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Section 'A'

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Subject Geotechnical Engineering

Assignment 01

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QNO  
01

## Geotech Report

## "Site investigation Report"

Introduction:-

A geotechnical site investigation was carried out in Dil lower with the aim of providing a geotechnical data for the design of construction. The project seeks to analyse all the site data.

Site description:-

Site description of the area under investigation, the location in Dil lower.

Method & Test Result:-

To provide geotechnical model of the site the following site investigation carried out.

Geotechnical Analysis:

- \* 3 core rotary boreholes
- \* 4 piezocone penetration test
- \* 2 seismic piezocone penetration test
- \* 8 Standard penetration Test (SPT)

in-situ test Analysis:-

Due to many limitations associated with lab test data is obtaining strength and stiffness parameters of soil.

## Cone piezocone penetration Test:-

CPTU Test is one of the versatile tools available for soil exploration

## SPT Test:-

SPT is a rapid and cost effective in-situ testing technique Use in the investigation of coarse-grained soil.

Determination of young modulus ( $E_u$ ) in fine-grain soil the corresponding over consolidated ratio (OCR) and undrained shear strength ( $c_u$ )

$$v = v' = 0.2 \div 0.3$$

$$E = E'$$

$$\frac{E_u}{2(1+v_u)} = \frac{E'}{2(1+v')}$$

$$v_u = 0.5$$

$$E_u = \frac{3E'}{2(1+v')} \quad \text{where } v' = 0.25$$

## Laboratory Test:-

Laboratory Test are necessary to determine relevant soil parameters.

Triaxial Test:-

Triaxial Test is widely used for measuring soil behaviour in shear and suitable for all type of soil.

$$c' = \frac{c \times (3 - \sin \phi)}{6 \times \cos \phi}$$

$$\sin \phi = \frac{3M}{6 + M}$$

Q#09) Write note on different software which is used in geotechnical Engineering.

A high variety of geotechnical software can be found in this category.

Following are some software which is used in Geotech Engineer.

3DEEP:-

This software is fully integrate with a design software package for automatic model generation.

Accecale:-

The program analysis the behaviour of rock slope under seismic condition.

ADONIS:-

Adonis is the free finite element software for geotec Engineer.

Allpile:-

Allpile is a windows based analysis program that handle virtually all type of piles.

ALP:-

The easy way to analyse soil structure interaction of a laterally loaded pile when it come to laterally loaded pile design

ALP 99:-

Axially Loaded Pile.

AMRETAIN:-

AMRETAIN is a software for checking single or double retaining wall made of Arcelor Mittal.

APILE:-

APILE is used to compute the axial capacity as a function of depth of driven pile.