



**REPORT ON DGPS SURVEY & PREPARATION OF
GEO-REFERENCED CADASTRAL MAP OF COMPENSATORY
AFFORESTATION LAND OVER AN AREA**

26.835 HA. IN THE VILLAGE BATA,

1.751 HA. IN THE VILLAGE SONPUR,

12.621 HA. IN THE VILLAGE TATIJHARIYA AND

24.813 HA. IN THE VILLAGE DUMARKHOLI,

TEHSIL: SAMRI/KUSMI, DISTRICT: BALRAMPUR/RAMANUGANJ,

STATE: CHHATTISGARH,

AGAINST FOREST DIVERSION OF MINING LEASE AREA 57.00 HA. AND

APPROACH ROAD 9.02 HA. IN FOREST COMPARTMENT

NO. 252,267,268 AND 269, FOREST RANGE: CHHOTEDONGAR,

FOREST DIVISION: NARAYANPUR, DISTRICT: NARAYANPUR,

STATE: CHHATTISGARH.



**SHRI BAJRANG
POWER AND ISPAT LTD.**

BELIEF, STRONGER THAN STEEL.

PREPARED BY : SOHAM FERRO MANGANESE PVT. LTD. (SFMP)

NKY Tower, Block No.16/17, Ajani Sq.Wardha Road, Nagpur - 440015, soham.ferromagnese@gmail.com, 0712-2239964, 2252221

**Report On DGPS Survey & Preparation of
Geo-referenced Cadastral Map Of Compensatory
Afforestation Land Over An Area
26.835 Ha. In The Village Bata,
1.751 Ha. In The Village Sonpur,
12.621 Ha. In The Village Tatijhariya And
24.813 Ha. In The Village Dumarkholi,
Tehsil: Samri/Kusmi; District: Balrampur/Ramanujanj,
State: Chhattisgarh,
Against Forest Diversion Of Mining Lease Area 57.00 Ha.
and Approach Road 9.02 Ha. in Forest Compartment No.
252, 267, 268 And 269, Forest Range: Chhotedongar,
Forest Division: Narayanpur, District: Narayanpur,
State: Chhattisgarh.**

**For
M/s SHRI BAJRANG POWER & ISPAT LTD.
DIST. - RAIPUR (CG)**

NOVEMBER 2019

Prepared by,



**Soham Ferro Manganese Private Limited (SFMPL)
NKY Tower, Block No.16/17, Ajani Sq. Wardha Road,
Nagpur-440015**

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1.) INTRODUCTION

Directorate of Geology & Mining, has decided to facilitate the work of fixing of mine boundaries by carrying out survey with the help of DGPS and Total Station instruments and erection of boundary pillars in the state of Chhattisgarh in order to comply the guidelines and directions issued in Mineral (Auction) Rules, 2015/ IBM Circular no. 2/2010 and Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules-2016], by calling bids from the Empanelled Agencies.

Soham Ferro Magnese Pvt. Ltd. (SFMPL) is a leading consultant in India and empanelled with Directorate of Geology & Mining, Chhattisgarh vide Empanelment Letter/Order No. F 7-14/2013/12 dated 10.11.2014 as an expert agency specialized for survey works.

M/s. SHRI BAJRANG POWER & ISPAT LTD. the project proponent is a firm having registered office in Village - Borjhara, Urla-Guma Road, Urla Growth Center, Raipur 493221, Chhattisgarh. The proponent has purchased CA Land at village Bata Area 26.835 Ha., at village Sonpur Area 1.751 Ha., at village Tatijhariya Area 12.621 Ha. and at village Dumarkholi Area 24.813 Ha., Tehsil - Samri/Kusmi, District - Balrampur/Ramanujan], State-Chhattisgarh for diversion of mining lease area 57.00 Ha. and approach road area 9.02 Ha. in Forest Range - Chhotedongar, Forest Division - Narayanpur, District- Narayanpur, State - Chhattisgarh. The proponent is committed to operate systematic and scientific mining operations, making optimum utilization of the resources. Needless to mention that the mining activities shall be carried out as per the mandatory laws and regulation prevailing.



CIRCULAR OF IBM 2/2010

**GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
OFFICE OF THE CHIEF CONTROLLER OF MINES**

No. N-11013/3/MP/90-CCOM Vol-VII

Nagpur, dated 06/04/2010

CIRCULAR NO. 2/2010

Sub: Submission of Geo-referenced Cadastral Map.

As per the procedure in vogue, a Mining Lease map / Prospecting License map showing the area/areas with details on a cadastral map with the Khasra numbers / Survey Nos. for mining lease / prospecting license, granted by the state governments under Act and Rules made there-under, is a basic requirement which is enclosed alongwith the Mining Plan / Scheme of Mining / Progressive Mine Closure Plan and Scheme of Prospecting. The Mining Lease map/ Prospecting License map is a certified copy obtained from the state / district authorities which is essential for planning purpose in mining plan / Scheme of Mining etc.

In supersession to all the instructions issued on the subject, it is decided that:

1. The Mining Lease / Prospecting License boundary showing all Khasra numbers / Survey Nos. on a Cadastral Map (Khasra Plan) on original plan (not the photo copy) and duly certified by State Government on a scale of 1:3960 shall be submitted with Mining Plan / Scheme of Mining / Progressive Mine Closure Plan and Scheme of Prospecting by the Lessee / Applicant / Licensee.
2. The boundary pillars of each mine lease / prospecting license are to be fixed precisely. Each boundary pillars shall be surveyed using DGPS (at least 2 Hours observation) for its ground position by an agency recognized by the State Government).
3. The Geo-referenced mining lease / prospecting licenses map prepared using DGPS shall be superimposed on Geo-referenced vectorised cadastral map.
4. On integration, the Geo-referenced mining lease / prospecting licenses map shall duly matched with geo-referenced vectorised cadastral maps.
5. In case of forest areas, the boundary pillars shall be fixed on ground with reference to at least three permanent ground features in and around mining leases / prospecting licenses.
6. The geo-referenced mining leases / prospecting licenses map shall be superimposed on latest high-resolution satellite data (cloud-free) derived from merging of Cartosat-2 and LISS-IV (Scale 1:5,000) covering an area of 500 meters from the mining lease / applied area boundary.
7. The satellite data products are available from NRSC, Hyderabad. The superimposed output in the form of soft copy and hard copy should be submitted along with the Mining plan / Scheme of Mining / Progressive Mine Closure Plan and Scheme of Prospecting. The soft copy submission should be in the standard format and digitized maps should be in shape file, which can be imported in any GIS database.
8. The above maps will be base for preparation of all statutory as well as working plans of the mines.

This circular may be given wide publicity amongst RQPs / Mine Owners / Lessee's / Licensee's / Applicants for implementation. Further, this may be intimated to all the states.

(Ranjan Sahai)
Chief Controller of Mines In Charge

**LETTER OF EMPANELMENT WITH DIRECTORATE, GEOLOGY & MINING,
CHATTISGARH**

छत्तीसगढ़ शासन
खनिज राश्वन विभाग
मंत्रालय
महानदी सघन, नया रायपुर-492002
// अमिसूचना //

By Speed post



रायपुर, दिनांक: अप्रैल, 2018

क्रमांक एफ 7-14/2013/12 : इस विभाग की समस्तखण्ड अधिसूचना दिनांक 10.11.2014 द्वारा कुल 10 संस्थानों को 03 वर्ष की अवधि के लिये सरल अधिमान्यता प्रदान की गई है जिसकी अवधि दिनांक 09.11.2017 को समाप्त हो गई है।

2/ राज्य शासन एतद्वारा निम्नलिखित 07 संस्थानों की अधिमान्यता का नवीनीकरण आवेदन प्रस्तुत करने में हुए विलम्ब की अवधि में छूट प्रदान करते हुए उनकी अधिमान्यता दिनांक 10.11.2017 से आगामी 03 वर्ष की अवधि के लिये प्रदान की जाती है :-

क्र.	एजेंसी का नाम एवं पता
1	M/S SHREERAM GEMICON (PVT.) LIMITED, GEOLOGICAL AND MINING CONSULTANTS, L-09, Songanga Colony Seepat Road, Bilaspur (Chhattisgarh)
2	M/S SINHA MINING CONSULTANCY, Office No. 9, D.Costa Commercial Apartment Near Old Railway Station Gate, Malbhat, Margu, Gua - 403601
3	M/S SPATIAL PLANNING AND ANALYSIS RESEARCH CENTRE PVT. LTD. E/11, Infocity, Chandaka Industrial Estate, Bhubaneswar, Orissa. 751024
4	MS SIDDHARTH GEO CONSULTANTS, 621/3, First Floor Ramkund, Sagota Colony, Behind Lifeworth Hospital, Raipur (Chhattisgarh) 492001
5	M/S SOHAM FERRO MANGANESE PVT. LTD., Block No. 16, 17 Ground Floor N.K.Y. Tower, Anjani Sq. Wardha Road, Nagpur (Maharashtra)
6	M/S SAN SURVEY ENGINEERING, Regd. Off. - 465, Jiban Pal Bagan, Karbala (West), P.O. & Dist. - Hooghly, West Bengal, 712103 Contact Office - Anjali Complex, Bankim Kanan, Chinsurah Station Road, Chinsurah, Hooghly, West Bengal - 712102
7	MS BHARAT ALUMINIUM COMPANY LIMITED, P.O. Bales Nagar Korba (C.G.)

3/ उपर्युक्त तालिका के सरल क्रमांक-01 से 06 में उल्लिखित कंपनियों/एजेंसियों की अधिमान्यता राज्य में खनिज खोजता को छोड़कर राश्व खनिजों की खनिज रियायत संबंधित डीजीपीएस सर्वे कार्य के लिये तथा सरल क्रमांक 7 में उल्लिखित मेसर्स भारत एल्यूमीनियम कंपनी लिमिटेड की अधिमान्यता राज्य में रिशत खन की खनिज रियायत संबंधित डीजीपीएस सर्वे कार्य के लिये होगी।

उपर्युक्त प्रदत्त अधिमान्यता की शर्तें निम्नानुसार होंगी :-

- Each corner of the lease area shall have a boundary pillar (corner pillar).
- There shall be erected intermediate boundary pillars between the corner pillars in such a way that each pillar is visible from the adjacent pillar located on either side of it.
- The distance between two adjacent pillars shall not be more than fifty meters.
- The pillar shall be of square pyramid frustum shaped above the surface and conoids shaped below the surface.
- Each pillars shall be of reinforced cement concrete.
- The corner pillar shall have a base of 0.5m X 0.5m and height of 1.30m of which 0.70m shall be above ground level and 0.60m below the ground.
- The intermediate pillars shall have a base of 0.25m x 0.25m and height of 1.30m of which 0.70m shall be above ground level and 0.60m below the ground.

..... 2

L.O.D.S. (Geology and Mining) No. (11/2018)



8. All pillars shall be painted in yellow color and the top ten centimeters in red color by enamel paint and shall be grouted with cement concrete.
9. On all corner pillars, distance and bearing to the forward and backward pillars and latitude and longitude shall be marked;
10. Each pillar shall have serial number in a clockwise direction and the number shall be engraved on the pillars;
11. The number of pillars shall be the numbers of the individual pillar upon the total number of pillars in the lease;
12. The tip of all the corner boundary pillars shall be a square of 15 centimeter on which a permanent circle of 10 centimeter diameter shall be drawn by paint or engraved and the actual boundary point shall be intersection of two diameters drawn at 90 degrees.
13. The lease boundary survey shall be accurate within such limits of error as the Control General, Indian Bureau of Mines may specify in this behalf;
14. The location and number of the pillars shall also be shown in the surface and other plans maintained by the lessee; and
15. In case of forest area within the lease, the size and construction and color of the boundary pillars shall be as per the norms specified by the Forest Department in this behalf.
16. The Survey Agency shall be responsible for the accuracy of the data collected during Survey.
17. Coordinates of boundary pillars shall be established in the World Geodetic System 1984 (WGS-84) Datum.
18. डीजीपीएस सर्वे कार्य हेतु पारिश्रमिक का निर्धारण अधिमाम्यता प्राप्त संस्थान एवं खनिज रियायतधारी के मध्य आपसी समन्वय से किया जाएगा। किसी भी प्रकार का आपसी विवाद होने पर राज्य शासन उत्तरदायी नहीं होगा।
19. डीजीपीएस सर्वे कार्य के गुणवत्ता में कमी पाये जाने पर या किसी भी प्रकार की कार्य संबंधी शिकायत पाये जाने पर जांच उपरान्त राज्य शासन को यह अधिकार होगा कि उक्त अधिकृत एंजनी की मान्यता किसी भी समय समाप्त की जा सकती है।
20. डीजीपीएस सर्वे के संबंध में भारतीय खान ब्यूरो/राज्य शासन द्वारा समय-समय पर जारी निर्देशों का पालन अधिमाम्यता प्राप्त संस्थान को करना होगा।
21. राज्य शासन द्वारा जारी यह अधिमाम्यता 03 वर्ष के लिए होगी। समयावधि समाप्ति से 03 माह पूर्व अधिकृत एंजनी नवीनीकरण हेतु आवेदन कर सकता।
4. यह अधिमाम्यता दिनांक 10.11.2017 से 03 वर्ष के लिए ही मान्य होगी।

छत्तीसगढ़ के राज्यपाल के नाम से
तथा आदेशानुसार

(हस्ताक्षर)

(प्रफुल्ल आरा)

उप सचिव

छत्तीसगढ़ शासन

खनिज मामल विभाग

पुत्रक्रमंक एक 7-14/2013/12
प्रतिनिधि-

संयुक्त दिनांक अप्रैल 2018
- 9 APR 2018

1. सचिव, भारत सरकार, खान मंत्रालय, शारदा भवन, नई दिल्ली,
2. कर्तारनर जेनरल, भारतीय खान ब्यूरो, शिवाजी प्रसाद, ए-ब्लॉक इन्डिया भवन, सिविल लाइन्स, मांगपुरा, नई दिल्ली,

WGS-84 Geodetic Datum

3

1/12/11

3. उप खान नियंत्रक क्षेत्रीय कार्यालय भारतीय खान ब्यूरो, दूसरी मंजिल, जी.एस.आई.
फील्ड प्रशिक्षण केंद्र, महालेखाकार अफिस कॉम्प्लेक्स, पोस्ट विधानसभा, रायपुर
4. संचालक, भौमिकी तथा खनिकर्म, छत्तीसगढ़ ब्लॉक-4, द्वितीय तल, इन्द्रायती भवन, नया
रायपुर
5. समस्त कलेक्टर, जिला: _____ छत्तीसगढ़
6. समस्त संबंधित _____

की और सूचनाएं एवं आवश्यक कार्यवाही हेतु अर्पित

7. संचालक, शासकीय मुद्रणालय, गेन्दवास, भगपुरी, रायपुर(छत्तीसगढ़) की ओर राजपत्र में
प्रकाशनाथ।
8. श्री श्रीकांत राव, सहायक भौमिकी विद्व, संचालनालय भौमिकी तथा खनिकर्म, द्वितीय
पल्लर इन्द्रायती भवन, नया रायपुर। कृपया उक्त आदेश/अधिसूचना को संचालनालय
की वेबसाईट में अपलोड करने का कष्ट करें।
9. गार्ड फाईल रजिस्टर


उप-सचिव
छत्तीसगढ़ शासन
खनिज साधन विभाग

SHRI BAJRANG POWER AND ISPAT LTD. (P) Limited



OUR EMPANELMENT NOTIFIED LETTER

We M/s. Soham Ferro Manganese Pvt. Ltd., would like to impress upon you that, our organization has been duly empanelled by Govt. Of Chhattisgarh, Directorate of Geology and Mining Mahanadi Bhawan, Naya Raipur vide their order bearing no. F 7-14/2013/12 Dt. 10.11.2014 for carrying Differential Global Positioning Systems (DGPS) survey and for carrying Geo referencing and Cadastral Map as per Guide lines issued by IBM Letter No. 02/2010 Dt. 06.04.2010 and Subsequent Guide Lines.

For Soham Ferro Manganese Pvt. Ltd.,

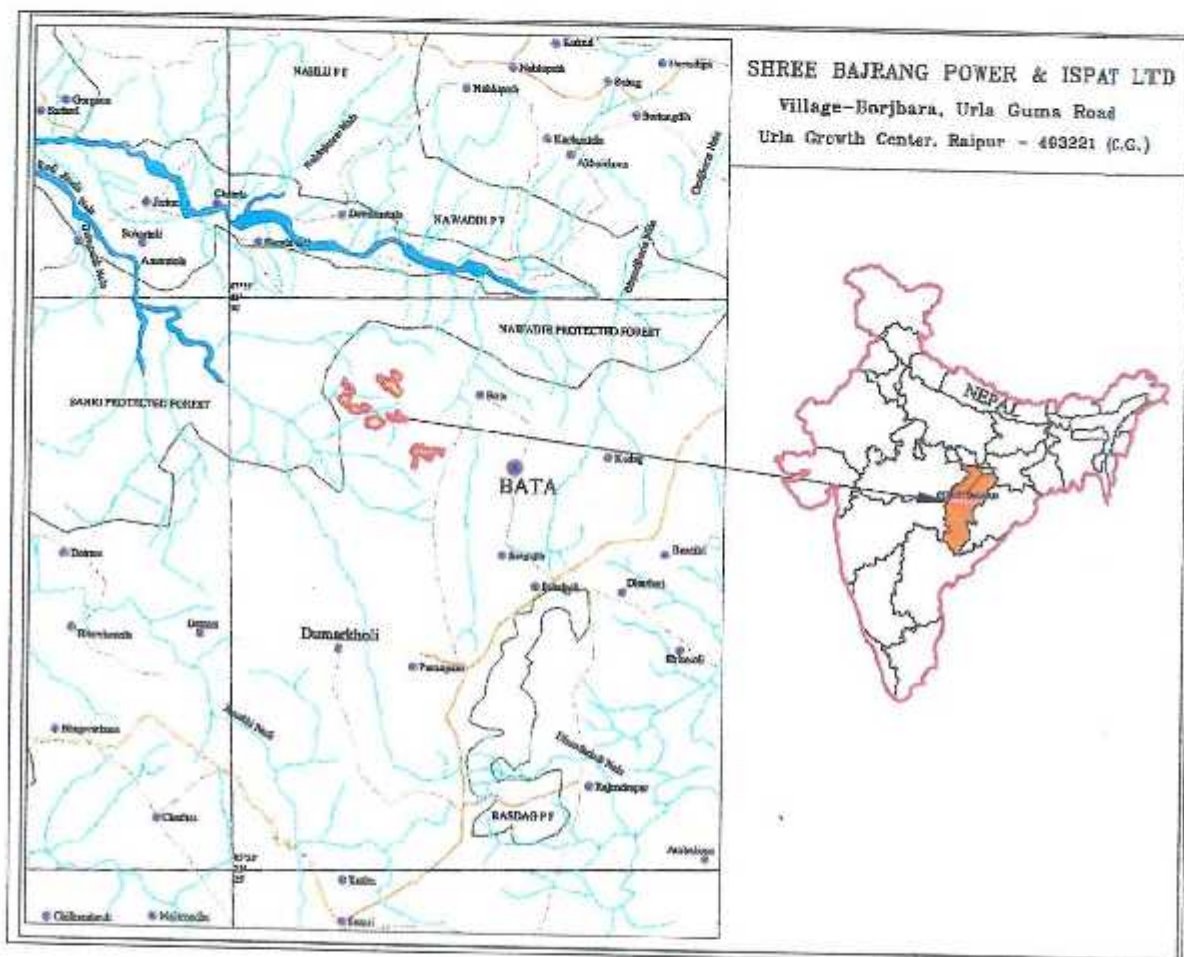


(Nitin Y. Selukar)
Director



5) LOCATION WITH LATITUDE AND LONGITUDE COORDINATES (WGS84)

A) BATA BLOCK



Coordinate of Centre of Bata Block:

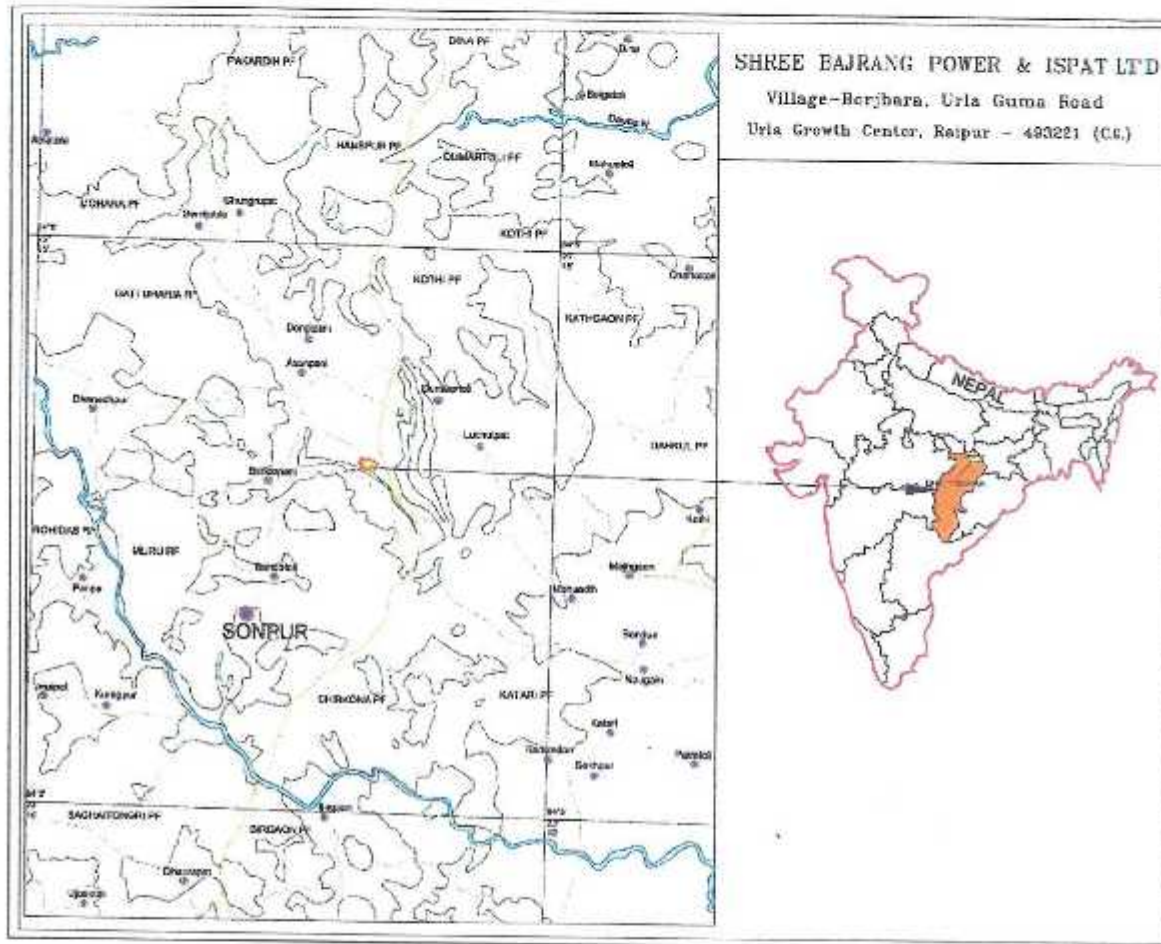
Long. -: E 83°56'34.627"

Lat. - : N 23°28'57.178"

Reference Point: DGPS Bench mark point is fixed on the boundry pillar at CA Land area in the village Bata. Capture a satellite signal on static mode observation 2 hours continuously on this benchmark point. Please refer on BM References and Site Location Photographs on page no-24.



B) SONPUR BLOCK



Coordinate of Centre of Sonpur Block:

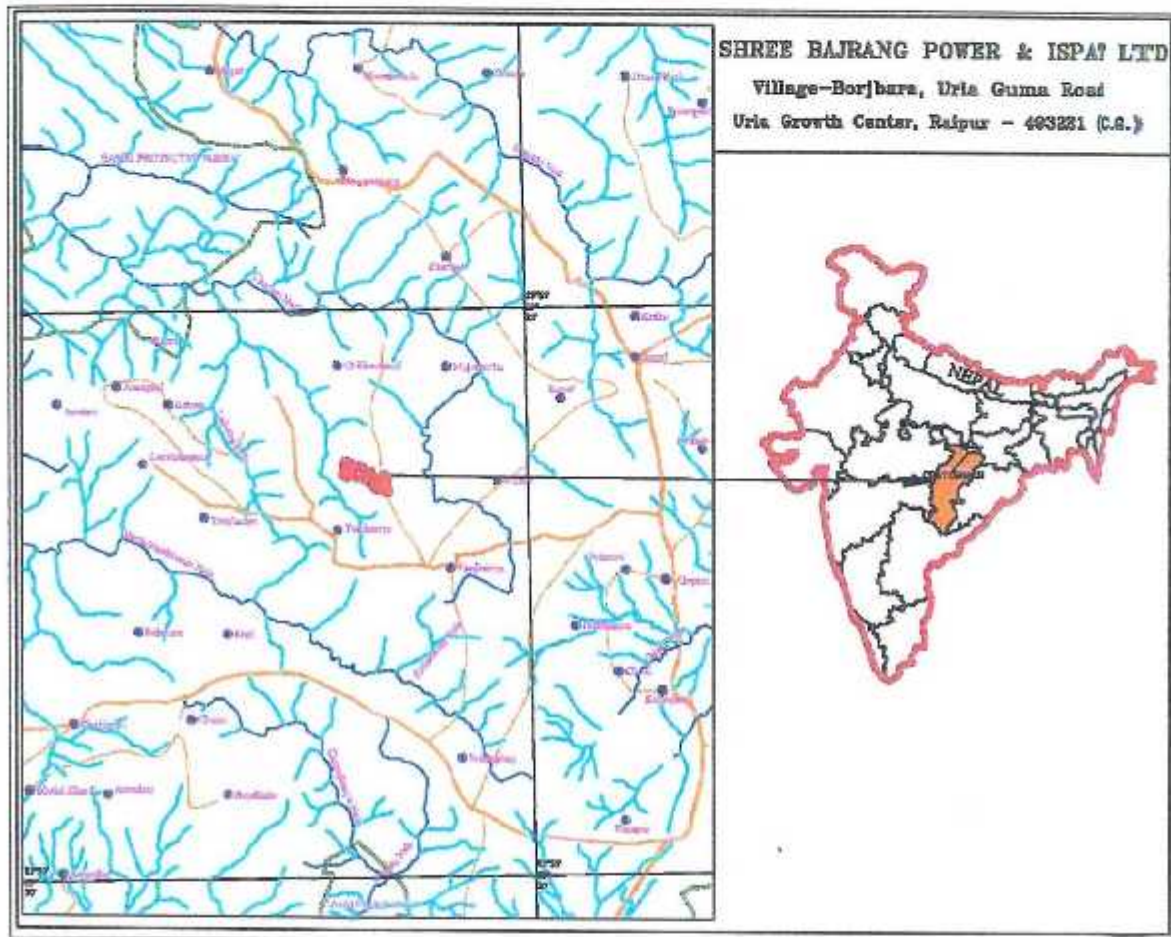
Long. -: E 84°3'9.971"

Lat. - : N 23°13'3.659"



Reference Point: DGPS Bench mark point is fixed on the rock stone at CA Land area in the Village Sonpur. Capture a satellite signal on static mode observation 2 hours continuously on this benchmark point. Please refer on BM References and Site Location Photographs on page no-25.

C) TATIJHARIYA BLOCK



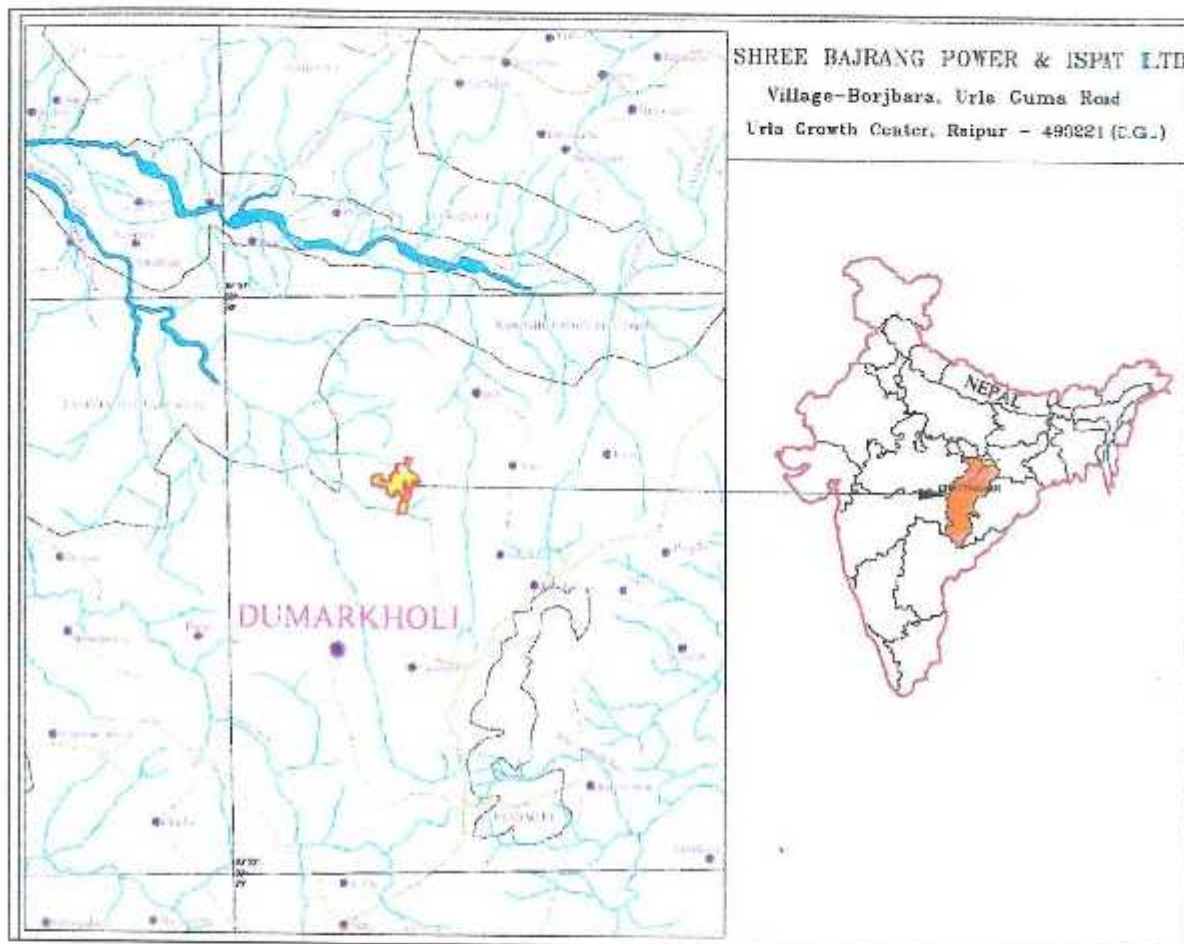
Coordinate of Centre of Tatiyhariya Block:

Long. -: E 83°53'25.770"

Lat. - : N 23°23'33.225"

Reference Point: DGPS Bench mark point is fixed on the rock stone at CA Land area in the Village Tatiyhariya. Capture a satellite signal on static mode observation 2 hours continuously on this benchmark point. Please refer on BM References and Site Location Photographs on page no-26.

D) DUMARKHOLI BLOCK



Coordinate of Centre of Dumarkholi Block:

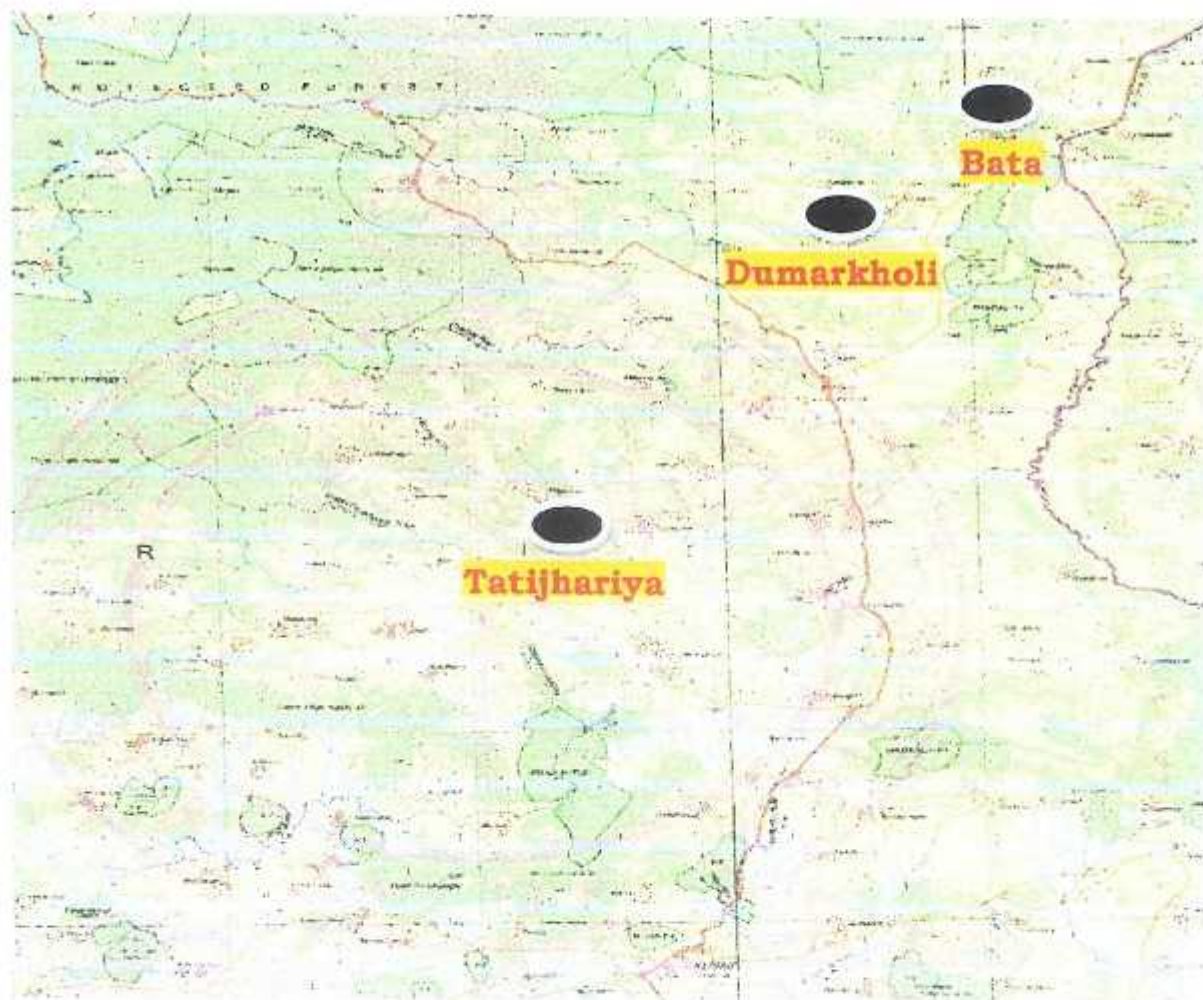
Long. -: E 83°56'41.838"

Lat. - : N 23°28'25.341"

Reference Point: DGPS Bench mark point is fixed on the Hand Pump at CA Land area in the village Dumarkholi. Capture a satellite signal on static mode observation 2 hours continuously on this benchmark point. Please refer on BM References and Site Location Photographs on page no-27.

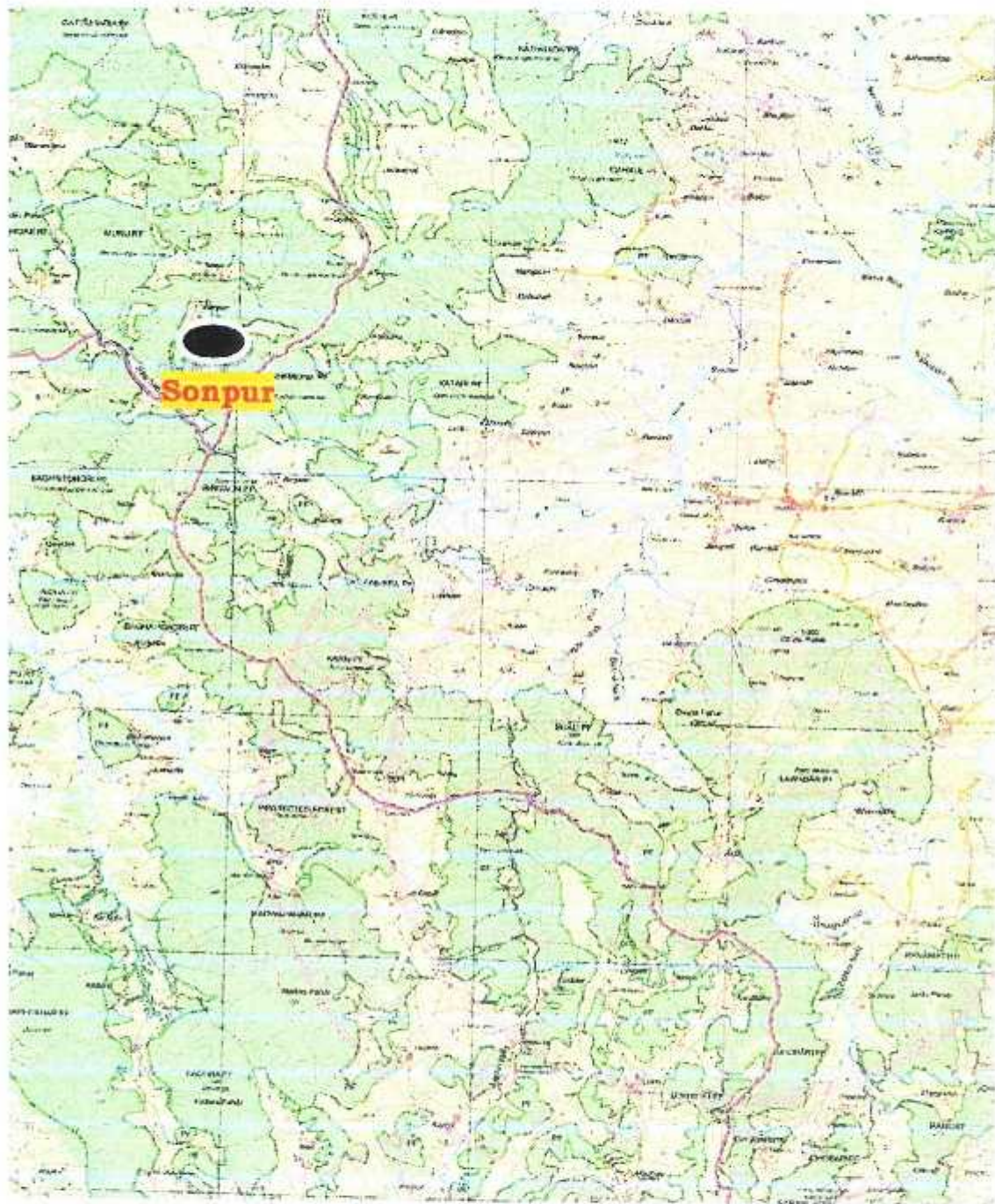
6) IDENTIFICATION AND DEMARCATION

Bata, Sonpur, Tatijhariya and Dumarkholi Compensatory Afforestation Land area falls in Samri/Kusmi Tehsil at Balrampur/Ramanujanj District in Chhattisgarh State. The Bata and Dumarkholi CA Land area is approachable from district headquarter Balrampur via Balrampur-Samri-Kusmi Rd upto of Bata and Dumarkholi villages. Bata and Dumarkholi CA Land area is 92kms from Balrampur. The Tatijhariya CA Land area is approachable from district headquarter Balrampur via Balrampur-Samri-Kusmi Rd upto of Tatijhariya village. Tatijhariya CA Land area is 87kms from Balrampur. The Sonpur CA Land area is approachable from district headquarter Balrampur via Balrampur-Samri-Kusmi Rd upto of Sonpur village. Sonpur CA Land area is 116kms from Balrampur. The CA Land area is a part of the Survey of India Topo sheets no 64M/15 and 73A/4.



Topo Sheet No. 64 M/15





Topo Sheet No. 73A/4

7) SCOPE OF WORK AS PER TENDER DOCUMENTS:

The Scope of work for the Surveying and Associated Activities are as follows:

- i. DGPS Survey: The mine lease areas provided by the client shall be surveyed by DGPS instrument. The data collected shall be duly geo-referenced using Ground Control Points (GCPs) from the nearest GSI reference/control point/GTS bench mark and collected using dual frequency DGPS receiver. A base map shall be prepared using these data.
- ii. Erection of Boundary Pillars- The boundary pillars (size of Corner Pillar shall have a base of 0.30m x 0.30m and height of 1.30m whereas Intermediate Pillar shall have a base of 0.25m x 0.25m and height of 1.0m) of each mine lease are to be fixed precisely as per specifications.
- iii. Preparation of geo-referenced vectorised ML/PL map using necessary digitization, amalgamation of maps, mosaicing, ground level point referring etc. all complete in all respects. On integration, the Geo-Referenced ML/PL map shall duly match with geo-referenced vectorised cadastral map.
- iv. Survey of all the lease boundary pillar locations using DGPS.
- v. Vectorised Geo-referenced ML/PL maps shall be superimposed on latest high resolution satellite data (cloud free), derived from merging of Cartosat-2 and LISS-IV (scale 1:5000) covering ML/PL area plus an area coming within the ML/PL area boundary and 500 m beyond the ML/PL boundary line.

Survey Agencies' scope of work is based on the Ministry of Mines, IBM Circular No. 2/2010 under reference no. N-11013/2/MP/90/CCOM Vol-VII dated 6/4/2010.



8) Instruments and Software Used

Hardware:

Sr. No.	Name of Instrument	Make/ Model	Accuracy	Numbers
1	DGPS (Dual Frequency)	Topcon Sokkia India Pvt. Ltd. / GSX-2	3mm+1PPM	3
2	Leica GNSS	S05	10mm+PPM	1
3.	Total Station	Leica TS 02 / 407	1-2 Sec	2
4.	Handle GPS	Garmin	3 Mt.	5

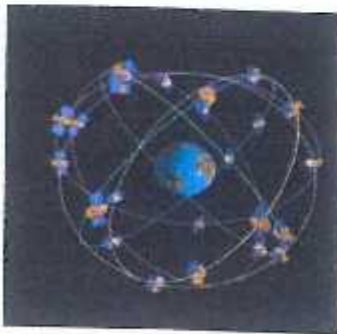
Software:

Sr. No.	Software	Make	Version
1	Magnet Tools	Topcon Sokkia India Pvt. Ltd.	1.2.1
2.	LEICA Geo Office Combined	Leica geosystems AG	7.0.1.0
3.	AutoCAD	Autodesk	2012
4.	Ms Office	Microsoft Corp.	2010
5.	EradasImagin	Eradas	8.4
6.	ArcGIS	ArcGIS	10.3

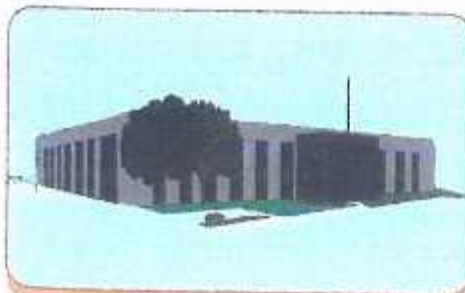
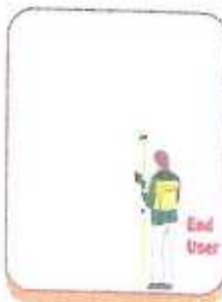


9) DIFFERENTIAL GLOBAL POSITIONING SYSTEM (DGPS)

9. a) INTRODUCTION



The Global Positioning System (GPS) is a worldwide radio-navigation system formed from a constellation of 24 satellites and their ground stations. It consists of Three Segments:-



- User Segment
- Control Segment
- Space Segment

GPS uses these "man-made stars" as reference points to calculate positions accurate to a matter of meters. In fact, with advanced forms of GPS you can make measurements to better than a centimeter. Surveying/Mapping most commonly used now days, in a sense it's like giving every square meter on the planet a unique tackle.

9. b] ACCURACY & INSTRUMENT USED

SFMPL Generally used Dual frequency Sokkia DGPS equipments are to be used for all static mode of observation. By having the base station close to the area of interest there is minimum time lag and with the appropriate DGPS receiver, an accuracy of (+/-10mm) can be achieved. The accuracy of DGPS may be increased considerably by including a reference station (GPS receiver on a site with known coordinates). In the so-called post-processing method, the observations of the rover (GPS receiver) are then corrected so that, depending on the type of receiver, accuracies of a few decimeters or a few centimeters may be reached.

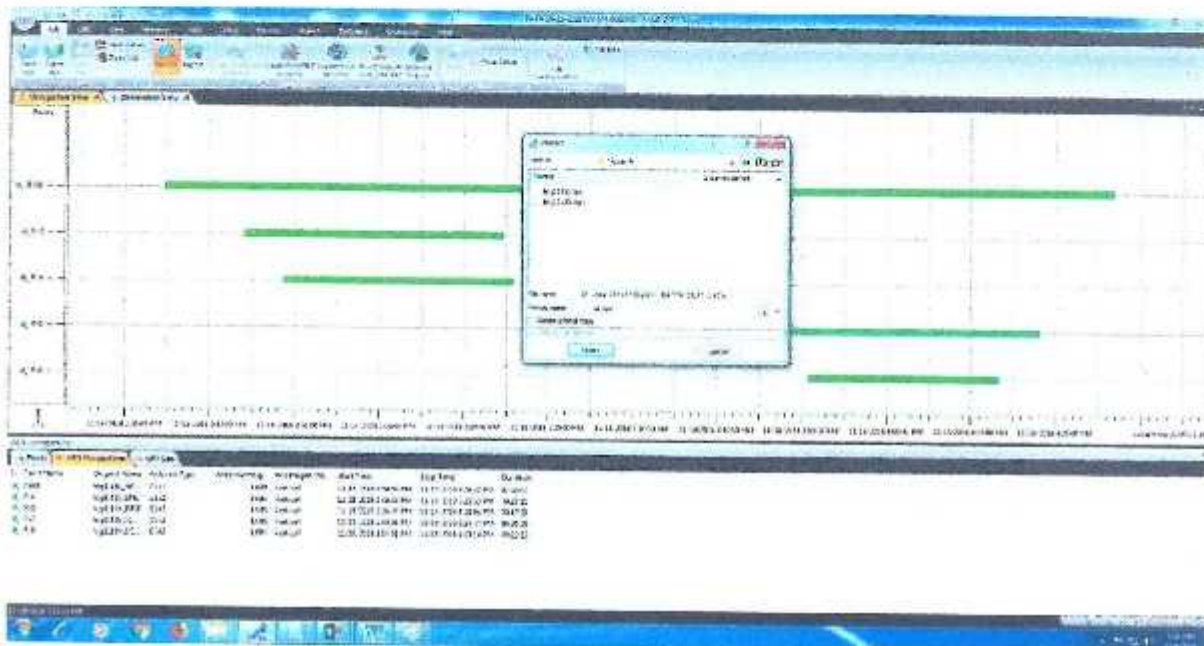
9. c] DATA PROCESSING IN SOKKIA MAGNET TOOLS SOFTWARE

All the pillar coordinates were taken for two hours of reading and pillar points are used for geo-referencing. The processed coordinates have been exported to Shape file from the Sokkia Magnet Tools software. These coordinates are imported in to GIS software and Geo-referencing of cadastral map, lease map and LISS- IV image was carried out. The lease boundary was digitized using the processed coordinates of the pillars and geo-referenced maps. These lease boundary was exported to shape file for the final submission as required by IBM.

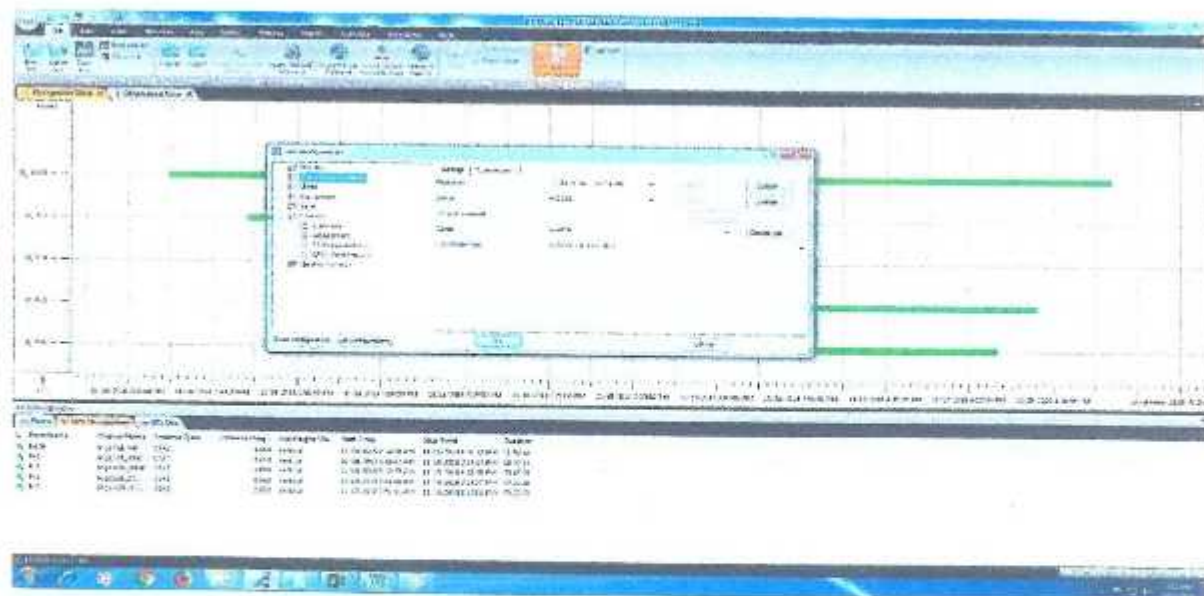


Sokkia –GSX 2 antenna recorded field survey data are downloading in Sokkia Receiver as following steps:

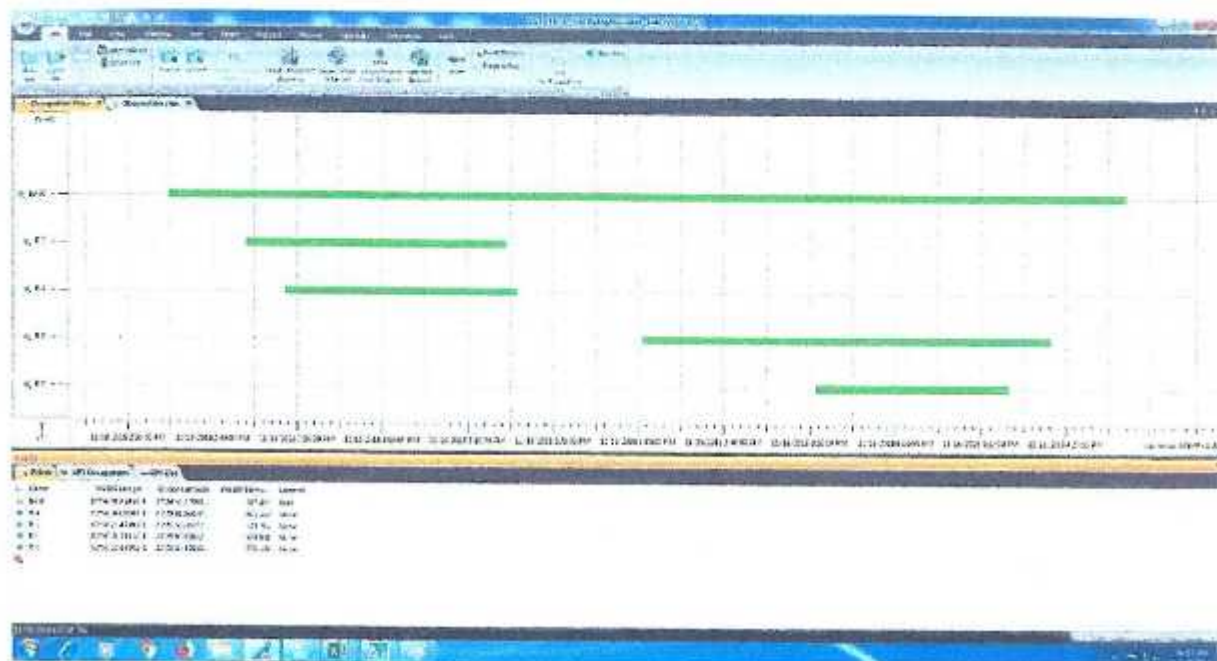
I) IMPORT



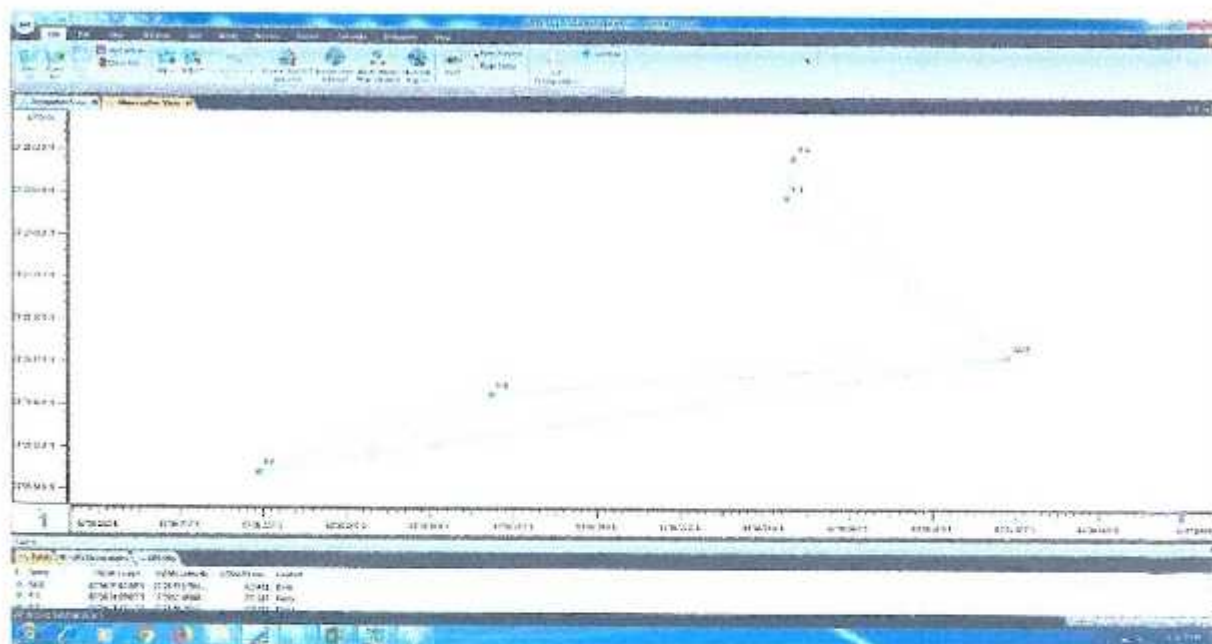
II) APPLYING PROJECTION SYSTEM



III] PROCESSING DATA



IV] POINT POSITION



10) METHODOLOGY ADOPTED FOR VECTORIZED CADASTRAL MAP AND SATELLITE IMAGING DATA

10. a] INTRODUCTION OF VECTORIZATION CADASTRAL

Cadastral surveys are specially designed large scale surveys, some in conjunction with other records, which are linked to land ownership and property. In India Normally Land Record Department created a cadastral map on Tracing film or Cloth Paper. It is usually generating in most Common Scale Factor which is to be saying that 16"=1Mile (1:3960). This paper is very essential to the rural for its village properties. The urban cadastral, although very vital needs a separate and detailed discussion. It's seen very older and shrinkage appearance quality. Receiving those maps to land record department to start with scanning in High Resolution scale and get converted into TIF format. AutoCAD Draftsman digitize a map on his professional skilled with Different Colours, Layer, Polyline & Block Entities Etc. on this way generated a accurate scale map to help us the geo reference.

10. b] GEO REFERENCE VECTORIZATION CADASTRAL MAP

The term is commonly used in the geographic information systems field to describe the process of associating a physical map or raster image of a map with spatial locations. Geo reference means triangular Combination of DGPS Control points (Static Based), Topographic Survey and Vectorized Cadastral Map (Raster image). Geo referencing may be applied to any kind of object or structure that can be related to a geographical location, such as points of interest, roads, places, bridges, Forest munara or field bund. Geographic locations are most commonly represented using a coordinate reference system, which in turn can be related to a geodetic reference system such as WGS-84. There are various GIS tools available that can transform image data to some geographic control framework, like the commercial ArcMap, or ERDAS Imagine Recorded Survey data importing in Arc Map For instance, a DGPS device will Easting and nothing coordinates for a given point of interest, effectively geo referencing

this point. A geo reference must be a matchless identifier. In other words, there must be only one location for which a geo reference acts as the reference.

10. c] METHODOLOGY OF SATELLITE IMAGERY

Ideal recent satellite data are characterized by intersection of features, such as roads, canals or streams. Considering the high resolution of satellite data (IKONOS) has been used mostly Geo-Tiff Format image is preferred. Satellite data typically on basis of different forest band applicable it's depend upon mineral of that area.

The following list describes the main phases applied in the present study, for the creation of the land cover maps:-

- Preparation of Digital Map
- Satellite data selection
- Geo reference satellite image in WGS84 Coordinates
- Satellite data classification, Selection & Estimation WGS84 Coordinates.
- Satellite data interpretation and vectorization of the resulting units,
- Post Processing of DGPS Data, Validation of decision Observation Period
- Field checking

For this methodology most preferable software's are been used i.e. Erdas imagine 8.4, ArcGIS & Autocad Map.



11. BM REFERENCES AND SITE LOCATION PHOTOGRAPHS

A) BATA BLOCK



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT

B) SONPUR BLOCK



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT

C) TATIJHARIYA BLOCK



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT

D) DUMARKHOLI BLOCK



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT



BLOCK BOUNDARY POINT

SHREE BAJRANG POWER & ISPAT LTD

BATA BLOCK

AREA :- 26.835 Ha.

TAHSIL -Samri, DISTRICT - Balrampur, STATE - Chattisgarh

LIST OF DGPS BOUNDARY PILLAR CO-ORDINATE

Sr. No.	BP No.	UTM NORTH WGS 84		WGS 84 DMS	
		EASTING	NORTHING	LATITUDE	LONGITUDE
1	BP-1	800590.277	2600804.987	23°29'22.757"	83°56'34.631"
2	BP-1/1	800631.986	2600777.412	23°29'21.834"	83°56'36.079"
3	BP-1/2	800674.954	2600751.844	23°29'20.975"	83°56'37.574"
4	BP-2	800715.813	2600720.201	23°29'19.92"	83°56'38.989"
5	BP-3	800697.436	2600675.582	23°29'18.484"	83°56'38.31"
6	BP-4	800679.956	2600676.954	23°29'18.54"	83°56'37.696"
7	BP-5	800635.946	2600638.402	23°29'17.317"	83°56'36.118"
8	BP-6	800619.724	2600641.091	23°29'17.415"	83°56'35.549"
9	BP-7	800604.821	2600667.581	23°29'18.285"	83°56'35.043"
10	BP-8	800551.504	2600676.912	23°29'18.624"	83°56'33.173"
11	BP-9	800575.161	2600732.227	23°29'20.405"	83°56'34.046"
12	BP-10	800552.819	2600790.182	23°29'22.301"	83°56'33.301"
13	BP-11	800558.318	2600797.681	23°29'22.541"	83°56'33.5"
14	BP-12	800575.645	2600787.219	23°29'22.19"	83°56'34.103"
15	BP-13	800371.298	2600727.559	23°29'20.389"	83°56'26.864"
16	BP-14	800417.883	2600679.698	23°29'18.803"	83°56'28.47"
17	BP-15	800408.241	2600656.450	23°29'18.055"	83°56'28.114"
18	BP-16	800414.676	2600649.221	23°29'17.816"	83°56'28.335"
19	BP-17	800453.768	2600676.243	23°29'18.667"	83°56'29.731"
20	BP-18	800500.532	2600650.305	23°29'17.794"	83°56'31.359"
21	BP-19	800498.904	2600634.264	23°29'17.274"	83°56'31.29"
22	BP-19/1	800547.694	2600623.332	23°29'16.886"	83°56'33"
23	BP-20	800583.397	2600607.595	23°29'16.352"	83°56'34.246"
24	BP-21	800500.822	2600617.204	23°29'16.652"	83°56'34.866"
25	BP-21/1	800634.863	2600580.582	23°29'15.44"	83°56'36.038"
26	BP-22	800654.867	2600555.946	23°29'14.627"	83°56'36.725"
27	BP-23	800639.578	2600536.481	23°29'14.005"	83°56'36.173"
28	BP-24	800551.914	2600524.927	23°29'13.621"	83°56'36.599"
29	BP-25	800672.987	2600531.187	23°29'13.811"	83°56'37.345"
30	BP-26	800730.297	2600476.522	23°29'11.997"	83°56'39.324"
31	BP-27	800586.614	2600412.766	23°29'9.956"	83°56'37.74"

[Signature]
Range Officer
Chando



संयुक्त वनसंरक्षण अधिकारी
बलरामपुर



32	BP-28	800670.361	2600415.307	23°29'10.049"	83°56'37.169"
33	BP-29	800651.723	2600392.230	23°29'9.312"	83°56'36.496"
34	BP-29/1	800606.646	2600413.867	23°29'10.045"	83°56'34.925"
35	BP-30	800571.580	2600433.351	23°29'10.701"	83°56'33.704"
36	BP-30/1	800543.654	2600474.825	23°29'12.066"	83°56'32.751"
37	BP-31	800496.518	2600531.108	23°29'13.925"	83°56'31.132"
38	BP-32	800490.763	2600526.976	23°29'13.795"	83°56'30.926"
39	BP-33	800485.037	2600485.088	23°29'12.439"	83°56'30.694"
40	BP-33/1	800446.681	2600517.164	23°29'13.506"	83°56'29.367"
41	BP-34	800408.827	2600560.816	23°29'14.949"	83°56'28.066"
42	BP-35	800416.561	2600574.949	23°29'15.402"	83°56'28.348"
43	BP-35/1	800375.213	2600603.061	23°29'16.343"	83°56'26.913"
44	BP-36	800324.251	2600629.446	23°29'17.234"	83°56'25.137"
45	BP-37	800322.511	2600684.959	23°29'19.038"	83°56'25.116"
46	BP-38	800341.216	2600716.463	23°29'20.048"	83°56'25.797"
47	BP-39	800352.249	2600713.222	23°29'19.936"	83°56'26.183"
48	BP-40	800443.561	2600574.309	23°29'15.364"	83°56'29.298"
49	BP-41	800457.245	2600563.547	23°29'15.005"	83°56'29.772"
50	BP-42	800452.026	2600552.511	23°29'14.65"	83°56'29.581"
51	BP-43	800435.088	2600562.584	23°29'14.988"	83°56'28.992"
52	BP-44	799795.208	2600658.616	23°29'18.532"	83°56'6.531"
53	BP-45	799831.605	2600628.472	23°29'17.529"	83°56'7.791"
54	BP-46	799819.413	2600609.362	23°29'16.917"	83°56'7.348"
55	BP-46/1	799853.350	2600572.643	23°29'15.702"	83°56'8.516"
56	BP-47	799906.423	2600535.853	23°29'14.472"	83°56'10.358"
57	BP-48	799904.061	2600519.665	23°29'13.948"	83°56'10.263"
58	BP-49	799920.313	2600519.549	23°29'13.933"	83°56'10.836"
59	BP-49/1	799944.044	2600475.540	23°29'12.488"	83°56'11.639"
60	BP-50	799960.746	2600439.332	23°29'11.301"	83°56'12.201"
61	BP-51	799924.622	2600417.843	23°29'10.627"	83°56'10.914"
62	BP-51/1	799887.040	2600450.822	23°29'11.723"	83°56'9.615"
63	BP-52	799838.999	2600507.623	23°29'13.6"	83°56'7.964"
64	BP-53	799822.607	2600499.671	23°29'13.352"	83°56'7.381"
65	BP-53/1	799790.343	2600537.868	23°29'14.614"	83°56'6.273"
66	BP-54	799767.233	2600587.051	23°29'16.227"	83°56'5.494"
67	BP-55	799781.959	2600416.296	23°29'10.672"	83°56'5.89"
68	BP-56	799839.740	2600381.935	23°29'9.517"	83°56'7.9"



69	BP-57	799874.563	2600393.541	23°29'9.871"	83°56'9.134"
70	BP-58	799878.562	2600344.632	23°29'8.28"	83°56'9.24"
71	BP-59	799894.529	2600325.243	23°29'7.64"	83°56'9.788"
72	BP-60	799859.323	2600278.627	23°29'6.149"	83°56'8.515"
73	BP-61	799851.310	2600216.098	23°29'4.124"	83°56'8.188"
74	BP-62	799867.500	2600200.413	23°29'3.604"	83°56'8.746"
75	BP-63	799856.059	2600181.417	23°29'2.995"	83°56'8.33"
76	BP-63/1	799818.368	2600214.272	23°29'4.087"	83°56'7.026"
77	BP-63/2	799780.673	2600247.121	23°29'5.178"	83°56'5.723"
78	BP-63/3	799742.979	2600279.969	23°29'6.27"	83°56'4.419"
79	BP-64	799696.746	2600322.069	23°29'7.668"	83°56'2.822"
80	BP-65	799730.967	2600376.517	23°29'9.414"	83°56'4.066"
81	BP-66	799750.807	2600366.820	23°29'9.086"	83°56'4.757"
82	BP-67	799908.811	2600224.052	23°29'4.344"	83°56'10.218"
83	BP-67/1	799958.799	2600222.965	23°29'4.276"	83°56'11.977"
84	BP-68	800006.699	2600223.528	23°29'4.262"	83°56'13.664"
85	BP-68/1	800041.168	2600187.308	23°29'3.063"	83°56'14.852"
86	BP-69	800075.656	2600147.376	23°29'1.743"	83°56'16.037"
87	BP-70	800041.876	2600089.479	23°28'59.886"	83°56'14.806"
88	BP-70/1	799993.744	2600103.020	23°29'0.357"	83°56'13.121"
89	BP-71	799933.363	2600113.737	23°29'0.745"	83°56'11.003"
90	BP-71/1	799895.742	2600146.671	23°29'1.84"	83°56'9.702"
91	BP-72	799874.372	2600165.380	23°29'2.462"	83°56'8.963"
92	BP-73	800121.194	2600258.676	23°29'5.328"	83°56'17.721"
93	BP-73/1	800162.517	2600230.527	23°29'4.386"	83°56'19.155"
94	BP-74	800229.974	2600204.159	23°29'3.485"	83°56'21.511"
95	BP-75	800243.301	2600186.227	23°29'2.894"	83°56'21.968"
96	BP-76	800207.852	2600138.945	23°29'1.382"	83°56'20.685"
97	BP-76/1	800157.898	2600136.808	23°29'1.345"	83°56'18.925"
98	BP-77	800128.221	2600133.662	23°29'1.263"	83°56'17.878"
99	BP-78	800096.143	2600155.843	23°29'2.005"	83°56'16.765"
100	BP-79	800082.897	2600191.251	23°29'3.163"	83°56'16.324"
101	BP-80	800111.100	2600210.068	23°29'3.756"	83°56'17.33"
102	BP-81	800078.194	2600237.182	23°29'4.658"	83°56'16.191"
103	BP-82	800270.166	2600058.211	23°28'58.718"	83°56'22.821"
104	BP-83	800301.827	2600041.664	23°28'58.16"	83°56'23.924"
105	BP-84	800358.321	2600030.083	23°28'57.746"	83°56'25.905"



106	BP-84/1	800393.715	2599994.766	23°28'56.576"	83°56'27.125"
107	BP-85	800445.790	2599967.254	23°28'55.648"	83°56'28.939"
108	BP-86	800416.935	2599906.507	23°28'53.694"	83°56'27.879"
109	BP-87	800383.742	2599917.415	23°28'54.071"	83°56'26.719"
110	BP-88	800322.867	2599869.858	23°28'52.567"	83°56'24.541"
111	BP-88/1	800273.401	2599877.148	23°28'52.836"	83°56'22.805"
112	BP-88/2	800223.770	2599883.207	23°28'53.066"	83°56'21.062"
113	BP-89	800159.579	2599906.546	23°28'53.867"	83°56'18.818"
114	BP-90	800185.316	2599979.686	23°28'56.225"	83°56'19.777"
115	BP-91	800157.854	2599992.971	23°28'56.674"	83°56'18.82"
116	BP-92	800166.380	2600026.084	23°28'57.744"	83°56'19.144"
117	BP-92/1	800216.375	2600026.751	23°28'57.732"	83°56'20.905"
118	BP-93	800251.675	2600022.073	23°28'57.557"	83°56'22.144"
119	BP-94	800671.149	2600154.164	23°29'1.568"	83°56'37.008"
120	BP-95	800693.792	2600117.921	23°29'0.376"	83°56'37.779"
121	BP-96	800679.523	2600087.261	23°28'59.39"	83°56'37.255"
122	BP-97	800618.963	2600117.442	23°29'0.41"	83°56'35.145"
123	BP-98	800636.897	2600147.483	23°29'1.374"	83°56'35.798"
124	BP-99	800478.572	2600048.222	23°28'58.255"	83°56'30.152"
125	BP-100	800477.460	2600089.872	23°28'59.609"	83°56'30.143"
126	BP-101	800502.112	2600116.006	23°29'0.441"	83°56'31.029"
127	BP-101/1	800542.725	2600086.841	23°28'59.467"	83°56'32.438"
128	BP-102	800564.490	2600058.689	23°28'58.538"	83°56'33.184"
129	BP-103	800628.951	2600036.900	23°28'57.788"	83°56'35.438"
130	BP-104	800643.726	2600078.776	23°28'59.138"	83°56'35.989"
131	BP-105	800684.173	2600072.052	23°28'58.893"	83°56'37.408"
132	BP-106	800690.173	2600078.233	23°28'59.089"	83°56'37.623"
133	BP-106/1	800736.448	2600059.294	23°28'58.443"	83°56'39.239"
134	BP-106/2	800782.145	2600039.001	23°28'57.754"	83°56'40.833"
135	BP-107	800827.643	2600026.026	23°28'57.302"	83°56'42.426"
136	BP-108	800813.380	2599978.496	23°28'55.768"	83°56'41.889"
137	BP-108/1	800763.653	2599983.721	23°28'55.971"	83°56'40.142"
138	BP-108/2	800714.150	2599990.748	23°28'56.232"	83°56'38.405"
139	BP-108/3	800664.274	2599994.275	23°28'56.38"	83°56'36.651"
140	BP-108/4	800614.560	2599988.934	23°28'56.24"	83°56'34.897"
141	BP-109	800586.570	2599985.039	23°28'56.132"	83°56'33.909"
142	BP-109/1	800543.447	2600010.346	23°28'56.982"	83°56'32.409"



143	BP-110	800950.707	2599610.678	23°28'43.732"	83°56'46.459"
144	BP-111	800996.858	2599600.719	23°28'43.378"	83°56'48.076"
145	BP-112	800978.719	2599549.788	23°28'41.736"	83°56'47.401"
146	BP-113	801011.096	2599539.214	23°28'41.371"	83°56'48.533"
147	BP-114	801035.982	2599587.650	23°28'42.927"	83°56'49.444"
148	BP-115	801063.237	2599625.821	23°28'44.149"	83°56'50.432"
149	BP-116	801071.500	2599625.436	23°28'44.131"	83°56'50.722"
150	BP-117	801081.864	2599603.379	23°28'43.408"	83°56'51.071"
151	BP-118	801080.084	2599587.194	23°28'42.883"	83°56'50.997"
152	BP-119	801089.435	2599579.671	23°28'42.633"	83°56'51.321"
153	BP-120	801078.572	2599538.107	23°28'41.29"	83°56'50.908"
154	BP-121	801092.932	2599522.961	23°28'40.789"	83°56'51.403"
155	BP-122	801102.941	2599564.585	23°28'42.134"	83°56'51.785"
156	BP-123	801136.356	2599549.043	23°28'41.607"	83°56'52.95"
157	BP-123/1	801185.277	2599559.373	23°28'41.91"	83°56'54.68"
158	BP-124	801225.463	2599567.926	23°28'42.161"	83°56'55.101"
159	BP-125	801259.456	2599532.504	23°28'40.988"	83°56'57.272"
160	BP-126	801279.263	2599564.064	23°28'41.999"	83°56'57.993"
161	BP-126/1	801325.522	2599545.087	23°28'41.352"	83°56'59.607"
162	BP-127	801381.008	2599528.304	23°28'40.77"	83°57'1.549"
163	BP-128	801393.712	2599546.189	23°28'41.342"	83°57'2.009"
164	BP-129	801403.504	2599541.512	23°28'41.184"	83°57'2.35"
165	BP-130	801413.077	2599549.221	23°28'41.428"	83°57'2.693"
166	BP-131	801427.526	2599539.136	23°28'41.091"	83°57'3.194"
167	BP-131/1	801400.706	2599496.937	23°28'39.738"	83°57'2.22"
168	BP-132	801368.962	2599435.125	23°28'37.752"	83°57'1.057"
169	BP-133	801337.266	2599461.586	23°28'38.633"	83°56'59.961"
170	BP-134	801346.884	2599494.687	23°28'39.701"	83°57'0.323"
171	BP-135	801282.711	2599532.609	23°28'40.975"	83°56'58.091"
172	BP-135/1	801261.739	2599487.220	23°28'39.515"	83°56'57.32"
173	BP-136	801231.262	2599445.743	23°28'38.189"	83°56'56.217"
174	BP-137	801221.849	2599417.795	23°28'37.287"	83°56'55.866"
175	BP-138	801168.983	2599429.966	23°28'37.718"	83°56'54.013"
176	BP-139	801196.887	2599464.097	23°28'38.808"	83°56'55.02"
177	BP-140	801175.753	2599482.073	23°28'39.406"	83°56'54.289"
178	BP-141	801152.620	2599429.545	23°28'37.715"	83°56'53.437"
179	BP-142	801220.567	2599413.989	23°28'37.165"	83°56'55.838"



180	BP-143	801200.789	2599355.806	23°28'35.288"	83°56'55.079"
181	BP-144	801144.596	2599379.245	23°28'36.087"	83°56'53.118"
182	BP-145	801149.123	2599408.303	23°28'37.028"	83°56'53.298"
183	BP-146	801119.979	2599411.400	23°28'37.148"	83°56'52.274"
184	BP-146/1	801076.737	2599436.503	23°28'37.992"	83°56'50.77"
185	BP-146/2	801028.121	2599448.185	23°28'38.403"	83°56'49.067"
186	BP-147	800992.098	2599462.448	23°28'38.891"	83°56'47.809"
187	BP-148	800970.973	2599386.002	23°28'36.422"	83°56'47.01"
188	BP-149	800982.272	2599349.140	23°28'35.217"	83°56'47.381"
189	BP-150	800963.915	2599314.430	23°28'34.102"	83°56'46.71"
190	BP-151	800977.923	2599285.173	23°28'33.143"	83°56'47.182"
191	BP-152	800955.215	2599232.801	23°28'31.457"	83°56'46.345"
192	BP-153	800902.003	2599260.224	23°28'32.383"	83°56'44.491"
193	BP-153/1	800928.797	2599317.058	23°28'34.211"	83°56'45.475"
194	BP-154	800949.952	2599362.510	23°28'35.673"	83°56'46.253"
195	BP-155	800927.510	2599370.842	23°28'35.959"	83°56'45.469"
196	BP-156	800963.388	2599443.752	23°28'38.303"	83°56'46.785"
197	BP-157	800935.977	2599449.623	23°28'38.511"	83°56'45.824"
198	BP-158	800936.232	2599484.953	23°28'39.659"	83°56'45.858"
199	BP-159	800903.297	2599467.923	23°28'39.127"	83°56'44.687"
200	BP-160	800878.267	2599490.416	23°28'39.875"	83°56'43.822"
201	BP-161	800904.928	2599526.295	23°28'41.022"	83°56'44.786"
202	BP-161/1	800921.756	2599573.378	23°28'42.54"	83°56'45.413"



SHREE BAJRANG POWER & ISPAT LTD

SONPUR BLOCK

AREA :- 3.439 Ha.

TAHSIL -Samri, DISTRICT - Balrampur, STATE - Chattisgarh

LIST OF DGPS BOUNDARY PILLAR CO-ORDINATE

Sr. No.	BP No.	UTM NORTH WGS 84		WGS 84 DMS	
		EASTING	NORTHING	LATITUDE	LONGITUDE
1	BP-1	198626.092	2570725.252	23°13'5.374"	84°3'19.374"
2	BP-1/1	198607.078	2570679.008	23°13'3.86"	84°3'18.739"
3	BP-2	198583.455	2570620.649	23°13'1.949"	84°3'17.95"
4	BP-3	198561.903	2570644.217	23°13'2.7"	84°3'17.176"
5	BP-4	198523.287	2570659.223	23°13'3.162"	84°3'15.809"
6	BP-4/1	198490.351	2570621.604	23°13'1.919"	84°3'14.678"
7	BP-4/2	198441.080	2570630.113	23°13'2.163"	84°3'12.941"
8	BP-4/3	198392.558	2570642.180	23°13'2.522"	84°3'11.227"
9	BP-4/4	198357.543	2570677.872	23°13'3.659"	84°3'9.971"
10	BP-5	198338.439	2570723.353	23°13'5.123"	84°3'9.268"
11	BP-5/1	198348.094	2570772.412	23°13'6.723"	84°3'9.572"
12	BP-6	198354.600	2570802.875	23°13'7.716"	84°3'9.779"
13	BP-6/1	198401.699	2570786.092	23°13'7.202"	84°3'11.446"
14	BP-7	198431.378	2570775.517	23°13'6.878"	84°3'12.496"
15	BP-8	198451.139	2570806.675	23°13'7.903"	84°3'13.168"
16	BP-8/1	198497.172	2570787.157	23°13'7.3"	84°3'14.8"
17	BP-9	198525.503	2570785.124	23°13'7.252"	84°3'15.797"
18	BP-9/1	198569.349	2570761.092	23°13'6.501"	84°3'17.355"



SHREE BAJRANG POWER & ISPAT LTD
TATIJHARIYA BLOCK
AREA :-12.621 HA.
TAHSIL -Samri DISTRICT - Balrampur, STATE - Chhattisgarh
LIST OF DGPS BOUNDARY PILLAR CO-ORDINATE

Sr. No.	BP No.	UTM NORTH WGS 84		WGS 84 DMS	
		EASTING	NORTHING	LATITUDE	LONGITUDE
1	BP-1	795877.045	2589915.214	23°23'32.204"	83°53'40.96"
2	BP-1/1	795858.959	2589868.600	23°23'30.702"	83°53'40.291"
3	BP-1/2	795844.131	2589820.849	23°23'29.16"	83°53'39.736"
4	BP-2	795834.867	2589796.534	23°23'28.377"	83°53'39.392"
5	BP-2/1	795787.002	2589810.991	23°23'28.878"	83°53'37.718"
6	BP-2/2	795740.078	2589828.257	23°23'29.469"	83°53'36.08"
7	BP-3	795706.912	2589810.851	23°23'28.925"	83°53'34.9"
8	BP-4	795700.464	2589789.160	23°23'28.225"	83°53'34.658"
9	BP-5	795721.286	2589774.524	23°23'27.736"	83°53'35.38"
10	BP-6	795714.490	2589741.605	23°23'26.671"	83°53'35.118"
11	BP-7	795744.943	2589726.633	23°23'26.165"	83°53'36.179"
12	BP-7/1	795794.852	2589723.616	23°23'26.035"	83°53'37.933"
13	BP-8	795822.687	2589729.670	23°23'26.213"	83°53'38.917"
14	BP-9	795877.691	2589724.095	23°23'25.996"	83°53'40.848"
15	BP-9/1	795879.701	2589674.136	23°23'24.372"	83°53'40.883"
16	BP-10	795881.422	2589631.360	23°23'22.982"	83°53'40.914"
17	BP-10/1	795831.539	2589634.780	23°23'23.126"	83°53'39.161"
18	BP-10/2	795782.459	2589644.328	23°23'23.468"	83°53'37.441"
19	BP-10/3	795734.400	2589658.122	23°23'23.947"	83°53'35.76"
20	BP-10/4	795686.942	2589673.864	23°23'24.489"	83°53'34.101"
21	BP-11	795654.486	2589684.951	23°23'24.87"	83°53'32.967"
22	BP-11/1	795620.014	2589721.168	23°23'26.069"	83°53'31.779"
23	BP-11/2	795584.358	2589756.221	23°23'27.231"	83°53'30.55"
24	BP-12	795549.675	2589793.827	23°23'28.475"	83°53'29.356"
25	BP-13	795590.481	2589859.122	23°23'30.569"	83°53'30.838"
26	BP-14	795645.034	2589815.785	23°23'29.126"	83°53'32.727"
27	BP-15	795663.994	2589859.854	23°23'30.545"	83°53'33.425"
28	BP-15/1	795617.851	2589879.112	23°23'31.2"	83°53'31.815"
29	BP-15/2	795571.541	2589897.963	23°23'31.842"	83°53'30.199"



30	BP-16	795510.758	2589939.396	23°23'33.228"	83°53'28.089"
31	BP-16/1	795476.335	2589903.133	23°23'32.072"	83°53'26.852"
32	BP-17	795434.724	2589847.332	23°23'30.287"	83°53'25.349"
33	BP-18	795387.685	2589882.711	23°23'31.467"	83°53'23.719"
34	BP-19	795365.530	2589853.043	23°23'30.518"	83°53'22.918"
35	BP-19/1	795329.997	2589888.219	23°23'31.683"	83°53'21.693"
36	BP-20	795301.719	2589918.998	23°23'32.701"	83°53'20.72"
37	BP-21	795259.956	2589920.392	23°23'32.774"	83°53'19.251"
38	BP-21/1	795289.055	2589961.053	23°23'34.075"	83°53'20.304"
39	BP-22	795334.859	2590025.055	23°23'36.124"	83°53'21.96"
40	BP-23	795292.841	2590050.525	23°23'36.979"	83°53'20.5"
41	BP-23/1	795254.283	2590018.694	23°23'35.97"	83°53'19.121"
42	BP-23/2	795221.784	2589980.696	23°23'34.757"	83°53'17.951"
43	BP-24	795207.241	2589959.470	23°23'34.077"	83°53'17.424"
44	BP-25	795227.921	2589941.744	23°23'33.488"	83°53'18.139"
45	BP-25/1	795203.997	2589915.587	23°23'32.654"	83°53'17.279"
46	BP-26	795194.011	2589867.356	23°23'31.094"	83°53'16.893"
47	BP-27	795138.383	2589889.322	23°23'31.844"	83°53'14.952"
48	BP-28	795093.215	2589934.069	23°23'33.326"	83°53'13.394"
49	BP-28/1	795108.356	2589981.722	23°23'34.864"	83°53'13.96"
50	BP-29	795118.589	2590013.287	23°23'35.883"	83°53'14.342"
51	BP-29/1	795160.134	2589985.467	23°23'34.952"	83°53'15.785"
52	BP-30	795194.912	2589963.538	23°23'34.217"	83°53'16.993"
53	BP-31	795228.807	2590011.260	23°23'35.745"	83°53'18.219"
54	BP-31/1	795189.170	2590041.738	23°23'36.761"	83°53'16.846"
55	BP-31/2	795155.357	2590073.106	23°23'37.802"	83°53'15.678"
56	BP-32	795098.079	2590107.168	23°23'38.945"	83°53'13.687"
57	BP-32/1	795129.526	2590146.041	23°23'40.187"	83°53'14.821"
58	BP-33	795149.280	2590170.460	23°23'40.967"	83°53'15.533"
59	BP-33/1	795198.791	2590163.486	23°23'40.709"	83°53'17.27"
60	BP-33/2	795245.074	2590144.567	23°23'40.064"	83°53'18.886"
61	BP-33/3	795290.627	2590123.953	23°23'39.365"	83°53'20.474"
62	BP-33/4	795336.002	2590102.951	23°23'38.653"	83°53'22.056"
63	BP-34	795372.897	2590085.624	23°23'38.067"	83°53'23.342"
64	BP-35	795387.247	2590108.227	23°23'38.791"	83°53'23.862"



65	BP-35/1	795432.200	2590086.337	23°23'38.051"	83°53'25.429"
66	BP-36	795463.589	2590071.052	23°23'37.534"	83°53'26.522"
67	BP-37	795439.183	2590012.508	23°23'35.649"	83°53'25.622"
68	BP-37/1	795471.150	2589974.061	23°23'34.379"	83°53'26.72"
69	BP-38	795515.709	2589943.450	23°23'33.356"	83°53'28.266"
70	BP-38/1	795550.370	2589979.486	23°23'34.504"	83°53'29.511"
71	BP-39	795566.680	2590010.236	23°23'35.492"	83°53'30.107"
72	BP-40	795597.906	2589999.568	23°23'35.125"	83°53'31.198"
73	BP-41	795592.623	2589981.085	23°23'34.528"	83°53'30.999"
74	BP-42	795610.067	2589971.950	23°23'34.22"	83°53'31.606"
75	BP-43	795590.310	2589921.839	23°23'32.606"	83°53'30.876"
76	BP-43/1	795635.189	2589899.272	23°23'31.844"	83°53'32.439"
77	BP-43/2	795679.652	2589876.915	23°23'31.088"	83°53'33.988"
78	BP-43/3	795726.052	2589858.288	23°23'30.453"	83°53'35.607"
79	BP-44	795762.458	2589843.706	23°23'29.956"	83°53'36.878"
80	BP-44/1	795767.205	2589893.480	23°23'31.569"	83°53'37.08"
81	BP-45	795768.774	2589957.844	23°23'33.659"	83°53'37.181"
82	BP-45/1	795826.415	2589935.149	23°23'32.884"	83°53'39.193"



SHREE BAJRANG POWER & ISPAT LTD

DUMARKHOLI BLOCK

AREA :-24.813 Ha.

TAHSIL -Samri, DISTRICT - Balrampur, STATE - Chattisgarh

LIST OF DGPS BOUNDARY PILLAR CO-ORDINATE

Sr. No.	BP No.	UTM NORTH WGS 84		WGS 84 DMS	
		EASTING	NORTHING	LATITUDE	LONGITUDE
1	BP-1	800927.510	2599370.842	23°28'35.959"	83°56'45.469"
2	BP-2	800949.952	2599362.510	23°28'35.673"	83°56'46.253"
3	BP-2/1	800928.797	2599317.058	23°28'34.211"	83°56'45.475"
4	BP-2/2	800907.365	2599271.884	23°28'32.758"	83°56'44.688"
5	BP-3	800885.348	2599220.758	23°28'31.113"	83°56'43.876"
6	BP-4	800887.972	2599185.940	23°28'29.98"	83°56'43.944"
7	BP-4/1	800931.770	2599161.821	23°28'29.168"	83°56'45.468"
8	BP-5	800962.929	2599144.662	23°28'28.59"	83°56'46.553"
9	BP-5/1	800999.630	2599110.705	23°28'27.463"	83°56'47.82"
10	BP-6	801046.127	2599071.026	23°28'26.143"	83°56'49.429"
11	BP-7	801030.599	2599005.303	23°28'24.019"	83°56'48.834"
12	BP-8	801085.621	2598988.368	23°28'23.432"	83°56'50.759"
13	BP-9	801053.925	2598925.815	23°28'21.422"	83°56'49.598"
14	BP-10	801010.510	2598936.123	23°28'21.786"	83°56'48.077"
15	BP-11	801023.569	2598999.337	23°28'23.83"	83°56'48.583"
16	BP-12	800964.796	2599011.380	23°28'24.26"	83°56'46.522"
17	BP-12/1	800959.412	2598961.670	23°28'22.649"	83°56'46.297"
18	BP-12/2	800944.579	2598912.139	23°28'21.051"	83°56'45.739"
19	BP-12/3	800943.652	2598864.594	23°28'19.507"	83°56'45.672"
20	BP-12/4	800924.169	2598813.232	23°28'17.852"	83°56'44.949"
21	BP-13	800906.888	2598751.204	23°28'15.849"	83°56'44.296"
22	BP-13/1	800887.407	2598705.156	23°28'14.367"	83°56'43.577"
23	BP-14	800871.890	2598675.881	23°28'13.427"	83°56'43.009"
24	BP-15	800833.337	2598693.908	23°28'14.038"	83°56'41.665"
25	BP-16	800823.650	2598666.486	23°28'13.154"	83°56'41.304"
26	BP-17	800880.597	2598635.721	23°28'12.117"	83°56'43.287"
27	BP-18	800868.476	2598591.783	23°28'10.698"	83°56'42.828"
28	BP-18/1	800860.393	2598559.646	23°28'9.659"	83°56'42.521"
29	BP-19	800876.900	2598527.469	23°28'8.604"	83°56'43.079"
30	BP-20	800847.394	2598495.659	23°28'7.59"	83°56'42.017"
31	BP-21	800836.844	2598472.453	23°28'6.844"	83°56'41.629"
32	BP-22	800793.243	2598484.076	23°28'7.25"	83°56'40.102"
33	BP-22/1	800746.040	2598472.400	23°28'6.902"	83°56'38.432"
34	BP-23	800707.085	2598475.749	23°28'7.037"	83°56'37.063"
35	BP-24	800707.947	2598546.320	23°28'9.328"	83°56'37.144"



36	BP-24/1	800734.197	2598586.640	23°28'10.62"	83°56'38.098"
37	BP-25	800740.162	2598639.193	23°28'12.323"	83°56'38.345"
38	BP-25/1	800765.571	2598682.256	23°28'13.704"	83°56'39.271"
39	BP-26	800782.484	2598701.448	23°28'14.316"	83°56'39.88"
40	BP-27	800805.248	2598695.489	23°28'14.108"	83°56'40.677"
41	BP-27/1	800818.410	2598743.726	23°28'15.665"	83°56'41.176"
42	BP-27/2	800840.297	2598788.581	23°28'17.111"	83°56'41.978"
43	BP-28	800857.074	2598845.830	23°28'18.956"	83°56'42.61"
44	BP-29	800890.085	2598825.303	23°28'18.267"	83°56'43.758"
45	BP-29/1	800913.756	2598864.897	23°28'19.537"	83°56'44.62"
46	BP-30	800920.658	2598912.206	23°28'21.069"	83°56'44.897"
47	BP-31	800896.615	2598910.728	23°28'21.037"	83°56'44.049"
48	BP-32	800881.679	2598844.768	23°28'18.905"	83°56'43.476"
49	BP-33	800838.050	2598868.273	23°28'19.697"	83°56'41.957"
50	BP-34	800840.408	2598926.827	23°28'21.597"	83°56'42.082"
51	BP-35	800856.205	2598979.860	23°28'23.309"	83°56'42.676"
52	BP-36	800821.781	2599005.489	23°28'24.164"	83°56'41.483"
53	BP-37	800808.963	2598945.039	23°28'22.209"	83°56'40.988"
54	BP-38	800806.165	2598889.963	23°28'20.423"	83°56'40.85"
55	BP-39	800850.975	2598852.891	23°28'19.189"	83°56'42.401"
56	BP-39/1	800835.371	2598805.388	23°28'17.657"	83°56'41.817"
57	BP-40	800824.108	2598773.353	23°28'16.624"	83°56'41.398"
58	BP-41	800797.970	2598784.892	23°28'17.016"	83°56'40.486"
59	BP-42	800783.967	2598757.770	23°28'16.144"	83°56'39.973"
60	BP-43	800734.764	2598790.573	23°28'17.243"	83°56'38.265"
61	BP-44	800736.807	2598840.631	23°28'18.867"	83°56'38.373"
62	BP-45	800681.661	2598849.524	23°28'19.192"	83°56'36.438"
63	BP-46	800662.944	2598821.025	23°28'18.779"	83°56'35.758"
64	BP-47	800668.450	2598780.528	23°28'16.96"	83°56'35.923"
65	BP-48	800637.780	2598780.182	23°28'16.97"	83°56'34.843"
66	BP-49	800623.937	2598744.148	23°28'15.809"	83°56'34.329"
67	BP-49/1	800587.857	2598778.763	23°28'16.957"	83°56'33.084"
68	BP-50	800539.628	2598810.239	23°28'18.011"	83°56'31.409"
69	BP-51	800552.487	2598876.970	23°28'20.169"	83°56'31.91"
70	BP-52	800516.350	2598908.326	23°28'21.212"	83°56'30.66"
71	BP-53	800450.385	2598910.672	23°28'21.332"	83°56'28.339"
72	BP-54	800384.410	2598939.096	23°28'22.299"	83°56'26.037"
73	BP-54/1	800341.927	2598934.449	23°28'22.176"	83°56'24.538"
74	BP-55	800305.781	2598950.831	23°28'22.732"	83°56'23.278"
75	BP-56	800313.150	2598989.214	23°28'23.974"	83°56'23.565"
76	BP-57	800297.591	2598999.159	23°28'24.307"	83°56'23.024"
77	BP-57/1	800301.815	2599048.980	23°28'25.922"	83°56'23.209"



78	BP-58	800306.921	2599078.206	23°28'26.868"	83°56'23.409"
79	BP-58/1	800355.322	2599090.749	23°28'27.243"	83°56'25.122"
80	BP-59	800407.796	2599118.413	23°28'28.107"	83°56'26.99"
81	BP-60	800471.093	2599099.973	23°28'27.466"	83°56'29.205"
82	BP-61	800471.823	2599063.411	23°28'26.278"	83°56'29.204"
83	BP-62	800436.538	2599052.492	23°28'25.947"	83°56'27.954"
84	BP-63	800428.132	2599015.144	23°28'24.739"	83°56'27.631"
85	BP-64	800492.746	2599013.408	23°28'24.64"	83°56'29.905"
86	BP-65	800544.948	2598979.019	23°28'23.489"	83°56'31.718"
87	BP-66	800565.528	2599002.063	23°28'24.223"	83°56'32.459"
88	BP-67	800597.336	2598989.951	23°28'23.809"	83°56'33.57"
89	BP-68	800604.848	2599035.993	23°28'25.299"	83°56'33.868"
90	BP-69	800580.750	2599059.780	23°28'26.088"	83°56'33.037"
91	BP-69/1	800609.333	2599100.805	23°28'27.401"	83°56'34.072"
92	BP-69/2	800641.415	2599139.155	23°28'28.625"	83°56'35.23"
93	BP-70	800666.456	2599175.137	23°28'29.777"	83°56'36.137"
94	BP-71	800699.861	2599167.349	23°28'29.502"	83°56'37.307"
95	BP-72	800719.901	2599140.327	23°28'28.611"	83°56'37.994"
96	BP-73	800724.173	2599154.476	23°28'29.067"	83°56'38.154"
97	BP-73/1	800696.605	2599196.189	23°28'30.44"	83°56'37.214"
98	BP-74	800675.846	2599215.761	23°28'31.09"	83°56'36.497"
99	BP-75	800698.936	2599273.863	23°28'32.961"	83°56'37.352"
100	BP-75/1	800750.395	2599267.402	23°28'32.717"	83°56'39.159"
101	BP-76	800775.990	2599268.739	23°28'32.744"	83°56'40.061"
102	BP-77	800808.997	2599293.843	23°28'33.537"	83°56'41.241"
103	BP-78	800840.222	2599258.360	23°28'32.364"	83°56'42.315"
104	BP-78/1	800850.909	2599307.205	23°28'33.943"	83°56'42.726"
105	BP-78/2	800843.754	2599352.236	23°28'35.41"	83°56'42.507"
106	BP-79	800828.179	2599375.532	23°28'36.177"	83°56'41.975"
107	BP-80	800846.896	2599382.945	23°28'36.405"	83°56'42.64"
108	BP-81	800920.010	2599359.453	23°28'35.594"	83°56'45.197"

Range Off.
Chando



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