

# USER DOCUMENT FOR CREATION OF AUTOCAD DRAWING FOR SCRUTINY MODULE (QGIS BASED)

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## 1. INTRODUCTION

T&CP is converting its drawing scrutiny process from Non-GIS to GIS. In new process input file for scrutiny module will be shapefile (.shp). User will continue to create drawing files in AutoCAD but now projection information is mandatory. To make compatible with the GIS system now table schema of drawing file has changed. In GIS system projection and table schema is the most important aspect, without proper projection and table schema the system will be unable to handle drawing files.

In this new system, there will be two methods to create drawing files;

- Civil 3D AutoCad based
- QGIS and AutoCad based

This document will describe drawing file creation using Civil 3D AutoCad software. Procedure to create drawing file using QGIS and AutoCad will be described in separate document.

## 2. PROJECTION INFORMATION

Projections are the backbone of any GIS system. Projections (Coordinate System) are a mathematical transformation that takes spherical coordinates (latitude and longitude) and transforms them into an XY (planar) coordinate system. This enables to create a map that accurately shows distances, areas, or directions. With this information, we can accurately work with the data to calculate areas and distances and measure directions. To create drawings, user first select UTM projection and later on during export drawing file should be converted into Geographic projection.

Users need to select UTM Northing-Easting coordinate system from AutoCAD coordinate system library. For AutoCAD system details of UTM Northing-Easting coordinate system are as follows;

### 2.1. UTM Projection Detail:

- Code Type – EPSG
- Category – UTM, WGS84 Datum
- Code – UTM84-44N
- Categories – UTM, WGS84 Datum

- EPSG Code – 32644
- Unit – Meter
- Description – UTM-WGS 1984 datum, Zone 44 North, Meter cent. Meridian 81d E

Zone will be different as per cities; user should select zone as per below mentioned list;

- ✓ Bhopal - Zone 43 North
- ✓ Indore - Zone 43 North
- ✓ Shivpuri - Zone 43 North
- ✓ Ujjain - Zone 43 North
- ✓ Betul - Zone 43 North
- ✓ Morena - Zone 43 North
- ✓ Narmadapuram - Zone 43 North
- ✓ Omkareshwar - Zone 43 North
- ✓ Burhanpur - Zone 43 North
- ✓ Gwalior - Zone 44 North
- ✓ Jabalpur - Zone 44 North
- ✓ Sagar - Zone 44 North
- ✓ Rewa - Zone 44 North
- ✓ Datia- Zone 44 North
- ✓ Bhind- Zone 44 North
- ✓ Dabra - Zone 44 North
- ✓ Chhatarpur - Zone 44 North
- ✓ Gohad - Zone 44 North

## 2.2. GCS Projection Detail:

- Code Type – EPSG
- Category – World / Continental
- Code – LL84
- Description – WGS84 datum, Latitude-Longitude
- Categories – Lat Longs; World/Continental

- EPSG Code – 4326
- Unit – Degree

### 3. LAYER TYPES

Based on scrutiny rules parameters, Features need to captured in shape file will be divided into two types. Polygon feature and line feature. Users will need to create drawing features in a polygon or line format.

User should ensure to use same spelling in layer. User must ensure to draw drawing units as per above-mentioned table. Detailed methodology will be described in methodology section.

Category wise details of polygon and line features are as follows;

*Table 1 - Polygon and Line features*

S.No.	Polygon Feature	Remarks	Line Features
1	INTERNAL ROAD		ELECTRIC LINES
2	OUTER ROAD		FRONTAGE
3	RAILWAY		DIM_MOSF
4	OUTER BOUNDARY		DIM_MOSR
5	ROAD WIDENING		Dim_MOS_SIDE_1
6	PLOT AREA		Dim_MOS_SIDE_2
7	GROUND COVERAGE		DIM_INTERNAL ROAD
8	OPEN SPACE		DIM_OUTER ROAD
9	SERVICE AREA		DIM_OUTER DIMENSION
10	PATHWAY		INTERNAL ROAD CENTERLINE
11	AREA UNDER MASTERPLAN ROAD		OUTER ROAD CENTERLINE
12	NOT INCLUDED IN PLANNING AREA		
13	CONVENIENCE SHOP		
14	SHOP CUM RESIDENTIAL		
15	MUNICIPALITY EWS		
16	MUNICIPALITY LIG		
17	PANCHAYAT EWS		
18	PANCHAYAT LIG		
19	OPENSOURCE PARKING		
20	BASEMENT PARKING		
21	OVERGROUND PARKING		
22	PODIUM PARKING		
23	CLUB_RESORT		
24	GYM		
25	YOGA CENTER		

26	SWIMMING POOL		
27	RESTAURANT		
28	RESIDENTIAL UNDER INDUSTRY		
29	1 FLOOR PARKING		
30	2 FLOOR PARKING		
31	MILK BOOTH		
32	CRECHE		
33	SCHOOL		
34	WATERBODIES		
35	RIVER		
36	LAKE		
37	NALA		
38	MAJOR CANAL		
39	MINOR CANAL		
40	WATERBODY BUFFER		
41	PROPOSED MODIFICATION BOUNDARY		
42	EXECUTED WORK BOUNDARY		

## 4. LAYERS TABLE SCHEMA

In the GIS system, attributes are managed in tables based on a series of simple, yet essential, relational data concepts:

Tables contain rows.

- All rows in a table have the same columns.
- Each column has a data type, such as integer, decimal number, character, and date.

Tables and relationships play a key role in GIS, just as they do in traditional database applications. Rows in tables can be used to store all the properties of geographic objects. This includes holding and managing feature geometry in a Shape column.

As per final layout template, users need to create/upload four types of shapefile (.shp). details are as follows;

1. PolyData
2. LineData
3. Location plan

**PolyData file** – This shape file contains all feature in polygon format. Features captured in this file is shown in table-1. While creation user must ensure to capture all feature plot wise and fill



attributes as per below table structure.

Table 2 - PolyData columns

plot_no	area	road_abt	height	width	length	road_nm	far	pltd_pr_nm	other_pr_nm	unt_cnt	type	layer	landuse	sublanduse
---------	------	----------	--------	-------	--------	---------	-----	------------	-------------	---------	------	-------	---------	------------

User should ensure to fill plot wise details. All fields must be in same format as described above (small letters); Details of each column are as follows

- plot\_no – In this column user will fill individual plot numbers. Write 0 where it is not applicable.  
Fill Plot\_no as IR1, IR2, IR3 etc. in Internal Road Centerline and DIM\_Internal Road.  
Fill the Plot\_no as "RA" in Dim\_Outer Road, of the outer road for which the user wants the road abutting.
- area – In this column user will fill an area of each polygon.
- road\_abt – In this column user will fill road abutting values, if applicable.
- height – In this column, the user will fill in the height details wherever applicable.
- width - In this column, the user will fill in the width details wherever applicable.
- length - In this column, the user will fill in the length details wherever applicable.
- road\_nm - In this column, the user will fill in the road names wherever applicable. If not applicable then user should write N.A.
- far - In this column, the user will fill in the plot wise FAR values wherever applicable.
- pltd\_pr\_nm - In this column, the user will fill plotted premises name (category) wherever applicable. If not applicable then user should write N.A.
- other\_pr\_nm - In this column, the user will fill other category premises name wherever applicable. If not applicable then user should write N.A.
- unt\_cnt - In this column, the user will fill dwelling unit count against each plot wherever applicable. In case of cinema, user will write seat count.
- type - In this column, the user will fill Major / Minor wherever applicable.
- layer - In this column, the user will layer/feature name, such as MOSF, Ground Coverage, Road, EWS-LIG, etc.
- landuse - In this column, the user will enter landuse category.
- sublanduse - In this column, the user will enter sublanduse category.
- If user creates a separate polygon for EWS/LIG then Polygon should be named as OB2. Distance between Main promises and EWS/LIG polygon cannot be greater than 2 KM.
- When applying Section 29/3 in the new APLASS system, where Section 29/1 was applied in the old APLASS system, follow these steps:

1. Create a layer named “Outer Boundary” and enter “New OB1” in the plot number column. Mark the proposed area boundary in red.
  2. Create a layer named “Outer Boundary” and enter “OLD OB1” in the plot number column. Mark the existing area boundary in yellow.
- When applying Section 29/3 in the new APLASS system, where Section 29/1 has already been applied, follow these steps:
    1. Prepare a shape file for Section 29/3 using the same format as the shape file for Section 29/1.
    2. Create a layer named “Proposed Modifications” and mark the proposed area boundary in red. And Create another layer named “Executed Work” and mark the existing area boundary in yellow.

Table 3 - PolyData attribute type

Attribute	Type	Attribute	Type
plot_no	Character	pltd_pr_nm	Character
area	Real	othr_pr_nm	Character
road_abt	Real	unt_cnt	Integer
height	Real	type	Character
width	Real	layer	Character
length	Real	landuse	Character
road_nm	Character	sublanduse	Character
far	Real		

**Type Field:** User should ensure to fill “*Inside Planning Area*” or “*Outside Planning Area*” under type field.

**LineData file** – This shapefile contains all features in line format. Features captured in this file are shown in table-1. While creation user must ensure to capture all feature plot wise and fill attributes as per below table structure.

Table 4 - LineData columns

elec_volt	plot_n	front_lngt	layer
0	38	10	Frontage
32	0	0	Electric

Table 5 - LineData attribute tyoe

Attribute	Type
-----------	------

elec_volts	Real
plot_no	Character
front_lngt	Real
feature	Character

Users should ensure to fill plot wise details. All fields must be in same format as described above (small letters); Details of each column are as follows;

**Elec\_volts** - In this column, the user will fill attributes (volts) against electric line. Units will be in volts.

**Plot\_no** - In this column user will fill individual plot numbers. Write 0 where it is not applicable.

**Front\_lngt** - In this column user will fill plot wise frontage length. Write 0 where it is not applicable.

**layer** – In this column user will write feature name for example; Frontage / High Voltage Electric line / Medium Voltage Electric Line etc.

**Annotation file** – This shapefile contains all Annotations as Point. User may enter Annotations, if required, as Point and fill attributes as per below table structure.

*Table 6B - Annotation attribute tyoe*

Attribute	Type
name	Character

**Location plan-** This file shows location details of site. This file will contain nearby colony boundaries, approach roads, etc. While creation user must ensure to capture all feature and fill attributes as per below table structure.

*Table 7 - Location plan attributes*

layer
Adjacent Khasra
Proposed Site
SH_20m
NH_25M

**Layer\_nm** - In this column user will fill name of individual polygons. User will capture features like proposed site, Road name & adjacent khasra, etc.

**Khasra plan** - This file shows Khasra plans of the site. This file will all adjoining khasra boundaries with their numbers. While creation user must ensure to fill attributes as per below table structure.

Table 8 - Khasra plan attributes

khasranum	layer
290	Khasra
315	Khasra
316	Khasra

Khasranum - In this column user will fill the khasra number.

Layer\_nm – In this column user will fill the name of polygon; like khasra.

### **Points to remember –**

1. **In case of Others Category for Premises like self-residence etc.** Following fields must have filled under outer boundary;

- Open space area
- FAR
- Parking area
- Frontage (Line Feature)
- In case of common “open space/park area” “plot\_no” field should be blank.

2. **In case of “outer boundary”, user should “plot\_no” as OB1, OB2.....n.**

3. **In case of open space for individual plot, “plot\_no” field should be filled.**

4. **In case of others category; For DIM\_Outter Road, user should write “RA” in plot\_no column as per Line feature, which is made in front of the "frontage" .**

5. **For ABD area (Indore), Plot width should be mentioned under width column of outer boundary.**

6. **In case of plotted category, “pltd\_pr\_nm” & “othr\_pr\_nm” should be filled with respective categories.**

7. **In case of area falls on AB road 60m Buffer (Indore City Case). User shall create drawing with two outer boundaries. One outer boundary contains details as per commercial premises (Area within 60 buffer) and another outer boundary contains premises details as per actual Land Use (outside 60m buffer).**

## **5. SOFTWARE REQUIRED**

- AutoCAD
- QGIS (Open Source Software)

## 6. METHODOLOGY

Before starting creation of drawing in AutoCAD, user should take coordinates from fields using DGPS/Total Station /GPS. Minimum of four coordinates of the plot will be required. The more coordinate points are, the greater the accuracy. Users should ensure to take sufficient numbers of coordinates. Number of coordinates will depend upon shape of the site, if site is irregular then user should try to take coordinates on each corner of the site. Users should take coordinates in UTM, Northing-Easting format (UTM, WGS84 Datum, coordinate system). For example;

*Table 9 - Coordinates sample*

S.No	Easting	Northing
1	213791.9245	2899570.855
2	213760.0462	2899588.024
3	213810.6914	2899604.012
4	213779.1875	2899621.843

### 6.1. Plotting Field Coordinates

In this process, we hereby going to define two process for plotting of field coordinates using QGIS software. QGIS is the open source software and available freely. User need to download the software from QGIS website. Two different processes are as follows;

- 1) Plotting of points using field coordinates values
- 2) Plotting of points using csv file

#### 6.1.1. Plotting of points using field coordinates values

After installing of QGIS software, user need to open QGIS software. To start QGIS software, user will go to Start/ Menu & click on “QGIS Desktop” then QGIS Desktop will open.

User shall click on “New Empty Project” Icon, to open the new blank project.

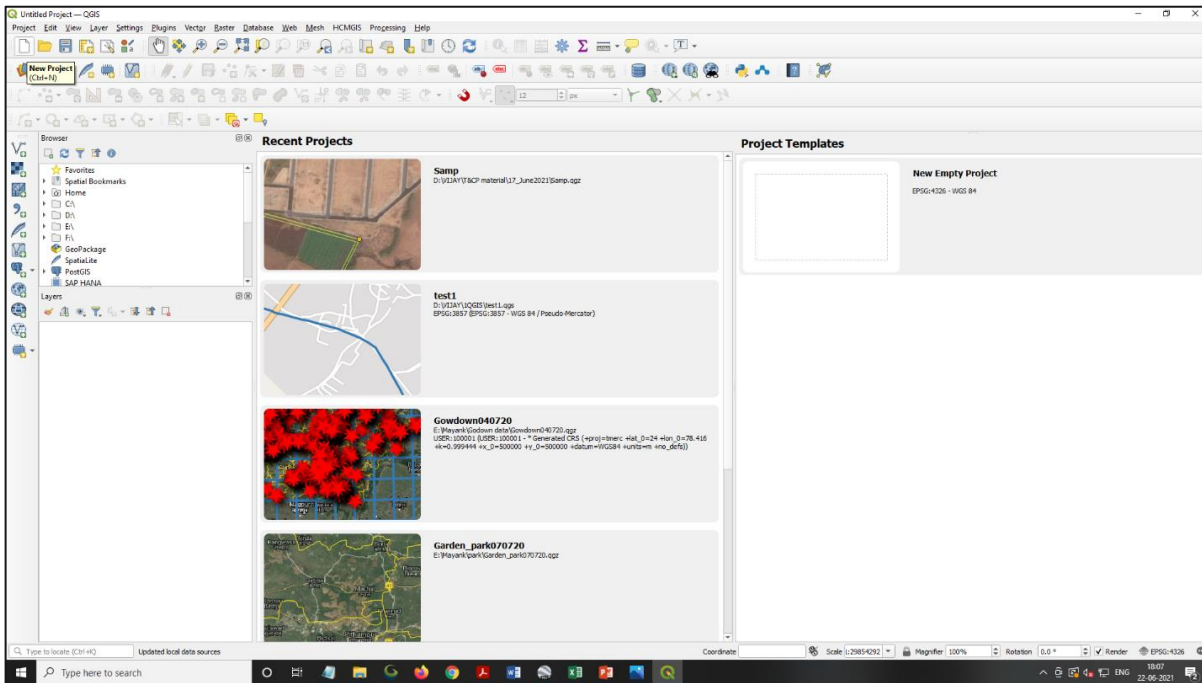


Figure 1 - QGIS window

Since QGIS are the open source software, therefore we need to download various plugins (functions) from internet. To create points from latitude/longitude values, user shall need to download the “Numerical Digitize” plugins. To Install Numerical Digitize plugins, Go to “Plugins” option, and click “Manage and Install Plugins” option.

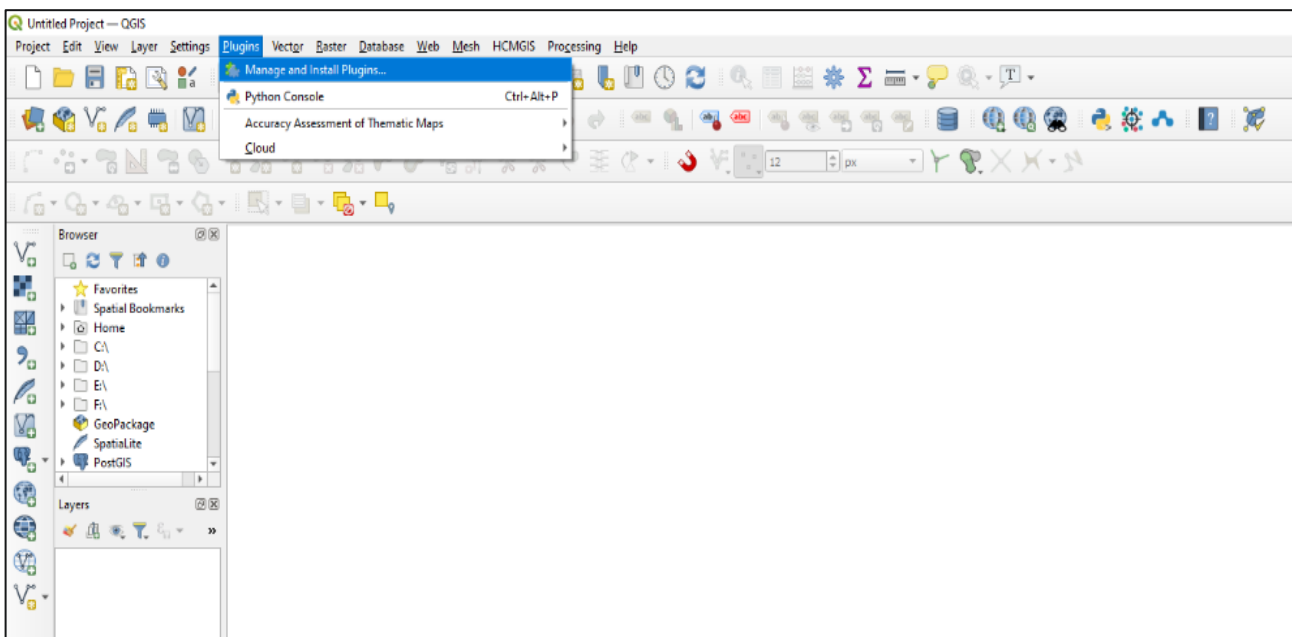


Figure 2 - Manage & Install Plugin

4 – “Plugins” Window will be open, and type “Numerical Digitize” in the search window, “Numerical Digitize” will be displayed. User shall select plugin and click on “install plugin” option

at the bottom of the window. “Numerical Digitize” shall be installed. After installation close the window by clicking on “close” option.

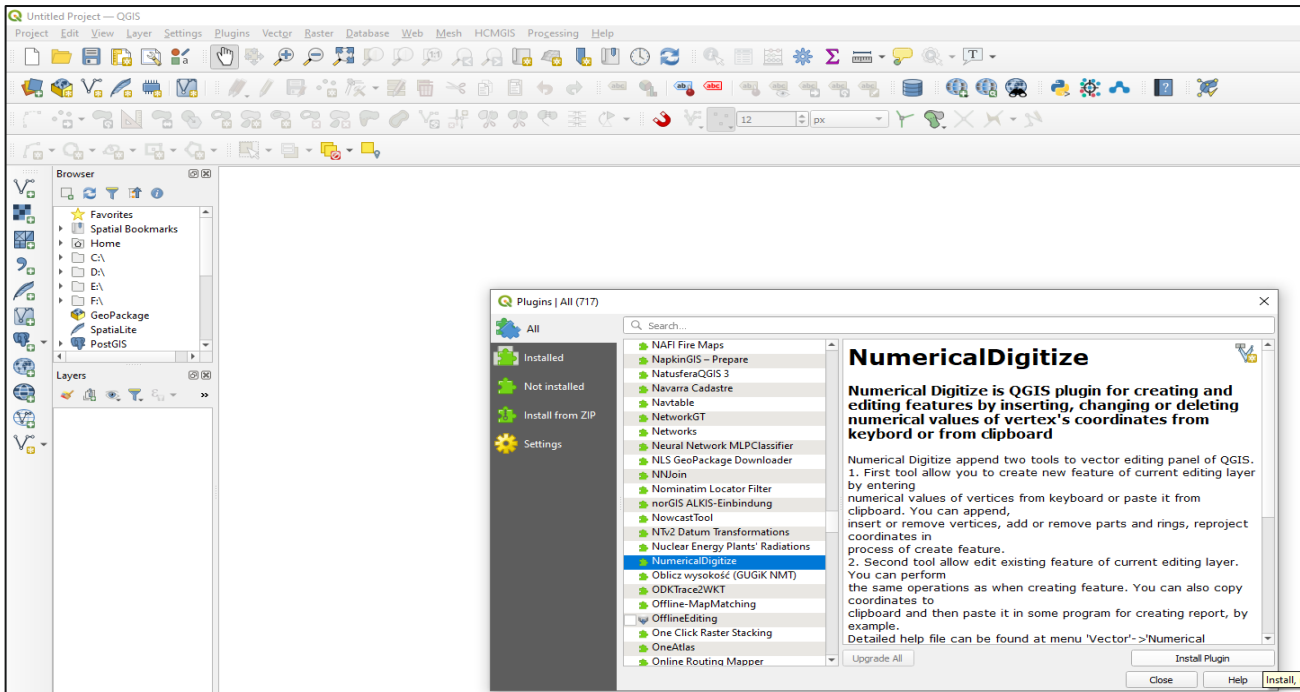


Figure 3 - Numerical Digitize

To start the process, user shall click on “Layer” tab and select “Create Layer” and “New Shapefile Layer” in QGIS.

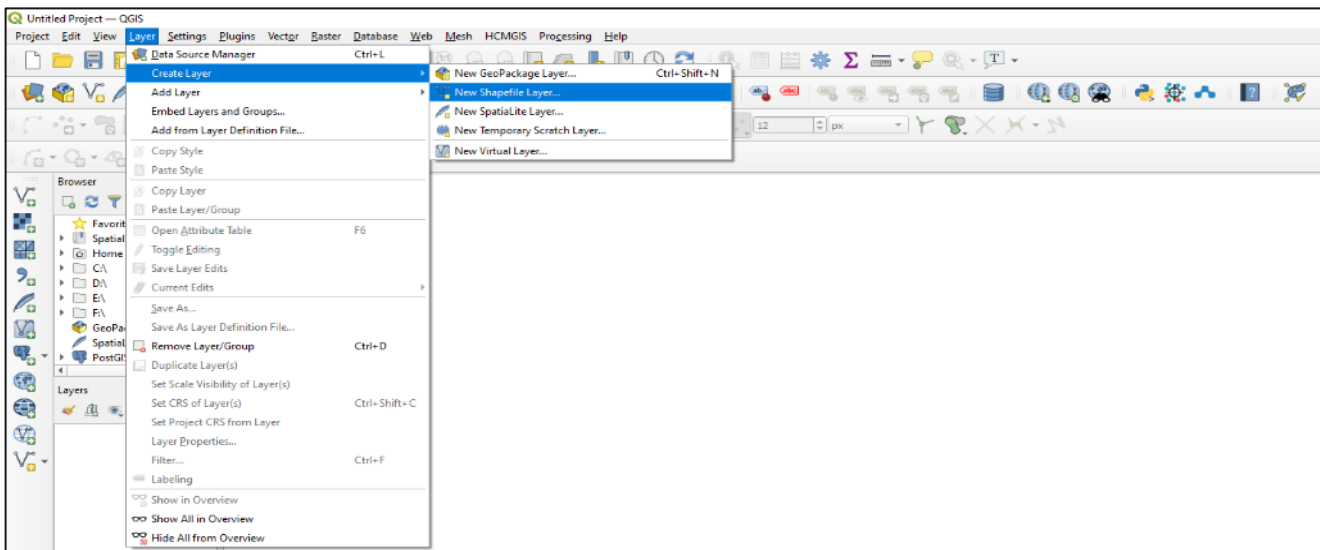


Figure 4 - New Shape File

“New Layer Shape file” window will open; user need to give path to save the file using fine name tab.

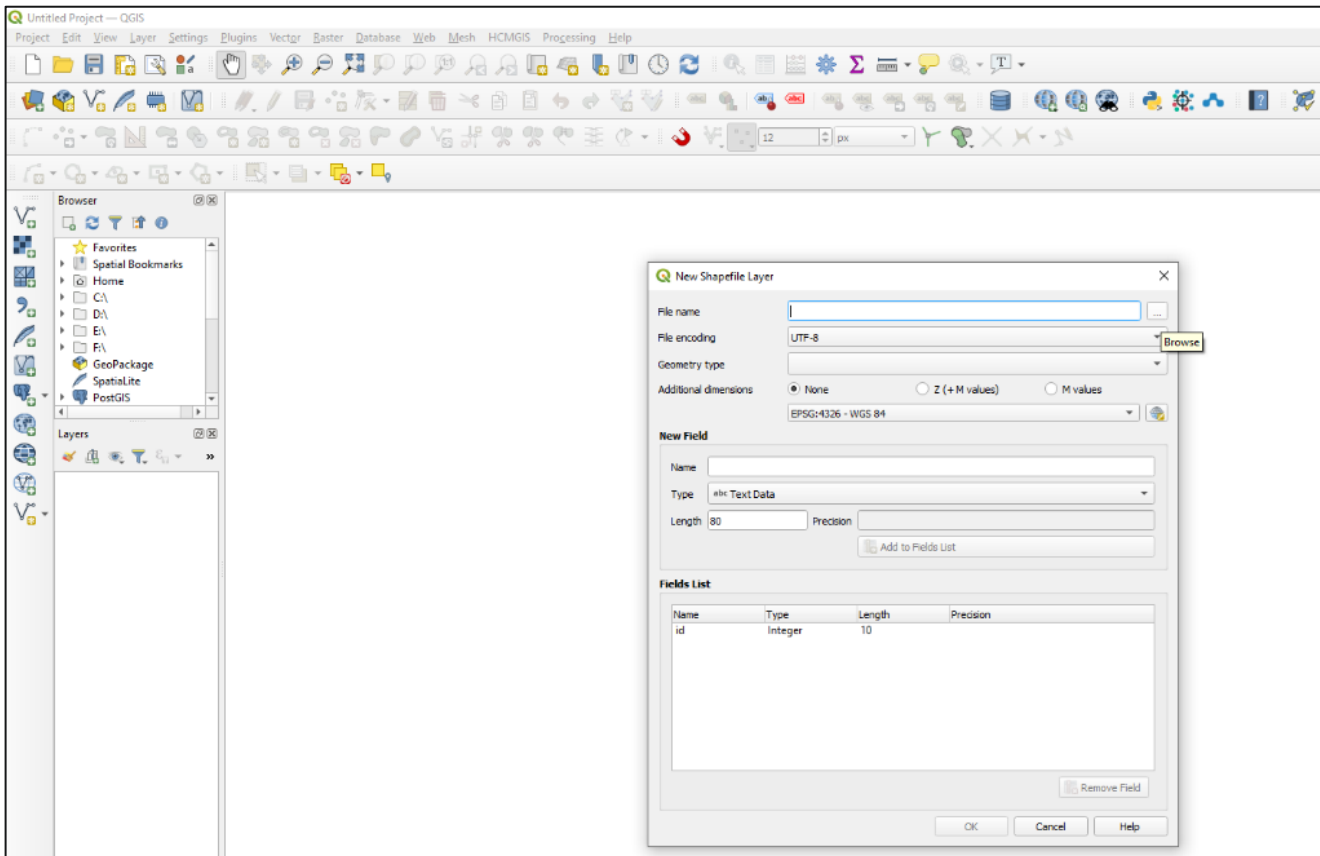


Figure 5 - Shape file template

User will give the file name in “Save Layer As” Window. Then click “save” option. And Select “Point” option in “Geometry type” option.

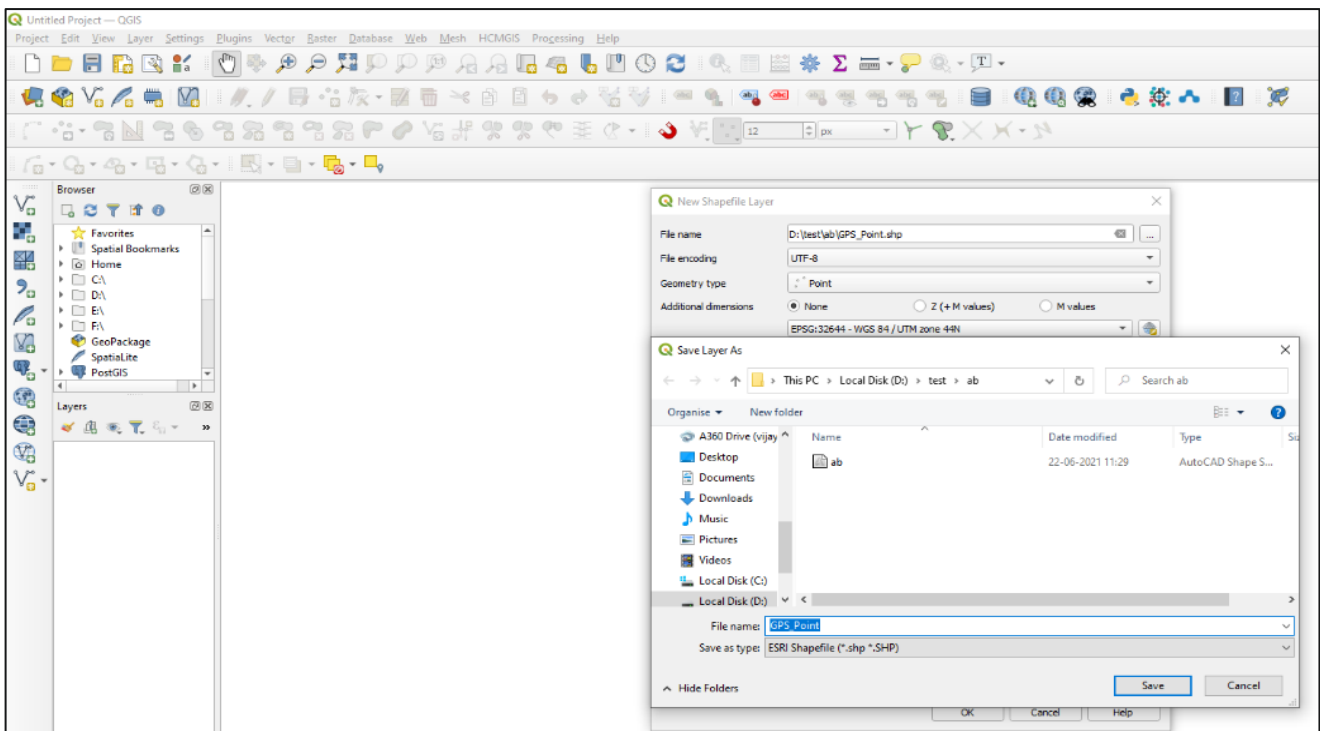


Figure 6 - Shape file creation



Now user need to define Coordinate system. User will define CRS (Coordinate Reference System Selector) Projection. Click “Select CRS” icon, then will be open “Coordinate Reference System Selector (CRS)” window.

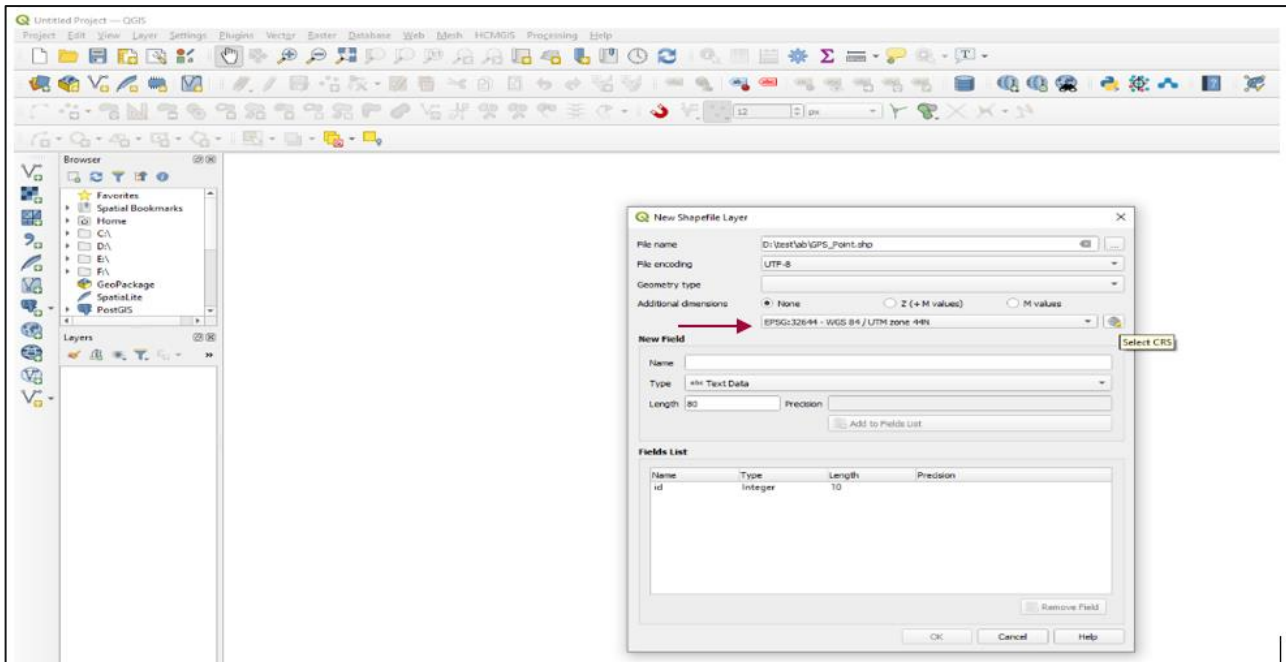


Figure 7 - Coordinate System

In CRS (Coordinate Reference System Selector) window will open. User have to type “326” in the Filter option, all related reference system will be displayed. User need to select required coordinate system from all the displayed option and click “Ok” option.

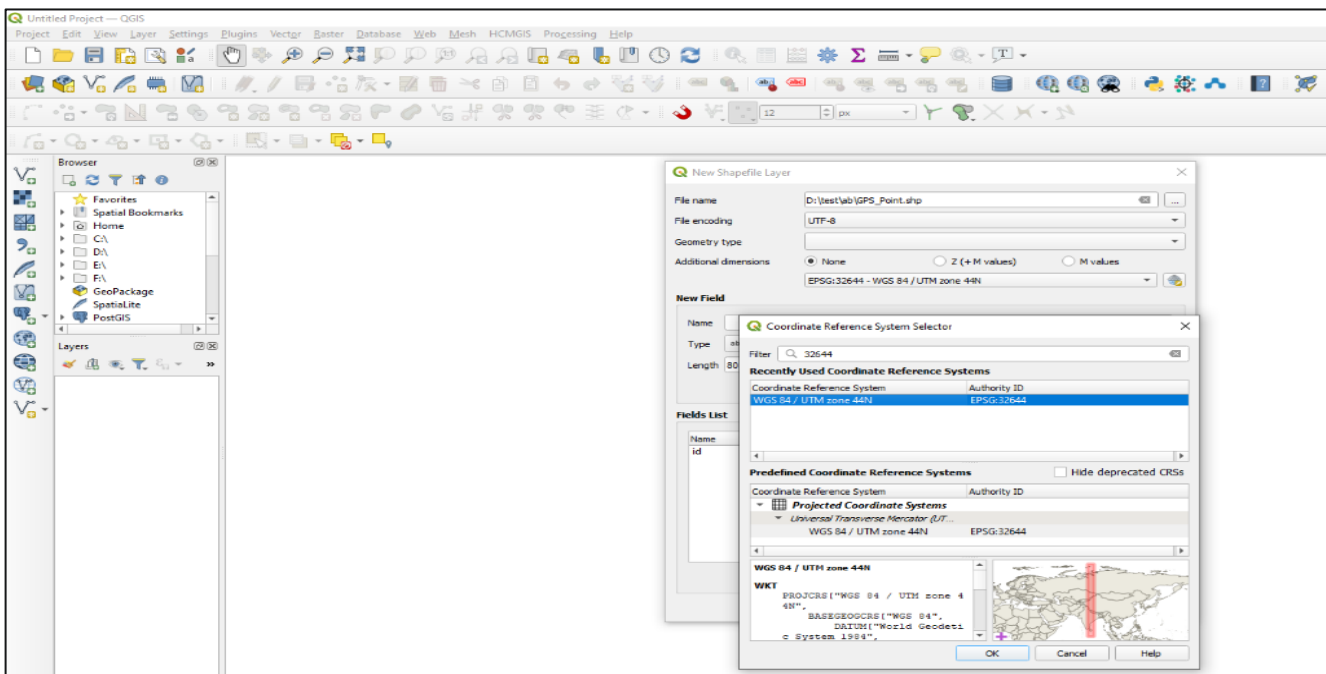


Figure 8 - Coordinate System Options

After selection of coordinate system, user needs to create fields to enter Latitude / longitude values. In “New Field” Tab user will enter Easting and Northing or X and Y in Name tab:, Type: Text Data and Click “Add field to list “option.

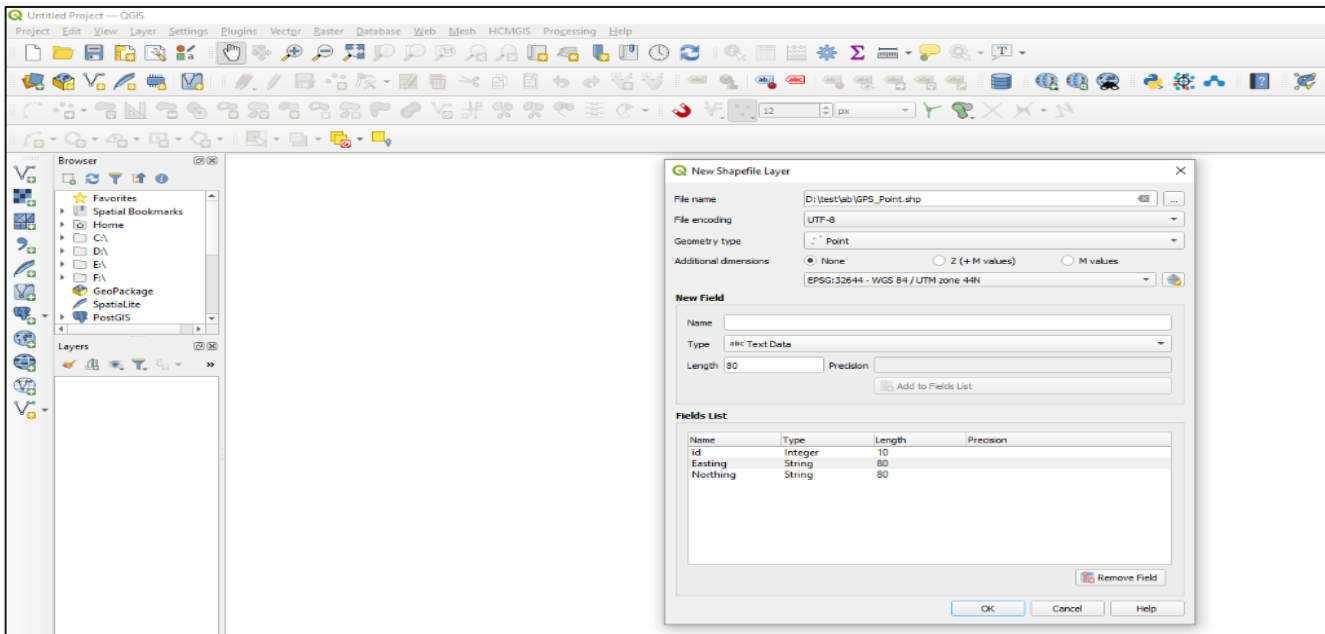


Figure 9 - Northing Easting

User will go to “Layer” window in Left side, right click on file name & and click “Toggle editing” option.

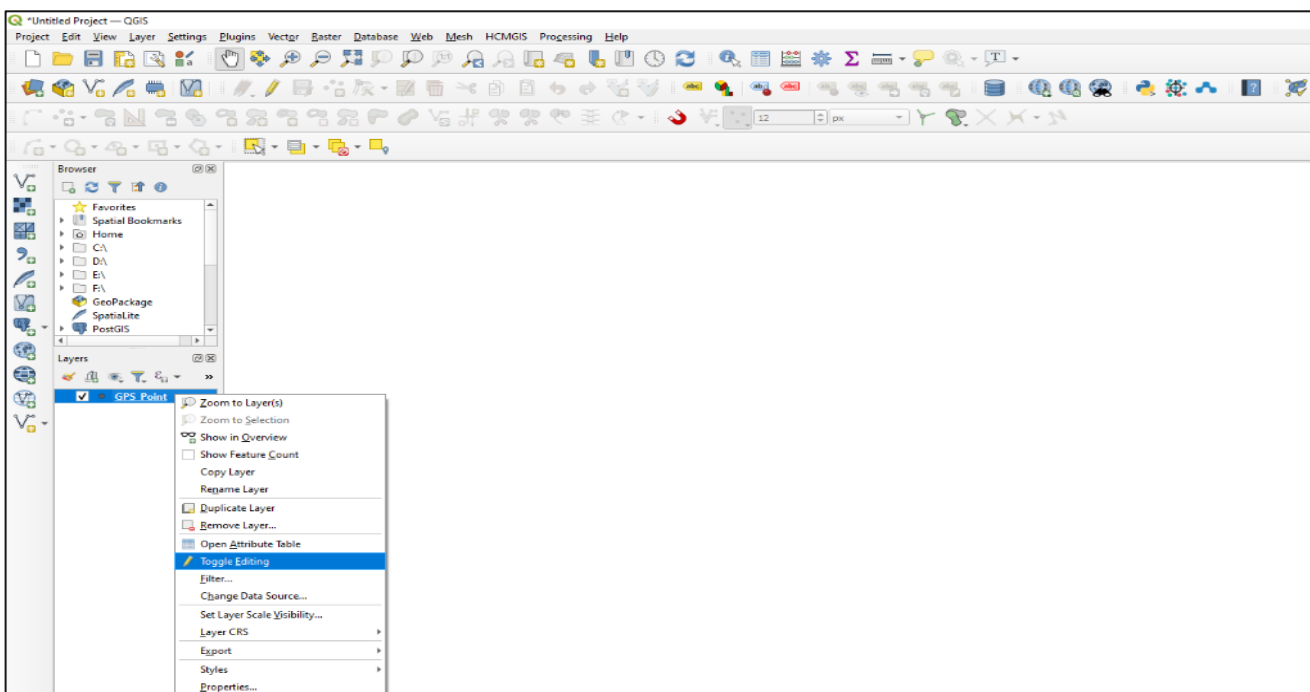


Figure 10 - Toggle Editing

Now user needs to click on “Add point Feature” icon.

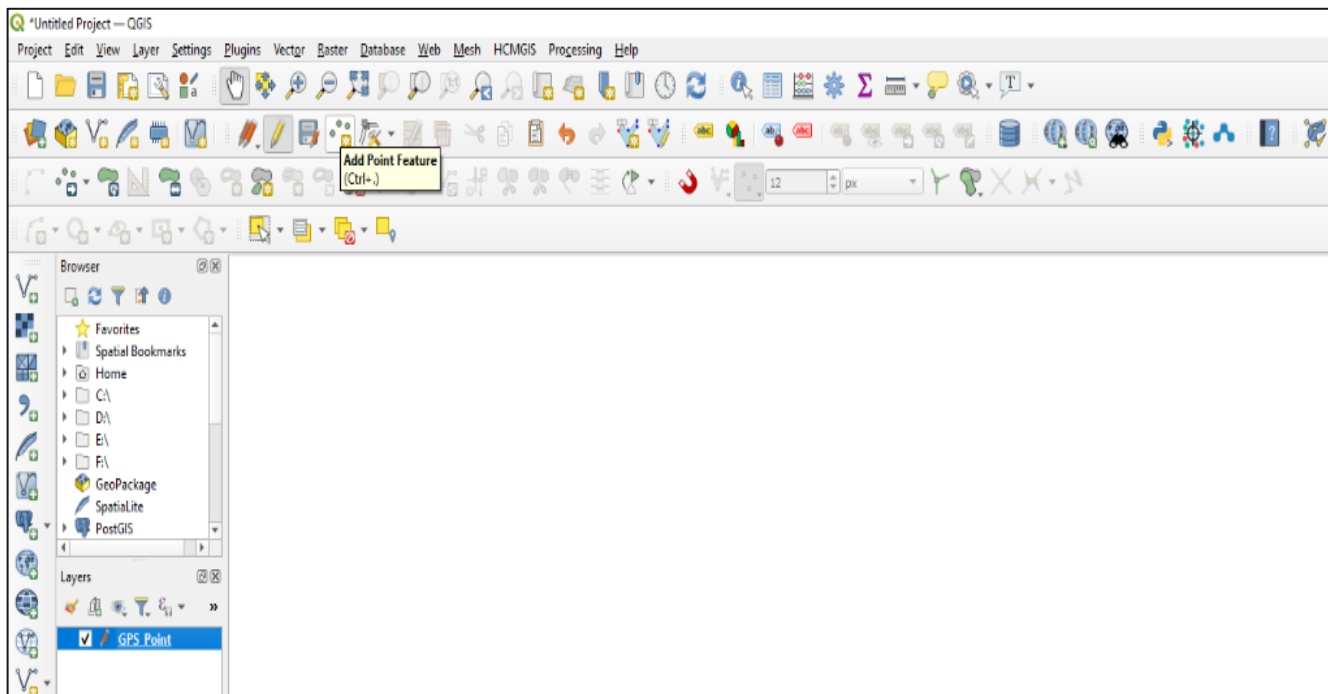


Figure 11 - Add point Feature

After that user will click on “Numerical Digitize” icon.

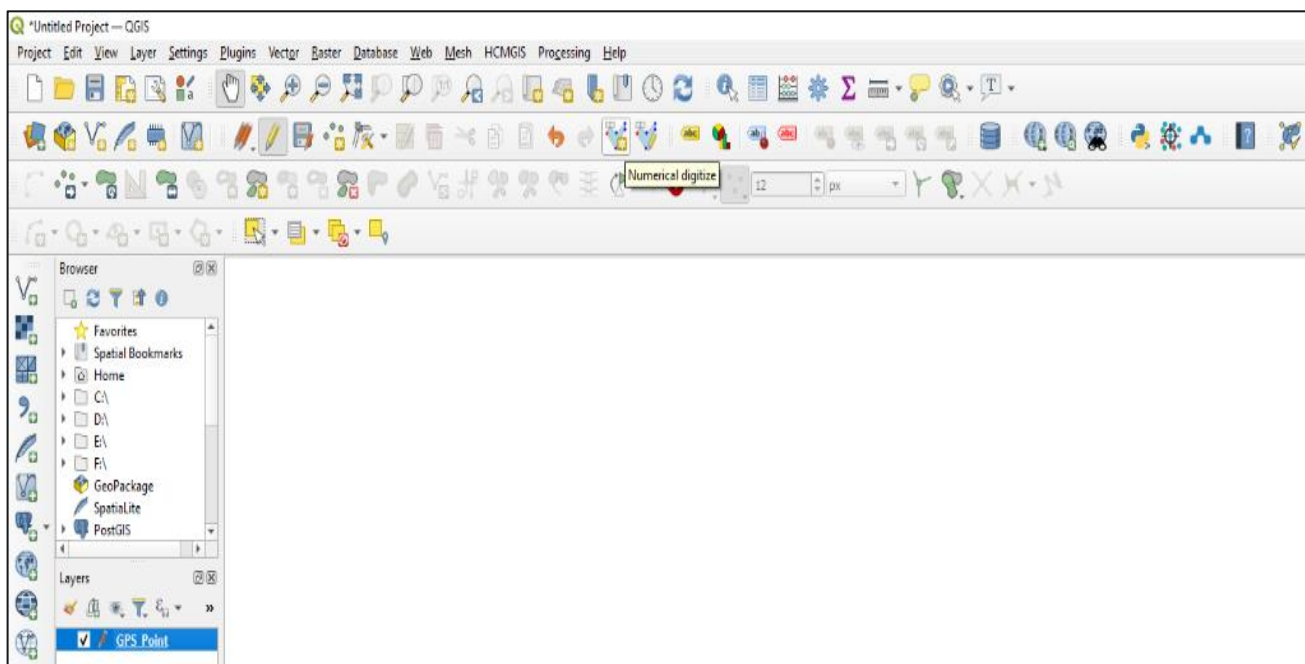


Figure 12 - Numerical Digitize

After that “Add Feature” window will be open, then fill X&Y or Northing & Easting. Then click “OK” Option.

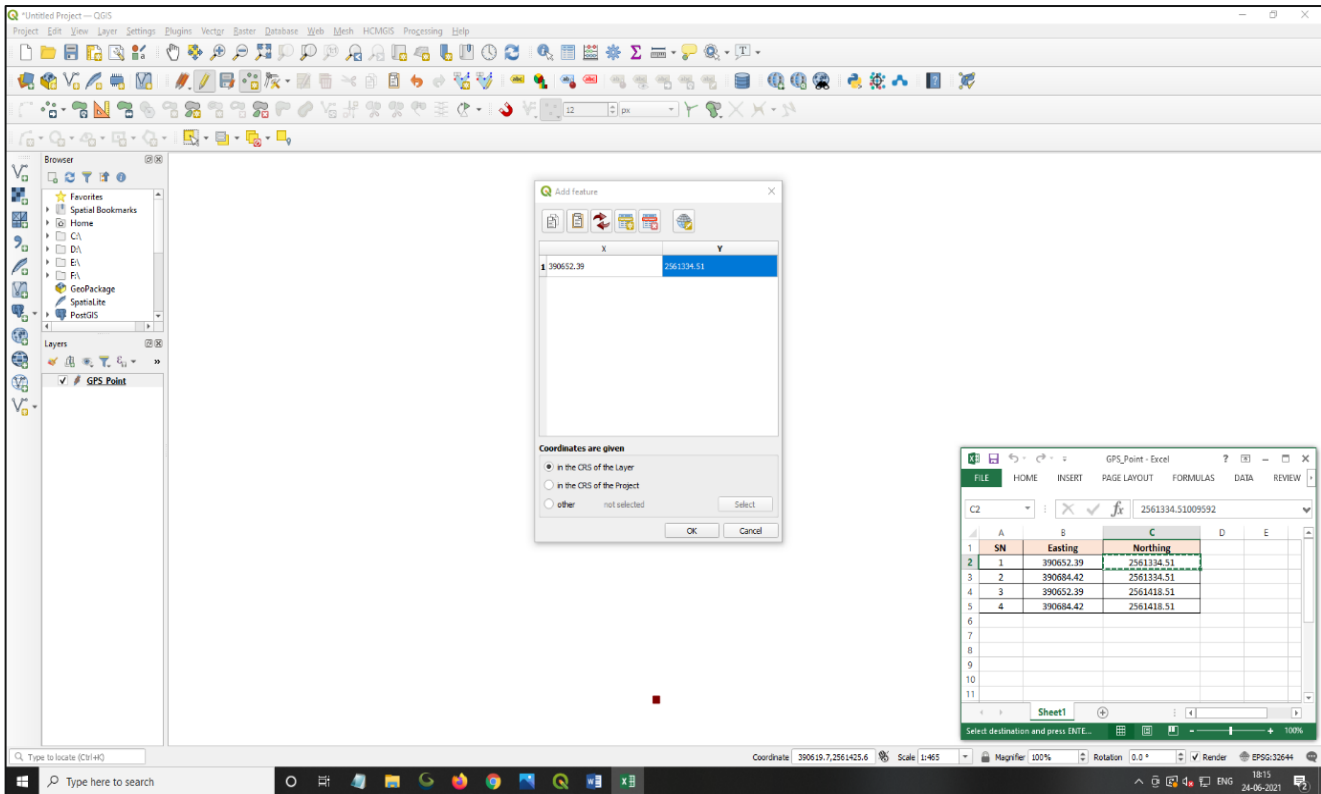


Figure 13 - Add feature

After that “GPS Point Feature Attribute” window will open. User will fill Point Number in “Id” tab & fill Easting, Northing values and Click “OK” option.

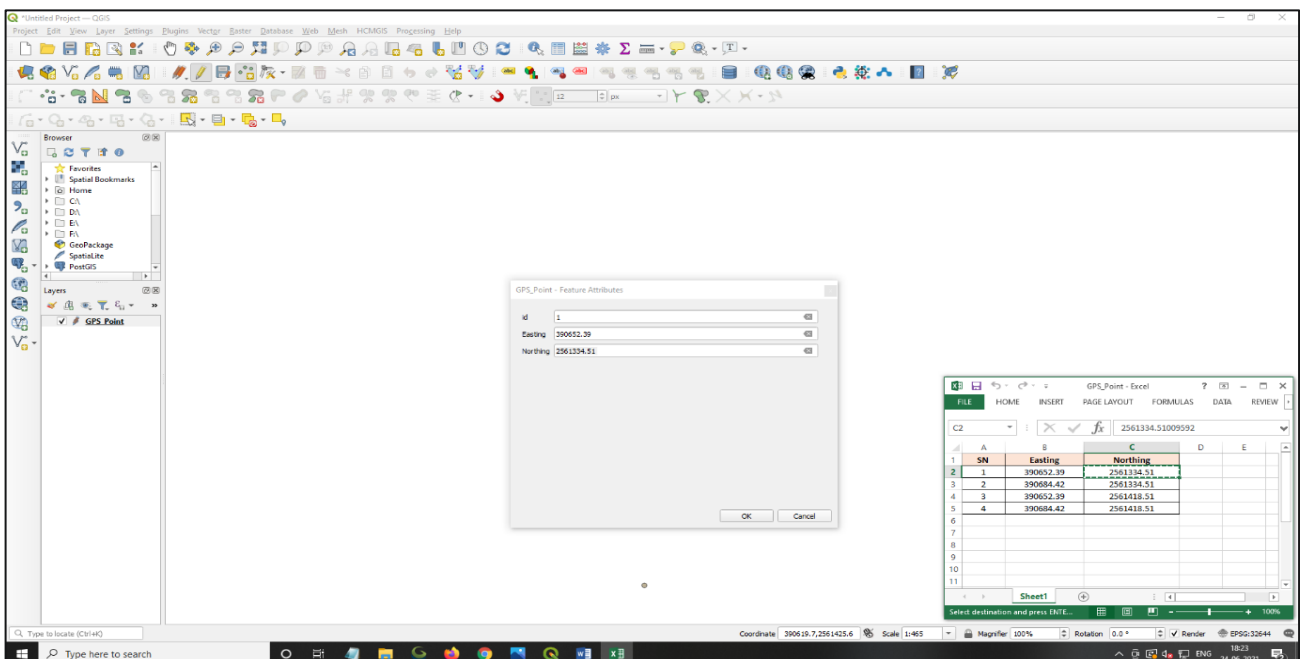


Figure 14 - GPS Point Feature Attribute

User will repeat the same process to plot other points. After that all point with coordinate will be visible.

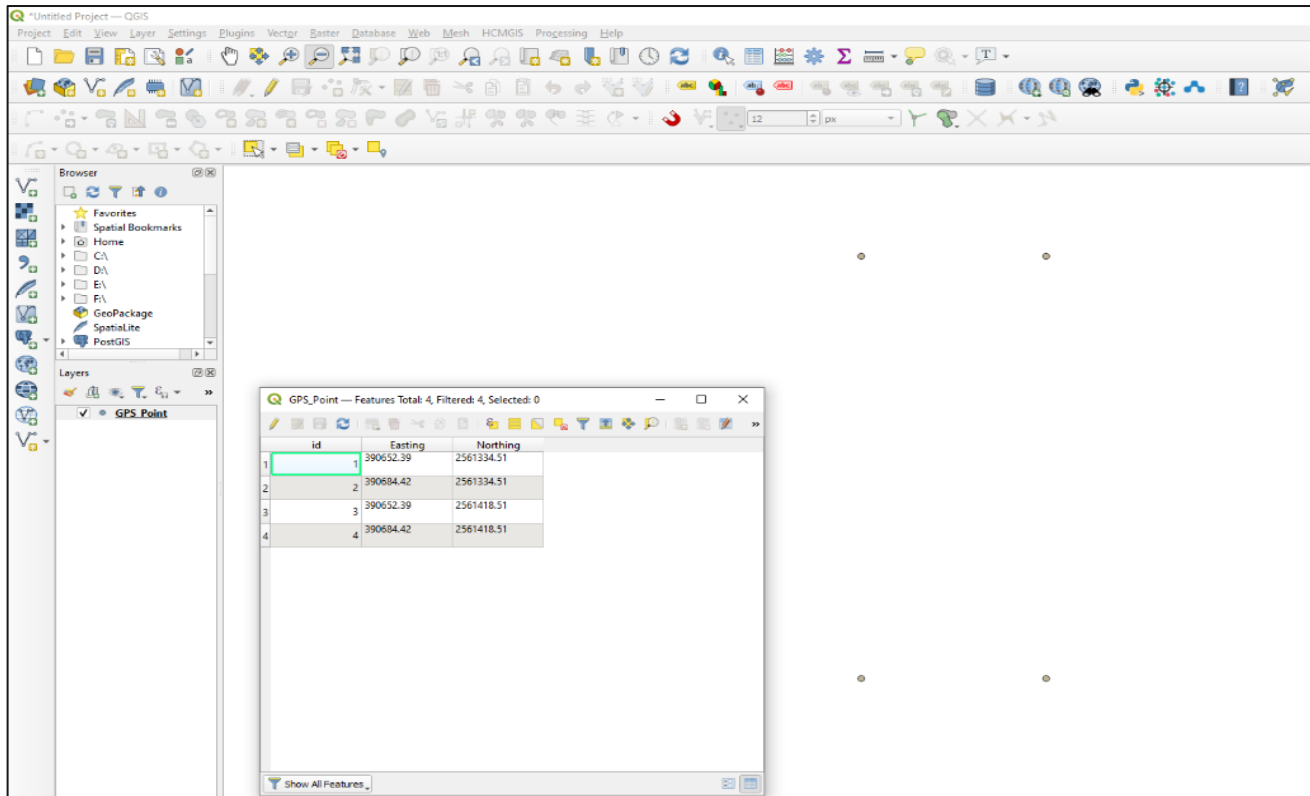


Figure 15 - Coordinates Points

### 6.1.2. Plotting of points using csv file

After installing of QGIS software, user need to open QGIS software. To start QGIS software, user will go to Start/ Menu & click on “QGIS Desktop” then QGIS Desktop will open.

User shall click on “New Empty Project” Icon, to open the new blank project.

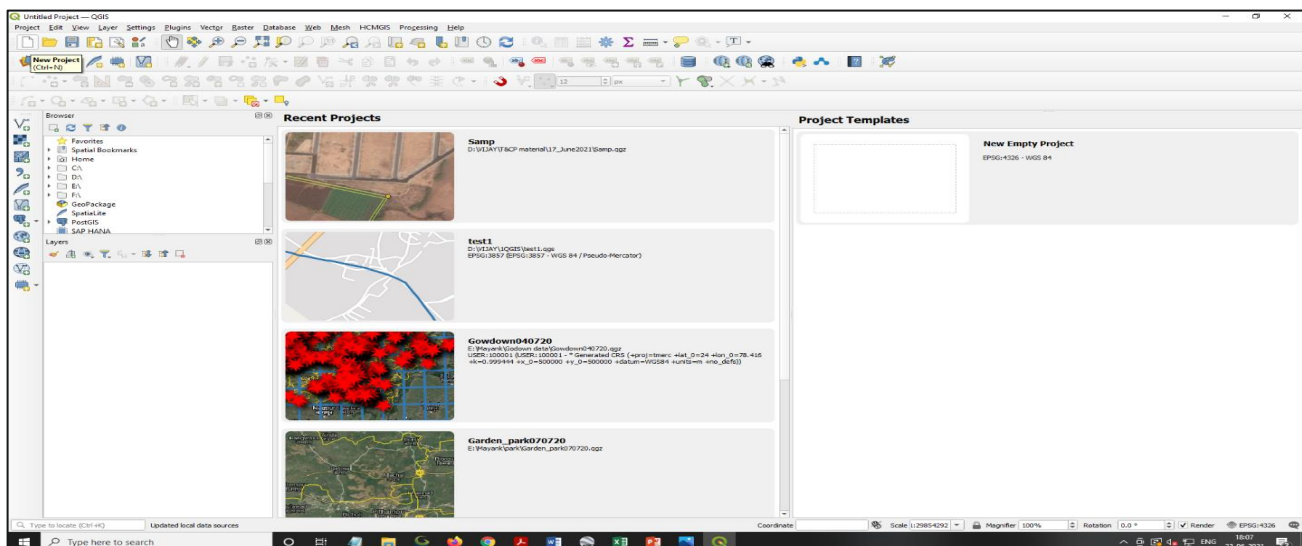


Figure 16 - QGIS Window

User will click on “Layer” option, & select “Add Layer” option. In add layer option user will click on “Add Delimited Text Layer” option in QGIS.

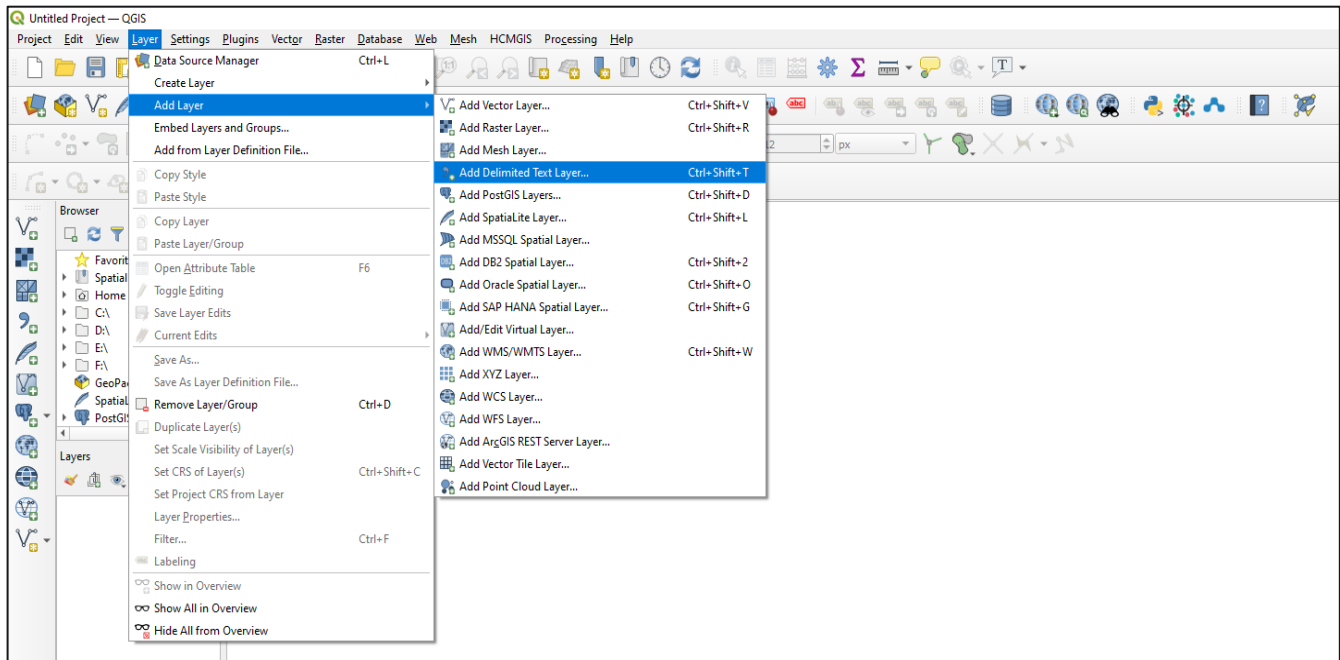


Figure 17 - Add Delimited Text Layer

“Data Source Manager-Delimited Text” window will open. User will select “CSV (Comma Separated Values)” option from the left hand panel.

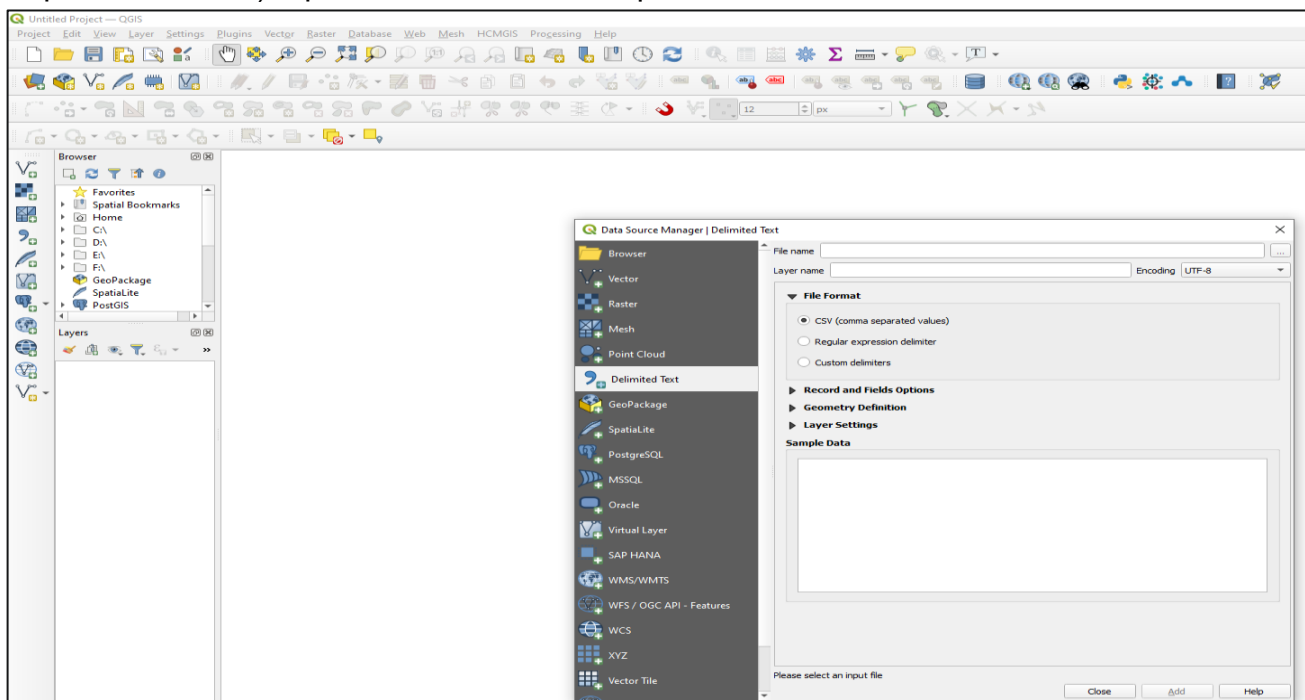


Figure 18 - Data Source Manager-Delimited Text

User will click on “File name” tab and select “Choose a Delimited Text File to Open” tab. User needs to select “CSV (Comma Separated Values)” format Excel file & click “open” option.

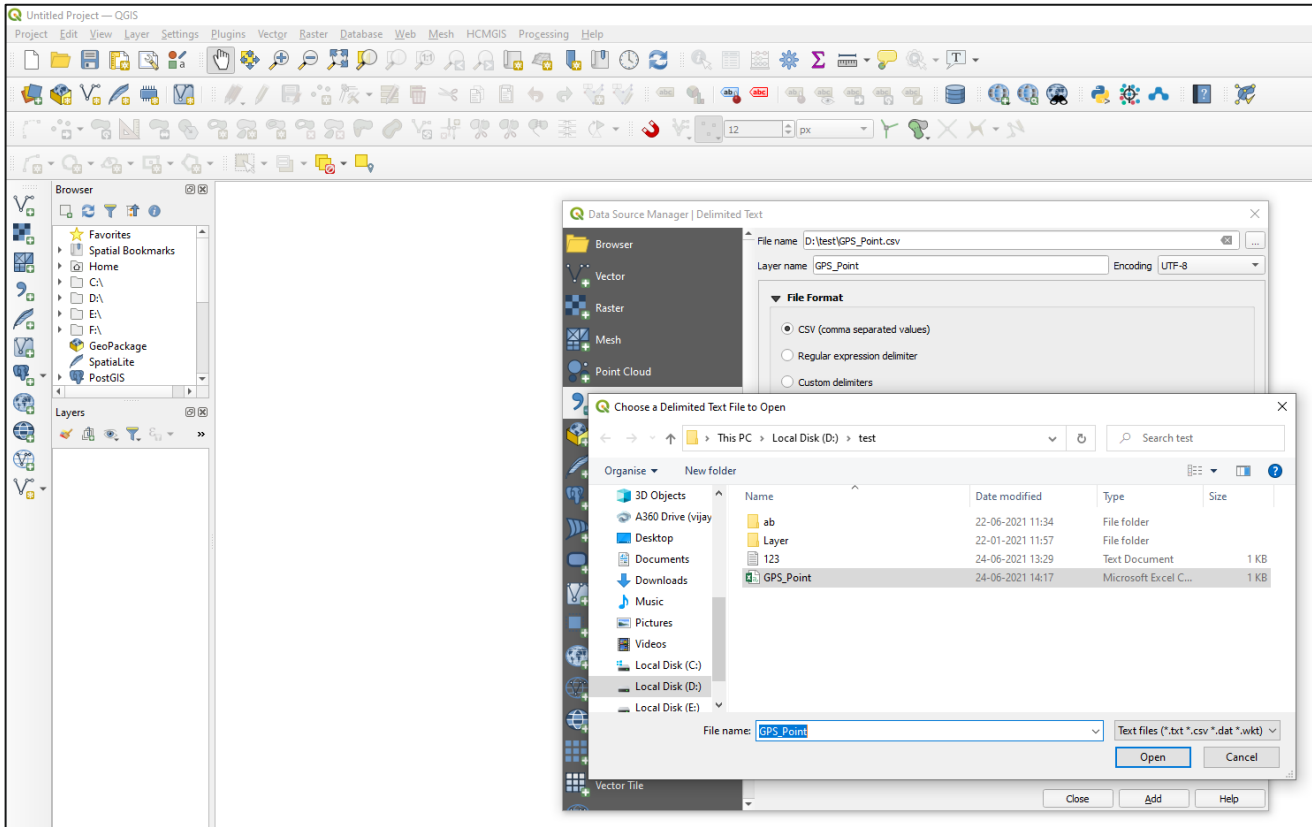


Figure 19 - CSV file save option

After selection of csv file, click “Add” Option & Click “Close” Option. CSV file will open in QGIS.

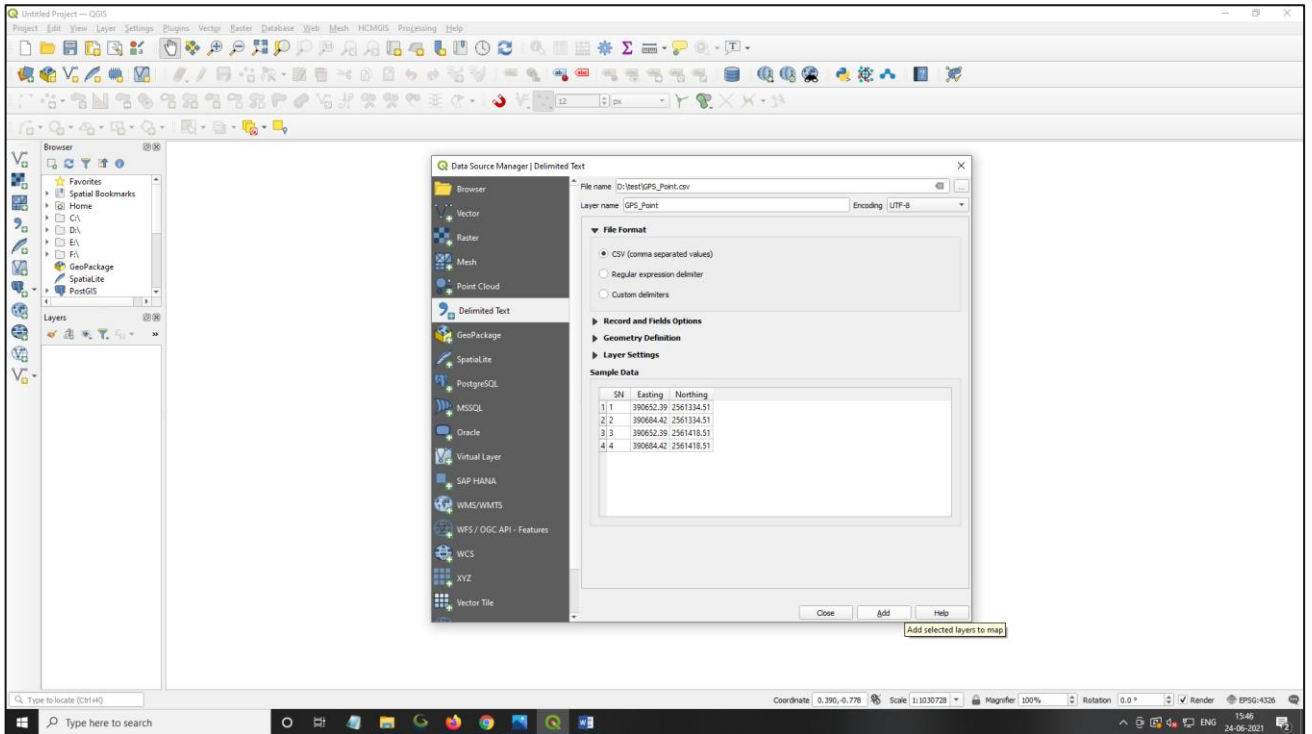


Figure 20 - Data Source Manager

Go to “Layer” window in left side, Right click on layer name, select “Layer CRS” option & Select & click “Set Layer CRS” option. CRS (Coordinate Reference System Selector) window will open.

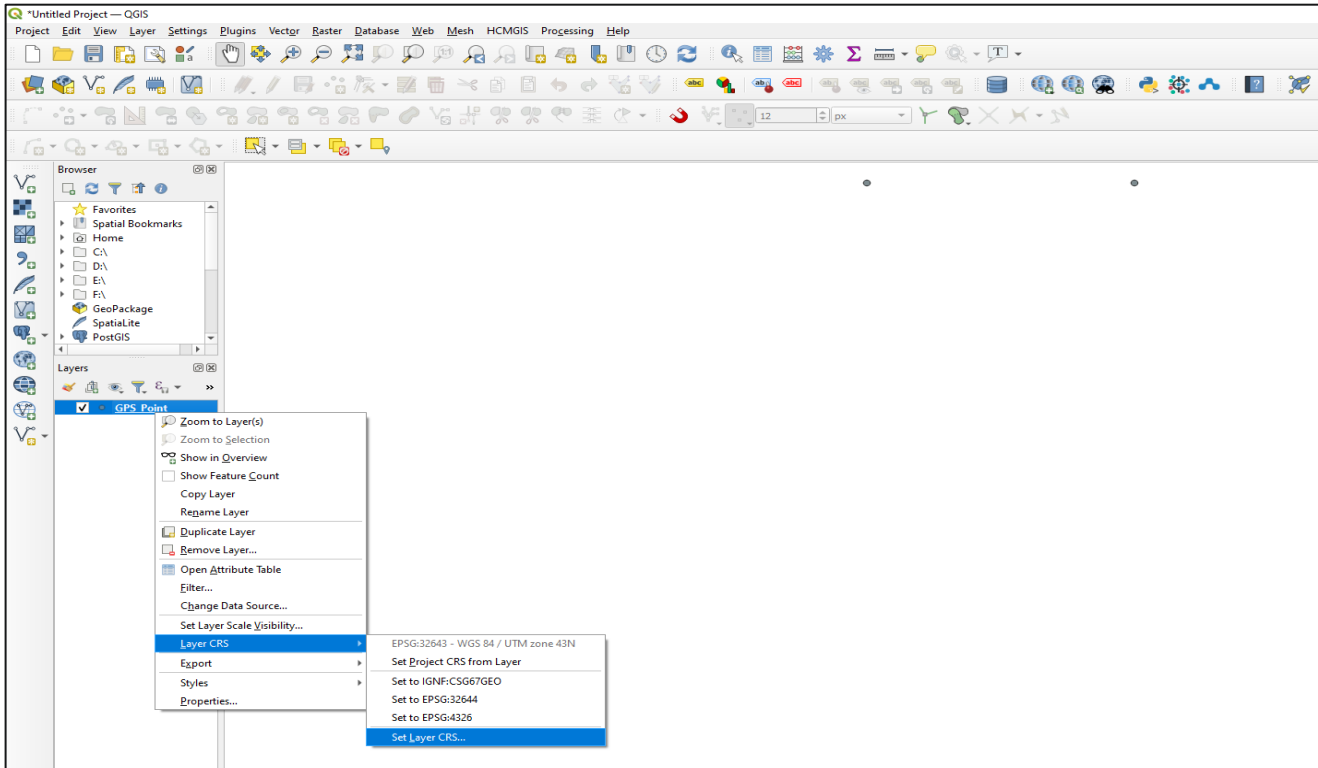


Figure 21 - Set Layer CRS

CRS (Coordinate Reference System Selector) window will open. User have to type “326” in the Filter option, all related reference system will be displayed. User need to select required coordinate system from all the displayed option and click “Ok” option.

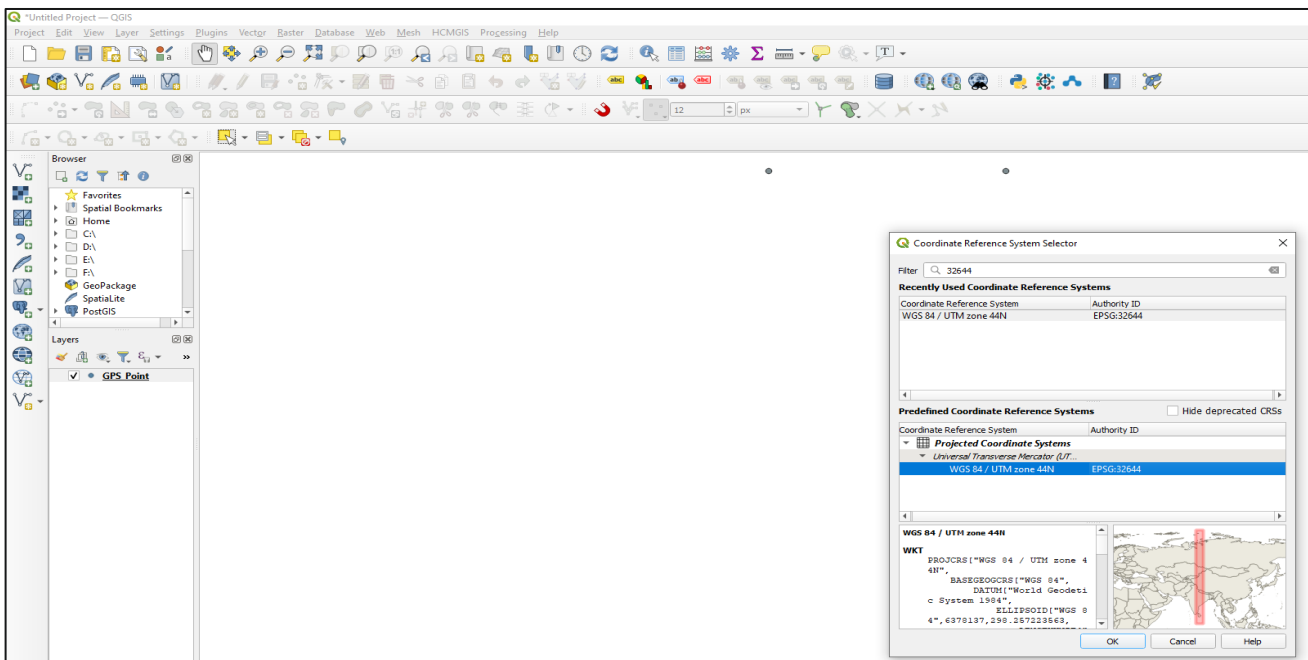


Figure 22 - CRS Setting



After Coordinate Reference System setting, user will right click on layer name and click on “Zoom to Layer” option, Data will be display with coordinates.

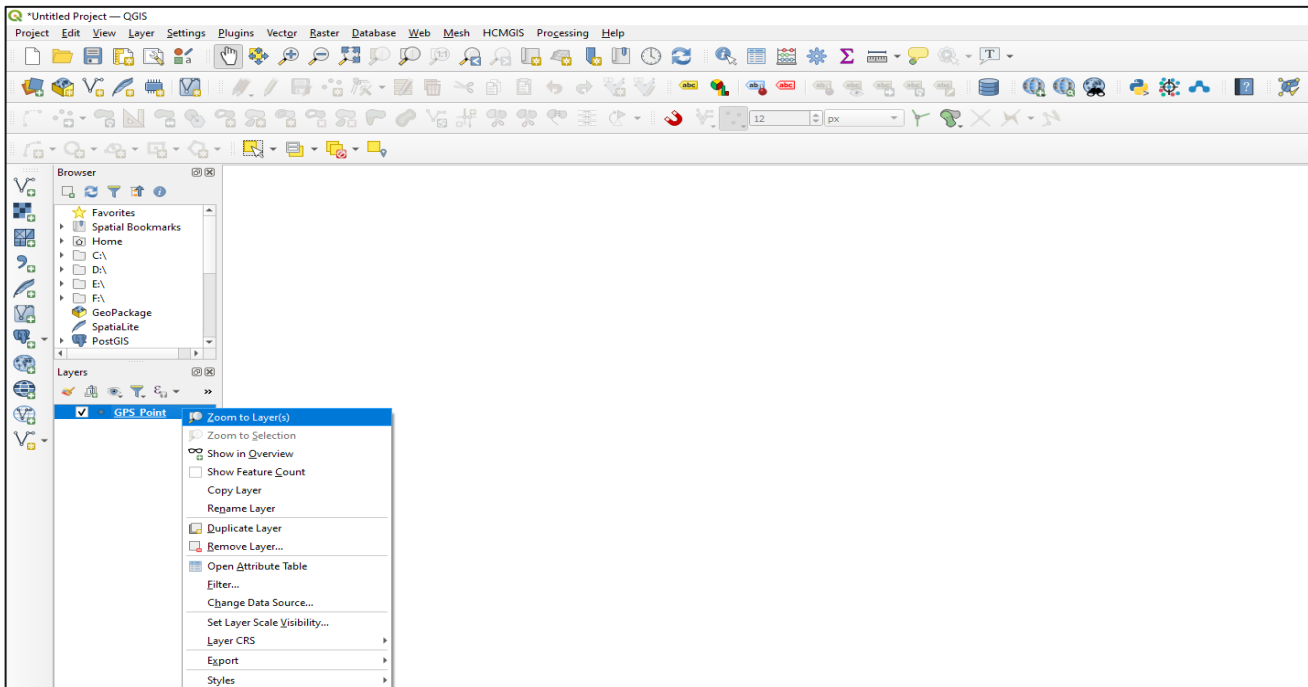


Figure 23 - Zoom to layer

## 6.2. Verification of Plotted Points

To validate the accuracy of plotted points, user needs to install “Quick Map Services” plugin. To Install Quick Map Services plugin, user will go to “Plugins” option and select “Manage and Install Plugins” option.

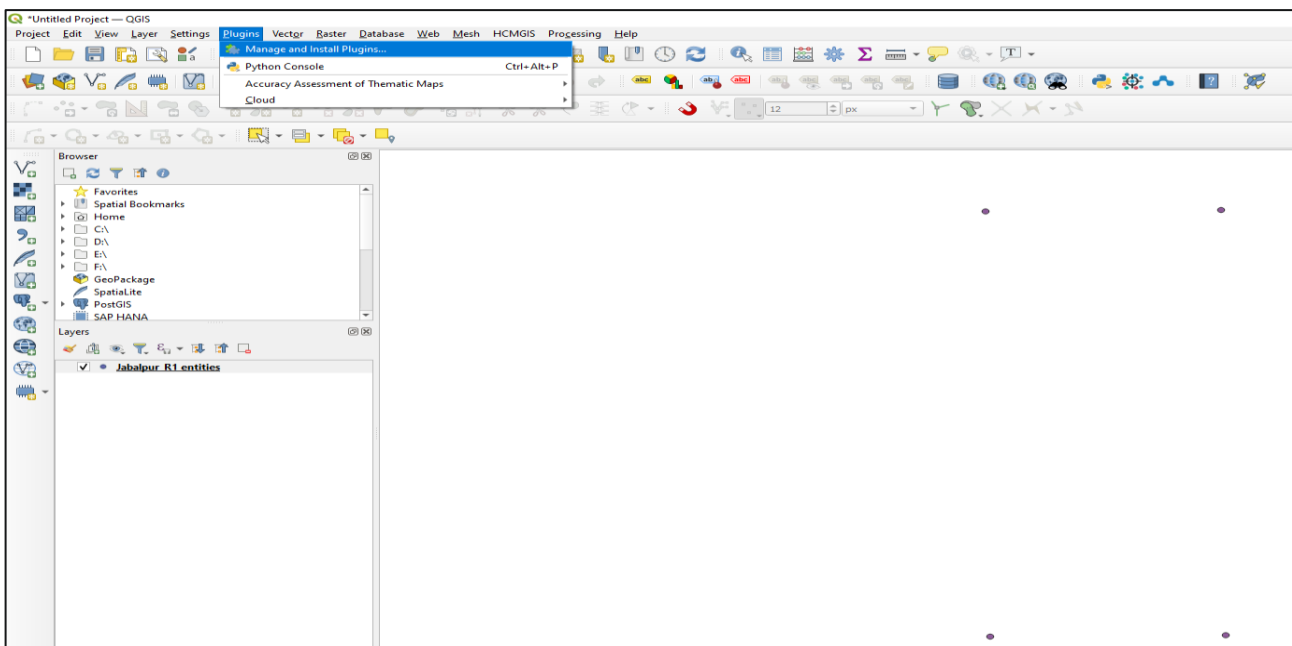


Figure 24 - Plugins

“Plugin” window will open, user will search “QuickMapServices” option. After selection of Quick Map Services click on “install plugin”. Plugin will install and click “close” tab.

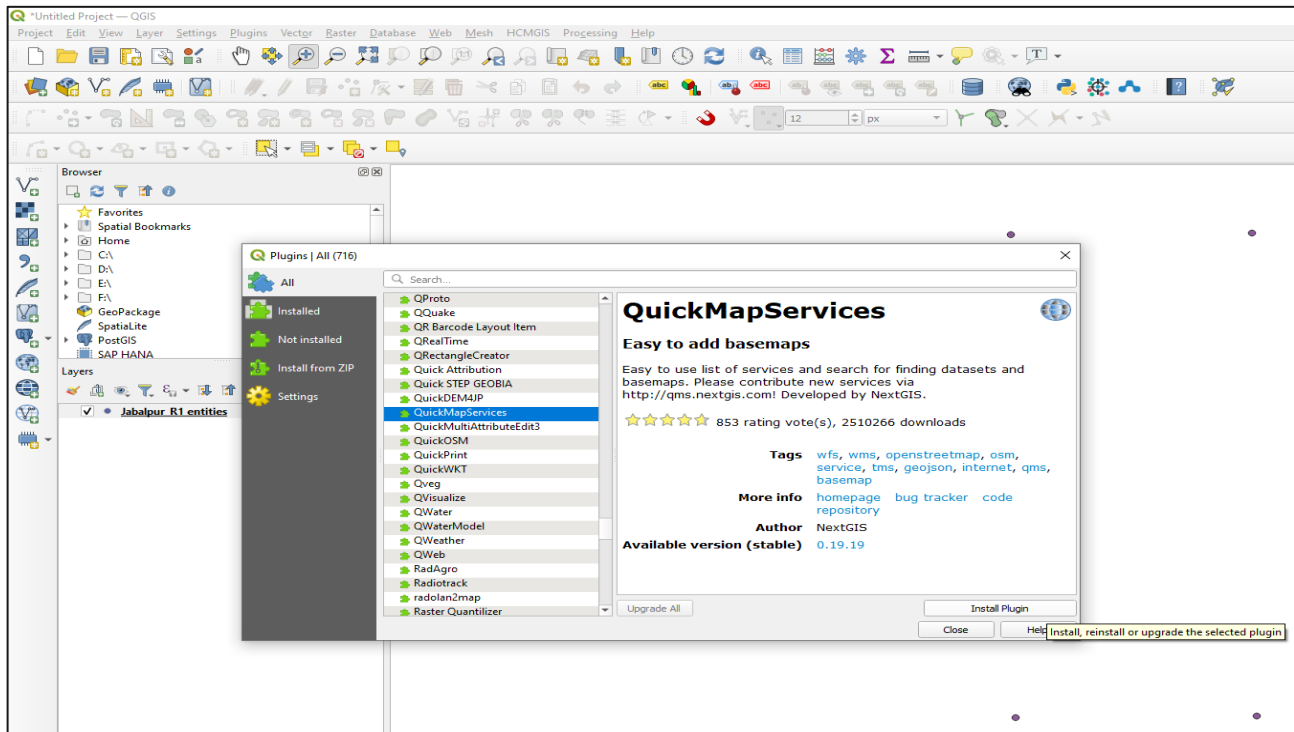


Figure 25 - Quick Map Services

### 6.2.1. For Verification from Base map (Google satellite/Hybrid)

To verify the points, user needs to go to “web” option and select “QuickMapServices” select Google & select & click “Google Satellite/Hybrid”. Google Satellite/Hybrid (Base Map) will be open.

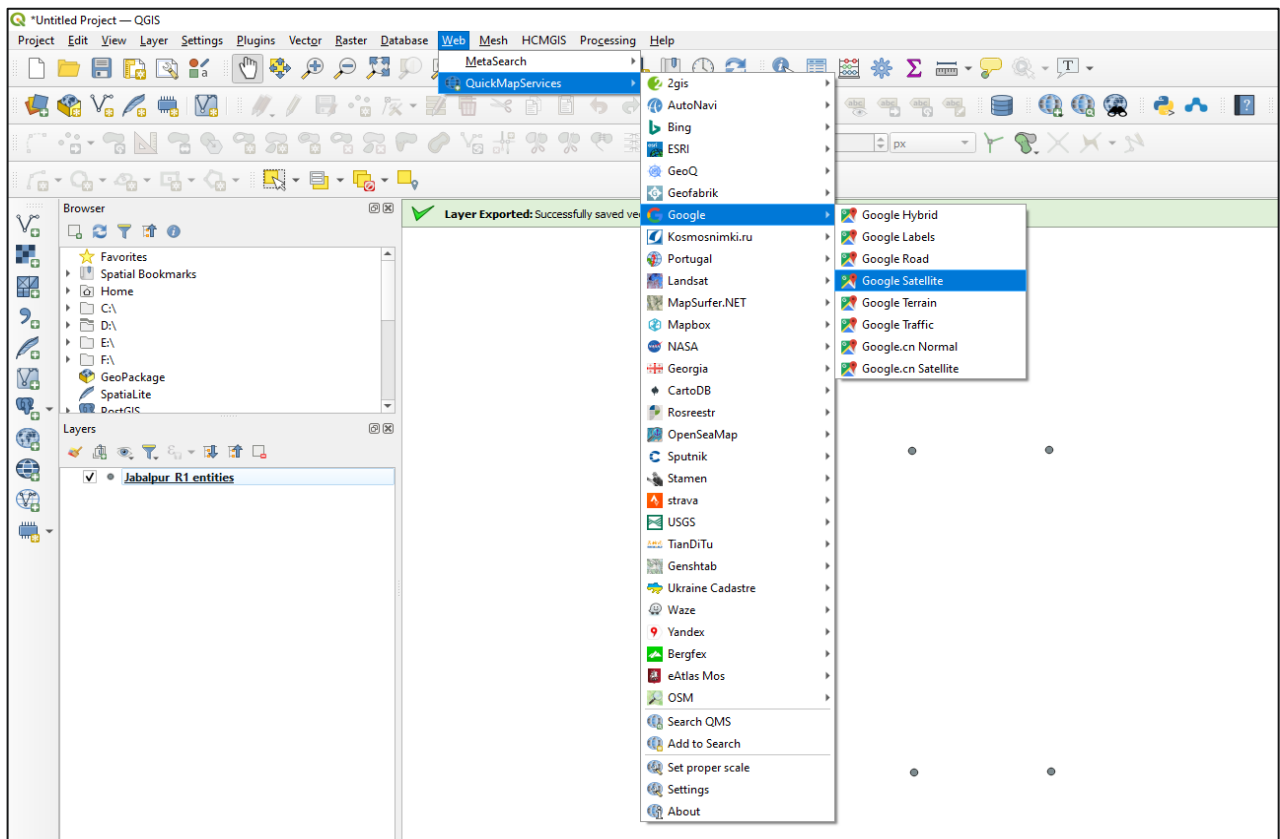


Figure 26 - Google Satellite

Google Satellite/Hybrid (Base map) will be open in the background. Open point layer on top of it, user will check the points accuracy with respect to ground locations.

### 6.3. Data export in DXF format

Go to “Layer” window in left side, Right click on file name, select “Export” option and click on “Save Feature As” option.

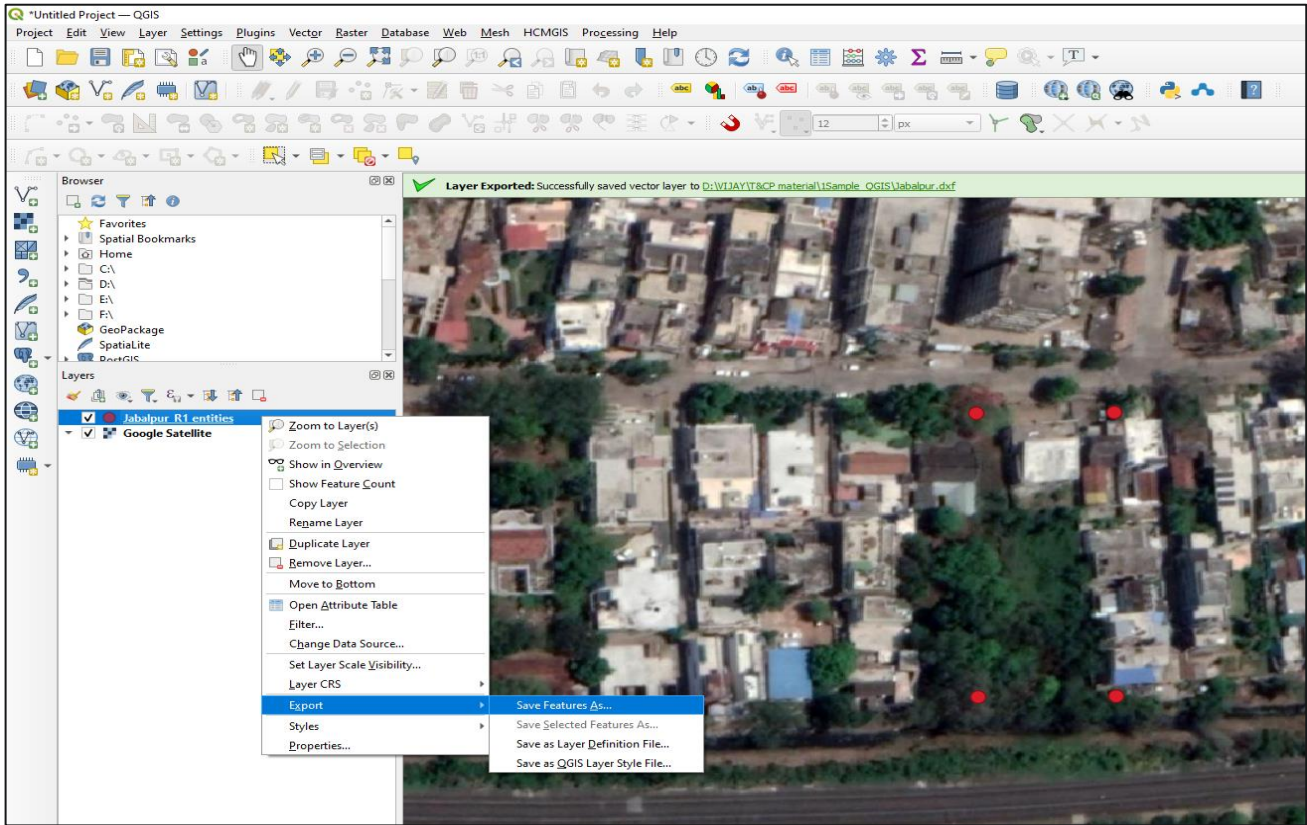


Figure 27 - Save Feature as

“Save Vector Layer As” Window will be open. User will follow: Format – AutoCAD DXF, File Name – Select your Drive/Path, Give file new name, CRS – Select & Set Projection with UTM, Click “Ok” option.

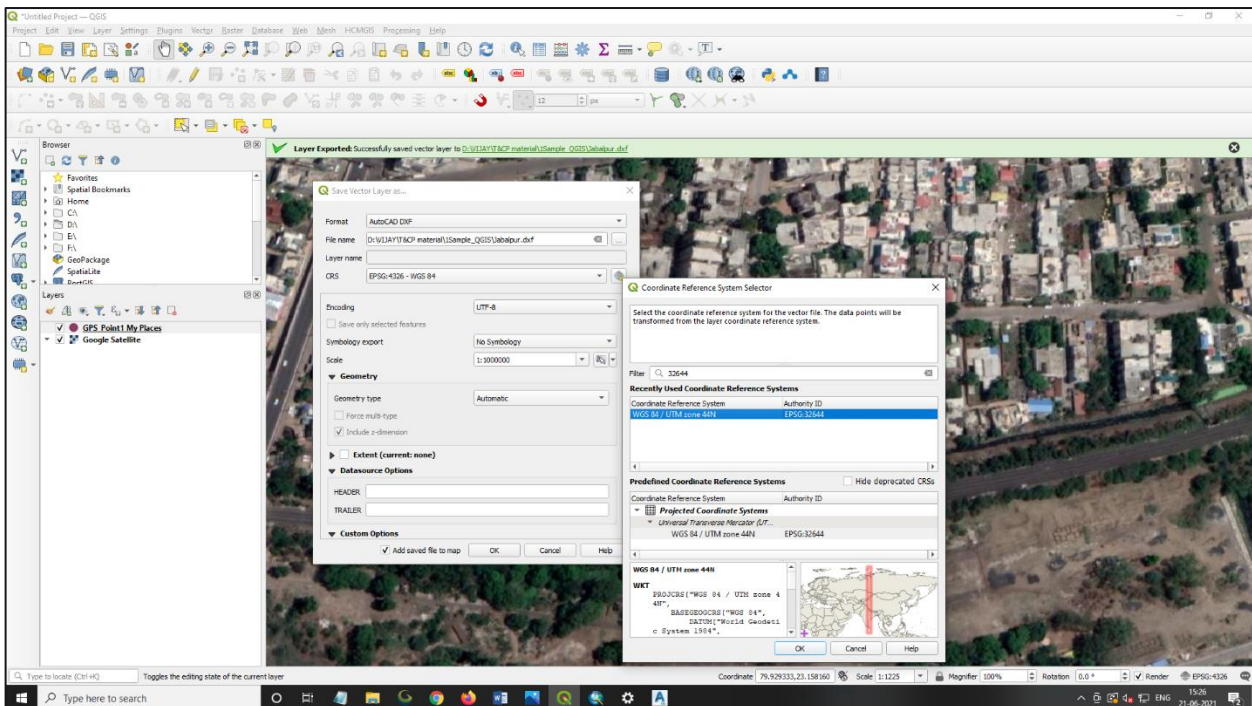


Figure 28 - CRS parameter

Set all Option with Projection (CRS), and Click “OK” option. File will be exported in DXF Format.

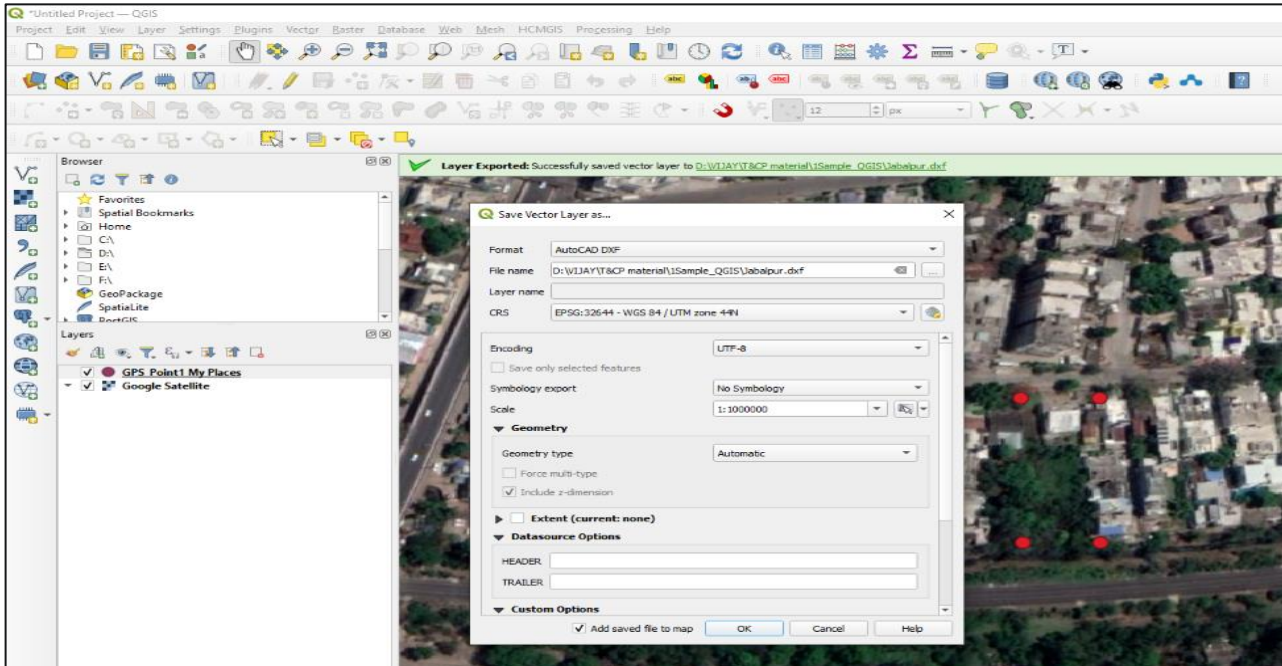


Figure 29 - Save layer as

## 6.4. DXF file in AutoCAD

Go to user path/Drive & select & Right click DXF file, & select “Open with” & select & click AutoCAD Application

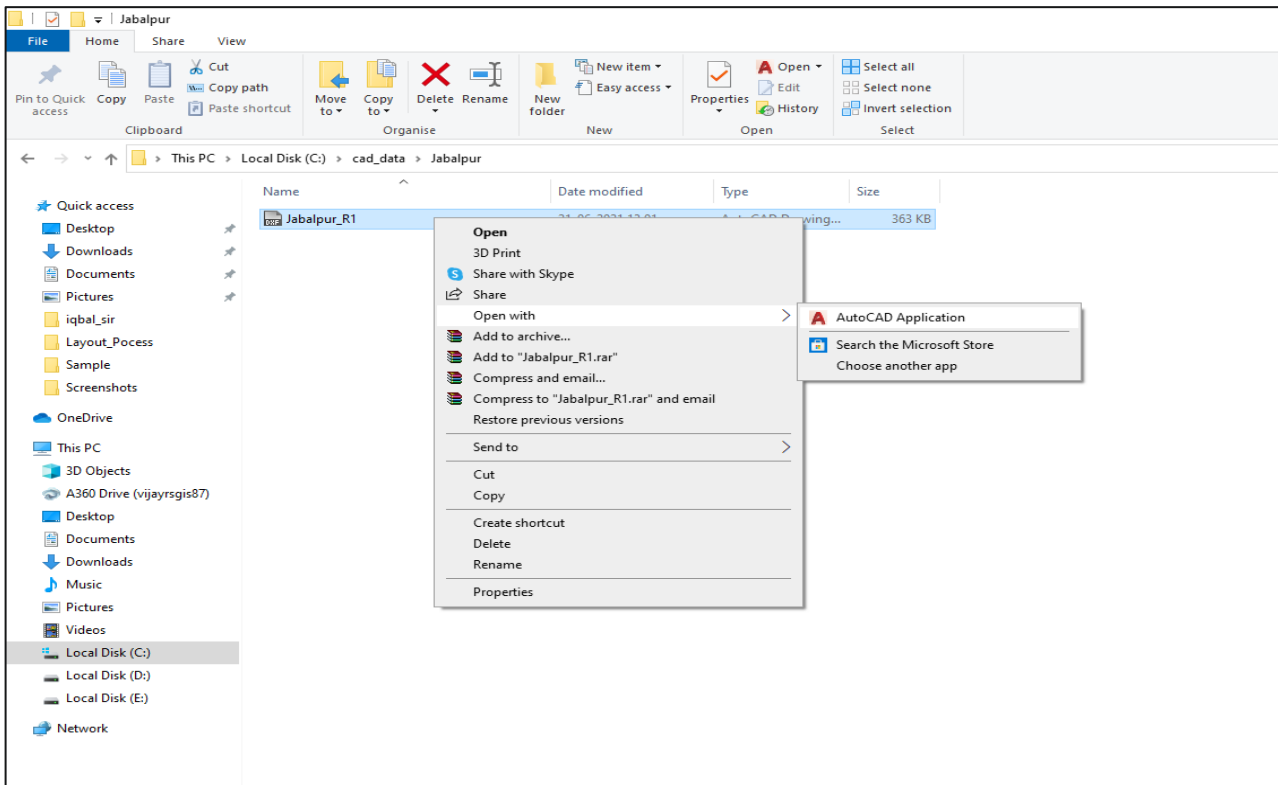


Figure 30 - File open

User will open DXF file in AutoCAD Application and save it as in “dwg” format.

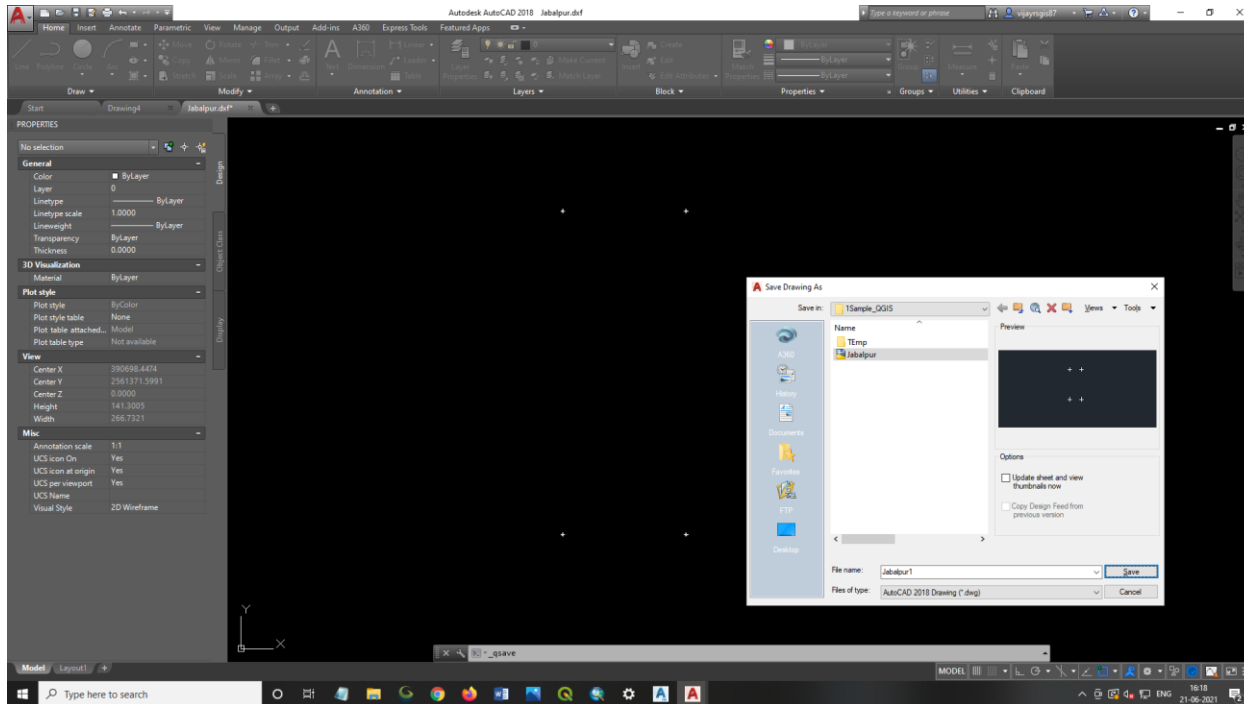


Figure 31 - DXF open

Now in AutoCAD user will create all required layer/data. User should ensure to capture all required layers as per Poly and Line schema.

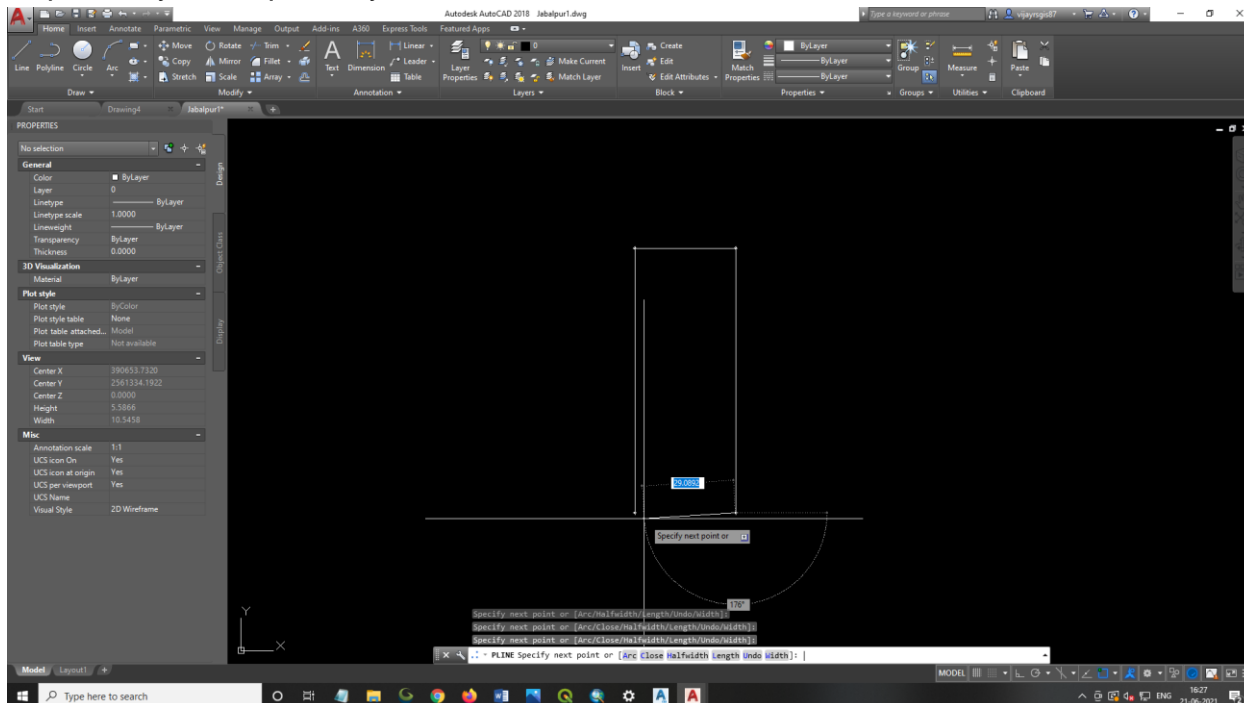


Figure 32 - DXF layer

After drawing all layers, file will export in “DXF” format.

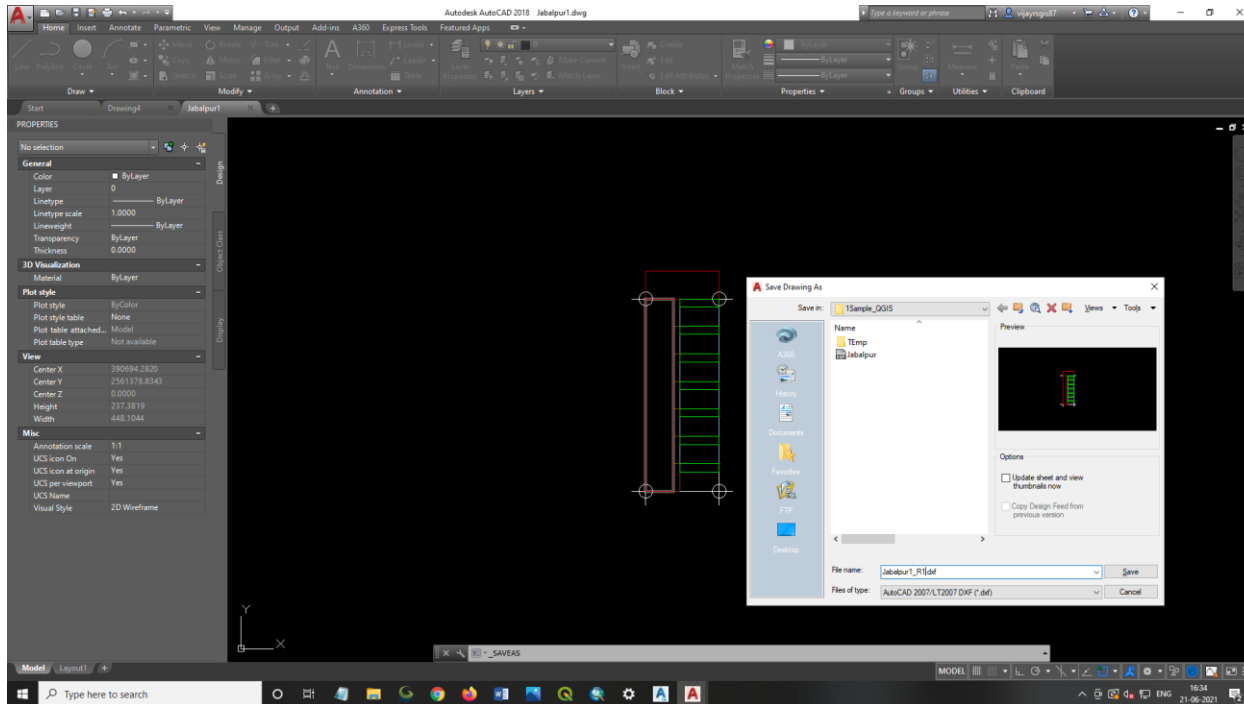


Figure 33 - Export DXF

## 6.5. DXF file in QGIS

Go to “Layer” Option, click on “Add Layer” and “select “Add Vector Layer” in QGIS.

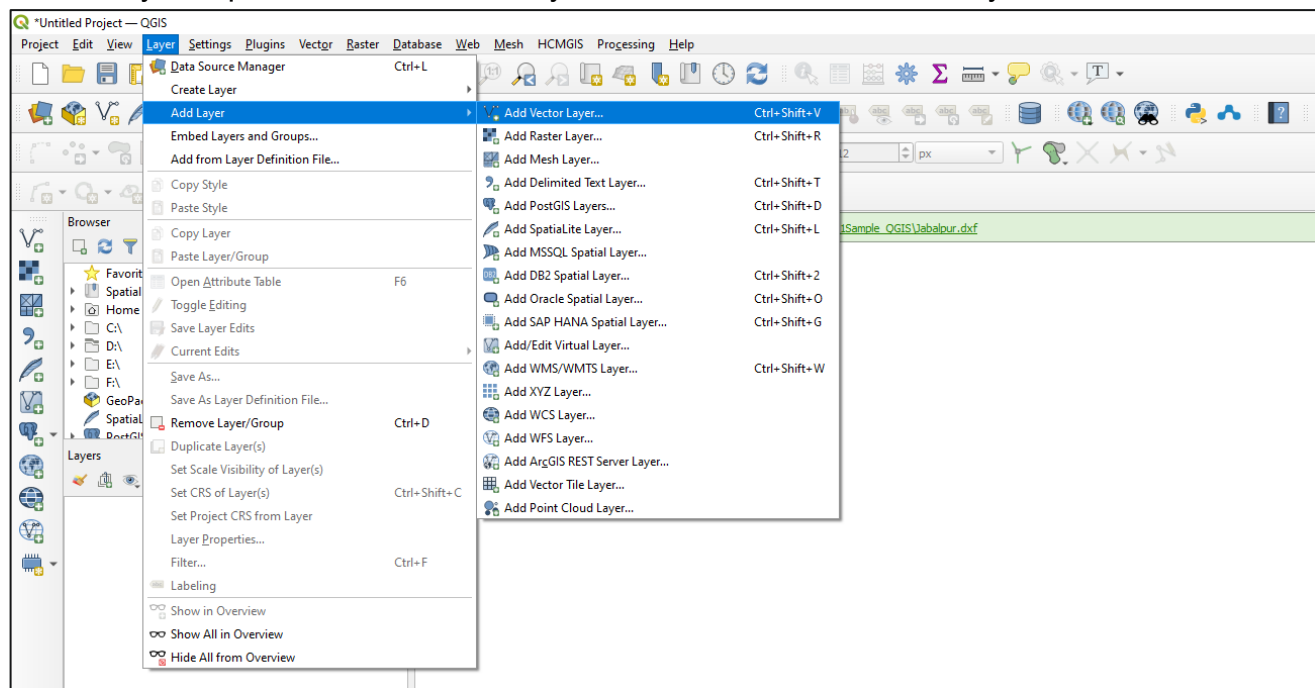


Figure 34 - Add Vector Layer

“Data Source Manager-Vector” Window will open, and Click “Vector” option in left side panel, after that “Open OGR Supported Vector Dataset(S)” Window will open, select path in your drive/Local Disc, than select kml/kmz file & Click “open” button.

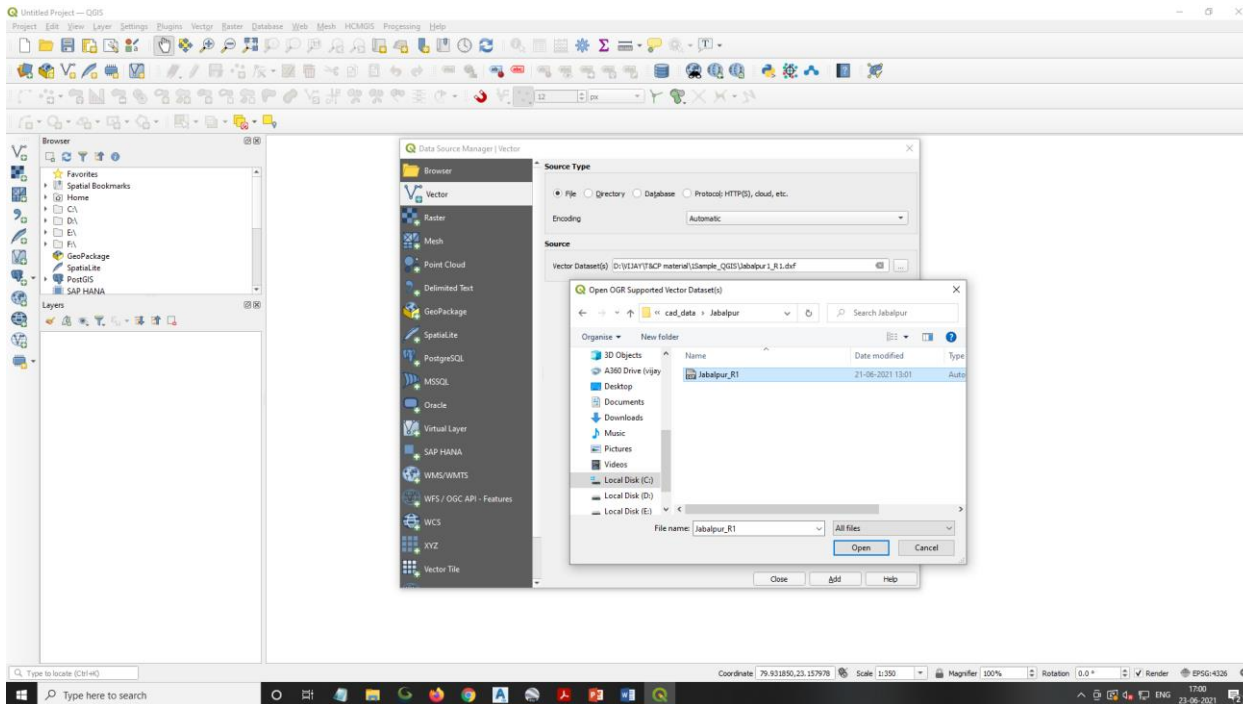


Figure 35 - Open file

User will click “ADD” button, “Select vector Layers to Add” window will open, select all layers and Click on “OK” and Click on “Close” button.

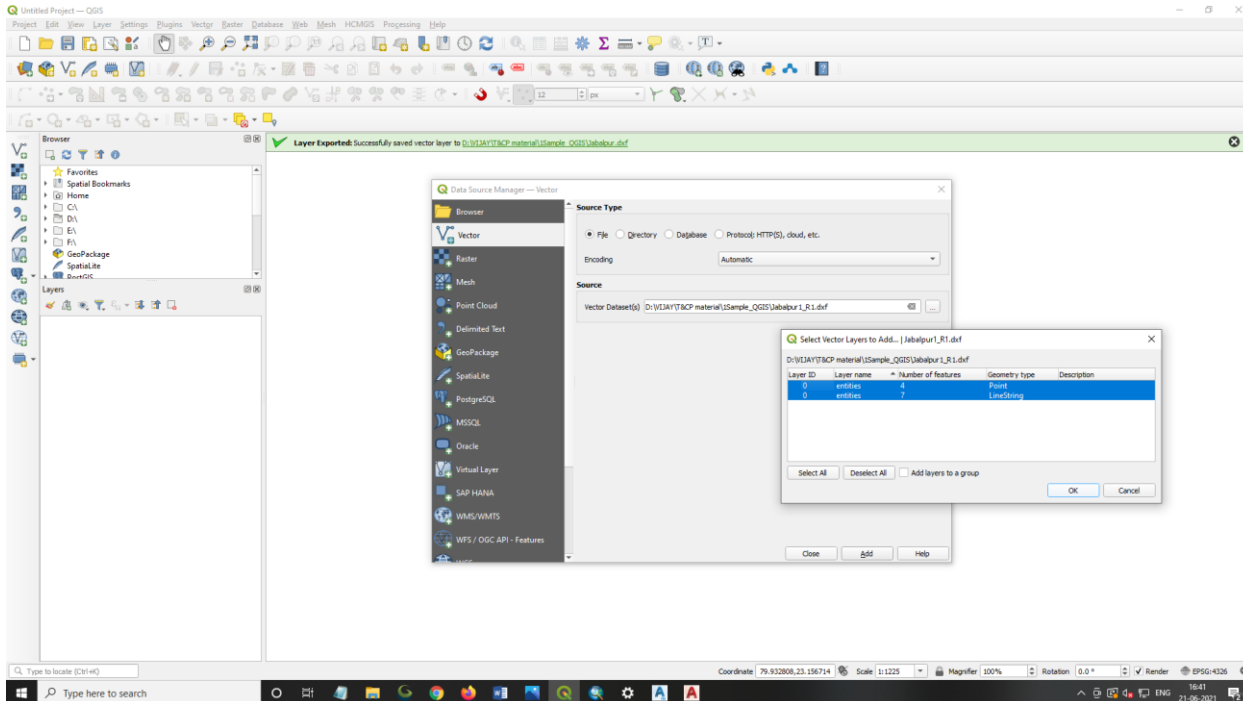


Figure 36 - Open layers

File name will display on left side layer window. User will go to “Layer” window in left side, Right click on file name, select “Layer CRS” & click on “Set Layer CRS”. CRS (Coordinate Reference System Selector) will be opened.



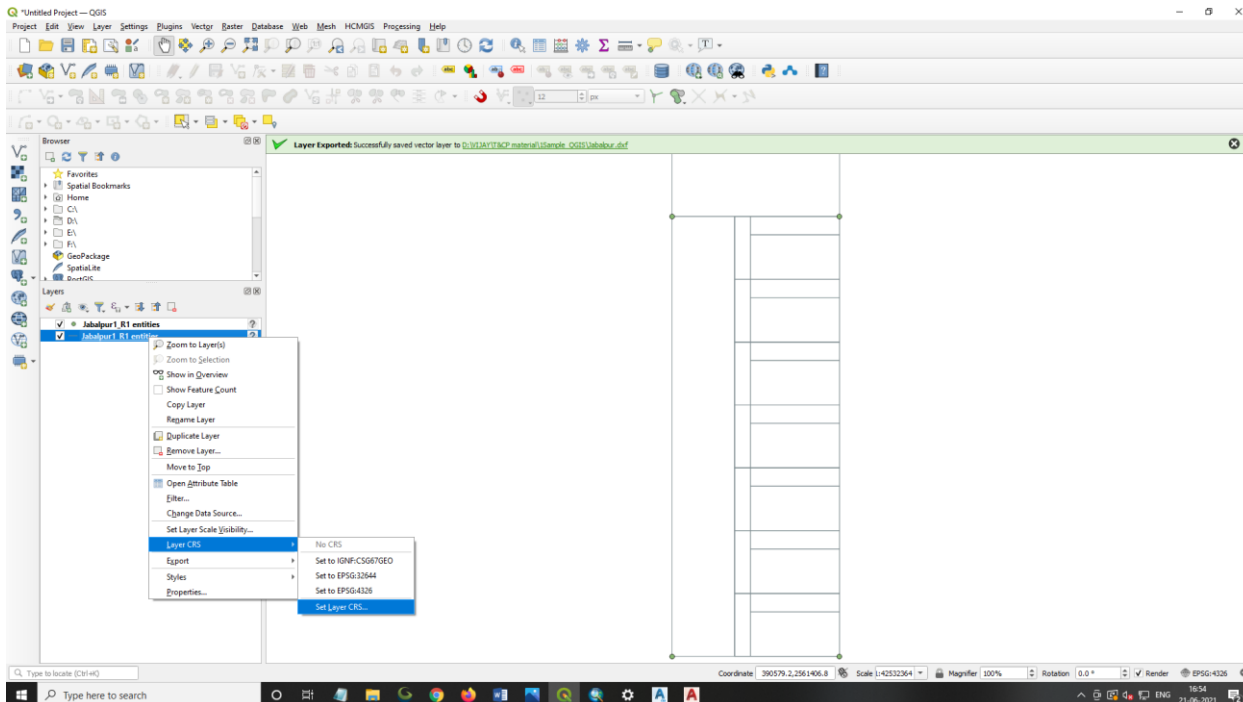


Figure 37 - Set layer CRS

User will set projection in UTM with Zone. For example Zone 44N (32644 must be typed in full at Filter option). Select UTM with Zone and click Ok.

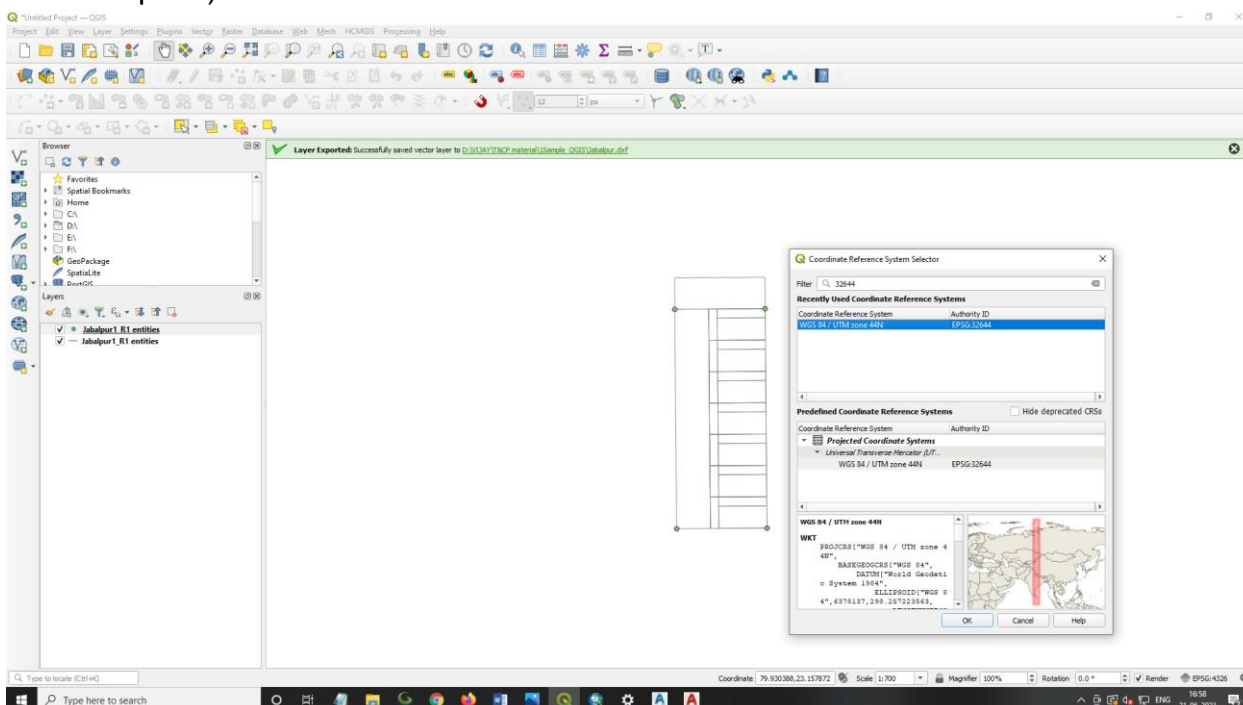


Figure 38 - CRS selector

To view the google image, user will go to “web” option, and select “QuickMapServices” In quick map services tab user will select Google & click “Google Satellite/Hybrid” option. Google Satellite/Hybrid (Base Map) will be open.

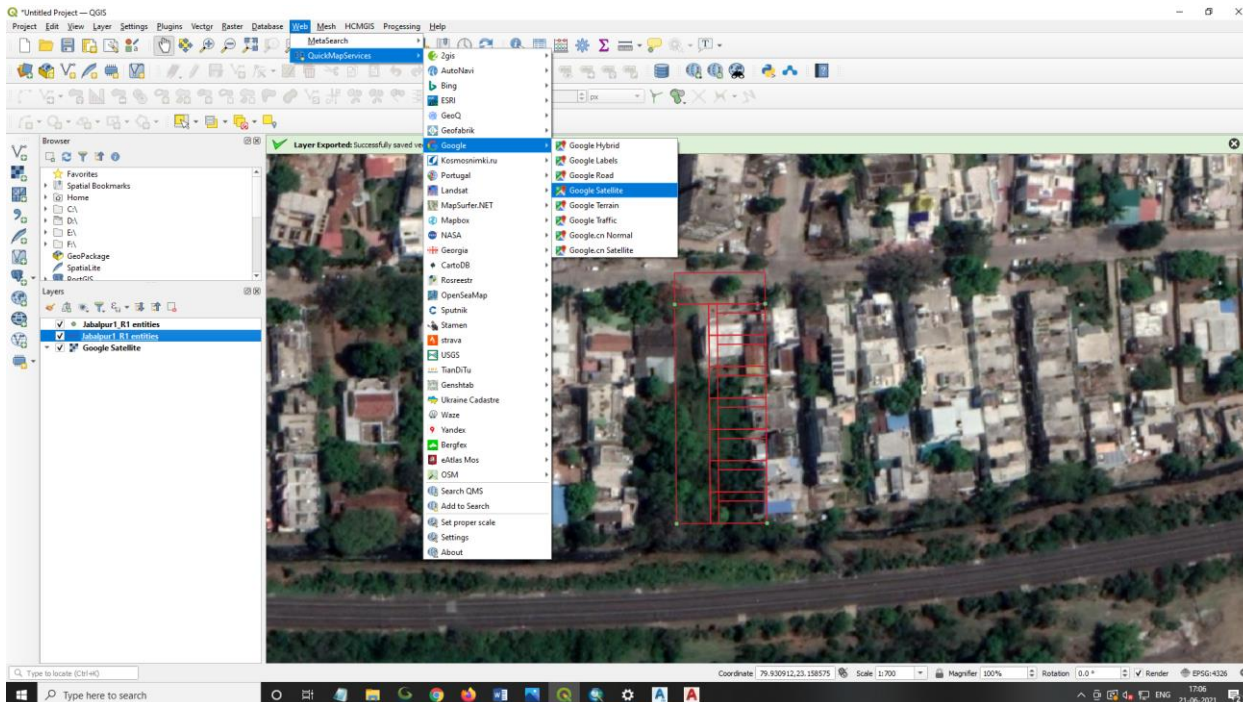


Figure 39 - Google Image Background

## 6.6. Data Export DXF to SHP (shapefile) Format

Go to “Layer” window in left side, Right click on file name, Select “Export” option and click “Save Feature As” option.

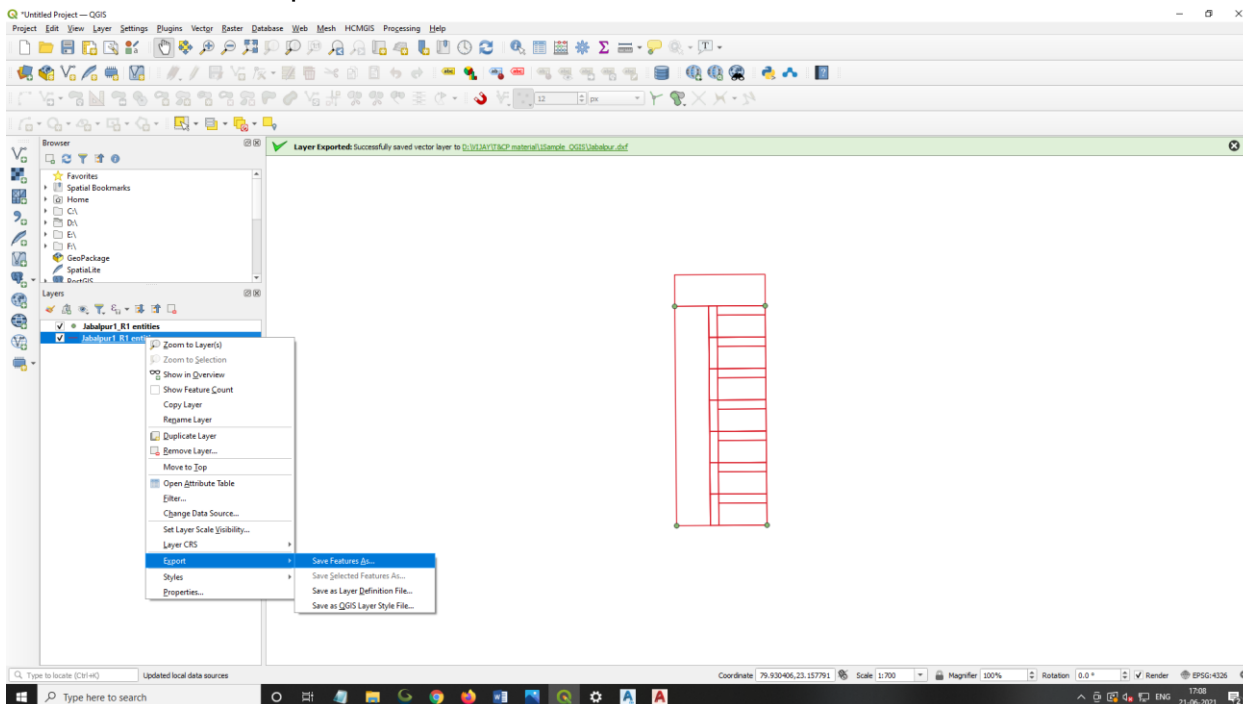


Figure 40 - File Export

“Save Vector Layer As” Window will be open. User will follow: Format – ESRI Shapefile, File Name – Select your Drive/Path, Give new file name, CRS – Select & Set Projection with UTM & Zone, Click “OK”. File will be exported in SHP (shapefile) Format.

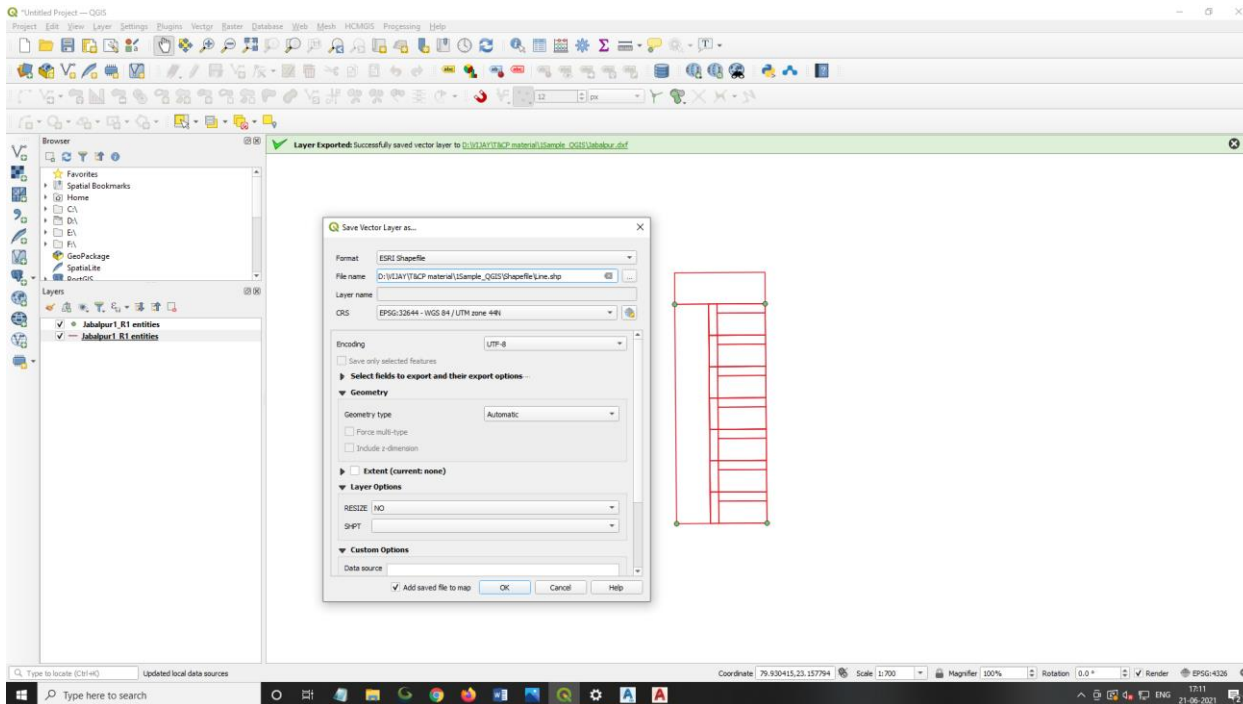


Figure 41 - Export Parameters

## 6.7. Topology Checking

Go to “Plugins” option, and click “Manage and Install Plugins” option.

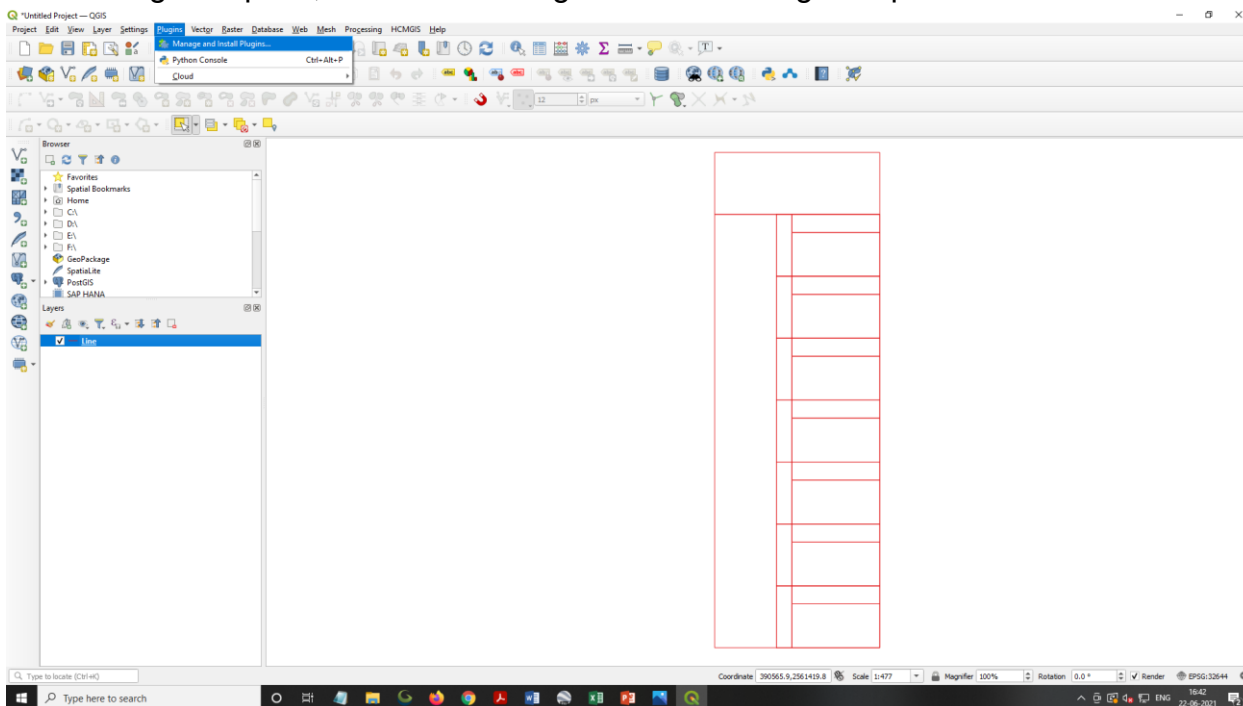


Figure 42 - Topology Checking

“Plugin All” Window will be open. Search “Topology Checker” and then select it and click install plugin below option.

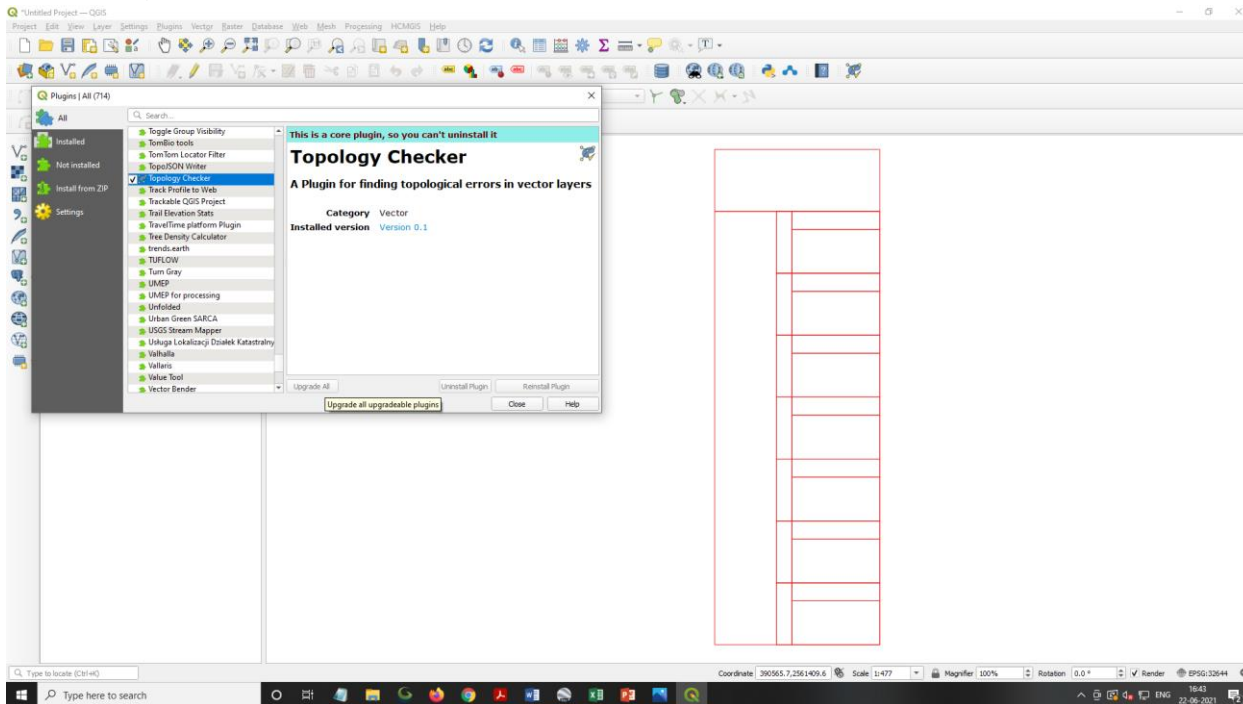


Figure 43 - Topology Checker Plugin

Go to “Vector” option and click topology checker, after that “Topology Checker Panel” will be open.

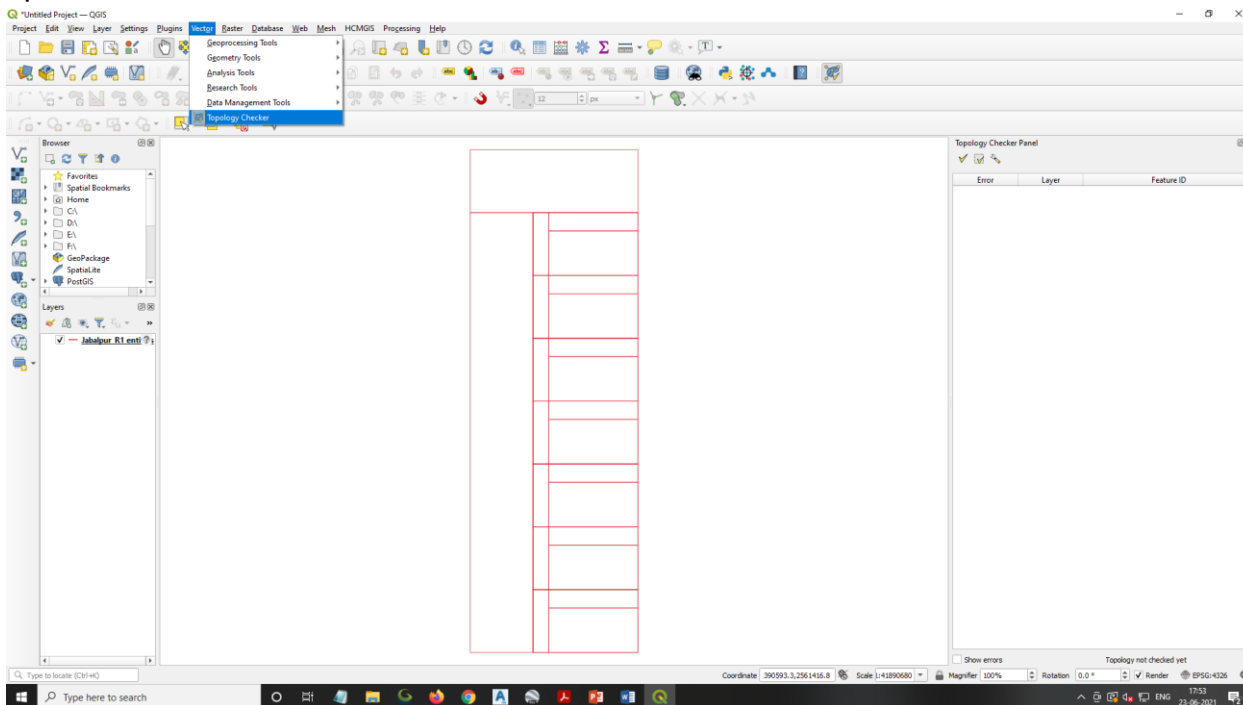


Figure 44 - Topology Checker

User will click on “configure” icon, “Topology rule setting” Window will open.

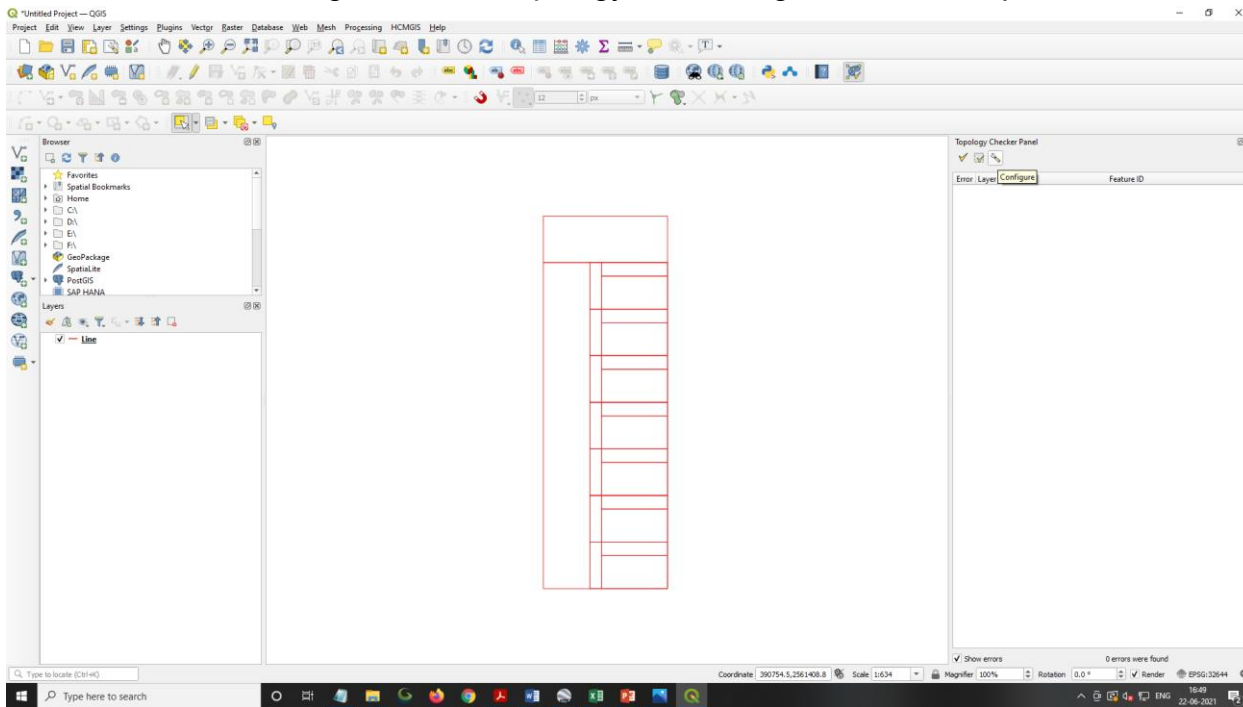


Figure 45 - Configure window

“Topology rule setting” Window will be open, User need to add topology rule in this window. For this user needs to click on “Add Rule” option.

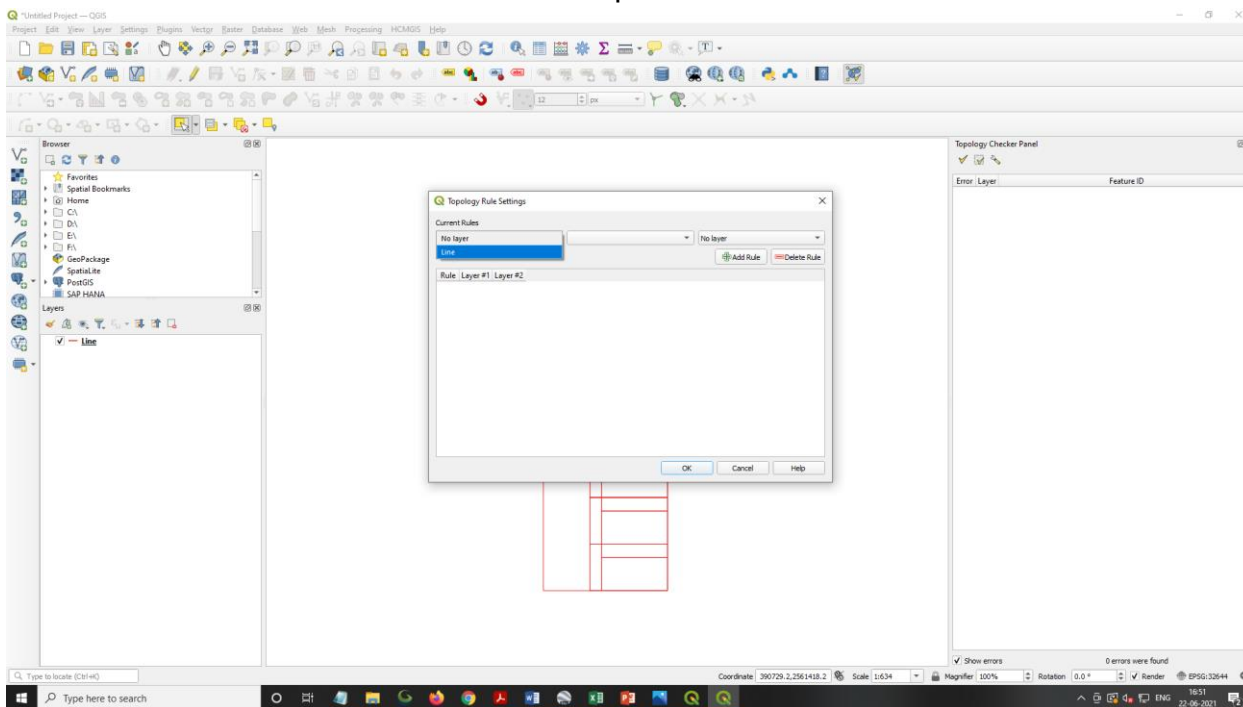


Figure 46 - Rules Selection

User will select file name and then select unusable rule and click “Add Rule” option repeat same process to add other rules also.

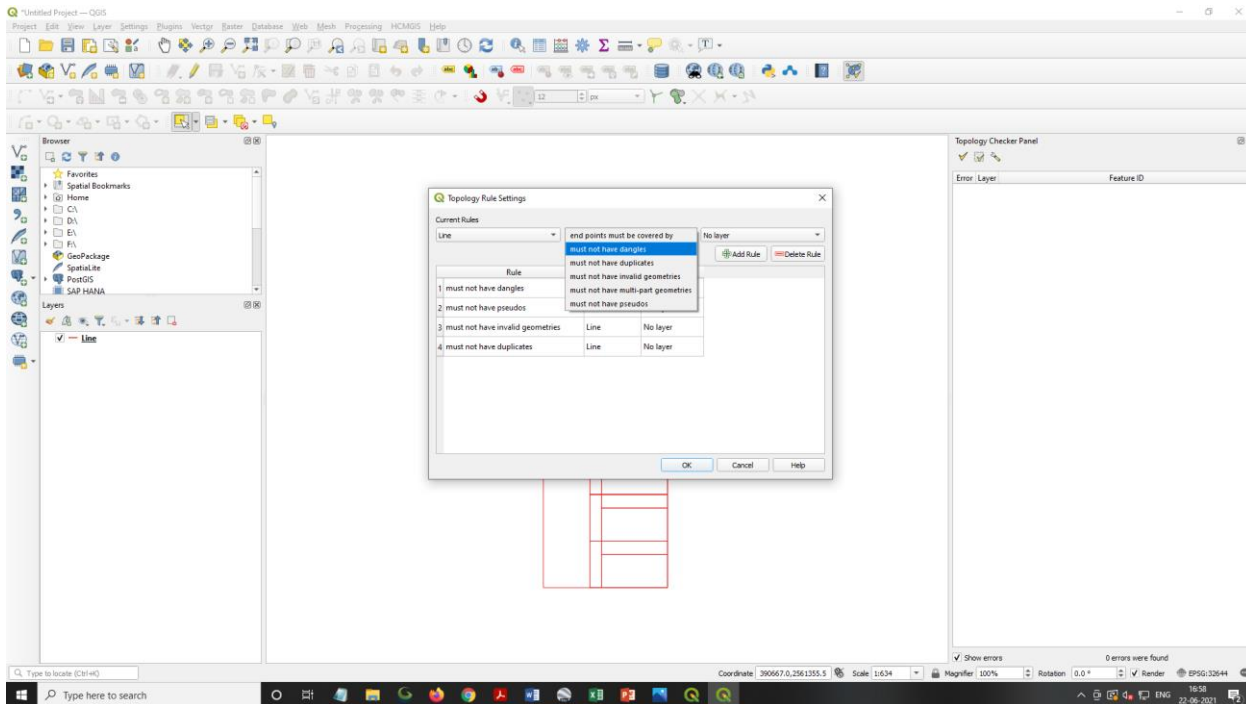


Figure 47 - Rules selection

User shall use “Delete rule” to delete any rule if not required and click on “Ok” button.

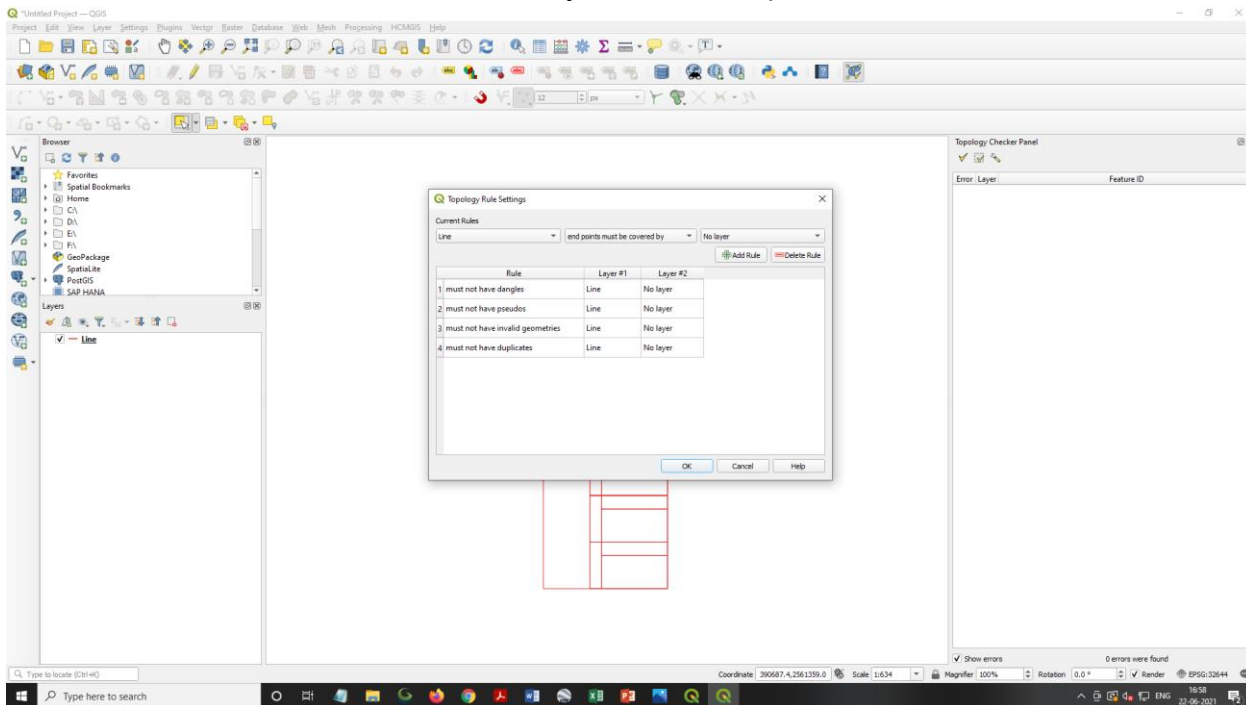


Figure 48 - Topology Rule Setting

User will click on “Validate Extent” icon in “Topology Checker Panel” window. After that error table will visible.

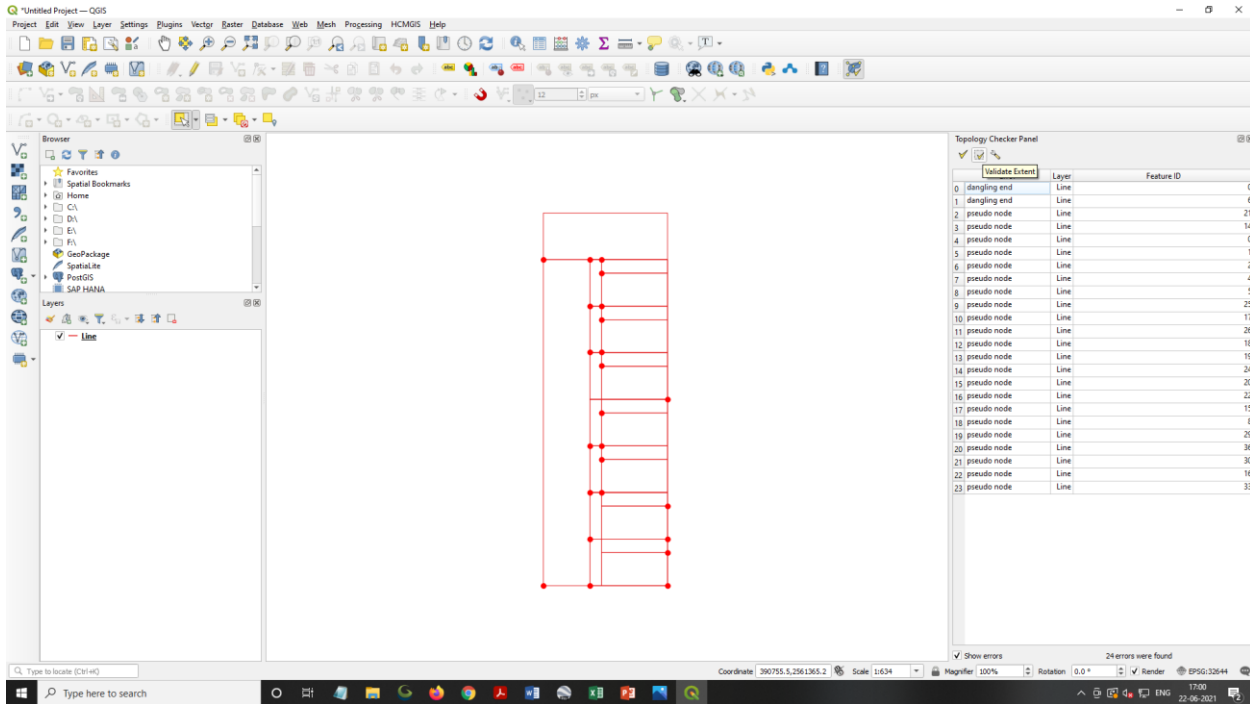


Figure 49 - Error Table

User will be see error table in right side.

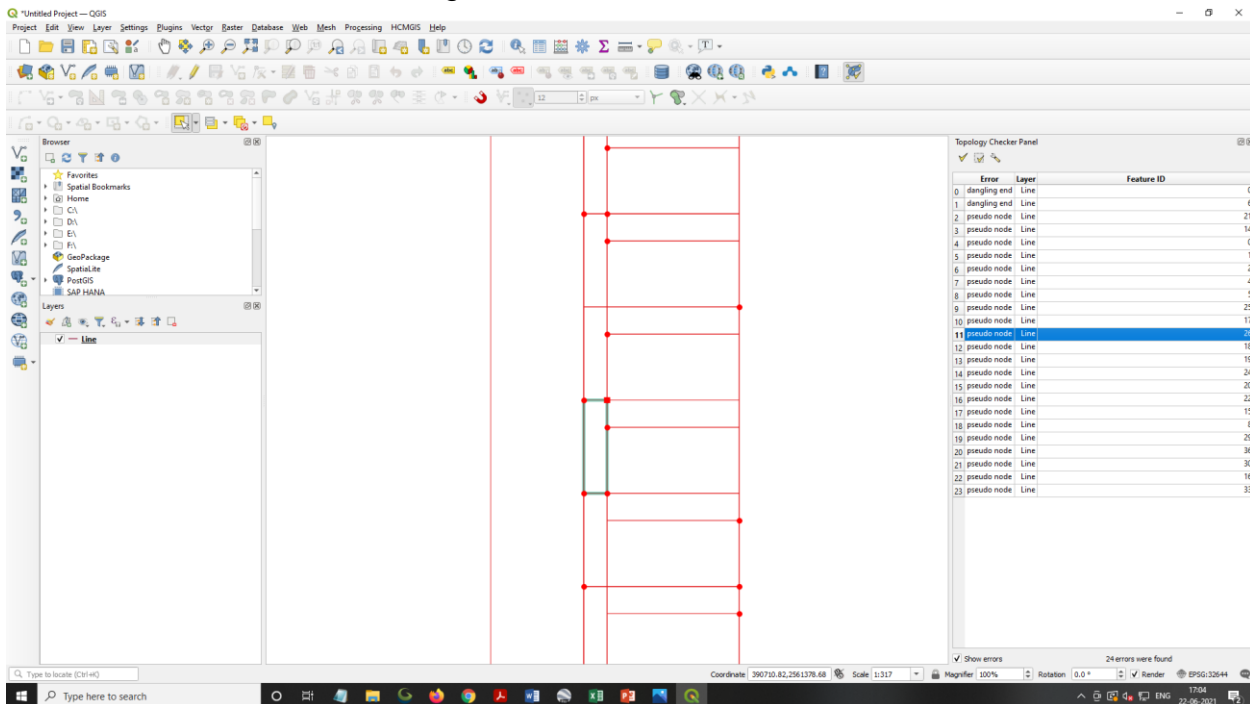


Figure 50 - Error Selection

To remove topological error, user will go to Layer window in right side, right click on file name and click “Toggle editing” option.

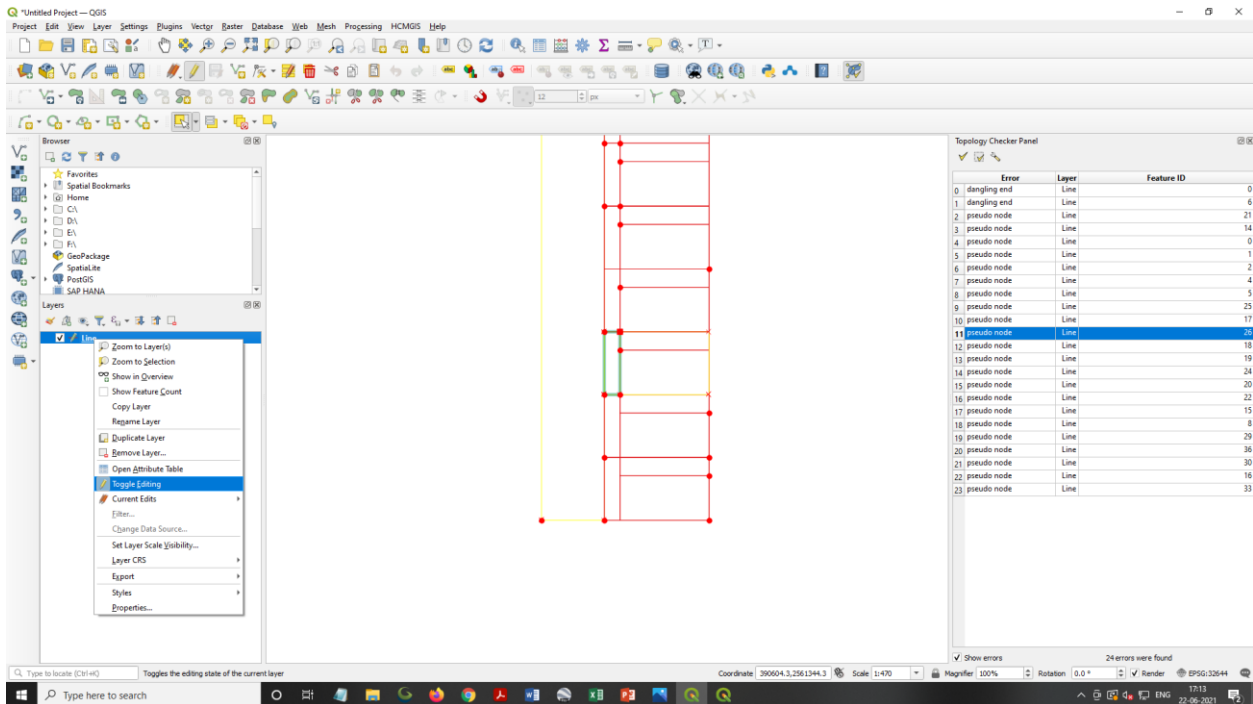


Figure 51 - Toggle Editing

In case of “Must not have duplicates” errors, after applying topology, all duplicates error represents in red color. User will select these polygons and open attribute table. In Attribute table user delete the duplicate polygons.

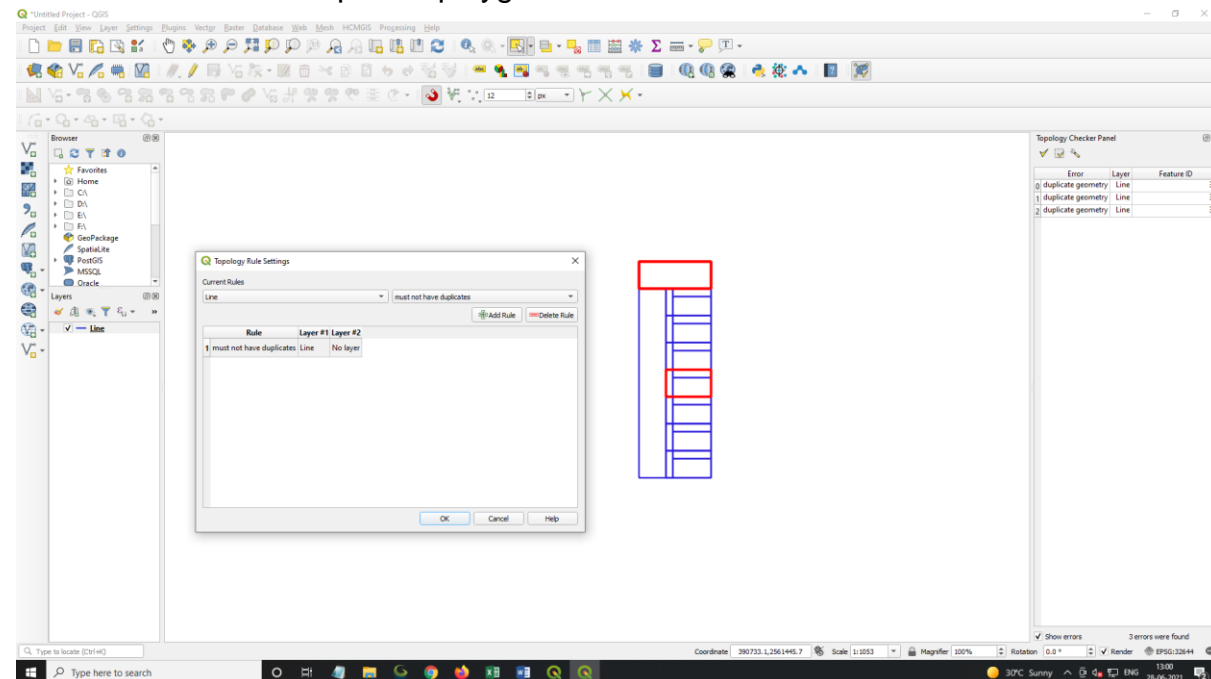


Figure 52 - Duplicate Error



In case of “Must not have dangles” errors, after applying topology, all duplicates error represents in red color. User will zoom these error and move hanging node to join other node.

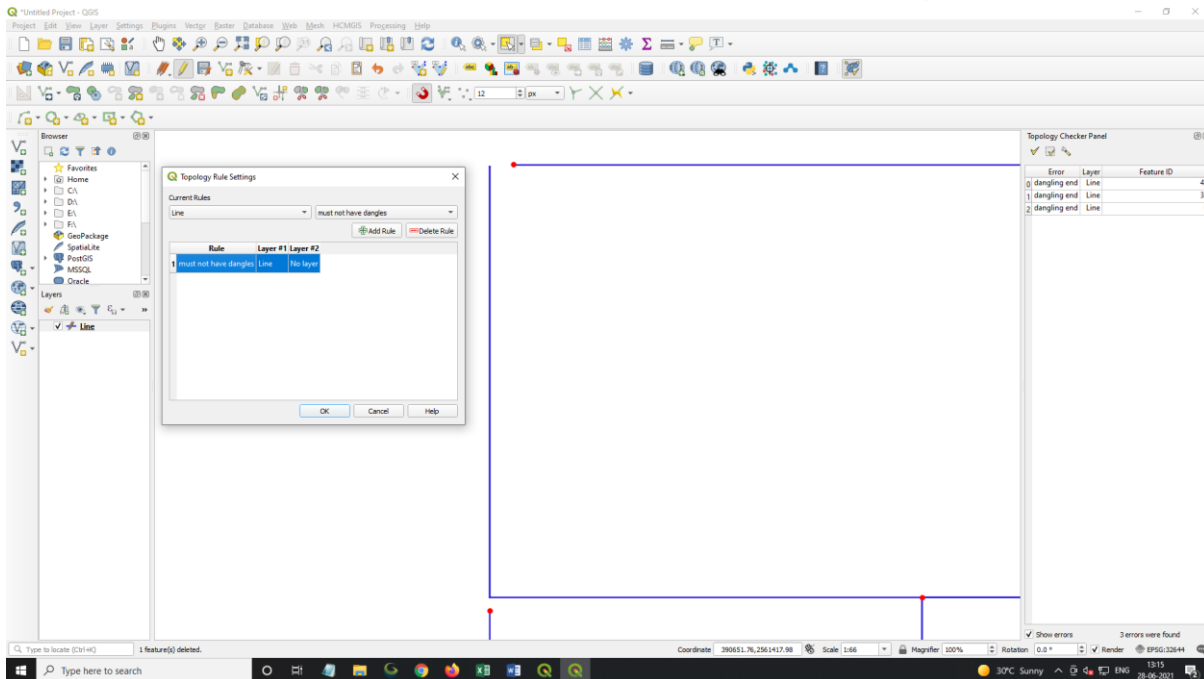


Figure 53 - Dangle Errors

After solving all the errors, user will again click on “Toggle editing” option and click “Stop Editing” window and click “Save” option.

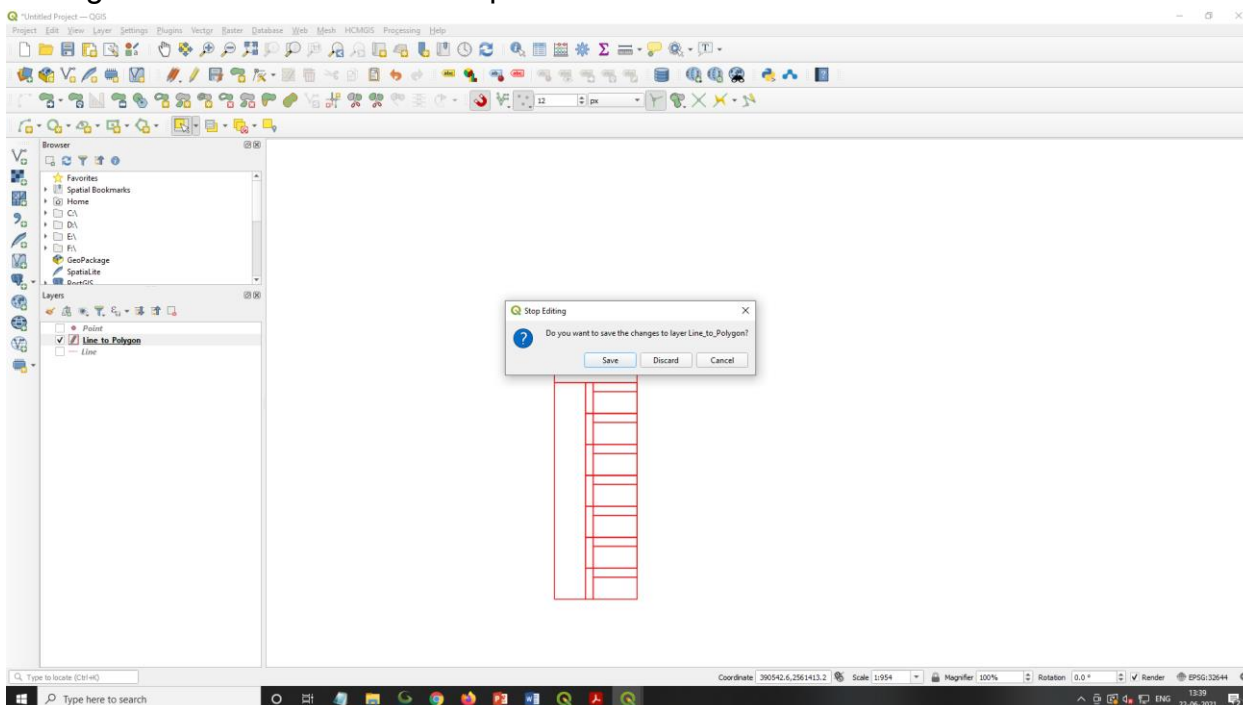


Figure 54 - Save option

## 6.8. Polyline To Polygon

Go to “Vector” option, select “Geometry Tools” option and click “Line to Polygon” option.

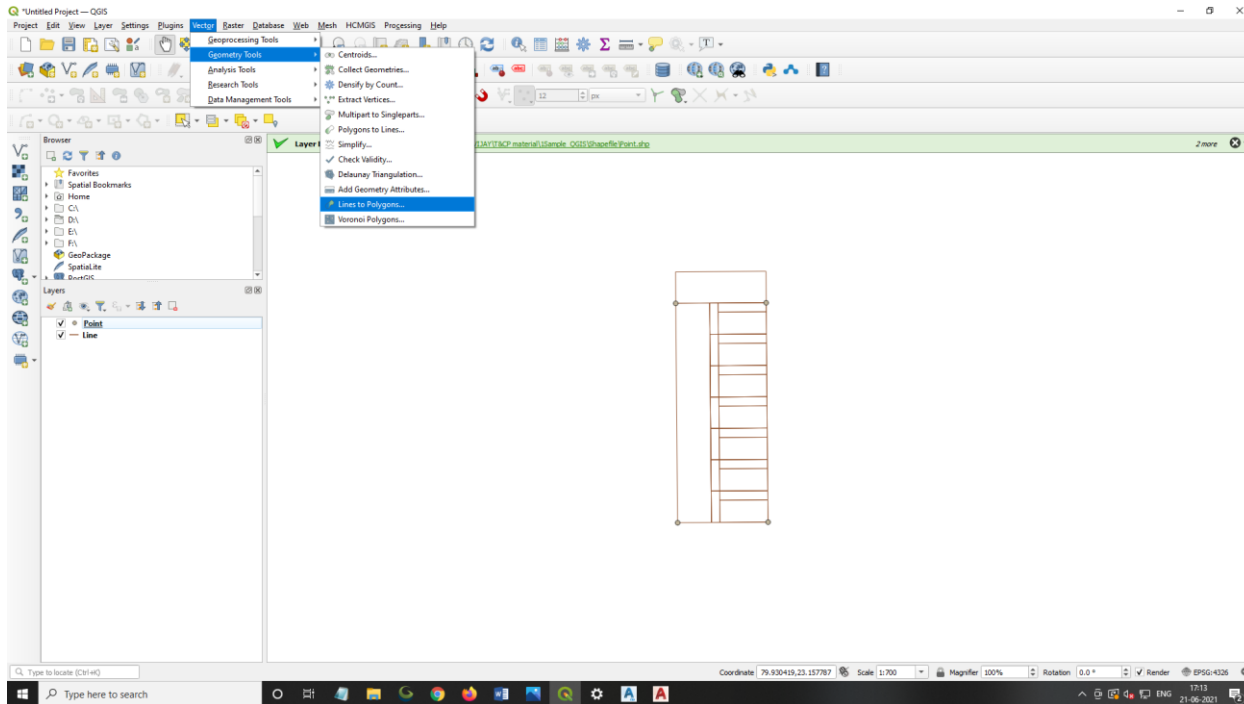


Figure 55 - Line to Polygon

“Line to Polygon” Window will open. User will select file in “Input Layer” and give output file path in “Polygon” option. After that select “Save to File” option for output.

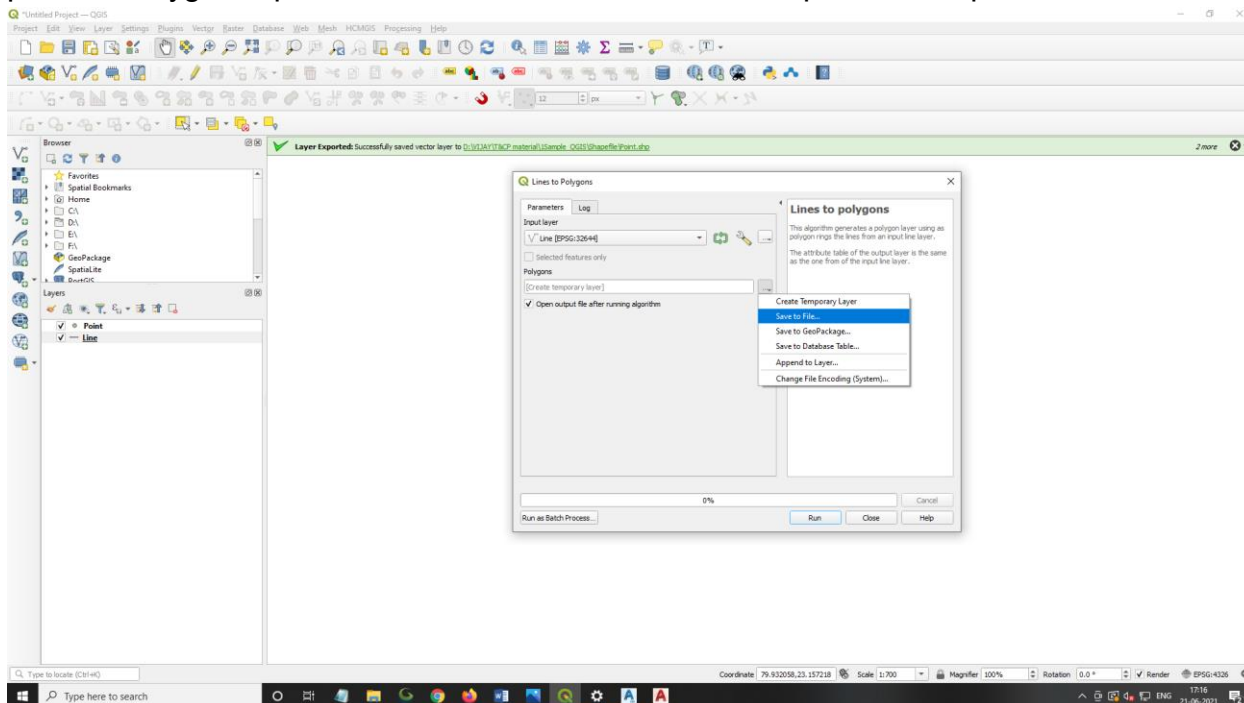


Figure 56 - Polygon save option

“Save file” window will open, user will give new file name and click “save” option.

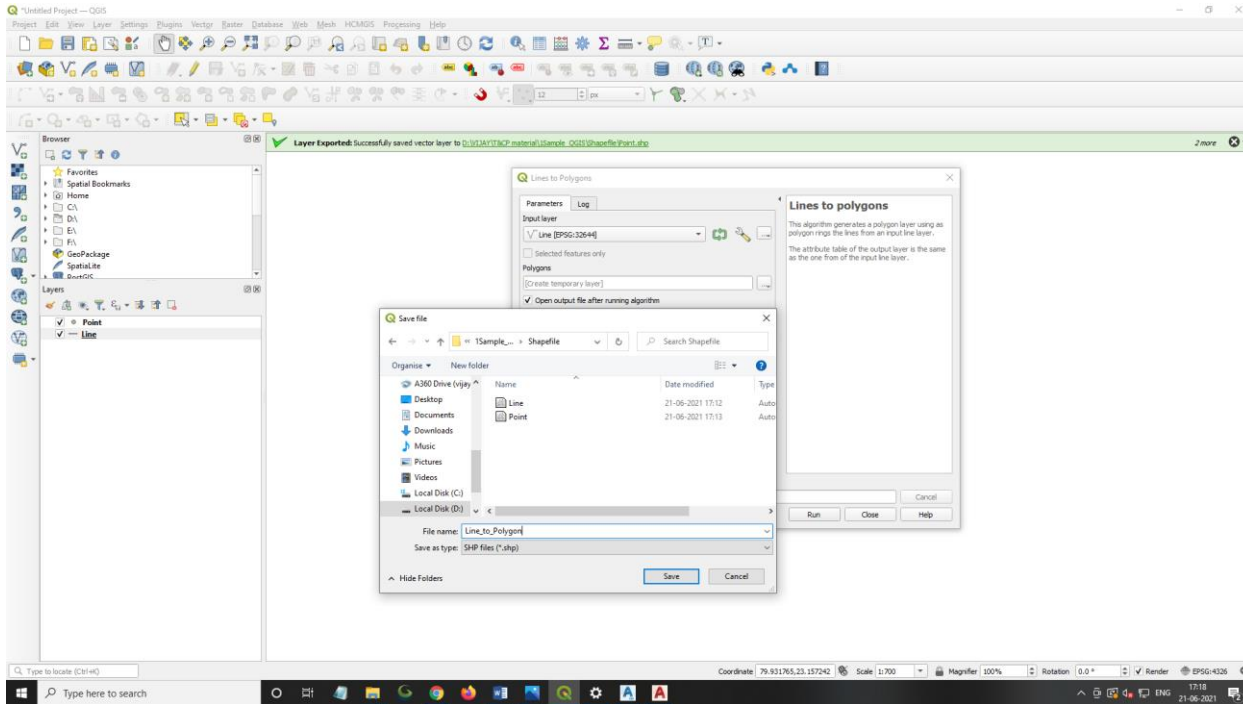


Figure 57 - Polygon save as shape file

Go to “Layer” window in left side and right click on Polygon file and click “Properties” option.

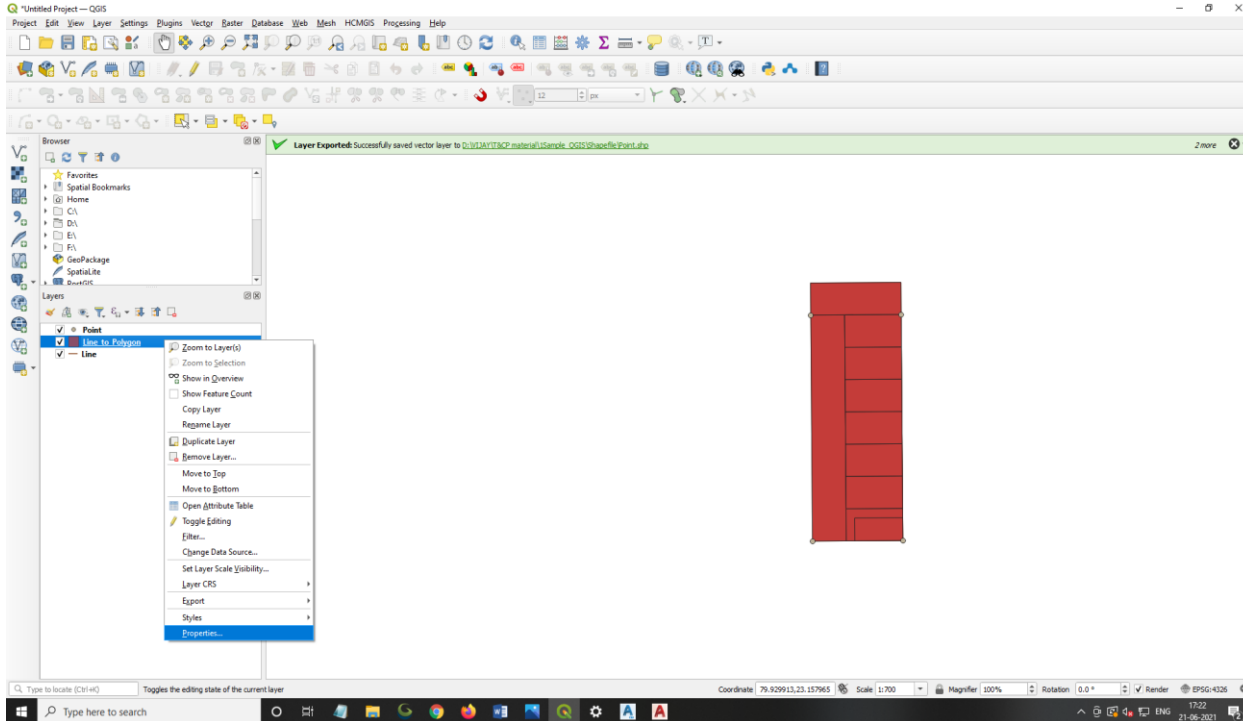


Figure 58 - Properties option

Layer Properties window will open. User will select “Control Feature Symbology” icon, and set required colour & width.

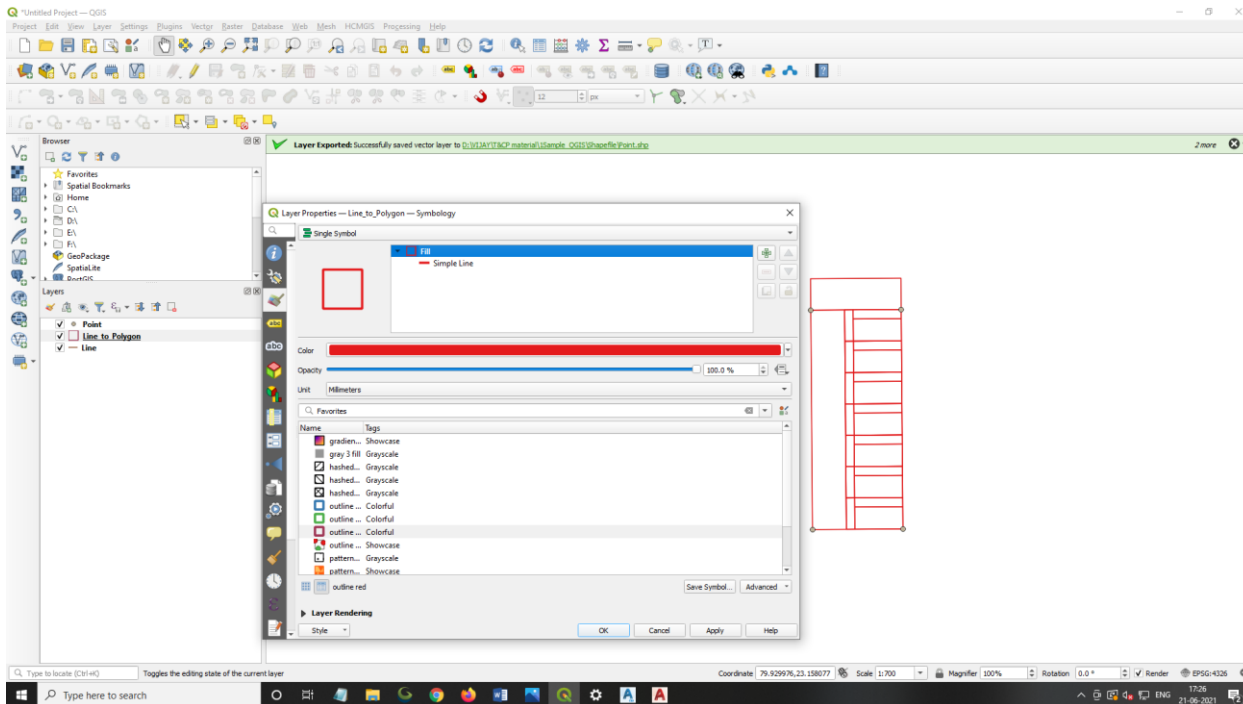


Figure 59 - Symbology Option

Go to “Layer” window in Left side, right click on file name & and click “Toggle editing” option.

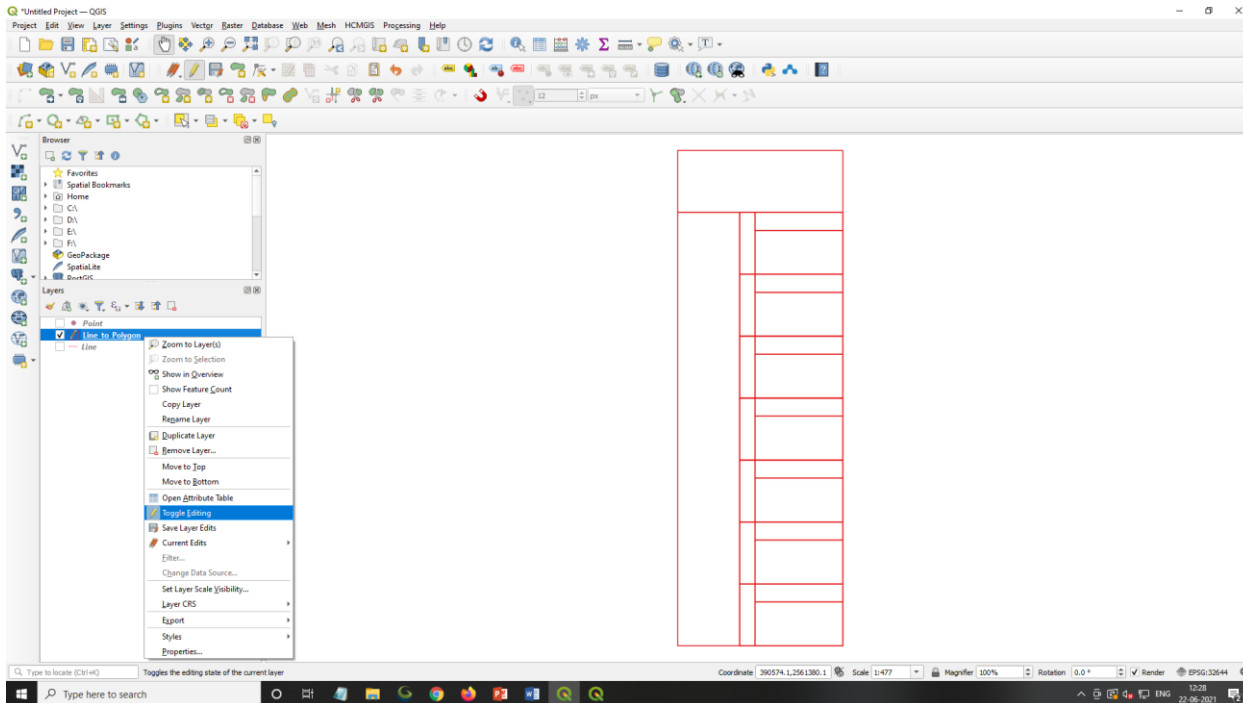


Figure 60 - Toggle Editing

Go to “Layer” window in right side, right click on file name and click “Open Attribute Table” option.

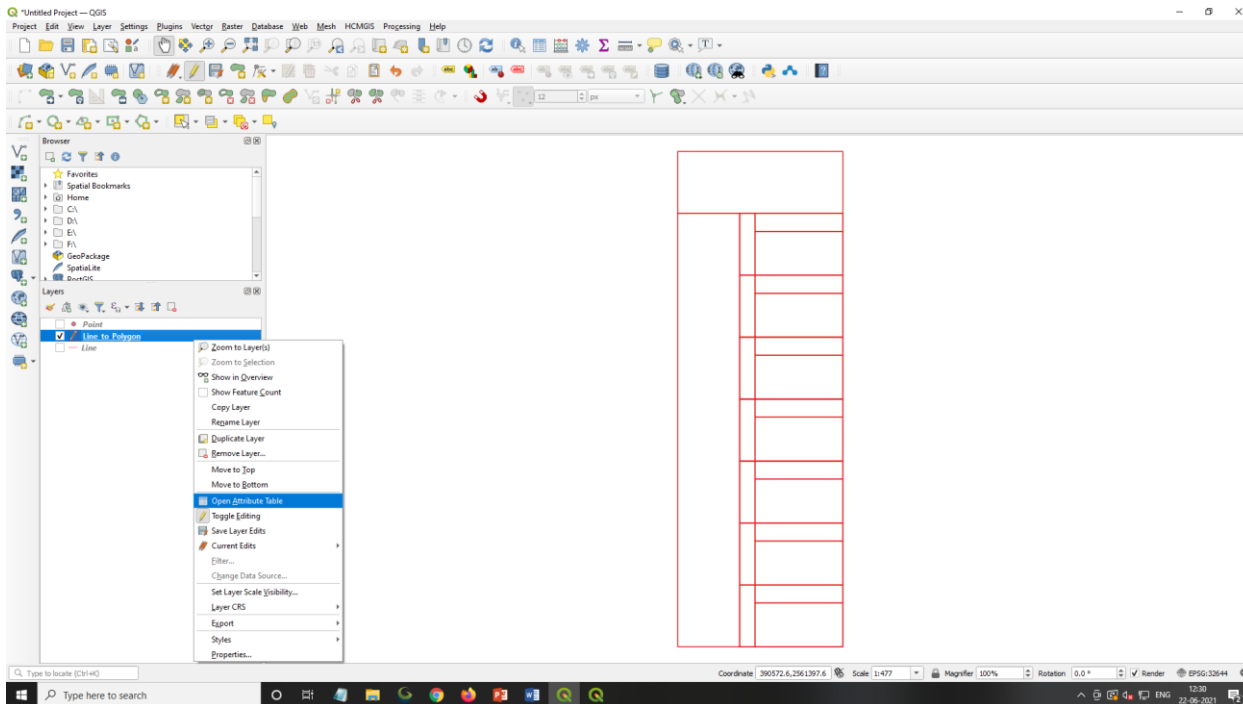


Figure 61 - Open Attribute Table

Polygon file attribute table will open. User needs to delete extra field by click on “Delete Field” icon.

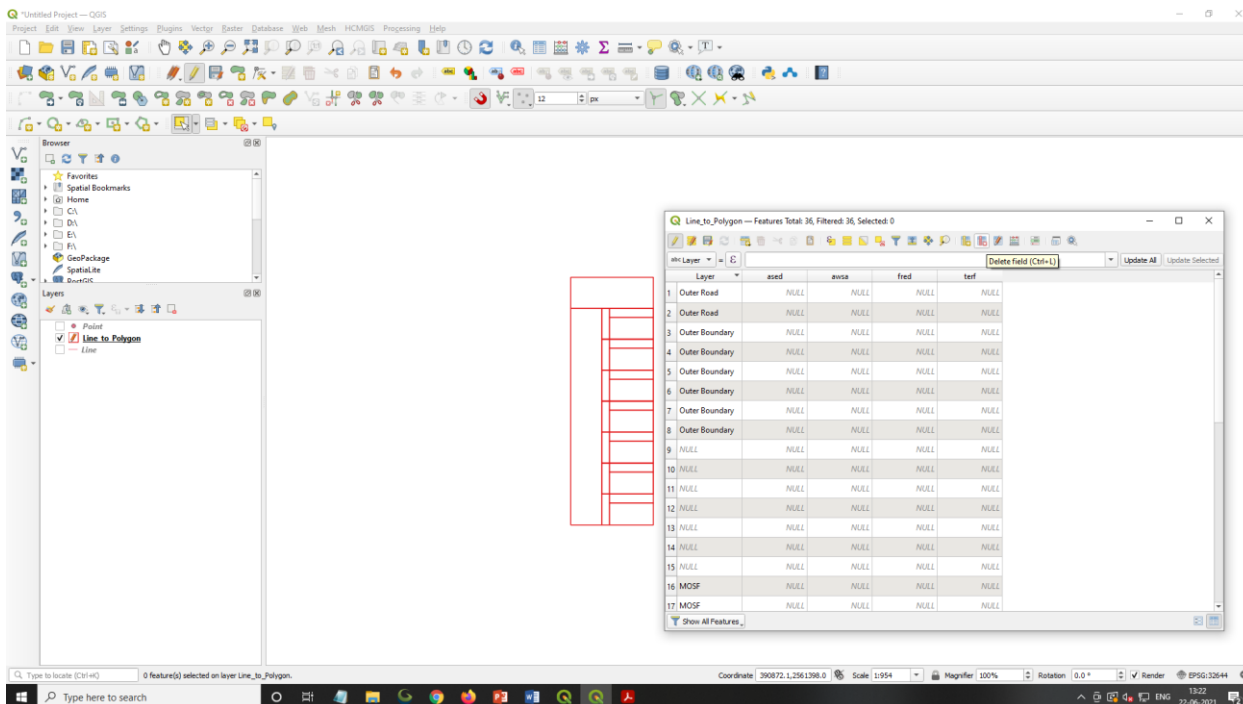


Figure 62 - Field selection

“Delete field” Window will open. User will delete unwanted column. Select all unwanted layer and click “ok” option.

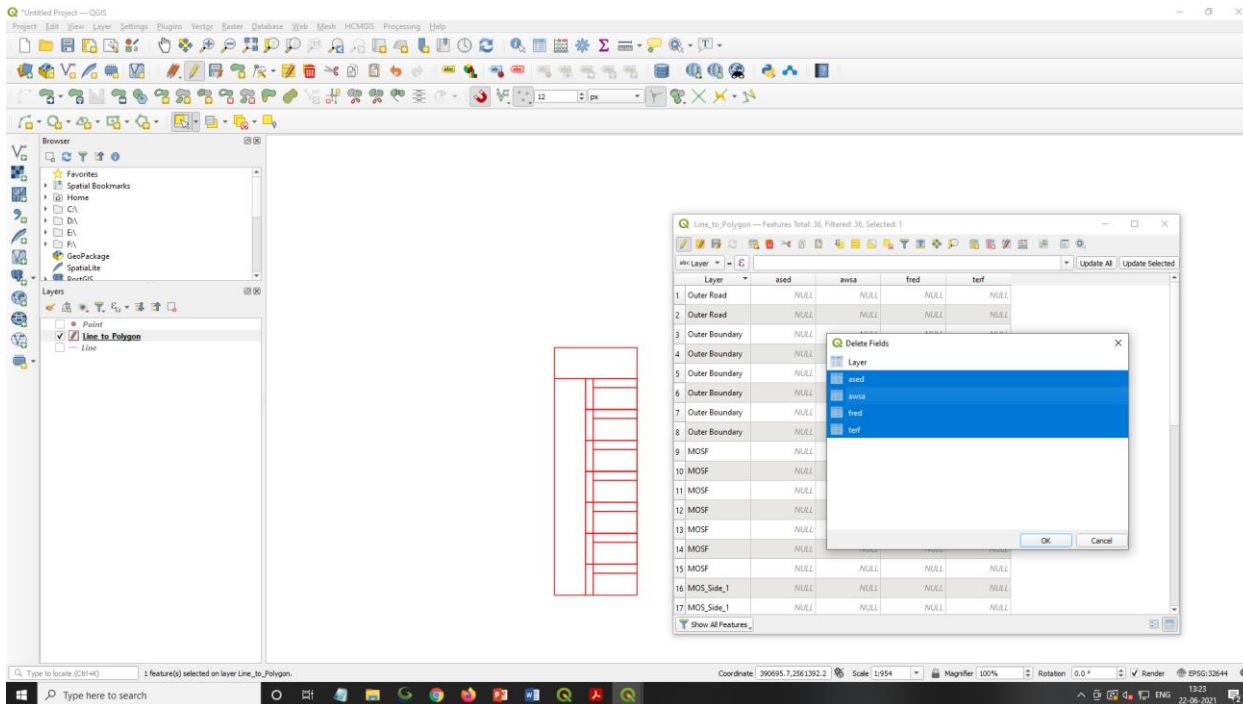


Figure 63 - Field Selection for delete

To add new fields, user will click on “New Field” icon.

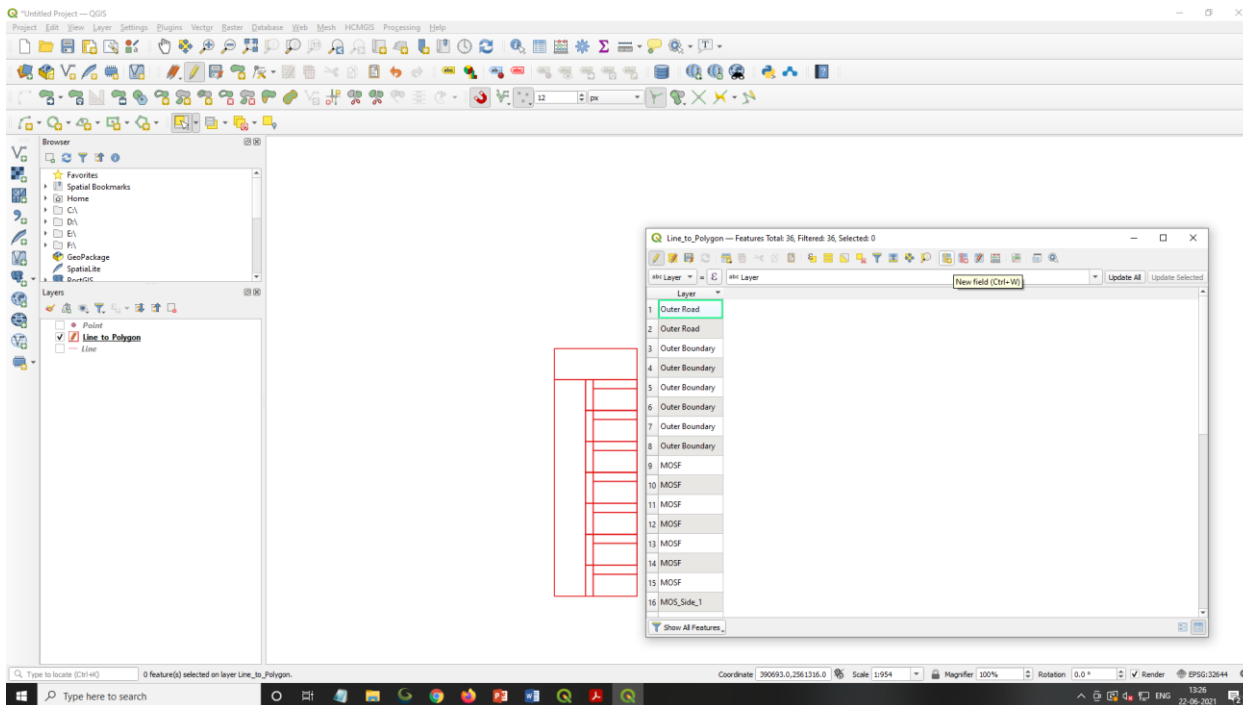


Figure 64 - New Field Icon

“Add Field” window will be open. As per “Polygon & Line Schema” defined in the Table no. 3 and Table no.4, user will define field name, Type, Length and click “OK” option.

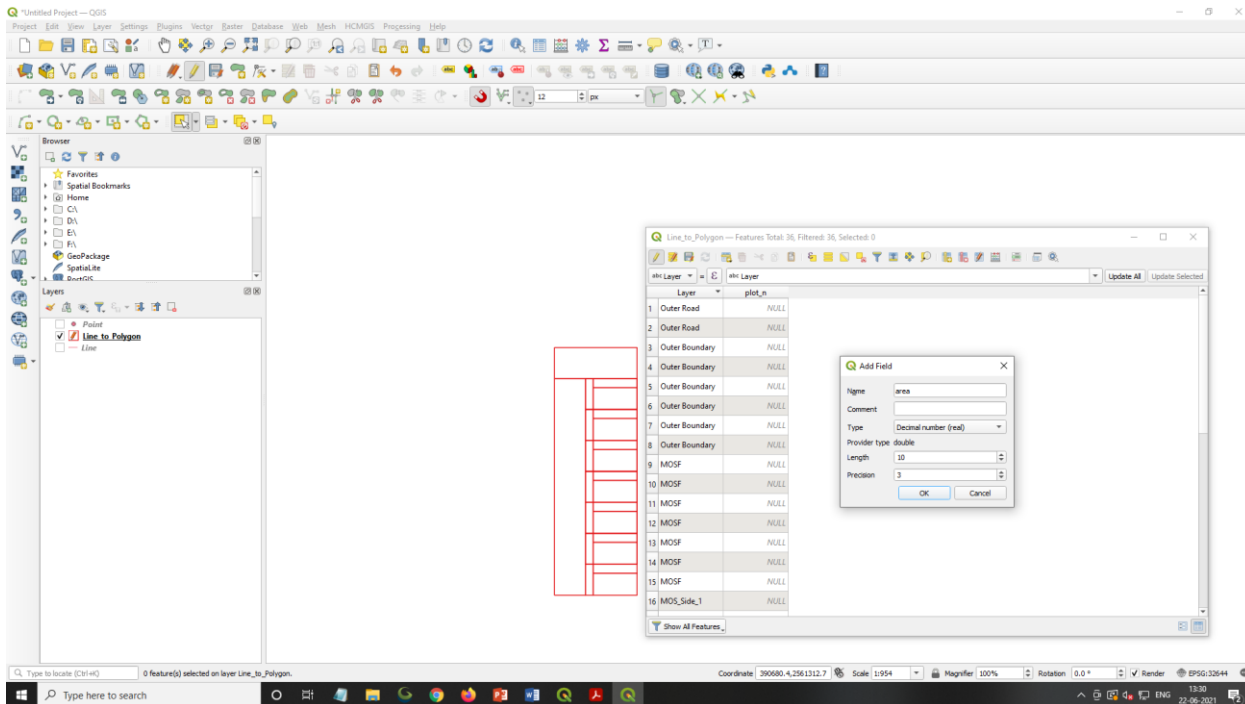


Figure 65 - New Field options

User will add all field and click “Save edits” icon.

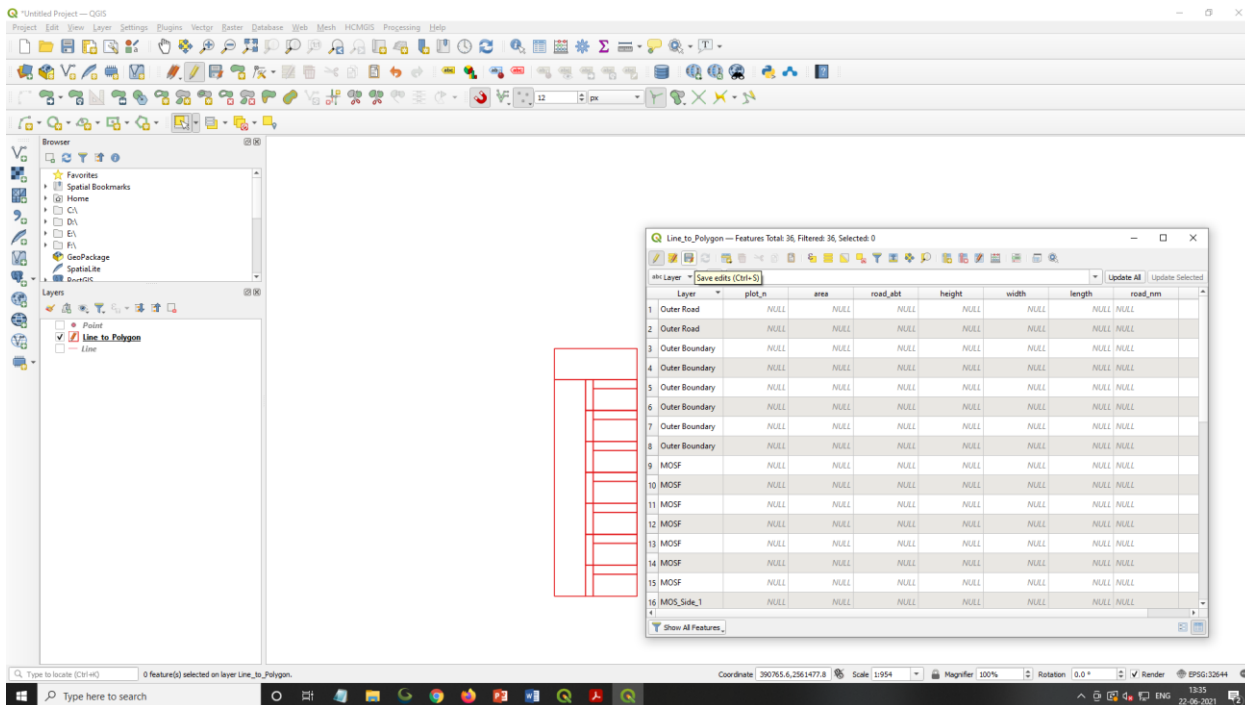


Figure 66 - Save Edits

After save editing, user will go to “Layer” window in Left side and right click on file name and click “Toggle editing” option.

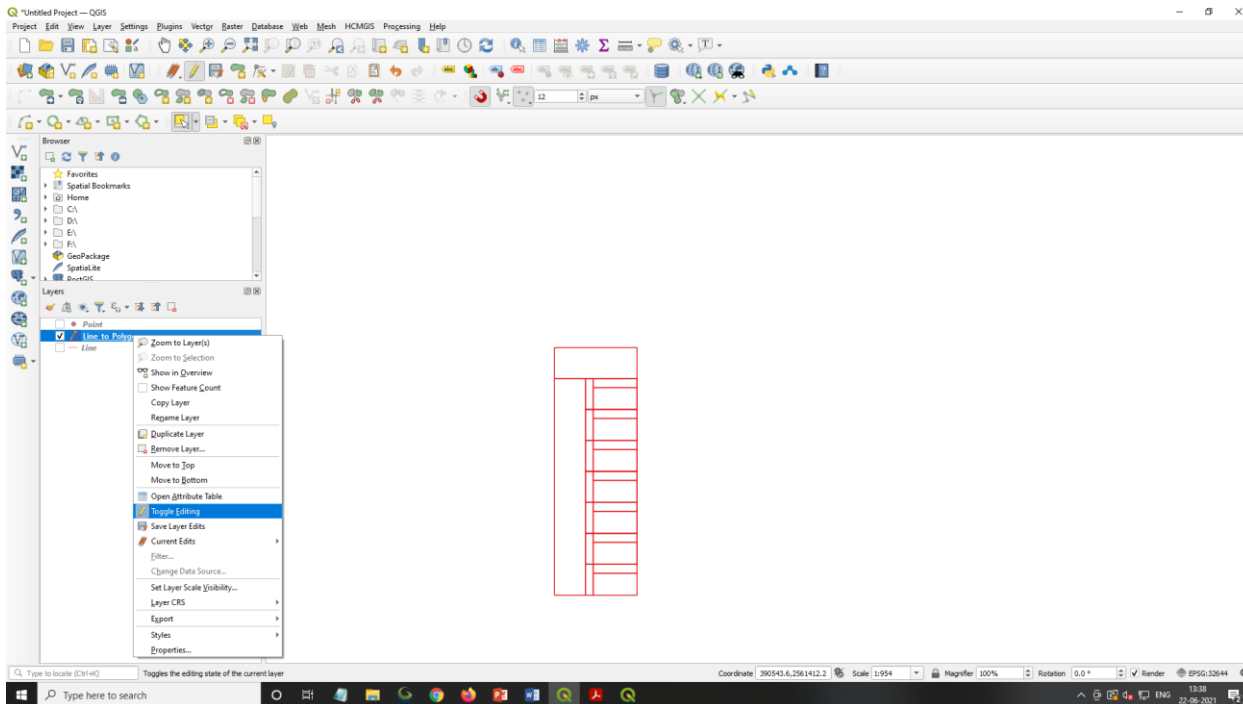


Figure 67 - Toggle Editing Off

Once user will click on “Toggle editing”. A window will open to save the file.

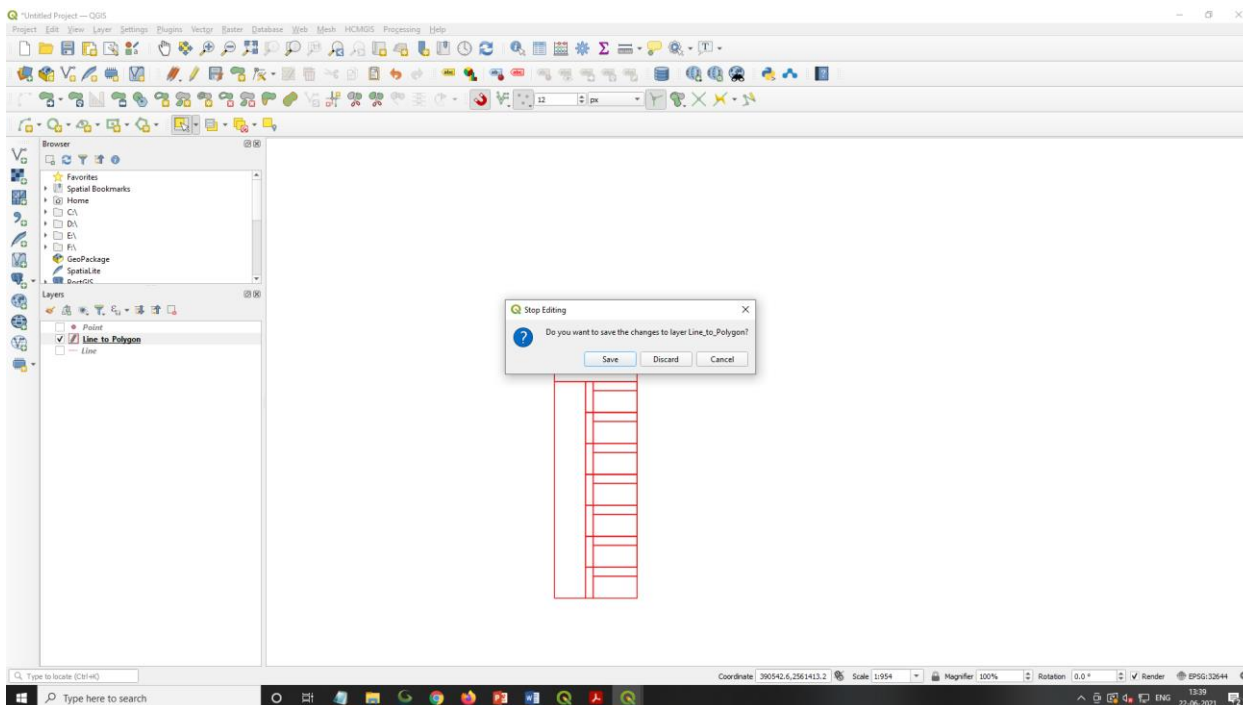


Figure 68 - Save option



## 6.9. Data Export UTM to GCS Format

Go to “Layer” window in left side, Right click on file name, Select “Export” and click “Save Feature As” Option.

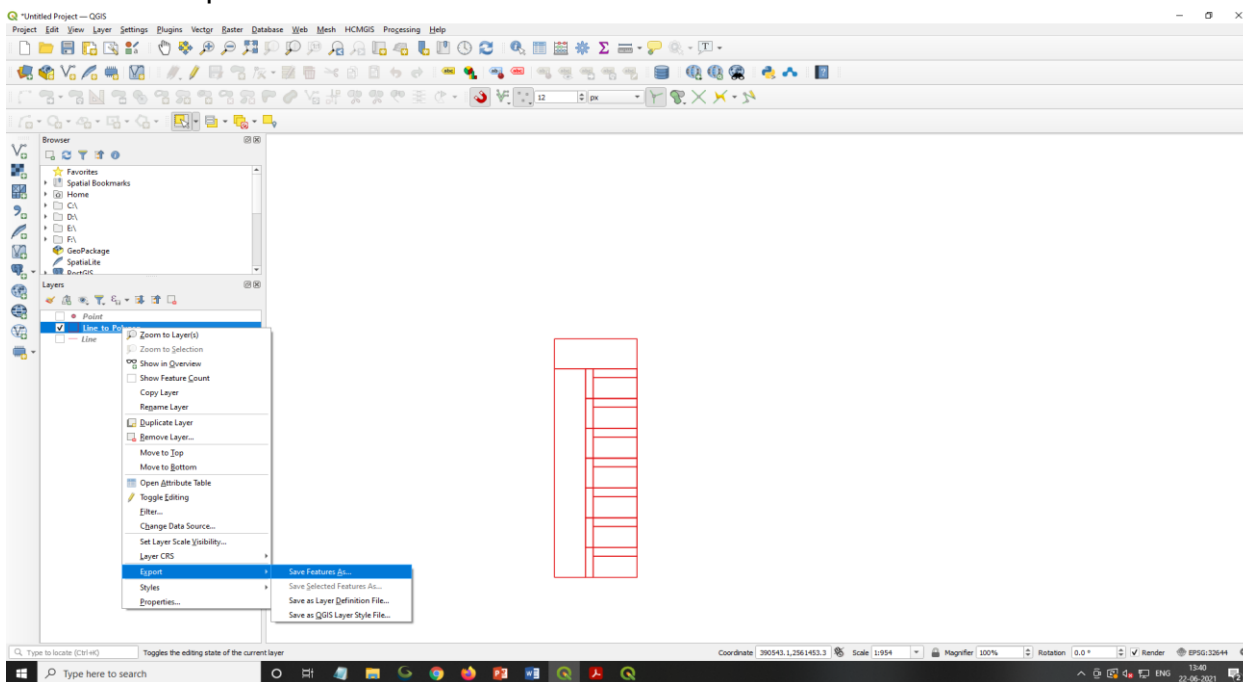


Figure 69 - Save Feature As

“Save Vector Layer As” Window will open. User will follow: Format – ESRI Shapefile, File Name – Select your Drive/Path, Give file name.

CRS – Select & Set Projection with GCS select name Default/Layer CRS: EPSG: 4326-WGS84,

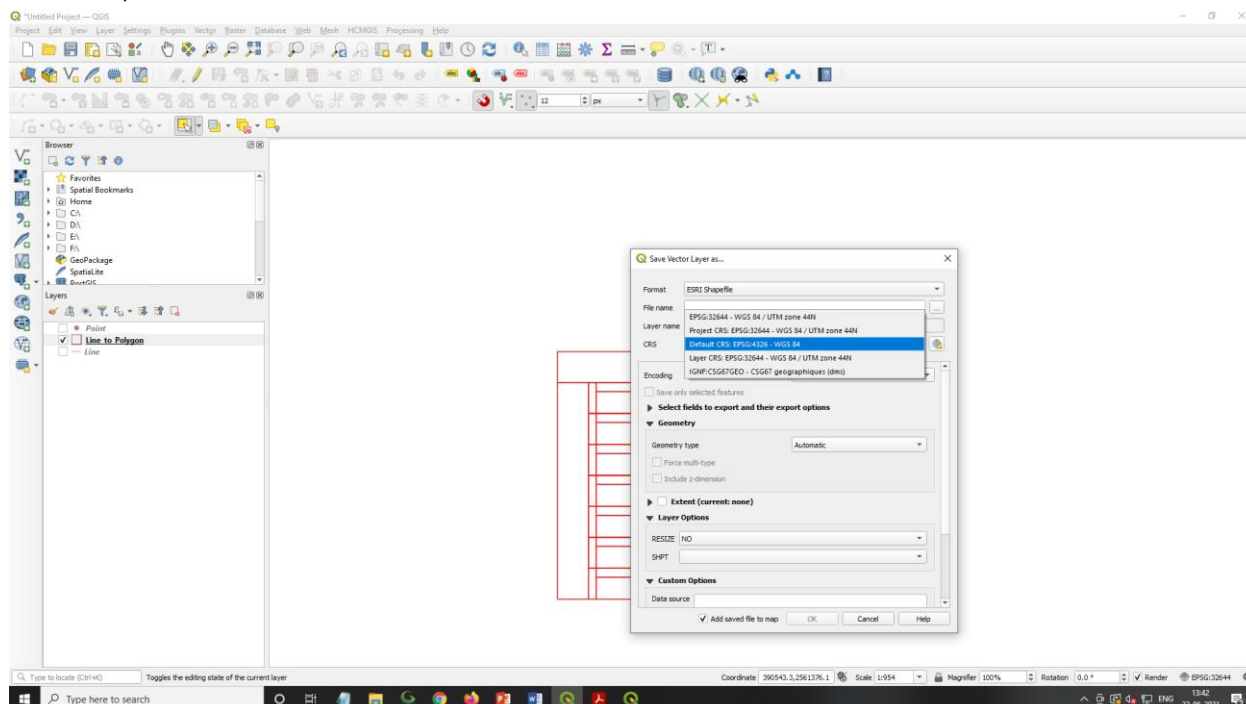


Figure 70 - Save file as options

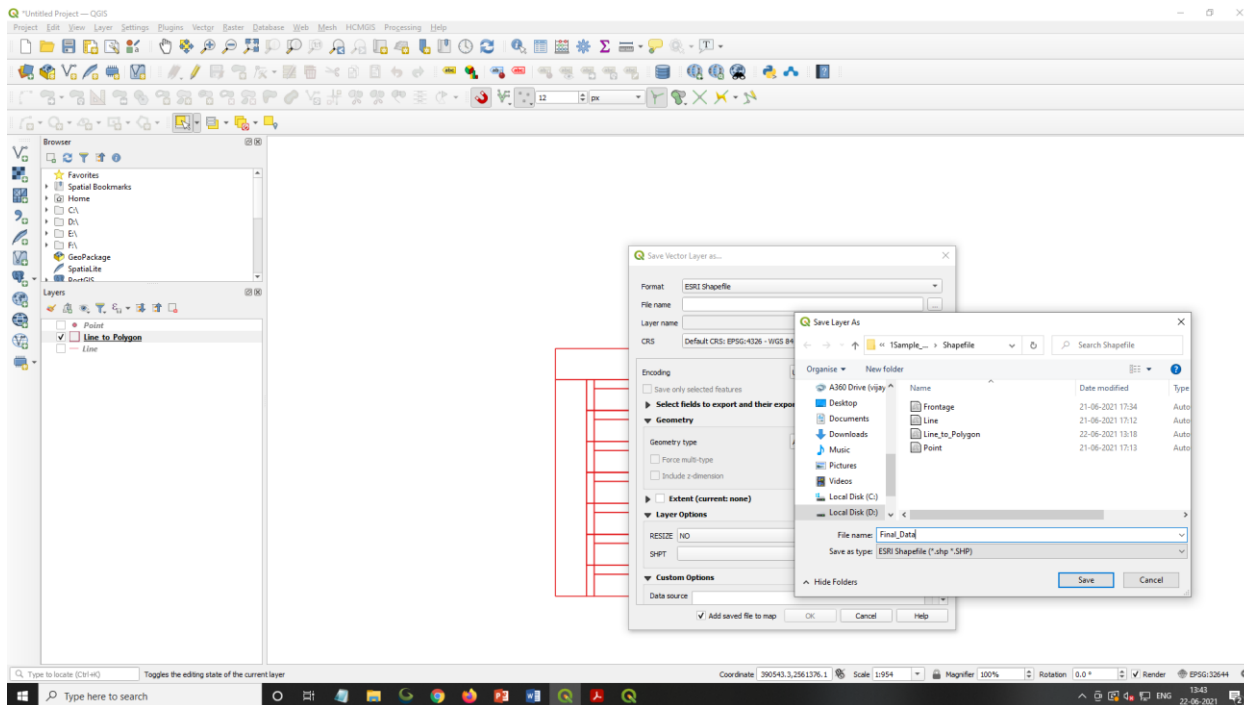


Figure 71 - Save file Naming

Go to “Layer” window in left side, right click on file name (Final Data) and click “Properties” option.

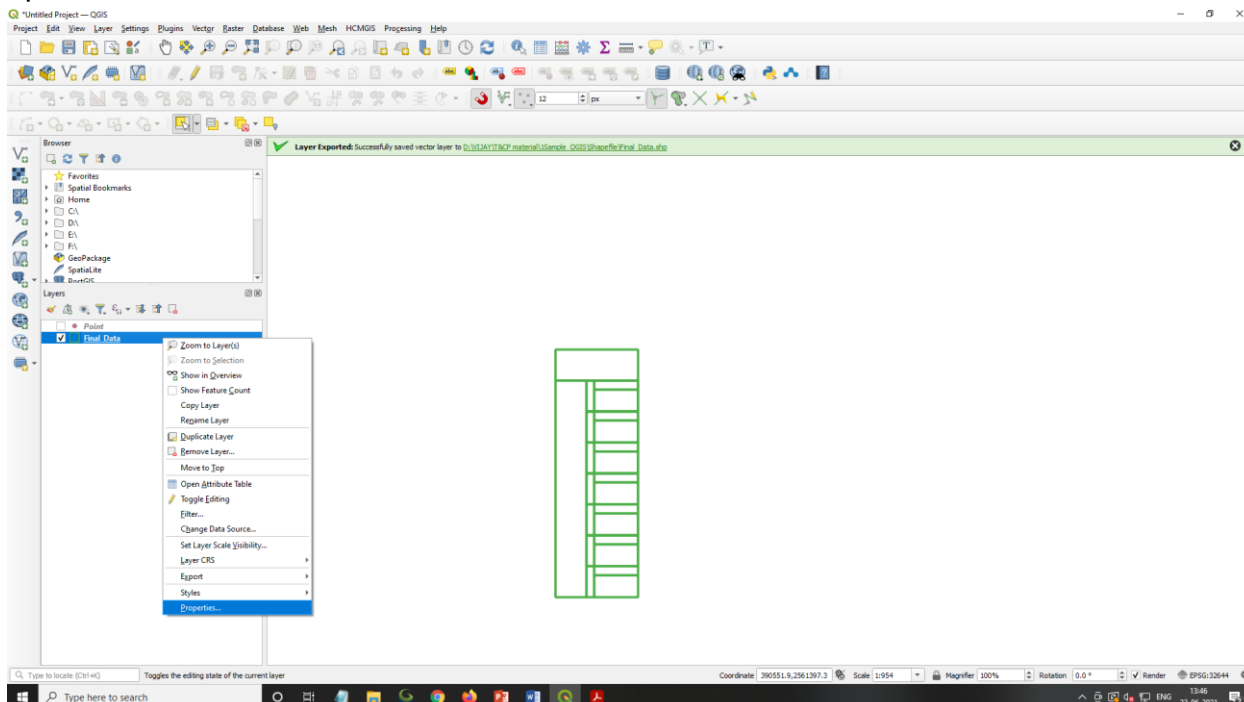


Figure 72 - Properties Selection

Layer Properties window will open, and select “Source” icon, and read/check file and CRS (Coordinate Reference System) Details.

Repeat the same process to create Khasra File and Location plan. Now files is ready to create zip file.

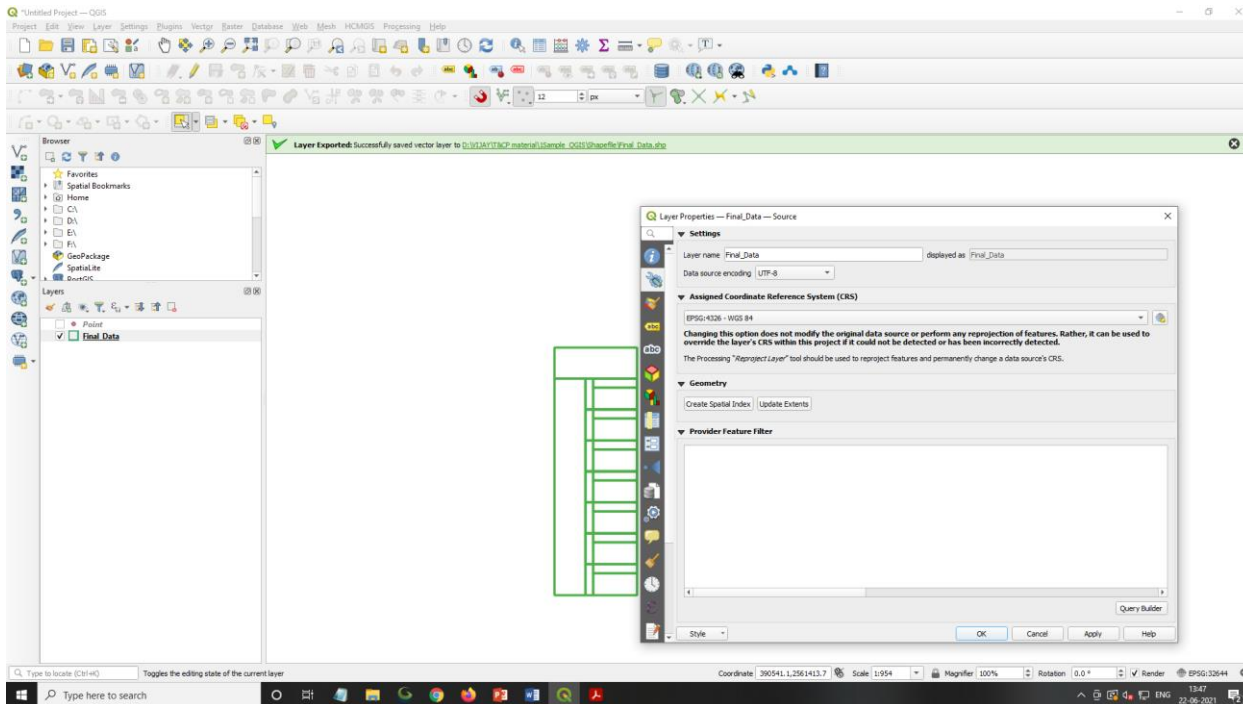


Figure 73 - Properties Checking

## 6.10. DELIVERABLES

User shall create zip files of the exported shapefiles. Details of zip files are as follows; User should ensure to kept same nomenclature as specified in this document and export the zip file.

**Zip Folder 1** – This folder contains PolyData and LineData. Name of this folder will be *LayoutPlan*.

**Zip Folder 2** – This folder contains Location data shapefile. Name of this folder will be *LocationPlan*.

**Zip Folder 3** – This folder contains Khasra Plan shapefile. Name of this folder will be *KhasraPlan*.

\*\*\*\*\*End of Document\*\*\*\*\*