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Section " "A"

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Q No 2. Write a geotechnical report on any civil Engineering project near to your home - town.

Geo technical Investigation of material used in suwat Express way Pakistan:-

Geo technical Investigation of suwat express way from Karnal Sher Khan Interchange to Chakdara Interchange Pakistan was perform to test the Soil, concrete, aggregate and asphalt sub grade material fall in class A-2-4 of AASHTO classification. The plastic Index (PI) value for sub grade is 7.5% while above layer is non-plastic. The maximum dry density (MDD) for sub grade was 2.139 gm/cc at 8.0% moisture content. Using lab density, CBR value was calculated for sub grade is 33.5%. The lab density and field density are utilized to check field compaction layer. The specific gravity of 2.682 while apparent specific gravity of these aggregate was calculated 2.758. The water absorption was 1.432% from various test procedure. The density of layer

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about 2.495 with bitumen by weight of 4.86%. The compaction of asphalt is 95.92%.

Test result

- | | |
|---|-------------|
| → Soil Type | silty-clay |
| → AASHTO classification | A-2-4 |
| → Plastic Index (PI) | 7.5 % |
| → The maximum Dry density (MDD) | 2.138 gm/cc |
| → moisture content | 8.0 % |
| → Using Lab density | |
| → CBR Value | 33.5 % |
| → The specific gravity after oven dry | 2.654 |
| → The bulk saturated surface dry aggregate specific gravity | 2.692 |
| → Apparent specific gravity | 2.758 |
| → water absorption | 1.432 % |
| → Test procedure density of layer | 2.495 |

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bitumen by weight

4.06%

composition of asphalt

95.92%



SHAMS UL ARIFIN

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Q2 Write a note on different software used in geotechnical Engineering?

Ans Software is designed to make work easier, and is a great tool for presenting laboratory results or using output to bulk up that geotechnical report.

Following are a software used in geotechnical engineering.

→ **DAN-W :-**

It is a window based geotechnical software tool used for dynamic remount analysis of rapid landslides and rock avalanches. The program accept user input data in form of path slope and initial sliding mass geometries and material property.

→ **CADS Re slope :-**

CADS Re slope is a landing slope stability software package for calculation factor of safety of earth slopes.

→ **Earth work volume :-**

AEC cutfill is a powerful and flexible earthwork cut and fill calculation software program.

→ **APILE**

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

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in clay, sand or mixed soil profiles.

Capwap:-

it is a software program that estimates the total bearing of pile or shaft.

Amerstain:-

Amerstain is a software for checking single or double retaining wall made of Arcelox Mittal, sheet piles it has been developed by terrasal for Arceloxmittal.

Geo. Axi pile:-

The program allow calculation of drilled piles of driven piles and graphical presentation of result.

ension piles can also be calculated.

Geo of Abolment

The program is desing the abolment including of foundation because of its completeness flexibility and user friendly. it is a fundamental instrument for any kind of geotechnical project.

Geo of beam:-

This program provides the analysis of foundation beam resting on elastic sub soil.

Auipile:-

it is a software used for pile foundation analysis includes uplift, axial, and lateral in group piles.