KOTTAMETA LIMESTONE BLOCK
MALKANGIRI DISTRICT, ODISHA

Volume II- Plans & Sections

Preferred Bidder

DALMIA CEMENT (BHARAT) LIMITED

Dalmiapuram – 621 651; Tamilnadu

Lease Area for grant : 801.171 Ha

(Forest Area-462.247 Ha & N.F. Area-338.924 Ha)

MINING PLAN

(Under Rule 16 (1) of MCR, 2016)

&

PROGRESSIVE MINE CLOSURE PLAN

(Under Rule 23 of MCDR 2017)

Category of the Mine – "A (Fully Mechanized)

Prepared by

P. S. Acharya Qualified Person	S. M. Patro Qualified Person
GEMTECH Consultants Pvt. Ltd,	
K-8/625, Kalinga Nagar, Ghatikia	
Bhubaneswar – 751019 (Odisha)	
Tel No – 9437008179 (M)	Tel No – 9861093020 (M)

May – 2017

भारतीय खान ब्यूरो, भुवनेश्वर
INDIAN BUREAU OF MINES, BHUBANESWAR

KOTTAMETA LIMESTONE BLOCK

MALKANGIRI DISTRICT, ODISHA

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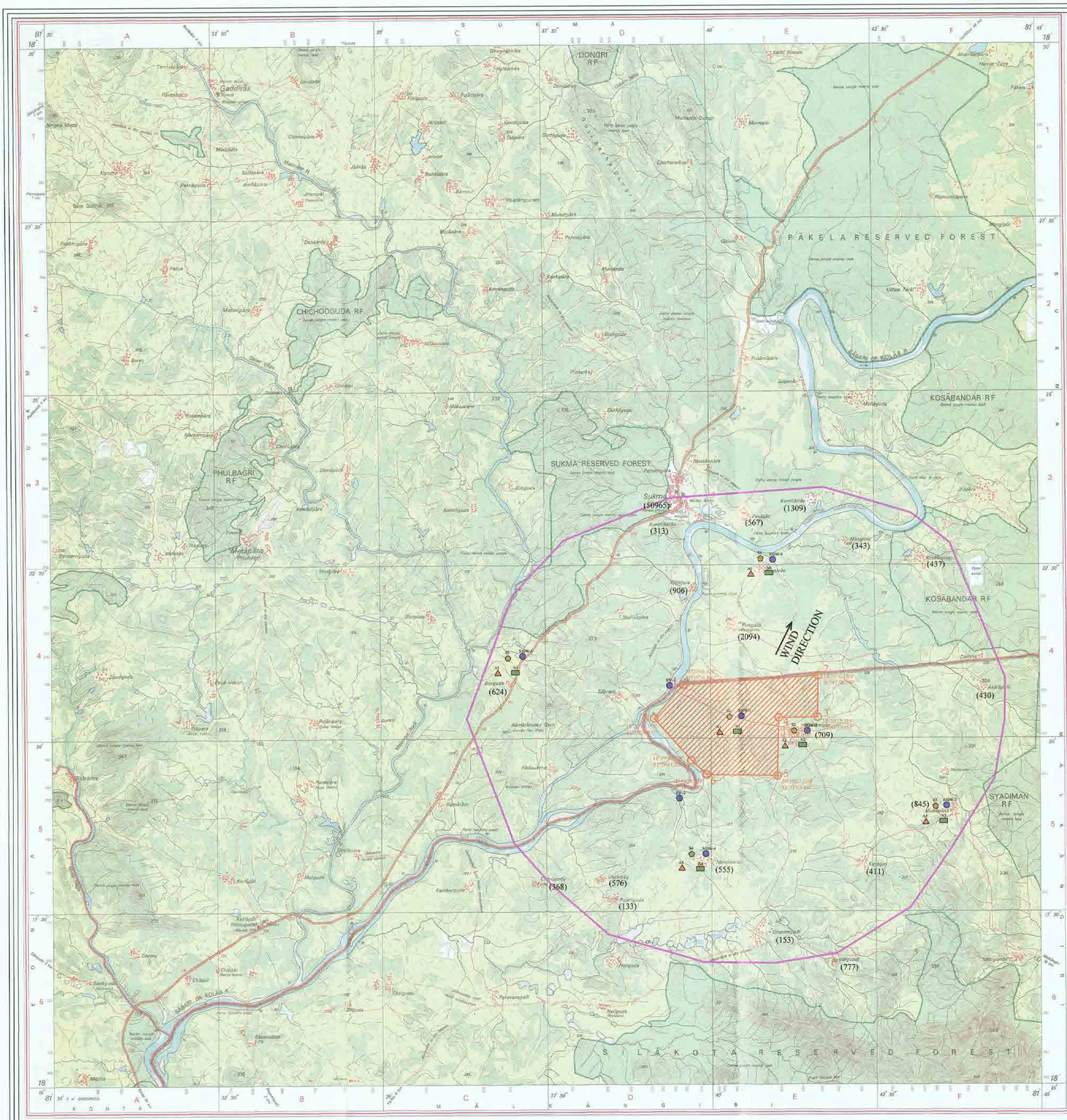
May – 2017

10.0 List of the Plans and Sections submitted

Sl No	Plate No	Description	Scale
1	Plate No.1	Key Plan	1 : 50,000
2	Plate No.2(A)	Village map of the auctioned block to be granted under lease.	1:3960
3	Plate No.2(B)	Cadastral Area Map of the auctioned limestone block in Katamater village	1:3960
4	Plate No.3	Surface Plan	1 : 5000
5	Plate No.4	Geological Plan	1 : 5000
6	Plate No.5(A)	Geological Sections (0-0' to 5-5')	1 : 2000
7	Plate No.5(B)	Geological Sections (6-6' to 11-11')	1 : 2000
8	Plate No.6 (A)	Development Plan & sections for 3rd year	1 : 2000
9	Plate No.6 (B)	Development Plan & sections for 4th year	1 : 2000
10	Plate No.6 (C)	Development Plan & sections for 5th year	1 : 2000
11	Plate No.7	Waste Dump, Top soil & low grade dump plan & sections	1 : 1000
12	Plate No.8	Conceptual Plan	1 : 5000
13	Plate No.9(A)	Conceptual Sections (0-0' to 5-5')	1 : 2000
14	Plate No.9(B)	Conceptual Sections (6-6' to 11-11')	1 : 2000
15	Plate No.10	Environment Plan	1 : 5,000
16	Plate No. 11	Financial Area Assurance Plan	1 : 5000

P.S.Acharya S.M.Patro
Qualified Persons

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



CONVENTIONAL SYMBOLS

INDEX

- LEASE AREA
- 5 K.M. RADIUS BOUNDARY
- VILLAGE POPULATION (430)
- AQ AIR MONITORING STATION
- S/GW-1 WATER MONITORING STATION
- NL NOISE MONITORING STATION
- SL SOIL MONITORING STATION

MINING SURVEYOR
H. P. DASH
Cert. No -528

Topo Sheet No. - E44J11

MINING PLAN

Under Rule1(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

KEY PLAN

GEMTECH CONSULTANTS(P) LTD
GEOLOGICAL & MINING CONSULTANTS
Plot No-KB/625, Kalinga Nagar, Ghatikia,
Bhubaneswar-751029

Certified that the Plan is prepared based on the lease map authenticated by the state government is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

P.S Acharya S.M.Patro
Qualified Persons

SCALE - 1:50,000

Plate No - 01

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

Block Pillars	Latitude_1	Longitud_1
1	18° 20' 46.321" N	81° 39' 34.860" E
2	18° 20' 53.764" N	81° 41' 38.090" E
3	18° 20' 17.735" N	81° 41' 37.452" E
4	18° 20' 17.292" N	81° 41' 2.056" E
5	18° 19' 27.110" N	81° 41' 0.447" E
6	18° 19' 28.189" N	81° 39' 55.683" E
7	18° 19' 40.768" N	81° 39' 41.811" E
8	18° 20' 17.350" N	81° 39' 8.017" E

Plate No- 02(A)

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PLAN SHOWING THE CADASTRAL AREA MAP OF THE AUCTIONED LIMESTONE BLOCK IN VILLAGE KATAMATER OVER 1979·735 ACRES OR 801·171 HECTARES IN MALKANGIRI DISTRICT.

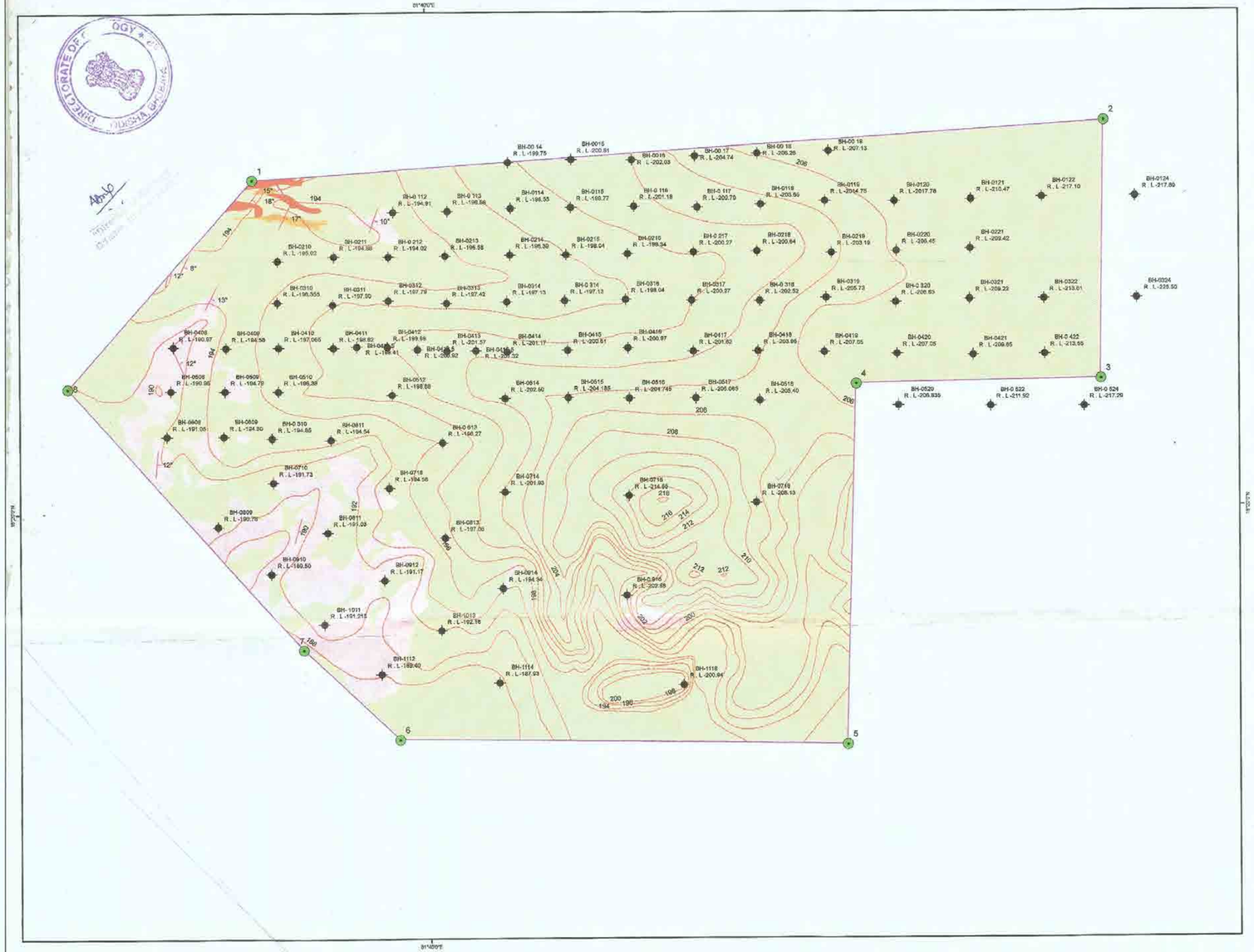
SCALE - 1:3960

CHIEF SURVEYOR
DIRCTORATE OF GEOLOGY
BHUBANESWAR

Plate No- 02(B)

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



BOREHOLE PLAN OF KOTAMETTA LIMESTONE DEPOSIT, MALKANGIRI DISTRICT

Plate - 3

T. S. No - 65 F / 11

N

0 0.5 1 2 KM

Id	Latitude_1	Longitud_1
1	18° 20' 46.321" N	81° 39' 34.860" E
2	18° 20' 53.764" N	81° 41' 38.090" E
3	18° 20' 17.735" N	81° 41' 37.452" E
4	18° 20' 17.292" N	81° 41' 2.060" E
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Legend

Lithology

- Alluvium
- Limestone
- Shale
- Quartzite
- Attitude of bed
- Contour
- DGPS Block Boundary
- Block_Pillars

Plate No- 02(C)

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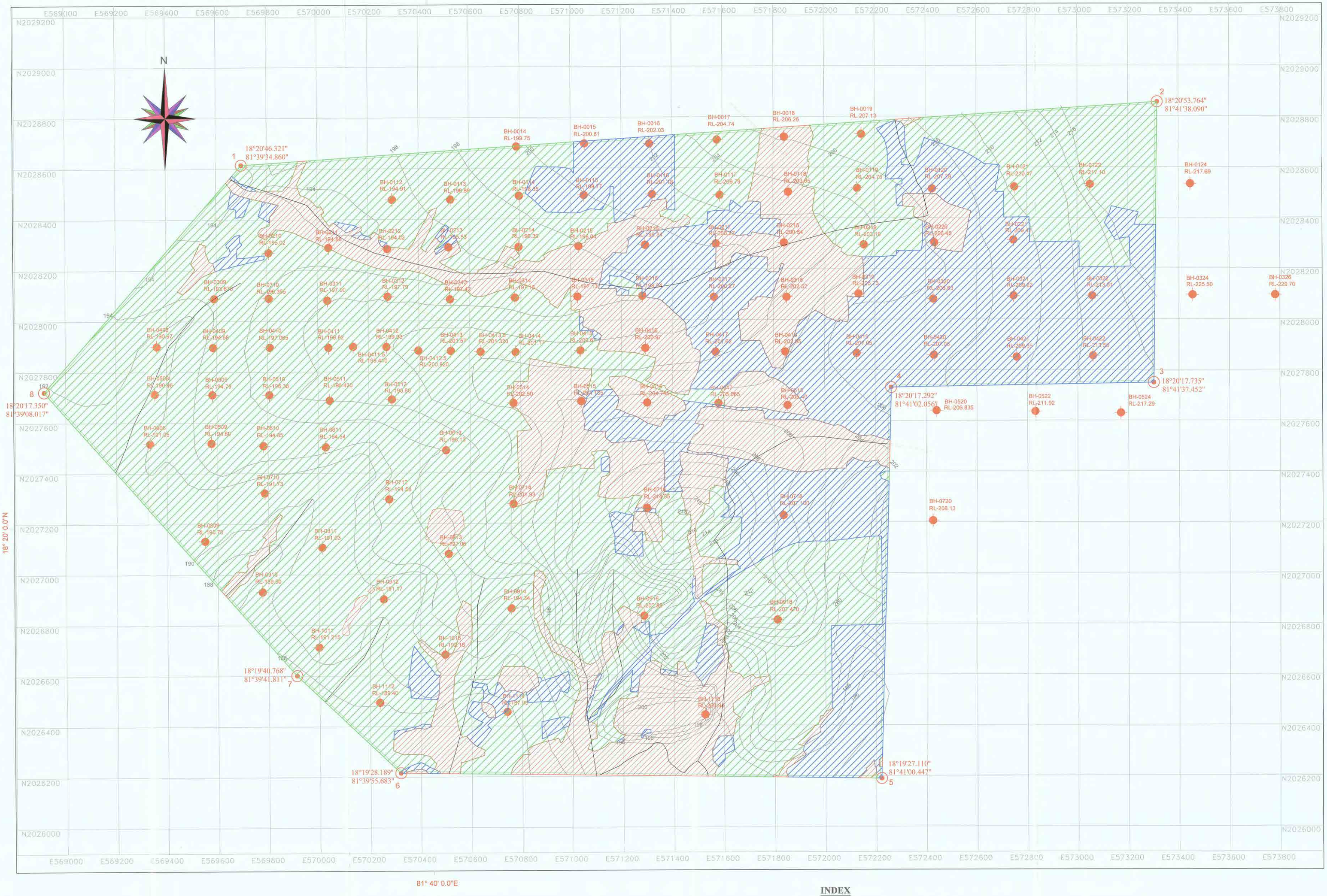

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- FOREST LAND
- GOVT. WASTE LAND
- ST LAND
- DRY NALA
- ROAD

MINING SURVEYOR
H. H. DASH
Certificate No -828

MINING PLAN

Under Rule10(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED

SURFACE PLAN

GEMTECH CONSULTANTS(P)LTD.
GEOLOGICAL & MINING CONSULTANTS
Plot No-KB/625, Kalinga Nagar, Ghatikia,
Bhubaneswar-751029

DATE OF SURVEY - 01.03.2017

Certified that the Plan is prepared based on the lease map authenticated by the state government is up to date & correct to the best of our knowledge.

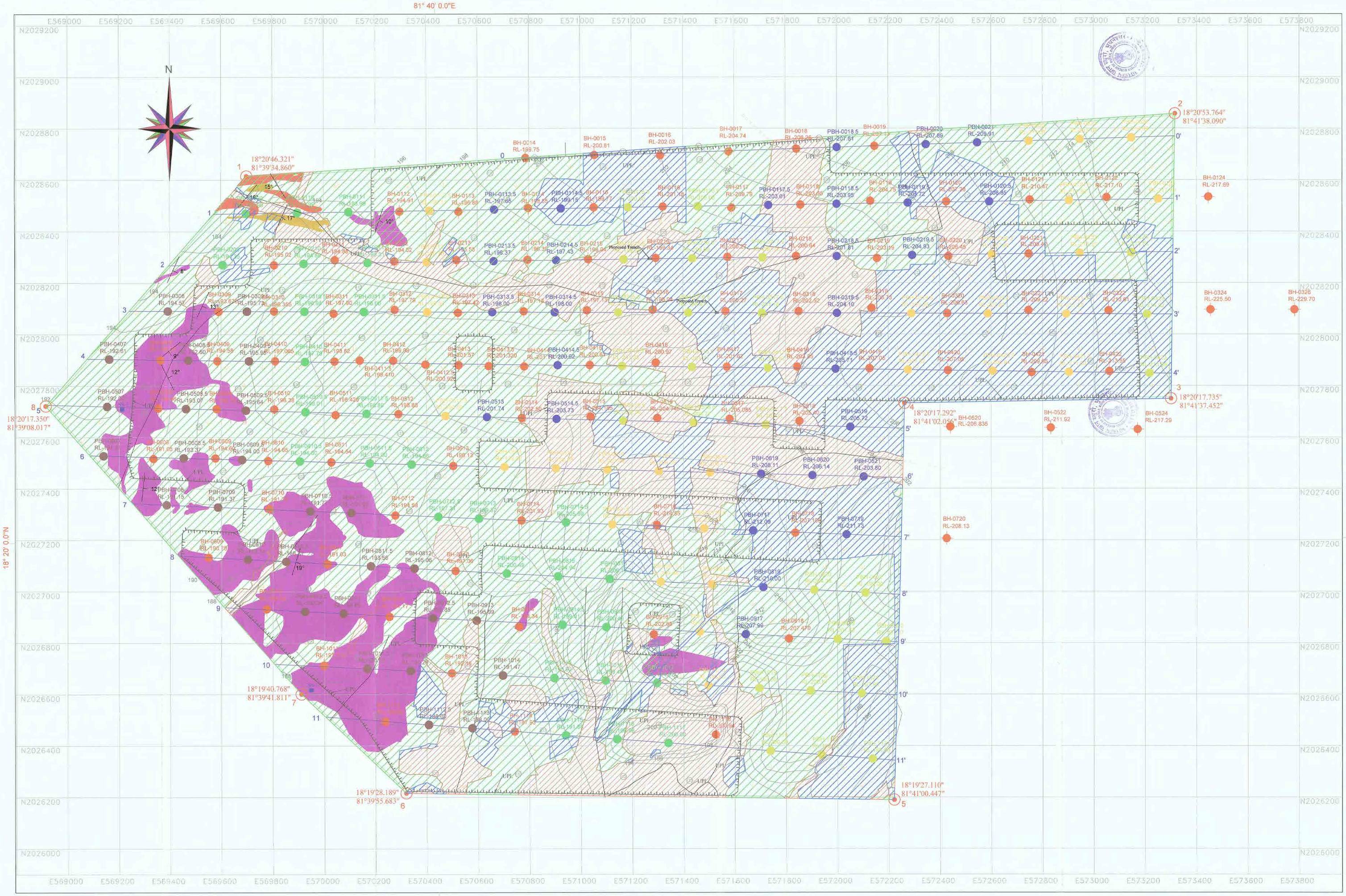
GEMTECH CONSULTANTS PVT LTD.

P.S Acharya S.M.Patro
Qualified Persons

SCALE - 1:5,000

Plate No - 03

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



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- ST LAND
- SS-1 SAMPLE POINT

PROPOSED BOREHOLE DETAILS

- 1ST YEAR
- 2ND YEAR
- 3RD YEAR
- 4TH YEAR
- 5TH YEAR

MINING PLAN

Under Rule1g(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

GEOLOGICAL PLAN

GEMTECH CONSULTANTS(P)LTD.
GEOLOGICAL & MINING CONSULTANTS
Plot No-KS/625, Kalinga Nagar, Ghatikia.
Bhubaneswar-751029

DATE OF SURVEY- 01.03.2017

Certified that the Plan is prepared based on the lease map authenticated by the state government is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

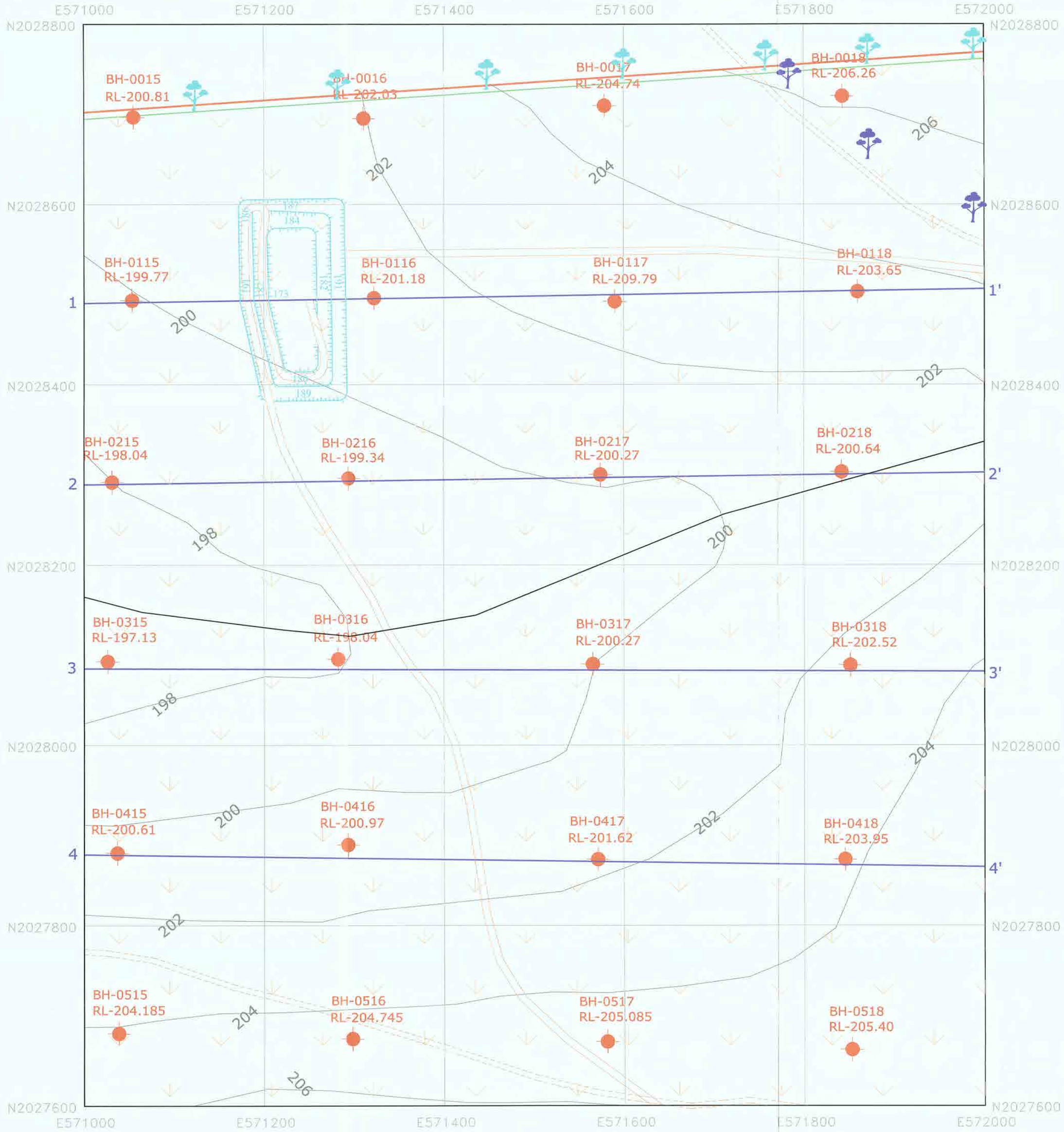
P.S Acharya S.M.Patro
Qualified Persons

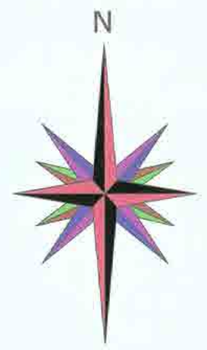
MINING SURVEYOR
H. H. DASH
Certificate No -828

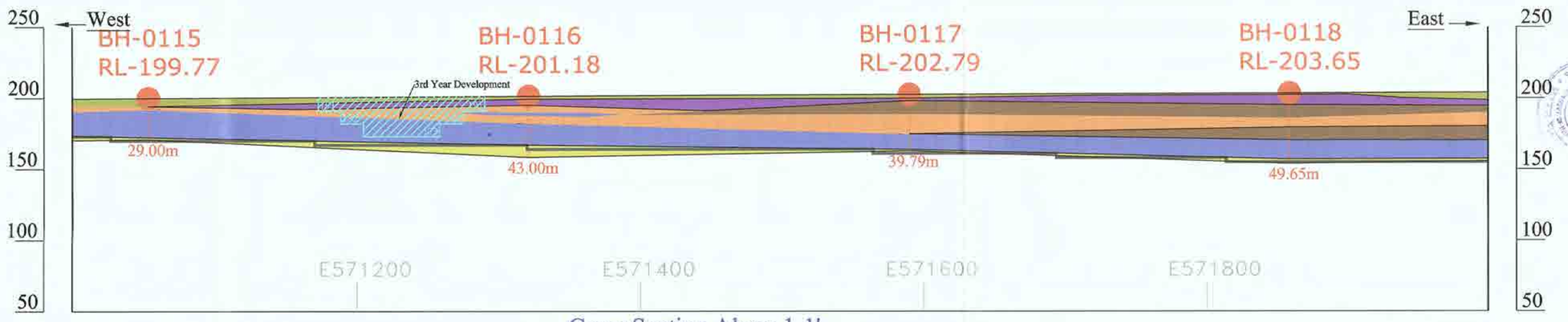
SCALE - 1:5,000

Plate No - 04

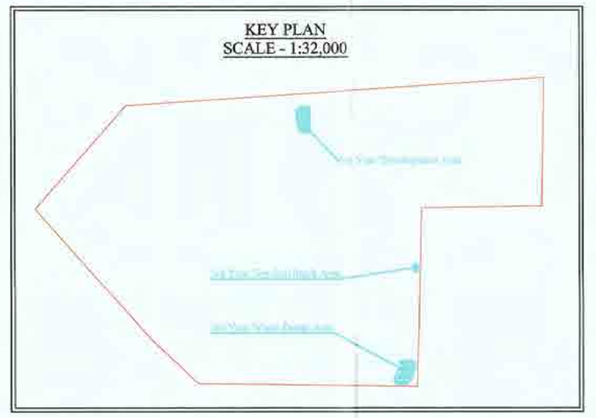
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT







Cross Section Along 1-1'



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MINING PLAN

Under Rule1(j)(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

DEVELOPMENT PLAN & SECTIONS FOR 3RD YEAR

GEMTECH CONSULTANTS(P)LTD.
GEOLOGICAL & MINING CONSULTANTS
Flat No-K/6/C3, Kalinga Nagar, Ghatikia, Bhubaneswar-751029

Certified that the Plan is prepared based on the lease map authenticated by the state government is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

P.S Acharya S.M.Patro

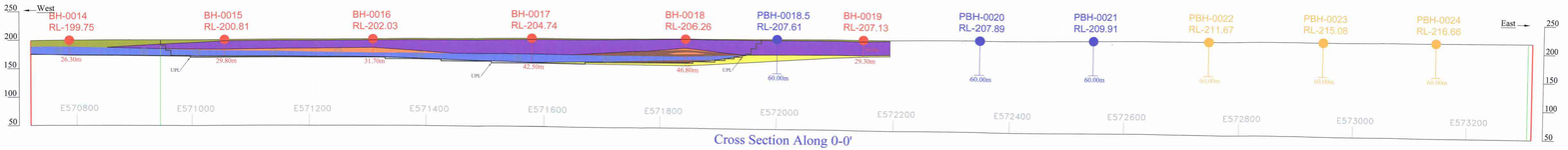
Qualified Persons

DATE OF SURVEY- 01.03.2017

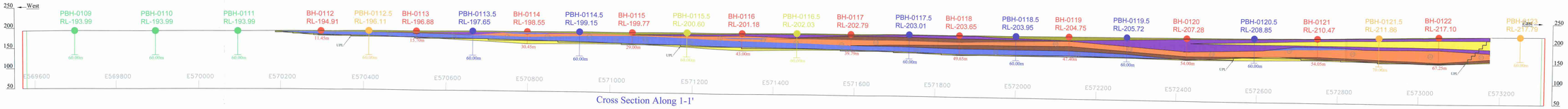
SCALE - 1:2,000

Plate No - 06(A)

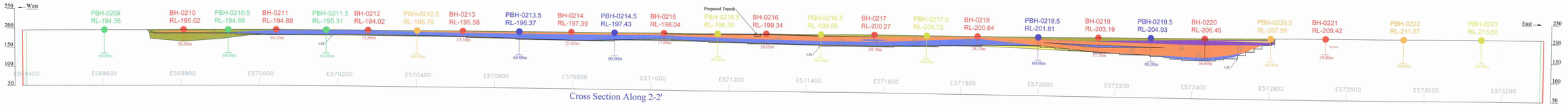
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



Cross Section Along 0-0'

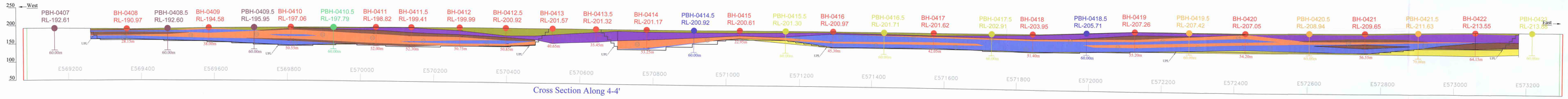


Cross Section Along 1-1'

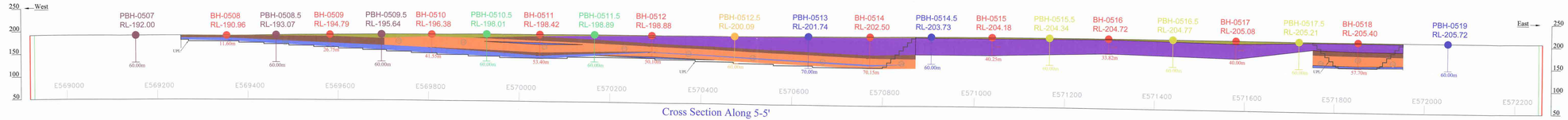


Cross Section Along 2-2'

Cross Section Along 3-3'



Cross Section Along 4-4'



Cross Section Along 5-5'

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MINING PLAN

Under Rule(42) of MCR 2016

OVER AN AREA OF 801.171 Ha IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOITAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

GEOLOGICAL SECTIONS (0-0' to 5-5')

GEOTECH CONSULTANTS PVT. LTD.
(GEOLOGICAL & MINING CONSULTANTS)
Plot No.N.H.5/1, Kalinga Nagar District,
Jajpur, Odisha

DATE OF SURVEY:- 01.01.2017

Certified that the Plan is prepared based on the base map authenticated by the same government or up to date is correct to the best of our knowledge.

For
GEOTECH CONSULTANTS PVT. LTD.

P.S Acharya — Qualified Persons — S.N Patra

SCALE :- 1:2,000

Plate No :- 05(A)

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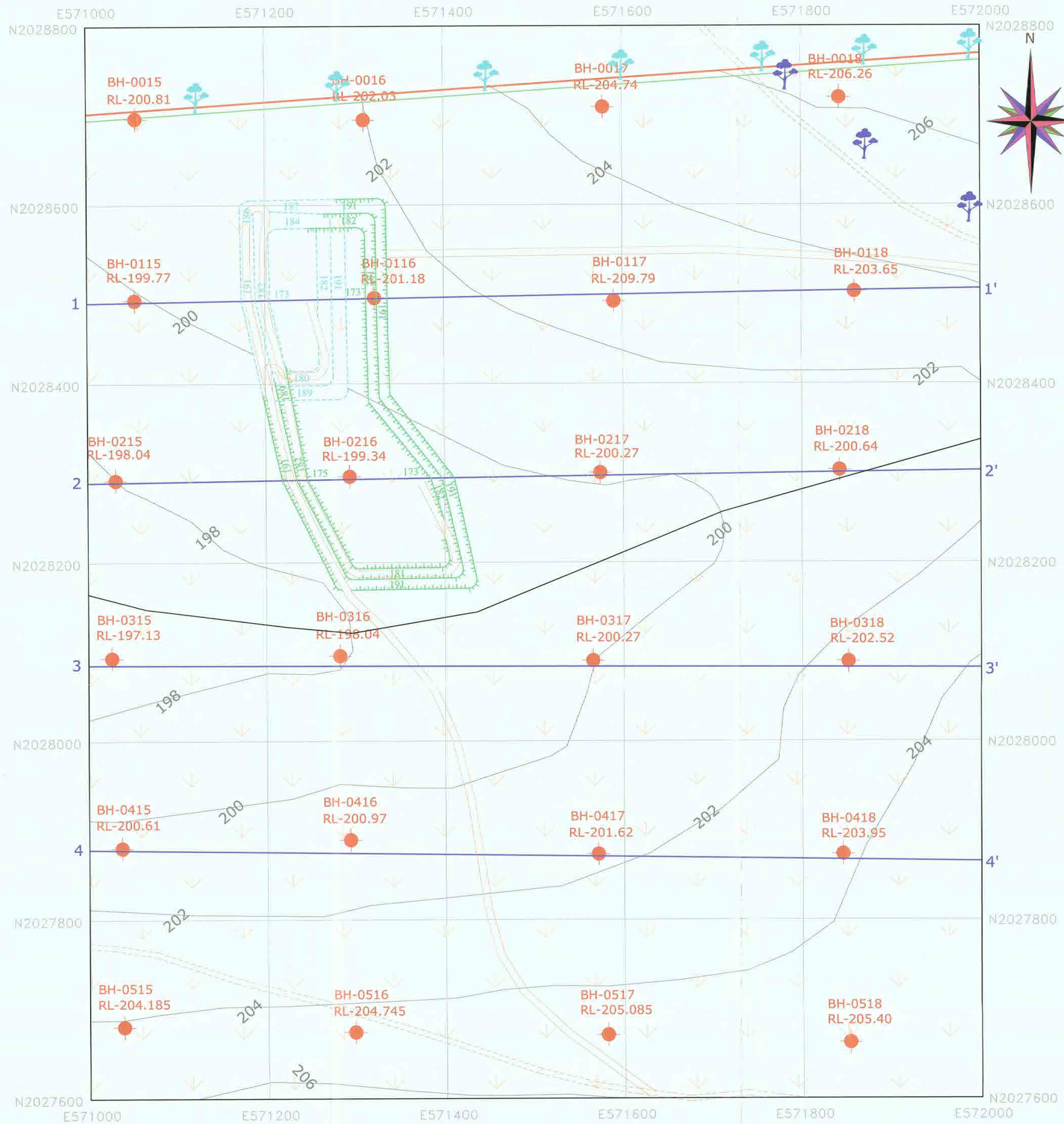
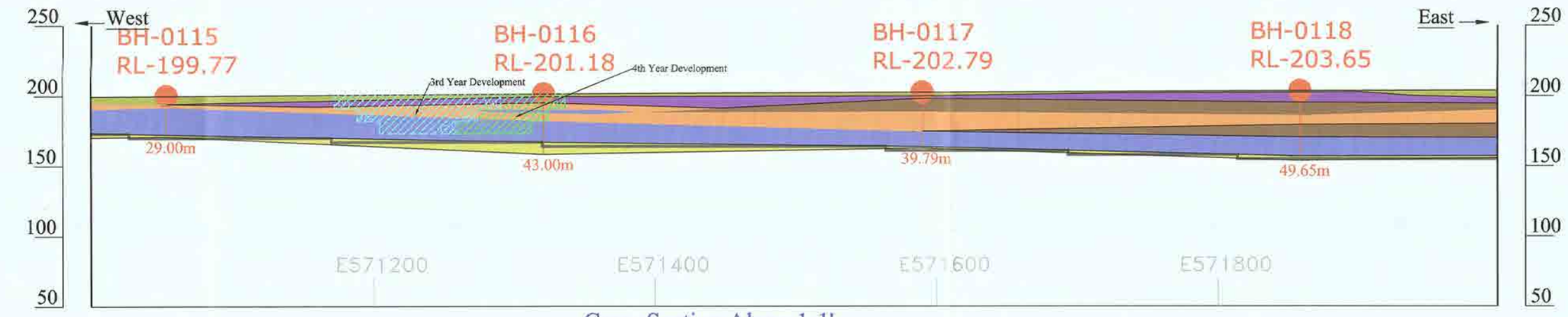
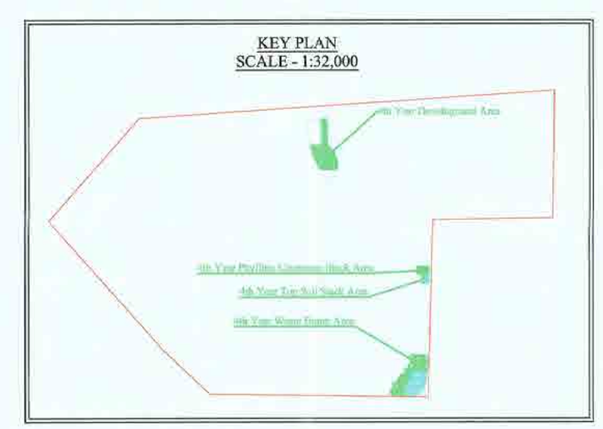




Cross Section Along 1-1'

Cross Section Along 2-2'



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- PLANTATION FOR 2ND YEAR
- PLANTATION FOR 3RD YEAR

MINING PLAN

Under Rule10(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

DEVELOPMENT PLAN & SECTIONS FOR 4TH YEAR

GEMTECH CONSULTANTS(P)LTD
GEOLOGICAL & MINING CONSULTANTS
Plot No-KB/835, Kalinga Nagar, Ghatikia,
Bhubaneswar-751029

DATE OF SURVEY- 01.03.2017

Certified that the Plan is prepared based on the lease map authenticated by the state government is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

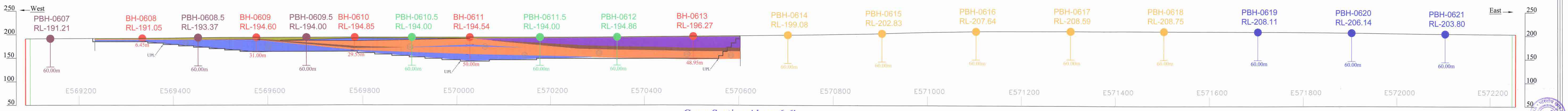
P.S Acharya — S.M.Patro

Qualified Persons

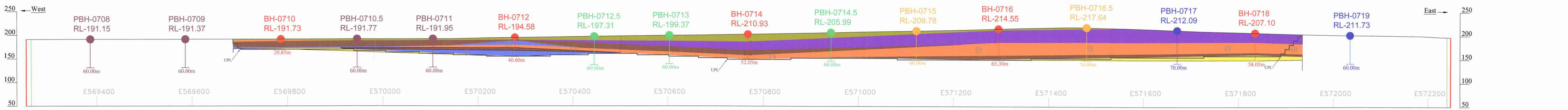
SCALE - 1:2,000

Plate No - 06(B)

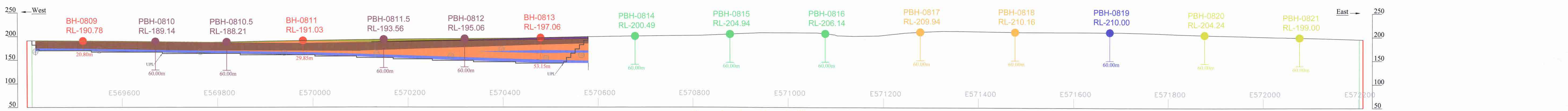
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



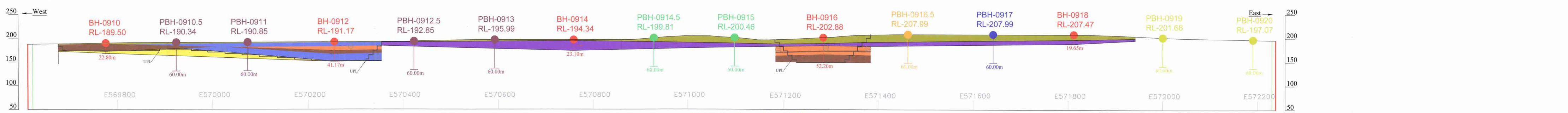
Cross Section Along 6-6'



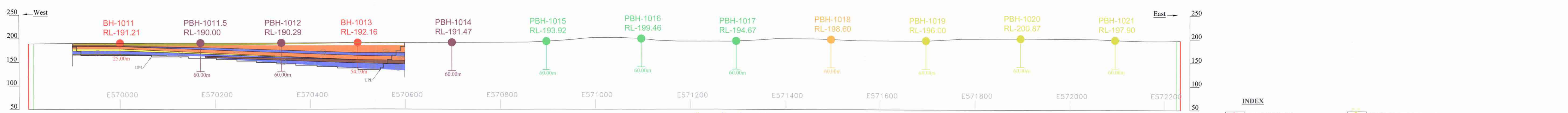
Cross Section Along 7-7'



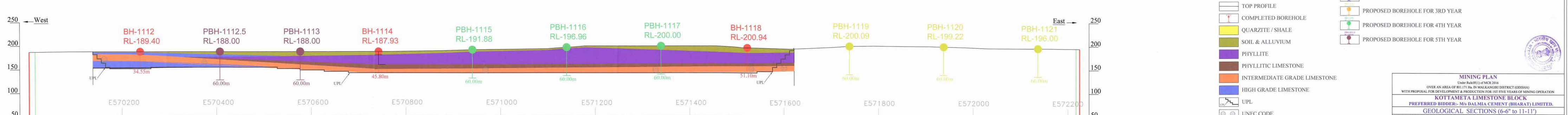
Cross Section Along 8-8'



Cross Section Along 9-9'



Cross Section Along 10-10'



Cross Section Along 11-11'

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- PROPOSED BOREHOLE FOR 3RD YEAR
- PROPOSED BOREHOLE FOR 4TH YEAR
- PROPOSED BOREHOLE FOR 5TH YEAR

MINING PLAN

Under Rule(R1) of MCR 2016

OVER AN AREA OF 881.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

GEOLOGICAL SECTIONS (6-6' to 11-11')

GEMTECH CONSULTANTS PVT. LTD.
GEOLOGICAL & MINING CONSULTANTS
Plot No.-1, Jaydev Vihar Nagar, Chandra, Bhubaneswar-751020

DATE OF SURVEY:- 01.03.2017

Certified that the Plan is prepared based on the latest map authenticated by the state government is up to date & correct to the best of our knowledge

GEMTECH CONSULTANTS PVT LTD.

P.B Alivarjo — Qualified Persons

S.N.Patra — Qualified Persons

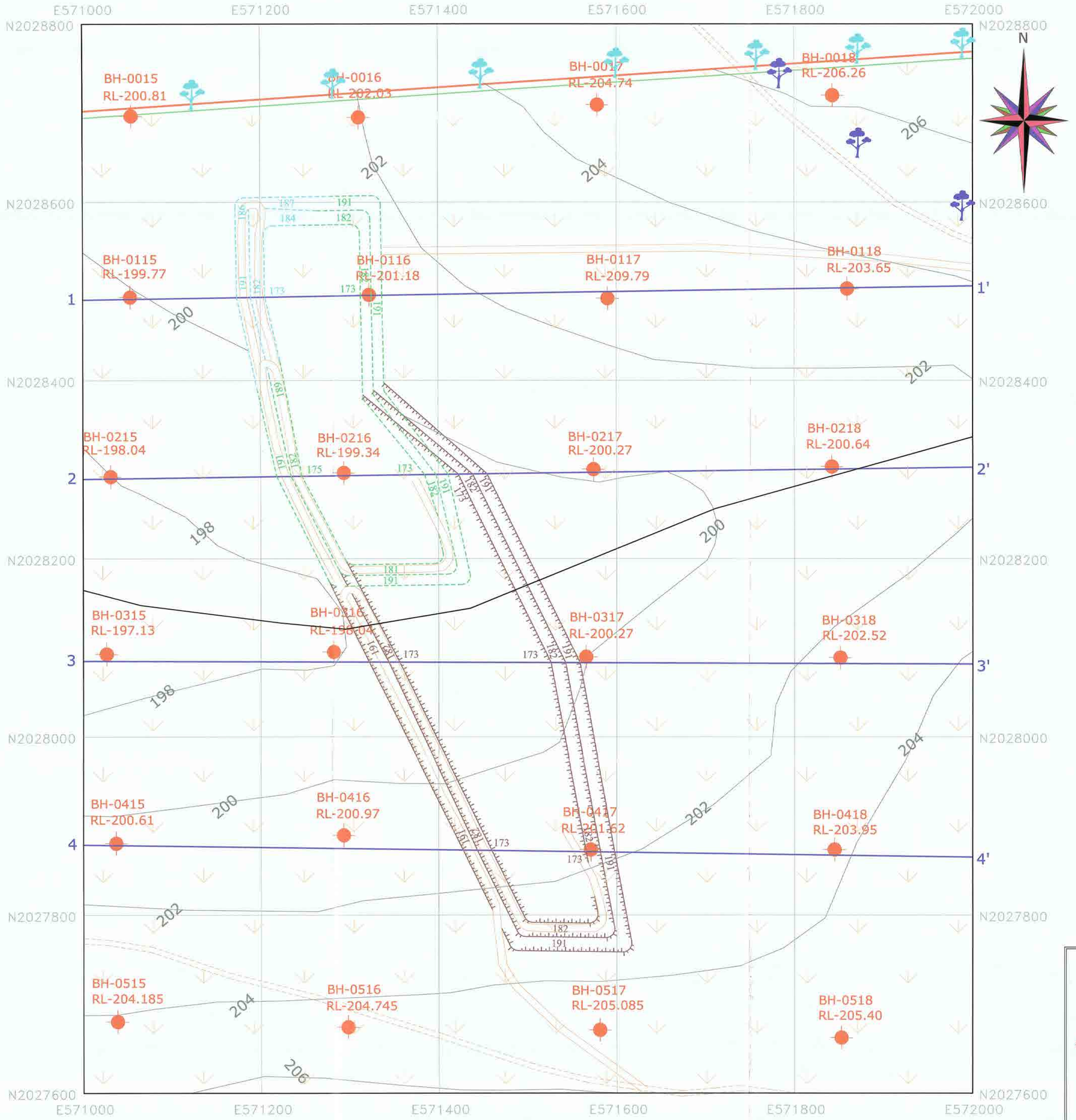
SCALE - 1:2,000

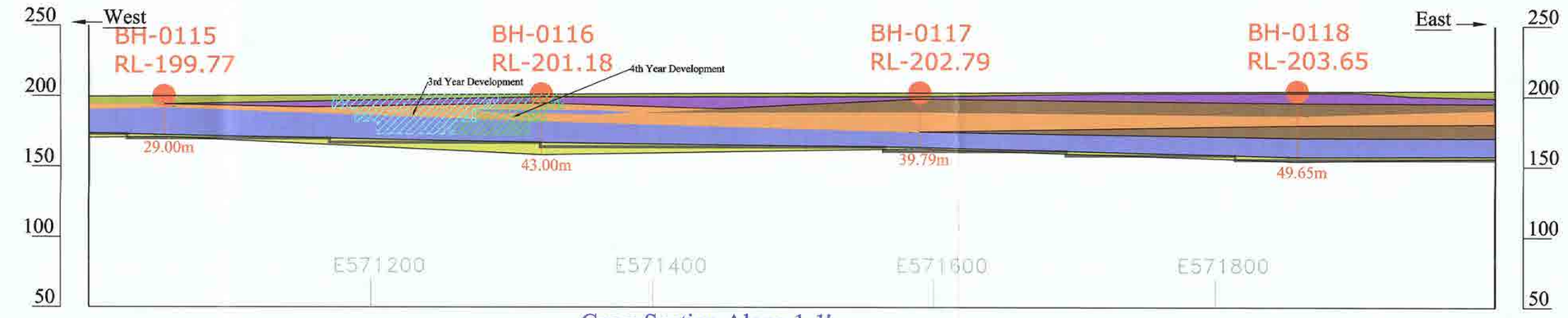
Plate No - 05(B)

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT





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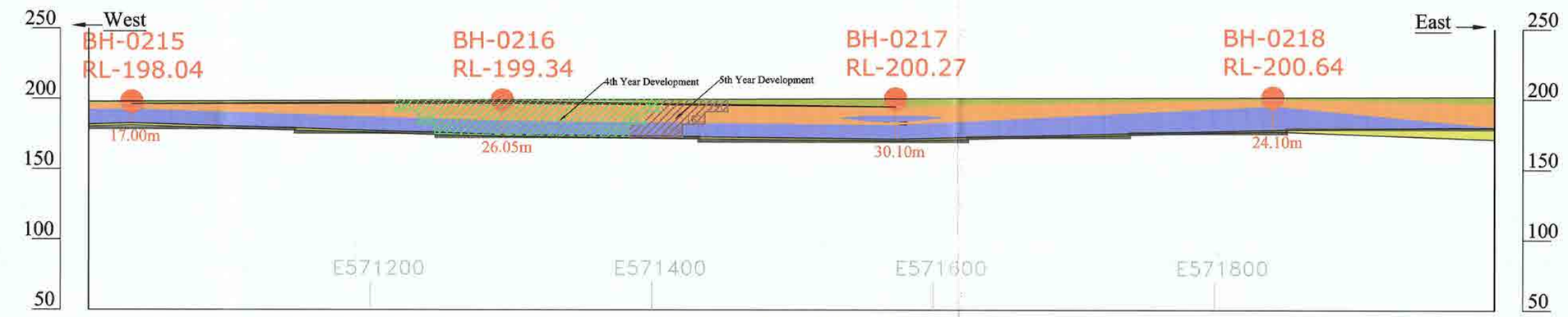

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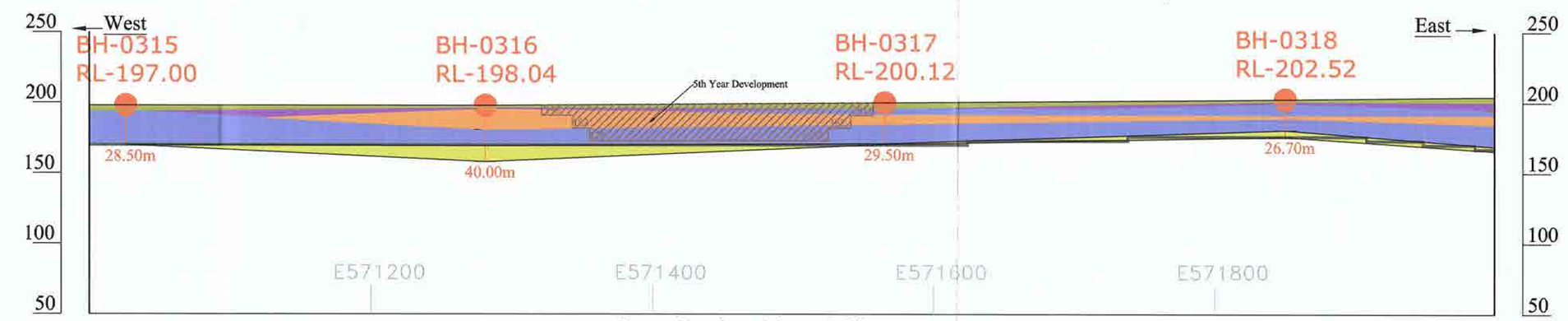

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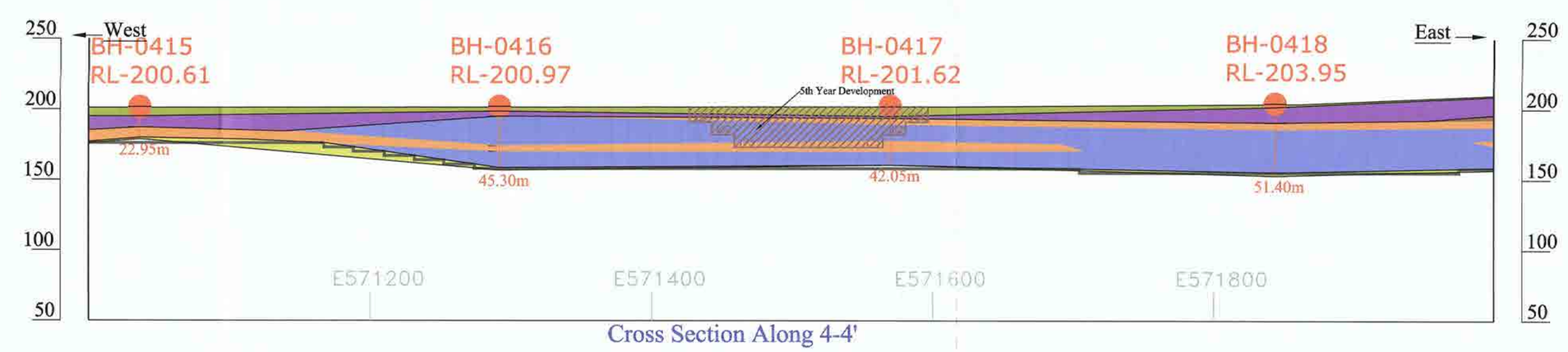
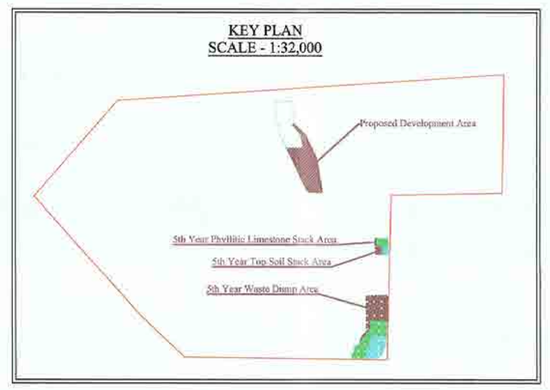


Cross Section Along 4-4'



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MINING PLAN

Under Rule10(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- *M/s DALMIA CEMENT (BHARAT) LIMITED.*

DEVELOPMENT PLAN & SECTIONS FOR 5TH YEAR

GEMTECH CONSULTANTS(P)LTD.
GEOLOGICAL & MINING CONSULTANTS
Plot No-X/6/25, Kalinga Nagar, Ghatikia,
Bhubaneswar-751029

DATE OF SURVEY- 01.03.2017

Certified that the Plan is prepared based on the lease crap authenticated by the state government is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

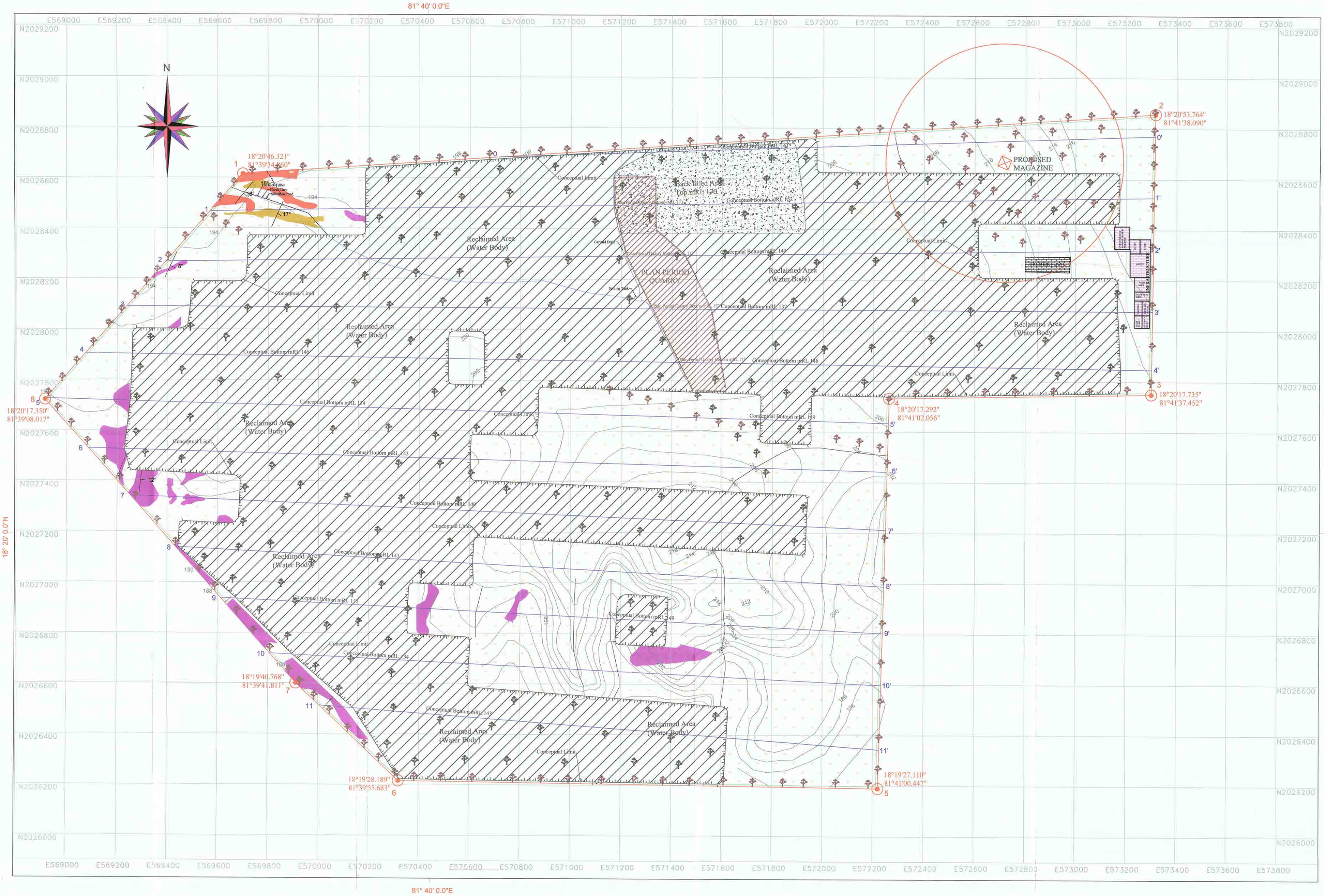
P.S Acharya S.M.Patra

Qualified Persons

SCALE - 1:2,000

Plate No - 06(C)

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



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MINING PLAN

Under Rule1(g)(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

CONCEPTUAL PLAN

GEMTECH CONSULTANTS(P)LTD.
GEOLOGICAL & MINING CONSULTANTS
Plot No-KR/625, Kalinga Nagar, Ghatikia,
Bhubaneswar-751029

Certified that the Plan is prepared based on the lease map authenticated by the state government is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

P.S Acharya **S.M.Patro**

Qualified Persons

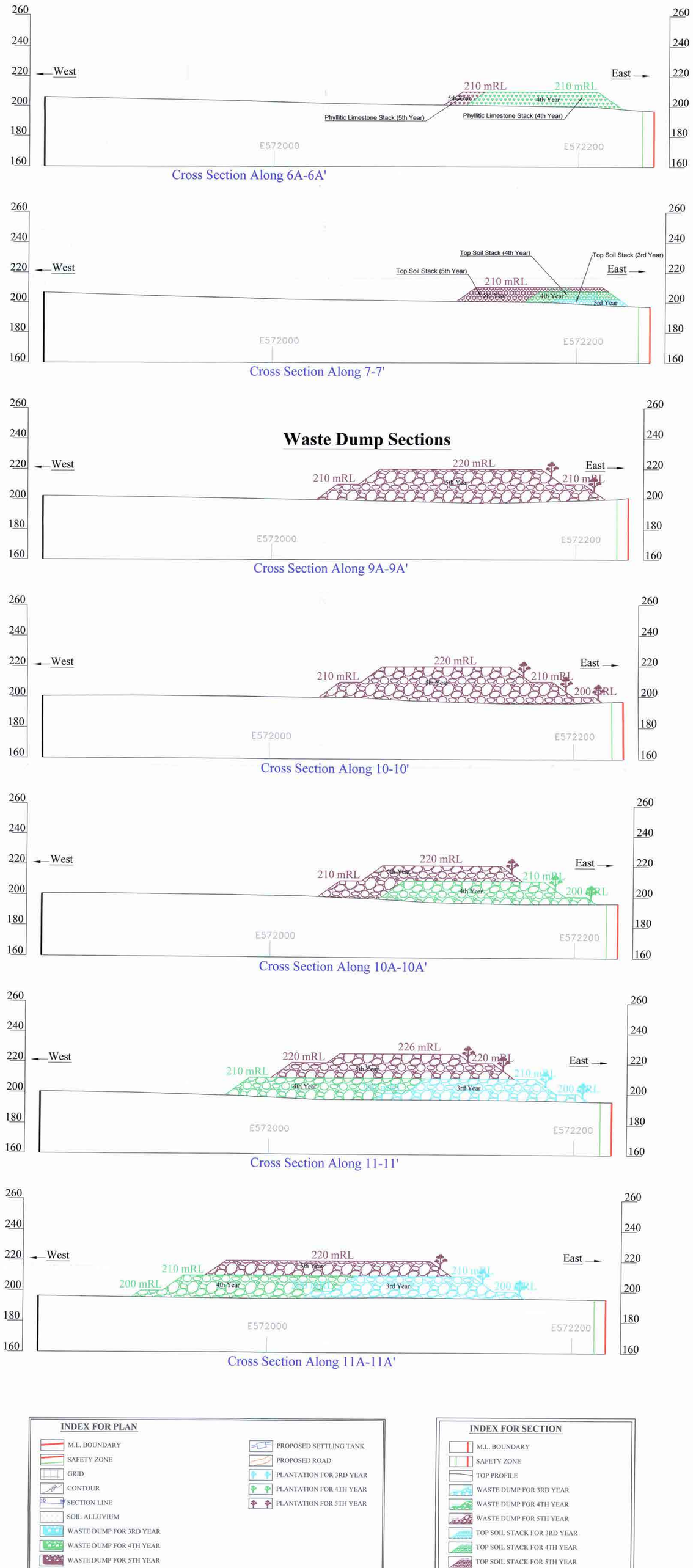
DATE OF SURVEY- 01.03.2017

SCALE - 1:5,000

Plate No - 08

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



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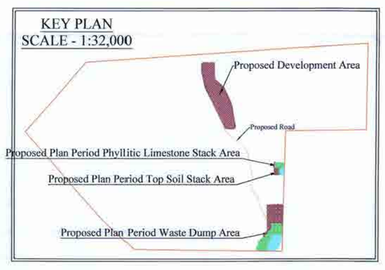
KEY PLAN
SCALE - 1:32,000



MINING PLAN

Under Rule1@(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

WASTE DUMP, TOP SOIL & PHYLLITIC LIMESTONE STACK PLAN & SECTIONS

GEMTECH CONSULTANTS(P)LTD.
GEOLOGICAL & MINING CONSULTANTS
Plot No-KB/625, Kalinga Nagar, Ghatikia,
Bhubaneswar-751029

DATE OF SURVEY- 01.03.2017

Certified that the Plan is prepared based on the lease map authenticated by the state goverenment is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

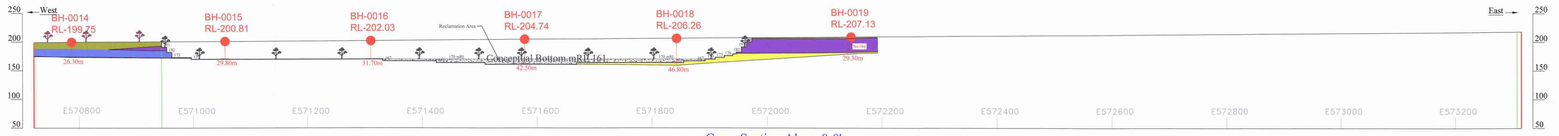
P.S Acharya **S.M.Patra**

Qualified Persons

SCALE - 1:1,000

Plate No - 07

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



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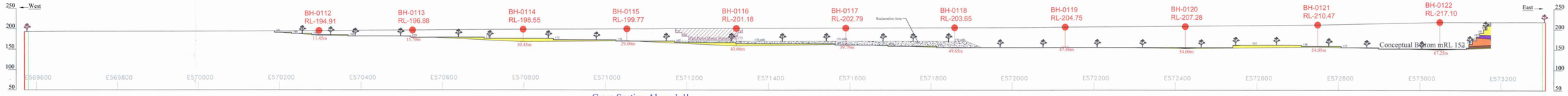
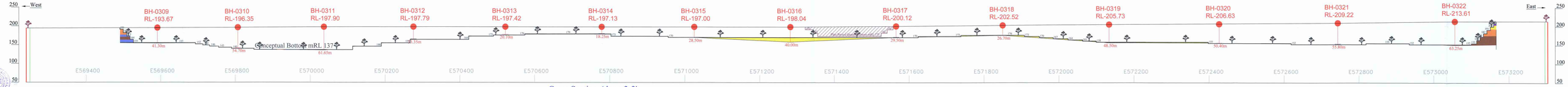


Cross Section Along 1-1'

Cross Section Along 2-2'



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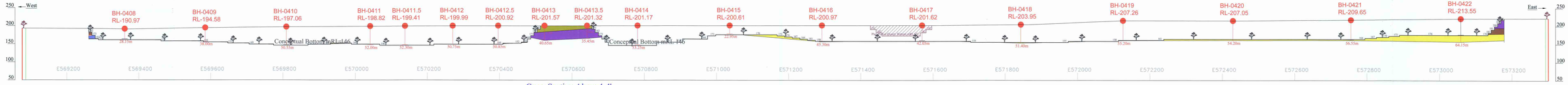
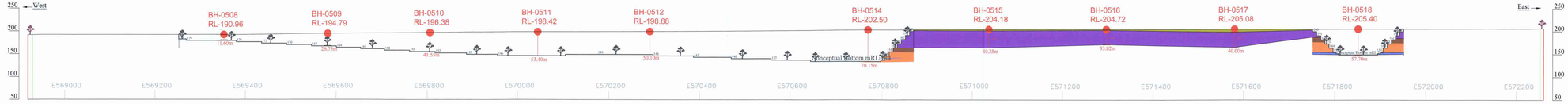


Cross Section Along 4-4'



Cross Section Along 5-5'

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MINING PLAN

Under Rule 8(C) of MCR 2016

OVER AN AREA OF 81.17 HA. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT OF ONE YEAR OF DEVELOPMENT AND FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

CONCEPTUAL SECTIONS (0-0' to 5-5')

GEOTECH CONSULTANTS PVT. LTD.
(Mining Plan & Geological Consultants)
Plot No.4,5,6,9,10, Kalinga Nagar, Bhubaneswar, Pin-751012

DATE OF SURVEY:- 01.03.2017

Certified that the Plan is prepared based on the latest map authenticated by the state government & up to date & correct to the best of our knowledge.

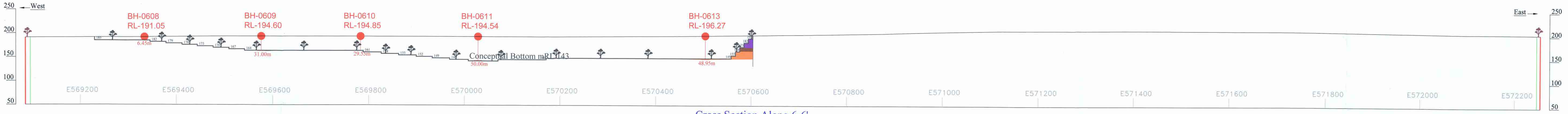
GEOTECH CONSULTANTS PVT. LTD.

P.S. Acharya — Qualified Person
S.N.Patra — Qualified Person

SCALE :- 1:2,000

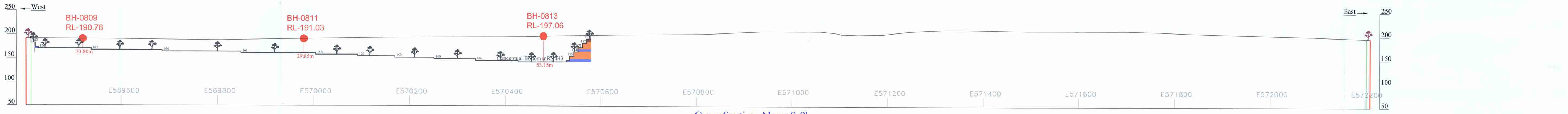
Plate No :- 09(A)

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



Cross Section Along 6-6'

Cross Section Along 7-7'



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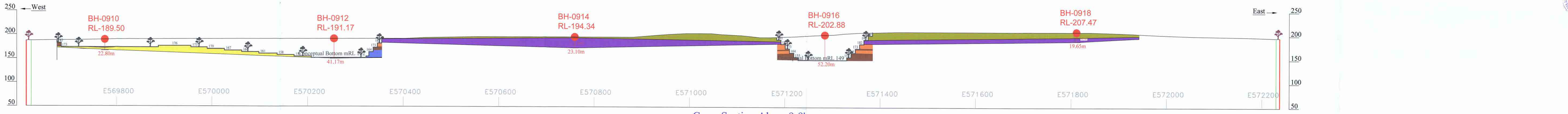

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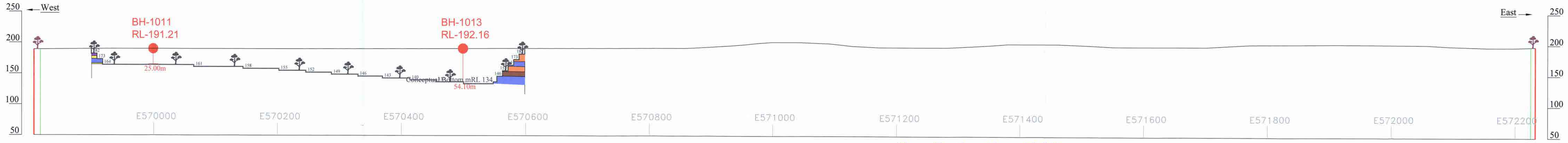
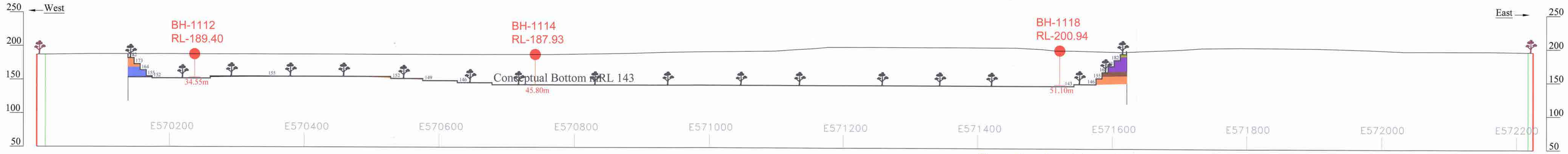


Cross Section Along 10-10'



Cross Section Along 11-11'

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- CONCEPTUAL BENCH PLANTATION

MINING PLAN

Under Rule(6)(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

CONCEPTUAL SECTIONS (6-6" to 11-11')

GEMTECH CONSULTANTS(P)LTD.
Plot No-B/82(P), Jagamara, Bhubaneswar
Plot No-B/82(P), Kalinga Nagar, Chandaka, Bhubaneswar-751029

Certified that the Plan is prepared on the base map authenticated by the state government in up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

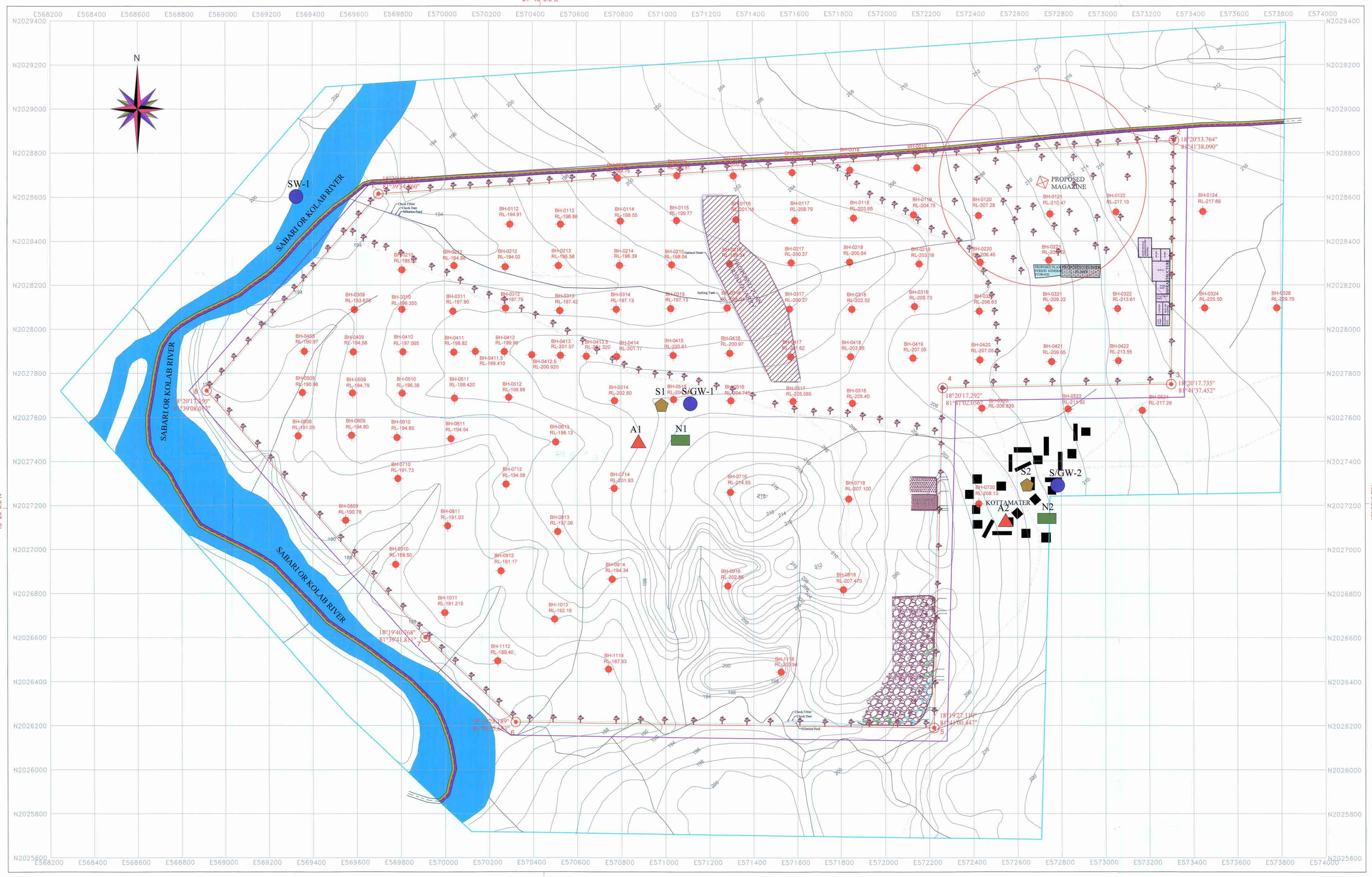
P.S Acharya — Qualified Persons — S.M.Patra

DATE OF SURVEY- 01.03.2017

SCALE - 1:2,000

Plate No - 09(B)

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



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- PROPOSED MINERAL STORAGE

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- S/GW-1 WATER MONITORING STATION
- N1 NOISE MONITORING STATION
- S1 SOIL MONITORING STATION

MINING SURVEYOR
K. K. DASH
Certificate No -628

MINING PLAN
Under Rule1(e1) of MCR 2016
OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)
WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK
PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

ENVIRONMENT PLAN

GEMTECH CONSULTANTS(P)LTD.
GEOLOGICAL & MINING CONSULTANTS
Plot No-KB/625, Kalinga Nagar, Ghatikia,
Bhubaneswar-751029

Certified that the Plan is prepared based on the lease map authenticated by the state government is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

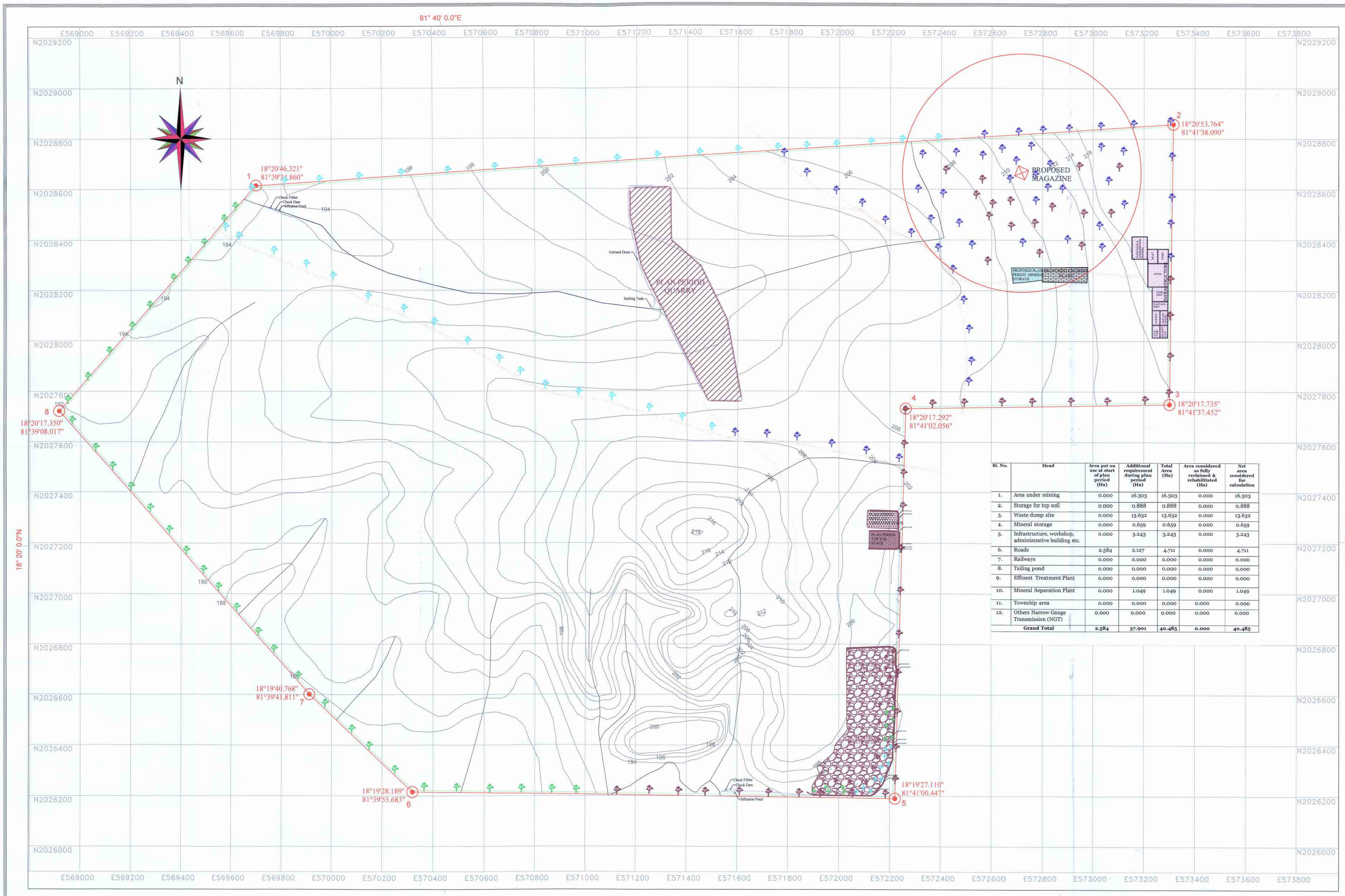
P.S Acharya **S.M.Patra**
Qualified Persons

DATE OF SURVEY- 01.03.2017

SCALE - 1:5,000

Plate No - 10

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



Sl. No.	Head	Area put on use at start of plan period (Ha)	Additional requirement during plan period (Ha)	Total Area (Ha)	Area considered as fully reclaimed & rehabilitated (Ha)	Net area considered for calculation
1.	Area under mining	0.000	16.303	16.303	0.000	16.303
2.	Storage for top soil	0.000	0.888	0.888	0.000	0.888
3.	Waste dump site	0.000	13.632	13.632	0.000	13.632
4.	Mineral storage	0.000	0.659	0.659	0.000	0.659
5.	Infrastructure, workshop, administrative building etc.	0.000	3.243	3.243	0.000	3.243
6.	Roads	2.584	2.127	4.711	0.000	4.711
7.	Railways	0.000	0.000	0.000	0.000	0.000
8.	Tailing pond	0.000	0.000	0.000	0.000	0.000
9.	Effluent Treatment Plant	0.000	0.000	0.000	0.000	0.000
10.	Mineral Separation Plant	0.000	1.049	1.049	0.000	1.049
11.	Township area	0.000	0.000	0.000	0.000	0.000
12.	Others Narrow Gauge Transmission (NGT)	0.000	0.000	0.000	0.000	0.000
	Grand Total	**2.584**	**37.901**	**40.485**	**0.000**	**40.485**

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MINING PLAN

Under Rule16(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

FINANCIAL AREA ASSURANCE PLAN

GEMTECH CONSULTANTS(P)LTD.
GEOLOGICAL & MINING CONSULTANTS
Plot No-KB/625, Kalinga Nagar, Ghatikia,
Bhubaneswar-751029

DATE OF SURVEY- 01.03.2017

Certified that the Plan is prepared based on the lease map authenticated by the state government is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

P.S Acharya **S.M.Patro**
Qualified Persons

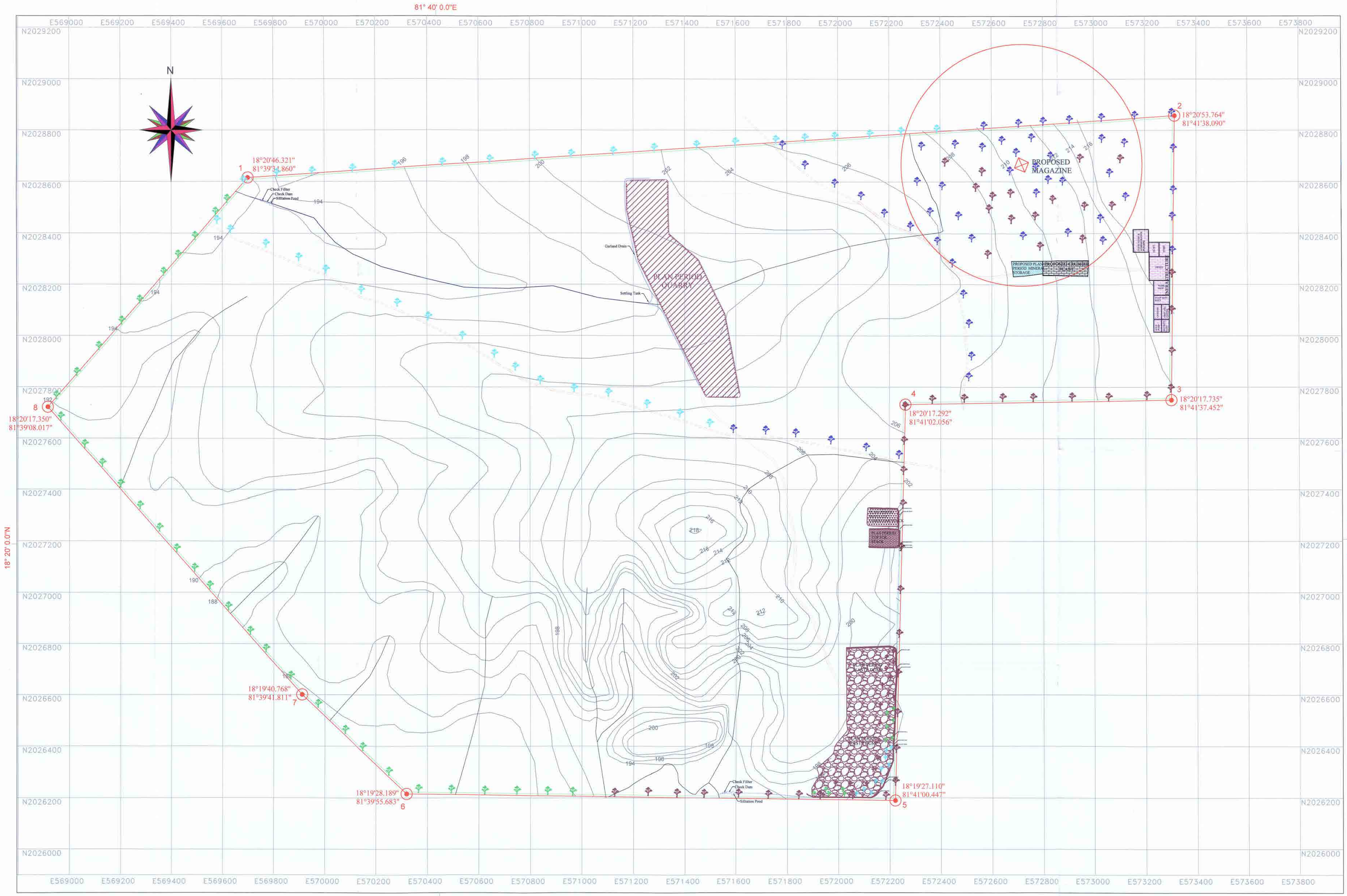
MINING SURVEYOR
H. H. DASH
Certificate No. 9

SCALE - 1:5,000

Plate No - 11

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



Retaining Walls

Retaining boulder wall (1.5 m high with 1.0 m visible and 1.5 m width) of substantial strength shall be constructed all around the eastern side of waste dump with locally available boulders mixed with sand and cement, to arrest any rolling down of the dump materials. Perforation shall be left at around 10 m intervals to allow for passage of water.

Garland Drains

Garland drains of 1.0 m deep and 1.0 m wide shall be constructed all along the eastern side waste dump followed by the retaining wall to prevent any wash off or leaching of dump materials during heavy rains. Side walls and the base shall be pitched with locally available boulders. Joints shall be filled up with cement and sand mixture so that water cannot percolate.

Settling Tank

The garland drain shall be channelized to settling tanks of 8m long, 5m width and 1.5m deep. Side walls and base shall be packed with locally available boulders mixed with cement and sand.

Siltation Pond

The garland drain shall be channelized to siltation pond of 15m long, 8m width and 2.5m deep. Side walls and base shall be packed with locally available boulders mixed with cement and sand.

Check Dam

The garland drain shall be channelized to check dam of 15m long, 8m width and 2.5m deep. Side walls and base shall be packed with locally available boulders mixed with cement and sand.

Check Fillter

The garland drain shall be channelized to check filter of 8m long, 5m width and 2.5m deep. Side walls and base shall be packed with locally available boulders mixed with cement and sand.

81° 40' 0.0"E

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MINING PLAN

Under Rule 8(1) of MCR 2016

OVER AN AREA OF 801.171 Ha. IN MALKANGIRI DISTRICT (ODISHA)

WITH PROPOSAL FOR DEVELOPMENT & PRODUCTION FOR 1ST FIVE YEARS OF MINING OPERATION

KOTTAMETA LIMESTONE BLOCK

PREFERRED BIDDER:- M/s DALMIA CEMENT (BHARAT) LIMITED.

SURFACE WATER DRAINAGE PLAN

GEMTECH CONSULTANTS(P)LTD.
GEOLOGICAL & MINING CONSULTANTS
Plot No-KB/625, Kalinga Nagar, Ghatikia,
Bhubaneswar-751029

Certified that the Plan is prepared based on the lease map authenticated by the state government is up to date & correct to the best of our knowledge.

GEMTECH CONSULTANTS PVT LTD.

P.S Acharya **S.M.Patro**
Qualified Persons

DATE OF SURVEY- 01.03.2017

SCALE - 1:5,000

Plate No - 12

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