

CHHATTISGARH BHARATNET PHASE-II PROJECT

LIDAR/DGPS SURVEY REPORT FOR JANJGIR-CHAMPA FOREST DIVISION FOR DIVERSION OF PROPOSED OFC ROUTES

Forest Division : JANJGIR-CHAMPA
Forest Land (RF/PF/OA) : 1.570 Ha.
Rev. Forest Land : 0.115 Ha.
Total Proposed Diversion Area : 1.685
Block : AKALTARA, DABHARA, PAMGARH
AND SAKTI
District : JANJGIR-CHAMPA(C.G.)

Applicant -



**Chhattisgarh Infotech Promotion Society (CHiPS)
Raipur (Chhattisgarh)**

Submitted By –



Tata Projects Limited, Raipur (Chhattisgarh)

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1.3. Location

The proposed OFC cable route in Janjgir-Champa Forest Division (The OFC route Akaltara, Dabhara, Pamgarh and sakti Block; DistriCt: Janjgir-Champa). The Proposed OFC route length is approx. 224.045 km in Akaltara Block, 325.907 km in Dabhara Block, 253.890 km in Pamgarh Block and 258.050 km in Sakti Block hence Total route length is 1061.892 km. The survey site passes through forest ranges Baloda and Sakti of Janjgir-Champa Forest Division. The OFC cable route is covered under Survey of India Toposheets 64 J08, 64 J12, 64 J16, and 64 K05, 64 K09, 64 K10, and 64 K13, and 64 O01, 64 O02 and 64 O06, on RF 1:50000

1.4. Objective

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.

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).



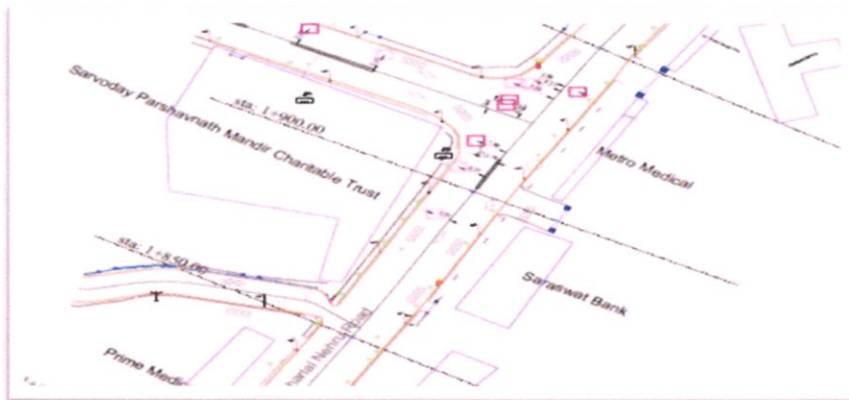
Mobile LiDAR Van

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



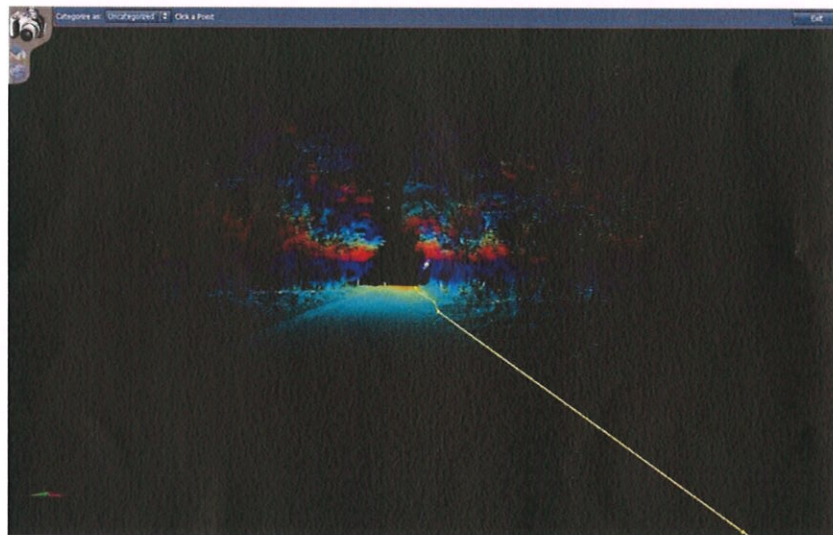
Final DRS / GIS Map

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.



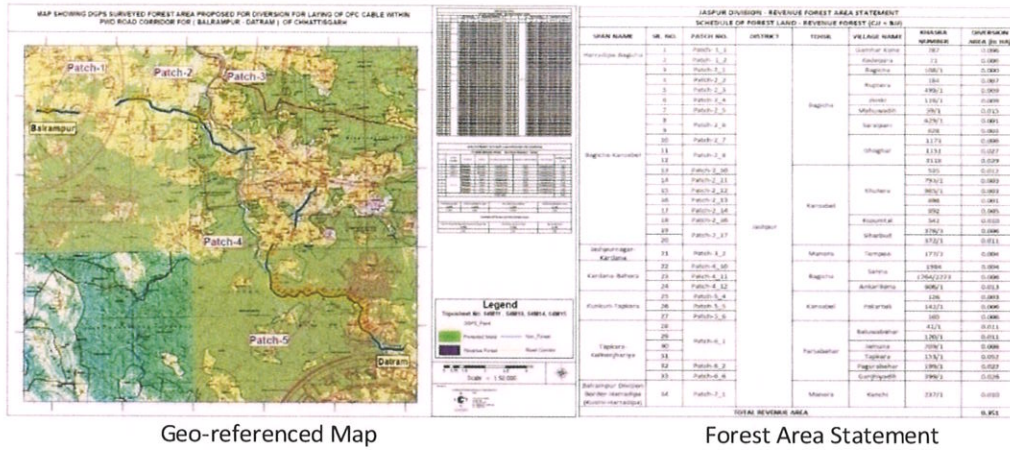
Proposed OFC Line on LiDAR Data (with Panoramic Imagery)



Proposed OFC Line on LiDAR Data only

4.7. 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.



5. DGPS Survey Results

The total OFC route length is approx. 1061.892 km. covered Akaltara, Dabhara, Pamgarh and Sakti Block of Janjgir-Champa District. Out of this 1028.202 km OFC route length is passing through non-forest Land and 33.690 km OFC route length is passing through Forest Patches hence the proposed forest area for diversion is 1.685 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 – Akaltara, Dabhara, Pamgarh And Sakti Block with in Janjgir - Champa Forest Division, District - Jan						
Total Route Length (in Km.)	Length of Non Forest Land (in K.m.)	Width of Non Forest Land (in K.M)	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.)
1061.892	1028.202	0.0005	51.410	33.690	0.0005	1.685

Sl. No.	Forest Division	Forest range	No of Compartment	Length (in m.)	Width (in m.)	Proposed Area (In Ha.)
1	Janjgir - Champa	Baloda	22	14920.997	0.5	0.747
2	Janjgir - Champa	Sakti	15	16473.801	0.5	0.823
Total of Table A			37	31394.798	0.5	1.570
Sl. No.	District	Block	No of Khasra	Length (in m.)	Width (in m.)	Proposed Area (In Ha.)
1	Janjgir - Champa	Akaltara	7	2295.571	0.5	0.115
Total of Table B			7	2295.571	0.5	0.115
Total Diversion Area (Table A+TableB)				33690.369	0.5	1.685



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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.)	Proposed Area (in Ha.)
1	1	Pamgarh	Janigeer-Champa	Borasi To Sasaha	Baloda	OA	148	877.672	0.5	0.044
2	2	Pamgarh	Janigeer-Champa	Pamgarh To Borasi	Baloda	OA	150	447.89	0.5	0.022
3	3	Akaltara	Janigeer-Champa	Banahil To Pakariya Jhu	Baloda	OA	158	1045.543	0.5	0.052
4	4	Akaltara	Janigeer-Champa	Bamhani To Akaltara	Baloda	OA	155	618.592	0.5	0.031
5	5	Akaltara	Janigeer-Champa	Katnai To Khod	Baloda	OA	141	1059.118	0.5	0.053
6	6	Akaltara	Janigeer-Champa	Katghari To Sankar	Baloda	PF	131	175.253	0.5	0.009
7	6	Akaltara	Janigeer-Champa	Katghari To Sankar	Baloda	PF	133	1960.729	0.5	0.098
8	7	Akaltara	Janigeer-Champa	Katghari To Sankar	Baloda	PF	129	214.243	0.5	0.011
9	7	Akaltara	Janigeer-Champa	Katghari To Sankar	Baloda	OA	143	895.174	0.5	0.045
10	7	Akaltara	Janigeer-Champa	Katghari To Sankar	Baloda	PF	173	414.738	0.5	0.021
11	8	Akaltara	Janigeer-Champa	Changori To Amlipali	Baloda	PF	126	247.738	0.5	0.012
12	8	Akaltara	Janigeer-Champa	Tapping To Changori	Baloda	PF	126	323.012	0.5	0.016
13	8	Akaltara	Janigeer-Champa	Amlipali To Tapping	Baloda	OA	159	460.646	0.5	0.023
14	8	Akaltara	Janigeer-Champa	Changori To Amlipali	Baloda	OA	159	228.707	0.5	0.011
15	8	Akaltara	Janigeer-Champa	Katghari To Sankar	Baloda	OA	159	903.595	0.5	0.045
16	8	Akaltara	Janigeer-Champa	Tapping To Changori	Baloda	OA	159	1111.15	0.5	0.056
17	9	Akaltara	Janigeer-Champa	Katghari To Sankar	Baloda	PF	127	578.21	0.5	0.029
18	9	Akaltara	Janigeer-Champa	Katghari To Sankar	Baloda	OA	160	568.572	0.5	0.028
19	11	Akaltara	Janigeer-Champa	Bhaistara To Parsahibana	Baloda	PF	110	355.825	0.5	0.018
20	12	Akaltara	Janigeer-Champa	Buchiardi To Parsahibana	Baloda	PF	111	552.021	0.5	0.028
21	12	Akaltara	Janigeer-Champa	Buchiardi To Parsahibana	Baloda	PF	111	550.834	0.5	0.028



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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.)	Proposed Area (in Ha.)
22	13	Akaltara	Janjgeer-Champa	Hardi To Bhaistara	Baloda	PF	109	1331.735	0.5	0.067
Total-										
23	14	Sakti	Janjgeer-Champa	Sundareli To Ghuichuva	Sakti	RF	40	1457.803	0.5	0.073
23	15	Sakti	Janjgeer-Champa	Sundareli To Ghuichuva	Sakti	PF	28	760.226	0.5	0.038
23	16	Sakti	Janjgeer-Champa	Ghuichuva To Rishabhthirth	Sakti	PF	32	676.595	0.5	0.034
23	16	Sakti	Janjgeer-Champa	Ghuichuva To Rishabhthirth	Sakti	PF	35	3962.989	0.5	0.198
23	16	Sakti	Janjgeer-Champa	Ghuichuva To Rishabhthirth	Sakti	OA	162	1545.857	0.5	0.077
23	16	Sakti	Janjgeer-Champa	Sundareli To Ghuichuva	Sakti	OA	162	240.366	0.5	0.012
23	16	Sakti	Janjgeer-Champa	Sundareli To Ghuichuva	Sakti	OA	165	437.423	0.5	0.022
23	17	Sakti	Janjgeer-Champa	Bailachuwa To Judaga	Sakti	OA	163	1759.435	0.5	0.088
23	18	Sakti	Janjgeer-Champa	Jongra To Sakti	Sakti	PF	11	183.762	0.5	0.009
23	18	Sakti	Janjgeer-Champa	Jongra To Sakti	Sakti	PF	23	299.886	0.5	0.015
23	18	Sakti	Janjgeer-Champa	Judaga To Jongra	Sakti	PF	23	862.34	0.5	0.043
23	19	Dabhara	Janjgeer-Champa	Kanwali To Darri	Sakti	OA	166	202.85	0.5	0.01
23	19	Dabhara	Janjgeer-Champa	Tundri To Badadaraha	Sakti	OA	166	1784.782	0.5	0.089
23	20	Dabhara	Janjgeer-Champa	Medhapali To Amaldiha	Sakti	PF	1	561.321	0.5	0.028
23	20	Dabhara	Janjgeer-Champa	Amaldiha To Domanpur	Sakti	PF	2	1738.166	0.5	0.087
Total-										
Grand Total-										
							15	16473.801	0.5	0.823
							37	31394.798	0.5	1.570



वन मण्डलाधिकारी
जो भण्डार-वाप्या वनमंडल

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Table B - Area statement for proposed forest patches – Revenue Forest Land (Chhote/Bade Jhad ke jangal)										
Sl. No.	Patch	District	Block	Route Name	Village	Type	Khasra No	Length (in m.)	Width (in m.)	Proposed Area (in Ha.)
1	4	Janjgir-Champa	Akaltara	Khisora To Taroud	Akaltara	BJJ	2183	267.788	0.5	0.013
2	8	Janjgir-Champa	Akaltara	Amlipali To Piparda	Son	BJJ	239/1	57.063	0.5	0.003
3	9	Janjgir-Champa	Akaltara	Amlipali To Piparda	Son	BJJ	194	72.595	0.5	0.004
4	10	Janjgir-Champa	Akaltara	Padariya To Piparda	Padariya	BJJ	465/1	1190.193	0.5	0.06
5	11	Janjgir-Champa	Akaltara	Buchihardi To Parsahibana	Karhidih	BJJ	3	39.142	0.5	0.002
6	11	Janjgir-Champa	Akaltara	Buchihardi To Parsahibana	Karhidih	BJJ	1/1	539.339	0.5	0.027
7	12	Janjgir-Champa	Akaltara	Buchihardi To Parsahibana	Buchihardi	BJJ	176/1	129.451	0.5	0.006
Total-							7	2295.571	0.5	0.115



बन मण्डल अधिकारी
जो नगीर - चम्पा वनमंडल

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°22'21.94960"	21°47'47.79214"	P-51	7	82°22'33.07597"	22°06'05.28084"
P-2	1	82°22'23.62876"	21°47'41.54566"	P-52	7	82°22'33.07597"	22°06'05.28084"
P-3	1	82°22'26.58118"	21°47'35.65658"	P-53	7	82°22'30.69823"	22°06'00.68838"
P-4	1	82°22'29.54730"	21°47'29.77354"	P-54	7	82°22'30.20151"	22°06'00.67334"
P-5	1	82°22'32.33348"	21°47'23.81480"	P-55	7	82°22'44.25704"	22°06'46.46335"
P-6	1	82°22'33.41460"	21°47'21.49982"	P-56	7	82°22'43.30304"	22°06'40.02302"
P-7	2	82°22'16.00400"	21°51'27.17352"	P-57	7	82°22'41.78832"	22°06'33.67702"
P-8	2	82°22'15.46665"	21°51'33.61970"	P-58	7	82°22'41.66765"	22°06'33.21118"
P-9	2	82°22'15.17985"	21°51'40.10279"	P-59	8	82°22'34.67672"	22°07'18.65841"
P-10	2	82°22'15.16823"	21°51'41.65975"	P-60	8	82°22'38.30820"	22°07'13.63341"
P-11	3	82°25'43.69974"	21°56'35.19590"	P-61	8	82°22'42.63727"	22°07'08.82818"
P-12	3	82°25'47.93153"	21°56'30.02831"	P-62	8	82°22'44.21376"	22°07'07.76394"
P-13	3	82°25'52.17915"	21°56'24.87210"	P-63	8	82°22'28.19200"	22°07'21.72270"
P-14	3	82°25'56.42236"	21°56'19.71571"	P-64	8	82°22'34.00075"	22°07'18.36608"
P-15	3	82°26'00.69649"	21°56'14.57860"	P-65	8	82°22'34.67672"	22°07'18.65841"
P-16	3	82°26'04.97215"	21°56'09.44267"	P-66	8	82°22'21.69243"	22°07'26.56240"
P-17	3	82°26'05.92665"	21°56'08.25950"	P-67	8	82°22'26.87694"	22°07'22.67524"
P-18	4	82°25'51.29903"	21°59'51.53331"	P-68	8	82°22'28.19200"	22°07'21.72270"
P-19	4	82°25'49.95975"	21°59'57.91506"	P-69	8	82°22'46.67327"	22°06'57.41089"

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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-20	4	82°25'48.53375"	22°00'04.28075"	P-70	8	82°22'45.18979"	22°06'51.05739"
P-21	4	82°25'47.10834"	22°00'10.64632"	P-71	8	82°22'51.96804"	22°07'13.68650"
P-22	4	82°25'46.98907"	22°00'11.24052"	P-72	8	82°22'46.86947"	22°07'09.81472"
P-23	4	82°26'15.73190"	22°00'44.71761"	P-73	8	82°22'46.53258"	22°07'05.57310"
P-24	4	82°26'20.88276"	22°00'49.10109"	P-74	8	82°22'48.60589"	22°07'02.94005"
P-25	4	82°26'22.66639"	22°00'50.54743"	P-75	8	82°22'44.21376"	22°07'07.76394"
P-26	5	82°27'40.87411"	22°03'27.26638"	P-76	8	82°22'40.09717"	22°07'12.81745"
P-27	5	82°27'36.33531"	22°03'22.41696"	P-77	8	82°22'35.96532"	22°07'17.84075"
P-28	5	82°27'36.57318"	22°03'16.70425"	P-78	8	82°22'40.91381"	22°07'22.24691"
P-29	5	82°27'40.83426"	22°03'11.59712"	P-79	8	82°22'39.51334"	22°07'27.97920"
P-30	5	82°27'41.46833"	22°03'27.33582"	P-80	8	82°22'36.07287"	22°07'33.63501"
P-31	5	82°27'48.33365"	22°03'27.98940"	P-81	8	82°22'34.14920"	22°07'36.76714"
P-32	5	82°27'40.87411"	22°03'27.26638"	P-82	8	82°22'34.14920"	22°07'36.76714"
P-33	6	82°24'59.65402"	22°05'47.80294"	P-83	8	82°22'30.75016"	22°07'42.43292"
P-34	6	82°25'01.98080"	22°05'52.11460"	P-84	8	82°22'22.54120"	22°07'46.60855"
P-35	6	82°25'04.18645"	22°04'45.57663"	P-85	8	82°22'51.88587"	22°07'17.29037"
P-36	6	82°25'04.47073"	22°04'52.05536"	P-86	8	82°22'52.30480"	22°07'15.47944"
P-37	6	82°25'05.85169"	22°04'58.42174"	P-87	9	82°23'42.92180"	22°07'31.61701"
P-38	6	82°25'06.35901"	22°05'04.90265"	P-88	9	82°23'36.19643"	22°07'31.04083"
P-39	6	82°25'05.94607"	22°05'11.33616"	P-89	9	82°23'29.22915"	22°07'31.20325"

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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-40	6	82°25'03.22914"	22°05'17.32514"	P-90	9	82°23'23.90566"	22°07'29.12410"
P-41	6	82°25'02.55196"	22°05'23.74603"	P-91	9	82°23'23.90566"	22°07'29.12410"
P-42	6	82°25'03.02631"	22°05'30.19591"	P-92	9	82°23'17.63476"	22°07'30.74586"
P-43	6	82°25'01.13857"	22°05'36.16423"	P-93	9	82°23'10.71353"	22°07'31.42209"
P-44	6	82°25'00.45358"	22°05'42.63111"	P-94	9	82°23'04.54463"	22°07'32.08899"
P-45	6	82°24'59.65402"	22°05'47.80294"	P-95	9	82°23'04.54463"	22°07'32.08899"
P-46	7	82°22'41.66765"	22°06'33.21118"	P-96	9	82°23'02.05342"	22°07'31.73152"
P-47	7	82°22'39.96518"	22°06'26.90489"	P-97	10	82°25'16.02800"	22°06'39.17497"
P-48	7	82°22'38.44613"	22°06'20.56450"	P-98	10	82°25'15.15241"	22°06'14.21358"
P-49	7	82°22'36.38445"	22°06'14.35960"	P-99	10	82°25'09.59596"	22°06'16.24680"
P-50	7	82°22'34.01661"	22°06'08.24348"	P-100	10	82°25'09.31298"	22°06'22.73549"
P-101	10	82°25'11.70988"	22°06'28.62834"	P-151	16	82°49'18.46404"	22°09'05.84989"
P-102	10	82°25'15.61747"	22°06'34.01330"	P-152	16	82°49'49.20833"	22°08'46.82923"
P-103	10	82°25'18.02510"	22°06'13.74382"	P-153	16	82°49'53.29450"	22°08'44.00391"
P-104	11	82°27'25.53258"	22°06'09.67571"	P-154	16	82°49'53.29450"	22°08'44.00391"
P-105	11	82°27'22.29602"	22°06'03.91604"	P-155	16	82°49'58.82410"	22°08'40.04063"
P-106	11	82°27'19.55040"	22°05'59.54781"	P-156	16	82°50'04.31547"	22°08'36.06834"
P-107	11	82°27'38.77031"	22°06'32.70184"	P-157	16	82°50'09.73805"	22°08'32.00853"
P-108	11	82°27'35.50895"	22°06'26.95281"	P-158	16	82°50'12.11886"	22°08'30.88933"
P-109	11	82°27'32.24660"	22°06'21.20432"	P-159	16	82°50'12.11886"	22°08'30.88933"

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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-110	11	82°27'29.92357"	22°06'17.22442"	P-160	16	82°50'18.40474"	22°08'28.06511"
P-111	11	82°27'44.32892"	22°06'42.30052"	P-161	16	82°50'24.69961"	22°08'25.25850"
P-112	11	82°27'43.68576"	22°06'41.17775"	P-162	16	82°50'30.59290"	22°08'21.85020"
P-113	12	82°28'00.31722"	22°07'10.17165"	P-163	16	82°50'36.26815"	22°08'18.08580"
P-114	12	82°27'56.98136"	22°07'04.45988"	P-164	16	82°50'42.95837"	22°08'16.36330"
P-115	12	82°27'53.70011"	22°06'58.72073"	P-165	16	82°50'49.87294"	22°08'15.55962"
P-116	12	82°27'51.21020"	22°06'54.35621"	P-166	16	82°50'56.77880"	22°08'14.72556"
P-117	12	82°27'51.55873"	22°06'54.25982"	P-167	16	82°51'03.57912"	22°08'13.33469"
P-118	12	82°27'54.81963"	22°07'00.00911"	P-168	16	82°51'10.00558"	22°08'10.80220"
P-119	12	82°27'58.12631"	22°07'05.73572"	P-169	16	82°51'16.53532"	22°08'08.53926"
P-120	12	82°28'00.64675"	22°07'10.04095"	P-170	16	82°51'23.40319"	22°08'07.41608"
P-121	12	82°27'50.55851"	22°06'53.11523"	P-171	16	82°51'30.30961"	22°08'06.49631"
P-122	12	82°27'50.56748"	22°06'53.13690"	P-172	16	82°51'33.60658"	22°08'03.24681"
P-123	13	82°29'29.61269"	22°04'59.88208"	P-173	16	82°51'30.82693"	22°07'57.28409"
P-124	13	82°29'26.20574"	22°05'05.55452"	P-174	16	82°49'21.59988"	22°09'11.06417"
P-125	13	82°29'22.74355"	22°05'11.19237"	P-175	16	82°49'25.70561"	22°09'06.11164"
P-126	13	82°29'18.27680"	22°05'16.16820"	P-176	16	82°49'31.33888"	22°09'02.27361"
P-127	13	82°29'13.42224"	22°05'20.83798"	P-177	16	82°49'36.93146"	22°08'58.38442"
P-128	13	82°28'46.24251"	22°06'00.02021"	P-178	16	82°49'42.30415"	22°08'54.24426"
P-129	13	82°28'43.98779"	22°06'06.06961"	P-179	16	82°49'45.57378"	22°08'49.92703"

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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-130	13	82°28'42.38617"	22°06'10.05756"	P-180	16	82°49'36.63166"	22°07'51.76359"
P-131	14	82°45'46.31926"	22°05'32.38147"	P-181	16	82°49'33.71721"	22°07'57.32478"
P-132	14	82°45'46.08134"	22°05'38.85771"	P-182	16	82°49'30.27275"	22°08'02.73169"
P-133	14	82°45'45.92137"	22°05'45.31897"	P-183	16	82°49'30.03567"	22°08'03.92026"
P-134	14	82°45'45.55303"	22°05'51.71398"	P-184	16	82°49'14.37199"	22°08'25.97431"
P-135	14	82°45'42.76663"	22°05'57.55094"	P-185	16	82°49'13.98962"	22°08'32.32950"
P-136	14	82°45'39.11115"	22°06'02.62785"	P-186	16	82°49'12.79501"	22°08'32.60803"
P-137	14	82°45'35.09385"	22°06'07.85179"	P-187	17	82°55'41.59835"	22°06'00.07677"
P-138	14	82°45'37.60681"	22°06'13.53758"	P-188	17	82°55'47.59327"	22°05'57.13010"
P-139	14	82°45'38.74507"	22°06'15.08868"	P-189	17	82°55'52.87026"	22°05'52.87930"
P-140	15	82°49'30.13578"	22°06'27.28251"	P-190	17	82°55'59.00739"	22°05'50.06647"
P-141	15	82°49'34.93488"	22°06'31.99909"	P-191	17	82°56'05.96984"	22°05'49.85973"
P-142	15	82°49'39.56022"	22°06'36.86595"	P-192	17	82°56'12.94615"	22°05'49.83635"
P-143	15	82°49'44.29186"	22°06'41.64409"	P-193	17	82°56'19.92081"	22°05'49.69451"
P-144	15	82°49'48.47583"	22°06'45.00778"	P-194	17	82°56'26.89553"	22°05'49.55628"
P-145	16	82°49'12.79501"	22°08'32.60803"	P-195	17	82°56'33.76935"	22°05'49.15011"
P-146	16	82°49'13.43231"	22°08'37.64189"	P-196	17	82°56'39.17666"	22°05'50.35515"
P-147	16	82°49'15.70639"	22°08'43.68337"	P-197	18	82°59'11.91975"	22°04'46.76143"
P-148	16	82°49'17.71987"	22°08'49.84770"	P-198	18	82°59'15.22650"	22°04'42.01855"
P-149	16	82°49'16.68091"	22°08'56.18361"	P-199	18	82°58'27.49566"	22°05'00.33068"

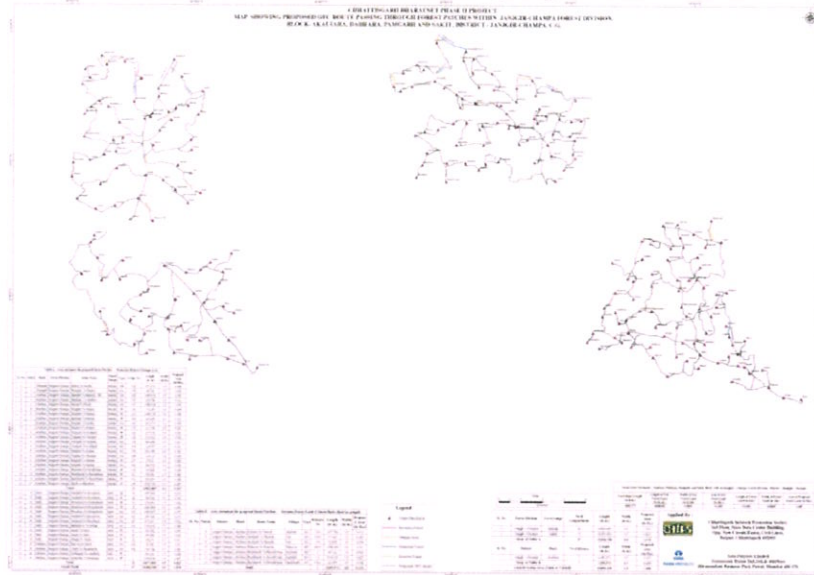
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Point	Patch	Longitud in D:M:S	Latitud in D:M:S	Point	Patch	Longitud in D:M:S	Latitud in D:M:S
P-150	16	82°49'14.01992"	22°09'01.48492"	P-200	18	82°58'33.79747"	22°04'58.94206"
P-201	18	82°58'37.10444"	22°04'58.24916"	P-218	19	83°10'59.39681"	21°54'20.79142"
P-202	18	82°58'01.49425"	22°05'12.15103"	P-219	19	83°10'57.83369"	21°54'27.12053"
P-203	18	82°58'07.88495"	22°05'09.63859"	P-220	19	83°10'57.10047"	21°54'33.07976"
P-204	18	82°58'14.11364"	22°05'06.98775"	P-221	20	83°12'25.66418"	21°47'09.92109"
P-205	18	82°58'19.81621"	22°05'03.26419"	P-222	20	83°12'22.87560"	21°47'03.96871"
P-206	18	82°58'25.90542"	22°05'00.10396"	P-223	20	83°12'20.44116"	21°46'57.90213"
P-207	18	82°58'27.49566"	22°05'00.33068"	P-224	20	83°12'20.45974"	21°46'51.44419"
P-208	19	83°11'11.82606"	21°53'43.14492"	P-225	20	83°12'21.61773"	21°46'45.04007"
P-209	19	83°11'18.00875"	21°53'40.15810"	P-226	20	83°12'23.08061"	21°46'38.71151"
P-210	19	83°11'18.09635"	21°53'40.11453"	P-227	20	83°12'23.79101"	21°46'32.29665"
P-211	19	83°11'18.09680"	21°53'40.12904"	P-228	20	83°12'26.85094"	21°46'27.54434"
P-212	19	83°11'13.08938"	21°53'43.98792"	P-229	20	83°12'30.11091"	21°46'21.80507"
P-213	19	83°11'10.79872"	21°53'50.12332"	P-230	20	83°12'33.00442"	21°46'18.24264"
P-214	19	83°11'08.15723"	21°53'56.13763"	P-231	20	83°12'28.75000"	21°47'47.91063"
P-215	19	83°11'05.53882"	21°54'02.16105"	P-232	20	83°12'28.60225"	21°47'41.43606"
P-216	19	83°11'03.39304"	21°54'08.34405"	P-233	20	83°12'27.57333"	21°47'35.01889"
P-217	19	83°11'01.55954"	21°54'14.61369"	P-234	20	83°12'26.63289"	21°47'29.86853"



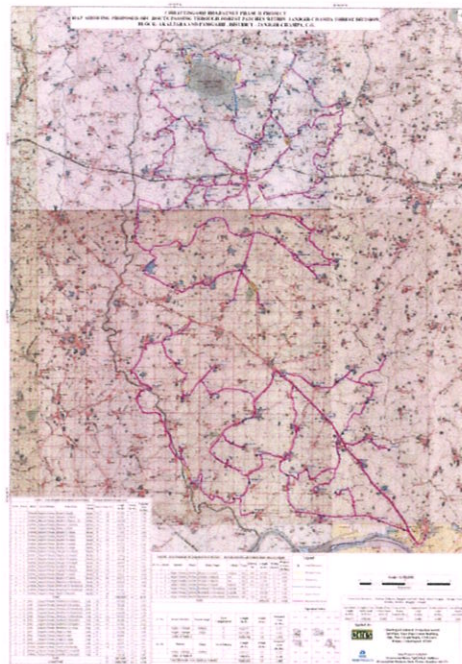
5.3. Geo-Referenced Maps of the Proposed Route (Annexure-3)

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



Geo-Referenced Maps of Forest Patched with in Janjgir - Champa Forest Division.

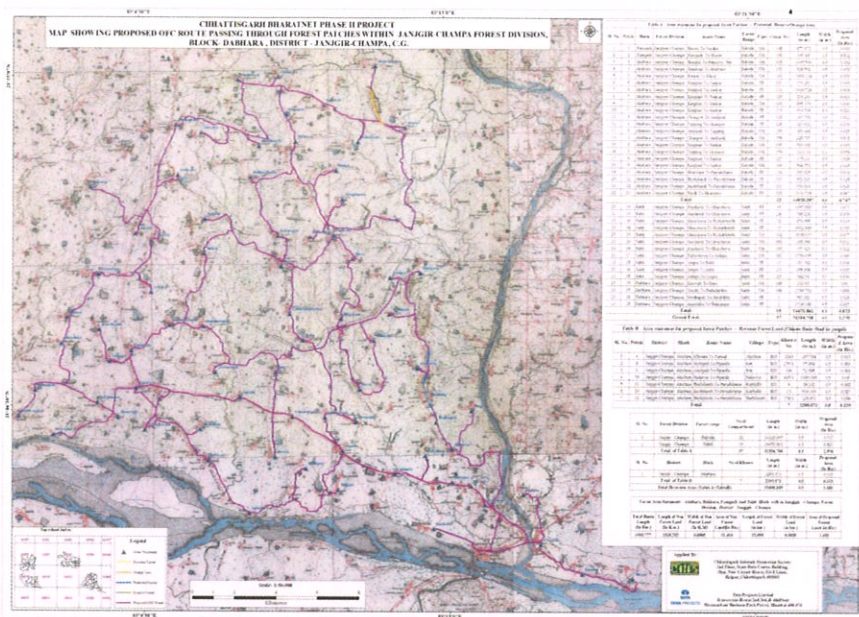
5.3.2. Map showing proposed OFC Route on Toposheet map on 1:50,000 scale.



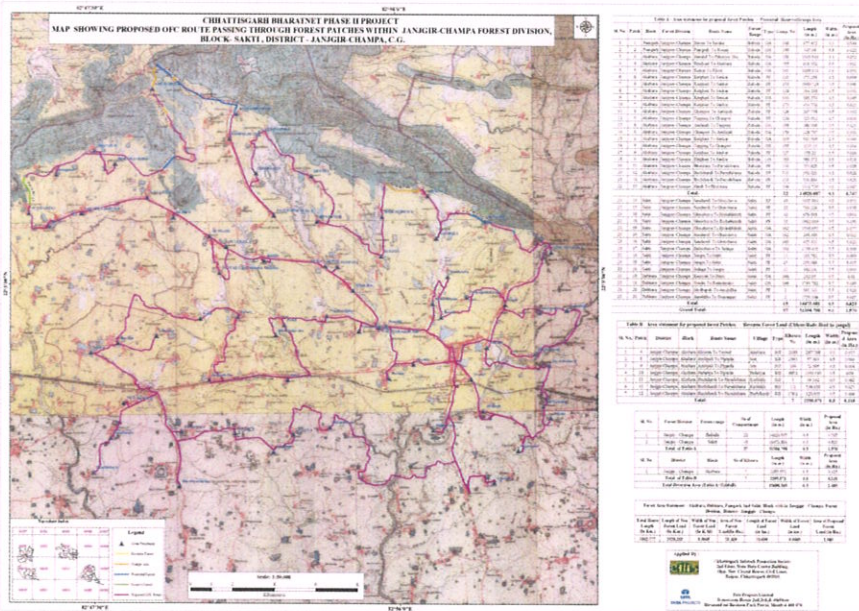
Geo-Referenced Toposheet Map of Forest Patched Aklarata and Pamgarh Block in Janjgir - Champa Forest Division.



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Geo-Referenced Toposheet Map of Forest Patched Dabhara Block in Janjgir - Champa Forest Division.



Geo-Referenced Toposheet Map of Forest Patched Sakti Block in Janjgir - Champa Forest Division.



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वन मण्डलाधिकारी
जौनपुर-चाम्पा वनमंडल