



**CHHATTISGARH STATE POWER TRANSMISSION
COMPANY LIMITED (CSPTCL)**

**DGPS Survey of Forest Patches for Diversion Proposal of
Forest Land in Surajpur district for 132KV DCDS EHT
Transmission Line from BISHRAMPUR to KAUSHALPUR
, Ramanujnagar (Approx. Route Length 30.55km)**



DGPS SURVEY AND GIS MAPPING DONE BY:

Geotrax International Services
Raipur, Chhattisgarh.

E.E. (EHT)
Contn.- Dn.
C.S.P.T.C.L. Korba





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1. Introduction and Background

Government of India, Ministry of Coal has allotted to M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited. Parsa East & Kente Basen Coal block situated at Village: Parsa, Tehsil-Udaipur, Distt-Surguja for fulfilling the requirement of Coal for their Thermal Power Stations situated at Kalisindh & Chhabra etc. in the State of Rajasthan.

For transportation of coal to the end user, Railway corridor has been proposed in between SURAJPUR road Railway Station and PEKB Coal Mine. The Rail Corridor is being constructed under the banner of Sarguja Rail Corridor Pvt. Ltd. (SRCPL), for fulfilling the SRCPL traction power requirement 132KV/25KV traction substation has been proposed at KAUSHALPUR, RAMANUJNAGAR. Chhattisgarh State power Transmission Company limited Raipur has approved the final Route of transmission line from 220/132kv Substation situated at Vishrampur, Distt.-Surguja to proposed 132KV/25KV substation at KAUSHALPUR, Near RAMANUJNAGAR. Total Route length of transmission line is 30.55kms (approx.).

132kV Vishrampur-Ramanujnagar Transmission line passes through three tehsils of Surajpur District- Tehsil Surajpur, Pilkha and Ramanujnagar. The entire route passes through Surajpur Forest Division, under Surguja forest circle.

In Surajpur forest Division, Transmission line passes through Ramanujnagar and Surajpur forest Range. The proposed route surveyed and finalized in such manner optimizing of forest land and it passes through revenue forest and protected forest land. Total forest land proposed to be diverted is 4.940 Ha in which Revenue forest land is 4.253 Ha and Protected forest land is 0.687 Ha.

Total Forest land proposed for diversion is 4.940 Ha.



Specially designed towers are proposed to be used for transmission line passing through the forest patches such that the ground clearance of bottom conductor is above 14 meters.

This Project will fulfill the Traction Power Requirement of M/s Surguja Rail Corridor Pvt. Ltd. for Operation of Railways and will also help in smooth transportation of Coal.



Fig-1: 132KV Transmission Line Corridor on Satellite Imagery

As per directives of Ministry of Environment & Forests dated 8th July 2011; all applications seeking diversion of forest land for non-forest purpose under Forest Conservation Act, 1980 must be accompanied with Geo-referenced shape file (both soft copy and hard copy maps) of the forest land proposed for diversion prepared using Differential GPS (DGPS).

To meet this requirement of MoEF, CSPTCL entrusted the DGPS survey work to M/s Geotrax International Services, Raipur, which is specializing in such assignments.

2. Scope of Work

1. Establishment of one base station for DGPS Survey and temporary benchmarks at every 10km.
2. Fixation of corridor boundary point by DGPS (Boundary point fixed at every corner and turning point. It also includes
 - a. DGPS survey to collect the 132KV Pylon/Tower coordinates
 - b. DGPS Survey of revenue forest khasra boundaries
3. Fixation of Pillars at tower location and Forest patches.
4. Data processing and Interpretation
 - a. Geo-referencing of cadastral map and identification of revenue forest khasras
 - b. Creation of Tower centerline layer using DGPS coordinates and creation of conductor corridor
 - c. Superimposition of Tower corridor layer on Georeferenced cadastral maps
 - d. Creation of forest patches (comprise one or more adjoining forest khasras) from the Geo-referenced cadastral maps and computation of forest area of individual forest patches, per village
 - e. Preparation of Geo-referenced forest map and creation of an area statement showing proposed area for forest diversion
 - f. Preparation of DGPS survey report along with soft copy of – maps in shapefile format and kml file
5. Printing of report and Geo-referenced maps (7sets) and Technical compliance.



3. Deliverables

The deliverables envisaged for the assignment are described below

1. Post processed DGPS observations data as well as raw data in RINEX format.
2. DGPS Reports - Base line & network adjustment report for the primary and temporary benchmarks.
3. Geo-referenced cadastral maps & forest block maps (for PF/RF areas, if any) based on DGPS observations.
4. Geo-reference shape file (Soft copy) of Forest Patches, tower ceterline and conductor corridor.
5. Area statement as per DGPS Survey showing proposed area for forest diversion
6. DGPS Survey and mapping report



4. Brief description of the Technical approach

4.1 Input Data

The land plan and maps required for geo-referencing were provided by Sarguja Rail Corridor Private limited to M/s Geotrax International Services.

4.2 GIS Data Preparation

Based on the input data (maps, tower details) and information provided by Revenue Department of Surajpur, the DGPS base station - Primary and Temporary Benchmarks Control Points (PCP and TBM) in the project area are planned. One PCP with 72 hours observation was planned and established on the roof top of the Forest Department Guest House (Shiv Park), Surajpur. Using satellite imagery TBM are planned at an average of every 10km distance along the 132 KV Transmission line.



Fig-2: Satellite Image showing the location of the Primary Control Point

4.3 Establishment of Primary Control Point

The Primary Control Point (PCP) with 72 hours of DGPS Observation was established as the DGPS base station. The PCP was established in the roof top of the Forest Department Guest House (Shiv Park) in Surajpur. As per Survey of India (SOI) Guideline, the PCP is to be fixed through continuous observation for 72 hours duration. The 72 hours of observation was carried out using DGPS from 21stJan 2016 to 23rdJan 2016. The observed data was processed with reference to the data of International GNSS Service (IGS)



stations as per SOI guideline (IGS processed report is enclosed as Annexure-1).

The coordinate of the PCP is as follows:

Latitude: N23°12'52.39830", Longitude: E82°52'59.05540"

Easting: 692697.708m, Northing: 2568519.766m (as per UTM Zone 44N)

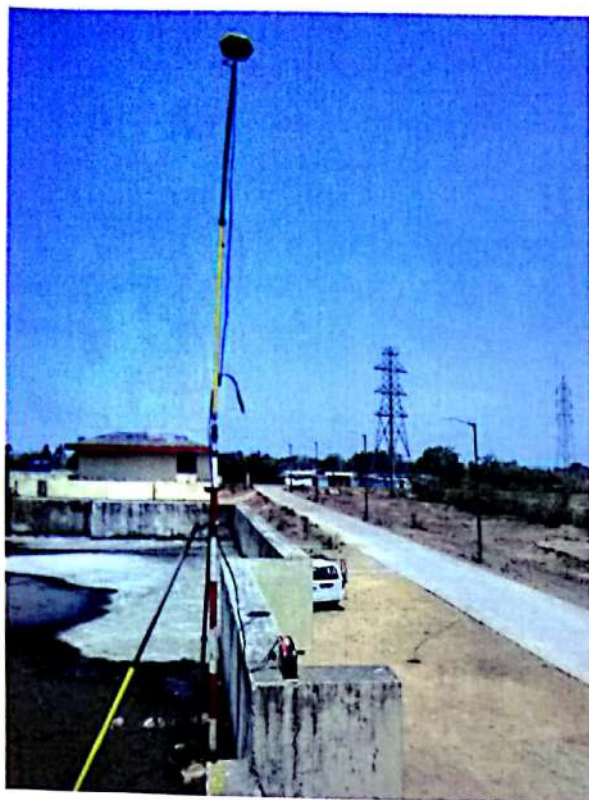
Elevation (EGM2008): 546.155m, Ellipsoidal Height: 486.573 m.



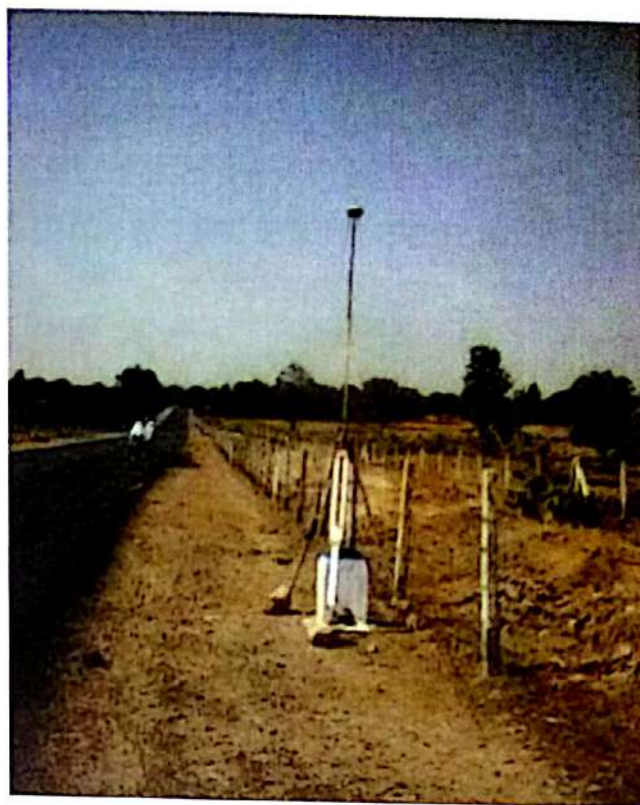
Fig-4: Images showing Primary Control Point (PCP)

4.4 Establishment of Secondary Control Point (SCP) & Temporary Bench Marks (TBM)

One Secondary Control Point is established at Satpata (Bishrampur) Substation office, Tehsil Pilkha, District Surajpur. Temporary Bench Marks established at an average of 10km distance on near permanent locations along the 132 KV tower corridor. The DGPS observation of 4 hours duration is carried out on the Secondary control points and Temporary Bench Marks is established with reference to Primary Control Point.



SCP 1 Substation office Satpata
(Bishrampur)



TBM 9 Mile stone (Ketka)

Fig-5: Images showing Secondary Control Point (SCP) & Temporary Bench Marks (TBM)

Table: 1 Showing Locations of the SCP & TBMS coordinates.

Sl No	Point Id	Latitude (d:m:s)	Longitude(d:m:s)	Ellipsoidal Heights Height(m)	Location
1	PCP Surajpur	23°12'52.37640"	82°52'59.00160"	485.081	Surajpur
2	SCP 1 (Substation office, Bishrampur)	23°10'38.71605"	82°56'58.19404"	488.532	Satpata
3	TBM 2	23°10'15.62529"	82°55'58.65143"	549.733	Keshawnagar
4	TBM 3	23°10'13.08993"	82°54'31.64471"	535.337	Beltikari
5	TBM 5	23°09'44.49086"	82°57'00.13575"	547.494	Dedari
6	TBM 6	23°08'31.38895"	82°56'44.57690"	549.397	Sapkara
7	TBM 7	23°08'27.48607"	82°55'18.06670"	560.531	Salka
8	TBM 8	23°08'20.31368"	82°53'48.00700"	589.873	Jobaga
9	TBM 9	23°08'45.27835"	82°52'56.97743"	604.074	Ketka
10	TBM 10	23°08'51.90705"	82°51'39.71560"	582.094	Ketka
11	TBM 11	23°09'00.00106"	82°51'08.74973"	575.277	Amgoan
12	TBM 12	23°09'25.83329"	82°49'23.00311"	562.327	Kot
13	TBM 13	23°09'43.70295"	82°47'40.74069"	571.897	Patna
14	TBM 14	23°09'11.33982"	82°46'25.58068"	550.259	Chandgikapur
15	TBM 15	23°08'47.86359"	82°45'43.40377"	541.907	Dawana
16	TBM 16	23°08'48.61157"	82°44'05.94488"	526.764	Kushalpur



4.5 DGPS Survey

DGPS survey was carried out using a pair of DGPS instrument. One DGPS Instrument was used as Base Station. The Base station for the survey was established at the nearest TBM. The distance between the Base Station PCP/TBM and rover was always less than 5km.

The other DGPS instrument was working as Rover. The survey was conducted in Real Time Kinematic (RTK) mode. The Survey team carried out DGPS Survey of 132KV tower centerline by walking along the corridor. DGPS readings were collected at every 50m distance along 132KV transmission line and at prominent locations such as culverts, bridges etc. were recorded. For Geo-referencing village maps on an average of 10 GCPs were collected for each village.

The static data is Post Processed using Trimble Business Centre software for obtaining the TBM coordinates.

4.6 Creation of Vector Layers of the 132KV Transmission Line

The power line centerline points captured through DGPS were plotted in the GIS Software and the centerline was created by joining the points. Along with power line centerline, the corridor points captured using DGPS were also plotted and the corridors were created. Several DGPS points (TBM) taken at prominent near-permanent locations were also plotted. After editing the layers, the final centerline and Tower line corridor is created as per the requirement of CSPTCL.



4.7 Geo-referencing of cadastral map

The Ground Control Points (GCP) fixed through DGPS survey were used to geo-reference the digitized cadastral maps by applying the co-ordinate value of the field observation to the corresponding point on the map.

4.8 Creation of Forest Patches

After application of geometric corrections (geo-referencing of cadastral), and overlaying the 132KV power line corridor layer, the forest patches were extracted from individual cadastral map (as per land schedule revenue forest and non-forest khasra are identified) along with computation of DGPS co-ordinates of forest land patch boundary.

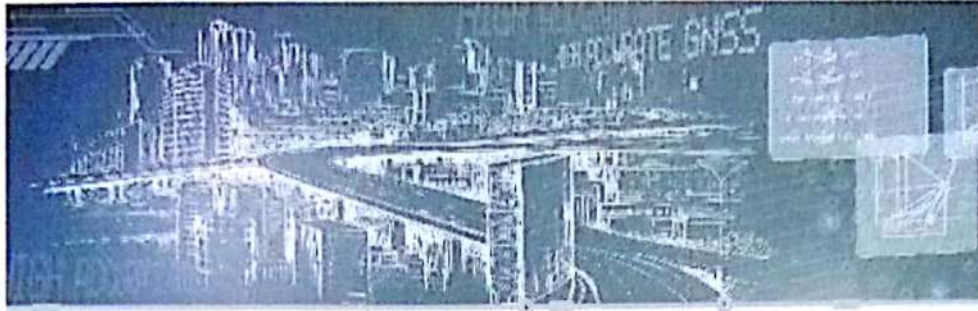
4.9 Specification of DGPS Equipment

Geotrax deployed the most advance and hi-precision devices to carry out the DGPS survey. The DGPS performance specifications are given below. The corresponding fact sheets are placed below for ready reference.



COMNAV

T300 GNSS Receiver



Features

- Ultra small
- Super light
- Many user-friendly conveniences built in
- GPS L1/L2/L5, BeiDou B1/B2/B3, GLONASS L1/L2
- Low power consumption
- Support long baseline E-RTK

RTK robust enough for challenging environments, in a device that is light and easy to carry

With decades of experience in the surveying GNSS receiver, the T300 is a product which combines lots of market proved advantages together. It can track all the working GNSS constellations. By using ComNav's unique QUAN™ algorithm technology, it can function in RTK mode with all the GNSS constellations or by using any single GNSS constellation such as GLONASS or BeiDou. The strong anti-interference ability of the receiver makes it possible to work in any environment.

Design driven to improve user experience

Our R&D people are always thinking about how to improve the physical experience of users and workflow in the field. With this in mind, the T300 integrates a cutting edge GNSS board, Bluetooth®, UHF (Rx&Tx) into a compact board. Smart design makes the T300 the lightest and smallest (volume) receiver in the world.

Hot swap battery design

Extending the field working time is also a passion for our R&D people. They do lots of tests and analysis to reduce the power consumption, and make the whole system work more efficiently. In parallel, they've designed in the capability to hot swap the battery source. When the working sounds and LED flashes, put your second battery in place. Then recharge the first while you keep working.

Consumer grade batteries... always available

Working power in the field is significantly inconvenient for users, as the batteries for GNSS receivers are often unusual types and not readily available. Once again our R&D people developed a solution so that the T300 runs on normal consumer batteries.



Technical Specifications

T300

Signal Tracking

- 256 channels with simultaneously tracked satellite signals
- GPS: L1 C/A, L1 C, L2 P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1, L2
- SBAS: WAAS, EGNOS, MSAS, GAGAN

Performance Specifications

- Cold start: <50 s
- Warm start: <30 s
- Hot start: <15 s
- Initialization time: <10 s
- Singal re-acquisition: <2 s
- Initialization reliability: >99.9%

Positioning Specifications

- Post Processing Static
 - Horizontal: 2.5 mm + 0.5 ppm RMS
 - Vertical: 5 mm + 0.5 ppm RMS
- Real Time Kinematic
 - Horizontal: 8 mm + 1 ppm RMS
 - Vertical: 15 mm + 1 ppm RMS
- E-RTK* (baseline<100 km)
 - Horizontal: 0.2 m + 1 ppm RMS
 - Vertical: 0.4 m + 1 ppm RMS
- Code differential GNSS positioning
 - Horizontal: 0.25 m + 1 ppm RMS
 - Vertical: 0.5 m + 1 ppm RMS
- SBAS: Typically <1 m 3D RMS
- Standalone: <1.5 m 3D RMS

Communications and Memory

- 1 Serial port (7 pin Lemo), Baud rates up to 921,600 bps.
- Radio modem: Tx/Rx with full frequency range from 410-470 MHz²
 - Transmit power: 0.5-2W adjustable
 - Range: 1-4 km
- Position data output rates: 1 Hz, 2 Hz, 5 Hz, 10 Hz
- 5 LEDs (indicating Power, Satellite Tracking, Bluetooth[®] and Differential Data)
- Bluetooth[®]: V 2.X protocol, work compatible with Windows 7, Windows mobile and Android

Data Format

- Correction data I/O:
 - RTCM 2.x, 3.x, CMR (GPS only), CMR+ (GPS only)
- Position data output:
 - ASCII: NMEA-0183 GSV, RMC, HDT, VHD, GGA, GSA, ZDA, VTG, GST, PJK, PTNL
 - ComNav Binary update to 20 Hz

Physical

- Size(WxH): 15.8 cm x 7.5 cm
- Weight: 0.95 kg (include 2 batteries)

Environmental

- Operating temperature: -40 °C to +65 °C (40 °F to 149 °F)
- Storage temperature: -40 °C to +65 °C (40 °F to 185 °F)
- Humidity: 100% condensation
- Waterproof and dust proof: IP67 protected from temporary immersion to depth of 1 meter, floats
- Shock: survives a 2 meter drop on to concrete

Electrical

- Input Voltage: 5-27 VDC
- Power consumption: 2.85 W (3 constellations)³
- Li-ion battery capacity: 2 x 1800 mAh, up to 8 hours typically
- Memory: 256 MB internal with up to 16 GB pluggable memory card

Software

- ComNav field data collection software CGSurvey
- Carlson's SurvCE field data collection software (optional)
- MicroSurvey's FieldGenius field data collection software (optional)

1 E-RTK, BeiDou B3 signal used in RTK calculate engine; concern the current situation, this mode can be used in APAC.

2 410-470 MHz, 3 frequency range, 410-430, 430-460, 460-470, need to clarify when place the order.

3 Power consumption will increase if using internal radio modem transmitter.

Specifications subject to change without notice.

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5. Results

The forest area proposed for diversion is computed from the Geo-referenced map and the area of each Revenue Forest Khasra was compared with the village ROR data given by Revenue Department. DGPS Survey processing report and co-ordinates of the PCP are in Annexure-1, and DGPS coordinates of TBM and 132KV transmission line Centerline coordinates is in Annexure-2. The geo-referenced co-ordinates of forest land patches for each village is in Annexure -3.

The area statement is given in the following below tables:

Total Forest Diversion Area Summary

Area Statement of Forest Area proposed for diversion			
Sl.No.	District Name	Revenue Forest Area (Ha)	Protected Forest Area (Ha)
1	Surajpur	4.253	0.687
	TOTAL		4.940

AREA STATISTICS OF PROTECTED FOREST AND RESERVE FOREST LAND PROPOSED TO BE DIVERTED IN SURAJPUR DIVISION						
SL NO	DIVISION	RANGE	TYPE OF LAND	PATCH NO	COMP NO	AREA IN Ha.
1	SURAJPUR	RAMANUJNAGAR	Protected Forest	PATCH NO -19	P 1777	0.341
2			Protected Forest		P 1777	0.346
TOTAL AREA						0.687

SCHEDULE OF TOTAL FOREST DIVERSION LAND

TABLE - A	SCHEDULE OF FOREST LAND - PROTECTED FOREST & RESERVE FOREST						
	SR. NO.	PATCH NO.	DIVISION	RANGE	COMPARTMENT TYPE	COMARTMENT NUMBER	DIVERSION AREA (in HA)
	1	PATCH-19	SURAJPUR	RAMANUJNAGAR	PROTECTED FOREST	P 1777	0.341
2	PROTECTED FOREST				P 1777	0.346	
TOTAL FOREST AREA							0.687

वनपरिक्षेत्राधिकारी
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Geotrax 2017

Range Officer
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H.O. HYD
B.O. RPR
S.P. Singh
Divisional Forest Officer
Surajpur Division, Surajpur (C.G.)



SCHEDULE OF FOREST LAND - REVENUE FOREST (CJJ + BJJ)

SR. NO.	PATCH NO.	DISTRICT	TEHSIL	VILLAGE NAME	KHASRA NUMBER	DIVERSION AREA (in HA)	
1	PATCH NO - 1	Surajpur	Pilkha	Salka	1878	0.052	
2	PATCH NO - 2			Salka	1430	0.019	
3	PATCH NO - 3			Salka	1423	0.052	
4	PATCH NO - 4			Salka	1419	0.048	
5	PATCH NO - 4			Salka	1417	0.014	
6	PATCH NO - 5			Salka	1408	0.142	
7	PATCH NO - 5			Salka	1385	0.652	
8	PATCH NO - 5			Salka	1406	0.127	
9	PATCH NO - 5			Salka	1387	0.007	
10	PATCH NO - 6			Salka	294	0.063	
11	PATCH NO - 7		Surajpur	Pondi	Pondi	674	0.082
12	PATCH NO - 8				Pondi	250	0.285
13	PATCH NO - 9				Pondi	43	0.046
14	PATCH NO - 9				Pondi	57	0.045
15	PATCH NO - 9				Pondi	50	0.369
16	PATCH NO - 10				Jobaga	38	0.019
17	PATCH NO - 11				Jobaga	31	0.146
18	PATCH NO - 11				Jobaga	18	0.183
19	PATCH NO - 11				Jobaga	19/1	0.073
20	PATCH NO - 12				Ketaka	1624	0.073
21	PATCH NO - 12		Ketaka	1625	0.172		
22	PATCH NO - 13		Ketaka	846	0.060		
23	PATCH NO 14		Ketaka	754	0.009		
24	PATCH NO - 15		Ketaka	564	0.001		
25	PATCH NO - 16		Ketaka	83	0.008		
26	PATCH NO - 17		Ramanujnagar	Amagaon	Amagaon	736	0.087
27	PATCH NO - 18				Patna	16	0.006
28	PATCH NO - 19				Rampur	536	0.105
29	PATCH NO - 19				Chandrikapur	161	0.099
30	PATCH NO - 20				Chandrikapur	158	0.016
31	PATCH NO - 21				Chandrikapur	180	0.579
32	PATCH NO - 21				Chandrikapur	184	0.002
33	PATCH NO - 22				Chandrikapur	83	0.179
34	PATCH NO - 23				Chandrikapur	54	0.002
35	PATCH NO - 24				Chandrikapur	64	0.016
36	PATCH NO - 25 & 27				Dawana	1083	0.129
37	PATCH NO - 26				Dawana	1091	0.023
38	PATCH NO - 28				Dawana	1127/1	0.062
39	PATCH NO - 29				Dawana	936	0.027
40	PATCH NO - 30				Saraipara	356	0.008
41	PATCH NO - 31				Saraipara	103	0.116
42	PATCH NO - 32		Ramanujnagar	1056	0.050		
Total Area						4.253	
TOTAL FOREST LAND (TABLE A+TABLE B)						4.940	

TABLE - B

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Range Officer
 Ramanujnagar

S.D.O.



वन परिक्षेत्राधिकारी
वन परिक्षेत्र सूरजपुर



Non-Forest Area statement in Surajpur district

SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
1	Surajpur	Pilkha	Satpata	Private Area	Private Area	769	0.006
2						770	0.029
3						771	0.001
4						776/1	0.148
5						776/2	0.005
6						777	0.048
7						778	0.001
8						779/2	0.03
9						779/3	0.238
10						778	0.007
11						911	0.005
12						912	0.119
13						910/2	0.045
14						913	0.089
15						914	0.010
16						909	0.065
17						907	0.138
18						905	0.106
19						904	0.043
20						894/1	0.075
21						894/2	0.057
22						895	0.042
23						896	0.009
24						897	0.221
25						898	0.104
26						889	0.062
27						885	0.015
28						888	0.153
29	Surajpur	Pilkha	Harratikra	Private Area	Private Area	109/2	0.188
30						106/2	0.013
31						106/1	0.195
32						107/2	0.116
33						107/1	0.090
34						102/1	0.039
35						102/2	0.155
36						101	0.021
37						98	0.111
38						97	0.002
39						99/2	0.100
40						99/1	0.001
41						30	0.105

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SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
42						21	0.084
43						23/2	0.221
44						22	0.051
45						23/1	0.004
46						18/5	0.002
47						18/4	0.082
48						18/3	0.169
49						18/2	0.012
50						747	0.055
51						744	0.048
52						745/919	0.076
53						745	0.029
54	Surajpur	Pilkha	Satpata	Private Area	Private Area	742	0.007
55						743	0.124
56						739	0.002
57						740	0.054
58						738	0.434
59				Govt	River	82	0.391
60						84/2	0.001
61						85	0.097
62						86	0.005
63						101	0.146
64						100	0.160
65						102	0.061
66						103/1	0.016
67						112	0.085
68						110	0.002
69						113	0.195
70						111	0.008
71				Private Area	Private Area	115	0.014
72	Surajpur	Pilkha	Dedari			114	0.161
73						123	0.047
74						133/1	0.007
75						124/2	0.128
76						128/2	0.050
77						132/1	0.095
78						128/1	0.005
79						131	0.032
80						129	0.105
81						126	0.092
82				Govt	Road	215	0.111
83						148	0.021
84				Private Area	Private Area	298	0.018
85						309/1	0.201


E.E. (EHT)
 Contn.- Dn.



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
86						299	0.006
87						308	0.045
88						307/4	0.233
89						305	0.077
90						313/1	0.178
91						314/1403	0.094
92						325/3	0.142
93						324	0.103
94						340	0.099
95						341/5	0.042
96						341/6	0.053
97						344	0.122
98						345	0.061
99						343/2	0.179
100						372	0.115
101						371	0.003
102						363	0.250
103						354/1	0.030
104						354/3	0.009
105						364	0.093
106						454/1	0.108
107						445	0.027
108						446	0.105
109						445/1396	0.059
110						447	0.011
111						449	0.055
112						454/3	0.036
113						450	0.128
114						452	0.176
115				Govt	Road	886	0.043
116						878	0.079
117						876	0.018
118						879	0.065
119						913	0.036
120						874	0.049
121						914	0.062
122						915	0.021
123				Private Area	Private Area	873	0.058
124						916/1	0.021
125						916/2	0.077
126						870	0.268
127						866	0.048
128						869/1	0.090
129						867	0.051

E.E. (EHT)
 Contrn.- Dn.
 C.S.P.T.C.L. Korba



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
130						936	0.030
131						868	0.188
132				Govt	Road	969	0.012
133						952	0.075
134						953	0.050
135						950	0.086
136						949	0.062
137						947	0.122
138						1047	0.005
139						1049	0.140
140						1050/1	0.050
141						1050/5	0.033
142						1071	0.049
143						1050/2	0.006
144						1050/4	0.041
145						1070	0.165
146				Private Area	Private Area	1076	0.181
147						1078	0.269
148						1075/2	0.027
149						1069/2	0.048
150						1093	0.112
151						1037	0.290
152						1110	0.097
153						1112	0.170
154						1117	0.072
155						1116	0.196
156						1121/1	0.018
157						1115/1	0.101
158						1113	0.094
159						1115/2	0.039
160						1114	0.142
161						6	0.082
162						5/2	0.049
163						7	0.007
164	Surajpur	Pilkha	Sapkara	Private Area	Private Area	4	0.239
165						2/1	0.013
166						2/2	0.159
167						26	0.130
168						1862	0.291
169						1864	0.014
170	Surajpur	Pilkha	Salka	Private Area	Private Area	1863	0.109
171						1889	0.086
172						1888/19	0.059
173						1888/18	0.058

E.E. (EHT)

Contn.- Dn.

G.S.P.T.C.L. Korba



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
174						1888/14	0.035
175						1888/15	0.049
176						1888/16	0.032
177						1888/17	0.022
178						1882	0.164
179						1881	0.088
180						1877/2	0.056
181						1877/1	0.009
182						1880	0.023
183				Govt	Road	1643	0.072
184						1699/3	0.113
185						1697	0.040
186						1698/2	0.077
187						1699/2	0.002
188						1696	0.034
189						1695	0.045
190						1698/1	0.012
191						1694	0.028
192						1696/1987	0.054
193						1672/3	0.028
194						1672/2	0.124
195						1671	0.001
196						1666	0.037
197						1672/1	0.024
198						1674	0.001
199						1675	0.007
200						1676	0.501
201				Private Area	Private Area	1677/2	0.011
202						1678/2	0.091
203						1678/1	0.078
204						1679	0.123
205						1564/2	0.052
206						1563	0.094
207						1564/1	0.172
208						1565	0.040
209						1457/2	0.052
210						1566/1	0.020
211						1567	0.053
212						1457/1	0.032
213						1568	0.130
214						1456/1	0.029
215						1456/2	0.042
216						1455/1	0.106
217						1455/2	0.051

E.E. (EHT)
Contn.- Dn.

C.S.P.T.C.L. Korba



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
218						1458	0.114
219						1460/3	0.052
220						1460/2	0.043
221						1460/1	0.053
222						1463	0.128
223						1464/1	0.002
224						1466	0.001
225						1465	0.245
226						1469	0.027
227						1471/2	0.129
228						1471/1	0.036
229						1428	0.062
230						1472	0.021
231						1427	0.031
232						1426	0.030
233						1425	0.034
234						1424	0.032
235						1421	0.054
236						1422	0.057
237						1431	0.026
238						1420	0.001
239						1418	0.180
240						1409	0.020
241						1382/1982	0.009
242						1386	0.175
243						293/4	0.085
244						293/7	0.038
245						292	0.105
246						293/8	0.038
247						293/9	0.033
248						291	0.003
249						283/2	0.046
250						283/3	0.064
251						282	0.074
252						281	0.226
253						280	0.079
254						686	0.064
255						687	0.009
256						685	0.050
257	Surajpur	Surajpur	Pondi	Private Area	Private Area	683	0.103
258						684	0.028
259						676	0.227
260						677	0.226
261						672	0.039

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C.S.P.T.C.L. Korba



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
262						673	0.334
263						249	0.038
264						246	0.101
265						245	0.012
266						257	0.240
267						258	0.043
268						235	0.192
269						212/1	0.064
270						212/2	0.048
271						213	0.379
272						202	0.545
273						177	0.075
274						178	0.083
275						179	0.059
276						182	0.162
277						133	0.333
278						132	0.028
279						130	0.034
280						129	0.177
281						128	0.116
282						117	0.578
283						116	0.018
284						113	0.187
285						109	0.292
286						110	0.041
287						108	0.097
288						56	0.051
289						55	0.001
290						40	0.085
291						39	0.280
292						39	0.098
293						42	0.494
294	Surajpur	Surajpur	Jobaga	Private Area	Private Area	35	0.130
295						30	0.006
296						23	0.274
297						1626/2	0.154
298						1621/6	0.006
299						1621/5	0.045
300						1621/4	0.034
301	Surajpur	Surajpur	Ketaka	Private Area	Private Area	1621/3	0.040
302						1621/2	0.049
303						1621/1	0.058
304						1630	0.105
305						1618	0.007


E.E. (EHT)

 Contn.- Dn.

C.S.P.T.C.L. Korba



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
306						1617/3	0.165
307						1617/2	0.046
308						1617/1	0.039
309						1615	0.043
310						1616	0.155
311						827	0.042
312						860	0.146
313						859	0.056
314						858	0.109
315				Govt	Mortgage	862	0.287
316						863	0.121
317						864	0.048
318						849	0.186
319						848/1	0.143
320				Private Area	Private Area	847	0.005
321						844	0.144
322						843	0.030
323						842/3	0.058
324						1450	0.061
325				Govt	Road	746/3	0.192
326						774	0.048
327						746/2	0.288
328				Private Area	Private Area	752	0.132
329						753/2	0.084
330						691	0.101
331				Govt	Road	736	0.005
332						725	0.065
333						724	0.082
334						716/1	0.094
335						717	0.180
336						716/2	0.059
337						718	0.058
338						714	0.171
339						713/2	0.057
340						713/1	0.054
341				Private Area		701/1	0.020
342						701/2	0.036
343						700	0.040
344						565	0.318
345						566	0.004
346						568/2	0.100
347						568/1	0.112
348						569	0.068
349						571/2	0.053


E.E. (EHT)
Contn.- Dn.



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
350						571/1	0.057
351						570	0.006
352						526	0.028
353						417	0.313
354						414	0.002
355						420	0.079
356						413	0.046
357						412	0.056
358						421/2	0.038
359						421/1	0.055
360						402/4	0.002
361						400	0.069
362						401	0.147
363						396/2	0.005
364						396/1	0.381
365						395	0.001
366						397	0.003
367						317/6	0.048
368						317/5	0.043
369						317/4	0.023
370						316	0.048
371						317/3	0.006
372						315	0.055
373						318	0.101
374						319	0.191
375						320	0.153
376						322/2	0.059
377						322/1	0.019
378						323/2	0.104
379						324	0.096
380						325	0.077
381						366/2	0.036
382						326/2	0.102
383						327	0.143
384						328/3	0.058
385						328/2	0.049
386						328/1	0.066
387						329/5	0.093
388						329/3	0.107
389						329/4	0.039
390						329/2	0.007
391						330	0.154
392						331	0.176
393						109	0.077

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C.S.P.T.C.L. Korba



SL. NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
394				Govt	Road	217	0.069
395						108	0.110
396						111	0.072
397						113	0.040
398						110	0.136
399						116	0.025
400						115	0.051
401						114	0.111
402						100	0.130
403						118	0.018
404						99/1	0.081
405						99/2	0.087
406				Private Area	Private Area	99/5	0.077
407						99/3	0.104
408						99/4	0.022
409						98	0.073
410						120/5	0.003
411						120/4	0.110
412						89	0.113
413						91	0.158
414						81/3	0.067
415						81/4	0.300
416						82	0.020
417						79	0.106
418						72/2	0.229
419				Private Area	Private Area	906	0.191
420				Govt	Road	907	0.031
421						898	0.030
422						899	0.028
423						897	0.015
424						895	0.124
425						896	0.007
426						884	0.001
427						894	0.173
428	Surajpur	Ramanujnagar	Amagaon			893	0.093
429				Private Area	Private Area	890	0.088
430						891	0.015
431						889	0.028
432						888	0.111
433						870	0.021
434						872	0.076
435						874	0.025
436						871	0.005
437						875	0.039

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E.E. (EHT)
Contn.- Dn.



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
438						829	0.126
439						845	0.003
440						831	0.001
441						830	0.090
442						836	0.355
443						837	0.001
444						835	0.170
445						793	0.092
446						794	0.118
447						795	0.312
448						778	0.050
449						779	0.054
450						770	0.001
451						776/2	0.127
452						776/1	0.025
453						775	0.077
454						771/1	0.292
455						771/2	0.214
456						754	0.056
457						753	0.134
458						751	0.024
459						750	0.004
460						749	0.101
461						747	0.009
462						748	0.051
463						741	0.199
464						733	0.056
465						732/4	0.178
466						734	0.077
467						732/3	0.020
468						709	0.028
469						718	0.030
470						710	0.061
471						711	0.073
472						716	0.074
473						717	0.038
474						715	0.047
475						714	0.107
476						712	0.104
477						713	0.010
478						61	0.099
479						60	0.163
480						57	0.178
481						58	0.077

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E.E. (EHT)

Contn.- Dn.

C.S.P.T.C.L. Korba



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
482						51	0.066
483						52	0.013
484						43	0.206
485						42	0.103
486						41	0.053
487						40	0.116
488						37	0.014
489						39	0.004
490						28	0.058
491						741	0.007
492						738	0.033
493						736	0.087
494				Private Area	Private Area	735	0.073
495						734	0.054
496						733	0.144
497						732	0.198
498				Govt	Water Land	730	0.087
499						726	0.043
500					Private Area	700	0.177
501						702	0.356
502						704	0.074
503						694	0.117
504						693	0.151
505						690/2	0.129
506						690/1	0.127
507						685	0.008
508	Surajpur	Ramanujnagar	Kot			684/2	0.038
509						684/1	0.007
510						683/2	0.086
511				Private Area		683/1	0.021
512					Private Area	682	0.217
513						681/1	0.053
514						681/2	0.028
515						680	0.031
516						681/3	0.031
517						679	0.025
518						677	0.046
519						676	0.012
520						664	0.060
521						675	0.141
522						668	0.047
523						672	0.251
524				Govt	Road	449	0.031
525				Private Area	Private Area	454	0.076

E.E. (EHT)
 Contn.- Dn.
 C.S.P.T.C.L. Korba



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
526						460	0.175
527						459	0.117
528						458	0.214
529						482	0.061
530						483	0.087
531						484/2	0.119
532						480	0.400
533						503	0.087
534						504/3	0.156
535						504/2	0.137
536						518	0.096
537						504/1	0.077
538						517	0.244
539						515	0.034
540						516	0.172
541						510/3	0.020
542						513	0.090
543				Govt	Water Land	512	0.051
544					River	511	0.044
545				Govt	River	1063	0.033
546						850	0.023
547				Private Area	Private Area	1054	0.058
548						1056	0.019
549						1055	0.097
550				Govt	Road	1057	0.040
551						579	0.022
552						1061	0.156
553						1060	0.047
554						1058	0.004
555						596	0.042
556				Private Area	Private Area	1059/1	0.05
557	Surajpur	Ramanujnagar	Chandrapur			1059/4	0.002
558						1059/3	0.019
559						1059/2	0.025
560						595	0.024
561						582	0.007
562				Govt	Mortgage	594	0.013
563						593	0.012
564						583	0.092
565						592	0.031
566				Private Area	Private Area	584	0.077
567						585	0.100
568						588	0.093
569						586	0.081

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C.S.P.T.C.L Korba



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
570				Govt	Nala	581	0.008
571				Private Area	Private Area	587	0.057
572				Govt	Road	576	0.039
573						575	0.110
574						574	0.127
575						573	0.023
576						548	0.418
577						545	0.087
578						271	0.304
579						269	0.156
580						268	0.014
581						267	0.443
582				Private Area	Private Area	277	0.022
583						265	0.004
584						266	0.111
585						282/1	0.209
586						263/2	0.018
587						262	0.031
588						260	0.207
589						261	0.007
590						282/3	0.066
591						283	0.001
592				Govt	Road	235	0.026
593						183	0.157
594						184	0.062
595						182	0.249
596						139	0.318
597						175	0.136
598				Private Area	Private Area	140	0.100
599						141	0.206
600						142	0.062
601						131	0.199
602						130	0.174
603						129	0.090
604						82	0.230
605						25	0.064
606						24/1	0.262
607						31	0.108
608	Surajpur	Ramanujnagar	Patna	Private Area	Private Area	32	0.234
609						34	0.082
610						24/2	0.471
611						17	0.005
612						14/1678	0.139
613	Surajpur	Chandrikapur	Chandrikapur	Private Area	Private Area	162/2	0.316



SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
614						162/1	0.546
615						164/2	0.053
616						164/1	0.183
617						152/1	0.316
618						168	0.127
619						169/2	0.066
620						169/1	0.236
621						174/1	0.248
622						177	0.255
623						178	0.194
624						179/4	0.212
625						179/3	0.099
626						179/2	0.030
627						185	0.082
628						187	0.345
629				Govt	Unmetteled Road	121	0.027
630						102	0.090
631						101	0.306
632						96/5	0.008
633						96/3	0.281
634				Private Area	Private Area	96/1	0.358
635						96/2	0.095
636						19	0.491
637						31/2	0.046
638						30	0.385
639				Govt	Unmetteled Road	28	0.121
640						84	0.082
641						41	0.134
642						42	0.095
643						43	0.011
644						45	0.191
645						46	0.116
646						48	0.050
647						49	0.094
648				Private Area	Private Area	50	0.284
649						53	0.364
650						51	0.007
651						55	0.024
652						52	0.013
653						56	0.341
654						57/1	0.139
655						57/2	0.076

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SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
656						60/1	0.064
657						61	0.040
658						59	0.117
659						66	0.084
660						65	0.220
661						63	0.071
662						1048	0.060
663						1047	0.102
664						1049	0.035
665						1050	0.145
666						1090	0.106
667						1089	0.165
668				Private Area	Private Area	1088	0.059
669						1057	0.061
670						1087	0.172
671						1086	0.091
672						1085	0.114
673						1084/2	0.137
674						1084/1	0.115
675				Govt	Unmetteled Road	1016	0.042
676						917	0.087
677						918	0.037
678						919	0.087
679						924	0.083
680	Surajpur	Ramanujnagar	Dawana			923	0.089
681						922	0.003
682						928/2	0.106
683						928/1	0.140
684						979	0.011
685						977	0.112
686						976	0.011
687				Private Area	Private Area	930	0.116
688						970	0.109
689						937	0.100
690						938	0.044
691						940	0.006
692						939	0.031
693						878	0.181
694						877	0.054
695						876	0.072
696						875	0.118
697						874	0.025
698						2	0.257

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SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
699						873/1	0.002
700						3/2	0.102
701						7	0.107
702						4/2	0.040
703						4/1	0.026
704						5	0.004
705						6	0.199
706						310	0.084
707						300	0.005
708						309	0.617
709						318	0.115
710						317	0.006
711						319	0.009
712						320	0.340
713						330	0.159
714						329/2	0.207
715						329/1	0.179
716						328	0.054
717						347	0.250
718						348	0.152
719						357	0.256
720				Private Area	Private Area	358	0.002
721						354	0.010
722						360	0.098
723	Surajpur	Ramanujnagar	Saraipara			657	0.100
724						359	0.072
725						656	0.014
726						379	0.342
727						381	0.172
728						401	0.128
729						382	0.044
730						400/1	0.107
731						399/2	0.027
732						404	0.004
733						400/2	0.039
734						405/2	0.053
735						405/1	0.203
736				Govt	Road	406	0.014
737						390	0.036
738				Private Area	Private Area	407	0.022
739				Govt	Nala	102	0.038
740				Private Area	Private Area	101	0.007
741				Govt	River	1	0.014
742	Surajpur	Ramanujnagar	Ramanujnagar	Govt	River	1046	0.130

E.E. (EHT)
Chandra Pr...

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SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
743						1058/3	0.100
744						1059/1	0.070
745						1060	0.252
746						1073/1	0.035
747						1067	0.007
748				Private Area	Private Area	1062	0.078
749						1061	0.122
750						1048	0.074
751						1063	0.153
752						1064	0.044
753				Govt	Road	750	0.032
754						772/6	0.254
755						836	0.121
756						835	0.098
757						834	0.041
758						831	0.112
759						828	0.089
760						827	0.109
761						826	0.164
762						825	0.059
763						819	0.058
764						816	0.029
765						818	0.011
766						817	0.115
767						807	0.101
768						803	0.119
769						802	0.247
770				Private Area	Private Area	800	0.130
771						801	0.010
772						799/17	0.022
773						799/16	0.023
774						799/15	0.025
775						799/14	0.029
776						799/13	0.029
777						879	0.038
778						799/1	0.039
779						626/1	0.046
780						600	0.088
781						601	0.072
782						602	0.133
783						608/3	0.019
784						603	0.066
785						606	0.001
786						607	0.083

(Signature)
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 Contn. - Dn.
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SL NO	DISTRICT	TEHSIL	VILLAGE NAME	LAND NAME	LAND TYPE	KHASRA NO	AREA (in Ha)
787						611	0.018
788						612/2	0.038
789						613/1	0.151
790						613/4	0.087
791						618/1	0.298
792						617	0.134
793						522/2	0.011
794						523	0.158
795						524	0.181
796						525	0.008
797				Govt	Road	303	0.066
798				Govt	Road	1136	0.153
799						1053	0.027
800				Private Area	Private Area	1063/2	0.012
801				Private Area		1064	0.046
802					Private Area	1062	0.004
803						1065	0.055
804				Govt	Unmetteled Road	1066	0.008
805				Govt	Road	903	0.037
806						885	0.030
807						886	0.078
808						887	0.048
809						888	0.015
810						889	0.089
811	Surajpur	Ramanujnagar	Kaushalpur			891/4	0.263
812						891/5	0.024
813						891/3	0.101
814						891/2	0.012
815				Private Area	Private Area	864	0.059
816						863	0.245
817						862/2	0.111
818						861/1	0.131
819						797	0.101
820						799	0.082
821						851	0.007
822						800/1	0.073
823						800/2	0.106
824						796	0.059
825						801/2	0.004
Total Area							77.759

E.E. (EHT)
 Contn.- Dn.
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6. Background of Organization

6.1 Company Profile: Geotrax

Geotrax International Services (www.geotrax.in) is a Professional Land Mapping and Services provider across India established in the year 1999. During the last 14+ years, we had an opportunity to execute a variety of surveying jobs all over India and in the Middle East to various customer specifications for RIS, LIS, and Municipal GIS oriented jobs. Cadastral Surveys using ETS/DGPS and Provision of Ground control conforming to stringent accuracy standards using high end instruments as RTK/GPRS DGPS is our specialty. We also have a UAV (Drone) and Ground Penetrating Radar (on Roaster).

Geotrax is headed by Mr. V.V.S Bandhakavi (Ex-Survey of India employee) who has more than 40+ years' experience in the field of surveying in India and abroad.

Some of our major clients include:

- Odisha Space Application Centre (ORSAC)
- Steel Authority of India (SAIL)
- National Thermal Power Corporation (NTPC)
- Survey Settlement and Land Records Department (Govt. Of Gujarat)
- Survey Settlement and Land Records Department (Govt. Of Madhya Pradesh)
- Irrigation Dept. (Govt. of Jammu and Kashmir)
- National Remote Sensing Agency (Hyderabad)
- Meinhardt India Private Limited (Delhi),
- Nagarjuna Construction Company (NCC, Hyderabad)
- Consulting Engineering Services (CES, New Delhi)
- Lee Associates of South Asia (LASA, Delhi)
- Power development Corporation (Govt. of Jammu and Kashmir)

Geotrax expertise covers:

- ❖ DGPS Surveys for Mining lease boundary, and Forest Diversion
- ❖ Consultancy services for Mining Plan & EIA
- ❖ Boundary and cadastral surveys using DGPS and Total station;
- ❖ Topographic surveys.
- ❖ Ground control surveys for photogrammetric projects, including Airborne GPS.
- ❖ Only one of the two companies in India who are empanelled by NRSA for DGPS survey for ground control point collection
- ❖ Route and alignment surveys combining conventional and photogrammetric methods.
- ❖ Construction and cross-section surveys (from road design to precision layout and quality control).

E.E. (EHT)
 Contn. Dn.
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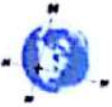
Being a client focused organization, Geotrax's combination of survey equipment, personnel, and computer resources allow for the tailoring of the project approach to match the orders of accuracy and precision requirements for each project. Geotrax's equipment resources include 250 DGPS, 33 hand-held GPS units, theodolites, electronic digital and automatic levels, 19 Electronic Total Stations, and data collectors.

On the mapping side, our CAD and GIS professionals assist the survey projects by creating accurate maps. We have dedicated CAD experts who have extensive experience with different CAD software.




7. Annexures

7.1 Annexure – 1: PCP Observation Processing Report



CSRS-PPP (V 1.05 34613)



comnav12

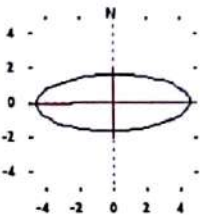
Data Start	Data End	Duration of Observations
2016-01-21 05:47:00.000	2016-01-23 16:44:00.000	58h 57m 0.00s
Apri / Aposteriori Phase Std		Apri / Aposteriori Code Std
0.015m / 0.009m		2.0m / 1.562m
Observations	Frequency	Mode
Phase and Code	L1 and L2	Static
Elevation Cut-Off	Rejected Epochs	Observation & Estimation Steps
10.000 degrees	26.19 %	30.00 sec / 30.00 sec
Antenna Model	APC to ARP	ARP to Marker
Unknown	Ant. not in PPP (0 m)	0.000 m

(APC = antenna phase center; ARP = antenna reference point)

Estimated Position for Base-Surajpur-Rd-Survey.160

	Latitude (+n)	Longitude (+e)	Ell. Height
ITRF08 (2016)	23° 12' 52.3982"	82° 52' 59.0553"	486.559 m
Sigmas(95%)	0.003 m	0.004 m	0.008 m
Apriori	23° 12' 52.515"	82° 52' 59.062"	539.808 m
Estimated - Apriori	-3.579 m	-0.203 m	-53.249 m

95% Error Ellipse (mm)
 semi-major: 4.621mm
 semi-minor: 1.622mm
 semi-major azimuth: 88° 56' 46.80"



UTM (North) Zone 44

2568519.763m (N) 692697.705m (E)

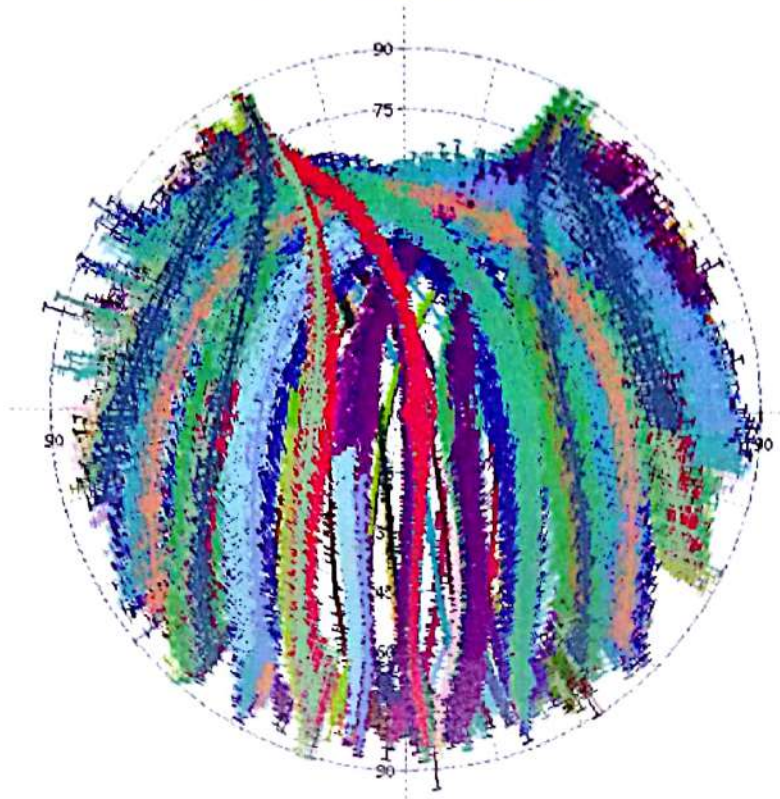
Scale Factors
 1.00005873 (point)
 0.99998236 (combined)

(Coordinates from RINEX file used as apriori position)



Estimated Parameters & Observations Statistics

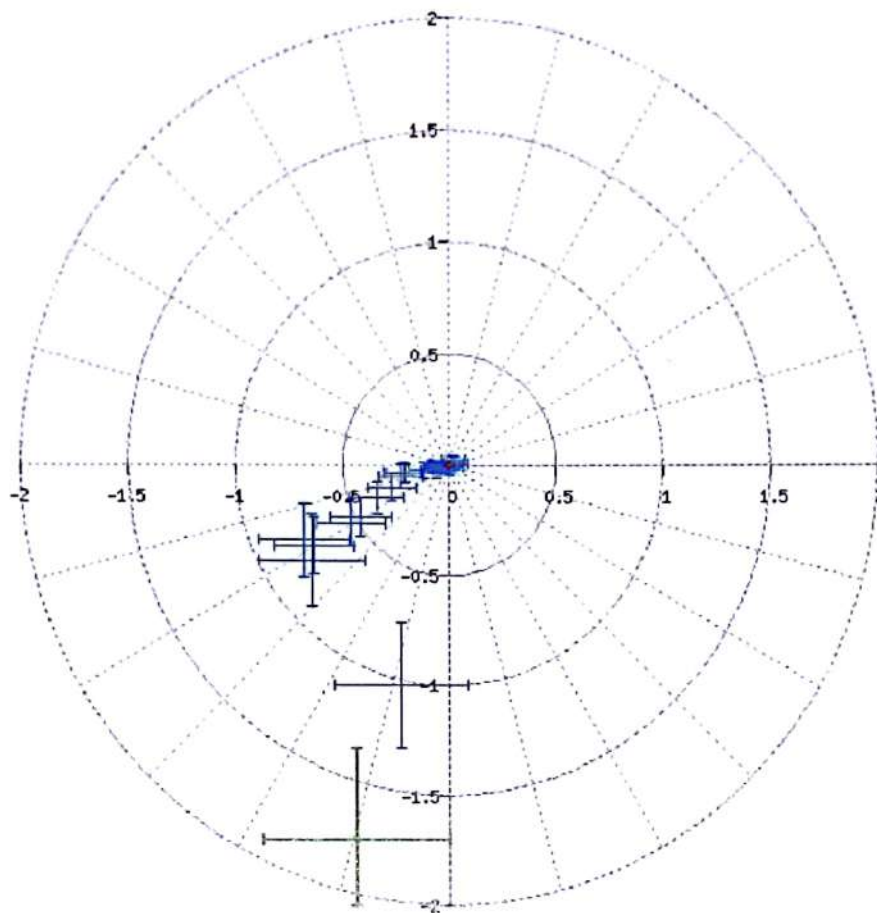
Pseudo-Range Residuals Sky Distribution



- | | | | | | | | |
|-------|-------|-------|-------|-------|------|------|------|
| PRN01 | PRN09 | PRN16 | PRN23 | PRN30 | R_05 | R_12 | R_20 |
| PRN02 | PRN10 | PRN17 | PRN24 | PRN31 | R_06 | R_13 | R_21 |
| PRN03 | PRN11 | PRN18 | PRN25 | PRN32 | R_07 | R_14 | R_22 |
| PRN05 | PRN12 | PRN19 | PRN26 | R_01 | R_08 | R_15 | R_23 |
| PRN06 | PRN13 | PRN20 | PRN27 | R_02 | R_09 | R_16 | R_24 |
| PRN07 | PRN14 | PRN21 | PRN28 | R_03 | R_10 | R_18 | |
| PRN08 | PRN15 | PRN22 | PRN29 | R_04 | R_11 | R_19 | |

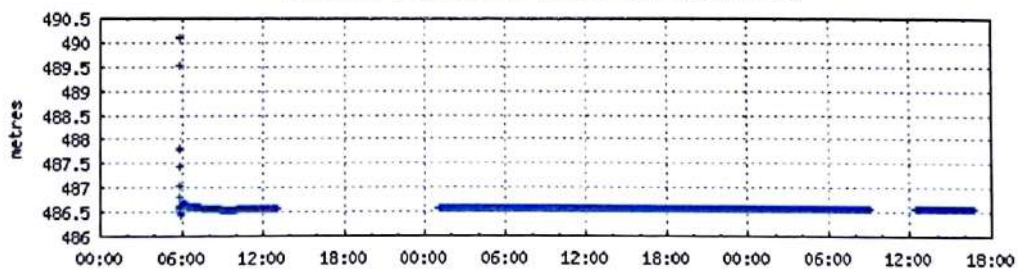


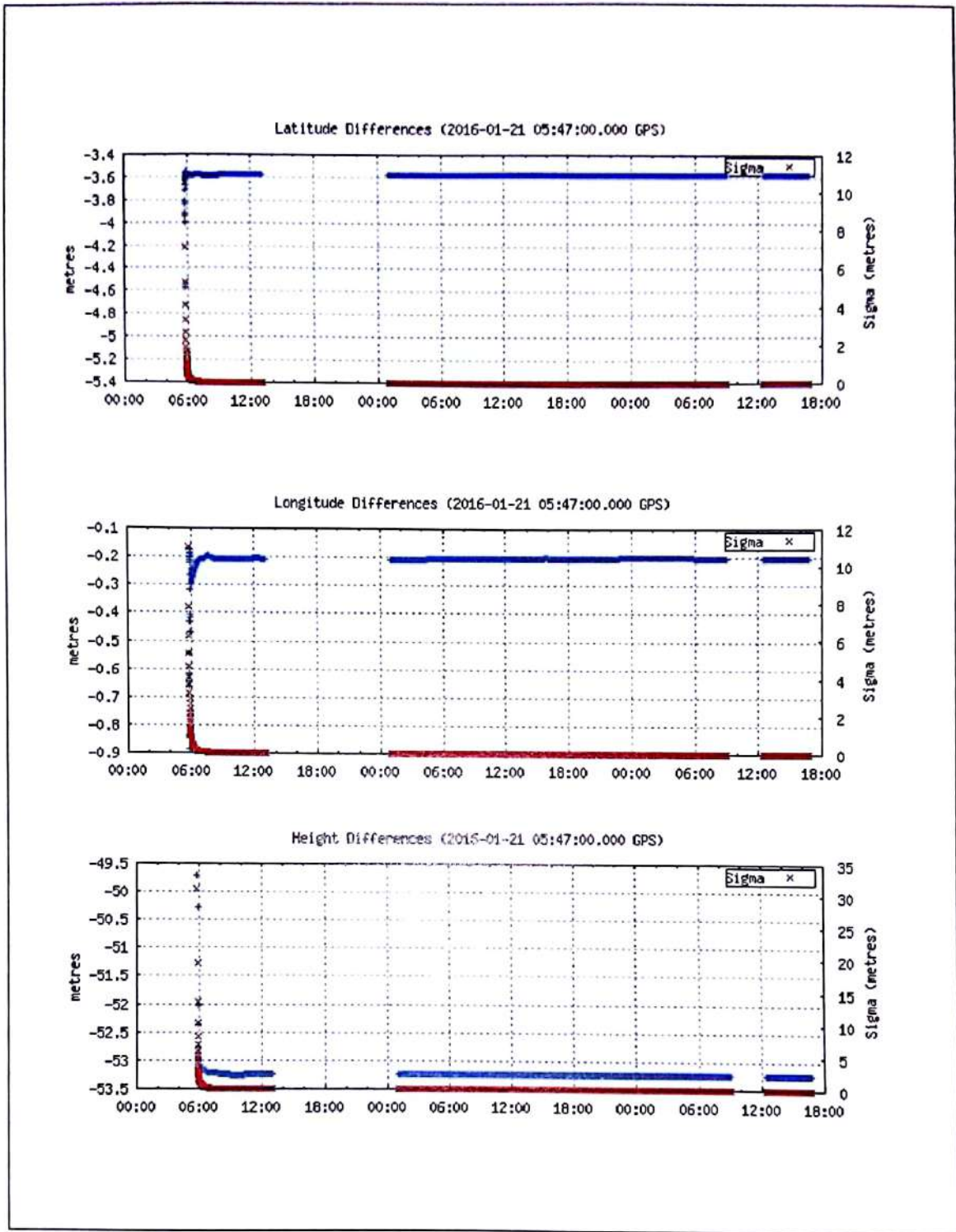
Corrections to a priori position (minus final corrections) (metres)



(1 sigma std of position corrections) / 25
(1 sigma std of initial position correction) / 25
(1 sigma std of final position correction) / 25

Ellipsoidal Height Profile (2016-01-21 05:47:00.000 GPS)

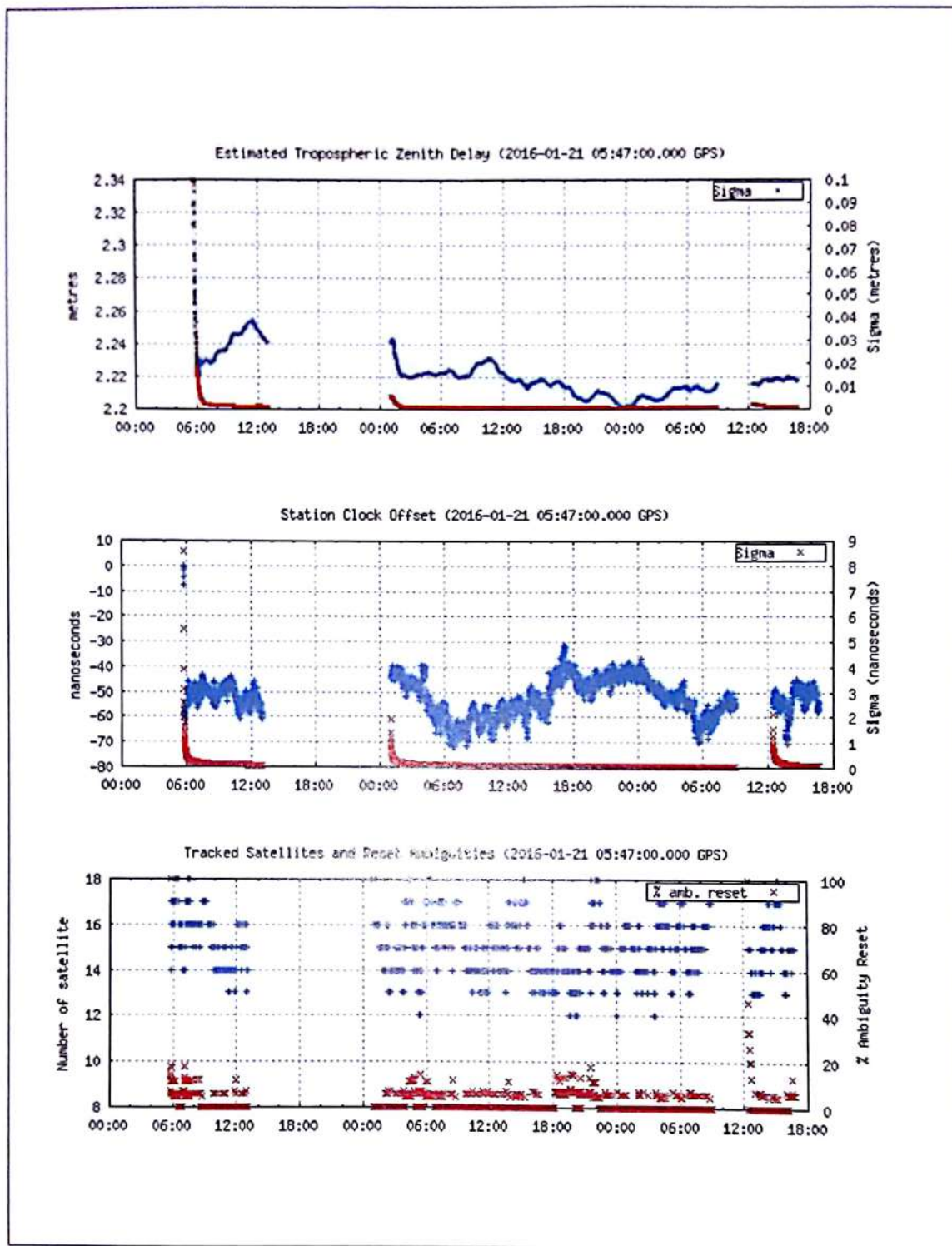




IGS Final

4

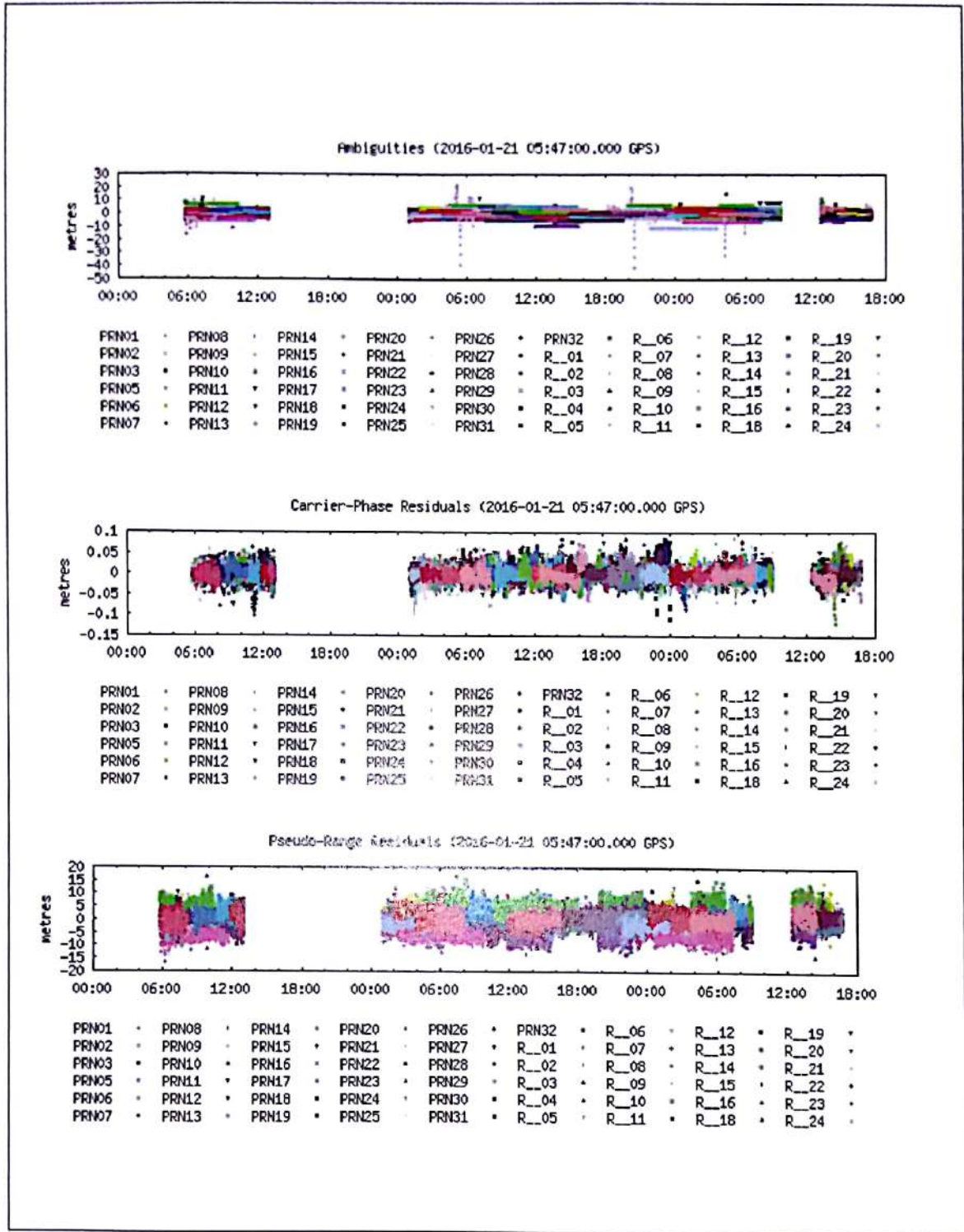
00:50:44 UTC 2016/05/02 / Base-Surajpur-Rd-Survey.16o



00:50:44 UTC 2016/05/02 / Base-Surajpur-Rd-Survey 16o

5

IGS Final





--- Disclaimer ---
Natural Resources Canada does not assume any liability deemed to have been caused directly or indirectly by any content of its PPP-On-Line positioning service.

If you have any questions, please feel free to contact:

Geodetic Survey Division
Canada Centre for Remote Sensing
Natural Resources Canada
Government of Canada
615 Booth Street, Room 440
Ottawa, Ontario K1A 0E9
Phone: 613-995-4410 FAX: 613-995-3215
EMail: information@geod.nrcan.gc.ca



Natural Resources Canada Ressources naturelles Canada

Canada



7.2 Annexure – 2: DGPS Surveyed co-ordinate of Centreline Points

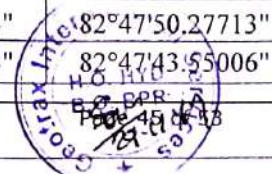
Sr. No.	Angle Point	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
Tapping with EAP 6					
1	AP 1	701214.611	2563958.745	23°10'20.49681"	82°57'56.37648"
2	AP 2	701290.528	2563781.411	23°10'14.70005"	82°57'58.96092"
3	G1	701283.968	2563731.843	23°10'13.09195"	82°57'58.70677"
4	G2	701277.407	2563682.276	23°10'11.48386"	82°57'58.45262"
5	AP 3	701270.725	2563631.789	23°10'09.84596"	82°57'58.19376"
6	AP 4	701179.082	2563565.037	23°10'07.71670"	82°57'54.94069"
7	G3	701168.005	2563537.157	23°10'06.81545"	82°57'54.53809"
8	G4	701149.543	2563490.690	23°10'05.31336"	82°57'53.86708"
9	AP 5	701123.387	2563424.858	23°10'03.18525"	82°57'52.91643"
10	AP 6	700842.390	2563258.981	23°09'57.91732"	82°57'42.96050"
11	6 A	700719.556	2563298.388	23°09'59.25184"	82°57'38.66146"
12	AP 7	700596.356	2563337.912	23°10'00.59032"	82°57'34.34956"
13	7 A	700488.272	2563285.778	23°09'58.94319"	82°57'30.52566"
14	7 B	700146.005	2563120.692	23°09'53.72732"	82°57'18.41672"
15	7 C	699929.834	2563016.433	23°09'50.43310"	82°57'10.76901"
16	AP 8	699699.900	2562905.541	23°09'46.92921"	82°57'02.63451"
17	8 A	699540.865	2562639.444	23°09'38.35006"	82°56'56.91921"
18	8 B	699371.563	2562356.182	23°09'29.21740"	82°56'50.83516"
19	8 C	699207.387	2562081.508	23°09'20.36158"	82°56'44.93555"
20	AP 9	699053.353	2561823.815	23°09'12.05316"	82°56'39.40059"
21	9 A	699058.384	2561543.860	23°09'02.95218"	82°56'39.44610"
22	9 B	699063.416	2561263.905	23°08'53.85119"	82°56'39.49162"
23	9 C	699068.447	2560983.951	23°08'44.75020"	82°56'39.53714"
24	AP 10	699073.643	2560694.810	23°08'35.35058"	82°56'39.58418"
25	10 A	698808.214	2560482.331	23°08'28.55980"	82°56'30.15614"
26	AP 11	698547.371	2560273.533	23°08'21.88653"	82°56'20.89123"
27	11 A	698255.499	2560342.897	23°08'24.26706"	82°56'10.66599"
28	11 B	697944.171	2560416.892	23°08'26.80631"	82°55'59.75898"
29	11 C	697632.847	2560490.893	23°08'29.34555"	82°55'48.85202"
30	AP 12	697322.371	2560564.699	23°08'31.87790"	82°55'37.97465"
31	12 A	697070.181	2560501.451	23°08'29.93059"	82°55'29.08200"
32	12 B	696798.590	2560433.343	23°08'27.83349"	82°55'19.50531"
33	12 C	696526.999	2560365.241	23°08'25.73641"	82°55'09.92871"
34	AP 13	696292.318	2560306.399	23°08'23.92434"	82°55'01.65365"
35	13 A	696071.927	2560188.384	23°08'20.18283"	82°54'53.85354"
36	13 B	695851.533	2560070.373	23°08'16.44133"	82°54'46.05343"
37	13 C	695631.137	2559952.366	23°08'12.69986"	82°54'38.25339"
38	AP 14	695404.401	2559830.969	23°08'08.85080"	82°54'30.22906"
39		695151.714	2559892.201	23°08'10.94840"	82°54'21.37675"



Sr. No.	Angle Point	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
40	14 B	694918.465	2559948.727	23°08'12.88465"	82°54'13.20537"
41	AP 15	694686.468	2560004.953	23°08'14.81053"	82°54'05.07775"
42	15 A	694425.460	2560106.319	23°08'18.21570"	82°53'55.95116"
43	15 B	694164.454	2560207.690	23°08'21.62090"	82°53'46.82449"
44	AP 16	693896.733	2560311.675	23°08'25.11376"	82°53'37.46287"
45	16 A	693638.430	2560419.753	23°08'28.73553"	82°53'28.43399"
46	16 B	693380.131	2560527.836	23°08'32.35731"	82°53'19.40510"
47	16 C	693121.835	2560635.923	23°08'35.97910"	82°53'10.37618"
48	16 D	692863.542	2560744.014	23°08'39.60090"	82°53'01.34722"
49	AP 17	692615.681	2560847.746	23°08'43.07648"	82°52'52.68278"
50	17 A	692318.351	2560887.686	23°08'44.49928"	82°52'42.25062"
51	17 B	692001.200	2560930.294	23°08'46.01694"	82°52'31.12294"
52	17 C	691703.873	2560970.246	23°08'47.43975"	82°52'20.69070"
53	AP 18	691411.590	2561009.526	23°08'48.83843"	82°52'10.43540"
54	18 A	691172.017	2561023.828	23°08'49.40314"	82°52'02.02140"
55	18 B	690932.443	2561038.135	23°08'49.96786"	82°51'53.60736"
56	AP 19	690677.505	2561053.363	23°08'50.56880"	82°51'44.65368"
57	19 A	690382.255	2561106.535	23°08'52.41961"	82°51'34.30009"
58	AP 20	690101.078	2561157.179	23°08'54.18221"	82°51'24.43994"
59	20 A	689833.491	2561292.817	23°08'58.70158"	82°51'15.09539"
60	20 B	689601.586	2561410.375	23°09'02.61839"	82°51'06.99673"
61	AP 21	689312.139	2561557.108	23°09'07.50713"	82°50'56.88843"
62	21 A	688983.442	2561586.430	23°09'08.59569"	82°50'45.34797"
63	21 B	688654.750	2561615.760	23°09'09.68424"	82°50'33.80762"
64	21 C	688326.055	2561645.097	23°09'10.77280"	82°50'22.26712"
65	21 D	687997.364	2561674.440	23°09'11.86135"	82°50'10.72666"
66	AP 22	687677.022	2561703.046	23°09'12.92226"	82°49'59.47930"
67	22 A	687517.087	2561956.858	23°09'21.23733"	82°49'53.96974"
68	22 B	687357.156	2562210.672	23°09'29.55242"	82°49'48.46015"
69	AP 23	687195.967	2562466.493	23°09'37.93319"	82°49'42.90706"
70	23 A	687003.020	2562572.187	23°09'41.44729"	82°49'36.17117"
71	23 B	686757.452	2562706.712	23°09'45.91983"	82°49'27.59815"
72	AP 24	686575.333	2562806.483	23°09'49.23685"	82°49'21.24005"
73	24 A	686248.917	2562854.994	23°09'50.94631"	82°49'09.78686"
74	24 B	685932.393	2562902.042	23°09'52.60397"	82°48'58.68069"
75	24 C	685605.982	2562950.568	23°09'54.31343"	82°48'47.22749"
76	24 D	685279.571	2562999.100	23°09'56.02290"	82°48'35.77418"
77	AP 25	684967.287	2563045.539	23°09'57.65840"	82°48'24.81650"
78	25 A	684721.403	2563090.719	23°09'59.22602"	82°48'16.19239"
79	25 B	684455.849	2563139.517	23°10'00.91905"	82°48'06.87832"
80	AP 26	684168.850	2563192.262	23°10'02.74881"	82°47'56.81202"
81	26 A	683984.861	2563038.158	23°09'57.81374"	82°47'50.27713"
82	AP 27	683795.458	2562879.525	23°09'52.73354"	82°47'43.55006"

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Sr. No.	Angle Point	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
83	27 A	683725.212	2562650.035	23°09'45.30242"	82°47'40.98122"
84	AP 28	683663.352	2562447.949	23°09'38.75864"	82°47'38.71911"
85	AP 29	683411.769	2562309.652	23°09'34.36414"	82°47'29.81546"
86	29 A	683189.803	2562138.973	23°09'28.90511"	82°47'21.93910"
87	29 B	682967.834	2561968.298	23°09'23.44613"	82°47'14.06279"
88	AP 30	682764.534	2561811.985	23°09'18.44637"	82°47'06.84907"
89	30 A	682465.645	2561786.185	23°09'17.72673"	82°46'56.33157"
90	30 B	682146.830	2561758.671	23°09'16.95912"	82°46'45.11295"
91	AP 31	681857.624	2561733.719	23°09'16.26280"	82°46'34.93624"
92	31 A	681617.543	2561507.310	23°09'08.99867"	82°46'26.40012"
93	31 B	681377.456	2561280.906	23°09'01.73457"	82°46'17.86405"
94	AP 32	681145.589	2561062.264	23°08'54.71938"	82°46'09.62045"
95	32 A	680884.915	2560960.042	23°08'51.49954"	82°46'00.41417"
96	32 B	680624.239	2560857.826	23°08'48.27974"	82°45'51.20795"
97	AP 33	680373.275	2560759.423	23°08'45.17992"	82°45'42.34482"
98	33 A	680193.286	2560846.624	23°08'48.08504"	82°45'36.05532"
99	AP 34	679972.999	2560953.353	23°08'51.64064"	82°45'28.35755"
100	34 A	679737.776	2560842.581	23°08'48.13224"	82°45'20.04254"
101	34 B	679502.552	2560731.814	23°08'44.62386"	82°45'11.72760"
102	AP 35	679271.409	2560622.974	23°08'41.17641"	82°45'03.55704"
103	35 A	679025.146	2560579.905	23°08'39.87257"	82°44'54.88288"
104	35 B	678778.883	2560536.840	23°08'38.56874"	82°44'46.20876"
105	AP 36	678540.400	2560495.139	23°08'37.30610"	82°44'37.80869"
106	36 A	678347.933	2560549.515	23°08'39.14840"	82°44'31.06647"
107	AP 37	678135.034	2560609.667	23°08'41.18629"	82°44'23.60842"
108	37 A	677980.961	2560819.098	23°08'48.05358"	82°44'18.28063"
109	AP 38	677870.266	2560969.569	23°08'52.98751"	82°44'14.45275"
110	38 A	677590.415	2561124.758	23°08'58.14028"	82°44'04.68080"
111	AP 39	677311.087	2561279.657	23°09'03.28327"	82°43'54.92686"
112	39 A	677134.920	2561441.442	23°09'08.61011"	82°43'48.80189"
113	39 B	676950.790	2561610.546	23°09'14.17787"	82°43'42.39991"
114	AP 40	676768.491	2561777.973	23°09'19.69036"	82°43'36.06148"
115	40 A	676679.932	2561955.914	23°09'25.50842"	82°43'33.02249"
116	AP 41	676600.436	2562115.643	23°09'30.73102"	82°43'30.29448"
117	AP 42	676503.727	2562176.671	23°09'32.75195"	82°43'26.92022"
118	G5	676487.527	2562223.974	23°09'34.29576"	82°43'26.37039"
119	G6	676471.325	2562271.278	23°09'35.83960"	82°43'25.82055"
120	AP 43	676454.239	2562321.167	23°09'37.46783"	82°43'25.24065"
121	AP 44	676381.443	2562461.639	23°09'42.06187"	82°43'22.73999"

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7.3 Annexure – 3: DGPS Surveyed co-ordinates of Forest Patches

Sr. No.	Patch	Khasra/Compartment no	Pillar ID	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
1	Patch No - 1	1878(Salka)	P- 1	698381.974	2560326.722	23°08'23.68672"	82°56'15.10332"
2			P- 2	698362.707	2560303.549	23°08'22.94189"	82°56'14.41538"
3			P- 3	698344.659	2560307.839	23°08'23.08912"	82°56'13.78310"
4			P- 4	698362.126	2560331.439	23°08'23.84862"	82°56'14.40797"
5	Patch No - 2	1430 (Salka)	P- 5	697197.168	2560534.577	23°08'30.95270"	82°55'33.56037"
6			P- 6	697217.437	2560524.467	23°08'30.61541"	82°55'34.26803"
7			P- 7	697192.814	2560518.293	23°08'30.42531"	82°55'33.39977"
8	Patch No - 3	1423 (Salka)	P- 8	697084.808	2560509.438	23°08'30.18388"	82°55'29.59977"
9			P- 9	697140.951	2560505.287	23°08'30.02489"	82°55'31.57100"
10			P- 10	697084.070	2560491.024	23°08'29.58572"	82°55'29.56530"
11	Patch No - 4	1419 & 1417(Salka)	P- 11	697043.725	2560508.743	23°08'30.17893"	82°55'28.15560"
12			P- 12	697050.219	2560508.387	23°08'30.16457"	82°55'28.38364"
13			P- 13	697049.110	2560493.423	23°08'29.67872"	82°55'28.33772"
14			P- 14	696985.100	2560494.042	23°08'29.72628"	82°55'26.08838"
15			P- 15	697013.451	2560501.151	23°08'29.94518"	82°55'27.08808"
16	Patch No - 5	1408,1385,1406 & 1387 (Salka)	P- 16	696953.342	2560486.078	23°08'29.48107"	82°55'24.96855"
17			P- 17	696951.186	2560474.191	23°08'29.09567"	82°55'24.88726"
18			P- 18	696985.639	2560466.341	23°08'28.82574"	82°55'26.09447"
19			P- 19	696919.487	2560449.752	23°08'28.31496"	82°55'23.76186"
20			P- 20	696896.883	2560444.084	23°08'28.14043"	82°55'22.96482"
21			P- 21	696857.554	2560434.222	23°08'27.83676"	82°55'21.57803"
22			P- 22	696630.743	2560377.346	23°08'26.08541"	82°55'13.58040"
23			P- 23	696612.093	2560372.669	23°08'25.94139"	82°55'12.92278"
24			P- 24	696618.271	2560382.073	23°08'26.24440"	82°55'13.14426"
25			P- 25	696617.700	2560396.756	23°08'26.72184"	82°55'13.13099"
26			P- 26	696627.443	2560397.393	23°08'26.73836"	82°55'13.47370"
27			P- 27	696635.166	2560406.291	23°08'27.02426"	82°55'13.74924"
28			P- 28	696856.914	2560461.897	23°08'28.73653"	82°55'21.56837"
29			P- 29	696869.521	2560465.059	23°08'28.83387"	82°55'22.01289"
30			P- 30	696897.562	2560472.090	23°08'29.05039"	82°55'23.00168"
31			P- 31	696904.658	2560465.011	23°08'28.81726"	82°55'23.24776"
32			P- 32	696926.353	2560472.949	23°08'29.06593"	82°55'24.01394"
33			P- 33	696926.257	2560479.286	23°08'29.27195"	82°55'24.01350"
34	Patch No - 6	294 (Salka)	P- 34	696552.911	2560385.664	23°08'26.38909"	82°55'10.84885"
35			P- 35	696555.286	2560358.424	23°08'25.50272"	82°55'10.91968"
36			P- 36	696533.566	2560352.977	23°08'25.33500"	82°55'10.15384"
37			P- 37	696529.757	2560379.858	23°08'26.21029"	82°55'10.03241"
38	Patch No - 7	674 (Pondi)	P- 38	696002.874	2560166.731	23°08'19.50857"	82°54'51.41670"
39			P- 39	695994.127	2560153.685	23°08'19.08826"	82°54'51.10327"
40			P- 40	695968.806	2560137.333	23°08'18.56763"	82°54'50.20584"
41			P- 41	695933.723	2560122.887	23°08'18.11307"	82°54'48.96617"
42			P- 42	695907.660	2560107.415	23°08'17.62134"	82°54'48.04309"
43			P- 43	695904.876	2560114.259	23°08'17.84495"	82°54'47.94838"
44	Patch No - 8	250 (Pondi)	P- 44	695854.094	2560087.068	23°08'16.98288"	82°54'46.15113"
45			P- 45	695862.658	2560085.185	23°08'16.91801"	82°54'46.45126"

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 B.O. RRR
 Surajpur Sub-division
 वन परिक्षेत्र सुरजपुर
 वन परिक्षेत्र सुरजपुर



Sr. No.	Patch	Khasra/Compartment no	Pillar ID	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
46			P- 46	695866.495	2560074.734	23°08'16.57670"	82°54'46.58127"
47			P- 47	695858.557	2560070.368	23°08'16.43819"	82°54'46.30030"
48			P- 48	695857.607	2560058.322	23°08'16.04708"	82°54'46.26135"
49			P- 49	695768.554	2560010.639	23°08'14.53528"	82°54'43.10963"
50			P- 50	695745.836	2559998.475	23°08'14.14961"	82°54'42.30564"
51			P- 51	695730.454	2560006.847	23°08'14.42826"	82°54'41.76888"
52			P- 52	695753.131	2560017.906	23°08'14.77803"	82°54'42.57098"
53			P- 53	695790.250	2560052.883	23°08'15.89902"	82°54'43.89160"
54			P- 54	694398.281	2560131.363	23°08'19.04120"	82°53'55.00741"
55			P- 55	694389.567	2560105.784	23°08'18.21351"	82°53'54.68945"
56			P- 56	694375.894	2560111.094	23°08'18.39189"	82°53'54.21135"
57			P- 57	694263.928	2560154.580	23°08'19.85265"	82°53'50.29621"
58	Patch No - 9	43,57&50 (Pondi)	P- 58	694245.150	2560161.873	23°08'20.09763"	82°53'49.63960"
59			P- 59	694229.382	2560187.674	23°08'20.94289"	82°53'49.09724"
60			P- 60	694230.612	2560196.484	23°08'21.22869"	82°53'49.14448"
61			P- 61	694241.137	2560192.396	23°08'21.09138"	82°53'49.51252"
62			P- 62	694381.956	2560137.703	23°08'19.25418"	82°53'54.43659"
63			P- 63	694101.827	2560246.502	23°08'22.90884"	82°53'44.64121"
64	Patch No - 10	38 (Jobaga)	P- 64	694068.501	2560247.784	23°08'22.96460"	82°53'43.47055"
65			P- 65	694068.609	2560259.403	23°08'23.34220"	82°53'43.47965"
66			P- 66	693854.658	2560343.916	23°08'26.17943"	82°53'35.99885"
67			P- 67	693847.729	2560317.547	23°08'25.32531"	82°53'35.74328"
68			P- 68	693800.314	2560337.389	23°08'25.99021"	82°53'34.08591"
69			P- 69	693734.681	2560364.853	23°08'26.91056"	82°53'31.79176"
70	Patch No - 11	31,18&19/1 (Jobaga)	P- 70	693717.448	2560372.065	23°08'27.15222"	82°53'31.18938"
71			P- 71	693721.248	2560387.454	23°08'27.65080"	82°53'31.32994"
72			P- 72	693704.050	2560395.920	23°08'27.93324"	82°53'30.72937"
73			P- 73	693706.084	2560406.089	23°08'28.26288"	82°53'30.80549"
74			P- 74	693741.940	2560391.084	23°08'27.76007"	82°53'32.05883"
75			P- 75	693804.247	2560365.011	23°08'26.88634"	82°53'34.23676"
76			P- 76	693626.124	2560439.549	23°08'29.38412"	82°53'28.01052"
77			P- 77	693622.955	2560424.998	23°08'28.91254"	82°53'27.89250"
78			P- 78	693611.049	2560420.765	23°08'28.77997"	82°53'27.47211"
79			P- 79	693610.519	2560419.177	23°08'28.72859"	82°53'27.45279"
80	Patch No - 12	1624 & 1625 (Ketaka)	P- 80	693607.333	2560418.143	23°08'28.69633"	82°53'27.34033"
81			P- 81	693599.971	2560421.224	23°08'28.79957"	82°53'27.08297"
82			P- 82	693534.573	2560448.591	23°08'29.71661"	82°53'24.79699"
83			P- 83	693537.896	2560476.469	23°08'30.62130"	82°53'24.92650"
84			P- 84	693593.260	2560453.301	23°08'29.84497"	82°53'26.86174"
85			P- 85	692825.038	2560774.773	23°08'40.61680"	82°53'00.00788"
86			P- 86	692823.325	2560768.560	23°08'40.41559"	82°52'59.94486"
87	Patch No - 13	846 (Ketaka)	P- 87	692825.115	2560751.718	23°08'39.86744"	82°53'00.00014"
88			P- 88	692809.571	2560751.976	23°08'39.88236"	82°52'59.45391"
89			P- 89	692799.956	2560756.000	23°08'40.01717"	82°52'59.11781"
90			P- 90	692804.564	2560783.340	23°08'40.90386"	82°52'59.29218"
91			P- 91	692421.149	2560887.505	23°08'44.45032"	82°52'45.86358"
92	Patch No - 14	754 (Ketaka)	P- 92	692420.835	2560879.593	23°08'44.19331"	82°52'45.84896"
93			P- 93	692400.059	2560889.627	23°08'44.52814"	82°52'45.12328"
94			P- 94	692400.046	2560890.340	23°08'44.55132"	82°52'45.12316"

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S.O. (M)
 Korbá Sub.-Dn.

व.न. अधिकारी
 व.न. अधिकारी
 व.न. अधिकारी

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Sr. No.	Patch	Khasra/Compartment no	Pillar ID	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
95	Patch No - 15	564 (Ketaka)	P- 95	692063.219	2560911.031	23°08'45.36491"	82°52'33.29401"
96			P- 96	692064.785	2560908.142	23°08'45.27035"	82°52'33.34774"
97			P- 97	692056.624	2560909.239	23°08'45.30940"	82°52'33.06140"
98	Patch No - 16	83 (Ketaka)	P- 98	689850.953	2561299.108	23°08'58.89882"	82°51'15.71195"
99			P- 99	689848.422	2561295.352	23°08'58.77780"	82°51'15.62133"
100			P- 100	689834.474	2561302.447	23°08'59.01418"	82°51'15.13423"
101			P- 101	689832.092	2561302.826	23°08'59.02746"	82°51'15.05067"
102	Patch No - 17	736 (Amagaon)	P- 102	689834.176	2561307.612	23°08'59.18217"	82°51'15.12609"
103			P- 103	688416.513	2561650.598	23°09'10.91448"	82°50'25.44915"
104			P- 104	688444.334	2561632.969	23°09'10.33005"	82°50'26.41923"
105			P- 105	688433.503	2561621.975	23°09'09.97715"	82°50'26.03361"
106			P- 106	688396.836	2561625.247	23°09'10.09858"	82°50'24.74625"
107			P- 107	688404.329	2561636.567	23°09'10.46344"	82°50'25.01466"
108			P- 108	688404.541	2561647.786	23°09'10.82798"	82°50'25.02708"
109	Patch No - 18	16 (Patna)	P- 109	688410.405	2561651.144	23°09'10.93471"	82°50'25.23467"
110			P- 110	683765.148	2562826.629	23°09'51.02635"	82°47'42.46162"
111			P- 111	683767.401	2562825.362	23°09'50.98429"	82°47'42.54026"
112			P- 112	683759.632	2562807.752	23°09'50.41502"	82°47'42.25952"
113			P- 113	683759.197	2562793.582	23°09'49.95459"	82°47'42.23811"
114	Patch No - 19	RF 1776 ,PF 1777 (Forest Area) 536 (Rampur) & 161 (Chandrikapur)	P- 114	683755.414	2562794.827	23°09'49.99658"	82°47'42.10566"
115			P- 115	683740.513	2562746.148	23°09'48.42031"	82°47'41.56073"
116			P- 116	683766.791	2562739.751	23°09'48.20186"	82°47'42.48174"
117			P- 117	683728.878	2562615.893	23°09'44.19120"	82°47'41.09530"
118			P- 118	683687.788	2562481.657	23°09'39.84450"	82°47'39.59272"
119			P- 119	683671.685	2562437.328	23°09'38.41008"	82°47'39.00742"
120			P- 120	683641.675	2562420.629	23°09'37.87932"	82°47'37.94527"
121			P- 121	683654.553	2562444.712	23°09'38.65694"	82°47'38.40842"
122			P- 122	683644.189	2562447.325	23°09'38.74603"	82°47'38.04521"
123			P- 123	683634.554	2562446.152	23°09'38.71176"	82°47'37.70600"
124			P- 124	683627.730	2562438.267	23°09'38.45821"	82°47'37.46272"
125			P- 125	683624.821	2562437.072	23°09'38.42052"	82°47'37.35993"
126			P- 126	683621.166	2562433.126	23°09'38.29374"	82°47'37.22973"
127			P- 127	683618.781	2562438.853	23°09'38.48082"	82°47'37.14837"
128	P- 128	683652.047	2562457.140	23°09'39.06190"	82°47'38.32569"		
129	P- 129	683667.076	2562506.238	23°09'40.65176"	82°47'38.87527"		
130	P- 130	683704.519	2562628.560	23°09'44.61268"	82°47'40.24449"		
131	Patch No - 20	158 (Chandrikapur)	P- 131	683363.042	2562289.214	23°09'33.71931"	82°47'28.09375"
132			P- 132	683364.324	2562284.970	23°09'33.58084"	82°47'28.13697"
133			P- 133	683335.317	2562263.067	23°09'32.88050"	82°47'27.10785"
134			P- 134	683330.128	2562263.907	23°09'32.90988"	82°47'26.92581"
135	Patch No - 21	180,184 (Chandrikapur)	P- 135	682801.166	2561857.182	23°09'19.90084"	82°47'08.15623"
136			P- 136	682818.152	2561836.183	23°09'19.21155"	82°47'08.74426"
137			P- 137	682769.426	2561799.402	23°09'18.03544"	82°47'07.01561"
138			P- 138	682567.008	2561781.388	23°09'17.53051"	82°46'59.89258"
139			P- 139	682556.151	2561780.451	23°09'17.50437"	82°46'59.51052"
140			P- 140	682555.871	2561783.140	23°09'17.59188"	82°46'59.50186"
141			P- 141	682563.810	2561808.213	23°09'18.40368"	82°46'59.79172"
142			P- 142	682608.480	2561812.068	23°09'18.51120"	82°47'01.36358"
143			P- 143	682640.316	2561800.274	23°09'18.11519"	82°47'02.47759"

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Ranchhupur

Sub. Dn.
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Ranchhupur

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Sr. No.	Patch	Khasra/Compartment no	Pillar ID	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
144			P- 144	682668.044	2561794.453	23°09'17.91495"	82°47'03.44978"
145			P- 145	682686.036	2561794.136	23°09'17.89747"	82°47'04.08207"
146			P- 146	682695.179	2561819.550	23°09'18.71988"	82°47'04.41440"
147			P- 147	682759.437	2561825.095	23°09'18.87454"	82°47'06.67555"
148	Patch No - 22	83 (Chandrikapur)	P- 148	681632.598	2561540.073	23°09'10.05766"	82°46'26.94332"
149			P- 149	681643.614	2561513.350	23°09'09.18469"	82°46'27.31913"
150			P- 150	681594.399	2561466.940	23°09'07.69565"	82°46'25.56931"
151			P- 151	681586.652	2561484.881	23°09'08.28186"	82°46'25.30467"
152			P- 152	681590.215	2561500.106	23°09'08.77534"	82°46'25.43644"
153	Patch No - 23	54 (Chandrikapur)	P- 153	681234.495	2561164.659	23°08'58.01254"	82°46'12.78922"
154			P- 154	681234.148	2561158.259	23°08'57.80464"	82°46'12.77428"
155			P- 155	681227.995	2561158.529	23°08'57.81587"	82°46'12.55813"
156	Patch No - 24	64 (Chandrikapur)	P- 156	680838.637	2560938.310	23°08'50.81141"	82°45'58.77824"
157			P- 157	680838.565	2560927.373	23°08'50.45591"	82°45'58.77106"
158			P- 158	680801.245	2560912.738	23°08'49.99495"	82°45'57.45302"
159			P- 159	680801.090	2560913.878	23°08'50.03204"	82°45'57.44806"
160			P- 160	680813.208	2560919.080	23°08'50.19637"	82°45'57.87624"
161			P- 161	680826.666	2560927.680	23°08'50.47059"	82°45'58.35293"
162	Patch No - 25	1083 (Dawana)	P- 162	680694.423	2560899.853	23°08'49.61817"	82°45'53.69279"
163			P- 163	680709.800	2560893.411	23°08'49.40273"	82°45'54.23053"
164			P- 164	680727.395	2560890.633	23°08'49.30550"	82°45'54.84780"
165			P- 165	680742.641	2560889.759	23°08'49.27109"	82°45'55.38334"
166			P- 166	680715.382	2560879.070	23°08'48.93438"	82°45'54.42063"
167			P- 167	680690.309	2560891.382	23°08'49.34447"	82°45'53.54456"
168			P- 168	680675.820	2560892.558	23°08'49.38839"	82°45'53.03577"
169			P- 169	680654.719	2560873.387	23°08'48.77356"	82°45'52.28593"
170	Patch No - 26	1091 (Dawana)	P- 170	680675.226	2560863.324	23°08'48.43838"	82°45'53.00246"
171			P- 171	680649.632	2560853.288	23°08'48.12225"	82°45'52.09858"
172			P- 172	680587.020	2560857.738	23°08'48.29153"	82°45'49.89967"
173	Patch No - 27	1083 (Dawana)	P- 173	680566.856	2560820.830	23°08'47.09979"	82°45'49.17522"
174			P- 174	680553.362	2560815.538	23°08'46.93311"	82°45'48.69867"
175			P- 175	680504.113	2560825.228	23°08'47.26744"	82°45'46.97169"
176			P- 176	680518.561	2560830.894	23°08'47.44591"	82°45'47.48196"
177			P- 177	680541.031	2560825.594	23°08'47.26480"	82°45'48.26949"
178			P- 178	680552.302	2560825.911	23°08'47.27068"	82°45'48.66580"
179			P- 179	680557.064	2560828.292	23°08'47.34621"	82°45'48.83421"
180			P- 180	680576.522	2560853.621	23°08'48.16186"	82°45'49.52892"
181	Patch No - 28	1127/1(Dawana)	P- 181	680416.491	2560761.868	23°08'45.24242"	82°45'43.86490"
182			P- 182	680371.643	2560746.022	23°08'44.74498"	82°45'42.28175"
183			P- 183	680348.482	2560756.434	23°08'45.09250"	82°45'41.47208"
184			P- 184	680350.201	2560761.883	23°08'45.26896"	82°45'41.53483"
185			P- 185	680359.620	2560762.095	23°08'45.27213"	82°45'41.86600"
186			P- 186	680378.988	2560753.205	23°08'44.97556"	82°45'42.54298"
187			P- 187	680389.025	2560767.517	23°08'45.43681"	82°45'42.90188"
188	Patch No - 29	936 (Dawana)	P- 188	679908.317	2560907.972	23°08'50.19093"	82°45'26.06474"
189			P- 189	679879.463	2560894.385	23°08'49.76058"	82°45'25.04475"
190			P- 190	679881.297	2560907.760	23°08'50.19460"	82°45'25.11490"
191			P- 191	679902.002	2560914.342	23°08'50.40044"	82°45'25.84546"
192	Patch	356 (Surajpara)	P- 192	678628.862	2560524.314	23°08'38.22000"	82°44'40.93034"

Geotrax 2017 **E.E (EHT)** Contn.- Dn. **C.S.P.T.C.L. Korba** Range Officer **Rama Raju** S. K. (F) **Surajpur Sub.-Dn.** Page 50 of 50



Sr. No.	Patch	Khasra/Compartment no	Pillar ID	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)		
193	No - 30		P- 193	678628.160	2560521.558	23°08'38.13069"	82°44'40.90449"		
194			P- 194	678625.016	2560519.544	23°08'38.06645"	82°44'40.79313"		
195			P- 195	678619.541	2560518.819	23°08'38.04503"	82°44'40.60040"		
196			P- 196	678616.152	2560516.934	23°08'37.98507"	82°44'40.48047"		
197			P- 197	678608.951	2560517.902	23°08'38.01934"	82°44'40.22777"		
198			P- 198	678609.259	2560520.886	23°08'38.11620"	82°44'40.23988"		
199			Patch No - 31	103 (Saraipara)	P- 199	678115.293	2560659.282	23°08'42.80669"	82°44'22.93535"
200					P- 200	678097.880	2560657.582	23°08'42.75818"	82°44'22.32259"
201	P- 201	678081.869			2560659.153	23°08'42.81545"	82°44'21.76045"		
202	P- 202	678062.462			2560685.532	23°08'43.68042"	82°44'21.08938"		
203	P- 203	678085.878			2560699.266	23°08'44.11777"	82°44'21.91819"		
204	Patch No - 32	1056 (Ramanujnagar)	P- 204	678039.206	2560762.707	23°08'46.19800"	82°44'20.30430"		
205			P- 205	678028.070	2560744.496	23°08'45.61036"	82°44'19.90523"		
206			P- 206	678028.231	2560732.064	23°08'45.20621"	82°44'19.90567"		
207			P- 207	678017.135	2560747.145	23°08'45.70071"	82°44'19.52199"		
208			P- 208	678025.761	2560780.982	23°08'46.79725"	82°44'19.83937"		

E.E. (EHT)
 Contn.- Dn.
 C.S.P.T.C.L. Korba

Range Officer
 Ramanujnagar

S.D.O. M.
 Surajpur Sub.-Dn.

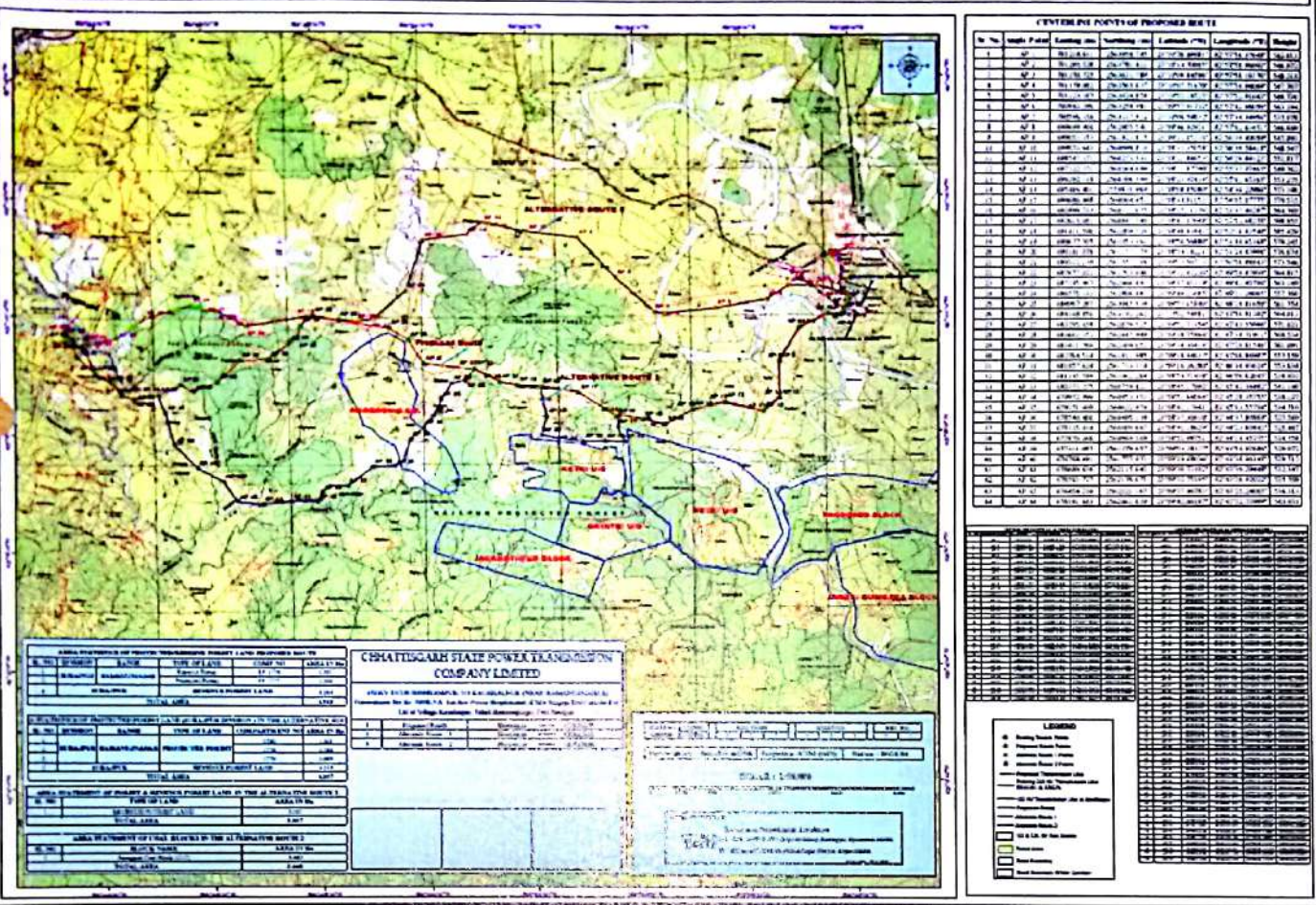


B.P. Singh
 (I.F.S.)
 Divisional Forest Officer
 Surajpur Division, Surajpur (C.G.)



7.4.2 Map Showing Alternative Route on Toposheet Layer 1:50,000 scale

Map Showing Proposed 132 KV DC BUBBAMPUR TO RAJNAGAR NEAR RAMNAGAR: Transmission line with Alternative Route 1 & 2 for 1000V Tractive Power Requirement of Mysurgan Rail Corridor Pvt Ltd at Village-Kandhupur, Tehsil-Ramnagar, Dist-Bardhaman



Not to Scale

E.E. (EHT)
 Contn.- Dn.
C.S.P.T.C.L. Korba

Range Officer
 Ramnagar

वन परिक्षेत्राधिकारी
वन परिक्षेत्र सूरजपुर

S.D.O.(F)
 Surajpur Sub-Dn.

