कार्यालय उप निदेशक एलीफेंट रिजर्व सरगुजा अम्बिकापुर(छ.ग.)

Phone (07774): – 240987 Email id : dders2014@gmail.com

क्रमांक 2314 /मा.चि/ अम्बिकापुर, दिनांक 30/11/2019

प्रति,

श्री अजय नायक
प्राधिकृत अधिकारी
टाटा प्रोजेक्ट्स लिमिटेड, रायपुर, छत्तीसगढ़

विषय :– **भारत सरकार की महत्वपूर्ण योजना "भारत नेट प्राजेक्ट (1Part of Digital India)"** के सफल क्रियान्वयन हेतु सूरजपुर जिला के सूरजपुर वनमंडल में तमोर पिंगला अभ्यारण्य के अन्तर्गत ओड़गी ब्लॉक के अन्तर्गत शामिल ग्राम पंचायत के मार्ग सामानांतर 1.423 हे0 वनभूमि, 0.039 हे0 राजस्व वनभूमि कुल रकबा 1.462 हे. वनभूमि पर ऑप्टिकल फायबर केबल बिछाने विषयक वनभूमि के गैरवानिकी प्रयोजन हेतु व्यपवर्तन प्रस्ताव हेतु डी.जी.पी.एस/लीडर सर्वे रिपोर्ट के सत्यापन बावत्।

सन्दर्भ :– आपका पत्र क्र0 24 रायपुर दि0 20.11.2019।

———00———

विषयान्तर्गत भारत सरकार की महत्वपूर्ण योजना "भारतनेट परियोजना" के तहत कार्यालय छ.ग. इन्फोटेक प्रमोंशन सोसायटी (chips) छ.ग. के समस्त जिलों के ग्राम पंचायतों को दूरसंचार की आधुनिक सुविधाओं को जोड़ने एवं डिजीटलकृत हेतु मेसर्स टाटा प्रोडक्ट को सहभागी नियुक्त किया गया है।

प्रकरण में संदर्भित पत्र द्वारा उप निदेशक एलीफेन्ट रिजर्व सरगुजा के गेमरेंज खोंड अन्तर्गत आवेदक संस्थान द्वारा ऑप्टिकल फाईबर केबल बिछाने हेतु डी.जी.पी.एस/लीडर सर्वे रिपोर्ट मय मानचित्र प्रस्तुत किया गया है। जिसका सत्यापन गेम रेंजर खोंड एवं अधीक्षक तमोर पिंगला अभ्यारण्य रमकोला के द्वारा किया गया है।

तमोर पिंगला अभ्यारण्य रमकोला अन्तर्गत ऑप्टिकल फाईबर केबल बिछाने हेतु डी. जी.पी.एस रिपोर्ट मय मानचित्र का सत्यापन उपरान्त रिपोर्ट प्रेषित है। वनभूमि प्रत्यावर्तन हेतु वन संरक्षण अधिनियम 1980 के अन्तर्गत नियमानुसार प्रस्ताव तैयार करते हुये ऑनलाईन पंजीयन की कार्यवाही पूर्ण करें, ताकि अग्रिम कार्यवाही की जा सके।

संलग्न :– डी.जी.पी.एस रिपोर्ट मय मानचित्र।

उप निदेशक
एलीफेन्ट रिजर्व सरगुजा
अम्बिकापुर(छ0ग0)

पृ0क्रमांक 2315 /मा.चि./2019 दिनांक 30/11/2019

प्रतिलिपि :–

1. अपर प्रधान मुख्य वन संरक्षक(व0प्रा0) छत्तीसगढ़ नवा रायपुर को सूचनार्थ सादर सम्प्रेषित।
2. वन संरक्षक (वन्यप्राणी) सरगुजा वृत्त को सूचनार्थ सादर सम्प्रेषित।

उप निदेशक
एलीफेन्ट रिजर्व सरगुजा
अम्बिकापुर(छ0ग0)

CHHATTISGARH BHARATNET PHASE-II PROJECT

LiDAR/DGPS SURVEY REPORT FOR TAMOR PINGLA SANCTUARY, SURAJPUR FOREST DIVISION FOR DIVERSION OF PROPOSED OFC ROUTES

Forest Division	:	**TAMOR PINGLA SANCTUARY ,SURAJPUR FOREST DIVISION**
Forest Land (RF/PF/OA)	:	**1.423 Ha.**
Rev. Forest Land	:	**0.039 Ha.**
Total Proposed Diversion Area	:	**1.462 Ha.**
Block	:	**ODGI**
District	:	**SURAJPUR (C.G.)**

Applicant -

Chhattisgarh Infotech Promotion Society (CHiPS)
Raipur (Chhattisgarh)

Submitted By –

TATA PROJECTS

Tata Projects Limited, Raipur (Chhattisgarh)

TATA PROJECTS LIMITED
TATA

Table of Contents

1. Introduction and Background

1.1. Background

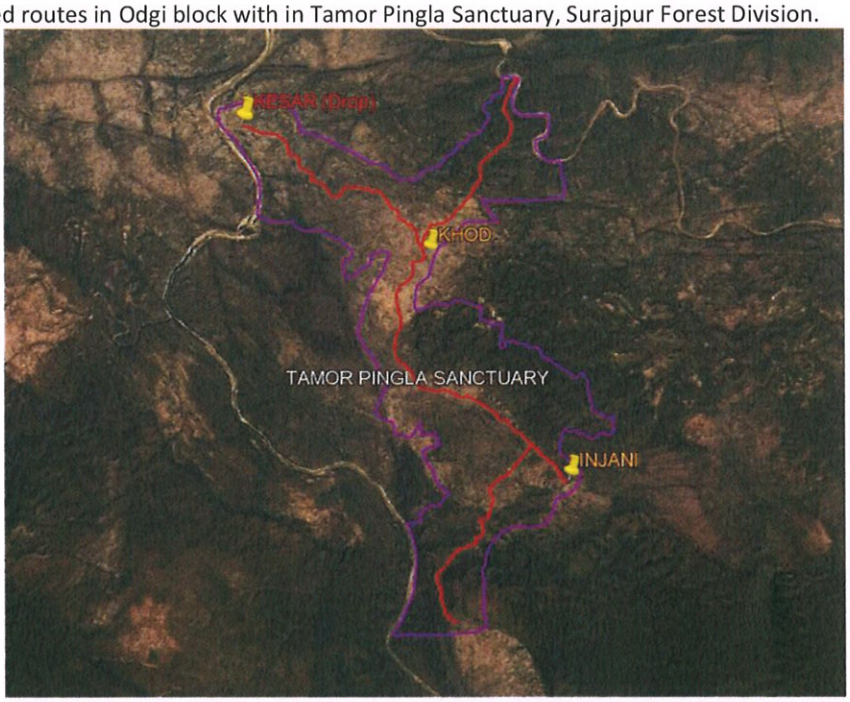
The Government of Chhattisgarh intends to setup an Optical Fibre Cable Network from the Block Head Quarters to Gram Panchayats to provide high speed broadband connectivity by connecting the 85 Blocks, 5987 Gram Panchayats across the State. The proposed network architecture for BharatNet Phase-II project follows ring architecture with Internet Protocol – Multi Protocol Label Switching (IP-MPLS) technology. The network shall be leveraged to deliver scalable bandwidth to households, institutions and enterprises. It is planned to have an IP-MPLS ring at GP level with provisioning of 6 dedicated core of fibre as mandated by Government of India.

The Chhattisgarh Infotech Promotion Society (CHiPS), a Registered Society promoted by the Government of Chhattisgarh, is the nodal agency and prime mover for propelling IT growth and implementation of IT plans in the State.

The Chhattisgarh Infotech Promotion Society (CHiPS) has selected an implementation partner **"Tata Project Limited"** for BharatNet Phase-II Project. The project has been conceived with the ambitious vision of providing connectivity to the yet unreached blocks in Chhattisgarh and entails massive investment on the infrastructure creation across the state which would serve as the information highway for decades to come.

1.2. Proposed Routes

The proposed routes in Odgi block with in Tamor Pingla Sanctuary, Surajpur Forest Division.



OFC Cable Proposed Routes in Bhaiyathan Block in Tamor Pingla Sanctuary ,Surajpur Forest Division.

1.3. Location

The proposed OFC Cable route in Surajpur Forest Division (The OFC route Odgi Block; District: Surajpur). The Proposed OFC route length is 337.897 km in Odgi Block, out of this 302.914 km covered Surajpur Forest Division (General) and 34.983 km covered Tamor Pingla Sanctuary area. The survey site passes through forest ranges Khond of Tamor Pingla Sanctuary, Surajpur Forest Division. The OFC Cable route is covered under Survey of India Toposheets 64 I13, and 64 I14, on RF 1:50000.

1.4. Objectives

As per directives of Ministry of Environment & Forests (MoEF) dated 8th July 2011; all applications for Forest Diversion, under Forest Conservation Act, 1980 must be accompanied with Geo-referenced shape file, showing the boundary of the proposed area (both soft copy and hard copy maps), prepared using LiDAR/Differential GPS (DGPS) and the same should be uploaded to MoEF website along with the online application.

To meet this requirement, **Tata Project Limited** entrusted the DGPS survey work to **Genesys International Corporation Limited, Mumbai** through Mobile LiDAR Technology.

2. Scope of Work

1. Establishment of Ground Control Pointy with 72 Hours observation which covering approx. 15 km radios of the proposed route.
2. DGPS Survey for collection of ground coordinates along the proposed OFC Cable trench at every 200 m interval and/or at every turn/bend along the proposed trench. The DGPS data is collected at forest patches only.
3. Data processing and Interpretation
    I. Geo-referencing of SOI Toposheet (scale 1:50000).
    II. Creation of OFC Cable trench boundary vector map using the DGPS Surveyed data
    III. Computation of Forest area and preparation of Forest Area Statement for proposed diversion. It includes Reserved/Protected Forest/ Orange Area & Revenue Forest Land.
    IV. Preparation of Geo-referenced map showing proposed OFC Route.
    V. Superimposition of cable route layer on Geo-referenced SOI Toposheet (scale 1:50000).
    VI. Preparation of DGPS survey report along with soft copy of maps including shapefile format and kml file.
4. Preparation of Desired report, Geo-referenced maps and Technical compliance in Hard copy and soft copy.

3. Deliverables

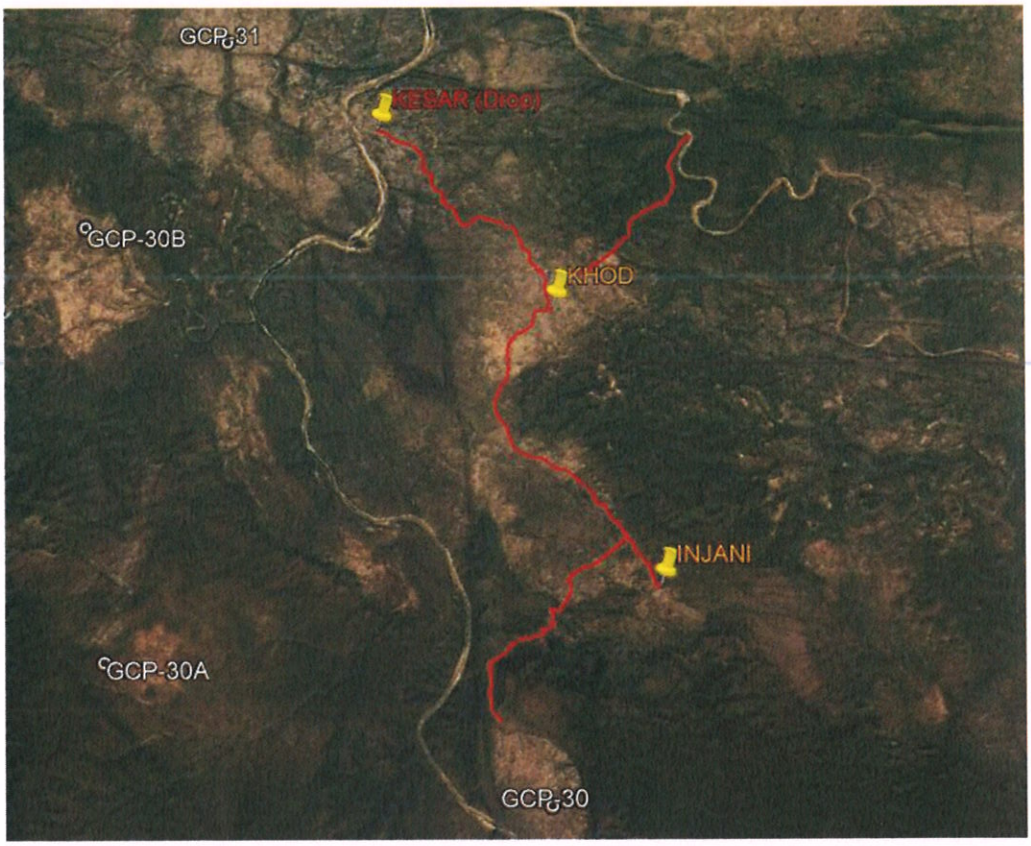
The deliverables envisaged for the assignment are described below -

1. Proposed Forest Diversion area statement as per LiDAR / DGPS Survey of proposed OFC route.
2. Geo-referenced map showing proposed OFC route in forest area and superimposed on SOI maps based on LiDAR / DGPS observations – Hard and Soft Copy (Maps in PDF format, SHP and KML formats).
3. LiDAR / DGPS Survey and Mapping Reports containing Ground Control Points report as the primary Control Points.
4. DGPS Survey and mapping report on hard copy and soft copy in CD.

4. Technical Approach

4.1. GCP Establishment for LiDAR (DGPS) Survey:

DGPS Survey with high precision equipment was used in blocks to bring mapping in to a single co-ordinates system. These Ground Control Point (GCPs) were connected to the Mobile LiDAR Mapping for accuracy purpose. The Ground Control Point required for eliminates the traditional mapping. The system can achieve millimeter accuracy of vehicle positioning, 3-D coordinates, and objects measured from the Geo-referenced image sequences. The Ground Control Point with 72 Hours of DGPS observation for Post Processing the GCP data with International GNSS Service (IGS) stations.



Leica Geosystems AG
Heinrich-Wild-Strasse
CH-9435 Heerbrugg
St. Gallen, Switzerland

Phone +41 71 727 3131
Fax +41 71 727 4674

- when it has to be right

Leica Geosystems

GNSS Processing Report - Summary

Report created: 07/31/2019 18:47:24

Project Details

General		Customer Details		Master Coordinate System	
Project Name:	CHIPS	Customer Name:	-	Coordinate System Name:	UTMWN
Owner:	BENGSYS INTERNATIONAL CORPORATION LIMITED	Contact Person:	-	Transformation Type:	Classical 3D
		Number:	-	Residual Distribution:	None
Lead Surveyor:	-	Email:	-	Ellipsoid:	WGS 1984
Date Created:	07/31/2019 14:21:03	Skype:	-	Projection Type:	UTM
Last Accessed:	07/31/2019 14:21:03	Website:	-	Geoid Model:	EGM_2008
Application Software:	Infinity 2.3			CSCS Model:	-

Path: D:\INFINITY PROJECTS\CHIPS\CHIPS.lpj
Size: 6,286.3 MB
Comments: -

SPP Point: 9453Base_1

Processing Parameters (05/26/2019 04:43:28 - 05/26/2019 12:53:14)

Data	Selected	Used	Comments
Cut-Off Angle:	15°	15°	
Frequency:	Automatic	L1/B1/L2/B2/L5	
Sampling Rate:	Use All	1 sec	
Satellite System:	GPS/GLONASS/Beidou	GPS/GLONASS/Beidou	
Ephemeris Type:	Broadcast	Broadcast	
Antenna Calibration Set:	Leica Relative	Leica Relative	

Processing Strategy

Solution Type:	Phase Fixed	Navigated
Solution Optimization:	Automatic	None
Frequency to use in Iono Minimized:	Automatic	Automatic
Tropospheric Model:	VMF with GPT2 model	VMF with GPT2 model
Ionospheric Model:	Automatic	Computed
Allow Widelane Fix:	Automatic	No

General Settings

Min. Distance for Iono Minimized:	15 km
Possible Ambiguities Fix up to:	300 km
Min. Duration for Float Solution (dHMS):	00:05:00

Results SPP Point: 9453Base_1

Acquisition

Time Span:	05/26/2019 04:43:28 - 05/26/2019 12:53:14
Duration:	08:09:46

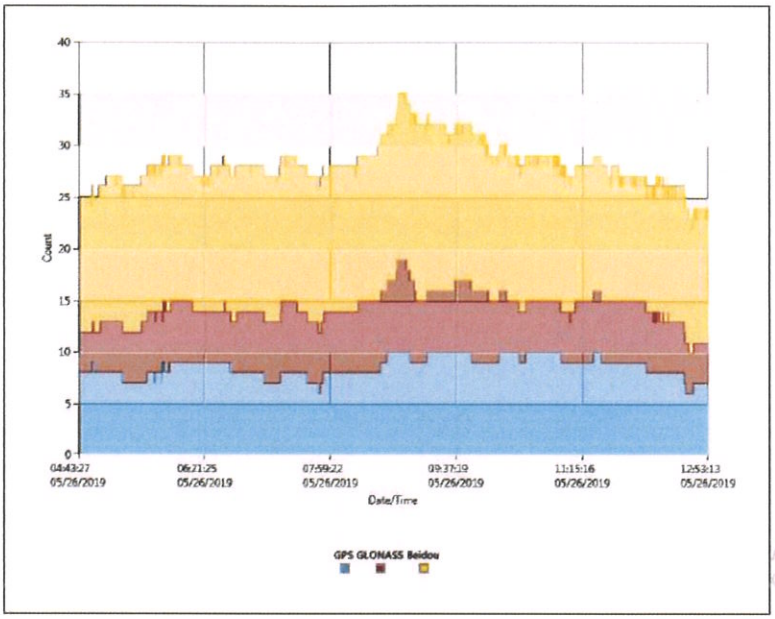
Antenna

Receiver Name / SN:	LEICA GS16 / 3701853
Antenna Name / SN:	LEIGS16 / -
Center Offset:	0.3800 m
Height Reading:	1.1500 m
Antenna Height:	1.5100 m

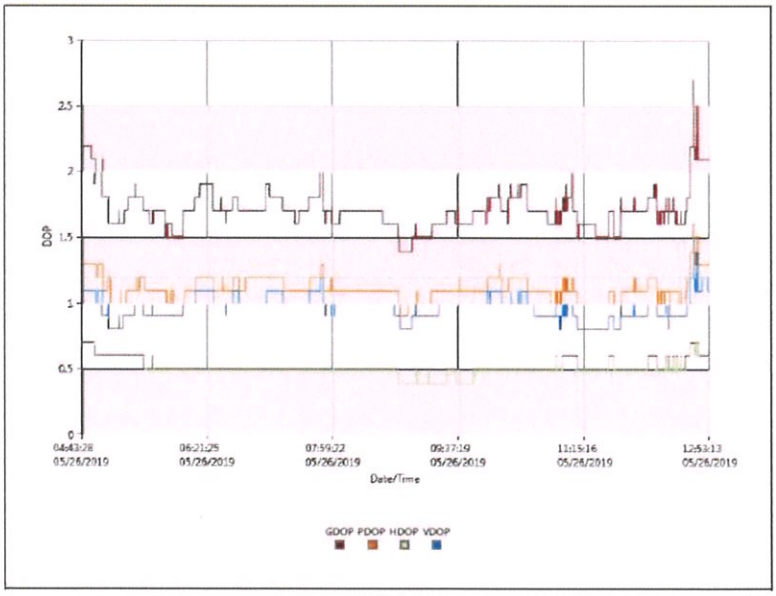
Processing Info (05/26/2019 04:43:28 - 05/26/2019 12:53:14)

Processed Date/Time: 07/31/2019 19:36:23

SVs Tracked



DOP



List of GCP's –

Sr.No	District	GCP No.	Latitude (D:M:S)	Longitude(D:M:S)	Easting	Northing
1	Surajpur	GCP-30	N23°37'32.09800"	E82°50'04.62390"	687158.700	2613975.468
2	Surajpur	GCP-30A	N23°38'14.80156"	E82°42'58.53156"	675065.965	2615139.083
3	Surajpur	GCP-30B	N23°44'18.66670"	E82°41'04.13589"	671691.724	2626293.600
4	Surajpur	GCP-31	N23°47'28.47827"	E82°42'35.06337"	674196.401	2632163.340

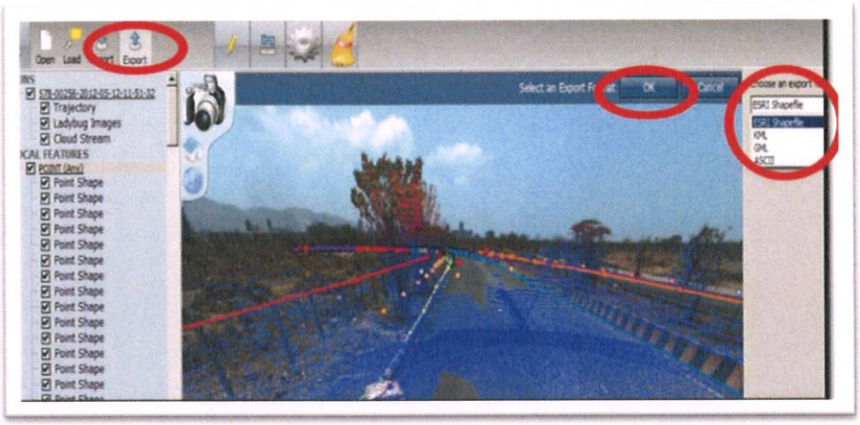
4.2. Mobile LiDAR (DGPS) data collection:

DGPS based Mobile LiDAR data was collected along with 360 degree panoramic view of the OFC route corridor (25 meter on each side along the center of the road).

Mobile LiDAR Van

4.3. DRS / GIS Map Creation Using LiDAR data:

All the features along the route are captured using LiDAR data and Panoramic Imagery to create the DRS / GIS Map.



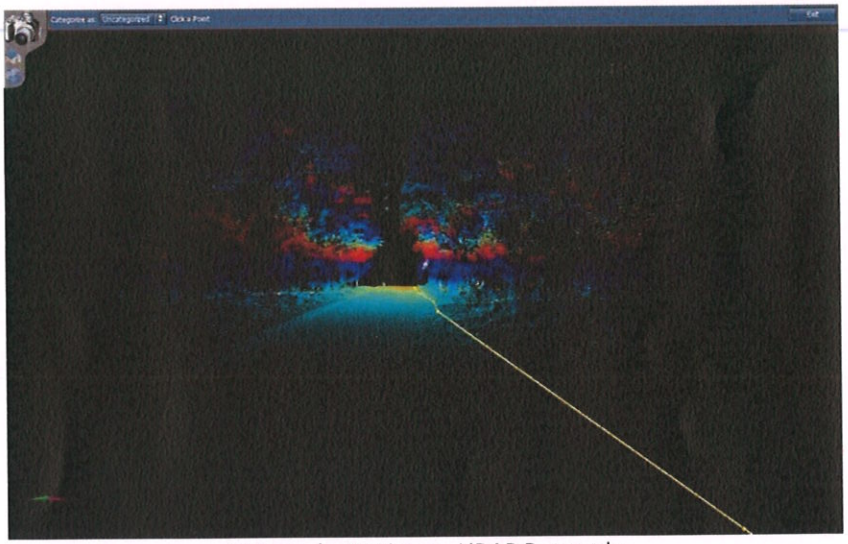
Feature Extraction on LiDAR

Final DRS / GIS Map

4.4. Demarcation of Proposed OFC on LiDAR data:

Proposed OFC line is demarcated based on the feasibility of trenching to be done on ground by referring the LiDAR data with the panoramic imagery.

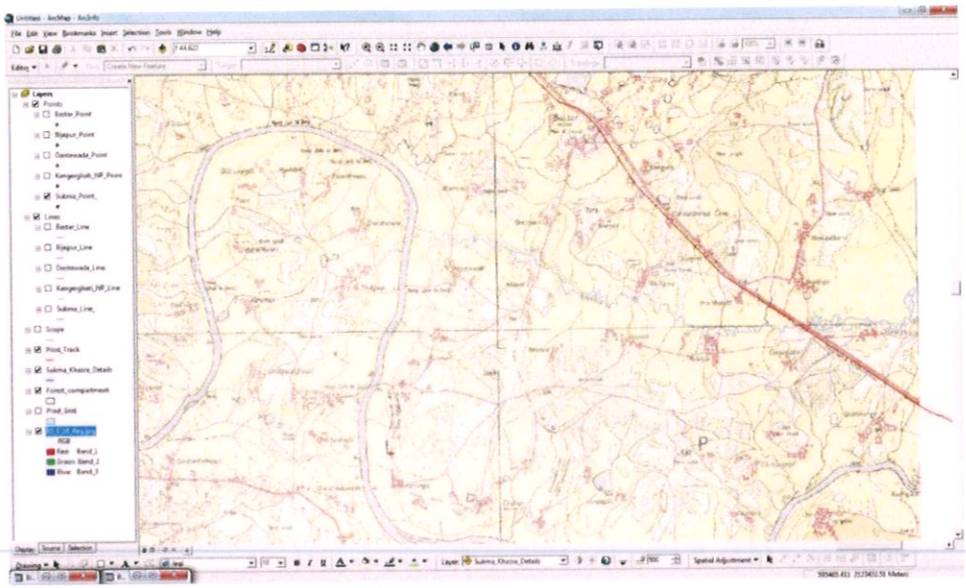
Proposed OFC Line on LiDAR Data (with Panoramic Imagery)



Proposed OFC Line on LiDAR Data only

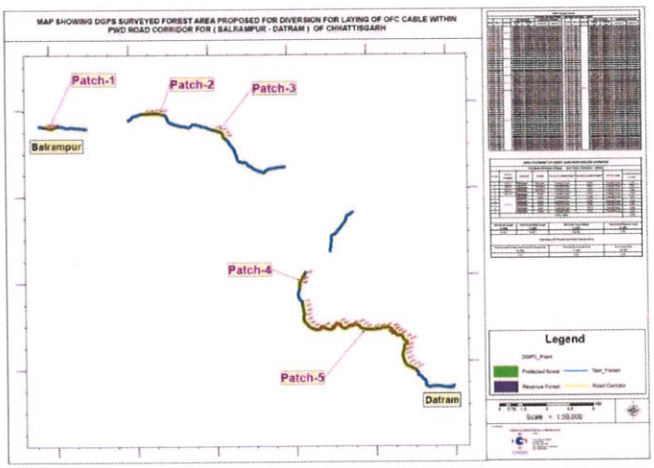
4.5. Geo-referencing of Maps:

Geo-referencing of Revenue Village Maps and SOI Toposheets are to be done. SOI Toposheets would be geo-referenced based on the coordinates provided on the maps whereas Revenue Village Maps would be geo-referenced with the help of GCPs collected on field. (At least 5 GCPs for a village having Government Forest Land are to be collected)



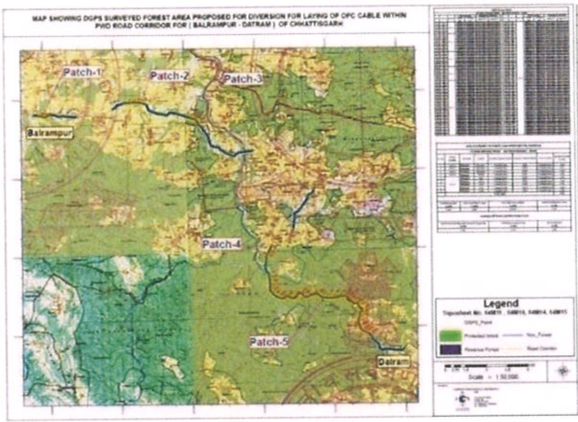
4.6. Creation of Vector Data for Forest Diversion:

Different Layers such as Polygon of Reserved Forest /Protected Forest /Orange Area Patch, Centerline of Proposed OFC Trench, Non-Forest Trench line, Polygons showing Revenue Forest patches etc. are to be created using the Lidar based GDPS Observation, Geo-referenced maps and the information provided by the forest department and Revenue department.

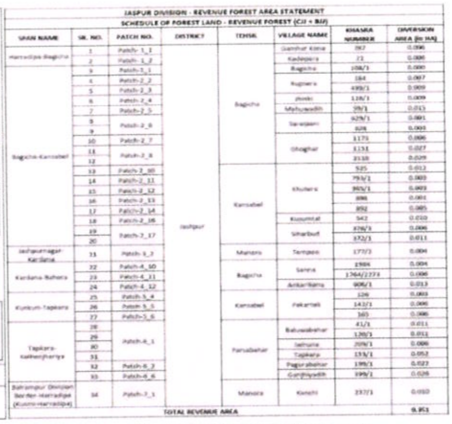


4.7. Generation of Map and Survey Reports for Forest Diversion

A map is created by overlaying the created vector data for the forest patches on the Geo-referenced SOI Toposheets. The reports are generated for DGPS Points (with Lat/long) placed at the regular intervals of 100 m on the proposed OFC route in the forest area. Another report is generated having area calculation for the proposed trench area in different type of Forest Lands. Samples of these are as below.



Geo-referenced Map



Forest Area Statement

5. DGPS Survey Results

The total OFC route length is approx. 337.897 km. covered Odgi Block of Surajpur District. Out of this 302.917 km covered Surajpur Forest Division (General) and 34.983 km covered Tamor Pingla Sanctuary area. OFC route length is passing through non-forest Land and 5.750 km OFC route length is passing through Forest Patches hence the proposed forest area for diversion 1.462 Ha. Forest Area Statement Report is in Annexure-1, and DGPS coordinates and forest patch boundary coordinates is in Annexure-2. The geo-referenced maps are in Annexure -3.

5.1. Forest Area Statement (Annexure-1)

Forest Area Statement –Odgi Block with inTamor Pingla Sanctuary, Surajpur Forest Division, District - Surajpur						
Total Route Length(in Km.)	**Length of Non Forest Land(in Km.)**	**Width of Non Forest Land(in Km.)**	**Area of Non-Forest Land (in Ha.)**	**Length of Forest Land (in km.)**	**Width of Forest Land (in km.)**	**Area of Proposed Forest Land (in Ha.)**
34.983	5.750	0.0005	0.287	29.233	0.0005	1.462

Tamor Pingla Sanctuary,Surajpur Forest Division – Total Forest Area for Diversion Proposal						
Sl. No.	**Forest Division**	**Forest range**	**No of Compartment**	**Length (in m.)**	**Width (in m.)**	**Proposed Area (In Ha.)**
1	Surajpur	Khond	23	28452.773	0.5	1.423
Sl. No.	**District**	**Block**	**No of Khasra**	**Length (in m.)**	**Width (in m.)**	**Proposed Area (In Ha.)**
1	Surajpur	Odgi	7	780.567	0.5	0.039
Total Diversion Area-				29233.340	0.5	1.462

गेम रेंजर
खोड़-तमोर पिंगला अभ्यारण्य

अधीक्षक
तमोर पिंगला अभ्यारण्य
रमकोला

Deputy Director
Elephant Reserve Surguja
Ambikapur (C.G.)

TATA PROJECTS LIMITED

Table A - Area statement for proposed forest Patches – Protected /Reserve/Orange Area										
Sl. No.	Patch	Block	Forest Division	Route Name	Forest Range	Type	Comp. No	Length (in m.)	Width (in m.)	ProposedArea (In Ha.)
1	1	Odgi	Surajpur	Vishalpur To Khod	Khond	RF	909	2371.146	0.5	0.119
2	1	Odgi	Surajpur	Vishalpur To Khod	Khond	RF	910	2419.134	0.5	0.121
3	1	Odgi	Surajpur	Vishalpur To Khod	Khond	RF	911	64.274	0.5	0.003
4	1	Odgi	Surajpur	Vishalpur To Khod	Khond	PF	P227	394.442	0.5	0.02
5	2	Odgi	Surajpur	Khod To Kesar	Khond	PF	228	1723.84	0.5	0.086
6	2	Odgi	Surajpur	Khod To Kesar	Khond	PF	897	907.194	0.5	0.045
7	2	Odgi	Surajpur	Khod To Kesar	Khond	PF	899	1652.454	0.5	0.083
8	2	Odgi	Surajpur	Khod To Kesar	Khond	PF	900	1446.771	0.5	0.072
9	2	Odgi	Surajpur	Khod To Kesar	Khond	PF	P227	920.988	0.5	0.046
10	3	Odgi	Surajpur	Khod To Injani	Khond	RF	914	2009.036	0.5	0.1
11	3	Odgi	Surajpur	Khod To Injani	Khond	PF	P226	1248.143	0.5	0.062
12	4	Odgi	Surajpur	Khod To Injani	Khond	RF	928	27.46	0.5	0.001
13	4	Odgi	Surajpur	Injani To Tamki	Khond	RF	929	34.792	0.5	0.002
14	4	Odgi	Surajpur	Khod To Injani	Khond	RF	929	47.173	0.5	0.002
15	4	Odgi	Surajpur	Injani To Tamki	Khond	PF	P223	3455.334	0.5	0.173
16	4	Odgi	Surajpur	Khod To Injani	Khond	PF	P223	1741.139	0.5	0.087
17	4	Odgi	Surajpur	Khod To Injani	Khond	PF	P224	839.235	0.5	0.043
18	4	Odgi	Surajpur	Khod To Injani	Khond	PF	P225	2216.439	0.5	0.111
19	5	Odgi	Surajpur	Injani To Tamki	Khond	RF	879	192.092	0.5	0.01
20	5	Odgi	Surajpur	Injani To Tamki	Khond	RF	880	404.48	0.5	0.02
21	5	Odgi	Surajpur	Injani To Tamki	Khond	RF	882	1061.657	0.5	0.053
22	5	Odgi	Surajpur	Injani To Tamki	Khond	PF	884	2025.503	0.5	0.101
23	5	Odgi	Surajpur	Injani To Tamki	Khond	PF	885	1250.047	0.5	0.063
Total-							**23**	**28452.773**	**0.5**	**1.423**

गेम रेंजर
खोड़-तमोर पिंगला अभ्यारण्य

अधीक्षक
तमोर पिंगला अभ्यारण्य
रमकोला

Deputy Director
Elephant Reserve Surguja
Ambikapur (C.G.)

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Table B - Area statem ent for proposed forest Patches – Revenue Forest land (Chhote / Bade Jhad ka Jangal)										
Sl No.	**Patch**	**District**	**Block**	**Route Name**	**Village**	**Type**	**Khasra No**	**Length (in m.)**	**Width (in m.)**	**ProposedArea (In Ha.)**
1	1	Surajpur	Odgi	Vishalpur To Khod	Khodh	CJJ	1	193.229	0.5	0.010
2	1	Surajpur	Odgi	Vishalpur To Khod	Khodh	CJJ	7	89.170	0.5	0.004
3	1	Surajpur	Odgi	Vishalpur To Khod	Khodh	CJJ	9	97.952	0.5	0.005
4	2	Surajpur	Odgi	Khod To Kesar	Khodh	CJJ	11	113.967	0.5	0.005
5	3	Surajpur	Odgi	Khod To Injani	Khodh	CJJ	714	58.685	0.5	0.003
6	3	Surajpur	Odgi	Khod To Injani	Khodh	CJJ	716	91.946	0.5	0.006
7	4	Surajpur	Odgi	Khod To Injani	Injani	BJJ	317	135.618	0.5	0.006
Total-							**7**	**780.567**	**0.5**	**0.039**

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5.2. LiDAR/DGPS Surveyed coordinates of Forest Patches (Annexure-2)

Point	Patch	Longitud in D:M:S	Latitud in D:M:S	Point	Patch	Longitud in D:M:S	Latitud in D:M:S
P-1	1	82°49'31.29130"	23°45'45.28917"	P-51	2	82°45'51.44076"	23°46'26.91674"
P-2	1	82°49'30.19853"	23°45'51.67748"	P-52	2	82°45'44.51070"	23°46'27.88808"
P-3	1	82°49'31.45743"	23°45'57.95402"	P-53	2	82°45'37.51453"	23°46'28.00691"
P-4	1	82°49'36.35614"	23°46'02.45488"	P-54	2	82°45'30.96583"	23°46'30.38051"
P-5	1	82°49'41.06809"	23°46'07.25211"	P-55	2	82°45'24.78213"	23°46'33.48416"
P-6	1	82°49'46.85716"	23°46'10.61004"	P-56	2	82°45'17.94661"	23°46'34.85126"
P-7	1	82°49'51.60228"	23°46'15.39484"	P-57	2	82°45'14.39620"	23°46'34.33809"
P-8	1	82°49'10.90318"	23°45'17.13699"	P-58	2	82°47'42.89354"	23°45'30.49909"
P-9	1	82°49'15.68948"	23°45'21.91242"	P-59	2	82°47'36.61593"	23°45'30.49569"
P-10	1	82°49'19.95667"	23°45'27.07141"	P-60	2	82°47'30.99565"	23°45'33.10850"
P-11	1	82°49'22.94360"	23°45'32.89132"	P-61	2	82°47'24.49939"	23°45'33.30435"
P-12	1	82°49'26.71959"	23°45'38.17210"	P-62	2	82°47'17.77672"	23°45'34.55341"
P-13	1	82°49'31.01771"	23°45'42.69850"	P-63	2	82°47'14.09960"	23°45'33.89472"
P-14	1	82°49'31.33288"	23°45'43.24804"	P-64	2	82°48'03.07899"	23°45'08.53612"
P-15	1	82°49'31.33288"	23°45'43.24804"	P-65	2	82°47'58.82800"	23°45'12.76119"
P-16	1	82°49'31.29130"	23°45'45.28917"	P-66	2	82°47'53.43066"	23°45'16.80697"
P-17	1	82°49'54.23788"	23°46'17.05460"	P-67	2	82°47'49.85630"	23°45'22.37792"
P-18	1	82°49'59.86676"	23°46'20.23144"	P-68	2	82°47'45.74775"	23°45'27.63262"
P-19	1	82°50'01.71776"	23°46'26.44382"	P-69	2	82°47'42.89354"	23°45'30.49909"
P-20	1	82°50'03.87558"	23°46'32.35724"	P-70	2	82°47'14.09960"	23°45'33.89472"
P-21	1	82°50'03.39378"	23°46'38.63441"	P-71	2	82°47'07.78737"	23°45'34.79128"
P-22	1	82°50'00.58448"	23°46'44.32989"	P-72	2	82°47'03.26777"	23°45'30.35004"
P-23	1	82°49'56.69987"	23°46'49.40789"	P-73	2	82°46'59.51838"	23°45'25.66532"
P-24	1	82°49'56.64246"	23°46'55.47024"	P-74	2	82°46'52.99597"	23°45'25.70668"
P-25	1	82°49'58.21141"	23°47'01.73496"	P-75	2	82°46'48.02715"	23°45'30.25996"

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रमकोला

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Point	Patch	Longitud in D:M:S	Latitud in D:M:S	Point	Patch	Longitud in D:M:S	Latitud in D:M:S
P-26	1	82°50'00.97778"	23°47'07.62987"	P-76	2	82°46'44.87422"	23°45'35.99599"
P-27	1	82°50'02.84762"	23°47'13.74542"	P-77	2	82°46'38.92944"	23°45'39.12229"
P-28	1	82°50'07.08690"	23°47'18.79078"	P-78	2	82°46'32.87561"	23°45'41.24529"
P-29	1	82°50'11.25059"	23°47'22.10446"	P-79	2	82°46'31.13129"	23°45'41.76120"
P-30	1	82°48'59.34789"	23°45'04.83364"	P-80	2	82°48'23.02464"	23°44'44.18960"
P-31	1	82°49'03.46190"	23°45'10.08966"	P-81	2	82°48'22.72197"	23°44'47.86088"
P-32	1	82°49'08.05568"	23°45'14.75216"	P-82	3	82°48'03.66340"	23°43'14.38292"
P-33	1	82°48'40.00911"	23°44'57.74249"	P-83	3	82°48'05.83885"	23°43'20.34468"
P-34	1	82°48'46.73969"	23°44'58.67950"	P-84	3	82°48'26.90859"	23°42'18.42435"
P-35	1	82°48'51.44506"	23°44'59.85279"	P-85	3	82°48'22.54067"	23°42'23.30443"
P-36	1	82°48'54.05540"	23°45'01.46676"	P-86	3	82°48'18.65339"	23°42'28.71714"
P-37	1	82°48'36.64140"	23°44'57.39453"	P-87	3	82°48'15.45064"	23°42'34.50922"
P-38	1	82°48'40.00911"	23°44'57.74249"	P-88	3	82°48'10.83696"	23°42'39.29929"
P-39	2	82°46'31.13129"	23°45'41.76120"	P-89	3	82°48'05.38722"	23°42'43.42652"
P-40	2	82°46'30.98829"	23°45'47.39351"	P-90	3	82°48'00.46761"	23°42'48.08082"
P-41	2	82°46'25.63186"	23°45'50.99468"	P-91	3	82°47'59.68804"	23°42'54.46351"
P-42	2	82°46'19.51206"	23°45'53.77573"	P-92	3	82°47'59.78735"	23°43'00.94991"
P-43	2	82°46'16.28188"	23°45'59.07819"	P-93	3	82°47'59.81620"	23°43'01.24240"
P-44	2	82°46'14.28909"	23°46'05.08377"	P-94	3	82°48'05.18408"	23°43'25.61352"
P-45	2	82°46'07.49588"	23°46'06.49364"	P-95	3	82°48'03.49815"	23°43'31.82364"
P-46	2	82°46'05.16702"	23°46'11.96106"	P-96	3	82°48'01.98197"	23°43'38.13973"
P-47	2	82°46'04.80055"	23°46'13.43361"	P-97	3	82°48'00.87193"	23°43'44.54241"
P-48	2	82°46'04.80055"	23°46'13.43361"	P-98	3	82°48'01.73695"	23°43'50.96508"
P-49	2	82°46'02.27063"	23°46'19.22865"	P-99	3	82°48'00.63611"	23°43'06.88898"
P-50	2	82°45'57.44175"	23°46'23.63982"	P-100	3	82°48'02.93958"	23°43'12.97576"
P-101	3	82°48'03.66340"	23°43'14.38292"	P-151	4	82°49'48.38524"	23°40'49.28852"
P-102	3	82°48'16.59051"	23°44'06.25561"	P-152	4	82°49'54.49489"	23°40'52.36094"
P-103	3	82°48'17.78154"	23°44'07.81132"	P-153	4	82°49'59.98463"	23°40'56.27868"

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खोड़-तमोर पिंगला अभ्यारण्य

अधीक्षक
तमोर पिंगला अभ्यारण्य
रमकोला

Point	Patch	Longitud in D:M:S	Latitud in D:M:S	Point	Patch	Longitud in D:M:S	Latitud in D:M:S
P-104	3	82°48'11.95532"	23°44'01.37383"	P-154	4	82°50'04.67213"	23°41'01.13080"
P-105	3	82°48'14.16277"	23°44'03.52291"	P-155	4	82°50'09.32930"	23°41'06.00331"
P-106	4	82°48'45.62933"	23°42'15.13382"	P-156	4	82°50'13.75254"	23°41'11.00696"
P-107	4	82°48'38.64278"	23°42'15.72123"	P-157	4	82°50'18.27912"	23°41'15.98042"
P-108	4	82°48'31.76233"	23°42'17.14982"	P-158	4	82°50'22.50610"	23°41'21.18503"
P-109	4	82°49'52.17248"	23°41'46.75819"	P-159	4	82°50'23.69820"	23°41'22.60455"
P-110	4	82°49'47.62564"	23°41'50.31338"	P-160	4	82°48'50.39746"	23°42'15.50334"
P-111	4	82°49'43.37468"	23°41'55.25561"	P-161	4	82°48'45.62932"	23°42'15.13382"
P-112	4	82°49'37.42923"	23°41'58.74556"	P-162	5	82°49'04.71362"	23°38'31.56098"
P-113	4	82°49'31.55770"	23°42'02.31562"	P-163	5	82°48'58.71463"	23°38'34.85999"
P-114	4	82°49'25.49978"	23°42'05.63838"	P-164	5	82°48'53.55135"	23°38'38.92176"
P-115	4	82°49'19.17567"	23°42'08.47117"	P-165	5	82°48'51.22165"	23°38'44.71945"
P-116	4	82°49'12.27425"	23°42'09.33867"	P-166	5	82°48'49.06660"	23°38'50.84514"
P-117	4	82°49'05.32286"	23°42'09.79832"	P-167	5	82°48'47.67812"	23°38'56.79301"
P-118	4	82°49'04.81798"	23°42'10.06152"	P-168	5	82°48'46.93320"	23°39'02.96830"
P-119	4	82°51'02.17901"	23°40'47.80992"	P-169	5	82°48'44.27774"	23°39'08.86928"
P-120	4	82°51'00.98791"	23°40'47.95580"	P-170	5	82°48'43.28429"	23°39'15.06412"
P-121	4	82°50'17.02028"	23°41'29.44017"	P-171	5	82°48'46.13853"	23°39'20.17269"
P-122	4	82°50'11.99815"	23°41'33.91001"	P-172	5	82°48'51.07093"	23°39'24.62339"
P-123	4	82°50'05.62579"	23°41'36.64376"	P-173	5	82°48'51.74982"	23°39'25.16453"
P-124	4	82°50'01.31358"	23°41'41.76342"	P-174	5	82°48'57.39719"	23°39'32.97054"
P-125	4	82°49'56.60567"	23°41'46.32069"	P-175	5	82°49'02.06201"	23°39'37.77746"
P-126	4	82°49'55.24172"	23°41'46.53965"	P-176	5	82°49'06.79627"	23°39'42.48670"
P-127	4	82°50'23.69943"	23°41'22.60668"	P-177	5	82°49'13.62546"	23°39'43.85569"
P-128	4	82°50'19.04362"	23°41'27.47549"	P-178	5	82°49'19.90497"	23°39'46.42804"
P-129	4	82°50'33.87381"	23°41'12.69398"	P-179	5	82°48'55.90185"	23°39'30.03340"
P-130	4	82°50'30.25076"	23°41'18.21036"	P-180	5	82°48'56.73452"	23°39'31.88455"
P-131	4	82°50'24.58467"	23°41'21.98000"	P-181	5	82°49'31.30229"	23°39'56.33927"

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Point	Patch	Longitud in D:M:S	Latitud in D:M:S	Point	Patch	Longitud in D:M:S	Latitud in D:M:S
P-132	4	82°50'54.63562"	23°40'53.15312"	P-182	5	82°49'31.18798"	23°40'02.40227"
P-133	4	82°50'51.29970"	23°40'58.81351"	P-183	5	82°49'29.91003"	23°40'08.31674"
P-134	4	82°50'47.50563"	23°41'03.84648"	P-184	5	82°49'30.66786"	23°40'11.84510"
P-135	4	82°50'41.70895"	23°41'07.50999"	P-185	5	82°49'37.55135"	23°40'12.19773"
P-136	4	82°50'38.56078"	23°41'10.97738"	P-186	5	82°49'24.74432"	23°39'51.91756"
P-137	4	82°50'38.56078"	23°41'10.97738"	P-187	5	82°49'27.79410"	23°39'53.58130"
P-138	4	82°50'37.62454"	23°41'11.20693"	P-188	5	82°48'57.39719"	23°39'32.97054"
P-139	4	82°51'01.27711"	23°40'47.79961"	P-189	5	82°49'39.14737"	23°40'17.82396"
P-140	4	82°51'02.17901"	23°40'47.80992"	P-190	5	82°49'40.73983"	23°40'23.85562"
P-141	4	82°50'23.69820"	23°41'22.60455"	P-191	5	82°49'28.11373"	23°39'53.34221"
P-142	4	82°50'29.22934"	23°41'18.89599"	P-192	5	82°49'22.16194"	23°39'47.19207"
P-143	4	82°50'32.91230"	23°41'13.41621"	P-193	5	82°49'24.82732"	23°39'51.77343"
P-144	4	82°50'39.04888"	23°41'10.51196"	P-194	5	82°49'24.75325"	23°39'51.90205"
P-145	4	82°50'43.81690"	23°41'05.83564"				
P-146	4	82°50'49.22236"	23°41'01.99409"				
P-147	4	82°50'52.20176"	23°40'56.25739"				
P-148	4	82°50'55.43308"	23°40'50.59805"				
P-149	4	82°49'38.71632"	23°40'39.90934"				
P-150	4	82°49'43.19155"	23°40'44.89913"				

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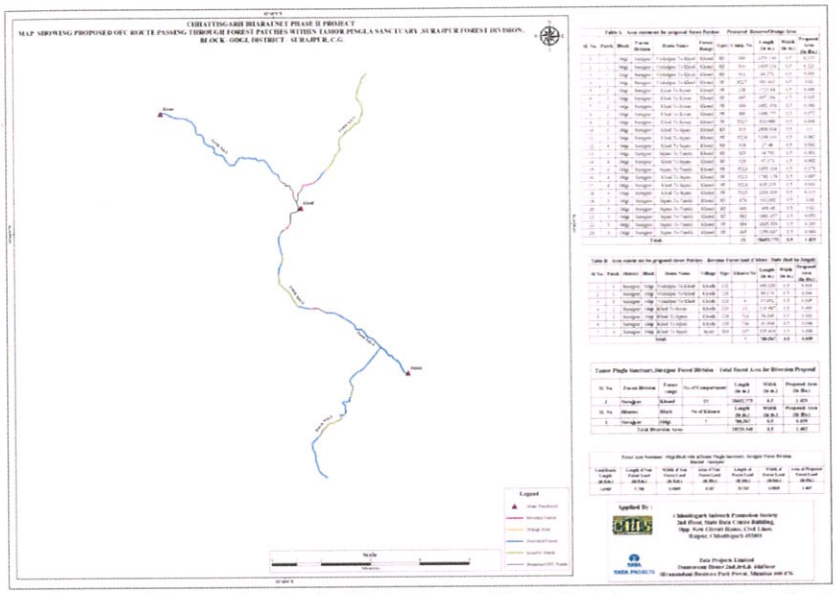
Elephant Reserve Surguja
Ambikapur (C.G.)

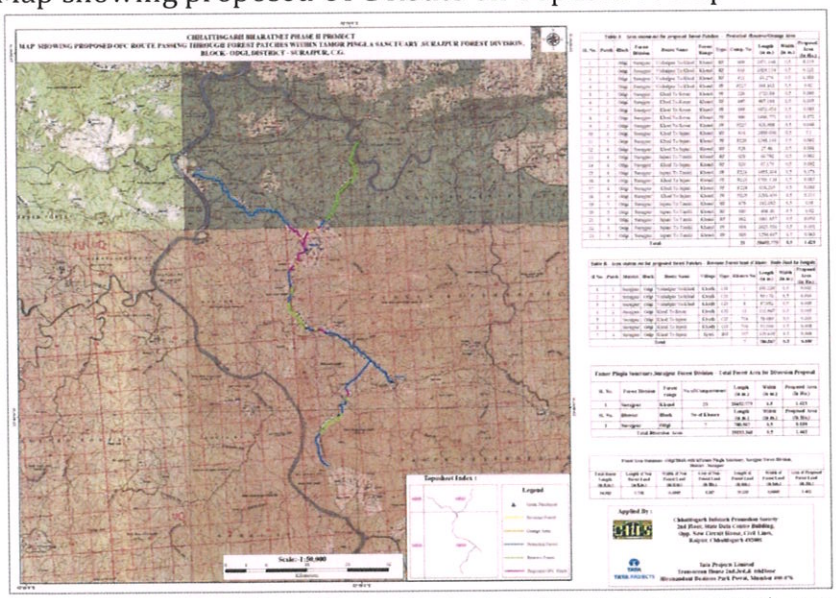
5.3. Geo-Referenced Maps of the Proposed Route (Annexure-3)

5.3.1. Map showing Geo-reference map of proposed OFC Route



Geo-Referenced Maps of Forest Patched with in Tamor Pingla Sanctuary, Surajpur Forest Division.

5.3.2. Map showing proposed OFC Route on Toposheet map on 1:50,000 scale.



Geo-Referenced Toposheet Map of Forest Patched odgi block in Tamor Pingla Sanctuary Surajpur Forest Division.

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Elephant Reserve Surguja
Ambikapur (C.G.)