

**MINING PLAN FOR COLOUR GRANITE AREA**

Over an extent of 2.832 hect in S.No. 154/3 of Jagannadhavalasa (V),  
Vangara (M), Srikakulam District.

*Applicant*

**M/s Pyramid Granites,**

No.94, 10<sup>th</sup> Cross,  
Lakshmi Nagar, Porur,  
CHENNAI- 600 116

*PREPARED BY*

**Y. THIMMAIAH,**

(RQP / DMG / HYD/10 /2001)  
102, Kavya Deluxe Apartments,  
Madhuranagar  
HYDERABAD - 38.



**APPROVED**

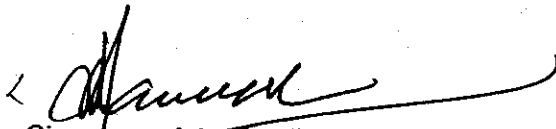
INCONFIRMITY WITH: G.C.D.R. 1999

## CERTIFICATE

This is to certify that the provisions of Granite Conservation & Development Rule – 1999 & Director of Mines & Geology, Govt. of A.P guidelines have been observed in mining plan preparation for Colour Granite over an extent of 2.832 hect in S.No.154/3 of Jagannadhavalasa (V), Vangara (M), Srikakulam Dist, A.P. of Sri Rama Rao and he agreed to implement the same.

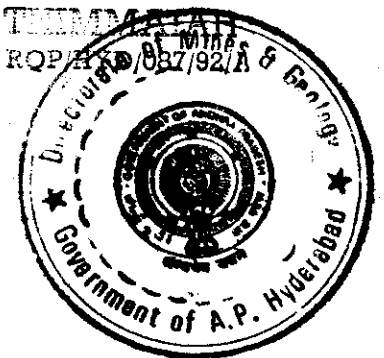
The provisions of Mines Act, Metalliferrous Mine Regulation as applicable has been observed in the mining plan. However any specific permission if required, the applicant will approach all such authorities including Director General of Mines Safety.

Certified further that the information furnished in the Mining Plan is in agreement with that supplied by applicant.

  
Signature of the Applicant

  
Signature of RQP

Y. THIMMAIAH  
Reg: RQP/MSD/087/92/A



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#### LIST OF ANNEXURES

- ANNEXURE -I Notice No. 6086/R1-3/2003, dated: 03-03-2003
- ANNEXURE -III Year-Wise Production for First Five Years
- ANNEXURE -II photos of the Subject Area



This Mining Plan is Approved subject to the  
Conditions/Stipulations Indicated in the  
Mining Plan Approval Letter No.....

15033/MP/2003 dated 3.3.2004

**MINING PLAN FOR COLOUR GRANITE OVER AN EXTENT OF 2.832 HECT,  
LOCATED IN S.NO.154/3 OF JAGANNADHAVALASA (V), VANGARA (M),  
SRIKAKULAM DISTRICT**

**INTRODUCTION:** The Director of mines & Geology has granted the Prospecting Licence for Colour Granite over an extent of 2.832 Hectares in above said area, in favor of M/s Pyramid Granites, vide Proceedings No. 40456/R1-3B/97, dt.28-11-2000 for a period of 2 years. Accordingly the Asst. Director of Mines & Geology has executed the P.L. vide Proceedings No. 5654/Q/2000, dt.24-1-2001. After prospecting the area, M/s Pyramid Granites have applied for grant of Q.L. for the same area. So, M/s Pyramid Granites are requested to submit AMP within 6 months through the Notice No.6086/R1-3/2003, dated: 03-03 -2003 (Ref: Annex- I).

**I GENERAL:**

a) Name & Address of the Applicant: M/s Pyramid Granites,  
No: 94, 10<sup>th</sup> cross,  
Lakshmi Nagar, Porur,  
Chennai – 600 116

b) Status of the Applicant : Partner ship firm

c) Type (s) of Granite : Colour Granite

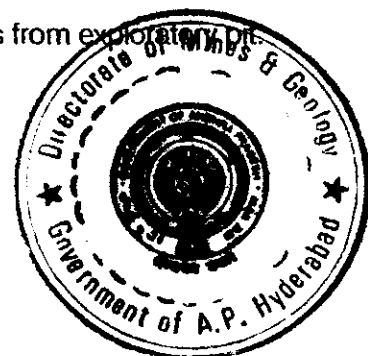
d) Period for which the Quarry Lease is required: 20 years

e) Name & Address of RQP : Y.Thimmaiah (RQP / DMG / HYD/10 /2001),  
102, Kavya Deluxe Apartments,  
Maduranagar,  
Hyderabad- 38, Ph: 23733478 & 23735373

f) Name & Address of the Prospecting Agency: This area has been operated by the applicant company during P.L Period and obtained about 40m<sup>3</sup> of granite blocks from exploration.

**APPROVED**

*Shankar*  
**Dr. P. DAYASANKAR**  
**JOINT DIRECTOR**  
**DEPT. OF MINES & GEOLOGY**  
**GOVT. OF A.P. HYDERABAD.**



## II LOCATION AND ACCESSIBILITY:

### a) Location:

The area is located on Topo Sheet No. 65 / N / 10 (1:63,360 Scale) at the junction of Latitude of 18° 34' 06" and Longitude of 83° 36' 58" (Plate-1).

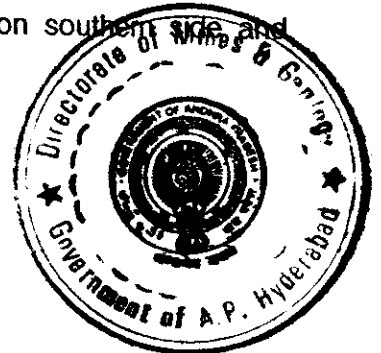
### (b) Details of the area:

District & State	Mandal	Village	Sy. No / Plot No. / Block No.	Area in hectares	Type of Land	Ownership & occupancy
Srikakulma & A.P	Vangara	Jagannadhavalasa	154/3	2.832 Hect	Govt. Land	Granted P.L to Applicant

### (c) Infrastructure:

i) The area is located at a distance of 1.0km from the village Jagannadhavalasa due South. And at a distance of 2km from Kondavalasa due west. Kondavalasa is located at a distance of 15km from Burada Village, which is located on state high way between Rajam & Palakonda. The area can be approached by a cart track of 1km length from tar road, immediately after Kondavalasa while going towards Madduvalasa. Rajam, is the nearest place, where the Market, Education, Hospital and Bus services are available and Rajam is located at 25km from the subject area. The nearest Railway Station is located at Chipurapalli within 43km distance from the subject area. The nearest airport and seaport is located at Vishakapatnam. Electricity is available in the vicinity of subject area. The subject area is belonging to part of the hillock and it has only sheet rock of colour granite i.e. Garnety Ferrous Quarzo Felspathic Rock. It is commercially know as "white galaxy". Due to sheet formation of granite, the area doses not have any vegetation.

ii) Boundaries: The subject area is located in Sy No: 154/3 of Jagannadhavalasa (v), Vangara (M). This area is surrounded by the Sy.No: 90 on eastern side, Sy. No: 154/1 on northern side, Sy. No: 152 on western side and Sy. No: 154/4 on southern side and cultivation lands are located on northern side.



### III GEOLOGY:

a) **Topography:** The area is located on Topo Sheet No. 65 /N/10 (1:63,360 Scale) at the junction of Latitude of 18° 34' 06" and Longitude of 83° 36' 58" (Plate-1). The subject area is belonging to part of the hill. It is elevated on southern side and sloping towards north. There is a maximum relief of 36m from north to south. Due to Sheet rock formation, the area does not have any trees or bushes. There are no prominent natural drainage channels in and around this area.

b) **Regional Geology:**

During the Late- Archaean, along the eastern margin of the Dharwar Craton, intense deformation and high-grade granulite facies metamorphism of a pile of volcano-sedimentary rocks and sub- volcanic intrusives formed in long, linear, rift-related basin resulted in the development of a typical suite of rocks comprising Khonndalite, calc-granulite and charnokite represented by Eastern Ghats.

c) **Local Geology:**

Alluvial soil covers the periphery of the hillock on northern side of the subject area and the same mound is continuing towards east and west. However, most of the subject is covered by the Garnetic Quartz Feldspathic rock as a sheet with out much overburden as show on plate-3. Garnetic Quartz Feldspathic Rock (Colour Granite) i.e. 'white Galaxy' is exposed as a sheet in most of the area. This rock type might have been derived from high-grade metamorphism of a pile of volcano-sedimentary rocks and sub- volcanic intrusives. The rock is formed in east – west trend & this type of material is being excavated for last more than ten years from this region. During P.L. period one pit was excavated to a size of 20m x 15 and to a depth of 3m. The trial pit and the samples collected from sheet of the area show that granite on surface is weathered and appearing dark brown or gray to a thickness of less than 0.25m. Below the surface, the granite shows white back ground with brown garnet dots. The Geological plan of applied area is enclosed as Plate-3 and geological sections of the area are enclosed as Pate-3A.

**Soil:** A little extent of the applied M.L. area is covered by the alluvial soil on northern side.

**White Galaxy Granite:** Most of the applied area is formed by the White Galaxy granite (Garnetic Quartz Feldspathic Rock) and no other litho units are available in this area. It is fine to medium grained, massive in nature. It has white background with uniformly spread garnet specks and it appears like galaxy.

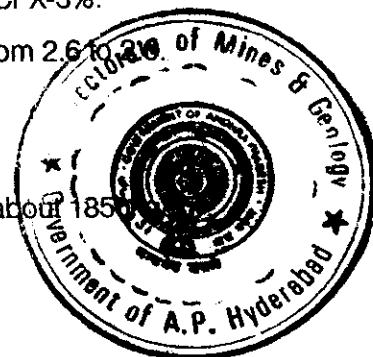


d) **Parameters for evaluation of the deposit:**

- i) Frequency of Occurrence of Fissures & Joints: The deposit shown widely spaced joints of fissures from surface it self. As such a large size of granite blocks can be recovered from this area.
- ii) Occurrence of folds and faults: No folds or faults are observes from this granite area.
- iii) Variation in strike: No variations are observes in the strike direction of the formation.
- iv) Splitting pattern of the stone: these granite blocks will be split into rectangular blocks of various sizes depend on the space of the joints of the sheet rock.
- v) Foliation: This granite doses not show any foliations.
- vi) Occurrence of Intrusives: No intrusives were noticed in this white granite area.
- vii) Extent of weathering: The applied area belongs to hillock with massive sheet rock. On the surface the sheet rock is weathered and appeared as brown to dark brown to a thickness of 0.25m
- viii) Amount of O.B to be removed: The area is covered by a massive sheet rock with surface weathering to a thickness of less than 0.25m. No other overburden is available in this area.

e) **Parameters for evaluation of the Stone Quality:**

- i) Texture & Grain Size: This Granite is a massive and it has fine to medium grained material. It is hard, compact and white in colour. It shows equigranular texture consisting of fine to medium grained plagioclase Feldspar, Quartz and garnet.
- ii) Colour & Aesthetic Beauty of the Stone: This granite stone shows white colour with scattered brown garnet specks. This granite attains good glossy finish. The minerals available in this granite show the uniform grain size and it has good aesthetic value with mixture of colour combinations of gray, brown and blue.
- iii) Hardness: The white granite is hard and compact. The hard ness of this granite around 6 on Moh's scale of hardness.
- iv) Mineral Composition: This granite has uniform grain size of different mineral of plagioclase Feldspar=40%, Quartz=45%, garnet20% and Biotite=8%, CPX-3%.
- v) Density / Specific Gravity: The Specific Gravity of this granite varies from 2.6 to 2.7.
- vi) Water absorption Capacity: It is less than 0.16%.
- vii) Porosity: The Porosity of this granite is about 0.36%.
- viii) Compressive Strength: The compression strength of this granite is about 185



- ix) Abrasiveness: It has the abrasiveness of 6.5.
- x) Permeability: Due to Compactness, it does not have permeability.
- xi) Rock Quality Designation (RQD): Compressive Strength & Young's Modulus of Elasticity of the rock are furnished. From these values the RQD is established to be good with RQD% between 75 to 90.
- xii) Young's Modulus of Elasticity: It is about 5.76 ( $15 \times 10^4$  kg/cm<sup>2</sup>).
- xiii) Degree of Weathering: Under hand lens/ Microscope: This granite is not weathered.
- xiv) Glossiness: it takes nice polish and gives glossiness surface due to equigranular of grain size in this rock.

#### IV EXPLORATION:

- a) **Present Status:** The Q.L area is a hilly terrain and consisting of only Garnetic Quartz Feldspathic Rock as a sheet formation without any overburden. To know the recovery of block sizes, quality of Granite and market movement of this Granite, about 40m<sup>3</sup> of granite blocks were excavated and dispatched from this area. Due to exploratory workings, a pit is formed on northern side of the area to a length of 20m; width of 15m & to an average depth of 3m. The location of the pit is shown on geological plan of plate-3.
- b) **Future Programme:** The Granite is well exposed as a hill without any overburden in this area to a maximum height of 34m. Since the granite is well exposed above the ground level, on exploratory pits or boreholes or geophysical survey works are proposed to prove the existence of granite in this area. However, the proposed workings will give the information about the quality of the granite, available in this area.

#### V Reserves:

Most of the area is formed with granite sheet rock without overburden. So, the reserves of granite are calculated by taking the following parameters.

- Total Extent of the area = 2.832 hect or 28320m<sup>2</sup>
- Granite Mineralised zone = 26880 m<sup>2</sup>
- Average thickness of the granite, exposed above the ground level: 34/2 = 17
- Recovery factor of the marketable granite blocks = 0.25





Economic/Marketable Reserves:

From top layer of the Granite body, about 25% of the marketable blocks can be recovered for gang saw cutting. The recovery of the blocks will increase in second & third layers from 30% to 35% respectively. The expected reserves of granite are given below.

Total area is covered under Q.L = 2.832 Hect

Granite Mineralised area = 26880m<sup>2</sup>

Average Proved depth of the deposit (top layer) = 17m

Probable depth of the deposit (second layer) = 5m

Possible depth of the deposit (third layer) = 5m

Recovery factor of marketable blocks = 0.25 from top layer, 0.3 from second layer and 0.35 from third layer.

Expected reserves of granite blocks in proved zone =  $26880 \times 17 \times 0.25 = 114240 \text{ m}^3$

Expected reserves of granite blocks in Probable zone =  $26880 \times 5 \times 0.3 = 40320 \text{ m}^3$

Expected reserves of granite blocks in Possible zone =  $26880 \times 5 \times 0.35 = 47040 \text{ m}^3$

Total = 201600 m<sup>3</sup>

Total reserves of Granite (for Dimensional Stone) = 2,01,600 m<sup>3</sup>

Total Granite Waste generation = 4,70,400 m<sup>3</sup>

**Mineable Reserves:** On western & eastern sides of the area, the granite reserves will be blocked under final pit slopes (at 45° pit slope). So, the non-mineable reserves are calculated as follows.

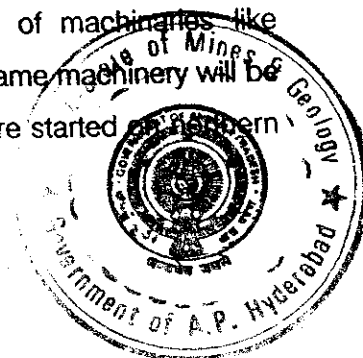
Cross sectional area of pit x Length of pit slope x R.F. =  $91 \times 470 \times 0.3 = 12,831 \text{ m}^3$ .

Therefore Mineable Reserves =  $2,01,600 - 12,831 = 1,88,769 \text{ m}^3$ .

**Life of the Quarry:** It is proposed to raise the production of about 2400 m<sup>3</sup> of granite blocks per annum. At this rate of production the expected life of the Quarry is about 78 years.

**VI MINING:**a) i) **Type of Mining:**

The subject area was granted for 2 years P. L to the applicant. In this P.L period the mining operations were carried out by opencast method with the help of machineries like excavator, tipper, compressor, Jet burner & jackhammer drills. The same machinery will be used in the Q.L period also. During the P.L period, the workings were started on western side of the area and obtained 40m<sup>3</sup> of granite blocks.



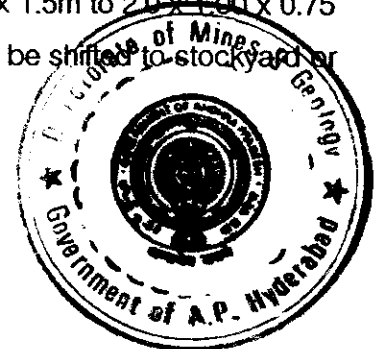
It is proposed to continue the Quarry workings on eastern, western & southern sides of the existing pit. Based on previous experience, the applicant will follow same method of mining and produce about 2400m<sup>3</sup> of granite blocks per year from this area. To mine granite in this area, the following machinery is used.

ii) **Type of Mechanization required:**

An excavator (Tata Hitachi -200LC) is used to remove the waste material, consisting of small, shape less and defected blocks from working face. One Tipper is required to shift the waste and secondary blocks from working place to stockyard. To cut the sheet rock in primary blocks a jet burner & compressor will be used. To cut primary blocks into secondary blocks, three or four jackhammer and one compressor (CP 325) is required. To load the dressed & marketable granite blocks in to trucks, the above excavator will be used. For transportation of marketable granite blocks to the user industries or to the seaport, hired trucks of 20t will be used.

b) **Brief description of the Existing method of workings:**

Near granite and soil contact (northern side) of the area, a free face for granite sheet rock has been developed by excavating the soil to a depth of 3m and to a length of 20 from the surface with the help of excavator (Tata Hitachi -200LC) and exploratory pit was developed during P.L. period. In this five years the granite sheet of 53m x 20m area will be cut into primary blocks with jet burner to an average size of 10m x 5m x 4.5m. Each primary block will be drilled with jackhammer holes in a row at closer interval and these holes will be filled with mixture of the "FRACT-AG" (Chemical powder) & water and these holes will be left for drying to 6 to 8 hours. Mean while the chemical in drill holes will increases in its volume and a result of the primary block get the cracks along the line of the drill holes. From each primary block about 18 secondary blocks can be obtain and these secondary blocks will be separated from primary block with the help of excavator. At the time of secondary blocks cutting, some waste material consisting of small size, shape less and defected blocks will also generate. This type of waste material will be loaded into tipper and then transported to dump yard. The use full secondary blocks will be removed from its *insitue* position with the help of excavator and it will be observed on all six faces. If the secondary block dose not have any defects, it will be cut in to a dimensional blocks with the help of jackhammer drilling and offset cutting to various sizes of 3 x 2.5 x 1.5m to 2.0 x 1.00 x 0.75 m depend on secondary block size. The dimensional blocks will be shifted to stockyard or it the market.



## c) Details of Production obtained from this area during P.L period:

Year	Machinery Deployed	Workers Employed	Dispatch m <sup>3</sup>	Sizes of different commercial blocks
2001 to 2003	Excavator: 1 (Hitachi-200), Tippers: 1, Compressors: 1 Jackhammers: 3	10 Nos / d	40	2.8 x 1.6 x 1.5 to 1.6 x 0.70 x 0.70 m

## d) Mining program for first five years:

i) Year wise workings: The proposed workings will be carried out on eastern, western & southern sides of the exploratory pit. The workings will be started on eastern side of the pit and then this pit will be advanced towards west & south in one or two benches of 4m height on an average. There is no overburden in proposed mining area. The waste material, which is available around the sheet rock, will be removed with the help of excavator and free face will be developed for separation of primary and secondary blocks.

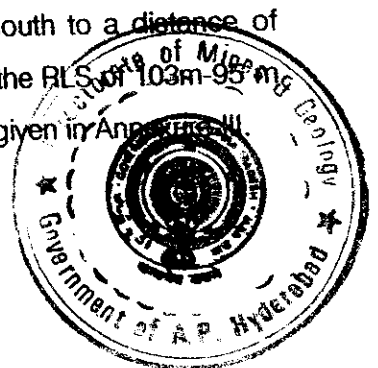
1<sup>st</sup> year: First year workings will be carried out over a length of 53m, width of 40m to an average height of 4.5m, between the RLS of 94m - 85m in two benches on eastern side of the existing pit. About 2385m<sup>3</sup> of granite blocks and 7155m<sup>3</sup> of mineral waste will generate during first year.

2<sup>nd</sup> year: In second year, the western face of exploratory pit will be advanced towards west to a distance of 53m over a width of 40m between the RLS of 94m-85m as shown in plate-4 and obtained the production of 2385m<sup>3</sup> of granite blocks and 7155m<sup>3</sup> of mineral waste.

3<sup>rd</sup> year: In third year, the production of 2385m<sup>3</sup> Granite and 7155 m<sup>3</sup> waste will be obtained by advancing the western face of secondary year workings towards west to a distance of 53m & to a length of 40m between the RLS of 94m-85m as shown in plate-4.

4<sup>th</sup> year: In fourth year, the production of 2325m<sup>3</sup> Granite and 6975m<sup>3</sup> waste will be obtained by advancing the southern face of first three years workings towards south to a distance of 15m, over a length of 155m and to an average height of 4m between the RLS of 100m-92m as shown in plate-4.

5<sup>th</sup> year: In fifth year, the production of 2325m<sup>3</sup> Granite and 6975m<sup>3</sup> waste will be obtained by advancing the southern face of fourth year workings towards south to a distance of 15m, over a length of 155 and to an average height of 4m between the RLS of 103m-95m as shown in plate-4. Bench wise production details of each year are given in Appendix III.



e) **Quantum of excavation (O.B & Granite):**

Removal / Excavation of O.B and other Quarry Waste if any and its Disposal: The quarry operations will be continued from the existing pit on slope of the hill from sheet rock. There is no overburden. But about 75% of the production is going to be as solid waste which is consisting of small size and shape less blocks and this waste will be removed from the working face. In every 6975m<sup>3</sup> to 7155 m<sup>3</sup> of waste will generate per year. In this five year about 35,415 m<sup>3</sup> of waste will generate from this area.

f) **Production & Marketing:**

It is proposed to obtain about 2400 m<sup>3</sup> of granite blocks to a different sizes of 3 x 2 x 2m to 1.5 x 0.75 x 0.75 m per year in this five years program. During P.L period, the granite blocks of more than 2.9x 1.6 x 1.0m size were supplied to other countries and the smaller size blocks were sold to domestic market. In future also this material will be supplied to other countries and it will be marketed within India also.

g) **Magazine, Type and Capacity:**

The applicant do not used any explosives during P.L. period. In place of explosives the Jet burner is used for separation of primary blocks from sheet rock and the chemical "FRACT-AG" is used for splitting the secondary blocks from primary blocks. In coming lease period also the same method of mining will be adopted without blasting. So no Magazine & explosives are required for mining in this area.

h) **Description of processing Plant if any:** There is no of processing Plant to the applicant.

i) **Organization Chart:**

	<u>Proprietor</u>
	<u>Mines Manager/ Mines Foreman</u>
<u>Supervisor</u>	<u>Mate</u>
Register Keeper	Excavator Operator: 1 No
	Truck Drivers: 1 Nos
	Drillers: 4 Nos
	Compressor Operator: 1 No
	Cutters : 4 Nos
	Helpers : 8 Nos

j) **Site Services:**

A rest shed & office will be constructed on NE corner of the subject area, where the locations are shown on Plate-4.



## VII SCHEME OF WASTE MANAGEMENT PLAN (SOLID & LIQUID):

- a) **Solid waste:** About 75% of the material from granite production is going to be generated as solid (granite) waste. In every about 6975m<sup>3</sup> to 7155 m<sup>3</sup> of waste will generate per year. In this five year about 35,415 m<sup>3</sup> of waste will generate from this area. Year wise waste generation particulars are given in anneure-III.
- b) **Liquid waste:** The quarry workings are located at higher levels than the ground level on the slope of the hill. So there will not be any water seepage in the working pit and no water will be discharged form this quarry.
- c) **Dumping site Particulars:** The subject area has a non-mineralised zone on northern side of the area. So this non mineralised zone is selected for waste dumping over a length of 120m to a width of 25m and to a height of 12m (Ref: Plate -4).
- d) **Utilization of waste, if not prevented:** The waste material will be stocked on northern side of the area temporarily. Later this waste is used for road maintenance and for building material with the permission of ADMG.

## VIII ENVIRONMENT MANAGEMENT PLAN:

### a) Baseline Information:

- i) Land use Pattern: The subject area is a Govt. wasteland. Due to prospecting work about 200m<sup>2</sup> area is occupied by the pit and waste dump has occupied 400 m<sup>2</sup> area.
- ii) Water Regime: There are no perennial water sources in and around the applied area within 500m radius. The surface rainwater of the area flows through the slopes of the area and joins to seasonal watercourse, which is located out side the lease area.
- iii) Flora and Fauna: Since the subject area is a rocky terrain, it does not contain any trees or bushes. There is no report of existence of wild animals in this region.
- iv) Quality of Air, Water and Ambient Noise Level: The subject area is away from industries and villages. So the air and water are fresh and unpolluted in this area.
- v) Climatic Conditions: The area has a tropical climate. The peak summer will be in the month of May. Highest temperature of 45<sup>o</sup> is recorded in this area during the month of May and the lowest temperature of 13<sup>o</sup> is recorded in the month of January. During 2002-2003 the rainfall in this area is about 180mm.



vi) Human Settlement: The following villages are located within 5km radius of the applied area. The population, distance and direction of the villages with respect to the applied area are given in the following table and their locations are shown on plate-1.

Name of the Village	Population	Distance(km )	Direction
Jagannadhavalasa	1200	1.0	N
Kondavalasa	1600	2.0	SE
Madduvalasa	1150	2.0	N
Sarasanapalle	800	9.0	NE
Agraharam	600	3.0	NE
Arasada	1850	4.5	SE
Bhagemmapeta	650	2.0	NW
Nilayavalasa	500	1.5	W
Pattuvardhanam	850	2.5	NW
Gadanavalasa	500	1.5	SW

vii) Public Building, Places of Worship and Monuments: There are no Public Building, Places of Monuments within or near by the area.

b) Environmental Impact Assessment (next five years):

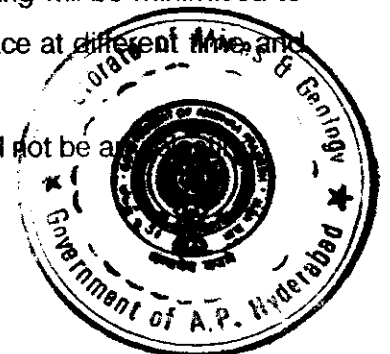
i) Land Degradation: In addition to old pit, about 11010m<sup>2</sup> area will be occupied by the proposed workings to an average depth of 4m and waste dump will occupy an area of 3000 m<sup>2</sup>, where the locations are shown on plate-4.

ii) Quality of Air: There are chances for air pollution at the time of jackhammer drilling and at the time transportation of Mineral & waste. But this air pollution will be controlled to the ambient air quality standards (24 hours) i.e. SO<sub>2</sub> = 120ug/m<sup>3</sup>, NO<sub>2</sub> = 120ug/m<sup>3</sup>, Suspended Particulate Mater (SPM) = 500ug/m<sup>3</sup>, Respirable Particulate Mater (size <10um) (RPM)=150ug/m<sup>3</sup>, CO=5mg/m<sup>3</sup> and Pb =1.5ug/m<sup>3</sup> by keeping waste cloth around jackhammer road and the drill hole at the time drilling. The mine roads will be sprayed with water, before starting the transportation of Mineral & wastes for minimise air pollution.

iii) Water Quality: There will not be any change in Quality of water due to granite mining, which is located at higher levels than the groundwater table. The surface rain water flow through the seasonal watercourse as usual.

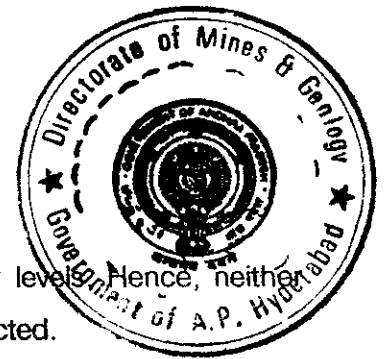
iv) Noise: the noise of excavator, compressors & Jackhammer drilling will be minimised to permissible limits (105 dB) by operating equipment at different place at different times and by carrying periodical maintenance regularly to these machinery.

v) Vibration Levels: There will not be any vibration because there will not be a



This Mining Plan is Approved subject to the Conditions/Stipulations Indicated in the

Mining Plan Approval Letter No.....  
15033 /MPT/2003 dated 3-3-2004



12

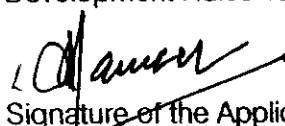
- vi) Water Regime: Quarry operations will be carried out at higher levels. Hence, neither groundwater table nor the surface drainage pattern is going to be affected.
- vii) Socio-Economics: The inhabitations of the surrounding villages are mainly depending on agriculture. Quarrying is on small scale, limited to 12 members. Hence there will not be much impact on Socio-Economics of the local inhabitant.

c) Environmental Management Plan:

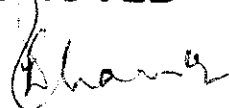
- i) Storage and Utilisation of Topsoil: No topsoil is going to be generated from this mining.
- ii) Proposal for Reclamation of Land Effected by Mining: No reclamation is proposed in this five years period because; the mining will be continued further depths below first five year workings
- iii) Afforestation Programme: The northern boundary i.e. dump slope will be planted in these five years. Every year about 24m length of the boundary will be planted on northern side with 24 plants at 1m interval. Year-wise plantation area is shown on plate-4
- iv) Stabilisation and Vegetation of Dumps: About 35415m<sup>3</sup> of waste material will generate during this five years period. This waste will be dumped on northern sides of the area in non mineralised zone and the dumps will be stabilized by the pack wall.
- v) Measure to Control to Erosion / Sedimentation of Watercourses: There is no surface erosion in the subject area because the surface area is covered by the sheet rock .
- vi) Treatment and Disposal of Water from Mine: No water will be disposed from mine.
- vii) Measures for Minimising Adverse Effects on Water Regime: No adverse effects are anticipated on water regime.
- viii) Measures for Protecting Historical Monuments and Rehabilitation of Human Settlements likely to be disturbed due to Mining Activity: There are no Historical Monuments or Human Settlements within or near by the area.
- ix) Socio Economic Benefits Arising out of Mining: Few labors will get employment and the state Government and village Panchayathi will get royalty due to mining activity.

IX ANY OTHER RELEVANT INFORMATION:

The granite quarrying will be carried out by following the rules of Granite Concession & Development Rules 1999.

  
Signature of the Applicant

**APPROVED**



  
Signature of RQP

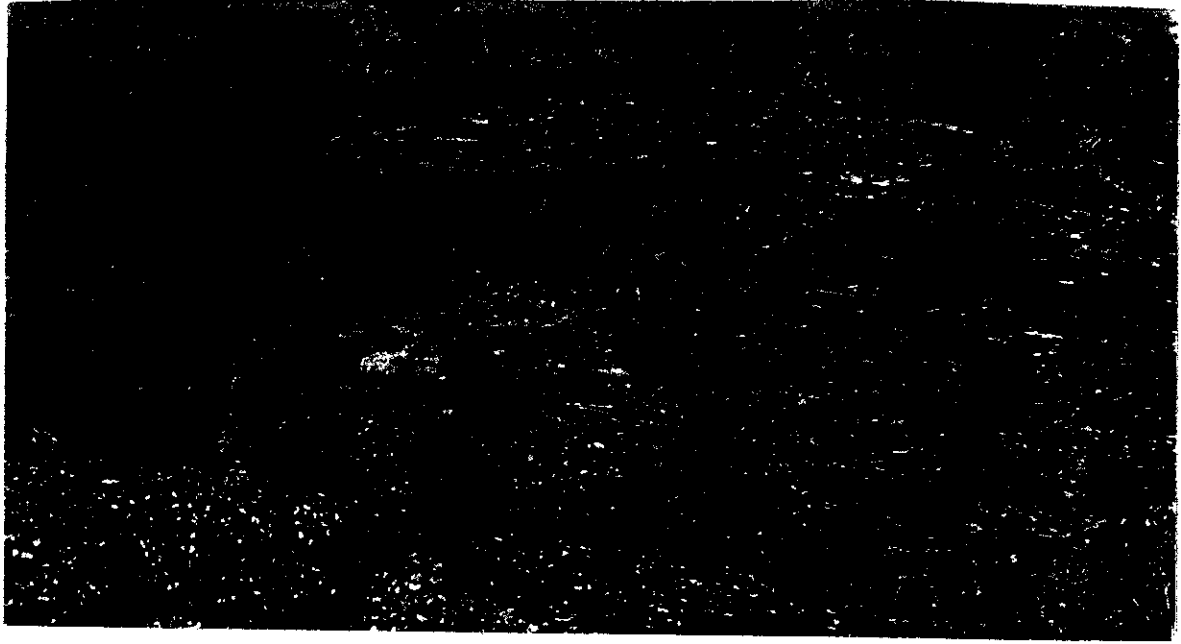
**Dr. P. DAYASANKAR**  
JOINT DIRECTOR  
DEPT. OF MINES & GEOLOGY  
GOVT. OF A.P., HYDERABAD,

**Y. THIRUNOVAN**  
Reg: RQP/111/003/2004

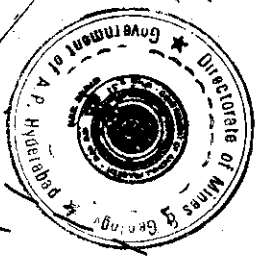
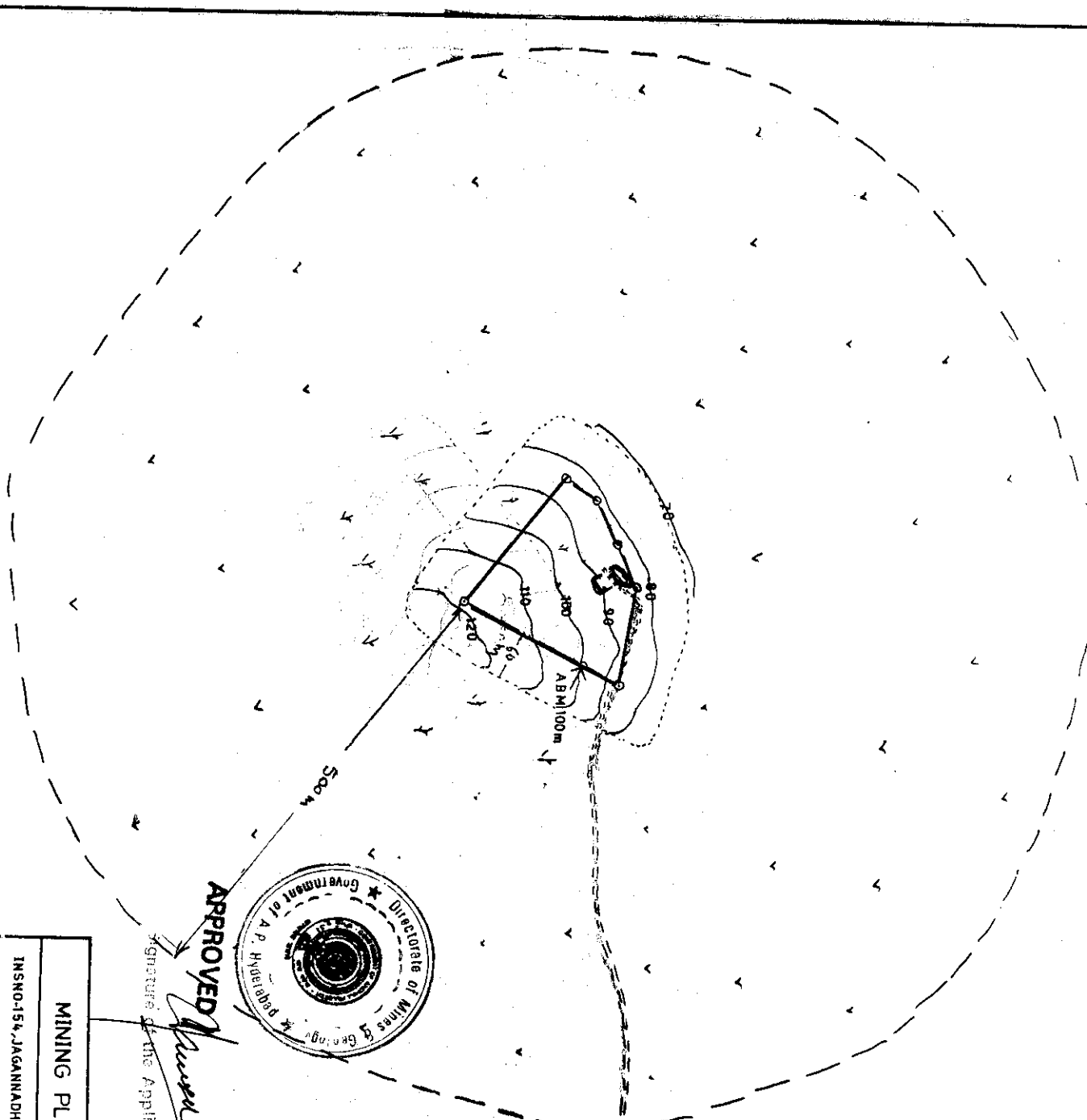
M/S PYRAMID GRANITES

ANNEXURE -

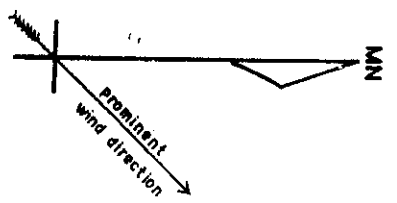
Photos Show the Applied Q L Area And Prospecting Pit Locations  
in S.No. 154/3 of Jagannadhavalasa (V), Kangara (M) Srikakulam (Dt)







**APPROVED**  
 Signature of the Applicant



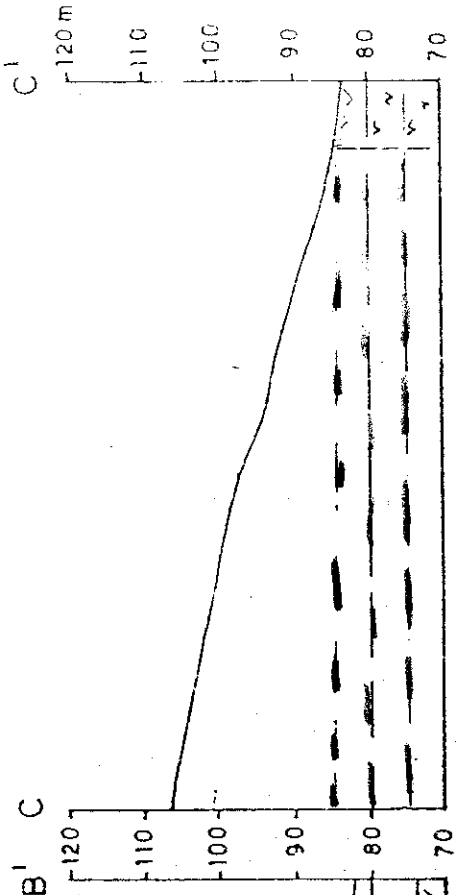
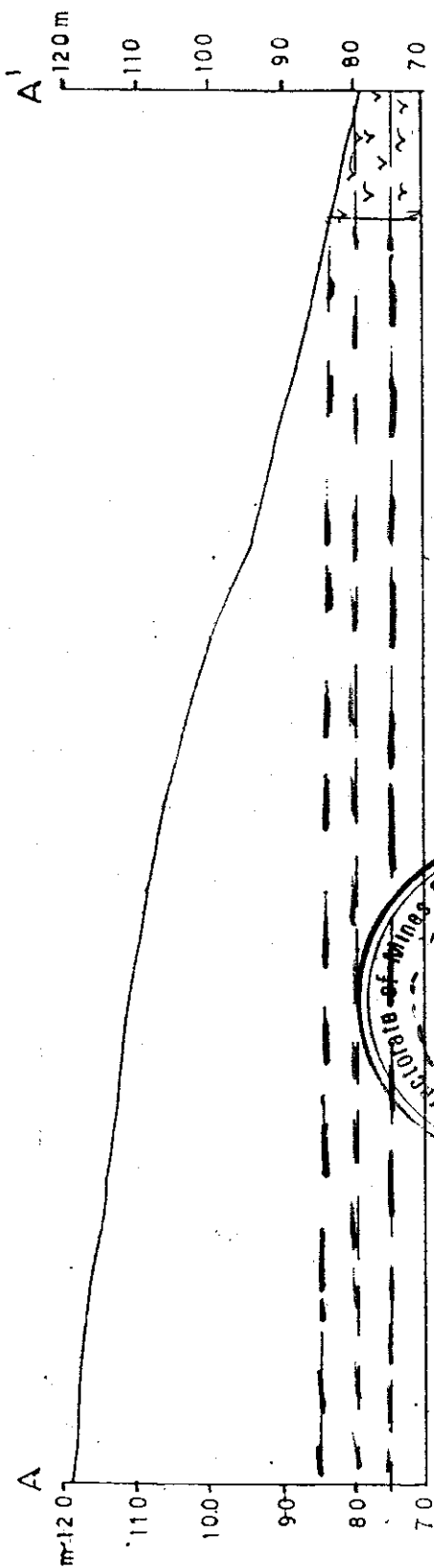
**INDEX**

- ASSUMED BENCHMARK
- LEASE BOUNDARY
- CON TOUR
- ROAD
- PIT
- 60m BOUNDARY
- 500m BOUNDARY
- CULTIVATION LAND
- STAGNANT WASTE LAND
- DUMP

Certified that the Plan is Correct  
 I. THIRUPATI  
 Reg: KOP/AM/D/03/192/6

PLATE NO: 5

MINING PLAN FOR COLOUR GRANITE
INSNO-154, JAGANNADHAVULASA(V), WANGAR(M), SRIVAKULAM DIST.
ENVIRONMENT PLAN
APPLICANT : M/S PYRAMID GRANITES
SCALE = 1 : 5000



**APPROVED**

**INDEX**

- SOIL COVER
- COLOUR GRANITE (WHITE)
- PROVED ZONE
- PROBABLE ZONE
- POSSIBLE ZONE

Certificate and plan is correct

*[Signature]*  
**Y. THIRUMAIYAH**  
 Reg: RQP/HYD/057/82/A

*[Signature]*  
 Signature of the Applicant

PLATE NO:3A

**MINING PLAN FOR COLOUR GRANITE**

IN S. NO-154 JAGANNADHAVALASA(V) VANGAR (M)SR IKAKULAM (Dt)

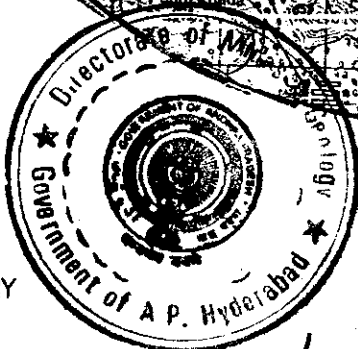
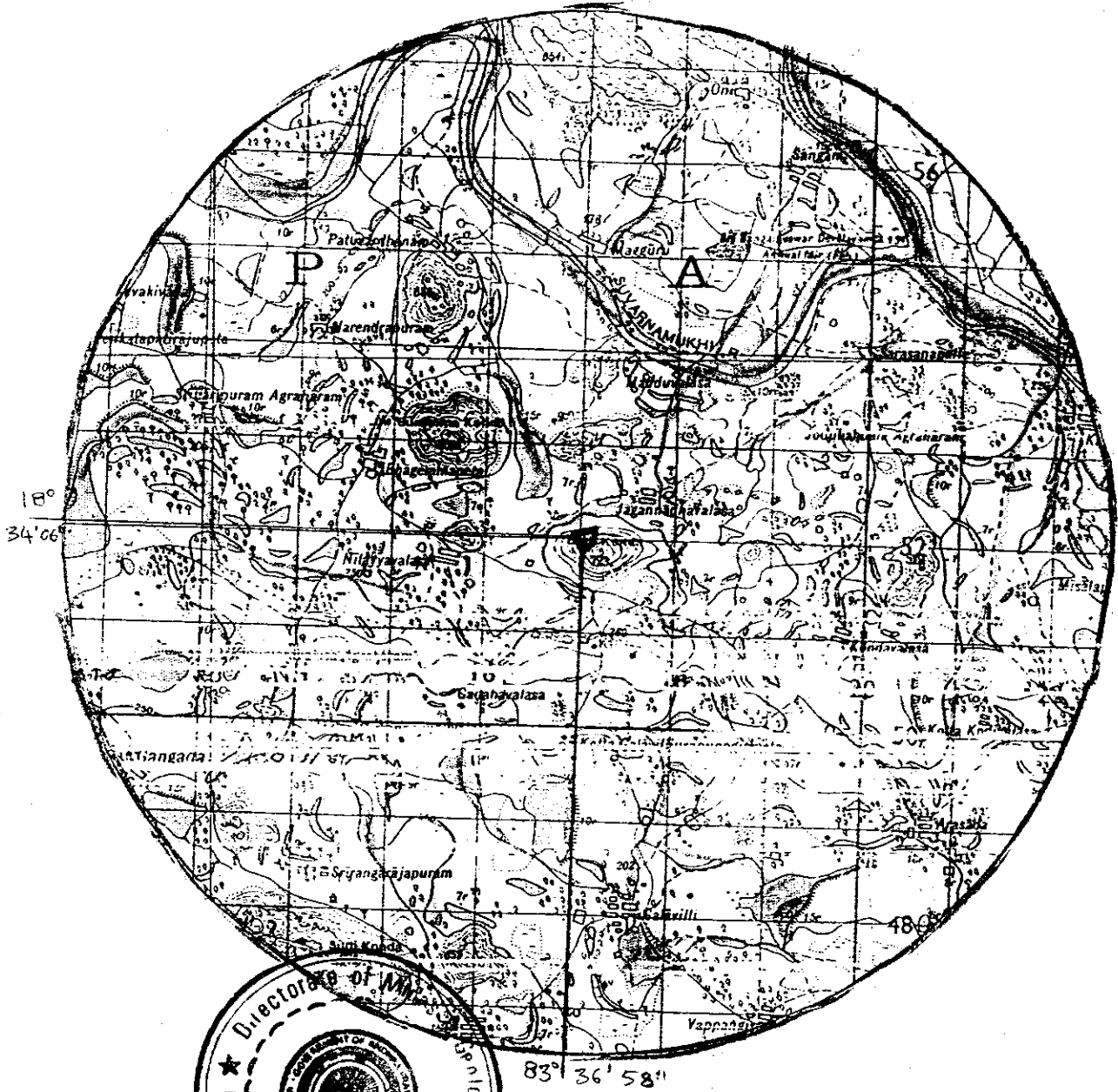
**GEOLOGICAL CROSS SECTIONS**

APPLICANT : M/S. Pyramid Granites

SCALE = 1:1000

LOCATION CUM KEY PLAN OF COLOUR GRANITE AREA

Located in S.No: 154/3 of Jagannadhavalasa (V), Vangara (M), Srikakulam (Dt)  
Applicant: M/s Pyramid Granites, Scale = 1: 63,360, Topo Sheet No: 65 / N / 10



DO NOT  
ECHO

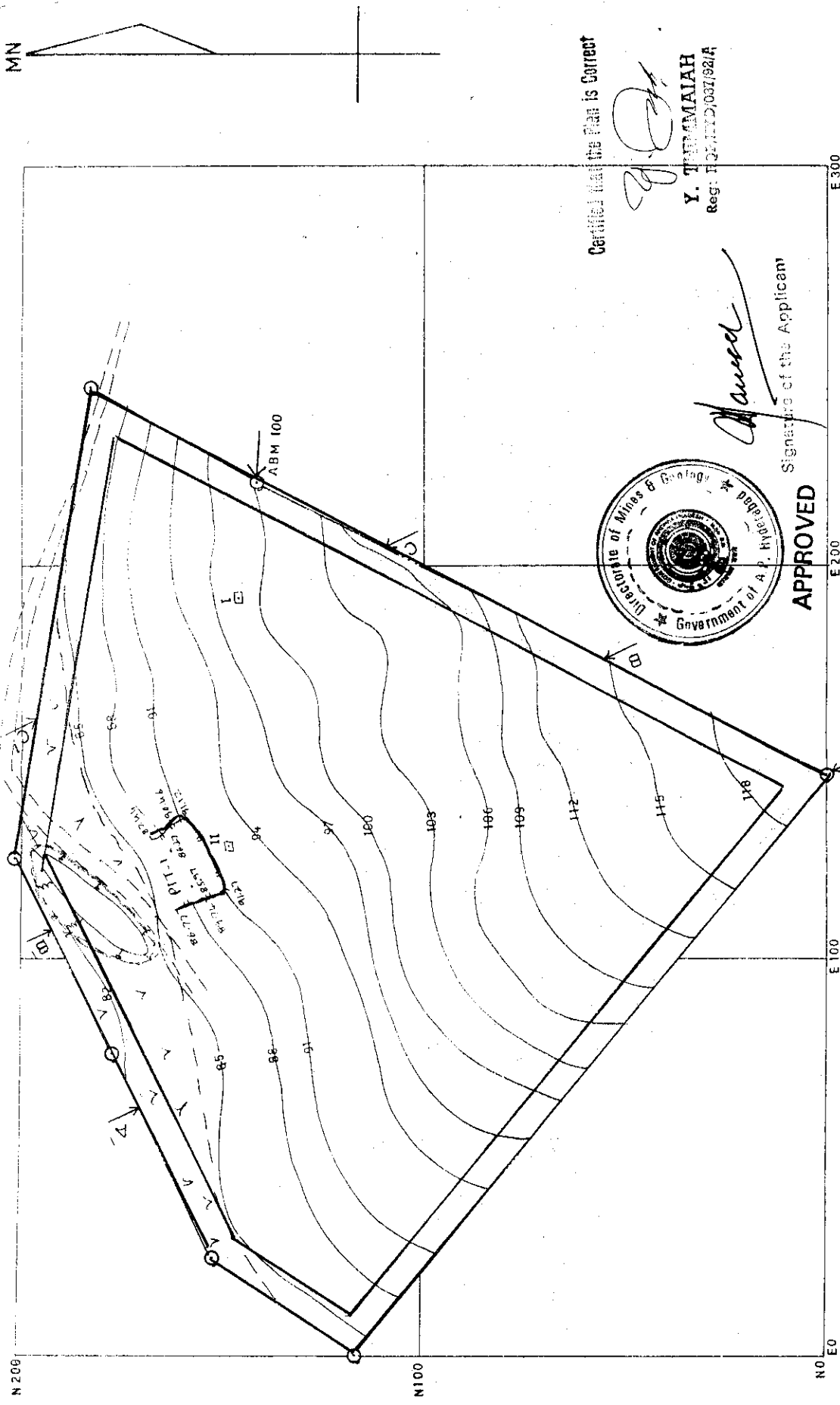
- INDEX
- LEASE BOUNDARY
- CONTOUR
- ROAD
- STREAM/VAGU
- TANK
- VILLAGE
- 5km RADIUS

APPROVED

Signature of the Applicant

Certified that the Plan is Correct

Y. THIMMAIAH  
Reg. District Surveyor

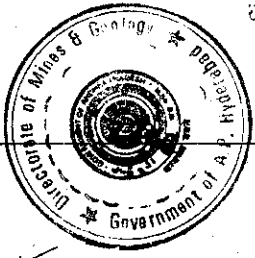


Certified that the Plan is Correct

*[Signature]*

**Y. THIRUMALAH**  
Reg: ICS/1113/007/92/A

*[Signature]*  
Signature of the Applicant



**APPROVED**

PLATE NO: 3



**INDEX**

- |  |                   |  |                |  |                |
|--|-------------------|--|----------------|--|----------------|
|  | ASSUMED BENCHMARK |  | ROAD           |  | COLOUR GRANITE |
|  | LEASE BOUNDARY    |  | SURVEY STATION |  | BUFFER ZONE    |
|  | CONTOUR           |  | SECTION LINE   |  | PTT            |
|  | BUMP              |  | SOIL COVER     |  |                |

IN S. NO-154 JAGANNADHVALASA (V) VANGAR (M) SRIRAKULAM (L3)  
(EXTENT - 2.832 Hectrs)

**SURFACE GEOLOGICAL PLAN**

APPLICANT : M/S. Pyramid Granites

SCALE = 1:1000 CONTOUR INTERVAL - 3 mt

*[Signature]*  
SURVEYOR