

**REPORT OF SOIL INVESTIGATIONS FOR THE PROPOSED RESIDENTIAL APARTMENTS AT
YAPRAL (V), GHMC ALWAL CIRCLE, MALKAJGIRI (M), R.R. DISTRICT**

Prepared by

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1. INTRODUCTION

Sri L. Rajeswar Rao and Others are proposing to construct 4 blocks of Residential Apartments in Sy. No. 49 (P), situated at Yapral (V), GHMC Alawal Circle, Malkajgiri (M), R.R. District.

Total Plot area is Ac.5-30 Gts. The buildings comprise RCC framed structures with C+G+4 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 (1) soil sample collected from 3.0 m depth was sent to the Lab for testing.

The soil sample consists of Silty gravel. No water is reported in the 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

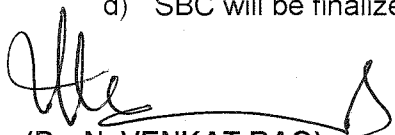
Table 1 gives the results of physical and engineering tests on soil samples. At 3 m depth, the soil is Silty gravel. It is designated as GM as per IS: 1498.

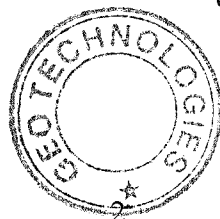
Open foundations are recommended. Appendix gives the calculations for SBC.

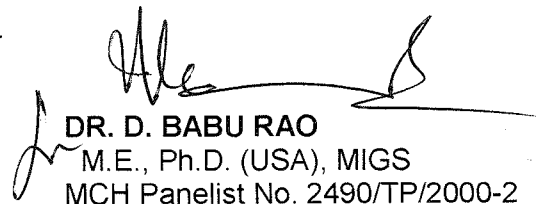
5. RECOMMENDATIONS

Based on Lab testing of one sample, the following Recommendations are given:

- a) The soil sample consists of Silty gravel.
- b) No water correction is applied.
- c) SBC is tentatively recommended as 35 tonnes per sq m for foundations resting at 2 m depth below sub-cellar floor level. This is based on the assumption of footings of width 2 m. The actual size would be based on the loads from the super structure.
- d) SBC will be finalized after detailed investigations.


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MALKAJGIRI (M), R.R. DISTRICT**

TABLE-1: SUMMARY OF SOIL PROPERTIES

Property	Location
	TP 1
Specific gravity	2.67
Density, KN / cu m	18.7
Grain size distribution	
Gravel > 4.75 mm	19
Coarse sand, 4.75-2 mm	24
Medium sand, 2-0.425 mm	25
Fine sand, 0.425-0.075 mm	19
Silt, 0.075-0.002 mm + Clay, < 0.002 mm	13
Shear Parameters	
Cohesion, KN / sq m	13
Angle of internal friction, deg	34

APPENDIX: CALCULATION OF BEARING CAPACITY

Assumed width of foundation... 2 m

Assumed depth of foundation... 2 m

Unit wt. = 18.7 KN / cu m

Cohesion = 13 KN / sq m (Neglected) Angle of internal friction = 34 deg.

No correction is needed for water table.

Using IS Code 6403 – 1981 formula:

$N_c = 31.45$ $N_q = 20.36$ $N_r = 26.67$

Net, Ult B.C. = $1.3 c N_c + r D (N_q - 1) + 0.4 r B N_r$
= 1123 KN per sq m

With a F.S. of 3.0, SBC = 374 KN per sq m

Recommended Safe Bearing Capacity is 35 tonnes per sq m.

SBC will be finalized after detailed investigations.

