

Dept. of Mining & Geology
District Office, Pathanamthitta
Mini Civil Station, Aranmula P.O.
Phone: 0468 -2317119
Email: geo.pat.dmg@kerala.gov.in

No. 2024/DOPTA/M/2019

Dated 11-06-2020

From

Geologist

To

Sri. Thomas Philip
Managing Director,
M/s Delta Aggregates & Sand (P) Ltd.,
Chittar P.O., Pathanamthitta (Dt)

Sir,

Sub : Kerala Minor Mineral Concession Rules 2015 - approval of Mining Plan in respect of proposed Granite Building stone quarry in 3.7691 Hectares in Survey No. 889/1-15-1, 889/1-15 of Perunadu village, Ranni Taluk, Pathanamthitta District submitted as per Rule 66 of KMMC Rules 2015 - reg.

Ref: 1. Kerala Minor Mineral Concession Rules 2015.
2. Your application dated 05.06.2020.

Please refer to the above. The Mining Plan submitted by you vide 2nd reference, is hereby approved, subject to the following conditions.

1. The Mining Plan is approved without prejudice to any other law applicable to the area from time to time whether made by Central Government, State Government or any other authority.
2. The Mining Plan is approved without prejudice to any order or direction from any court of competent jurisdiction.
3. It is also clarified that approval of your aforesaid Mining Plan does not in any way imply the approval of Government in terms of any other provisions of the Kerala Mining Mineral Concession Rules 2015.
4. It is further clarified that the approval of Mining Plan is subject to the provisions of other relevant statutes, orders and guidelines as may be applicable to the mining area from time to time.
5. The approval of the "Mining Plan" shall be revoked with immediate effect if it is found at a later stage that the information furnished in the plan are incorrect or false.
6. The approval of Mining Plan is subject to production of clearance certificate from the National Wild Life Board to the effect that the Board has no objection in granting Quarrying lease from the Department of Mining & Geology since the applied area falls within 10km of Periyar Wild Life Sanctuary or Certificate from the Wild Life Warden concerned to the effect that there is no Wild Life Sanctuary or National Park within 10km of the outer boundaries of the applied area.

Yours faithfully,

GEOLOGIST



MINING PLAN

(Including Progressive Mine Closure Plan)
(Under Rule 55 of the Kerala Minor Mineral Concession Rules 2015)

for

GRANITE BUILDING STONE QUARRY (Minor Mineral)

Extent: 3.7691 Ha. (9.3134 Acres)

at

Survey. Nos. 866/1-15-1 & 866/1-15,

Village : Perunad,
Taluk : Ranni,
District : Pathanamthitta,
State : Kerala.

M/s.Delta Aggregates & Sand Private Limited,

Chittar – Post,Ranni Taluk, Pathanamthitta District, Kerala – 689 663,

Production Capacity: 2,65,788.63 TPA (Max)

Open Cast, Semi Mechanized Mining Method

Patta Land

Prepared By

C. Thambu Cherian
DMG/KERALA/RQP/17/2018



GLOBAL Environment & Mining Services

(Consulting Engineers, Mine Designers, Geologists & Surveyors)
#212, Celestic Tower, Palm Avenue, Green Glen Layout, Bellandur,
BANGALORE - 560103, Karnataka

Landline : +91-80257 46999,

e-mail : gems.blr@globalmining.in

webste : www.globalmining.in

H.O.

3rd Main Road, Basaveshwara Badawane

HOSPET – 583201, Bellary Dist. (Karnataka)

Ministry approved plan

**GEOLOGIST
PATHANAMTHITTA**

M/s.Delta Aggregates & Sand Private Limited.,

Chittar - Post, Pathanamthitta District, Kerala – 689 663.

Ph No. : 04735 256995, 256959

UNDERTAKING

The Mining Plan including Progressive Mine Closure Plan for 'Granite Building Stone Quarry of M/s. Delta Aggregates & Sand Private Limited., over an extent of 3.7691 Ha. (9.3134 Acres) at Survey. Nos. 889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala State, has been prepared by C. Thambu Cherian, M/s. GLOBAL Environment & Mining Services, Bangalore.

We request the District Geologist, Department of Mining & Geology, Pathanamthitta District, Kerala State to make further correspondence regarding the Mining Plan including Progressive Mine Closure Plan with the Recognized Qualified Person at the following address:

C.Thambu Cherian
M/s GLOBAL Environment & Mining Services,
#212, Celestic Tower, Palm Avenue, Green Glen Layout,
Bellandur, Bangalore – 560103,
Karnataka State, India.
Landline: +91 80257 46999

H. O.
3rd Main Road, Basaveshwara Badawane
HOSPET – 583201, Bellary Dist. (Karnataka)

We hereby undertake that all the proposals made in the Mining plan including Progressive Mine Closure Plan by the Recognized Qualified Person are deemed to have been made with the knowledge and consent of me in all respects.

Place: Chittar

Date: 22.01.2020

M/s. Delta Aggregates & Sand Private Limited.,




Shri. Thomas Philip
Managing Director

M/s.Delta Aggregates & Sand Private Limited.,

Chittar - Post, Pathanamthitta District, Kerala – 689 663.

Ph No. : 04735 256995, 256959

CERTIFICATE

This is to certify that the Mining Plan including Progressive Mine Closure Plan for 'Granite Building Stone Quarry of M/s. Delta Aggregates & Sand Private Limited., over an extent of 3.7691 Ha. (9.3134 Acres) at Survey. Nos. 889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala State, has been prepared in full consultation with me and I have understood its contents and agree to implement the same in accordance with the law.

Place: Chittar

Date: 22.01.2020

M/s. Delta Aggregates & Sand Private Limited.,


Shri. Thomas Philip
Managing Director



M/s. Delta Aggregates & Sand Private Limited.,

Chittar - Post, Pathanamthitta District, Kerala – 689 663.

Ph No. : 04735 256995, 256959

CERTIFICATE

"The provisions of Mines Act 1952, the Kerala Minor Mineral Concession Rules (KMMCR) 2015 under have been observed in Mining Plan including Progressive Mine Closure Plan for 'Granite Building Stone Quarry of M/s. Delta Aggregates & Sand Private Limited., over an extent of 3.7691 Ha. (9.3134 Acres) at Survey. Nos. 889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala State, and where specific permissions are required, the Director General of Mines Safety will be approached. Further, standards prescribed by DGMS in respect of all provisions of the mines act 1952 will be strictly implemented.

Place: Chittar

Date: 22.01.2020

M/s. Delta Aggregates and Sand Private Limited.,


Shri. Thomas Philip
Managing Director



M/s. Delta Aggregates & Sand Private Limited.,

Chittar - Post, Pathanamthitta District, Kerala – 689 663.

Ph No. : 04735 256995, 256959

CERTIFICATE

This is to certify that the "Progressive Mine Closure Plan" in respect of Mining Plan for 'Granite Building Stone Quarry of M/s.Delta Aggregates & Sand Private Limited., over an extent of 3.7691 Ha. (9.3134 Acres) at Survey. Nos. 889/1-15-1 & 889/1-15, Perunad Village, Ranni Village, Ranni Taluk, Pathanamthitta District, Kerala State, complies and has taken in to consideration all statutory rules, regulations, orders made by the Central or State Government, Statutory Organizations, Court etc, and wherever any specific permission is required I will approach the concerned authorities.

I also give an undertaking to the effect that all the measures proposed in the closure plan will be implemented in a time bound manner as proposed.

Place: Chittar

Date: 22.01.2020

M/s. Delta Aggregates & Sand Private Limited.,


Shri. Thomas Philip
Managing Director





GLOBAL Environment & Mining Services
(Consulting Engineers, Mine designers, Geologist & Surveyors)
#212, Celestic Tower, Palm Avenue, Green Glen Layout,
Bellandur, **BANGALORE – 560103**, Karnataka, India
Landline : +91 80257 46999
e-mail : gems.blr@globalmining.in
Website : globalmining.in

H. O.
3rd Main Road, Basaveswara Badavane,
HOSPET – 583201, Bellary Dist., (Karnataka)

CERTIFICATE

1. Certified that provisions of Mines Act 1952, the Kerala Minor Mineral Concession Rules (KMMCR) 2015 have been observed in the preparation of Mining Plan including Progressive Mine Closure Plan for 'Granite Building Stone Quarry of M/s. Delta Aggregates & Sand Private Limited., over an extent of 3.7691 Ha. (9.3134 Acres) at Survey. Nos. 889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala State, and wherever specific permissions are required the applicant will approach Director General of Mines safety.
2. It is also certified that information furnished in the above mining plan including Progressive Mine Closure Plan are true and correct to the best of our knowledge.

Place: Bangalore

Date: 22.01.2020

GLOBAL Environment & Mining Services

C. Thambu Cherian
DMG/KERALA/RQP/17/2018





GLOBAL Environment & Mining Services
(Consulting Engineers, Mine designers, Geologist & Surveyors)
#212, Celestic Tower, Palm Avenue, Green Glen Layout,
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Website : globalmining.in

H. O.
3rd Main Road, Basaveswara Badavane,
HOSPET – 583201, Bellary Dist., (Karnataka)

CERTIFICATE

This is to certify that the provisions of the Kerala Minor Mineral Concession Rules (KMMCR) 2015 have been observed in the preparation of Mining Plan including Progressive Mine Closure Plan for 'Granite Building Stone Quarry of M/s. Delta Aggregates & Sand Private Limited., over an extent of 3.7691 Ha. (9.3134 Acres) at Survey. Nos. 889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala State, and wherever specific permissions are required, the applicant will approach the concerned authorities of the Department of Mining & Geology, Kerala.

Place: Bangalore

Date: 22.01.2020

GLOBAL Environment & Mining Services

C. Thambu Cherian
DMG/KERALA/RQP/17/2018



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LIST OF PLATES

SL No	DESCRIPTION	Plate No.	Scale
1	Administrative Plan	1	NTS
2	Key Plan	1A	1:50,000
3	Survey Map	2	1:2000
4	Surface Plan	3	1:1000
5	Geological Plan & Sections	4	1:1000
6	Production & Development Plan (I-Year)	5A	1:1000
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9	Production & Development Plan (IV-Year)	5D	1:1000
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11	Production & Development Sections	6	1:1000
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13	Environment Plan / Drainage Plan (Map showing all features (Site & Surroundings within 500m Radius)	8	1:5000
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17	Buffer Map (5Km) Showing Site Location & Transportation Route Map	12	1:50,000
18	Topsoil / Waste Management Plan	13	1:1000



MINING PLAN**For "GRANITE BUILDING STONE QUARRY"****M/s. Delta Aggregates & Sand Private Limited.,****INTRODUCTION:**

Granite Building Stone is one of the most common rock types in the Geology of Kerala. It is a coarse-grained plutonic rock containing over 80-90% quartz, feldspar and a small percentage of biotite, hornblende and other ferromagnesian minerals. Due to its hard nature and easy availability it is commonly used as a construction material and road material all over the state. The abundance of granite building stone and its growing demand has prompted the entrepreneur to apply for the mining in this area.

Shri. Thomas Philip, Managing Director, M/s. Delta Aggregates & Sand Private Limited, Chittar-Post, Ranni Taluk, Pathanamthitta District, Kerala – 689 663 has proposed for their mining operations (Granite Building Stone Quarry) in the area over an extent of 3.7691 Ha. (9.3134 Acres) for the production of granite building stone Survey. Nos. 889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala State. The location of the proposed mine is shown on the Administrative Plan and Key plan enclosed vide **Plate No 1 & 1A**. The Survey Map showing the applied mining area is enclosed vide **Plate No – 2**.

This granite building stone quarry is located at 1.2 Kms from Perunad Village in Ranni Taluk. It is at a distance of 23.3 Kms by road from Pathanamthitta town. It can be reached from Mannarkulanji - Pampa Road.

Now as a statutory requirement a Mining Plan (including Progressive Mine Closure Plan) showing systematic development of the mine and mining related proposals for next five years required to be prepared and submitted to the Geologist, Dept. of Mining and Geology Pathanamthitta, Govt of Kerala for approval. Hence a Mining plan is prepared for the period of 5 years for the maximum production of 2,65,788.63 Tonnes per annum and submitted to Department of Mining & Geology, Pathanamthitta for approval.

The Mining is proposed to be operated by developing benches of 5m height and 5m ultimate width by Opencast Semi-Mechanised Mining Method. The mechanised operation of mining includes excavators, tippers, rock breakers, Jack hammer drilling and blasting.



This Mining Plan is prepared as per the requirements of the Kerala Minor Mineral Concession Rules (KMMCR) 2015, and is submitted to the District Geologist, Pathanamthitta Kerala for approval.

The boulders and broken material from the mine would be transported to the local consumers, Construction sites and / or to the crusher situated outside the lease area for further sizing.



1.0 GENERAL

- a) **Name & address of lessee:** M/s. Delta Aggregates & Sand Private Limited,
Shri. Thomas Philip, Managing Director,
Chittar Post, Ranni Taluk,
Pathanamthitta District, Kerala-689 663,
Ph No. : 04735 256995 ,256959,
- b) **Registered Office:** Shri. Thomas Philip, Managing Director,
M/s. Delta Aggregates & Sand Private Limited,
Chittar Post, Ranni Taluk,
Pathanamthitta District, Kerala-689 663,
Ph No. : 04735 256995 ,256959,
- c) **Status of lessee**
- | | | |
|---------------------------|---|-----|
| Private Individual | : | No |
| Cooperative Association | : | No |
| Private Company | : | Yes |
| Public Company | : | No |
| Public Sector Undertaking | : | No |
| Joint Sector Undertaking | : | No |
| Other (Pl. specify) | : | No |
- The Id proof of Shri. Thomas Philip is enclosed as **Annexure – 7**.
- d) **Mineral/s which are occurring:** Granite building stone.
in the area and which the
Lessee intends to mine
- d) **Period for which the mining lease is granted/renewed/proposed to be**
applied:
Fresh Lease, Proposed For 7 Years.



e) Name & address of RQP Preparing Mining Plan

<p align="center">C.Thambu Cherian DMG/KERALA/RQP/17/2018</p>
<p align="center">GLOBAL Environment & Mining Services #212, Celestic Tower, Palm Avenue, Green Glen Layout, Bellandur, BANGALORE-560 103, Karnataka e-mail : gems.blr@globalmining.in Landline: +91-80 2574 6999</p>
<p>HEAD OFFICE 3rd Main Road, Basaveshwara Badawane HOSPET – 583201, Bellary Dist. (Karnataka)</p>

The RQP certificate of C. Thambu Cherian from Directorate of Mining and Geology, Kerala is enclosed as **Annexure - 2**.

f) Name of Prospecting Agency: GSI/DMG Kerala**g) Reference no. and date of consent letter from the State Government G.O. No.**

For mining of the said area, Directorate of Mining and Geology, Thiruvananthapuram, has issued a Letter of Intent (LOI) vide No. 8676/M3/2019 dated 09.01.2020. The copy of the LOI is enclosed as **Annexure -1**.



2.0 LOCATION & ACCESSIBILITY:

LOCATION:

The 'Granite Building Stone Quarry of M/s. Delta Aggregates & Sand Private Limited., over an area of 3.7691 Ha. (9.3134 Acres) is located in Survey. Nos. 889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

ACCESSIBILITY:

This granite building stone quarry is located at 1.2 Kms from Perunad Village in Ranni Taluk. It is at a distance of 23.3 Km_s by road from Pathanamthitta town. It can be reached from Mannarkulanji - Pampa Road.

The location of this mining area is shown on the Administrative and Key Plan enclosed Vide **Plate No-1 and 1A.**

a)	Details of area (with location map)	:	The lease is marked on Key plan / enclosed vide Plate No.1A.
i)	District and state	:	Pathanamthitta, Kerala
ii)	Taluk / Mandal	:	Ranni
iii)	Village	:	Perunad
iv)	Khasara No. / Plot No. / Block / Gat Noetc	:	Survey. Nos. 889/1-15-1 & 889/1-15.
v)	Lease Area (Hectares)	:	3.7691 Ha
vi)	Whether the area is recorded to be in forest (please specify whether protected, reserved etc.,)	:	No
vii)	Ownership / Occupancy	:	Private
viii)	Existence of public road/railway line, if any, nearby and approximate distance Nearest Port / Airport	:	The nearest railhead – Chengannur (44 Km) and Nearest airport – Trivandrum Airport (129 Km) from the mine.
ix)	Topo sheet No. -	:	C43Q15 (58 C/15)
x)	Latitude & Longitude	:	N-09°21'03.51" to N-09°21'13.91" E-76°53'39.04" to E-76°53'48.24"

The detail of lands is enclosed as **Annexure – 8 & 9.** The copy of consent of the landowner is enclosed as **Annexure – 10.**

The details of land in each Survey Number along with its extent and land proposed for mining are given in the Table 2.1



Table No. 2.1: Details of Survey Number and the area acquired for lease

Sl. No.	Doc. No.	Name of the Owner	Re-Sy.No.	Village Name	Area of Possession In Ha.	Area for Mining in Ha.	Area for Buffer zone in Ha.	Total Applied Area in Ha.
1	1161/18	Jibu Jose	889/1-15-1	Pernad	3.3690	2.8301	0.5343	3.3644
3	1921/10	Noushad	889/1-15		0.4047	0.2719	0.1328	0.4067
TOTAL					3.7737	3.1020	0.6671	3.7691

x) Land Use Pattern (Forest, Agricultural, Grazing, Barren etc.):

The entire proposed Mining area is a private land. The details of the land is given in the Table No 2.2.

Table No. 2.2: The details of the land applied for mining

Particulars	Extent in Ha.	Ownership
Lands	3.7691	Private

Attach general location and vicinity map showing area boundaries and existing and proposed access roads. It is preferred that the area be marked on a Survey of India Topographical map or as the case may be. However if none of these are available the area should be shown on accurate sketch map on a scale of 1: 50,000.

A general location plan is prepared in scale 1: 50,000 and enclosed vide Plate No. 1A.

Details of the Ground Points from the site is given in the Table. No. 2.3,

Ground Control Point	Location	Distance from Corner Pillar -Km	GPS Reading	
			Latitude	Longitude
Common Point- 1	Murithnikkal Sree Durga Devi Temple	0.383	N-09°21'18.20"	E-76°53'57.53"
Common Point-2	Juma Masjid, Pottamoozhy	1.000	N-09°21'04.74"	E-76°54'22.93"



3.0 GEOLOGY & RESERVES:

- a) Briefly describe the topography and general geology and local/mine geology of the mineral deposit including drainage pattern.

1. Topography of the area:

The lease is located on the slope of the area gently dipping towards NE. The highest elevation in this area is 180.0m above MSL and the lowest elevation is 115m above MSL. The general slope of the lease hold area is between 9° to 28° degree. The area has moderate climate with maximum temperature of 33.4° in the month of April and minimum temperature of 22.4°C in the month of Jan. The area receives average rain fall of more than 3133.9mm.

2. Geology

Regional Geology:

Geologically, the district forms part of the Precambrian metamorphic shield comprising (i) Charnockite Group, Khondalite Group and Megmatite Complex of Archaean age, (ii) Acid intrusive of Proterozoic age and (iii) rocks of Cenozoic age (basic intrusive, Neogene and Quaternary).

Charnockite group is the dominant formation of the area within which occur concordant, linear and lensoidal bodies of calc granulite and quartzite of Khondalite Group. The Charnockite Group comprises Charnockite (hypersthene granite), pyroxene-granulite and cordierite gneiss. Charnockite is the dominant rock and its variants are charnockite gneiss, massive charnockite and hypersthene-diopside gneiss. The rock is generally dark grey and crudely foliated. Cordierite gneiss occurs as impersistent bands within charnockite, while pyroxene granulite is seen as restites, mostly in the west. At places, charnockite is migmatized resulting in the formation of biotite gneiss, and garnet-biotite gneiss (Migmatite Complex). These rocks are predominant towards south. The area witnessed a period of igneous activity during the Proterozoic as evidenced from the granite and syeno-granite (acid intrusive) bodies. Pegmaite and quartz veins traverse the older rocks parallel to the regional foliation. Basic igneous activity, probably of Late Mesozoic age, is evidenced from the dolerite and gabbro dykes cutting across the older rocks. These dykes have a general NW-SE trend. Warkalli sediment of Neogene age are exposed near Thiruvalla. Along the western margin, the basement and sedimentary rocks have been lateritised.



Local Geology:

The granite building stones are very well exposed in outcrops, whereas part of area with lower elevation is covered by topsoil of about 0 to 1.2m thickness,

A geological plan showing the granite and soil cover and the geological sections showing subsurface geology is prepared on 1:1000 scale and enclosed vide **Plate No 4.**

Table 3.1: Local Geology

Soil Cover	0 to 1.2m
Granite	110 m (min. estimate)

The geology of the lease area is shown the Geological Plan and Sections enclosed vide **Plate No-4.**

- b) The topographic plan of the lease area prepared on a scale of 1:1000 or 1:2000 with contour interval of 3 to 10 m. depending upon the topography of the area should be taken as the base plan for preparation of geological plan. The details of exploration already carried out including evidences of mineral existence should be shown the geological plan.

The topographic plan on 1:1000 scale is prepared with contour interval of 5m by incorporating all the existing details like topography, surface exposures, structures etc. and enclosed vide **Plate No 3.**

c) Exploration Already carried out:

The granite building stone in the lease area are of intrusive nature with good outcrops and very good exposures in the open pits. Hence no exploration proposal is made.

- d) Geological sections should be prepared at suitable intervals on a scale of 1:1000 / 1:2000.

The geological cross sections are prepared for every 50m interval based on the updated geological plan on 1:1000 scales and The geological plan and sections are enclosed vide **Plate No - 4.**

- e) Broadly indicate the year wise future program of exploration, taking into consideration the future production program planned in next five years as in table below:

The granite building stones are intrusive in nature and well exposed in the mine. As the granite building stone in this mining area is of proved nature, no exploration is proposed.



- f) Indicate geological and recoverable reserves and grade, duly supported by standard method of estimation and calculations along with required sections (giving split up of various categories i.e., proved, probable, possible) indicate cut-off grade. Availability of resources should also be indicated for the entire leasehold.

The geological resources of granite building stones are estimated by cross sectional method and given in the Table No 3.2

Table No:3.2: The Geological Resources.

Section No	Area (m ²)	Influence (m)	Volume (m ³)	Tonnage (T) BD 2.5T/m ³	UNFC
A-A'	1870	35.5	66,385.00	165,962.50	332
B-B'	9106	42	382,452.00	956,130.00	332
C-C'	8103	39	316,017.00	790,042.50	332
D-D'	5424	50	271,200.00	678,000.00	332
E-E'	3948	50	197,400.00	493,500.00	332
F-F'	1020	38.5	39,270.00	98,175.00	332
Total			1,272,724.00	3,181,810.00	332

These resources of granite building stones are estimated in the 332 category of UNFC codification

For the estimation of geological resources, the area is marked with sections A-A' to F-F' with the interval of 50m. The section wise sectional area is measured and multiplied by the influence to obtain the volume in m³. The volume is multiplied by 2.5T/m³ (BD) to calculate the resources of granite building stone in tonnes.

- g) Indicate mineral reserves by slice plan/level plan method, as applicable as per the proposed mining parameters.

The reserves of granite building stone in tonnes are estimated out of indicated resources after deleting the granite building stone blocked in the 7.5m buffer area and ultimate benches. The granite building stone reserves are given in the Table No – 3.3.



Table No 3.3: Granite Building Stone Mineable Reserves

Section No	Bench Level	Area (m ²)	Influence (m)	Volume (m ³)	Tonnage (T) BD 2.5T/m ³	Recovery (@ 95% Salable Ore)	Waste (@ 5%)	UNFC
A-A'	145	10	28	280.00	700.00	665.00	35.00	122
	140	77	28	2,156.00	5,390.00	5,120.50	269.50	122
	135	197	28	5,516.00	13,790.00	13,100.50	689.50	122
	130	182	28	5,096.00	12,740.00	12,103.00	637.00	122
	125	119	28	3,332.00	8,330.00	7,913.50	416.50	122
	120	60	28	1,680.00	4,200.00	3,990.00	210.00	122
SUB TOTAL				18,060.00	45,150.00	42,892.50	2,257.50	122
B-B'	170	24	42	1,008.00	2,520.00	2,394.00	126.00	122
	165	155	42	6,510.00	16,275.00	15,461.25	813.75	122
	160	347	42	14,574.00	36,435.00	34,613.25	1,821.75	122
	155	438	42	18,396.00	45,990.00	43,690.50	2,299.50	122
	150	504	42	21,168.00	52,920.00	50,274.00	2,646.00	122
	145	589	42	24,738.00	61,845.00	58,752.75	3,092.25	122
	140	653	42	27,426.00	68,565.00	65,136.75	3,428.25	122
	135	665	42	27,930.00	69,825.00	66,333.75	3,491.25	122
	130	587	42	24,654.00	61,635.00	58,553.25	3,081.75	122
	125	509	42	21,378.00	53,445.00	50,772.75	2,672.25	122
	120	440	42	18,480.00	46,200.00	43,890.00	2,310.00	122
	115	362	42	15,204.00	38,010.00	36,109.50	1,900.50	122
SUB TOTAL				221,466.00	553,665.00	525,981.75	27,683.25	122
C-C'	175	22	39	858.00	2,145.00	2,037.75	107.25	122
	170	69	39	2,691.00	6,727.50	6,391.13	336.38	122
	165	118	39	4,602.00	11,505.00	10,929.75	575.25	122
	160	156	39	6,084.00	15,210.00	14,449.50	760.50	122
	155	206	39	8,034.00	20,085.00	19,080.75	1,004.25	122
	150	250	39	9,750.00	24,375.00	23,156.25	1,218.75	122
	145	279	39	10,881.00	27,202.50	25,842.38	1,360.13	122
	140	312	39	12,168.00	30,420.00	28,899.00	1,521.00	122
	135	344	39	13,416.00	33,540.00	31,863.00	1,677.00	122
	130	368	39	14,352.00	35,880.00	34,086.00	1,794.00	122
	125	310	39	12,090.00	30,225.00	28,713.75	1,511.25	122
	120	251	39	9,789.00	24,472.50	23,248.88	1,223.63	122
	115	185	39	7,215.00	18,037.50	17,135.63	901.88	122
	110	105	39	4,095.00	10,237.50	9,725.63	511.88	122
SUB TOTAL				116,025.00	290,062.50	275,559.38	14,503.13	122
D-D'	170	13	50	650.00	1,625.00	1,543.75	81.25	122
	165	40	50	2,000.00	5,000.00	4,750.00	250.00	122
	160	57	50	2,850.00	7,125.00	6,768.75	356.25	122
	155	86	50	4,300.00	10,750.00	10,212.50	537.50	122
	150	130	50	6,500.00	16,250.00	15,437.50	812.50	122



	145	166	50	8,300.00	20,750.00	19,712.50	1,037.50	122
	140	199	50	9,950.00	24,875.00	23,631.25	1,243.75	122
	135	236	50	11,800.00	29,500.00	28,025.00	1,475.00	122
	130	270	50	13,500.00	33,750.00	32,062.50	1,687.50	122
	125	246	50	12,300.00	30,750.00	29,212.50	1,537.50	122
	120	194	50	9,700.00	24,250.00	23,037.50	1,212.50	122
	115	141	50	7,050.00	17,625.00	16,743.75	881.25	122
	110	88	50	4,400.00	11,000.00	10,450.00	550.00	122
	105	36	50	1,800.00	4,500.00	4,275.00	225.00	122
SUB TOTAL				95,100.00	237,750.00	225,862.50	11,887.50	122
E-E'	165	5	50	250.00	625.00	593.75	31.25	122
	160	30	50	1,500.00	3,750.00	3,562.50	187.50	122
	155	53	50	2,650.00	6,625.00	6,293.75	331.25	122
	150	77	50	3,850.00	9,625.00	9,143.75	481.25	122
	145	97	50	4,850.00	12,125.00	11,518.75	606.25	122
	140	112	50	5,600.00	14,000.00	13,300.00	700.00	122
	135	137	50	6,850.00	17,125.00	16,268.75	856.25	122
	130	169	50	8,450.00	21,125.00	20,068.75	1,056.25	122
	125	207	50	10,350.00	25,875.00	24,581.25	1,293.75	122
	120	188	50	9,400.00	23,500.00	22,325.00	1,175.00	122
	115	136	50	6,800.00	17,000.00	16,150.00	850.00	122
	110	84	50	4,200.00	10,500.00	9,975.00	525.00	122
SUB TOTAL				64,750.00	161,875.00	153,781.25	8,093.75	122
F-F'	135	2	31	62.00	155.00	147.25	7.75	122
	130	20	31	620.00	1,550.00	1,472.50	77.50	122
	125	48	31	1,488.00	3,720.00	3,534.00	186.00	122
	120	78	31	2,418.00	6,045.00	5,742.75	302.25	122
	115	97	31	3,067.00	7,517.50	7,141.63	375.88	122
	110	47	31	1,457.00	3,642.50	3,460.38	182.13	122
SUB TOTAL				9,052.00	22,630.00	21,498.50	1,131.50	122
GRAND TOTAL				524,453.00	1,311,132.50	1,245,575.88	65,556.63	122

Table No. 3.4 Generation of topsoil

Section No	Area (m ²)	Influence (m)	Volume (m ³)	Tonnage (T) BD 1.6T/m ³	UNFC
A-A'	66	28	1,848.00	2,956.80	122
B-B'	194	42	8,148.00	13,036.80	122
C-C'	148	39	5,772.00	9,235.20	122
D-D'	110	50	5,500.00	8,800.00	122
E-E'	104	50	5,200.00	8,320.00	122
F-F'	44	31	1,364.00	2,182.40	122
Total			27,832.00	44,531.20	122



h) Grades of granite building stone.

The general analysis of granite building stone is given in the Table 3.4

Table No 3.4: Analysis of granite building stone

Minerals*	Percentage %
SiO ₂	71.8
Al ₂ O ₃	13.6
Fe ₂ O ₃	01.6
FeO	01.8
MgO	00.6
CaO	01.5
Na ₂ O	03.4
K ₂ O	04.6
H ₂ O	00.8
TiO ₂	00.2
P ₂ O ₅	00.1

*Source: The Principles of Petrology by G W Tyrrell



4.0 MINING

- a) Briefly describe the existing/proposed method for developing/working the deposit with all design parameters.

It is a virgin area. It is located in the Survey. Nos. 889/1-15-1 & 889/1-15, Perunad Village. In these five years of the mining plan period it is proposed to work on all the sections from A-A' to F-F'. A crushing and screening plant is located outside the lease area.

It is proposed to produce maximum 2,65,788.63 tonnes granite building stone from this mine in III - Year by open cast semi-mechanised mining method. Jack hammer drilling blasting shall be adopted for mining along with rock breaker. Excavators shall be used for excavating and loading the material to the tippers. A team of 25 labors shall be deployed for the miscellaneous and environmental work.

The excavated material shall be transported to the crushing and screening plant located outside the lease area for crushing and sizing. The sized product shall be supplied to the consumer mainly for building construction and infrastructure development.

- b) Indicate quantum of development and tonnage and grade of production expected pit wise as in table below.

The year wise calculation of production for these five years of mining plan period is given in the Table No - 4.1. During mining the top soil shall be handled as waste. The same shall be used for the afforestation in the buffer zone. The quantity of generated top soil is given in Table No 4.2

Table No. 4.1 Year-wise calculations of granite building stone production

Year Wise	Section No	Bench Level	Area (m ²)	Influence (m)	Volume (m ³)	Tonnage (T) BD 2.5T/m ³	Recovery (@ 95% Salable Ore)	Waste (@ 5%)
I-Year	B-B'	170	24	42	1,008.00	2,520.00	2,394.00	126.00
		165	155	42	6,510.00	16,275.00	15,461.25	813.75
	C-C'	175	22	39	858.00	2,145.00	2,037.75	107.25
		170	69	39	2,691.00	6,727.50	6,391.13	336.38
		165	118	39	4,602.00	11,505.00	10,929.75	575.25
		160	156	39	6,084.00	15,210.00	14,449.50	760.50
	D-D'	170	13	50	650.00	1,625.00	1,543.75	81.25



	E-E'	165	40	50	2,000.00	5,000.00	4,750.00	250.00
		160	57	50	2,850.00	7,125.00	6,768.75	356.25
		165	5	50	250.00	625.00	593.75	31.25
		160	30	50	1,500.00	3,750.00	3,562.50	187.50
TOTAL					29,063.00	72,507.50	68,882.13	3,625.38
II-Year	B-B'	160	347	42	14,574.00	36,435.00	34,613.25	1,821.75
		155	438	42	18,396.00	45,990.00	43,690.50	2,299.50
		150	504	42	21,168.00	52,920.00	50,274.00	2,646.00
	C-C'	155	206	39	8,034.00	20,085.00	19,080.75	1,004.25
		150	250	39	9,750.00	24,375.00	23,156.25	1,218.75
	D-D'	155	86	50	4,300.00	10,750.00	10,212.50	537.50
		150	130	50	6,500.00	16,250.00	15,437.50	812.50
		145	166	50	8,300.00	20,750.00	19,712.50	1,037.50
	E-E'	155	53	50	2,650.00	6,625.00	6,293.75	331.25
		150	77	50	3,850.00	9,625.00	9,143.75	481.25
		145	97	50	4,850.00	12,125.00	11,518.75	606.25
TOTAL					102,372.00	255,930.00	243,133.50	12,796.50
III-Year	A-A'	145	10	28	280.00	700.00	665.00	35.00
		140	77	28	2,156.00	5,390.00	5,120.50	269.50
	B-B'	145	389	42	24,738.00	61,845.00	58,752.75	3,092.25
		140	653	42	27,426.00	68,565.00	65,136.75	3,428.25
	C-C'	145	279	39	10,881.00	27,202.50	25,842.38	1,360.13
		140	312	39	12,168.00	30,420.00	28,899.00	1,521.00
	D-D'	140	199	50	9,950.00	24,875.00	23,631.25	1,243.75
		135	236	50	11,800.00	29,500.00	28,025.00	1,475.00
	E-E'	140	112	50	5,600.00	14,000.00	13,300.00	700.00
		135	137	50	6,850.00	17,125.00	16,268.75	856.25
F-F'	135	2	31	62.00	155.00	147.25	7.75	
TOTAL					111,911.00	279,777.50	265,788.63	13,988.88
IV-Year	A-A'	135	197	28	5,516.00	13,790.00	13,100.50	689.50
		130	182	28	5,096.00	12,740.00	12,103.00	637.00
	B-B'	135	665	42	27,930.00	69,825.00	66,333.75	3,491.25
		130	587	42	24,654.00	61,635.00	58,553.25	3,081.75
	C-C'	135	344	39	13,416.00	33,540.00	31,863.00	1,677.00
		130	368	39	14,352.00	35,880.00	34,086.00	1,794.00
	D-D'	130	270	50	13,500.00	33,750.00	32,062.50	1,687.50
TOTAL					104,464.00	261,160.00	248,102.00	13,058.00
V-Year	A-A'	125	119	28	3,332.00	8,330.00	7,913.50	416.50
		125	509	42	21,378.00	53,445.00	50,772.75	2,672.25
	B-B'	120	440	42	18,480.00	46,200.00	43,890.00	2,310.00
		125	310	39	12,090.00	30,225.00	28,713.75	1,511.25
	C-C'	120	251	39	9,789.00	24,472.50	23,248.88	1,223.63
		D-D'	125	246	50	12,300.00	30,750.00	29,212.50



	120	194	50	9,700.00	24,250.00	23,037.50	1,212.50
E-E'	130	169	50	8,450.00	21,125.00	20,068.75	1,056.25
	125	207	50	10,350.00	25,875.00	24,581.25	1,293.75
F-F'	130	20	31	620.00	1,550.00	1,472.50	77.50
TOTAL				106,489.00	266,222.50	252,911.38	13,311.13
Production for 5 year				454,239.00	1,135,597.50	1,078,817.63	56,779.88

Table No. 4.2 Year-wise generation of topsoil

Year	Section No	Area (m ²)	Influence (m)	Volume (m ³)	Tonnage (T) BD 1.6T/m ³
I-Year	B-B'	70	42	2,940.00	4,704.00
	C-C''	66	39	2,574.00	4,118.40
	D-D*	30	50	1,500.00	2,400.00
	E-E'	18	50	900.00	1,440.00
Total				7,914.00	12,662.40
II-Year	B-B'	79	42	3,318.00	5,308.80
	C-C''	34	39	1,326.00	2,121.60
	D-D*	42	50	2,100.00	3,360.00
	E-E'	35	50	1,750.00	2,800.00
Total				8,494.00	13,590.40
III-Year	A-A'	41	28	1,148.00	1,836.80
	B-B'	44	42	1,848.00	2,956.80
	C-C''	28	39	1,092.00	1,747.20
	D-D*	26	50	1,300.00	2,080.00
	E-E'	24	50	1,200.00	1,920.00
	F-F'	5	31	155.00	248.00
Total				6,743.00	10,788.80
IV-Year	A-A'	25	28	700.00	1,120.00
	C-C''	20	39	780.00	1,248.00
	D-D*	11	50	550.00	880.00
Total				2,030.00	3,248.00
V-Year	E-E'	25	50	1,250.00	2,000.00
	F-F'	11	31	341.00	545.60
Total				1,591.00	2,545.60
GRAND TOTAL				26,772.00	42,835.20

The summary of the production and development of waste is given in the Table No 4.3



Table No 4.3: Summary of the production and development

Year	Production (T)	Topsoil (T)	Waste (T)	Total Handling (T)	Ratio
I-Year	68,882.13	12,662.40	3,625.38	85,169.90	1:0.2
II-Year	2,43,133.50	13,590.40	12,796.50	2,69,520.40	1:0.1
III-Year	2,65,788.63	10,788.80	13,988.88	2,90,566.30	1:0.09
IV-Year	2,48,102.00	3,248.00	13,058.00	2,64,408.00	1:0.07
V-Year	2,52,911.38	2,545.60	13,311.13	2,68,768.10	1:0.06
Total	10,78,817.63	42,835.20	56,779.88	11,78,432.70	1:0.04

The Year wise movement of the benches in pit during the five years mining is shown on the production and development plan enclosed vide **Plate No – 5A to 5E** respectively.

c) Attach- Individual year wise plans & sections (in case of 'A' class mines):

The year wise Production & Development at the end of every year (of all the five year) is given on the production & development Plan enclosed vide **Plate No 5A to 5E** and the production and development sections are enclosed vide **Plate No 6**.

d) Attach supporting composite plan and section showing pit layouts, dumps, stacks of sub-grade mineral, if any, the year from which effected.

The year wise Production & Development at the end of every year (of all the five year) is given on the production & development Plan enclosed vide **Plate No 5A to 5E** and the production and development sections are enclosed vide **Plate No 6**.

e) Indicate proposed rate of production when the mine is fully developed, and the expected life of the mine and the year from which effected.

The Geological resources of granite building stone in this area are 31,81,810.00 Tonnes and mineable reserves are 12,45,575.88 Tonnes. In the first five years of plan period totally 10,78,817.63 Tonnes granite building stone / aggregate shall be quarried. The balance mineable reserves of 1,66,758.25 Tonnes will be mined subsequently. Thus, the life of the mine is about 7 years.

The production plan for 1st five years is given below,

Year	Production
I-Year	68,882.13
II-Year	2,43,133.50
III-Year	2,65,788.63
IV-Year	2,48,102.00
V-Year	2,52,911.38
Total	10,78,817.63



The production plan for the remaining plan period is given below,

Year	Production
VI-Year	1,00,000.00
VII-Year	66,758.25
Total	1,66,758.25

- f) **Attach a note furnishing a conceptual mining plan for the entire lease period (for 'B' category mines) and up to the life of mine (for 'A' category mines) based on the geological, mining and environmental considerations.**

Conceptual mining plan:

For any mine, preparation of conceptual mining plan amounts to, fore-seeing in totality and planning for mining and related activities through-out its life span, till such time all the usable ore / minerals are exhausted to the economical limits and lease area is reclaimed to the extent possible. Apart from physico-chemical and mineralogical parameters which form primary basis for compilation of conceptual mine plan, several other factors such as economic viability, safety, environment, sustainable development, marketability and the norms laid down by the Government agencies from time to time do play important roles, with ever increasing and changing needs of humanity, coupled with technological advancements.

A Conceptual Plan of the Lease area and conceptual sections are enclosed vide Plate No. 7.

- (i) **Mineral reserves and anticipated life of the mine:**

The Geological resources of granite building stone in this area are 31,81,810.00 Tonnes and mineable reserves are 12,45,575.88 Tonnes. In the first five years of plan period totally 10,78,817.63 Tonnes granite building stone / aggregate shall be quarried. The balance mineable reserves of 1,66,758.25 Tonnes will be mined subsequently. Thus, the life of the mine is about 7 years.

The production plan for 1st five years is given below,

Year	Production
I-Year	68,882.13
II-Year	2,43,133.50
III-Year	2,65,788.63
IV-Year	2,48,102.00
V-Year	2,52,911.38
Total	10,78,817.63



The production plan for the remaining plan period is given below,

Year	Production
VI-Year	1,00,000.00
VII-Year	66,758.25
Total	1,66,758.25

(ii) Exploration:

The granite building stone in the lease area are of intrusive nature with good outcrops and very good exposures in the open pits. Hence no exploration proposal is made.

(iii) Mine Development:

At conceptual stage there shall be single pit in this area with 15 benches of 5m height and 5m width. The pit at conceptual stage shall have 207m length and 105m width and it shall be developed upto 105m above MSL level. The overall pit slope shall be maintained at less than 45°.

The top benches shall be rehabilitated with simple vegetation by spreading the excess topsoil. The bottom benches at the conceptual stage shall be converted into rainwater storage pond. The pit shall be properly fenced with single opening for drawing the water.

Totally 42,835.20 Tonnes topsoil and 56,779.88 Tonnes waste shall be recovered and 10,78,817.63 Tonnes granite building stone shall be generated in the first five years of the plan period. The topsoil and waste material shall be stacked at the designated area as shown in the mining plan. The Topsoil shall be used for Afforestation/Green belt development as and when required. The waste material shall be used for road leveling work and also shall be utilized for back filling the pit at conceptual stage.

(iv) Environmental Aspects:

A safety barrier area of 7.5m from the boundary shall be developed as green belt area by planting the local species. At conceptual/Mine Closure stage the working pit shall be developed for pisciculture with good local bio-diversified vegetation. Totally 0.6671 Ha safety barrier area shall be used for green belt. Apart from this the plantation shall be carried out outside the lease area along haulage road.

A garland drain is proposed all along periphery of mining area to prevent the entry of rainwater in the pit. The water from garland drain shall be diverted to silt settling tank & rainwater harvesting pond before releasing to natural water course.



During mining the main source of air pollution is expected to be drilling, blasting and transportation. The regular sprinkling of water on haulage road and stopping drilling and blasting during high wind shall drastically reduce impact on air.

The present land use, proposed land use for the plan period and at conceptual stage is given in the Table No 4.4.

Table No. 4.4: Ultimate land use at the end of mine

Particulars	Land use pattern at present stage (Ha)	Land use pattern (end of progressive stage) (Ha)	Land use pattern at Conceptual stage (Ha)
Area for mining / mining activities	-	2.9459	3.1020
Area for Roads	-	-	-
Area for Safety Barrier / Green belt	-	0.6671	0.6671
Overburden / dump/ tailing dump	-	0.0925	-
Total	-	3.7055	3.7691
Unused area	3.7691	0.0636	-
Total Lease area	3.7691	3.7691	3.7691

* Road area inside the mine Lease is not shown separately. Since the material is transported on benches the road area is therefore included in the mining area.

g) Opencast Mines:

i. Describe briefly giving salient features of the mode of work (mechanized, semi-mechanized, and manual):

In this five years plan period the mining is proposed by opencast semi-mechanized mining method and the sequence of mining shall be as given under,

- The topsoil shall be recovered and transported to the safety barrier area for utilizing the same for afforestation / green belt development.
- After exposing the granite building stone, drilling shall be done by jack hammer.
- The blasting shall be carried out by Cartridge Slurry explosives.
- The rock breakers shall be used to break the oversize boulders left after blasting.
- The blasted material and the broken material by rock breakers of size 150mm to 250mm shall be loaded to the tippers by excavator and transported to the crushing and screening plant located outside the lease area.



- Safety Berm shall be maintained in all the bottom benches (wherever there is possibility of boulders to roll out) to prevent any rolling boulders from the benches to roll out in the steep slopes.

The year wise planning, production & development of the mine is as given under,

I-Year : -

The mining in the I-Year shall be done on the section B-B' to E-E'. It is proposed to develop benches of 5m height & 5m width to produce 68,882.13 T granite building stones. The simultaneous recovery of topsoil and waste is expected to be 12,662.40 T and 3,625.38 T. At the end of I-Year the size of the pit shall be 185m in length & 45m in width. The mining operation shall be reached to the level of 160m above MSL.

II-Year : -

The mining in the II-year shall be done on the section B-B' to E-E'. It is proposed to develop benches of 5m height & 5m width to produce 2,45,133.50 T granite building stones. The simultaneous recovery of topsoil and waste is expected to be 13,590.40 T and 12,796.50 T. At the end of II-year the size of the pit shall be 195m in length & 84m in width. The mining operation shall be reached to the level of 145 m above MSL.

III-Year : -

The mining in the III-year shall be done on the section A-A' to F-F'. It is proposed to develop benches of 5m height & 5m width to produce 2,65,788.63 T granite building stones. The simultaneous recovery of topsoil and waste is expected to be 10,788.80 T and 13,988.88 T. At the end of III-year the size of the pit shall be 207m in length & 125m in width. The mining operation shall be reached to the level of 135m above MSL.

IV-Year : -

The mining in the IV-year shall be done on the section A-A' to D-D'. It is proposed to develop benches of 5m height & 5m width to produce 2,48,102.00 T granite building stones. The simultaneous recovery of topsoil and waste is expected to be 3,248.00 T and 13,058.00 T. At the end of IV-year the size of the pit shall be 207m in length & 125m in width. The mining operation shall be reached to the level of 130m above MSL.

V-Year : -

The mining in the V-year shall be done on the section A-A' to F-F'. It is proposed to develop benches of 5m height & 5m width to produce 2,52,911.38 T granite building stones. The



simultaneous recovery of topsoil and waste is expected to be 2,545.60 T and 13,311.13 T. At the end of V-year the size of the pit shall be 207m in length & 125m in width. The mining operation shall be reached to the level of 120m above MSL.

The mining shall be done by developing the benches of 5m height with 5m ultimate width. At the end of fifth year of mining totally there shall be 12 benches developed in this mine. The level of the bottom most bench shall be 120m above MSL. The pit slope shall be 45°. In these five years of the plan period a pit of 207m in length & 125m width shall be formed.

The year wise (of all the five years) pit design is shown on the Production & Development Plan enclosed vide **Plate 5A to 5E**, and the year wise movement of the benches is shown on the Production & Development Sections enclosed vide **Plate No 6**.

ii. Describe briefly the layout of mine workings, the layout of faces and sites for disposal of over burden/waste.

The year wise layout of the mine is shown on the year wise production and development plan enclosed **Plate No 5A to 5E** and production and development sections enclosed vide **Plate No 6**. As there is no over burden or side burden, there is no requirement for any area for disposal of waste.

h) Underground Mines:

Not Applicable

i) Extent of Mechanization

The mining shall be carried out by deploying two excavator, one rock breaker and ten tippers for the maximum total handling of 2,90,566.30 Tonnes material in III-year ten units of jackhammer drilling are required. One water tankers shall be deployed for the sprinkling of water and jeeps for travelling of the staff to mine site.

1. Drilling Machines

During this mining plan period, the maximum production estimated is about 2,79,777.50 Tonnes in III-year. The drilling and blasting in granite building stone is 100%. It is proposed to drill with jackhammer with 33/48 mm dia bit. The calculations required for no of drilling units are given below.

Total material handled (max.) per annum shall be 2,79,777.50 T



Hole depth	--	1.5 m
Burden	--	1.m
Spacing	--	1.5m

Therefore, the drilling machine required per year is calculated as under:

Rock broken / hole of 1.5 m depth

Spacing x Burden X Depth x efficiency x B.D. (2.5T/m³)

1m x 1.5m x 1.5m x 80% X 2.5 BD=4.5 Tonnes

Therefore, rock broken/m = 4.5 Tonnes/1.5 m = 3 Tonnes /m

Drilling meter age required/yr = $\frac{2,79,777.50}{3} = 93,259.17\text{m}$

Therefore, drilling required per day = $93,259.17/300 \text{ days} = 310.86 \text{ m/day}$

The jack hammer can drill about 50m per shift.

Hence the number of jack hammer drill units required = $(310.86/\text{day}) / 50\text{m each}$
= 6.27units

Considering 80% availability number of units required = $(6.27*20\%) + 6.27 = 7.51$

Additionally, 2 jack hammers required.

Hence 10 units of jack hammer are required for drilling and blasting in this area for single shift. Considering the working single shift from 6am to 1pm totally 10 jack hammer drill units are required.

Table No. 4.5: Requirement of Jack Hammer Drilling Machines

Type	No's	Dia. of hole (mm)	Make	Motive Power	H.P
Pneumatic Jack Hammer Drill	10	33/48	Atlas Capco (or Equivalent)	Diesel	40

Table No. 4.5A: Requirement of Air Compressor

Type	No's	Capacity	Make	Motive Power	HP
Air Compressor	3	250 CFM	Atlas Capco (or Equivalent)	Diesel	40



2. Loading Equipment

During this mining plan period, the maximum handling estimated is about 2,90,566.30 tonnes in III-year. Out of which 2,65,788.63 Tonnes granite building stone and 10,788.80 tonnes of topsoil and 13,988.88 tonnes of waste.

So, total handling per day = $2,90,566.30 / 300 \text{ days} = 968.55 \text{ tonnes}$

Total handling of 968.55 tonnes per day (for 300 working days) shall be loaded in the tippers by excavator. The loading capacity of excavator PC 220 in such terrain is 125Tonnes /hour.

The calculations of the excavators required are given below.

Tonnage proposed to be handled per hour
= $968.55 \text{ Tonnes} / 7 \text{ hours} = 138.36 \text{ tonnes}$

No. of Excavators

One excavator can handle 125 tonnes/hour in such terrain. And hence considering 80% availability, 1 excavator can handle 100 tonnes/hour.

Thus one 1 excavator can make (100 X 7 hours) seven hundred tonnes per day

So to handle 138.36 tonnes, we require 1.38 No. of excavators.

Additionally, 1 excavator shall be used as spare

Hence Number of excavators required is 2.

Table No 4.6: Requirement of Loading Equipment.

Type	No's	Capacity	Make	Motive Power	H.P
Excavator	2	1.2m ³ bucket capacity	Tata Hitachi 220 (or Equivalent)	Diesel	140

3. Haulage and Transport Equipment**a) Material Handling**

Totally 2,79,777.50 T material shall be handled in the III-year. Out of that 2,65,788.63 tonnes granite building stones shall be transported to the crushing and screening plant outside the lease area and 10,788.80 tonnes of topsoil and 13,988.88 tonnes of waste to be transported to buffer zone where plantation to be carried out.

The requirements of the tippers to handle this material is calculated below



Total Handling / day = $2,79,777.50 / 300\text{days} = 932.59 \text{ tonnes/day}$

No of tippers = $(932.59 / 10\text{tonnes per trip} / 2\text{trips per hour} / 7\text{-hour effective shift}) = 6.66 \text{ units}$

Considering 80% efficiency No. tippers required will be = 8

Additionally, 2 tippers shall be used as spare

Hence 10 tippers are required for mining

The requirement of the transport equipment is given in the Table No 4.6

Table No 4.7: Requirement of transporting equipments

Type	No's	Size/ Capacity	Make	Motive Power	H.P
Tipper	10	10 tonnes	Tata	Diesel (or Equivalent)	97

b) Transport from mine head to the destination

The broken material would be directly transported to the crusher outside the quarry by the same tipper. No additional tippers are required for the transportation.

4. Miscellaneous:

Describe briefly any allied operations and machineries related to the mining of the deposit not covered earlier operations

For afforestation one water tankers with spraying arrangement shall be deployed.

The details of the equipment required for miscellaneous is given in the Table No 4.8

Table No. 4.8: Requirement of the equipment's for miscellaneous

Type	Nos.	Size/Capacity	Make	Motive Power	H.P
Water Pump	1	6.5 HP	Kirloskar (or Equivalent)	Diesel	6.5
water tanker	1	8000 Liters	Tata (or Equivalent)	Diesel	97
Jeep	2	1+4	Mahindra (or Equivalent)	Diesel	40
Maintenance Van	1		Tata (or Equivalent)	Diesel	40



5.0 BLASTING

- a) Broad blasting parameters like charge per hole, blasting pattern, charge per delay, maximum number of holes blasted in a round, manner and sequence of firing etc.

BLASTING			
1.	Burden x Spacing x Depth	:	1m X 1.5m X 1.5m depth
2.	Number of holes	:	10
3.	Dia of holes	:	33 mm/48mm
4.	Depth of each hole	:	1.5m
5.	Explosives to be used	:	Cartridged Slurry explosives
6.	Powder factor	:	3 Tonnes/kg
7.	Consumption of explosives per year	:	2,79,777.50 Tonnes / 3 tonnes/kg powder factor =93,260kg

i. **Blasting Pattern:**

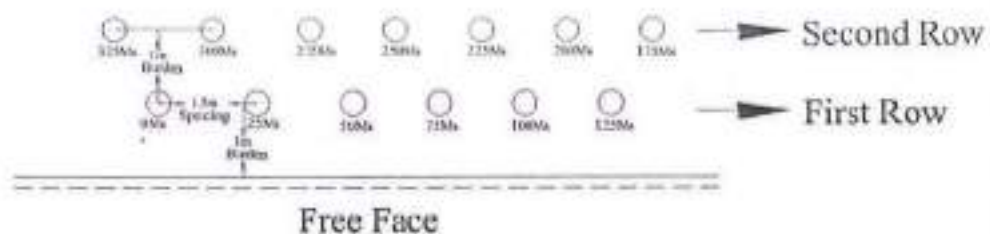
In case of jack hammer the blasting pattern shall be staggered, however, it would vary depending on the rock condition.

ii. **Manner and sequence of firing:**

In case of jack hammer the blasting pattern shall be staggered, however, it would vary depending on the rock condition. The rock shall be blasted and sequenced using delay detonators for least vibrations & fly rock.

Controlled Blasting techniques with Electric and Non-electric (Nonel) delay detonators will be carried out to reduce ground vibration.

Drilling & Blasting Pattern with MilliSecond Delay Detonators to Reduce Ground Vibration



- b) **Type of explosives used/to be used**
Cartridged Slurry explosives shall be used for the blasting.
- c) **Powder factor in ore and overburden/ waste / development heading / stope.**
3 Tonnes / kg
- d) **Whether secondary blasting is needed, if so, describe in brief :**
No secondary blasting shall be undertaken. Rock broken shall be used to
Break down the bigger boulders.
- e) **Storage of explosives (like capacity & type of explosive magazine) :**
There is no explosive magazine within the mining area.



6.0 MINE DRAINAGE

- a) **Likely depth of water table based on observations from nearby wells and water bodies:**

The mine is located at higher elevation on hill and the water table in the mine is much below the general surface however a few perched aquifers has been observed at about 252m from the boundary of the mine. Here we have observed water level to be about 8m below from the surface.

- b) **The deepest workings expected to reach.**

The expected deepest mining operation shall be about 105m above MSL, which will be much above the ground water table.

- c) **Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged.**

No ground water would be encountered during mining.



7.0 STACKING OF MINERAL REJECTS & DISPOSAL OF WASTE

- a) Indicate briefly the nature and quantity of topsoil, overburden/waste and mineral rejects likely to be generated during the next five years:

Totally 42,835.20 Tonnes topsoil and 56,779.88 Tonnes waste shall be recovered and 10,78,817.63 Tonnes granite building stone shall be generated in the first five years of the plan period. The topsoil and waste material shall be stacked at the designated area as shown in the mining plan. The Topsoil shall be used for Afforestation/Green belt development as and when required. The waste material shall be used for road leveling work and also shall be utilized for back filling the pit at conceptual stage. The year wise and section wise generation of topsoil and waste is given in the Table No 7.1.

Table 7.1 details of the waste generation

Year	Production (T)	Topsoil (T)	Waste (T)	Total Handling (T)
I-Year	68,882.13	12,662.40	3,625.38	85,169.90
II-Year	2,43,133.50	13,590.40	12,796.50	2,69,520.40
III-Year	2,65,788.63	10,788.80	13,988.88	2,90,566.30
IV-Year	2,48,102.00	3,248.00	13,058.00	2,64,408.00
V-Year	2,52,911.38	2,545.60	13,311.13	2,68,768.10
Total	10,78,817.63	42,835.20	56,779.88	11,78,432.70

Threshold values in respect of apatite and rock phosphate, bauxite, barytes, chromite, chinaclay/kaolin, fluorite, graphite, gypsum, iron ore, kyanite and sillimanite, copper ore, manganese, magnesite, talc/steatite/soapstone, and wollastonite minerals as evolved by IBM may be adopted as applicable.

Not applicable

- b) Land chosen for disposal of waste with proposed justification.

The topsoil and waste material shall be stacked at the designated area as shown in the mining plan. The Topsoil shall be used for Afforestation/Green belt development as and when required. The waste material shall be used for road leveling work and also shall be utilized for back filling the pit at conceptual stage.



- c) **Attach a note indicating the manner of disposal, and configuration, sequence of buildup of dumps along with the proposals for the stacking of sub-grade ore to be indicated item wise.**

The topsoil and waste material shall be stacked at the designated area as shown in the mining plan. The Topsoil shall be used for Afforestation/Green belt development as and when required. The waste material shall be used for road leveling work and also shall be utilized for back filling the pit at conceptual stage.



8.0 USE OF MINERAL

- a) Describe briefly the end-use of the mineral (sale to intermediary a parties, captive consumption, export and internal use).

The granite building stones are used mainly as a basic filling material in construction, infrastructure development and road making.

- b) Indicate the physical and chemical specifications stipulated by some of the buyers.

The tumbler index of granite building stone should be +85; the size should be 150mm to 250mm, suitable for feed do the crushers.

- c) Give details in case of blending of different grades of ores that are being practiced or being practiced at the mine to meet specifications stipulated by buyers.

Not applicable



9.0 OTHERS

a) Site Services:

The site services at mine shall take care of the workers requirement of food, shelter, water, emergency first aid services as well as equipment maintenance services in addition to recreational facilities for the employees, workmen and their families.

The following statutory and administrative facilities shall be made available near the mine site.

- Rest Shelter
- First Aid Station
- Latrines/Urinals
- Canteen
- Water supply for drinking purposes

The above site services shall be provided outside the lease area.

b) Employment potential:

The list of the staff and workmen employed in the mine is given in Table No 9.1

Table No 9.1: Requirement of workmen & staff

Sl. No	Particulars	No's
1	Highly Skilled	3
2	Skilled	12
3	Semi-skilled	15
4	Un-skilled	25
	Total	55

One Mines Manager cum Engineer shall be in-charge of the site operations. Apart from the above said direct employment twice the number of indirect employment shall be provided during mine operation.



10.0 MINERAL PROCESSING

- a) If processing/beneficiation of the ore or minerals mined is planned to be conducted on site or adjacent to the extraction area, briefly describe the nature of the processing/beneficiation. This should indicate size and grade of feed material and concentrate (finished marketable product), recovery rate.

No processing / beneficiation would be undertaken in the lease area. The entire product of rock of size 150mm to 250mm shall be transports to the crusher outside the lease area.

- b) Explain the disposal method for tailings or waste from the processing plant (quantity and quality of tailing proposed to be discharged, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralize any such effect before their disposal and dealing of excess water from the tailing dam).

There is no crushing and screening within the lease. The entire rock produced would be transported for the crusher outside the lease area. As all the products are saleable, there would be no generation of waste.

- c) A flow sheet or schematic diagram of the processing procedure should be attached.

There is no crushing & screening plant within the lease area.

- d) Specify quantity and type of chemicals to be used in the processing plant.

Not Applicable

- e) Specify quantity and type of chemical to be stored on site/plant.

Not Applicable

- f) Indicate quantity (cu.m per day) of water required for mining and processing and sources of supply of water. Disposal of wastewater and extent of recycling.

The requirement of water for the purpose of drinking, dust suppression by water tanker and afforestation as given in Table No 10.1



Table.No.10.1 Requirement of water

Purpose	Qty Required m ³ /day
Drinking water & Domestic	4
Afforestation	8
Dust suppression by water tanker	10
Total	22*

*Water for dust suppression and afforestation may not be required for four to five months during the monsoon

- The required water for domestic, dust suppression and afforestation shall be brought from the Rainwater Harvesting Pond, and nearby old abandoned quarries.

- Packaged drinking water shall be provided for drinking purposes.



PART - II**11.0 ENVIRONMENTAL MANAGEMENT PLAN****a) Attach a note on the status of baseline information with regard to the following :**

This Granite Building Stone Quarry, over an extent of 3.7691 Ha. (9.3134 Acres) is located on the NE slopes of area. The highest elevation in this area is 180m above MSL and the lowest elevation is 115m above MSL. The area has moderate climate with maximum temperature of 33.4⁰ in the month of April and minimum temperature of 19.7⁰C in the month of December. The area receives average rain fall of more than 3169.28mm. The area receives highest rainfall receives in the month of July.

The area is surrounded by the lands with commercial crop like rubber plantation, teak, rose wood, pepper, cashew, coconut, aeracanut, coffee, coco, mango, jackfruit etc. snakes, squirrel, rats, crow, sparrows, pigeon, butterfly & insects etc are seen periodically. The nearest habitat Pottammuzhi is located at 0.5 Kms away from this mine. No public buildings, monuments exist inside the mining area.

Existing land use pattern indicating the area already degraded due to mining/pitting, dumping, roads, processing plant, workshop, township etc., in a tabular form.

The existing land use pattern is given in the Table No 11.1

Table No. 11.1 Existing landuse Pattern.

Particulars	Land use pattern at present stage (Ha)
Area for mining / mining activities	-
Area for Safety Barrier/Greenbelt	-
Roads	-
Total	-
Unused area	3.7691
Total Lease area	3.7691

➤ **Water regime**

Pathanamthitta experiences salubrious climate with mean rainfall of 3133.9 mm. The eastern part of the district receives maximum rainfall in comparison with the western part. The area around Konni receives the highest rainfall and the area around Adoor receives the lowest.



➤ **Flora and Fauna**

The common flora in this area are given in the Table No 11.2

Table No 11.2: Common Flora in study area

Sl No	Botanical Name	Common Name
1	Coffea Arabica	Coffee
2	Tectonagrandis	Teak wood
3	Areca catechu	Aerocanut
4	Artocarpusheterophyllus	Jackfruit
5	BorassusFlabellifer	Pana
6	Ensetesuperbum	Rock Banana
7	Schleicheraoleosa	Poovam
8	Cocosnucifera	Coconut
9	Anacardiumoccidentale	Cashew
10	Grevillearobusta	Silver oak
11	Boutelovadactyloides	Buffalo grass
12	Orocylumindicum	Palakapayyami
13	LepidiumMeyenii	Maka
14	MacarangaPeltata	Vatta
15	Abrusprecatorius	Kumi
16	Piper nigrum	Pepper
17	Heveabrazilensis	Rubber tree
18	Artocarpusaltalis	Kadaplava
19	Mangiferaindica	Mango
20	Grewiatilifoliaahl	Chadachi
21	Dalbergialatifolia	Rosewood
22	Chromolaenaodorata	Communist Pacha
23	Bambusae	Bamboo
24	Theobroma Cacao	Cocoa

The common fauna in this area is given in the Table No 11.3

Table No 11.3: Common Fauna in study area

Sl No	Scientific Name	Common Name
1	Ranahexadactyla	Frog
2	Serpentes	Snakes
3	Tyso Alba stertens	Owl
4	Herpestesedwardsi	Keeri, Common Grey Mongoose
5	Bandicotabengalensis	Bandicoot, Peruchazhi
6	Funambulaspalmarum	Annan, squirrel
7	Rattus	Rat
8	Acridenocorpha	Grasshopper
9	Lacertilia	Lizard
10	Formicidae	Ant
11	Corvus	Crow
12	Rhopalocera	Butterfly
13	Felis catus	Cat
14	Canis lupus familiaris	Dog
15	Bos taurus	Cow
16	Araneae	Spider
17	Chamaeleonidae	Chameleon



Quality of Air, Ambient Noise Level and Water**1. Ambient air quality**

The air quality in the area mainly depends on the nature & concentration of emissions and meteorological conditions. The major air pollutants include:

- Particulate Matter (Dust) of various sizes
- Gases, such as, Sulphur Dioxide, Oxides of Nitrogen, Carbon Monoxide etc. from vehicular exhaust.

Dusts are the single largest air pollutant observed in this area. Diesel operating vehicles produces NO_x, SO₂ and CO emissions, usually at low levels. Dust can be a significant nuisance to surrounding land users and potential health risk in some circumstances. Dust is produced from a number of sources and through number of mechanisms such as

- Land clearing,
- Overburden removal,
- Crushing & screening,
- Loading & unloading of material on site &
- Subsequent transport off the site etc.

The detected ambient air quality is given in the Table 11.4

Table No 11.4: Detected AAQ in core & buffer zone.

Area	Sample Code	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³
Core Zone	A1	35.8	18.2	7.4	6.6
Pottammuzhi	A2	38.2	19.5	10.8	9.6



The Environment monitoring data is enclosed as **Annexure – 14.**

Noise levels:

The noise level with in the core zone is found to be 44.58 dB(A) Leq* during day time and 36.18 dB(A) Leq* during night, whereas in the buffer zone it is 47.22 dB(A) Leq* during day time and 36.76 dB(A) Leq* during night time. The impact of mining on the ambient noise level would be hardly noticeable in nearby villages, as the nearest habitant Pottammuzhi is 0.5 Kms away from the mine.

The detected noise level is given in the Table 11.5

Table No 11.5: Detected noise level in core & buffer zone.

Area	Sample Code	Day dB(A)LEQ	Night dB(A)LEQ
Core Zone	N1	44.58	36.18
Pottammuzhi	N2	47.22	36.76

The Environment monitoring data is enclosed as **Annexure – 14**.

Water Quality:

There is no water regime of any importance in the mining area. Drinking water is made available through bore wells. This water is being used for drinking purpose from many years. In buffer zone the minimum pH value of water is detected as 7.20 in Pottammuzhi, total dissolved solids detected minimum 152.0 mg/l in Pottammuzhi. The total hardness of water is detected minimum 106 mg/l in Pottammuzhi. The Environment monitoring data is enclosed as **Annexure – 14**.

➤ **Climatic conditions:**

The area has moderate climate with maximum temperatures ranges from 23.8° to 26.0°C and the minimum temperatures range from 19.7° to 25°C. The temperature starts rising from January and reaches the peak in the month of March and April and then decreases during the monsoon month and again rising from September onwards. The area receives a total annual rain fall of around 3169.28mm. The highest rainfall receives in the month of July. The rain start in the month of June and continue upto November. It is maximum in the month of July.

➤ **Human settlement:**

There is no human settlement in core zone. The nearest habitants are more than 215m away from the boundary of the mining lease area. The nearest human settlements are in Pottammuzhi, which is about 0.5 Kms from the mining lease area.

Public buildings, places of worship and monuments of historical or archaeological importance:

There are no monuments of either historical or archaeological importance in the core or buffer zone.

➤ **Attach plans showing the locations of sampling stations:**

The environment monitoring is carried out for 15days and the location of sampling station is given in the key plan.



- b) Attach an Environmental Impact Assessment Statement describing the impact of mining and beneficiation of environment on the following over the next five years and up to conceptual plan period 'A' category mines.

- i. Land area indicating the area likely to be degraded due to mining, pitting, dumping, road, workshop, processing plant, township etc.

Due to this mining operation there shall be an impact on the environment. The area broken for mining at the end of five years of the mining plan period and at the conceptual stage is given in the Table No 11.6.

Table no.11.6 Land use at the end mining plan period and life of the mine

Particulars	Land use pattern at present stage (Ha)	Land use pattern (end of progressive stage) (Ha)	Land use pattern at Conceptual stage (Ha)
Area for mining / mining activities	-	2.9459	3.1020
Area for Roads	-	-	-
Area for Safety Barrier / Green belt	-	0.6671	0.6671
Overburden / dump/ tailing dump	-	0.0925	-
Total	-	3.7055	3.7691
Unused area	3.7691	0.0636	-
Total Lease area	3.7691	3.7691	3.7691

* Road area inside the mine Lease is not shown separately. Since the material is transported on the benches the road area is therefore included in the mining area.

The land use pattern at the end of first five years of plan period is given in PMCP enclosed vide **Plate No-10** and the ultimate land use pattern at conceptual stage is enclosed vide **Plate No-7**.

ii. Air Quality

The quality of air in lease area would be deteriorated to certain extent due to drilling, blasting and transportation of the rock produced. However, the following environment control measures and the mitigating measures to control air pollution due to mining operations shall be undertaken, so that the pollution levels are maintained well within the permissible limits.

CONTROL MEASURES:

A. QUARRYING

- Dust suppression systems (water spraying) would be adopted at mine working & loading points.



- Wet Drilling shall be practiced to reduce dust generation.
- Speed control on vehicle movement, to limit speed.
- The blasting shall be carried out during day hours, it shall be avoided during strong wind and temperature inversion condition.
- Excavation operations shall be suspended during very strong wind condition.
- Wind reduction control by plantation. Trees and shrubs will be grown along the Green belt area/safety barrier area along the periphery of the quarry and along the haul roads.
- Plantation of wide leaf trees, creepers and tall grass along approach roads, and around hillock will help-in to suppress the dust.
- Proper tuning of excavators and compressors will be ensured to keep the gas emissions from the vehicles within the prescribed norms of the CPCB and MoEF guidelines.
- All workers shall be provided with personal protective devices eg. Dust Mask, Goggles, Helmet, etc.

iii. Water Quality

There is no water source of perennial type passing through the area. The lease area is located at higher elevation on the area and here the ground water level is much more below the general surface on the lowest portion. Hence no ground water would be encountered during mining as the mining is proposed to extend upto only 10m depth from the lowest level of the lease area. Hence there shall not be any impact on water quality. Also granite building stone being a very stable material and is not hazardous material does affect the water quality. The following mitigating measures for the surface run off has been incorporated.

MITIGATING MEASURES:

The following mitigation measures are suggested for water management and water pollution control.

- Garland drains shall be constructed all along the periphery of the quarry. The garland drain shall be routed through Silt Settling Tank (SST) to remove suspended soils and the overflow water shall be discharged to natural water course. A Rainwater



Harvesting Pond (RWHP) is also envisaged for the use of the surface water. The one SST & RWH Pond is proposed in the NE of the Mining Lease area.

- Settling tanks and drains shall be periodically de-silted.
- Providing sufficient gully checks to check any silt flowing along with the surface run-off during monsoon. The environment management measures for the surface water run offs are shown in the Environment Management Plan enclosed vide **-Plate No 8 & 9.**
- No toilet is planned within the mine area. However the toilets built at the site office, shall be provided with septic tanks to handle the sewage from the same.
- The quality of the water in the surrounding area and the Pre & Post monsoon water quality shall be monitored to track any changes or contamination in the water quality.
- The working of quarry at present shall be restricted at 105m above MSL at conceptual stage of quarrying, which is much above the ground water level.

iv. Noise Levels

The noise level within the core zone is found to be 46.4 dB(A) Leq* during day time and 34.4 dB(A) Leq* during night, whereas in the buffer zone it is 48.8 dB(A) Leq* during day time and 35.0 dB(A) Leq* during night time. The impact of mining on the ambient noise level would be quite insignificant, in the nearby villages as the nearest habitants are beyond 215m from the boundary of the mining lease area and human settlements are in Pottammuzhi, which is located at 0.5 Km away from the mine.

➤ Control Measures:

- Identification of mitigation measures for noise abatement for both point sources and line sources are undertaken and measures to minimize the impact is proposed.
- The equipments and machines shall be maintained properly. Particular attention shall be given to the silencers and mufflers.
- Use of sharp drilling bits, delivery of compressed air at optimal pressure and proper maintenance of compressor, drilling machine, jackhammers and tipper trucks.
- Limiting the speed of empty haulage vehicles/tippers to a moderate level to prevent undue noise.



- In addition to it, Green belt development shall be undertaken around the quarry lease area to minimize propagation of noise.
- Provision of rotation of workers to minimize exposure time as well as provision of earmuffs to workers exposed to high noise areas is also envisaged.
- Regular monitoring of noise level shall be done within the core zone and the buffer zone of the mining lease area.

Vibration levels (due to blasting)

The drilling is proposed by jack hammer with 33mm/48mm dia. The blasting shall be done sequentially. Due to very small diameter hole blasting, the vibration in this area shall well within the permissible limits. Delay shall be used for blasting keeping the vibration to minimum with least fly rock.

Thus, the vibration would not have any significance as the nearest habitants are beyond 215m from the boundary of the mining lease area and human settlements are in Pottammuzhi, which is located at 0.5 Km away from the mine.

Control Measures:

VIBRATION & NOISE MITIGATION MEASURES (BLASTING PRECAUTIONS):

- Only small diameter drill holes of 33/48mm diameter with 25mm diameter cartridge slurry/ emulsion explosives shall be used for blasting, no large diameter holes are proposed for the blasting. With optimum blast design, effective blasting techniques with delay detonators and low charge per delay, care shall be taken to limit the blast vibrations and the PPV below 10mm per second, i.e. within the permissible limits, vide DGMS circular 7 of 1997.
- Each blast would be carefully planned, supervised, executed and observed by qualified Blasters.
- Design of optimum blast hole geometry i.e. burden, spacing, Blast hole layout pattern, inclination and depth considering, burden, nature of the rock, safe working space, fragmentation size, etc., to keep the flyrock, noise and ground vibrations at the minimum.
- Blasting shall be done using appropriate delay detonators to keep the noise and vibration at the minimum levels.



- Proper sequencing of the blast so as to keep the vibration, noise and flyrock to the minimum levels.
- The appropriate Charge per delay shall be regulated to keep the PPV below 10mm/ sec as per DGMS Circular 7 of 1997.
- The holes shall be proper stemmed and the stemming of each hole shall be checked by the qualified blaster to avoid 'blown thorough' holes, that is one of the major source of noise and Airblast during primary blasting.
- No secondary blasting like Pop Shooting or Plaster Shooting shall be undertaken for breaking down large boulders so as to avoid Airblasts and Fly rocks. Only rock breakers will be used for breaking down the bigger boulders.
- Wherever houses or public buildings are at a distance of 50 to 100m the controlled blasting techniques like cushion blasting, Muffle Blasting will be adopted.

v. Socio-economics

Social and demographic profile: The mine is situated in the remote area, where the socio- economic status of the people is not satisfactory. The main occupation of the people is working in plantation and there are no major industries in this area. The mining operation in such remote places would provide 55 direct and twice the number of indirect employments to local people. Hence mining operation will help in improving socio-economic status of the area.

vi. Occupational health and safety hazards:

The statutory norms shall be followed during the course of mining to ensure the proper health and safety of workers. All the health and safety aspects as per the requirement and standards of the DGMS shall be followed to ensure the health and safety of all persons employed at the mine. Apart from this there is no other factor envisaged during the mining operations.

vii. Human settlement:

The local population is well settled in the nearby villages. There is possibility of migrating the laborers from surrounding area to the nearby villages due to increase in revenue earning in this area. There shall be better development of infrastructure due to mining activities.



viii. Recreation facilities:

As on now there is not much recreational facilities available. Recreation facilities would be improved once the mining start and financial position of workers develop. The company also plans to provide good facilities as part of the CER works.

viii. Historical monuments etc.

There are no historical monuments in the core or buffer zone.

- c) Attach an Environmental Management Plan (supported by appropriate plans and sections and time-bound action proposed to be taken with sequence & timing in the following diagrams should be used).**

Temporary storage and utilization of topsoil.

Totally 42,835.20 Tonnes of topsoil and 56,779.88 tonnes of waste is expected to be generated. This topsoil/waste shall be transported to the safety barrier area and used for afforestation / green belt development all along periphery of the mine. Waste will be transported to the pre-determined dump situated in the NE side of the Mine Lease area as shown in the Production & Development plan, and also used for road repair works.

- **Year wise proposal for reclamation of land affected by abandoned mines and their mining activity during first five years (and up to conceptual plan period for 'A' category mines, clarifying to extent back filling and re-contouring and/or alternative use of unfilled/partially filled excavations to sides/slopes and mine.**

The mining operations during these five years of the plan period are planned upto 120m above MSL. At conceptual stage the pit shall be developed for pisciculture with good local bio-diversified vegetation. The reclamation measures are shown on the environment management plan enclosed vide Plate No - 9.

- **Programme for afforestation, year wise for the initial five years (and up to conceptual plan of 'A' category mines) indicating number of plants with name of species to be demarcated in areas in hectares.**

0.6671 Ha area earmarked for safety barrier shall be developed as green belt by planting minimum but not limiting to 900 local species. wherever if it is not possible to do plantation in the safety zone area, the same plantation will be done in the nearest possible



area to safeguard the environmental protection. Till conceptual stage totally 0.6671 Ha area shall be covered under green belt. Apart from this Afforestation planting shall be done on the haulage road and public places by planting 1600 saplings.

The afforestation program is given in the Table No 11.7

Table No 11.7: Afforestation program

Year	No of Plants	Green Belt area covered	Location
I-Year	500 saplings	0.13342 Ha	Green belt area & Haulage Road
II-Year	500 saplings	0.13342 Ha	
III-Year	500 saplings	0.13342 Ha	
IV-Year	500 saplings	0.13342 Ha	
V-Year	500 saplings	0.13342 Ha	
	2500 saplings	0.6671 Ha	

- **Stabilization and vegetation dumps along with waste dump management for next five years (and up to conceptual plan period for 'A' category mines).**

Only 42,835.20 tonnes topsoil is expected to generate in this area. The topsoil shall be stocked in the safety barrier and used for developing the green belt in safety barrier area. A minimum of 900 saplings shall be planted in this area. Till conceptual stage totally 0.6671 Ha area shall be covered under green belt. Apart from this Afforestation shall be done on the haulage road and public places by planting another 1600 saplings.

- **Treatment and disposal of water from mine:**

Except during monsoon months, no water shall be discharged from mine. A garland drain shall be made all around the mine to divert the water away from the pit through silt settling tank. The clarified water from Silt Settling Tank (SST) shall be directed to Rainwater Harvesting Pond (RWHP). The overflow water from Rainwater Harvesting Pond shall be released to natural water course.

- **Measures for minimizing adverse effects on water regime:**

Except during monsoon months, no water shall be discharged from mine. A garland drain shall be made all around the mine to divert the water away from the pit to Silt Settling Tank (SST). The water from Silt Settling Tank (SST) shall be directed to a rain harvesting pond before being released to natural water course. However granite building stone is a Nontoxic and hence there shall not be any chemical hazardous effect on the water regime.



- Protective measures for ground vibrations/air blast caused by blasting:

The drilling is proposed by jack hammer with 33mm/48mm dia. The blasting shall be done with 25mm slurry cartridges. Due to very small diameter hole blasting the vibration in this zone shall very low and the vibrations shall be maintained below 10mm/s as per the DGMS circular No. 7 of 1997. The nearest habitant Pottammuzhi is situated at about 0.5 Km away from the mine. Secondary blasting shall not be undertaken to avoid air blast. Only rock breaker shall be used to break the bigger boulders.

- Measures for protecting historical monuments and for rehabilitation of habitat, settlements, disturbed due to mining activity:

There are no historical monuments in the core or buffer zone.

- Socio-economic benefits arising out of mining:

Social and demographic profile: The mine is situated in the remote area, where the socio- economic status of the people is not satisfactory.

The main occupation of the people is working in plantation. There are no major industries in the area. The mining operations in such remote places would provide 55 direct and twice the number of indirect employments to local people. Hence mining operation will help in improving socio-economic status of the area.

d) Monitoring schedules for different environmental components after the commencement of mining operations and related activities (for 'A' category mines only):

For this mining project a quarterly monitoring mechanism for various environmental parameters shall be evolved as per the guidelines issued by State Environment Committee / MOEF.



PART III**12.0 PROGRESSIVE MINE CLOSURE PLAN****12.01 Introduction**

- a) Name & address of lessee: M/s. Delta Aggregates & Sand Private Limited,
Shri. Thomas Philip, Managing Director,
Chittar Post, Ranni Taluk,
Pathanamthitta District, Kerala-689 663,
Ph No. : 04735 256995 ,256959,
- b) Registered Office: Shri. Thomas Philip, Managing Director,
M/s. Delta Aggregates & Sand Private Limited,
Chittar Post, Ranni Taluk,
Pathanamthitta District, Kerala-689 663,
Ph No. : 04735 256995 ,256959,
- c) Location of the area : A location plan is enclosed vide Plate No. 1.
- d) Extent of the area : 3.7691Ha
- e) Type of the lease area : Private.
- f) Present Land Use Pattern

The present land use in mine area is given in the Table No 12.1:

Table No. 12.1: Present Land Use Pattern.

Particulars	Land use pattern at present stage (Ha)
Area for Mining/Mining activities	-
Area for Roads	-
Area for Safety Barrier / Green belt	-
Unused area	3.7691
Total lease area	3.7691

Method of Mining

Please refer Chapter – 4 mining



12.02 Reasons for closure

There is no proposal given for mine closure in these five years of the mining plan as the life of the mine is around 7 Years, however progressive mine closure plan is submitted along with this mine plan and the details are given in the **Plate No:10** (Progressive Mine Closure Plan).

Statutory Obligations

The mining plan is to be approved by District Geologist, Department of Mining & Geology, Pathanamthitta District, Kerala State whereas the Environment Clearance is under process.

12.03 Closure Plan Preparation:

Lessee : 'Granite Building Stone Quarry' of
M/s. Delta Aggregates & Sand Private Limited,
Shri. Thomas Philip, Managing Director,
Chittar Post, Ranni Taluk,
Pathanamthitta District, Kerala-689 663,
Ph No. : 04735 256995 ,256959,

Name and Address of the RQP:

C.Thambu Cherian DMG/KERALA/RQP/17/2018
Global Environment & Mining Services #212, Celestic Tower, Palm Avenue, Green Glen Layout, Bellandur, BENGALURU-560 103, Karnataka Email : gems.blr@globalminig.in Mob. No.: +91-80257 46999 HEAD OFFICE 3 rd Main Road, Basaveshwara Badawane HOSPET – 583201, Bellary Dist. (Karnataka)

Executing Agency : M/s. Delta Aggregates & Sand Private Limited,

MINE DESCRIPTION:**12.20 Geology:****Regional geology**

Please Refer Chapter 3 Geology & Reserves

Local Geology:

Please refer Chapter No 3 Geology & Reserves.



12.21 Reserves

Please refer Chapter 3 Geology &Reserves

12.22 Mining Method:

Please Refer Chapter 4 Mining.

12.23 Mineral Beneficiation:

There is no mineral beneficiation involved in the quarry operations.

12.30 REVIEW OF IMPLEMENTATION OF MINING PLAN

12.31 Name of Mine: 'Granite Building Stone Quarry' of M/s. Delta Aggregates & Sand Private Limited.,

12.32 Particulars of the Approved Mining Plan/ Scheme

It is under process. Mining plan is prepared for five years and submitted for approval.

12.33 Date of commencement of Mining Operations.

This mine is working on lease granted by Government of Kerala.

12.34 Review of Compliance Position of Mining Plan

Review of Compliance position of Salient features of Mining Plan on chapter wise basis bringing out marked deviation, if any, and justification / reasons thereof.

1. Exploration :

This is the first Mining plan. Hence it is not applicable

2. Mine Development:

This is the first Mining plan. Hence it is not applicable

3. Mine Production:

This is the first Mining plan. Hence it is not applicable

4. Reclamation & Rehabilitation;

This is the first Mining plan. Hence it is not applicable

Waste Management

This is the first Mining plan. Hence it is not applicable



Quality of Air

This is the first Mining plan. Hence it is not applicable

Noise Level

This is the first Mining plan. Hence it is not applicable

Ground Vibrations

This is the first Mining plan. Hence it is not applicable

Quality of water:

This is the first Mining plan. Hence it is not applicable

3.4C Review of compliance of conditions and stipulations imposed, if any, while approving Mining Plan / Scheme. In case non-compliance, partial compliance justification reasons thereof may be furnished along with proposal for compliance in ensuring period.

This is the first Mining plan. Hence it is not applicable

3.4D Review of compliance of violations pointed out after inspections made under MCDR, 1988 during the last five years.

This is the first Mining plan. Hence it is not applicable

3.4E Any other points requiring attention in the interest of proper mine design Development, conservation and Ecology of the area.

Nil

12.4.0 Progressive mine closure Plan**12.4.1 Mined out land.**

The present landuse, the landuse at the end of 5 years of the mining plan and at the conceptual stage is given in the Table Number 12.2.



Table No.12.2: Present land use, land use at the end of progressive stage and the ultimate land use pattern.

Particulars	Land use pattern at present stage (Ha)	Land use pattern (end of progressive stage) (Ha)	Land use pattern at Conceptual stage (Ha)
Area for mining / mining activities	-	2.9459	3.1020
Area for Roads	-	-	-
Area for Safety Barrier / Green belt	-	0.6671	0.6671
Overburden / dump/ tailing dump	-	0.0925	-
Total	-	3.7055	3.7691
Unused area	3.7691	0.0636	-
Total Lease area	3.7691	3.7691	3.7691

* Road area inside the mine Lease is not shown separately. Since the material is transported on the benches the road area is therefore included in the mining area.

12.4.2 Water quality management:

There is no water course in the lease. To divert the rain water away from the mine to the natural course, a garland drain shall be made all around the lease as shown in the Environment Management Plan enclosed vide **Plate No: 9**. The water from garland drain shall be collected in the silt settling pond before releasing that to natural water course.

12.4.3 Air quality management:

The air around the mine is clean and moderately dry. To maintain the same during mining the sprinkling of water shall be done on haulage road. The drilling and blasting, excavation and loading shall not be done during high wind.

12.4.4 Waste Management:

Totally 42,835.20 tonnes topsoil and 56,779.88 tonnes of waste is expected to generate from this mine. The topsoil shall be used for afforestation to develop the green belt in safety barrier area within the periphery of mining area. Waste will be transported to the pre-determined dump situated in the NE side of the Mine Lease area as shown in the Production & Development plan, and also used for road repair works.

12.4.5 Topsoil Management

The entire topsoil shall be utilized for Afforestation/Green belt development and for plantation proposal on the ultimate benches as shown in the Production and Development Plan.



12.4.6 Tailing Dam Management

Not Applicable

12.4.7 Infrastructure.

No infrastructure is proposed to develop inside the lease area. The office and structures required for other service including statutory requirement shall be constructed outside the lease area, which shall be dismantled at conceptual stage of mining.

12.4.8 Disposal of Machinery

The question of disposal of mining machinery does not arise as the closure plan is a progressive in nature, and the life of the mine extends beyond the plan period.

12.5 Safety & Security:

For safety the lease hold areas shall be guarded by security personals.

12.6 Disaster Management & Risk Assessment:

No disaster is expected in this small scale of mining; however, as an emergency the location of the hospital, police station and fire brigade is given in the Table No 12.3

Table No. 12.3: Location of Stations during Emergency

Stations	Location of the station	Distance of station from Quarry
Govt. Hospital	Community Health Centre, Perunad	6.4 Km
Police station	Perunad	6.4 Km
Fire Brigade	Seethathodu	11.1 Km

In case of any eventuality the following person will be available for contact.

Shri. Thomas Philip, Managing Director,
M/s. Delta Aggregates & Sand Private Limited,
Chittar Post, Ranni Taluk,
Pathanamthitta District, Kerala-689 663,
Ph No. : 04735 256995 ,256959,

12.7 Care and maintenance during temporary discontinuance:

The following specific measures shall be taken during temporary discontinuance,

- The pit shall be fenced



- b. Proper and adequate security at the entrance to the mine to prevent entry of unauthorized person with proper gates under lock.
- c. All the above will be examined by manager once in a week to ensure that they are in order.

12.7.1 Economic repercussions of closure of mine & manpower retrenchments:

In case of the closure of the mine the company shall plan for the voluntary retirement scheme.

12.7.2 Time Scheduling of Abandonment:

The life of the mine is around 7 years and as on now there is no schedule for abandonment of mine. However, the time scheduling for environment management measures are given in Table 12.4

Table No. 12.4 : Environment Management Schedule

YEAR	I-Year	II-Year	III-Year	IV-Year	V-Year
Greenbelt					
Garland drain					
Afforestation					
Environmental Monitoring					
Water spraying on haul roads					

Abandonment Cost

As on now the environment management cost includes the initial and capital cost and annual recurring cost.

The capital cost is given in the table No 12.5 and annual recurring cost is given in Table No 12.6

Table No. 12.5 Initial/ Capital Investment for Environmental Protection

Sl. No.	Particulars	No.	Cost (LakhRs.)
I	Pollution Control		
1.1	Water sprayer (Mobile)	1	6.00
	Total		6.00



Table No. 12.6: Recurring Annual Cost for Environmental Protection

Sl. No.	Particulars	No.	Cost (Lakh Rs.)
1	Pollution Control		
1.1	Mitigation expenses for Air, Water, Noise, Vibration, etc.		15.00
1.2	Green belt development	Avg. 500 plants	2.25
1.3	Personal protective equipment	55	1.10
1.4	Environmental monitoring		6.00
1.5	Desilting and Maintenance of Garland Drain, SST and RWHP		8.00
	Total		32.35
2	Corporate Environment Responsibility		4.00
	Total		36.35

The annual cost for environment protection / environmental improvement and CER activities are envisaged as Rs. 36.35 lakhs and the specific environmental protection cost per tonne is nearly Rs 16.85/- per tonne of granite building stone.

12.8 Financial Assurance:

At the end of these five years of the mining plan period totally 3.7691 Ha. (9.3134 Acres) area shall be used for mining and green belt development activities. The financial assurance of Rs 1,00,000/- shall be given as a bank guarantee to Directorate of Mining & Geology after confirmation. The detail breakup of the land is given in Table No 12.8.1 and the broken-up area is shown in **Plate No. 10** Progressive Mine Closure Plan.



Table No. 12.8.1: Details of Broken up area at the end of progressive stage

Sl. No.	Head	Area Put On Use at start of plan (in H a)	Additional requirement during plan period (in Ha)	Total (in Ha)	he area considered as fully reclaimed & rehabilitated (in Ha)	Net area considered for calculation (in Ha)
1	Area under mining / mining activities	-	2.9459	2.9459	-	2.9459
2	Safety Barrier/Green belt	-	0.6671	0.6671	-	0.6671
3	Overburden / dump/ tailing dump	-	0.0925	0.0925	-	0.0925
4	Infrastructure (workshop, office, etc)	-	-	-	-	-
5	Roads	-	-	-	-	-
6	Storage of topsoil	-	-	-	-	-
7	Mineral separation plant	-	-	-	-	-
8	Afforestation on dump	-	-	-	-	-
9	Others to specify	-	-	-	-	-
	Total	-	3.7055	3.7055	-	3.7055
	Virgin area	3.7691	0.0636	0.0636	-	0.0636
	Total Lease area	3.7055	3.7055	3.7055	-	3.7055

12.9 Certificate:

Enclosed

12.10 Plans and Sections:

Plans and sections are enclosed.

GLOBAL Environment & Mining Services



C.Thambu Cherian
DWG/KERALA/RQP/17/2018



ANNEXURES



No. 8676/M3/2019

Directorate of Mining & Geology
 Kesavadasapuram, Pattam Palace P.O,
 Thiruvananthapuram - 4
 Tel Fax : 0471 2447429
 e-mail: director_dir.dmg@kerala.gov.in
www.dmg.kerala.gov.in
 Dated : 09-01-2020

From

The Director of Mining & Geology

To

M/s. Delta Aggregates & Sand Pvt. Ltd,
 Chittar P. O,
 Pathanamthitta District - 689 663
 (Represented by its Managing Director, Shri. Thomas Philip)

Sir,

Sub:- Mines and Minerals – Minor Mineral – Granite (Building Stone) – Application for quarrying lease under KMMC Rules 2015 – Letter of Intent - forwarding of- reg.

Ref:- 1. Your application for quarrying lease dated. 07.08.2019.
 2. Letter No. 2024/DOPTA/M/19 dtd. 16/09/2019 of the Geologist, District Office, Pathanamthitta.
 3. Rule 33 of Kerala Minor Mineral Concession Rules 2015.

Please refer to the references cited above . As per the reference 1st cited, you have applied for a quarrying lease for a period of 12 years from this office for the extraction of granite building stone from an area of 3.7691 Hectares in Sy. Nos. 889/1-15-1, 889/1-15 of Perunad Village of Ranni Taluk of Pathanamthitta District [as shown in the Survey Map No. H1 – 5752/19 issued by Tahsildar, Ranni enclosed]. Vide reference cited 2 above, District Geologist, Pathanamthitta has forwarded your application to this office with recommendations to issue Letter of Intent. On scrutiny of application and other documents received from the Geologist, Pathanamthitta, it is seen that a quarrying lease can be granted to the precise area shown in the Survey Map under the provisions contained in the KMMC Rules 2015. However, for granting quarrying lease you have to produce the following documents through District Geologist to the satisfaction of this office in accordance with the relevant statutes.

DOCUMENTS TO BE PRODUCED

1. Mining plan approved by the District Geologist as stipulated in the KMMC Rules 2015, for the precise area as per the survey map.
2. Environmental Clearance as stipulated in EIA Notification 2006 for the precise area.
3. Consent to operate quarry from the Kerala State Pollution Control Board for the precise area.
4. Explosive licence from the authorities concerned for appropriate quantity of explosives required for extraction of mineral from the precise area as mentioned in the approved mining plan.



5. Licence from the Local Self Government authorities concerned for operating quarry in the precise area.
6. Clearance from the National Wild life Board to the effect that the Board has no objection in granting Quarrying Lease from the Department of Mining & Geology since the applied area falls within 10 KM of the Periyar Wildlife Sanctuary or Certificate from the Wildlife Warden concerned to the effect that there is no Wildlife Sanctuary or National Park within 10 KMS of the outer boundaries of the applied area.

In addition, you shall make arrangements for the survey and demarcation by erection of boundary pillars of the said area by the revenue authority not below the rank of a Tahsildar or Asst. Director of the Department of Survey and Land Records and shall produce a certificate in this regard issued by authorities concerned.

It is further informed that the duration of lease as well as annual production of mineral will be decided based on the approved mining plan and documents submitted.

It is also informed that as per the provisions contained in the KMMC Rules 2015 this letter of intent shall be sufficient for the purpose of issuing necessary licenses/consents/Clearances/NOCs etc. by the other statutory authorities concerned. In the event of granting of quarrying lease you may also need to produce new Possession & Enjoyment Certificate at the time of grant of quarrying lease.

It is further informed that this letter of intent is valid for a period of one year from the date of issue. In case you have any valid reason for seeking extension of period of this LOL, the same may be obtained before the expiry of this LOL. Your application for Quarrying Lease shall deemed to have been rejected, if you fail to produce above mentioned documents before the expiry of LOL.

Yours faithfully,

ADDITIONAL DIRECTOR OF MINING & GEOLOGY
For DIRECTOR OF MINING & GEOLOGY

Encl: Photocopy of Survey Map showing precise area

Copy to:-

1. The Member Secretary, SEIAA, Thampanoor Bus Terminal, Thiruvananthapuram.
2. The Chairman, SEIAA, Thampanoor Bus Terminal, Thiruvananthapuram.
3. The Deputy Chief Controller of Explosives, CSEZ, CGO Complex, Kakkannad, Ernakulam
4. Kerala State Pollution Control Board, District Office, Pathanamthitta District.
5. The Secretary, Perunadu Grama Panchayath, Pathanamthitta District
6. The Tahsildar, Ranni Taluk Office, Pathanamthitta District.

For kind attention of statutory authorities

[The statutory authorities while issuing licence/consents/NOCs based on this letter of intent may refer this letter of intent in the respective licence/consent/ clearance /NOC while issuing the same. The statutory authorities may refer the survey map and consider the extent of applied area, quantity of mineral proposed to extract and the period of lease applied for while issuing such documents. The authorities may note that the operation as per their licence shall start only after execution and registration of quarrying lease granted by this office. All the Survey Nos./Re-Survey numbers with Block No. included in the survey map submitted in this connection may be included in all the aforesaid documents.]

7. The Geologist, District Office, Pathanamthitta (The Geologist shall forward all the above said documents to this office for grant of quarrying lease with recommendations)





GOVERNMENT OF KERALA

DEPARTMENT OF MINING AND GEOLOGY

Directorate of Mining and Geology, Pattom Palace PO,
Kesavadasapuram, Thiruvananthapuram-695004, Kerala
www.dmg.kerala.gov.in

FORM Q

**CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON TO PREPARE
MINING PLANS FOR QUARRYING MINOR MINERALS IN KERALA**

(Issued under Rule 54 of the Kerala Minor Mineral Concession Rules, 2015)

Shri. C. Thambu Cherian, S/o C.M. Cherian, Chamakkatt, Erayilkadavu Road, Kottayam District - 686 001, having given satisfactory evidence of his qualification and experience is hereby granted **RECOGNITION** under Rule 54 of the Kerala Minor Mineral Concession Rules, 2015 as qualified person to prepare Mining Plans for quarrying minor minerals in Kerala.

The registration number is **DMG/KERALA/RQP/17/2018**

This recognition is valid for a period of 10 years ending 26/09/2028


Photograph of RQP

Signature of RQP



K. Biju
K. BIJU IAS

DIRECTOR OF MINING AND GEOLOGY

K. BIJU IAS

Director

Mining and Geology Department
Kesavadasapuram, Pattom Palace, PO
Thiruvananthapuram-695004

Place: Thiruvananthapuram
Date: 27-09-2018





प्रारूप 1

पंजीकरण प्रमाण-पत्र

कॉर्पोरेट पहचान संख्या U14100KL2008PTC022221

2008 - 2009

यह एतद्वारा सत्यापित करता है कि निम्नलिखित

DELTA AGGREGATES AND SAND PRIVATE LIMITED

का पंजीकरण, कम्पनी अधिनियम 1956 (1956 का 1) के अंतर्गत प्राप्त किया जाता है और यह कम्पनी प्राइवेट लिमिटेड है।

यह निगमन-पत्र आज दिनांक 08/04/08 को इसका अंतर्गत को सेरे इलाहाबाद से इलाहाबाद में जारी किया जाता है।

Form 1

Certificate of Incorporation

Corporate Identity Number U14100KL2008PTC022221 2008 - 2009

I hereby certify that DELTA AGGREGATES AND SAND PRIVATE LIMITED is this day incorporated under the Companies Act, 1956 (No. 1 of 1956) and that the company is private limited.

Given under my hand at Ernakulam this Eighth day of April Two Thousand, Eight.



(JOSEKUTTY V E)

असिस्टेंट रजिस्ट्रार / Assistant Registrar of Companies

केरल एवं लक्षद्वीप
Kerala and Lakshadweep

कम्पनी रजिस्ट्रार के कार्यालय में उपलब्ध पता का है।
Mailing Address as per record available in Registrar of Companies office:
DELTA AGGREGATES AND SAND PRIVATE LIMITED
No. 423 E, Chittur P.O. Pathanamthitta 687 685663,
Pathanamthitta - 689663,
Kerala, INDIA





കേരളം KERALA

A 016125

**MEMORANDUM OF ASSOCIATION
OF
DELTA AGGREGATES AND SAND
PRIVATE LIMITED**

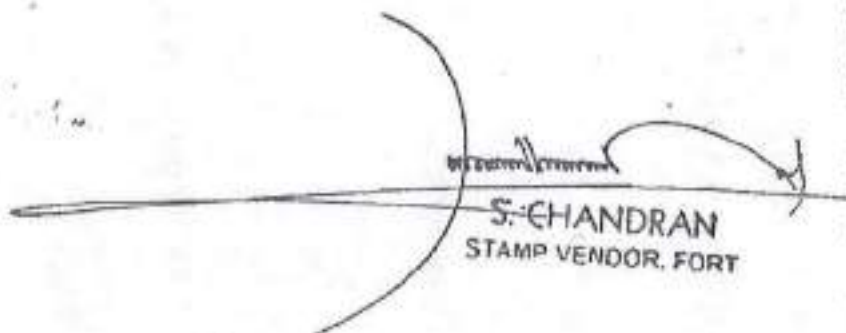
- I. The name of the Company is DELTA AGGREGATES AND SAND PRIVATE LIMITED.
- II. The Registered Office of the Company will be situated in the State of Kerala.



Abraham Joseph

No. 30870
18.3.08

Thomas philip Rs. 500/-


S. CHANDRAN
STAMP VENDOR, FORT



III. A. The main objects to be pursued by the Company on its incorporation are:

1. To carry on the business of Aggregates in the nature of Rock Quarry and Sand Mining.

B. The objects incidental or ancillary to the attainment of the main objects are:

- 1) To establish branch offices/ agencies of the Company in any part of Indian Union or abroad with due approval from competent authority.
- 2) To amalgamate with or take over the assets and liabilities of any Company or Firm having objects altogether or in part similar to those of this Company.
- 3) To purchase, take on lease or otherwise acquire lands, buildings, furniture, plant and machinery, vehicles, and such other assets as are required for carrying on the business of the Company.
- 4) To foster interaction with educational institutions, research organizations; industry and individuals to form an ever-growing team of talent and garner the expertise in the promotion of the Company's objectives.
- 5) To enter into contract or arrangement with any government department, firm, Company, Universities, Colleges, Individual specialists in any field or association of persons for catering to the product, project and services objectives as mentioned above.
- 6) To open accounts in one or more banks/branches of banks as decided by the Board of Directors from time to time and to arrange for the operation of such accounts.
- 7) Subject to the provisions of the Companies Act, 1956 to borrow or avail secured loans for the purpose of business of the Company from Banks, Financial Institutions or from such other sources by creating charge on the assets of the Company.
- 8) Subject to Section 58 A of the Companies Act, 1956 and Reserve Bank of India guidelines issued from time to time, to borrow money on unsecured basis from share holders or other persons on such terms as the Directors think proper.

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- 9) To invest the surplus funds of the Company in such shares/bonds/securities, as may be decided by the Board or to lend or make advances to any persons or body corporate, however that the Company shall not engage in or carry on the business of banking as defined in Section 5(b) of the Banking Regulation Act, 1949.
- 10) To appoint agents/ representatives at any place to promote the business of the Company.
- 11) To draw, make, accept, endorse and negotiate Cheques, Bills of Exchange, Drafts, Promissory Notes and other negotiable or transferable instruments in connection with the business of the Company.
- 12) Subject to the provisions of the Companies Act, 1956 or any other law in force from time to time to indemnify and keep indemnified members, Directors, Officers and Servants of the Company against proceedings, damages or other claims in respect of anything done by them for and in the interest of the Company.

C) The other objects of the Company not included in (A) and (B) above are:

1. To carry on the business of Transport carriers
2. To carry on the business of construction of buildings and flats
3. To carry on the business of rubber products and its marketing
4. To carry on the business of Import and Export of all General Goods, Health Products and Goods, Medicines, Fitness Equipments, Laboratory Equipments, Monitors, Electronics items, Fabric, and General and Allied Articles.
5. To carry on the business of publications in India.
6. To carry on the business of general contractors and suppliers
7. To carry on the business of hardware, wooden and other building materials



IV. The liability of the members is limited.

V. The Authorised Share Capital of the Company is Rs. 1,00,000/- (Rupees One Lakh Only) divided into 10000 (Ten Thousand) Equity Shares of Rs. 10/- (Rupees ten) each.



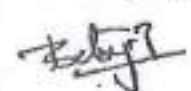
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We, the several persons whose names and addresses are subscribed are desirous of being formed into a Company in persons of this Memorandum of the Association and we respectively agree to take the numbers of equity shares in the Capital of the Company set opposite our respective names.

Sl. No.	Name, addresses, Description and occupation of Subscribers	No. of Equity Shares taken by each Subscriber	Signatures
1.	Thomas Philip S/o Philip Abraham. Cherupulichiyil, Ranni. Cherukulangji P.O. Pallanamthitta - 689673 Business, 32 years.	3400 Three Thousand Four Hundred	
2.	Abraham Philip S/o Cherupulichiyil Abraham Philip Cherupulichiyil House 413 Cherukulangji P.O. Ranni. Pallanamthitta - 689673 Business 35 years.	3300 Three Thousand Three Hundred.	Abraham Philip 

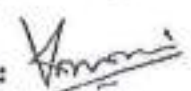


G.

Sl No.	Name, addresses, Description and occupation of Subscribers	No. of Equity Shares taken by each Subscriber	Signatures
3.	Betsy PHILIP d/o Kottuppallit George Philip 786, Kodupallit, 2, Kozhancherry. 689673 Business ✓ 30 yrs	3300 [Three Thousand Three hundred]	
Total Number of shares taken		10,000	(Ten Thousand)

Dated the 31st day of March 2008 at Thiruvananthapuram

Witness to the above 3 signatures:


Dr. V.L. Mung, 1/2 Ralte V. Lakshminarayana Iyer
Gangotry, TC 41/470, 3 Puthan Street,
Thiruvananthapuram - 695009
Advocate
Enrolment No: K/734/1994⁵





കേരളം KERALA

B 963425

ARTICLES OF ASSOCIATION OF DELTA AGGREGATES AND SAND PRIVATE LIMITED



1. The regulations in Table A of Schedule - I to the Companies Act, 1956 applicable to Private Companies shall apply to the Company except in so far as they are not in conflict with or repugnant to the following Articles of Association, and, unless the context otherwise requires, words or expressions contained in these Articles of Association shall bear the same meaning as in the Act or any statutory modification thereof in force at the date at which these Articles of Association become binding on the Company.

(contd..2)

7 *[Signature]*



Abraham

No. 30866
18.3.08

Thomas philip

Rs. 1000/-


S. CHANDRAN
STAMP VENDOR, FORT





2. The Company is a Private Company within the meaning of Section 3(1) (iii) of the Companies Act, 1956 with a minimum paid-up capital of Rupees One Lakh or such higher paid-up capital as may be prescribed accordingly:
- a. Restricts the right to transfer its shares.
 - b. Limits the number of members to 50 (Fifty only) not including.
 - i. Persons who are in the employment of the Company and
 - ii. Persons who, having been formerly in the employment of the Company, were members of the Company while in that employment and have continued to be members after the employment ceased and
 - c. Prohibits any invitation to the Public to subscribe for any shares in, or debentures of, the Company.
 - d. Prohibits any invitation or acceptance of deposits from persons other than its members, directors or their relatives. Provided that where two or more persons hold one or more shares in the Company jointly, they shall for the purposes of this definition be treated as a single member.
3. The Authorised Share Capital of the Company is Rs. 1,00,000/- (Rupees One Lakh Only) divided into 10000 (Ten Thousand) Equity Shares of Rs. 10/- (Rupees ten) each.
4. Except as provided in Section 77 and 77 A of the Act, no part of the funds of the Company shall be employed in the purchase of the Company's own shares.

TRANSFER AND TRANSMISSION OF SHARES

5. The Board of Directors may decline to register any transfer of shares to any person whom they do not approve, without assigning, any reasons therefore and may also decline to register any transfer of shares on which the Company has lien. Any decision of the Board of Directors in this matter shall be with the consent of the promoter Directors.
6. The Directors may suspend the registration of any transfer of shares during the fourteen days immediately preceding the Annual General Meeting each year.
7. No shares are permitted to be transferred to a minor or to a person of unsound mind.

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Beti I



8. The transfer book and register of Shareholders may, further, subject to the provisions of the Act, be closed during such times as the Directors think fit, not exceeding in the aggregate of 45 days in each year and not more than 30 days at any one time.
9. In the case of death of anyone or more of the persons named in the register as the joint holders of any share, the survivor or survivors shall be the only persons recognized by the Company as having any title to or interest in such share, but nothing herein contained shall be taken to release the estate of a deceased joint-holder from any liability on shares held by him jointly with any other person.

GENERAL MEETING

10. General Meeting of the members shall be called by giving 3 days notice than prescribed in Section 171 of the Companies Act, 1956.
11. The required quorum for the General Meeting shall be two persons present in person.
12. A demand for poll shall not prevent the continuance of a meeting for the transaction of any business other than that on which a poll has been demanded. The person or persons who made the demand may withdraw at the demand for a poll any time.
13. An instrument appointing a proxy shall be in the forms in Schedule IX to the Act.
14. The shareholders at the General Meeting of the Company shall elect the Directors. However, the following shall be the first Directors of the Company and shall continue to be Directors of the Company unless resigned. The number of Directors shall not be less than two and more than twelve.

1. THOMAS PHILIP
2. ABRAHAM PHILIP AND
3. BETSY PHILIP

15. Subject to the provisions of the Act and these Articles of Association, the Board of Directors shall have the power to appoint, from time to time any one or more of the Directors as Managing Director (s) of the Company



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[Handwritten signature]

upon such terms and conditions as the Board thinks fit, subject to the approval of the Promoter Directors.

16. Under Section 313 of the Act, the Company's Board of Director, subject to the approval of the Promoter Directors, may appoint for a period of not less than three months, an Alternate Director to act for a Director (hereinafter called the "Original Director") during his/her absence from the State in which the meeting of the Board of Directors are ordinarily held. An Alternate Director shall not hold office for a period longer than that permissible to the Original Director in whose place he has been appointed and shall vacate the office if and when the Original Director returns to the State.
17. In the case of any vacancy occurring in the Board of Directors, the continuing Directors may act, notwithstanding any vacancy in their body, but if, and so long as their number is reduced below two, then the sole continuing Director may act for the purpose of increasing the number of Directors to that number or summoning a General Meeting but for no other purpose.
18. Every Director including a person deemed to be a Director by virtue of explanation to the sub-section (1) of Section 303 of the Act, Managing Director, Manager or Secretary of the Company shall, within twenty days of his appointment to any of the above offices in any other legal entity, disclose to the Company the particulars relating to his office in the other legal entity which are required to be specified by sub-section (1) of the said section, or, if he is holding such an office in another legal entity at the time of his appointment as Director of the Company within twenty days.
19. The Company shall be managed and controlled by the Board of Directors. The Bank Account of the Company shall be operated either by Joint Signature of 2 Directors or by a Single Director, as decided by the Board, from time to time.
20. The Directors including the Managing Director may, with the sanction of the Board delegate any of his powers to such person or persons, by Power of Attorney or otherwise as the Board deems proper and expedient to grant and may revoke such powers at pleasure.

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WINDING UP

21. Subject to the provisions of the Act as to preferential payments, the assets of the Company shall, on its winding up, be applied in satisfaction of its liabilities *pari passu* and subject to such application, shall, unless the Articles of Association otherwise provide, be distributed among the members according to their rights and interests in the Company.

COMMON SEAL

22. The Common Seal of the Company shall not be affixed to instruments except under the authority of the Board of Directors, by means of a resolution and except in the presence of one of the Directors, who shall sign every instrument other than share certificate to which the Seal is affixed subject to the companies (Issue of Share Certificates) Rules, 1960.

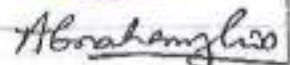
INDEMNITY

23. The Acts of the Directors, Officers and employees of the Company in relation to any affairs of the Company shall be indemnified and secured out of the assets and profits of the Company from and against all action, costs, charges and expenses which they or any of them shall or may incur or sustain by any act done in or the execution of their duty unless the same happens through his or her own negligence, defect, dishonesty or breach of trust.
24. Every Director, Managing Director, Manager, Secretary, Trustee, Member of a Committee, Officer, Servant, Agent, Accountant, or any other persons employed in the business of the Company shall, if so required by the Board before entering upon his/ her duties or at any time during his/her time of office, sign a declaration pledging himself to observe strict secrecy regarding all transactions of the Company and the State of Accounts and in matters relating thereto, and thereby such declaration pledge himself/ herself not to reveal any matters which may come to his/her knowledge in discharge of duties except when required so to do by the person to whom such matters relate and then only so far as may be necessary in order to comply with any of the provisions contained in these Articles.











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Sl. No.	Name, addresses, Description and occupation of Subscribers	Signatures
1.	<p>Thomas Philip S/o Philip Abraham Cherupulichy, P. O., Puthanam H. Ha. - 689673. Business 32 years.</p>	
2	<p>Abraham Philip S/o Cherupulichy Abraham Philip Cherupulichy House No - 413 Cherupulichy P. O. P. O. Puthanam H. Ha. 689673 Business 35 years</p>	<p>Abraham Philip</p> 



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Sl. No.	Name, addresses, Description and occupation of Subscribers	Signatures
3	<p>Beky philip D/o kottuppallil George philip 786, kodupallil, 2 Kozhancherry - 689 673</p> <p>Business</p> <p>30 yrs</p>	<p><i>Beky T</i></p>



Dated 31st day of March 2008 at Thiruvananthapuram

Witness to the above 3 Signatures : *[Signature]*

Dr. V.L. Munny & Co. Late V. Leekshminarayana Iyer
Gangotry, PC 41/470 3 Pulkan Street,
Thiruvananthapuram - 695009
Advocate
Enrollment No: K/734/1994





DELTA

AGGREGATES & SAND PVT. LTD.

Chittar P.O., Pathanamthitta, Pin - 689 663

Ph: 04735 256995, 256959. Email: deltaaggregatesandsand@gmail.com

GSTIN : 32AAECD2617B1ZF

www.deltagroups.in

CERTIFIED TRUE COPY OF THE RESOLUTION PASSED AT THE MEETING OF THE BOARD OF DIRECTORS OF M/s DELTA AGGREGATES AND SAND PRIVATE LIMITED HELD AT ITS REGISTERED OFFICE ON WEDNESDAY, THE 17TH DAY OF JULY, 2019

Authorisation to lease land for quarry purpose with Mr. Jibu Jose and Mr. Noushad

"RESOLVED THAT the consent of the Board of Directors be and is hereby accord to enter lease agreement with Mr. Jibu Jose, Sy No.889/1-15-1 of Perinad village, Ranni taluk, Pathanamthitta and Mr. Noushad, Sy No.889/1-15, Perinad village, Ranni taluk, Pathanamthitta to Mr. Thomas Philip (DIN.01996260) Managing Director of the company and to enter into and execute lease agreement.

"RESOLVED FURTHER THAT Mr. Thomas Philip (DIN No.01996260) Managing Director of the company be and is hereby authorise to negotiate and finalise the terms and conditions and to enter into necessary agreements with Mr. Jibu Jose and Mr. Noushad and to appear before the authorities including Registrar/Sub-Registrar, Mining and Geology Department and any other department in-connection with obtaining license to do all such acts, deeds, matters and things and to execute all such documents and writings as may be necessary, desirable or expedient.



ICERTIFIED TRUE COPYI

For and On Behalf Of The Board Of Directors Of
DELTA AGGREGATES AND SAND PVT LTD

Betsy Philip
Betsy Philip

DIN:02108432 | Director

Signed before me



Volume V Page 65

Sl no 164 Date 2/7/19



K.P. Subhash Kumar
Reg. No. 04/10/PTA
K.P. Subhash Kumar Bsc, LLB
Advocate & Notary
In Revenue Dist. Pathanamthitta



ആധാരം - സാമ്പത്തികമാർഗ്ഗം അനുസരിച്ച്

தமிழக மாதிரியை அறிவிப்பதன் காரணத்தால்
INDIAN IDENTIFICATION AUTHORITY OF BERA

සහතිකයක්
 මෙය නිවැරදි
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 කර ඇති බවට
 සහතික

Address:
S/O: Philip, Chempuladai,
Vaduvankkara,
Puthanambilla,
Cherukudi, Kerala. 682973



213

FORM 12 C
(See Rule 3)



GOVERNMENT OF KERALA
RANNI PERUNADU VILLAGE OFFICE
POSSESSION CERTIFICATE

No. 43056609

Date: 18/09/2019

Name of Person to whom certificate is issued	NOUSHAD P M SON OF MUHAMMAD PUTHENPEEDIKAYIL
Name of Father	MUHAMMAD
Address	PUTHENPEEDIKAYIL, O, POTTENMOOZHY
Post Office with PIN Code	LAHAI, 689662
District	Pathanamthitta

Certified that land shown in the schedule below are in possession and enjoyment of the person

Taluk / Village	Old Survey No	Re-Survey Block	ReSurvey No	Extend in Ha	Thandapper	Class of Land
Ranni/ Ranni Perunadu	889/1-15			0.4047	12994	dry

Certificate Issued Date	18/09/2019
Designation of the Issuing officer	Village Officer
Purpose for which the certificate is issued for	MINING AND GEOLOGY PATHANAMTHITTA

This certificate is issued based on the details given in the application, local enquiry, facts and records produced.



Security Code : 745S3

Signature valid

Digitally signed by: SATHEESH
Date: 2019.09.18 13:55:09 IST

NOTE:

1. This digitally signed document is legally valid as per the Information Technology (IT) Act, 2008.
2. Authenticity of this document can be verified from <http://edistrict.kerala.gov.in/> and submitting the Certificate Number and Security code. Alternatively, please call the numbers 155300(from BSNL landline), 0471155300(from BSNL mobile), 04712335523/04712115094/04712115098(from other networks) and quote the Certificate Number to the operator.

FORM 12 C
(See Rule 3)



GOVERNMENT OF KERALA
RANNI PERUNADU VILLAGE OFFICE
POSSESSION CERTIFICATE



No. 43056935

Date: 18/09/2019

Name of Person to whom certificate is issued	JIBU JOSE SON OF P G JOSE PUTHENVEETIL
Name of Father	P G JOSE
Address	PUTHENVEETIL, O, POTTANMOOZHY
Post Office with PIN Code	LAHAJ, 689652
District	Pathanamthitta

Certified that land shown in the schedule below are in possession and enjoyment of the person

Taluk / Village	Old Survey No	Re-Survey Block	ReSurvey No	Extend in Ha	Thandapper	Class of Land
Ranni/ Ranni Perunadu	880/1-15-1			33600.0000	15865	dry

Certificate Issued Date	18/09/2019
Designation of the Issuing officer	Village Officer
Purpose for which the certificate is issued for	MINING AND GEOLOGY PATHANAMTHITTA

This certificate is issued based on the details given in the application, local enquiry, facts and records produced.



Security Code : X8X3W

Signature valid

Digitally signed by **PATHEESH**
Date: 2019.09.18 14:06:49 IST

NOTE

1. This digitally signed document is legally valid as per the Information Technology (IT) Act, 2008.
2. Authenticity of this document can be verified from <http://edistrict.kerala.gov.in/> and submitting the Certificate Number and Security code. Alternatively, please call the numbers 155300(from BSNL landline), 9471155300(from BSNL mobile), 04712335523/04712115094/04712115098(from other networks) and quote the Certificate Number in the message.

8075 ഒറിജിനൽ

ကျေးဇူးတင်

ബാഗ്ഗേജ് വെയ്ക്കൽ : സാക്ഷ്യം

സം. No. 807467

15864-

-00 അമ്പൽ $\frac{\text{അമ്പൽ}}{\text{അമ്പൽ}}$ അമ്പൽ $\frac{\text{അമ്പൽ}}{\text{അമ്പൽ}}$ $\frac{\text{അമ്പൽ}}{\text{അമ്പൽ}}$ $\frac{\text{അമ്പൽ}}{\text{അമ്പൽ}}$



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மணி விருட்டிய (அகரம்) 1085. தி.வி. 1085

பித்திரம் பித்திரம் என்கிறார்கள் (மகாபாரதம்)

9/13 - 3 மார்ச் 5 மாலை 24 நிமிடங்கள்

ഇതേ നിവേദനം സ്വീകരിച്ച് വർദ്ധിച്ച കണക്കിൽ മൂലയിൽ വച്ചിരിക്കുന്നു.

studio:

anonymi

നിരപ്പിൽ അധിനിവേശമുണ്ട്

വിദ്യാർത്ഥി അസിസ്റ്റന്റിന്റെ





കേരളം KERALA

CC 272881

സമ്മതപത്രം

2019 മെയ് മാസം 23 ൾ തീയതി പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ പെരുനാട് വില്ലേജിൽ പൊട്ടംമുഴി എന്ന സ്ഥലത്തു ഓഫീസിലെ 689662 പുത്തൻവീട്ടിൽ പിജി ജോസ് മകൻ 25 വയസ്സുള്ള ജിനു ജോസ് എന്ന ഞാൻ പത്തനംതിട്ട ജില്ലയിൽ കോന്നി താലൂക്കിൽ ചിറ്റാർ വില്ലേജിൽ ഡെൽറ്റ അഗ്രിഗേറ്റസ് ആൻഡ് സാൻഡ് എന്ന കമ്പനിക്ക് എഴുതി കൊടുക്കുന്ന സമ്മതപത്രം.

എൻ്റെ ഉടമസ്ഥതയിലും കൈവശത്തിലിരിക്കുന്നതുമായ പെരുനാട് സബ് റെജിസ്ട്രാറഫീസിലെ 307-10 നമ്പർ ആധാരപ്രകാരം പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ പെരുനാട് വില്ലേജിൽ സർവ്വേ നമ്പർ 889 / 1-15 ൽ



[Signature]
AJITH KUMAR. M.
ADVOCATE & NOTARY
PATHANAMTHITTA



No: 67 Rs: 100/-

24.4.19



കേരളം കേര KERALA

CC 272882

(2)

3. ഹെക്ടർ 36 ആർ 90 ച മീറ്റർ സ്ഥലം താങ്കൾക്ക് കരിക്കൽ വന്നും ചെയ്ത് വിൽപ്പന നടത്തുന്നതിന് മൈനിൽ ആൻഡ് ജിയോളജി വകുപ്പിൽ നിന്നും ക്വാറിയിൽ ലീസ് അനുവദിച്ചു എങ്കിലും ചെയ്യുന്ന തീയതി മുതൽ 15 (പതിനഞ്ച്) വർഷത്തേക്ക് താഴെ പേരെഴുതി ഒപ്പിട്ടിരിക്കുന്ന രണ്ട് സാക്ഷികൾ മുമ്പാകെ സ്ഥാനസ്ഥാപനം പൂർണ്ണമായും സമ്മതിച്ചിരിക്കുന്നു.

എന്ന്

ജി.ജെ. ജോസ്

Removed before me in my
Office at Pathanamthitta on
the 19th day of May 2019.

(ഒപ്പ്)

സാക്ഷികൾ

1. പേര്: മുഹമ്മദ് ബഷീർ

ഷമീർ മൻസിൽ

ളാഹപിട

2. പേര്: മാത്യു സി സാമുവേൽ

ചക്കാലത്തുണ്ടിയിൽ

ചിറ്റാൻപിട

AJITH KUMAR, M.
ADVOCATE & NOTARY
PATHANAMTHITTA



No: 68 Rs: 100/-



കേരളം KERALA

CB 249976

സ്ഥാനപത്രം

2019 ജൂലൈ മാസം 27-ാം തീയതി പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ പെരുനാട് വില്ലേജിൽ പൊട്ടംമുഴി എന്ന സ്ഥലത്തു ഓഹപിഒ പിൻ : 689662, പുത്തൻപീടികയിൽ വീട്ടിൽ മുഹമ്മദ് മകൻ നൗഷാദ് പി എം എന്ന ഞാൻ പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ ചിറ്റാർ വില്ലേജിൽ ഡെൽറ്റ അഗ്രിഗേറ്റസ് അസോസിയേഷൻ പ്രസിഡന്റ് ലിമിറ്റഡ് എന്ന കമ്പനിക്ക് എഴുതി കൊടുക്കുന്ന സ്ഥാനപത്രം



നൗഷാദ് പി എം



K.P. Subhash Kumar Bsc, LL
Advocate & Notary
in Revenue Dist. Pathanamthitta



No. 3204
27/07/19
നൗഷാദ് പി എം
പുത്തൻപീടികയിൽ





കേരളം കേരള KERALA

CB 249977

(2)

എൻറെ ഉടമസ്ഥതയിലും കൈവശത്തിലിരിക്കുന്നതുമായ പെരുനാട് സബ് റെജിസ്ട്രാറഫീസിലെ 1921-ാം നമ്പർ ആധാര പ്രകാരം പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ പെരുനാട് വില്ലേജിൽ തണ്ടപ്പേർ നമ്പർ 12994 പ്രകാരം സർവ്വേ നമ്പർ 889/1-15 ൽ 40 ആർ 47 ച മീറ്റർ സ്ഥലം താങ്കൾക്ക് കരിങ്കൽ ഖനനം ചെയ്ത് വിൽപ്പന നടത്തുന്നതിന് മൈനിങ് ആൻഡ് ജിയോളജി വകുപ്പിൽ നിന്നും ക്വാറിയിങ് ലീസ് അനുവദിച്ചു എങ്കിലും ചെയ്യുന്ന തീയതി മുതൽ 15 (പതിനഞ്ച്) വർഷത്തേക്ക് താഴെ പേരെഴുതി ഒപ്പിട്ടിരിക്കുന്ന രണ്ട് സാക്ഷികൾ മുമ്പാകെ സാക്ഷ്യം വെച്ചുപുറത്തു സമ്മതിച്ചിരിക്കുന്നു



പേര്: നൗഷാദ് പി എം

(ഒപ്പ്)



സാക്ഷികൾ

1. മാത്യു സി സാമുവേൽ, ചക്കാലത്തുണ്ടിയിൽ, ചിറ്റാർ പി ഒ
2. ഷൈജു എസ് ഷൈജു ഭവൻ ചിറ്റാർ പി ഒ

3000 No. 2 Page 63

No. 3205
21/07/19

നൗഷാദ് പി എം 21054 210 117 Date 20/7/19
മുത്തൻചിറ്റാർ

To County Officer and Magistrate
 by the client in my office
 signed on this 20th day of July 2019
 K.P. Subhash Kumar Bsc, LLB
 Advocate & Notary



കേരളം കേരള KERALA


CD 931018

സത്യവാങ്മൂലം

2019 ജൂലൈ മാസം 26-ാം തീയതി മൈനിംങ്ങ് ആന്റ് ജിയോളജി ഡയറക്ടർ മുൻപാകെ ഡെൽറ്റ അഗ്രിഗേറ്റ്സ് ആൻഡ് സാൻഡ് പ്രൈവറ്റ് ലിമിറ്റഡ് കമ്പനിയുടെ ഡയറക്ടറായ പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ വടശ്ശേരിക്കര വില്ലേജിൽ ചേറുകുളത്തി എന്ന സ്ഥലത്ത് താമസം ചെയ്യുന്നവരിൽ വീട്ടിൽ ഹിരിപ്പ് എന്നയാളുടെ മകൻ തോത്സ് ഹിരിപ്പ് ടി കമ്മ്യൂണിറ്റി ബോഡിയിലിരിക്കുന്ന സത്യവാങ്മൂലം.

പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ പെരുന്തട് വില്ലേജിൽ താലൂക്കു പട്ടികയിൽ വിവരിച്ചിട്ടുള്ള സ്ഥലങ്ങളിൽ നിന്നും കരിങ്കൽ ഖനനം ചെയ്യുന്നതിന് അനുമതി നൽകുന്നപക്ഷം താഴെ പറയുന്ന കാര്യങ്ങൾ നിർവ്വഹിക്കുന്ന മെന്ന് മെൽ കോമ്പനിക്കുകയും ഉറപ്പുനൽകുകയും ചെയ്യുന്നു.



Signed before me

Reg. No. 04/10/PTA
K.P. Subhash Kumar Sec, LLB
Advocate & Notary
in Revenue Dist. Pathanamthitta



2019-07-19

S. Subhash Kumar






കേരളം കേരള KERALA

CD 931019

1. അംഗീകരിച്ച ടൈംലൈൻസ് പ്ലാൻ പ്രകാരം ഖനനം നടത്തുന്നതാണ്.
2. ഖനനപ്രവർത്തനം മൂലം പരിസരമലിനീകരണവും പാരിസ്ഥാനിക പ്രശ്നങ്ങളും ഉണ്ടാകാതിരിക്കാൻ വേണ്ട ക്രമീകരണങ്ങൾ നടത്തുന്നതാണ്. ഇക്കാര്യത്തിൽ ബന്ധപ്പെട്ട അധികാരികളുടെ നിർദ്ദേശങ്ങൾ പാലിക്കുന്നതാണ്.
3. സ്വീകരിക്കാവുന്നതല്ലാത്ത അമിതമായ ഉപയോഗം മൂലം പരിസ്ഥിതിയെ കൽക്കി പ്രയാസമുണ്ടാക്കുകയില്ല കമ്പനിയുടെ പേരിലുള്ള എക്സ്പ്ലോഷീവ് ലൈസൻസ് പ്രകാരം വാങ്ങുന്ന സ്വീകരിക്കാവുന്നതല്ലാത്ത ഉപയോഗം മൂലം പ്രശ്നം സമർപ്പണം ഖനനം നടത്തുകയുള്ളൂ.
4. സമീപവാസികളിൽ നിന്നും പരാതിക്ക് ഇടവരാത്തവിധത്തിൽ മാത്രമേ ഖനന പ്രവർത്തനം നടത്തുകയുള്ളൂ.



Subscribed before me.

 K.P. Subhadran, B.Sc., LL.B.
 Advocate & Notary
 in Revenue Dist. Palthana


 കോൺസൾട്ടന്റ്



18808
 26-07-19



(3)

5. ക്വാറിയിൽ ജോലിചെയ്യുന്ന തൊഴിലാളികൾക്കും ക്വാറിയുമായി ബന്ധപ്പെട്ട് പ്രവർത്തിക്കുന്നവർക്കും മറ്റ് പൊതുജനങ്ങൾക്കും ക്വാറിപ്രവർത്തനം മൂലം അപകടങ്ങൾ സംഭവിക്കാതിരിക്കുന്നതിന് വേണ്ടിയുള്ള സുരക്ഷാക്രമീകരണങ്ങൾ ക്വാറിയിലും പരിസരത്തും നടത്തുന്നതാണ്. ക്വാറിക്ക് ചുറ്റും ഫെൻസിങ്ങ് ആവശ്യമുള്ളപക്ഷം ഫെൻസിങ്ങ് നടത്തുന്നതാണ്.

6. അപേക്ഷയോടൊപ്പം ഹാജരാക്കിയിരിക്കുന്ന രേഖകളിലൊന്നുംതന്നെ തെറ്റായ വിവരങ്ങളോ, വ്യാജരേഖകളോ ഇല്ലാത്തതാണ്.

അപേക്ഷയോടൊപ്പം ഹാജരാക്കിയ സമ്മതപത്രങ്ങൾക്ക് ഇപ്പോഴും നിയമ സാധ്യതയുള്ളതാണെന്ന് ഞാൻ ഉറപ്പുനൽകുന്നു. ഈ രേഖകളിൽ ഒപ്പിട്ടിരിക്കുന്നത് ഇതുമായി ബന്ധപ്പെട്ട വ്യക്തികൾ മാത്രമാണ്. സമ്മതപത്രം നൽകിയ വ്യക്തികൾക്ക് ഇപ്പോഴും ഇന്ത്യൻ പൗരത്വമുള്ളതാണ്.

കമ്പനിസംബന്ധിച്ച് ഞാൻ ഹാജരാക്കിയ എല്ലാ രേഖകളും നിയമാനുസൃതമായതും നിലവിൽ സാധ്യതയുള്ളതുമാണ്. ക്വാറിയോട് ചേർന്ന് കിടക്കുന്ന റവന്യൂ പുറംമ്പോക്കിൽനിന്നും ഞാൻ അനധികൃത ഖനനം നടത്തുന്നതല്ല.

അപ്രകാരം ഖനനം നടത്തുന്നപക്ഷം ഉത്തരവാദി സ്ഥാപനം തന്നെയാണെന്ന് എനിക്ക് ബോദ്ധ്യപ്പെട്ടിട്ടുണ്ട്. അപ്രകാരം ഖനനം നടത്തുന്ന പക്ഷം സ്ഥാപനത്തിനെതിരെ ഉണ്ടായോക്കാവുന്ന ഏതൊരു നടപടിക്കും ഞാൻ തടസ്സം നീൽക്കുന്നതല്ല. അപേക്ഷയോടൊപ്പം ഹാജരാക്കിയിരിക്കുന്ന രേഖകളിൽ തെറ്റായ വിവരങ്ങൾ ഉണ്ടെന്നോ ഏതെങ്കിലും രേഖകൾ വ്യാജമാണെന്നോ തെളിയുന്നപക്ഷം ആയതിന്റെപൂർണ്ണ ഉത്തരവാദിത്വം സ്ഥാപനത്തിന്റേതാണെന്ന് എനിക്ക് ബോദ്ധ്യപ്പെട്ടിട്ടുണ്ട്.



Reg. No. 24/10/PTA
P. Subhas: Bsc, LLB
Advocate & Notary
in Revenue Dist. Pathanamthitta

ഞാൻ എഴുതിച്ചു

(4)

അപ്രകാരമുള്ള സ്ഥാപനത്തിന്റെ പ്രവൃത്തിക്കെതിരെ ഏതർത്ഥമനടപടിയും സ്വീകരിക്കുന്നതിന് തടസ്സമില്ലാത്തതും തെറ്റായ വിവരങ്ങൾ നൽകുകയോ വ്യാജരേഖകൾ നൽകിയോ ആണ് ബാൻ അനുമാതി സമ്പാദിച്ചതെന്ന് തെളി യുന്ന പക്ഷം സ്ഥാപനത്തിന് അനുവദിച്ച അനുമാതികൾ റദ്ദ്ചെയ്യുന്നതിന് ഏനിക്ക് പൂർണ്ണസമ്മതമാണ്. അപേക്ഷയിലും അപേക്ഷയോടൊപ്പം ഹാജ രാക്കിയ രേഖകളിലും ബന്ധപ്പെട്ട ഉദ്യോഗസ്ഥരോ ബന്ധപ്പെട്ട വ്യക്തികളോ മാത്രമാണ് ഒപ്പിട്ടിരിക്കുന്നത്. മേൽ വിവരങ്ങൾ സത്യമാണ്.

ക്രമനമ്പർ	ആനാദന നമ്പർ	കണ്ടപ്പേർ നമ്പർ	സർവ്വേ നമ്പർ	കൈവരം സ്ഥലം ഹെക്ടറിൽ	അപേക്ഷിക്കുന്ന സ്ഥലം ഹെക്ടറിൽ
1.	1161/18	15865	889/1-15-1	3.3690	3.3644
2.	1921/10	12994	889/1-15	0.4047	0.4047
			ആകെ	3.7737	3.7691

പേര് : തോമസ് ഫിലിപ്പ്

ഒപ്പ് :

സാക്ഷികൾ



1. പേര്

2. പേര്



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SP No 119 Date 30/4/19

Solemnly affirmed and Signed
before me on this 1st day of
July 2019

Reg. No. 041180 PTA
K.P. Subhash Kumar Bsc, LLB
Advocate & Notary
In Revenue Dist. Pathanamthitta

No 540/2019

സാക്ഷ്യപത്രം

ശ്രീജിബു ജോസ്, പുത്തൻവീട്ടിൽ, പൊട്ടംമുഴി, ഗ്രാമപി.ഒ. 2018 ആം ആണ്ട് പെരുനാട് സബ് റജിസ്ട്രാർ ഓഫീസിലെ ഒന്നാം ഫുസ്ടകം 731 ആം വാല്യം 13 മുതൽ 18 വരെ വശങ്ങളിൽ 1161 ആം നമ്പർ കൂട്ടവകാശ ഒഴിവുകുറി ആധാര പ്രകാരവും പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ, പെരുനാട് വില്ലേജിലെ 15865 ആം നമ്പർ തണ്ടപ്പേർ പ്രകാരം സർവ്വേ നമ്പർ 889/1-15-1 ൽ 3.3690 ഹെക്ടർ സ്ഥലവും ശ്രീ.നൗഷാദ്, പുത്തൻ പീടികയിൽ പൊട്ടംമുഴി, ഗ്രാമപി.ഒ. 2010 ൽ പെരുനാട് സബ് റജിസ്ട്രാർ ഓഫീസിലെ ഒന്നാം ഫുസ്ടകം 375 ആം വാല്യം 215 മുതൽ 218 വരെ വശങ്ങളിൽ 1921 ആം നമ്പർ തീറാധാരപ്രകാരവും പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ, പെരുനാട് വില്ലേജിലെ തണ്ടപ്പേർ നമ്പർ 12994 പ്രകാരം, സർവ്വേ നമ്പർ 889/1-15-1 ൽ 40 ആർ 47 ച. മീറ്റർ സ്ഥലവും ചേർത്ത് ആകെ 3.7737 ഹെക്ടർ വസ്തുവിൽ നിന്നും കരിങ്കല്ല് ഖനനം ചെയ്യാൻ ഉദ്ദേശിക്കുന്ന 3.7691 വസ്തുവിന്റെ അതിരുകൾ ഇരുമ്പ് പിണ്ണുകൾ സ്ഥാപിച്ചു വേർതിരിച്ചിട്ടുണ്ടെന്നു സാക്ഷ്യപ്പെടുത്തി മൈനിങ്ങ് ആന്റ് ജിയോളജി പത്തനംതിട്ട ഓഫീസിൽ ഹാജരാക്കാൻ അനുവദിച്ചു.

പെരുനാട്

25-07-2019



[Signature]
VILLAGE OFFICER,
PERUNAD



No 540/2019.

സാക്ഷ്യപത്രം

ശ്രീജിബു ജോസ്, പുത്തൻവീട്ടിൽ, പൊട്ടംമുഴി, ഗ്രാഹ.പി.ഒ. 2018 ആം ആണ്ട് പെരുനാട് സബ് റജിസ്ട്രാർ ഓഫീസിലെ ഒന്നാം ഫുസ്തകം 731-ആം വാല്യം 13 മുതൽ 18 വരെ വശങ്ങളിൽ 1161-ആം നമ്പർ കൂട്ടവകാശ ഒഴിവുകുറി ആധാര പ്രകാരവും പത്തനംതിട്ട ജില്ലയിൽനിന്നി താലൂക്കിൽ, പെരുനാട് വില്ലേജിലെ 15865-ആം നമ്പർ തണ്ടപ്പേർ പ്രകാരം സർവ്വേ നമ്പർ 889/ 1-15-1 ൽ 3.3690 ഹെക്ടർ സ്ഥലവും ശ്രീ.നൗഷാദ്, പുത്തൻ പീടികയിൽ, പൊട്ടംമുഴി, ഗ്രാഹ.പി.ഒ. 2010 ൽ പെരുനാട് സബ് റജിസ്ട്രാർ ഓഫീസിലെ ഒന്നാം ഫുസ്തകം 375 ആം വാല്യം 215 മുതൽ 218 വരെ വശങ്ങളിൽ 1921-ആം നമ്പർ തീറാധാരപ്രകാരവും പത്തനംതിട്ട ജില്ലയിൽനിന്നി താലൂക്കിൽ, പെരുനാട് വില്ലേജിലെ തണ്ടപ്പേർ നമ്പർ 12994 പ്രകാരം, സർവ്വേ നമ്പർ 889/1-15-ൽ 40 ആർ 47 ച. മീറ്റർ സ്ഥലവും ചേർത്ത് ആകെ 3.7737 ഹെക്ടർ ഭൂമി റവന്യൂ വകുപ്പ് മറ്റ് പ്രത്യേക ആവശ്യങ്ങൾക്ക് പതിച്ചു കൊടുത്തതല്ലെന്നും റിസർവ് വനത്തിന്റേ പരിധിയിൽ ഉൾപ്പെട്ടതല്ലെന്നും ടി ഭൂമിയിന്മേൽ കോടതി അറ്റാച്ച്മെന്റുകൾ മറ്റ് ബാങ്ക് ബാധ്യതകളോ ഇല്ലായെന്നും ടി ഭൂമി ആദിവാസി വിഭാഗങ്ങൾക്ക് അവകാശപ്പെട്ടതല്ലായെന്നും ടി ഭൂമിയുടെ 100 മീറ്റർ പരിധിയിൽ ആദിവാസി സെറ്റിൽമെന്റുകൾ ഇല്ലാ എന്നും സാക്ഷ്യപ്പെടുത്തി മൈനിൽ ആൻഡ് ജിയോളജി പത്തനംതിട്ട ഓഫീസിൽ ഹാജരാക്കാൻ അനുവദിച്ചു.

പെരുനാട്

25-07-2019



[Signature]
VILLAGE OFFICER
PERUNAD





കേരളം KERALA

31AA 455361

AFFIDAVIT

I, Thomas Philip, Managing Director, Delta Aggregates and Sand Pvt Ltd, Chittar, Pathanamthitta do hereby solemnly affirm and state as follows :-

Delta Aggregates and Sand Pvt Ltd have filed the upto date income tax returns, paid the Income Tax assessed thereon and paid the Income Tax on the basis of self-assessment as per the provisions contained in the Income Tax Act 1961.

What is stated above are true to the best of my knowledge and belief.

Dated this the 30th day of August 2019

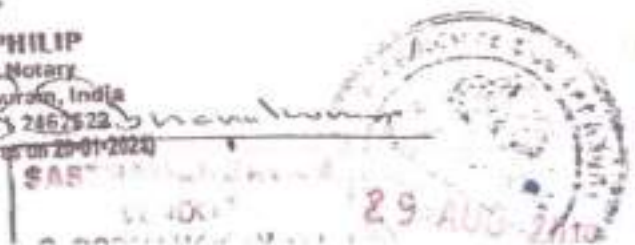
ATTESTED

[Signature]
20-8-2019

GEORGE PHILIP
Advocate & Notary
Thiruvananthapuram, India
Phone: +91 473 2862522
(My Commission Expires on 20-01-2024)

Deponent: Thomas Philip

Thomas Philip
Managing Director





കേരളം കേരള KERALA

CD 931018

സത്യവാങ്മൂലം

2019 ജൂലൈ മാസം 26-ാം തീയതി മൈസൂർ ജില്ലയിൽ ഡയറക്ടർ മുൻപാകെ ഡെൽറ്റ അഗ്രിഗേറ്റിംഗ് ആൻഡ് സാൽവ് പ്രൈവറ്റ് ലിമിറ്റഡ് കമ്പനിയുടെ ഡയറക്ടറായ പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ വടശ്ശേരിക്കര വില്ലേജിൽ ചെറുകുളങ്ങര എന്ന സ്ഥലത്ത് താമസം ചെയ്യുന്ന വില്ലേജിൽ വീട്ടിൽ ഫിലിപ്പ് എന്നയാളുടെ മകൻ അമൽ ഫിലിപ്പ് ടി കമ്പനി കൗവേണ്ടി ബോധിപ്പിക്കുന്ന സത്യവാങ്മൂലം.

പത്തനംതിട്ട ജില്ലയിൽ റാന്നി താലൂക്കിൽ ചെറുകുളങ്ങര വില്ലേജിൽ താമസം ചെയ്യുന്ന പട്ടികയിൽ വിവരിച്ചിട്ടുള്ള സ്ഥലങ്ങളിൽ നിന്നും കരിങ്കൽ ഖനനം ചെയ്യുന്നതിന് അനുമതി തൽക്ഷണപക്ഷം താഴെ പറയുന്ന കാര്യങ്ങൾ നിർവ്വഹിക്കു മെന്ന് അമൽ അനുമതിക്കുകയും ഉറപ്പുനൽകുകയും ചെയ്യുന്നു.



Reg. No. 04/10/PTA
K.P. Subhash Kumar Bsc, LLB
Advocate & Notary
in Revenue Dist. Pathanamthitta

1000/18507
26-07-19.

S. Subhash Kumar





കേരളം കേരള KERALA

CD 931019

1. അംഗീകരിച്ച ടൈംലൈൻസ് പ്ലാൻ പ്രകാരം ഖനനം നടത്തുന്നതാണ്.
2. ഖനനപ്രവർത്തനം മൂലം പരിസരമലിനീകരണവും ചാര്യസ്ഥി പ്രശ്നങ്ങളും ഉണ്ടാകാതിരിക്കാൻ വേണ്ട ശ്രമകരണങ്ങൾ നടത്തുന്നതാണ്. ഇക്കാര്യത്തിൽ ബന്ധപ്പെട്ട അധികാരികളുടെ നിർദ്ദേശങ്ങൾ പാലിക്കുന്നതാണ്.
3. സ്പോടകവസ്തുക്കളുടെ അമിതമായ ഉപയോഗം മൂലം പരിസരവാസി കൾക്ക് പ്രയാസമുണ്ടാവുകയില്ല കമ്പനിയുടെ പേരിലുള്ള എക്സ്‌പ്ലോസിവ് ലൈസൻസ് പ്രകാരം വാങ്ങുന്ന സ്പോടകവസ്തുക്കൾ ഉപയോഗിക്കുമ്പോൾ ശ്രമം സ്ഥാപനം ഖനനം നടത്തുകയുള്ളൂ.
4. സമീപവാസികളിൽ നിന്നും പരാതിക്ക് ഇടവരാത്തവിധത്തിൽ മാത്രമേ ഖനന പ്രവർത്തനം നടത്തുകയുള്ളൂ.



കോൺസിൽ

18808
26-07-19

S. Subhaskar



(3)

5. ക്വാറിയിൽ ജോലിചെയ്യുന്ന തൊഴിലാളികൾക്കും ക്വാറിയുമായി ബന്ധപ്പെട്ട് പ്രവർത്തിക്കുന്നവർക്കും മറ്റ് പൊതുജനങ്ങൾക്കും ക്വാറിപ്രവർത്തനം മൂലം അപകടങ്ങൾ സംഭവിക്കാതിരിക്കുന്നതിന് വേണ്ടിയുള്ള സുരക്ഷാക്രമീകരണങ്ങൾ ക്വാറിയിലും പരിസരത്തും നടത്തുന്നതാണ്. ക്വാറിക്ക് ചുറ്റും ഫെൻസിംഗ് ആവശ്യമുള്ളപക്ഷം ഫെൻസിങ് നടത്തുന്നതാണ്.
6. അപേക്ഷയോടൊപ്പം ഹാജരാക്കിയിരിക്കുന്ന രേഖകളിലൊന്നുംതന്നെ തെറ്റായവിവരങ്ങളോ, വ്യാജരേഖകളോ ഇല്ലാത്തതാണ്.

അപേക്ഷയോടൊപ്പം ഹാജരാക്കിയ സാക്ഷ്യപത്രങ്ങൾക്ക് ഇപ്പോഴും നിയമ സാധുതയുള്ളതാണെന്ന് ഞാൻ ഉറപ്പുനൽകുന്നു. ഈ രേഖകളിൽ ഒപ്പിട്ടിരിക്കുന്നത് ഇതുമായി ബന്ധപ്പെട്ട വ്യക്തികൾ മാത്രമാണ്. സാക്ഷ്യപത്രം നൽകിയ വ്യക്തികൾക്ക് ഇപ്പോഴും ഇന്ത്യൻ പൗരത്വമുള്ളതാണ്.

കമ്പനിസംബന്ധിച്ച് ഞാൻ ഹാജരാക്കിയ എല്ലാ രേഖകളും നിയമാനുസൃതമായതും നിലവിൽ സാധുതയുള്ളതുമാണ്. ക്വാറിയോട് ചേർന്ന് കിടക്കുന്ന റവന്യൂ പുറംമ്പോക്കിൽനിന്നും ഞാൻ അനധികൃത ഖനനം നടത്തുന്നതല്ല.

അപ്രകാരം ഖനനം നടത്തുന്നപക്ഷം ഉത്തരവാദി സ്ഥാപനം നൽകുന്നതാണ് എനിക്ക് ബോദ്ധ്യപ്പെട്ടിട്ടുള്ളത്. അപ്രകാരം ഖനനംനടത്തുന്ന പക്ഷം സ്ഥാപനത്തിനെതിരെ ഉണ്ടായോക്കാവുന്ന ഏതൊരു നടപടിക്കും ഞാൻ തടസ്സം നൽകുന്നതല്ല. അപേക്ഷയോടൊപ്പം ഹാജരാക്കിയിരിക്കുന്ന രേഖകളിൽ തെറ്റായ വിവരങ്ങൾ ഉണ്ടെന്നോ ഏതെങ്കിലും രേഖകൾ വ്യാജമാണെന്നോ തെളിയുന്നപക്ഷം ആയതിന്റെപൂർണ്ണ ഉത്തരവാദിത്വം സ്ഥാപനത്തിന്റേതാണെന്ന് എനിക്ക് ബോദ്ധ്യപ്പെട്ടിട്ടുണ്ട്.



by/for me

ഞാൻ ചിട്ടപ്പാ

Reg. No. 3410/PTA
K.P. Subhas: Bsc, LLB
Advocate & Notary
in Revenue Dist. Pathanamthitta

(4)

അപ്രകാരമുള്ള സ്ഥാപനത്തിന്റെ പ്രവൃത്തിക്കെതിരെ ഏതീയമനഃപദിയും സ്വീകരിക്കുന്നതിന് തടസ്സമില്ലാത്തതും തെറ്റായ വിവരങ്ങൾ നൽകുകയോ വ്യാജരേഖകൾ നൽകിയോ ആണ് ഞാൻ അനുമാതി സമ്പാദിച്ചതെന്ന് തെളിയിക്കുന്ന പക്ഷം സ്ഥാപനത്തിന് അനുവദിച്ച അനുമാതികൾ റദ്ദുചെയ്യുന്നതിന് ഏതീയ പൂർണ്ണസമ്മതമാണ്. അപേക്ഷയിലും അപേക്ഷയോടൊപ്പം ഹാജരാക്കിയ രേഖകളിലും ബന്ധപ്പെട്ട ഉദ്യോഗസ്ഥരോ ബന്ധപ്പെട്ട വ്യക്തികളോ മാത്രമാണ് ഒപ്പിട്ടിരിക്കുന്നത്. മേൽ വിവരങ്ങൾ സത്യമാണ്.

ക്രമനമ്പർ	ആധാരനമ്പർ	ജെ.പി. നമ്പർ	സർവ്വേ നമ്പർ	കൈവരം നമ്പരം ഹെക്ടറിൽ	അപേക്ഷിക്കുന്ന നമ്പരം ഹെക്ടറിൽ
1.	1161/18	15865	889/1-15-1	3.3690	3.3644
2.	1921/10	12994	889/1-15	0.4047	0.4047
			ആകെ	3.7737	3.7691

പേര് : തോമസ് ഫിലിപ്പ്

ഒപ്പ് :

സാക്ഷികൾ



1. പേര്

2. പേര്

[Handwritten signature]

തോമസ് ഫിലിപ്പ്



Volume V Page 64
SP No 119 Date 30/7/19

Solemnly affirmed and Signed before me on this 16th 20th day of July 2019

REG. No. 04/105PTA
K.P. Subhash Kumar BSc, LLB
Advocate & Notary
In Revenue Dist. Palaniam



GLOBAL Environment & Mining Services

(Analytical Laboratory, Consulting Engineers, Mass designers, Geologist & Surveyors)

3rd Main Road, Brahmavaram Badamane, HOSAPETE - 583201.

Dist., Bellary (Karnataka) Ph: +91-8394 651111, 229433

e-mail : gems_hpt@rediffmail.com, gems_hpt@gmail.com, Website: www.globalmining.in



Certificate No: TC-5323

GEMS-LD/TF/11/01

Date: 19.01.2020

Analysis Report of Ambient Air Quality Monitoring

- | | |
|-----------------------------------|--|
| 1 Name of the Customer/Address | Granite Building Stone Quarry of
M/s. Delta Aggregates & Sand Private Limited,
Extent 3.7691 Ha (9.3134)
Sy. Nos. 889/1-15-1, 889/1-15
Perunad Village, Ramni taluk,
Pathanamthitta District, Kerala State. |
| 2 Sample Description | Ambient Air Quality Monitoring |
| 3 Sample Collected By | GLOBAL Environment & Mining Services |
| 4 Particulars of Sample Collected | Combined Sampler (GTI-241) |
| 5 Duration of the Monitoring | 24 Hour of Sampling |
| 6 Name of the Station | Core zone area (A1) |
| 7 Sample Received | 15.01.2020 |
| 8 Date of Analysis | 16.01.2020 |
| 9 Date of Analysis Completion | 18.01.2020 |
| 10 Sample Code | GEMS/GBSQDASPL/AAQM/2019-20/1779 |
| 11 Report Number | ULR-TC5323200000001F |

Results

Date of Monitoring	PM10 [$\mu\text{g}/\text{m}^3$]	PM2.5 [$\mu\text{g}/\text{m}^3$]	SO ₂ [$\mu\text{g}/\text{m}^3$]	NO ₂ [$\mu\text{g}/\text{m}^3$]
	IS : 5182: (Part 23) 2006 (RA 2012)	USEPA 2001	IS : 5182: (Part 2) 2001 (RF 2014)	IS : 5182: (Part 6) 2006 (RF 2014)
13.01.2020	35.8	18.2	7.4	6.6
Standard	100	60	80	80

INFERENCE

As per CPCB Standards,

Report Status: - Measured Values for the above parameters are within the limit.

End of Report

Analysed By
J.M. Thippeswamy
Chemist



Authorized Signatory
K. Kameshwar Reddy
Technical Manager

Note:

- The result listed refers only to the tested samples & applicable parameters. Undertaking of analysis is not warranted nor implied.
- Water Samples will be destroyed after 15 Days, Minerals 3 Months, Filter papers & Thinners 1 Year and H.C samples from the date of issue of Month test certificate unless otherwise specified.
- This report is not to be reproduced wholly or in part & cannot be used as evidence in the Court of law. It should not use any advertising media without special permission in writing.
- Total liability of our laboratory is limited to the fee/contract amount. Any dispute arising out of this report is subject to Bangalore jurisdiction only.



GEM NO:

**GLOBAL Environment & Mining Services**

(Analytical Laboratory, Consulting Engineers, Mine designers, Geologist & Surveyors)

3rd Main Road, Banavara Basavara, HOSAPETE - 583201,

Dist., Bellary (Karnataka). Ph: +91-8394 651111, 229433

e-mail : gems_hpt@yahoo.com, gems.hpt@gmail.com, Website: www.globalmining.in

Certificate No: TC-5323

GEMS-LD/TF/11/01

Date: 19.01.2020

Analysis Report of Ambient Air Quality Monitoring

- 1 Name of the Customer/Address : Granite Building Stone Quarry of
M/s. Delta Aggregates & Sand Private Limited,
Extent 3.7691 Ha (9.3134)
Sy. Nos. 889/1-15-1, 889/1-15
Perunad Village, Ramni taluk,
Pathanamthitta District, Kerala State.
- 2 Sample Description : **Ambient Air Quality Monitoring**
- 3 Sample Collected By : GLOBAL Environment & Mining Services
- 4 Particulars of Sample Collected : Combined Sampler (GTI-241)
- 5 Duration of the Monitoring : 24 Hour of Sampling
- 6 Name of the Station : **Pottammuzhi (A2)**
- 7 Sample Received : 15.01.2020
- 8 Date of Analysis : 16.01.2020
- 9 Date of Analysis Completion : 18.01.2020
- 10 Sample Code : GEMS/ GBSQDASPL/AAQM/2019-20/1780
- 11 Report Number : ULR-TC5323200000002F

Results

Date of Monitoring	PM10 [$\mu\text{g}/\text{m}^3$]	PM2.5 [$\mu\text{g}/\text{m}^3$]	SO ₂ [$\mu\text{g}/\text{m}^3$]	NO ₂ [$\mu\text{g}/\text{m}^3$]
	IS: 5182: (Part 23) 2006 (RA 2012)	USEPA 2001	IS: 5182: (Part 2) 2001 (RF 2014)	IS: 5182: (Part 6) 2006 (RF 2014)
14.01.2020	38.2	19.5	10.8	9.6
Standard	100	60	80	80

INFERENCE	As per CPCB Standards, Report Status: - Measured Values for the above parameters are within the limit. **End of Report**
-----------	--

Analysed By
J.M. Thippeswamy
Chemist

**Note:**

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
- Water Samples will be destroyed after 15 Days, Minerals 3 Months, Filter papers & Thinners 7 Days and D.C samples from the date of issue of Month test certificate unless otherwise specified.
- This report is not to be reproduced wholly or in part & cannot be used as evidence in the Court of law & should not be used for advertising media without special permission in writing.
- Total liability of our laboratory is limited to the invoice amount. Any dispute arising out of this report is subject to Hosapete jurisdiction only.



GEMMS

**GLOBAL Environment & Mining Services**

(Analytical Laboratory, Consulting Engineers, Mine designers, Geologist & Surveyors)

3rd Main Road, Basavegowda Badavara, HOSAPETE - 583201,

Dist., Bellary (Karnataka). Ph: +91-8394 651111, 229433

e-mail : gemms_hpt@yahoo.com, gemmslab_hpt@gmail.com, Website: www.globalmining.in



Certificate No: TC-5323

GEMS-LD/TF/08/01

Date: 19.01.2020

TEST REPORT OF AMBIENT NOISE LEVEL MONITORING

1	Name of the Customer/Address	Granite Building Stone Quarry of M/s. Delta Aggregates & Sand Private Limited, Extent 3.7691 Ha (9.3134) Sy. Nos. 809/1-15-1, 809/1-15 Perumal Village, Ramnathuk, Pathanamthitta District, Kerala State.
2	Sample Description	Ambient Noise Level Monitoring
3	Sample Collected By	GLOBAL Environment & Mining Services
4	Particulars of Sample Collected	Digital LCD Sound Level Meter (TD-6080-WIND)
5	Duration of the Monitoring	24 Hour of Sampling
6	Date of Sample Received	15.01.2020
7	Date of Analysis Completion	18.01.2020
8	Sample Code	GEMS/GRSQDASPL/ANLM/2019-20/1781 & 1782
9	Report Number	UJR-TCS3232000000003F

Date	13.01.2020	14.01.2020
Name of the Location	Core Zone N1	Pottammuzhi N2
Time (hrs)	N1	N2
6.00	37.2	39.4
7.00	39.4	42.2
8.00	41.8	46.6
9.00	41.6	48.2
10.00	41.5	48.2
11.00	44.6	48.4
12.00	45.5	48.8
13.00	45.2	48.4
14.00	45.6	48.8
15.00	45.8	48.0
16.00	45.6	47.6
17.00	46.4	47.2
18.00	46.2	47.0
19.00	46.0	46.6
20.00	46.0	46.2
21.00	40.4	41.0
22.00	38.0	38.1
23.00	34.6	35.4
00.00	34.8	35.0
01.00	34.4	35.0
02.00	34.6	35.0
03.00	34.4	35.2
04.00	34.8	35.6
05.00	34.4	35.8
Lmax	46.4	48.8
Lmin	34.4	35.0
Ld	44.58	47.22
Ln	36.18	36.76
Leq	45.3	47.1

****End of Report******Note:**

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
- Waste Samples will be destroyed after 10 Days, Minerals 1 Month, Filter papers & Sludges 7 Days and D.C samples from the date of issue of Month on certificate unless otherwise specified.
- This report is not to be reproduced wholly or in part & cannot be used as evidence in the Court of law & should not use any advertising media without special permission in writing.
- Total liability of our laboratory is limited to the invoice amount. Any dispute arising out of this report is subject to Hosapete jurisdiction only.

NOISE: (AMBIENT STANDARDS)

Area Code	Category of Area	Limit in dB(A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Area	50	40

Note	Day time shall mean from 6:30 am and 10:00 pm
	Night time shall mean from in between 10:00 pm and 5:00 am
	Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority
	Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority
	*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relative to human hearing
	A "decibel" is a unit in which noise is measured
	"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.
Leq. It is energy mean of the noise level over a specified period.	


 Authorized Signatory
 K. Ramesh Reddy
 Technical Manager



Note:

- The result listed refers only to the tested samples & applicable parameters. Extension of products is neither inferred nor implied.
- Water Samples will be preserved after (1)Days, Minerals (1) Month, Filter papers & Thin films 7 Days and H.C. samples from the date of issue of Month test certificate unless otherwise specified.
- This report is not to be reproduced wholly or in part & cannot be used as evidence in the Court of law & should not use any advertising media without special permission in writing.
- Test facility of our laboratory is limited to the invoice amount. Any dispute arising out of this report is subject to Manager's jurisdiction only.

Col. No.		(Pg No. 3-35)				
14	Oil & Grease	API(A 22nd Edition 2012 SS20 B (Pg No 5-40 to 5-41)	mg/L	NIL	-	-
15	Total Coliform count*	API(A 22nd Edition 2012 9222 B (Pg No 9-66) Membrane filter technique	MPN/100ml	Absent	Shall not be detectable in any 100 ml sample	-
23	Faecal coliform count*	API(A 22nd Edition 2012 9222 B (Pg No 9-66) Membrane filter technique	E.Coli/100ml	Absent	Shall not be detectable in any 100 ml sample	-

****End of report****


Analyzed By
K. Ramesh Yadav B.R.
Chemist


Authorized Signatory
K. Ramesh Yadav B.R.
Technical Manager



Note:

1. This report is valid only for the purpose for which it is issued. It does not cover any other parameters. Enforcement of products is neither inferred nor implied.
2. Water Samples will be stored for 1 month, 3 months, 6 months & 1 year samples from the date of issue of Month test certificate unless otherwise specified.
3. This report is not to be used as evidence in the Court of law & should not use any advertising media without special permission in writing.
4. Total liability of our laboratory is limited to the invoice amount. Any dispute arising out of this report is subject to Bangalore jurisdiction only.



GEM



GLOBAL Environment & Mining Services

(Analytical Laboratory, Consulting Engineers, Mine designers, Geologist & Surveyors)

3rd Main Road, Beaswara Badavane, HOSAPETE - 583201,

Dist., Bellary (Karnataka). Ph: +91-8394 651111, 229433

e-mail : gems_bhp@yahoo.com, gems@bhp@gmail.com, Website: www.globalmining.in

Certificate No: TC-5323

GEMS-LD/TF/23/01

Date: 19.01.2020

Analysis Report of Drinking Water

1 Name of the Customer/Address

2 Sample Collected By

3 Sample type

4 Name of the location

5 Date of Sample Collection

6 Date of Sample Received

7 Date of Sample Analyzed

10 Sample Code

11 ULR Number

Granite Building Stone Quarry of
M/s. Deha Aggregates & Sand Private Limited,
Extent 3.7691 Ha (9.3134)
Sy. Nos. 889/1-15-1, 889/1-15
Perund Village, Ramn taluk,
Pathanamthitta District, Kerala State.
GLOBAL Environment & Mining Services.
Well Water
Buffer area (WW1)
13.01.2020
15.01.2020
17.01.2020
GEMS/GBSQDASPL/WW/2019-20/1783
ULR-TC5323200000004F



Sl. No.	Parameters	Protocol	Unit	Results	Standards as per IS : 10500 : 2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 22 nd Edition 2012 4500 B (Pg No. 4-92 to 4-96)	-	7.40	6.5 to 8.5	No Relaxation
2.	Conductivity	APHA 22 nd Edition 2012 2510 B (Pg No. 2-54)	µS/cm	144	-	-
3.	Turbidity (NTU)	APHA 22 nd Edition 2012 2130 B (Pg No. 2-14)	NTU	0.20	1	5
4.	Total Dissolved Solids	APHA 22 nd Edition 2012 2540 B (Pg No. 2-65)	mg/L	152	500	2000
5.	Calcium as Ca	APHA 22 nd Edition 2012 3500 Ca B (Pg No. 3-84)	mg/L	20.0	75	200
6.	Magnesium as Mg	APHA 22 nd Edition 2012 3500 B-Mg By Calculation	mg/L	5.62	30	100
7.	Total Suspended Solids	APHA 22 nd Edition 2012 2540 B (Pg No. 2-65 to 2-67)	mg/L	1.42	-	-
8.	Dissolved Oxygen	IS 3025 (part 36) - 1989, ICA - 2014 Winkler titrimetric iodide modification	mg/L	7.60	-	-
9.	BOD 5 days at 20°C	IS 3025 (part 44) - 1993, RA-2014.	mg/L	NIL	-	-
10.	COD as O ₂	APHA 22 nd Edition 2012 2540 B (Pg No. 5-19 to 5-20)	mg/L	NIL	-	-
11.	Dissolved Phosphate as P	IS 3025 (part 36) - 1989, RA - 2014, Stannous chloride method	mg/L	<0.01	-	-
12.	Sodium as Na	APHA 22 nd Edition 2012 Na 3500 B (Pg No. 3-97 to 3-98)	mg/L	16.0	-	-
13.	Potassium as K	APHA 22 nd Edition 2012 3500 B (Pg No. 3-87 to 3-88)	mg/L	2.80	-	-
14.	Total Hardness as CaCO ₃	APHA 22 nd Edition 2012 2340 C (Pg No. 2-46)	mg/L	106.0	200	600
15.	Chloride as Cl	APHA 22 nd Edition 2012 4500 Cl (Pg No. 4-72)	mg/L	18.0	250	1000
16.	Total Iron as Fe	APHA 3500 B (Pg No. 3-77)	mg/L	0.18	0.30	No Relaxation
17.	Sulphate as SO ₄	APHA 22 nd Edition 2012 4500 SO ₄ 2 - E (Pg No. 4-190)	mg/L	98	200	400
18.	Fluoride as F	APHA 22 nd Edition 2012 4500 F-D (Pg No. 4-87 to 4-88)	mg/L	0.18	1	1.50
19.	Nitrate Nitrogen as NO ₃	APHA 22 nd Edition 2012 4500 NO ₃ E (Pg No. 4-175 to 4-177)	mg/L	10	45	No relaxation
20.	Total Alkalinity as	APHA 22 nd Edition 2320 B	mg/L	78.0	200	600

Note:

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is within inferred not implied.
- Water Samples will be destroyed after 15 Days, Minerals 1 Month, Filter papers & Thinlides 7 Days and R.C. samples from the date of issue of Month test certificate unless otherwise specified.
- This report is not to be reproduced wholly or in part & cannot be used as evidence in the Court of law & should not use any advertising media without special permission in writing.
- Total liability of our laboratory is limited to the invoice amount. Any dispute arising out of this report is subject to Bangalore jurisdiction only.

	CaCO ₃	(Pg No 2-35)				
21.	Chl & Germ	APHA 22 nd Edition 2012 5520 B (Pg No 5-40 to 5-41)	mg/l	NIL		-
22.	Total Coliform count*	APHA 22 nd Edition 2012 9222 B (Pg No 9-66) Membrane filter technique	MPN/ 100ml	Absent	Shall not be detectable in any 100 ml sample	-
23.	Escherichia coli count*	APHA 22 nd Edition 2012 9222 B (Pg No 9-66) Membrane filter technique	E. Coli/ 100ml	Absent	Shall not be detectable in any 100 ml sample	-

****End of report****


Analyzed By
Keerthana Yadav B.R
Chemist


Authorized Signatory
K. Ramakrishna Reddy
Technical Manager



Note:

1. The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
2. Water Samples will be destroyed after 15 days, Solids & Sludges 3 Months, Filter papers & Membranes 7 days and E.C. samples from the date of issue of Sludge test certificate unless otherwise specified.
3. This report is not to be reproduced wholly or in part & cannot be used as evidence in the Court of law & should not use any advertising media without specific permission in writing.
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NABL

National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION**GLOBAL ENVIRONMENT & MINING SERVICES**

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

3RD MAIN ROAD, HOSPET, BALLARI, KARNATAKA, INDIA

in the field of

TESTING

Certificate Number: TC-5323

Issue Date: 26/12/2019

Valid Until:

25/12/2021

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Signed for and on behalf of NABL

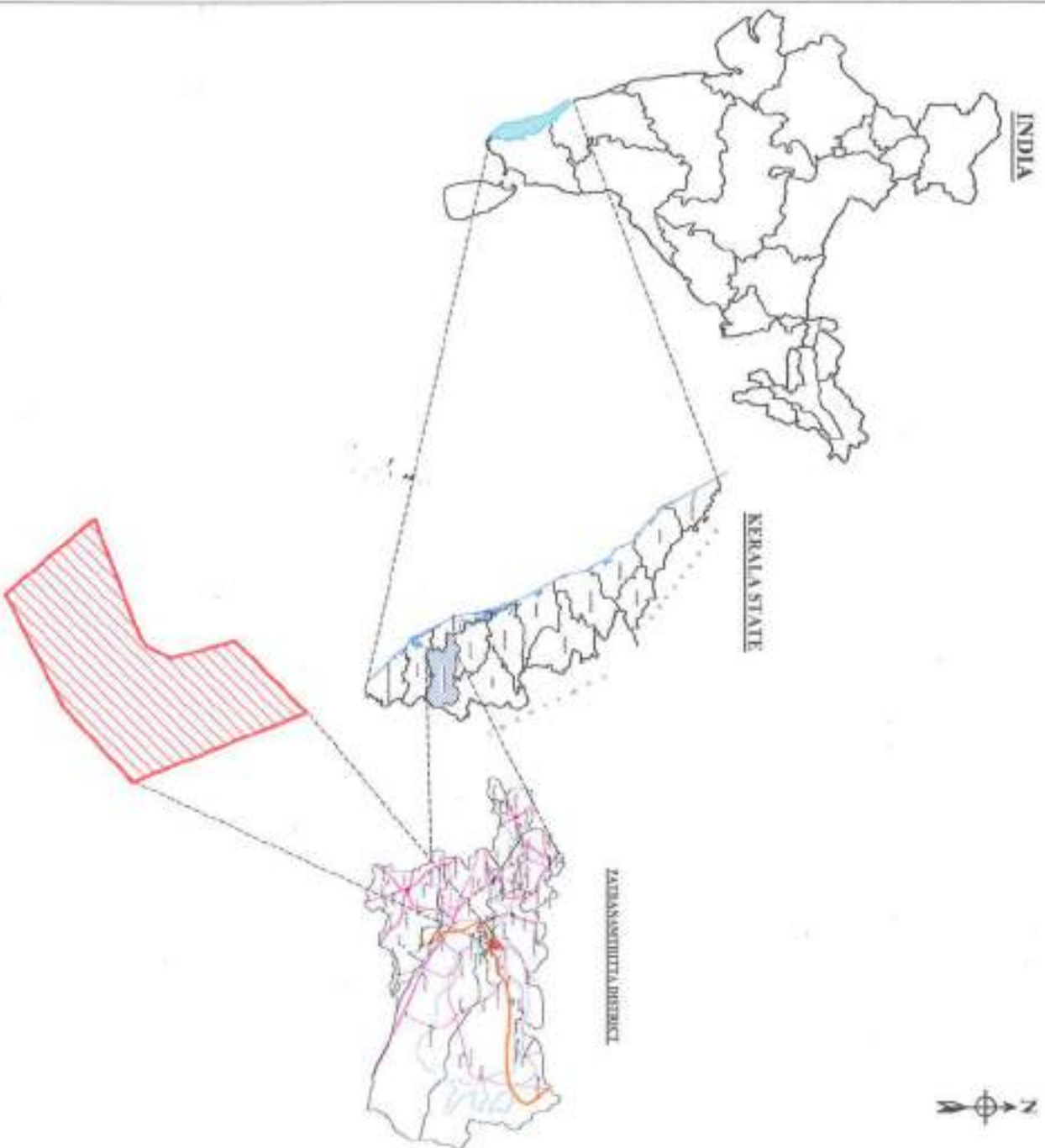


N. Venkateswaran
Chief Executive Officer



PLATES





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- QUARRY BOUNDARY
- DISTRICT BOUNDARY
- NATIONAL HIGHWAY
- MAJOR ROAD
- RIVER
- OTHER STOPS

PLATE NO. 1

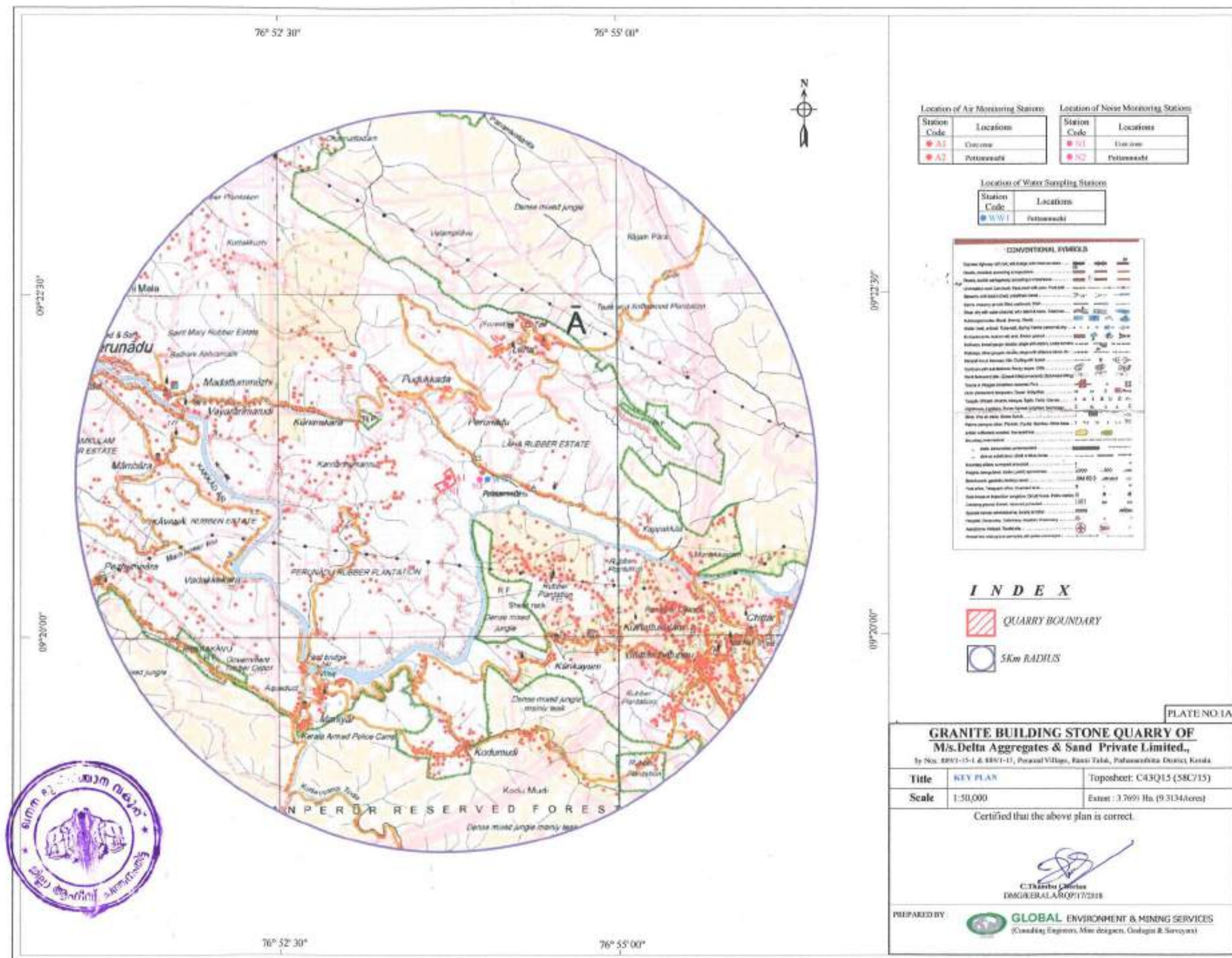
GRANITE BUILDING STONE QUARRY OF
M/s. Delta Aggregates & Sand Private Limited.,
 In the P.W.D. Survey No. 17, P.W.D. District, Zathankulam District.

Title ADMINISTRATIVE PLAN

Scale NTS 1:50,000 (1:10,000)

Certified that the above plan is correct.


 Director
 P.W.D., ZATHANKULAM DISTRICT



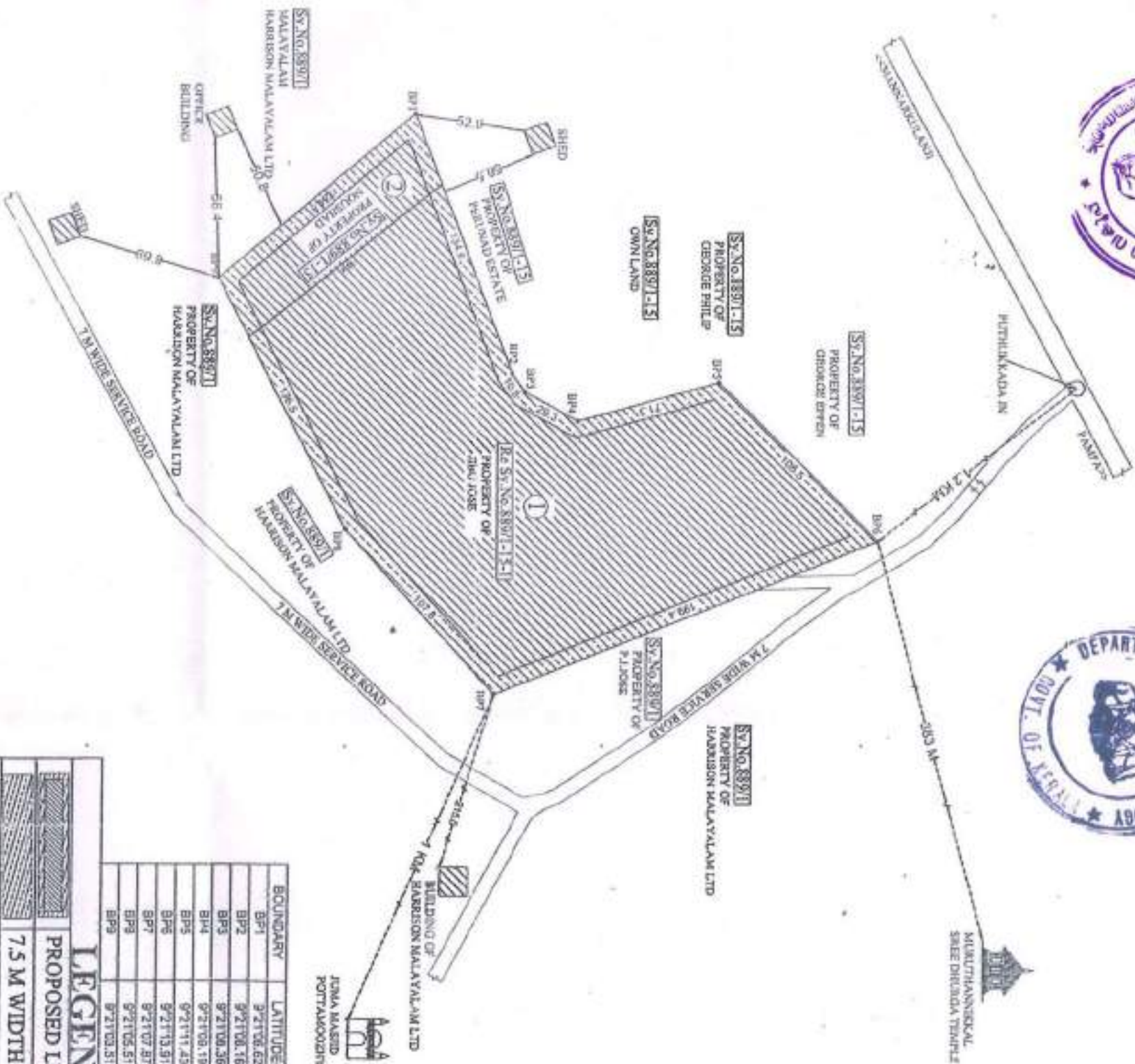
H1 - 5352/19

ILE NO
DISTRICT : PATHANAMTHITTA
TALUK : RANNI
VILLAGE : PERUNAD

SURVEY MAP

SURVEY MAP OF PROPOSED LEASE AREA OF MR. DELTA AGGREGATES AND SAND PVT LTD,
CHITTAR.P.O.PATHANAMTHITTA,KERALA-689663

SURVEY NO : 889/1-15-1,889/1-15
PROPOSED LEASE AREA = 3.7691 Ha



BOUNDARY	LATITUDE(N)	LONGITUDE(E)
BP1	9°21'08.62"N	76°53'55.04"E
BP2	9°21'08.16"N	76°53'43.17"E
BP3	9°21'08.36"N	76°53'43.87"E
BP4	9°21'08.19"N	76°53'43.93"E
BP5	9°21'11.43"N	76°53'43.32"E
BP6	9°21'13.91"N	76°53'45.85"E
BP7	9°21'07.87"N	76°53'48.24"E
BP8	9°21'05.51"N	76°53'45.67"E
BP9	9°21'03.51"N	76°53'41.63"E

LEGEND

	PROPOSED LEASE AREA
	7.5 M WIDTH BUFFER AREA
	HOUSE/BUILDING
	MAIN ROAD
	7 M WIDE SERVICE ROAD
	MOSQUE
	TEMPLE
	MINING AREA = 3.1020 Ha
	BUFFER AREA = 0.6671 Ha
	PROPOSED LEASE AREA = 3.7691 Ha
	SCALE 1CM:25M

DETAILS OF PROPERTY

No.	DOC.NO.	TP.NO	SY.NO.	TOTAL LAND AREA	BUFFER ZONE AREA	MINING AREA	TOTAL LEASE AREA	NAME OF OWNER
1	1161/18	15865	889/1-15-1	3.3690 Ha	0.5343 Ha	2.8301 Ha	3.3644 Ha	JIBU JOSE ✓
2	1921/10	12994	889/1-15	0.4047 Ha	0.1328 Ha	0.2719 Ha	0.4047 Ha	NOUSHAD ✓
TOTAL LAND				3.7737 Ha	0.6671 Ha	3.1020 Ha	3.7691 Ha	

THIS PLAN IS ISSUED TO SUBMIT BEFORE MINING AND GEOLOGY ACT, 1968 ENVIRONMENTAL IMPACT ASSESSMENT AUTHORITY



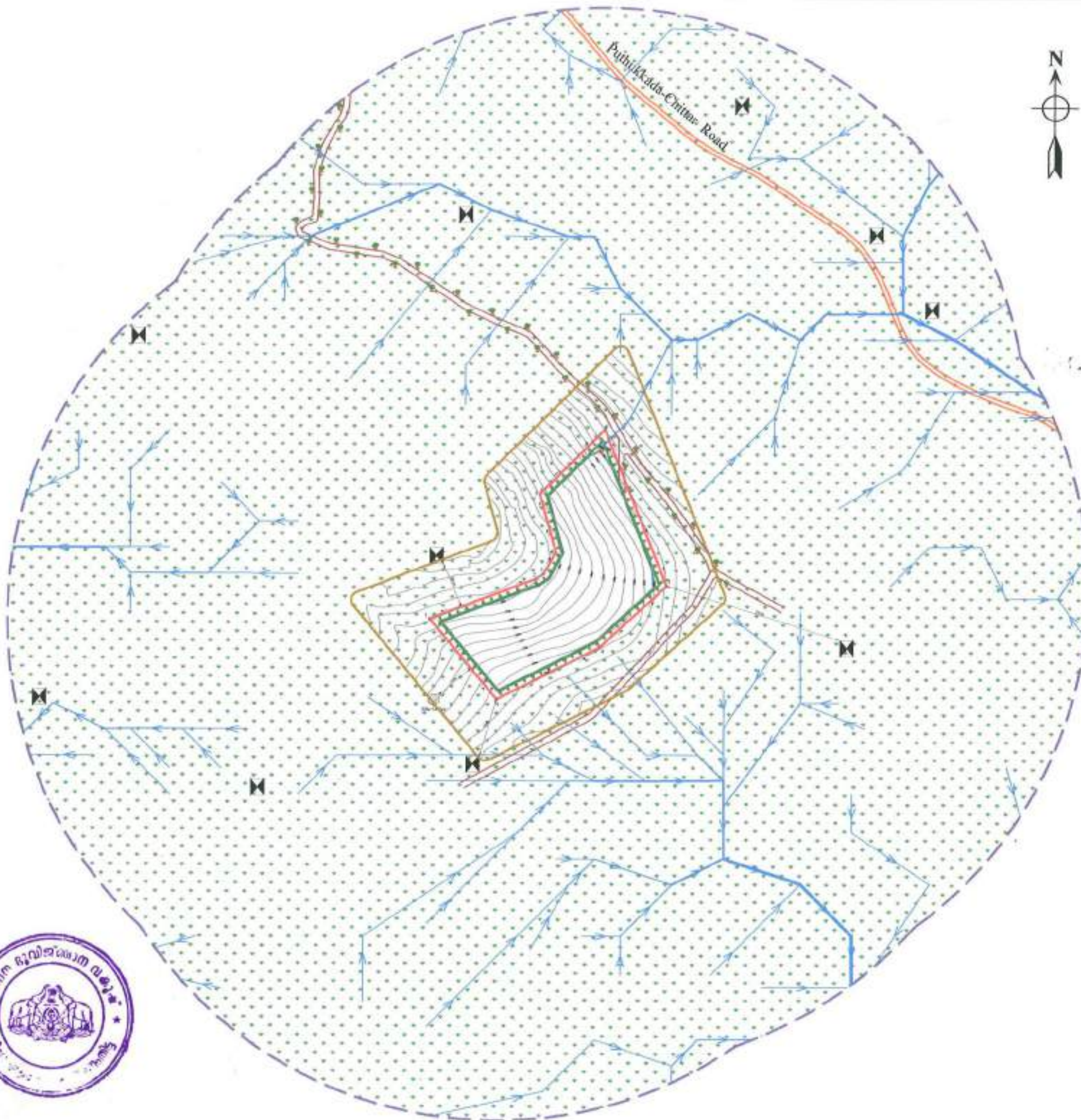
COUNTER SIGNED

Perunad

VILLAGE OFFICER

TALUK OFFICE, RANNI

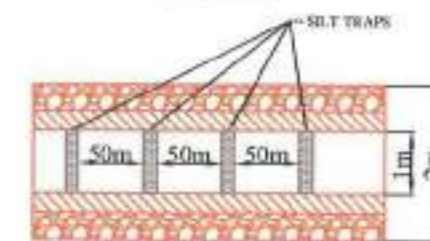
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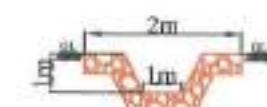
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- 500m LIMIT LINE
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- SST SILT SETTLING TANK
- RWH RAIN WATER HARVESTING POND
- DIRECTION OF NATURAL WATER FLOW
- HOUSES / SHEDS
- SITE OFFICE
- DIRECTION OF WATER FLOW

TYPICAL PLAN AND SECTIONS OF GARLAND DRAIN
SCALE :- NTS



GARLAND DRAIN PLAN



GARLAND DRAIN SECTION

PLATE NO.8

GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates & Sand Private Limited.,
By Nos.8891-151 & 8891-15, Pottuvil Village, Pottuvil Taluk, Pothumthi District, Kerala.

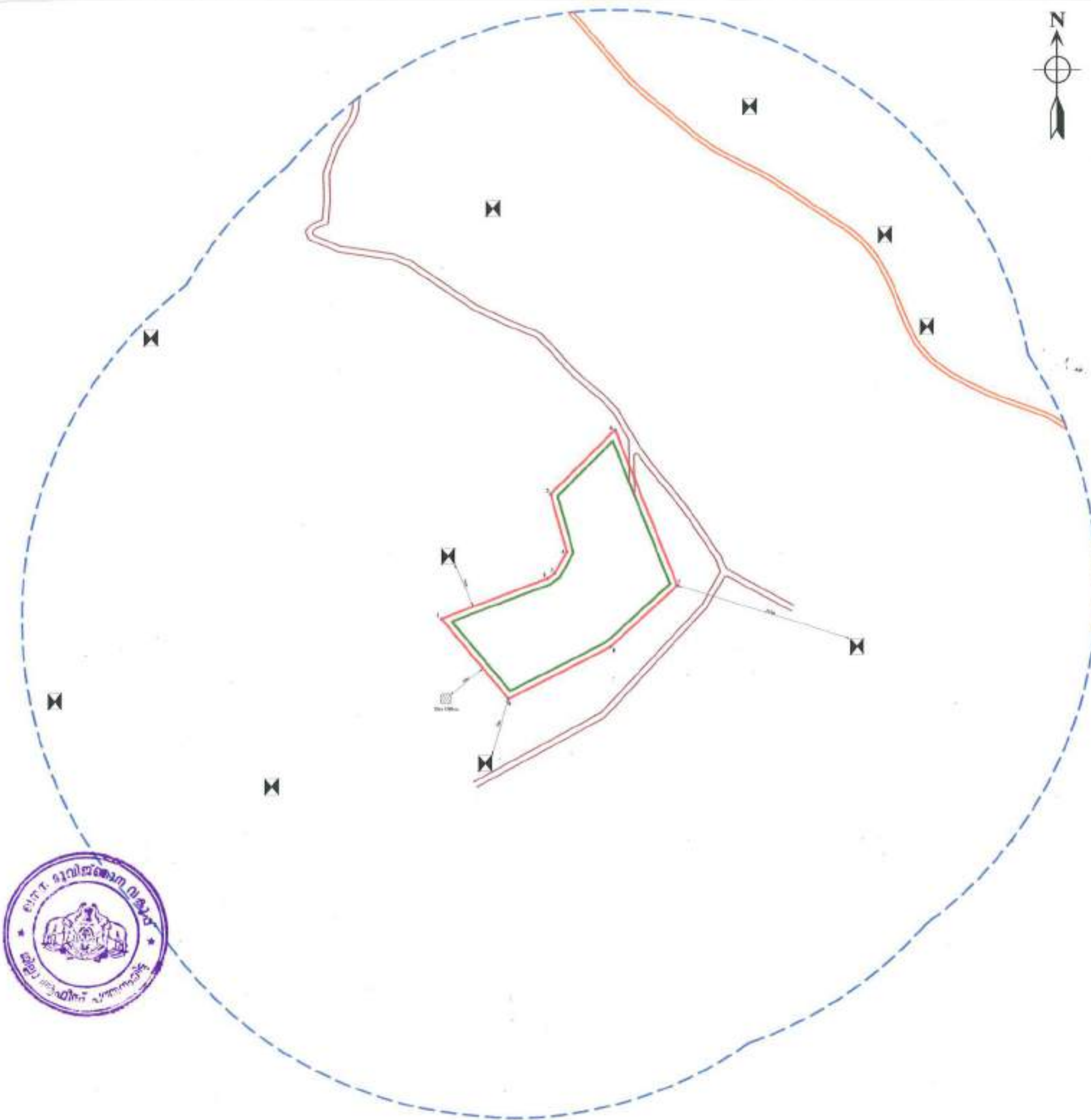
Title	ENVIRONMENT / DRAINAGE PLAN (Site plan showing all features of site & surroundings as per the plan)	
Scale	1:5000	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY:  GLOBAL ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mine designers, Geologists & Surveyors)





INDEX

- QUARRY BOUNDARY
- 7.5m SAFETY BARRIER
- 240 CONTOURS
- VILLAGE ROAD
- PRIVATE ROAD
- 500m LIMIT LINE
- HOUSES / SHEDS
- SITE OFFICE

PLATE NO.11

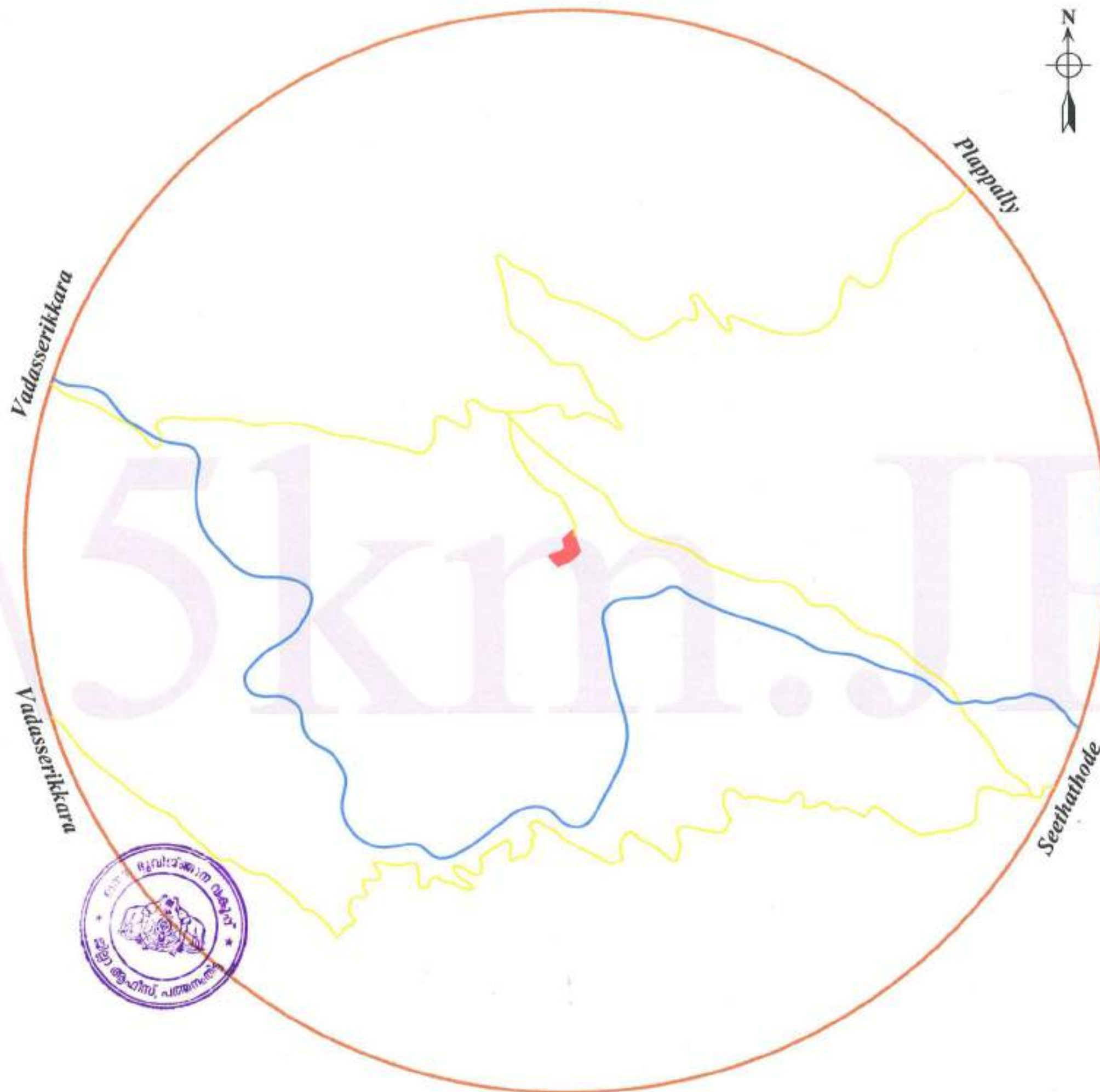
GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates & Sand Private Limited.,
By Nos.888V-17-1 & 888V-18, Ponnani Village, Kankulam, Ponnambetor Division, Cochin

Title	INFRASTRUCTURE PLAN	
Scale	1:5000	Extent: 3.3991 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C.Thambu Cherian
DMO/KERALA/RQP/172018

PREPARED BY: GLOBAL ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mineralogists, Geologists & Surveyors)



I N D E X





-  **QUARRY BOUNDARY**
-  **5Km RADIUS**
-  **TRANSPORTATION ROAD**
-  **RIVER AND THODU**

PLATE NO.12

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

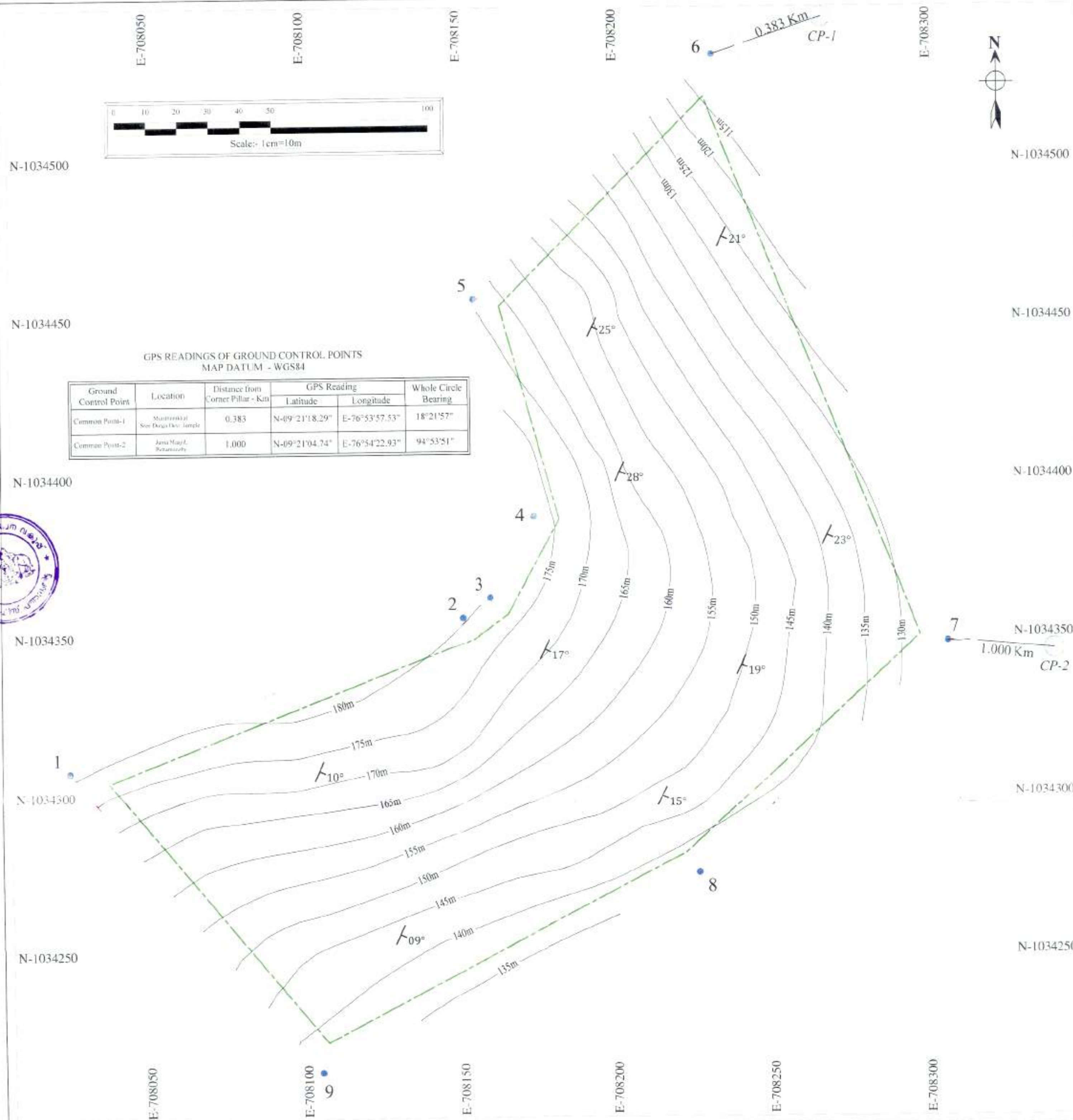
Sy Nos. 889/1-15-1 & 889/1-15, Puzhal Village, Ranni Taluk, Ponnani District, Kerala

Title	BUFFER MAP (5Km) SHOWING SITE LOCATION & TRANSPORTATION ROUTE MAP	
Scale	1:50,000	Extent : 3.7691 Ha. (9.3134Acres)

Certified that the above plan is correct.


C.Thangal Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY :  **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologist & Surveyors)



GPS READINGS OF BOUNDARY PILLARS
MAP DATUM - WGS84

Boundary Pillars	Latitude	Longitude
1	N-09°21'06.62"	E-76°53'39.04"
2	N-09°21'08.16"	E-76°53'43.17"
3	N-09°21'08.36"	E-76°53'43.46"
4	N-09°21'09.19"	E-76°53'43.93"
5	N-09°21'11.43"	E-76°53'43.32"
6	N-09°21'13.91"	E-76°53'45.85"
7	N-09°21'07.87"	E-76°53'48.24"
8	N-09°21'05.51"	E-76°53'45.62"
9	N-09°21'03.51"	E-76°53'41.63"

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QUARRY BOUNDARY

7.5m SAFETY BARRIER

180° CONTOURS

ROAD

CP COMMON POINTS

28° NATURAL HILL SLOPE

PLATE NO.3

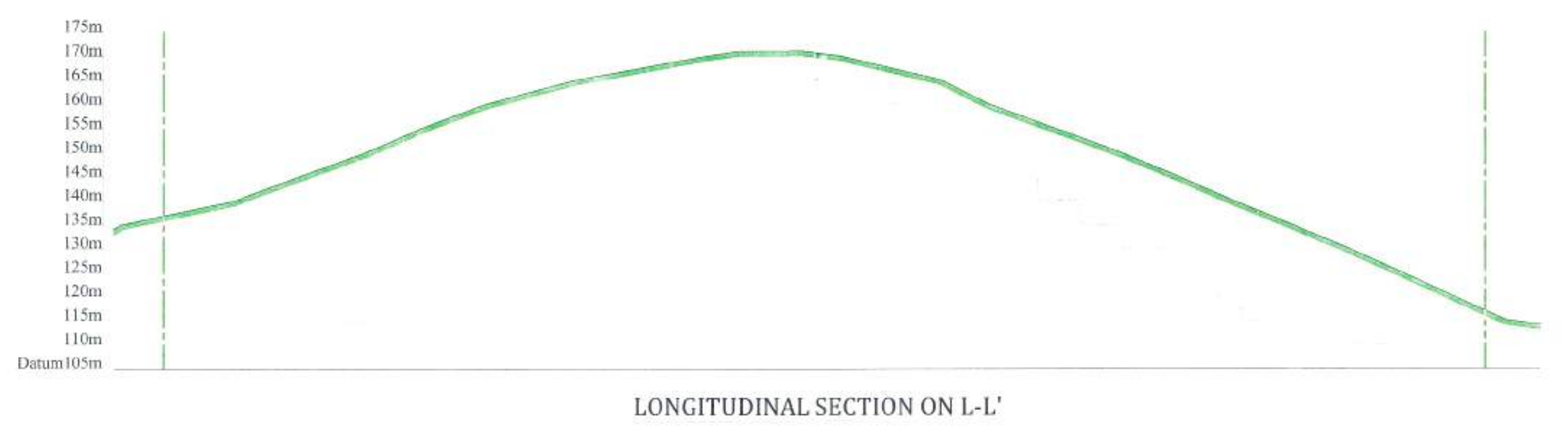
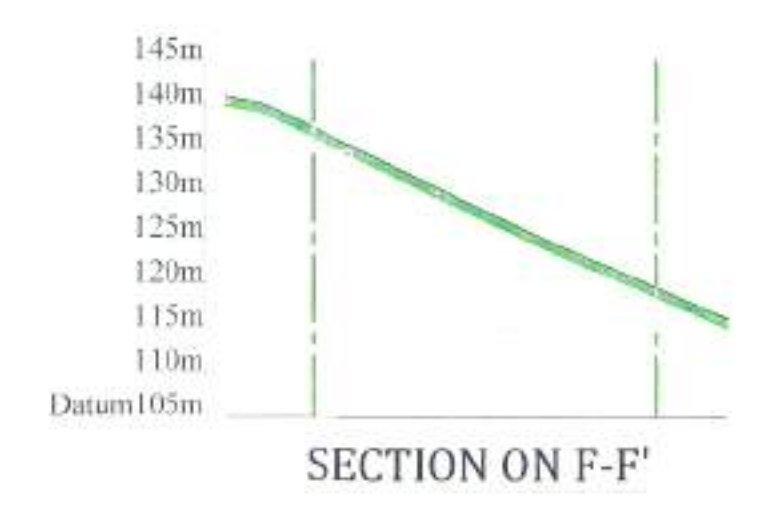
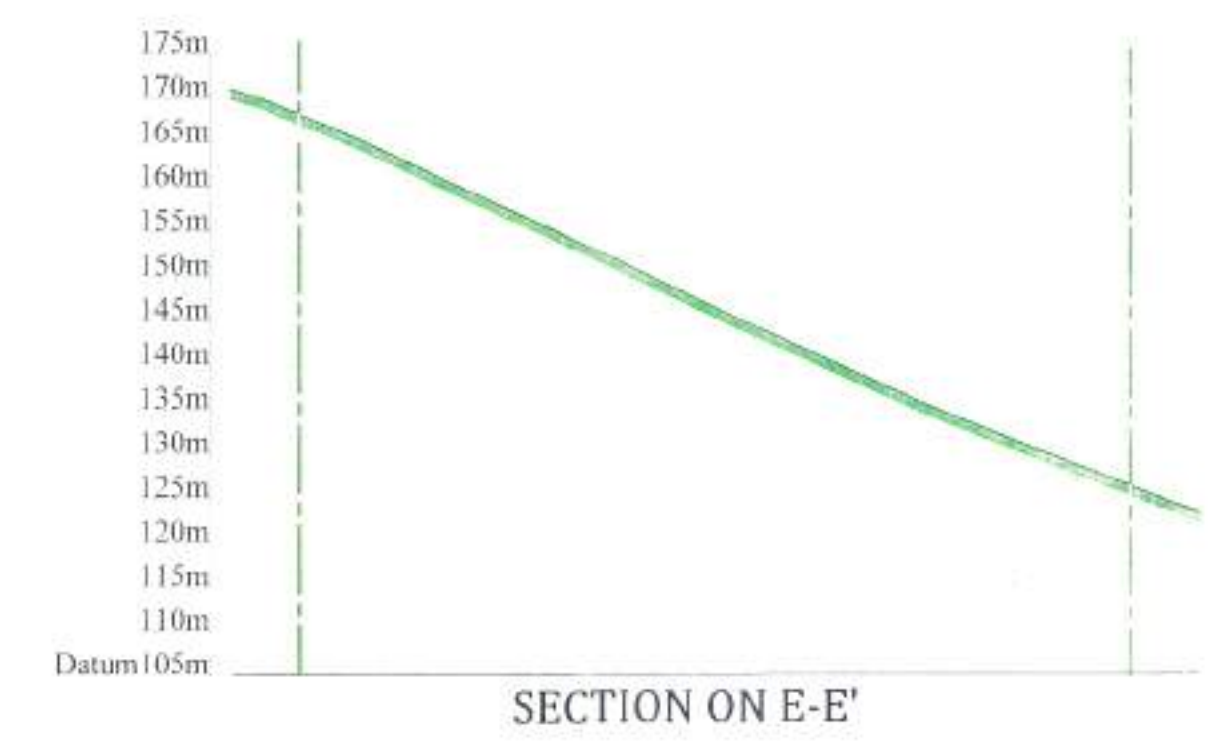
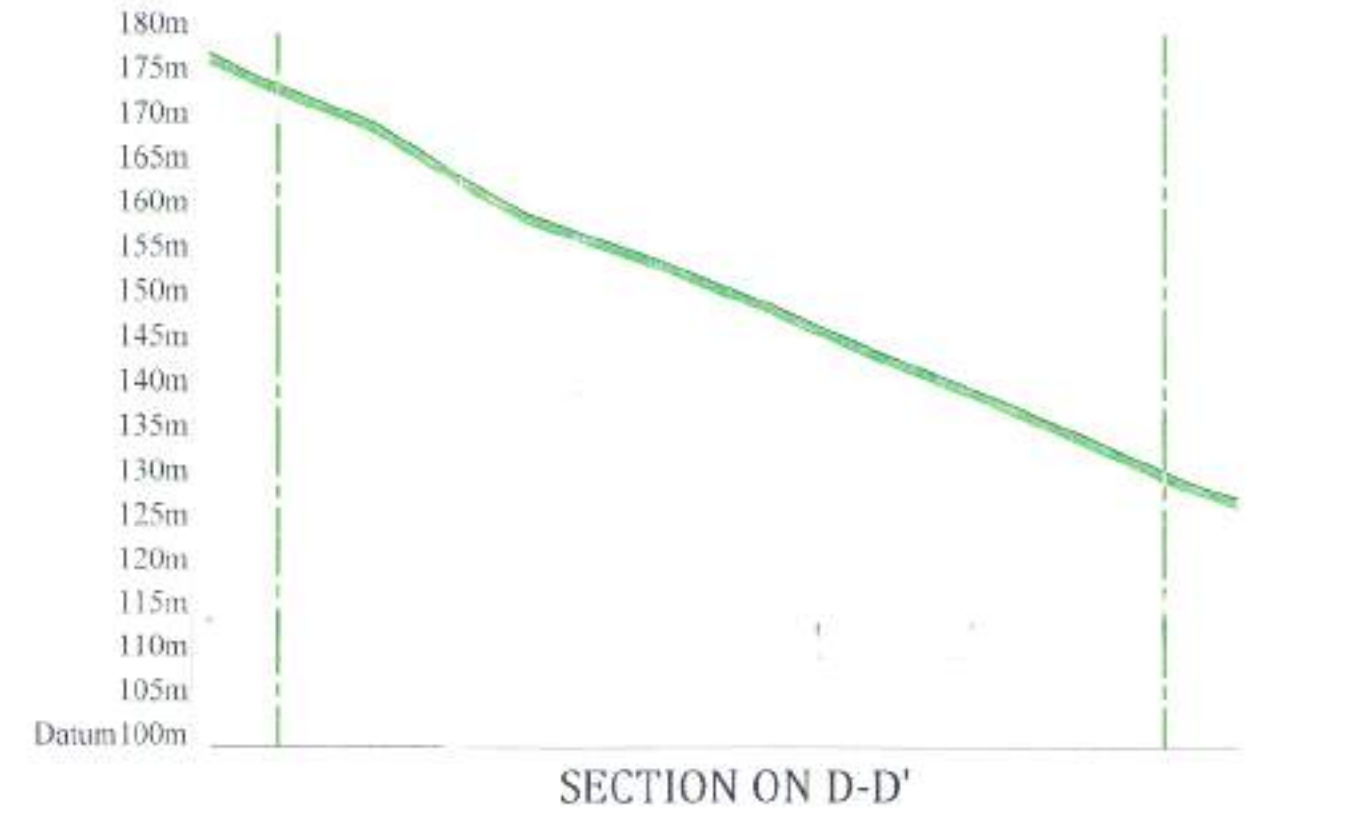
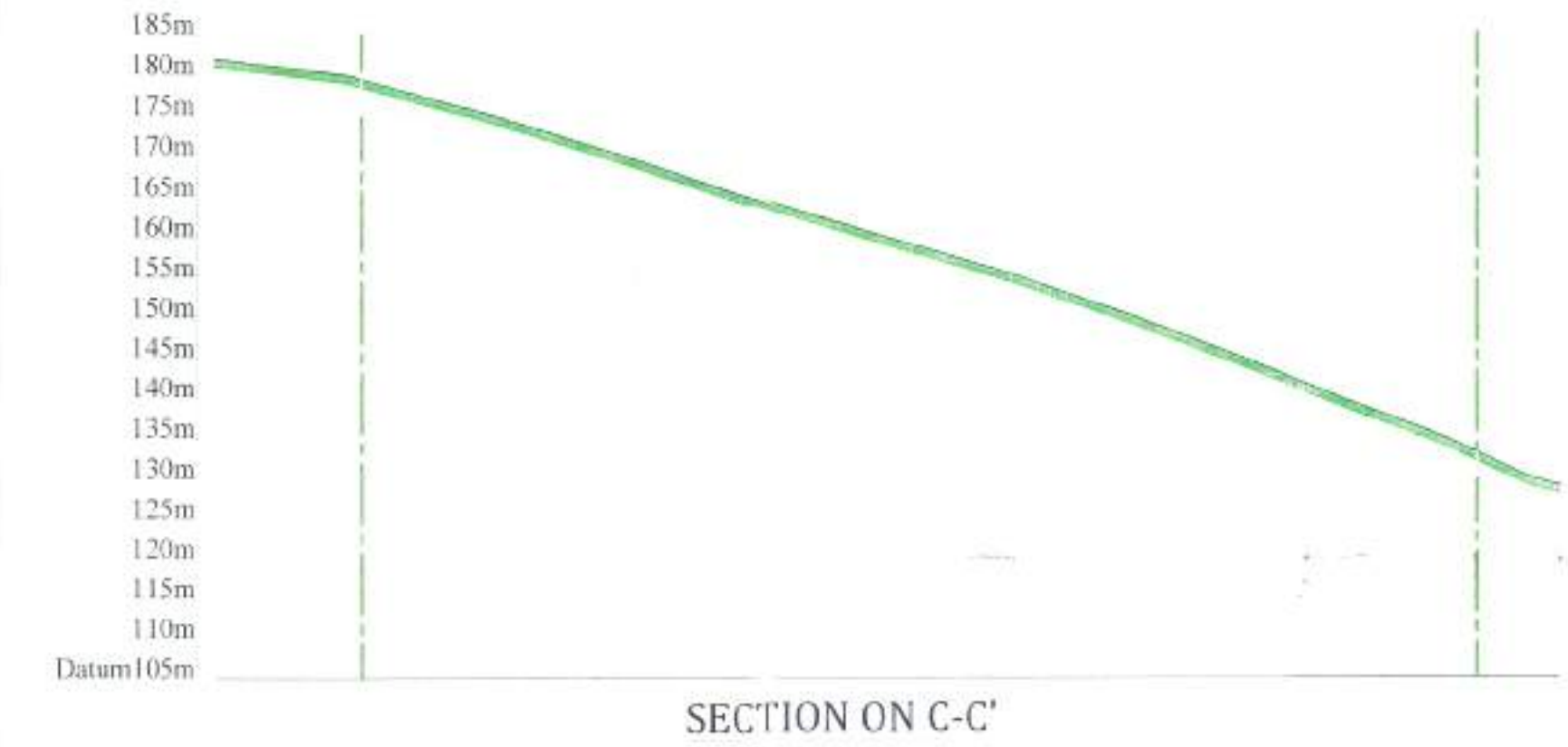
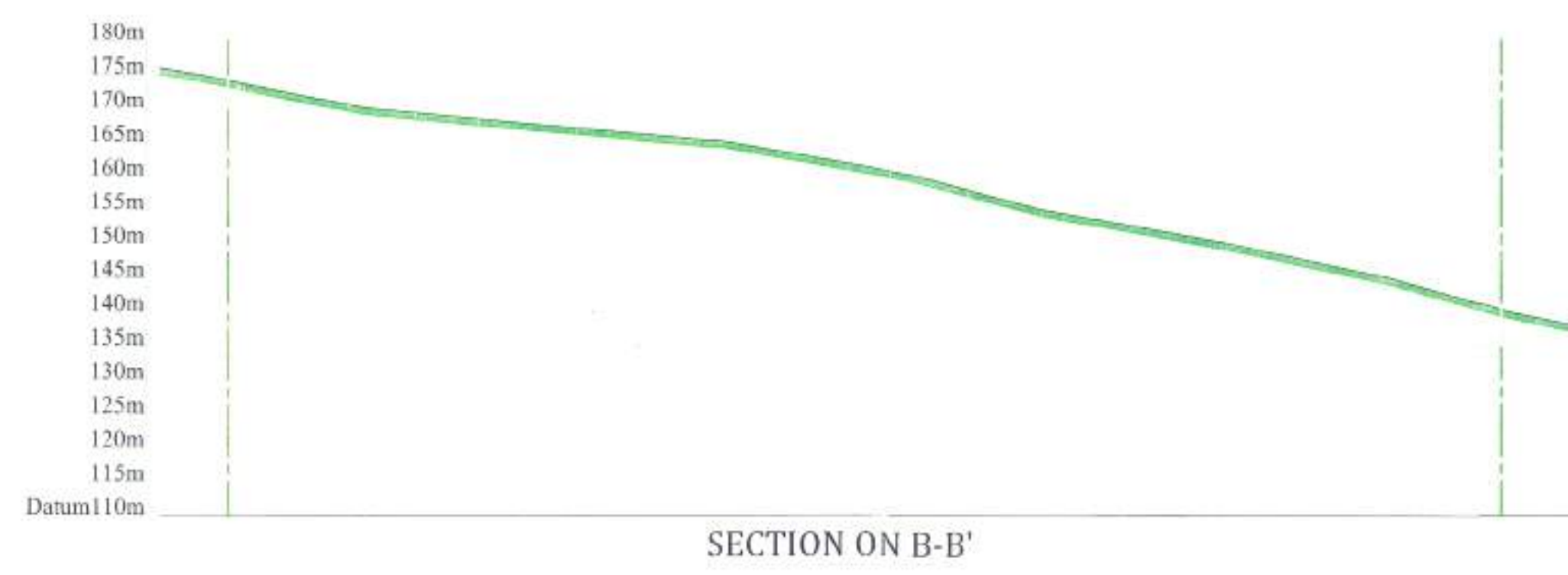
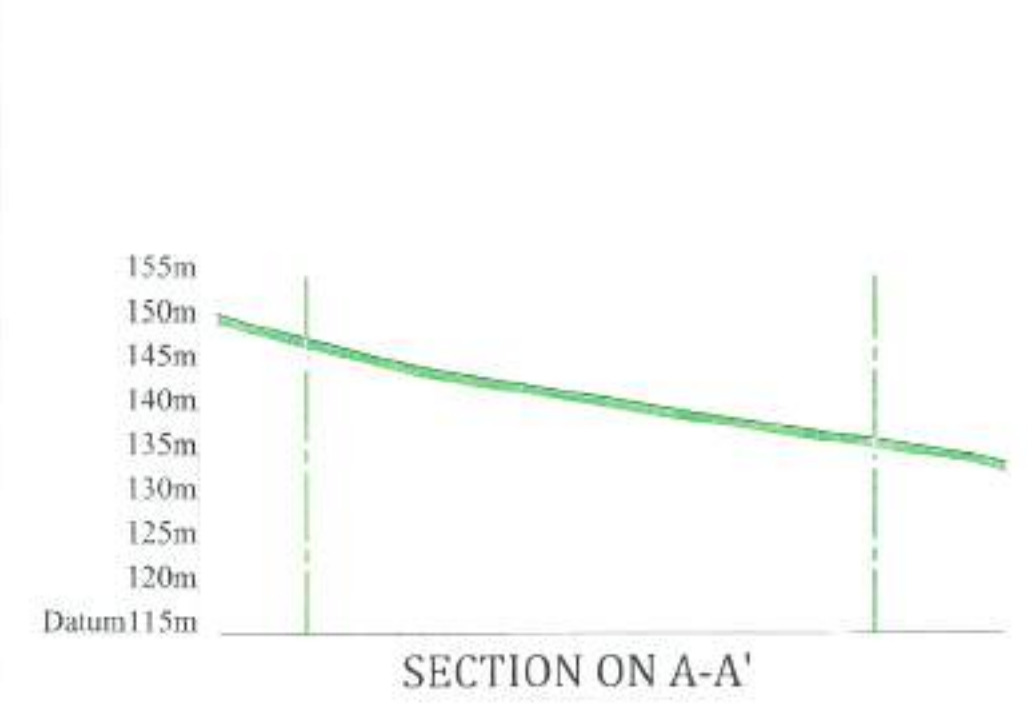
GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited., Sy Nos 889/1-15-1 & 889/1-15, Perumal Village, Ramu Taluk, Palakkad District, Kerala.

Title	SCALE : 1:1000	Date of Survey :14.09.2019
Scale	1:1000	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY : **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologist & Surveyors)



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- QUARRY BOUNDARY
- 7.5m SAFETY BARRIER
- CONTOURS
- ROAD
- ULTIMATE PIT LIMIT
- SOIL COVER
- GRANITE
- SECTION LINE

PLATE NO.4

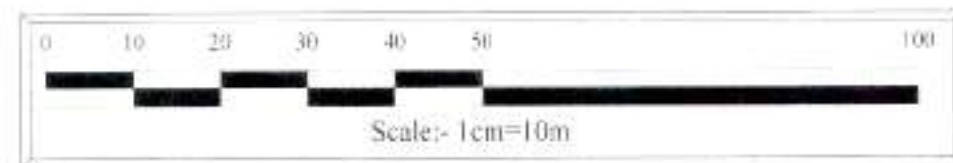
GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates and Sand Private Limited.,
Sy No.889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

Title	Geological Plan & Cross Sections	
Scale	1:1000 RF	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan & sections is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY: **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologist & Surveyors)



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

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SAFETY BERM

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PIT POSITION AT THE END OF I-YEAR

PLATE NO.5A

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

Sy Nos 889/1-15-1 & 889/1-15, Perumad Village, Ranni Taluk, Puthanarthitta District, Kerala.

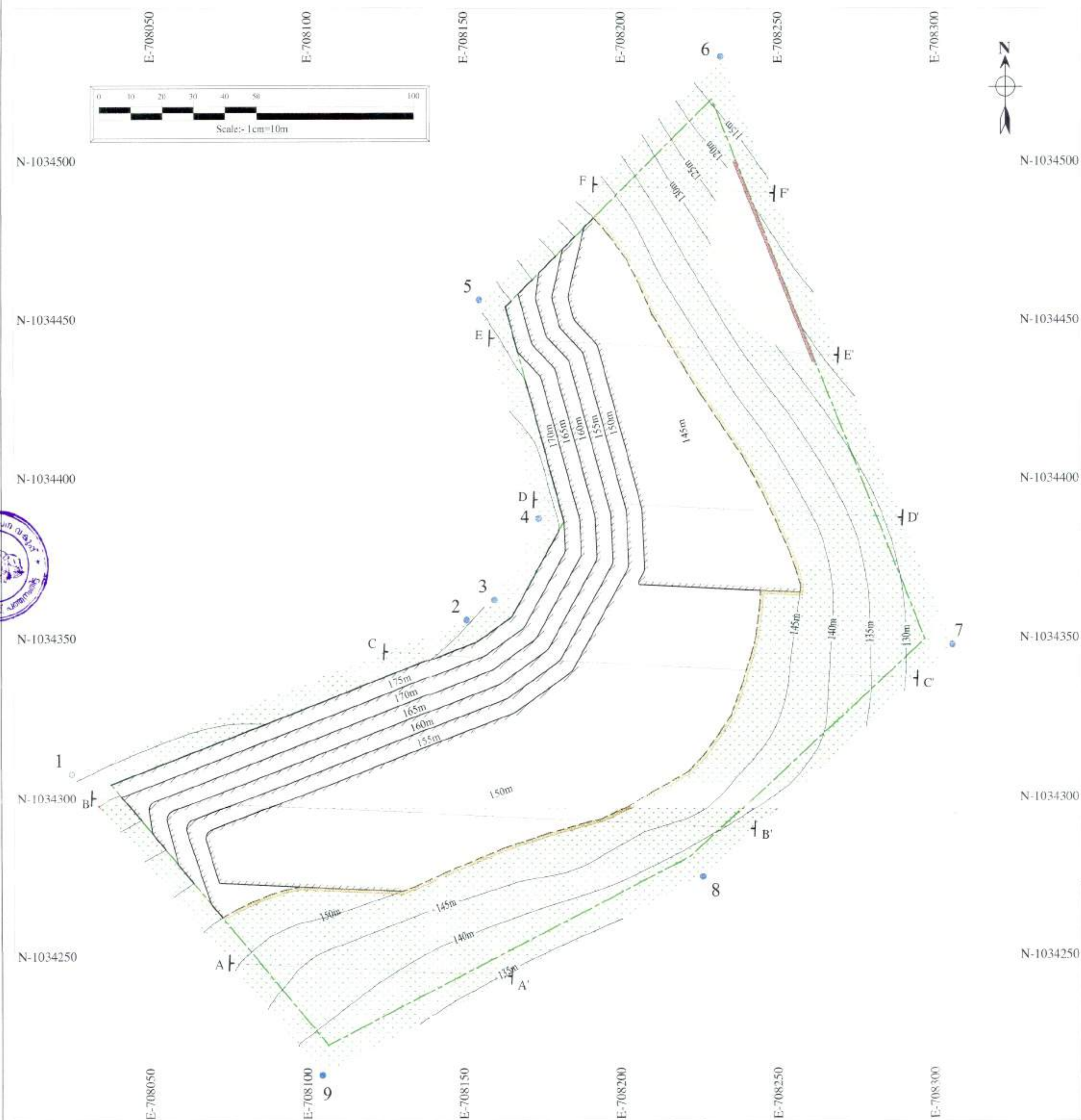
Title	GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,	
Scale	1:1000	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.


C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY :

 **GLOBAL** ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mine designers, Geologists & Surveyors)



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

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PIT POSITION AT THE END OF 11-YEAR

PLATE NO.5B

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

Sr Nos.889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

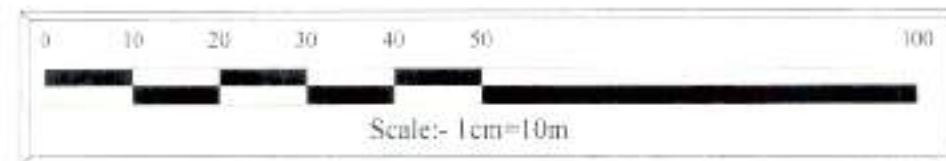
Title: QUARRY PLAN AND PROPOSED PITS PLAN (1:1000)

Scale: 1:1000 Extent: 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.


C.Thambur Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY:  GLOBAL ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mine designers, Geologist & Surveyors)



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

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PIT POSITION AT THE END OF III-YEAR

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

Sy Nos 889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

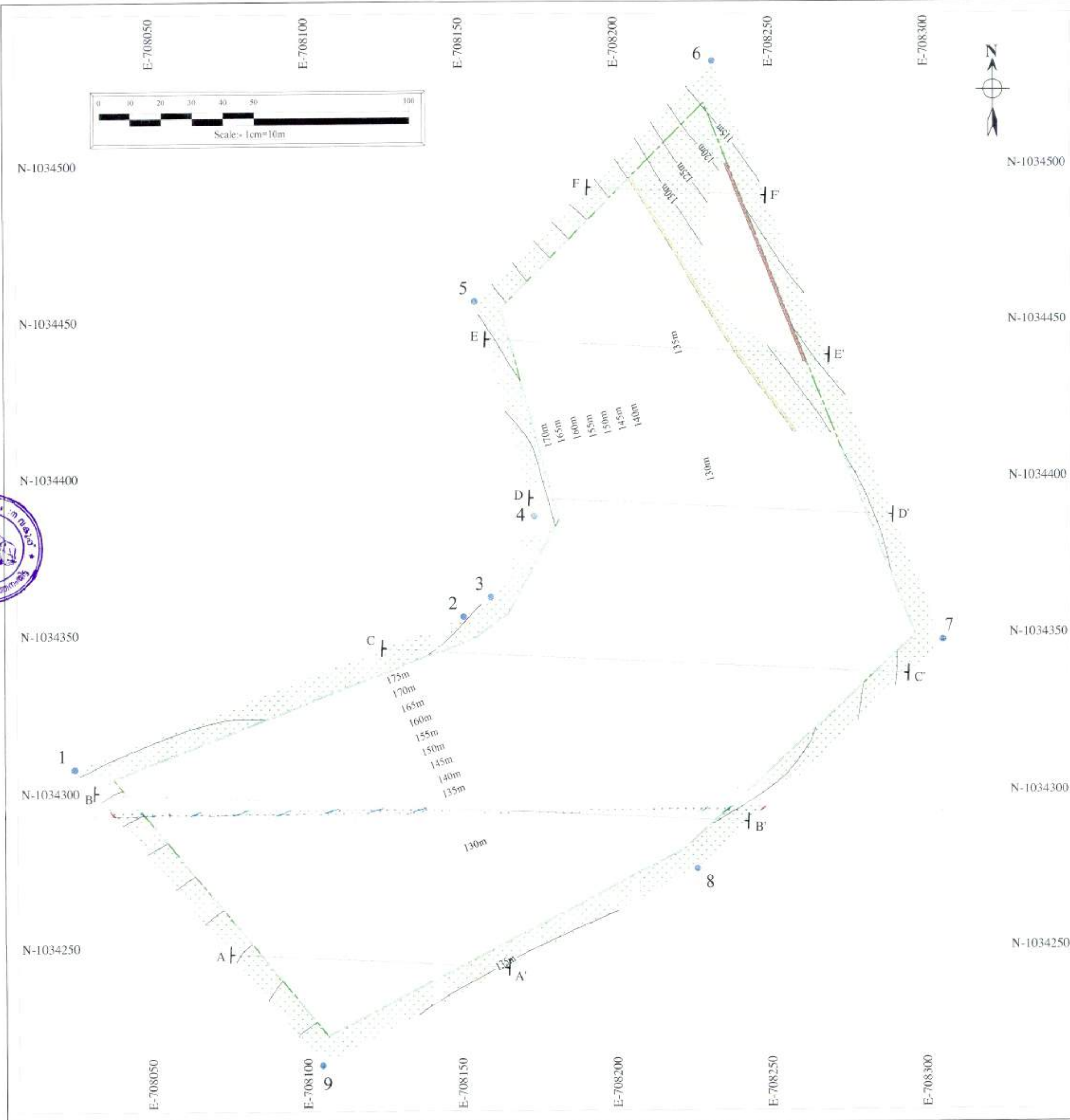
Title	SOUTH EAST PLANNING & DEVELOPMENT PLANNING OFFICE	
Scale	1:1000	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY: **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologist & Surveyors)

PLATE NO.5C



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

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GRANITE

SECTION LINE

PROPOSED DUMP

SAFETY BERM

GABION WALL

PIT POSITION AT THE END OF IV-YEAR

PLATE NO.5D

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

Sy Nos.889/1-15-1 & 889/1-15, Perurad Village, Ranni Taluk, Pathanamthitta District, Kerala.

Title

Scale

Extent : 3,7691 Ha. (9.3134Acres)

Certified that the above plan is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY

GLOBAL ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mine designers, Geologists & Surveyors)



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

CONTOURS

ROAD

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PROPOSED DUMP

SAFETY BERM

GABION WALL

PIT POSITION AT THE END OF 5-YEAR

PLATE NO.5E

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

Sy Nos.889/1-15-1 & 889/1-15, Perumad Village, Ranji Taluk, Pathanamthitta District, Kerala

Title PROJECT REPORT ON DELTA DUMPING PLANS & PIT POS.

Scale 1:1000 Extent : 3.7691 Ha. (9.3134 Acres)

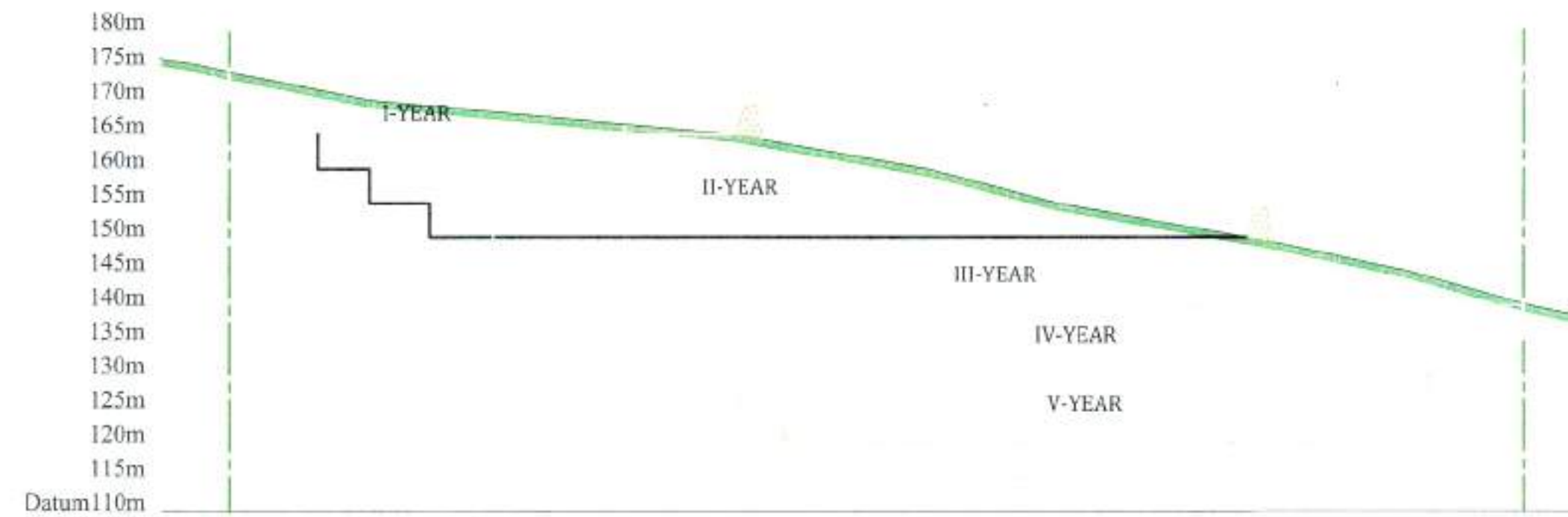
Certified that the above plan is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

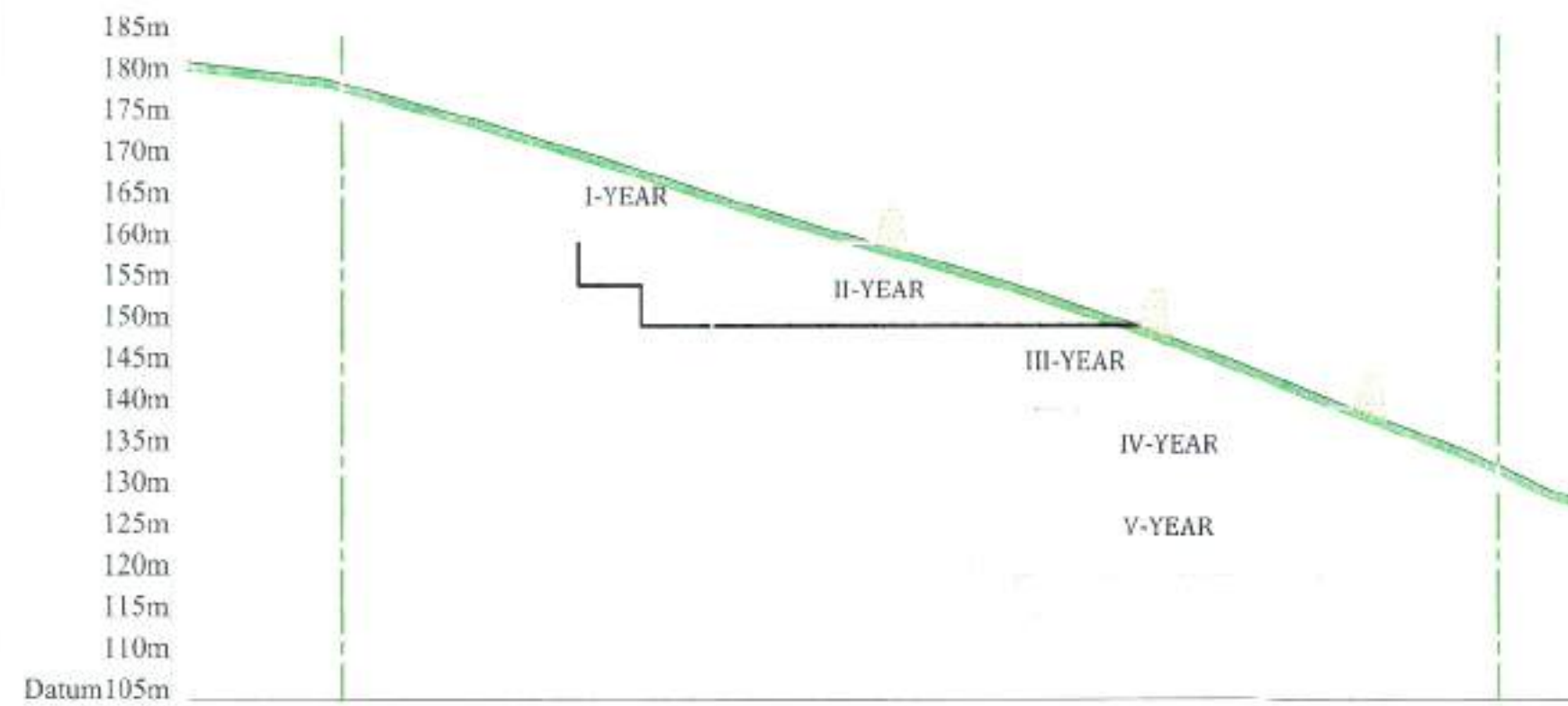
PREPARED BY: GLOBAL ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mine Designers, Geologist & Surveyors)



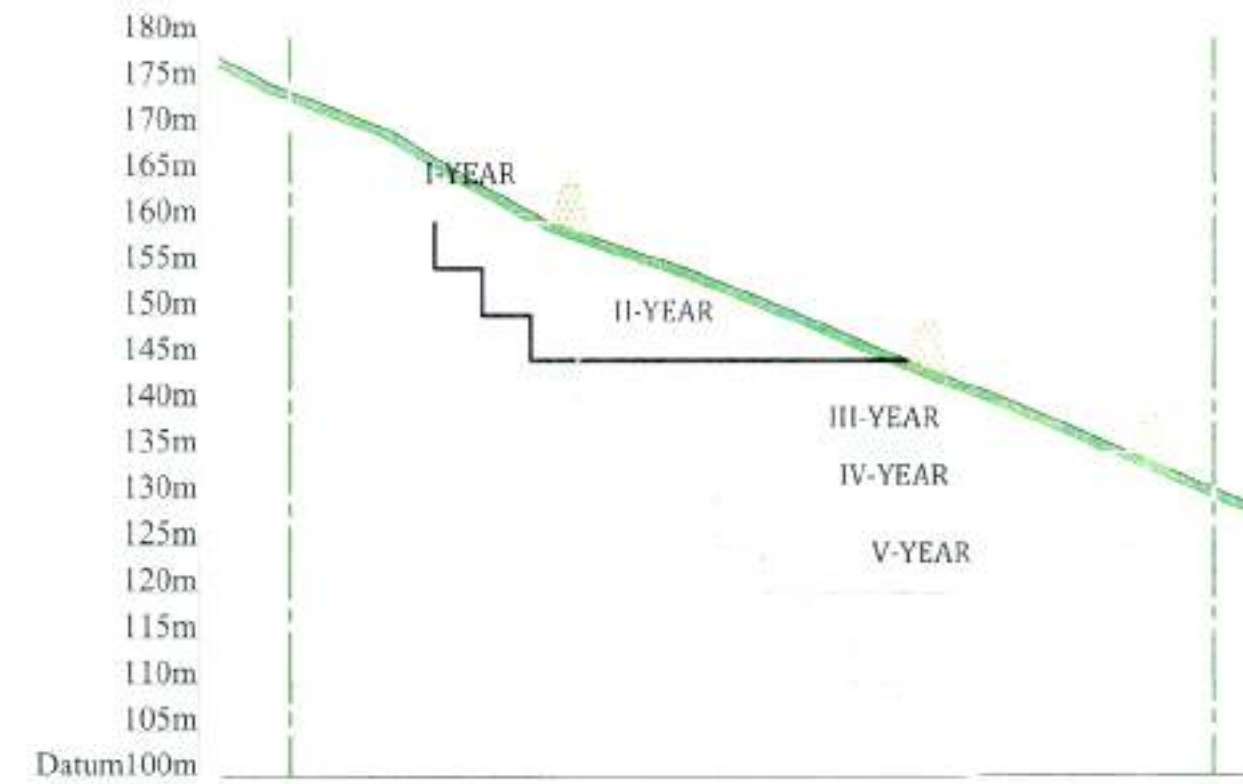
SECTION ON A-A'



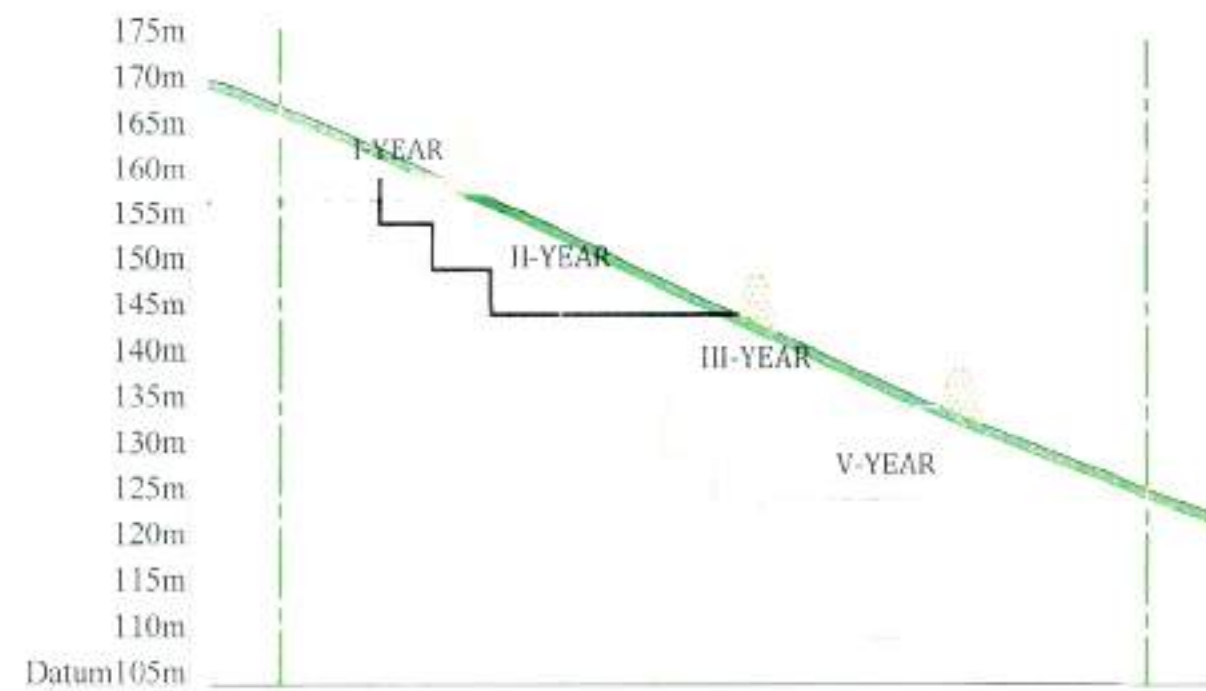
SECTION ON B-B'



SECTION ON C-C'



SECTION ON D-D'



SECTION ON E-E'



SECTION ON F-F'

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QUARRY BOUNDARY

7.5M SAFETY BARRIER

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PIT POSITION AT THE END OF II-YEAR

PIT POSITION AT THE END OF III-YEAR

PIT POSITION AT THE END OF IV-YEAR

PIT POSITION AT THE END OF V-YEAR

SAFETY BERM

PLATE NO.6

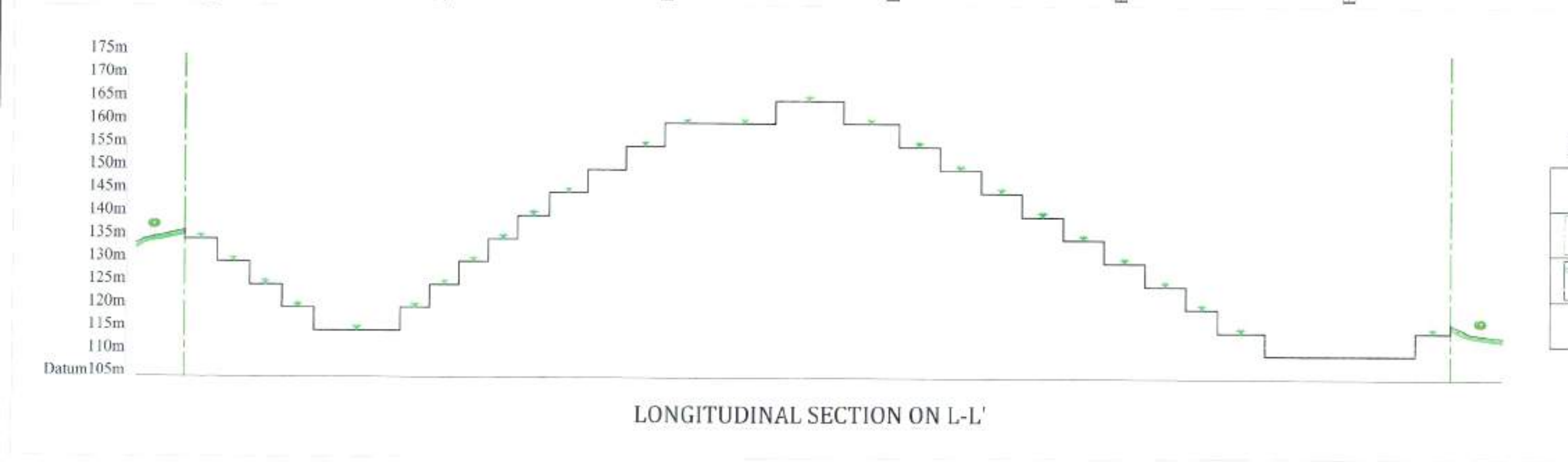
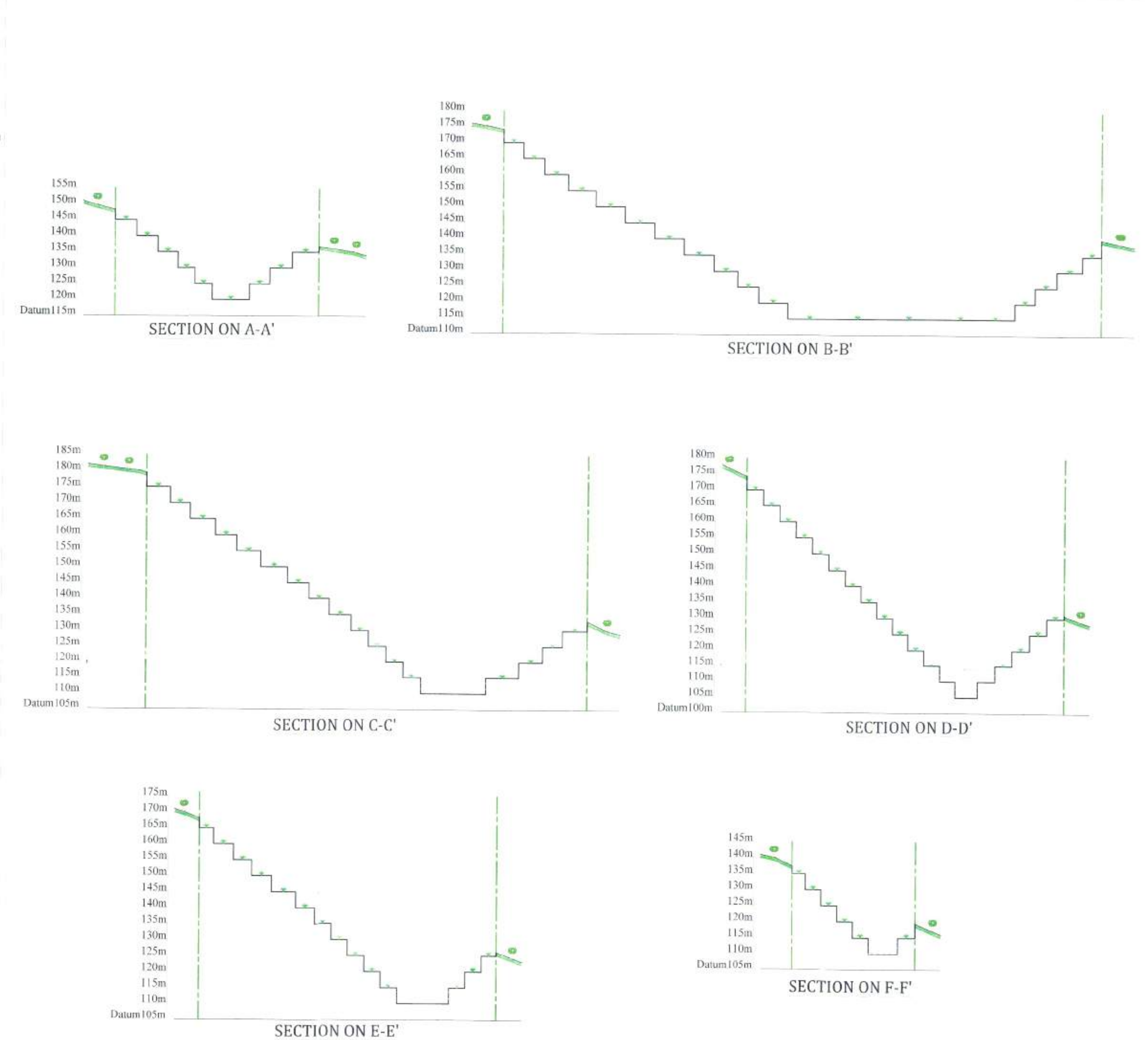
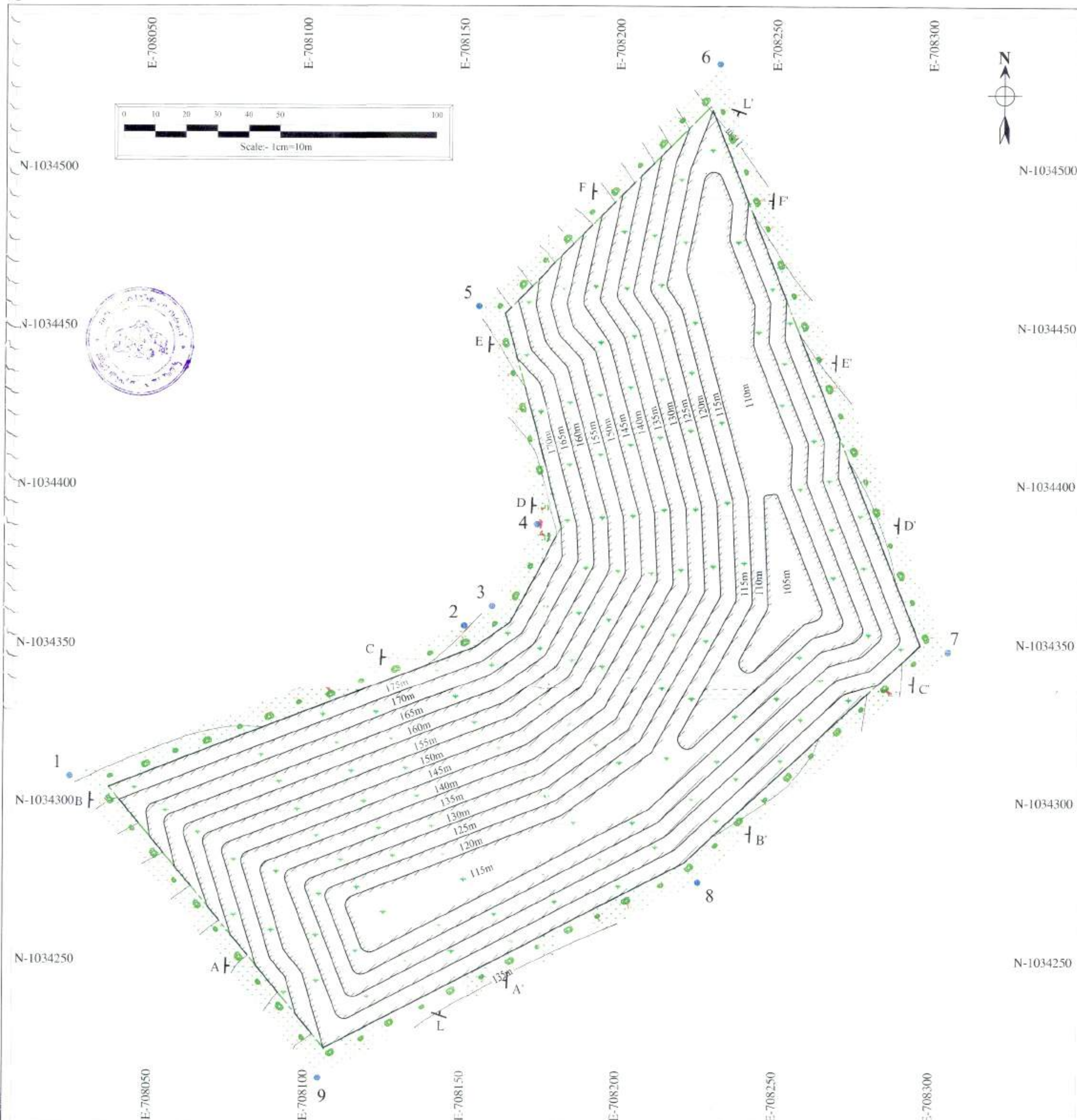
GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates and Sand Private Limited.,
Sy No 888/1-15-1 & 189/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

Title	PRODUCTION & DEVELOPMENT SECTION	
Scale	1:1000 RF	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above sections is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY : **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologists & Surveyors)



LAND USE AT CONCEPTUAL STAGE (Ha.)

PARTICULARS	AREA IN Ha.
AREA FOR QUARRYING	3.1020
AREA FOR SAFETY BARRIER	0.6671
TOTAL	3.7691

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- QUARRY BOUNDARY
- 7.5m BUFFER ZONE PLANTATIONS
- CONTOURS
- ROAD
- PLANTATION IN BENCHES
- SECTION LINE
- ULTIMATE BENCHES
- WATER POND
- FENCING

PLATE NO.7

GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates and Sand Private Limited.,
Sy No 889/1-15-I & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

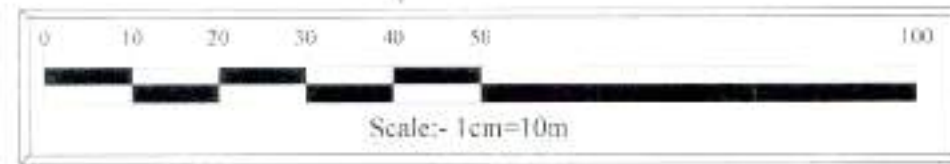
Title : **CONCEPTUAL PLAN & CROSS SECTIONS**

Scale : 1:1000 RF Extent : 3.7691 Ha. (9.3134Acres)

Certified that the above plan & sections is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY : **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologist & Surveyors)



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

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RWHP RAIN WATER HARVESTING POND

GARLAND DRAIN

WATER FLOW DIRECTION

PROPOSED DUMP

SAFETY BERM

GABION WALL

PIT POSITION AT THE END OF V-YEAR

PLATE NO.9

GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates & Sand Private Limited.,

Sy Nos.889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

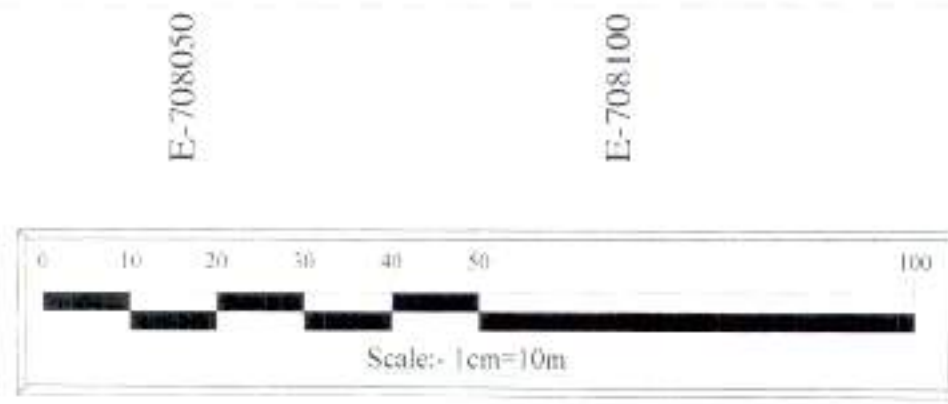
Title: **ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESI) STUDY - DETAILED PLAN - DRAINAGE PLAN**

Scale: 1:1000 Extent: 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.


C.Thambiy Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY:  **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologists & Surveyors)



GEOLOGIST
PATHANAMTHITTA



I N D E X

- QUARRY BOUNDARY**
- PLANTATION IN SAFETY BARRIER
 - CONTOURS
 - ROAD
 - SOIL COVER
 - FENCING
 - PLANTATIONS
 - PROPOSED DUMP
 - SAFETY BERM
 - GABION WALL
 - PIT POSITION AT THE END OF V-YEAR

PLATE NO. 13

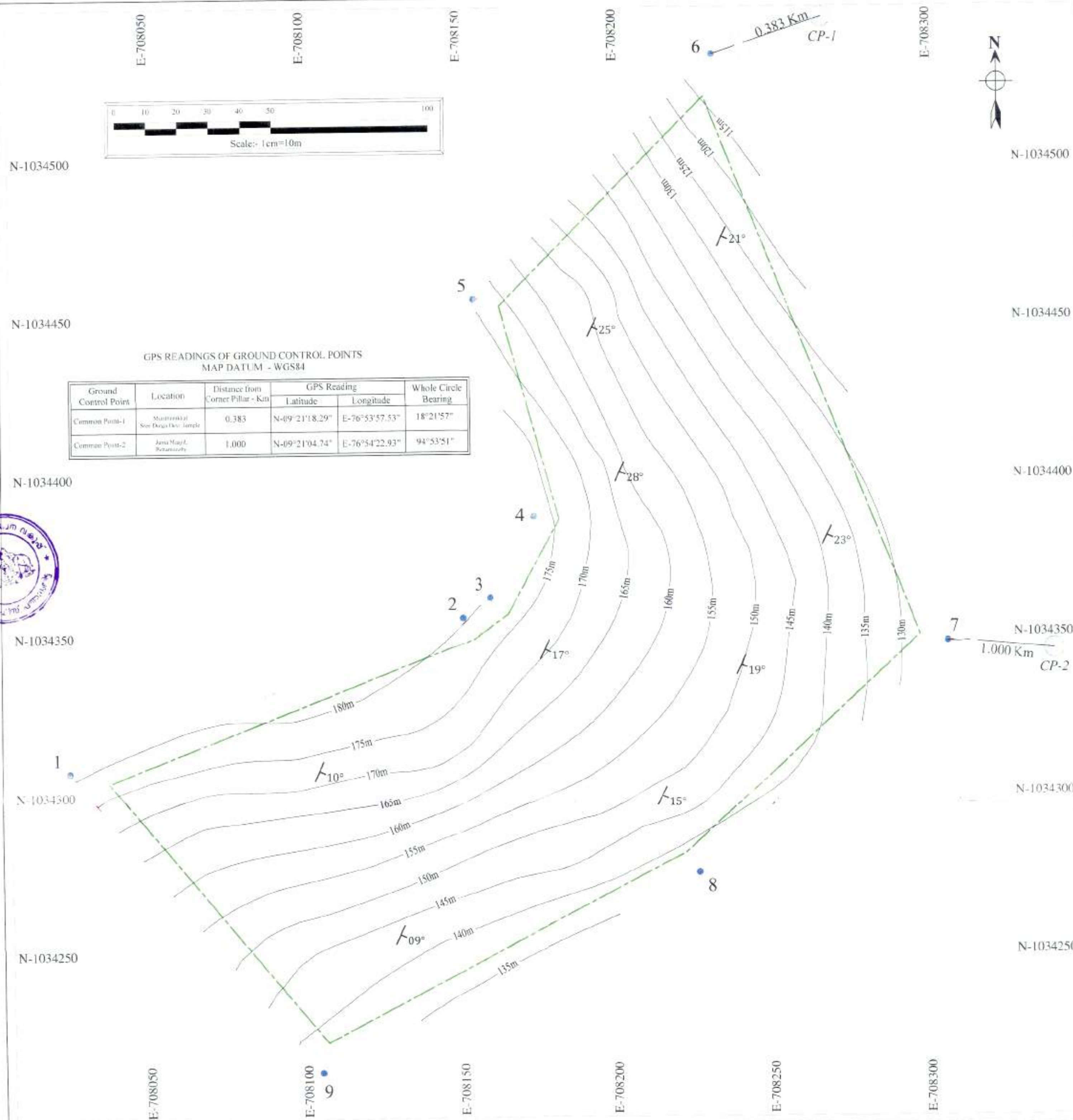
GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates & Sand Private Limited.,
Sy Nos: 889/1-15-1 & 889/1-15, Perumad Village, Rammi Taluk, Pathanamthitta District, Kerala.

Title	DELTA AGGREGATES & SAND PRIVATE LIMITED	
Scale	1:1000	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C. Thambu Cherian
 DMG/KERALA/RQP/17.2018

PREPARED BY: **GLOBAL ENVIRONMENT & MINING SERVICES**
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GPS READINGS OF BOUNDARY PILLARS
MAP DATUM - WGS84

Boundary Pillars	Latitude	Longitude
1	N-09°21'06.62"	E-76°53'39.04"
2	N-09°21'08.16"	E-76°53'43.17"
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QUARRY BOUNDARY

7.5m SAFETY BARRIER

180° CONTOURS

ROAD

CP COMMON POINTS

28° NATURAL HILL SLOPE

PLATE NO.3

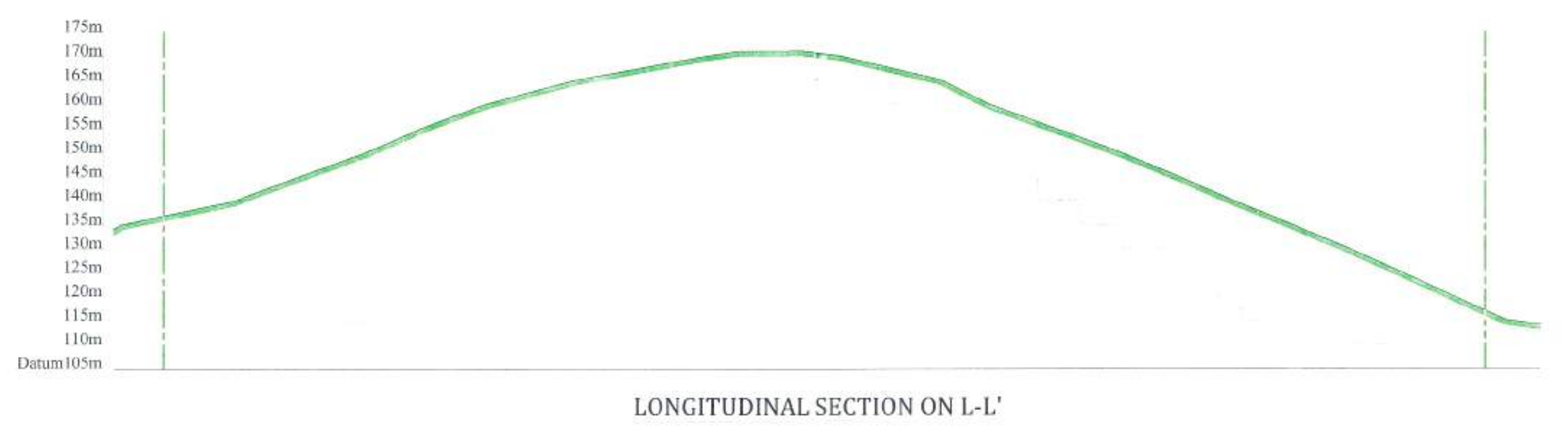
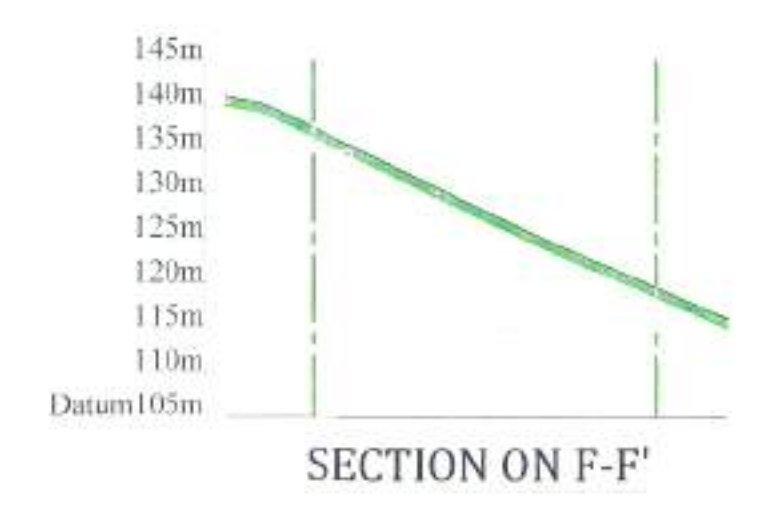
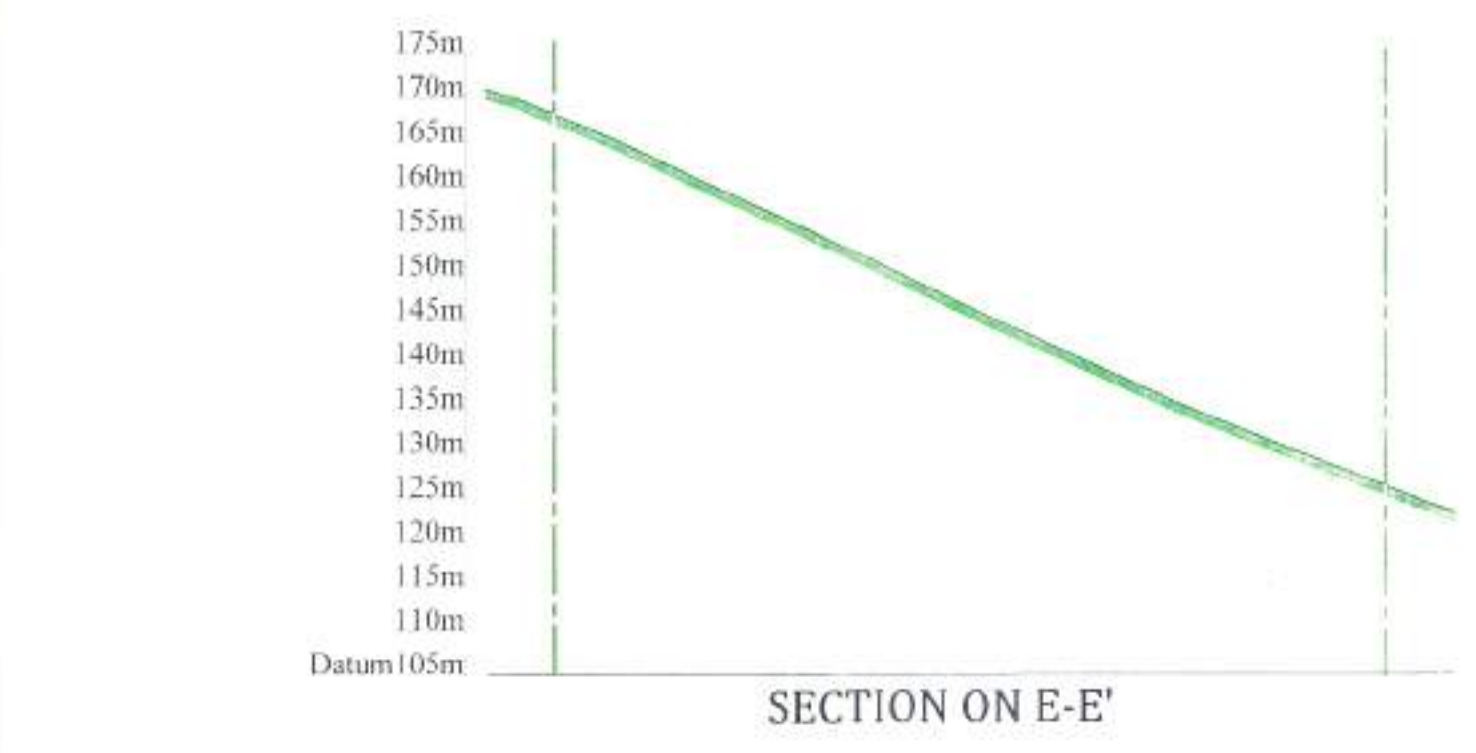
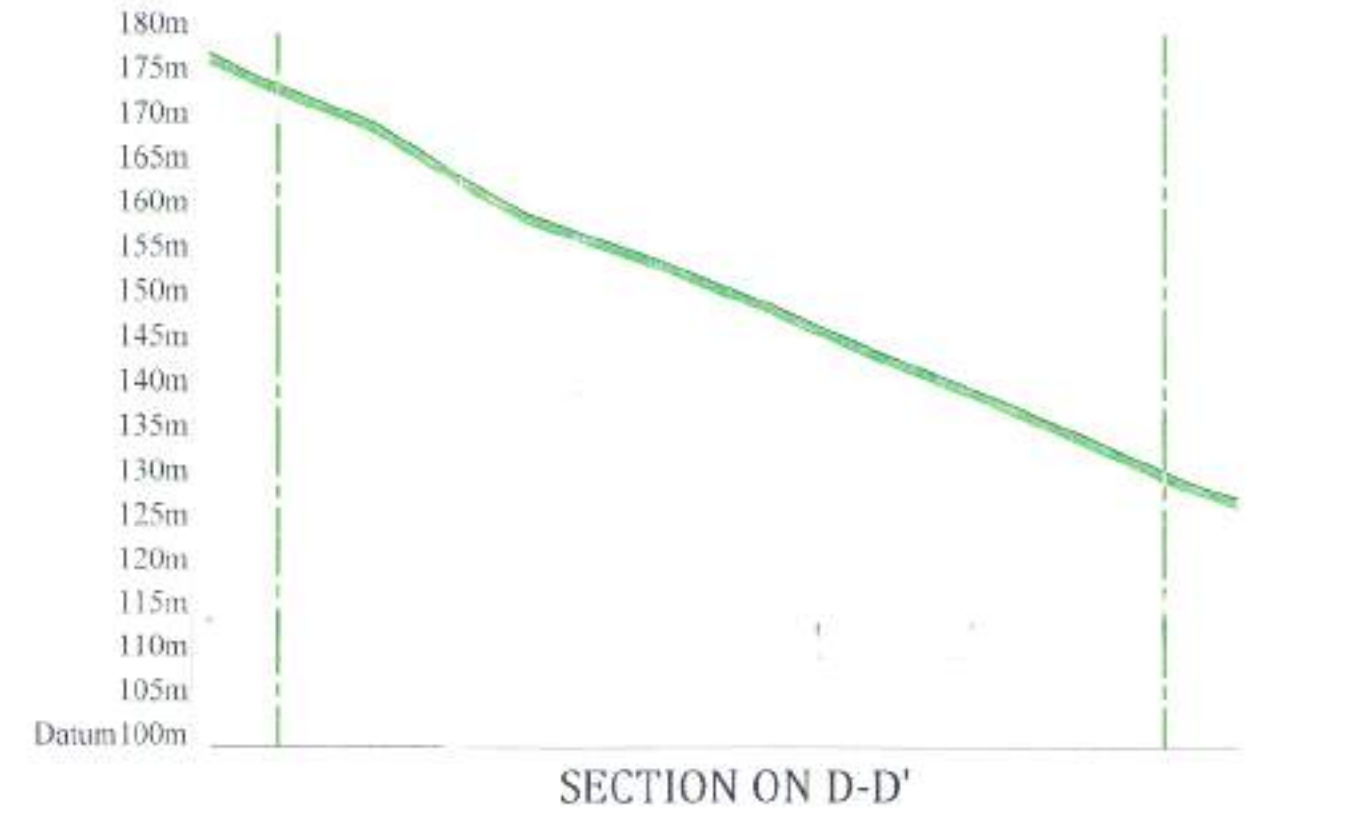
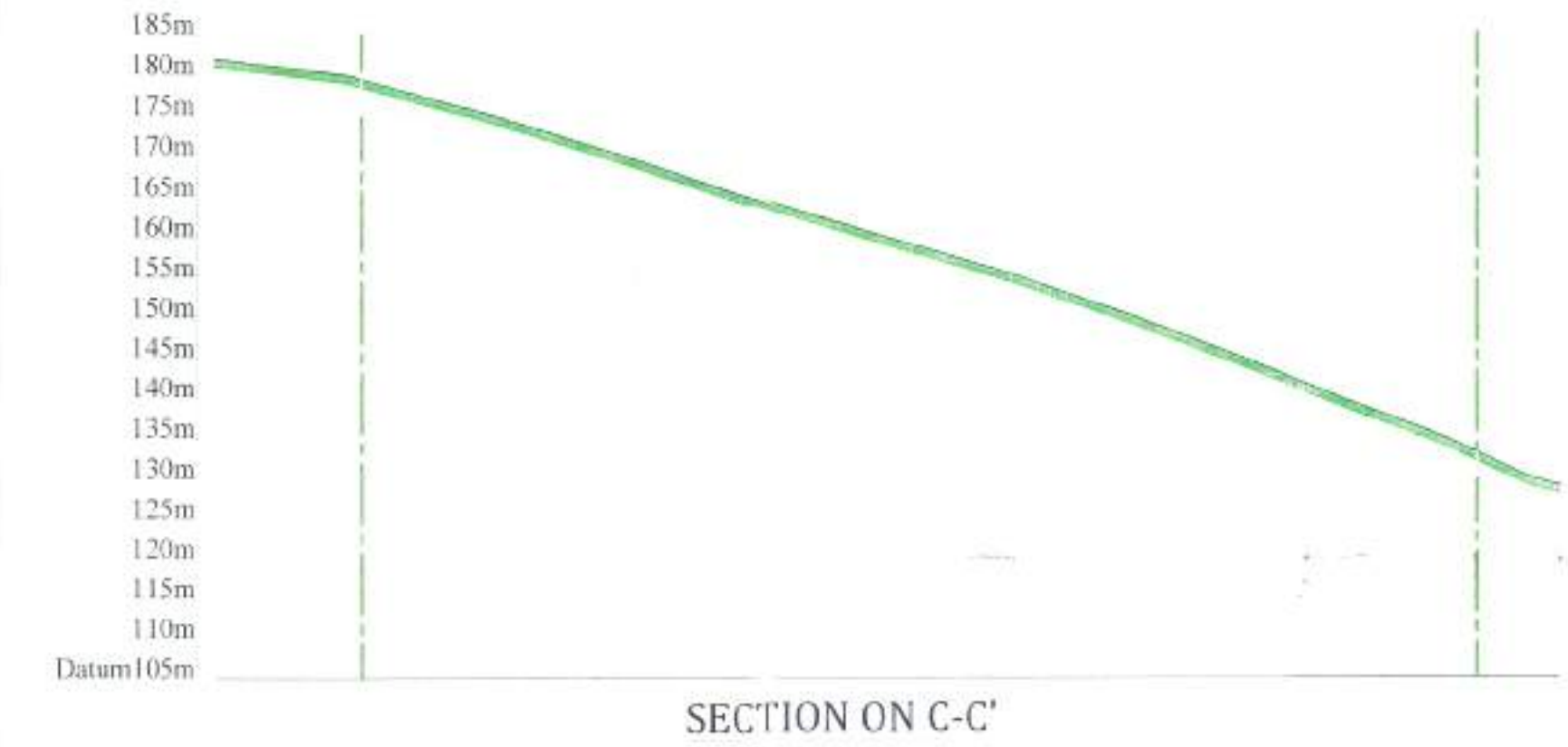
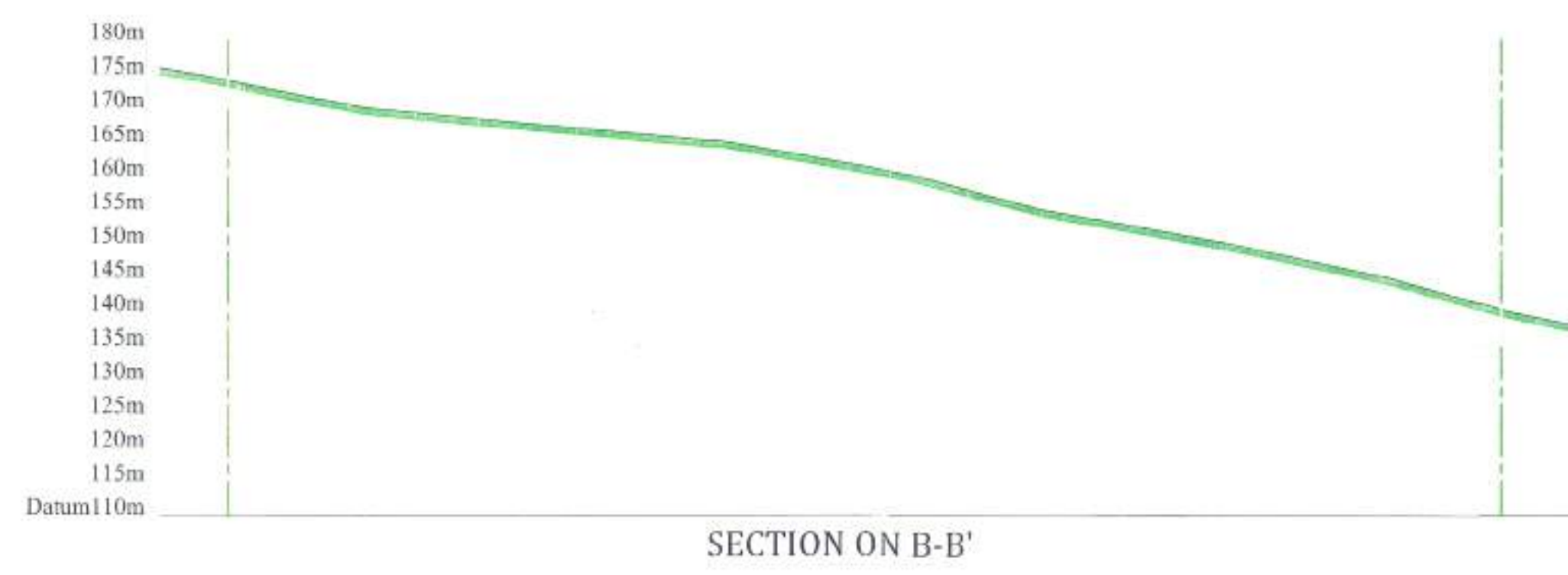
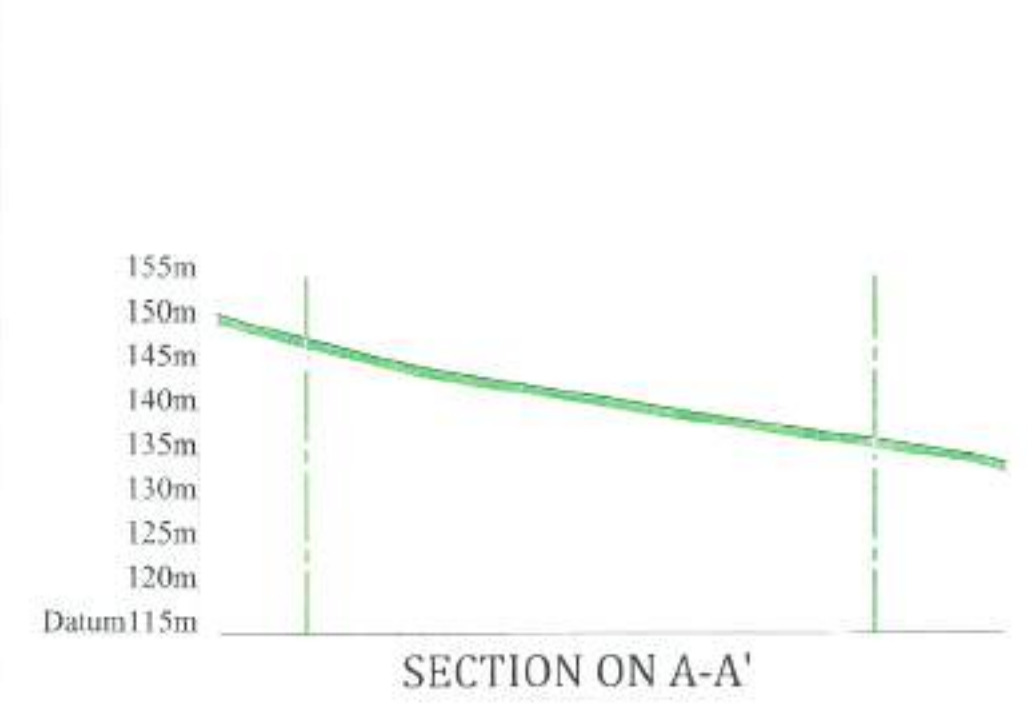
GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited., Sy Nos 889/1-15-1 & 889/1-15, Perumal Village, Ramu Taluk, Palakkad District, Kerala.

Title	SCALE : 1:1000	Date of Survey :14.09.2019
Scale	1:1000	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY : **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologist & Surveyors)



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- QUARRY BOUNDARY
- 7.5m SAFETY BARRIER
- CONTOURS
- ROAD
- ULTIMATE PIT LIMIT
- SOIL COVER
- GRANITE
- SECTION LINE

PLATE NO.4

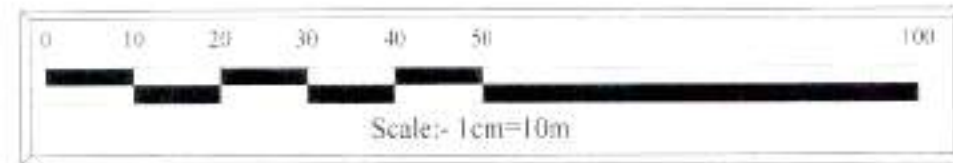
GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates and Sand Private Limited.,
Sy No.889/1-15-I & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

Title	GEOLOGICAL PLAN & CROSS SECTIONS	
Scale	1:1000 RF	Extent : 3.7691 Ha. (9.3134Acres)

Certified that the above plan & sections is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY : **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologist & Surveyors)



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

CONTOURS

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PROPOSED DUMP

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GABION WALL

PIT POSITION AT THE END OF I-YEAR

PLATE NO.5A

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

Sy Nos 889/1-15-1 & 889/1-15, Perumad Village, Ranni Taluk, Puthanarthitta District, Kerala.

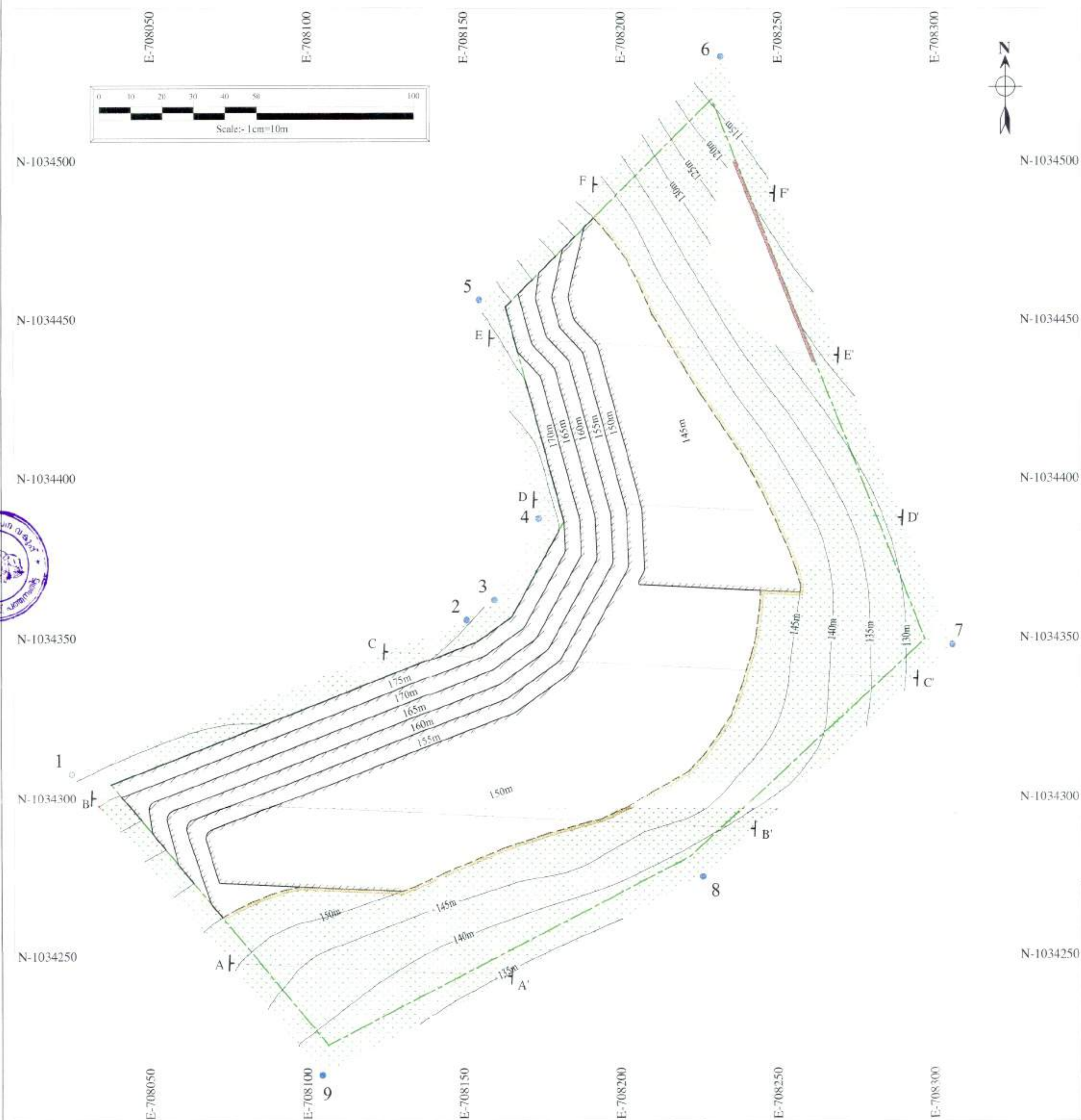
Title	GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,	
Scale	1:1000	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.


C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY :

 **GLOBAL ENVIRONMENT & MINING SERVICES**
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QUARRY BOUNDARY

7.5m SAFETY BARRIER

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ROAD

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PROPOSED DUMP

SAFETY BERM

GABION WALL

PIT POSITION AT THE END OF 11-YEAR

PLATE NO.5B

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

Sr. Nos.889/1-15-1 & 889/1-15, Perumal Village, Ranni Taluk, Pathanamthitta District, Kerala.

Title: QUARRY PLAN AT PRESENT PLANS (1:1000)

Scale: 1:1000 Extent: 3.7691 Ha. (9.3134 Acres)

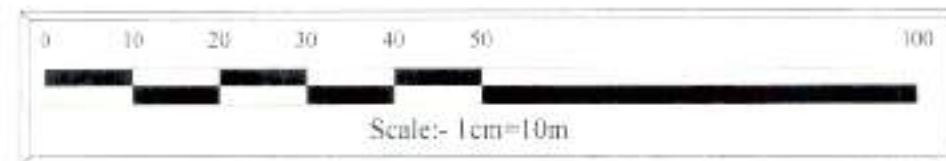
Certified that the above plan is correct.

C.Thambur Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY:



GLOBAL ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mine designers, Geologist & Surveyors)



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

CONTOURS

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GABION WALL

PIT POSITION AT THE END OF III-YEAR

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

Sy Nos 889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

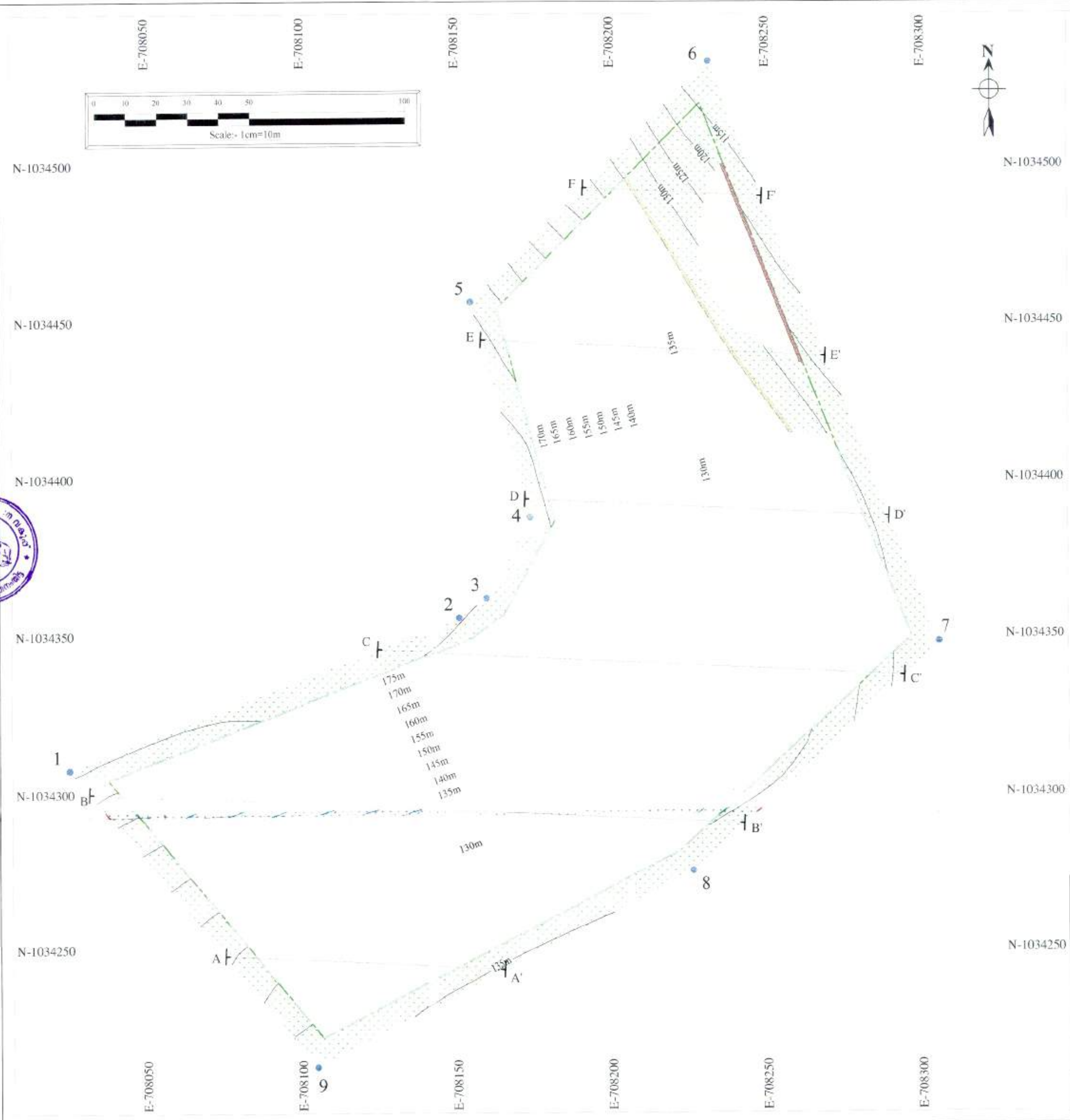
Title	SOUTH EAST PLANNING & DEVELOPMENT P.L.C. (PVT) LTD.	
Scale	1:1000	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C. Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY: GLOBAL ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mine designers, Geologist & Surveyors)



PLATE NO.5C

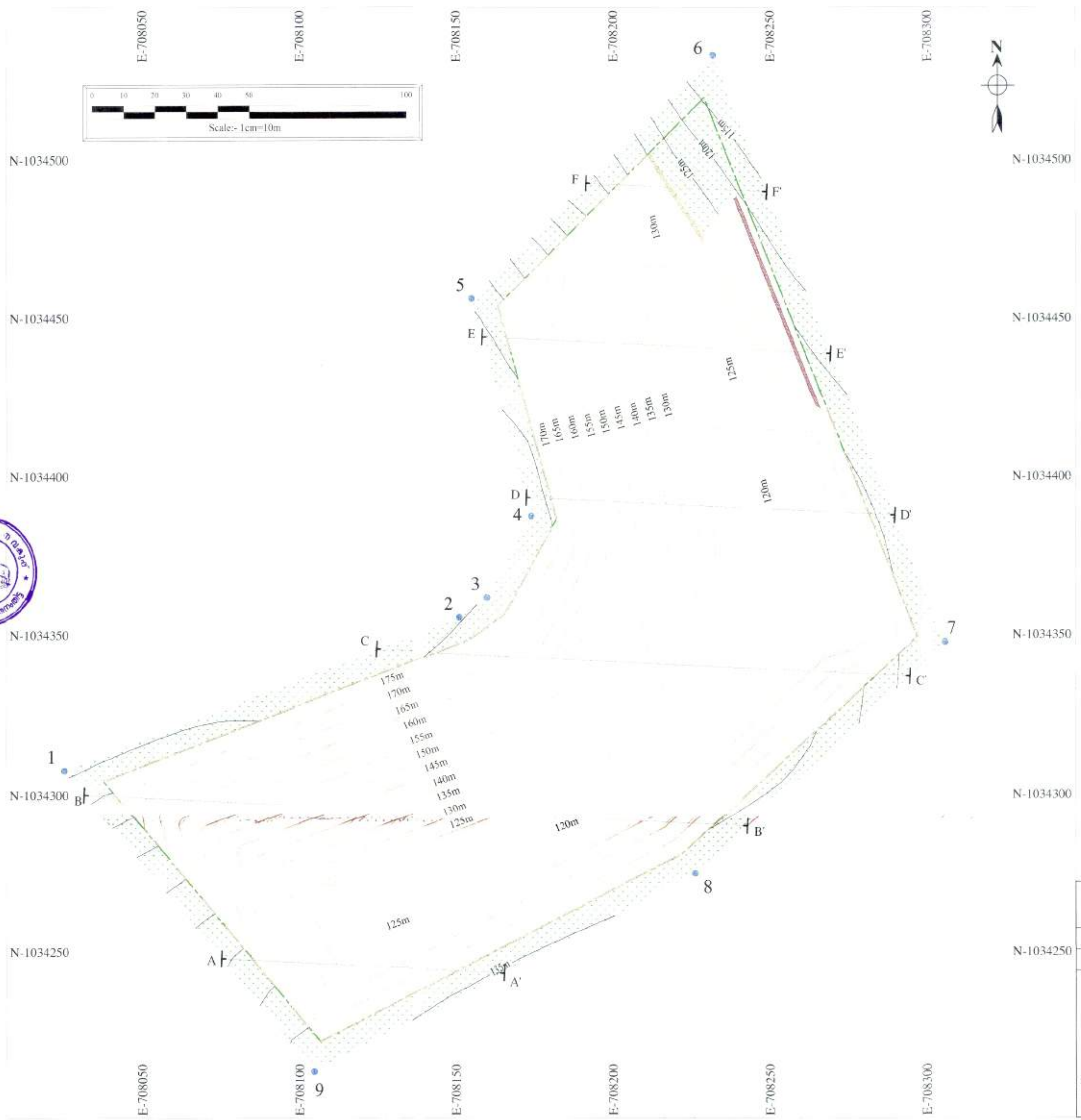


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- GABION WALL
- PIT POSITION AT THE END OF IV-YEAR

PLATE NO.5D

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited., <small>Sy Nos.889/1-15-1 & 889/1-15, Perurad Village, Ranni Taluk, Pathanamthitta District, Kerala.</small>	
Title	GRANITE BUILDING STONE QUARRY PLAN (IV-YEAR)
Scale	1:1000 Extent : 3.7691 Ha. (9.3134Acres)
Certified that the above plan is correct.	
 C.Thambu Cherian DMG/KERALA/RQP/17/2018	
PREPARED BY	 GLOBAL ENVIRONMENT & MINING SERVICES <small>(Consulting Engineers, Mine designers, Geologists & Surveyors)</small>



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

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PIT POSITION AT THE END OF V-YEAR

PLATE NO.5E

GRANITE BUILDING STONE QUARRY OF M/s.Delta Aggregates & Sand Private Limited.,

Sy Nos.889/1-15-1 & 889/1-15, Perumad Village, Ranji Taluk, Pathanamthitta District, Kerala

Title PROJECT REPORT ON DELTA DUMPING PLANS & APPENDIX

Scale 1:1000 Extent : 3.7691 Ha. (9.3134 Acres)

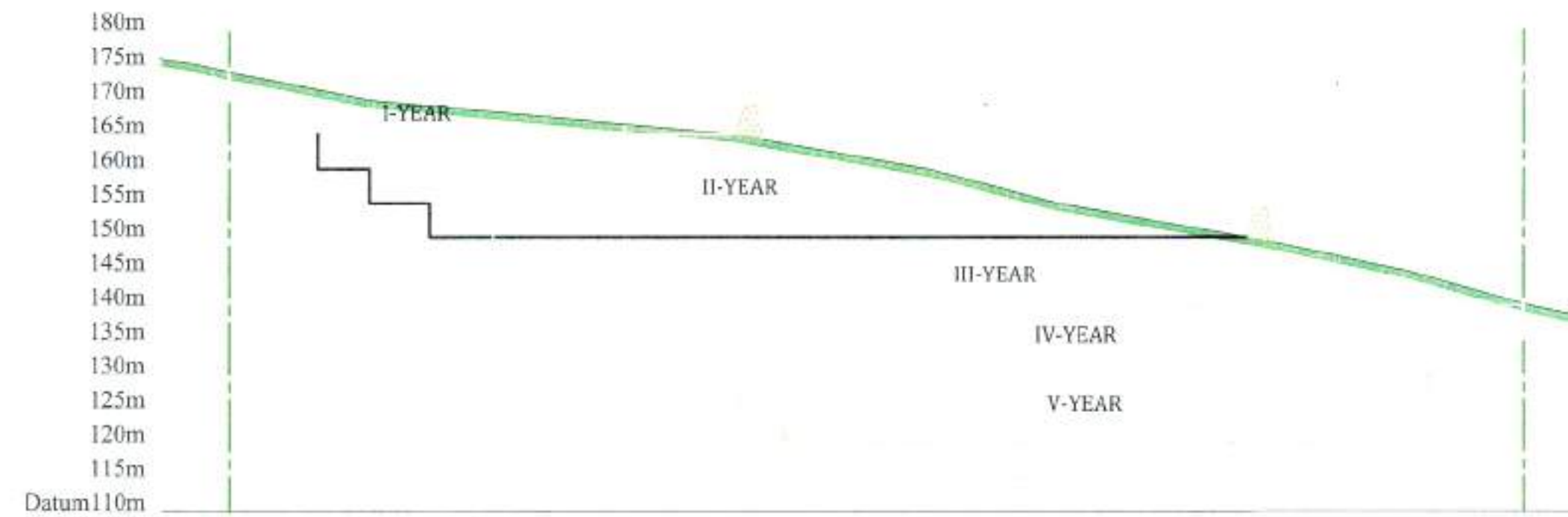
Certified that the above plan is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

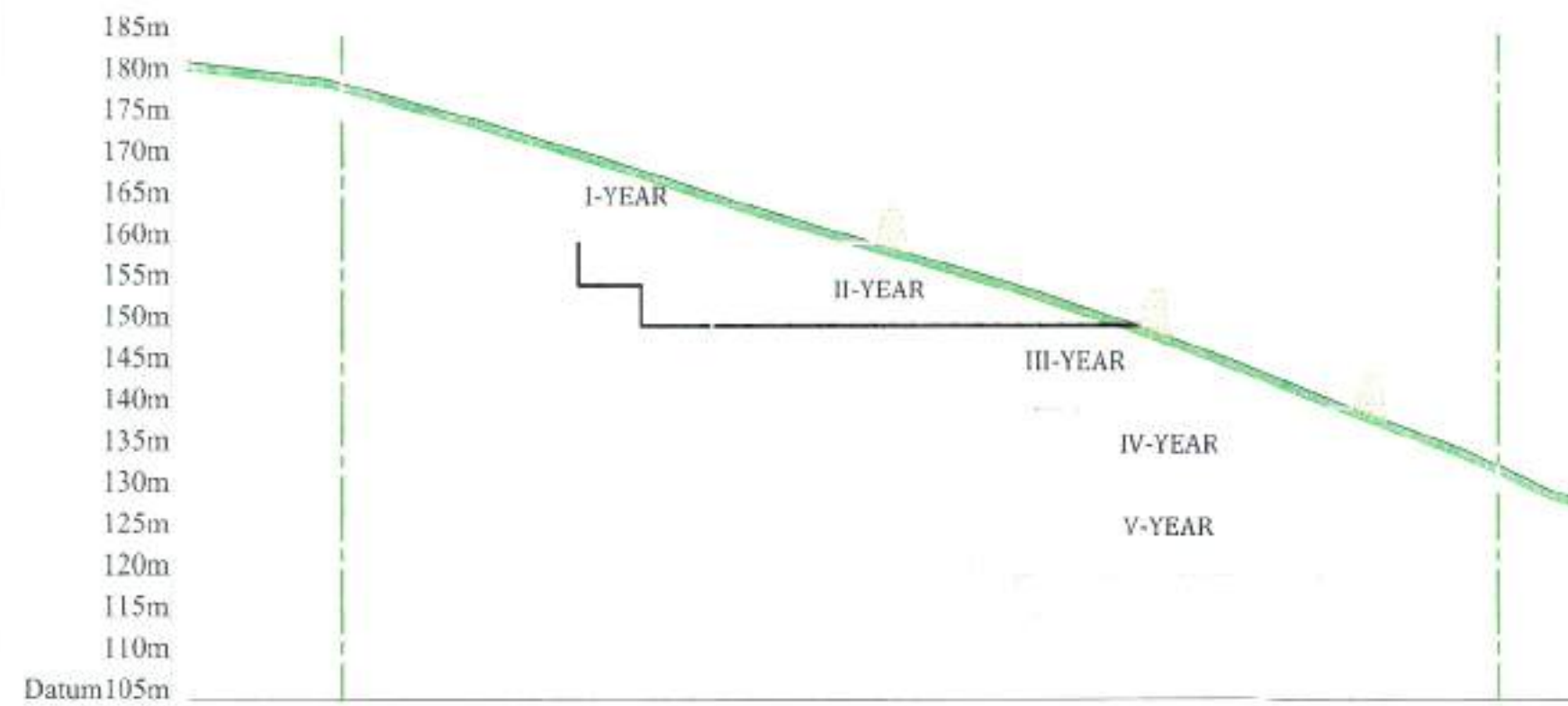
PREPARED BY: GLOBAL ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mine Designers, Geologist & Surveyors)



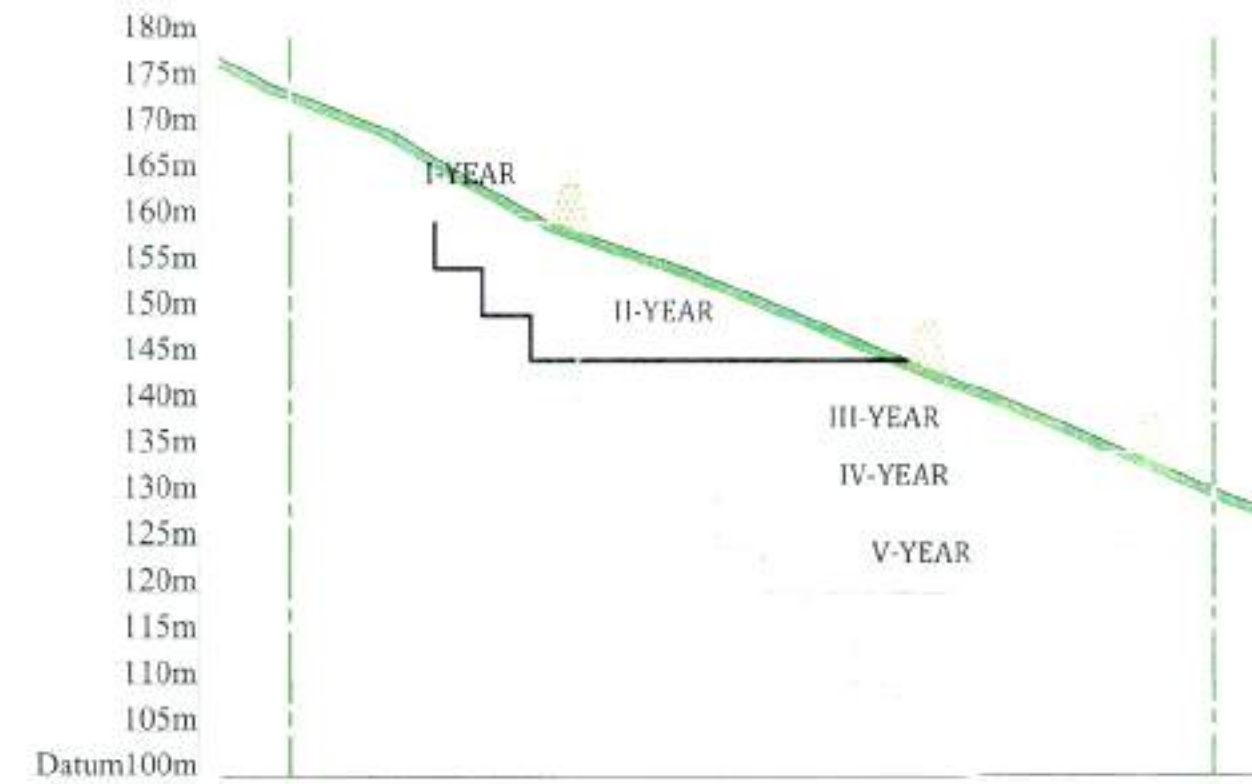
SECTION ON A-A'



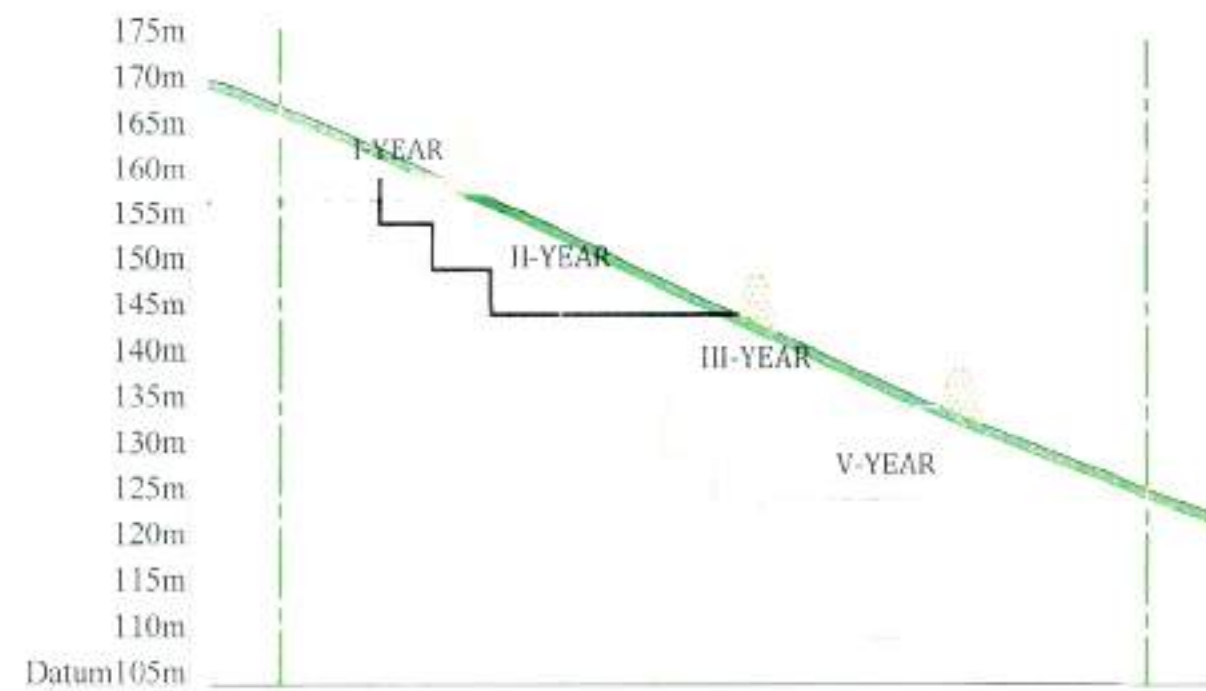
SECTION ON B-B'



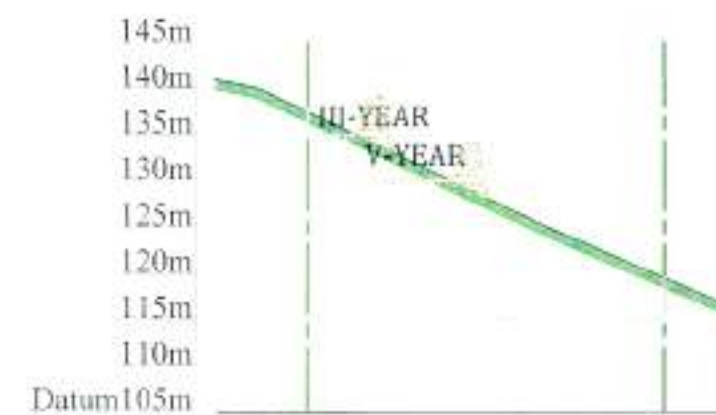
SECTION ON C-C'



SECTION ON D-D'



SECTION ON E-E'



SECTION ON F-F'

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QUARRY BOUNDARY

7.5M SAFETY BARRIER

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PIT POSITION AT THE END OF II-YEAR

PIT POSITION AT THE END OF III-YEAR

PIT POSITION AT THE END OF IV-YEAR

PIT POSITION AT THE END OF V-YEAR

SAFETY BERM

PLATE NO.6

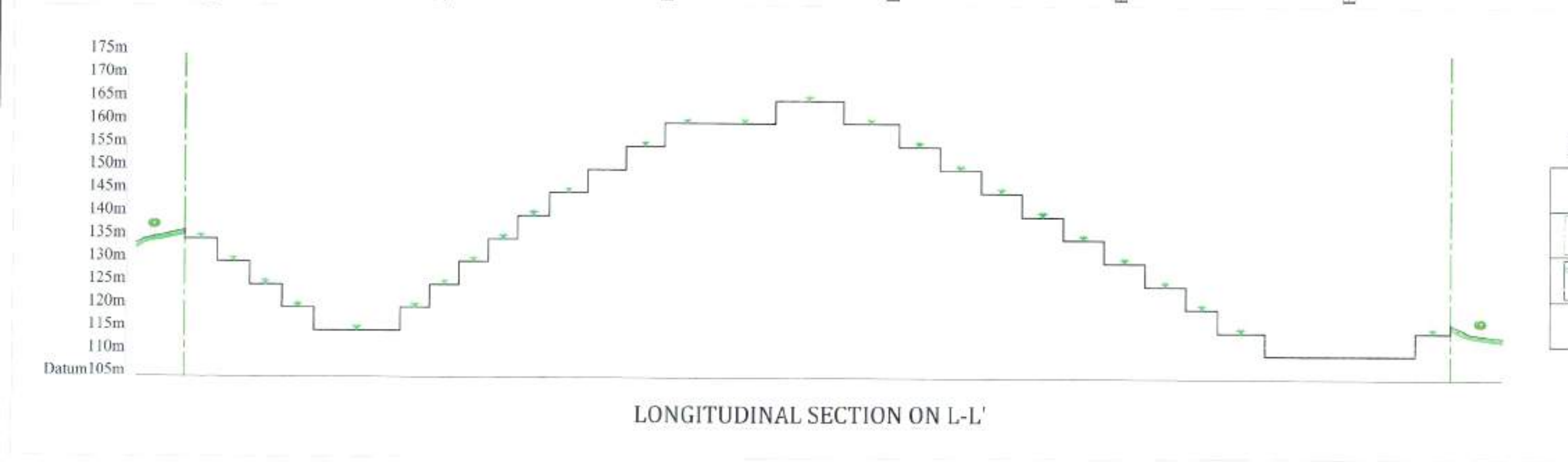
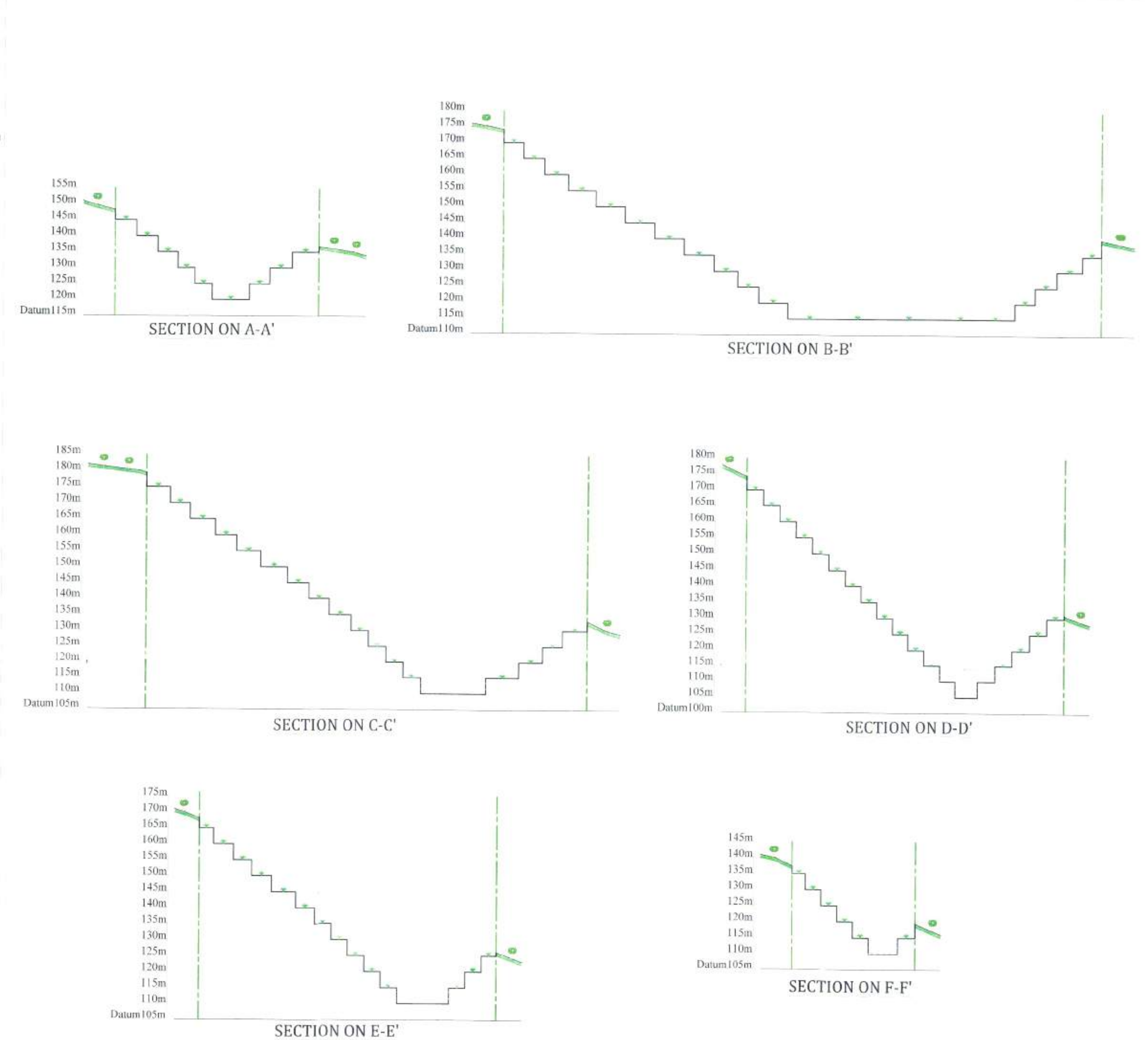
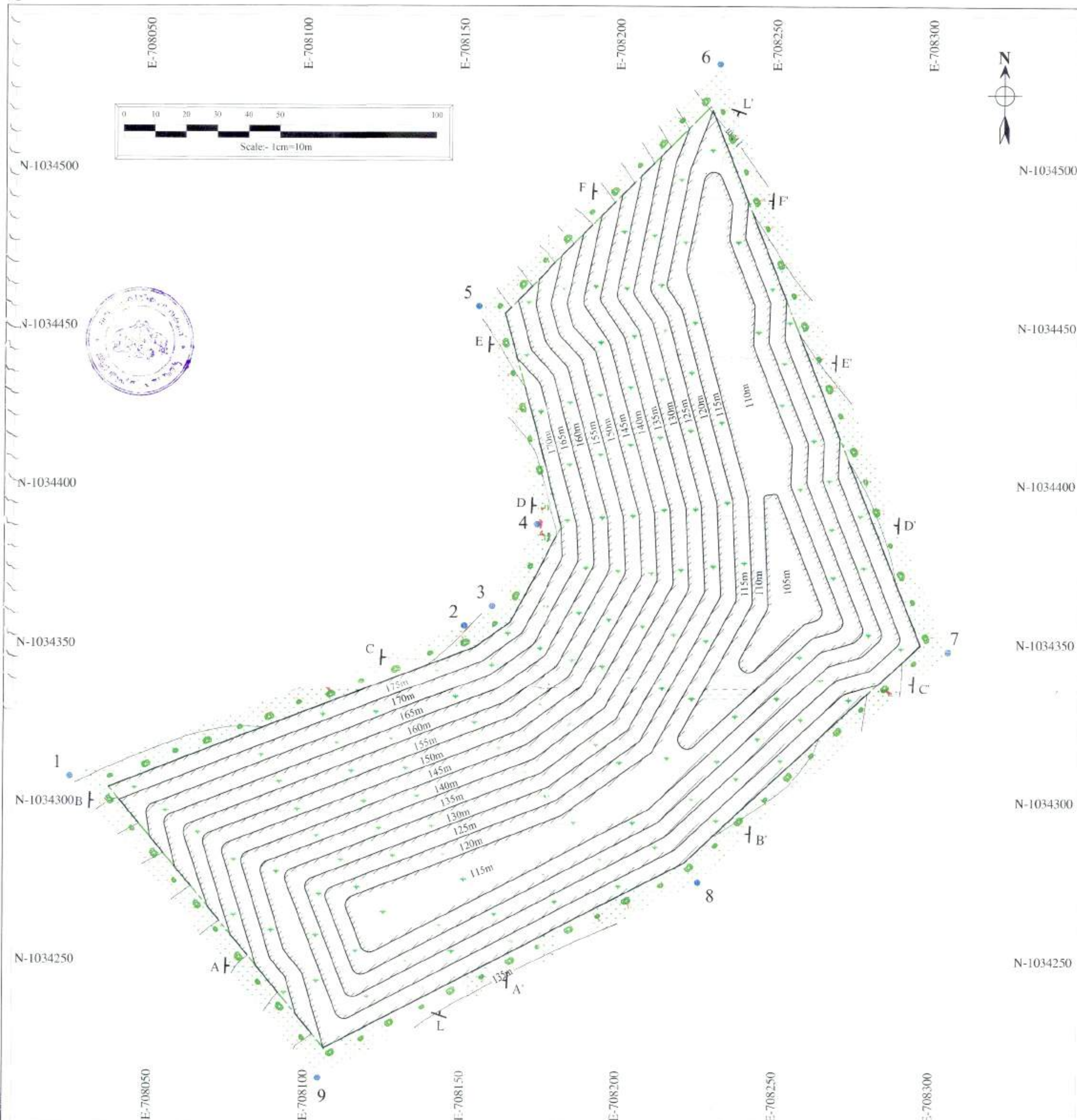
GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates and Sand Private Limited.,
Sy No 888/1-15-1 & 189/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

Title	PRODUCTION & DEVELOPMENT SECTION	
Scale	1:1000 RF	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above sections is correct.

C. Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY : **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologists & Surveyors)



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- QUARRY BOUNDARY
- 7.5m BUFFER ZONE PLANTATIONS
- CONTOURS
- ROAD
- PLANTATION IN BENCHES
- SECTION LINE
- ULTIMATE BENCHES
- WATER POND
- FENCING

LAND USE AT CONCEPTUAL STAGE (Ha.)

PARTICULARS	AREA IN Ha.
AREA FOR QUARRYING	3.1020
AREA FOR SAFETY BARRIER	0.6671
TOTAL	3.7691

PLATE NO.7

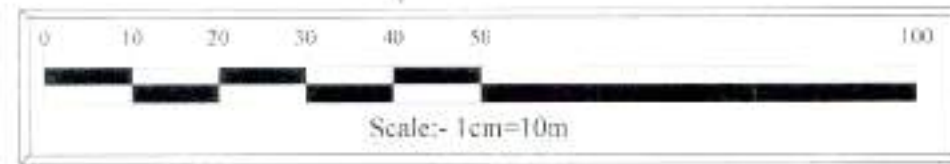
GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates and Sand Private Limited.,
 Sy No 889/1-15-I & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

Title	CONCEPTUAL PLAN & CROSS SECTIONS	
Scale	1:1000 RF	Extent : 3.7691 Ha. (9.3134Acres)

Certified that the above plan & sections is correct.

C.Thambu Cherian
 DMG/KERALA/RQP/17/2018

PREPARED BY : **GLOBAL ENVIRONMENT & MINING SERVICES**
 (Consulting Engineers, Mine designers, Geologist & Surveyors)



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QUARRY BOUNDARY

7.5m SAFETY BARRIER

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RWHP RAIN WATER HARVESTING POND

GARLAND DRAIN

WATER FLOW DIRECTION

PROPOSED DUMP

SAFETY BERM

GABION WALL

PIT POSITION AT THE END OF V-YEAR

PLATE NO.9

**GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates & Sand Private Limited.,**

Sy Nos.889/1-15-1 & 889/1-15, Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala.

Title DETAILED SITE PLAN - DRAINAGE PLAN

Scale 1:1000 Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C.Thambiy Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY: **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologists & Surveyors)



LAND USE AT PROGRESSIVE STAGE (Ha.)

PARTICULARS	AREA IN Ha.
AREA FOR QUARRYING	2.9459
AREA FOR SAFETY BARRIER	0.6671
AREA FOR WASTE DUMP	0.0925
TOTAL	3.7055
UNUSED AREA	0.0636
GRAND TOTAL	3.7691

I N D E X

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- 7.5m SAFETY BARRIER
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- PLANTATIONS
- PROPOSED DUMP
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- GABION WALL
- PIT POSITION AT THE END OF V-YEAR

PLATE NO.10

GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates & Sand Private Limited.,
Sy No. 889/1-15-I & 889/1-15, Pennad Village, Ranni Taluk, Pathanamthitta District, Kerala.

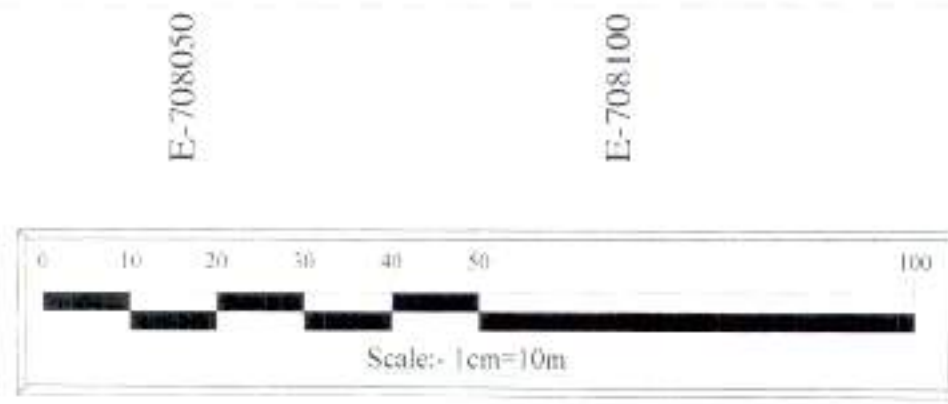
Title	PROGRESSIVE VENTURE PLAN
Scale	1:1000

Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C.Thambu Cherian
DMG/KERALA/RQP/17/2018

PREPARED BY **GLOBAL ENVIRONMENT & MINING SERVICES**
(Consulting Engineers, Mine designers, Geologist & Surveyors)



GEOLOGIST
PATHANAMTHITTA

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PLATE NO. 13

GRANITE BUILDING STONE QUARRY OF
M/s.Delta Aggregates & Sand Private Limited.,
Sy Nos. 889/1-15-1 & 889/1-15, Perumad Village, Ramni Taluk, Pathanamthitta District, Kerala.

Title	DELTA BUILDING STONE QUARRY & SAND AGGREGATE PLANS	
Scale	1:1000	Extent : 3.7691 Ha. (9.3134 Acres)

Certified that the above plan is correct.

C. Thambu Cherian
DMG/KERALA/RQP/17.2018

PREPARED BY: GLOBAL ENVIRONMENT & MINING SERVICES
(Consulting Engineers, Mine designers, Geologist & Surveyors)

