SOIL TESTING REPORT

PROPOSED BUILDINGS

AT RAMARAM
KEESARA (M), RR DT.

MODI PROPERTIES & INVESTMENTS PVT LTD.

Report Prepared by

DR. D. BABU RAO
M.E.,Ph.D.(USA), MIGS

MCH Panellist No. 2490 /TP/2000-2

CONSULTING GEO TECHNICAL ENGINEER
FORMER PROFESSOR & HEAD OF CIVIL ENGINEERING
OSMANIA UNIVERSITY

Phone / Fax : 66638830
Mobile : 98490 - 39337

Email : *dbaburao2000@ yahoo.com*

REPORT OF SOIL INVESTIGATIONS FOR PROPOSED BUILDING AT RAMPALLY

1.INTRODUCTION :

M/s Modi Properties and Investments Pvt Ltd. are proposing to construct Buildings in Sy No. 128 to 136, at Rampur (v), Keesara (M), RR Dt.

Fig.1 gives the site plan. The area of the site is 6 acres.

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

2. FIELD INVESTIGATIONS

Five Trial Pits were examined at the site . This is adequate in accordance with IS : 2720 (Code of Practice for Subsurface Investigation of Foundations).

The sub soil comprises top loose soil (fill / clay) to 1.5 m depth, followed by silty morum. There is a stream on the North side of the site. The low lying area near the stream has been filled with morum.

Fig. 2 gives the sub soil profile.

The samples were properly packed & transported to the Testing lab at Hyderabad.

3. LABORATORY TESTING

The samples were tested at the Soil Testing Laboratory at Hyderabad. The following Engineering Tests were conducted:

- Specific gravity Bulk density
- Grain size distribution Direct shear test

All the Tests were conducted in accordance with IS: 2720 (Methods of Tests for Soils)

4. RESULTS

Table 1 gives the results of physical and engineering tests on samples from the bottom of the Pits

The bottom soils are classified as SM as per IS Classification.

Appendix gives the calculations for SBC.

5. RECOMMENDATIONS

Based on Field Investigations and Laboratory Testing, the following Recommendations are made for the proposed structure.

a) The sub soil comprises top loose soil (fill / clay) to 1.5 m depth, followed by silty morum. There is a stream on the North side of the site. The low lying area near the stream has been filled with morum.

b) SBC is recommended as 20 t / sq m.

c) The actual size of the foundations will be based on loads from the super structure.

d) All foundation pits should be filled back with well – compacted morum.

e) All foundations should rest on natural morum. Footings should not be placed on filled –up material.

(DR. D. BABU RAO)
M.E.,Ph. D.(USA),MIGS

CONSULTING GEOTECHNCAL ENGINEER

FORMER PROFESSOR

Dr. D. BABU RAO
M.E., Ph.D. (U.S.A.,
Consulting Geotechnical Engineer

TABLE 1

SUMMARY OF SOIL PROPERTIES

BUILDINGS AT RAMPUR

Property / Sample No.	1	2	5	
Soil	SM	SM	SM	
Specific gravity	2.65	2.66	2.66	
Density, KN / cu m	17.5	17.7	17.7	
Grain size distribution				
Gravel > 4.75 mm	10	12	16	
Coarse sand, 4.75 – 2 mm	21	12	20	
Medium sand 2 - 0.425 mm	10	17	11	
Fine sand, 0.425 – 0.075 mm	13	20	11	
Silt, 0.075 – 0.002 mm	37	29	30	
Clay < 0.002 mm	9	10	12	
Shear Parameters				
Cohesion, KN / sq m	38	37	27	
Angle of internal friction, Φ degrees	29	30	30	

Samples are from the bottom of the Pits. Samples fro TP 3,4 are filled soils.

Dr. D. BABU RAO
M.E., Ph.D. (U.S.A
Consulting Geotechnical Engine

APPENDIX

CALCULATION OF SAFE BEARING CAPACITY

BUILDINGS AT RAMPUR

Assumed depth of foundation D = 1.5 m

Assumed Width of foundation B = 1.5 m (resting in natural morum)

Unit wt. = 17.5 kN / cu m

Cohesion = 38 kN / sq m

Φ = 29 degrees

Using IS Code 6403 -1981 formula :

Nc'= 15.18 Nq' = 6.91 Nr'= 6.07

Net ult B.C. = 1.3 c' Nc' + r D (Nq' -1) + 0.4 r B' Nr'

= 713 kN / sq m

With a FS of 3, SBC = 237 kN / sq m

Recommended Safe Bearing Capacity is 20 tonnes per sq m.

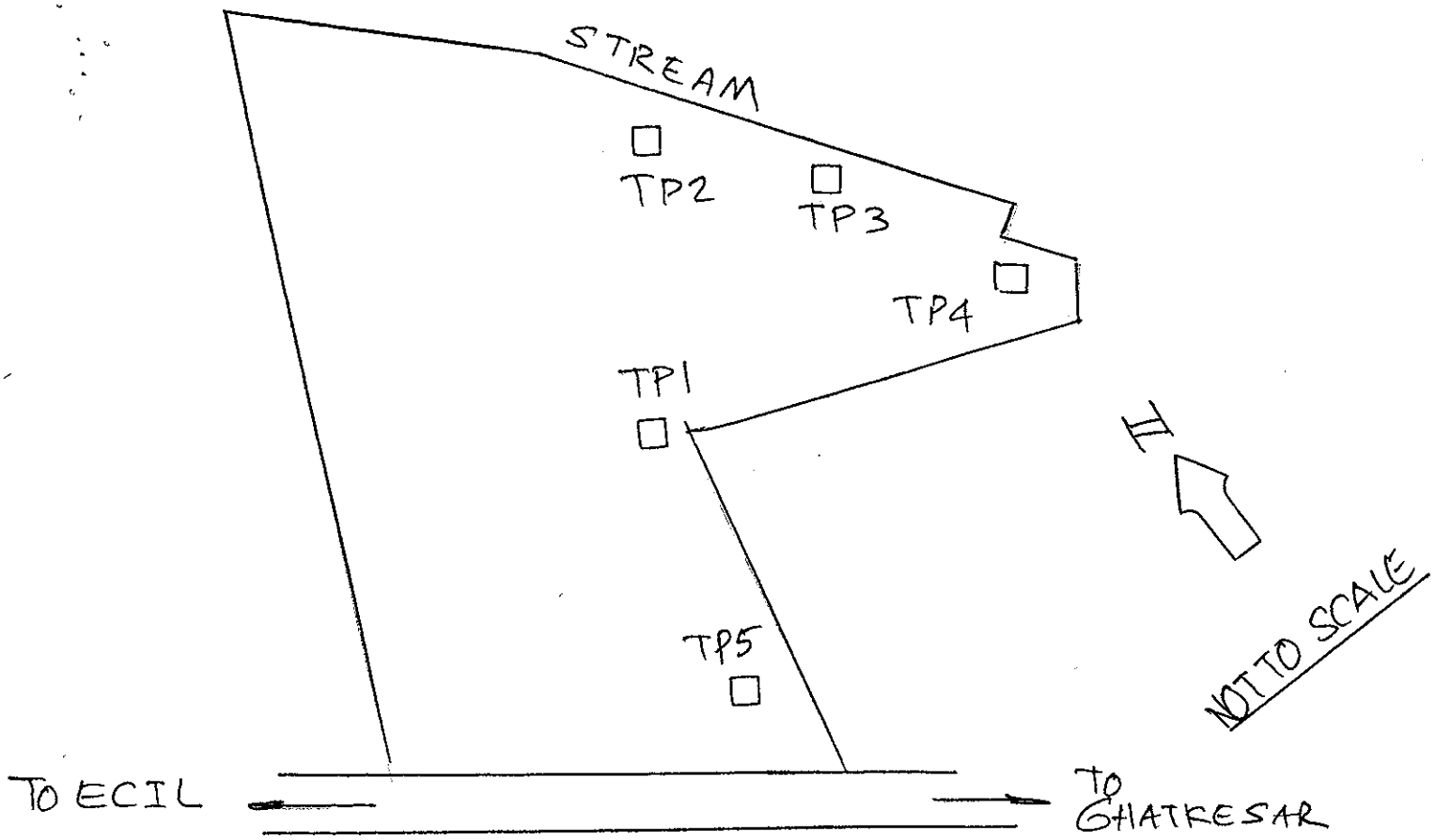

FIG.1: SITE PLAN OF PROPOSED BUILDINGS AT RAMPALLY, KEESARA(M), R.R.DT.

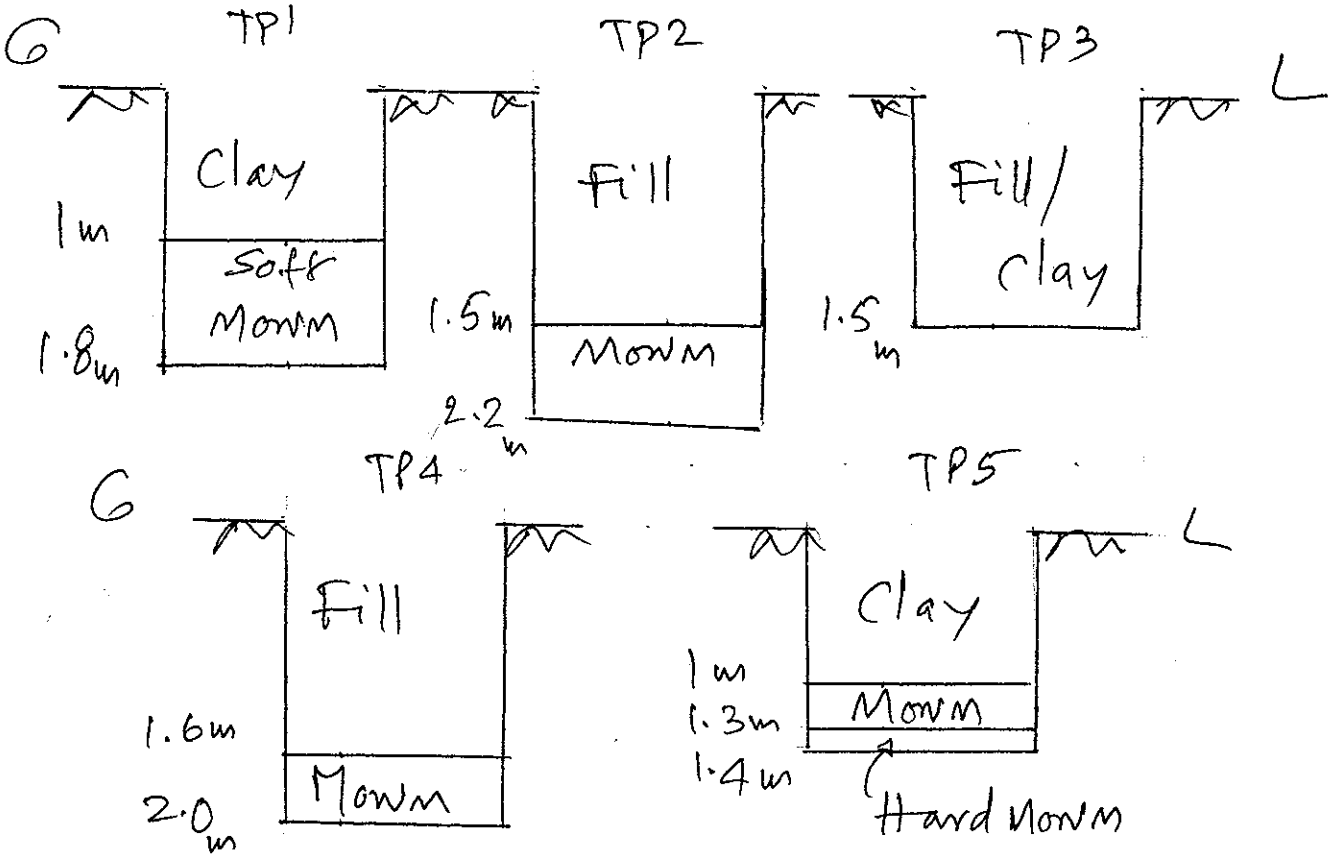

FIG. 2: LOGS OF TRIAL PITS