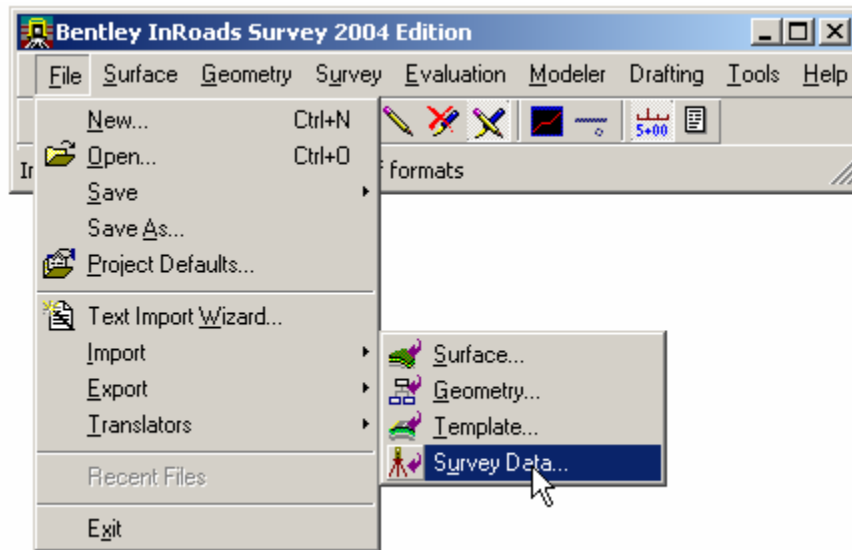
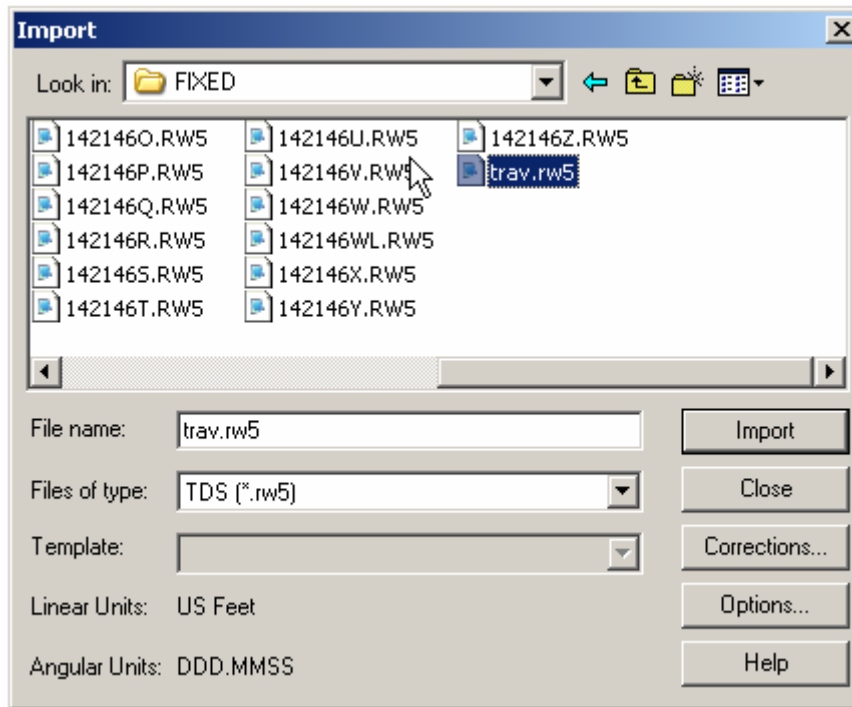


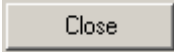
Importing the Traverse

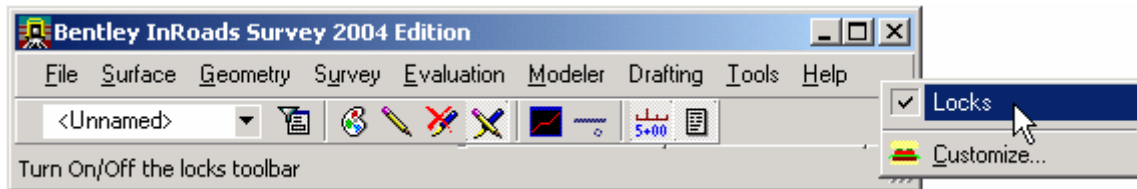


- 1) Select **File > Import > Survey Data**

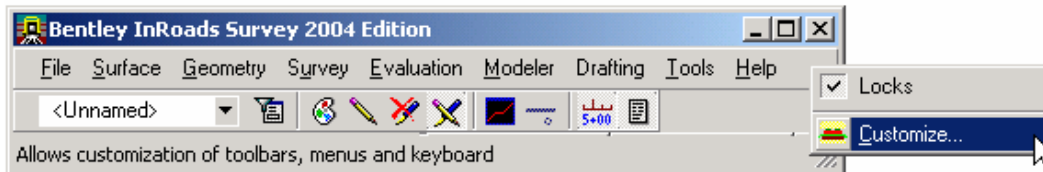


- 2) Select **Trav.rw5** with a **<DATA>** and then **<DATA>** the . This will make the screen flash and data has been read.

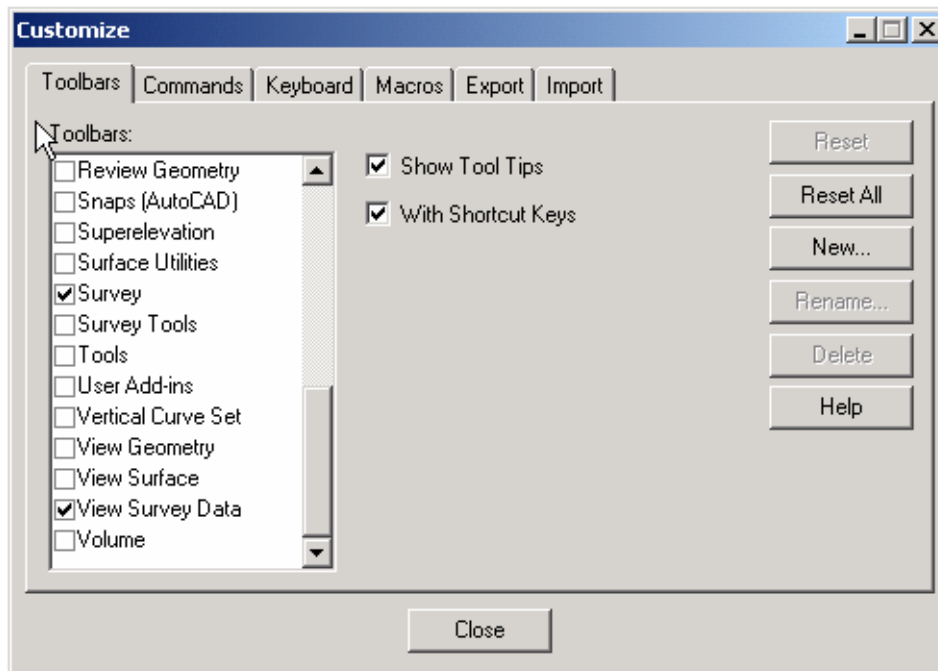
- 3) After the flash **<DATA>** 



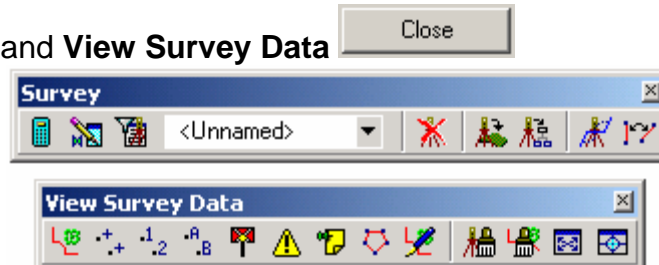
Right Click next to **H**elp and select **L**ocks



Right Click next to **H**elp and select **C**ustomize...

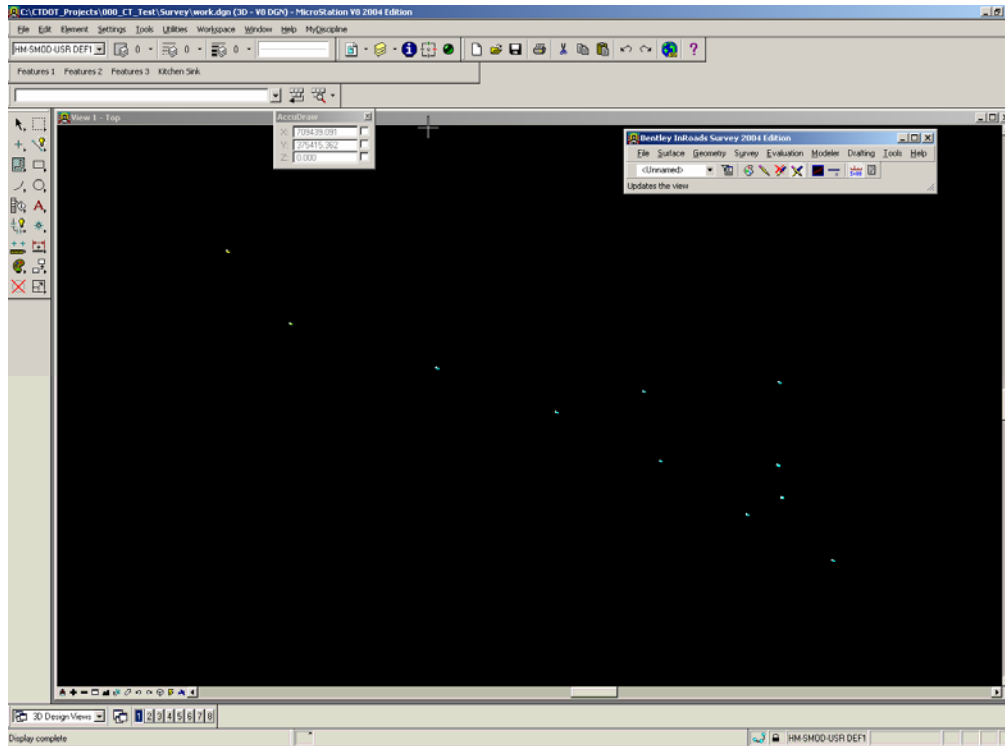


Turn on **S**urvey and **V**iew Survey Data

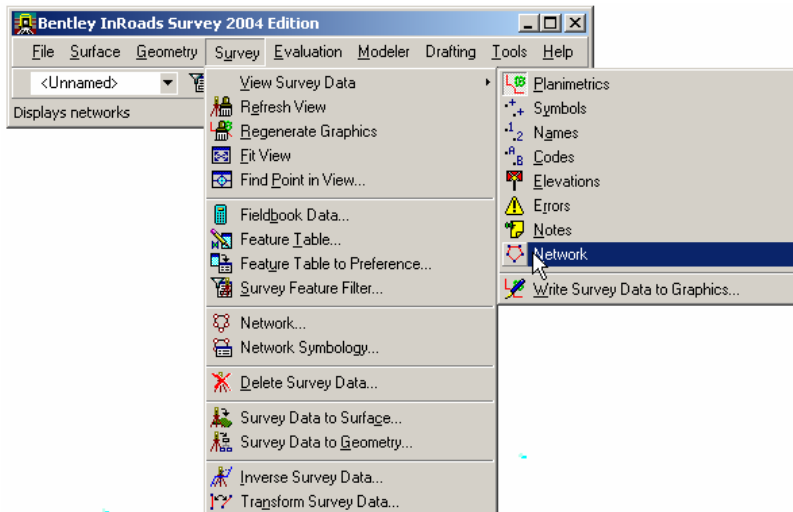


These now can be docked on the InRoads Menu

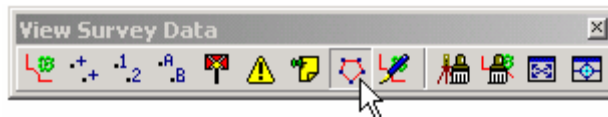
- 4) The processing will take a few seconds and the view below will appear. Notice the Traverse Points are displayed.



- 5) Select **Survey > View Survey Data > Network**

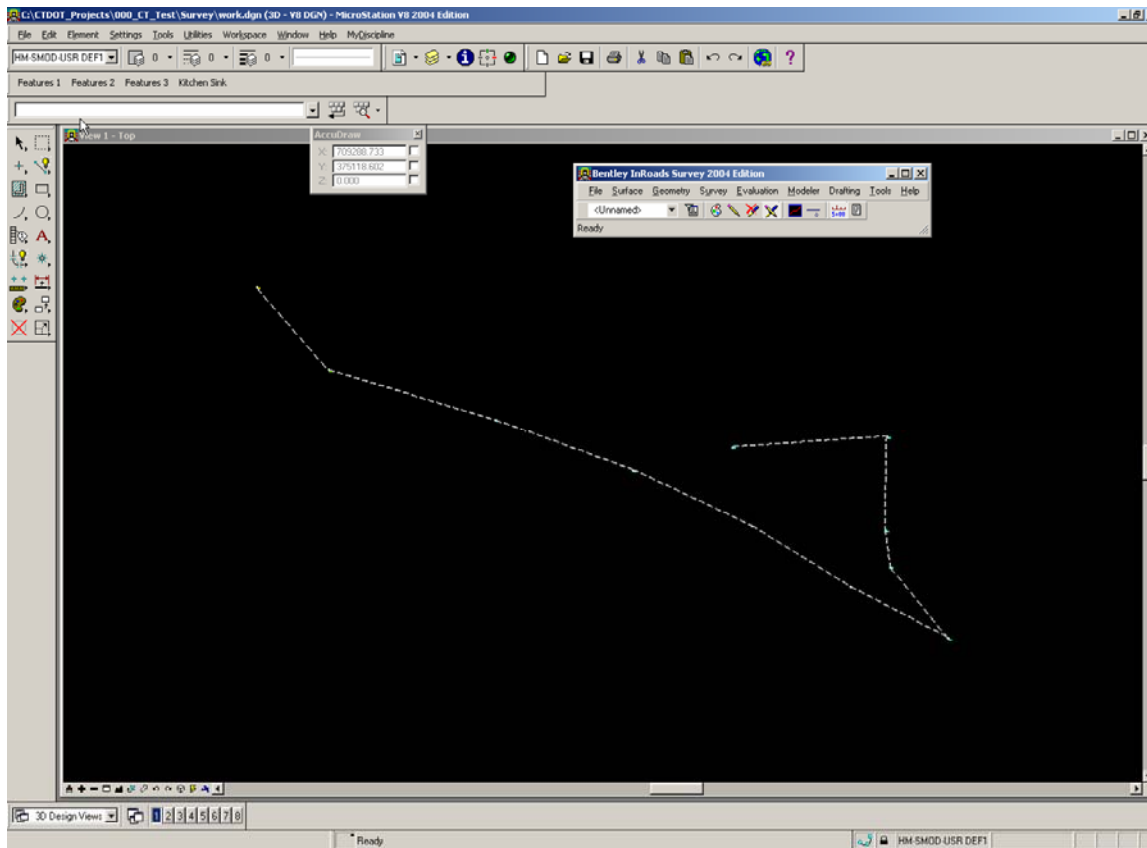


Or





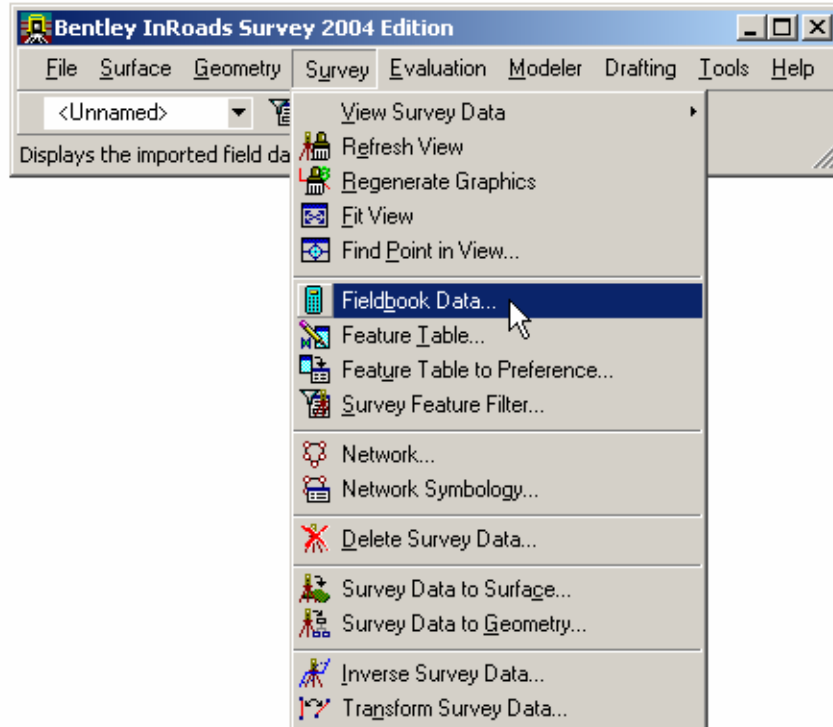
This will display the Traverse lines between the points.



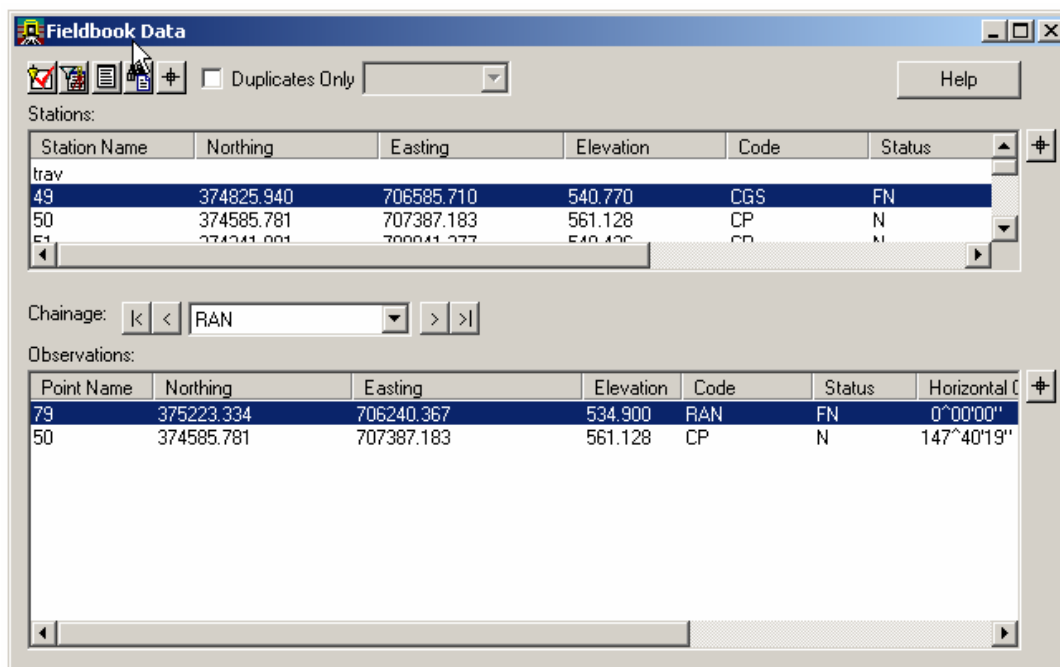


Adjusting the Traverse using Least Squares

6) Select Survey>Fieldbook Data

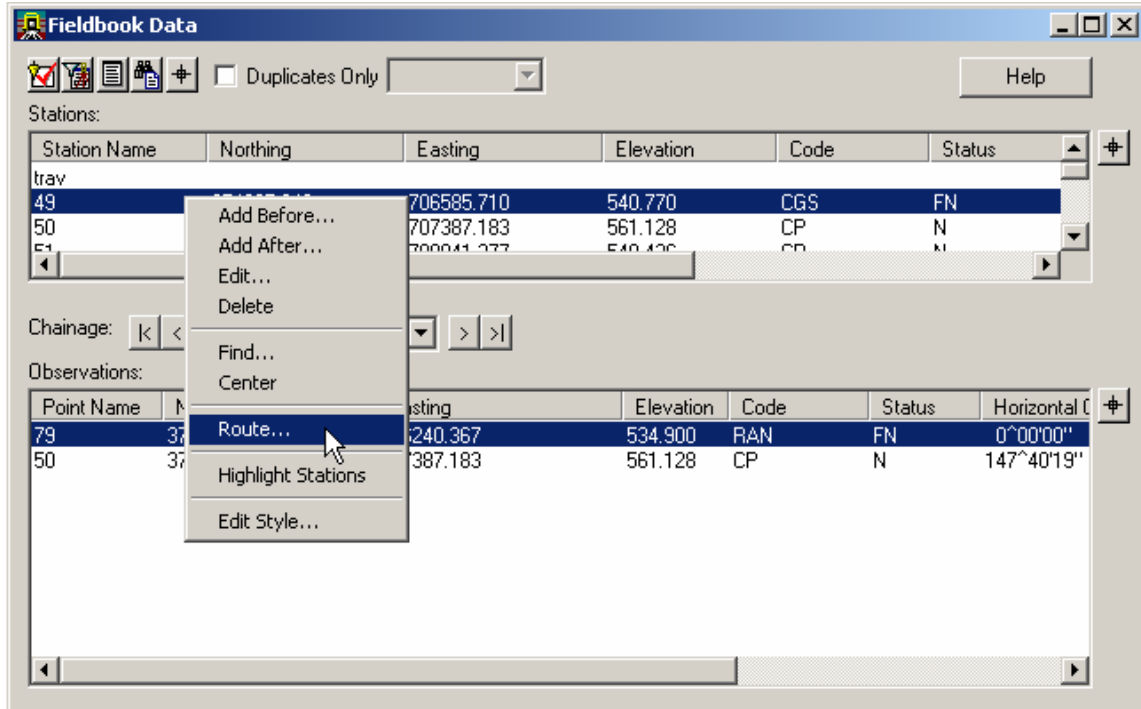


The Fieldbook Data dialog will appear.

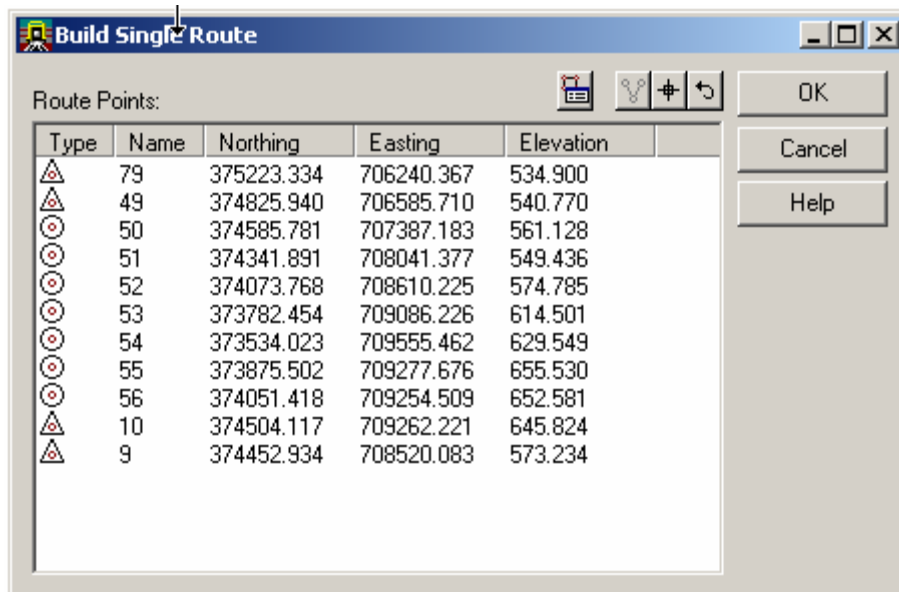




- 7) In the Station portion of the dialog < RIGHT CLICK> the first station 49. A menu will appear and now slide down and select **Route...** with a <D>



The following dialog will appear and show you the data for the traverse. Notice that the fixed points are symbolized with a triangle and the computed points are circles.



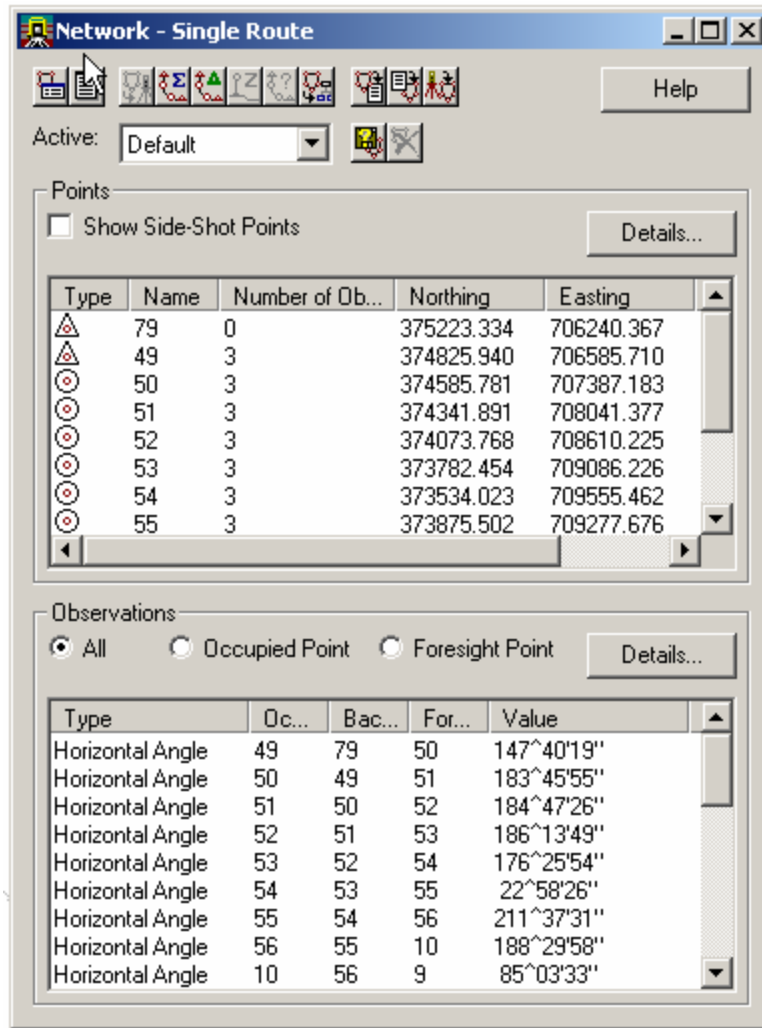
- 8) <DATA> 



To learn more these Commands <D>

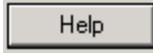



This brings the Network data into the **Network - Single Route** dialog.

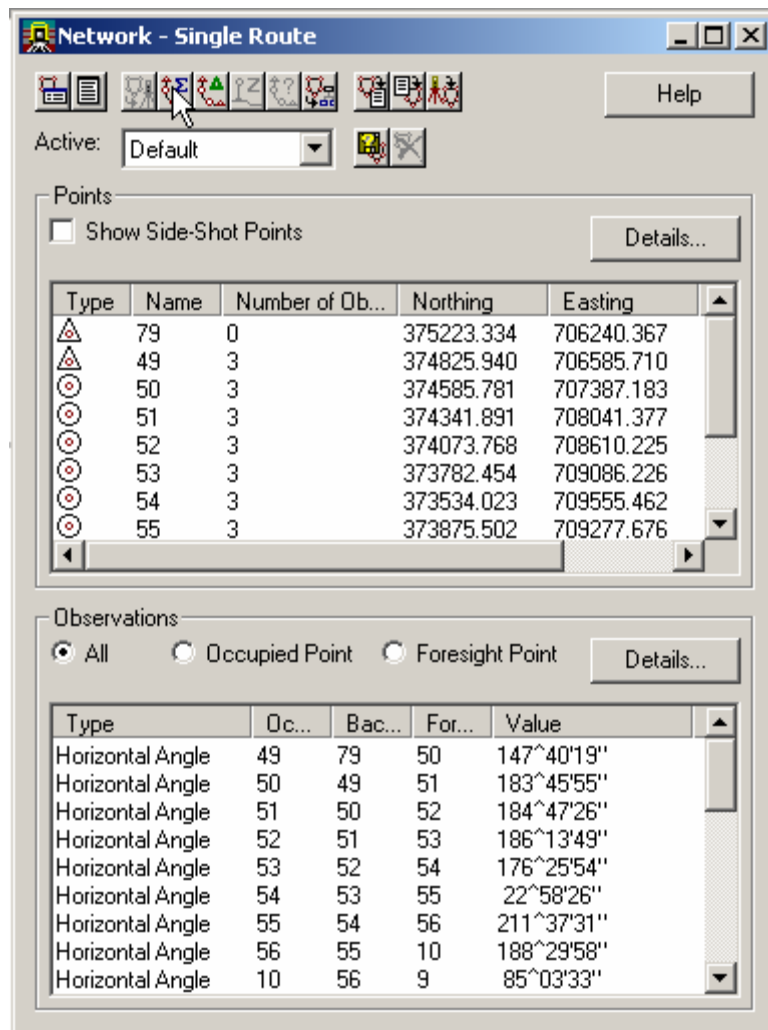




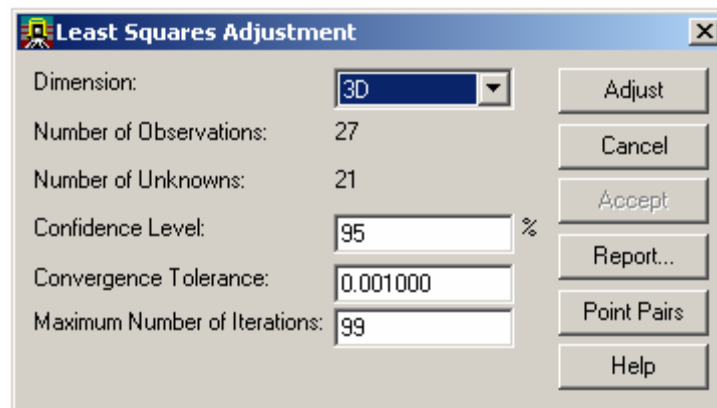
To learn more these Commands <D>



9) **DATA**> the Least Squares button 

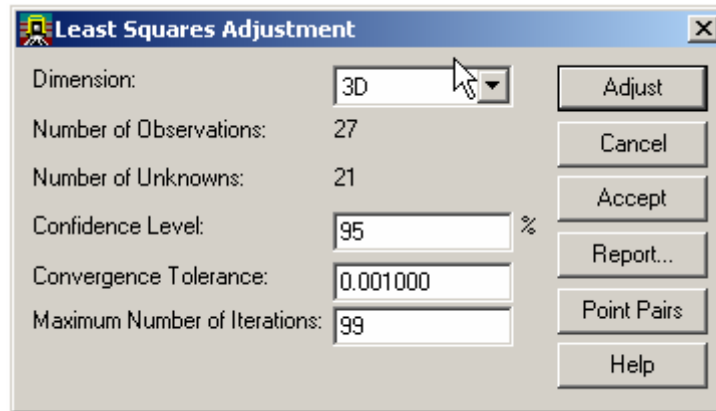


10) Match the dialog with the one shown below

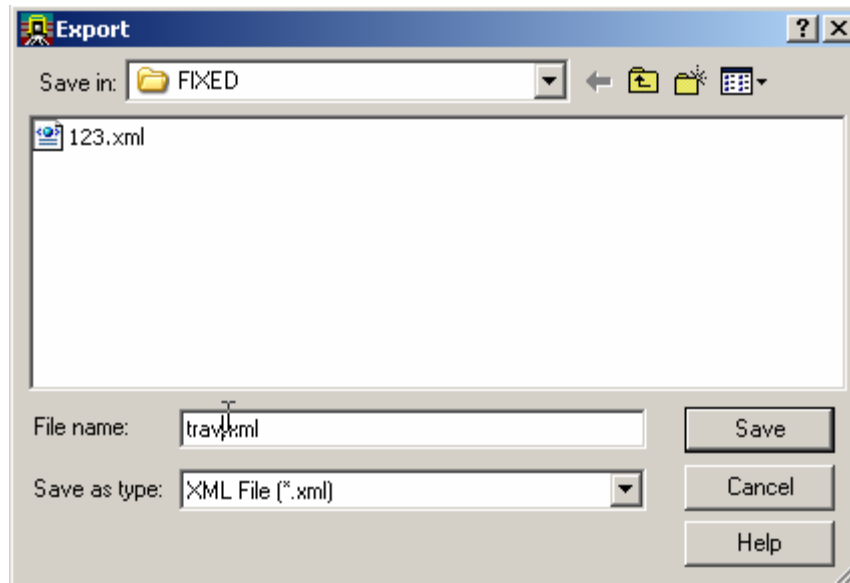


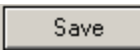


11) <DATA> 



12) Before we  <DATA>  to review the report .



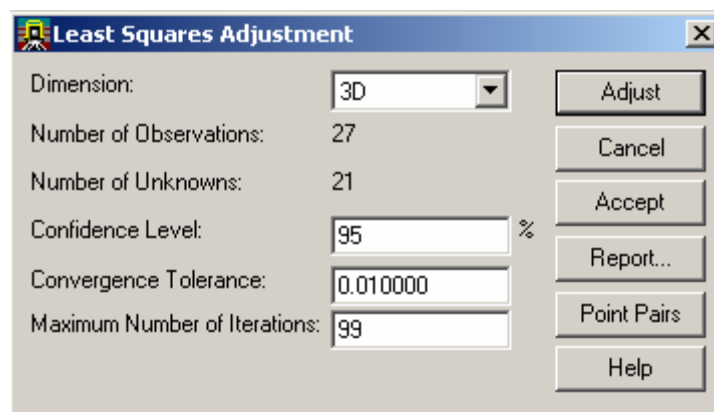
13) **File name:** trav.xml for the file name and <DATA> 



The following xml report will be generated. We will check the adjustments and see if everything is the way we.



After review close the window and the Least Squares Adjustment Dialog will still be available.



14) <DATA> this will bring the adjusted data forward.



Notice the xyz values change based on the adjustment.

The screenshot shows the 'Network - Single Route' window with the following data:

Points Table:

Type	Name	Number of Ob...	Northing	Easting	Elevation
△	79	0	375223.334	706240.367	534.900
△	49	3	374825.140	706585.710	540.770
⊙	50	3	374585.797	707387.150	561.130
⊙	51	3	374341.788	708041.305	549.437
⊙	52	3	374073.608	708610.111	574.787
⊙	53	3	373782.248	709086.073	614.504
⊙	54	3	373533.785	709555.279	629.552
⊙	55	3	373875.271	709277.507	655.533

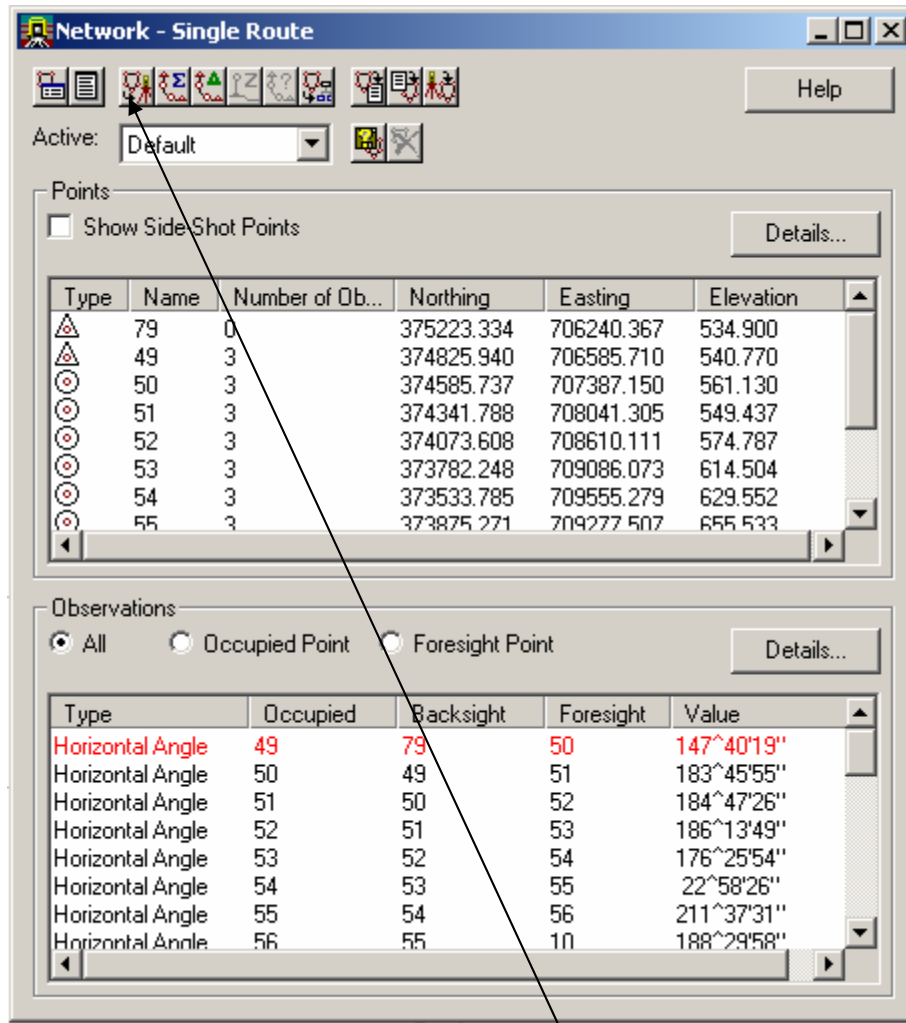
Observations Table:

Type	Occupied	Backsight	Foresight	Value
Horizontal Angle	49	79	50	147°40'19"
Horizontal Angle	50	49	51	183°45'55"
Horizontal Angle	51	50	52	184°47'26"
Horizontal Angle	52	51	53	186°13'49"
Horizontal Angle	53	52	54	176°25'54"
Horizontal Angle	54	53	55	22°58'26"
Horizontal Angle	55	54	56	211°37'31"
Horizontal Angle	56	55	10	188°29'58"



Note: Even after we accept the Network we could still return to the adjustment commands and start again. InRoads will retain the original data information so that the Network can be recomputed anytime.

Now we still need to bring the adjusted data forward one more time. Even though we have accepted the data for the adjustment we still need to bring it forward to the fieldbook.



15) **<DATA>** the Network to Fieldbook Icon



This brings the adjusted data into the fieldbook.



Status

indicates the relevant status code(s) for each station. The status codes are:

N - The point has notes.

E - The point has been edited.

F - The point is a keyed-in (fixed) coordinate.

A - The point has attributes.

V - At least one of the attributes has a value.

I - An inserted point

C - An adjusted point.

Notice: In this dialog the status of the traverse points are now fixed.

The screenshot shows the 'Fieldbook Data' dialog box with the following data:

Stations:

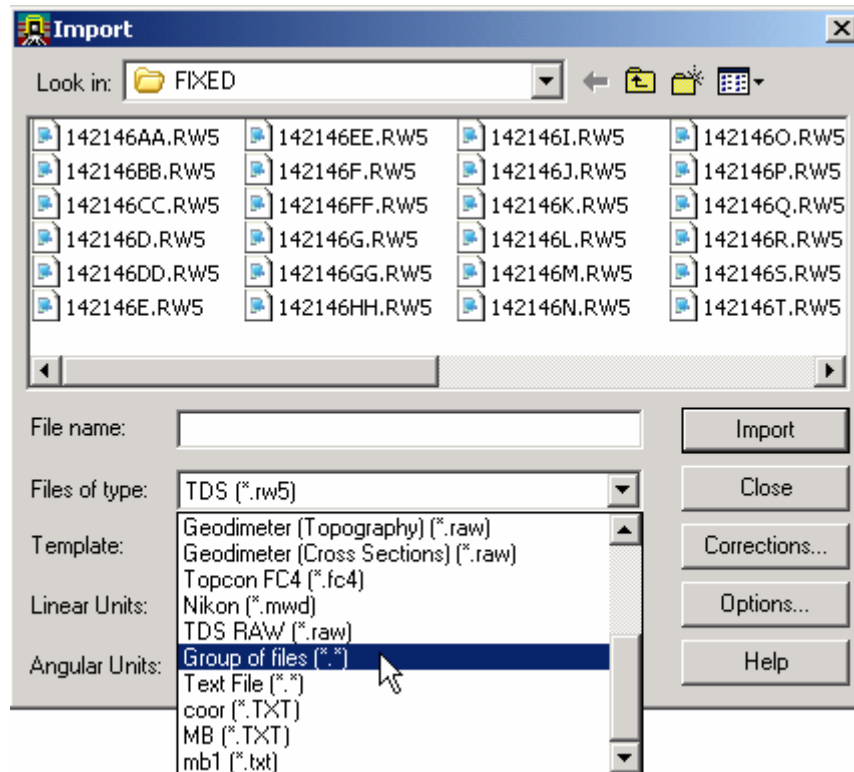
Station Name	Northing	Easting	Elevation	Code	Status
trav					
49	374825.940	706585.710	540.770	CGS	FN
50	374585.737	707387.150	561.130	CP	FCN
51	374341.788	708041.305	549.437	CP	FCN
52	374073.608	708610.111	574.787	CP	FCN
53	373782.248	709086.073	614.504	CP	FCN
54	373533.785	709555.279	629.552	CP	FCN
55	373875.271	709277.507	655.533	CP	FCN

Chainage: [k] [<] RAN [>] [>|]

Observations:

Point Name	Northing	Easting	Elevation	Code	Status	Horizontal Obs.
79	375223.334	706240.367	534.900	RAN	FN	0°00'00"
50	374585.737	707387.150	561.130	CP	FCN	147°40'19"

Note: For multiple files you can use the **Group of files** option to import list.



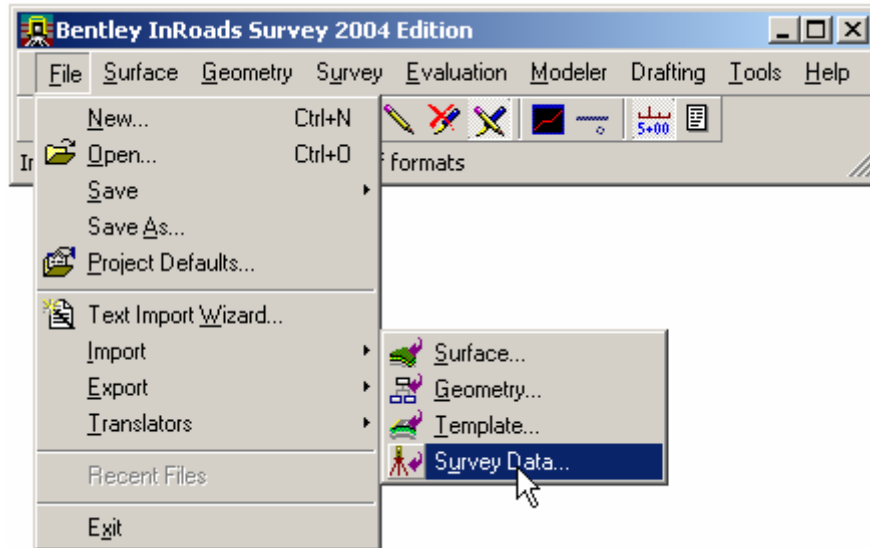
Sample of the format used in the .txt file used for Group of files


```

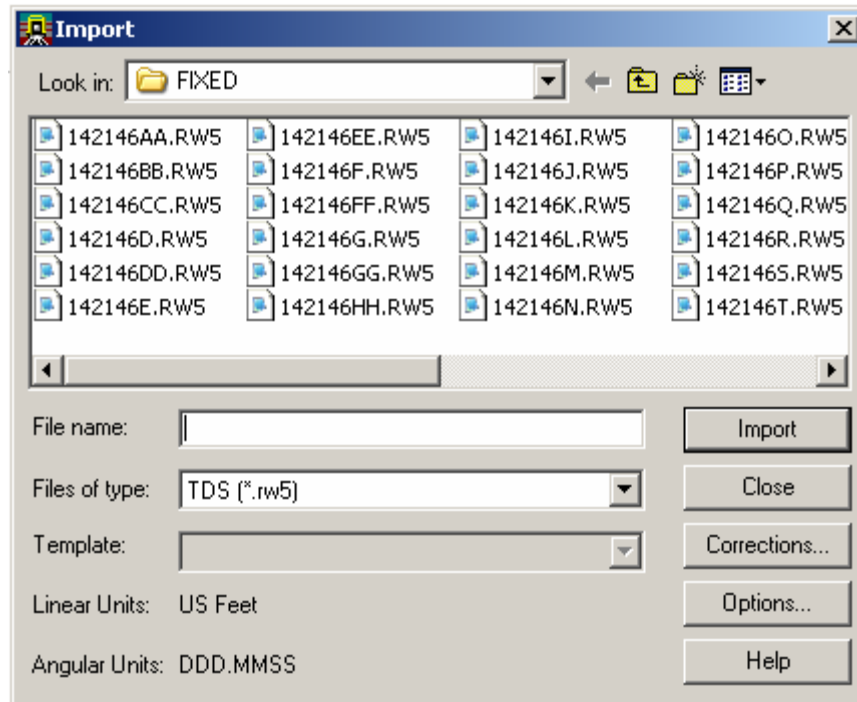
142146AA.RW5 TDS RW5
142146bb.RW5 TDS RW5
142146cc.RW5 TDS RW5
142146d.RW5 TDS RW5
142146dd.RW5 TDS RW5
142146e.RW5 TDS RW5
142146ee.RW5 TDS RW5
142146f.RW5 TDS RW5
142146ff.RW5 TDS RW5
142146g.RW5 TDS RW5
142146gg.RW5 TDS RW5
142146hh.RW5 TDS RW5
142146i.RW5 TDS RW5
142146j.RW5 TDS RW5
142146k.RW5 TDS RW5
    
```


Processing the rest of the Survey Data

16) Select the **File > Import > Survey Data**



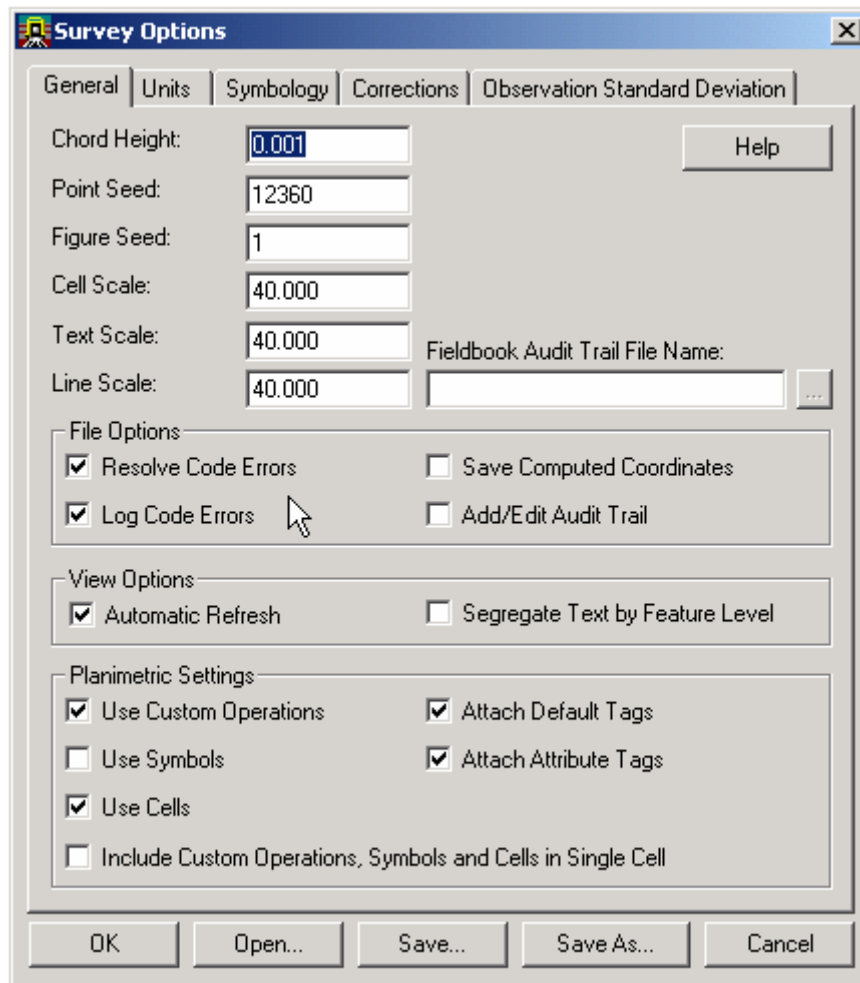
17) Again the import dialog appears. You can double click each file or select each file and **<DATA>** 



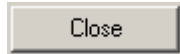


TIP

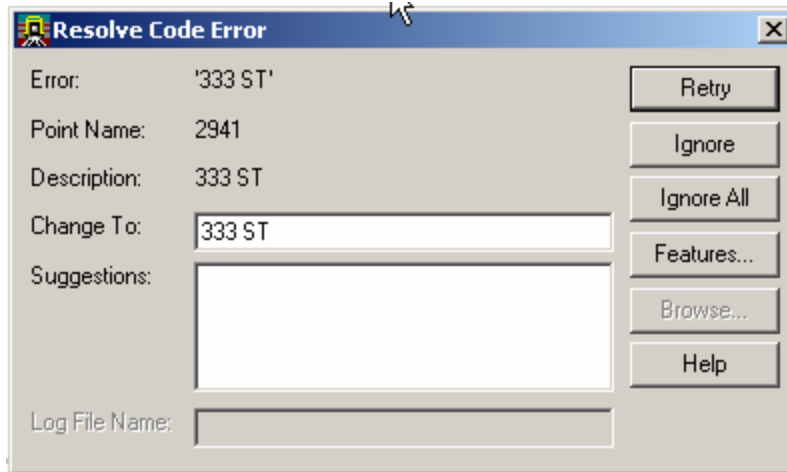
Select **Tools > Survey Options** and in the File Options portion of this dialog you can turn the option to **Resolve Code Errors** and **Log Code Errors** on or off.



18) After selecting all the files that are to be imported <DATA>



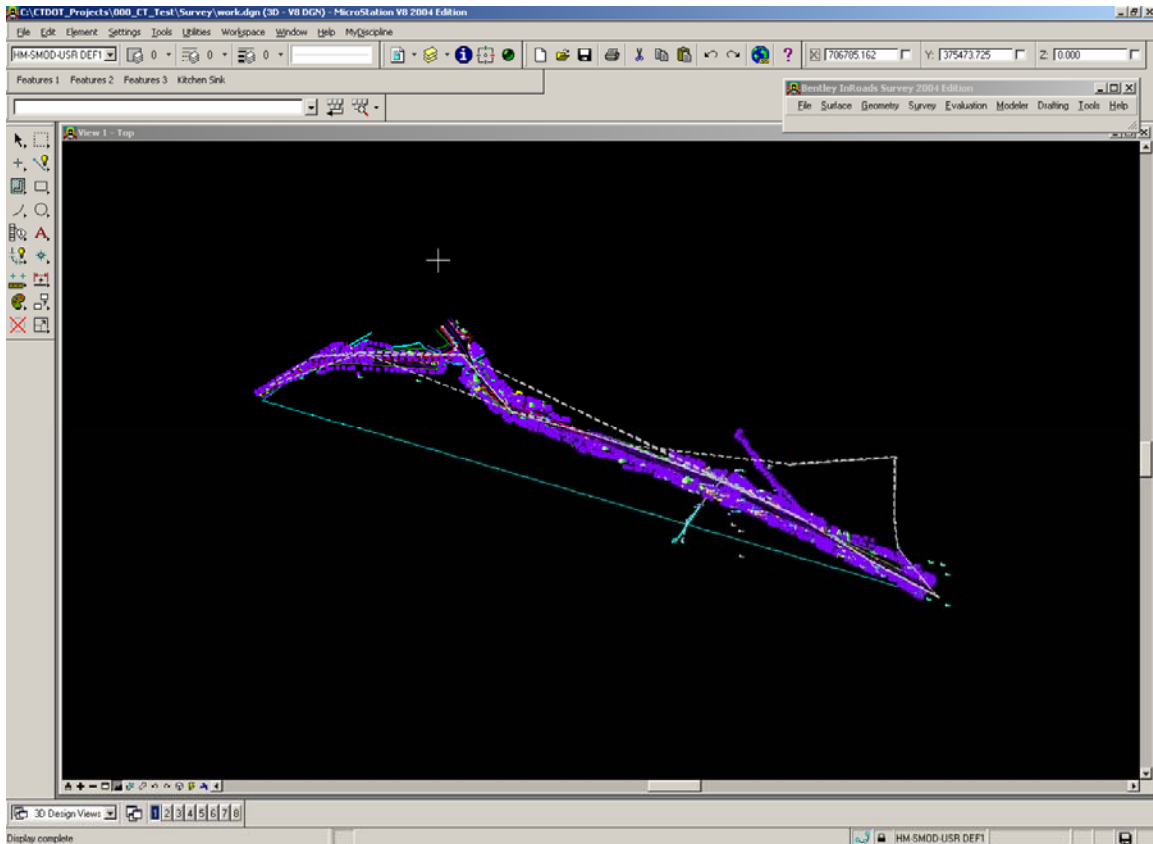
The following dialog will appear because there are Code Errors



19) Select  with a <DATA> This will process the data and allow the user to fix the code errors later.



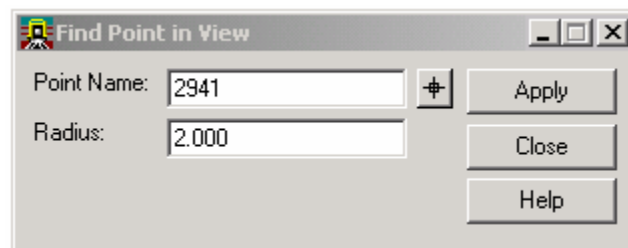
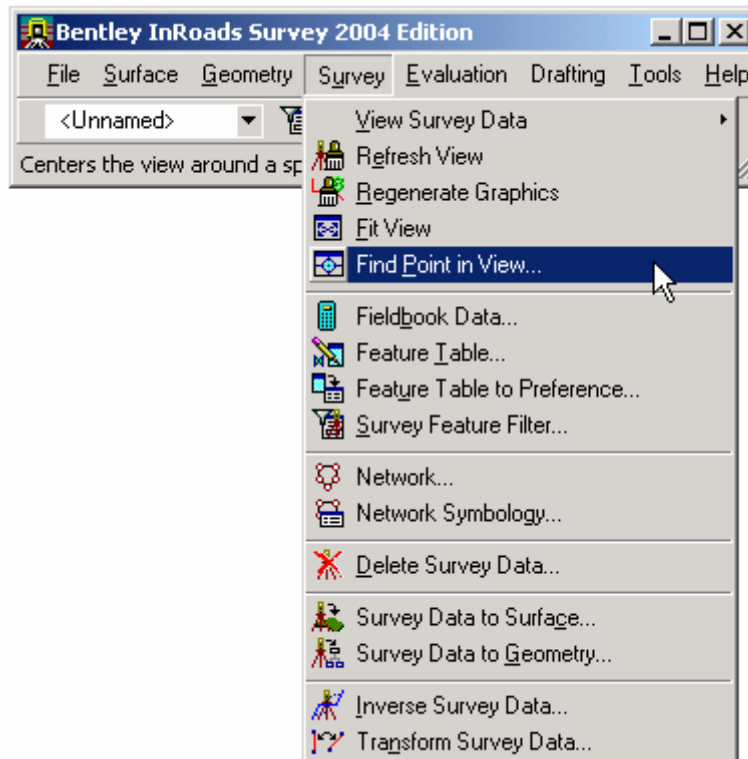
20) After a few seconds the view will appear as shown below.





Fixing Code Errors

- 21) The first Code error we will fix is the code error that was reported as we processed the data. Select the **Survey > Find point in view** command



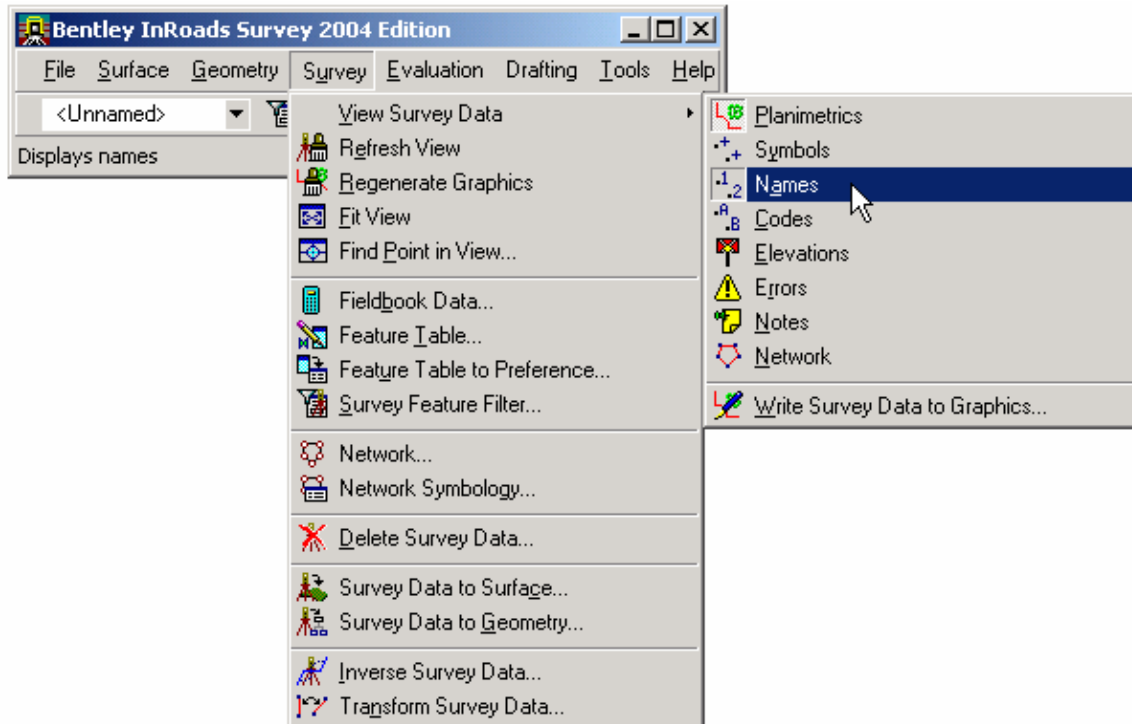
- 22) When the **Find Point in View** dialog appears enter the
point number: **2941** (Pt # observed when the code errors were reported.)
radius: **2.000** (feet)

<DATA>

This will center the point to the screen and everything that is within a 2 foot radius.



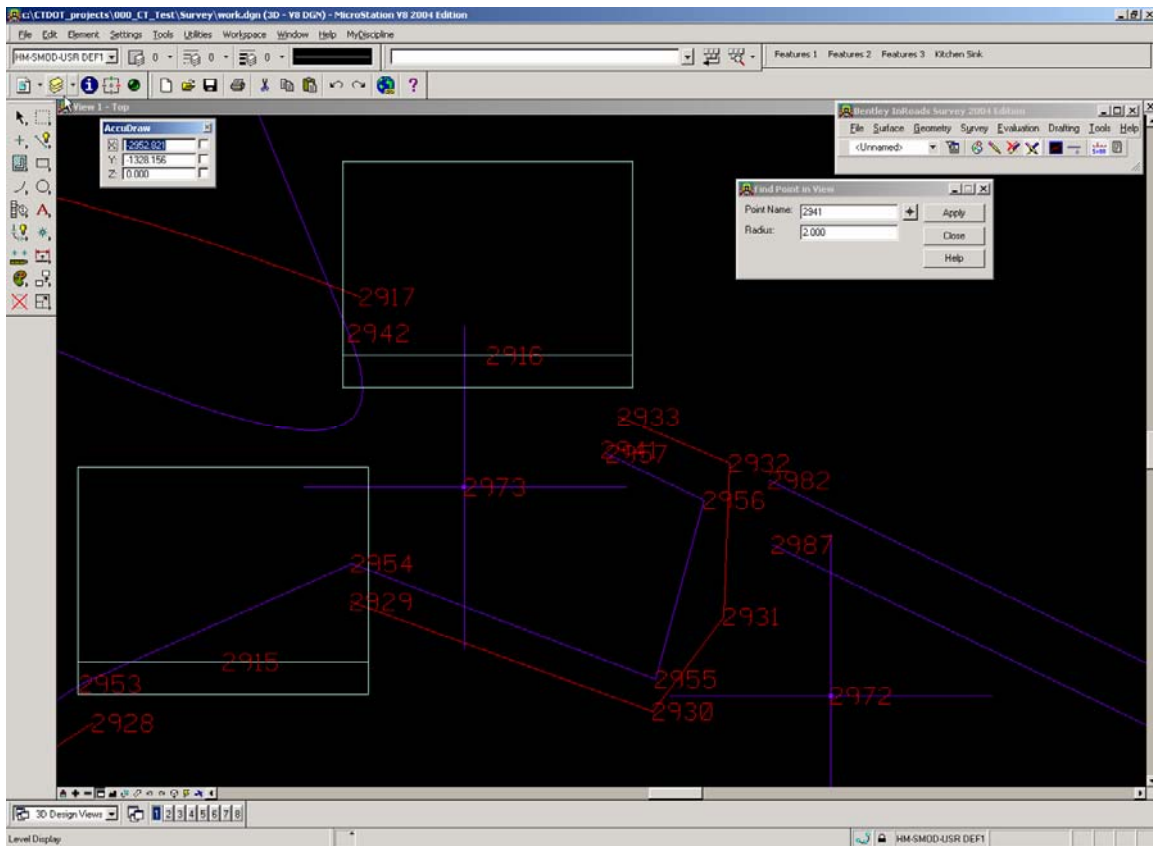
23) Turn on the point numbers by selecting **Survey > View Survey Data**



Or



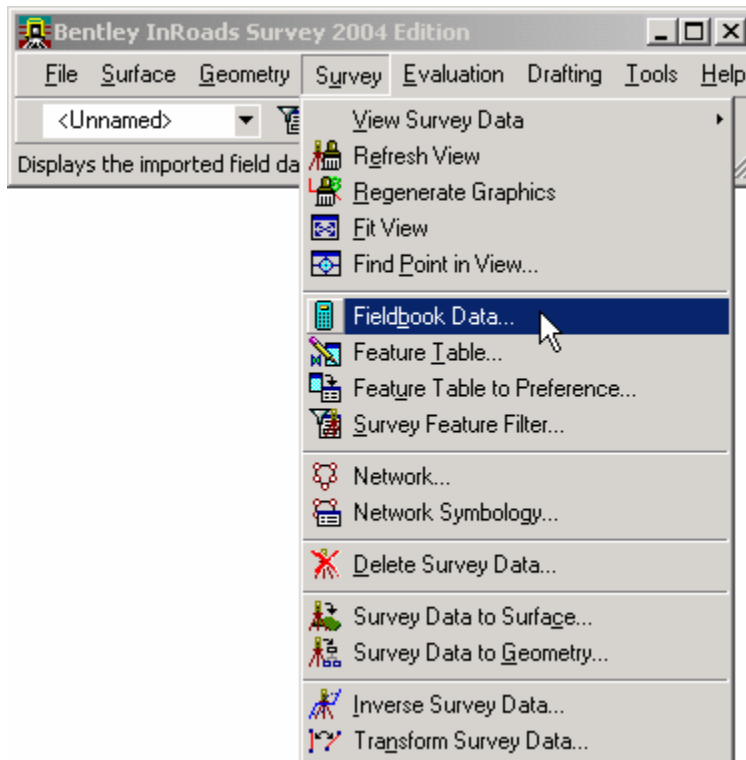




Notice there is no symbology for point 2941 this is because the code was entered incorrectly in the field.



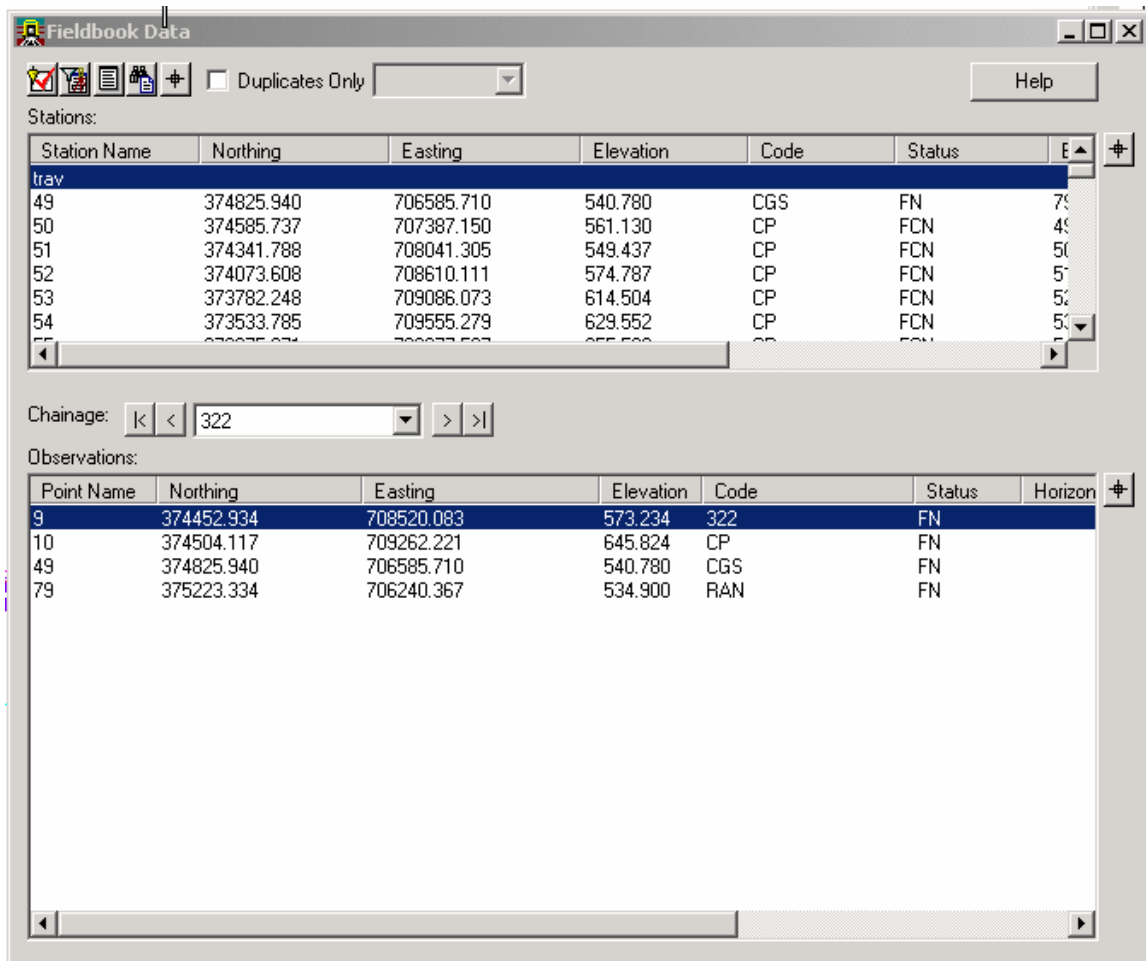
24) **Select the Survey > Fieldbook Data** from the Survey Menu




Or



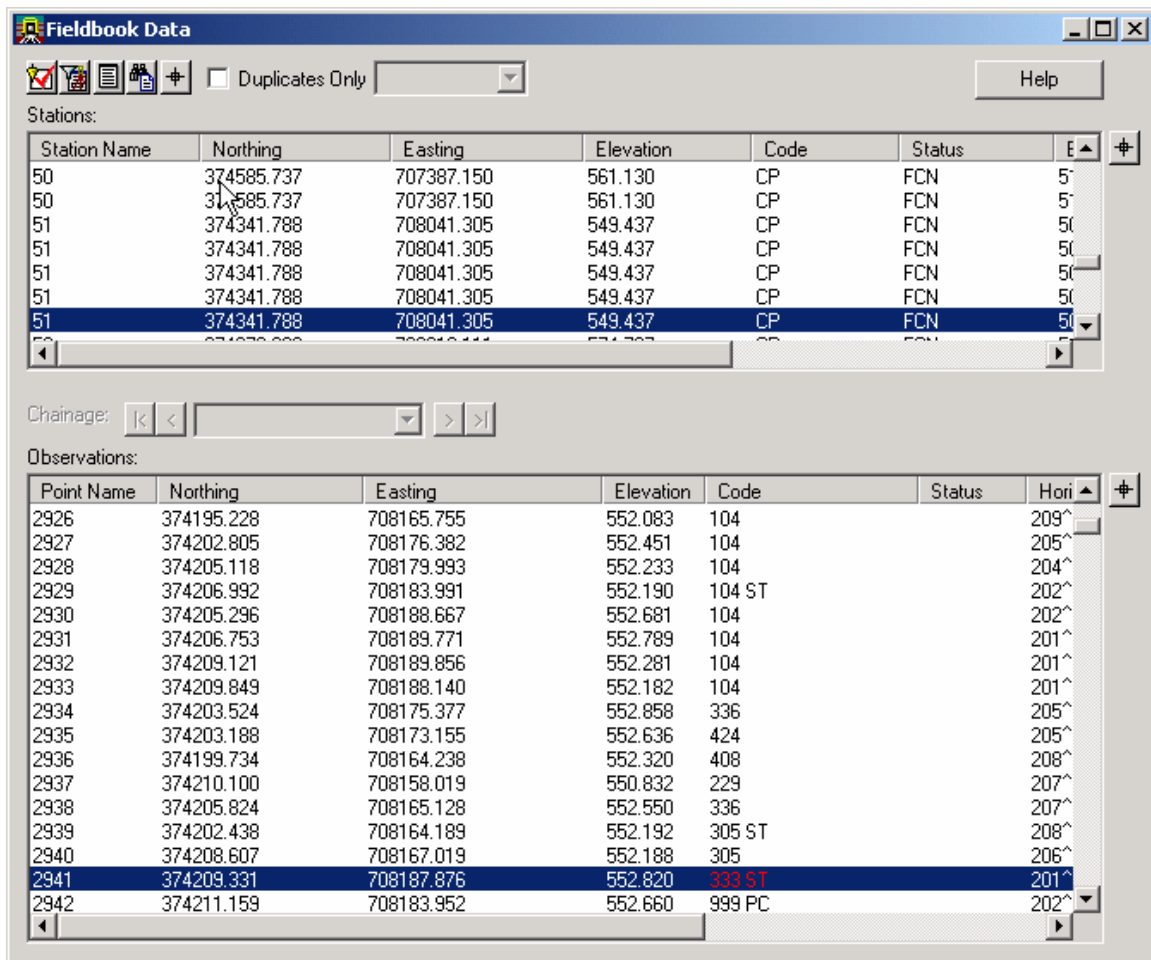




25) After the Fieldbook Data dialog appears select the selector button  from the Observation section with a **<DATA>** this will cause the dialog to minimize and InRoads will prompt you to Identify Point in the lower left hand corner of the screen. The minimized dialog might be covering the prompt just move it out of the way.



- 26) The Fieldbook Data dialog will display again with the point **2941** selected. Notice that the code is red. This indicates that there is a code error and the system does not recognize the code that was used in the field.





27) On the hilited line <RIGHT CLICK> and select edit or <DOUBLE CLICK>

Observations:

Point Name	Northing	Easting	Elevation	Code	Status	Hori
2926	374195.228	708165.755	552.083	104		209^
2927	374202.805	708176.382	552.451	104		205^
2928	374205.118	708179.993	552.233	104		204^
2929	374206.992	708183.991	552.190	104 ST		202^
2930	374205.296	708188.667	552.681	104		202^
2931	374206.753	708189.771	552.789	104		201^
2932	374209.121	708189.856	552.281	104		201^
2933	374209.849	708188.140	552.182	104		201^
2934	374203.524	708175.377	552.858	336		205^
2935	374203.188	708173.155	552.636	424		205^
2936	374199.734	708164.238	552.320	408		208^
2937	374210.100	708158.019	550.832	229		207^
2938	374205.824	708165.128	552.550	336		207^
2939	374202.438	708164.189	552.192	305 ST		208^
2940	374208.607	708167.019	552.188	305		206^
2941	374209.331	708187.876	552.820	333 ST		
2942	374211.159	708183.952	552.660	999 PC		

Context menu options:

- Add Before...
- Add After...
- Edit...**
- Delete
- Cut
- Copy
- Paste
- Find...
- Center
- Highlight Observations
- Raw Observation
- Right Face Angle

Edit Observation

Point Name: [K] < [2941] > >|

Type: [Computed]

Horizontal Observation: [201^39'10"]

Vertical Observaton: [89^04'47"]

Slope Distance: [197.580]

Code: [333 ST]

Target Height: [5.000]

Northing: [374209.331]

Easting: [708187.876]

Elevation: [552.820]

Notes:

Apply Close Help

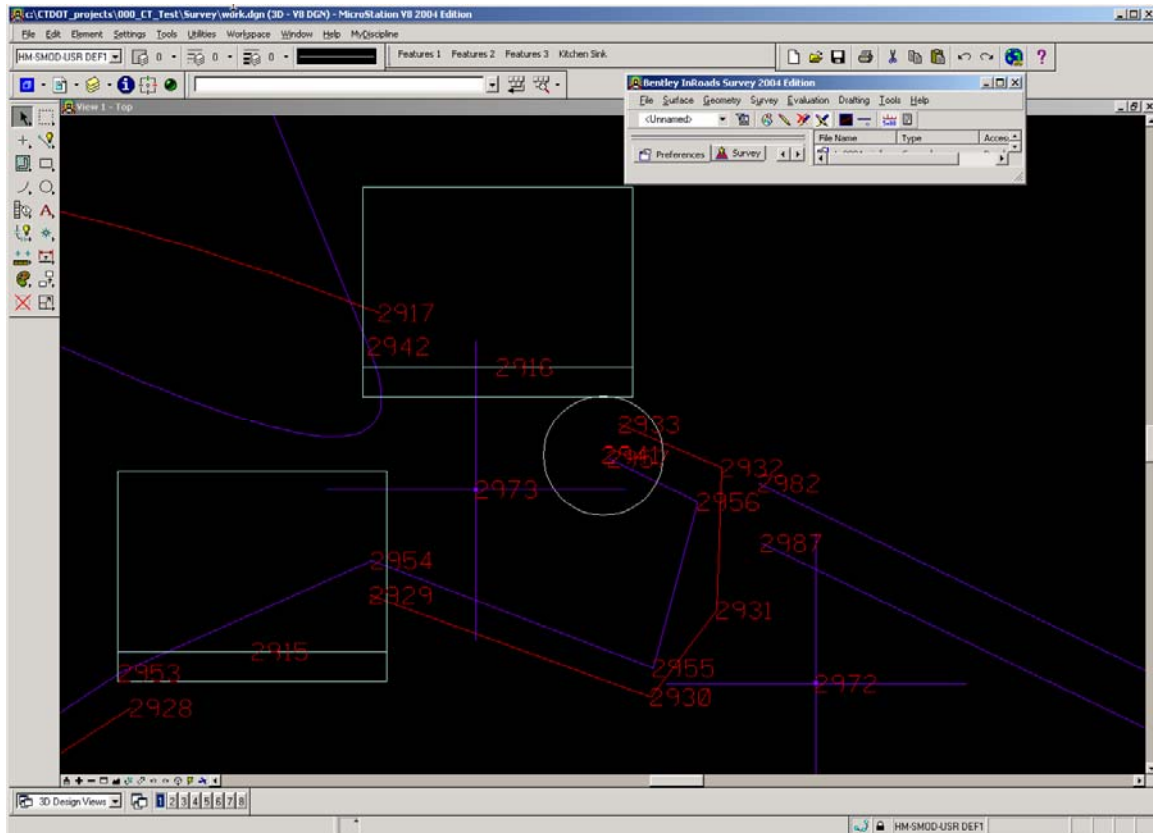
Attributes:

Code	Name	Value

28) Enter **336** as the code and <DATA>  this will execute the command.



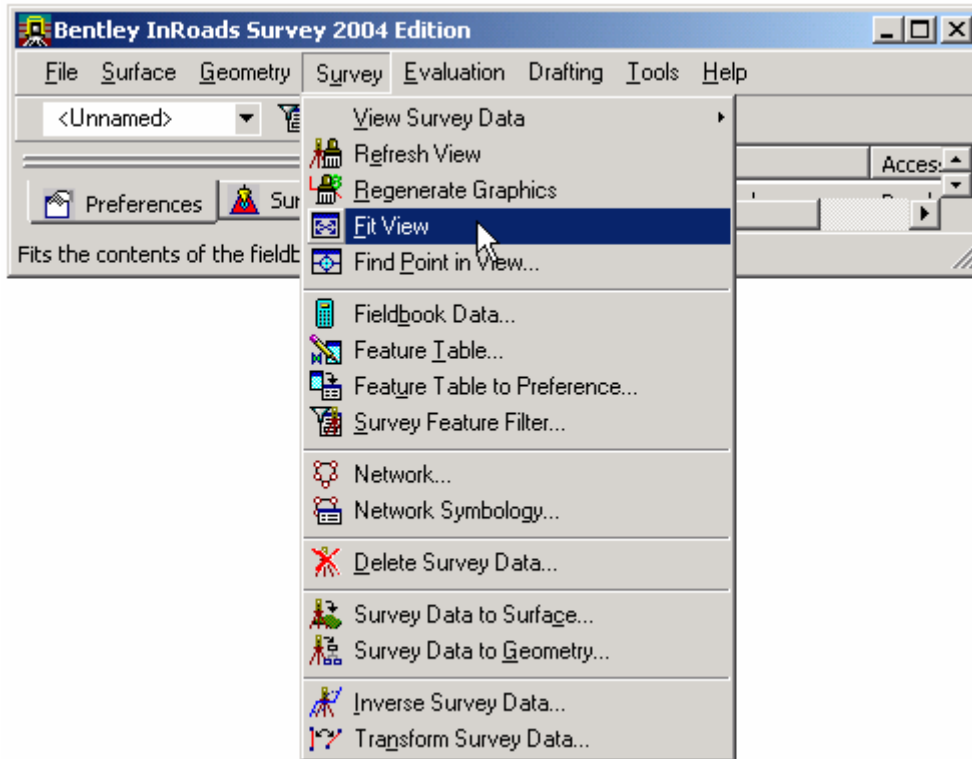
Notice the point now has the correct symbol for our point.





Finding things to fix

- 29) Select the **Survey > Fit View** this will fit the dynamic survey data display to your screen.

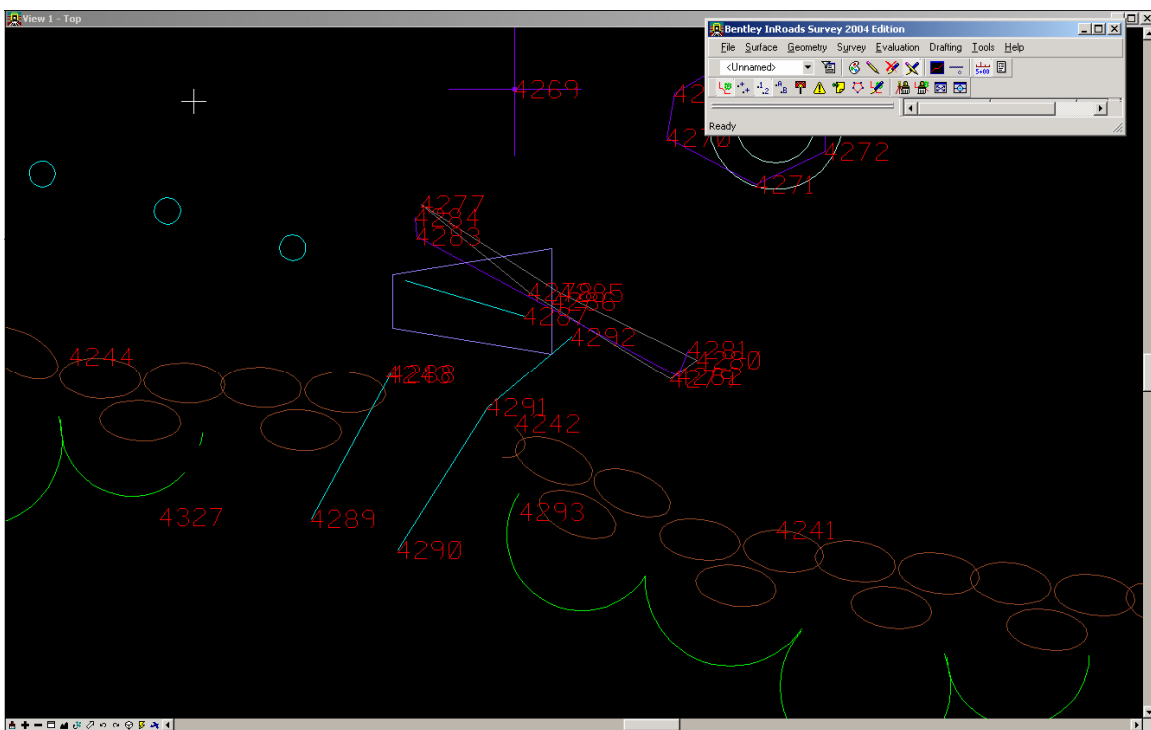
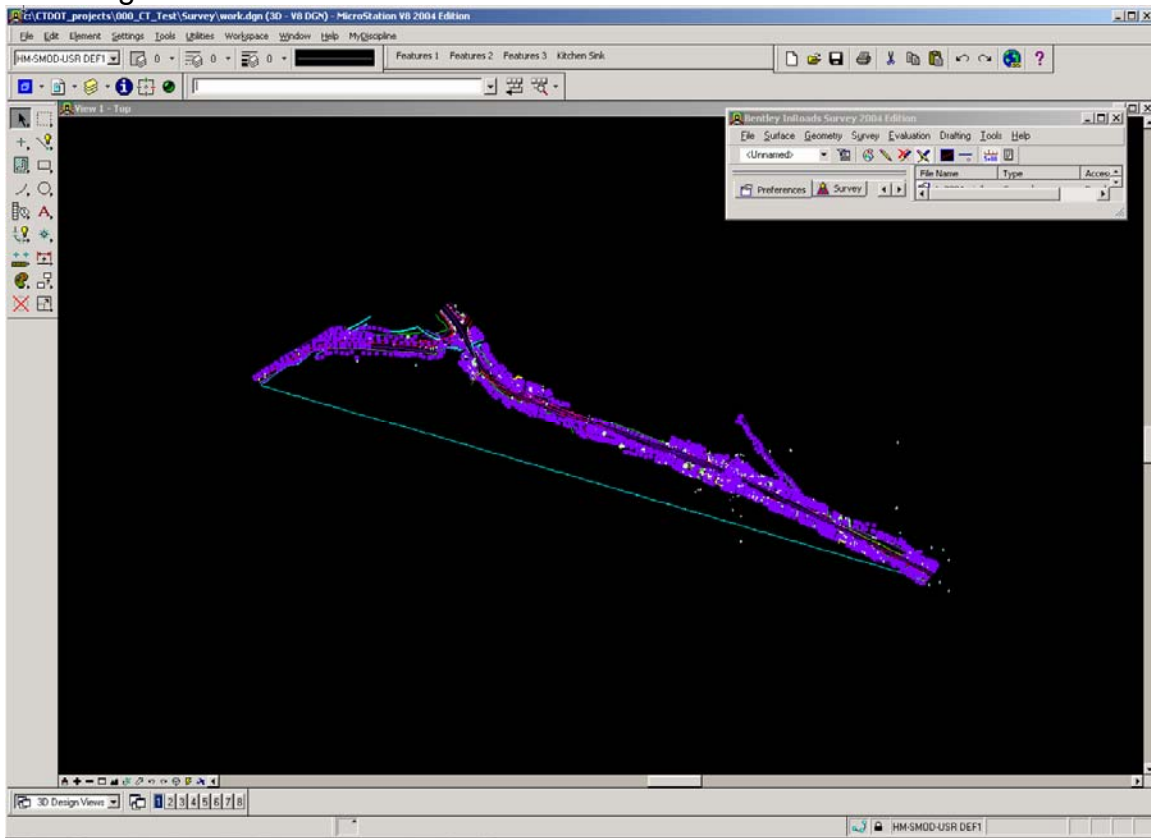


Or



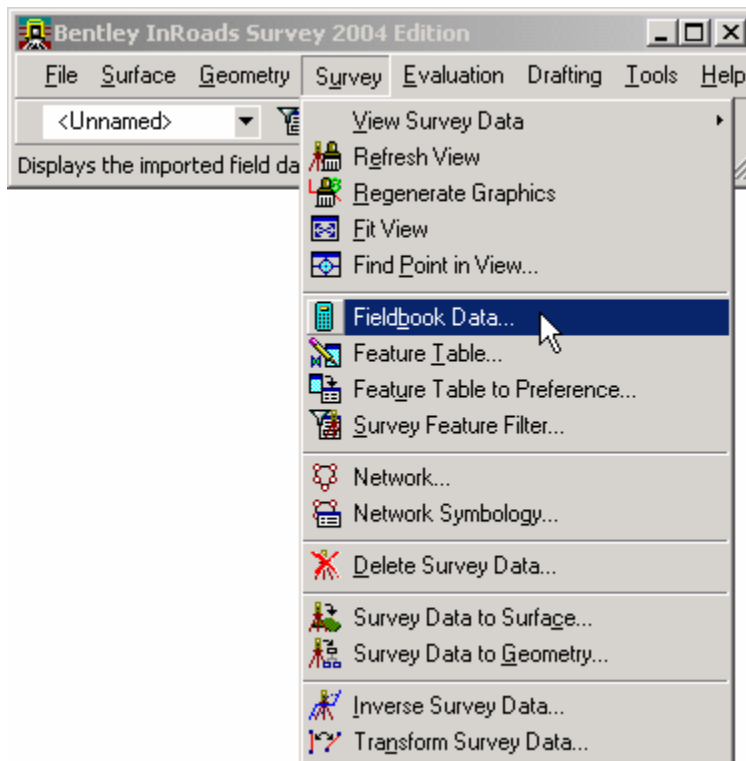


30) The view shows a blue line from one end of the data to the other this is not right. With the MicroStation Window Area in on the lower end of the line





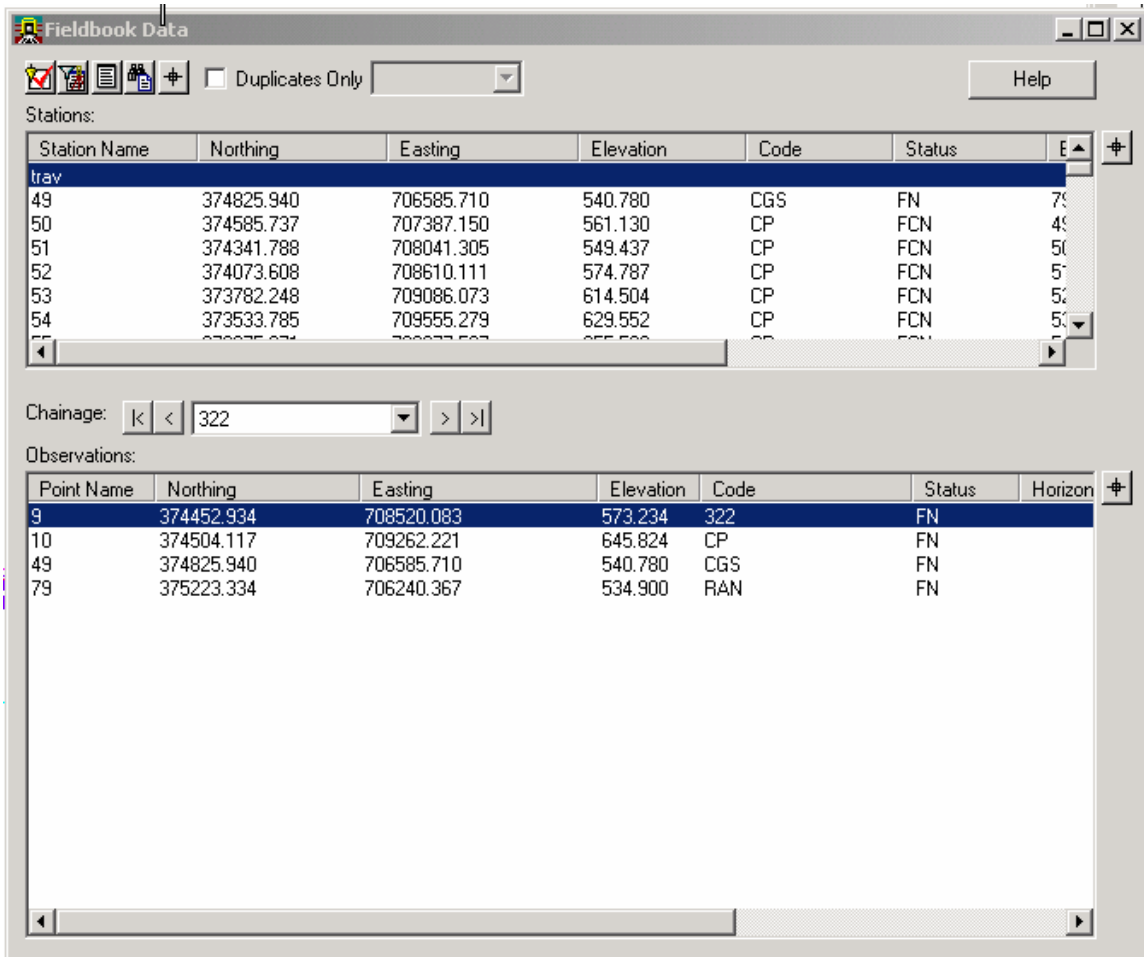
31) Again we will select the **Survey > Fieldbook Data** command from the menu




Or



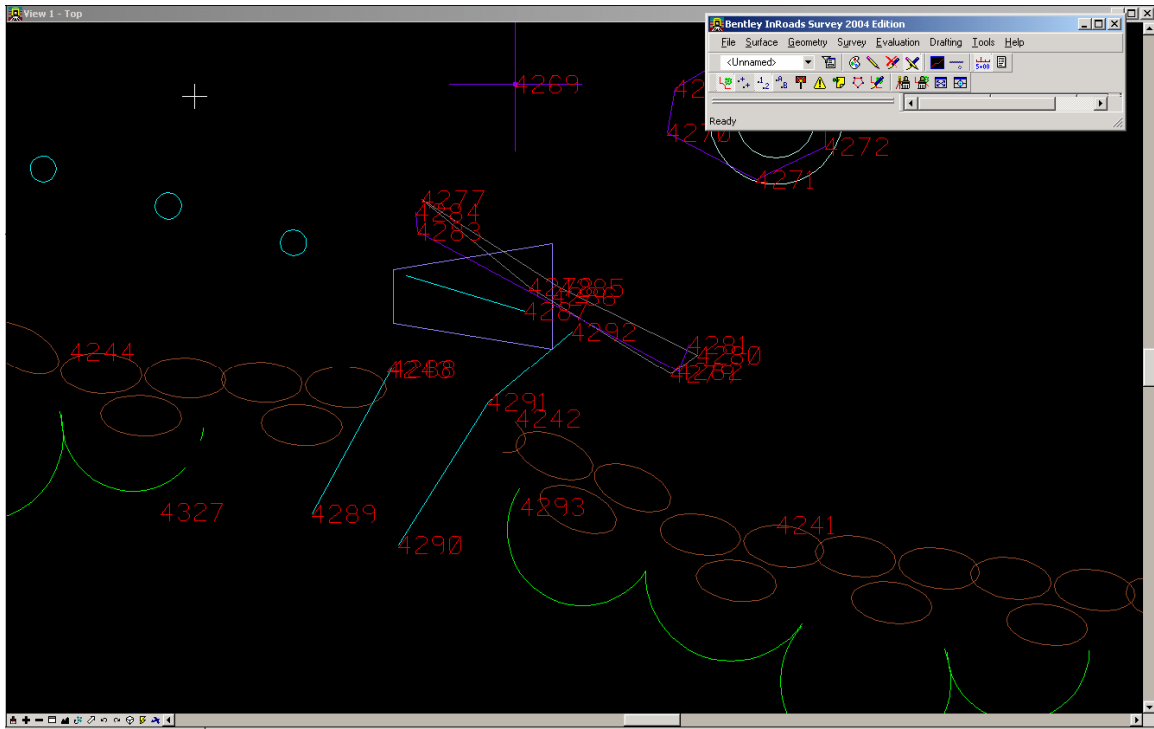




- 32) After the **Fieldbook Data** dialog appears select the selector button  from the **Observation** section with a **<DATA>** This will cause the dialog to minimize and InRoads will prompt you to Identify Point in the lower left hand corner of the screen.

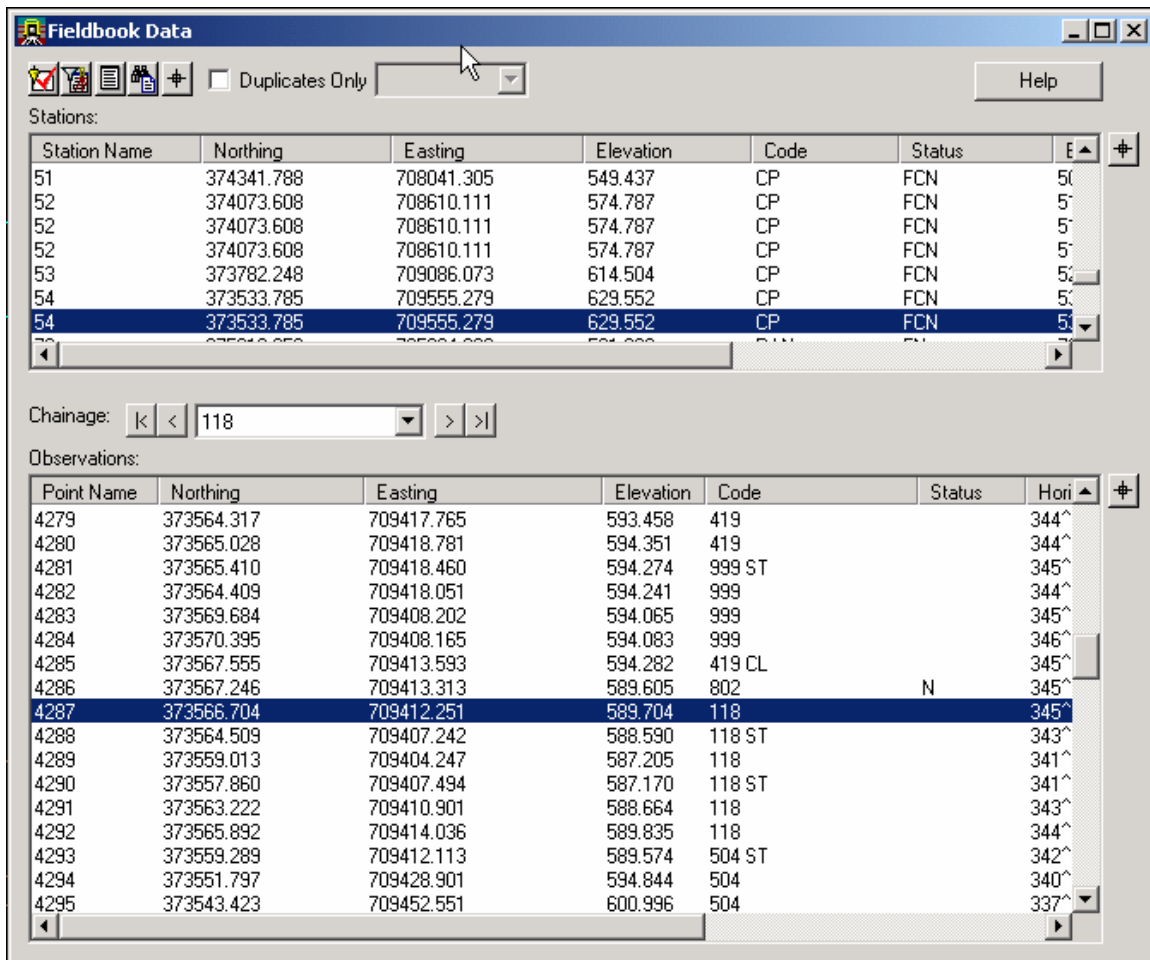


33) With a **<DATA>** select point **4287** in the view





- 34) The **Fieldbook Data** dialog will display again with the point **4287** selected. Notice that the code is **118** and that the second point of this chain has **ST** after it. After some trial and error we find that the **ST** should have been applied to the first point on this chain.



- 35) **<Right Click>** on the blue bar for point **4287** and select **Edit**



Edit Observation

Point Name:

Type:

Horizontal Observation:

Vertical Observaton:

Slope Distance:

Code:

Target Height:

Northing:

Easting:

Elevation:

Notes:

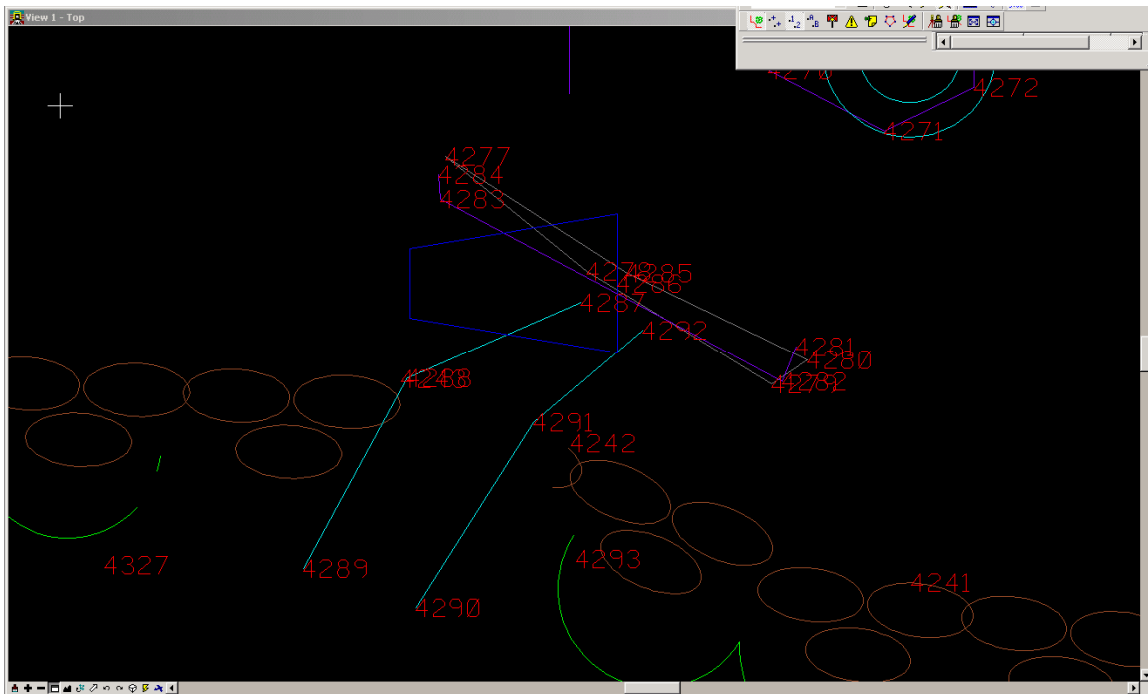
Attributes:

Code	Name	Value

Buttons: Apply, Close, Help

36) Add **ST** to the code line and then select the next button this will take you to the next point where you will remove the **ST** and

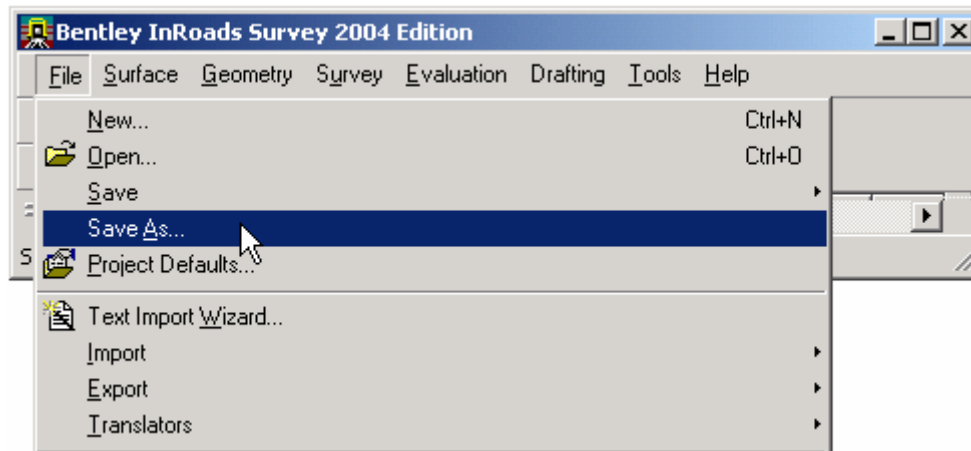
37) Notice the long line is gone and the channel is now displayed correctly.



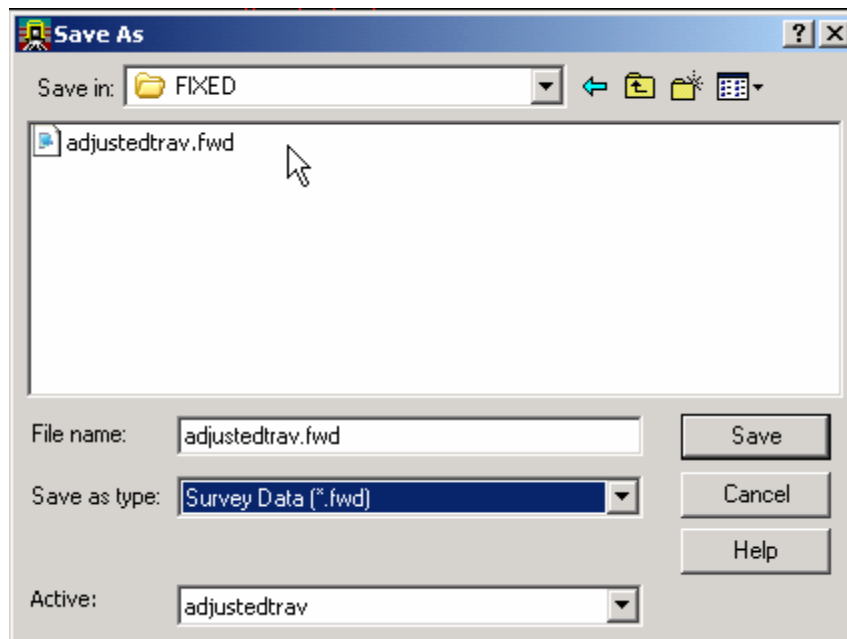


Save .fwd (Survey Data)

- 38) After all the data has been adjusted or at the end of each day you will want to save the Survey Data. To do this Select the **File > Save As**



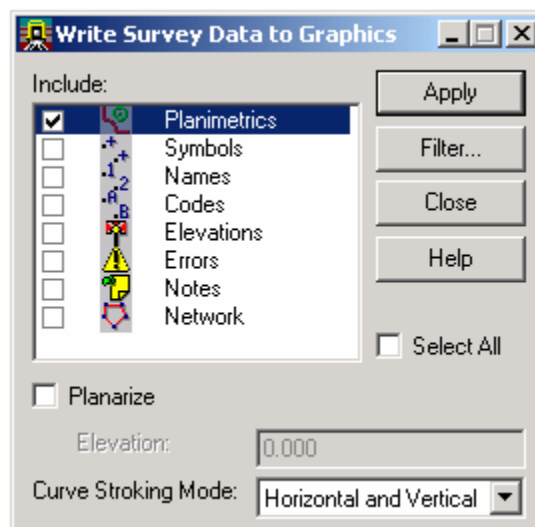
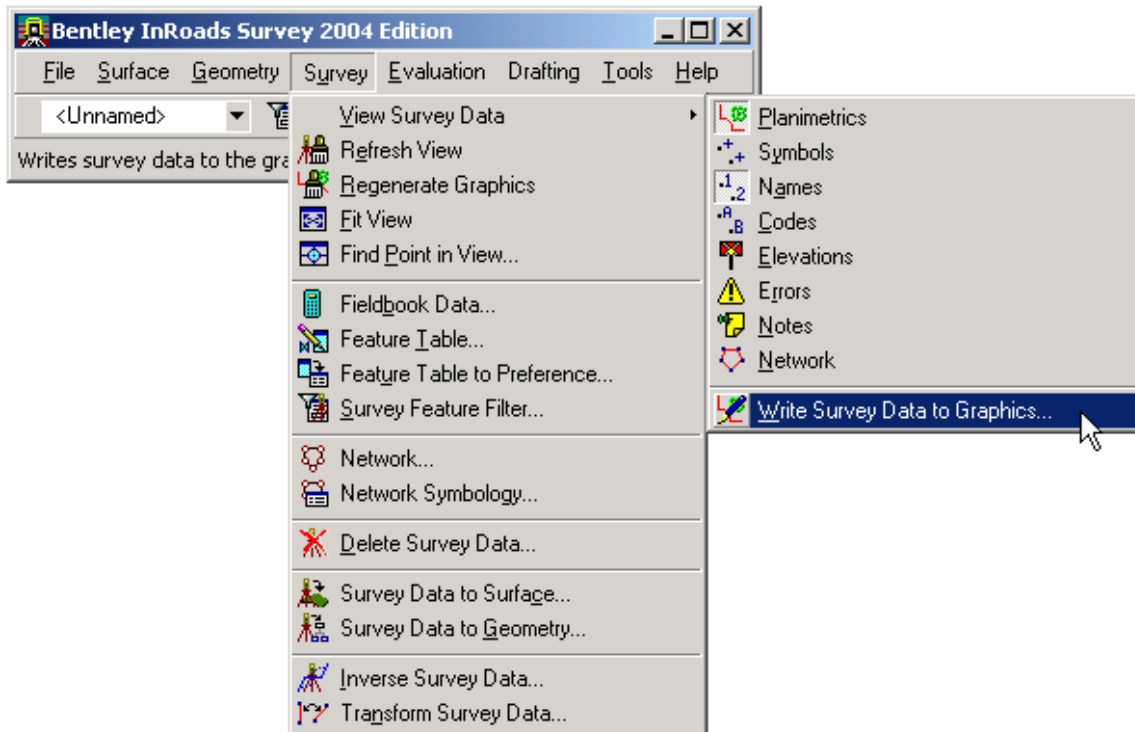
- 39) The **Save As** dialog appears, select the **Save as type: (*.fwd)** and enter a File name then **<DATA>** This saves the data in the he next day you will load the .fwd and either continue with the edit process or import more field data or both. Remember to save the .fwd when ever exiting InRoads Survey.

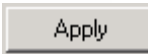




Write Survey Data to Graphics

- 40) Now we will want to save the graphics to a design file. Select the **Survey > View Survey Data > Write Survey Data to Graphics**

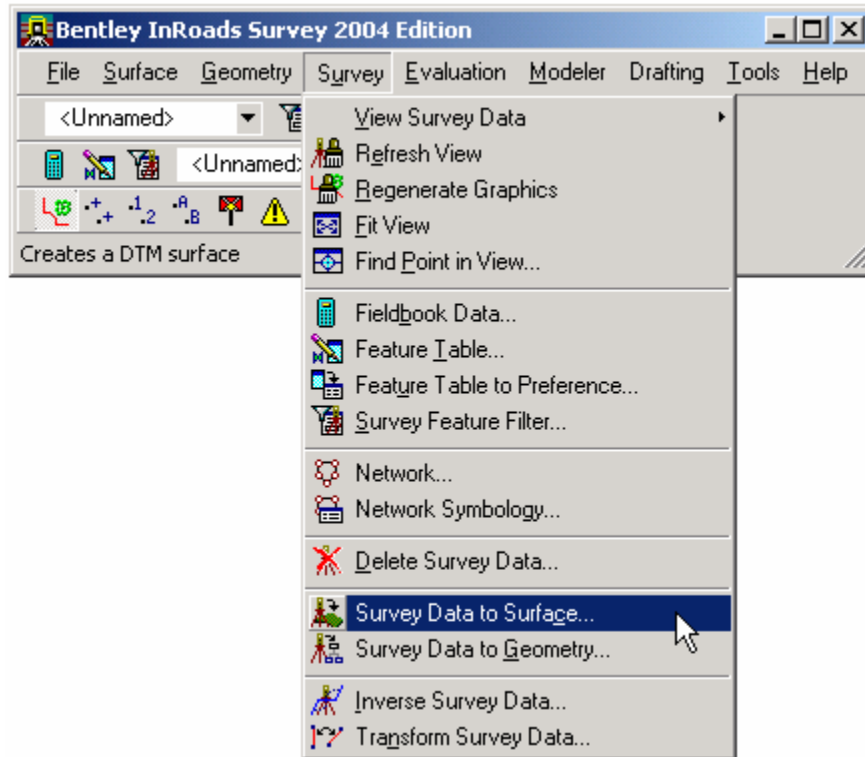


- 41) **Select** the include field for Planimetrics and  This will write the graphics to the design file.

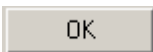
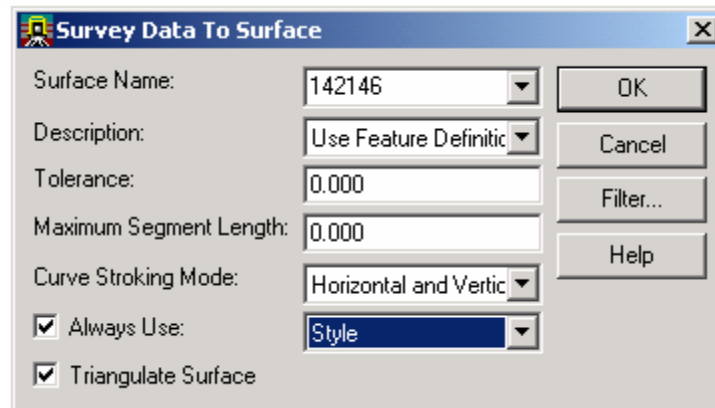


Survey Data to Surface

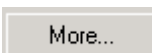
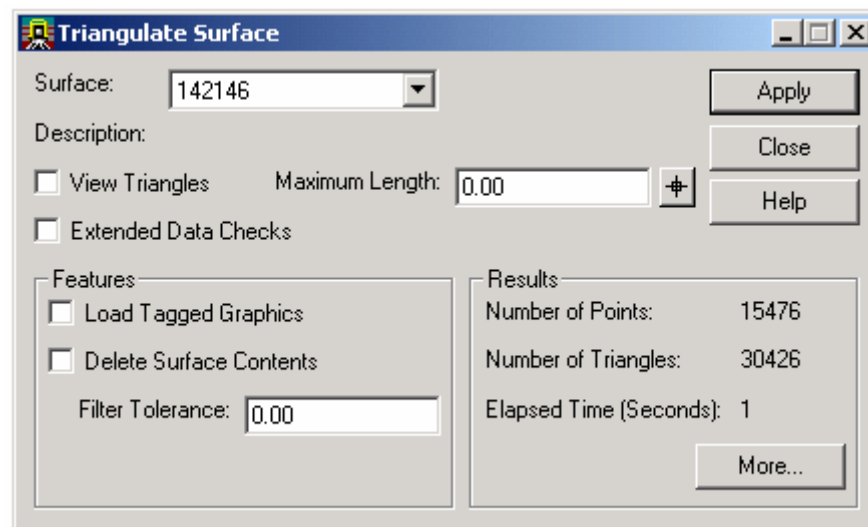
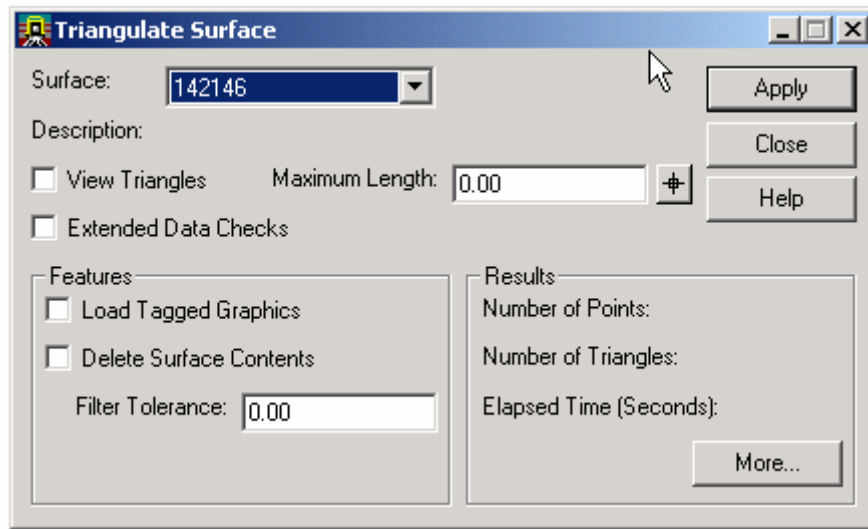
42) Select Survey > Survey Data to Surface



Or









Surface Properties

Main | Advanced

Surface: 142146
 Name: 142146
 Description:
 Maximum Length: 0.00
 Preference: default
 Material:
 Extended Data Checks

Report...
Help

Data Range
 Point Type: Total

	Minimum	Maximum
Northing:	373473.419	375504.384
Easting:	704790.114	709615.296
Elevation:	0.000	655.533

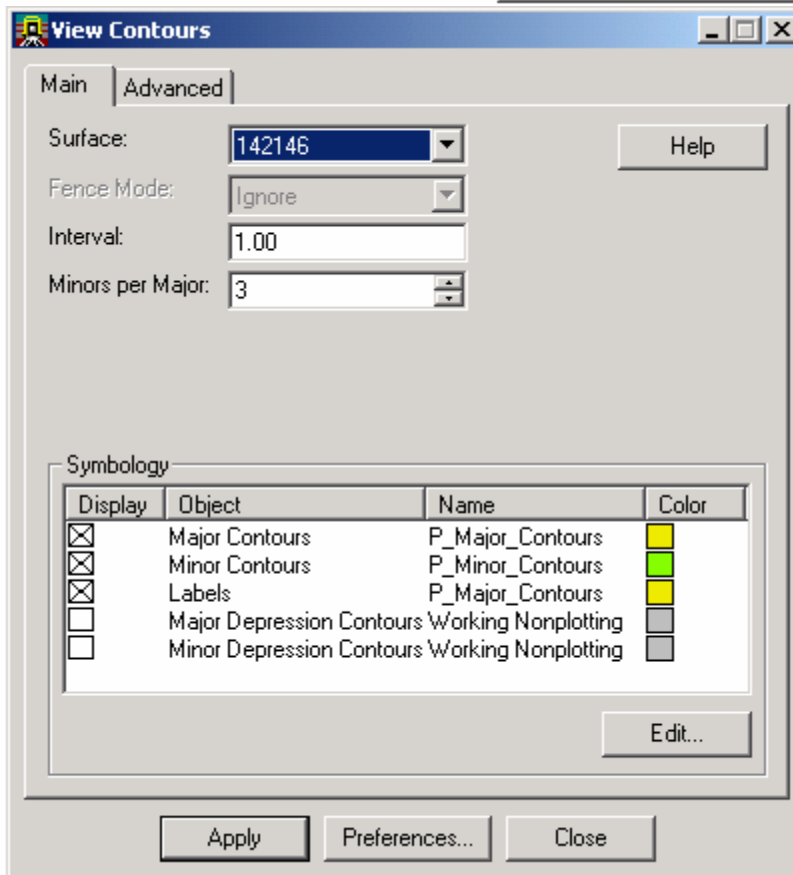
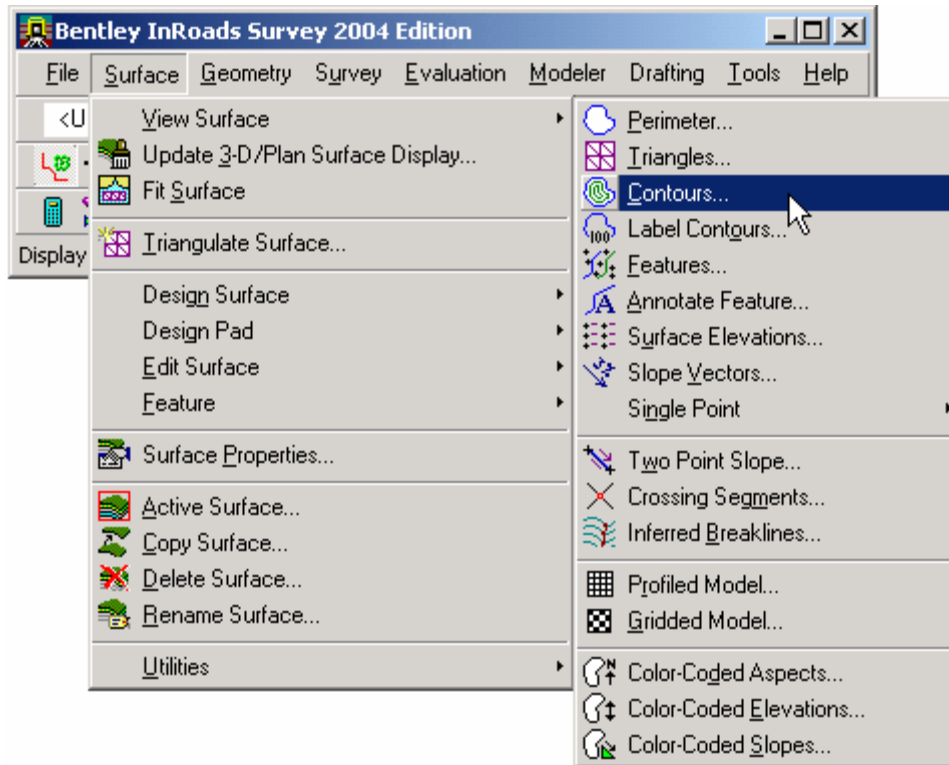
Data Totals

	Active	Features	Deleted	Total
Random:	2531	148	145	2676
Breakline:	12945	456	0	12945
Contour:	0	0	0	0
Inferred:	0		0	0
Interior:	0	0	0	0
Exterior:	0	0	0	0
All Points:	15476	605	145	15621
Triangles:	30426		68	30494

Apply Close

Close

Checking the Contours





Apply

