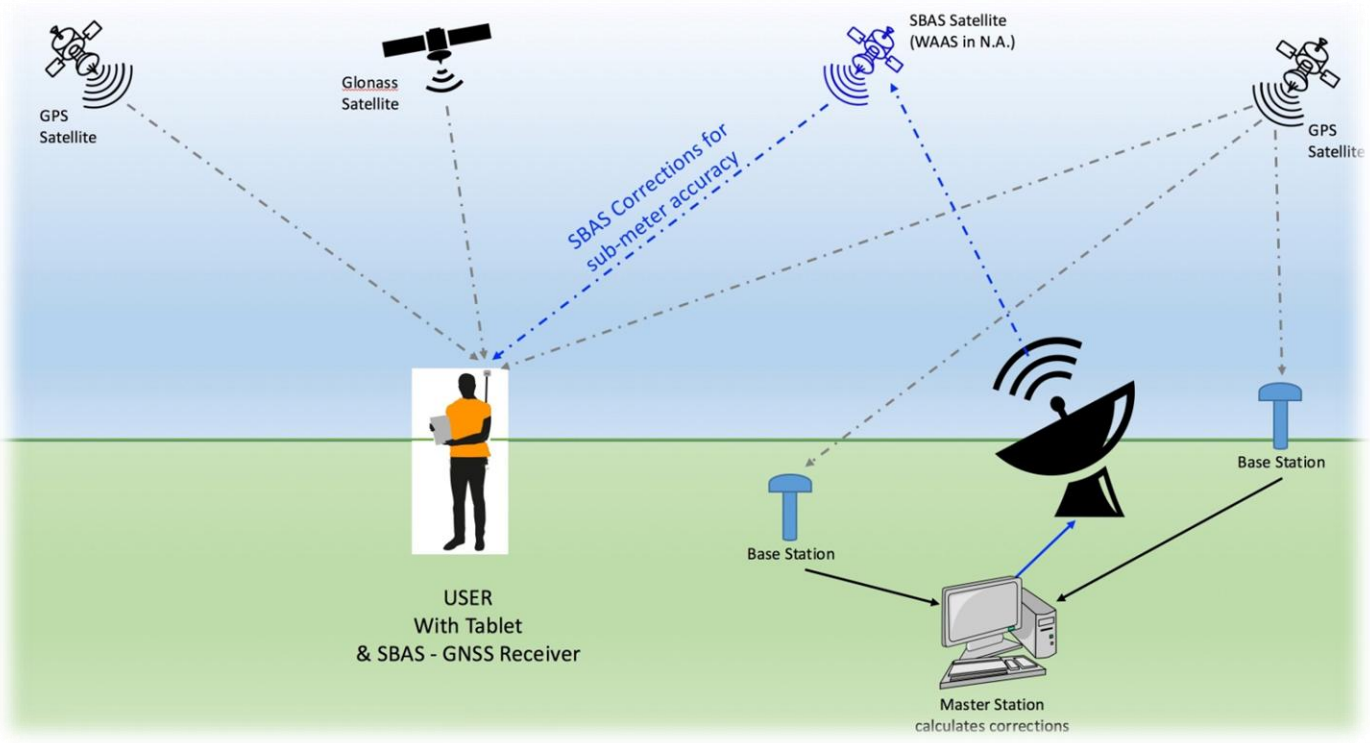
D.G.P.S. SURVEY REPORT FOR
3rd LINE IN BETWEEN PANIAJOB-BORTALAO
IN LIEU OF 3rd LINE PROJECT BETWEEN
RAJNANDGAON-NAGPUR (KALUMNA)
FOREST DIVISIONKHAIRAGARH
DISTRICT RAJNANDGAON
CHHATTISGARH



Computer Plus
Raipur (C.G.)

Name of the Applicant:

Executive Engineer,
Construction/Rajnandgaon (XEN/CON/RJN),
Chhattisgarh.

Surveyed By:

COMPUTER PLUS
Software Development &Consultancy
Devendra Nagar (Raipur),
Chhattisgarh.

INDEX

MAPS ON A4, A3& A0 SIZE PRINTOUT

DATA ENCLOSED IN SOFT COPY

1. ABOUT US

Computer Plus an **ISO 9001:2015 certified** organization working in the field of I.T. Consulting & Software Services. We are registered organization under **Directorate of Geology and Mining, Chhattisgarh**.We are serving since 1998 & head office in Raipur, (C.G.), with core competence in the areas of Integrated Business Solutions with Implementation and Support.

Our Team:

We're justifiably proud of the team we've assembled. Initially numbering just two programmers, **Computer Plus** has grown steadily and now has over 250 staff members. The **Computer Plus** team is made up of highly-qualified, talented and innovative IT and GIS professionals each with their own area of expertise. Their experience spans the full range of custom software development, from small entrepreneurial projects to complex systems for major corporations.

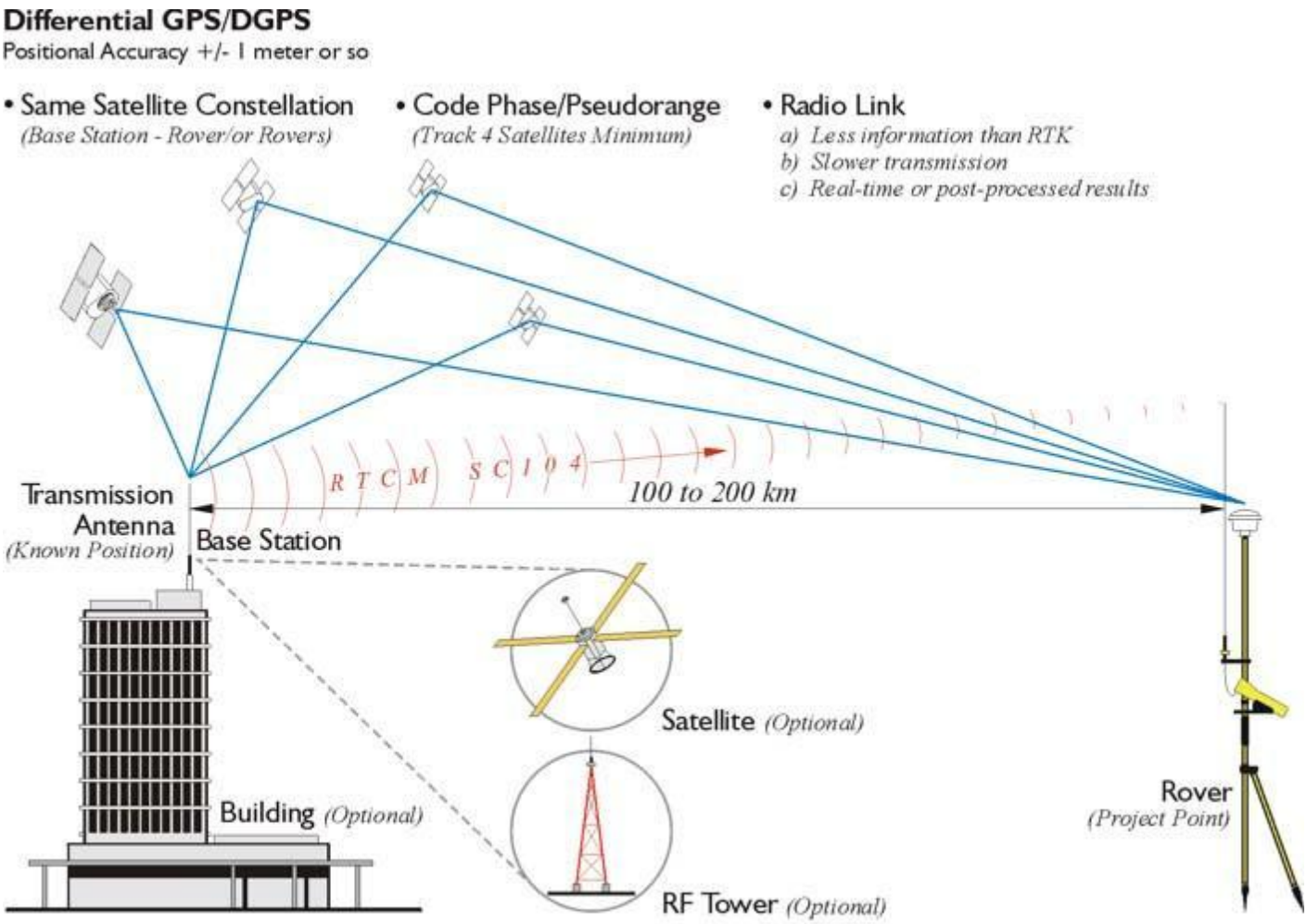
Our Mission:

Computer Plus's mission is to solve challenging technical problems in partnership with our clients.
How we achieve it:

- We understand the business needs of our clients, and how technology can be a tool to make modern businesses more profitable for both private and government sector.
- **Computer Plus** combines technical excellence with great customer service and value for money.
- We value creativity and collaboration; ideas are shared and everybody contributes on an individual basis toward the common goal.

We create new teams for each project, ensuring the best possible combination of skills and experience to meet the client's needs and deliver high quality solutions.

2. INTRODUCTION TO DGPS



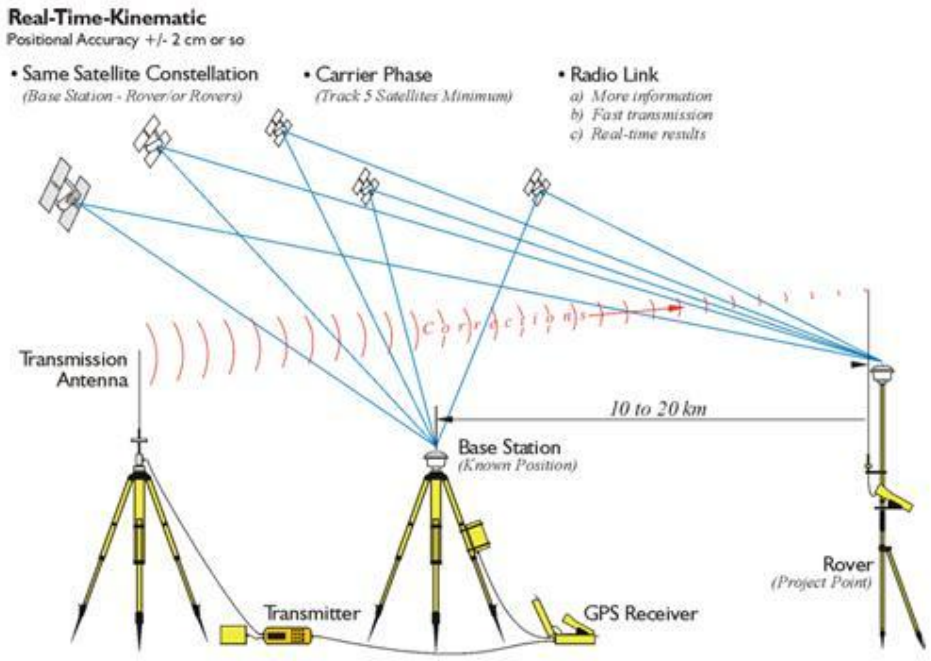
The term DGPS is sometimes used to refer to differential GPS that is based on pseudo ranges, aka code phase. Even though the accuracy of code phase applications was given a boost with the elimination of Selective Availability (SA) in May 2000 consistent accuracy better than the 2-5 meter range still 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 operate in 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, some one-way, communication with the base stations. Radio systems, geostationary satellites, low-earth-orbiting.

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 receiver at a known location logging data at the same time as a receiver at anunknown 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 receivers on 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 in real-time.

In this category of GPS surveying work there is sometimes a distinction made between code- based and carrierbased solutions. In fact, most systems use a combination of code and carrier measurements so the distinction is more a matter of emphasis rather than an absolute difference.Well that's a bit 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.

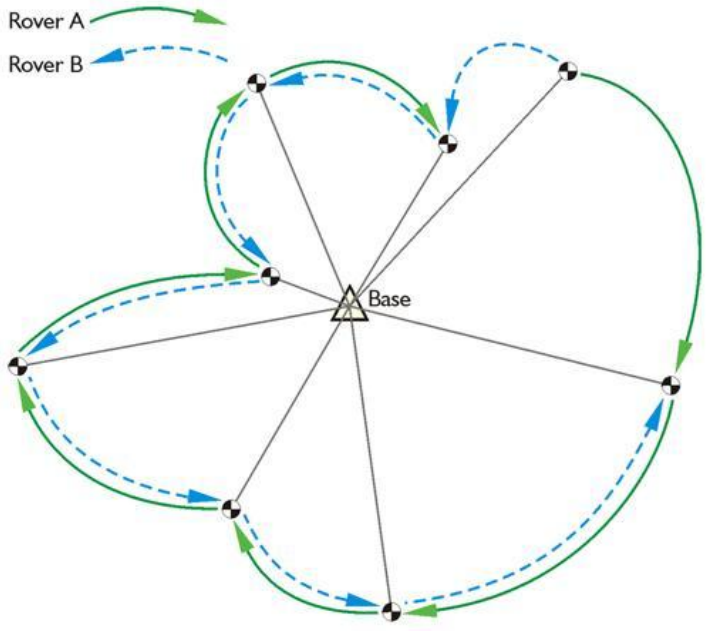
Errors in satellite clocks, imperfect orbits, the trip through the layers of the atmosphere, and many other sources contribute inaccuracies to GPS signals by the time they reach a receiver.

These errors are variable, so the best to way to correct them is to monitor them as they happen. A good way to do this is to set up 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 corrections can be communicated from the base to the rover. It works well, but the errors are constantly changing so a base station has to monitor them all the time, at least all the time the rover 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 later in post processing.

Real-time positioning is built on the foundation of the idea that, with the important exceptions of multipath 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 baseline match. The shorter the baseline, the more the errors are correlated. The longer the baseline, 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 position 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 a short 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 these radial base lines, it would be tough to catch it because there's no real redundancy. The illustration shows a way 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 four to eight hours between the first occupation and the second occupation on the point. Another way is to move the base to another 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-occupation of the project points after one base station has been moved to a new control point, or a two base stations can be up and running from the very outset and throughout 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 antenna is blocked or tilted until the lock on the satellites is interrupted. It is then re-oriented on the unknown position a second time for the repeat solution. This does offer a second solution, but from virtually the same constellation.

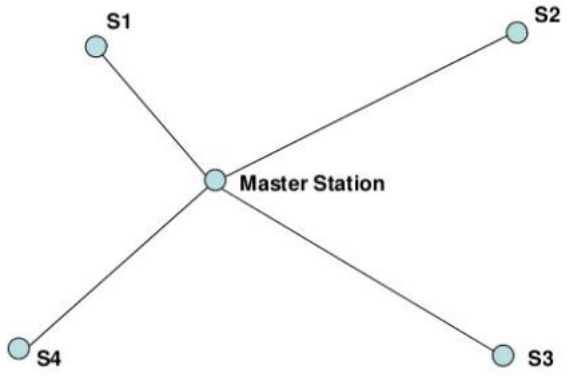
More efficiency can be achieved by adding additional roving receivers. However, as the number of receivers rises, the logistics become more complicated, and a survey plan becomes necessary. Also, project points that are simultaneously near one another but far from the control station should be directly connected with a baseline 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 a real-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 download the positions from more than one base and process your new position based on these continuously operating reference stations and have some redundancy.

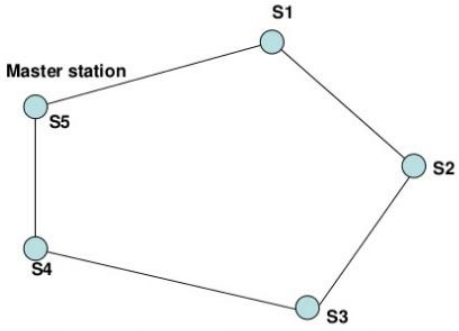
2. STATIC METHOD

I.Rapid Static Method



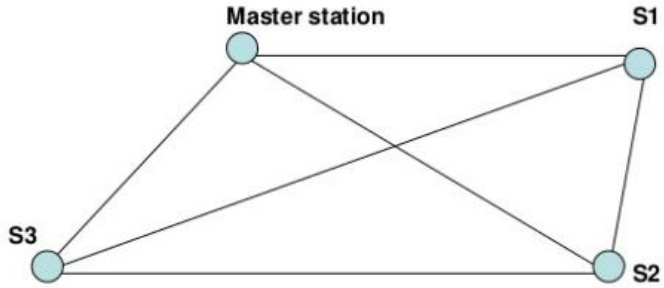
Schematic diagram of Rapid Static Method

II.Traverse Method



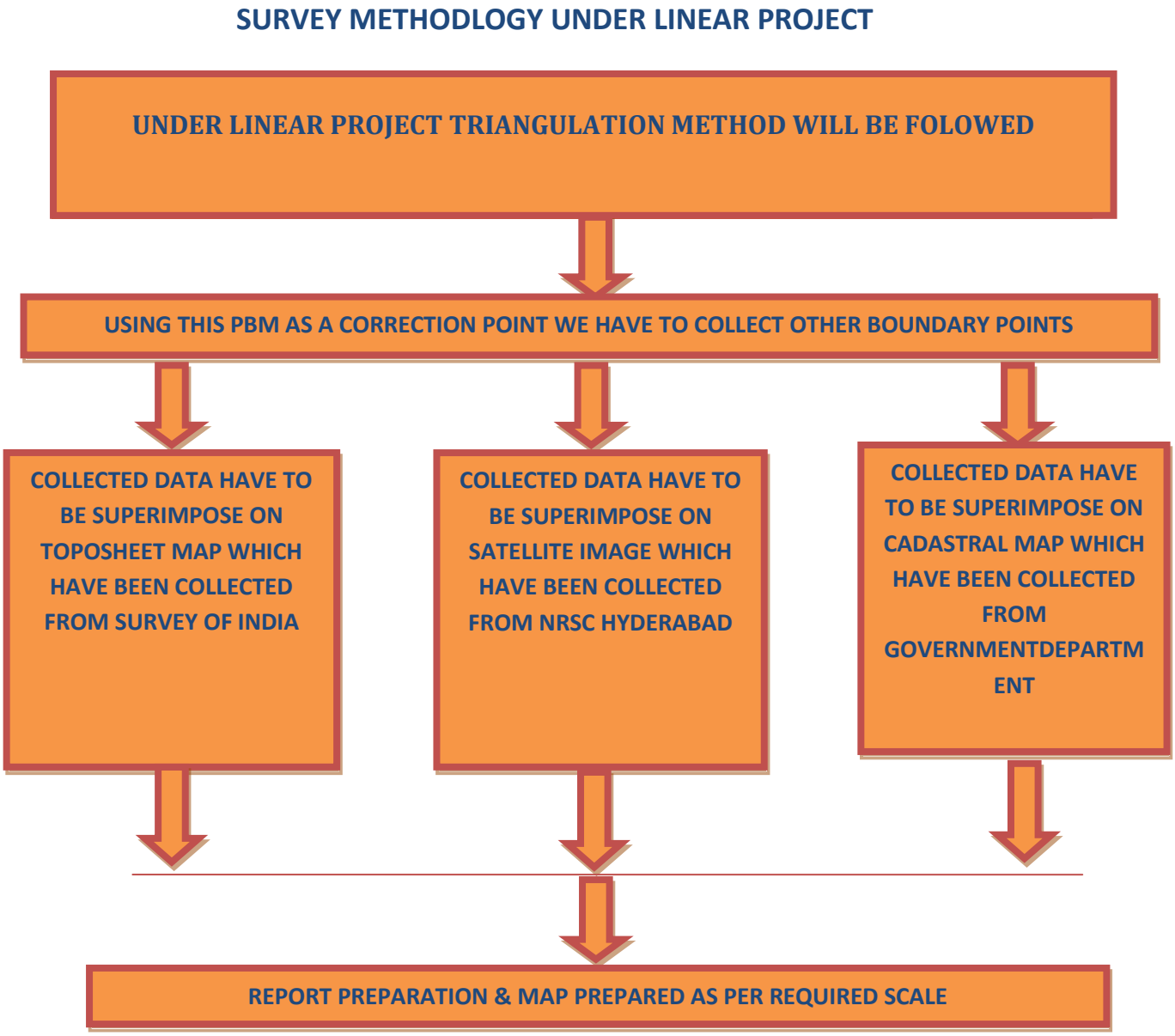
Schematic diagram of Traverse method

III. Trilateration Method



Trilateration method

3. METHODOLOGY USED



4. INTRODUCTION TO SURVEY SITE

The surveyed area for**3rd Line in between Paniajob-Bortalao in lieu of 3rd line Project between Rajnandgaon- Nagpur (Kalumna) atVillagePaniyajob& Bortalao**which comes under**Block Dongargarh, District Rajnandgaon,and Chhattisgarh**. Dongargarh Railway Station longitude latitude is**80°45.688'E 21°11.120'N.**Survey site is located **10.7**Km from**Dongargarh**. Survey site comes under **Forest DivisionKhairagarh**, **Forest RangeNorth Bortalab&Forest CircleDurg.**

Area Under Reserve Forest Land

S.No.	District Name	Division Name	Compartment No.	Chainage From	Chainage To	Length (In Meters)	Width (In Meters)	Area (In Hect)
1	RAJNANDGAON	KHAIRAGARH	RF 437	42741.67	42857	115.33	62.00	0.716
2				42857	42907	50.00	62.00	0.310
3				42907	43307	400.00	62.00	2.480
4				43307	43333.38	26.38	62.00	0.164
5				43333.38	43380.01	46.63	50.00	0.227
6				43380.01	43430.01	50.00	41.00	0.197
7				43430.01	43480.01	50.00	28.00	0.135
8				43480.01	43530.01	50.00	23.00	0.111
9				43530.01	43561.27	31.26	22.00	0.067
10				43561.27	43580.01	18.74	23.00	0.042
11				43580.01	43589.51	9.50	26.00	0.025
12				43589.51	43630.01	40.50	33.00	0.131
13				43630.01	43680.01	50.00	49.45	0.244
14				43680.01	43740.01	60.00	72.00	0.445
15				43740.01	43790.01	50.00	118.00	0.592
16				43790.01	43840.01	50.00	127.00	0.636
17				43840.01	43880.21	40.20	128.09	0.512
18				43880	44100	220.00	84.00	1.851
19				44100	44260	160.00	90.00	1.441
20				44260	44340	80.00	160.00	1.277
21				44340	44500	160.00	168.00	2.689
22				44500	44600	100.00	160.00	1.607
23				44600	44652.05	52.05	79.80	0.421
24				44652.05	44663	55.47	5.95	0.033
25				44652.05	44663	24.53	7.54	0.019
TOTAL AREA OF RESERVE FOREST								16.372

Area Under Revenue Forest Land

S.No.	District Name	Division Name	District Name	Block Name	Village Name	Khasra No.	Area (In Hect)
1	Rajnandgaon	Khairagarh	Rajnandgaon	Dongargarh	Bortalao	203	2.711
2						201	0.154
3						199	1.530
4					Paniyajob	260	0.187
TOTAL AREA OF REVENUE FOREST							4.582

AREA DETAILS& LAND CLASSIFICATION

S.No.	LAND TYPE	Area(In Hect)
1	RESERVE FOREST	16.372
2	REVENUE FOREST	4.582
TOTAL SURVEYED AREA		20.954

वन परिक्षेत्र अधिकारी
उत्तर बोरतलाव परिक्षेत्र

तहसीलदार
डोंगरगढ़ (छ.ग.)

Computer Plus
Raipur (C.G.)

अनुविभागीय अधिकारी
डोंगरगढ़ (छ.ग.)

सहा. वनमण्डलाधिकारी
डोंगरगढ़

वनमण्डलाधिकारी
खैरागढ़, वनमण्डल, खैरागढ़

कार्यपालन अभियंता (निर्माण)
Executive Engineer (Con.)
द.पू.म. रेलवे, राजनांदगांव
S.E.C. Railway. RJN

5. CONTROL POINT

PRIMARY CONTROL POINT (FIXING OF BASE STATION POINT)

Name	P.C.P VILLAGE NAME	LONGITUDE	LATITUDE
1	Paniyajab	80° 38' 17.886" E	21° 12' 53.335" N
2		80° 38' 16.505" E	21° 12' 53.153" N
3		80° 40' 20.841" E	21° 11' 47.727" N
4		80° 40' 20.255" E	21° 11' 50.127" N

SURVEYED GROUND CONTROL POINTS

RESERVE FOREST COORDINATES			
S.No.	PILLAR ID	LONGITUDE	LATITUDE
1	L1	80° 39' 52.737" E	21° 11' 41.995" N
2	C1	80° 39' 52.221" E	21° 11' 43.137" N
3	R1	80° 39' 51.734" E	21° 11' 44.287" N
4	C2	80° 39' 50.388" E	21° 11' 43.600" N
5	L2	80° 39' 50.155" E	21° 11' 42.613" N
6	R2	80° 39' 50.522" E	21° 11' 44.612" N
7	C3	80° 39' 48.398" E	21° 11' 44.232" N
8	L3	80° 39' 47.545" E	21° 11' 43.455" N
9	R3	80° 39' 49.251" E	21° 11' 45.010" N
10	C4	80° 39' 46.781" E	21° 11' 44.820" N
11	L4	80° 39' 46.383" E	21° 11' 43.884" N
12	R4	80° 39' 47.180" E	21° 11' 45.757" N
13	C5	80° 39' 45.176" E	21° 11' 45.436" N
14	L5	80° 39' 44.818" E	21° 11' 44.484" N
15	R5	80° 39' 45.562" E	21° 11' 46.377" N
16	C6	80° 39' 43.572" E	21° 11' 46.055" N
17	L6	80° 39' 43.203" E	21° 11' 45.107" N
18	R6	80° 39' 43.973" E	21° 11' 46.990" N
19	C7	80° 39' 41.968" E	21° 11' 46.673" N
20	L7	80° 39' 41.608" E	21° 11' 45.722" N
21	R7	80° 39' 42.363" E	21° 11' 47.612" N
22	C8	80° 39' 40.365" E	21° 11' 47.292" N
23	L8	80° 39' 39.961" E	21° 11' 46.358" N
24	R8	80° 39' 40.806" E	21° 11' 48.212" N
25	C9	80° 39' 38.761" E	21° 11' 47.911" N
26	L9	80° 39' 38.383" E	21° 11' 46.966" N
27	R9	80° 39' 39.183" E	21° 11' 48.838" N
28	C10	80° 39' 37.157" E	21° 11' 48.530" N
29	L10	80° 39' 36.828" E	21° 11' 47.566" N
30	R10	80° 39' 37.572" E	21° 11' 49.460" N
31	C11	80° 39' 35.553" E	21° 11' 49.148" N

S.No.	PILLAR ID	LONGITUDE	LATITUDE
32	L11	80° 39' 35.251" E	21° 11' 48.175" N
33	R11	80° 39' 35.933" E	21° 11' 50.092" N
34	C12	80° 39' 33.949" E	21° 11' 49.767" N
35	L12	80° 39' 33.551" E	21° 11' 48.831" N
36	R12	80° 39' 34.348" E	21° 11' 50.704" N
37	C13	80° 39' 33.103" E	21° 11' 50.094" N
38	L13	80° 39' 32.694" E	21° 11' 49.161" N
39	R13	80° 39' 33.512" E	21° 11' 51.026" N
40	C14	80° 39' 31.608" E	21° 11' 50.671" N
41	L14	80° 39' 31.526" E	21° 11' 50.485" N
42	R14	80° 39' 32.016" E	21° 11' 51.603" N
43	R14A	80° 39' 32.162" E	21° 11' 51.934" N
44	C15	80° 39' 30.004" E	21° 11' 51.289" N
45	L15	80° 39' 30.134" E	21° 11' 51.587" N
46	R15	80° 39' 30.558" E	21° 11' 52.553" N
47	C16	80° 39' 28.400" E	21° 11' 51.908" N
48	L16	80° 39' 28.651" E	21° 11' 52.466" N
49	R16	80° 39' 28.954" E	21° 11' 53.171" N
50	C17	80° 39' 26.796" E	21° 11' 52.527" N
51	L17	80° 39' 27.069" E	21° 11' 53.148" N
52	R17	80° 39' 27.350" E	21° 11' 53.790" N
53	C18	80° 39' 25.793" E	21° 11' 52.914" N
54	L18	80° 39' 26.071" E	21° 11' 53.546" N
55	R18	80° 39' 26.337" E	21° 11' 54.181" N
56	C19	80° 39' 25.192" E	21° 11' 53.145" N
57	L19	80° 39' 25.424" E	21° 11' 53.675" N
58	R19	80° 39' 25.746" E	21° 11' 54.409" N
59	C20	80° 39' 24.888" E	21° 11' 53.263" N
60	L20	80° 39' 25.093" E	21° 11' 53.741" N
61	R20	80° 39' 25.424" E	21° 11' 54.533" N
62	C21	80° 39' 23.588" E	21° 11' 53.764" N
63	L21	80° 39' 23.629" E	21° 11' 53.847" N
64	R21	80° 39' 24.143" E	21° 11' 55.028" N
65	C22	80° 39' 21.985" E	21° 11' 54.383" N
66	L22	80° 39' 21.759" E	21° 11' 53.868" N
67	R22	80° 39' 22.539" E	21° 11' 55.646" N
68	C23	80° 39' 20.060" E	21° 11' 55.125" N
69	L23	80° 39' 19.466" E	21° 11' 53.774" N
70	R23	80° 39' 20.615" E	21° 11' 56.389" N
71	R23A	80° 39' 20.931" E	21° 11' 57.111" N
72	C24	80° 39' 18.463" E	21° 11' 55.760" N
73	L24	80° 39' 17.635" E	21° 11' 54.019" N
74	R24	80° 39' 19.397" E	21° 11' 57.720" N
75	C25	80° 39' 16.894" E	21° 11' 56.452" N
76	L25	80° 39' 15.917" E	21° 11' 54.614" N
77	R25	80° 39' 17.916" E	21° 11' 58.373" N

S.No.	PILLAR ID	LONGITUDE	LATITUDE
78	C26	80° 39' 15.667" E	21° 11' 57.073" N
79	L26	80° 39' 14.940" E	21° 11' 55.889" N
80	R26	80° 39' 16.400" E	21° 11' 58.254" N
81	R26A	80° 39' 16.817" E	21° 11' 58.929" N
82	L26A	80° 39' 14.610" E	21° 11' 55.354" N
83	C27	80° 39' 14.200" E	21° 11' 57.939" N
84	L27	80° 39' 13.466" E	21° 11' 56.755" N
85	R27	80° 39' 15.030" E	21° 11' 59.062" N
86	C28	80° 39' 12.800" E	21° 11' 58.899" N
87	L28	80° 39' 11.933" E	21° 11' 57.803" N
88	R28	80° 39' 13.734" E	21° 11' 59.951" N
89	C29	80° 39' 11.479" E	21° 11' 59.951" N
90	L29	80° 39' 10.323" E	21° 11' 59.091" N
91	R29	80° 39' 12.472" E	21° 12' 0.951" N
92	C30	80° 39' 10.239" E	21° 12' 1.088" N
93	L30	80° 39' 9.072" E	21° 12' 0.260" N
94	R30	80° 39' 11.327" E	21° 12' 1.997" N
95	C31	80° 39' 9.769" E	21° 12' 1.566" N
96	L31	80° 39' 8.664" E	21° 12' 0.674" N
97	R31	80° 39' 10.834" E	21° 12' 2.497" N
98	R31A	80° 39' 10.912" E	21° 12' 2.562" N
99	L31A	80° 39' 8.586" E	21° 12' 0.609" N
100	C32	80° 39' 8.657" E	21° 12' 2.814" N
101	L32	80° 39' 7.507" E	21° 12' 1.819" N
102	R32	80° 39' 9.849" E	21° 12' 3.760" N
103	C33	80° 39' 7.643" E	21° 12' 4.133" N
104	L33	80° 39' 6.272" E	21° 12' 3.428" N
105	R33	80° 39' 8.976" E	21° 12' 4.899" N
106	C34	80° 39' 6.563" E	21° 12' 5.801" N
107	L34	80° 39' 5.174" E	21° 12' 5.130" N
108	R34	80° 39' 7.912" E	21° 12' 6.537" N
109	R34A	80° 39' 8.977" E	21° 12' 7.084" N
110	L34A	80° 39' 4.111" E	21° 12' 4.584" N
111	C35	80° 39' 5.367" E	21° 12' 8.147" N
112	L35	80° 39' 2.781" E	21° 12' 7.201" N
113	R35	80° 39' 7.921" E	21° 12' 9.165" N
114	R35A	80° 39' 8.050" E	21° 12' 9.215" N
115	L35A	80° 39' 2.653" E	21° 12' 7.153" N
116	C36	80° 39' 4.767" E	21° 12' 9.673" N
117	L36	80° 39' 1.981" E	21° 12' 8.872" N
118	R36	80° 39' 7.531" E	21° 12' 10.540" N
119	C37	80° 39' 4.287" E	21° 12' 11.235" N
120	L37	80° 39' 1.498" E	21° 12' 10.438" N
121	R37	80° 39' 7.069" E	21° 12' 12.071" N
122	C38	80° 39' 3.849" E	21° 12' 13.143" N
123	L38	80° 39' 1.111" E	21° 12' 12.718" N

S.No.	PILLAR ID	LONGITUDE	LATITUDE
124	R38	80° 39' 6.570" E	21° 12' 13.654" N
125	R38A	80° 39' 6.707" E	21° 12' 13.679" N
126	L38A	80° 39' 0.975" E	21° 12' 12.697" N
127	C39	80° 39' 3.550" E	21° 12' 14.745" N
128	L39	80° 39' 0.793" E	21° 12' 14.429" N
129	R39	80° 39' 6.267" E	21° 12' 15.290" N
130	C40	80° 39' 3.264" E	21° 12' 16.349" N
131	L40	80° 39' 1.891" E	21° 12' 16.183" N
132	R40	80° 39' 4.621" E	21° 12' 16.611" N
133	R40A	80° 39' 5.993" E	21° 12' 16.827" N
134	L40A	80° 39' 0.520" E	21° 12' 15.968" N
135	C41	80° 39' 2.948" E	21° 12' 18.065" N
136	L41	80° 39' 1.584" E	21° 12' 17.828" N
137	R41	80° 39' 4.312" E	21° 12' 18.303" N
138	R41A	80° 39' 3.475" E	21° 12' 18.157" N
139	C42	80° 39' 2.893" E	21° 12' 18.340" N
140	R42	80° 39' 3.400" E	21° 12' 18.538" N
141	R43	80° 39' 4.292" E	21° 12' 18.405" N
REVENUE FOREST COORDINATES			
S.No.	**PILLAR ID**	**LONGITUDE**	**LATITUDE**
142	1	80° 40' 21.597" E	21° 11' 50.487" N
143	2	80° 40' 21.643" E	21° 11' 50.297" N
144	3	80° 40' 21.567" E	21° 11' 49.607" N
145	4	80° 40' 21.145" E	21° 11' 49.466" N
146	5	80° 40' 20.377" E	21° 11' 49.250" N
147	6	80° 40' 20.228" E	21° 11' 49.261" N
148	7	80° 40' 19.839" E	21° 11' 49.208" N
149	8	80° 40' 19.380" E	21° 11' 48.875" N
150	9	80° 40' 19.220" E	21° 11' 48.811" N
151	10	80° 40' 19.086" E	21° 11' 49.060" N
152	11	80° 40' 18.893" E	21° 11' 49.586" N
153	12	80° 39' 4.228" E	21° 12' 18.414" N
154	13	80° 39' 2.154" E	21° 12' 18.051" N
155	14	80° 39' 1.190" E	21° 12' 18.036" N
156	15	80° 38' 57.966" E	21° 12' 17.844" N
157	16	80° 38' 57.447" E	21° 12' 22.378" N
158	17	80° 38' 59.615" E	21° 12' 22.543" N
159	18	80° 38' 59.959" E	21° 12' 22.346" N
160	19	80° 39' 0.083" E	21° 12' 22.060" N
161	20	80° 38' 59.849" E	21° 12' 21.692" N
162	21	80° 38' 59.949" E	21° 12' 21.401" N
163	22	80° 39' 0.636" E	21° 12' 20.421" N
164	23	80° 39' 0.879" E	21° 12' 20.002" N
165	24	80° 39' 2.751" E	21° 12' 20.083" N
166	25	80° 39' 2.832" E	21° 12' 19.682" N
167	26	80° 39' 3.187" E	21° 12' 19.067" N

S.No.	PILLAR ID	LONGITUDE	LATITUDE
168	27	80° 39' 3.708" E	21° 12' 18.817" N
169	28	80° 38' 59.790" E	21° 12' 27.486" N
170	29	80° 38' 57.800" E	21° 12' 27.160" N
171	30	80° 38' 56.959" E	21° 12' 28.197" N
172	31	80° 38' 58.268" E	21° 12' 27.994" N
173	32	80° 38' 59.846" E	21° 12' 27.985" N
174	33	80° 38' 56.118" E	21° 12' 31.033" N
175	34	80° 38' 55.286" E	21° 12' 30.338" N
176	35	80° 38' 54.299" E	21° 12' 31.116" N
177	36	80° 38' 53.670" E	21° 12' 31.510" N
178	37	80° 38' 53.583" E	21° 12' 31.395" N
179	38	80° 38' 53.700" E	21° 12' 30.599" N
180	39	80° 38' 52.682" E	21° 12' 30.939" N
181	40	80° 38' 49.969" E	21° 12' 31.354" N
182	41	80° 38' 49.323" E	21° 12' 30.127" N
183	42	80° 38' 39.410" E	21° 12' 31.636" N
184	43	80° 38' 38.601" E	21° 12' 31.791" N
185	44	80° 38' 40.663" E	21° 12' 33.334" N
186	45	80° 38' 41.204" E	21° 12' 32.754" N
187	46	80° 38' 41.779" E	21° 12' 33.152" N
188	47	80° 38' 42.161" E	21° 12' 33.348" N
189	48	80° 38' 43.904" E	21° 12' 33.147" N
190	49	80° 38' 44.793" E	21° 12' 33.189" N
191	50	80° 38' 45.300" E	21° 12' 34.501" N
192	51	80° 38' 47.043" E	21° 12' 33.910" N
193	52	80° 38' 46.864" E	21° 12' 32.292" N
194	53	80° 38' 48.039" E	21° 12' 32.141" N
195	54	80° 38' 48.998" E	21° 12' 32.208" N
196	55	80° 38' 49.988" E	21° 12' 32.370" N
197	56	80° 38' 50.287" E	21° 12' 32.298" N
198	57	80° 38' 50.760" E	21° 12' 32.059" N
199	58	80° 38' 51.266" E	21° 12' 32.747" N
200	59	80° 38' 51.467" E	21° 12' 33.139" N
201	60	80° 38' 53.178" E	21° 12' 32.356" N

वन परिक्षेत्र अधिकारी
उत्तर बोरतलाव परिक्षेत्र

तहसीलदार
डोंगरगढ़ (छ.ग.)

Computer Plus
Raipur (C.G.)

अनुविभागीय अधिकारी
डोंगरगढ़(छ.ग.)

उप वनमण्डलाधिकारी
डोंगरगढ़

वनमण्डलाधिकारी
खैरागढ़,वनमण्डल,खैरागढ़

कार्यपालन अभियंता (निर्माण)
Executive Engineer (Con.)
S.E.C. Rail

6. SURVEY DATE

Survey Date	Observation	Survey Time	Village Name
17-07-2020	Pillar Survey	11:30 AM To 04:00PM	Paniyajab
18-07-2020		10:30 PM To 03:50 PM	
19-07-2020		10:30 PM To 05:00 PM	
30-01-2021		10:30 PM To 05:00 PM	Bortalao

Weather was nice with clear sun light. Survey pillar marking has been done before itself so it was easy to get the location point**.**Surveyhas been done by the survey team members **Mr. Santosh Sahu, Mr. Kishor Sahu, Mr. Surendra Pratap Singh, Mr. Rakesh Ratre and Sanjay Gardiya**. The team was lead by**Mr. SantoshSahu**and Report is prepared by **T.Preeti**.

Base Station Photographs

Survey Photographs with Staff


Chhattisgarh 491445, India
Latitude 21°11'54.182"N Longitude 80°39'24.114"E
LOCAL 16:26:10 GMT 10:56:10 SUNDAY 07.19.2020 ALTITUDE 316 METER


Chhattisgarh 491445, India
Latitude 21°11'53.552"N Longitude 80°39'24.926"E
LOCAL 16:24:45 GMT 10:54:45 SUNDAY 07.19.2020 ALTITUDE 333 METER

Survey Pillar Photographs


L13
L14
L17
L18
L20
L21
L24











L4
N - 21°12'17.828"
E - 80°39'01.584"
R1
R4


R-11
R-12
R-13
R-14
R-14A
R-15
R-16
R-17
R-18


R-20

R-21

R-21

R-22

R-23

R-23A

R-24

R-25

R-26 A

R-26

R-26 A

R-27


R-28
R-29
R-30
R-31
R-32
R-33
R-34
R-41
R-42
R-43

DGPS SURVEY & REPORT PREPARED BY

COMPUTER PLUS

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