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Name

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7463

Section

"A"

Subject

Geotechnical and
foundation Engineering

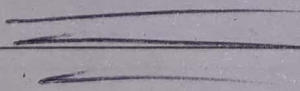
Submitted TO

Engr. Usfat Ali

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05/July/2020

Assignment and Quiz



{ Assignment } ①

Date 05/07/2020

①: Write a geotechnical report of any civil Engineering project which close to your home town?

Ans:-

Introduction :- This report is carried out for geotechnical investigation of boundary wall of BOQ in Peshawar Cantt. The purpose of this investigation was to evaluate the subsurface conditions on the site in the area of proposed building and to provide geotechnical bearing capacity and recommendation for the construction.

Project Description :- The 2371 Kanal property is located in a under developed region of BOQ Peshawar Cantt the project will include construction of a new building boundary wall occupying the entire property.

Geologic Overview :- The project site is located in Peshawar road near Cantt.

① it is an alluvial plume 300km^2 and its catchment extent Khesibar rang. The mountain bordering the alluvial plain are mostly composed of late tertiary age flood, assumed that these rock extent as basement rock Saiwaliz group. During the upper pre-stocene and holocene the basin been filled with silty, clay, sand and gravels.

(2)

Seismicity :- The construction site belongs to Seismic Zone 3A with peak horizontal acceleration varying from 0.07 to 0.14g.

Subsurface :- Five exploratory borings and three pits were excavated into the area of the proposed foundation wall. In general our exploratory borings encountered predominantly silt up to 6ft and after clayey soil up to 32ft depth.

Laboratory test :- Unconfined compression test, Direct shear test and consolidation test were performed undisturbed undistributed soil specimens obtained from boreholes and test pits using Shelby tube and block sampler. Additionally Atterberg limit test, Sieve analysis, moisture content test were conducted on disturbed samples for classification purpose.

Ground water :- Ground water seepage table was encountered in borehole No 3 and 4 ~~see~~ at 31ft depth from ground level.

Conclusion and Recommendation :- Keeping and view results of the field and lab tests. it is concluded that bearing capacity of 0.60 TSF may be adopted from strip foundation

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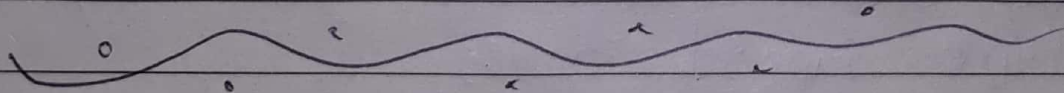
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at 6th depth for the construction of boundary wall BOQ peshawar Cantt.

② Since the shrinkage value of foundation lies b/w 30-37, which shows soils class of very poor quality. it is recommended to replace the foundation soil with well graded gravel and properly compact it.

③ There is no risk of chemical attack on concrete as the chemical content of soil is in permissible range.

④ In case of masonry masonry wall provide RCC column at 10ft interval and strapp beam at the top of foundation RCC slab to reduce differential settlement.



Quiz ①

Date 05/07/20

Q1:- Write a note on different software which are used in geotechnical Engineering?

Ans:- Following are the different software used in geotechnical engineering.

①:- Deep virtual reality software for deep foundations:-

This is the first software fully integrated with a design software package automatic used generation for the first time you can easily demonstrate to your clients what your work is all about before putting a single shovel into the ground.

- unlimited walls and number of excavation
- Multiple stages in same model.
- Single button integration from deep tool
- Multiple support types
- view walls and footings
-

②:- ALP - Lateral loaded piles Analysis software :-

ALP enables you to analysis locally loaded piles with ease producing outputs such as compression graphs in mm. The software predicts the pressure horizontal moments, shear forces and bending moment included in a pile when subjected to lateral load, bending moments and imposed soil displacement lateral load and bending moments can be applied at any point down the pile, as well as partially or fully lateral or bending moments.

(2)

Date _____

(3) AmRetains Software :- it is a software for checking single or double retaining walls made of Arcelor sheets piles. It has been developed by Terrosol for Arcelormittet and is based on commercial software.

Amretained calculation is based on the subgrade reaction calculation method but also includes 3 checks according to the french standard NF p94-282

(i) Failure another passive side.

(ii) Balance of vertical forces

(iii) Krantz

it also enables the calculations of double walls and near walls.