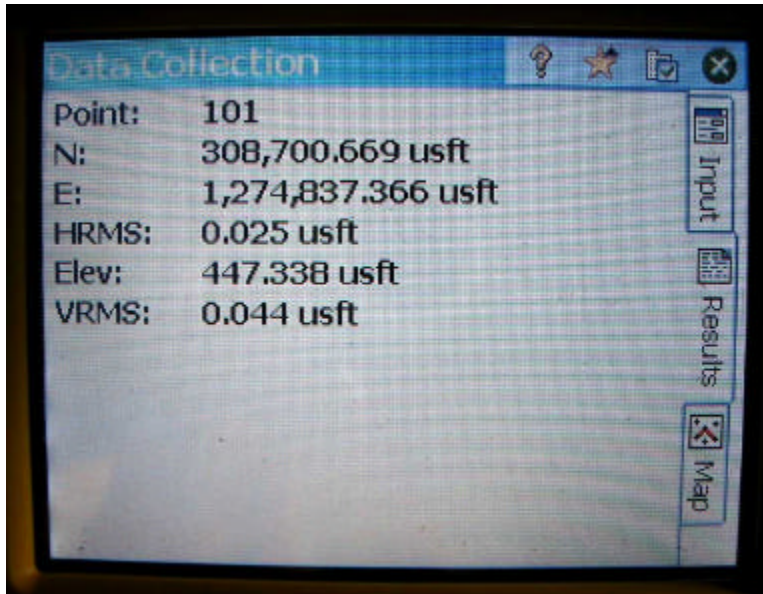
After collecting all your points for this session you "*X*" out of the "*Data Collection:*" portion of Survey Pro and then start using the VRS coordinates with your survey.
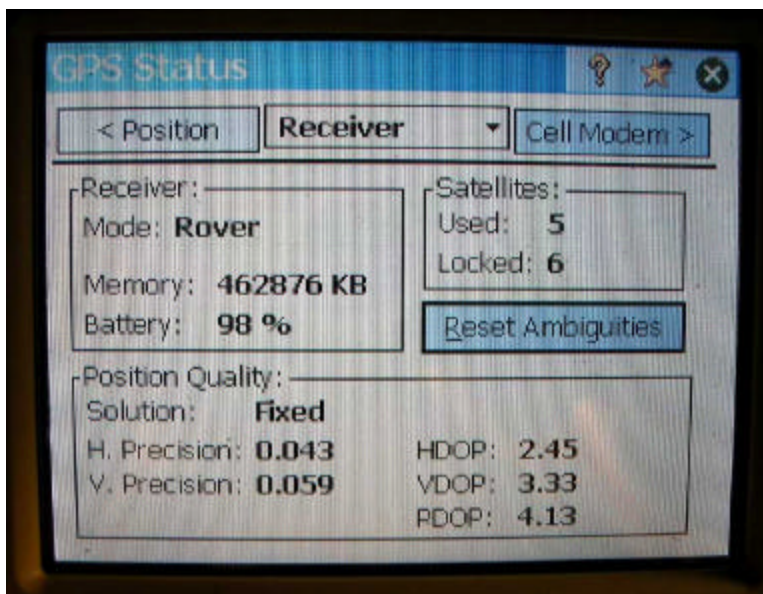
GPS Status Menu:

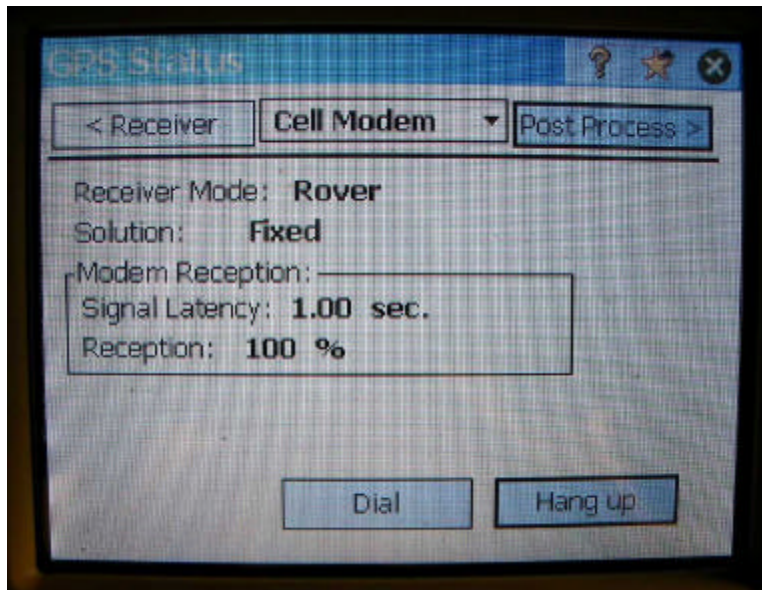The "GPS Status:" menu will bring up the status of you GPS receiver.
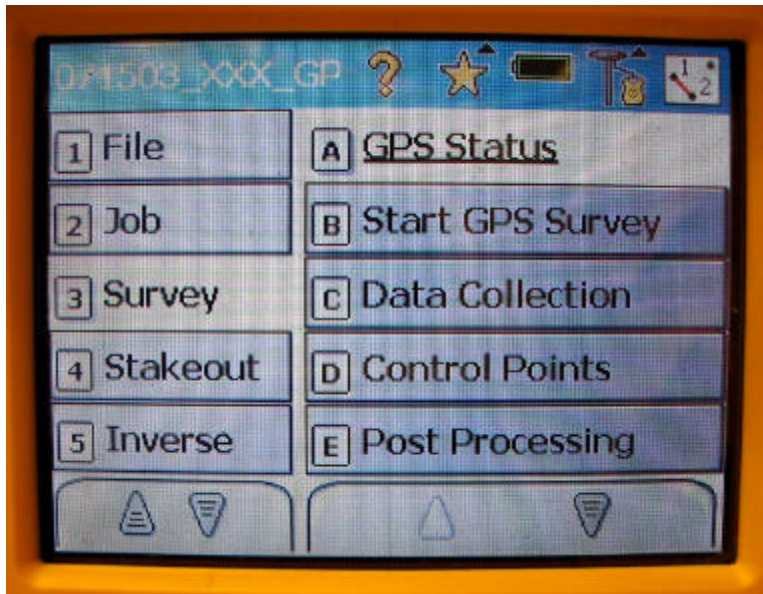
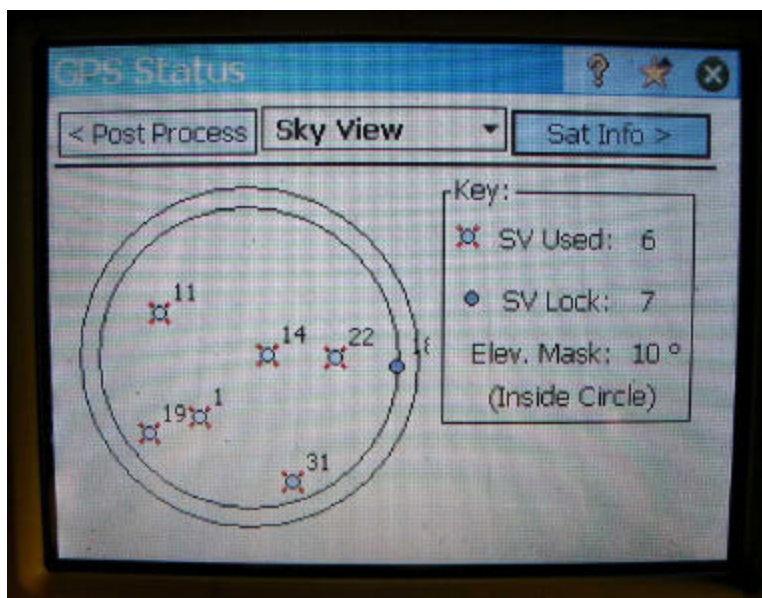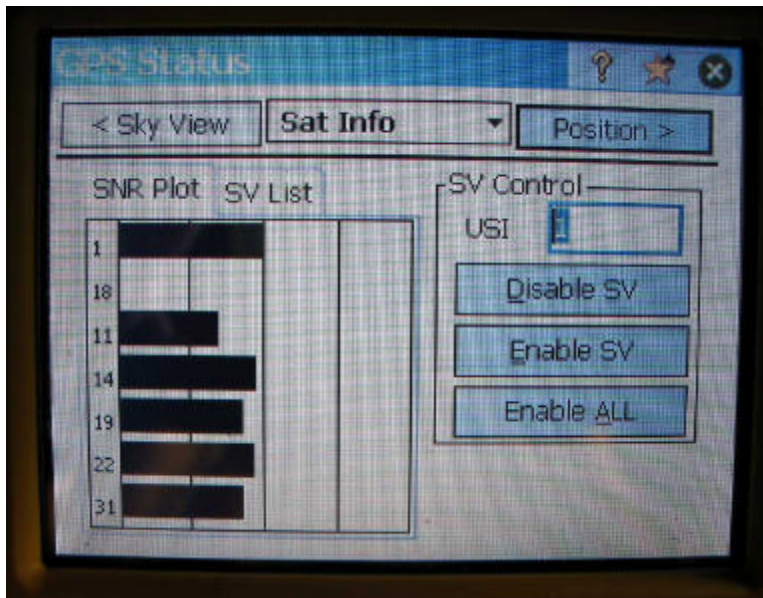Here are some screen captures of what you will see in this menu.

Receiver:

Cell Modem:

Sky View:

Sat Info:

Position: