

BHUNAKSHA 3.0

(Mutation of FMBs Digitized using CollabLand)

<https://bhunaksha.nic.in>

User Manual

1. Modify Map Overview

2. Table Data

- 2.1 Ladder Table
- 2.2 Station Table
- 2.3 Boundary Table
- 2.4 Extended Table
- 2.5 Adjacency Table
- 2.6 Control Table
- 2.7 Traverse Table
- 2.8 Bearing Table

3. Open Map

4. Page Setup

5. Save

6. Export

- 6.1 Image
- 6.2 PDF
- 6.3 Shape File
- 6.4 KML

7. Sub Division Point

- 7.1 Offset Point
- 7.2 Triangle Point

8. Sub Division Lines

- 8.1 Point to Point
- 8.2 Area and Side

9. Sub Divisioning

10. Merge Sub Divisions

11. Modify

- 11.1 Modify Point
- 11.2 Modify Text
- 11.3 Move Text

12. Delete

- 12.1 Point
- 12.2 Line
- 12.3 Sub Division

13. Tools

- 13.1 Distance
 - 13.1.1 Point to Point
 - 13.1.2 Point to Line
- 13.2 Area
- 13.3 Angle
- 13.4 Search
 - 13.4.1 Point
 - 13.4.2 Line

13.4.3 Sub Division

14. Details

- 14.1 Note
- 14.2 Copy
- 14.3 Modify
- 14.4 Move
- 14.5 Rotate
- 14.6 Delete

15. View Menu

- 15.1 Undo
- 15.2 Redo
- 15.3 Zoom In
- 15.4 Zoom Out
- 15.5 AutoFit
- 15.6 Pan Mouse
- 15.7 Pin Map
- 15.8 Release Map

16. Scale

- 16.1 Variable Scale
- 16.2 Fixed Scale
- 16.3 User Scale

17. WorkFlow Menu

- 17.1 Forward
- 17.2 Verify
- 17.3 Approve
- 17.4 Reject

1. Modify Map Overview

This section will provide an overview of the FMB Mutation module which are used by Draftsman/Surveyor for doing modifications in map. Each of the operations will be described below:-

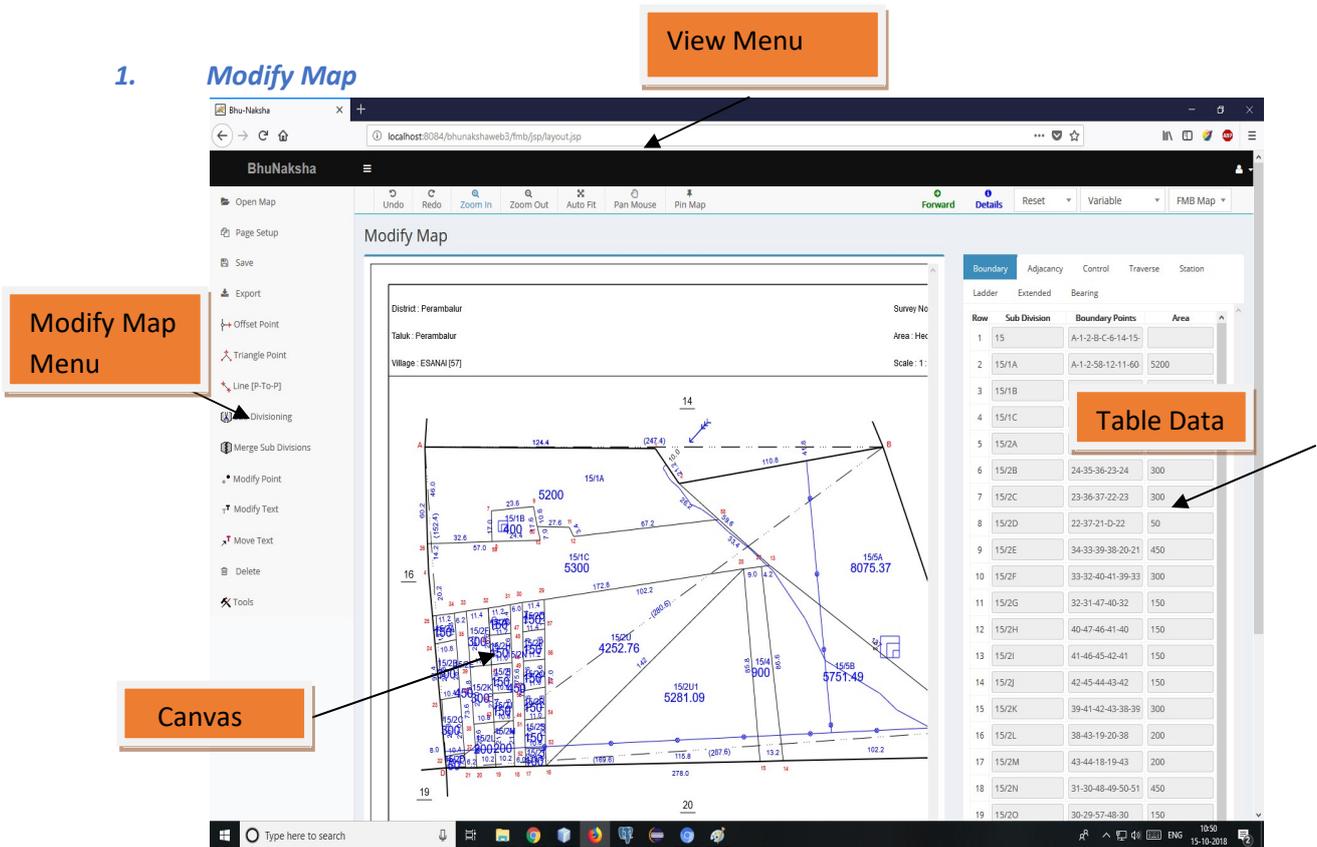


Figure 1 Modify Map Page

Modify Map page Consists of four Panel as shown in figure.

2. Table Data

BhuNaksha provides the details of following Data Tables on selecting the map. The respective tables are updated dynamically when new point is created in the map during modification.

2.1 Ladder Table – It displays the basic 5-Column Ladder Data of Chain Survey. The table will be updated automatically when new point is created.

2.2 Station Table - Holds Co-ordinate Data of Base Points in Total Station Survey and Theodolite Survey. The Elevation of the points, if not entered, would be considered as 0.0 (zero) by default.

2.3 Boundary Table - Gives the list of points in the outer boundary and the sub-division boundaries of the map. The outer boundary and sub-division boundary are updated automatically whenever new point is created.

2.4 Extended Table - Contains the information about the Sub-Division or Cut Points that are defined in the map, for all systems of Survey (Chain, Theodolite or Total Station). Therefore this table can be used along with the Ladder Table and the Station Table.

2.5 Adjacency Table - Lists the adjacent plot numbers/names and the vertices they share with the parcel being digitized.

2.6 Control Table - Enlists the names of various control points in the map and their types. The control points can be Bi-Junction (BJ) points, Tri-Junction (TJ) points, or Khandam (KH) points.

2.7 Traverse Table - Specifies the co-ordinates and type of Traverse Points used for mosaicing of maps.

2.8 Bearing Table - Provides the facility to log the Angle and Distance of Traverse Survey. The Bearing of the first Station station also need to be specified, otherwise it would be assumed as zero (0.0).

3. Open Map

When you clicked on Open Map menu then Plot Details pop up window will appear on screen, where we can select district, taluk, village, ward/block and survey no. On Clicking ok button, the corresponding map will be opened in canvas as show in figure 2.

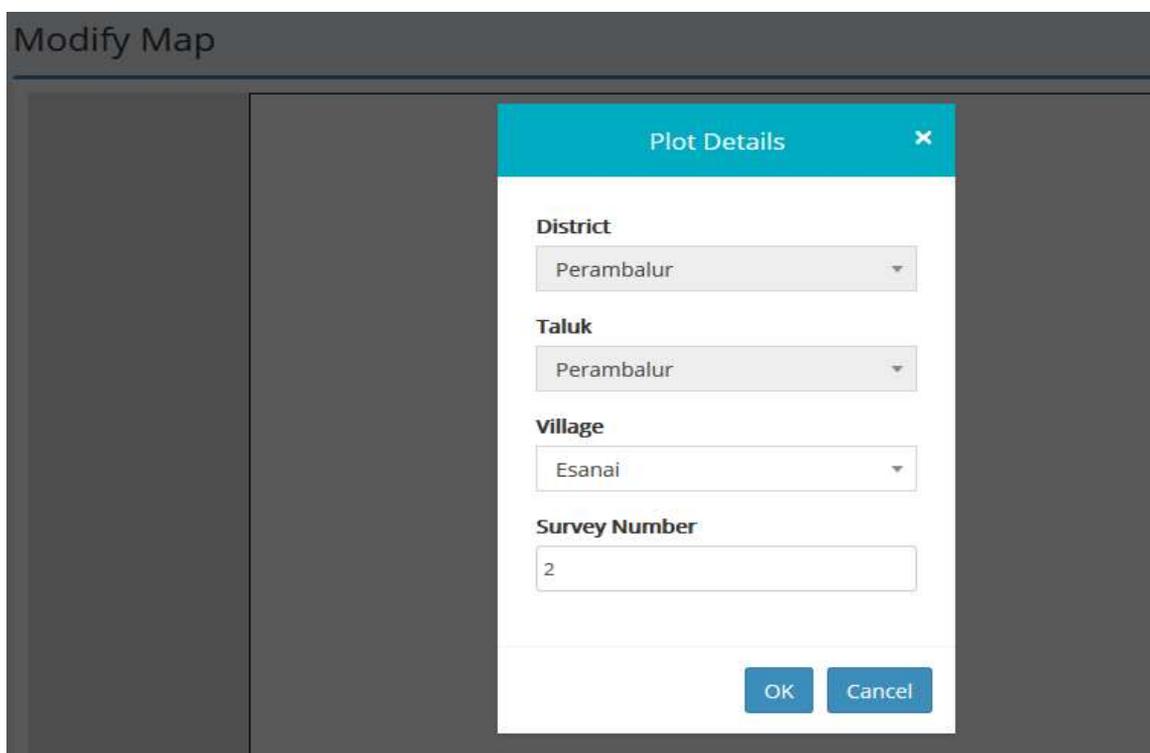


Figure 2 Open Map

4. Page Setup

The "Page Setup" options allows setting of parameters like paper size, orientation, and margin. On successfully entering the required parameters, the canvas would be resized and redisplayed.

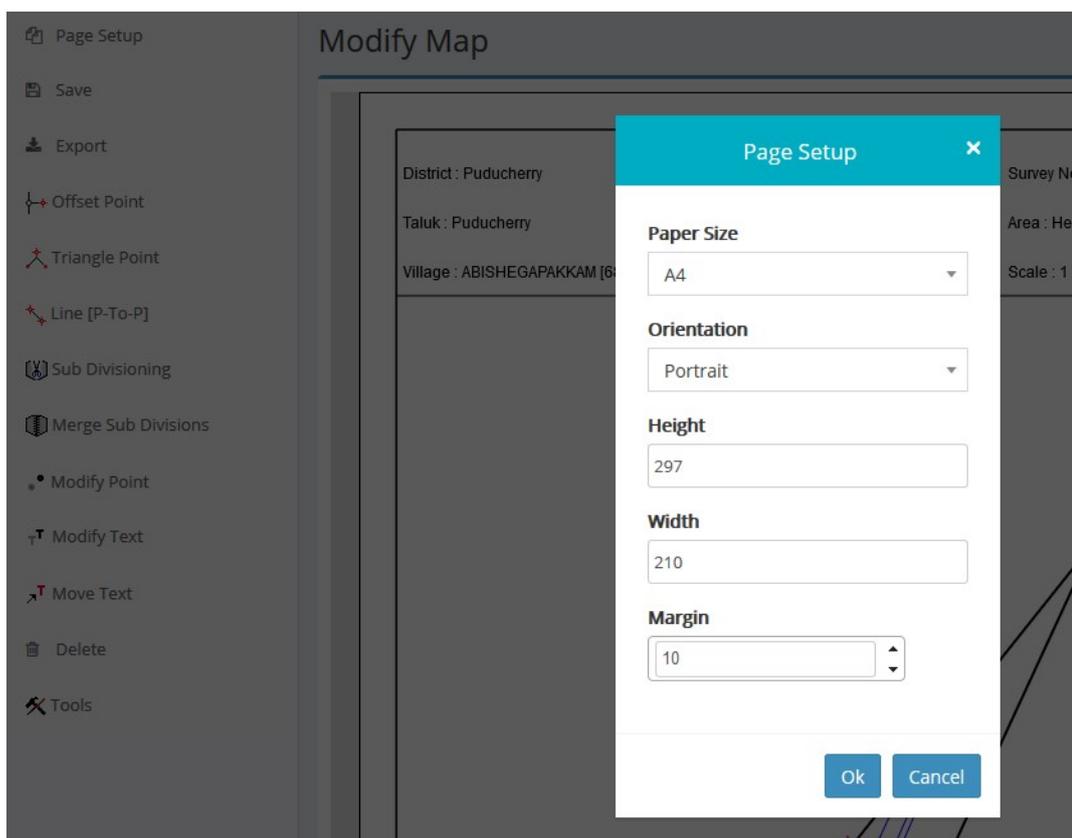


Figure 3 Page Setup

5. Save

After doing map modifications, click on save menu to save the current tippan in the database

6. Export

Export menu is intended for exporting Map from BhuNaksha into specified formats. Currently the following formats are supported

6.1 Image File – In this case, the map displayed in the Canvas can be exported into an Image file. Images can be exported in the JPG/JPEG, TIF/TIFF, PNG and BMP formats.

6.2 PDF File – In this case, the map displayed in the Canvas can be exported into a PDF file.

6.3 Shape File - In this case, the map displayed in the Canvas can be exported into a Shape file. On invoking this option, the map would be saved into six files with *.dbf *.fix *.prj *.qix *.shp and *.shx extensions

6.4 KML File- In this case, the map displayed in the Canvas can be exported into a KML file. On invoking this option, the map would be saved in the given file in KML format.

7. Sub Division Point

This option allows users to create Points, primarily required for Sub-Division of the Maps. The following point creation methods are available

7.1 Offset Point

Using this option, the user can specify Sub-Division Points on Base Lines and Boundary Lines of a Tippan. On invoking this option, the system will highlight the lines for selection. On selecting the line, a dialog box would appear with the following fields.

- Length Unit** Select the unit in which the length is entered
- Distance** Enter the distance from the base point
- Offset** Enter the offset distance (0.0 for Point on Line)
- Name** Enter the name of the point
- Total Length** Select how the Total Length is to be displayed
- Add Point in** Select the Table in which the Point is to be added

While entering the data, the Point will be temporarily displayed on the Canvas. Pressing the "OK" Button would create the Sub-Division Point. Users can create Symbols at the given position by specifying the Symbol Code as the Point name. Users are advised to select the lines at the same end (as far as possible) for better results.

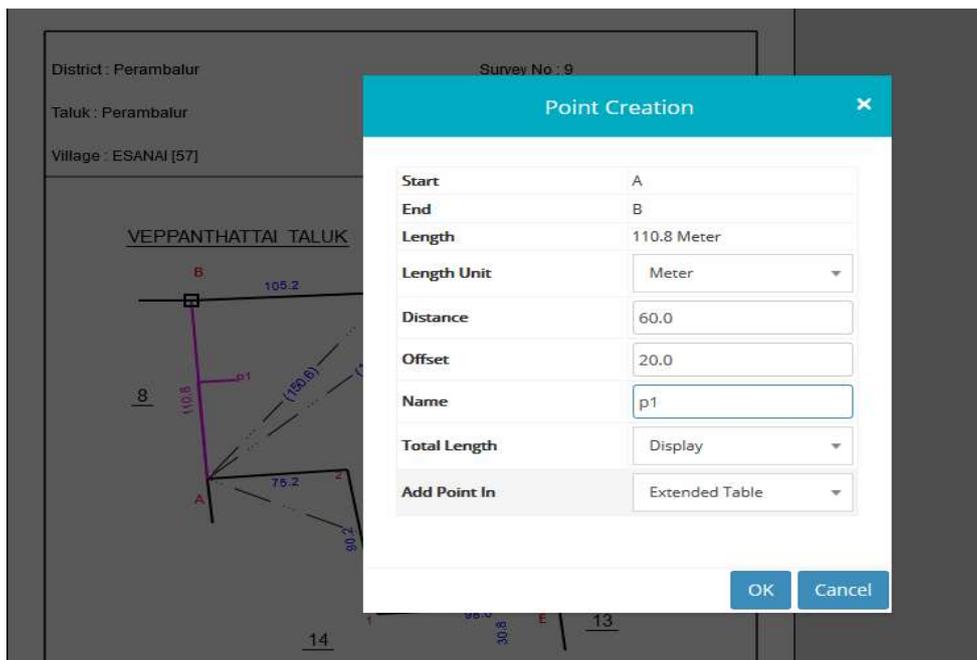


Figure 4 Offset Point

7.2 Triangle Point

Using this option, users can create points by specifying its distance from two existing points. On invoking the option, the system would prompt for the first and the second points; and the side in which the point shall be created. Once these points are specified, the system would display a dialog through which the users can enter the point name and the distances from the the selected points, and the unit in which the distances are entered. Pressing the "OK" Button would create the Point.

8. Sub Division Lines

This option allows users to create sub-division Lines, primarily used as boundaries of sub-divisions in the Maps. The following Line creation methods are available.

8.1 Point to Point

Using this option, the user can create sub-division lines by connecting existing points. On invoking this option, the system will highlight the lines for selection. Then the user can now select the points connecting the sub-division lines. The operation can be terminated by clicking at a corner (the last corner) two times, or by pressing Enter.

8.2 Side and Area

Using this option, the user can create sub-division lines parallel to the sides of a sub-division enclosing a user specified area. Once this option is invoked, the system will prompt to Select the Sub-Division near the Side. On selecting the side of a sub-division, the system would prompt for the area of sub-division, the unit in which the area is entered, and the names of sub-division points. Once these inputs are provided the system would create the sub-division line enclosing the specified area. The region covering the specified area would be displayed in a shaded pattern and the user would be prompted to optionally modify the displayed length of the new sub-division line.

9. Sub Divisioning

Using this option, the user can create a Sub-Division. On invoking this option, Click on the region where the sub division has to be done. On clicking inside the closed boundary of the Sub-Division, the system will prompt for the Sub-Division Name and the Displayed Area. Specifying the name and the area, the Sub-Division will be created. If a Sub-Division exists at the clicked point, that will be deleted.

10. Merge Sub Divisions

Using this option, the user can merge two Sub-Divisions into one Sub-Division. On invoking this option, the user can "Select the two Sub-Divisions to Merge". Then the system will prompt for the Sub-Division Name and the Displayed Area. Specifying the name and the area, the two selected Sub-divisions will be merged and a new Sub-Division will be created.

11. Modify

11.1 Modify Point

Using this option, the user can modify the parameters (like coordinates, base and offset distances) of the Points in the Tippan. On selecting the Point, a dialog box would appear, using which the user can enter the modified parameters of the Point.

11.2 Modify Text

Using this option, the user can modify the Texts in the Tippan (like Displayed Length of Lines, Displayed Area of Sub-Divisions). On invoking the option, the System will highlight the texts in map. On selecting the Text, a dialog box would appear, using which the user can enter the modified text. Facility exists to remove the Length of the Lines and to display them within brackets. Users can rotate the Area and Name of the Sub-Divisions also using this option.

11.3 Move Text

Using this option, the user can move the Texts in the Tippan. On invoking the option, the System will prompt for selection of Text to Move. The user can select any text and drag it to the desired position.

12. Delete

12.1 Point

This option help users to delete independent (un-used) Points in the map. On selecting the Point, it would be deleted (without any further confirmation).

12.2 Line

This option help users to delete independent (un-used) Lines in the map. On selecting the Line, it would be deleted (without any further confirmation).

12.3 Sub Division

This option help users to delete a Sub-Division in the map. When the option is the name of the Sub-Division to be deleted. On specifying the Sub-Division name, it would be highlighted and the map would be moved such that the specified Sub-Division would be positioned at the centre of the Canvas. The Sub-Division would be deleted once the user confirms the system prompt to this effect. invoked, the system would display a dialog box using which the users can specify

13. Tools

13.1 Distance

13.1.1 Point to Point

Using this option, the user can measure the distance between two existing points in the Tippan. When this option is invoked, the system will prompt for selection of first point and second point. When the second Point is also selected, the system would display the distance between the two selected Points.

13.1.2 Point to Line

Using this option, the user can measure the perpendicular (offset) distance from an existing point to a Line in the Tippan. When this option is invoked, the system will prompt for selection of point and the line. When the Line is also selected, the system would display the offset distance from the selected Point to the Line.

13.2 Area

This option allows the user to compute the area enclosed within a polygon. On invoking this option, the user can now select the points falling on the vertices of the polygon. A random point anywhere in the canvas can be selected by pressing the right mouse button. The selection will automatically terminate when a closed boundary is specified or the 'C' key is pressed. On successful selection of the polygon points, the enclosed area would be displayed

13.3 Angle

This option allows the user to measure the angle between two lines. On invoking this option, the system will prompt for the lines. On selecting two lines, the angle from the first line to the second line in clockwise direction (in Degrees and Minutes) would be displayed.

13.4 Search

13.4.1 Point

This option help users to locate a Point in the map. When the option is invoked, the system would display a dialog box using which the users can specify the name of the Point. On specifying the Point name, a temporary Marker would be displayed on the given Point and the map would be moved such that the specified Point would be positioned at the centre of the Canvas.

13.4.2 Text

This option allow users to locate a Text in the map. When the option is invoked, the system would display a dialog box using which the users can specify the Text to be searched. Users may suffix and/or prefix an Asterisk/Star (*) symbol to denote the behaviour of search as given below:

EnterTo Search for

- abc The EXACT Text "abc"**
- abc* Texts STARTING WITH "abc"**
- *abc Texts ENDING WITH "abc"**
- *abc* Texts CONTAINING "abc"**

Provision also exists to conduct the search in the whole map or limit it to Point/Sub-Division Names, Linear/Area Measurements, and Notes. On specifying the inputs, a Table of Search Results would be displayed in a tabular form along with a Display Selector ([]). On clicking the Display Selector, a temporary Marker would be

displayed over that Text and the map would be panned such that the specified Point would be positioned at the centre of the Canvas.

13.4.3 Sub Division

This option help users to locate a Sub-Division in the map. When the option is invoked, the system would display a dialog box using which the users can select the name of the Sub-Division. On selecting the Sub-Division name, it would be highlighted and the map would be moved such that the specified Sub-Division would be positioned at the centre of the Canvas.

14. Details

This menu provides a host of features like creation and modification of details like Notes.

14.1 Note

Using this option, the user can create Notes in the Maps. On invoking the option, a dialog box would appear consisting of the following fields.

- Note** - Enter the Text for the Note
- Font** - Choose the Font of the Note
- Color** - Choose the Color of the Note
- Size** - Enter the Size of the Note
- Angle** - Enter the Rotation Angle of the Note
- Underline** - Select the box if the Text is to be underlined
- Bold** - Select the box if the Text is to be in Bold
- Italic** - Select the box if the Text is to be in Italics

On properly entering the fields and pressing "OK" button, the System will prompt: "Specify Position for Note". On specifying the position, the note will be created. Users can modify the above parameters using the same dialog box which would re-appear when the Right Mouse Button is pressed (before specifying the position of Note).

14.2 Copy

Using this option, the user can copy the Details in the Tippan. On invoking the option, the System will highlight the Detail to Copy. The user can now pick the detail and copy it any number of times by specifying the location. Press Esc or Enter key to terminate copying and to pick a new detail for copy.

14.3 Modify

Using this option, the user can modify the Details in the Tippan. On invoking the option, the System will highlight the Detail to Modify. On selecting the Detail, a dialog box would appear, using which the user can enter the modified parameters.

14.4 Move

Using this option, the user can move the Details in the Tippan. On invoking the option, the System will highlight the Detail to Move. The user can select any Detail and drag it to the desired position.

14.5 Rotate

Using this option, the user can Rotate the Details (except aligned Symbols) in the Tippan. On invoking the option, the System will highlight the Detail to Rotate. On selecting the detail, a dialog box would appear using which the user can specify the angle of rotation. If the given angle is Positive then the Detail will be rotated in Anti-clockwise direction and if it is Negative then the Detail will be rotated in clock-wise direction.

14.6 Delete

Using this option, the user can delete the Details in the Tippan. On invoking the option, the System will highlight the Detail to Delete. The user can select any Detail and it will be deleted.

15. View Menu

15.1 Undo

The "Undo" option undoes the last operation performed

15.2 Redo

The "Redo" option redoes the last operation undone.

15.3 Zoom In

This option changes the zoom scale to double of the existing value, if the scale chosen is "Variable".

15.4 Zoom Out

This option changes the zoom scale to half of the existing value, if the scale chosen is "Variable".

15.5 AutoFit

The "Auto Fit" option automatically fits the Tippan according to the space available in the canvas. Auto Fit will function properly only if 'Variable' scale is used. In case of a fixed scale, this option only centers the canvas.

15.6 Pan Mouse

On selecting this menu, the user can Press the Mouse and drag to Pan the Tippan according to the requirement.

15.7 Pin Map

This option Pins the map to the drawing canvas so that any further Panning and Zooming is arrested.

15.8 Release Map

This option Releases the map from the drawing canvas so that further Panning and Zooming is possible.

16. Scale

This option allows the user to change the scale of the map for editing.

16.1 Variable Scale

This option changes the zoom scale mode to "Variable".

16.2 Fixed Scale

These are the fixed scales like 500,1000, 2000 which are set during the digitization process.

16.3 User Scale

This option changes the zoom scale to a value specified by the user. On invoking this option, the system would display a dialog box using which the user can specify the scale value.

17. Workflow

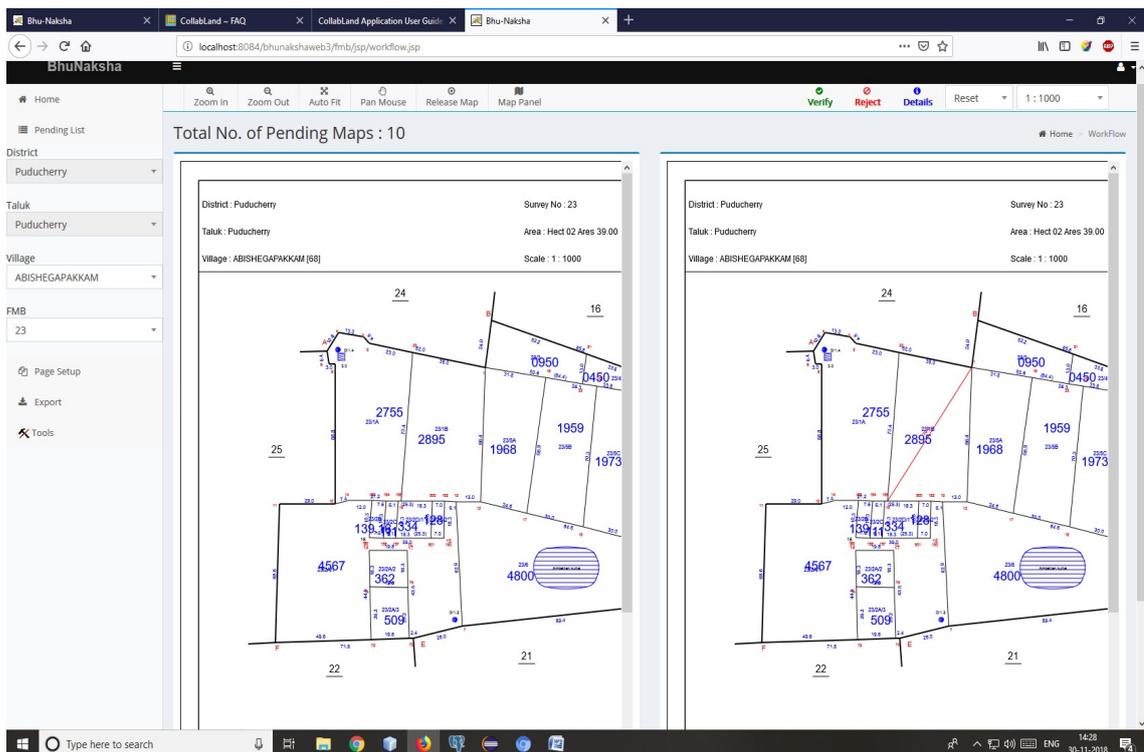


Figure 5 Workflow Page

This option allows the user to change the scale of the map for editing.

17.1 Forward

This option is meant for the user who is responsible for modifying the FMB during Internal workflow. When the modification is completed the FMB will be forward for further processing by the higher authority. When a map is forwarded, it cannot be accessed by anyone else other than the higher authority, until the workflow process is concluded.

17.2 Verify

This option is meant for the user who is responsible for modifying the FMB during Internal workflow. When the modification is completed the FMB will be forward for further processing by the higher authority. When a map is forwarded, it cannot be accessed by anyone else other than the higher authority, until the workflow process is concluded.

17.3 Approve

This option will be enabled for the user who is having the role of the Approving authority. Once this option is selected the modified FMB will be treated as the current FMB and the old FMB will not be available for further transaction. Care has to be taken before approving the modified FMB as it completes the transaction process.

17.4 Reject

This option will be enabled only for the verifying and the approving authority. When the concerned authority is not satisfied with the modifications and/or transactions carried out by the next lower level officer(s) this option will be used to terminate the initiated transaction.