D.G.P.S. SURVEY REPORT

OF

COMPENSATORY AFFORSTATION PLANTATION LAND UNDER RAIGARH DIVISION AGAINST DIVERSION LAND FROM KONDATARAI TO NTPC JURDA

(132 KV DCDS TRANSMISSION LINE FROM KONDATARAI TO NTPC JURDA)

FOREST DIVISION : RAIGARH
DISTRICT : RAIGARH
STATE : CHHATTISGARH

Name of the Applicant:

CHHATTISGARH STATE POWER TRANSMISSION CO. LTD.
DANGANIYA RAIPUR,CHHATTISGARH.

Project :

CONSTRUCTION OF 132 KV DCDS LINE TO PROVIDE 132 KV SUPPLY FROM KONDATARAI TO JURDA

वन परिक्षेत्र अधिकारी
रायगढ़ (छ.ग.)

वन मण्डलाधिकारी
रायगढ़, वनमण्डल

Executive Engineer

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   3. LOCATION MAP

B. SURVEY SITE ON SOI TOPOSHEET IN A0 SIZE

DATA ENCLOSED IN SOFT COPY

1. SURVEY REPORT
2. KML FILE
3. SHP FILE
4. MAPS IN JPEG AND PDF FORMAT

1.ABOUT US

From last 15 years we are giving our services for civil construction and building work at Korba and surroundings. We are involve in survey from last 10 years. We are doing topographical survey by using Total Station and DGPS(last 2 year). Now we are introduce us in Drone Survey also from 2018

Scope of work :

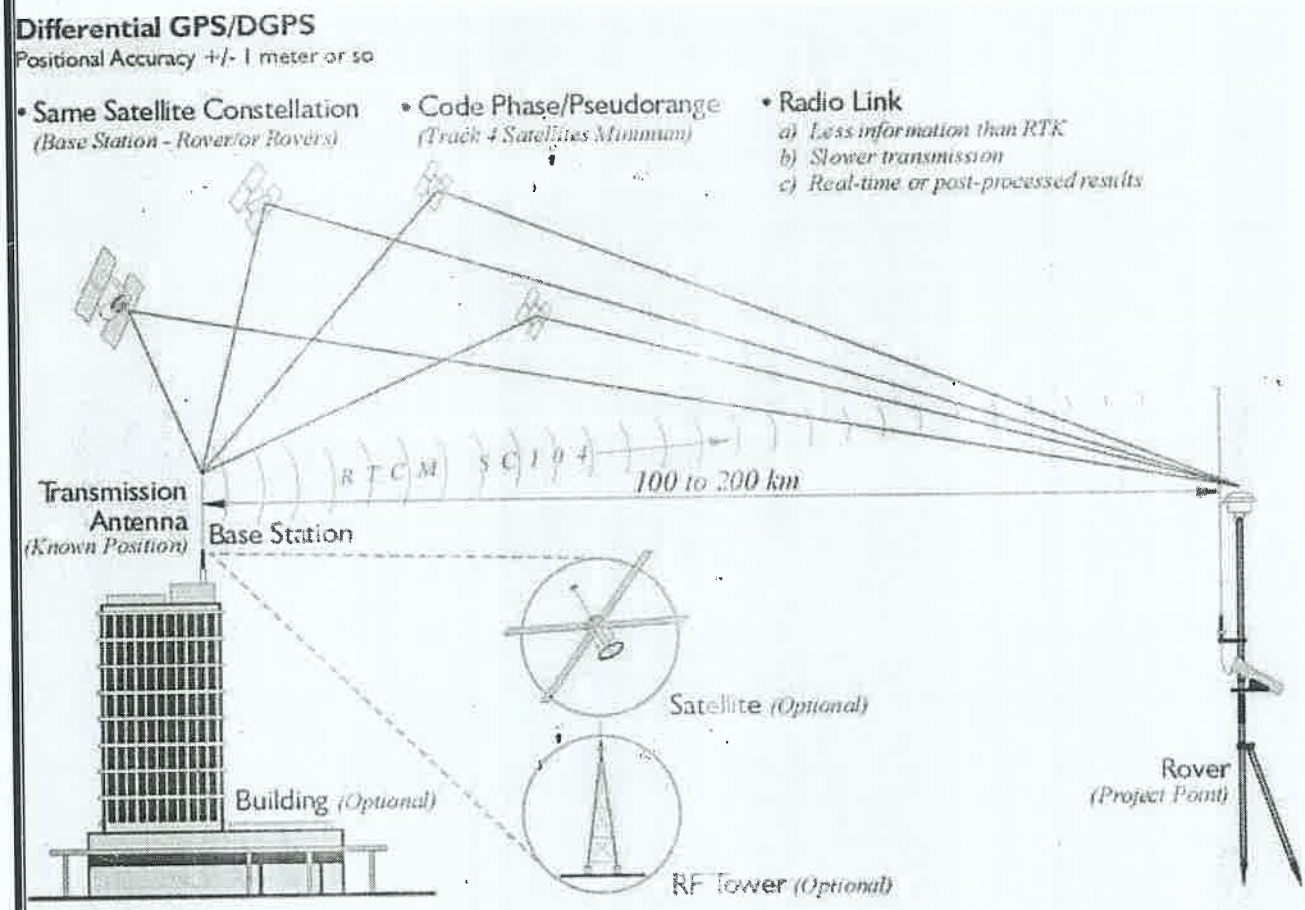
1. Detail survey of land, marking all important amenities.
2. Route Survey for road and ash pipe line, water pipe line etc. Providing L-Section C- section.
3. Route Survey for canal (WRD Department).
4. Finding out Catchment area for Annicut proposal.
5. Area grading, Cut-fill Quantity Calculation
6. Route Survey for Electric Tower Spotting
7. Layout of building columns according to drawing. for Power Plant, multistory building, colonies etc.
8. Drone Survey for mapping.

Our valuable clients are:

1. NTPC, CHHATTISGARH
2. ACB INDIA LIMITED
3. INDU PROJECT LIMITED, HYDERABAD
4. NAGAR NIGAM, CHATTISGARH
5. CSEB, CHATTISGARH
6. PRASAD AND COMPANY(PROJECT WORKS)LIMITED
7. DC INDUSTRIAL PLANTSERVICES PRIVATE LIMITED
8. HOUSING BOARD, CHATTISGARH
9. VANDNA GLOBAL
(VANDANA VIDYUT POWER PLANT &VANDNA ENERGY POWER PLANT , KORBA)
10. WATER RESOURCE DEPARTMENT, CHHATTISGARH
11. ACPL,HYDERABAD (ATHNA POWER PLANT)
12. SV POWER PLANT
13. HARSHA ABKUS Pvt. ltd.(survey of land at Tilda & finding out Soil Resistivity of land)

We are also doing work for forest clearance also

2.INTRODUCTION TO DGPS



The term DGPS is sometimes used to refer to differential GPS that is based on pseudo ranges, aka code phase. Even though the accuracy of code phase applications was given a boost with the elimination of Selective Availability (SA) in May 2000 consistent accuracy better than the 2•5 meter range still requires reduction of the effect of correlated ephemeris and atmospheric errors by differential corrections. Though the corrections could be applied in post processing services that supply these corrections, most often operatein real-time. In such an operation pseudo range based versions can offer meter •or even sub meter results.

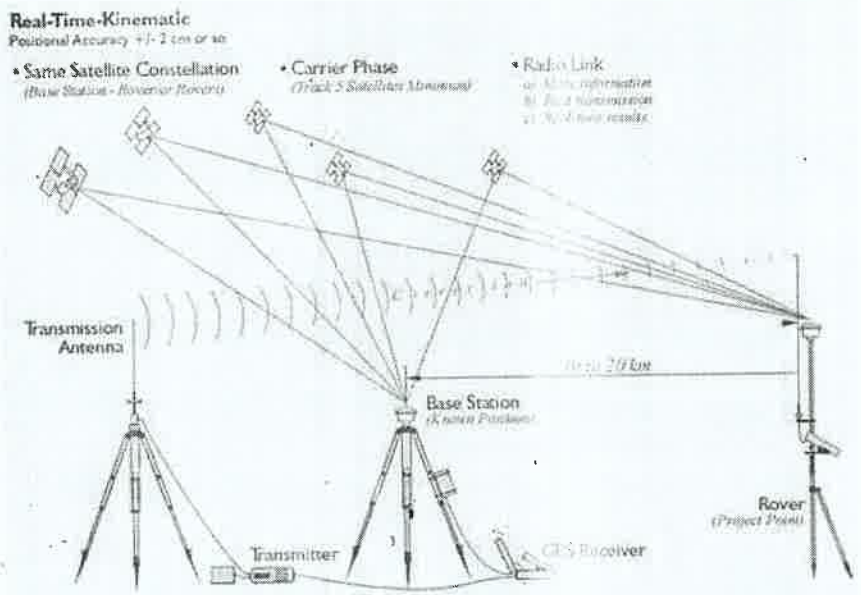
Usually, pseudo range corrections are broadcast from the base to the rover or rovers for each satellite in the visible constellation. Rovers with an appropriate input/output (I/O) port can receive the correction signal and calculate coordinates. The real-time signal comes to the receiver over a

data link. It can originate at a project specific base station or it can come to the user through a service of which there are various categories. Some are open to all users and some are by subscription only. Coverage depends on the spacing of the beacons, aka transmitting base stations, their power, interference, and so forth. Some systems require two-way, someone-way, communication with the base stations. Radio systems, geostationary satellites, low•earth•orbiting.

3.SURVEY METHOD

1 RTK (Real Time Kinematic)
2 STATIC METHOD

1 Real-Time Kinematic



Most, not all, GPS surveying relies on the idea of differential positioning. The mode of a base or reference receive rata known location logging data at the same time as a receiver at an unknown location together provide the fundamental information for the determination of accurate coordinates. While this basic approach remains today, the majority of GPS surveying is not done in the static post processed mode. Post processing is most often applied to control work. Now, the most commonly used methods utilize receiver son reference stations that provide correction signals to the end user via a data link sometimes over the Internet ,radio signal , or cell phone and often inreal- time.

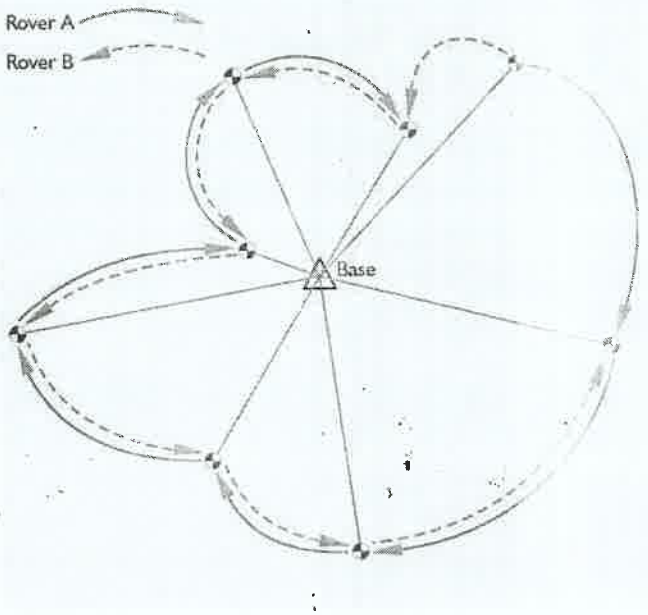
In this category of GPS surveying work there is sometime sad distinction made between code based and carrier based solutions. In fact, most systems use a combination of code and carrier measure men tsetse distinction is more amateur of emphasis rather than an absolute difference. Well that's abet of discussion about static surveying, but as you know, a good deal of GPS these days is done not static .Much work is now done with DGPS or real-time kinematic, RTK.

Errors in satellite clocks, imperfect orbits, the troth rough the layers of the atmosphere, and many other sources contribute in accuracies to GPS signals by the time they reach a receiver.

These errors are variable, so the best to way to correct the mistook monitor them as they happen. Ago Ordway to do this is to setup a GPS receiver on a station whose position is known exactly, a base station .This base station receiver's computer can calculate its position from satellite data, compare that position with its actual known position, and find the difference .The resulting error correction scan be communicated from the base to the rover .It works well, but the errors are constantly changing so a base station has to monitor the mall the time ,at least all the time there over receiver or receivers are working. While this is happening the rovers move from place to place collecting the points whose positions you want to know relative to the base station ,which is the real objective after all .Then all you have to do is get those base station corrections and the rover's data together somehow. That combination can be done over a data link in real-time or applied dl at era post processing.

Real-time positioning is built on the foundation of the idea that, with the important exceptions of multi path and receiver noise, GPS error sources are correlated. In other words, the closer the rover is to the base the more the errors at the ends of the base line match. The shorter the base line ,the more the errors are correlated .The longer the base line ,the less the errors are correlated.

The base station is at a known point, whether it was on a building permanently or it's a tripod mounted base station. The fact that it is in a known positon allows the base station to produce corrections .The constellation is telling the base station that it is in a slightly different place ,so corrections can be created to sent to the rover at the unknown point .The corrections are applied in real time.



RADIAL GPS

Such real-time surveying is essentially radial. There are advantages to the approach.The advantage is a large number of positions can be established in as hurt amount of time with little or no planning .The disadvantage is that there is little or no redundancy in positions derived ,each of the baselines originates from the same control station. Redundancy can be incorporated, but it requires repetition of the observations so each baseline is determined with more than one GPS constellation. One way to do It is to occupy the project points, the unknown positions, successively with more than one rover. It is best if these successive occupations are separated by at least 4 hours and not more than 8 hours so the satellite constellation can reach a significantly different configuration.

RTK and DGPS are radial. You have a known point in the middle, the base, and then the unknown points around it. This provides little geometric solidity .If there's an error in one of the sera dial base lines, it would be tough to catch it because there's no real redundancy .The illustration shows away around this difficulty. There are two receivers ,A and B, and it's possible by double occupation, one receiver going one way and the other going the other, by double occupying the unknown points to get some redundancy and some checks against the positions from a base. Another way to do it is to

use one receiver. That receiver would occupy each points twice with forte eight hours between the first occupation and the second occupation on the point. Another way is to move the base to an other known point .Then if you have vectors from another base into these points, you have a check .This approach allows a solution to be available from two separate control stations. Obviously, this can be done with re•occupatio no the project points after one base station has been moved to a new control point ,o ratio base stations can be up and running from the very outset and through out of the work as would be the case using two CORS stations . It is best if there are both two occupations on each point and each of the two utilize different base stations.

A more convenient but less desirable approach is to do a second occupation almost immediately after the first .The roving receiver's an tennais blocked or tilted until the lock on the satellites is interrupted .It is then reoriented on the unknown position, a second time for the repeat solution. This does offerasecondsolution, butfromvirtuallythesameconstellation.

More efficiency can be achieved by adding additional roving receivers. However, as the number of receivers rises ,the logistics become more complicated, and a survey plan becomes necessary . Also, project points that are simultaneously near one another but far from the control station should be directly connected with a base line to maintain the integrity of the survey. Finally, if the base receiver loses lock and it goes unnoticed, it will completely defeat the radial survey for the time it is down.

These are a few possibilities to consider when you are doing areal-time survey.

An advantage to continuously operating reference station network is that since those bases are operating simultaneously and all the time, it's possible to down load the positions from more than one base and process your new position based on these continuously operating reference stations and have some redundancy.

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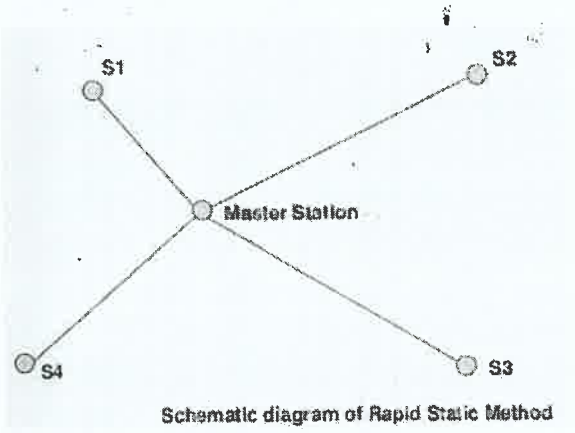
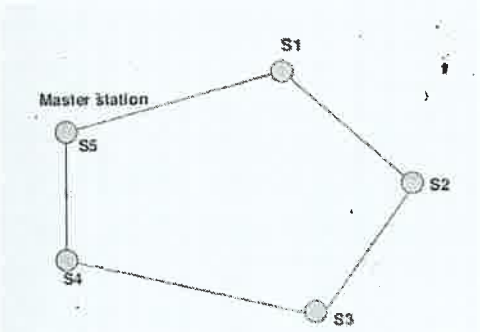
2.STATIC METHOD

I. Rapid Static Method



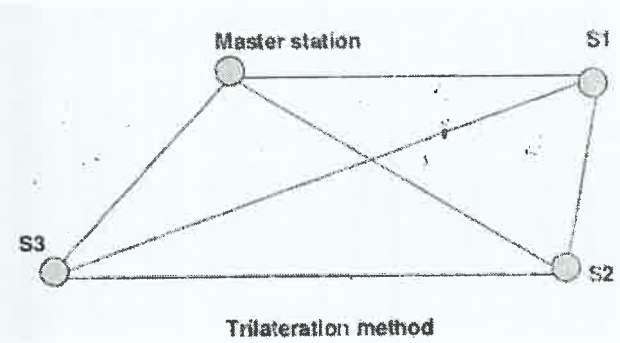
Schematic diagram of Rapid Static Method

II. Traverse Method



Schematic diagram of Traverse method

III. Trilateration Method



Trilateration method

INTRODUCTION TO SURVEY SITE

The Survey area is located on villages Teka, Boropida, Odekara comes under District Raigarh, Chhattisgarh. Raigarh longitude-latitude is 83°23'42"E , 21°53'51" N. Survey Site comes under Forest Division Raigarh.

AREA DETAILS AND LAND CLASSIFICATION

Sr no.	Division Name	District name	Village Name	Area in Hectare
1.	Raigarh	Raigarh	Teka	3.417
2.	Raigarh	Raigarh	Odekara	8.076
3.	Raigarh	Raigarh	Borodipa	7.685
			Total	19.178

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Bilaspur

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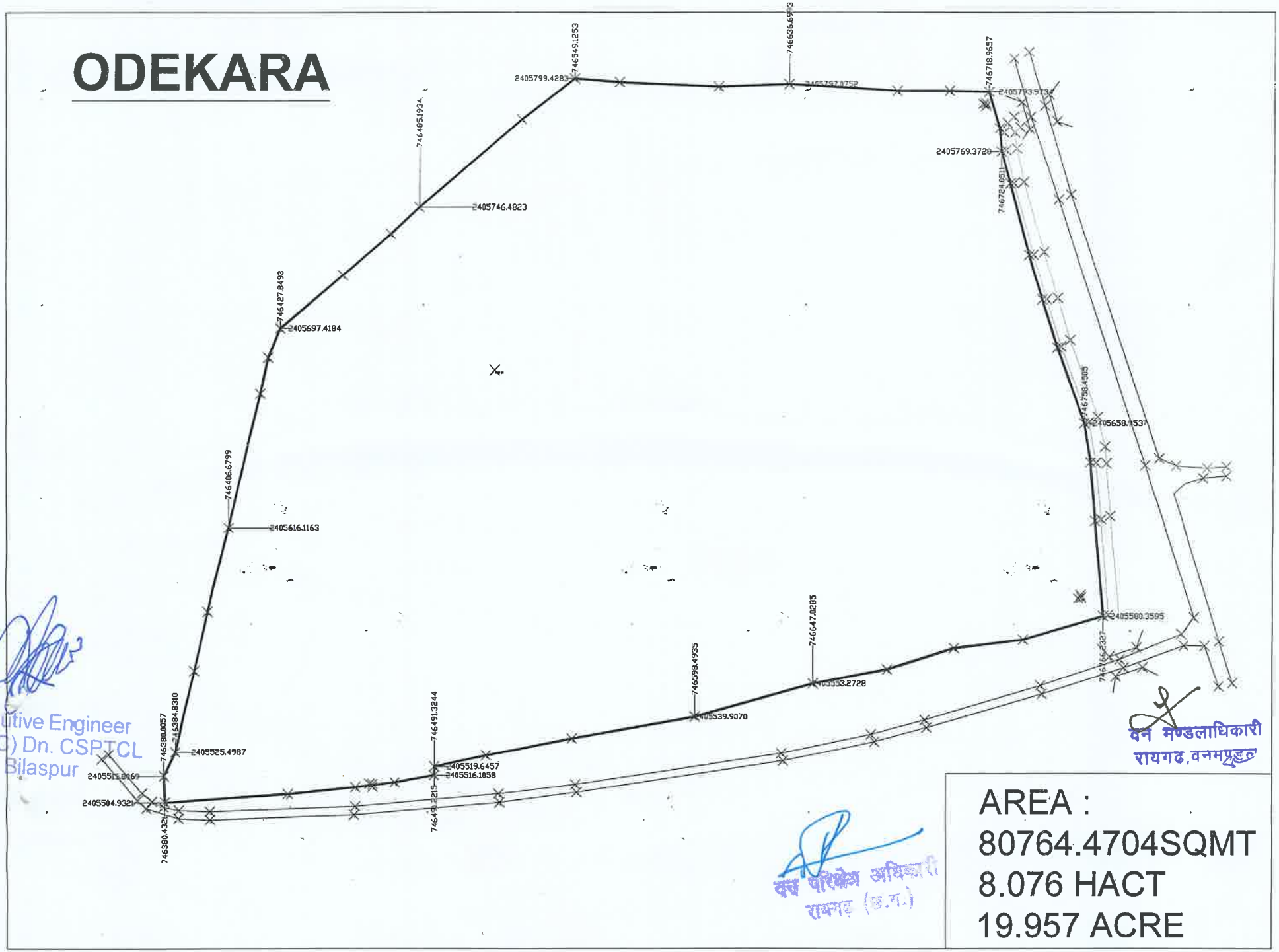
ODEKARA



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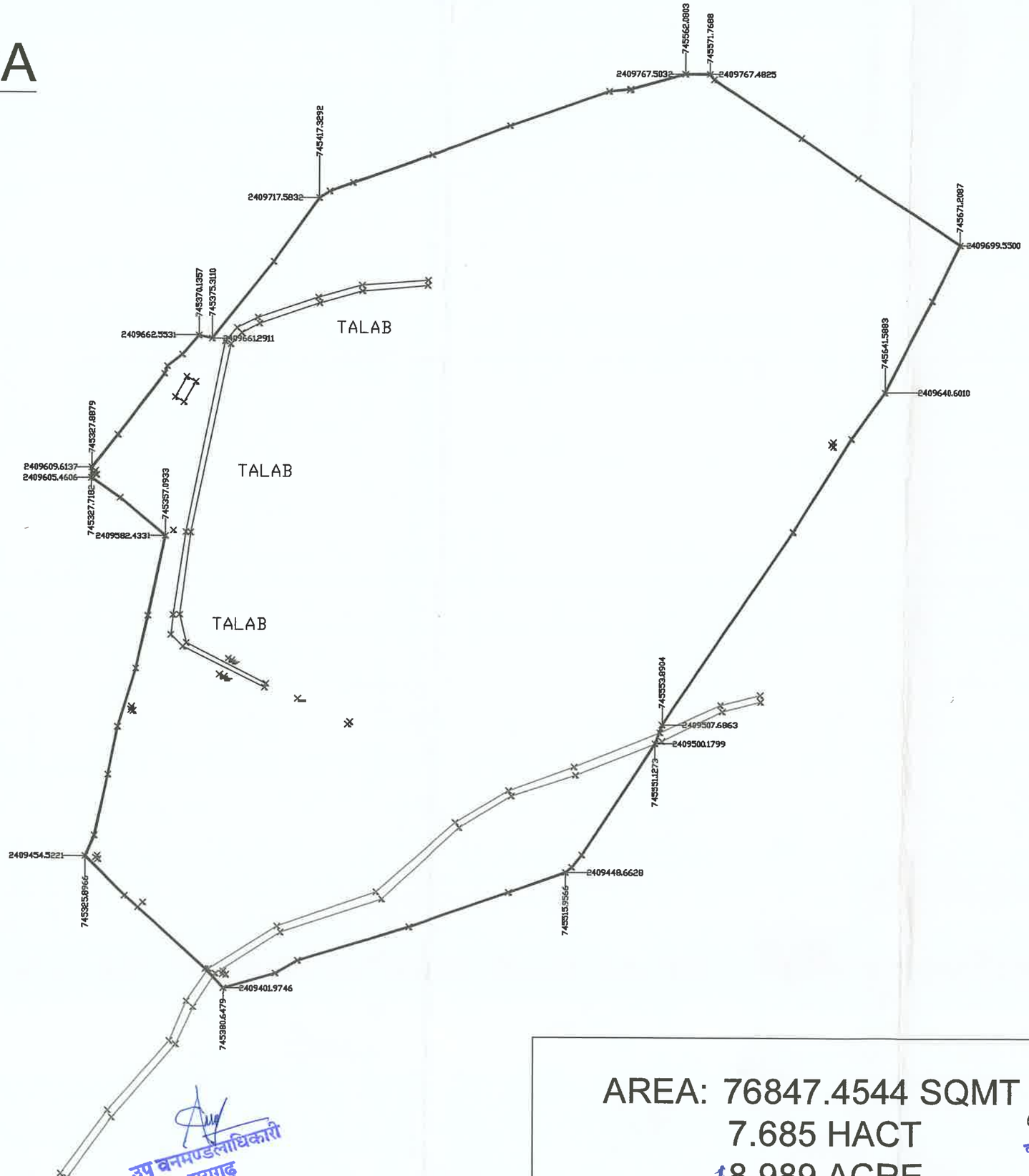
रायगढ़ (छ.ग.)

AREA :
80764.4704SQMT
8.076 HACT
19.957 ACRE

BORODIPA

G.NO. 1021 OA



AREA: 76847.4544 SQMT
7.685 HACT
18.989 ACRE

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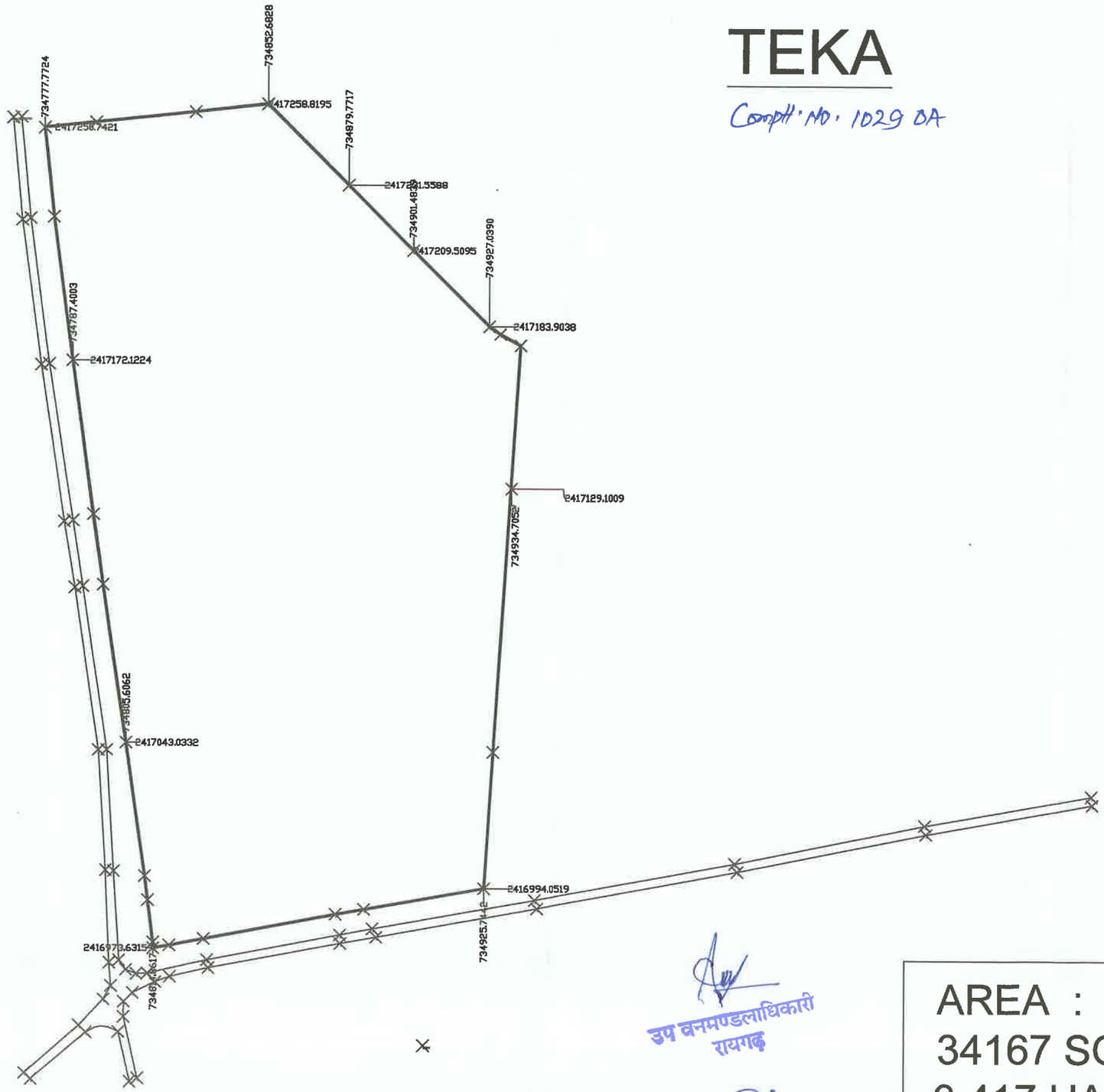
पनेरू (छ.ग.)

उप वनमण्डलाधिकारी
रायगढ़

वन मण्डलाधिकारी
रायगढ़, वनमण्डल

TEKA

Compt. No. 1029 DA



उप वनमण्डलाधिकारी
रायगढ़

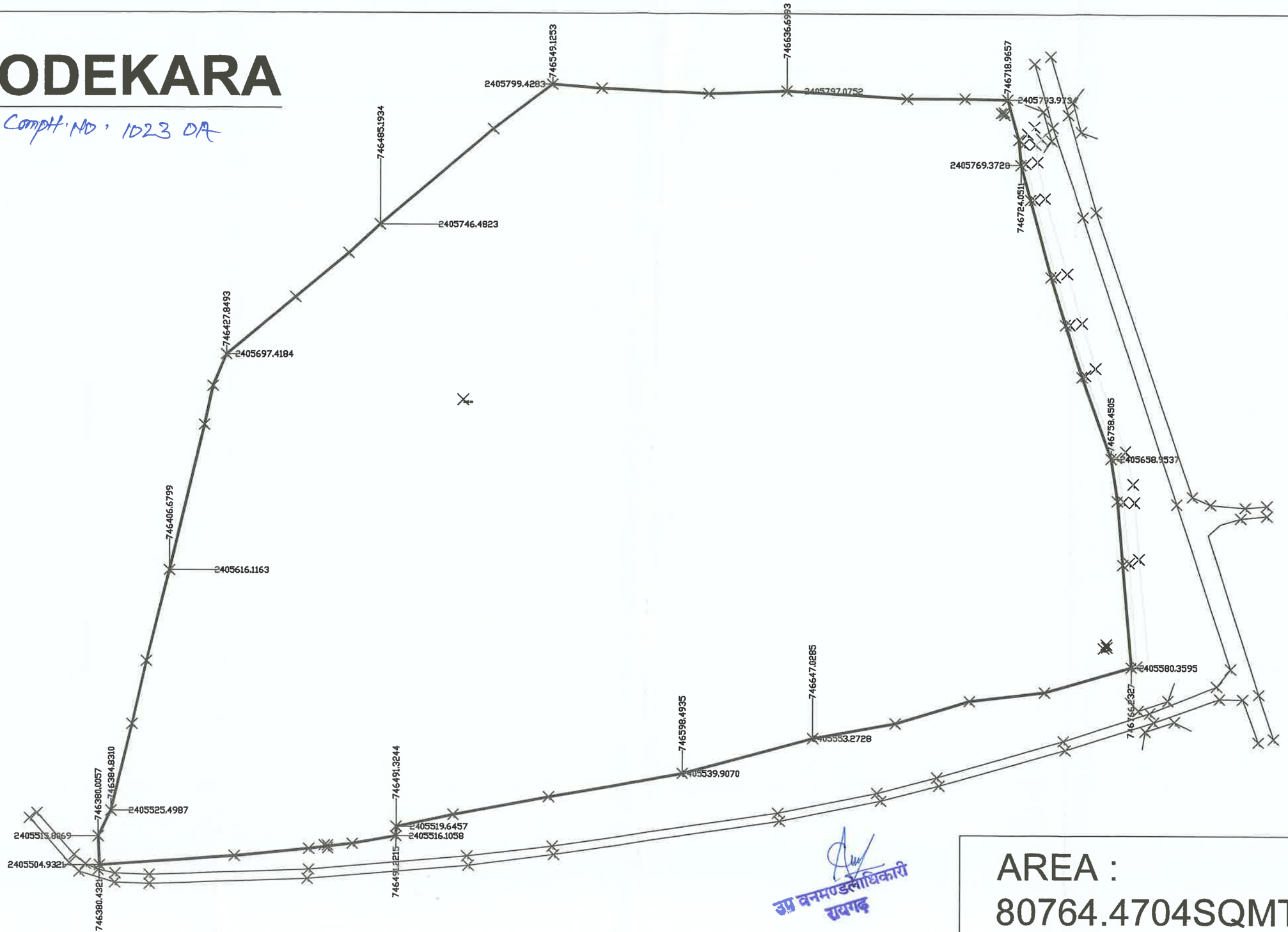
वन परिक्षेत्राधिकारी
रायगढ़ (छ.ग.)

AREA :
34167 SQMT
3.417 HACT

वन मण्डलाधिकारी
रायगढ़ वनमण्डल

ODEKARA

Compt. No. 1023 OA



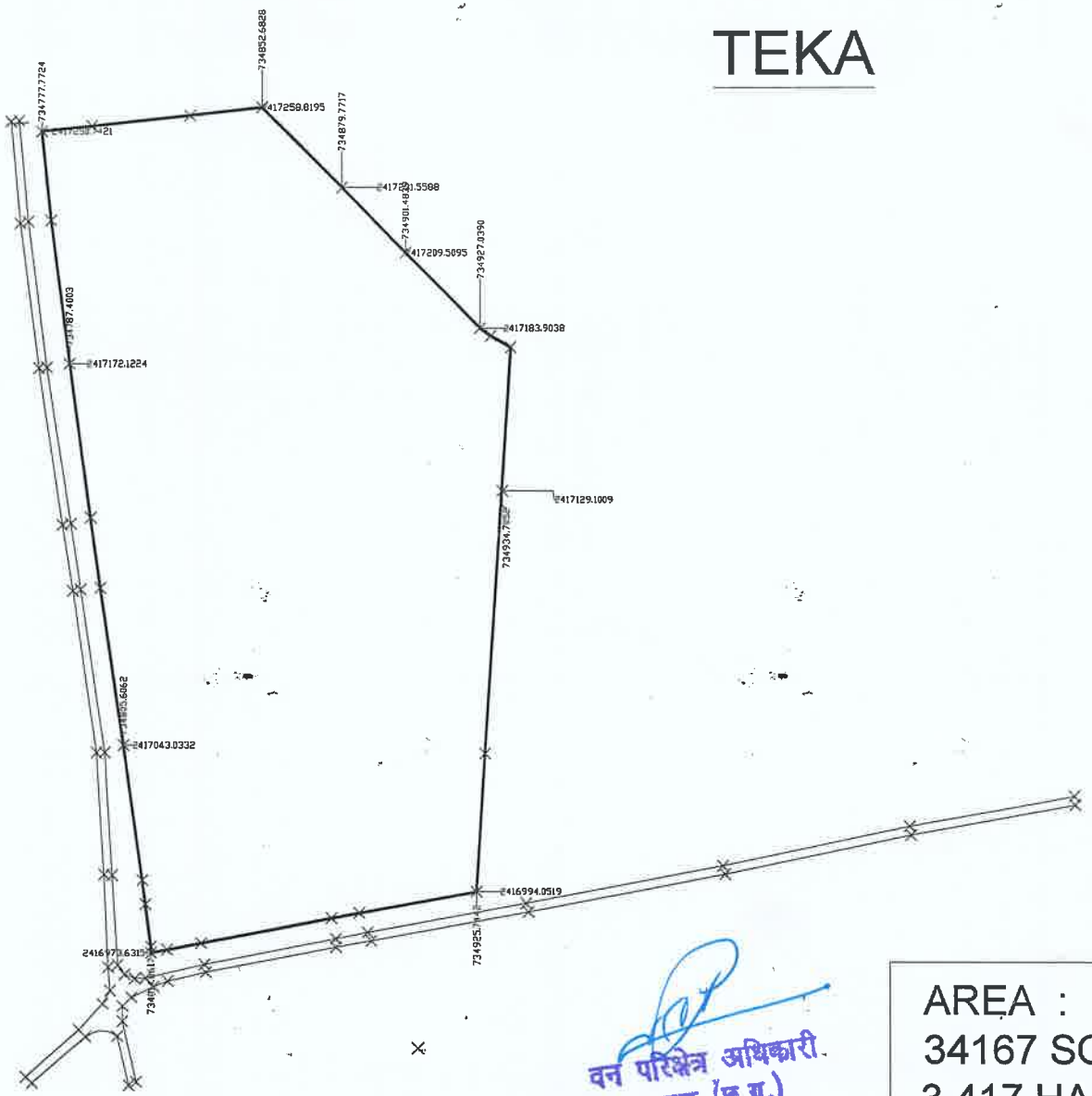
AREA :
80764.4704SQMT
8.076 HACT
19.957 ACRE

उप वनमण्डलाधिकारी
रायगढ़

वन मण्डलाधिकारी
रायगढ़ (छ.ग.)

वन मण्डलाधिकारी
रायगढ़ वनमण्डल

TEKA



AREA :
34167 SQMT
3.417 HACT

वन मण्डलाधिकारी
रायगढ़, वनमण्डल

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BORODIPA

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वन परिक्षेत्र अधिकारी
रायगढ़ (छ.ग.)

AREA: 76847.4544 SQMT
7.685 HACT
8.989 ACRE

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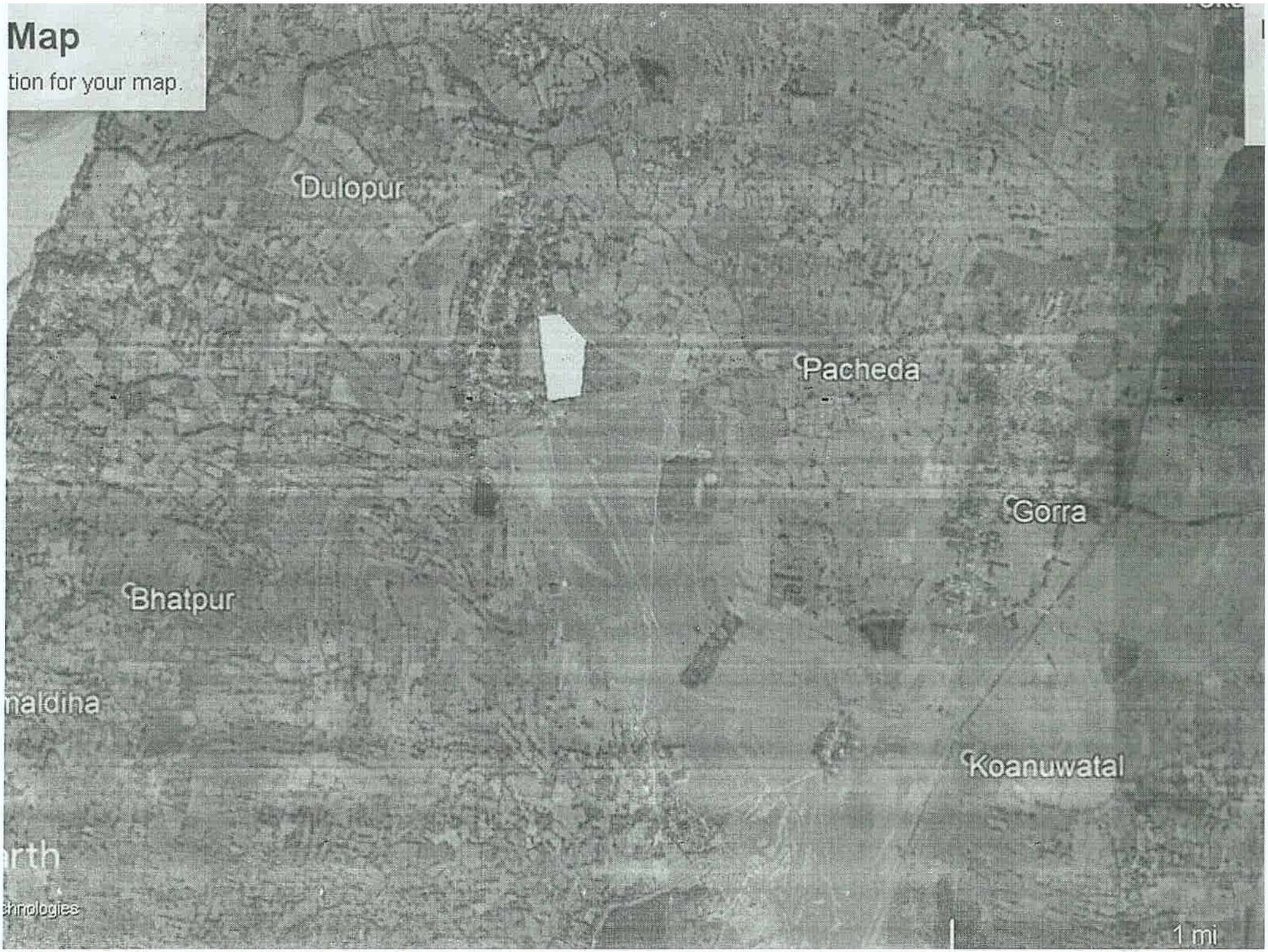
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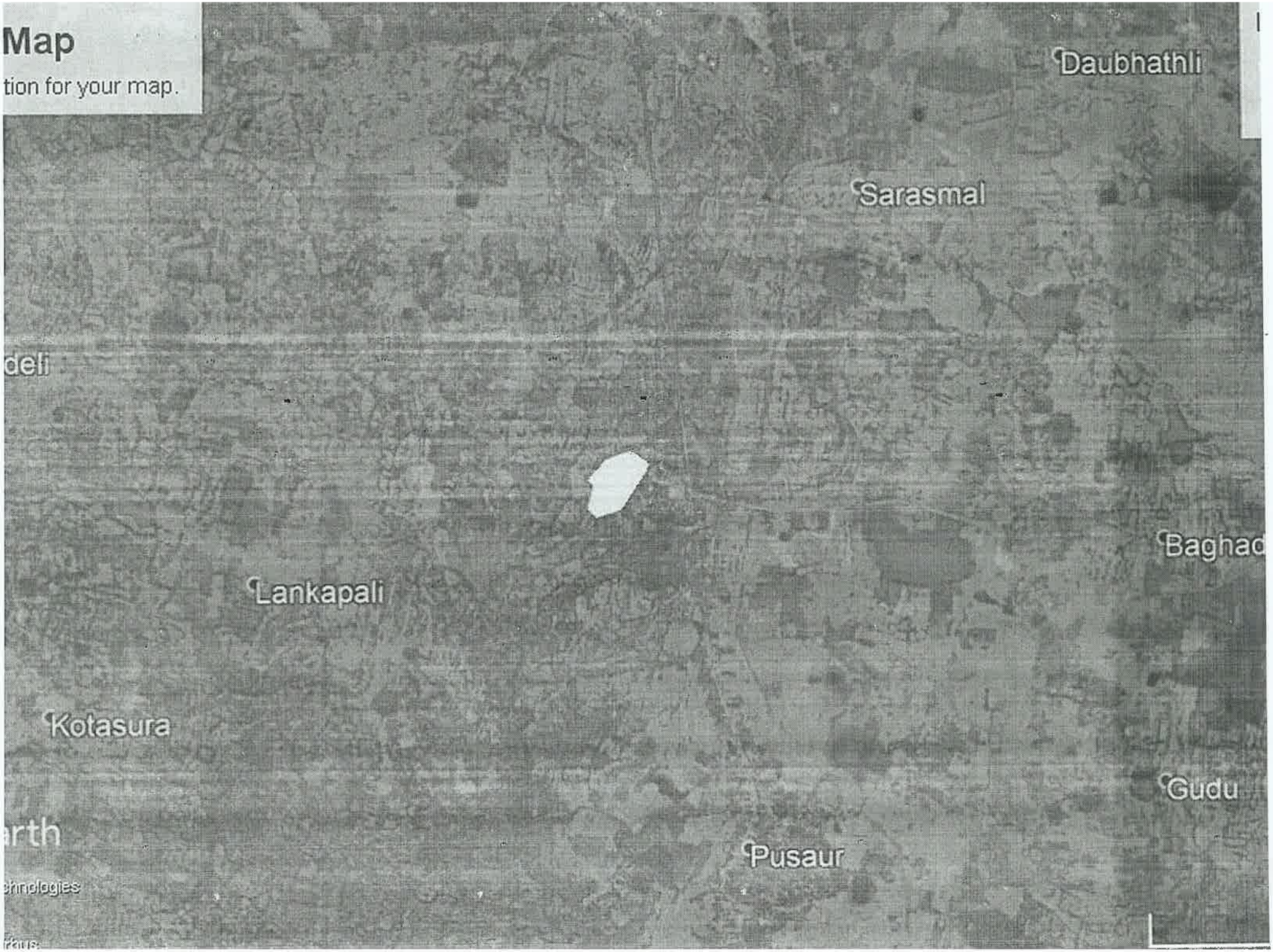
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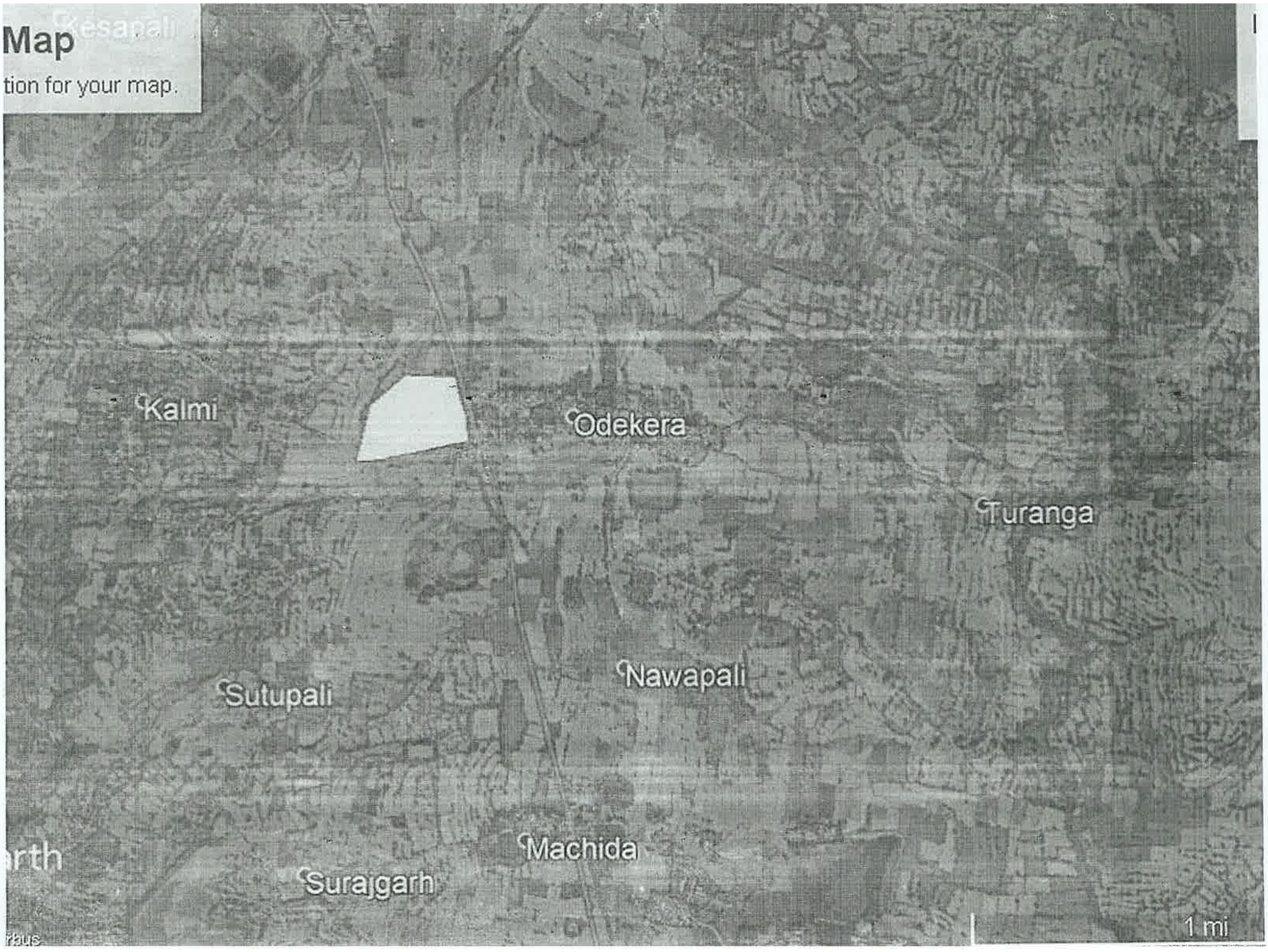
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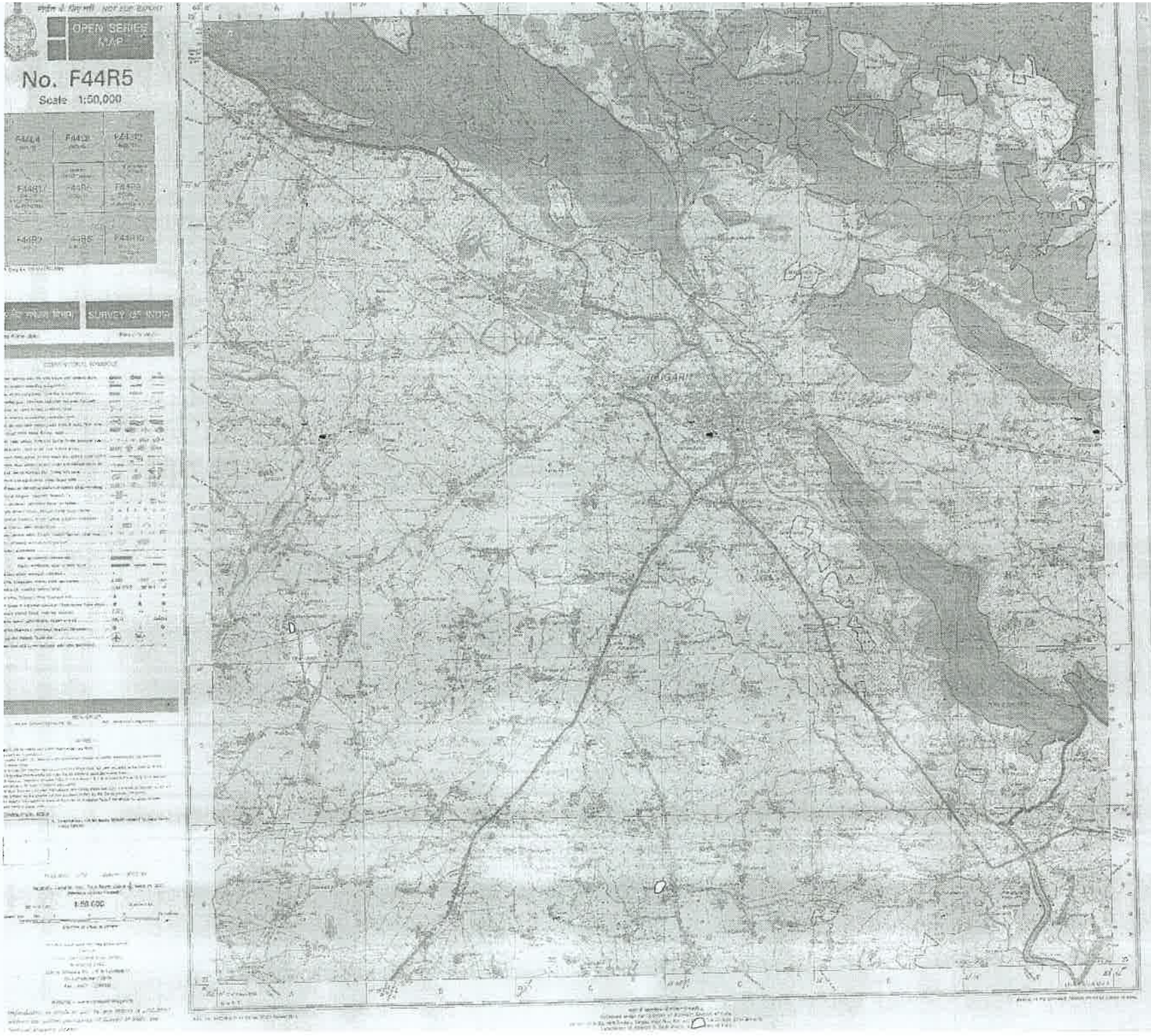
Kalmi
Odekera
Turanga
Nawapali
Sutupali
Machida
Surajgarh
1 mi



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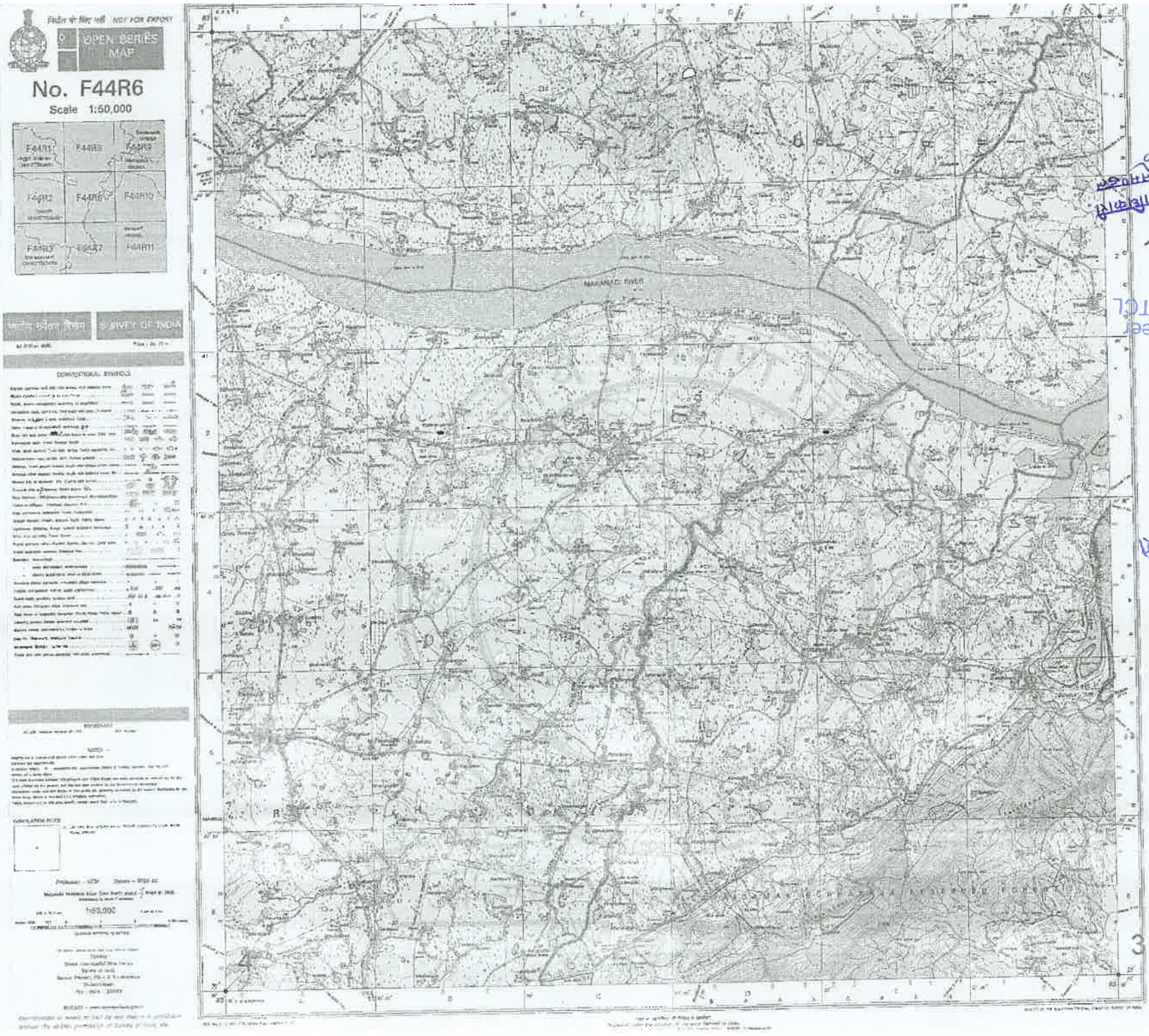

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Bilaspur

DGPS SURVEY DATA OF DIFFERENT SITE

EASTING-NORTHING DETAIL FOR AREA AT TEKA
TOTAL AREA 3.417 HACT.

SR.NO	X(Easting)	Y(Northing)
1	734885.7082	2416985.973
2	734930.9394	2417180.388
3	734927.262	2417182.975
4	734901.7069	2417208.58
5	734879.9947	2417230.63
6	734852.9316	2417257.915
7	734852.9058	2417257.89
8	734828.6858	2417255.218
9	734795.2929	2417251.621
10	734777.9954	2417249.75
11	734778.0061	2417249.763
12	734781.2046	2417219.606
13	734787.5608	2417171.193
14	734794.6783	2417119.204
15	734797.9803	2417095.465
16	734805.8292	2417042.104
17	734812.2097	2416997.095
18	734813.1906	2416989
19	734815.0501	2416974.68
20	734815.0847	2416972.702
21	734820.5359	2416973.642
22	734832.046	2416975.874
23	734876.2364	2416984.258
24	734925.7442	2416994.052
25	734928.6701	2417040.094
26	734934.7052	2417129.101
27	734937.5872	2417177.444

EASTING-NORTHING DETAIL FOR AREA AT ODEKARA

TOTAL AREA 8.076 HACT.

SR. NO.	X(Easting)	Y(Northing)
1	746419.975	2405669.748
2	746423.1527	2405684.347
3	746428.1284	2405696.256
4	746453.8822	2405717.89
5	746473.7548	2405734.506
6	746485.4099	2405745.32
7	746527.5327	2405781.402
8	746549.3786	2405798.274
9	746549.4043	2405798.266
10	746567.7127	2405796.78
11	746608.0796	2405794.939
12	746636.9783	2405795.913
13	746681.792	2405793.142
14	746703.2021	2405793.199
15	746719.2447	2405792.811
16	746723.5147	2405777.755
17	746724.3302	2405768.21
18	746727.9945	2405755.094
19	746735.8252	2405726.029
20	746741.2835	2405708.027
21	746747.622	2405688.418
22	746758.6671	2405657.791
23	746761.1069	2405641.809
24	746763.156	2405617.838
25	746766.5118	2405579.197
26	746733.9056	2405569.721
27	746705.7098	2405566.328
28	746678.1515	2405557.798
29	746647.3076	2405552.11
30	746598.7725	2405538.744
31	746548.4858	2405529.814
32	746512.8814	2405523.068
33	746491.6035	2405518.483
34	746491.5005	2405514.943
35	746475.2175	2405512.019
36	746466.0265	2405510.314
37	746465.9651	2405511.361
38	746464.8151	2405511.444

39	746458.9459	2405510.093
40	746431.0891	2405507.296
41	746380.7736	2405503.769
42	746380.3473	2405514.644
43	746385.0475	2405524.336
44	746392.8976	2405556.957
45	746398.3288	2405580.711
46	746406.8964	2405614.954
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50	746453.8822	2405718.471
51	746473.7548	2405735.087
52	746485.4099	2405745.901
53	746527.5327	2405781.983
54	746549.3786	2405798.855
55	746549.4043	2405798.847
56	746567.7127	2405797.362
57	746608.0796	2405795.52
58	746636.9783	2405796.494
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60	746703.2021	2405793.78
61	746719.2447	2405793.392
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64	746727.9945	2405755.676
65	746735.8252	2405726.61
66	746741.2835	2405708.609
67	746747.622	2405689
68	746758.6671	2405658.372
69	746761.1069	2405642.391
70	746763.156	2405618.419
71	746766.5118	2405579.778
72	746733.9056	2405570.302
73	746705.7098	2405566.909
74	746678.1515	2405558.38
75	746647.3076	2405552.692
76	746598.7725	2405539.326
77	746548.4858	2405530.395
78	746512.8814	2405523.649
79	746491.6035	2405519.064
80	746491.5005	2405515.524
81	746475.2175	2405512.601

82	746466.0265	2405510.896
83	746465.9651	2405511.942
84	746464.8151	2405512.025
85	746458.9459	2405510.675
86	746431.0891	2405507.878
87	746380.7736	2405504.351
88	746380.3473	2405515.226
89	746385.0475	2405524.917
90	746392.8976	2405557.538
91	746398.3288	2405581.292
92	746406.8964	2405615.535
93	746419.975	2405670.911
94	746423.1527	2405685.509
95	746428.1284	2405697.418
96	746453.8822	2405719.053
97	746473.7548	2405735.669
98	746485.4099	2405746.482
99	746527.5327	2405782.564
100	746549.3786	2405799.436
101	746549.4043	2405799.428
102	746567.7127	2405797.943
103	746608.0796	2405796.102
104	746636.9783	2405797.075
105	746681.792	2405794.305
106	746703.2021	2405794.361
107	746719.2447	2405793.973
108	746723.5147	2405778.918
109	746724.3302	2405769.373
110	746727.9945	2405756.257
111	746735.8252	2405727.192
112	746741.2835	2405709.19
113	746747.622	2405689.581
114	746758.6671	2405658.954
115	746761.1069	2405642.972
116	746763.156	2405619.001
117	746766.5118	2405580.359
118	746733.9056	2405570.884
119	746705.7098	2405567.49
120	746678.1515	2405558.961
121	746647.3076	2405553.273
122	746598.7725	2405539.907
123	746548.4858	2405530.976
124	746512.8814	2405524.23

125	746491.6035	2405519.646
126	746491.5005	2405516.106
127	746475.2175	2405513.182
128	746466.0265	2405511.477
129	746465.9651	2405512.524
130	746464.8151	2405512.607
131	746458.9459	2405511.256
132	746431.0891	2405508.459
133	746380.7736	2405504.932
134	746380.3473	2405515.807
135	746385.0475	2405525.499
136	746392.8976	2405558.119
137	746398.3288	2405581.873
138	746406.8964	2405616.116

वन परिक्षेत्र अधिकारी
रायगढ़ (छ.ग.)

Executive Engineer
EHT (C) Dn. CSPTCL
Bilaspur

वन मण्डलाधिकारी
रायगढ़,वनमण्डल

EASTING-NORTHING DETAIL FOR AREA AT BORODIPA
TOTAL AREA 7.685 HACT.

SR. NO.	X(Easting)	Y(Northing)
1	745360.584	2409583.676
2	745357.358	2409581.329
3	745357.346	2409581.338
4	745339.358	2409596.449
5	745327.983	2409604.356
6	745328.153	2409608.51
7	745338.438	2409621.629
8	745356.783	2409646.078
9	745357.875	2409649.081
10	745363.822	2409653.704
11	745370.401	2409661.387
12	745399.708	2409690.965
13	745375.576	2409660.187
14	745430.894	2409722.604
15	745417.594	2409716.479
16	745421.687	2409719.141
17	745462.363	2409733.739
18	745493.233	2409745.536
19	745572.034	2409766.378
20	745562.345	2409766.399
21	745540.455	2409759.981
22	745532.305	2409759.379
23	745540.694	2409760.329
24	745573.694	2409764.188
25	745608.129	2409740.866
26	745630.784	2409725.124
27	745671.474	2409698.383
28	745660.411	2409676.046
29	745641.791	2409639.497
30	745628.522	2409620.945
31	745605.318	2409583.506
32	745605.408	2409583.746
33	745554.093	2409506.582
34	745551.392	2409499.076
35	745522.661	2409454.558
36	745518.632	2409449.587
37	745516.159	2409447.559

38	745493.684	2409439.476
39	745454.096	2409425.629
40	745410.244	2409412.013
41	745401.409	2409406.844
42	745380.85	2409400.871
43	745347.015	2409432.98
44	745349.008	2409435.01
45	745341.635	2409437.634
46	745326.162	2409453.418
47	745331.122	2409452.156
48	745330.31	2409452.818
49	745330.874	2409453.554
50	745329.697	2409461.602
51	745334.941	2409485.939
52	745338.783	2409505.013
53	745343.976	2409511.802
54	745344.804	2409511.447
55	745344.181	2409512.972
56	745345.839	2409528.361
57	745350.578	2409549.413
58	745360.584	2409584.228
59	745357.358	2409581.881
60	745357.346	2409581.89
61	745339.358	2409597.002
62	745327.983	2409604.909
63	745328.153	2409609.062
64	745338.438	2409622.181
65	745356.783	2409646.63
66	745357.875	2409649.633
67	745363.822	2409654.256
68	745370.401	2409661.939
69	745399.708	2409691.517
70	745375.576	2409660.739
71	745430.894	2409723.156
72	745417.594	2409717.031
73	745421.687	2409719.693
74	745462.363	2409734.291
75	745493.233	2409746.088
76	745572.034	2409766.93
77	745562.345	2409766.951
78	745540.455	2409760.533
79	745532.305	2409759.931
80	745540.694	2409760.882

81	745573.694	2409764.74
82	745608.129	2409741.418
83	745630.784	2409725.676
84	745671.474	2409698.935
85	745660.411	2409676.598
86	745641.791	2409640.049
87	745628.522	2409621.497
88	745605.318	2409584.058
89	745605.408	2409584.298
90	745554.093	2409507.134
91	745551.392	2409499.628
92	745522.661	2409455.11
93	745518.632	2409450.139
94	745516.159	2409448.111
95	745493.684	2409440.028
96	745454.096	2409426.181
97	745410.244	2409412.565
98	745401.409	2409407.396
99	745380.85	2409401.423
100	745347.015	2409433.532
101	745349.008	2409435.562
102	745341.635	2409438.186
103	745326.162	2409453.97
104	745331.122	2409452.708
105	745330.31	2409453.37
106	745330.874	2409454.106
107	745329.697	2409462.154
108	745334.941	2409486.491
109	745338.783	2409505.565
110	745343.976	2409512.354
111	745344.804	2409511.999
112	745344.181	2409513.524
113	745345.839	2409528.913
114	745350.578	2409549.965
115	745360.584	2409584.78
116	745357.358	2409582.433
117	745357.346	2409582.442
118	745339.358	2409597.554
119	745327.983	2409605.461
120	745328.153	2409609.614
121	745338.438	2409622.733
122	745356.783	2409647.182
123	745357.875	2409650.185

124	745363.822	2409654.808
125	745370.401	2409662.491
126	745399.708	2409692.069
127	745375.576	2409661.291
128	745430.894	2409723.709
129	745417.594	2409717.583
130	745421.687	2409720.245
131	745462.363	2409734.843
132	745493.233	2409746.64
133	745572.034	2409767.483
134	745562.345	2409767.503
135	745540.455	2409761.085
136	745532.305	2409760.483
137	745540.694	2409761.434
138	745573.694	2409765.292
139	745608.129	2409741.97
140	745630.784	2409726.228
141	745671.474	2409699.487
142	745660.411	2409677.15
143	745641.791	2409640.601
144	745628.522	2409622.049
145	745605.318	2409584.61
146	745605.408	2409584.85
147	745554.093	2409507.686
148	745551.392	2409500.18
149	745522.661	2409455.662
150	745518.632	2409450.691
151	745516.159	2409448.663
152	745493.684	2409440.58
153	745454.096	2409426.733
154	745410.244	2409413.117
155	745401.409	2409407.948
156	745380.85	2409401.975
157	745347.015	2409434.084
158	745349.008	2409436.114
159	745341.635	2409438.738
160	745326.162	2409454.522
161	745331.122	2409453.26
162	745330.31	2409453.922
163	745330.874	2409454.658
164	745329.697	2409462.706
165	745334.941	2409487.043
166	745338.783	2409506.117

167	745343.976	2409512.906
168	745344.804	2409512.551
169	745344.181	2409514.076
170	745345.839	2409529.465
171	745350.578	2409550.517

वन क्षेत्र अधिकारी
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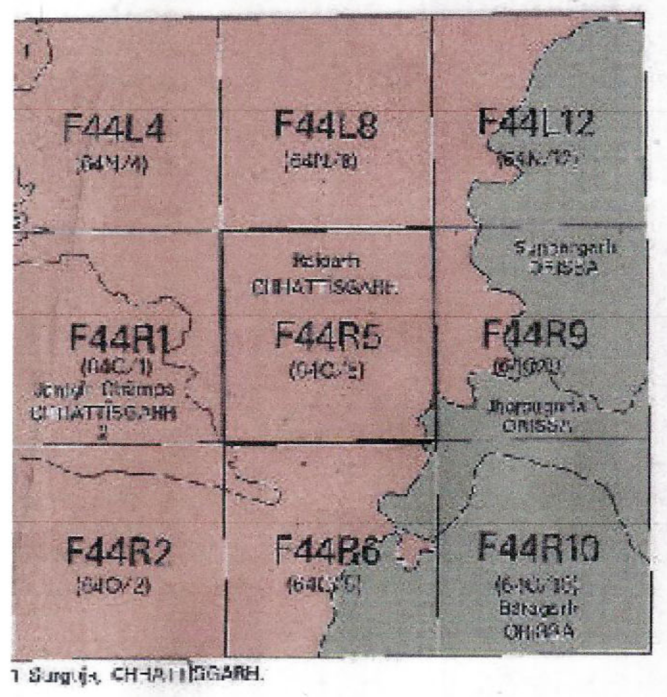
वन मण्डलाधिकारी
रायगढ,वनमण्डल

निर्यात के लिए नहीं NOT FOR EXPORT

OPEN SERIES MAP

No. F44R5

Scale 1:50,000



भारतीय सर्वेक्षण विभाग SURVEY OF INDIA

CONVENTIONAL SYMBOLS

NOTES :-

COMPILATION INDEX

A. Compiled from 1:50,000 survey 1979-81. Updated for major details during 2004-05.

Projection - UTM   Datum - WGS 84

Magnetic Variation from True North about $\frac{1}{2}$° West in 2005.

1:50,000

For further details about this map, please contact

Director

Orissa Geo-Spatial Data Centre

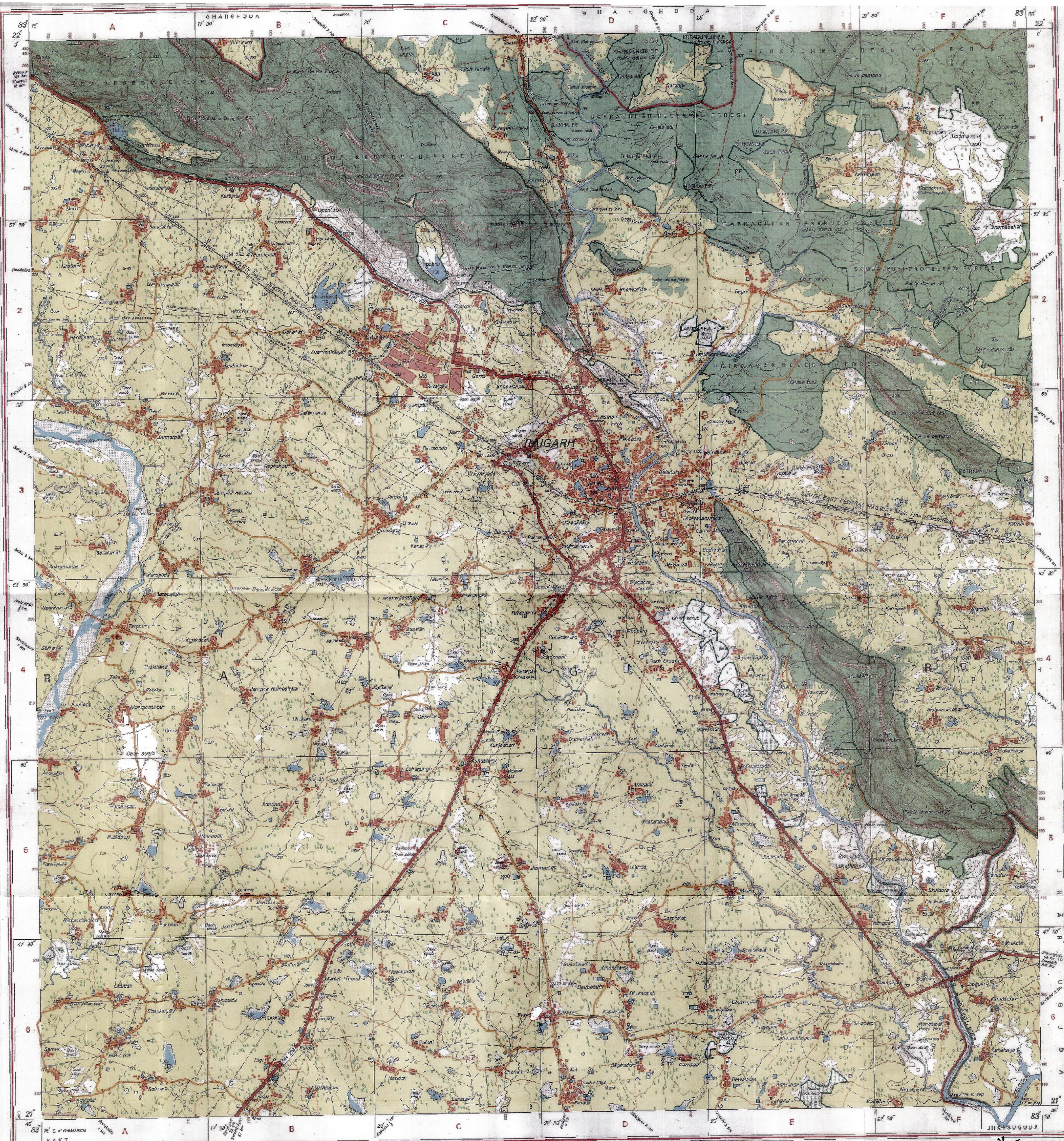
Survey of India

Survey Bhawan, PO - R R Laboratory

Bhubaneshwar-751013

Fax : 0674 - 2301416

WEBSITE - www.surveyofindia.gov.in



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वन मण्डलाधिकारी

रायगढ़ वनमण्डल