

**REPORT OF SOIL INVESTIGATIONS
FOR THE PROPOSED BUILDINGS AT
NAGARAM (V)
KEESARA (M), R. R. DISTRICT**

Prepared by

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1. INTRODUCTION

M/s Paramount Builders are proposing to construct residential buildings in Sy. Nos. 181, 182 & 183, situated at Nagaram Village, Keesara Mandal, Ranga Reddy District.

Total area of the site is 2 acres 6 guntas.

The proposed buildings comprise RCC framed structures with S + 5 Upper Floors.

The aim of this Report is to evaluate the nature and depth of soils at the site, and to determine the safe bearing capacity of the foundations accordingly.

2. FIELD INVESTIGATIONS

One soil sample collected from the site by the client was brought to the lab for testing.

The soil sample consists of chalky morum.

No water is reported in the Trial Pit.

3. LABORATORY TESTING

The soil sample was tested in the Soil Mechanics Laboratory at Hyderabad. The following tests were conducted:

Specific gravity

Bulk Density

Grain size distribution

Direct shear test

All the tests were conducted in accordance with IS: 2720 (Code of Practice for Testing of Soils).

4. RESULTS

Table 1 gives the results of physical and engineering tests on soil sample. At 2 m depth the soil is chalky gravel. It is designated as GC as per IS: 1498.

Open foundations are recommended. Correction is not needed for WT.

Appendix gives the calculations for SBC.

5. RECOMMENDATIONS

Based on lab testing, the following Recommendations are given:

- a) The soil sample tested consists of chalky morum.
- b) No water is reported in the trial pit.
- c) SBC is tentatively recommended as 25 tonnes per sq m for foundations resting on morum. This is based on the assumption of isolated footings of width 2 m at 2 m depth. The actual size would be based on the loads from the super structure.
- d) This recommendation is valid only for the sample tested. Detailed soil investigations are recommended.
- e) SBC will be finalized later after detailed investigations.
- f) All foundation pits should be filled back with well-compacted morum.



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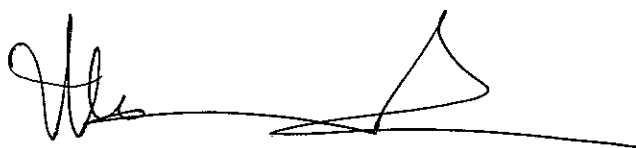
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TABLE 1

SUMMARY OF SOIL PROPERTIES

**PROPOSED BUILDINGS AT
NAGARAM (V),
KEESARA (M), R. R. DISTRICT**

Property	Location
	TP 1
Specific gravity	2.66
Density, KN / cu m	18.2
<i>Grain size distribution</i>	
Gravel > 4.75 mm	24
Coarse sand, 4.75-2 mm	20
Medium sand, 2-0.425 mm	19
Fine sand, 0.425-0.075 mm	16
Silt, 0.075-0.002 mm + Clay, < 0.002 mm	21
<i>Shear Parameters</i>	
Cohesion	14
Angle of internal friction, deg	33



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APPENDIX
CALCULATION OF BEARING CAPACITY

PROPOSED BUILDINGS AT
NAGARAM (V),
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Assumed width of foundation... 2 m

Assumed depth of foundation... 2 m

Unit wt. = 17.6 KN / cu m

Cohesion = 14 KN / sq m (Neglected) Angle of internal friction = 33 deg.

No correction is needed for water table.

Using IS Code 6403 – 1981 formula:

$N_c = 29.37$ $N_q = 18.39$ $N_r = 23.55$

Net, Ult B.C. = $1.3 c N_c + r D (N_q - 1) + 0.4 r B N_r$
= 943 KN per sq m

With a F.S. of 3.0, SBC = 314 KN per sq m

Recommended Safe Bearing Capacity is 25 tonnes per sq m.

SBC will be finalized after detailed investigations.

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Groundwater Feasibility Report

Client: M/s Paramount Builders

Address: Sy. Nos. Nagaram Village, Keesara Mandal, R. R. District.

Area: 2 acres 6 guntas.

1. Geology:

- (a) Rock Type: Granite
- (b) Texture : Medium to Fine grained
- (c) Soil Type: Chalky gravel
- (d) Recharge Conditions: Moderate

2. Geophysical Data:

- (a) No. of Vertical Electrical Soundings (VES): 1
- (b) Configuration: Schlumberger
- (c) Generalised Sequence based on VES:

0 – 5.0 m ... Top soil
5.0 – 25 m ... Weathered zone
25 – 80 m ... Rock with intermittent fractures
80 – 150 m ... Hard Rock with minor fractures
Below 150 m ... Hard rock with no fractures

3. Recommendations:

- 1. The site has moderate potential for groundwater. One point is tentatively suggested for drilling in N-E Corner.
- 2. Type of well: Bore well
- 3. Size: 6 ½ "
- 4. Depth: 150 m
- 5. Casing: 15-20 m
- 6. Expected yield: Moderate (1 ½ " – 2 ")
- 7. Detailed investigation is recommended.


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