Appendix-8

Road Slope Management System (RSMS)

Manual Volume 4

GIS Operation Manual

Ver2.2 June 2007

The Department of Public Works and Highways

Notice

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RSMS

RSMS(Road Slope Management System) is an application software program, which was developed in the Study named "The Study on Risk Management for Sediment-related Disaster on Selected National Highways in The Republic of The Philippines." This Study was undertaken by JICA (Japan International Cooperation Agency) Study Team, DPWH(The Department of Public Works and Highways in the Republic of the Philippines) Counterpart Team in cooperation with DPWH and JICA Philippine Office.

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Introduction

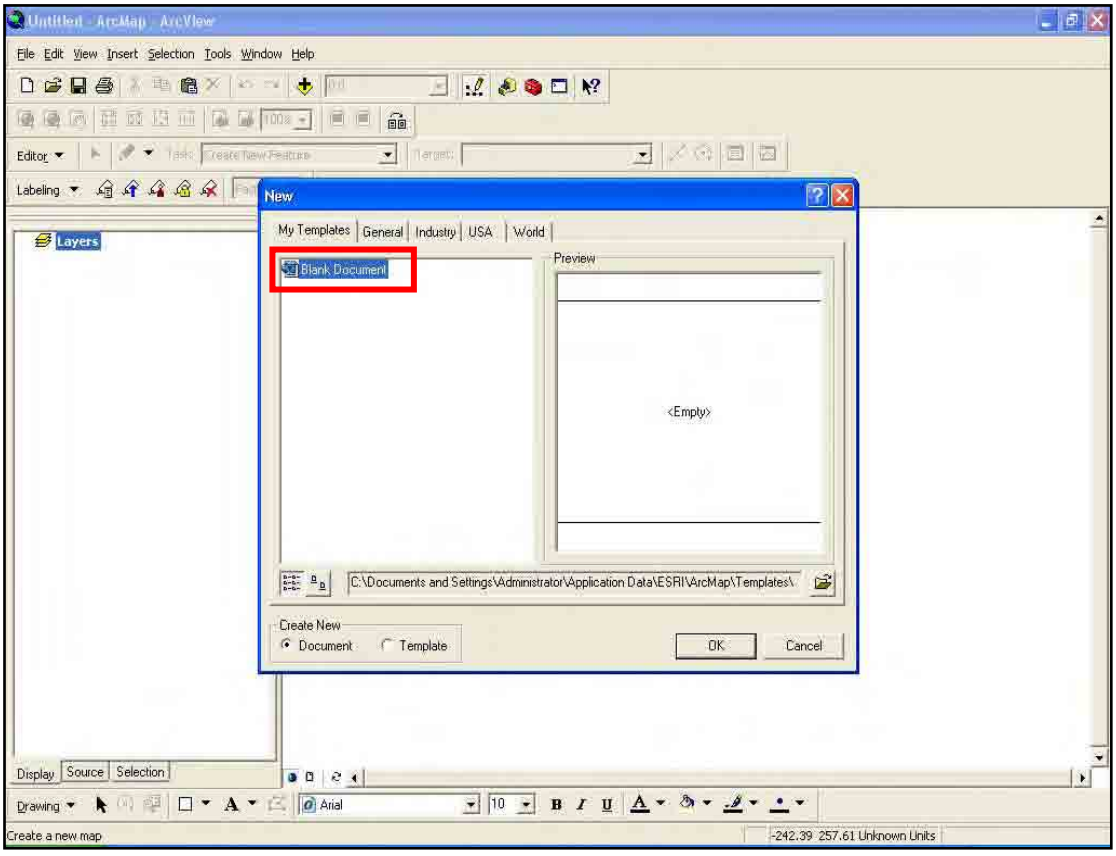
This manual provides the users of RSMS(Road Slope Management System) with an explanation of how to manipulate the map display functions developed in the GIS system of DPWH's PS department.

A. Adding Survey Points

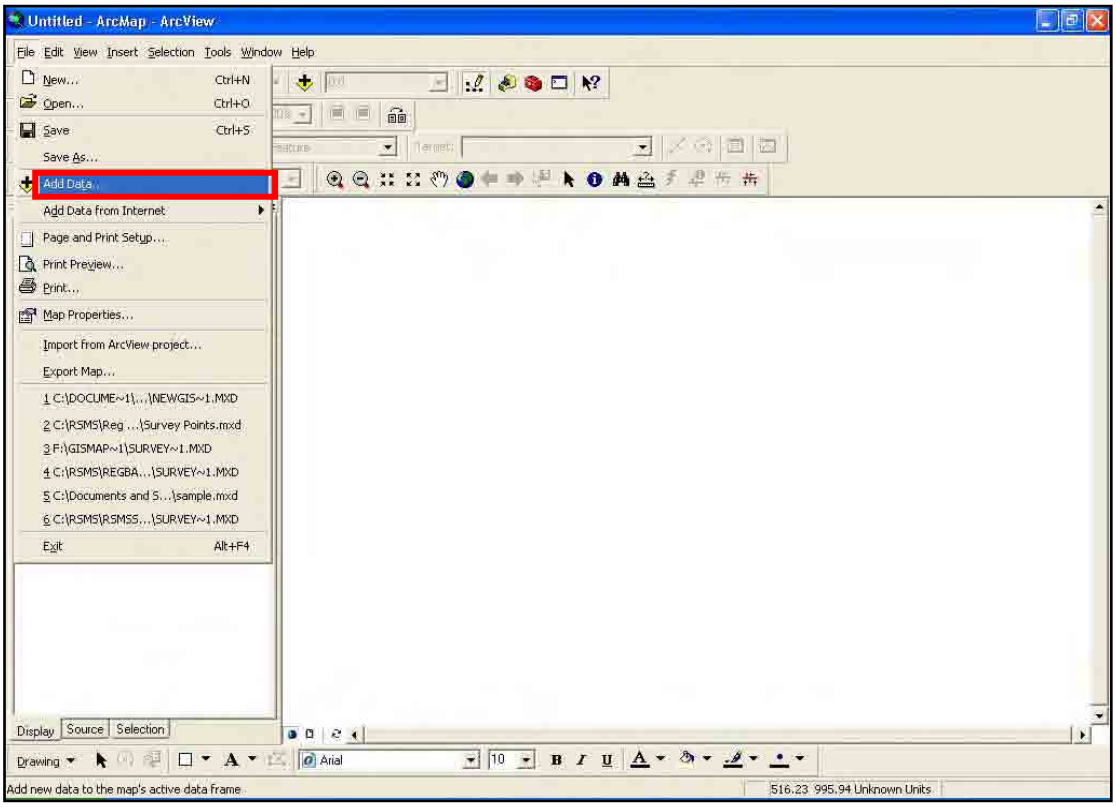
This section provides the user with basic information needed to view or add survey points from the RSMS to the GIS.

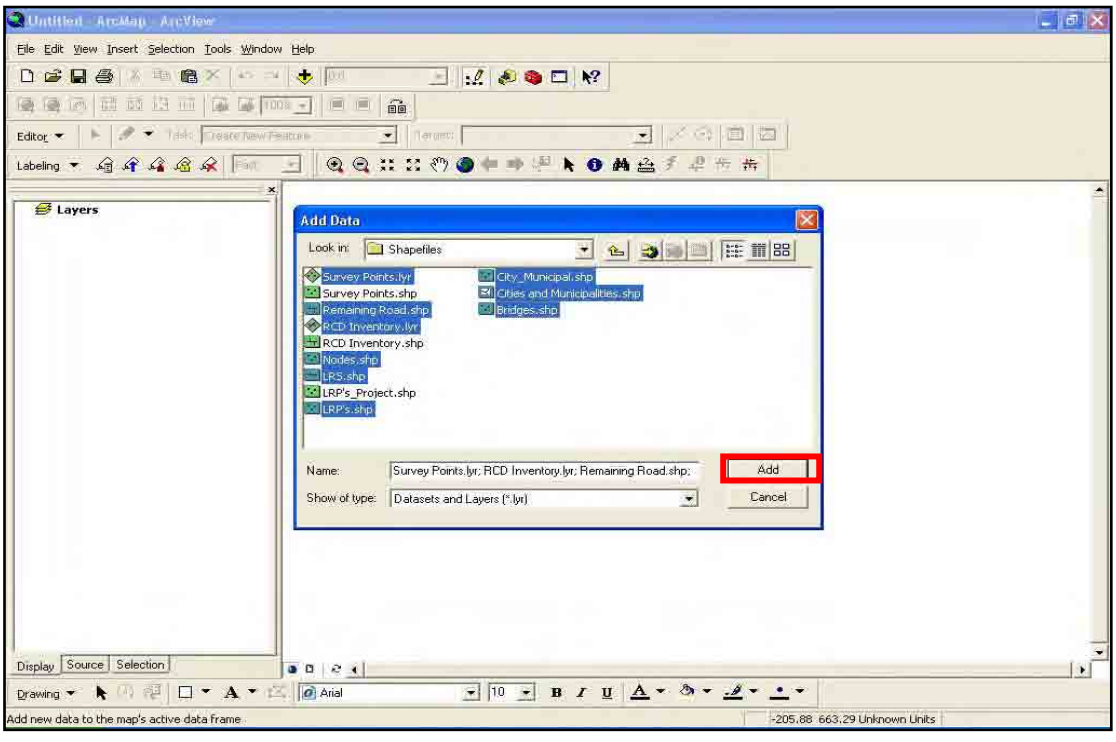
A.1 Adding the GIS Map Layers

1. Open **ArcMap**.
2. Create a new **Blank Document**.



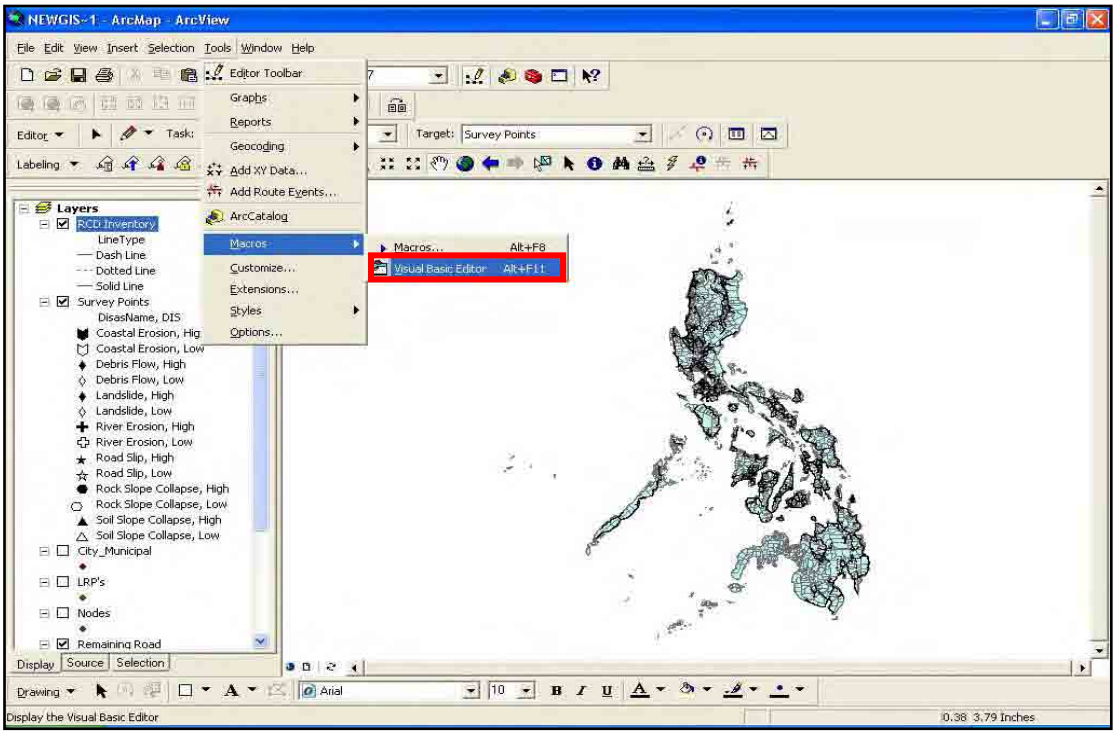
3. Add **GIS data** to the document.



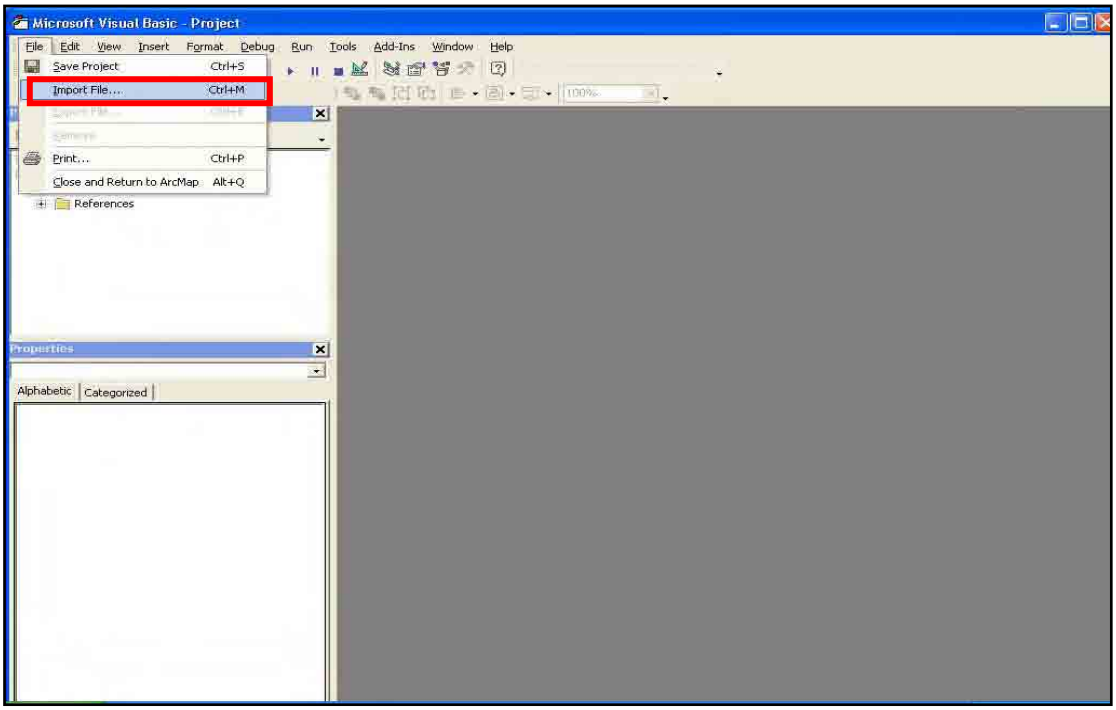


A.2 Setting up the VBScript

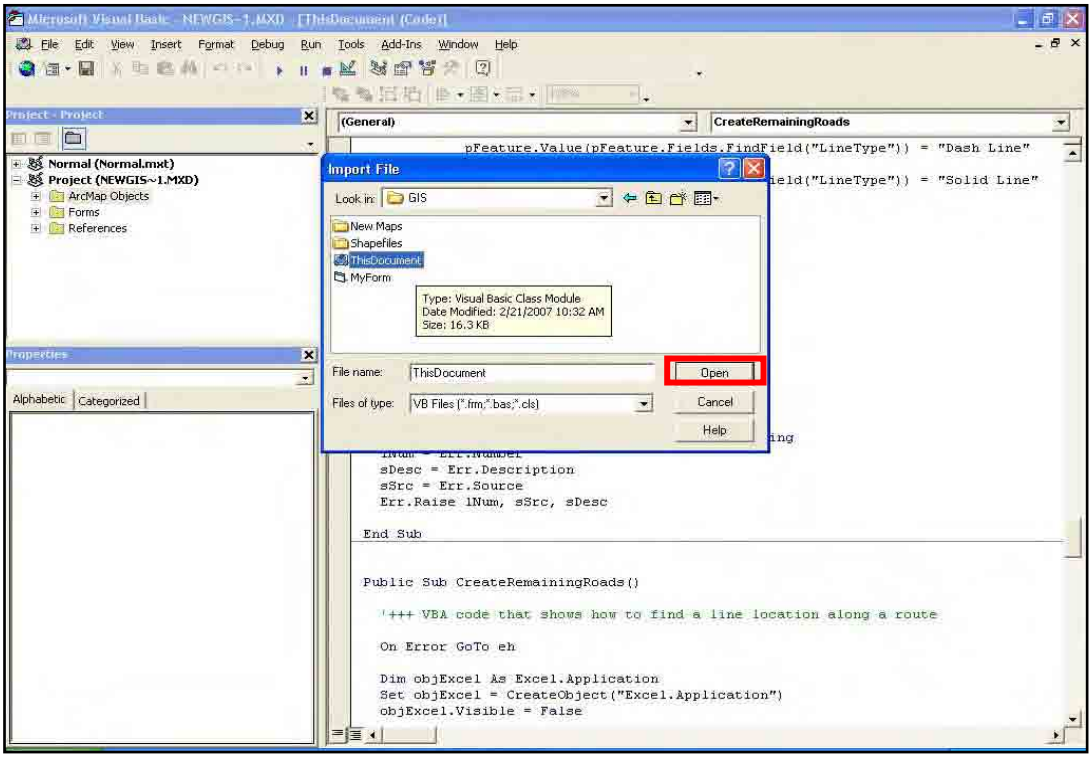
4. Click the **Tools** menu and point to **Macros** then select **Visual Basic Editor**.



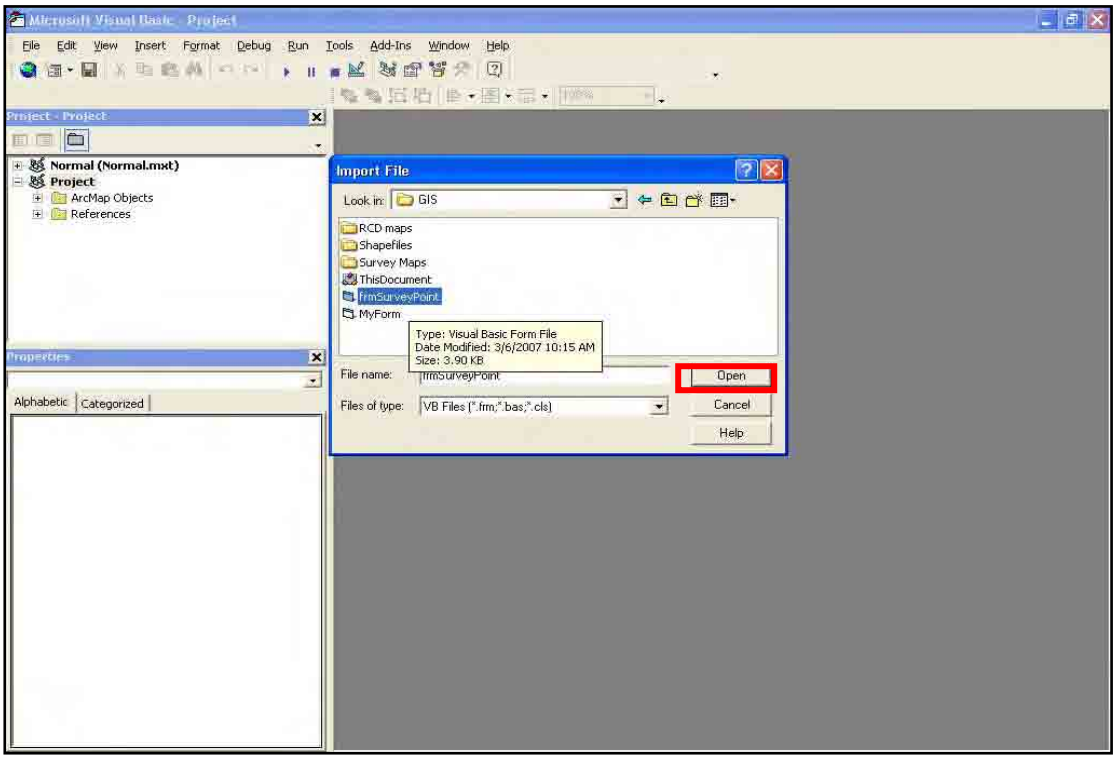
5. In the **Visual Basic Editor** window select **File** and click **Import File**.



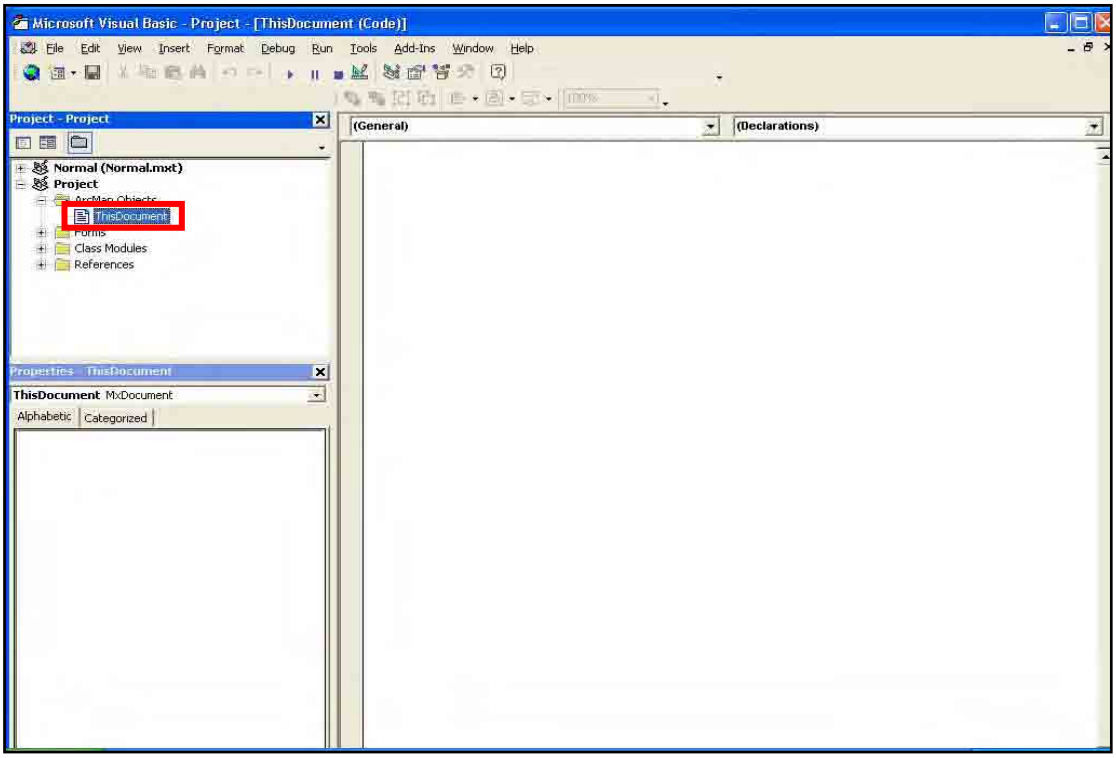
6. Browse the **ThisDocument** file and click **Open**.



7. Do the same to **MyForm** and **frmSurveyPoint** file and click **Open**.

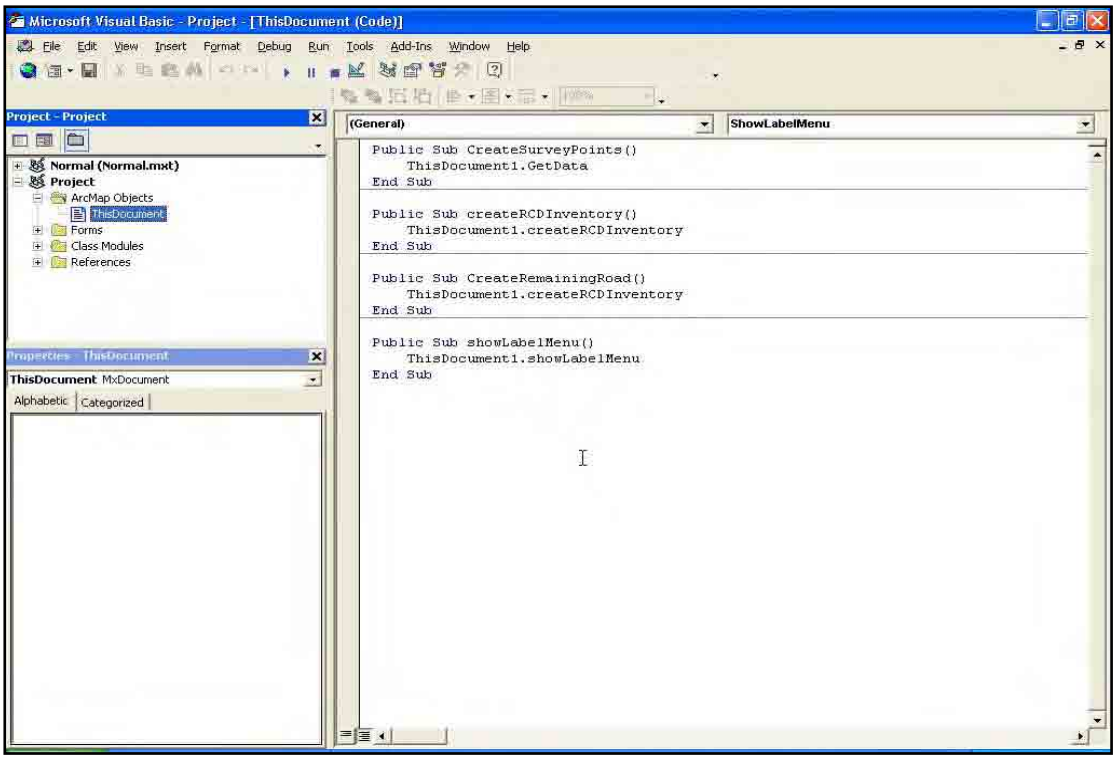


8. Expand **ArcMap Object** folder and double-click **ThisDocument**.

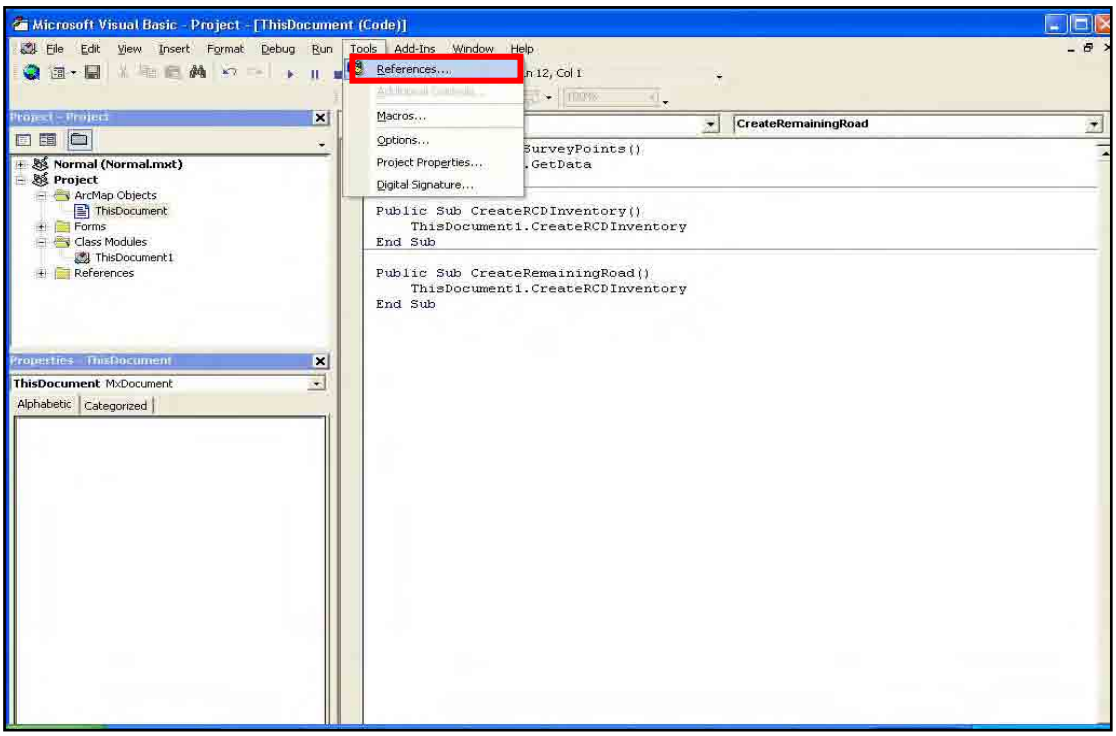


9. Type the following text as can be seen from the figure below:

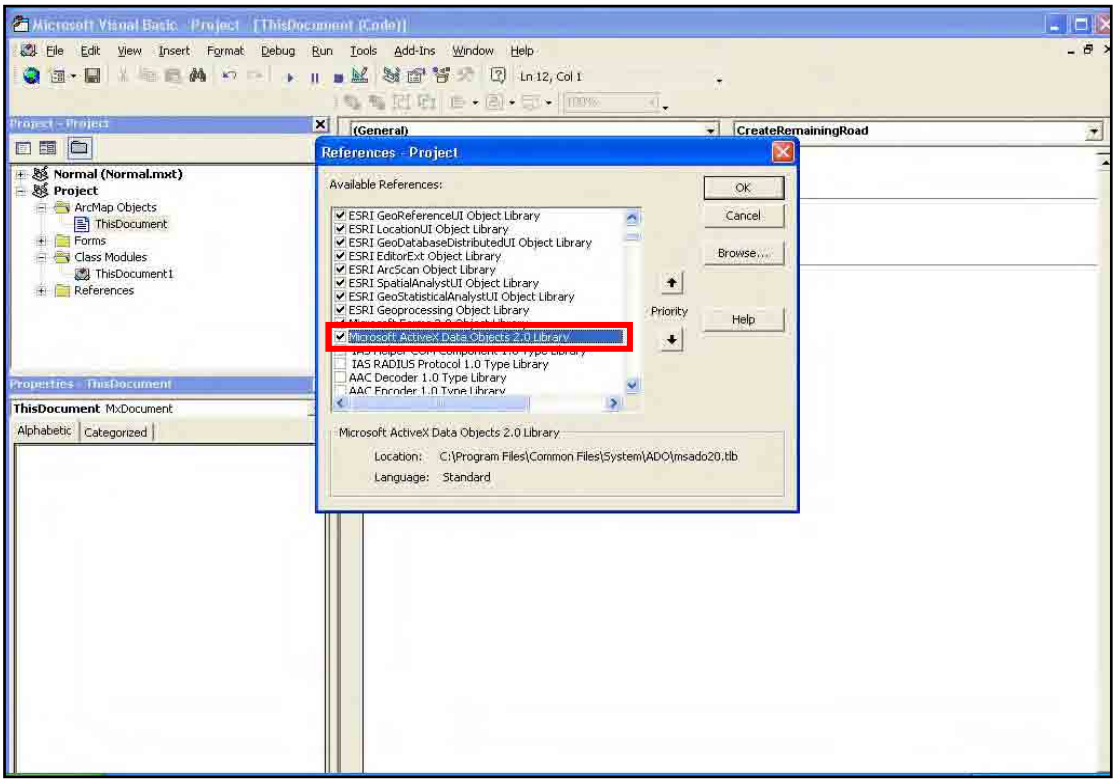
```
Public Sub CreateSurveyPoints()
   ThisDocument1.GetData
End Sub

Public Sub CreateRCDInventory()
   ThisDocument1.CreateRCDInventory
End Sub

Public Sub CreateRemainingRoad()
   ThisDocument1.CreateRCDInventory
End Sub

Public Sub ShowLabelMenu()
        ThisDocument1.showLabelMenu
End Sub
```



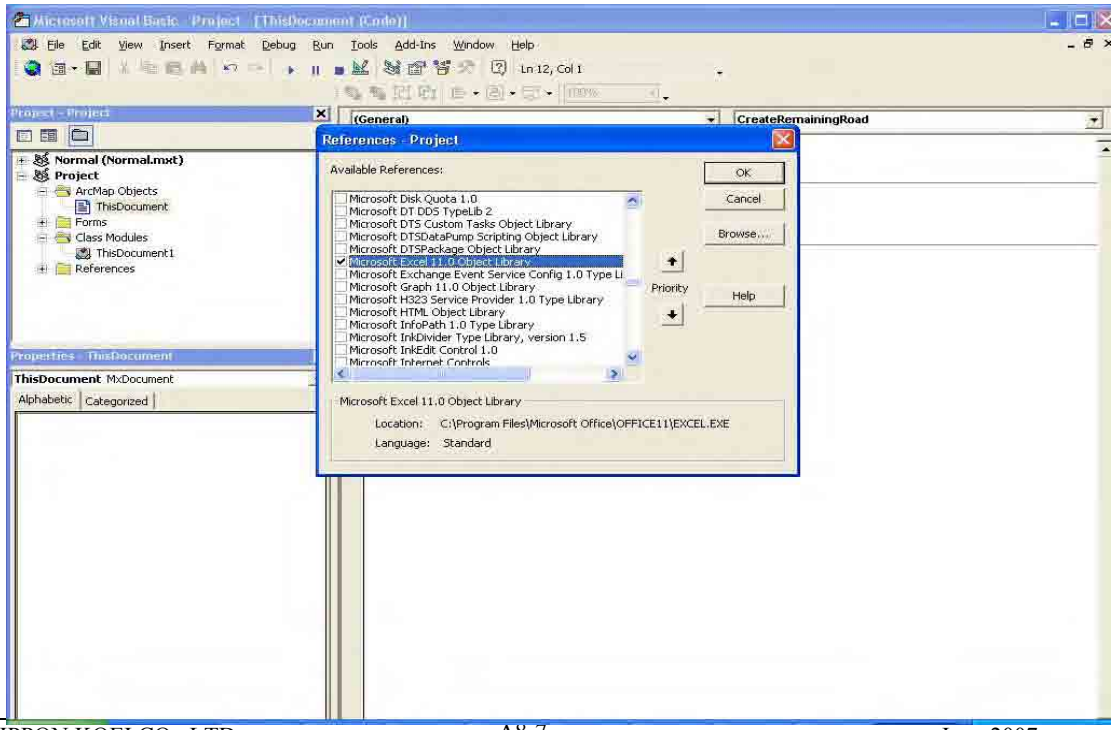
10. Click **Tools** menu and select **References**.



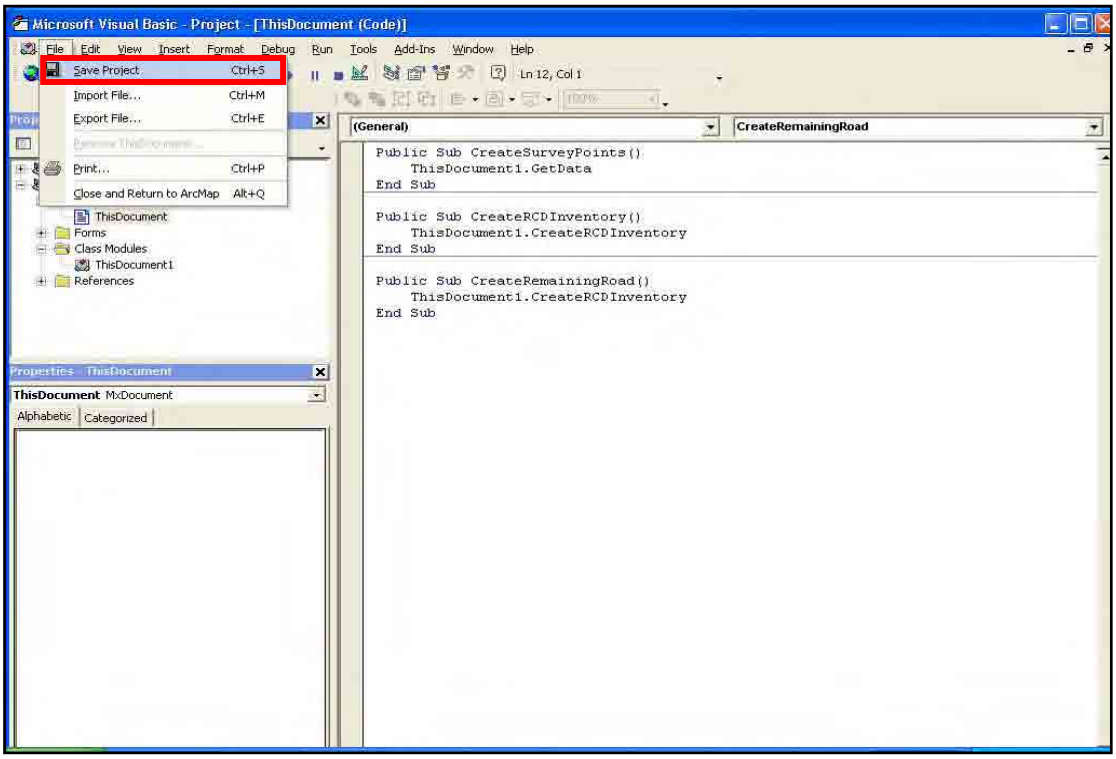
11. Find and check the **Microsoft ActiveX Data Object 2.0 Library**.



12. Find and check also the **Microsoft Excel 11.0 Object Library**. If you cannot find it then you must install Microsoft Excel and do it again.



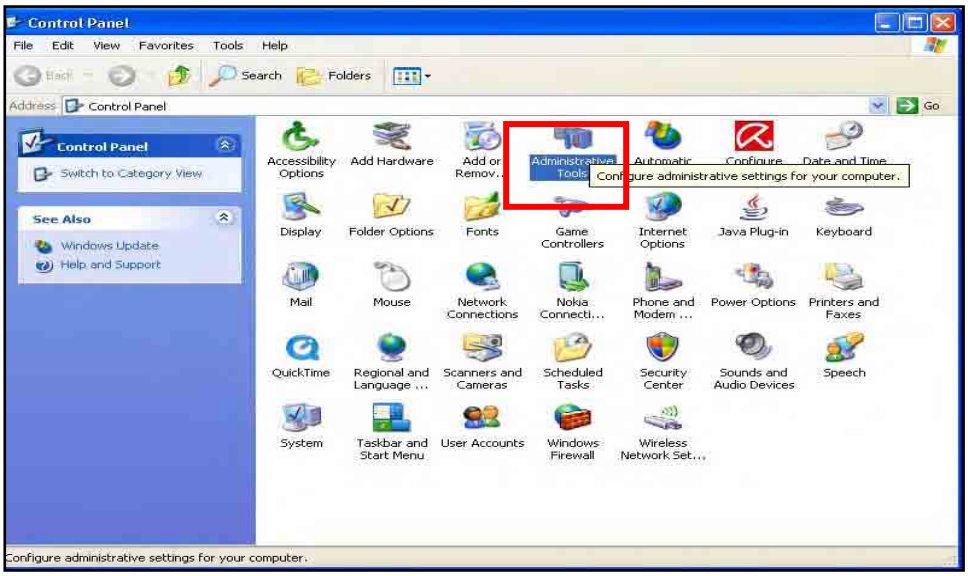
13. Click **OK.**
14. Save the project by clicking **File** menu and select **Save Project**.



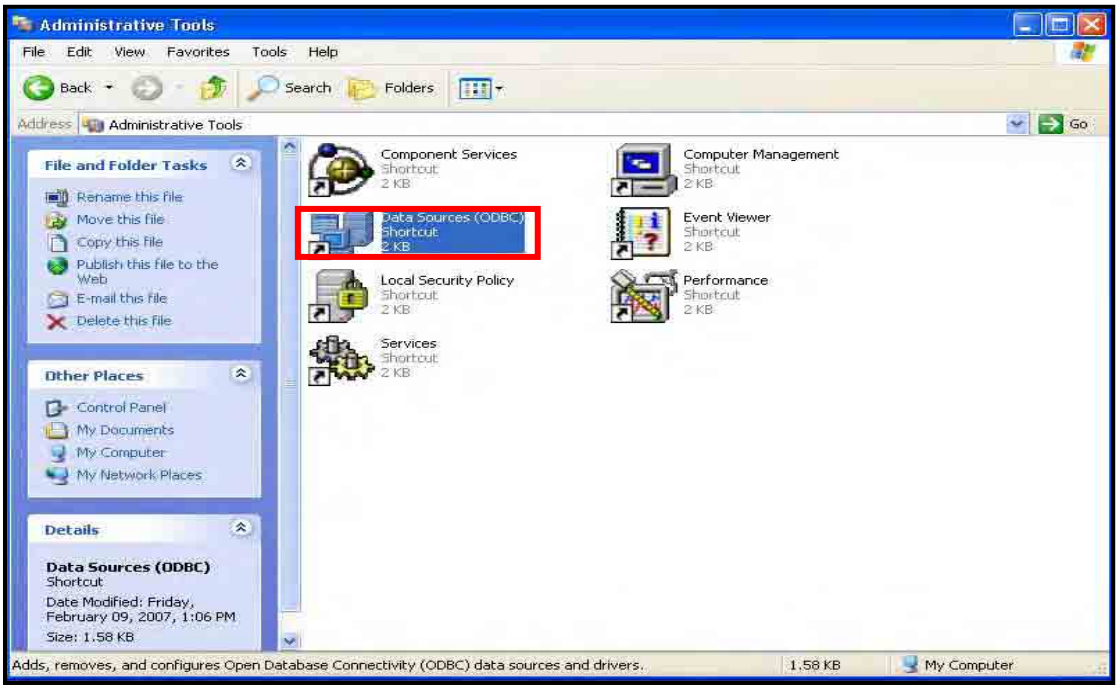
15. Close the **Visual Basic Editor** window.

A.3. Setting up the ODBC Definition

16. Go to **Control Panel** and open **Administrative Tools**.



17. In the **Administrative Tools** window open **Data Sources (ODBC)**.

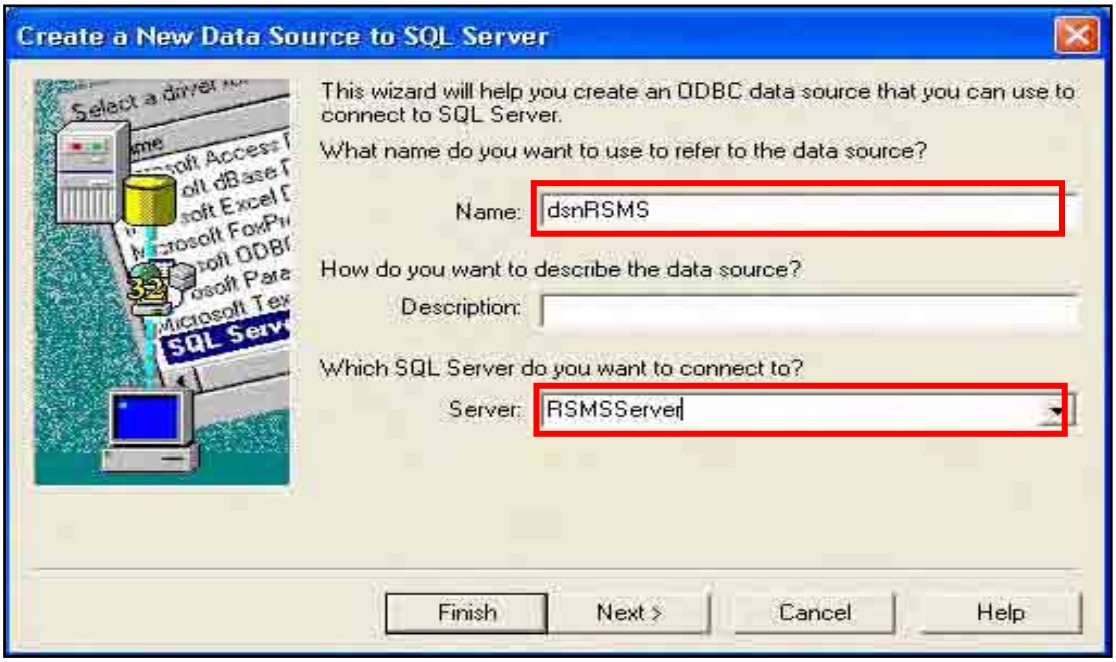


18. In the **Data Sources (ODBC)** window click **System DSN** tab.

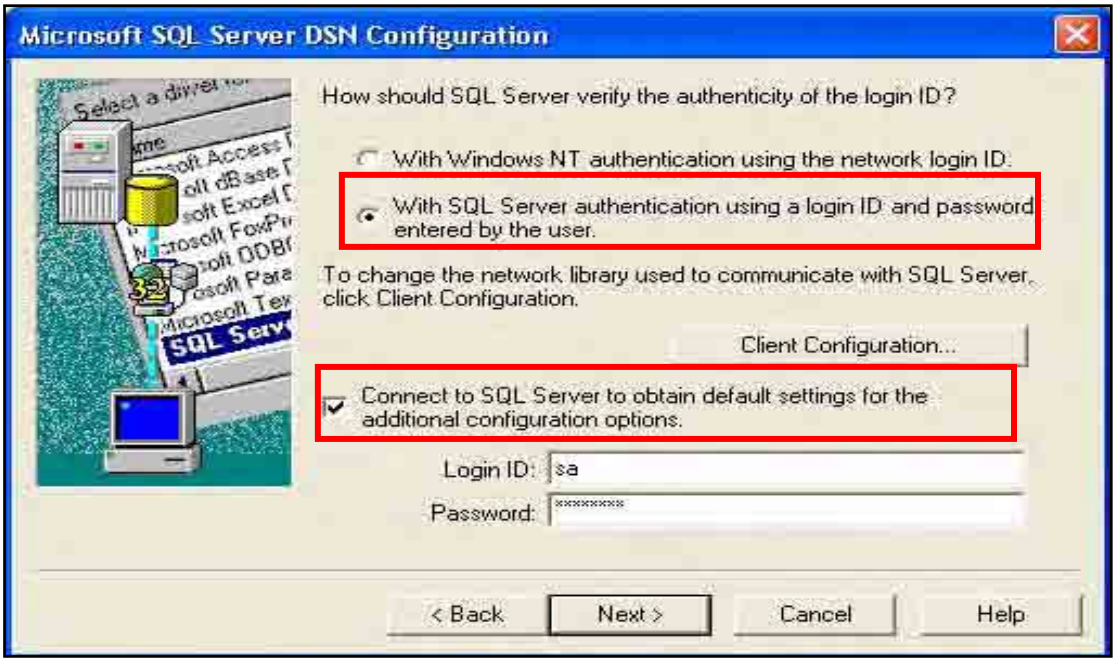
19. Then click **Add** button.

20. In the **Create New Data Source** window, find and select SQL Server and click **Finish**.

21. Type **dsnRSMS** as name select **RSMSServer** as server.

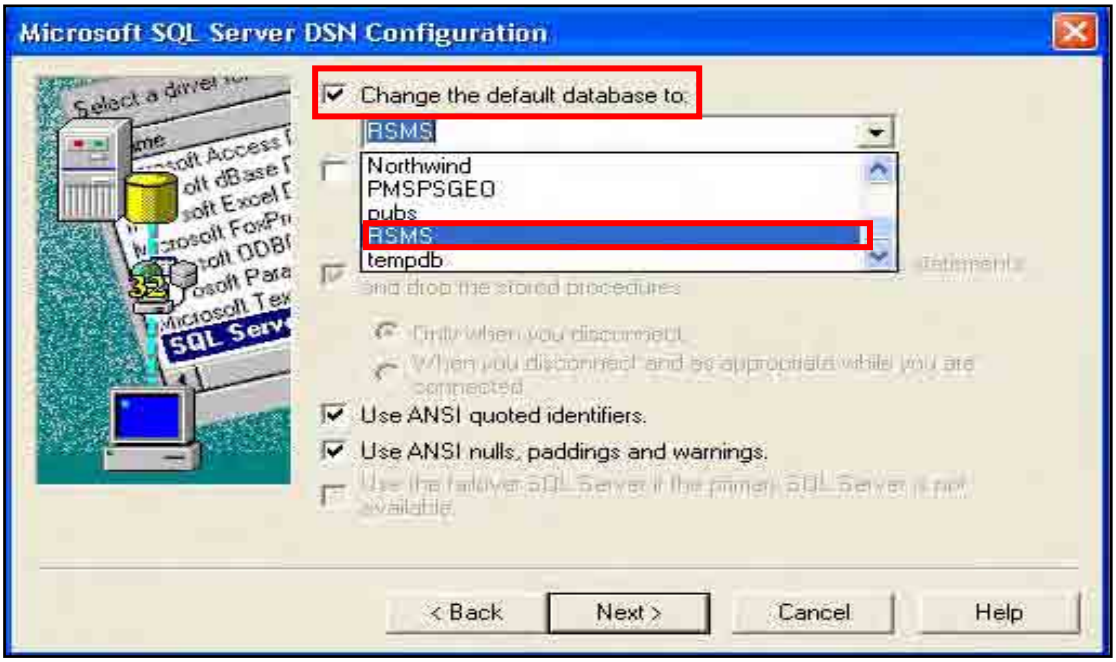


22. Select **With SQL authentication** option and check **Connect to SQL Server**.



23. Type the **Login ID** and **Password** of the Server or ask your server administrator then click **Next.**

24. Check the **Change default database**, then select **RSMS**



25. Click **Next**. Then click **Finish**.

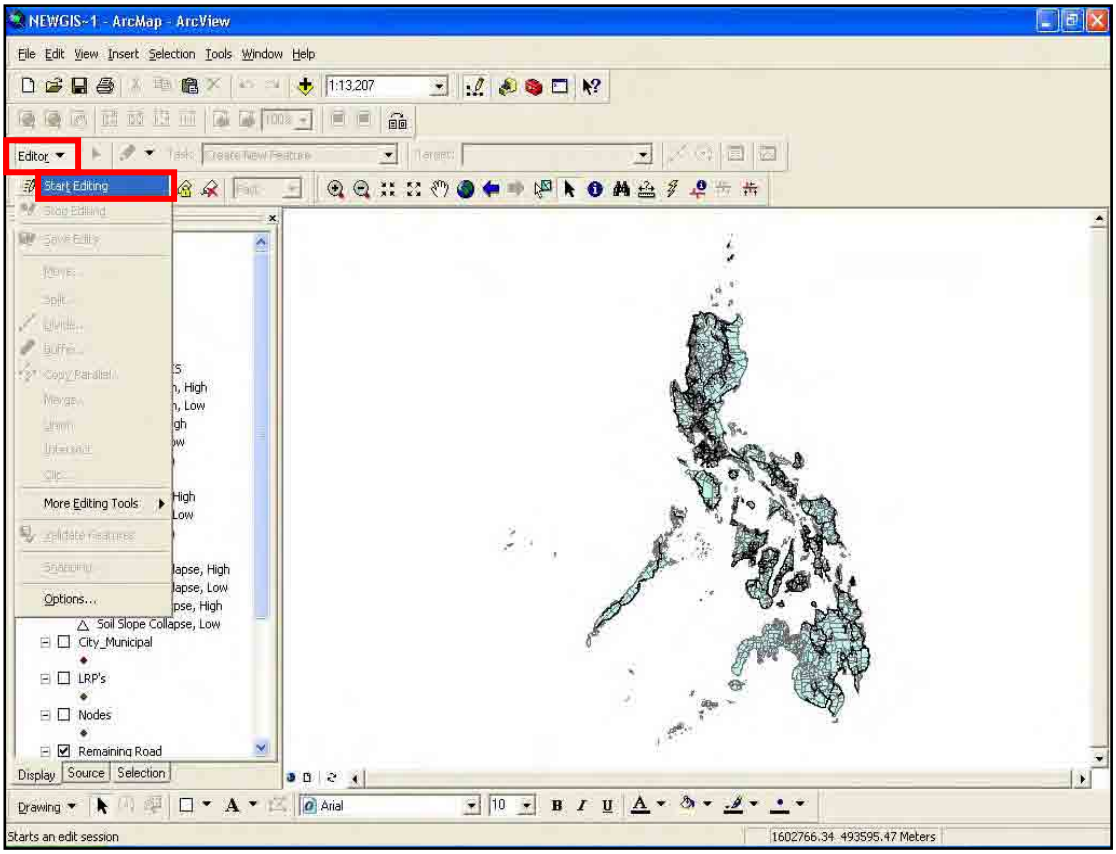
26. Click the **Test Data Source** to check the connection. If you see the **Test Completed Successfully** message click **OK** else check your configuration or ask administrative assistance.

27. Then click **OK.**

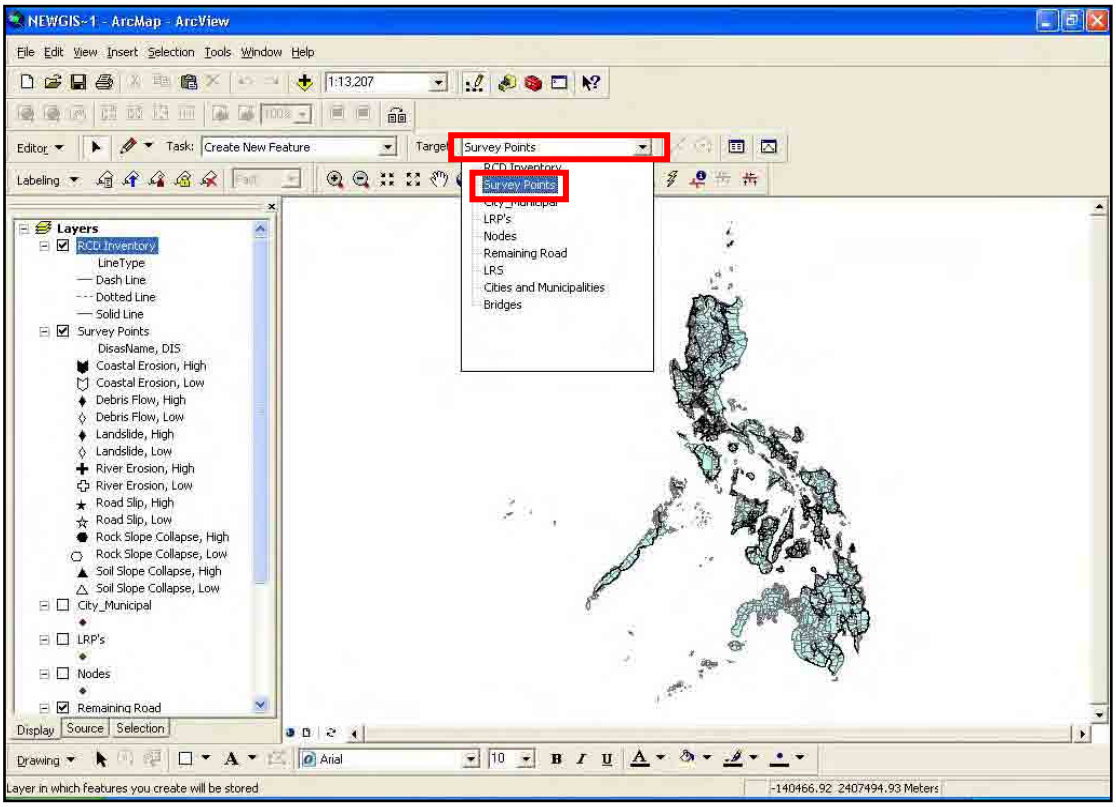
A.4 Running the VBScript to Load the Survey Points

28. Go back to **ArcMap**.

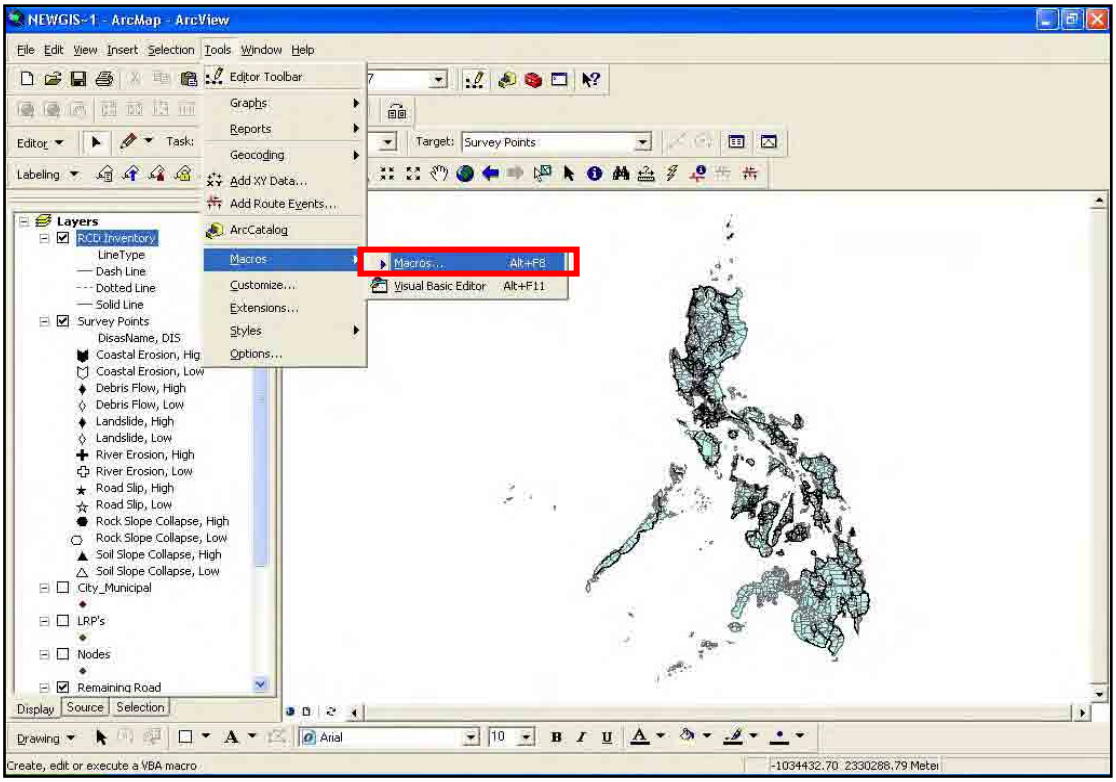
29. Click **Editor** tool and select **Start Editing**.


NEWGIS-1 - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
1:13,207
Editor
Start Editing
Stop Editing
Save Edits
More Editing Tools
Validate Features
Snapping
Options...
Soil Slope Collapse, Low
City_Municipal
LRP's
Nodes
Remaining Road
Display Source Selection
Drawing
Arial
10
Starts an edit session
1602766.34 493595.47 Meters

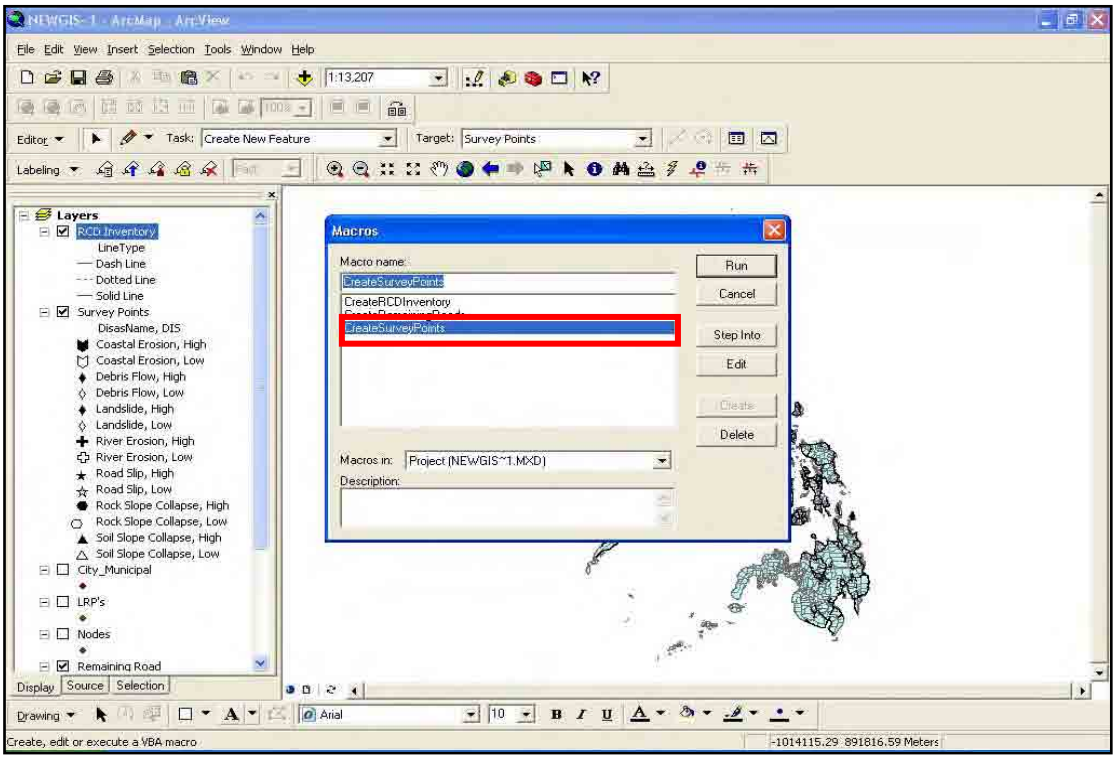
30. Click **Target** dropdown and select **Survey Points**.



31. Click **Tools** menu and point to **Macros** then select **Macros**.



32. In the **Macros** dialog box, select **CreateSurveyPoints** and click the **Run** button.

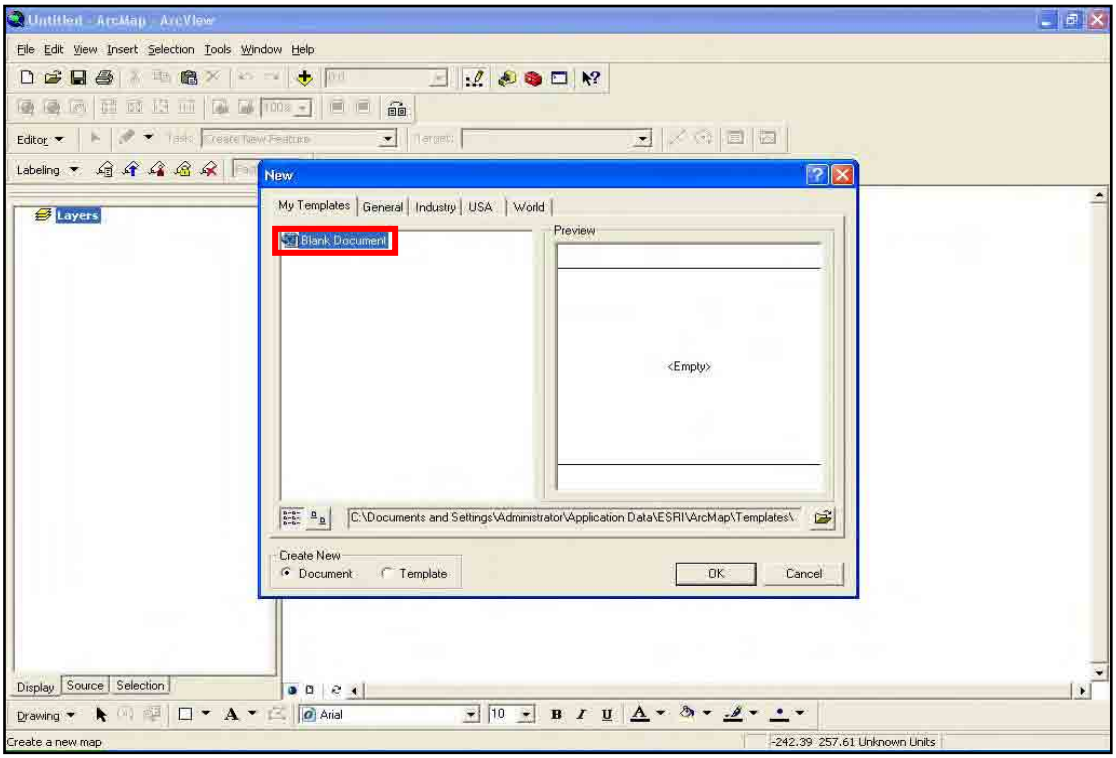


B. Viewing survey points

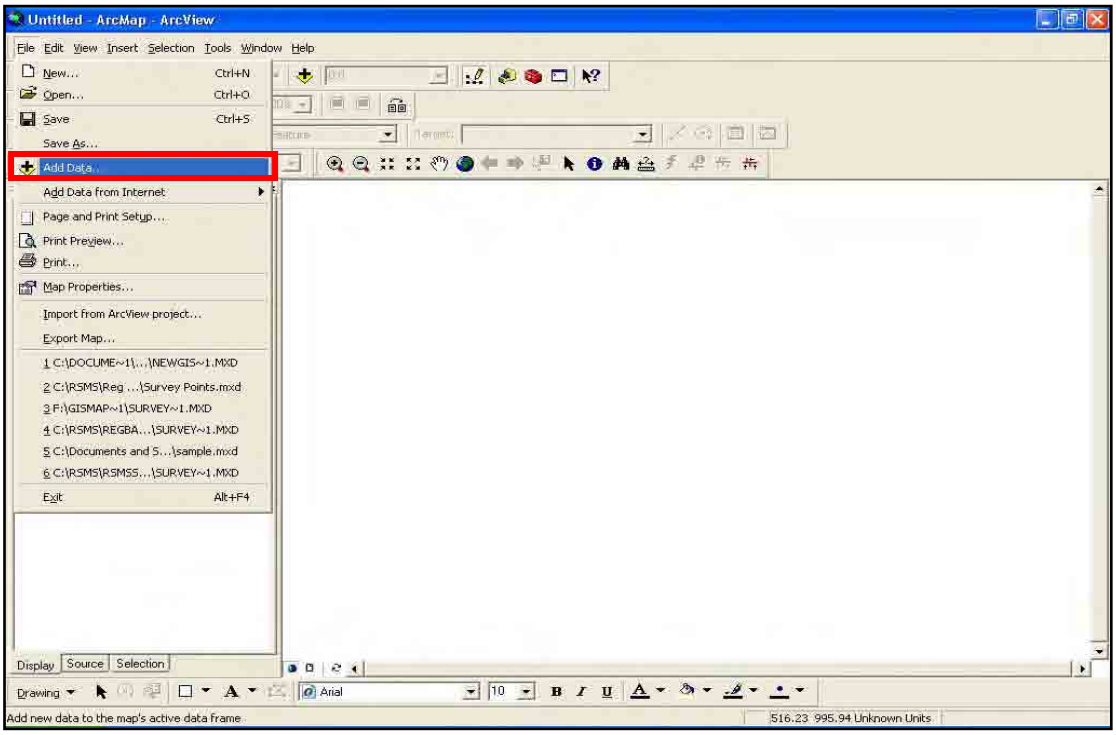
This helps the user to view survey points from the GIS.

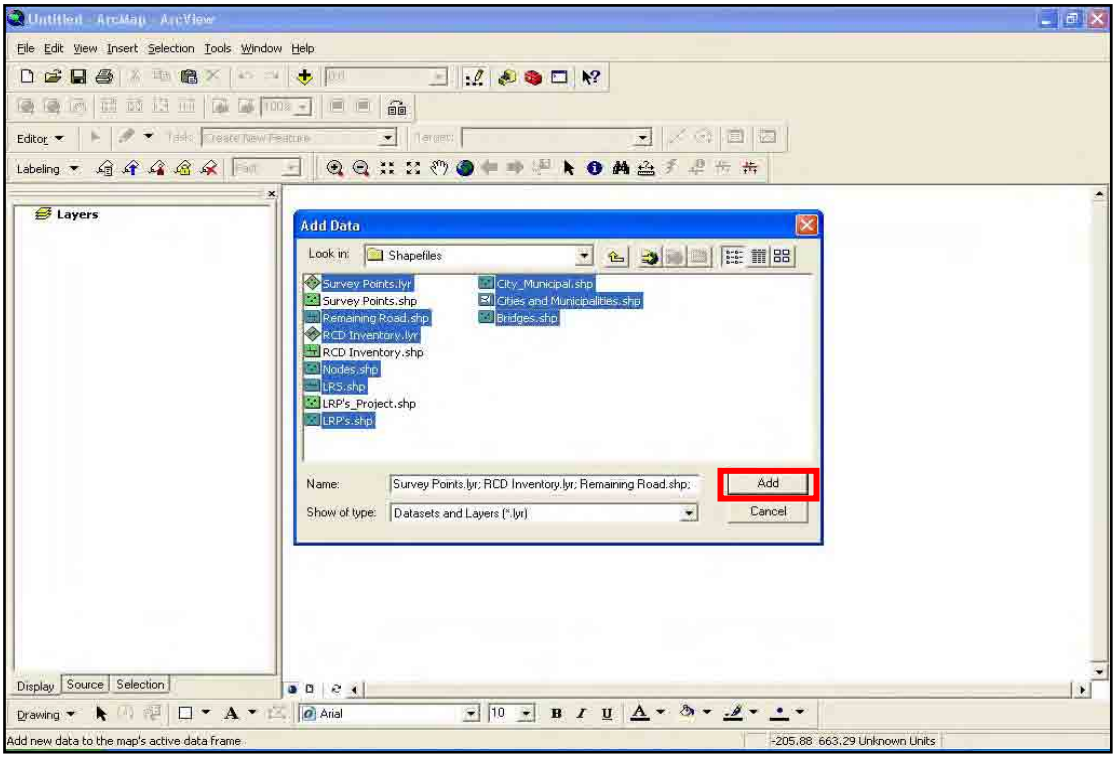
B.1 Adding the GIS Map Layers

1. Open **ArcMap**.
2. Create a new **Blank Document**.



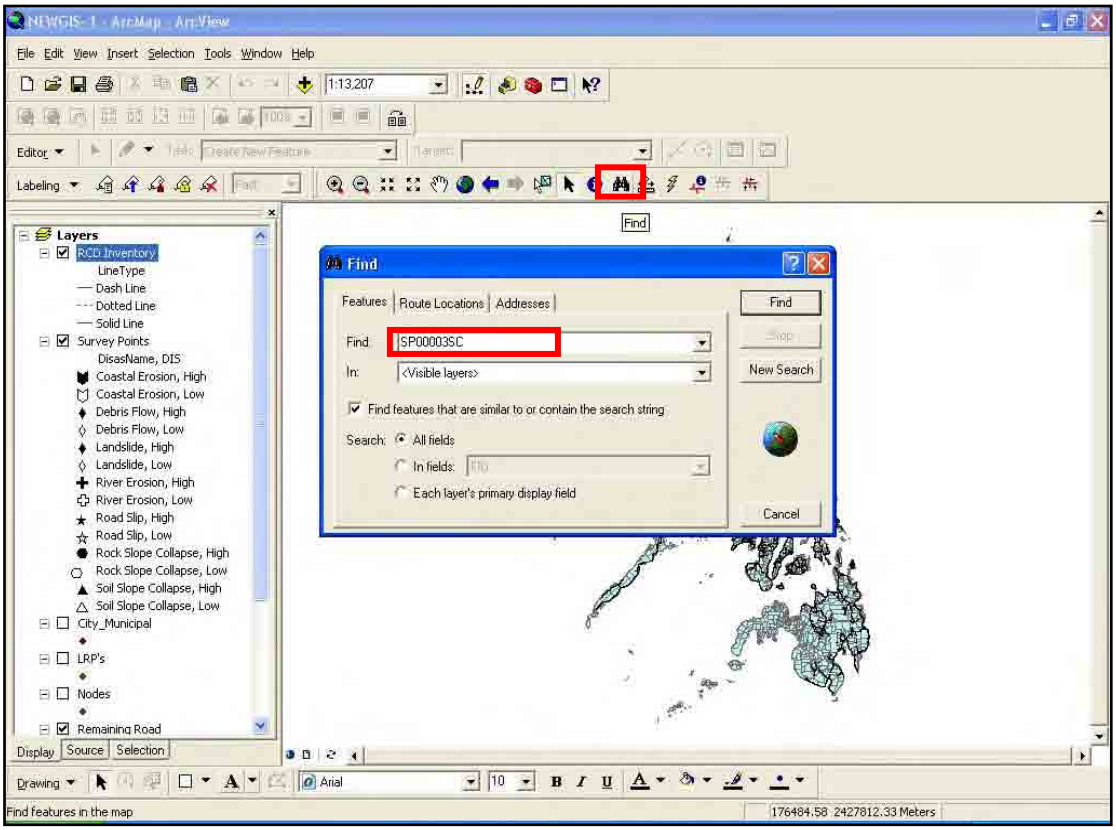
3. Add **GIS data** to the document.





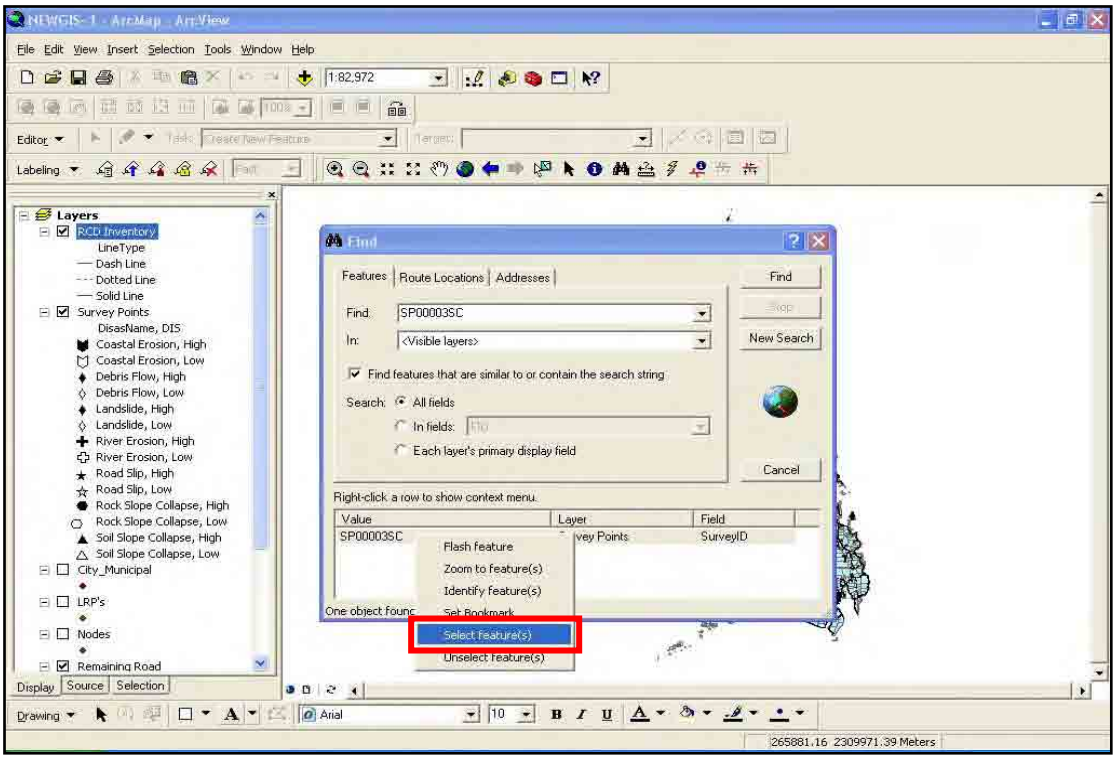
B.2 Selecting the Survey ID for Display

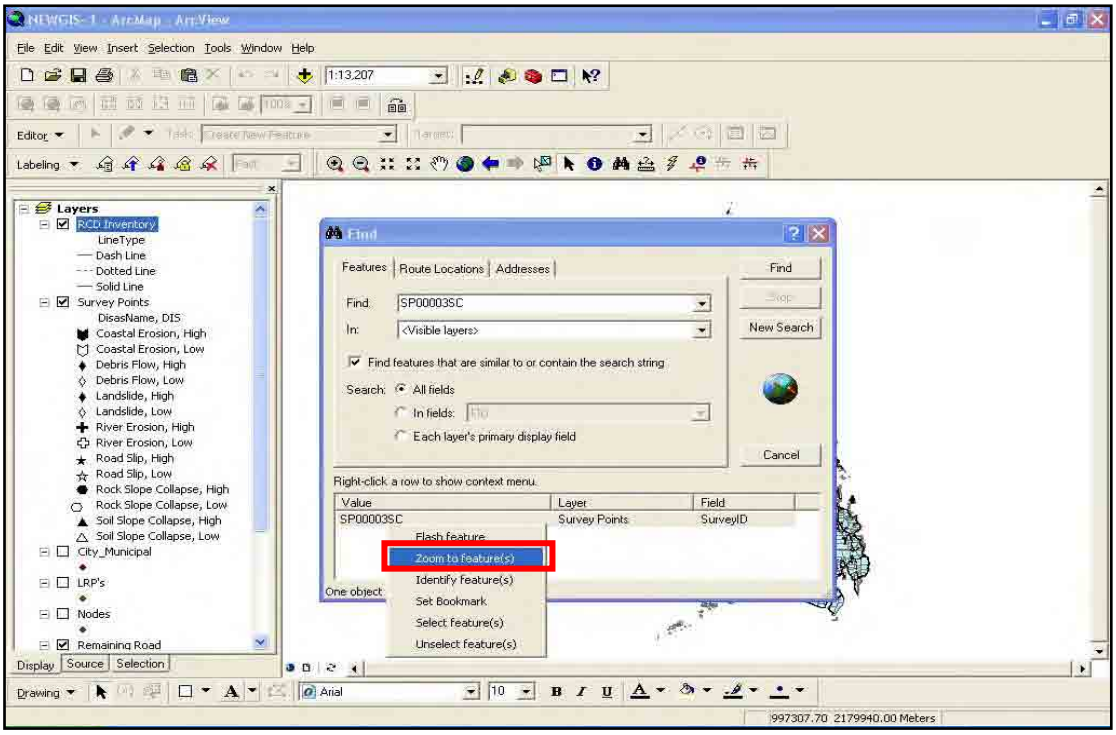
4. Click the **Find** button and type the **Survey ID** that you want to view.



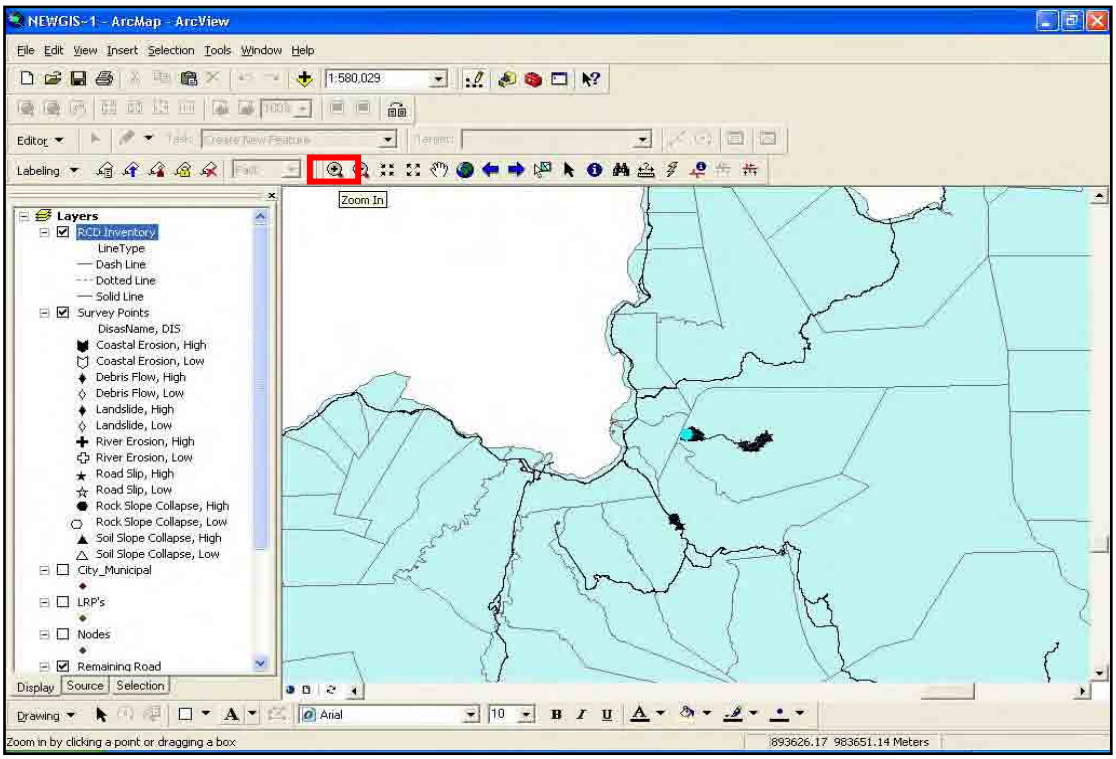
5. Then click **Find** button.

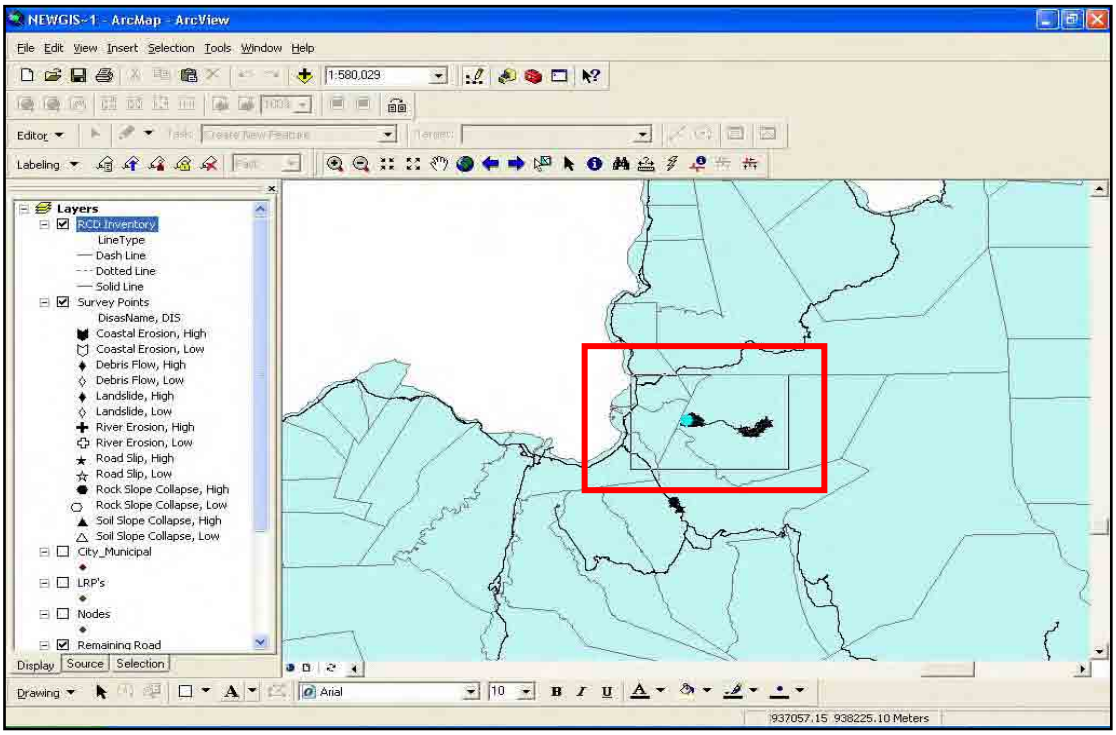
6. Right-click the result item and click **Select feature**, then right-click the result item again and select **Zoom to feature(s)**.


NEWGIS- 1 - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
1:82,972
Editor
Labeling
Layers
RCD Inventory
LineType
Dash Line
Dotted Line
Solid Line
Survey Points
DisasName, DIS
Coastal Erosion, High
Coastal Erosion, Low
Debris Flow, High
Debris Flow, Low
Landslide, High
Landslide, Low
River Erosion, High
River Erosion, Low
Road Slip, High
Road Slip, Low
Rock Slope Collapse, High
Rock Slope Collapse, Low
Soil Slope Collapse, High
Soil Slope Collapse, Low
City_Municipal
LRP's
Nodes
Remaining Road
Display Source Selection
Find
Features Route Locations Addresses
Find: SP00003SC
In: <Visible layers>
Find features that are similar to or contain the search string
Search: All fields
In fields:
Each layer's primary display field
Find
Stop
New Search
Cancel
Right-click a row to show context menu.
Value Layer Field
SP00003SC vey Points SurveyID
One object found
Flash feature
Zoom to feature(s)
Identify feature(s)
Set Bookmark
Select feature(s)
Unselect feature(s)
Drawing
Arial
10
265881.16 2309971.39 Meters

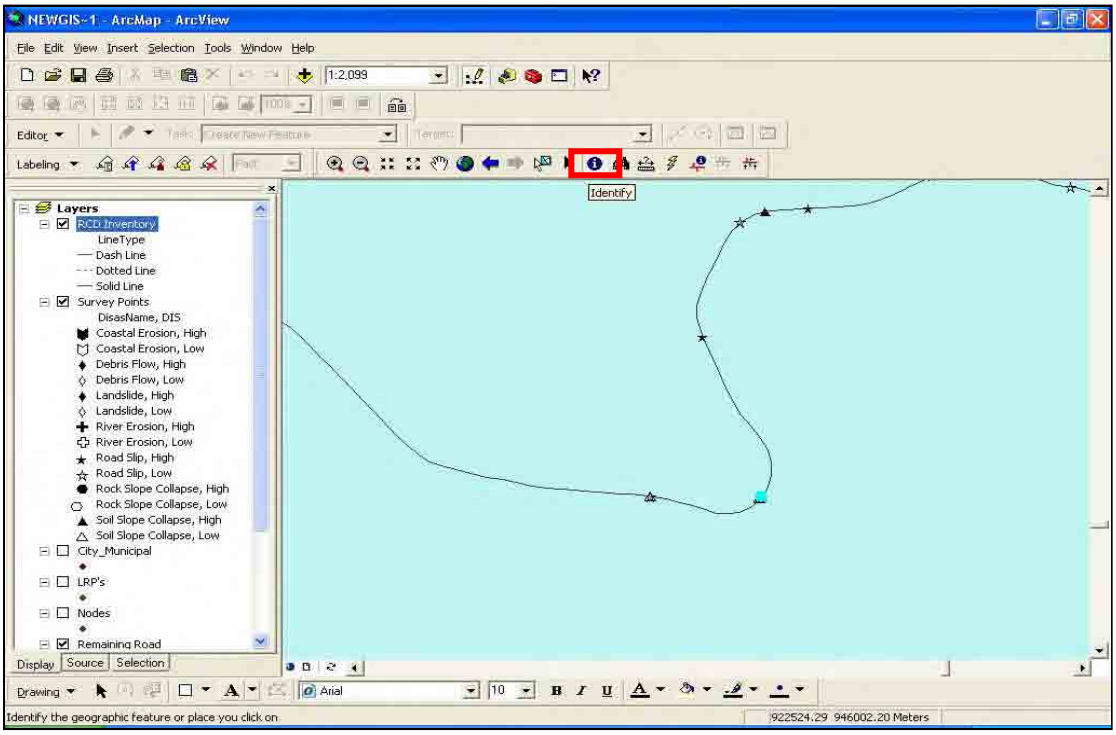

NEWGIS- 1 - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
1:13,207
Editor
Labeling
Layers
RCD Inventory
LineType
Dash Line
Dotted Line
Solid Line
Survey Points
DisasName, DIS
Coastal Erosion, High
Coastal Erosion, Low
Debris Flow, High
Debris Flow, Low
Landslide, High
Landslide, Low
River Erosion, High
River Erosion, Low
Road Slip, High
Road Slip, Low
Rock Slope Collapse, High
Rock Slope Collapse, Low
Soil Slope Collapse, High
Soil Slope Collapse, Low
City_Municipal
LRP's
Nodes
Remaining Road
Display Source Selection
Find
Features Route Locations Addresses
Find: SP00003SC
In: <Visible layers>
Find features that are similar to or contain the search string
Search: All fields
In fields:
Each layer's primary display field
Find
Stop
New Search
Cancel
Right-click a row to show context menu.
Value Layer Field
SP00003SC Survey Points SurveyID
One object
Flash feature
Zoom to Feature(s)
Identify feature(s)
Set Bookmark
Select feature(s)
Unselect feature(s)
Drawing
Arial
10
997307.70 2179940.00 Meters

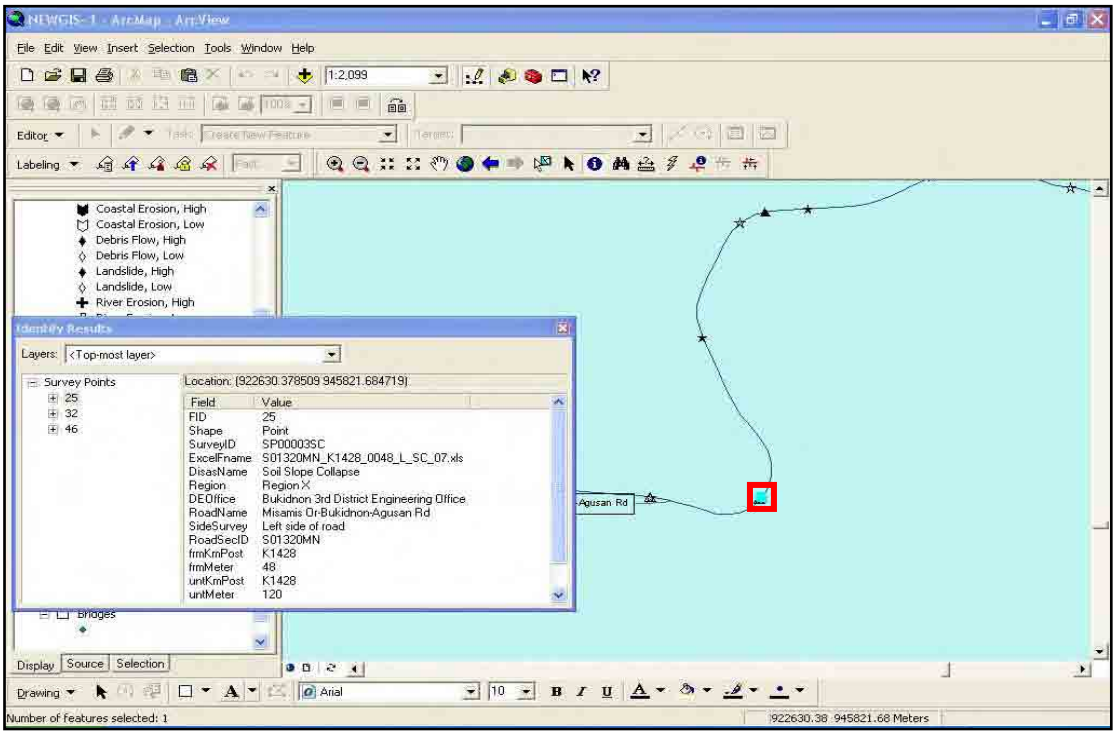
7. If the survey point is hard to see, then click the **Zoom In** tool and drag the selected part you want to zoom in.



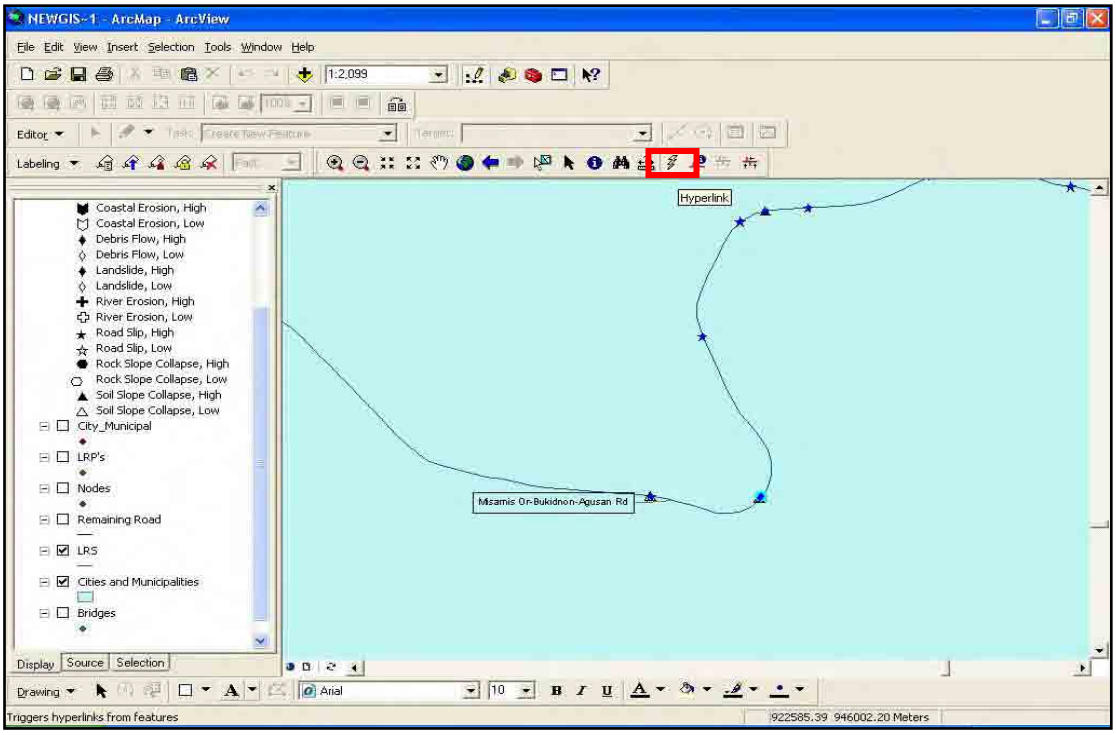


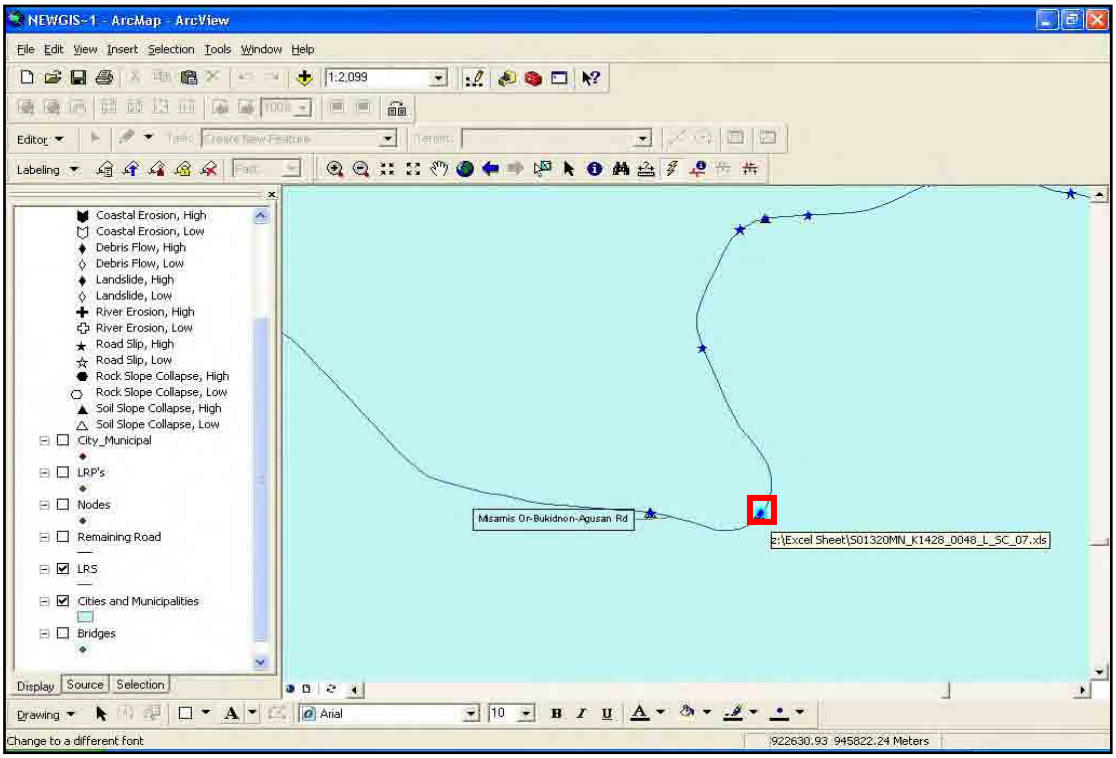
8. After the survey point is already visible, Click **Identify** tool to display the attribute for that survey point.





9. Click also the **Hyperlink** tool to view the Inventory Sheet of that survey point.
   Note: To view the Inventory Sheet, be sure that your computer is mapped to the server.



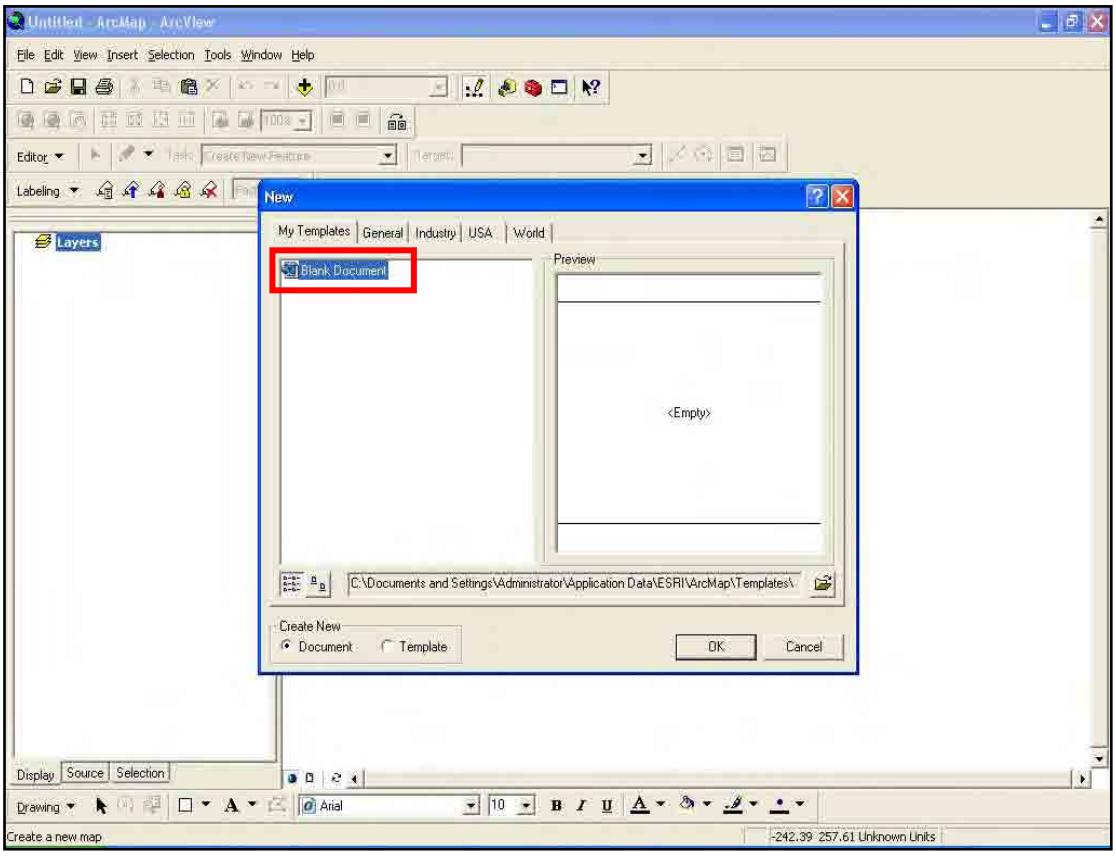


C. Creating RCD Inventory

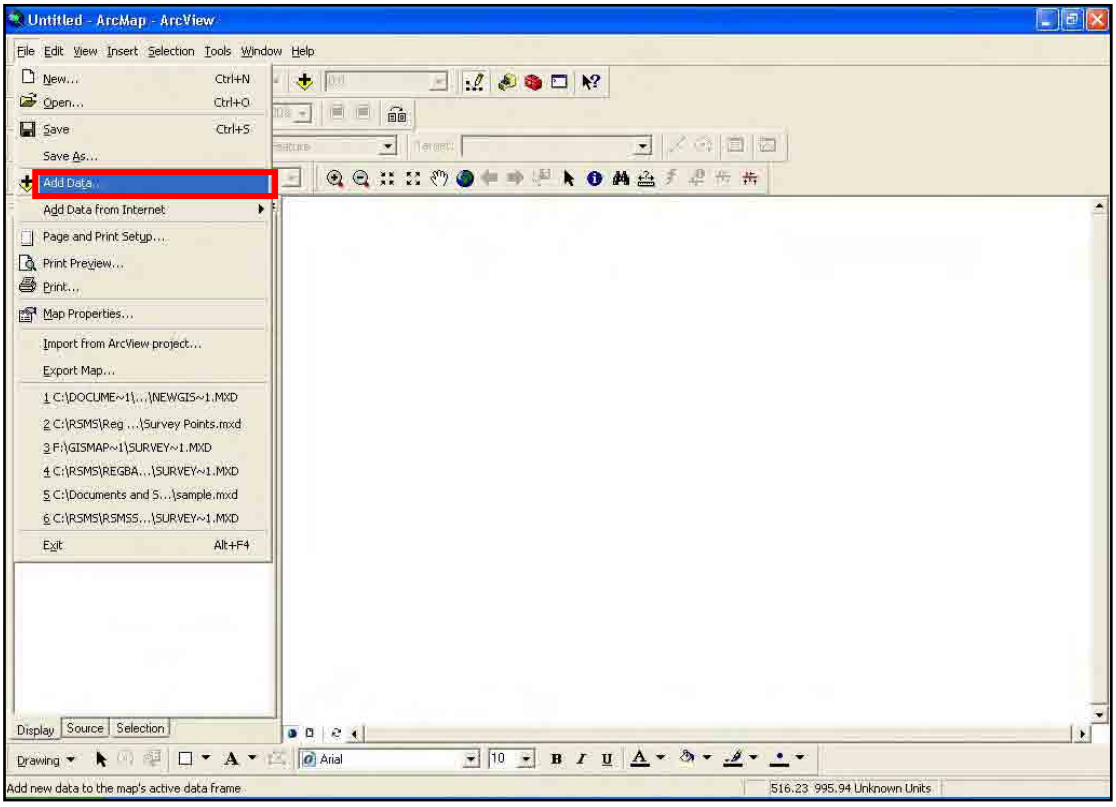
This helps the user to add a line that has a Road Closure Disaster (RCD) from the excel sheet to the GIS.

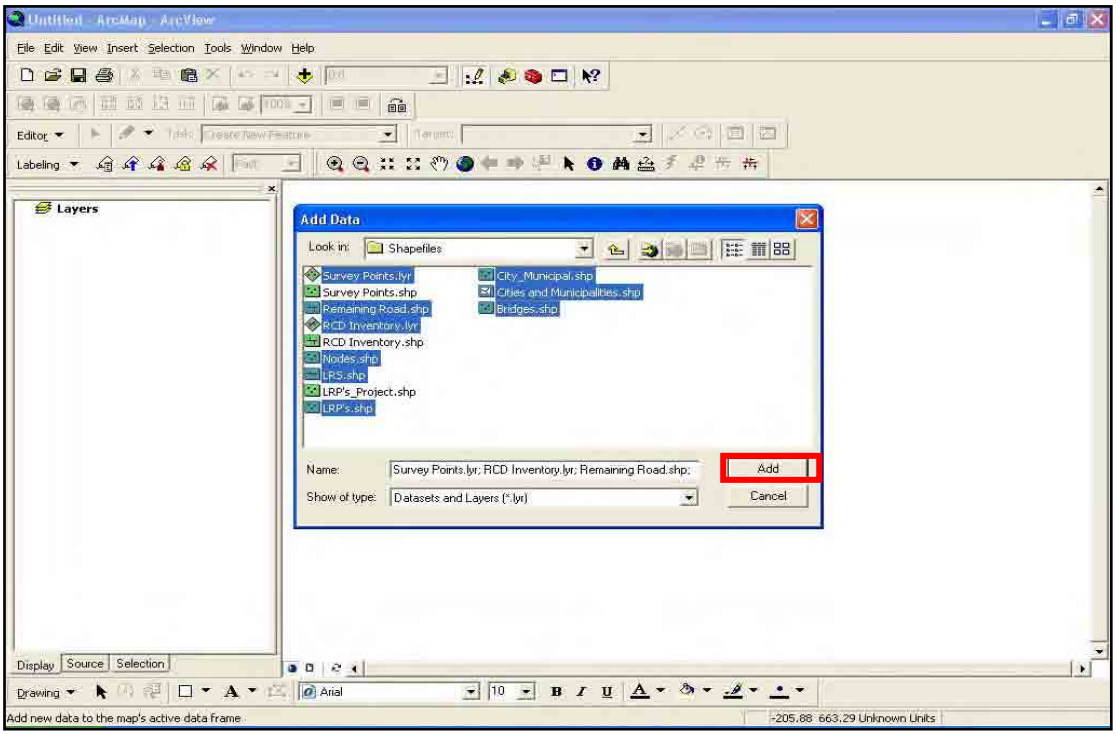
C.1 Adding the GIS Map Layers

1. Open **ArcMap**.
2. Create a new **Blank Document**.



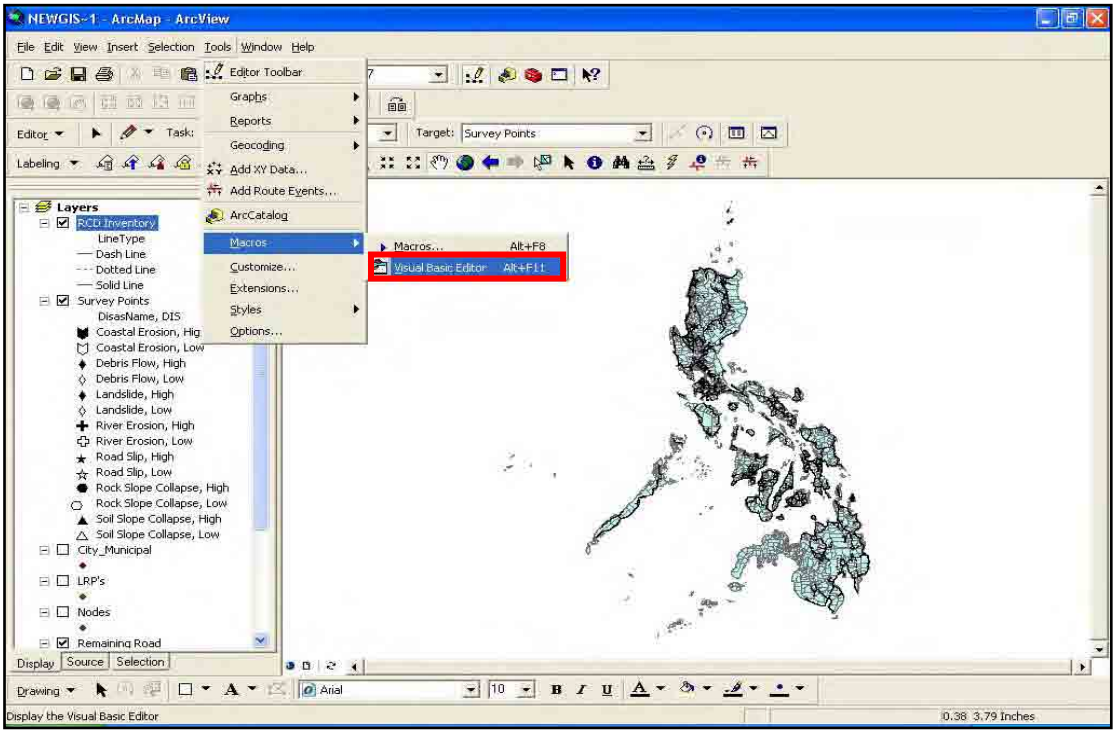
3. Add **GIS data** to the document.



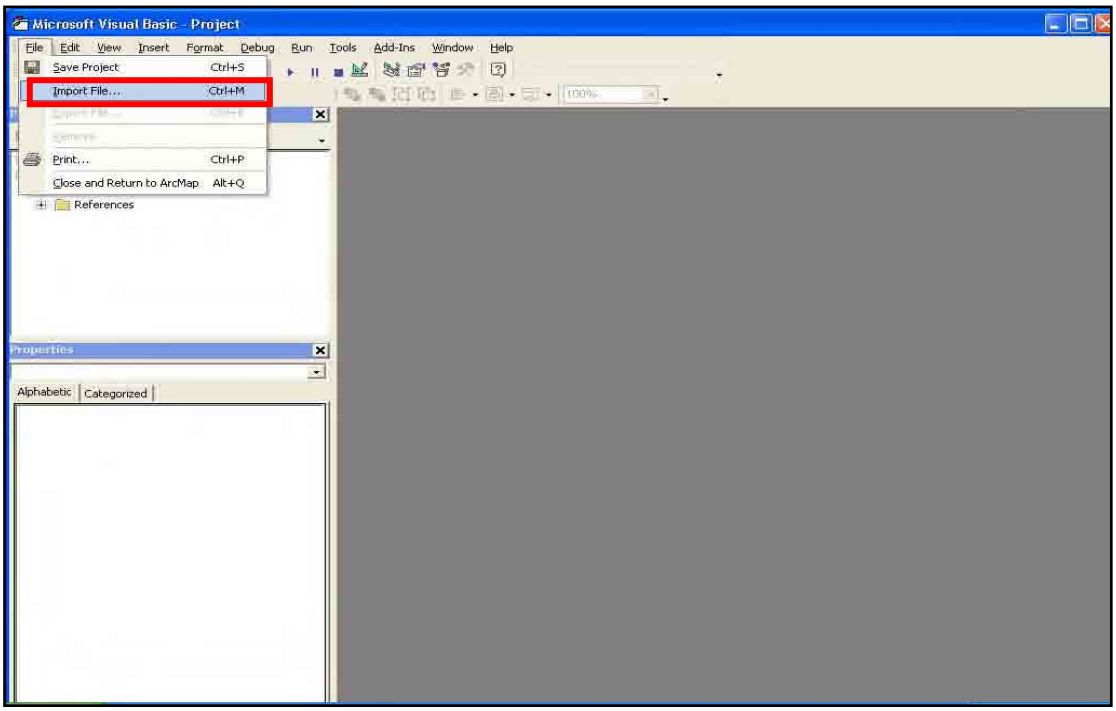


C.2 Setting up the VBScript

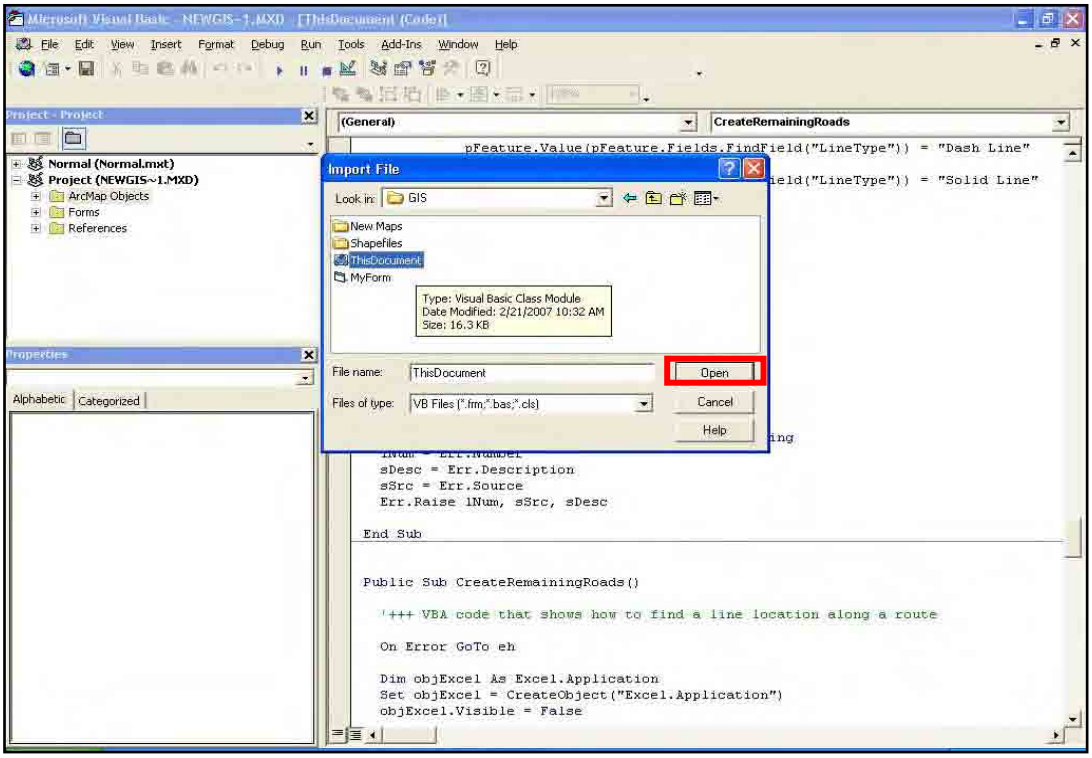
4. Click **Tools** menu and point to **Macros** then select **Visual Basic Editor**.



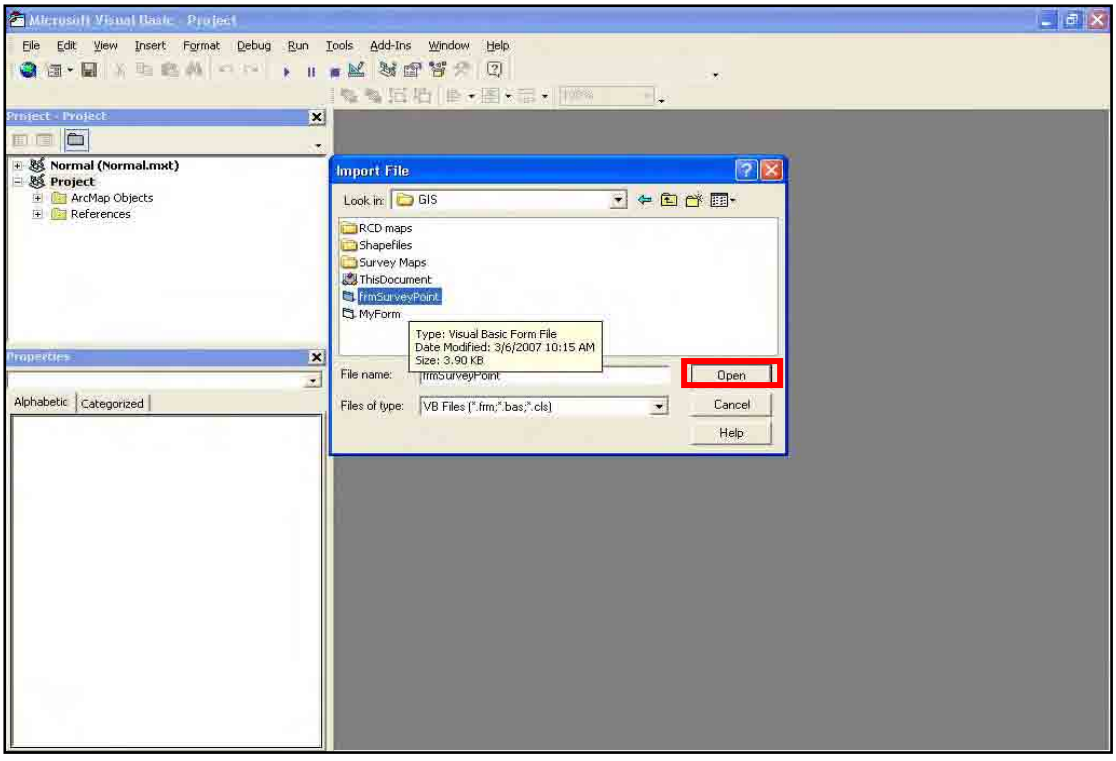
5. In the **Visual Basic Editor** window select **File** and click **Import File**.



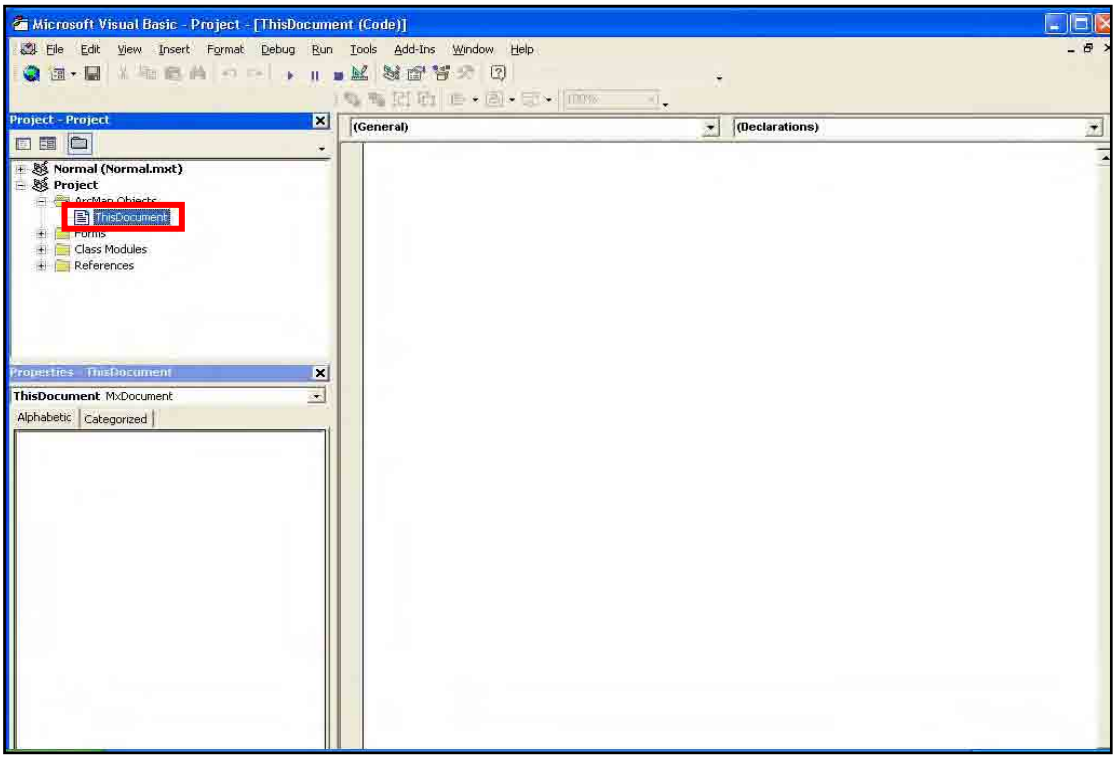
6. Browse the **ThisDocument** file and click **Open**.



7. Do the same to **MyForm** and **frmSurveyPoint** files and click **Open**.

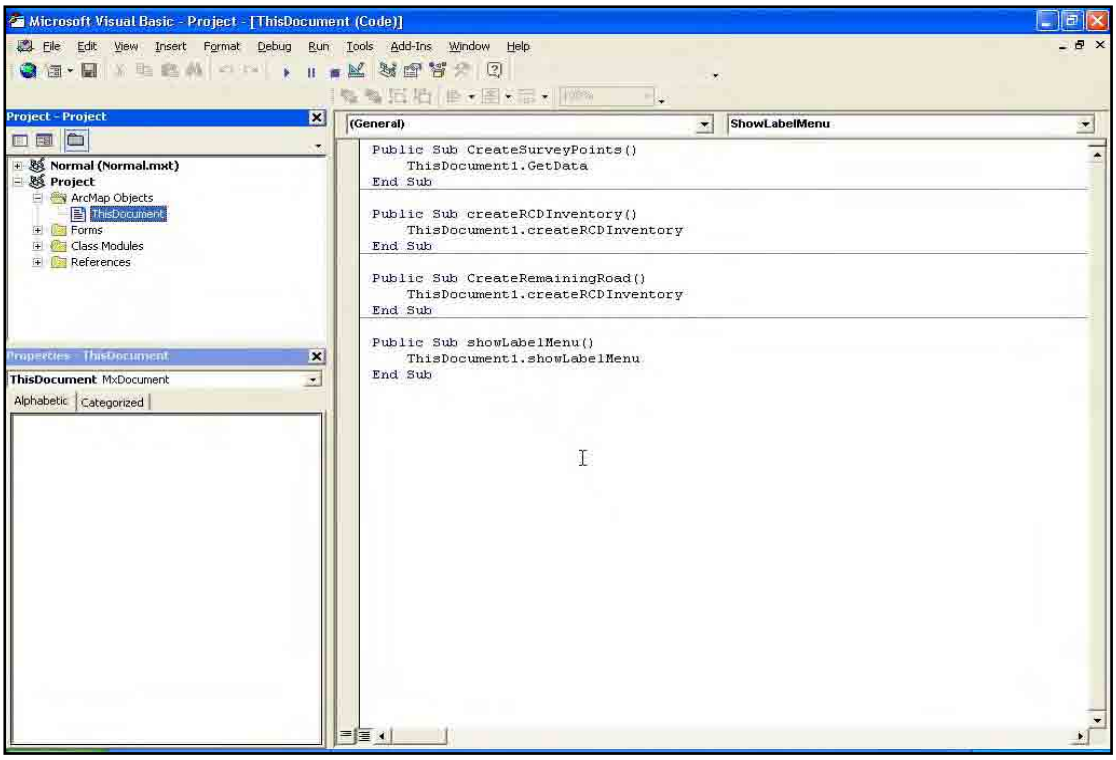


8. Expand **ArcMap Object** folder and double-click **ThisDocument**.

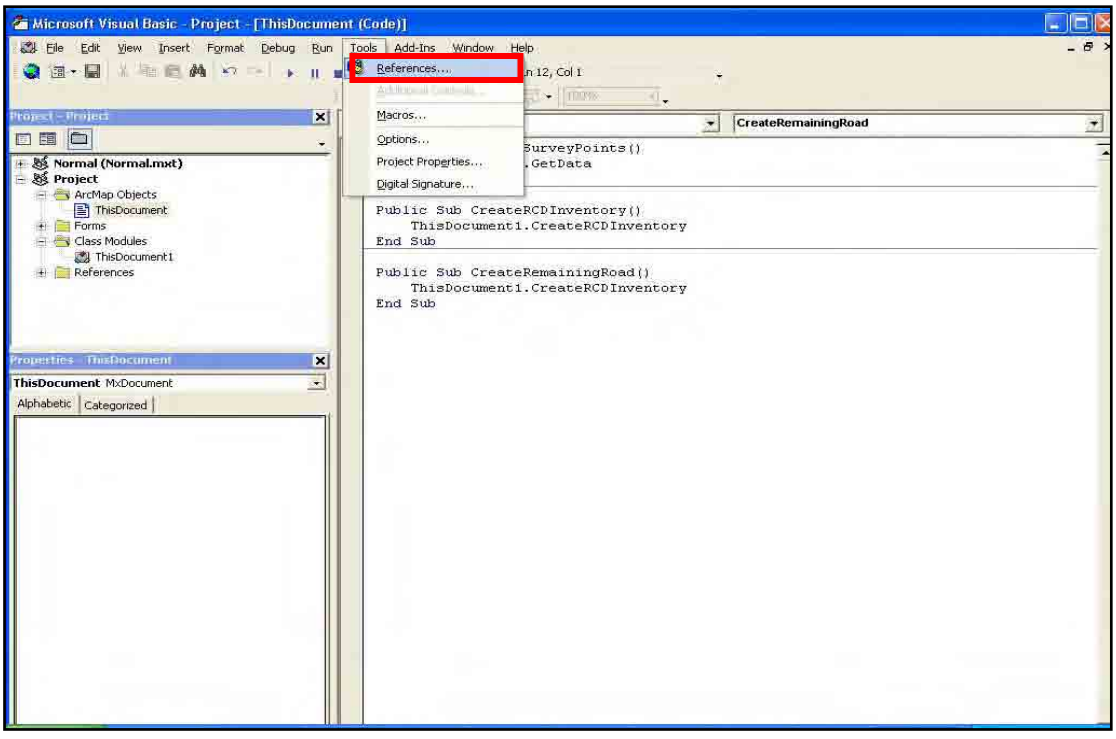


9. Type the following text like in the pictures:

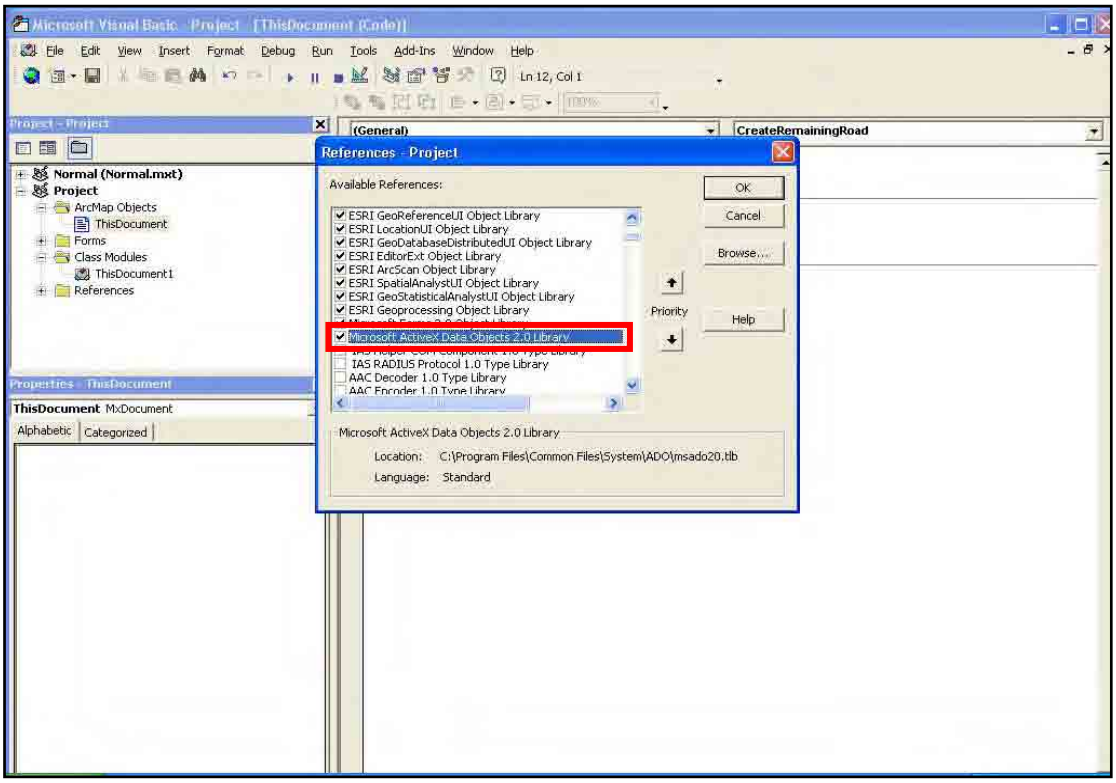
```
Public Sub CreateSurveyPoints()
   ThisDocument1.GetData
End Sub

Public Sub CreateRCDInventory()
   ThisDocument1.CreateRCDInventory
End Sub

Public Sub CreateRemainingRoad()
   ThisDocument1.CreateRCDInventory
End Sub

Public Sub ShowLabelMenu()
        ThisDocument1.ShowLabelMenu
End Sub
```



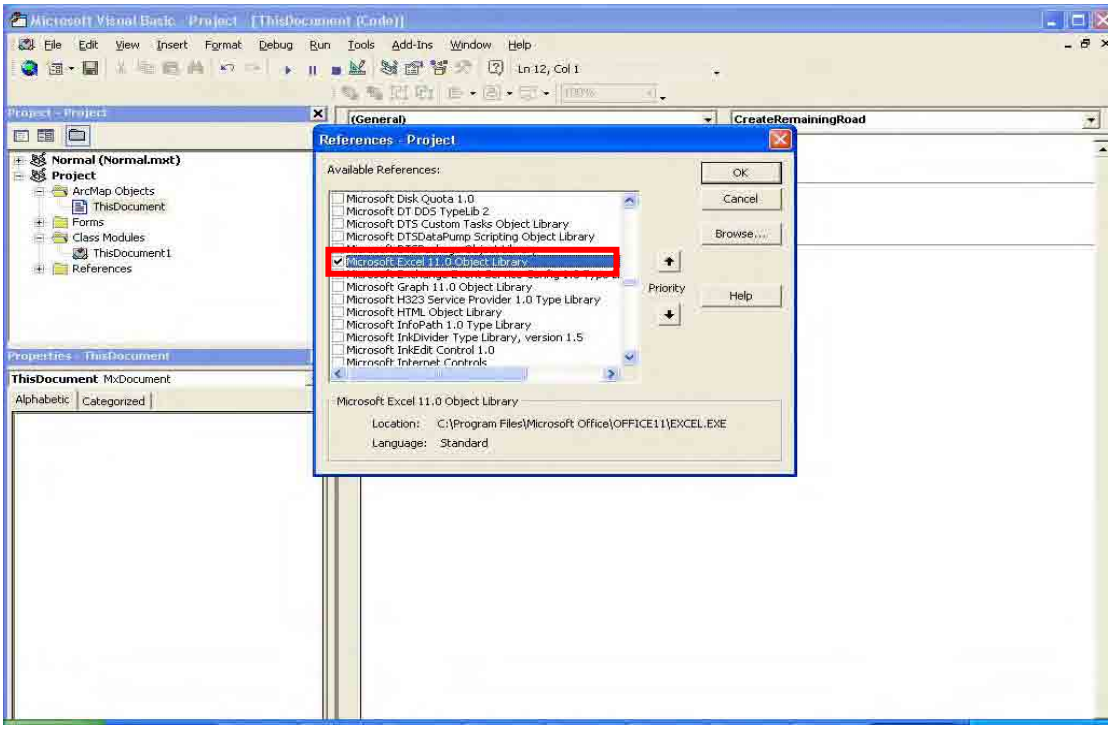
10. Click **Tools** menu and select **References**.



11. Find and check the **Microsoft ActiveX Data Object 2.0 Library**.

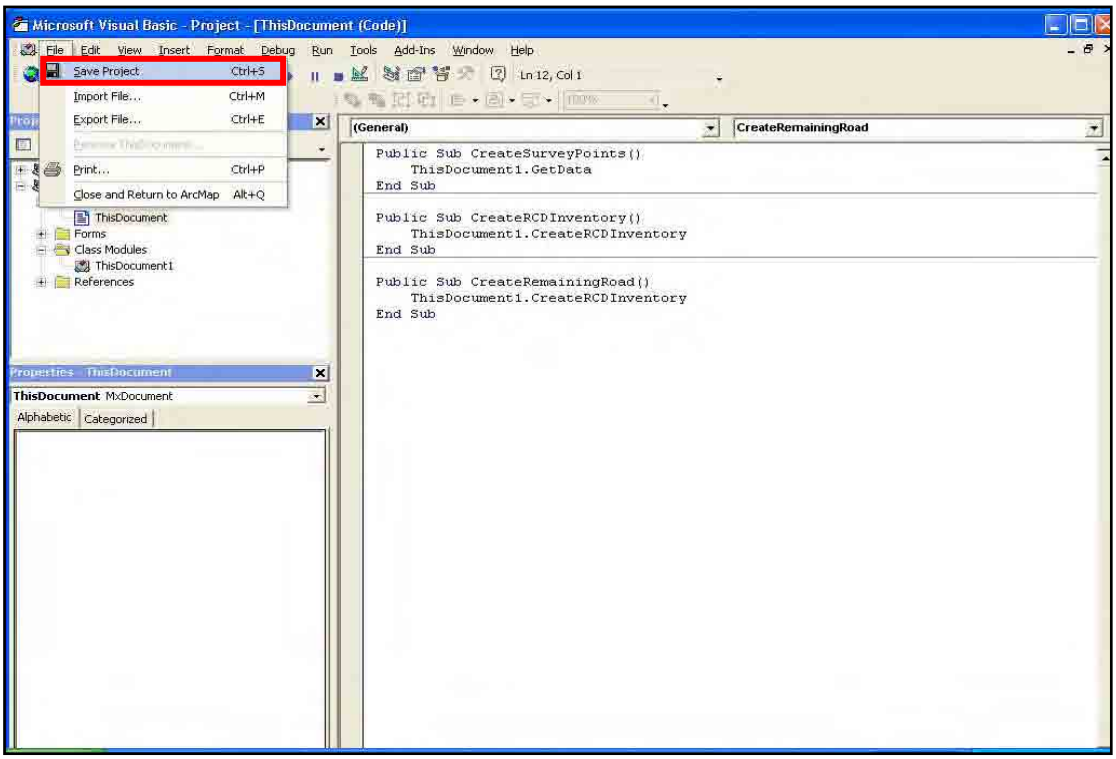


12. Find and check also the **Microsoft Excel 11.0 Object Library**. If you cannot find it then you must install Microsoft Excel and do it again.



13. Click **OK.**

14. Save the project by clicking **File** menu and select **Save Project**.

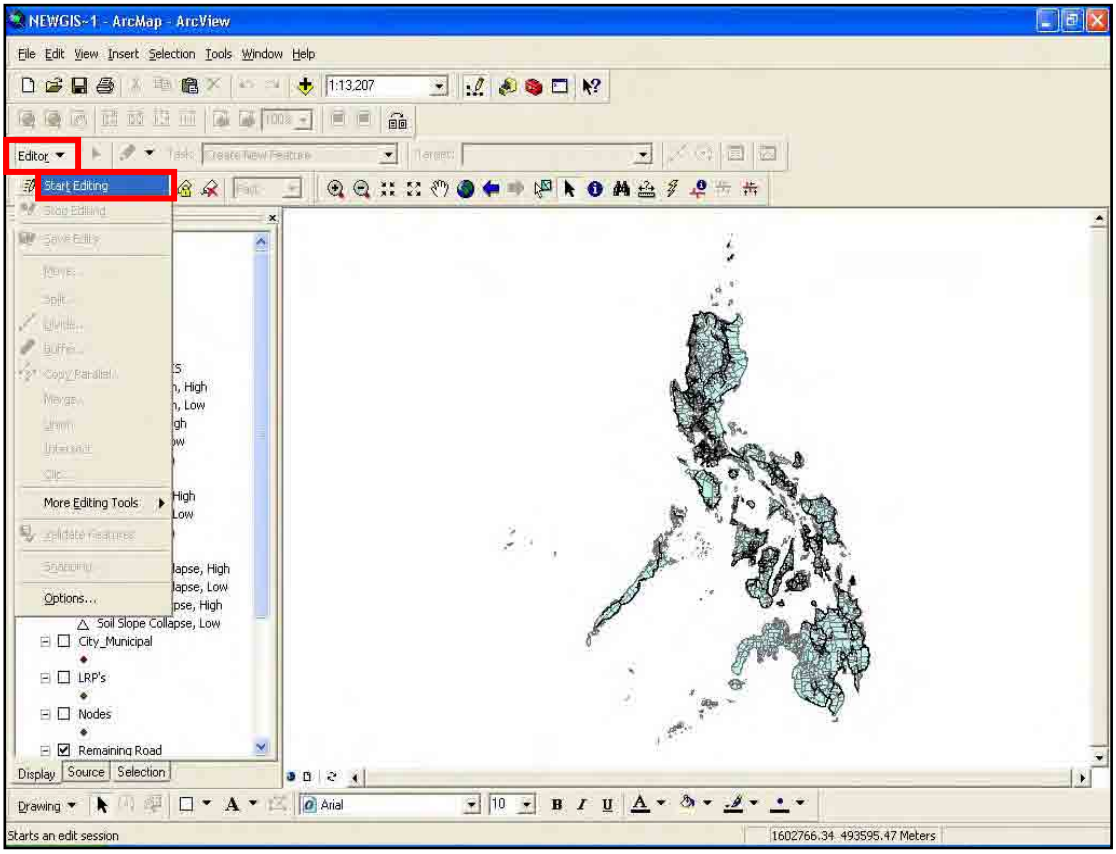


15. Close the **Visual Basic Editor** window.

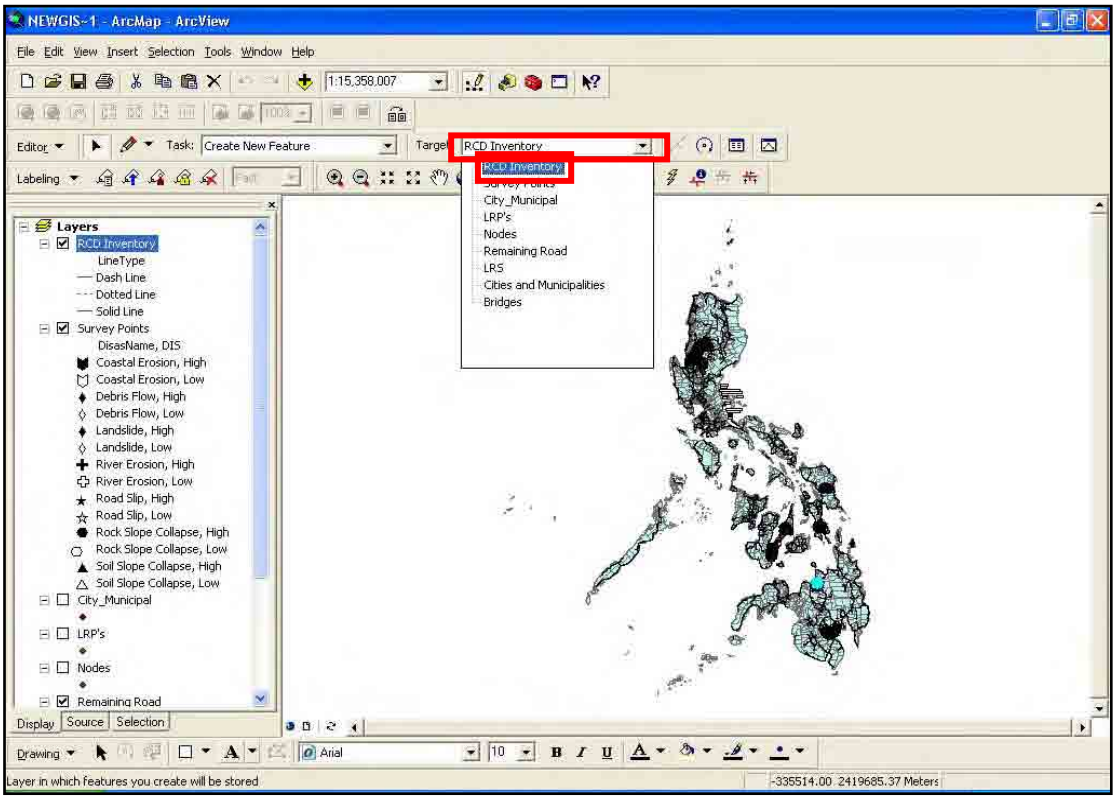
C.3 Running the VBScript

16. Then go back to **ArcMap**.

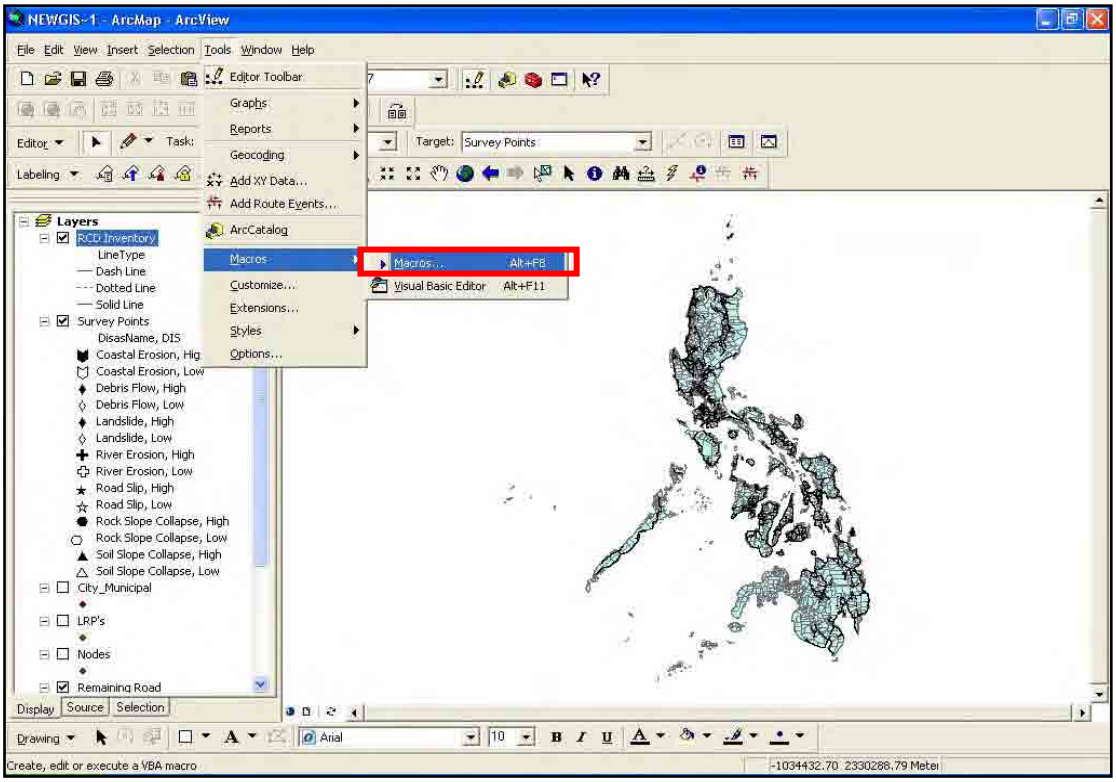
17. Click **Editor** tool and select **Start Editing**.



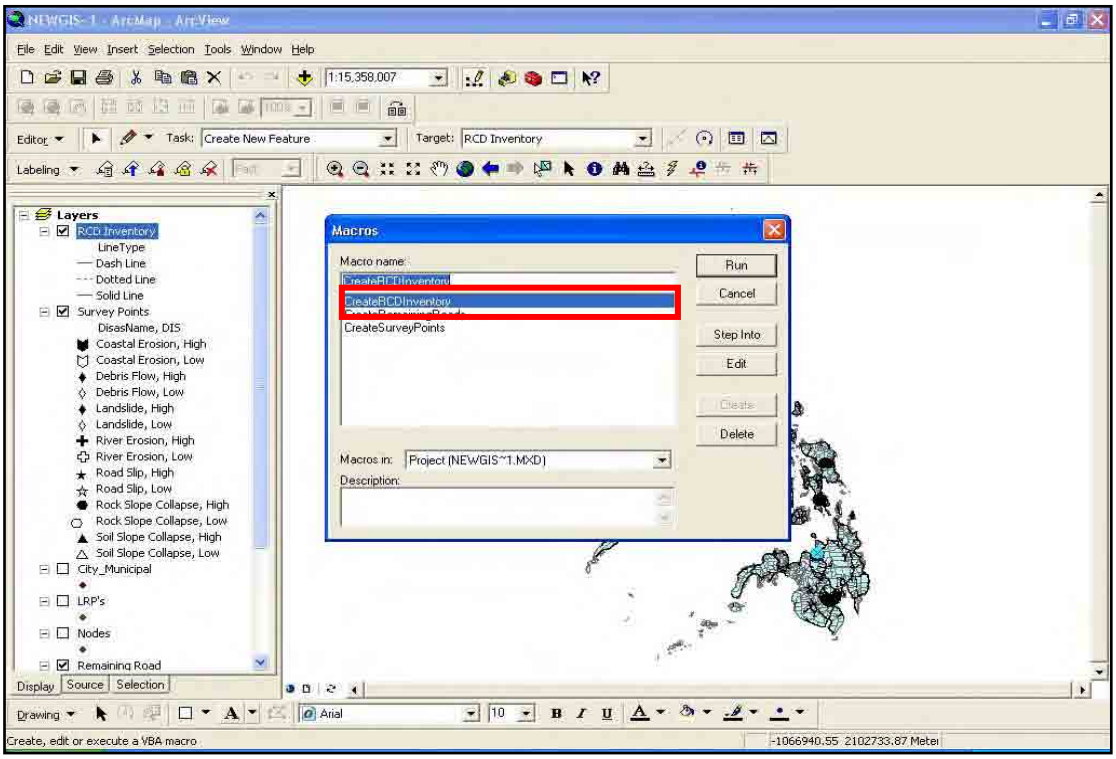
18. Click **Target** dropdown and select **RCD Inventory**.



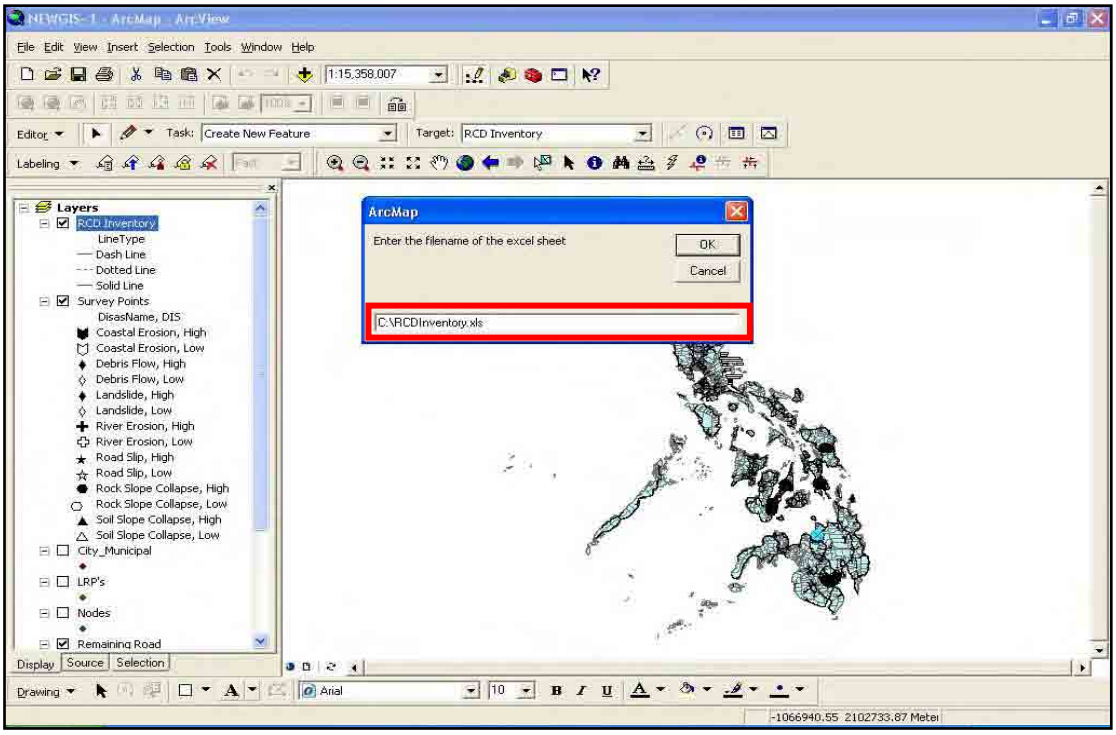
19. Click **Tools** menu and point to **Macros** then select **Macros**.



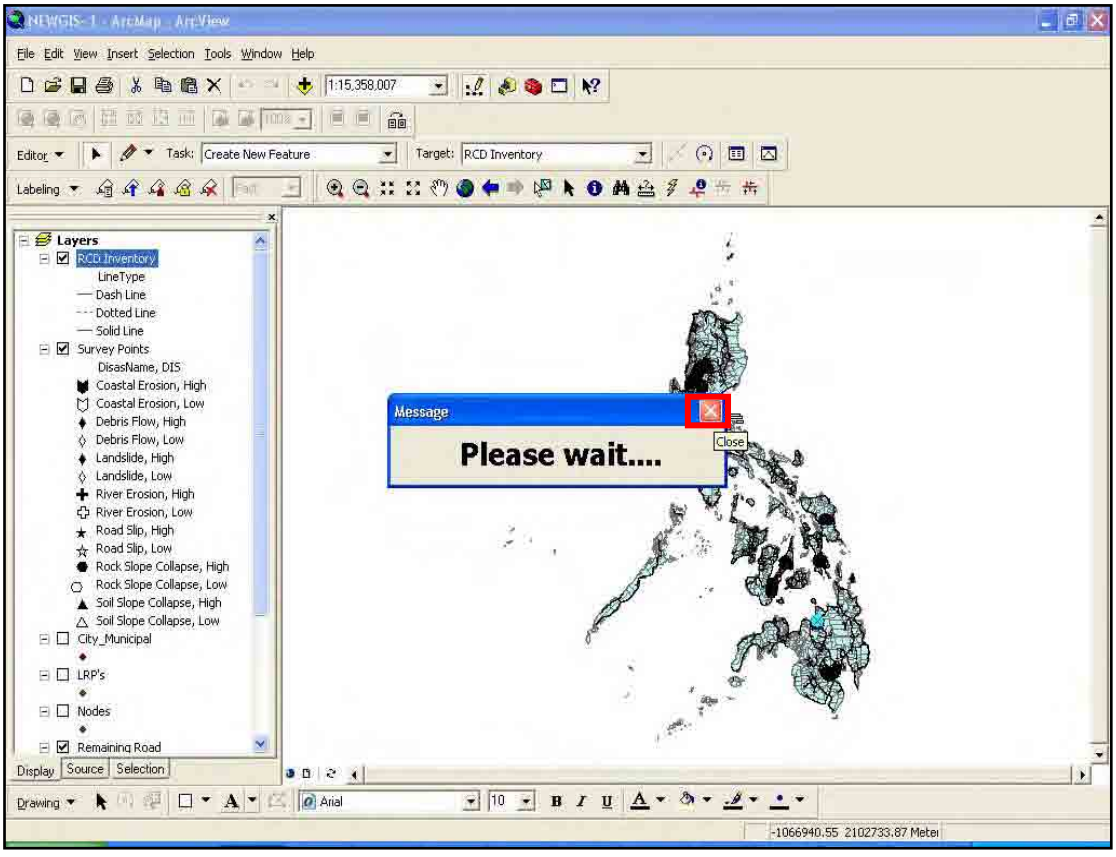
20. In the **Macros** dialog box, select **CreateRCDInventory** and click **Run** button.



21. The system will prompt you to enter the file directory of the RCD Inventory sheet.



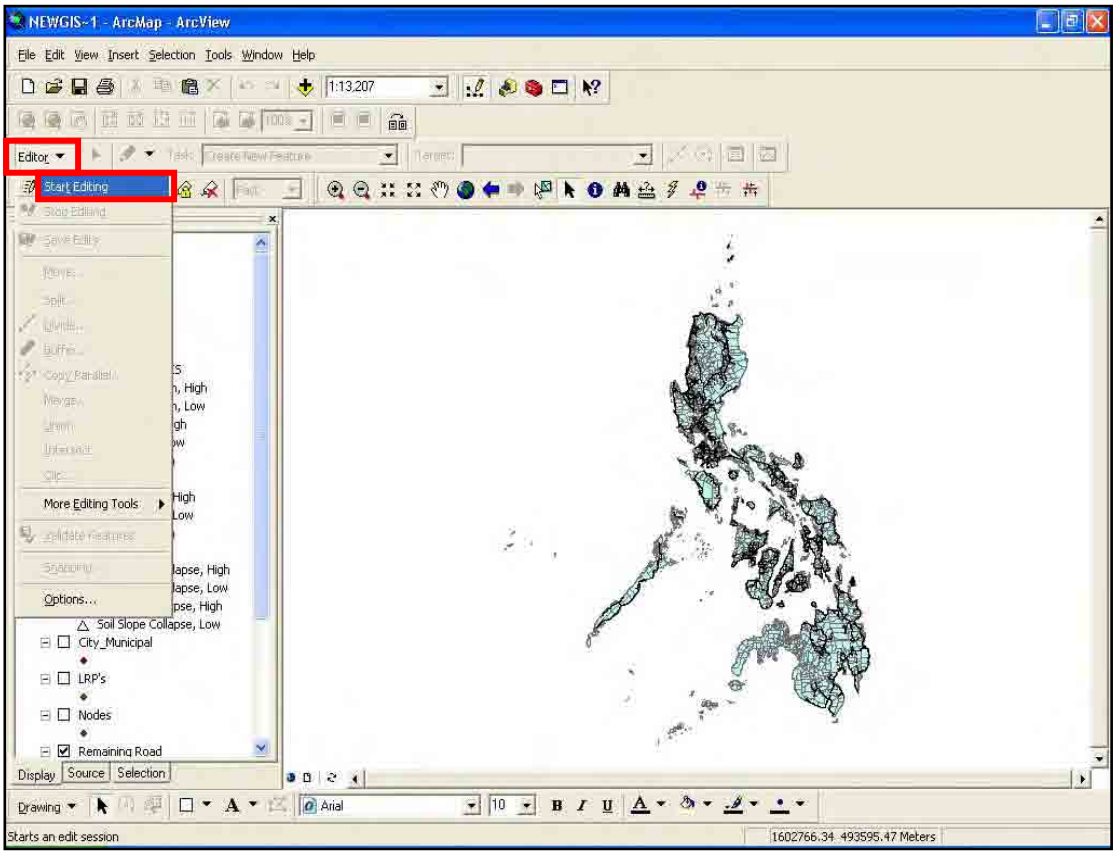
22. The system will prompt you a message "**Please Wait...**".



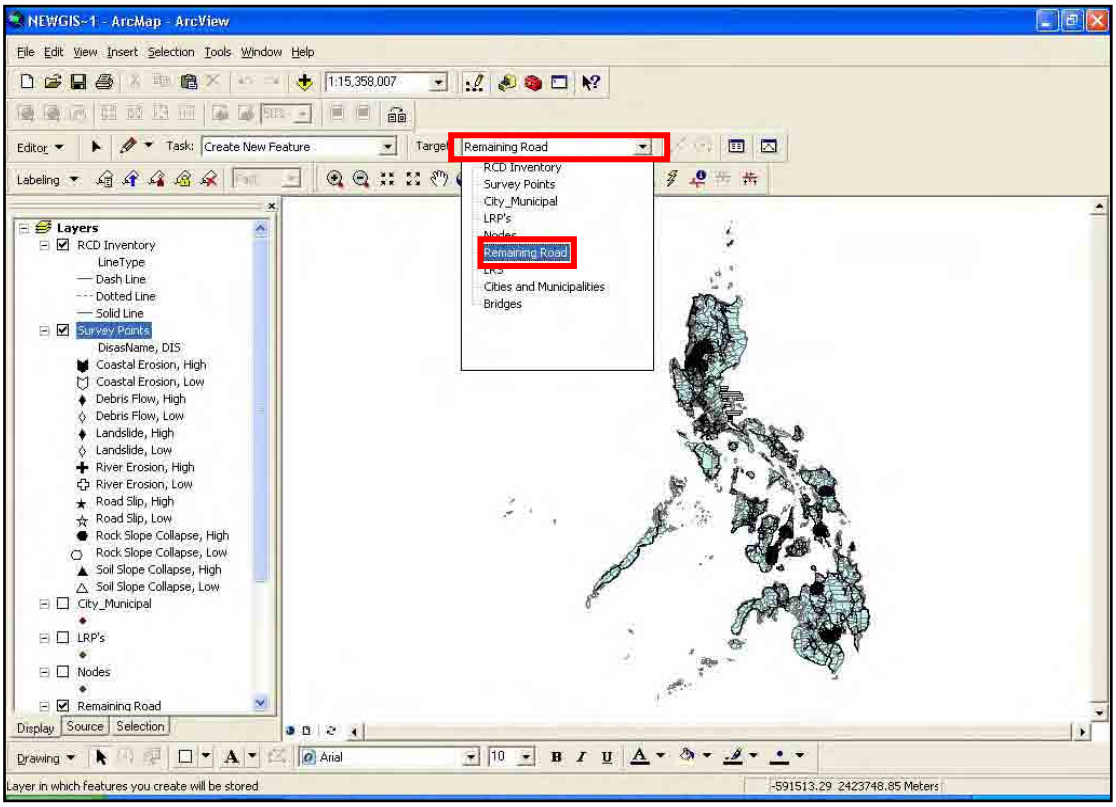
23. Close the message box.

24. Then wait until the message box closes.

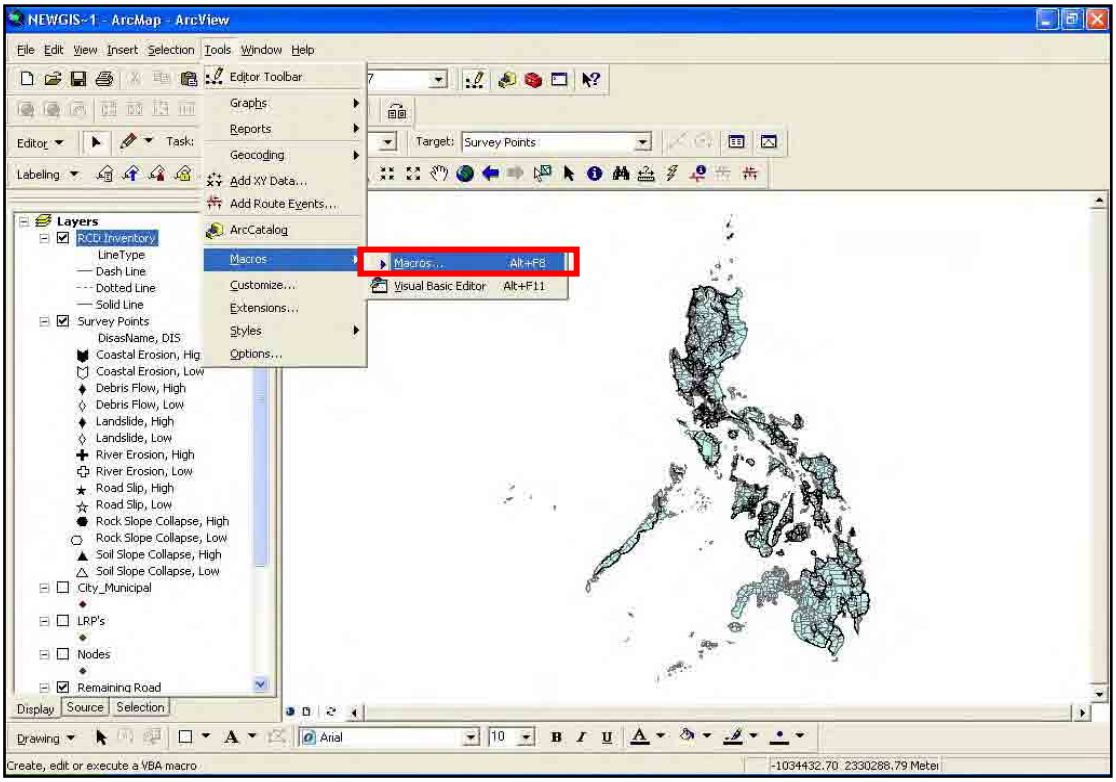
25. Click **Editor** toolbar and select **Start Editing.**



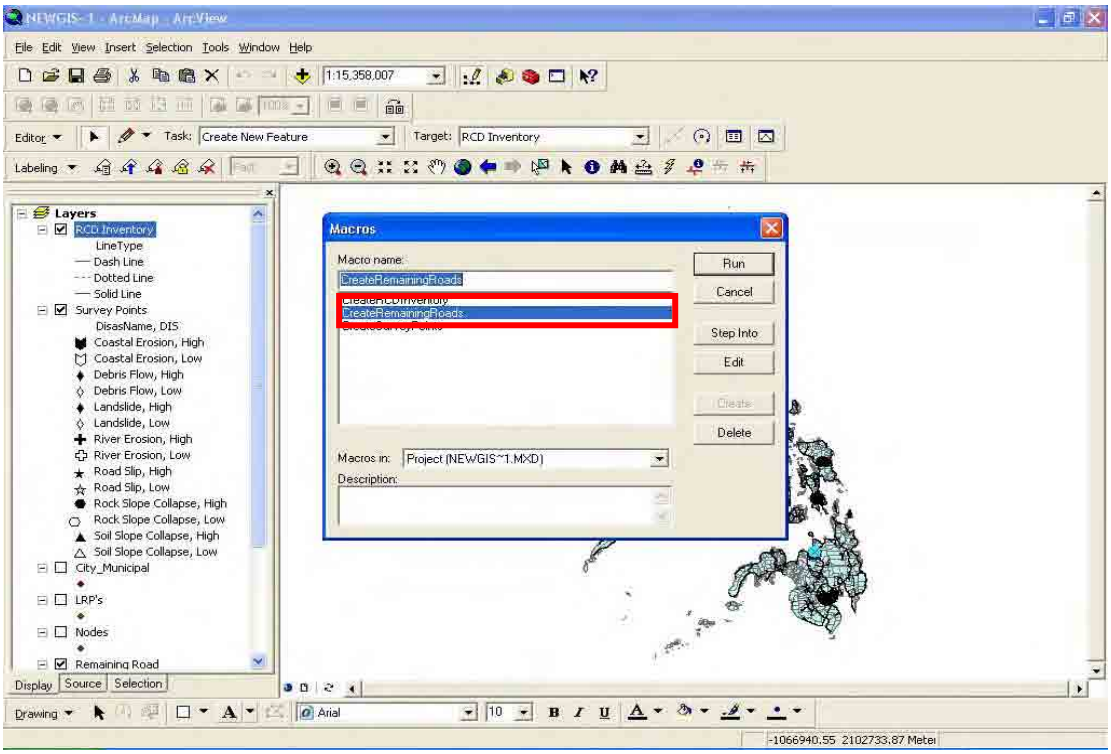
26. Click **Target** dropdown and select **Remaining Road**.



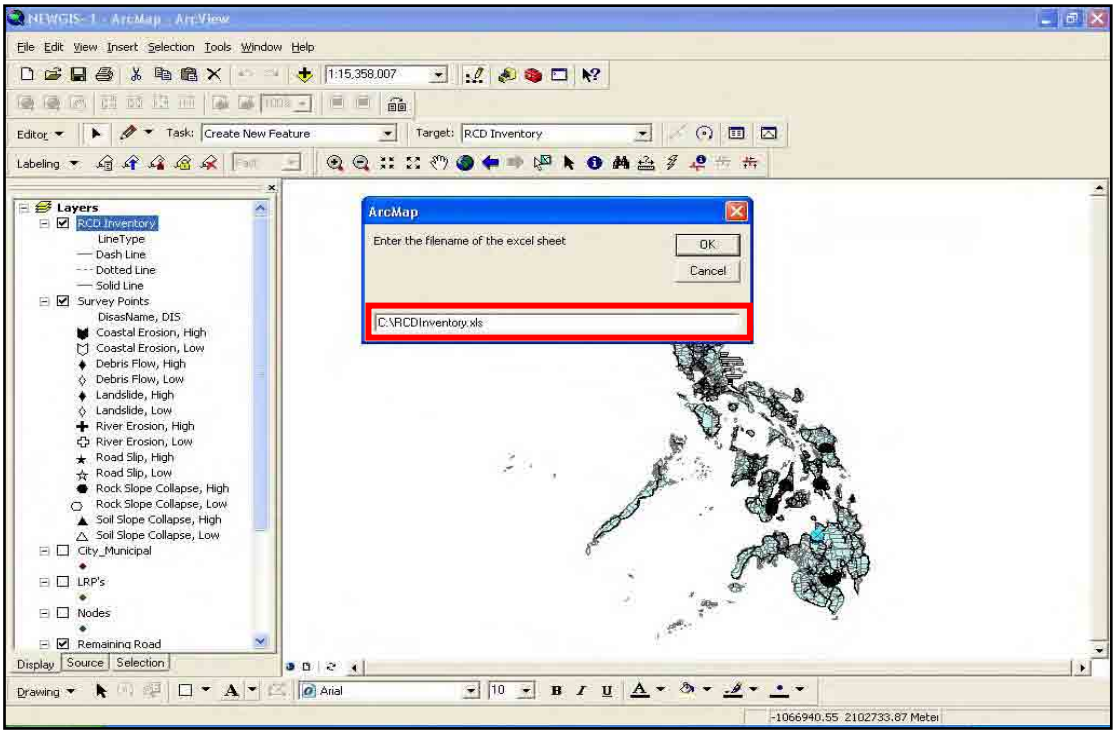
27. Click **Tools** menu and point to **Macros** then select **Macros**.



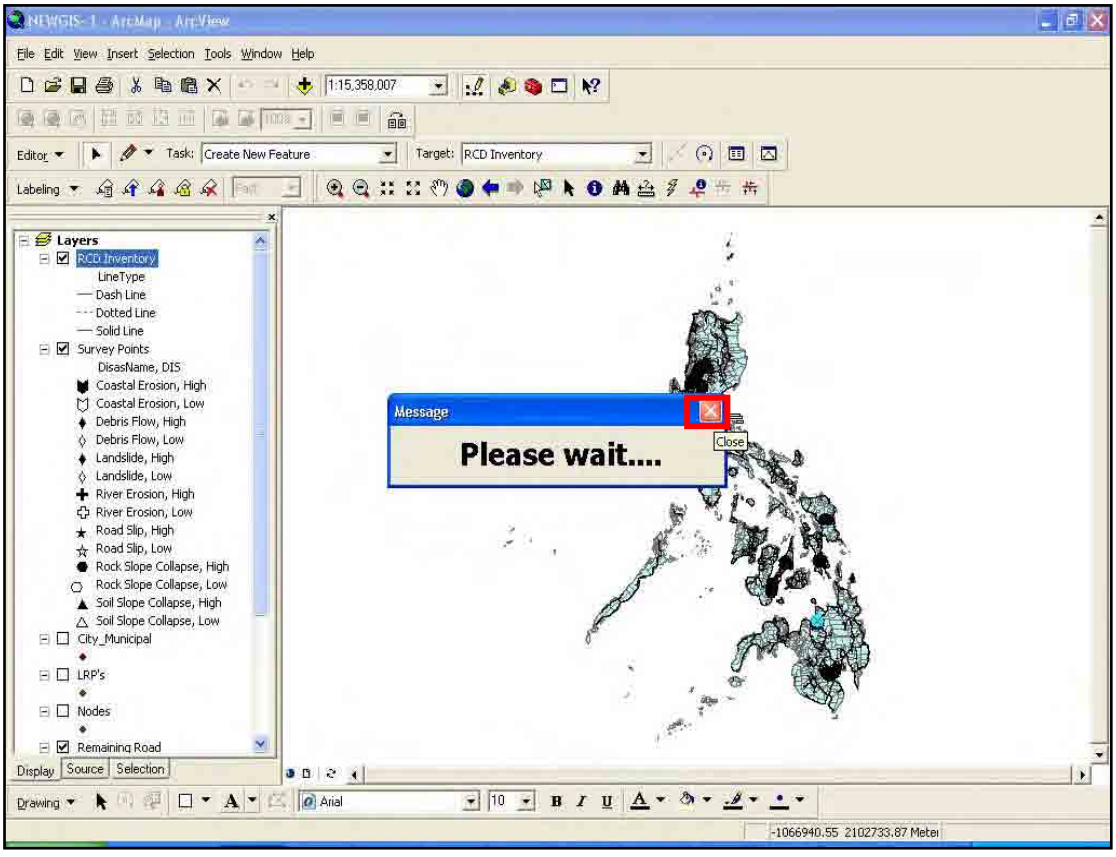
28. In the **Macros** dialog box, select **CreateRemainingRoads** and click **Run** button.



29. The system will prompt you to enter the file directory of the RCD Inventory sheet.



30. The system will display a message "**Please Wait...".**



31. Close the message box.

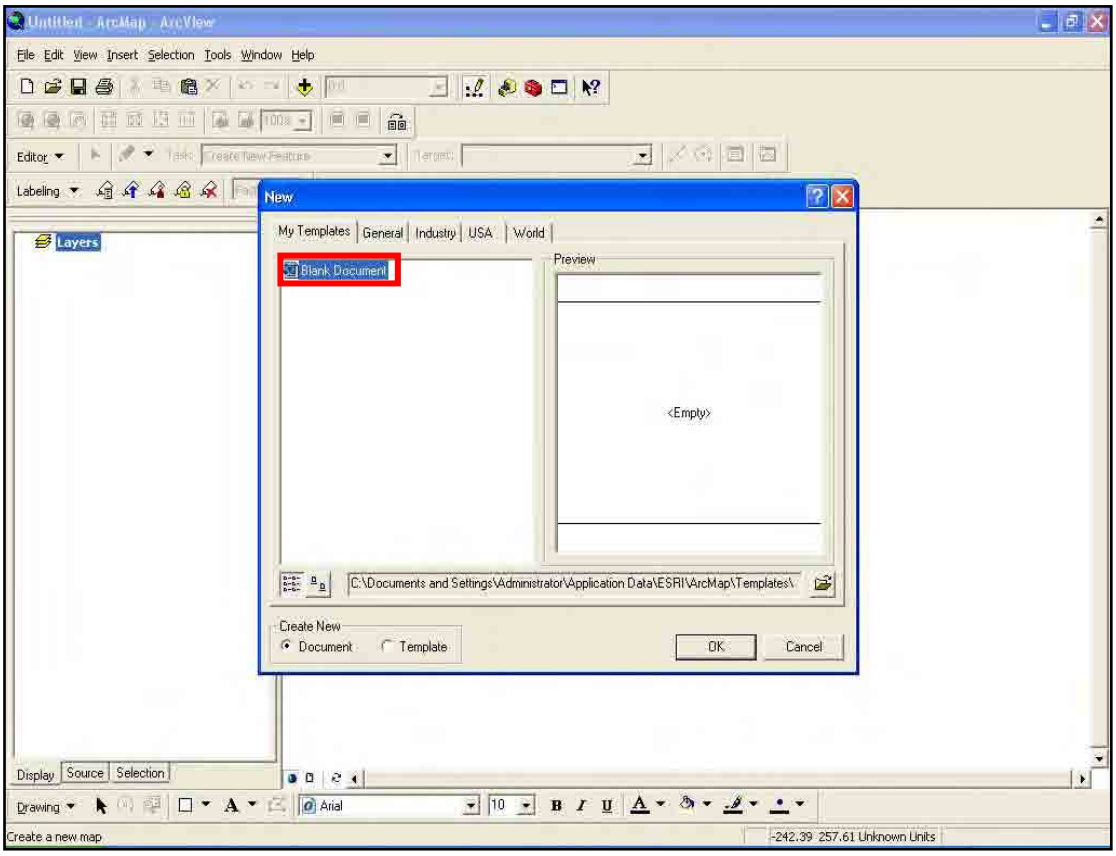
32. Then wait until the message box will disappear.

D. Viewing Road with RCD

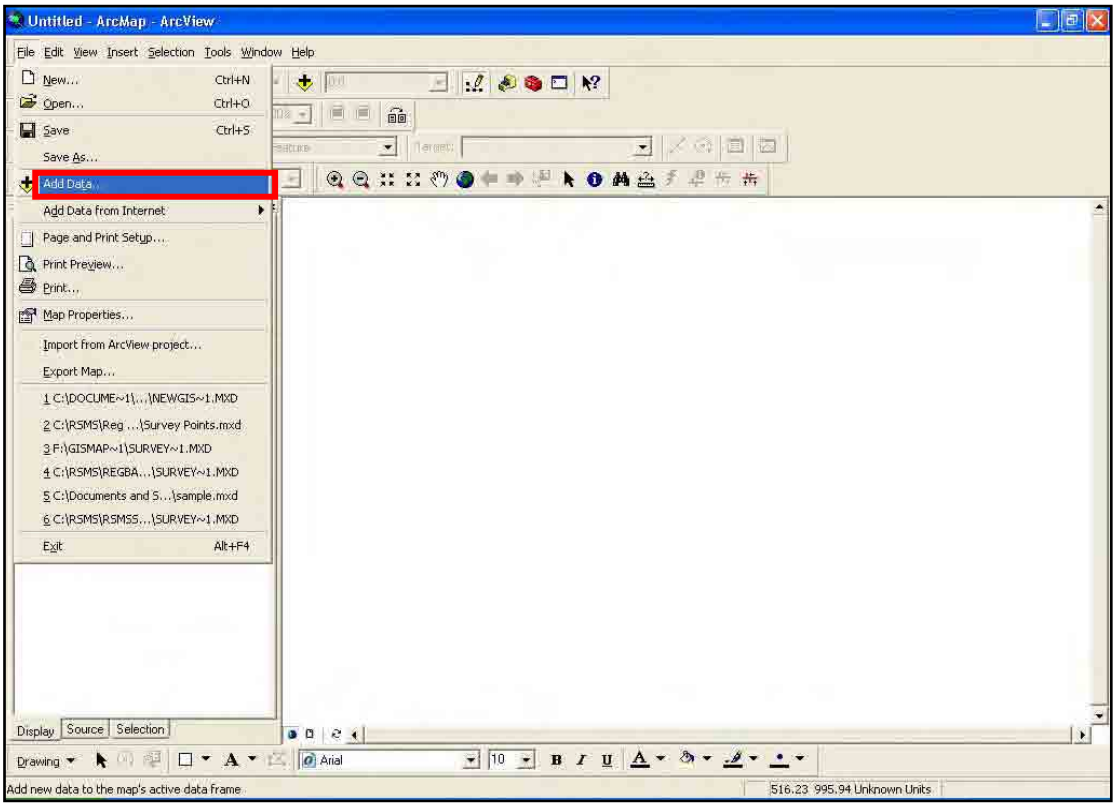
This helps the user to view roads with Road Closure Disaster (RCD).

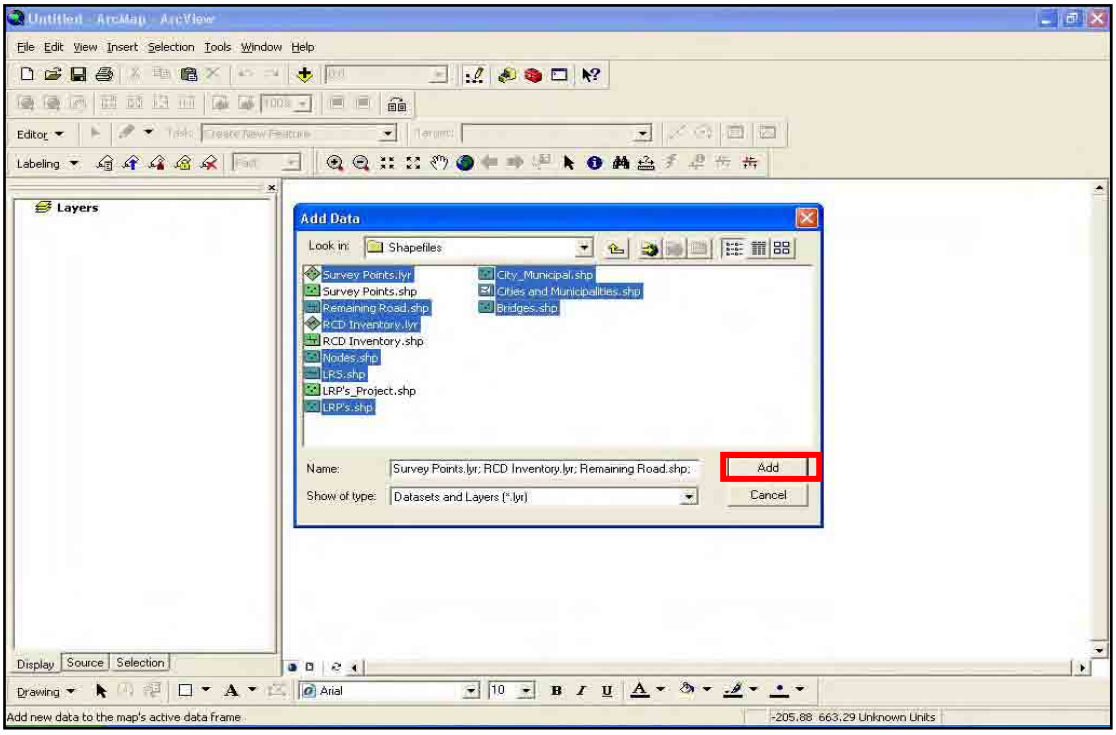
D.1 Adding the GIS Map Layers

1. Open **ArcMap**.
2. Create a new **Blank Document**.

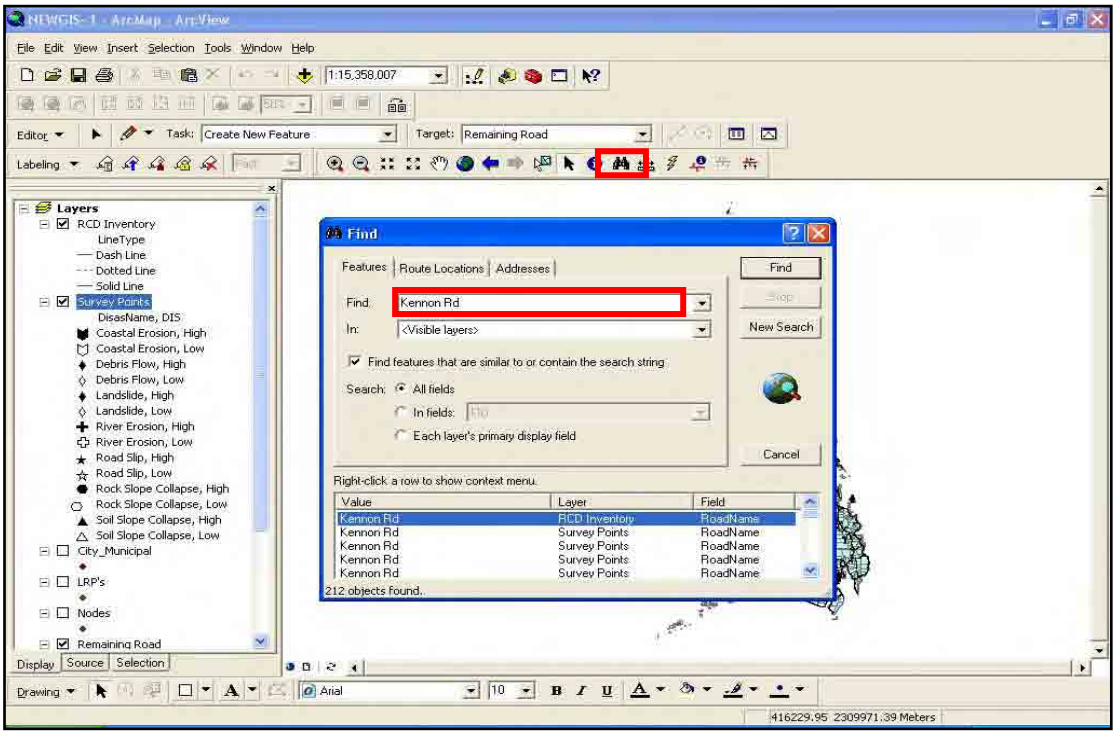


3. Add **GIS data** to the document.



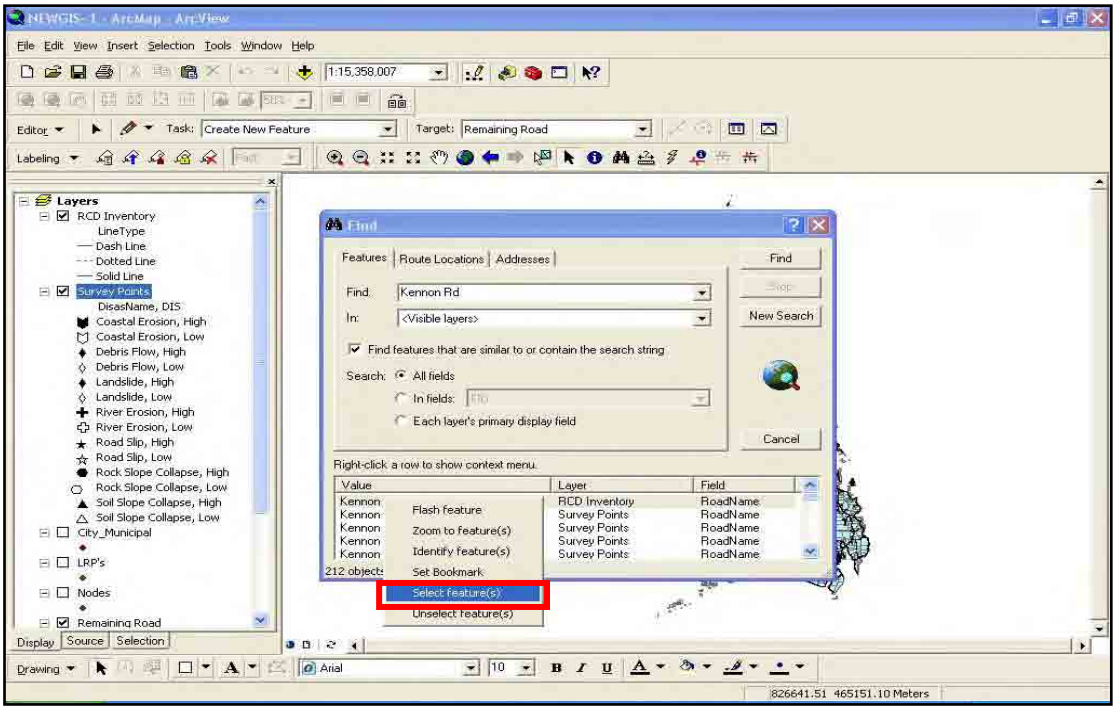


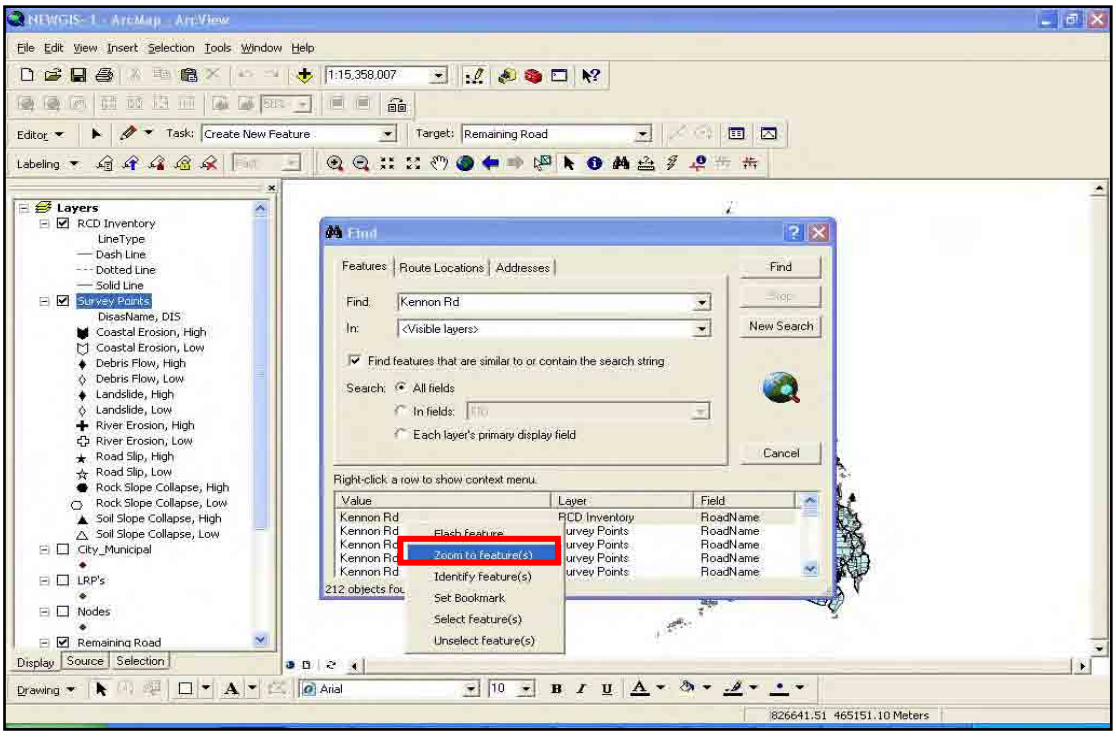
4. Click **Find** button and type the **Road Name** that you want to view.



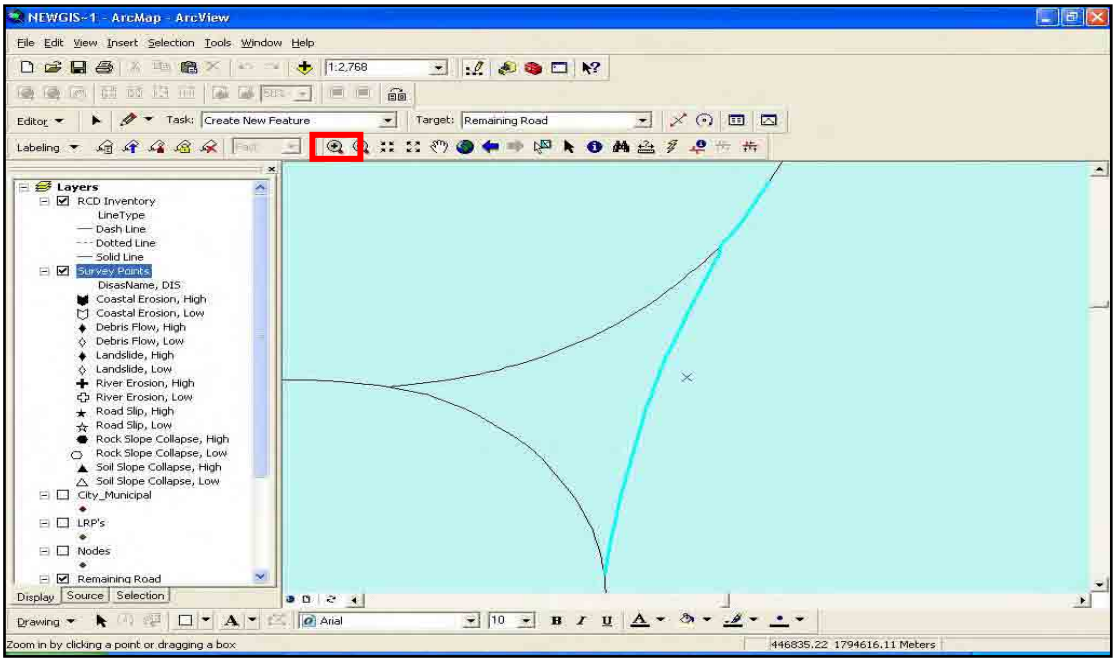
5. Then click **Find** button.

6. Right-click the result item and click **Select feature(s)**, and then right click result item again and click **Zoom to feature(s)**.





7. If the survey point is hard to see, then click the **Zoom In** icon and drag the selected part you want to zoom in.



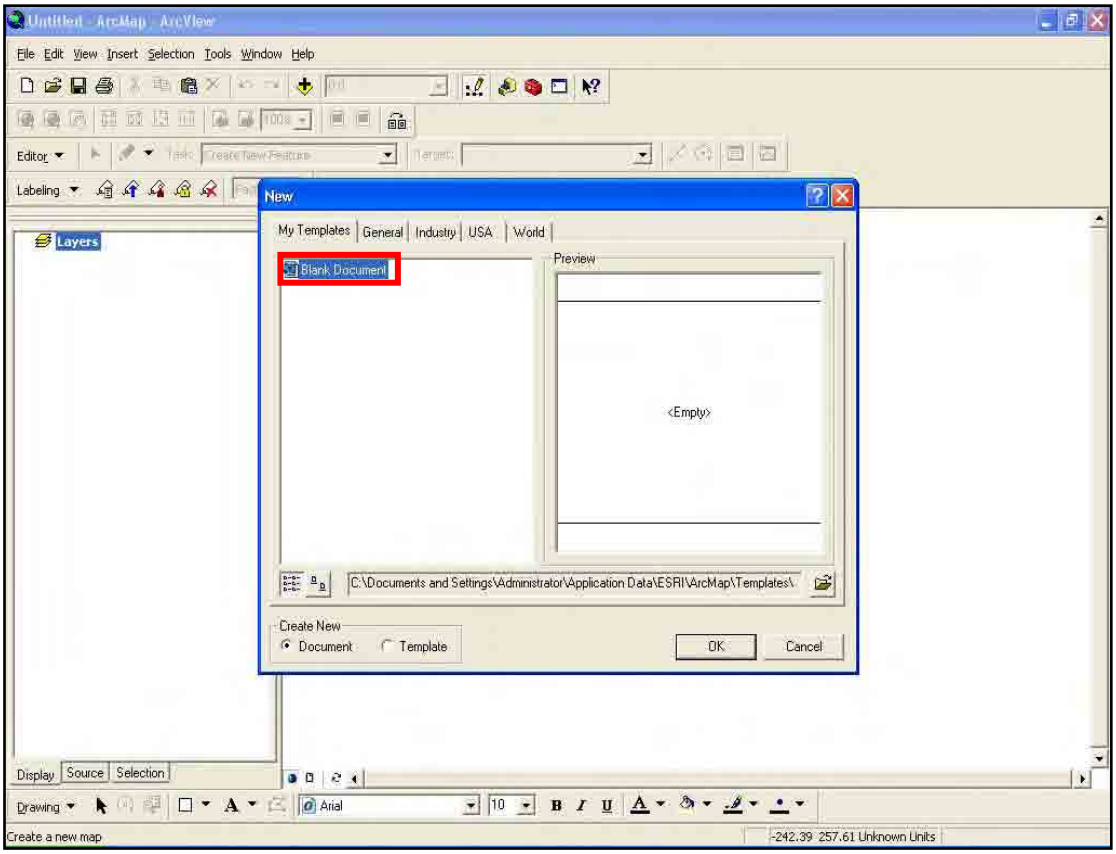
8. After the survey point is already visible, Click **Identify** button to display the attribute for that survey point.

E. Printing Maps

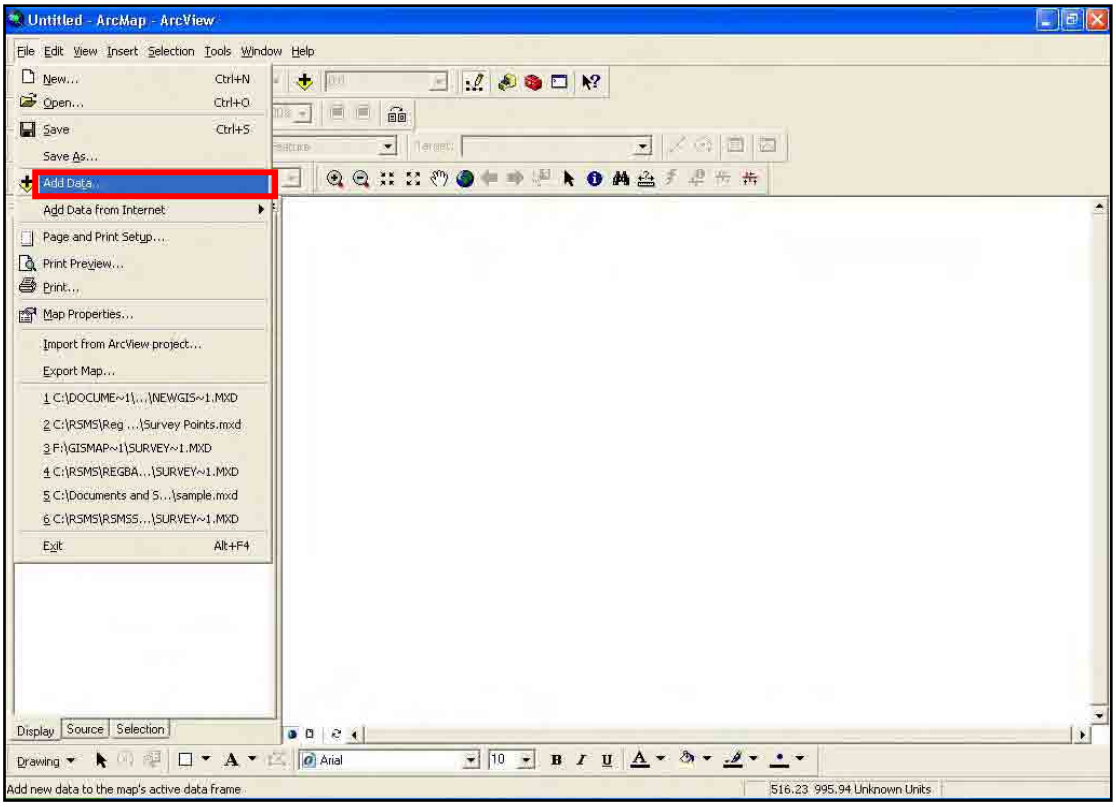
This helps the user print particular part of the maps.

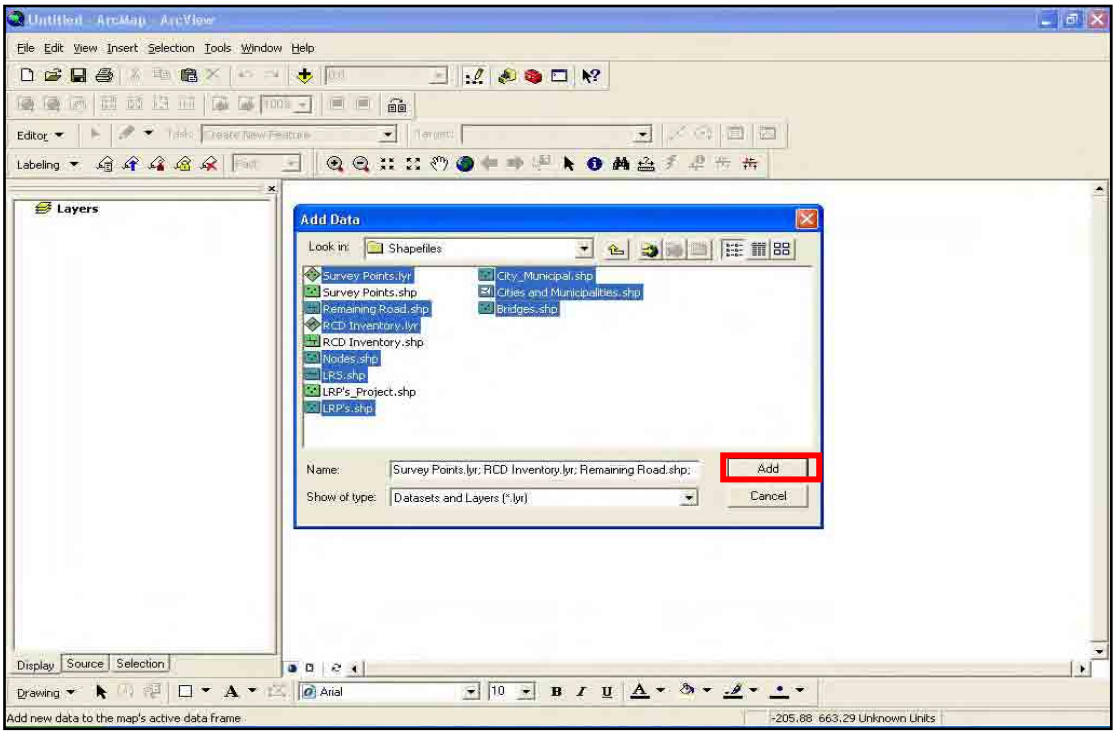
E.1 Adding GIS Map layers

1. Open **ArcMap**.
2. Create a new **Blank Document**.



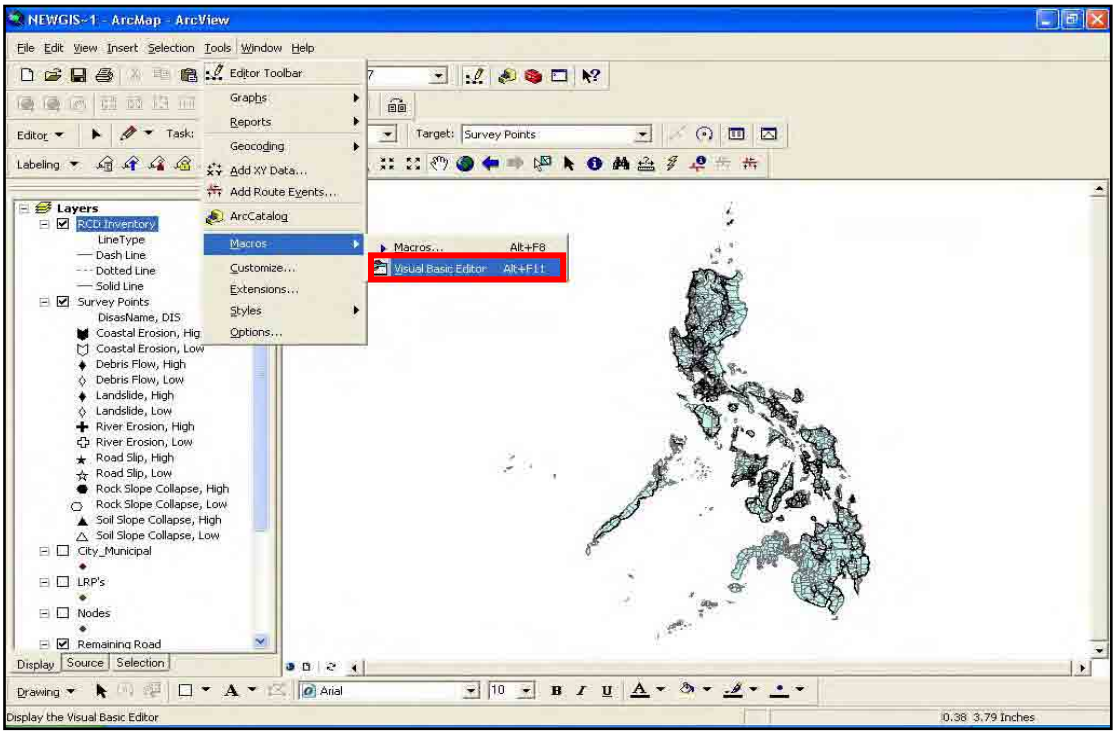
3. Add **GIS data** to the document.


Untitled - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
New... Ctrl+N
Open... Ctrl+O
Save Ctrl+S
Save As...
Add Data...
Add Data from Internet
Page and Print Setup...
Print Preview...
Print...
Map Properties...
Import from ArcView project...
Export Map...
1 C:\DOCUME~1\...\NEWGIS~1.MXD
2 C:\RSMS\Reg ...\Survey Points.mxd
3 F:\GISMAP~1\SURVEY~1.MXD
4 C:\RSMS\REGBA...\SURVEY~1.MXD
5 C:\Documents and S...\sample.mxd
6 C:\RSMS\RSMS5...\SURVEY~1.MXD
Exit Alt+F4
Display Source Selection
Drawing Arial 10
Add new data to the map's active data frame
516.23 995.94 Unknown Units

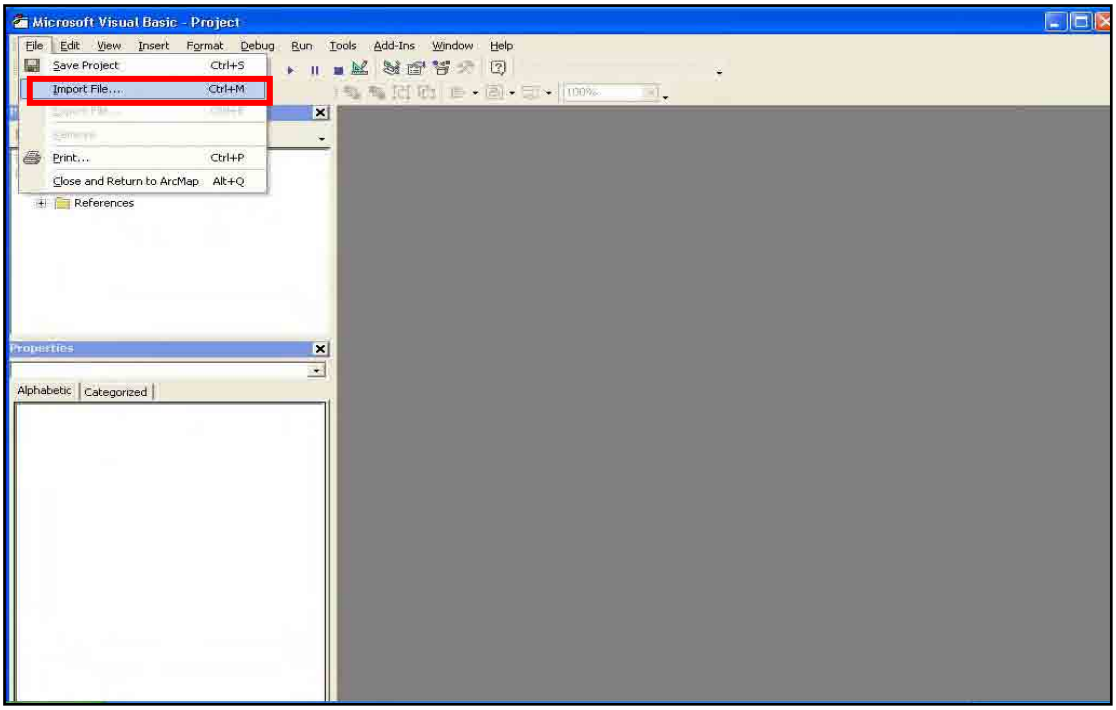

File Edit View Insert Selection Tools Window Help
Editor Labeling
Layers
Add Data
Look in: Shapefiles
Survey Points.lyr
Survey Points.shp
Remaining Road.shp
RCD Inventory.lyr
RCD Inventory.shp
Nodes.shp
LRS.shp
LRP's_Project.shp
LRP's.shp
City_Municipal.shp
Cities and Municipalities.shp
Bridges.shp
Name: Survey Points.lyr; RCD Inventory.lyr; Remaining Road.shp;
Add
Show of type: Datasets and Layers (*.lyr)
Cancel
Display Source Selection
Drawing Arial 10
Add new data to the map's active data frame
-205.88 663.29 Unknown Units

E.2 Setting up the VBScript

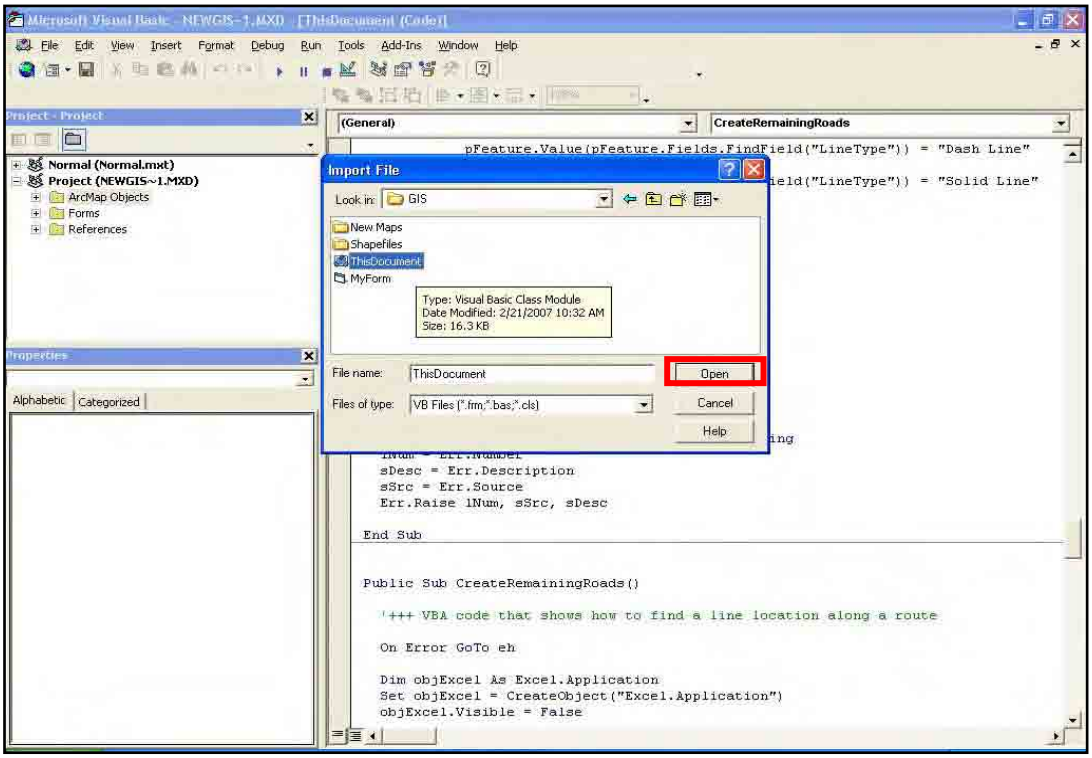
4. Click **Tools** menu and point to **Macros** then select **Visual Basic Editor**.



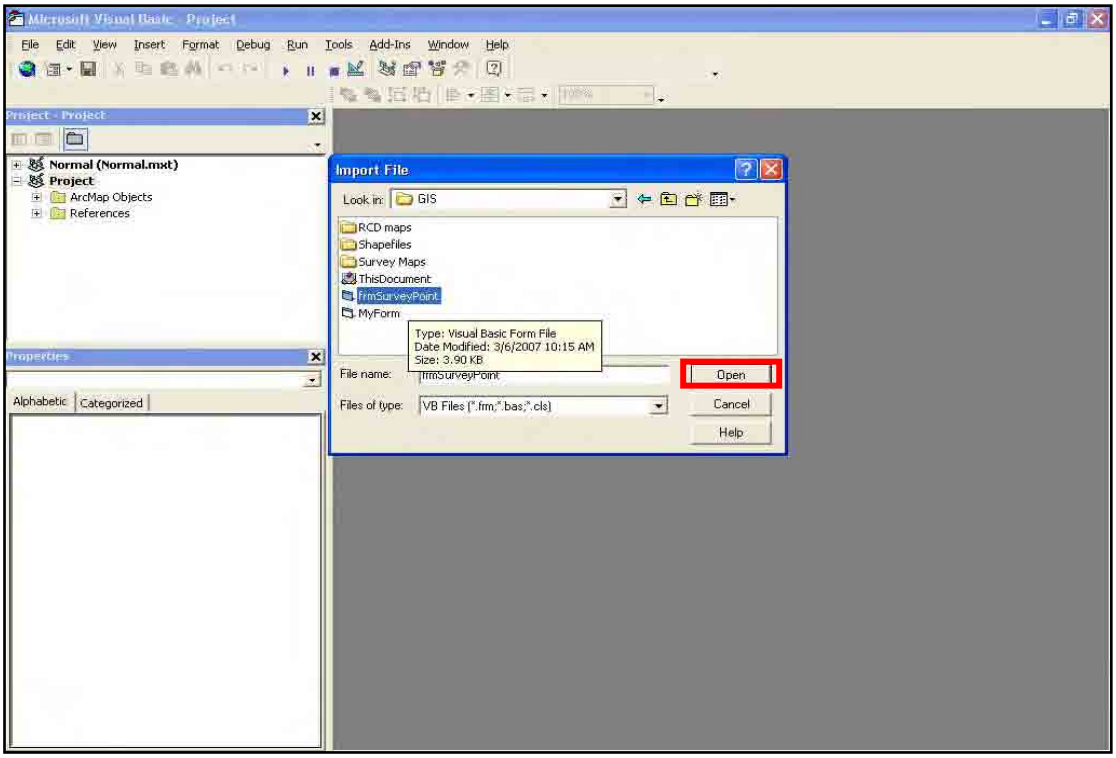
5. In the **Visual Basic Editor** window select **File** and click **Import File**.



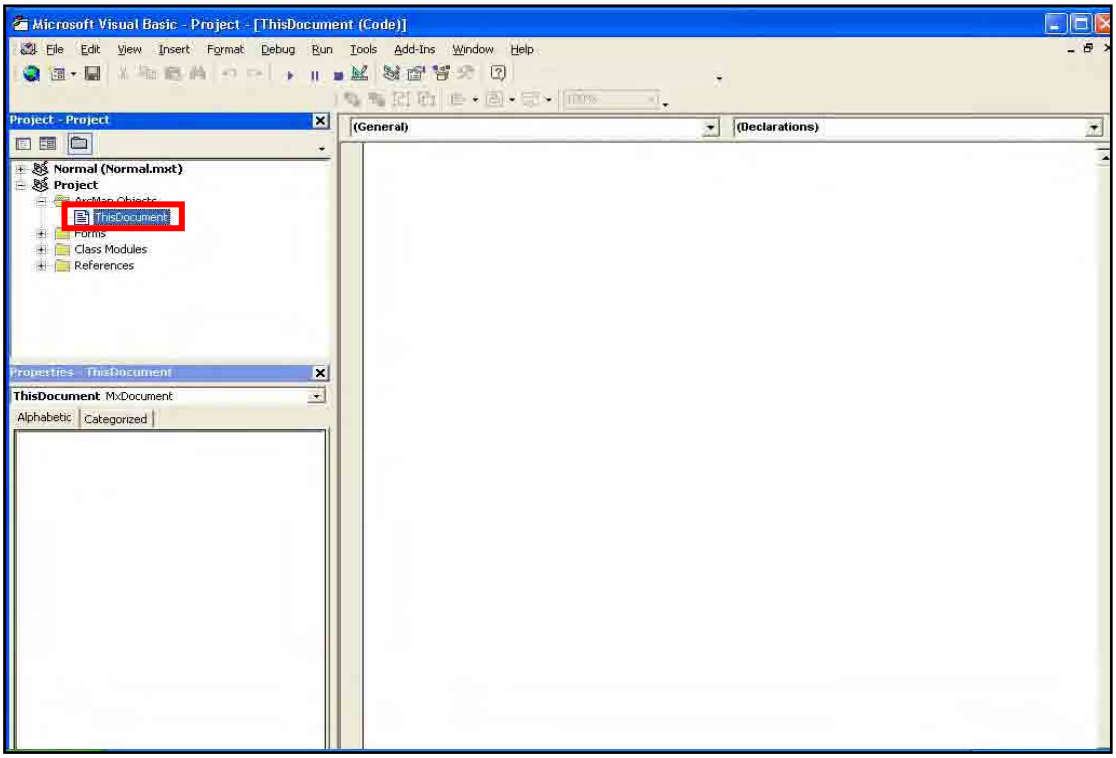
6. Browse the **ThisDocument** file and click **Open**.



7. Do the same to **MyForm** and **frmSurveyPoint** files and click **Open**.

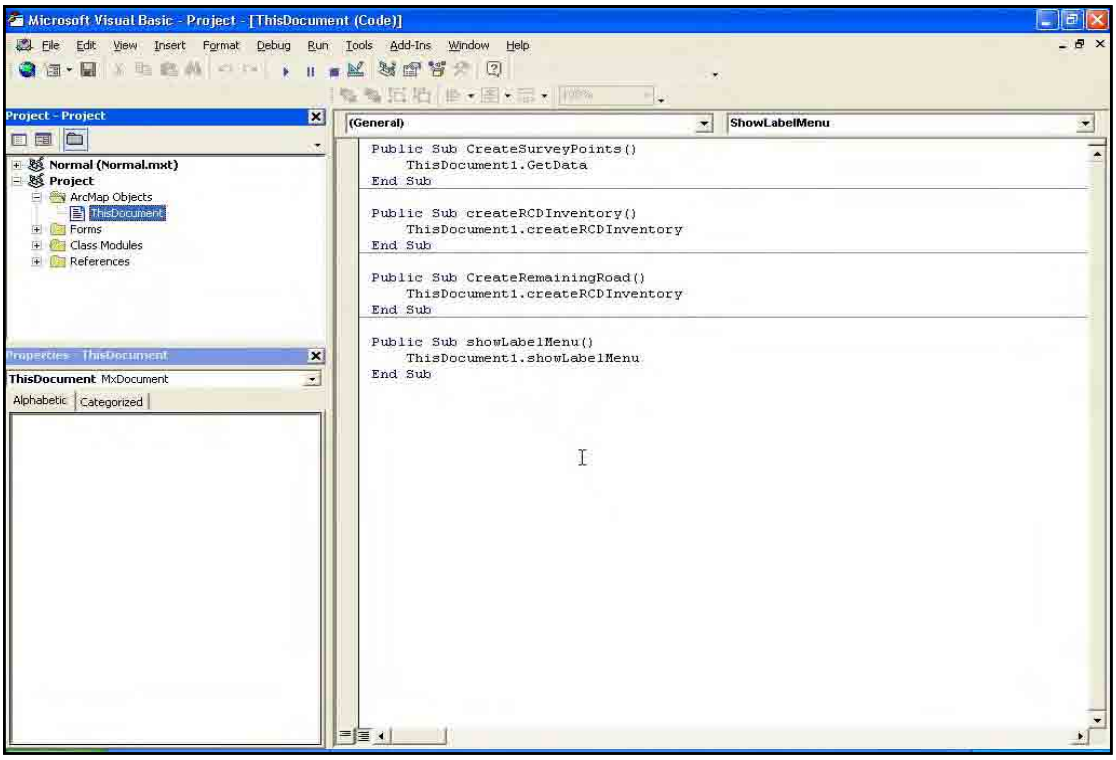


8. Expand **ArcMap Object** folder and double-click **ThisDocument**.

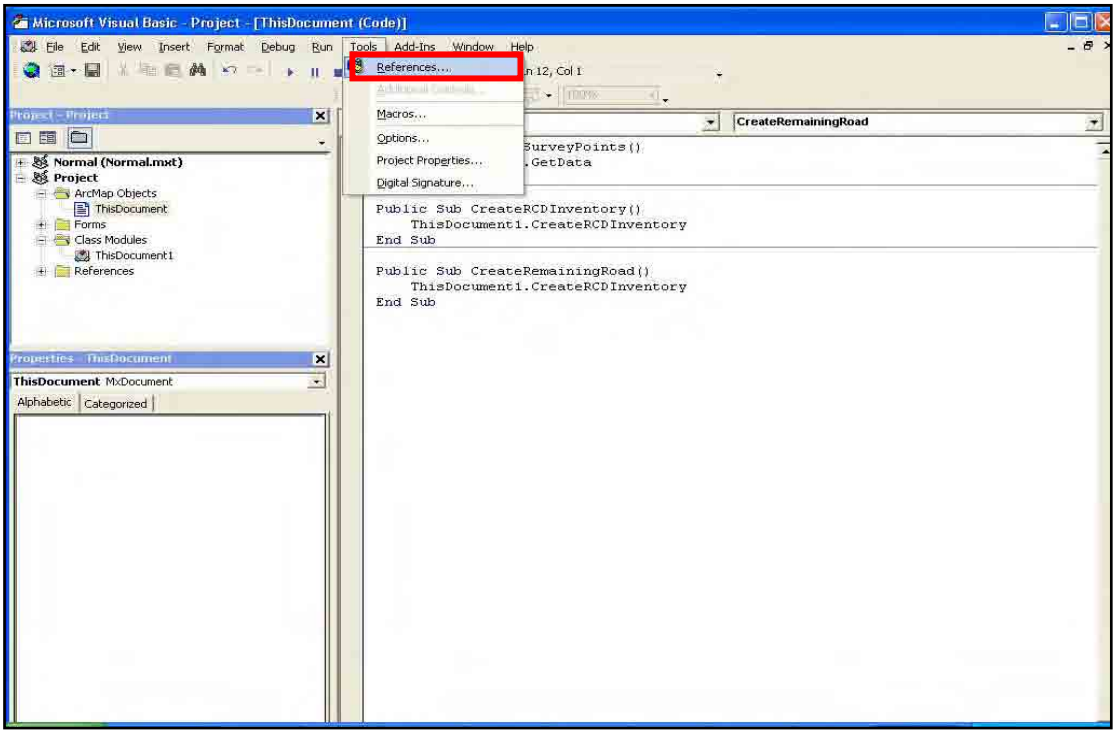


9. Type the following text :

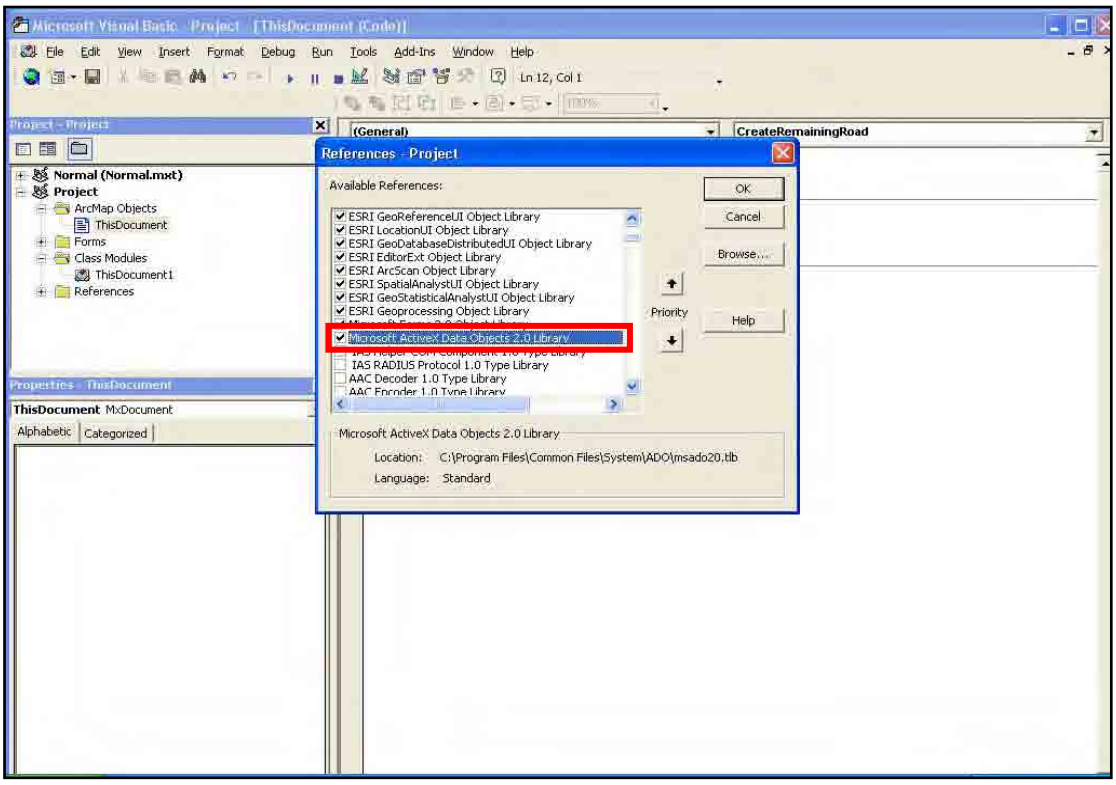
```
Public Sub CreateSurveyPoints()
   ThisDocument1.GetData
End Sub

Public Sub CreateRCDInventory()
   ThisDocument1.CreateRCDInventory
End Sub

Public Sub CreateRemainingRoad()
   ThisDocument1.CreateRCDInventory
End Sub

Public Sub ShowLabelMenu()
        ThisDocument1.ShowLabelMenu
End Sub
```



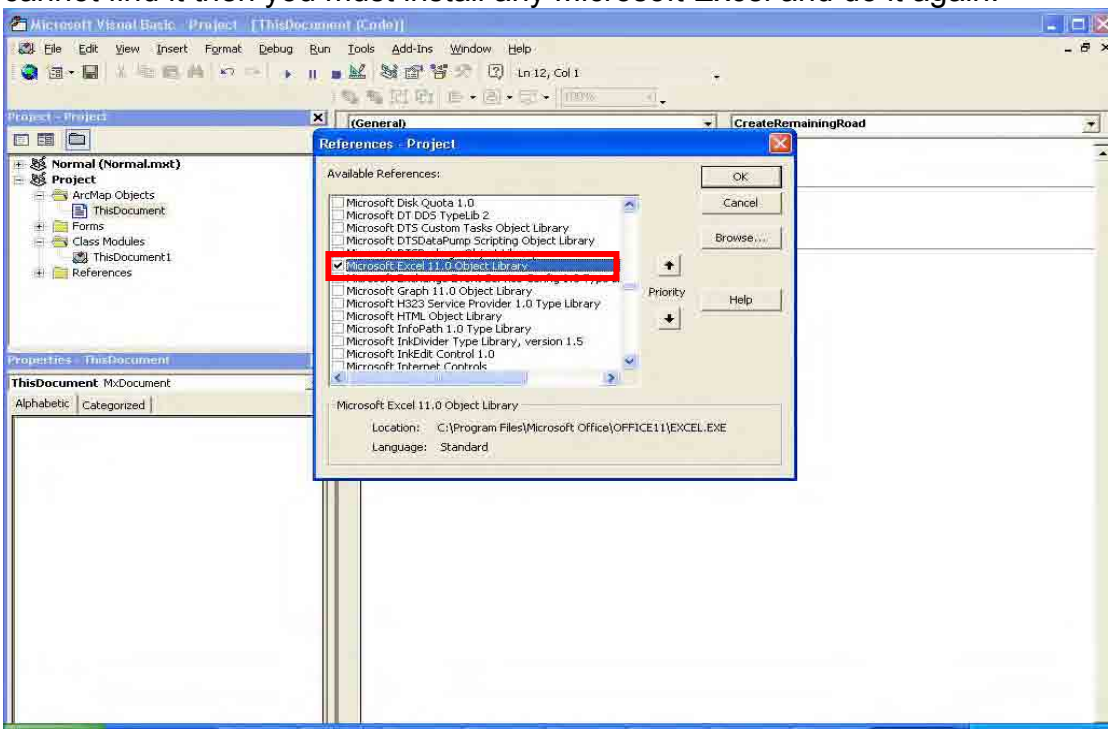
10. Click **Tools** menu and select **References**.



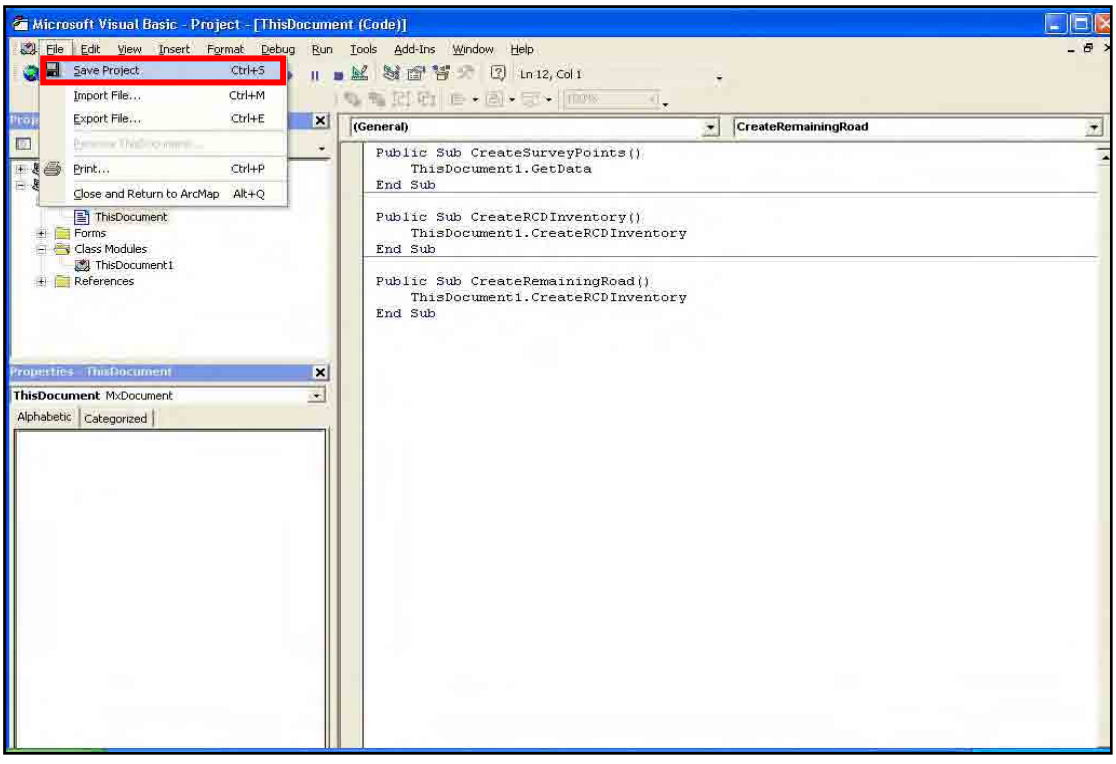
11. Find and check the **Microsoft ActiveX Data Object 2.0 Library**.



12. Find and check also the **Microsoft Excel 11.0 Object Library**. If you cannot find it then you must install any Microsoft Excel and do it again.



13. Click **OK.**
14. Save the project by clicking **File** menu and select **Save Project**.

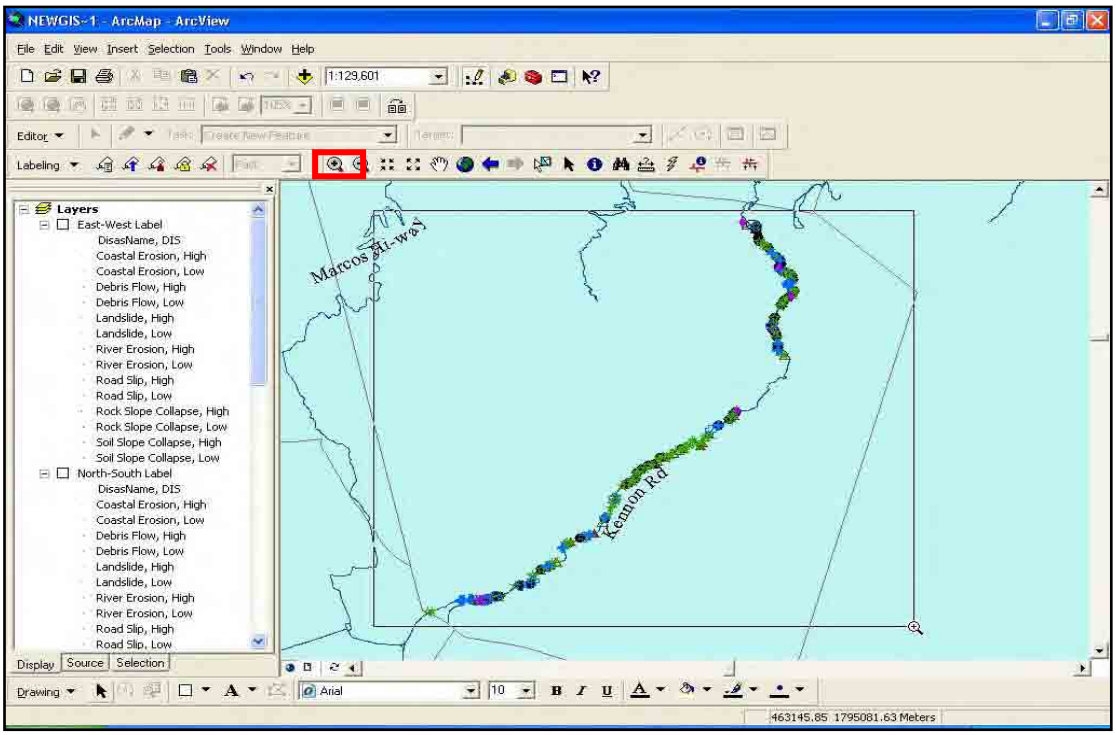


15. Close the **Visual Basic Editor** window.

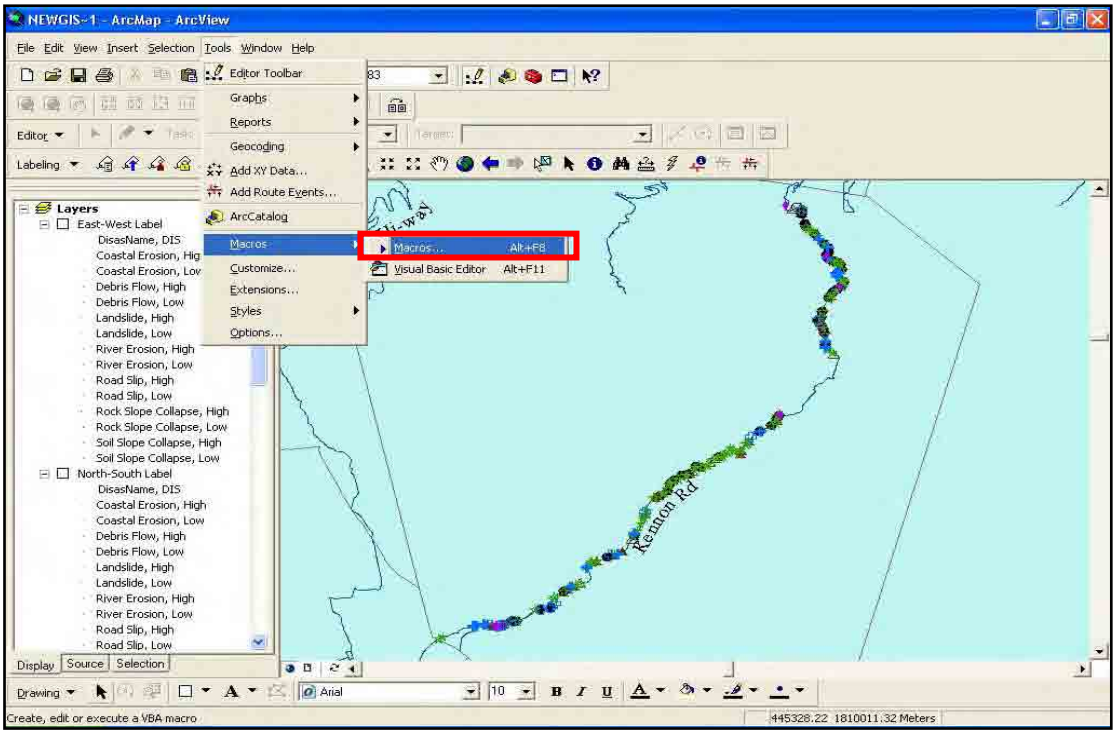
E.3 Running the VBScript

16. Then go back to **ArcMap**.

17. Select part of the map that you want to print by using **Zoom In** tool or **Zoom Out** tool to adjust the visibility of the items in the map.

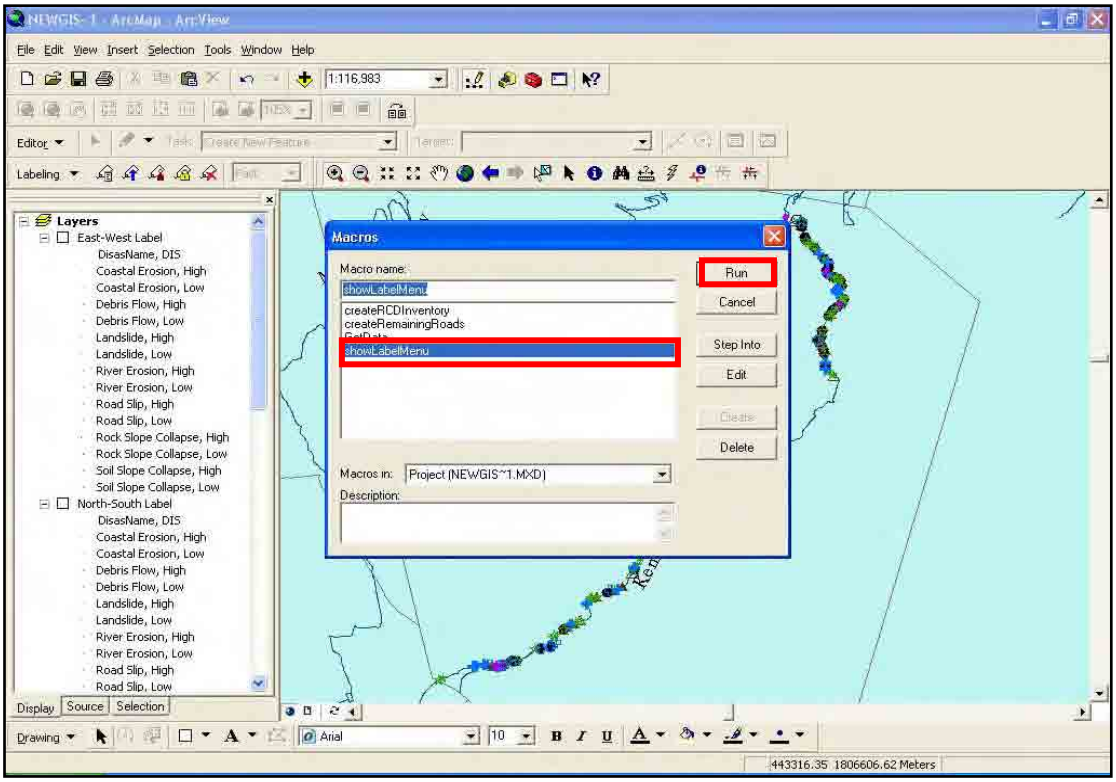


18. Once you've finished adjusting the visibility of your selected part of the map, click **Tools** menu and point to **Macros** and select **Macros**.



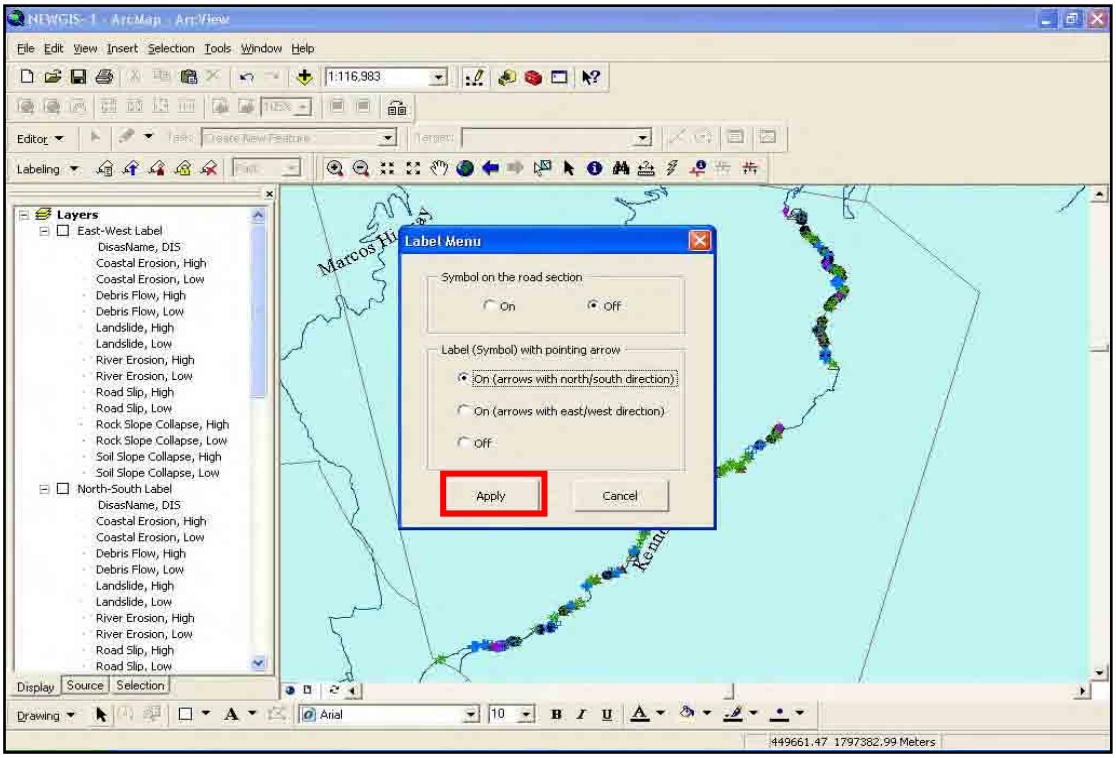
E.4 Displaying the Labels and Symbols

19. In the **Macros** dialog box, select **ShowLabelMenu** and click **Run** to appear the **Label Menu**.

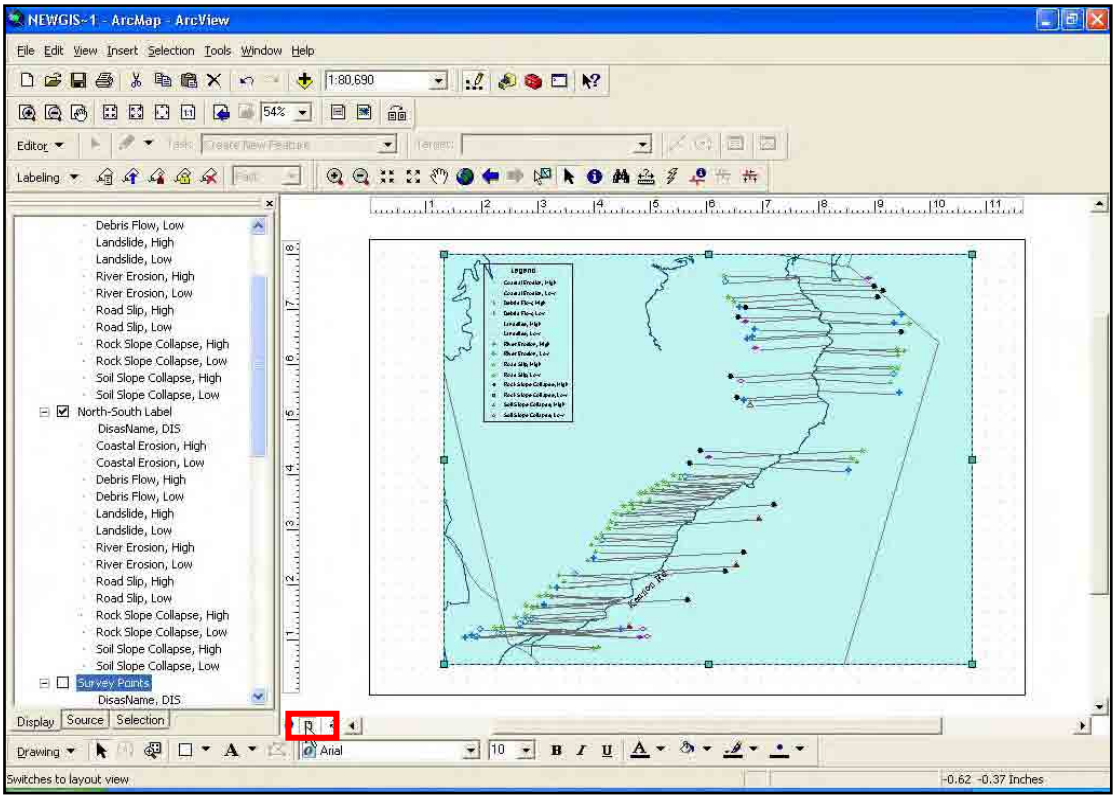


20. In the **Label Menu,** select **On** option in the **Symbol on the road section** category to view the symbol of the survey points on the road section or select **Off** option if you don't want to view the symbol on the road section.

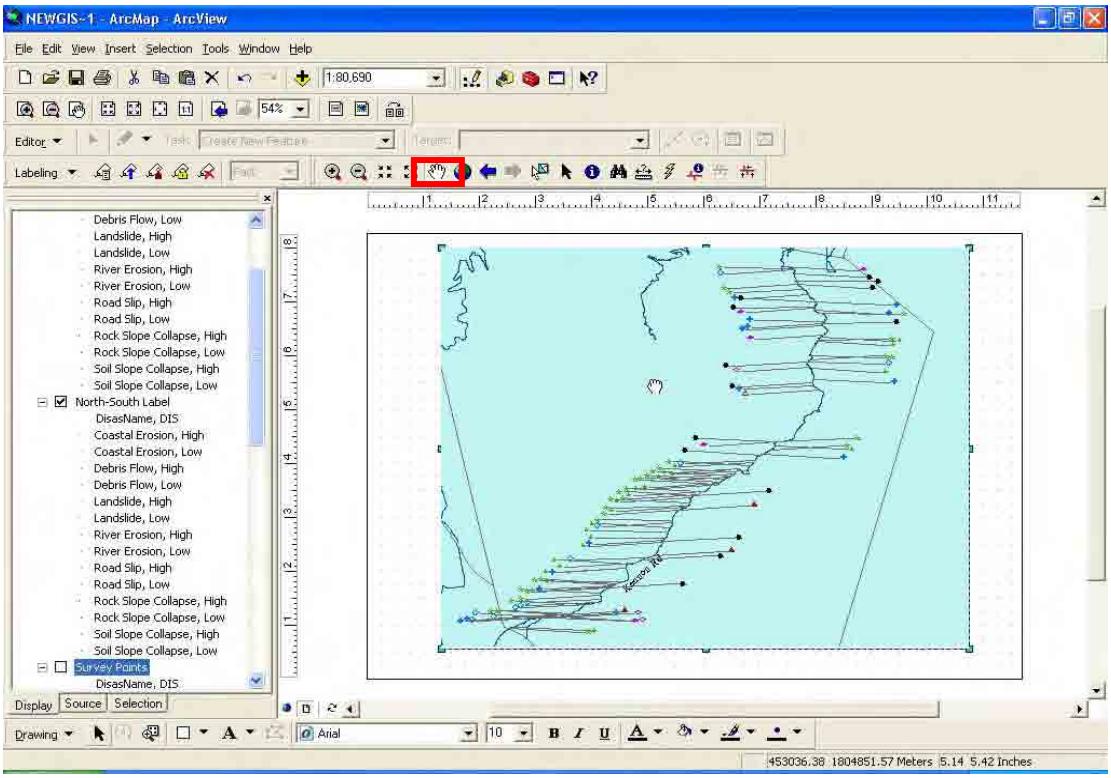
    Select also **On (arrow with north/south direction)** option in the **Label (Symbol) with pointing arrow** category to view the label of the survey points if the road is a north/south direction, or select **On (arrow with east/west direction)** option to view the label of the survey points if the road is an east/west direction or select **Off** if you don't want to view any label of the survey points. After selecting an option from the two categories, click the **Apply** button to apply the selected option or **Cancel** button to close.



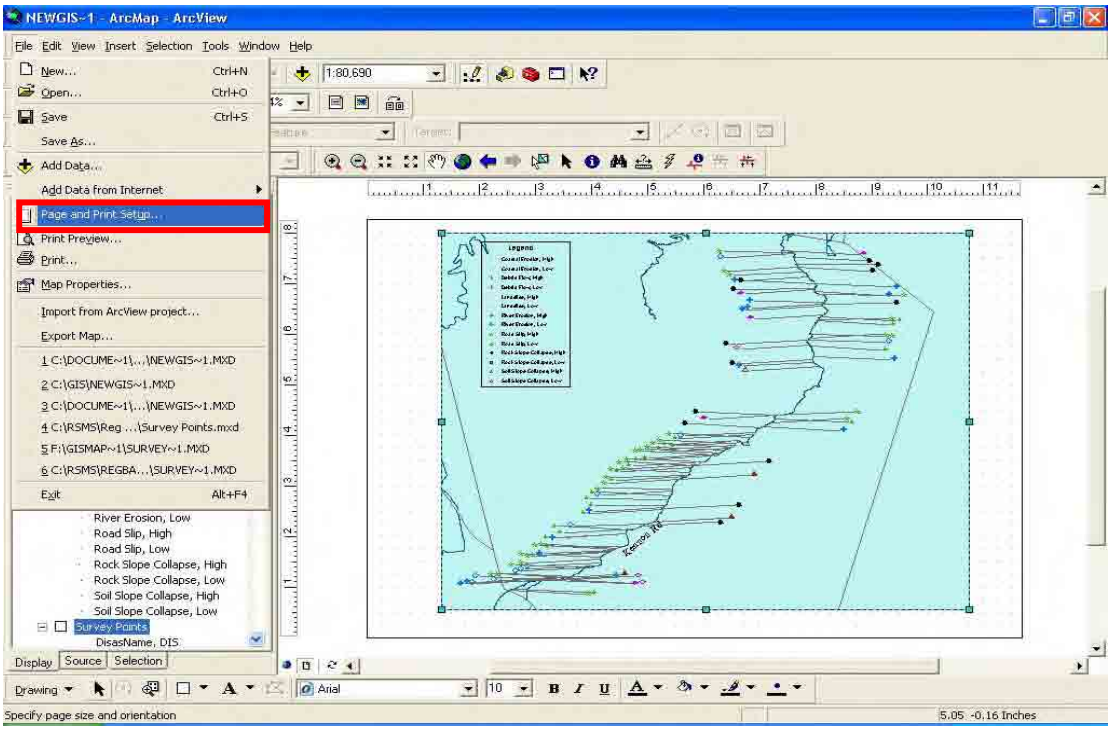
21. Once you've finished selecting the appropriate label, click **Layout View** button to switch view of the map.

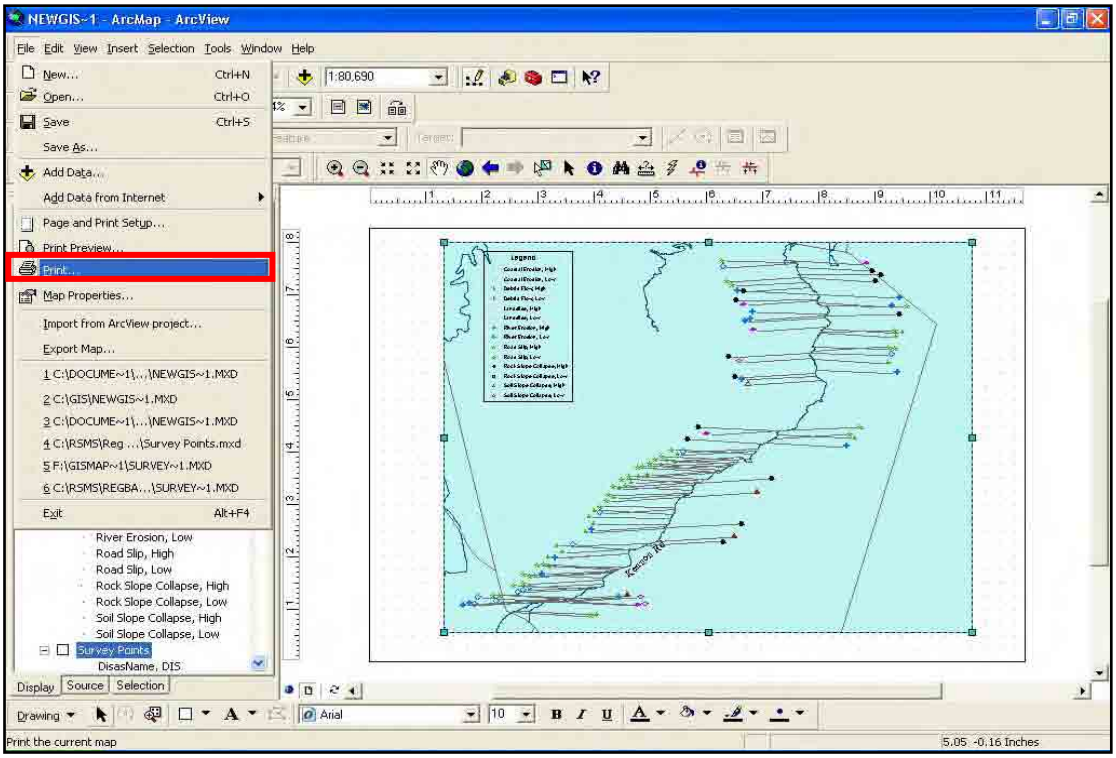


22. If you want to adjust that map so that other item will be visible use the **Pan** tool.



23. After you are finished adjusting your map, click **File** menu and select **Print** to print your map or **Print and Print Setup** to change the configuration of your paper size and orientation of your printout.




NEWGIS~1 - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
New... Ctrl+N
Open... Ctrl+O
Save Ctrl+S
Save As...
Add Data...
Add Data from Internet
Page and Print Setup...
Print Preview...
Print...
Map Properties...
Import from ArcView project...
Export Map...
1 C:\DOCUME~1\...\NEWGIS~1.MXD
2 C:\GIS\NEWGIS~1.MXD
3 C:\DOCUME~1\...\NEWGIS~1.MXD
4 C:\RSMS\Reg ...\Survey Points.mxd
5 F:\GISMAP~1\SURVEY~1.MXD
6 C:\RSMS\REGBA...\SURVEY~1.MXD
Exit Alt+F4
River Erosion, Low
Road Slip, High
Road Slip, Low
Rock Slope Collapse, High
Rock Slope Collapse, Low
Soil Slope Collapse, High
Soil Slope Collapse, Low
Survey Points
DisasName, DIS
Display Source Selection
Drawing
Arial
10
Print the current map
5.05 -0.16 Inches