PRASHANT ADVANCED SURVEY LLP

(Advanced Land Survey & Geospatial Solutions)

Streamlining Land Acquisition Processes for Highway Projects with Geospatial & Digital Solutions using Mobile LiDAR Technology :

O-207, 2nd Floor, Bramha Boulevard Phase 1, Connaught Road,
Near Sadhu Vaswani Chowk, Pune -411001, Maharashtra, India.
M +91 98900 55670.

Email : prashant@prashantsurveys.com;
prashantadvsurvey@gmail.com
Website : www.prashantsurveys.com

AEC Forum 2025;

Vivanta, Dwarka, New Delhi

22nd Aug., 2025.

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AEC Forum 2025;

Vivanta, Dwarka, New Delhi

22nd Aug., 2025.

Streamlining Land Acquisition Processes for Highway Projects with Geospatial & Digital Solutions using Mobile LiDAR Technology :

Prashant Alatgi, Designated Partner

Prashant Advanced Survey LLP,

Pune, India.

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Agenda :

1. About “Prashant Advanced Survey LLP”.
2. About LiDAR technology (Mobile, Backpack & Aerial).
3. Data captured by Leica ‘Pegasus Two’ Mobile LiDAR system, data processing & software's used.
4. About Land Plan & Land Acquisition Survey with advantages to the Government.
5. Revenue Record Collection & Authentication from Land Records Department.
6. Use of Mobile LiDAR Technology for Land Plan Survey.
7. Our Experience in Land Plan Surveys & ongoing projects.
8. HD Mapping of >1,00,000 Km National Highways in India.
9. GNSS / DGPS Base Station (GCP’s) & CORS network.
10. Contact us.







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1. About “Prashant Advanced Survey LLP” :

- We are a 34 years old professional Land Surveying & Mapping company based in Pune, India, (formerly Prashant Surveys), providing Complete 3D Geospatial Solution to our clients with Land Surveying, Mapping & GIS requirements.

- We use the 'state of the art' advanced technology of Surveying like Survey grade 3D Mobile LiDAR Survey, UAV (Unmanned Aerial Vehicle) / Drone LiDAR Survey, Backpack LiDAR Survey, DGPS / GNSS (Differential Global Positioning System / Global Navigation Satellite System), Aerial Photogrammetry survey & provide customized GIS solution.

- We offer our cost-effective quality services to Government, Semi Government, Private Organizations & Corporates all over the globe, with high speed and best in class accuracy.

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ii) Our Management Team :

- **Mr. Prashant S. Alatgi +91 98900 55670**
  - Designated Partner; Head : Technical, BD, R&D
  - (Ph.D. Research Scholar, M.E. Civil, B.E. Civil; 26+ years of experience)

- **Mr. Shivanand A. Alatgi**
  - Founder, Chief Technical Officer
  - (Retired from 'Survey of India'; 55+ years of experience)

- **Mr. D. N. Jadhav**
  - Head : GIS & RS; Retired from Survey of India
  - (B.A. Hons., M.Sc. Geo-informatics; 55+ years of experience)

- **Mrs. Deepa P. Alatgi**
  - Head : Administration, Accounts & H.R.
  - (Bachelor of Commerce; 23+ years of experience)

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iii) About Speaker :

- **Mr. Prashant S. Alatgi (M +91 98900 55670)**
  - **Designated Partner : Technical, R&D and Business Development**
  - **(Ph.D. Research Scholar, M.E. Civil, B.E. Civil; 26+ years of experience)**

- Ph.D. Research Scholar in ‘Advanced Surveying’ from MIT – WPU, Pune, India.
- M.E. (Civil) 1st Rank MIT, Pune; 2nd Rank, University of Pune, India.
- Certified by ISRO in "Remote Sensing & GIS" from NRSC, Hyderabad.
- FMIE, Life member of ACCE, IRC, ISRS, INCA, ISG, SAMA.
- Certified Subsurface Utility Engineer by Engineering Council of India & IndSTT.
- Having 26+ years of experience in advanced Land Surveying & GIS technology.
- Speaker in 32 International Conferences on Advanced Surveying technologies.
- Specializing in advanced Land Survey techniques like 3D Mobile LiDAR, UAV / Drone based LiDAR, Backpack LiDAR, DGPS, RS & GIS.

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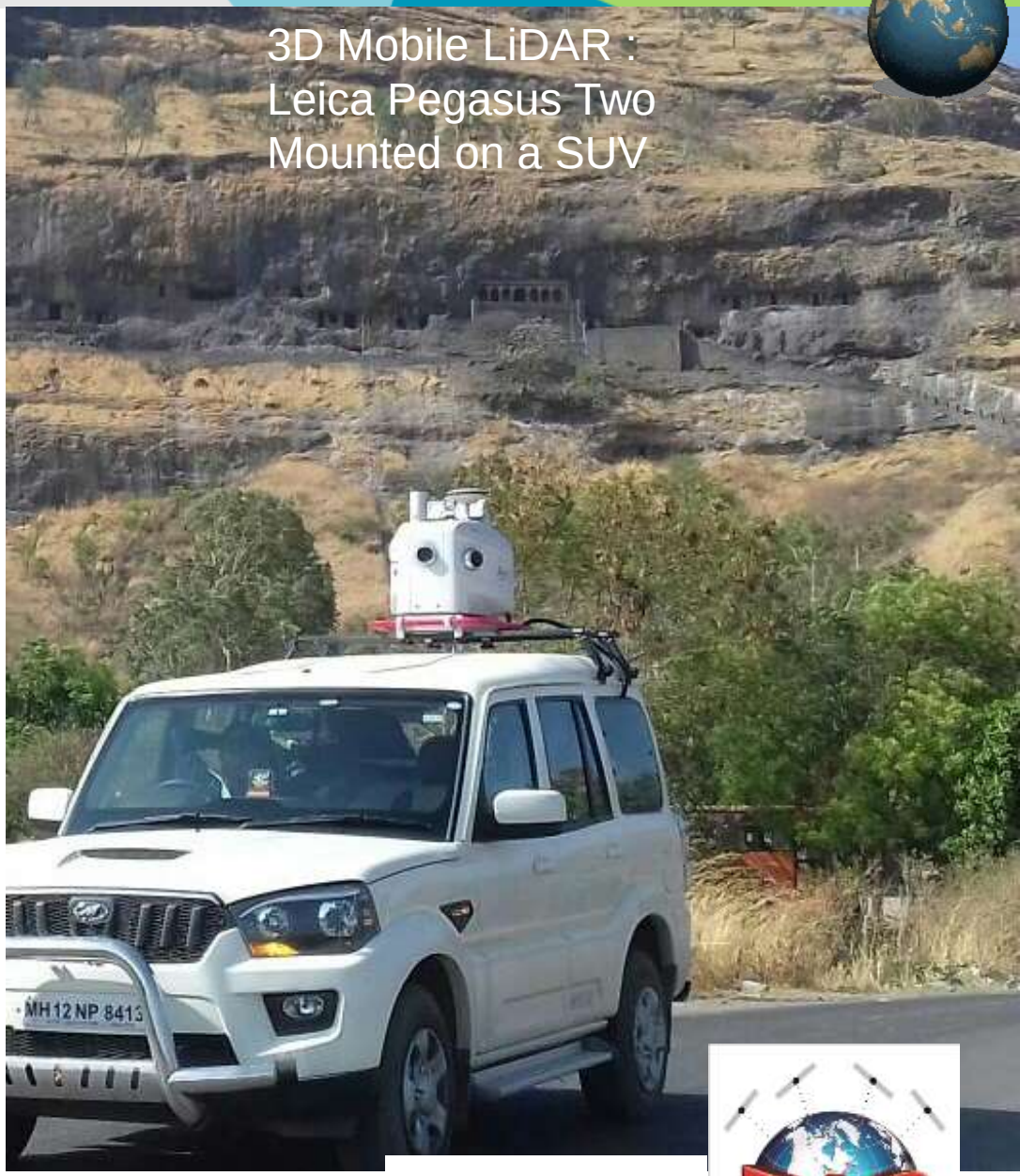
iv) Why Choose us :

- 34 years experienced & well reputed firms based in Pune, India, for providing complete 3D Geospatial Solution with Land Surveying, Mapping & GIS requirements.

- Continuously adopt the most Advanced Land Surveying & Mapping technologies viz. 3D Mobile LiDAR Survey, UAV / Drone LiDAR Survey, Backpack LiDAR Survey, DGPS / GNSS Survey, Aerial Photogrammetry & GIS solution.

- Have successfully completed more than 35,000 Km of highway & 3,000 Km of Railway Topographic surveys & 2 defence airports throughout India using 3D Mobile LiDAR technology since year 2015. Also completed 650 Km of Highway 65 in Saudi Arabia.

- Completed more than 100 prestigious projects of Land Surveying and mapping during past 34 years.



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iv) Why Choose us : (Contd…)

- Founder, Mr. Shivanand Alatgi, (Retd. form Survey of India), having 55 years of hardcore experience in the field of Land Surveying & Mapping, assisted with Technical consultants and advisers retired from Survey of India with 40+ years of experience.

- Head : Technical, R&D and Business Development, Mr. Prashant S. Alatgi, (Ph.D. Research Scholar, MIT - WPU, Pune, India; M.E., Civil, C&M, 1st Rank MIT, 2nd Rank, University of Pune, India), having 26 years of experience in advanced Land Survey, Mapping & Geospatial Solution, using 'state of the art' 3D Mobile LiDAR / NSV, Backpack LiDAR, UAV / Drone LiDAR, DGPS, ETS, RS & GIS technology.

- 1st Company in India to procure 'Leica Pegasus One' Survey grade Mobile LiDAR mapping system in March 2015 and the 1st private Company in India to procure 'Leica Total Station' (ETS) Electronic Total Station instrument, in the year 1998.

Network Survey Vehicle (NSV) :
'Leica Pegasus Two' with pavement Camera

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iv) Why Choose us : (Contd…)

- 1st Land Surveying company in India to possess 5 numbers of ‘Leica Pegasus Two’ Mobile LiDAR Systems. Have the capacity to capture LiDAR data of highways for about 1,000 Kilometers per day (200 Km per instrument per day), with accuracy of about +/- 2 cm.

- 1st Land Surveying company in India to possess 3 numbers of ‘Omniasphere - Janus Explore’ Backpack LiDAR Systems from Switzerland / Italy to capture data with accuracy upto +/- 5 cm in X, Y, Z coordinates.

- Strives to develop the innovative advanced Survey grade mapping technologies and provides the best geospatial solution for timely completion of large-scale Highways, Railways, Airports & Smart City projects, with required accuracy and optimum cost.

‘Omniasphere - Janus Explore’ Backpack LiDAR Systems.

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v) List of Survey Equipment's & software's :

- Leica ‘Pegasus Two’ Mobile LiDAR systems : 05 Nos.
- Backpack / Handheld LiDAR ‘Janus Explore’ : 03 Nos.
- DGPS / GNSS Receivers (Leica GS14 & Trimble R8) : 12 Nos.
- UAV / Drone, ‘Lookout VTOL’ & ‘Martice 350 RTK’ : 02 Nos.
- Leica Digital Levels ‘Sprinter 150M’ (Leica) : 02 Nos.
- Leica LGO / Infinity, TBC for GNSS data processing : 08 Nos.
- Leica ‘Mapfactory’ licenses for Arc GIS / AutoCAD : 11 Nos.
- Leica ‘Auto P’ & ‘Waypoint Inertial Explorer’ licenses : 03 Nos.
- Topodot, Pix4d Professional & ‘3D Reshaper’ license : 10 Nos.

vi) List of Hardware's & Assets :

- Desktop Computers / Workstations, I 9 processors. : 03 Nos.
- Desktop Computers, Intel Pentium I 7 processors. : 30 Nos.
- Laptop Computers, Intel Pentium I 7 & I 5. : 12 No.
- Four-wheeler (Mahindra Scorpio) SUV. : 04 Nos.
- Four-wheeler (Maruti Eeco). : 01 Nos.
- Plotter 36 inch, Hp designjet T830 MFP colour. : 01 Nos.
- Scanner 36 inch, Hp designjet T830 MFP colour. : 01 Nos.
- Laser Printers A4, Hp 1020 / F4288, Epson L4160. : 06 Nos.
- Office space 2,500 Sq. ft in Pune, India. : 02 Nos.

vii) Services Provided :

- 3D LiDAR Survey of Roads, Highways & Expressways
- 3D Mobile LiDAR survey of Railway lines & Airports
- Backpack survey of campus, factories & narrow lanes
- PPK UAV / Drone LiDAR Survey, Mapping & inspection
- Land Plan / Acquisition Survey of Highways by Mobile LiDAR
- Base Map Survey for Smart City & 3D City Mapping
- Optical Fiber Cable (OFC) Surveys by Mobile LiDAR
- DGPS / RTK Survey for Ground Control Points (GCP's)
- Data Processing of Mobile / Backpack / UAV LiDAR & GIS

Some of our Clients :

भा रा रा प्रा NHAI

GOVERNMENT OF KARNATAKA

MSRDC

Mumbai Metropolitan Region Development Authority

IRCON INTERNATIONAL LIMITED
(A Government of India Undertaking)

MILITARY ENGINEER SERVICES

KEC INTERNATIONAL LIMITED

LTIMindtree

CIPS

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viii) Events & Conferences :

Mr. Prashant Alatgi, Designated partner of 'Prashant Advanced Survey LLP', was a speaker / presenter on advanced 'Mobile, Backpack, UAV/Drone LiDAR Technology' in various international & national conferences as listed below :

No	Name of Conference	Venue & Dates	Topic / Title	Role
1.	'HxGN live 2015', hosted by Leica Geosystems AG / Hexagon AB.	18th to 20th Nov., 2015, Hong Kong, China.	"First Mobile Mapping Project in India – 2,500 Km in High speed data acquisition".	Speaker
2.	"Geosmart India 2016", Division of Geospatial Media & Communications.	01st to 03rd March, 2016, India Expo Centre & Mart, Greater Noida, India.	"Mobile LiDAR Technology - High speed data acquisition".	Speaker
3.	'HxGN live 2016', hosted by Leica Geosystems AG / Hexagon AB.	13th to 16th June 2016, Anaheim, California, USA.	"2,700 Km of Highways Surveying in India with Pegasus: One".	Speaker
4.	"Survey India 2016", Survey And Mapping Association of India (SAMA).	07th to 08th Sept., 2016, Holiday Inn, New Delhi, India.	"Mobile LiDAR Technology – Leadership address".	Speaker

viii) Events & Conferences : (Contd…)

No	Name of Conference	Venue & Dates	Topic / Title	Role
5.	'HxGN live 2017', hosted by Leica Geosystems AG / Hexagon AB.	13th to 16th June 2017, Las Vegas, Nevada, USA.	"3,000 Km of State Highway Surveying in India, for DPR projects, using Leica Mobile LiDAR Pegasus Two".	Speaker
6.	'HxGN Local 2017', hosted by Leica Geosystems AG / Hexagon AB.	13th October 2017, Hyderabad, India.	"4,000 Km of Highways Surveying in India, with Leica Pegasus Two".	Speaker
7.	'Leica M3D Road Show', hosted by Leica Geosystems AG / Hexagon AB.	07th December 2017, Hyderabad, India.	"7,000 Km of Highways Surveying in India, with Leica Pegasus Two".	Speaker
8.	'HxGN live 2018', hosted by Leica Geosystems AG / Hexagon AB.	12th to 15th June 2018, Las Vegas, Nevada, USA.	"Leica 'Pegasus Two' a perfect Network Survey Vehicle (NSV) for Road Asset Management & pavement analysis for the Highways Infrastructure projects in India".	Speaker
9.	"Geosmart India 2019", Division of Geospatial Media & Communications.	11th to 13th Feb., 2019, Hotel Pullman, Greater Noida, India.	"Mobile LiDAR Technology for Highways & Smart Cities in India".	Speaker

viii) Events & Conferences : (Contd…)

No	Name of Conference	Venue & Dates	Topic / Title	Role
10.	"Geospatial World Forum 2019", Division of Geospatial Media & Communications.	02nd to 04th April, 2019, TAETS Art and Event Park, Amsterdam, The Netherlands.	"Smart City Mission: Precise 4D asset mapping above and below the ground using Hybrid Technology of Mobile LiDAR & GPR systems along with Drones".	Speaker
11.	"HxGN live 2019", hosted by Leica Geosystems AG / Hexagon AB.	10th to 14th June 2019, Las Vegas, Nevada, USA.	"Smart City : Precise asset mapping above & below the ground using Leica Pegasus : Stream, Mobile LiDAR and GPR system along with PPK UAVs / Drones".	Speaker
12.	"INTERGEO 2019", HxGN Live TV interview.	18th Sept 2019, Stuttgart, Germany.	"Generating high precise base maps for smart city projects".	Speaker
13.	"Geosmart India 2019", Division of Geospatial Media & Communications.	03rd to 05th Dec., 2019, HICC, Hyderabad, India.	"Lidar Survey for Infrastructure Projects".	Speaker
14.	"Advances in Construction Technology & Management", (ACTM 2021)	11th to 12th March, 2021, College of Engineering Pune, India. (online mode)	"Pavement analysis and measurement of distress on concrete & bituminous roads using Mobile LiDAR Technology".	Speaker

viii) Events & Conferences : (Contd…)

No	Name of Conference	Venue & Dates	Topic / Title	Role
15.	"International Civil Engineering Symposium 2021" AAKAR IIT Bombay 13th Edition.	20th to 21st March, 2021, IIT Bombay, Mumbai, India.	"Use of NSV / Mobile LiDAR technology for measurement of distress at approaches & expansion joints of structures on Highways".	Speaker
16.	"Geospatial World Forum 2021", Division of Geospatial Media & Communications	20th to 22nd Oct., 2021, TAETS Art and Event Park, Amsterdam, The Netherlands.	"Use of LiDAR Technology in preparing digital 3D maps for smart City projects".	Speaker
17.	"Rail Analysis Innovation & Excellence Summit 2022"	06th April 2022, at Hotel Le Meridian, New Delhi, India	"Innovation in 3D Mapping, Metrology & Simulation Solutions".	Speaker
18.	"National Conference on Innovative Global Trends in Art, Design Technology and Management".	04th May to 06th May 2021 at MIT Art, Design & Technology University, Pune.	"Topographic Survey using Advanced LiDAR / UAV technologies".	Speaker
19.	"Geosmart Infrastructure 2022", Division of Geospatial Media & Communications.	05th to 06th Sept. 2022, Holiday Inn, Aerocity, New Delhi.	"Unlocking Opportunities in Transport Infrastructure with Reality Capture Technologies (LiDAR / Las	

viii) Events & Conferences : (Contd…)

No	Name of Conference	Venue & Dates	Topic / Title	Role
20.	"RIDE 2022", (Research, Innovation, Design, Entrepreneurship) MIT-World Peace University, Pune.	23rd Sept 2022, MIT-MIT-World Peace University, Kothrud, Pune, India.	"Innovation & Entrepreneurship".	Speaker
21.	INTERGEO 2022, Essen, Germany.	18th to 20th October 2022, Essen, Germany.	"Geo data acquisition for Infrastructure and Smart City projects using LiDAR Technology".	Speaker
22.	Resilient Urban Infrastructure, Chandigarh Smart City Limited.	02nd November, 2022, Chandigarh Smart City Limited, (Online).	Futuristic Technologies in Construction : Mobile LiDAR	Speaker
23.	Implementation of National Educational Policy, AISSMS, COE, Pune, India.	23rd Feb., 2023 at AISSMS College of Engg., Pune, India.	"Land Surveying & Mapping services using Mobile LiDAR".	Speaker
24.	"Geospatial World Forum 2023", Rotterdam, The Netherlands.	02nd to 05th May, 2023, Rotterdam, The Netherlands.	"Road and Railway Infrastructure Projects using Mobile LiDAR".	Speaker

viii) Events & Conferences : (Contd…)

No	Name of Conference	Venue & Dates	Topic / Title	Role
25.	"Training on Land Survey works to Officers of BRO School & Center, Dighi Camp, Pune, India.	27th May, 2023, School of Highway Engg., BRO School & Center, Dighi Camp, Pune.	"Land Survey works using survey grade Mobile LiDAR".	Speaker
26.	"HxGN live Global 2023", hosted by Leica Geosystems AG, part of Hexagon AB.	12th to 15th June 2023, Las Vegas, Nevada, USA.	"Growing your business with Mobile Mapping".	Speaker
27.	INTERGEO 2023, Berlin, Germany.	10th to 12th October 2023, Berlin, Germany.	"Mobile Mapping of 25,000 Km Highways and 2,500 Km Railways network in India & abroad".	Speaker
28.	"RIDE 2024", (Research, Innovation, Design, Entrepreneurship) MIT-World Peace University, Pune.	23rd Aug. 2024, MIT-MIT-World Peace University, Kothrud, Pune, India.	"Innovation & Entrepreneurship".	Speaker
29.	INTERGEO 2024, Stuttgart, Germany.	24th to 26th September 2024, Stuttgart, Germany.	"Mobile Mapping of 35,000 Km Highways and 3,000 Km Railways and 2 Major Airports in India and abroad".	Speaker

viii) Events & Conferences : (Contd…)

No	Name of Conference	Venue & Dates	Topic / Title	Role
30.	"Geosmart India 2024", Division of Geospatial Media & Communications.	02nd to 05th Dec., 2024, HICC, Hyderabad, India.	"Role of Advanced Surveying Tools and Techniques for Accelerating Construction of Highways".	Speaker
31.	ACCE (Mysore Centre) "Recent Advances in Civil Engineering' (RACE-25).	17th to 18th Jan 2025, MBCT Auditorium, Mysore, Karnataka, India.	"Advanced Topographic Surveying using Mobile, UAV/Drone, and Backpack LiDAR Technologies ".	Speaker
32.	Goespatial World, AEC Forum 2025. "Resilient Infrastructure through Digitalization".	21st to 22nd August, 2025, Vinanta, Dwarka, New Delhi, India.	"Streamlining Land Acquisition Processes for Highway Projects with Geospatial & Digital Solutions using Mobile LiDAR Technology".	Speaker

2. About our Mobile LiDAR Technology :

- Mobile LiDAR is an advanced mapping solution used to collect survey grade 3D point cloud data along the motorable roads / highways quickly & accurately.

- Incorporates the most advanced LiDAR sensors, Cameras (including all cameras for 360 degrees view), position / GNSS / GPS receivers & IMU (Inertial Measurement Unit).

- We are presently owning five numbers of ‘Leica Pegasus Two’ survey grade mobile LiDAR systems since 2015 and completed about 35,000 Km of highways, 3,000 Km of Railway & 2 defence airports in India. Also carried out 650 Km of Highway survey in Saudi Arabia for HW#65.

- Output after processing include; Geo-referenced 3D point cloud data, digital 3D maps in Autocad *.dwg or Arc GIS *.shp files, pavement distress, images / Panaromic views & Videos.

‘Leica Pegasus Two’ Mobile LiDAR mounted on a SUV vehicle.

Leica ‘Pegasus – Two’ mobile LiDAR : Major Components

- **Laser Scanner :** Z+F profiler 9012, with 119 m range and 360 degrees field of view. Scan speed of above 1 million points per second.
- **Camera Sensor :** No. of cameras 6 to 8, CCD size 2000 x 2000, 256 MP with 360 degree view.
- **GNSS/GPS & IMU Sensor :** L1, L2, L-Band and SBAS tracking GPS+GLONASS, single and dual antenna support, low noise FOG IMU.

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2. About our Backpack / Handheld LiDAR Technology (Contd…):

- Our 3 numbers of Backpack LiDAR ‘Omniashpere - Janus Explore’ can be carried on the shoulders & used for kinematic Laser scanning by walk or on a bike.

- Backpack LiDAR can be used for static scans of narrow lanes, heritage buildings, campus, factories, under the bridges & areas where vehicle mounted mobile mapping is not feasible.

- Handheld LiDAR can be carried by the hands, and used for kinematic scans by walking, mainly for creating the BIM models & interior measurements.

2. About our Drone mounted Aerial LiDAR Technology (Contd…) :

- Our Drone mounted Aerial LiDAR, Matrice 350 RTK with Zenmuse L2 Laser scanner & RGB camera is the best-in-class system for aerial applications.

- It can be used for mapping greenfield alignments, cities, hilly terrain and areas where mobile mapping and backpack LiDAR survey will not be sufficient.

3a) Data Captured by Leica ‘Pegasus Two’ Mobile LiDAR system:

- **The Leica ‘Pegasus Two’ mobile LiDAR / NSV can capture:**

(i) ‘3D Scan point cloud data’ in 360 degrees (Z+F 9012).

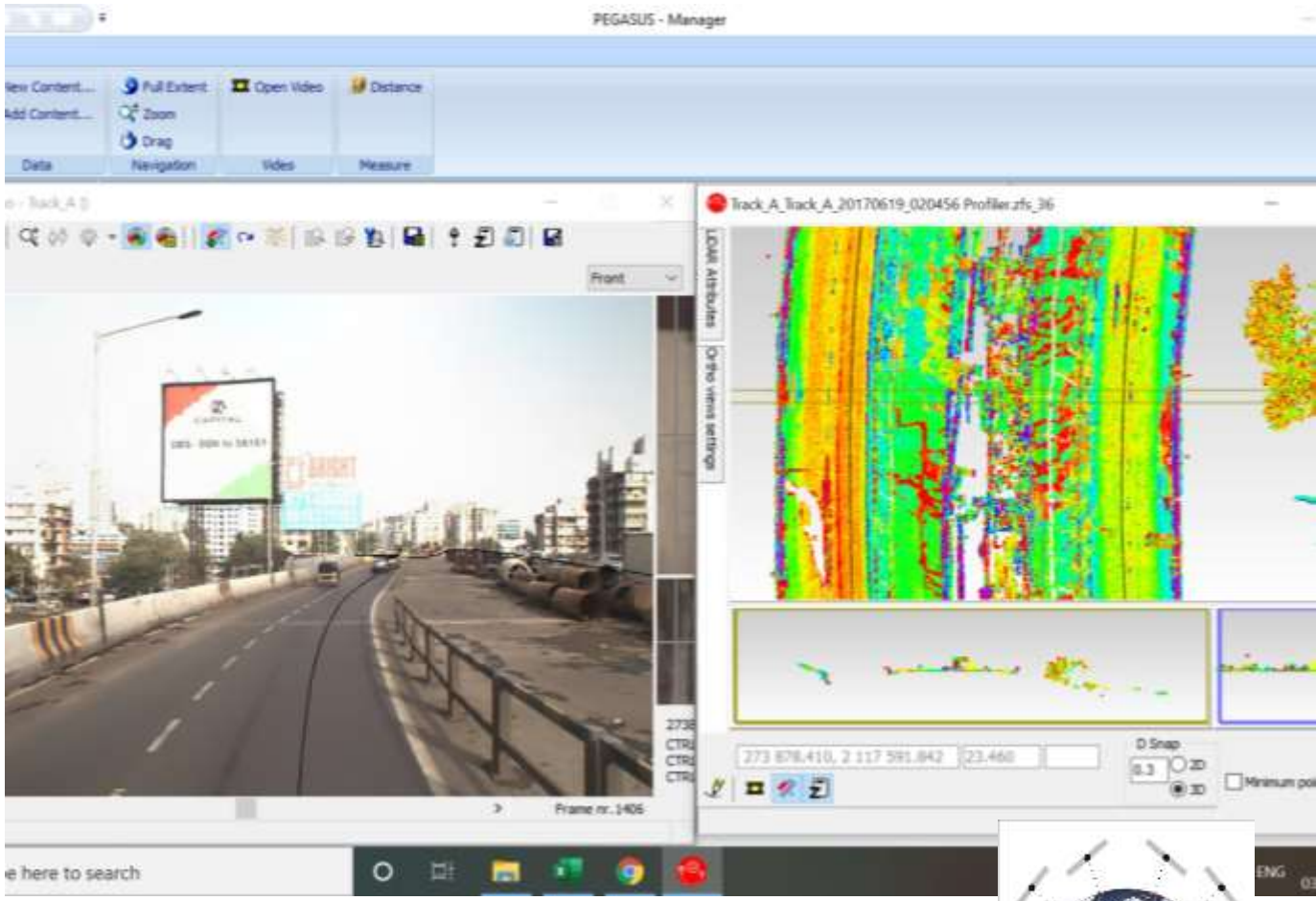
(ii) ‘High Resolution photographs’ in all directions & pavement.

(iii) ‘Trajectory file’ / position information, (GNSS Receivers).

- Above data can be captured for about 100 to 200 Km per day, depending upon the highway / road & site conditions.
- SOI CORS base station files ensure accuracy of the data.
- Requires proper logistics planning for the LiDAR teams.
- **Absolute accuracy of the LiDAR data is about + / - 5 cm.**
- **The precision of Z+F 9012 laser profiler is < = 1 mm.**

3b) Mobile LiDAR Data Processing Methodology & software's used for generating outputs :

- The data captured by Mobile LiDAR is processed in the following Software's :
- ‘Waypoint Inertial Explorer’, for trajectory.
- ‘Leica Auto P’, for point cloud registration.
- ‘Leica Map factory- Arc GIS’ & TopoDOT for feature extraction / vectorization (point, line, polygon) for all the road side features & amenities.
- ‘3D Reshaper’ for DEM / DTM & Contours.
- Arc GIS / Autocad, MS Excel for drawings & data display.



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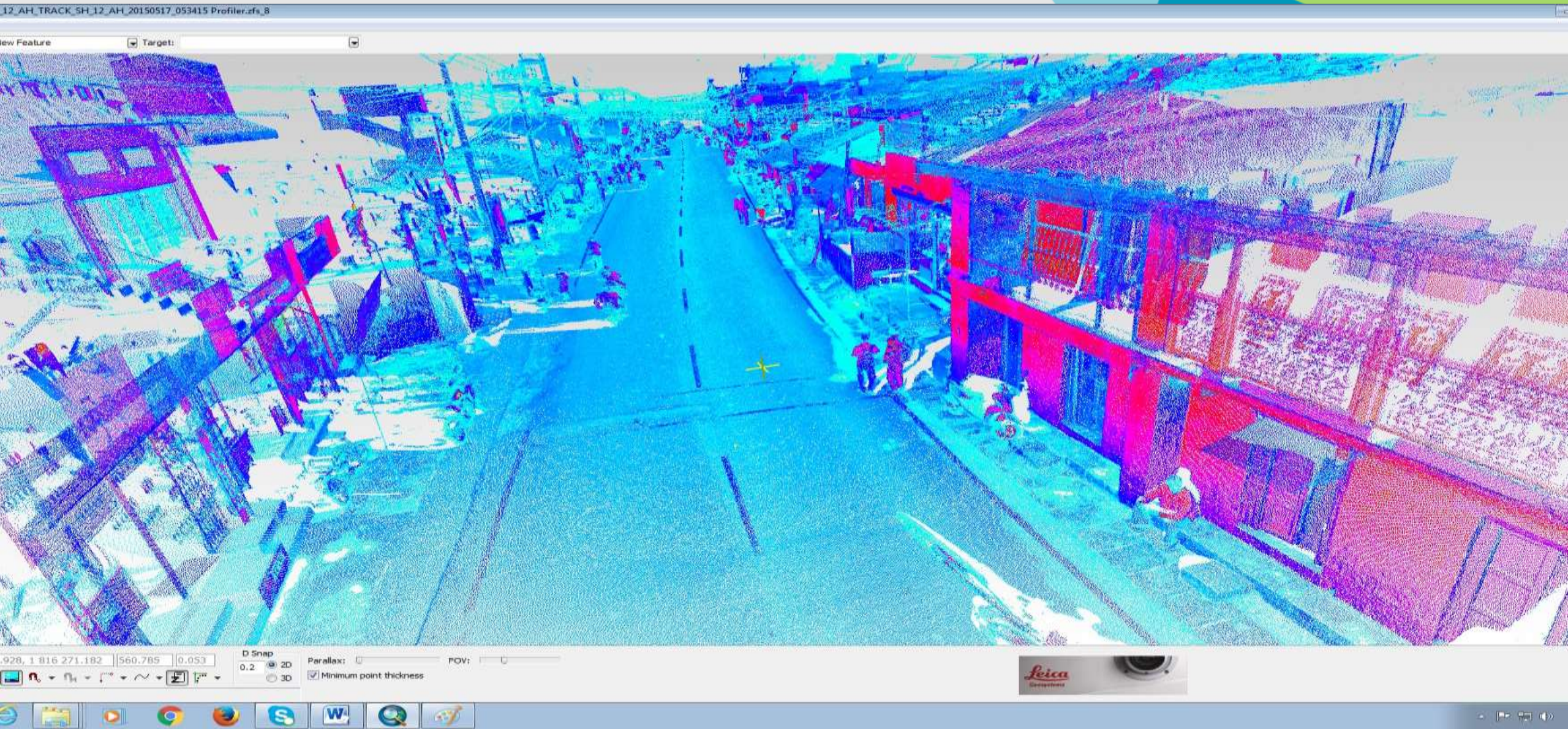

‘3D Scan point cloud data’ for City road captured by using Mobile LiDAR ‘Leica Pegasus Two’:

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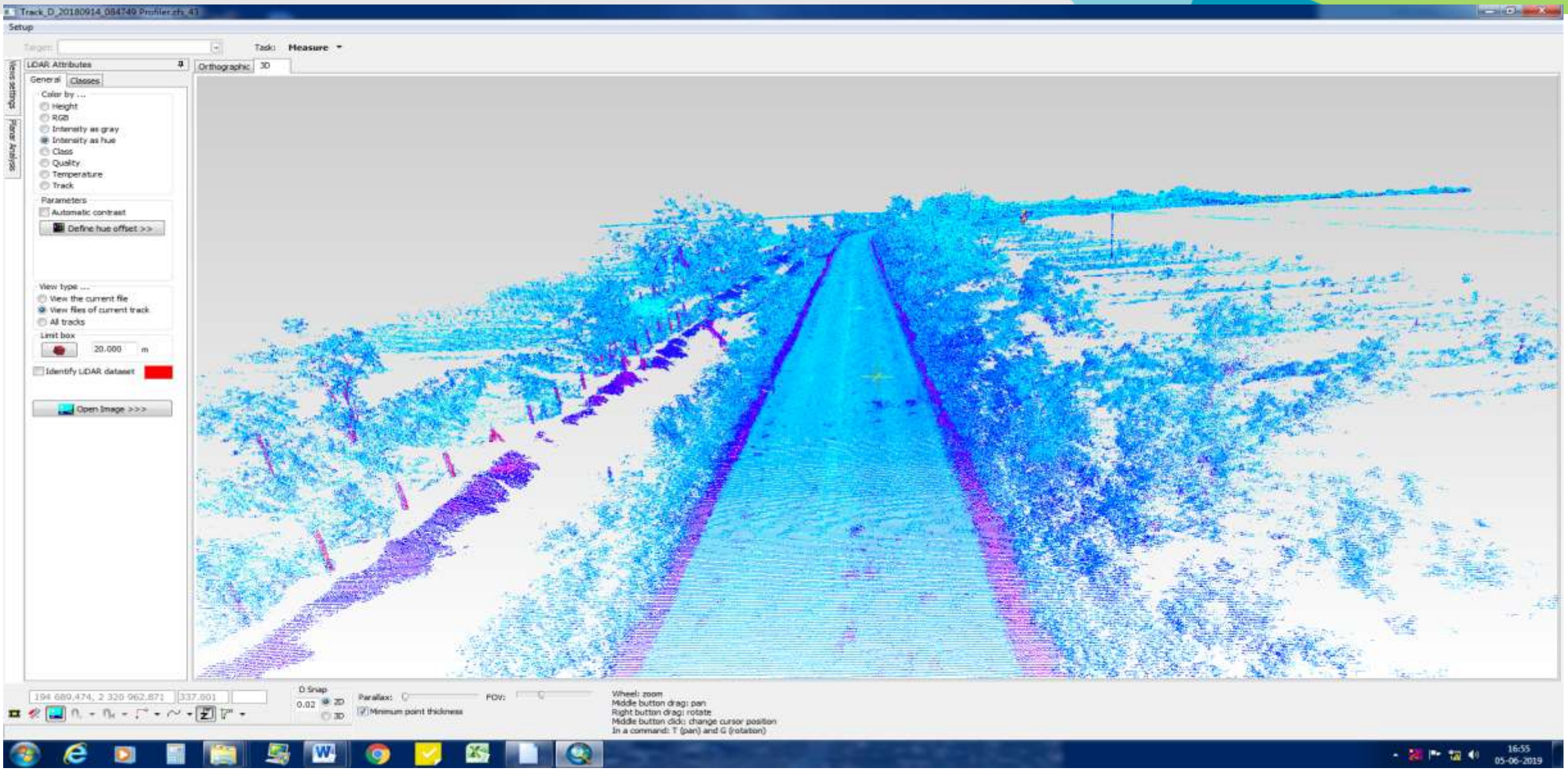
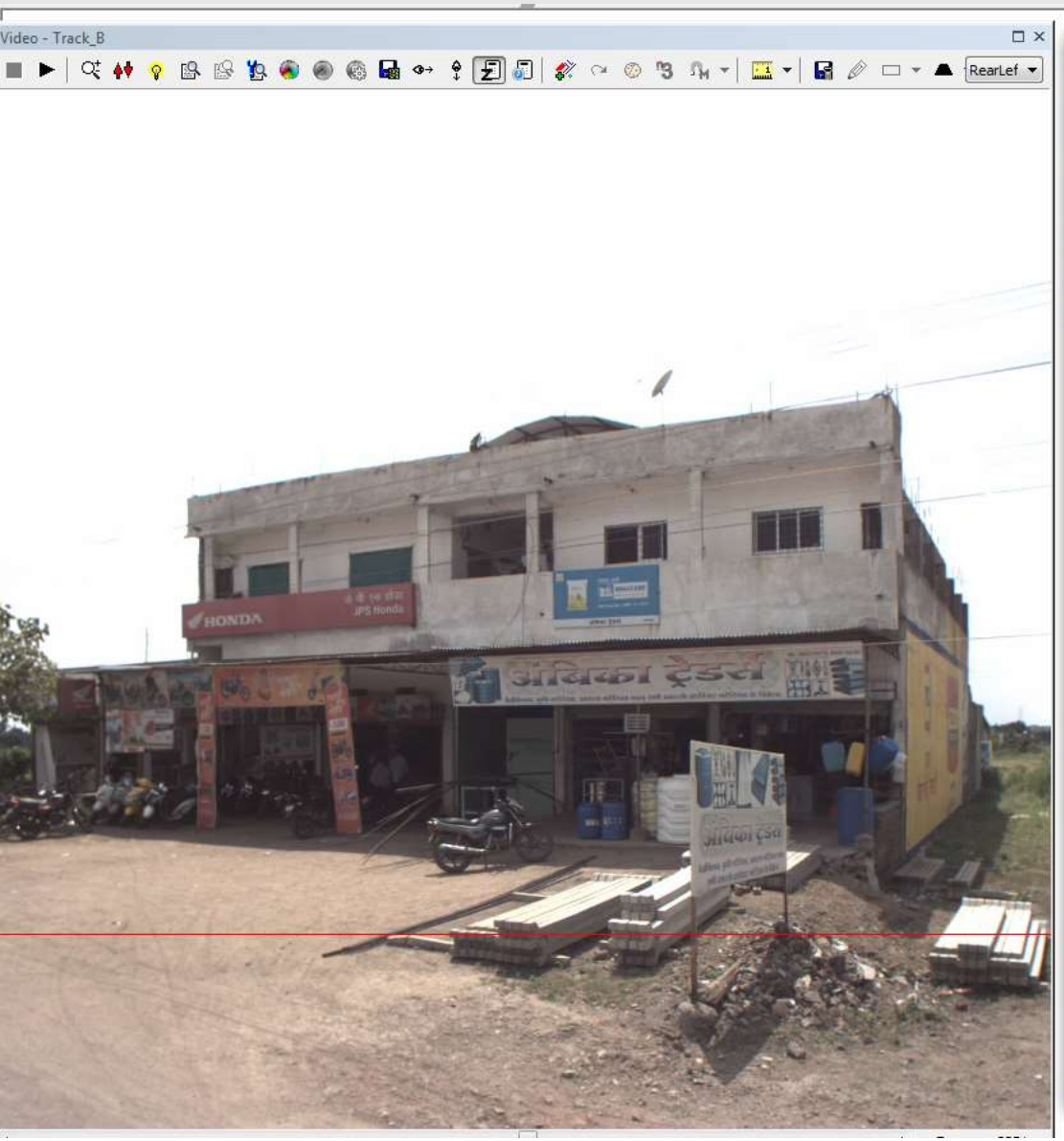
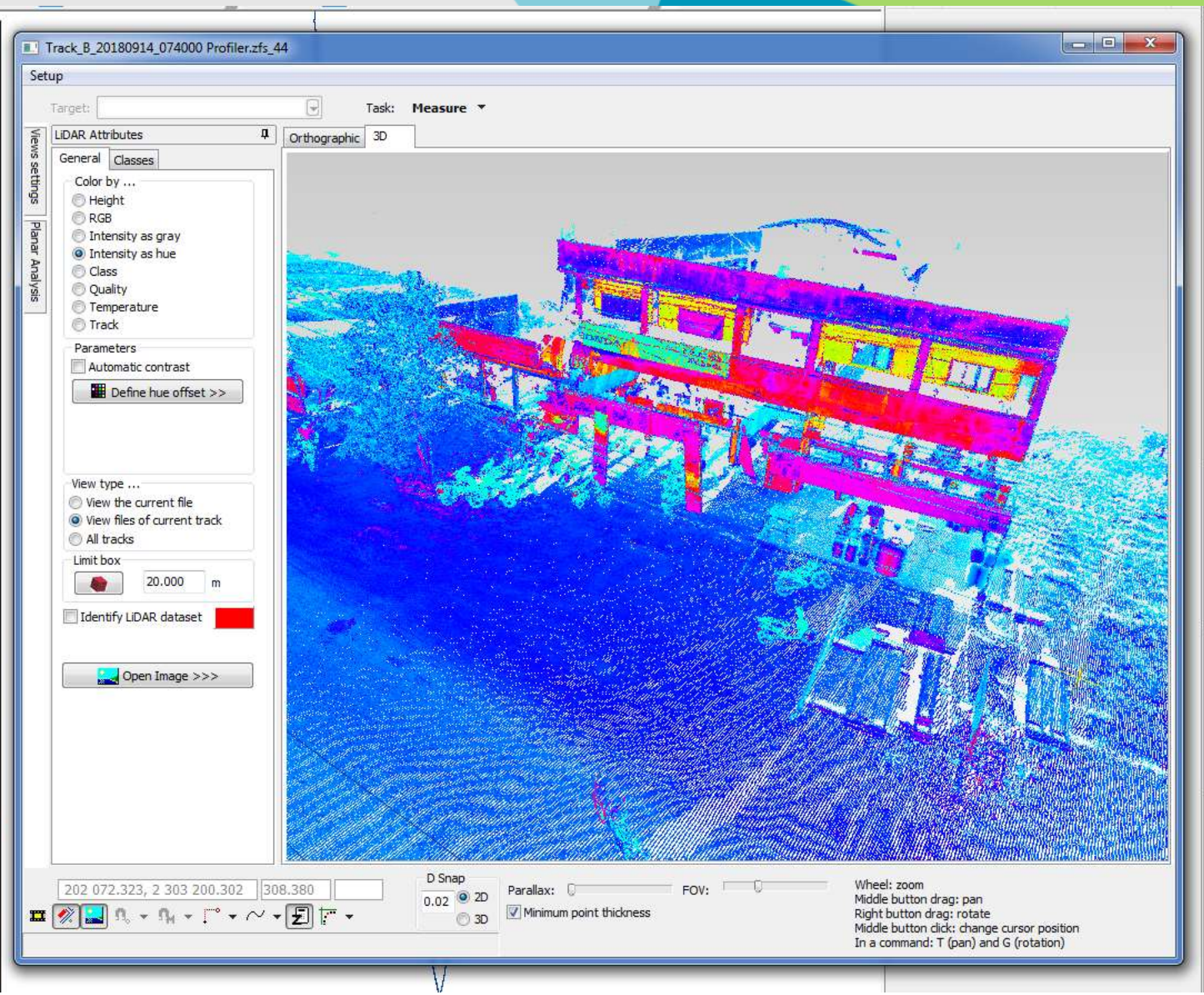


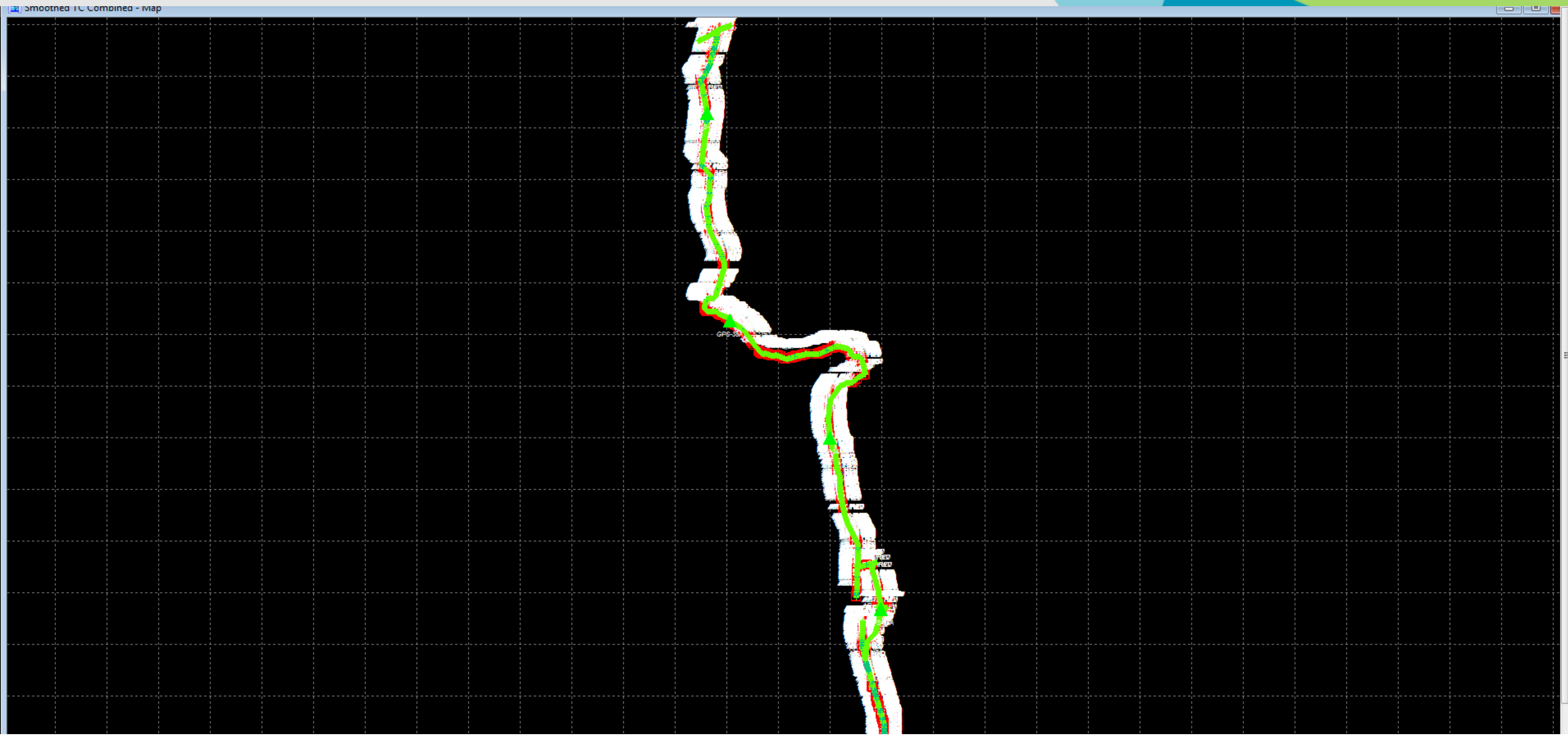
‘3D Scan point cloud data’ for Village Rd captured by using Mobile LiDAR ‘Leica Pegasus Two’:

‘High Resolution Photographs’ captured using Mobile LiDAR ‘Leica Pegasus Two’:





Screen Shot of ‘Photographs’ & ‘3D Scan point cloud data’ in ‘Leica Map Factory’ Arc GIS :

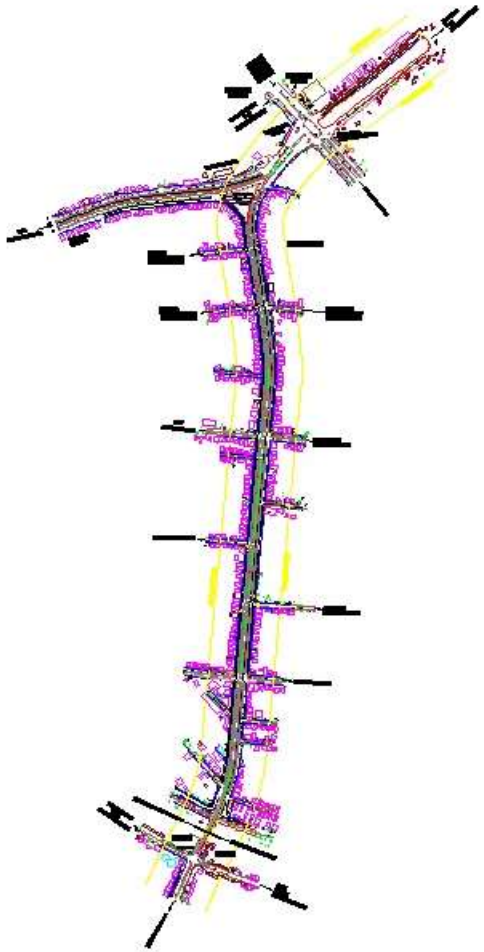


‘Trajectory file’ generated in ‘Inertial Explorer’ using Mobile LiDAR ‘Leica Pegasus Two’:

PROJECT : 399_PCMC

PACKAGE : Akurdi Road

Length : 2.5 Km



PLAN OF :

MOBILE LIDAR SURVEY

North

For 2.5 K.M. length

Chainage from K.M. 00/000 TO K.M. 02/500

LEGEND :

POINT FEATURES

LINE FEATURES

POLYGON FEATURES

SCALE = 1 : 2000

PRASHANT SURVEYS

[redacted]

E-Mail : prashantsurveys@gmail.com

Website : www.prashantsurveys.com

Date of Drawing : 16-10-2017.

Drawing Revision No. : 00.

File No.: 399_PCMC_KM_2.5_PLAN.dwg

‘3D Plan of Mobile LiDAR data, captured by ‘Leica Pegasus Two’:

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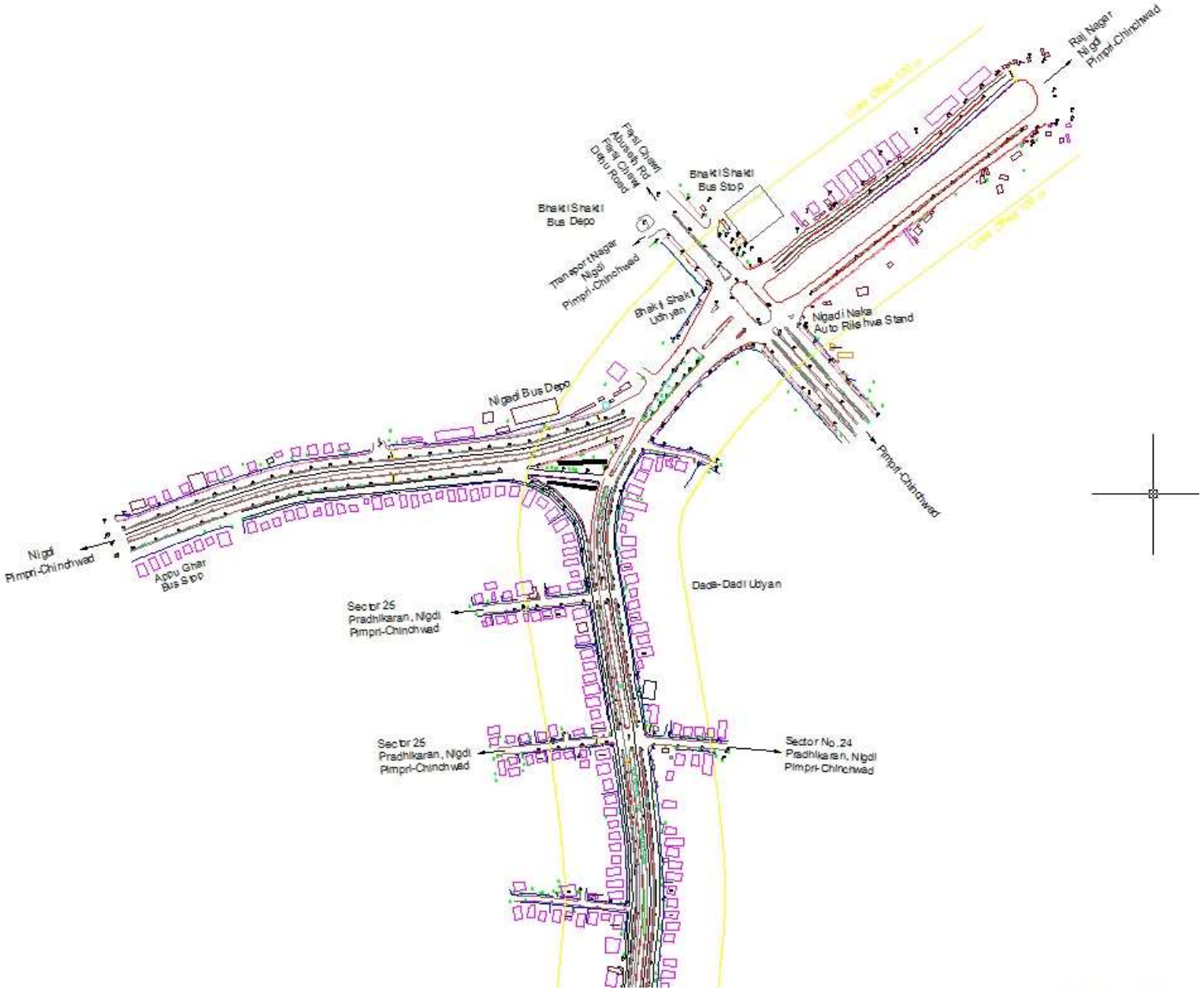
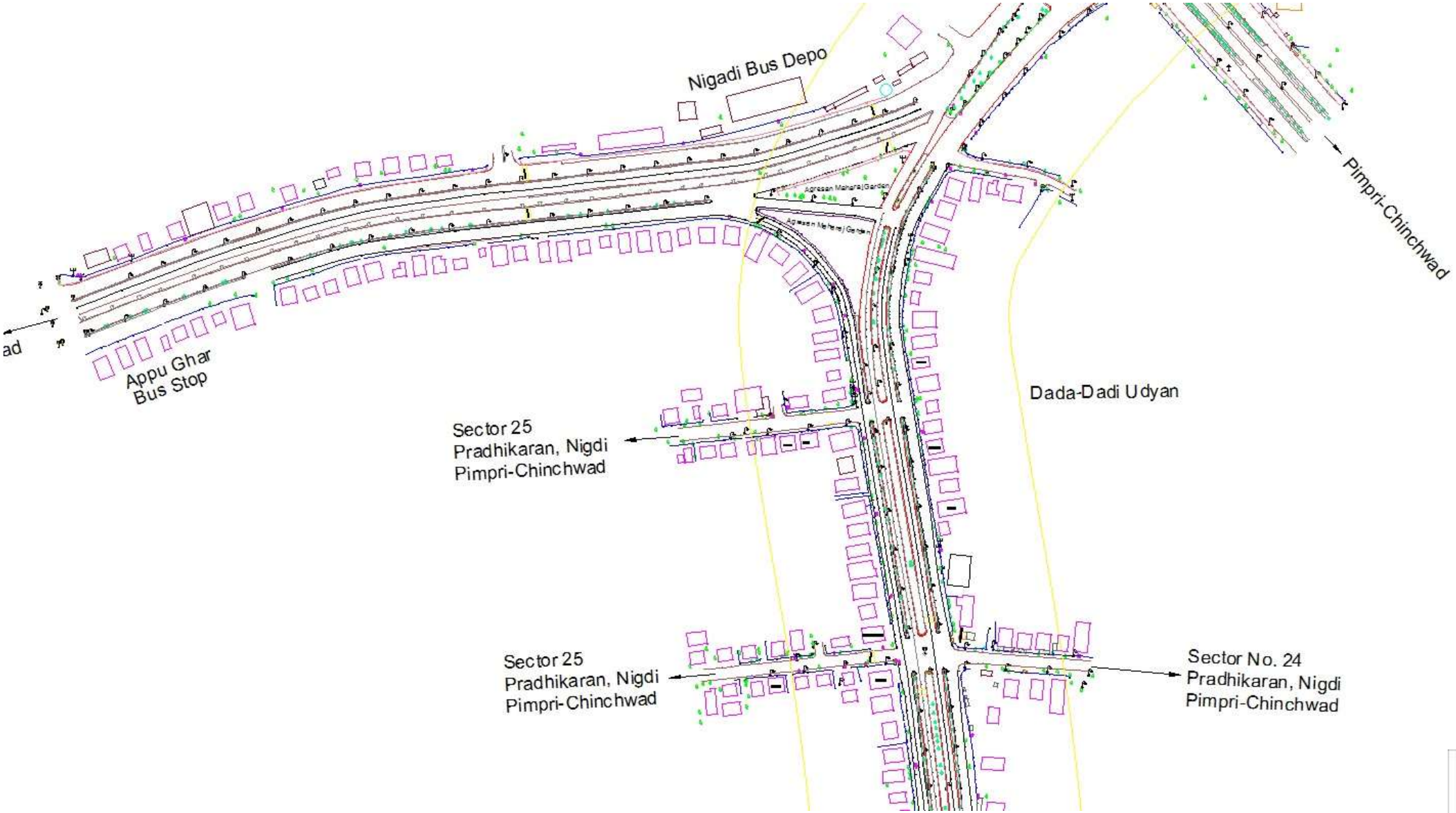


‘3D Plan of Mobile LiDAR data, captured by ‘Leica Pegasus Two’:

ISO 9001 : 2015



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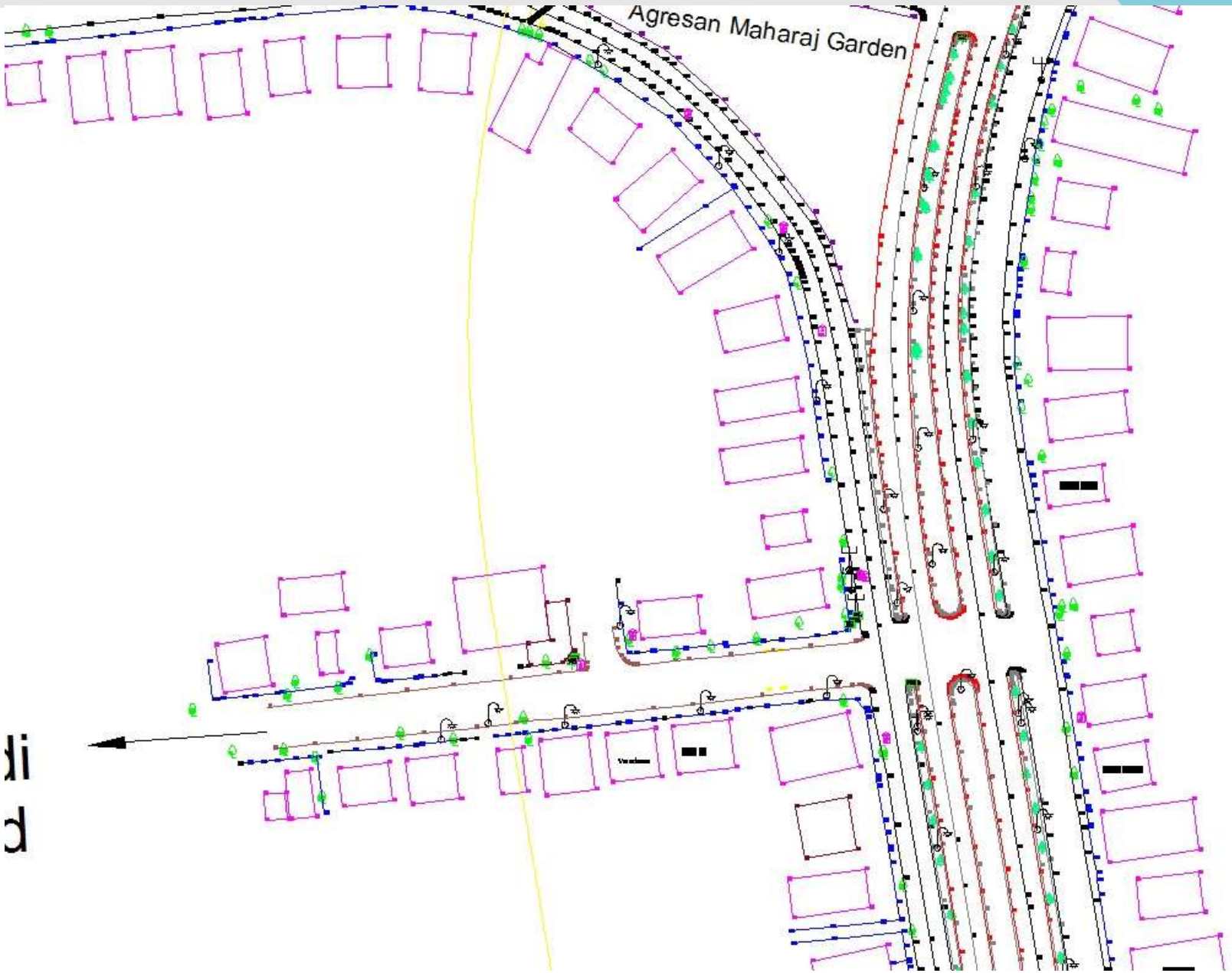

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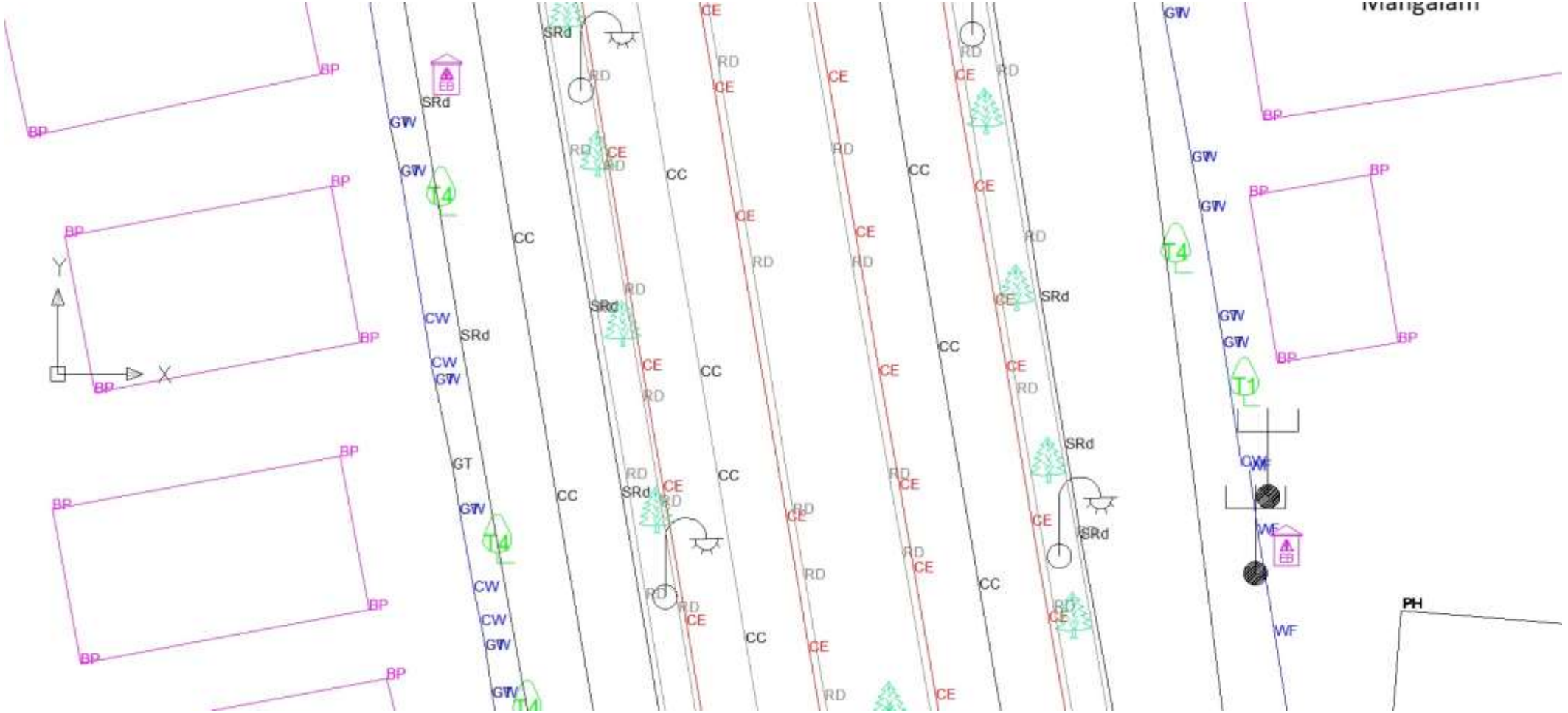


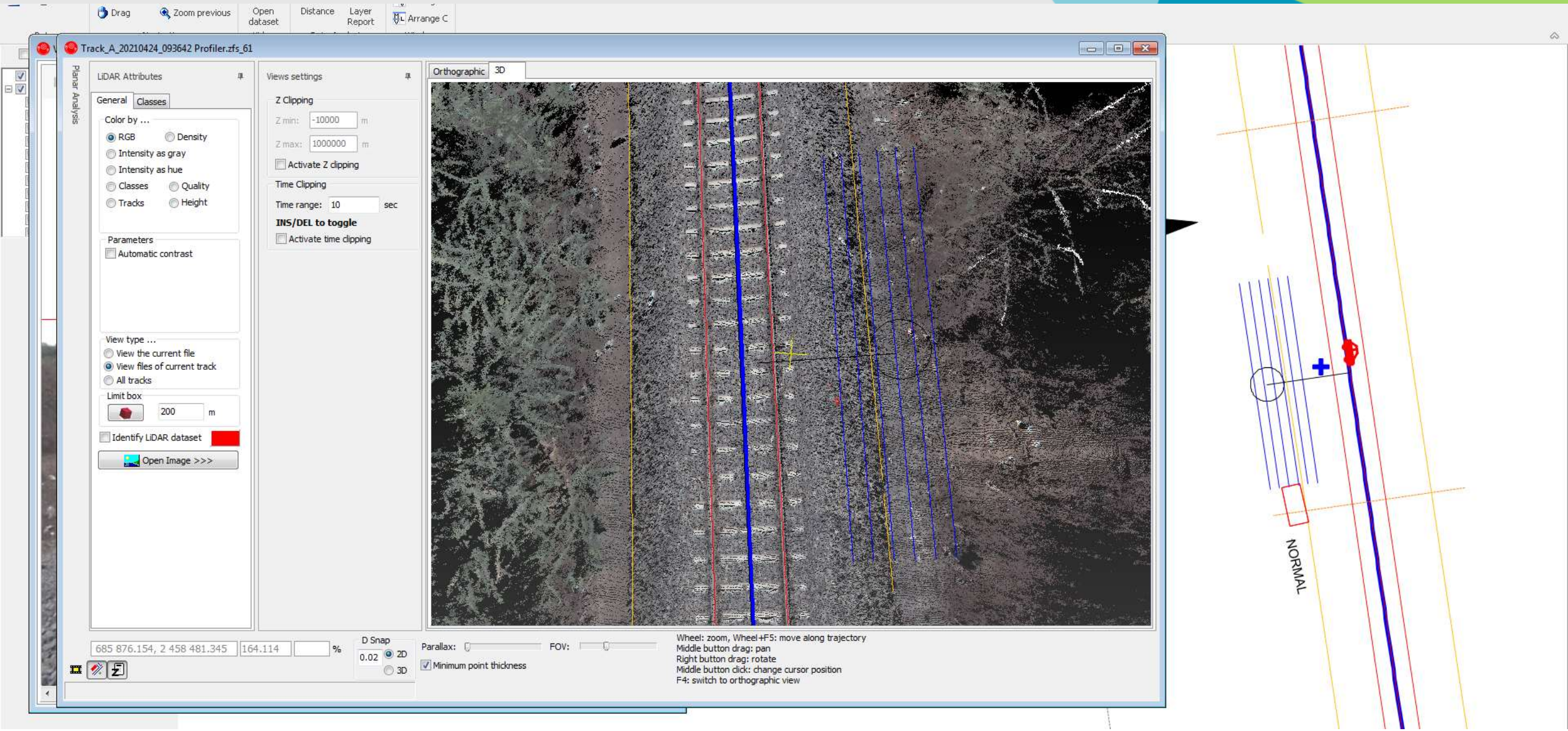
‘3D Plan of Mobile LiDAR data, captured by ‘Leica Pegasus Two’:

ISO 9001 : 2015

‘Leica Pegasus Two’ mounted on ‘Tower Wagon’ for Railway project :

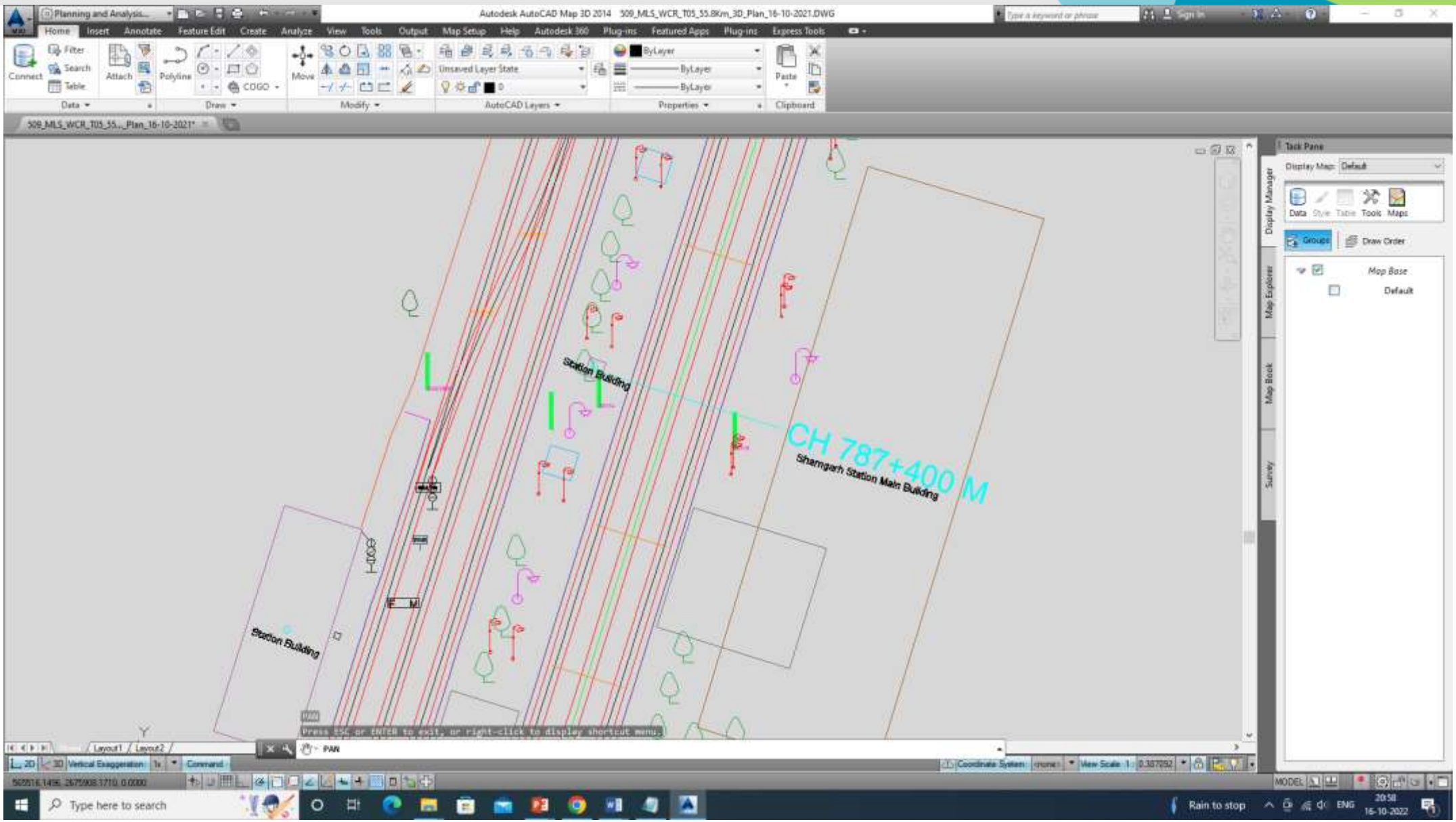
‘Leica Pegasus Two’ mounted on ‘Motorized Trolley’ for Railway project :

ISO 9001 : 2015



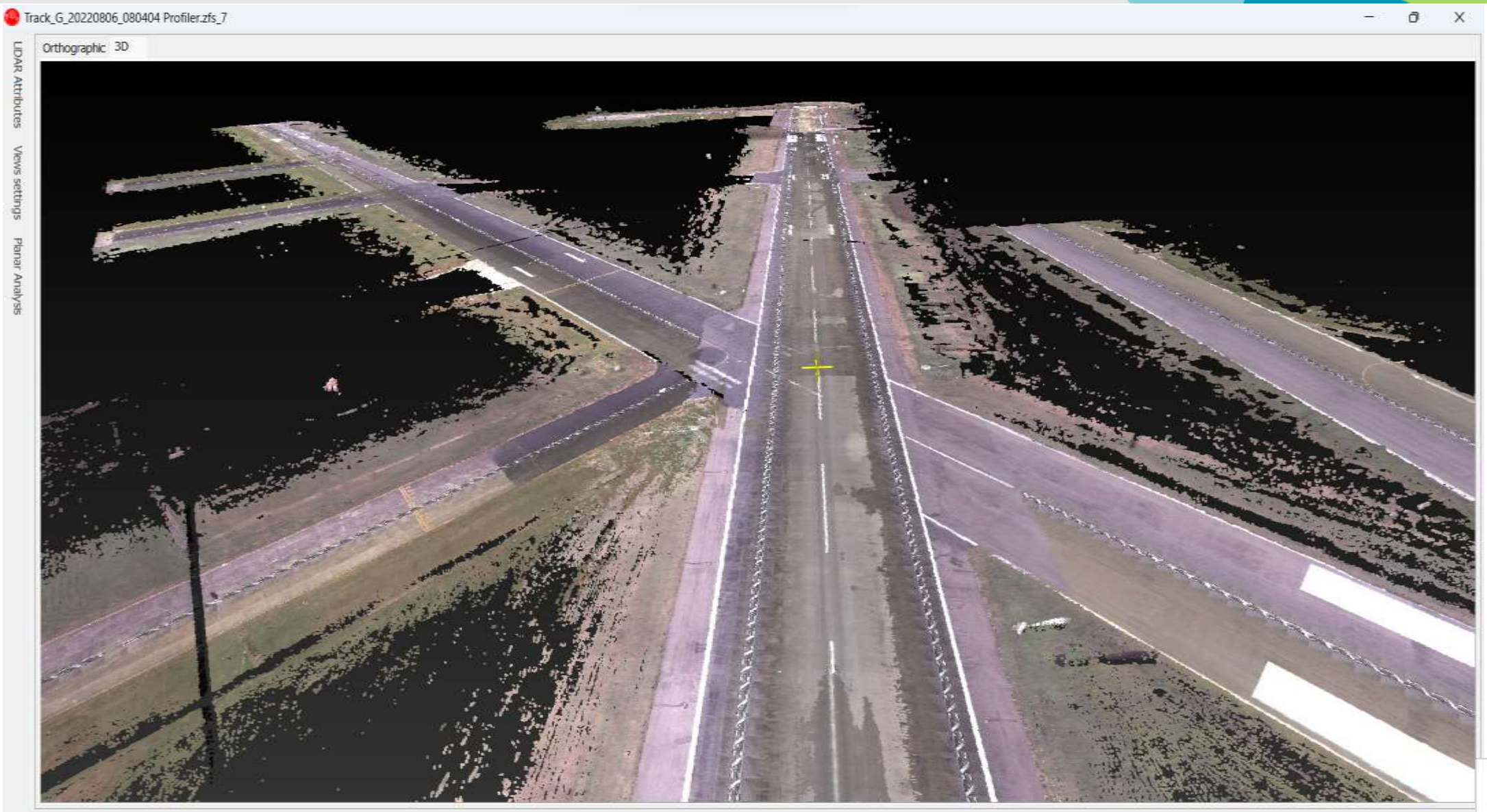
Screen Shot of ‘Leica Pegasus Viewer’ with 3D point cloud data for Railway project :

ISO 9001 : 2015



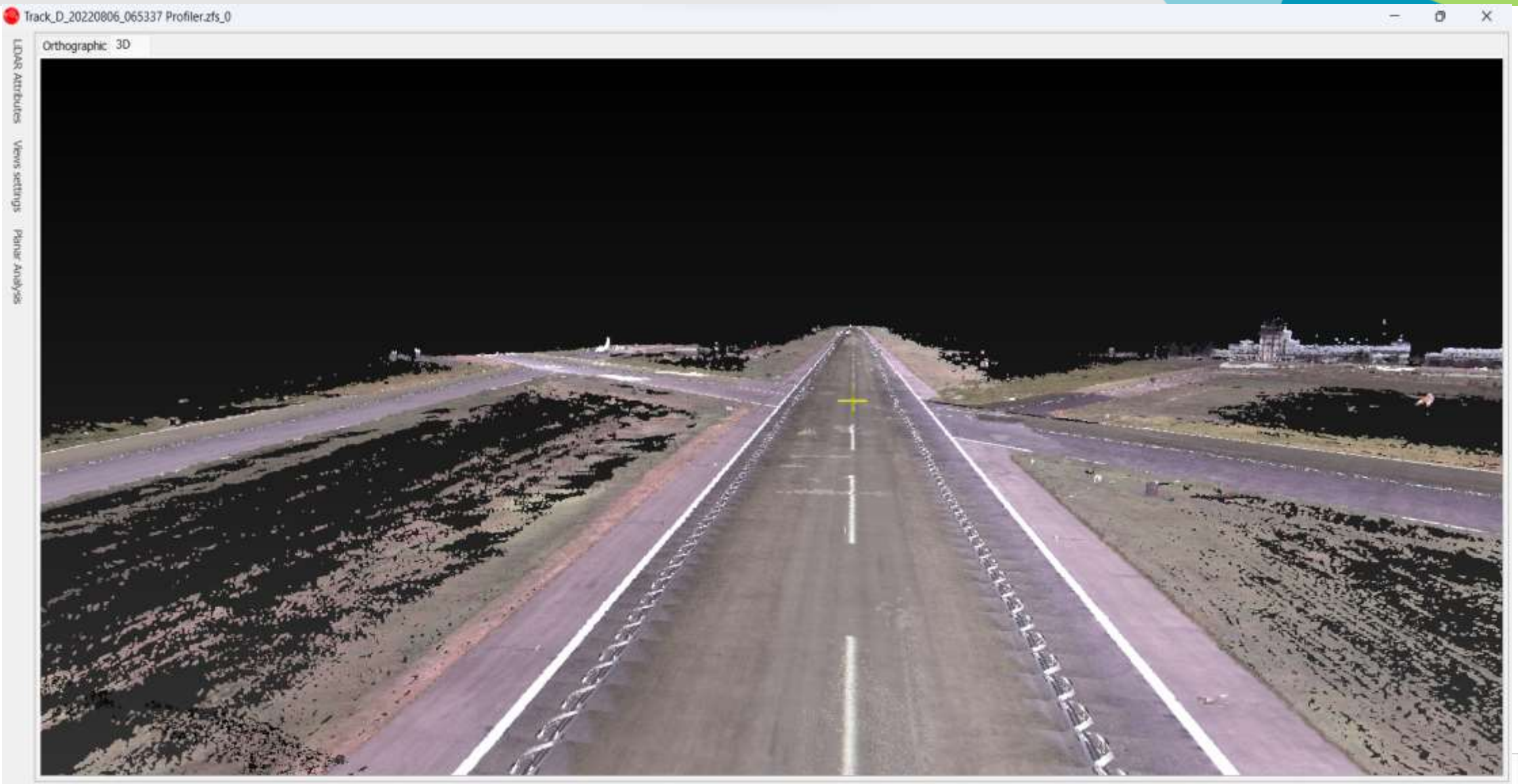
Screen Shot of 'Vectorized' 3D Plan in Autocad *.Dwg format for Railway project :

ISO 9001 : 2015



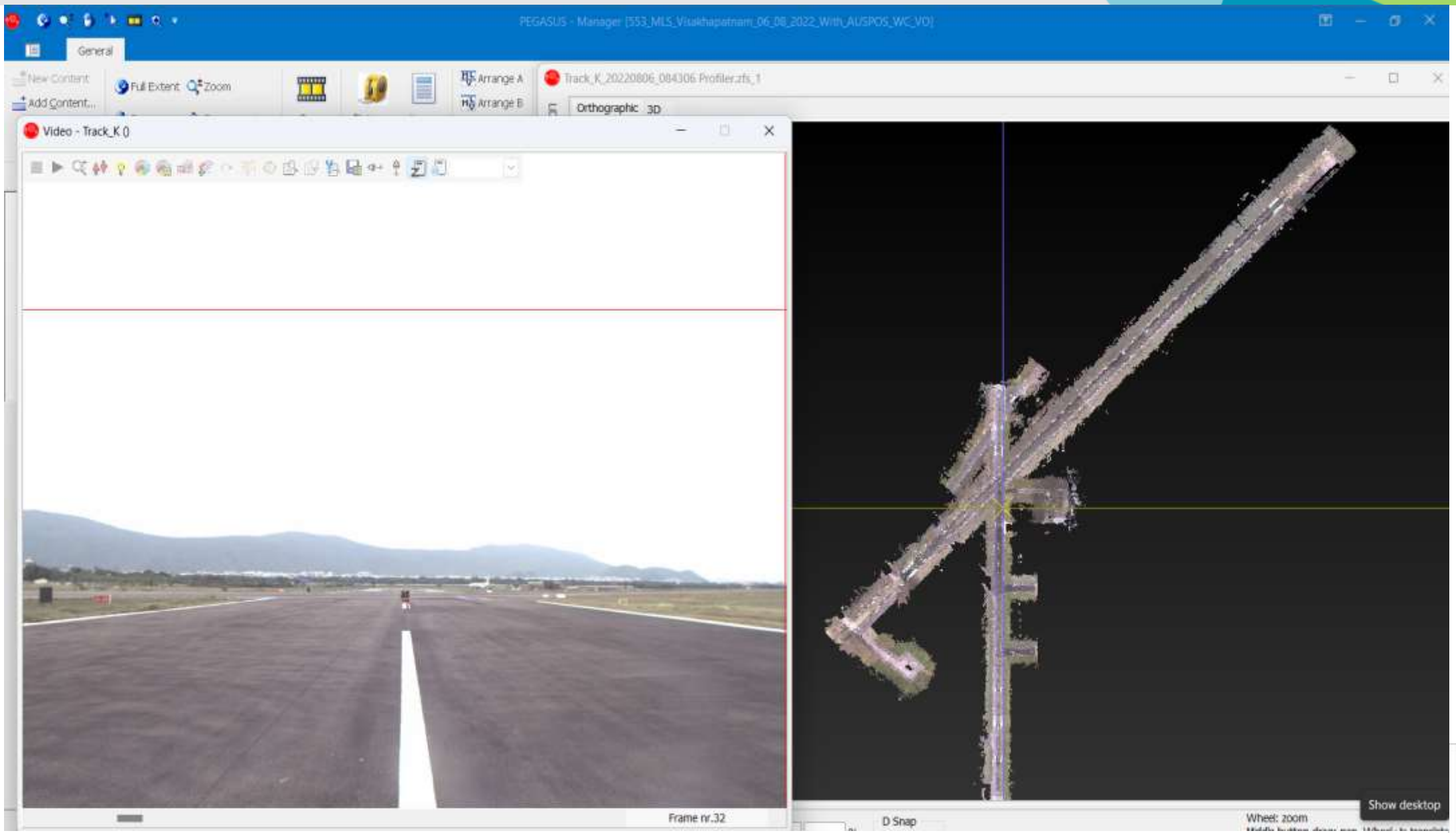
3D Point Cloud data of the Airport Runway & Taxiways captured by ‘Leica Pegasus Two’ Mobile LiDAR.

ISO 9001 : 2015

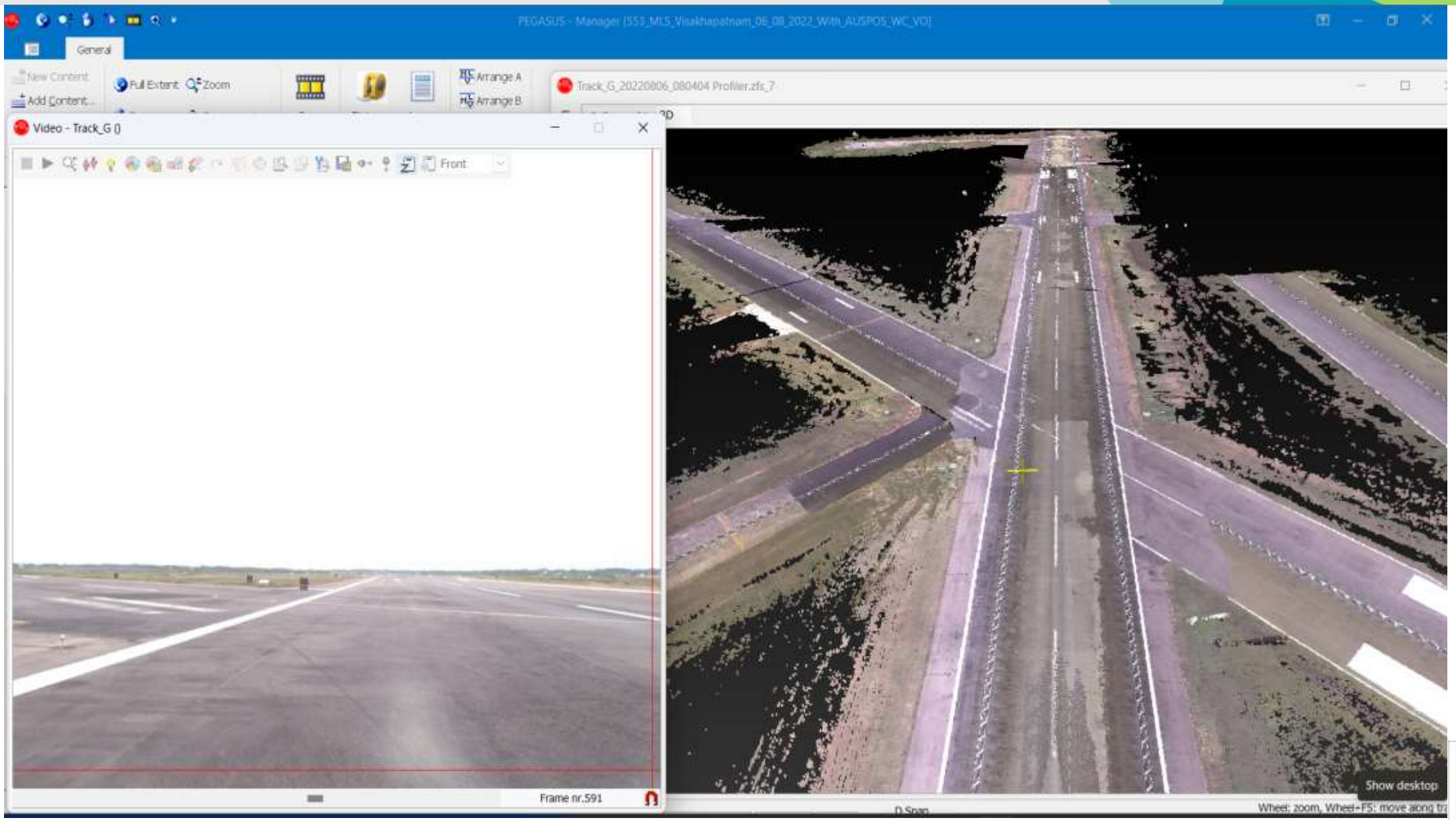


3D Point Cloud data of the Airport Runway & Taxiways.

ISO 9001 : 2015



Camera data and 3D Point Cloud data in ‘Leica Pegasus Viewer’.



Camera data and 3D Point Cloud data in ‘Leica Pegasus Viewer’.

4) About Land Plan & Land Acquisition Survey :

- **Land Plan Survey** is the systematic process of finding out the Road / Highway Land Width available with the Government.

- <u>This process can be broadly classified in four parts :</u>

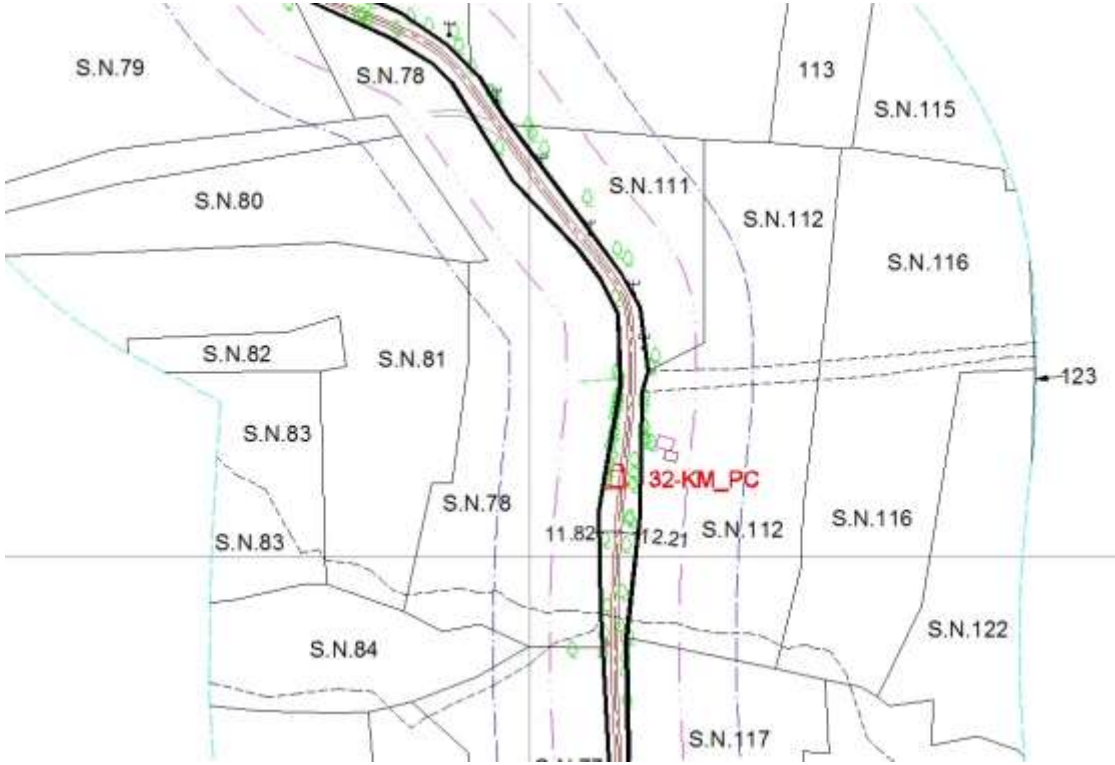
  (i) Data collection on site and preparing the existing survey drawings using advanced LiDAR technology.

  (ii) Collection & digitization of revenue records.

  (iii) Superimposition of these revenue records accurately on the Survey drawings to prepare the Land Plan sheets.

  (iv) Verification & authentication of the prepared Land Plan sheets from concerned Land Record authorities with signature & seal on each and every original sheets.

- NH / PWD Govt. Department can know the exact Authenticated road / highway Land width available with them & maintain these records for further Land Acquisition proposals, road widening and removal of the encroachments.



Sample Land Plan Survey Sheet

ISO 9001 : 2015

4) About Land Plan & Land Acquisition Survey (Contd..):

- **Land Acquisition Survey** is the process of finding out the adjoining Road / Highway Land to be acquired by the Government, using the authenticated Land Plan Survey sheets.

- <u>This process can be broadly classified in four parts :</u>

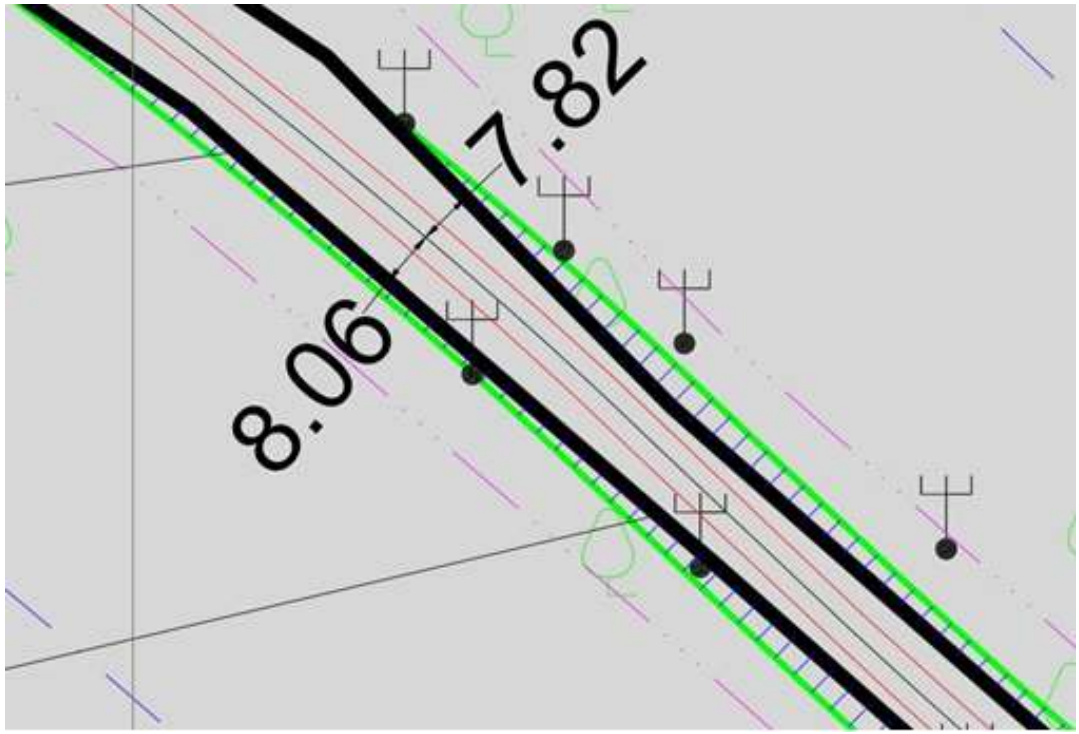
  (i) Data collection of Land Plan survey sheets, authenticated from the Revenue Record authorities.

  (ii) Obtaining the proposed designed alignment, with the final highway width required for widening.

  (iii) Superimposition of the designed alignment accurately on the existing Land Plan survey sheets.

  (iv) Finding out the exact land acquisition areas, on either side of the existing road centerline.

- NH / PWD Dept. can know the exact Land acquisition areas (survey number wise) & calculate the minimum compensation to be made to the land owners.



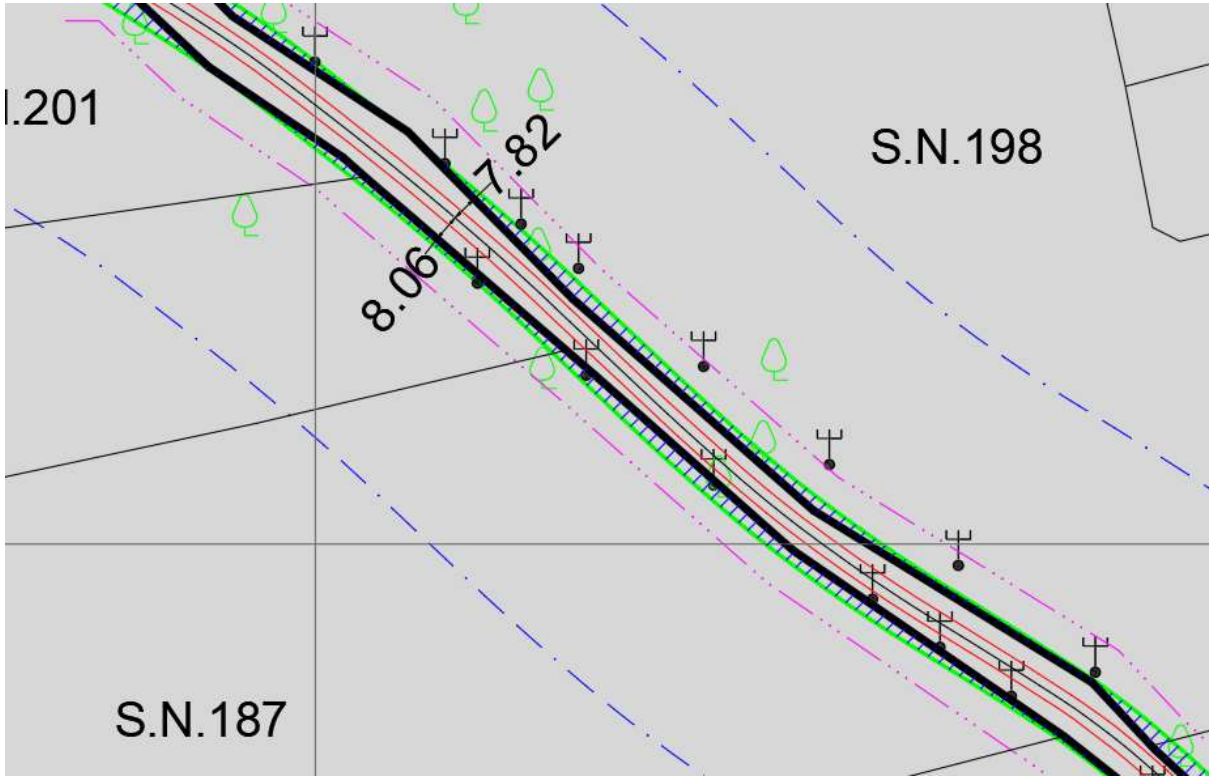
Sample Land Acquisition Survey Sheet

4) Advantages of Land Plan & Land Acquisition to Govt. :

- Government can remove the road side encroachments & solve litigations or court cases raised by farmers and adjoining land owners, using the authenticated Land Plan Survey drawings.

- The maps so prepared shall be completely in a digital format, with 3D point cloud data, 360 degrees view photographs, WGS84 Coordinate system and AutoCAD drawings in vector format. Video files can also be generated from the above, for evidence purpose.

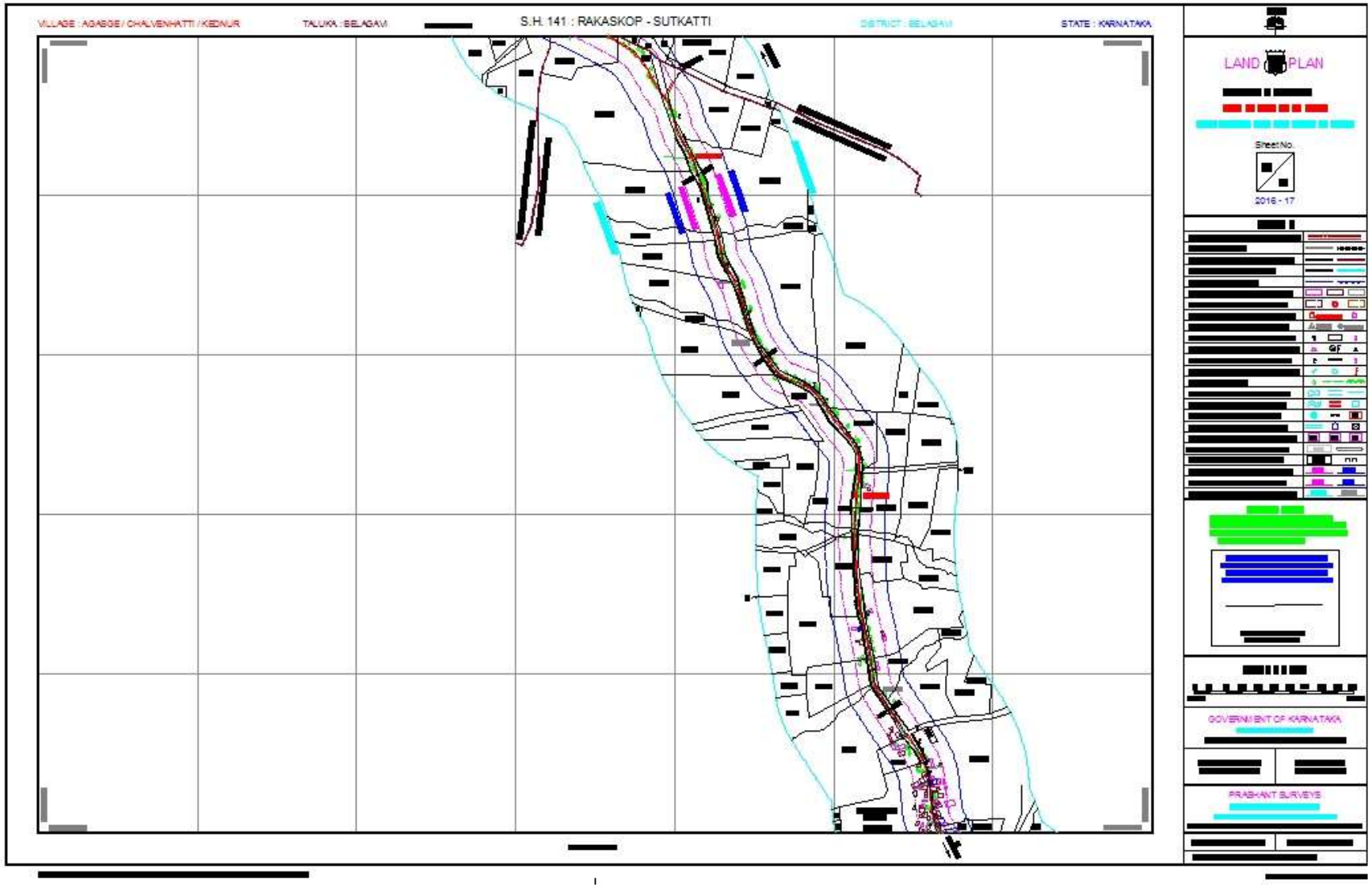
- This data can be made use by the Government of Karnataka for multiple purposes, like land acquisition for Highway widening, construction tendering, removing the encroachments, fixing and maintaining the highway boundary, issuing building permissions, to name a few.



Sample Land Acquisition Survey Sheet

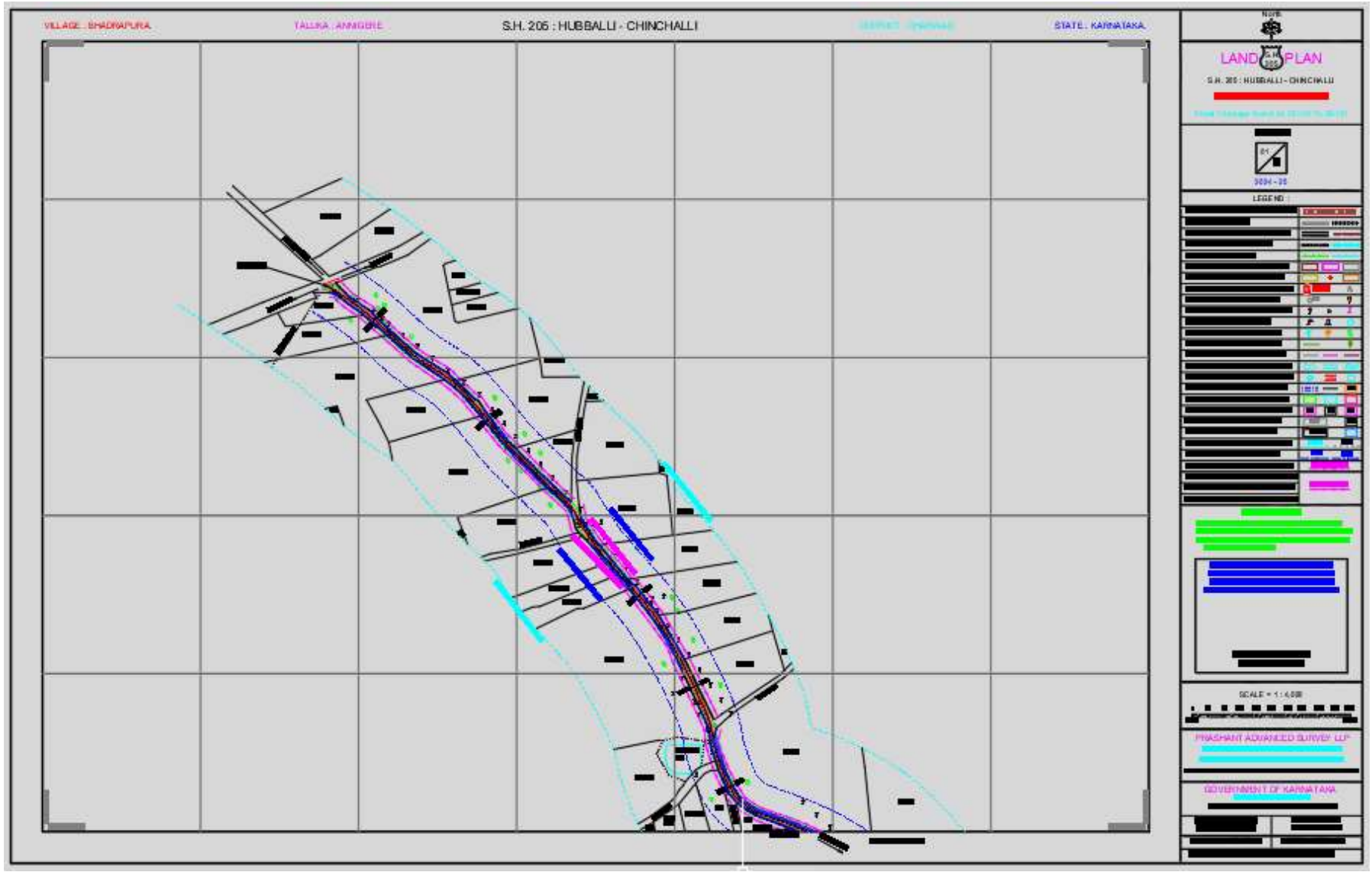
ISO 9001 : 2015

4) Sample ‘Land Plan’ Survey Drawing :



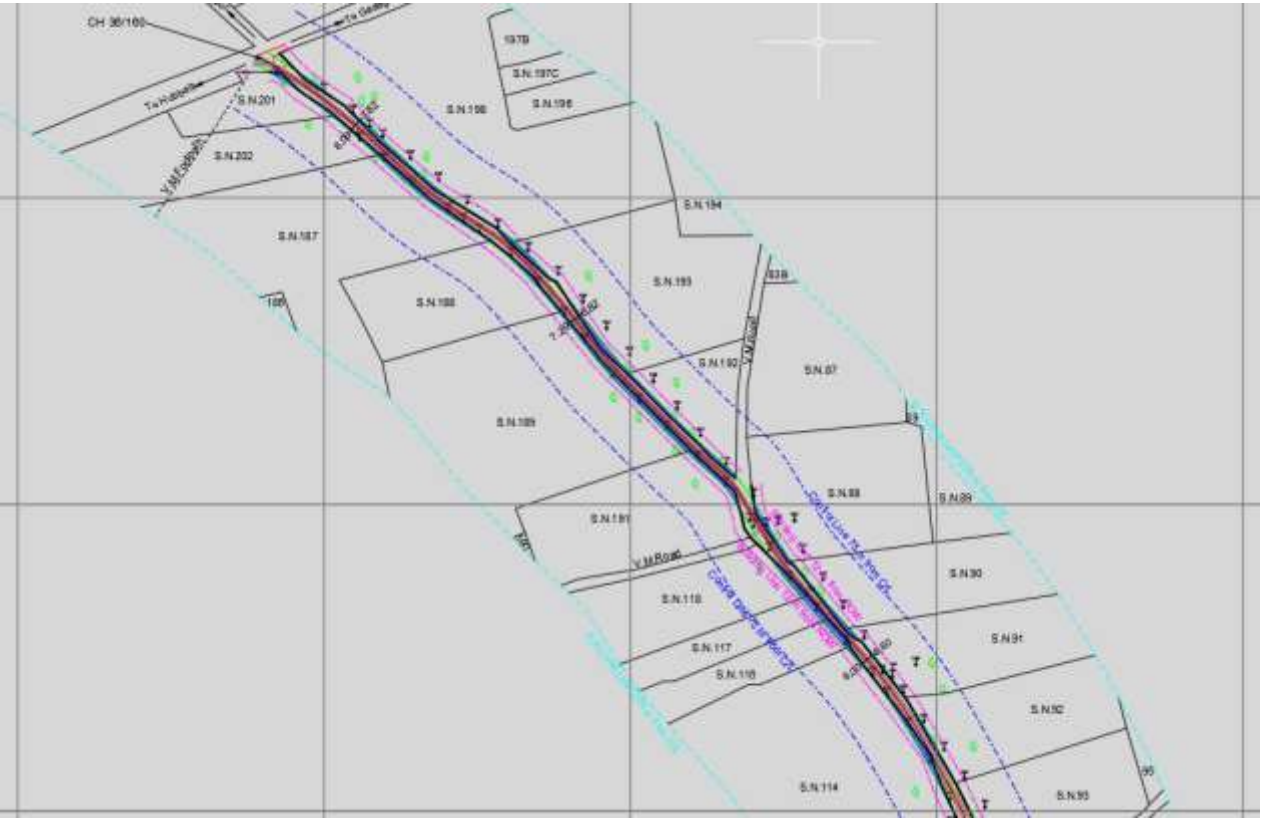
ISO 9001 : 2015

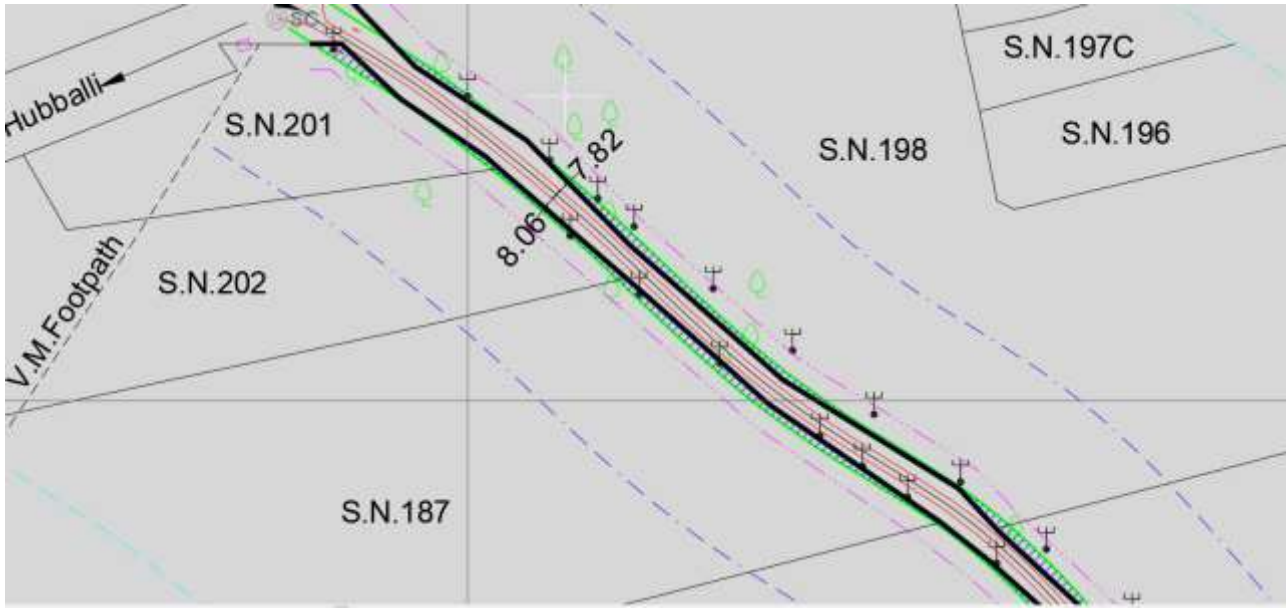
4) Sample ‘Land Acquisition’ Survey Drawing :



ISO 9001 : 2015

4) Sample ‘Land Acquisition’ Survey Drawing :

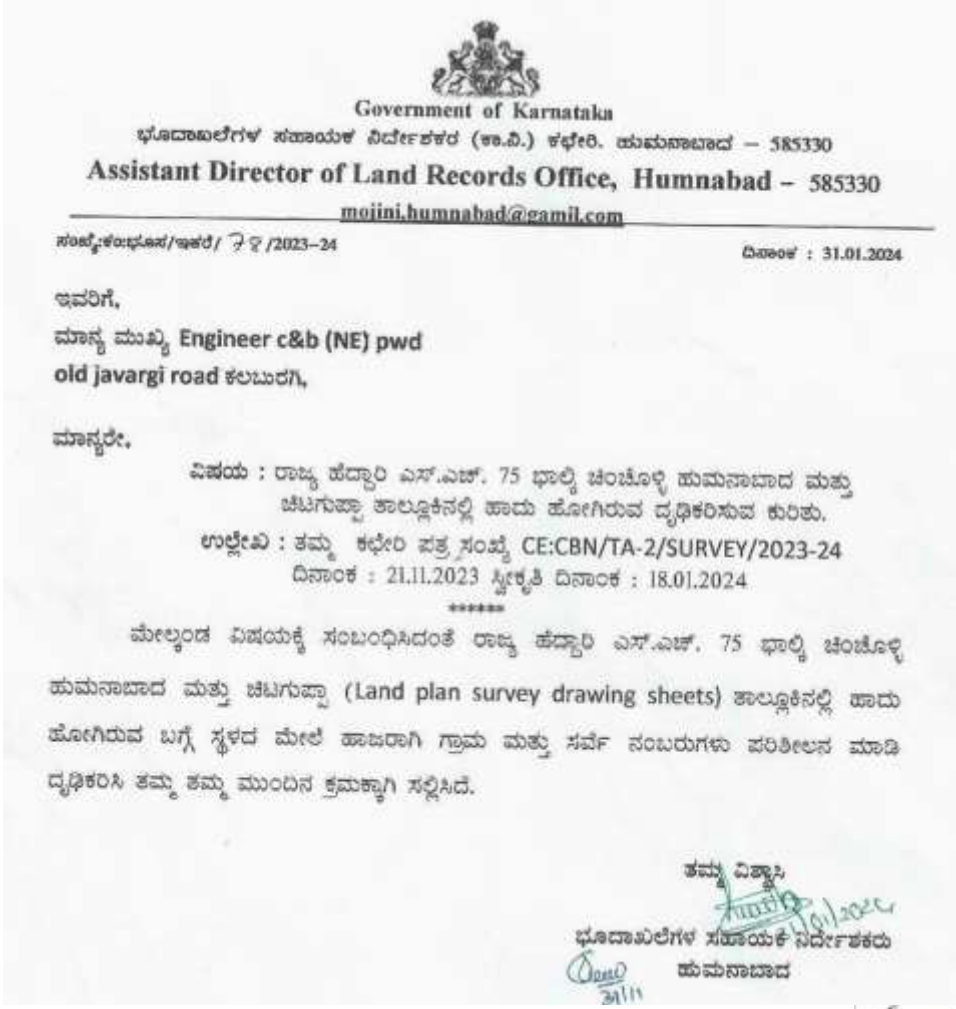




ISO 9001 : 2015

5) Revenue Record Collection & Authentication from Land Records Dept. :

- Required revenue records along the highways are collected from the concerned Land Records Department.
- These records are digitized, processed & converted from raster format to vector, so that they are free from errors.
- These records are then superimposed accurately on to the LiDAR Survey drawings so that the Land Plan Survey sheets are formed.
- These Land Plan Survey sheets are verified & authenticated from the Concerned Land Record Authorities with signature and seal on each sheets.
- Based on these final authenticated Land Plan sheets the list of encroachments along the highway, Land Acquisition proposals with area to be acquired are prepared and submitted for further action.



Government of Karnataka
ಭೂದಾಖಲೆಗಳ ಸಹಾಯಕ ನಿರ್ದೇಶಕರ (ಆ.ಪಿ.) ಕಛೇರಿ, ಹುಮನಾಬಾದ – 585330
Assistant Director of Land Records Office, Humnabad – 585330
mojini.humnabad@gamil.com

ಸಂಖ್ಯೆ:ಕೆಂಭೂಇಸ/ಇಆರ್/ ೨೪ /2023–24 ದಿನಾಂಕ : 31.01.2024

ಇವರಿಗೆ,
ಮಾನ್ಯ ಮುಖ್ಯ Engineer c&b (NE) pwd
old javargi road ಕಲಬುರಗಿ,

ಮಾನ್ಯರೇ,

ವಿಷಯ : ರಾಜ್ಯ ಹೆದ್ದಾರಿ ಎಸ್.ಎಚ್. 75 ಭಾಲ್ಕಿ ಚಿಂಚೋಳಿ ಹುಮನಾಬಾದ ಮತ್ತು ಚಿಟಗುಪ್ಪಾ ತಾಲ್ಲೂಕಿನಲ್ಲಿ ಹಾದು ಹೋಗಿರುವ ದೃಢೀಕರಿಸುವ ಕುರಿತು.

ಉಲ್ಲೇಖ : ತಮ್ಮ ಕಛೇರಿ ಪತ್ರ ಸಂಖ್ಯೆ CE:CBN/TA-2/SURVEY/2023-24
ದಿನಾಂಕ : 21.11.2023 ಸ್ವೀಕೃತಿ ದಿನಾಂಕ : 18.01.2024

******

ಮೇಲ್ಕಂಡ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ರಾಜ್ಯ ಹೆದ್ದಾರಿ ಎಸ್.ಎಚ್. 75 ಭಾಲ್ಕಿ ಚಿಂಚೋಳಿ ಹುಮನಾಬಾದ ಮತ್ತು ಚಿಟಗುಪ್ಪಾ (Land plan survey drawing sheets) ತಾಲ್ಲೂಕಿನಲ್ಲಿ ಹಾದು ಹೋಗಿರುವ ಬಗ್ಗೆ ಸ್ಥಳದ ಮೇಲೆ ಹಾಜರಾಗಿ ಗ್ರಾಮ ಮತ್ತು ಸರ್ವೆ ನಂಬರುಗಳು ಪರಿಶೀಲನ ಮಾಡಿ ದೃಢೀಕರಿಸಿ ತಮ್ಮ ತಮ್ಮ ಮುಂದಿನ ಕ್ರಮಕ್ಕಾಗಿ ಸಲ್ಲಿಸಿದೆ.

ತಮ್ಮ ವಿಶ್ವಾಸಿ
ಭೂದಾಖಲೆಗಳ ಸಹಾಯಕ ನಿರ್ದೇಶಕರು
ಹುಮನಾಬಾದ

List of Encroachment for Land Plan Survey of SH-45, ARABHAVI - CHALLAKERI Road.

Sr. No.	Sheet No.	Chainage In Km.	Name of District	Name of Taluka	Name of Village	Side Left/R	Survey Number	Encroachment Area (Sq.m.)	Total Area of Str.(Sq.m.)	Remarks	Full / Part
Abbreviations used in Remarks : BG - Building Pakka, BK - Bldg. Kaccha, BUC - Bldg. under constn, BTS - Bldg. Tin Shed, TOI-Toilet, BU- Bus Stop, TM - Temple.											
1	1	5.987	BELAGAVI	GOKAK	LOLSUR	LEFT	254	9.051	13.085	BK	PART
2	1	6.000	BELAGAVI	GOKAK	LOLSUR	RIGHT	1	12.111	12.111	TOI	FULL
3	1	6.135	BELAGAVI	GOKAK	LOLSUR	LEFT	252	5.893	5.893	BK	FULL
4	2	7.261	BELAGAVI	GOKAK	GOKAK	LEFT	48	13.489	20.141	BK	PART
5	2	7.270	BELAGAVI	GOKAK	GOKAK	LEFT	48	28.819	38.972	BK	PART
6	2	7.285	BELAGAVI	GOKAK	GOKAK	LEFT	48	59.933	68.856	BUC	PART
7	2	7.309	BELAGAVI	GOKAK	GOKAK	RIGHT	35	89.594	127.160	BUC	PART
8	2	7.318	BELAGAVI	GOKAK	GOKAK	RIGHT	35	62.488	62.488	BK	FULL
9	2	7.335	BELAGAVI	GOKAK	GOKAK	RIGHT	35	9.974	9.974	BU	FULL
10	2	7.335	BELAGAVI	GOKAK	GOKAK	RIGHT	35	36.609	281.620	BG	PART
11	2	7.356	BELAGAVI	GOKAK	GOKAK	RIGHT	35	81.838	81.838	BG	FULL
12	2	7.367	BELAGAVI	GOKAK	GOKAK	RIGHT	35	8.068	8.068	BK	FULL
13	2	7.367	BELAGAVI	GOKAK	GOKAK	LEFT	48	13.423	187.171	BK	PART
14	2	7.393	BELAGAVI	GOKAK	GOKAK	LEFT	48	29.486	129.892	BK	PART
15	2	7.411	BELAGAVI	GOKAK	GOKAK	LEFT	137	15.210	45.012	BG	PART
16	2	7.416	BELAGAVI	GOKAK	GOKAK	LEFT	137	19.499	64.099	BK	PART
17	2	7.425	BELAGAVI	GOKAK	GOKAK	LEFT	137	10.830	10.830	TOI	FULL
18	2	7.438	BELAGAVI	GOKAK	GOKAK	RIGHT	137	3.687	3.687	BK	FULL
19	2	7.449	BELAGAVI	GOKAK	GOKAK	LEFT	136	1.133	1.133	BK	FULL
20	2	7.481	BELAGAVI	GOKAK	GOKAK	LEFT	136	10.606	10.606	BK	FULL
21	2	7.497	BELAGAVI	GOKAK	GOKAK	LEFT	136	3.191	3.191	BK	FULL
22	2	7.514	BELAGAVI	GOKAK	GOKAK	LEFT	136	14.311	14.311	BU	FULL
23	2	7.547	BELAGAVI	GOKAK	GOKAK	LEFT	90	2.733	2.733	BK	FULL
24	2	7.635	BELAGAVI	GOKAK	GOKAK	LEFT	90	3.027	3.328	BK	PART
25	2	7.652	BELAGAVI	GOKAK	GOKAK	LEFT	93	12.652	20.426	BK	PART
26	2	7.739	BELAGAVI	GOKAK	GOKAK	LEFT	93	4.551	4.551	BK	FULL
27	2	7.754	BELAGAVI	GOKAK	GOKAK	LEFT	93	4.272	4.272	BK	FULL
28	2	8.053	BELAGAVI	GOKAK	GOKAK	LEFT	104	7.759	7.759	BK	FULL
29	2	8.056	BELAGAVI	GOKAK	GOKAK	LEFT	104	12.141	12.141	BK	FULL
30	2	8.114	BELAGAVI	GOKAK	GOKAK	LEFT	102	10.066	18.670	BG	PART
31	2	8.160	BELAGAVI	GOKAK	GOKAK	RIGHT	102	4.852	4.852	BTS	FULL

576_Dharwad LAND ACQUISITION PROPOSAL FOR SH 205 from KM 36.160 To KM 47.430 :										06-09-2024
Sr. No	District	Taluka	Village Name	Sheet No.	Chainage	Survey No. (Left)	Area in Sq.m. (Left)	Survey No. (Right)	Area in Sq.m. (Right)	Remarks
1	Dharwad	ANNIGERE	BADHRAPURA	1	CH 36/160	198	883.44	201	267.66	RLWA
2	Dharwad	ANNIGERE	BADHRAPURA	1		0	0.00	202	173.31	RLWA
3	Dharwad	ANNIGERE	BADHRAPURA	1		0	0.00	187	653.85	RLWA
4	Dharwad	ANNIGERE	BADHRAPURA	1		193	809.05	188	329.55	RLWA
5	Dharwad	ANNIGERE	BADHRAPURA	1		192	573.46	189	1144.95	RLWA
6	Dharwad	ANNIGERE	BADHRAPURA	1		0	0.00	191	440.02	RLWA
7	Dharwad	ANNIGERE	BADHRAPURA	1		88	349.36	118	345.61	RLWA
8	Dharwad	ANNIGERE	BADHRAPURA	1		90	282.34	117	291.88	RLWA
9	Dharwad	ANNIGERE	BADHRAPURA	1		0	0.00	116	341.16	RLWA
10	Dharwad	ANNIGERE	BADHRAPURA	1		91	217.13	114	1153.30	RLWA
11	Dharwad	ANNIGERE	BADHRAPURA	1		92	214.50	0	0.00	RLWA
12	Dharwad	ANNIGERE	BADHRAPURA	1		94	3012.86	105	170.50	RLWA
13	Dharwad	ANNIGERE	BADHRAPURA	1		0	0.00	104	55.56	RLWA
14	Dharwad	ANNIGERE	BADHRAPURA	1	CH 38/051	0	0.00	103	398.45	RLWA
15	Dharwad	ANNIGERE	BADHRAPURA	2	CH 38/051	0	0.00	102	1115.46	RLWA
16	Dharwad	ANNIGERE	BADHRAPURA	2		0	0.00	101	408.36	RLWA
17	Dharwad	ANNIGERE	BADHRAPURA	2		99	2081.75	99	197.81	RLWA
18	Dharwad	HUBBALLI	KOLIWADA	2		0	0.00	100	529.18	RLWA
19	Dharwad	HUBBALLI	KOLIWADA	2		494	2823.97	431	1376.15	RLWA
20	Dharwad	HUBBALLI	KOLIWADA	2		493	415.63	0	0.00	RLWA
21	Dharwad	HUBBALLI	KOLIWADA	2		432	77.89	432	1965.17	RLWA
22	Dharwad	HUBBALLI	KOLIWADA	2		433	1.69	433	152.55	RLWNA
23	Dharwad	HUBBALLI	KOLIWADA	2		443	728.93	443	1096.54	RLWNA

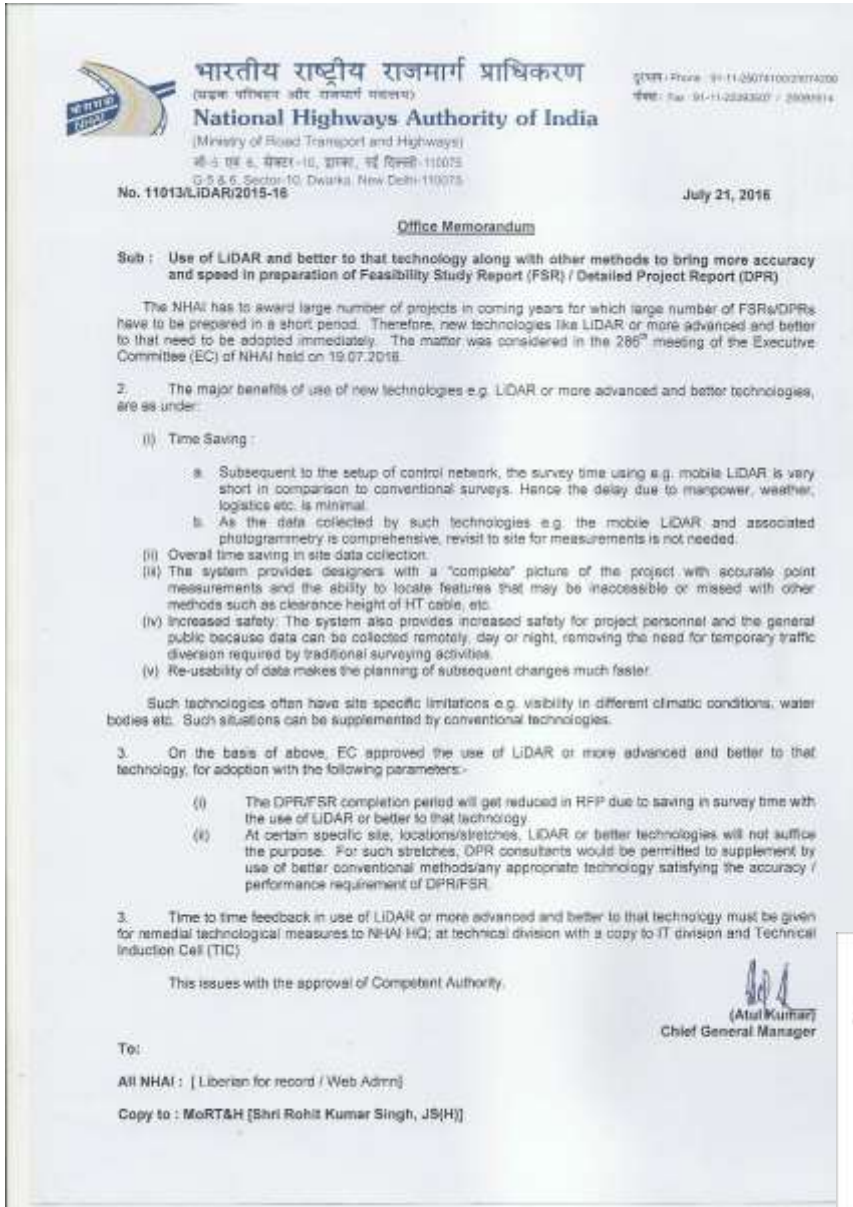
Abbrivations used in Remarks :

1) RLWA Road Land Width Available

2) RLWNA Road Land Width Not Available

6) Use of Mobile LiDAR Technology for Land Plan Survey :

- Mobile LiDAR is used in Land Plan Surveys for accurately mapping all the existing features and utilities (point, line & polygon) along the highways.
- This process is extremely fast as compared to the primitive Total Station method of Survey. Example : A Total Station team can survey average 1.5 Km length only in one day. Where as one team of Mobile LiDAR can survey about 100 to 200 Km in one day, depending upon the site conditions.
- Missing details, omissions and repeat work is avoided using LiDAR technology, since complete scanning of site along with the photographs is taken.
- Overall accuracy of the data obtained is upto 5 cm which is high precise and hence LiDAR technology has been made mandatory by NHAI (National Highway Authority of India) vide Office Memorandum dated 21-07-2016.



भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन और राजमार्ग मंत्रालय)
National Highways Authority of India
(Ministry of Road Transport and Highways)
G-5 & 6, Sector-10, Dwarka, New Delhi-110075

No. 11013/LiDAR/2015-16 July 21, 2016

Office Memorandum

Sub : Use of LiDAR and better to that technology along with other methods to bring more accuracy and speed in preparation of Feasibility Study Report (FSR) / Detailed Project Report (DPR)

The NHAI has to award large number of projects in coming years for which large number of FSRs/DPRs have to be prepared in a short period. Therefore, new technologies like LiDAR or more advanced and better to that need to be adopted immediately. The matter was considered in the 286th meeting of the Executive Committee (EC) of NHAI held on 19.07.2016.

2. The major benefits of use of new technologies e.g. LiDAR or more advanced and better technologies, are as under:

(i) Time Saving :

a. Subsequent to the setup of control network, the survey time using e.g. mobile LiDAR is very short in comparison to conventional surveys. Hence the delay due to manpower, weather, logistics etc. is minimal.
b. As the data collected by such technologies e.g. the mobile LiDAR and associated photogrammetry is comprehensive, revisit to site for measurements is not needed.

(ii) Overall time saving in site data collection.
(iii) The system provides designers with a "complete" picture of the project with accurate point measurements and the ability to locate features that may be inaccessible or missed with other methods such as clearance height of HT cable, etc.
(iv) Increased safety: The system also provides increased safety for project personnel and the general public because data can be collected remotely, day or night, removing the need for temporary traffic diversion required by traditional surveying activities.
(v) Re-usability of data makes the planning of subsequent changes much faster.

Such technologies often have site specific limitations e.g. visibility in different climatic conditions, water bodies etc. Such situations can be supplemented by conventional technologies.

3. On the basis of above, EC approved the use of LiDAR or more advanced and better to that technology, for adoption with the following parameters:-

(i) The DPR/FSR completion period will get reduced in RFP due to saving in survey time with the use of LiDAR or better to that technology.
(ii) At certain specific site, locations/stretches, LiDAR or better technologies will not suffice the purpose. For such stretches, DPR consultants would be permitted to supplement by use of better conventional methods/any appropriate technology satisfying the accuracy / performance requirement of DPR/FSR.

3. Time to time feedback in use of LiDAR or more advanced and better to that technology must be given for remedial technological measures to NHAI HQ; at technical division with a copy to IT division and Technical Induction Cell (TIC).

This issues with the approval of Competent Authority.

(Atul Kumar)
Chief General Manager

To:

All NHAI : [Liberian for record / Web Admn]

Copy to : MoRT&H [Shri Rohit Kumar Singh, JS(H)]

7) Our Experience in Land Plan Survey projects :

- Completed about **3,536 Km Land Plan Survey** of various State Highways for PWD Divisions : Haveri, Gadag, Bidar, Koppal, Vijayapur, Bagalkot, Chikkodi & Belgavi in Karnataka.
- Have been newly awarded more than 6,000 Km of Land Plan Survey Works of State Highways by PWD, Govt. of Karnataka.
- All above projects have been executed using the most advanced Mobile LiDAR & DGPS / GNSS technology.
- The authentication from the concerned Land Record Department was obtained on all the original Land Plan Survey sheets and work completion certificates also obtained for all.

Sr.	Name of folder and PWP&IWTD Divisions in Karnataka	Length in Km	Work done Ref no.	Work done certificate date
1)	1_365_PWPIWTD_Haveri	328.94	04286	29-10-2015.
2)	2_366_PWPIWTD_Koppal_I	304.48	JE-1	08-01-2015.
3)	3_368_PWPIWTD_Bidar_I	138.67	1592	04-09-2018.
4)	4_372_PWPIWTD_Gadag	257.09	3323	03-10-2018.
5)	5_373_PWPIWTD_Vijayapur	380.88	379	30-04-2018.
6)	6_374_PWPIWTD_Bagalkot	361.33	907	27-06-2017.
7)	7_375_PWPIWTD_Chikkodi	670.77	3220	24-10-2017.
8)	8_376_PWPIWTD_Belgavi	605.34	657	24-05-2018.
9)	9_377_PWPIWTD_Bidar_II	191.11	1591	04-09-2018.
10)	10_378_PWPIWTD_Koppal_II	297.47	2005	27-09-2017.
	Total Length of Land Plan Survey done (km)=	3,536.08		

ISO 9001 : 2015

Work Done Certificates from E.E. Haveri, Gadag, Vijayapur :

GOVERNMENT OF KARNATAKA
PUBLIC WORKS, PORTS AND INLAND WATER TRANSPORT DEPARTMENT

No.033/PB-3/LPlan/WOC/2015-16/ №04286

Office of the
Executive Engineer,
PW, P & IWTD Division, Haveri
Date 29 OCT 2015

WORK DONE CERTIFICATE

This is to certify that M/s Prashant Surveys, Pune-2, has been awarded the work of " Carrying out Survey work & Preparing Land Plans" for 328.94 Km length of SH-06 Karwar-Kaiga-Ilkal state highway, vide work indent No.12758 & work order No "033/PB/Land plan/Ltr to proceed/2012-13/5267"Dated:19-02-2013 by this office. The work is satisfactorily completed by the Agency.

The work involved carrying out Land Plan Survey sheets of the SH-6 by advanced method of survey using Trimble Dual frequency DGPS / LIDAR / Electronic Total Station instruments, distomats & thus preparing land plans by superimposing the available revenue records.

1	Date of commencement :	19-02-2013
2	Due Date of completion of survey work:	01-08-2013
3	Date of completion of survey work [328.94 Km]:	02-05-2014
4	Tendered Amount :	100.56 Lakhs
5	Submission of prepared Land plan survey sheets [along with signature and seal of the concerned Land records authority] Sheet for:	
a)	Gadag Taluk	14-05-2014
b)	Shirhatti Taluk	14-08-2014
c)	Ron & Yalburga Taluks	19-09-2014
d)	Kustagi & Hungund Taluks	30-10-2014
e)	Shiggaum & Savanur Taluks	30-10-2014
f)	Yellapur Taluk	16-03-2015
g)	Karwar & Mundagod Taluks	18-09-2015

This certificate is issued on specific request of the Contractor.

Yours faithfully,
Sd/-
Executive Engineer,
PW, P & IWTD Division, Haveri.

Copy to: M/s Prashant Surveys, Pune-2, Contractor for information

Executive Engineer,
PW, P & IWTD Division, Haveri.

6 |

Gorverment of Karnataka
Public Works,Ports & Inland Water Transport Department.Division Gadag.

Phone No: 08372-238782 Fax No. 08372-237268
Ref No: ee/pwd/gdgdn/ab-1/2018-19

E.Mail : eepwdgdg@rediffmail.com
Executive Engineer, PWP & IWTD,
Gadag Division.
Dist:- Gadag
State:- Karnataka
Date :- 3 OCT 2018

№-3323

WORK DONE CERTIFICATE

To Whomesoever It May Concern

This is to certify that M/s **Prashant Surveys**, 204 Mayfair Arcade, 563 Nana Peth, Pune - 411002, has been awarded the work of "Carrying out Survey work & Preparing Land Plan Survey sheets of **S.H. 136, Gajendragad - Sorab under Gadag Division", for total 257.09 Km** length, vide **work indent No. 35327 & work order No. "PWD/EE/Gdg/PB2/WO/F/2014-15/6292", dated 11-03-2015**", by this office. The agreement amount for this work is **Rs. 88,56,750.50**

The work involved carrying out Topographical Survey work & Preparing Land Plan Survey sheets of the State Highways SH-136, Gajendragad - Sorab under Gadag Division; by advanced methods of LiDAR survey technology. Accordingly the work was carried out efficiently by using 'Leica Pegasus' Mobile LiDAR System, Trimble / Leica Dual frequency DGPS instruments & thus preparing land plans by superimposing the available revenue records.

The authentication with signature & seal of the concerned Land Records authority was also obtained on the prepared Land Plan Survey sheets for all the 8 Talukas **(Ron, Navalgund, Gagad-Betigeri, Shirahatti, Mundargi, Haveri, Byadagi & Hirekerur). The total worth of the project for 257.09 Km length was about Rs. 88.57 Lacs.**

The above survey work has been completed satisfactorily by **M/s Prashant Surveys, Pune** We recommend them for executing future similar types of projects elsewhere.

Executive Engineer,
PWP & IWTD, Gadag Division,
Gadag.

To,
M/s. Prashant Surveys Pune
204 Mayfair Arcade, 563 Nana Peth.

GOVERNMENT OF KARNATAKA
PUBLIC WORKS,PORTS & INLAND WATER TRANSPORT DEPARTMENT

No.EE/PWD/BJPYTA /2017-18/ №379

Office of the
Executive Engineer
Public Works, Ports & Inland Water
Transport Department, Division,Vijayapur
Dated 30 APR 2018

WORK DONE CERTIFICATE

To Whomesoever It May Concern

This is to certify that M/s **Prashant Surveys**, 204 Mayfair Arcade, 563 Nana Peth, Pune - 411002, has been awarded the work of "Carrying out Survey work & Preparing Land Plan Survey sheets of State Highways in Belagavi Division", for total **380.88 Km** length, vide **work indent No :- 35600 & work order No. "PWP&IWTD/BJP.Dn/PB/Tender/:2015-16/,0220.Dated :20th May 2016.**", by this office. The agreement amount for this work is Rs. **127,78.524/-**

The work involved carrying out Topographical Survey work & Preparing Land Plan Survey sheets of the State Highways **SH-12, SH-41, SH-61, SH-55, SH-124, in Vijayapur Division;** by advanced methods of **LiDAR Survey technology**. Accordingly the work was carried out efficiently by using **'Leica Pegasus Two' Mobile LiDAR System, Leica Dual frequency GS14 GNSS / DGPS instruments & thus preparing land plans by superimposing the available revenue records.**

The authentication with signature & seal of the concerned Land Records authority was also obtained on the prepared Land Plan Survey sheets for all the **5Talukas viz Indi,Vijayapur,Basavan Bagewadi,Sindgi,Muddebihal.** The total worth of the project for **380.88** Km length was about **Rs. 127.78 Lakhs.**

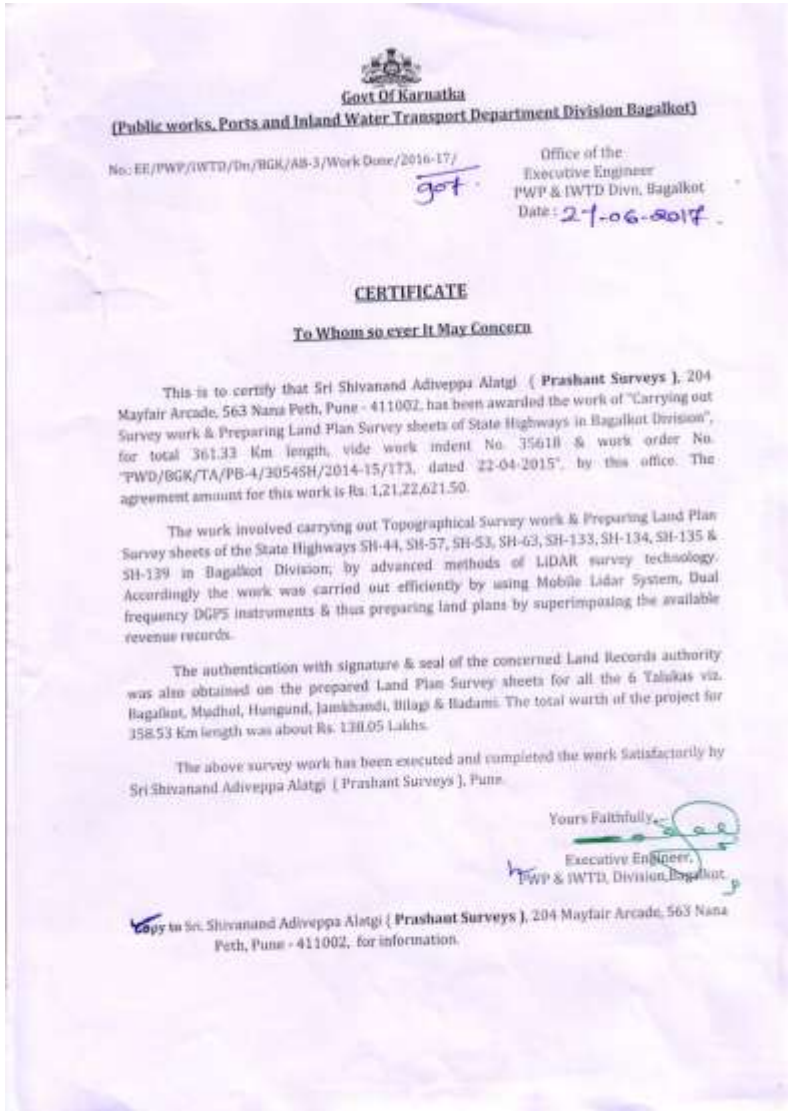
The above survey work has been completed by **M/s Prashant Surveys, Pune & the performance of Mr. Prashant Alatgi & Shivanand Alatgi with their entire team members was excellent**. We recommend them for executing future similar types of projects elsewhere.

Executive Engineer,
PWP & IWTD, Vijaypur Division,
VIJAYAPUR

To
M/s Prashant Surveys,
204, Mayfair Arcade, 563 Nana Peth,
Pune : 411002.

ISO 9001 : 2015

Work Done Certificates from E.E. Bagalkot, Chikkodi, Belgavi :



Govt Of Karnatka
(Public works, Ports and Inland Water Transport Department Division Bagalkot)

No: EE/PWP/IWTD/Dn/BGK/AB-3/Work Done/2016-17/ 907

Office of the
Executive Engineer
PWP & IWTD Divn, Bagalkot
Date: 27-06-2017

CERTIFICATE

To Whom so ever It May Concern

This is to certify that Sri Shivanand Adiveppa Alatgi (**Prashant Surveys**), 204 Mayfair Arcade, 563 Nana Peth, Pune - 411002, has been awarded the work of "Carrying out Survey work & Preparing Land Plan Survey sheets of State Highways in Bagalkot Division", for total 361.33 Km length, vide work indent No. 35618 & work order No. "PWD/BGK/TA/PB-4/30545H/2014-15/173, dated 22-04-2015", by this office. The agreement amount for this work is Rs. 1,21,22,621.50.

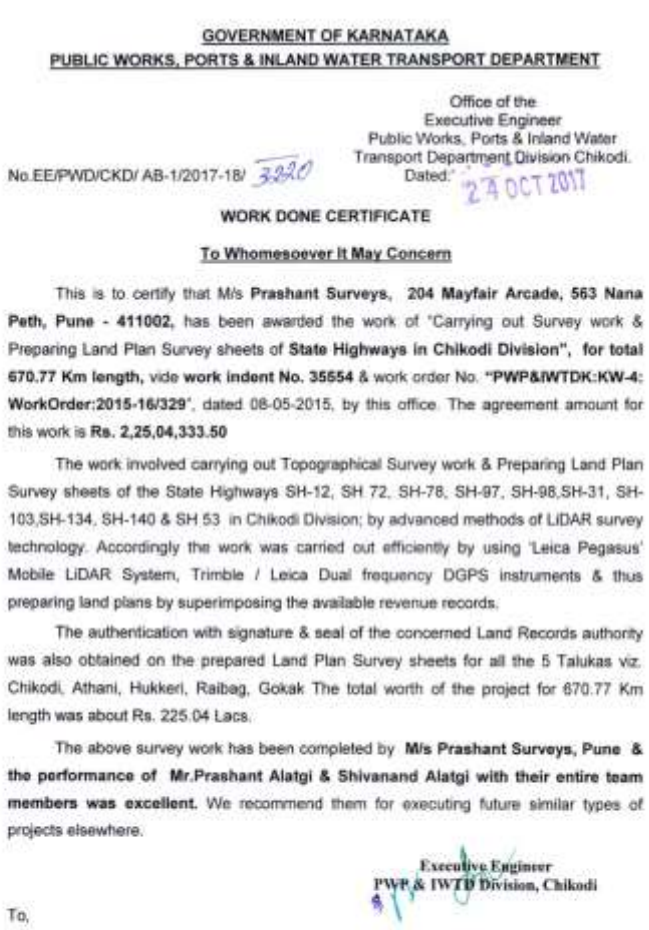
The work involved carrying out Topographical Survey work & Preparing Land Plan Survey sheets of the State Highways SH-44, SH-57, SH-53, SH-63, SH-133, SH-134, SH-135 & SH-139 in Bagalkot Division; by advanced methods of LiDAR survey technology. Accordingly the work was carried out efficiently by using Mobile Lidar System, Dual frequency DGPS instruments & thus preparing land plans by superimposing the available revenue records.

The authentication with signature & seal of the concerned Land Records authority was also obtained on the prepared Land Plan Survey sheets for all the 6 Talukas viz. Bagalkot, Mudhol, Hungund, Jamakhandi, Bilagi & Badami. The total worth of the project for 358.53 Km length was about Rs. 138.05 Lakhs.

The above survey work has been executed and completed the work Satisfactorily by Sri Shivanand Adiveppa Alatgi (Prashant Surveys), Pune.

Yours Faithfully,-
Executive Engineer,
PWP & IWTD, Division Bagalkot.

Copy to Sri. Shivanand Adiveppa Alatgi (**Prashant Surveys**), 204 Mayfair Arcade, 563 Nana Peth, Pune - 411002, for information.



GOVERNMENT OF KARNATAKA
PUBLIC WORKS, PORTS & INLAND WATER TRANSPORT DEPARTMENT

No.EE/PWD/CKD/ AB-1/2017-18/ 3220

Office of the
Executive Engineer
Public Works, Ports & Inland Water
Transport Department Division Chikodi.
Dated: 24 OCT 2017

WORK DONE CERTIFICATE

To Whomesoever It May Concern

This is to certify that M/s **Prashant Surveys, 204 Mayfair Arcade, 563 Nana Peth, Pune - 411002,** has been awarded the work of "Carrying out Survey work & Preparing Land Plan Survey sheets of **State Highways in Chikodi Division", for total 670.77 Km length,** vide **work indent No. 35554** & work order No. **"PWP&IWTDK:KW-4: WorkOrder:2015-16/329"**, dated 08-05-2015, by this office. The agreement amount for this work is **Rs. 2,25,04,333.50**

The work involved carrying out Topographical Survey work & Preparing Land Plan Survey sheets of the State Highways SH-12, SH 72, SH-78, SH-97, SH-98,SH-31, SH-103,SH-134, SH-140 & SH 53 in Chikodi Division; by advanced methods of LiDAR survey technology. Accordingly the work was carried out efficiently by using 'Leica Pegasus' Mobile LiDAR System, Trimble / Leica Dual frequency DGPS instruments & thus preparing land plans by superimposing the available revenue records.

The authentication with signature & seal of the concerned Land Records authority was also obtained on the prepared Land Plan Survey sheets for all the 5 Talukas viz. Chikodi, Athani, Hukkeri, Raibag, Gokak The total worth of the project for 670.77 Km length was about Rs. 225.04 Lacs.

The above survey work has been completed by **M/s Prashant Surveys, Pune & the performance of Mr.Prashant Alatgi & Shivanand Alatgi with their entire team members was excellent.** We recommend them for executing future similar types of projects elsewhere.

Executive Engineer
PWP & IWTD Division, Chikodi

To,

Prashant Surveys,
(Advanced Land Survey & Geospatial Sloutions)
204, Mayfair Arcade, 563 Nana Peth,
Besides Chacha Halwai, Laxmi road,
PUNE – 411002.

GOVERNMENT OF KARNATAKA
PUBLIC WORKS,PORTS & INLAND WATER TRANSPORT DEPARTMENT
No EE/PWD/BGM/AB-1/2017-18/ 657

Office of the
Executive Engineer
Public Works, Ports & Inland Water
Transport Department, Division, Belagavi
Dated 24 MAY 2018

WORK DONE CERTIFICATE

To Whomesoever It May Concern

This is to certify that M/s **Prashant Surveys**, 204 Mayfair Arcade, 563 Nana Peth, Pune - 411002, has been awarded the work of "Carrying out Survey work & Preparing Land Plan Survey sheets of State Highways in Belagavi Division", for total **605.34 Km** length.**work indent No:-32965** on tender belagavi division vide **work order No. "PWP&IWTD/Bgm.Dn/DM/Tender/:2015-16/1302 Dated :11th June 2015.**", Amounts to Rs. **2,03,09,157/-**

The work Includes Topographica,Road Survey work & Preparing Land Plan Survey sheets of the State Highways **SH-54, SH-141, SH-44, SH-45, SH-73, in Belagavi Division;** by advanced methods of **LIDAR Survey technology**. Accordingly the work was carried out officiently by using **'Leica Pegasus Two' Mobile LiDAR System, Leica Dual frequency GS14 GNSS / DGPS instruments & thus preparing land plans by superimposing the available revenue records.**

The authentication with signature & seal of the concerned Land Records authority was also obtained on the prepared Land Plan Survey sheets for all the **13 Talukas viz. Khanapur, Belagavi, Saundatti, Bailhongal, Chikkodi, Raybag, Athani, Hukkeri, Gokak, Jamakhandi, Mudhol, Badami, & Hunagund.** The total worth of the project is **605.34** Km Amout of **Rs. 203.09 Lakhs.**

The above survey work completed by **M/s Prashant Surveys, Pune & the performance (M/s Prashant Survey) with their entire team members is Very Good**.

Executive Engineer,
PWP & IWTD, Belagavi Division,
Belagavi

To
M/s Prashant Surveys,
204, Mayfair Arcade, 563 Nana Peth,
Pune : 411002.

ISO 9001 : 2015

Work Done Certificates from E.E. Bidar & Koppal Divisions :

Government of Karnataka
(PWP & IWT. Dept.)

Office of the
Executive Engineer,
PWP & IWT. Divn. Bidar.

No. EE/PWP&IWT.DVN/JE-3/2018-19/591 Dated 04 SEP 2018

:: WORK DONE CERTIFICATE ::

This is to certify that M/s prashant Surveys, 204 Mayfair Arcade, 563 Nana Peth, Pune – 411002, has been awarded the work of "Carrying out Survey work & Preparing Land Plan survey sheets of State Highways in Bidar Division" for total 191.11 Km. length, vide work Indent No. 33483 & work order No. PWP&IWTD/EE/BDR/DN./ JE-3/Tender/2015-16/ 670 dated: 15th June 2015" by this office. The agreement amount for this work is Rs. 64,11,740.50/-.

The work involved carrying out Topographical Survey work & Preparing Land Plan Survey sheets of the State Highways SH-122, SH-123, in Bidar Division, by advanced methods of LiDar Survey Technology. Accordingly the work was carried out efficiently by using 'Leica Pegasus Two, Mobile LiDAR System, Leica Dual frequency GS14 GNSS / DGPS instruments & thus preparing land plans by superimposing the available revenue records.

The authentication with signature & seal of the concerned Land Records authority was also obtained on the prepared Land Plan Survey sheets for all the Talukas 4viz. Bidar, Aurad, Bhalki, Basavakalyan. The total worth of the project for 191.11 Km length was about Rs. 64.11 lakhs.

The Work done certificate is issued for the purpose of contesting tender.

Executive Engineer,
PWP & IWTD, Divn. Bidar.

To,
M/s Prashant Surveys,
204, Mayfair Arcade, 563 Nana Peth,
Pune – 411002.

GOVERNMENT OF KARNATAKA

Office of the
Executive Engineer
Public Works, Ports & Inland Water
Transport Department Division Koppal.

No.EE/PWD/KPL/JE-1/2014-15 Dated: 8 JAN 2015

WORK DONE CERTIFICATE

To Whomesoever It May Concern

This is to certify that M/s Prashant Surveys, Pune-2, has been awarded the work of "Carrying out Survey work & Preparing Land Plans" for 304.48 Km length of SH-23 Kalmala – Shiggaon state highway, vide work indent No. 13451 & work order No. "PWP&IWTDK:KW-4:WorkOrder :2013-14/1006", by this office. The agreement amount for this work is Rs. 98.04 Lakhs

The work involves carrying out Land Plan Survey of the SH-23 by advanced method of survey using Dual frequency DGPS / LIDAR, Electronic Total Station instruments, distomats & thus preparing land plans by superimposing the available revenue records.

Collection & authentication of Land Records for Mundargi-Shiggao & -Shirahatti taluk is completed. Still the work is in progress & upto date payment made till date is Rs. 60.58 lacs.

The above survey work has been executed by M/s Prashant Surveys, Pune & the performance of this organisation along with entire team members is satisfactory.

Executive Engineer,
PWP & IWTD, Koppal Division,
Koppal.

GOVERNMENT OF KARNATAKA

Office of the
Executive Engineer
Public Works, Ports & Inland Water
Transport Department Division Koppal.
Dated: 27 SEP 2017

No.EE/PWD/KPL/ Acc/2017-18/2005

WORK DONE CERTIFICATE

To Whomesoever It May Concern

This is to certify that M/s **Prashant Surveys, 204 Mayfair Arcade, 563 Nana Peth, Pune - 411002,** has been awarded the work of "Carrying out Survey work & Preparing Land Plan Survey sheets of **State Highways in Koppal Division", for total 297.47 Km length,** vide work indent No. 35741 & work order No. "PWP&IWTDK:KW-4: WorkOrder:2015-16/1129", dated 08-08-15, by this office. The agreement amount for this work is **Rs. 1,05,37,874.75.**

The work involved carrying out Topographical Survey work & Preparing Land Plan Survey sheets of the State Highways SH-30, SH 63 & SH 36 in Koppal Division, by advanced methods of LiDAR survey technology. Accordingly the work was carried out efficiently by using 'Leica Pegasus' Mobile LiDAR System, Trimble / Leica Dual frequency DGPS instruments & thus preparing land plans by superimposing the available revenue records.

The authentication with signature & seal of the concerned Land Records authority was also obtained on the prepared Land Plan Survey sheets for all the 7 Talukas viz. Koppal, Yelburga, Kustagi, Sirguppa, Sindanur, Gangavati & Ron. The total worth of the project for 297.47 Km length was about Rs. 105.38 Lacs.

The above survey work has been completed by **Mr.Shivanand Alatgi (Prashant Surveys, Pune) with their entire team members was excellent.** We recommend them for executing future similar types of projects elsewhere.

Executive Engineer
PWP & IWTD Division, KOPPAL.

To,

Prashant Surveys,
(Advanced Land Survey & Geospatial Sloutions)
204, Mayfair Arcade, 563 Nana Peth,
Besides Chacha Halwai, Laxmi road,
PUNE – 411002.

ISO 9001 : 2015

8) HD Mapping of >1,00,000 Km National Highways in India:

- The total length of National Highways in India is constantly evolving, but is currently around 1,46,195 km. There is a severe need of high precise Survey Grade HD data for all the existing National Highways in India.
- “Prashant Advanced Survey LLP” based in Pune, Maharashtra, India has taken up the huge challenging task of capturing more than 1,00,000 Km of HD data for the existing National Highways network in India.
- Presently about 19,000 Km of National Highways in Maharashtra has already been captured, using only 2 numbers of survey grade “Leica Pegasus Two” Mobile LiDAR systems.
- After the rainy season, data will be captured by 5 numbers of “Leica Pegasus Two” Mobile LiDAR systems @ 1,000 Km per day (about 200 Km / instrument / day) with accuracy of + / - 5 to 10 cm using the Survey of India CORS (Continuously Operating Reference Station) DGPS network.
- Data for more than 1,00,000 Km NH should be available by 2nd December 2025 during the next ‘Geosmart India’ conference to be held in Bharat Mandapam, New Delhi with the vision of “One Nation One Map – Advancing Geospatial Infra for National Sovereignty & Economy”.

ISO 9001 : 2015

9) GNSS / DGPS Base Stations (GCP's) & CORS Network :

- The precise GNSS / DGPS Base Station network sometimes called Ground Control Points (GCP's) or CORS (Continuously Operating Reference Stations) are the backbone of all the data capture methods (Mobile, Backpack, UAV / Drone LiDAR).

- These have to be established by Survey Grade GNSS receivers in static mode for at least four hours per base station with more than 4 satellites with triangulation or simply by using the existing CORS network maintained by 'Survey of India'.

- These base station points are usually established by Survey Grade DGPS on existing permanent structures / Km stones or monumental pillars and database maintained for future references.

- Survey of India has established the CORS network, which is available on subscription basis, so as to maintain uniform coordinates throughout the India.

Survey Of India CORS Base Station :








DGPS / GNSS Base Stations, using Leica GS14 Receivers :

Thank You !!

10. Contact us :

Prashant Advanced Survey LLP

O-207, 2nd Floor, Bramha Boulevard

Phase 1, Connaught Road, Near

Sadhu Vaswani Chowk, Pune-

411001, Maharashtra, India.

AEC Forum 2025,
Vinanta, Dwarka, New Delhi,
22nd Aug., 2025.

PRASHANT ADVANCED SURVEY LLP

(Advanced Land Survey & Geospatial Solutions)

Mr. Prashant S. Alatgi +91 98900 55670
Designated Partner
(Ph.D. Research Scholar, M.E. Civil; 26+ years experience)

Mr. Shivanand A. Alatgi
Chief Techincal Officer
(Retired from 'Survey of India'; 55+ years experience)

Website : www.prashantsurveys.com
Email : prashant@prashantsurveys.com,
prashantadvsurvey@gmail.com

ISO 9001 : 2015