Government of the People's Republic of Bangladesh
Ministry of Road Transport and Bridges (MoRTB)
Roads and Highways Department (RHD)

# Sylhet-Charkhai-Sheola Highway Improvement Project

# Geotechnical Investigation Report (Part-1)

## May, 2022

# GOVERNMENT OF
# THE PEOPLE'S REPUBLIC OF BANGLADESH
# MINISTRY OF ROAD TRANSPORT AND BRIDGES
# ROADS AND HIGHWAYS DEPARTMENT

**ADB LOAN 3295 - BAN**
**FEASIBILITY STUDY, DETAILED DESIGN AND**
**TENDERING SUPPORT OF TECHNICAL ASSISTANCE FOR**
**SUB REGIONAL ROAD TRANSPORT PROJECT PREPARATORY FACILITY-II**

## ROAD 04: SYLHET - CHARKHAI - SHEOLA - SUTARKANDI

## FINAL DETAILED DESIGN REPORT

## APPENDIX H-1: GEOTECHNICAL INVESTIGATION REPORT (PART - 01)

**MAY 2022**


HIFAB International AB, Sweden

*In association with*

Oriental Consultants Global Co. Ltd., Japan (JV)
BCL Associates Ltd., Bangladesh (Sub-consultant)
Development Design Consultants Ltd., Bangladesh (Sub-consultant)

# Table of Contents

## LIST OF APPENDIX

## List of Term Used

### General

| | | | | | |
|---|---|---|---|---|---|
| ASTM | = | American Society for Testing and Materials | $NaPo_3$ | = | Sodium hexametaphosphate |
| BH | = | Borehole | USA | = | Unites States of America |

### Drilling and Sampling

| | | | | | |
|---|---|---|---|---|---|
| FVT | = | Field Vane Shear Test | SPT | = | Standard Penetration Test |
| GWL | = | Groundwater Level | SS | = | Split Spoon |
| PS | = | Piston Sampler | ST | = | Shelby Tube |
| | | | UD | = | Undisturbed |
| | | | WO | = | Wash Out |
| | | | | | |

### Cohesionless Soil

| Stiffness Defination | SPT N Value | |
|---|---|---|
| Very Loose | N = | 0 - 4 |
| Loose | N = | 4- 10 |
| Medium Dense | N = | 10 - 30 |
| Dense | N = | 30 - 50 |
| Very Dense | N = | > 50 |

### Soil Properties

| | | | | | |
|---|---|---|---|---|---|
| Gs | = | Specific Gravity | PI | = | Plasticity Index |
| LI | = | Liquidity Index | PL | = | Plastic Limit |
| LL | = | Liquid Limit | SPT - N | = | Standard Penetration Resistance |
| NP | = | Non plastic | NMC | = | Natural Water Content |
| N-Values | = | Standard Penetration Resistance Values | $\gamma_t$ | = | Total Unit Weight |
| | | | | | |
| | | | | | |

### Cohesive Soil

| Stiffness Definition | Cu (KPa) | | SPT N Value |
|---|---|---|---|
| Very Soft | <12 | or | 0 - 2 |
| Soft | 12 - 25 | or | 2 - 4 |
| Medium Stiff | 25 - 50 | or | 4 - 8 |
| Stiff | 50 - 100 | or | 8 - 15 |
| Very Stiff | 100 - 200 | or | 15 -30 |
| Hard | >200 | or | > 30 |

**Soil Classification**

| | | | | | |
|---|---|---|---|---|---|
| CH | = | High Plasticity Clay | OH | = | High Plasticity Organic Silt / Clay (LL>50) |
| CL | = | Low Plasticity Clay | OL | = | Low Plasticity Organic Silt / Clay (LL<50) |
| D10, D30, D50, D60 | = | Particle-size diameter corresponding to 10, 30, 50 and 60%, respectively, passing on the cumulative particle size distribution curve. | SM | = | Silty Sand |
| MH | = | Elastic Silt | SP | = | Poorly graded Sand |
| ML | = | Silt | SP-SM | = | Poorly graded Sand with Silt |
| SW | = | Well graded Sand | SC | = | Clayey Sand |
| | | | | | |

**Grain Classification**

| Grain Definition | Grain Size |
|---|---|
| Gravel | >4.750mm |
| Coarse Sand | 4.750 - 2.000 mm |
| Medium Sand | 2.000 - 0.425 mm |
| Fine Sand | 0.425 - 0.075 mm |
| Silt | 0.075 - 0.002 mm |
| Clay | < 0.002 mm |

**List of Term Used (Cont'd)**

**ASTM Standards**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| D 422 | = | Grain Size Analysis | D 2435 | = | Consolidation Test | D 4767 | = | Unit Weight |
| D 854 | = | Specific Gravity | D 2487 | = | Classification of Soil for Engineering Purpose | | | |
| D 1586 | = | Standard Penetration Test | D 2488 | = | Description and Identification of Soil (Visual Manual Procedure) | | | |
| D 2216 | = | Natural Moisture Content | D 2850 | = | Unconsolidated-undrainedtriaxial test | | | |
| D 2166 | = | Unconfined Compression Test | D 4318 | = | Atterberg Limit | | | |

**Calculation**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| C | = | Cohesion | | | | | | |
| $C_c$ | = | Coefficient of curvature | | | | $t_{50}$ | = | Time at 50 percent consolidation |
| $C_u$ | = | Uniformity coefficient | | | | $t_{90}$ | = | Time at 90 percent consolidation |
| | | | | | | γ | = | unit weight |
| | | | | | | Ø | = | Effective friction angle between soil and pile material |

## 1.0 INTRODUCTION

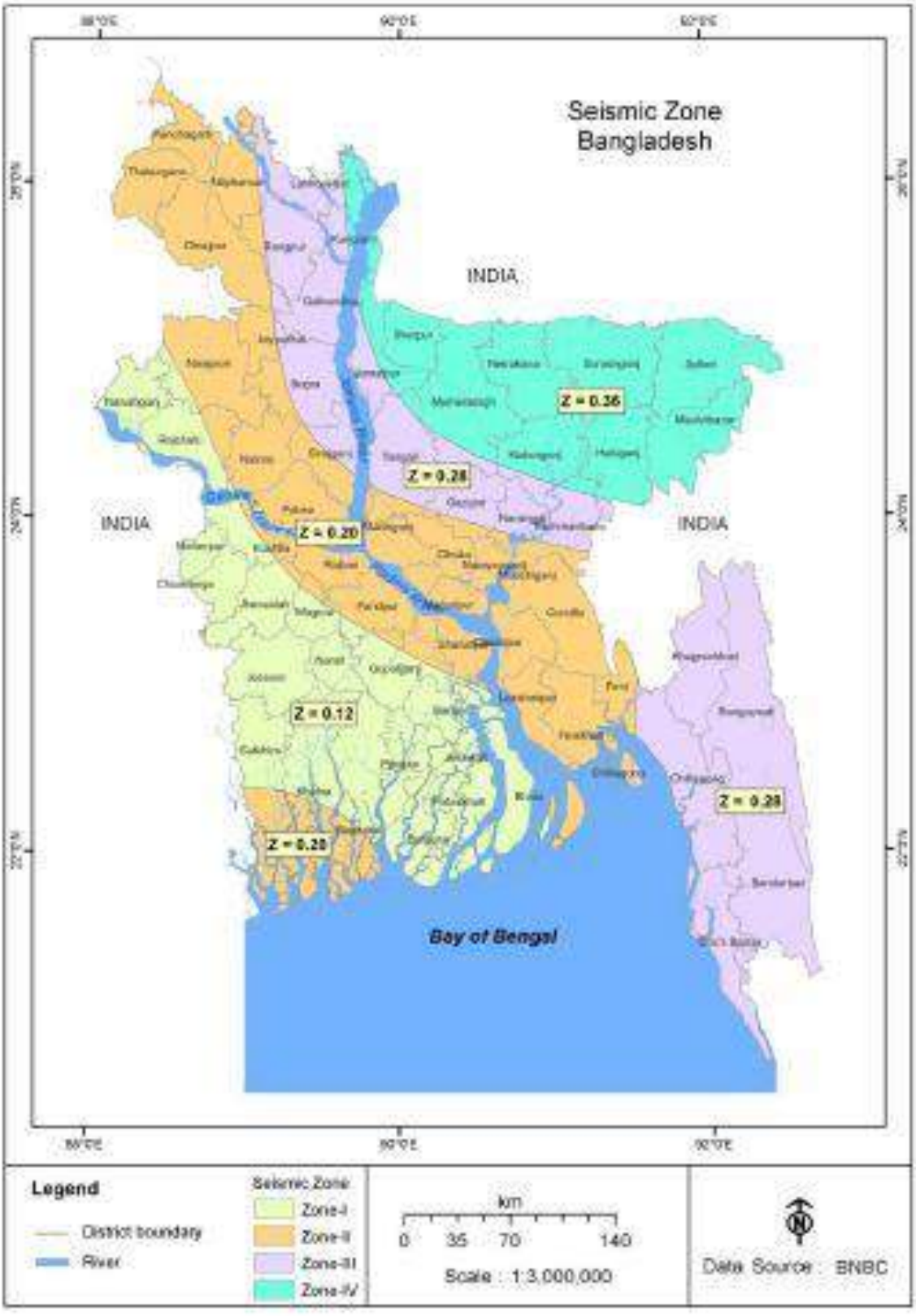
The Government of Bangladesh has received a loan from the Asian Development Bank (ADB) for additional financing for the already in motion Sub-regional Transport Project Preparatory Facility and intends to apply a portion of proceedings to prepare the feasibility study and detailed engineering design for upgrading of selected portion of national highways, regional highways and district roads with minimum provision of 4 lane with Slow Moving Vehicular Traffic (SMVT) lane on both sides.

In this context, seven road portions were chosen as a priority for improvement under the Sub-regional Transport Project Preparatory Facility (SRTPPF-II). As a part of contractual obligation, the consultant took initiatives to carry out sub-soil investigation to provide adequate information on sub-surface and surface conditions for the foundations and other sub-structures for the proposed project, leading to their economical and safe designs.

Al – Mayeda Survey Consultants were engaged for carrying out the Geotechnical Investigation work for Sylhet - Sutarkandi. According to the sub-soil investigation program 4 rigs were mobilized in Sylhet - Sutarkandi road and the field activities and laboratory tests were carried out during the period of March to April 2019.This report has been prepared as per terms and conditions of the contract and the field and laboratory testings were carried out in accordance with ASTM/AASHTO/BS International Standard. All information together our comments and recommendations have been included in this report.

## 2.0 LOCATION

The project road traverses through Sylhet District. Based on seismic zoning map BNBC 2017 the region falls under Zone -IV having a seismic zone co-efficient of 0.36. The seismic zoning Map is shown in Figure 1. The Borehole layout plan & Bore logs are shown in Appendix – A of this report.


Seismic Zone
Bangladesh
INDIA
INDIA
INDIA
Z = 0.36
Z = 0.28
Z = 0.20
Z = 0.12
Z = 0.28
Z = 0.28
Bay of Bengal
Legend
District boundary
River
Seismic Zone
Zone-I
Zone-II
Zone-III
Zone-IV
km
0 35 70 140
Scale : 1:3,000,000
Data Source : BNBC

## 3.0 SCOPE OF WORKS

The purpose of this geotechnical investigation was to determine the properties and distribution of geotechnical sub-surface materials and ground water levels within the project area.

The scope of works as stipulated in the ToR is summarized as follows.

1. Mobilization and demobilization of 4 drilling rigs, necessary equipment and personnel to the project site.
2. Drilling and sampling of 44 boreholes as specified. To carry out Field Standard Penetration Test (S.P.T - 63.5 kg hammer having a free fall of 760mm) to determine the natural bearing resistance of the subsoil for the purpose of design.
3. Full time field supervision of drilling and sampling work during the course of the field works and prepare bore log.
4. To obtain disturbed and undisturbed soil samples for carrying out the laboratory tests to determine the natural and relevant physical properties of the subsoil pertaining to the site for the purpose of design.
5. To ascertain the type of substrata and their characteristics.
6. Explore the suitable foundation of proposed project and evaluate the bearing capacity for foundations of the structures.
7. Preparing a factual report in accordance with the requirement of ToR specification

## 4.0 EQUIPMENT

4 percussion drilling rigs were mobilized at this site to drill the boreholes of this project. Care was taken to avoid any utilities in borehole locations.

Split spoon sampler and Shelby tubes were used for disturbed and undisturbed sampling. Laboratory testing was conducted using standard equipment for the respective laboratory testing in Al Mayeda Survey consultant's laboratory.

## 5.0 FIELD INVESTIGATION

Field work includes locating borehole position, drilled boreholes, conducting in-situ tests, Standard Penetration Test, collection of disturbed soil samples, undisturbed soil samples, still photographs, GPS position sealing soil samples and recording all field data.

During the period of 2nd March 2019 to 2nd April, 2019 Forty four (44) boreholes were drilled at bridge locations shown in Appendix-A.

Borehole locations were set out by Al – Mayeda's operation team and representatives from the consultant.

| *Structure ID* | *Borehole* | *Easting* | *Northing* |
|---|---|---|---|
| FLY-01 | BH-01 | E-400046.611m | N-2749285.342m |
| | BH-03 | E - 400148.28m | N - 2749347.1m |
| | BH-04 | E - 400244.155m | N - 2749418.093m |
| | BH-05 | E - 400336.55m | N - 2749492.5m |
| | BH-06 | E - 400432.450m | N - 2749563.271m |
| | BH-07 | E - 400528.028m | N - 2749633.712m |
| | BH-08 | E - 400624.812m | N - 2749702.209m |
| | BH-02 | E – 400720.79m | N – 2749773.79m |
| OVP-01 | BH-01 | E - 391436.131m | N - 2749830.489m |
| | BH-02 | E - 391827.306m | N - 2749501.653m |
| | BH-05 | E - 391699.559m | N - 2749659.587m |
| | BH-03 | E - 391593.39m | N - 2749728.89m |
| | BH-04 | E - 391769.942m | N - 2749584.475m |
| OVP-02 | BH-01 | E - 393997.34m | N - 2748476.66m |
| | BH-02 | E - 394127.542m | N - 2748485.622m |
| OVP-03 | BH-01 | E - 404905.418m | N - 2752561.300m |
| | BH-02 | E - 404798.36m | N - 2752555.71m |
| OVP-04 | BH-01 | E - 409632.926m | N - 2752814.212m |
| | BH-02 | E - 409705.671m | N - 2752846.215m |
| BR-02 | BH-03 | E - 419972.72m | N - 2752441.06m |
| | BH-04 | E - 419977.833m | N - 2752354.288m |
| | BH-05 | E - 419956.81m | N - 2752646.32m |
| | BH-06 | E - 419981.39m | N - 2752147.24m |
| | BH-07 | E - 419986.970m | N - 2752043.862m |
| | BH-08 | E - 420159.946m | N - 2752017.326m |
| | BH-09 | E - 419994.79m | N - 2751942.00m |
| | BH-10 | E - 420026.932m | N - 2751815.942m |
| | BH-11 | E - 420122.42m | N - 2751788.68m |
| | BH-12 | E - 420337.228m | N - 2751958.776m |
| | BH-13 | E - 419877.55m | N - 2752865.80m |
| Embankment | RB-02 | E- 409423.087m | N - 2752746.685m |
| Embankment | RB-03 | E - 412961.457m | N - 2754074.363m |
| Embankment | RB-04 | E - 415518.112m | N - 2753963.296m |
| Embankment | RB-05 | E - 416106.707m | N - 2753912.626m |
| Embankment | RB-07 | E - 392671.953m | N - 2748704.730m |
| Embankment | RB-08 | E - 392824.253m | N - 2748581.539m |
| Embankment | RB-09 | E - 393085.935m | N - 2748489.802m |
| Embankment | RB-10 | E - 411542.256m | N - 2753535.199m |
| Embankment | RB-12 | E - 393068.560m | N - 2748486.060m |
| UP - 01 | UP-1 BH-01 | E - 386587.87 m | N - 2751976.34 m |

| | | | |
|---|---|---|---|
| RB-13 | RB-13 | E - 392810.09 m | N - 2748600.66 m |
| OVP-05 | BH-01 | E - 414243.32m | N - 2754353.84m |
| | BH-02 | E - 414459.432m | N - 2754316.155m |
| | BH-03 | E - 414334.85m | N - 2754339.56m |

## 5.1 Field Works for Exploratory Boreholes

Borehole drillings were done by percussion method wash boring. A steel casing was placed into the ground as standpipe upto sufficient depth and thereafter drilling proceeds without using further casing. In its simplest form the system almost resembles execution of hole by chiselling. A drilling bit used for cutting soil by mechanical operation is connected to 50mm outer and 37mm inner diameter drill rod through which drilling mud was pumped. This drilling mud helps the borehole from Collapsing. The borehole is uniform and regular. The mud slurry flows out at high pressure from base of the drilling bit and carries cuttings of soil to the surface through the annular space between the drill rod and the borehole wall. The drilling bit is operated upto 150mm above standard penetration testing/soil sampling depth and this 150mm of soil washed out only by pumping drilling mud through the drill rod and drilling bit.

Uncased boreholes were 100 mm dia., while a 3m long temporary casing were used to protect surface soil against collapsing.

All boreholes were backfilled after completion of the investigation. Standard Penetration Test (SPT) were conducted at every 1.5 m depth interval. Manually operated, 63.5 kg Donut hammers were used. Fifty blows were considered as refusal. All works conducted as per ASTM D1586

Sampling was performed at specified depths over the depth drilled as specified in the ToR of the consultant. Undisturbed soil samples were recovered by means of the Shelby Tubes by pushing through hydraulic pressure.

The blow counts required to advance the final 300 mm of a 450 mm sampler drive was recorded on the borehole logs as SPT 'N' values. In dense strata where it was difficult to drive the sampler to the full 450 mm, the penetration achieved with 50 blows of the hammer was recorded instead. SPTs >50 blows were considered refusal. All works conducted as per ASTM D1586.

All the SPT samples were extruded at site for necessary inspection and identification of the soils encountered. Field bore logs were prepared during drilling and testing and are presented in **Appendix A.** All samples were photographed with necessary identification; e.g. site name, borehole, and depth and SPT numbers. The photographs are presented in **Appendix E**

## 5.2 Storage and transportation of sample

After inspection, the recovered SPT samples were placed in polythene bags with proper marking for soil identification. The disturbed soil samples were collected by standard split spoon sampler and preserved in polythene bags after visual examination and sent to laboratory for testing. Reference code: ASTM 1586. The undisturbed soil samples contained in Shelby tubes (duly

sealed with wax) and disturbed ones in polythene hags were brought to soil mechanics Laboratory of Al – Mayeda Survey Consultant for undergoing laboratory tests. Full care was taken in extraction of undisturbed soil samples form Shelby tubes and trimming test specimen to save samples from any moisture loss & disturbance to its original structure.

## 5.3 Measurement of Ground Water

Ground Water Table was measured by standpipe piezometers at each borehole points. The measurements are taken after 24 hours of drilling and depth of ground water below the existing ground surface.

# 6.0 LABORATORY TESTING WORK

The laboratory tests details are demonstrated at Appendix-D which provide by the Geotechnical Engineer of the consultant. All the test works were performed according to their respective ASTM / AASHTO standards.

All samples were examined by a soil technician and checked against the laboratory test results before final description.

**Table-3:** List of laboratory tests quantity information

| Laboratory Testing: | Quantity |
|---|---|
| a) Grain Size Analysis (Hydro & Sieve) AASHTO T-127 & T-11/ ASTM D-422 | 123 |
| b) Natural Moisture Content AASHTO T-265 | 46 |
| c) Atterberg Limits and Plasticity Index ASTM D423-66 | 80 |
| d) Direct Shear Test ASTM D3080-98 | 60 |
| e) 1 - D Consolidation test | 09 |
| f) Unconfined Compression Test | 16 |

## 6.1 Test Methodology

Test methodology in brief is presented in following sub-sections.

The summary of laboratory test results and detail laboratory test results of soil samples are presented at Appendix-C and D.

### 6.1.1 Water Content and Unit Weight determination

The natural water contents of undisturbed samples were measured. Unit weights of UD samples were determined via trimming the sample to a standard of 35.3 mm diameter and length of 70 mm. the unit weights of the disturbed samples were calculated based on the weight and dimension of the soil.

### 6.1.2 Natural Moisture Content

The disturbed soil samples collected by split sampler in plastic bags and undisturbed samples were collected in Shelby tubes, The Tube were sealed both side by wax and sent to laboratory to obtain moisture. Moisture content tools were carried out as per ASTM D2216 Standard..

### 6.1.3 Grain Size Analysis

ASTM D422-6 this test method covers the quantitative determination of particle size distribution as well as fineness. The soil washed by No. 200 sieve to determine the percentage of fine and coarse particles. Sieve analysis done on soil quality retained on No. 200 sieve. The resulting data was acquired to obtain the particle size distribution and presented in Gradation Curve of **Appendix-D** in the report.

For determination of soils finer than No. 200 (75-µ m), the finer soil particles are isolated by soaking in water containing a sodium hexametaphosphate. Subsequently, the soil sample is wash sieved. The percentage loss in mass resulting from the wash treatment is then calculated as the percentage of soil particles finer than No. 200 (75-µ m). (Reference code: ASTM D 421)

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### 6.1.4 Specific Gravity

Specific gravity tests were conducted on representative samples. A 50-100 gram of dry soil was placed in a 500 cc volumetric flask; the flask was then filled with clean water. Afterwards filled flask was boiled for a period of 30 minutes to remove air from the mixture. The flask was topped with water up to the 500 cc mark whenever necessary. Once the evacuation was completed, the flask with the soil mixture was weighed and the specific gravity was then calculated based on the equivalent weight of water together with flask at the temperature. The test was usually carried out at temperature of 29 to 30$^{\circ}$C; therefore, the reported specific gravity was also given in this temperature range. Tests were performed in accordance with ASTM D 854 standards.

### 6.1.5 Atterberg Limit

Atterberg limits were performed on all cohesive (clay and some silt) soil samples. The liquid limit is determined by Casagrande cup method and the plastic limits are determined via “rolling Thread” method. For liquid limit determination, three water contents with blow counts between 15 and 30 are adopted. As for plastic limit, two (2) measurements were made for each sample. Tests were performed in accordance with ASTM D 4318 standards.

### 6.1.6 Unconfined Compression Test

The undisturbed soil sample extruded from thin walled shelby tube was trimmed to 1: 2 dia length ratio and applied to an axial compression in Unconfined Compression Machine. The test was carried out in accordance with the ASTM D2166 Standard.

### 6.1.7 Direct Shear Test

Unconsolidated Undrained Direct shear tests were performed on cohesionless disturbed soil samples obtained from borings of bridges. Square box, single shear device was used. The shearing area of the box was 25.40cm2 with a volume of 51.489 cm3. From this test cohesion and angle of internal friction Ø was obtained. The test was done as per ASTM D3080 Standard.

### 6.1.8 1-D Consolidation Test

1-D Consolidation test were carried out on the undisturbed samples. Settlement observations are recorded at various times after the application of each load level. When testing most clay soils are tested, each load is left in place for 24 hours. After the maximum pressure has been applied, the load acting on the soil specimen is unloaded in four decrements (e.g., down from 64,000 psf to 16,000 psf to 4000 psf). When a suitably low pressure is reached, the rest of the remaining load is removed in a single step and the apparatus is dismantled rapidly to minimize any additional moisture taken in by the soil.

## 7.0 SITE GEOLOGY

The surface geology of Bangladesh is dominated by young (Helocene) alluvial and deltaic sediments deposited within last 6000 to 10000 years. Surface sediments in the north include coarse grained mountain front alluvial fan deposits. Sediments in much of lowland central Bangladesh are alluvial sands and silts, where present site of investigation is located, while in the South closer to the coast, sediments are predominatly deltaic silts and clays. An extract from „Geological Map of Bangladesh" showing the geology of the project area is presented on Figure 1 (Ref. Geological Map of Bangladesh –by Geological Survey of Bangladesh). This geological map indicates that the soil type of the site is categorized as paludal deposits. Geologically there is no significant variation in the process of soil formation of our studied areas. Our study confirms deposition of silt and clay underlain by sand.


**Figure: Geological Map of Bangladesh**

## 8.0 RECOMMENDATIONS ON FOUNDATION OF STRUCTURES

Foundations are a vitally important part of the design of bridge and accordingly a significant amount of effort has been dedicated to the various aspects of site investigation and foundation design. Considering the soil condition its physical and engineering characteristics, it is recommended to make deep foundation by cast-in-situ bored pile for construction of proposed bridge at the site.

## 9.0 RESULTS AND DISCUSSION

The summary of laboratory test results and details laboratory test results are displayed at Appendix-C and D. Photographs of the field investigation has been incorporated in Appendix- E.

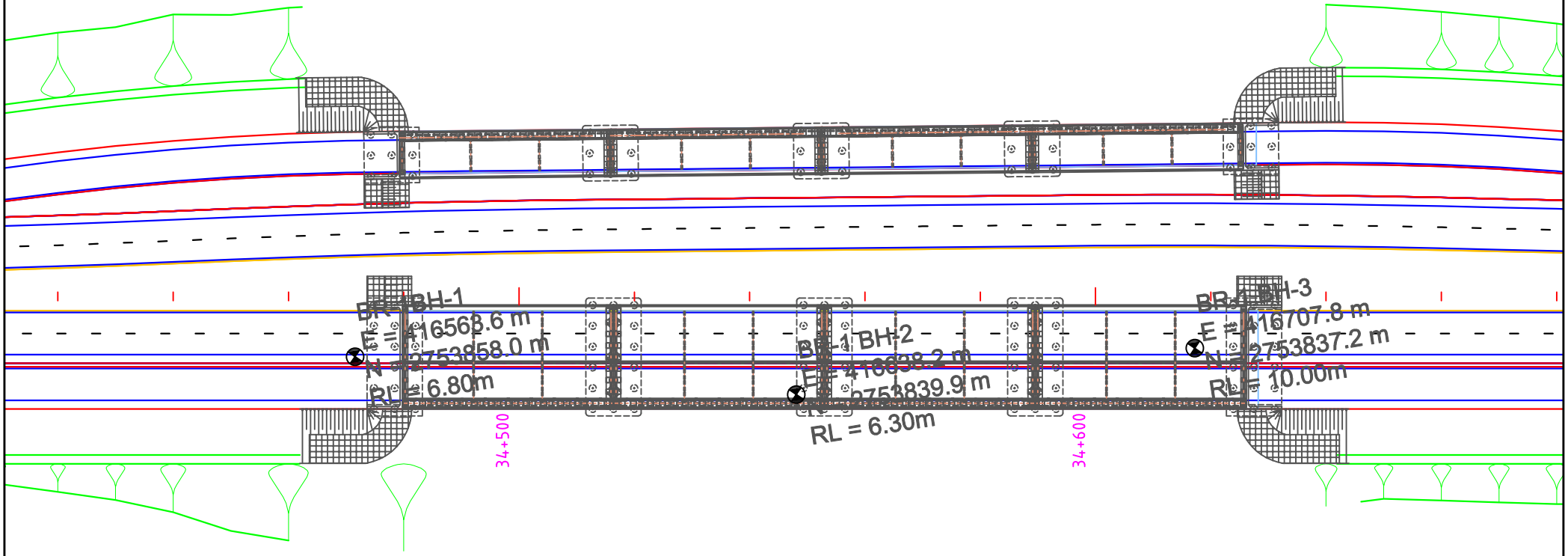
The objective of the subsurface investigation is to design a suitable foundation for the proposed bridge, whose substructure would transmit the structural loads into the ground safely. However, unit toe and skin soil resistance were estimated for bored cast-in-situ pile— as described in this report. These values will have to be used judiciously; especially in case of estimating the toe resistance of bored pile constructed under bentonite slurry without base grouting. Pile diameter may be picked out considering vertical and lateral load concentration; however, diameter 1000mm and 1200mm has been considered suitable for the structures.

Suggestion is made for construction of pilot piles before commencement of service piles, to verify the estimated pile capacity based on soil investigation report. Carrying capacity may be checked —either by Static Axial Compression Pile Load Test or the High Strain Dynamic Pile Test. Apart from that during the investigation it was evident that drilling boreholes at the exact foundation location was not possible as there was some protection work as well as encroachment along the bank-line and in some cases the proposed bridge was outside of RHD's acclaimed land. With that being said it may be added that it is recommended to carry out confirmatory boring at each foundation location during the construction phase of the project to get a better understanding of the ground conditions after land acquisition and site clearance.

In case of bored pile constructed by percussion method under bentonite slurry and pile toe resting on very dense sand with high elastic modulus, designers are often deceived and use higher toe resistance and high ultimate capacity as well, for piles constructed without base grouting.

APPENDIX- A

# Boreholes Layout Plan

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Dhaka - 1207, Phone - 01711266857, Email: almayedabd@gmail.com

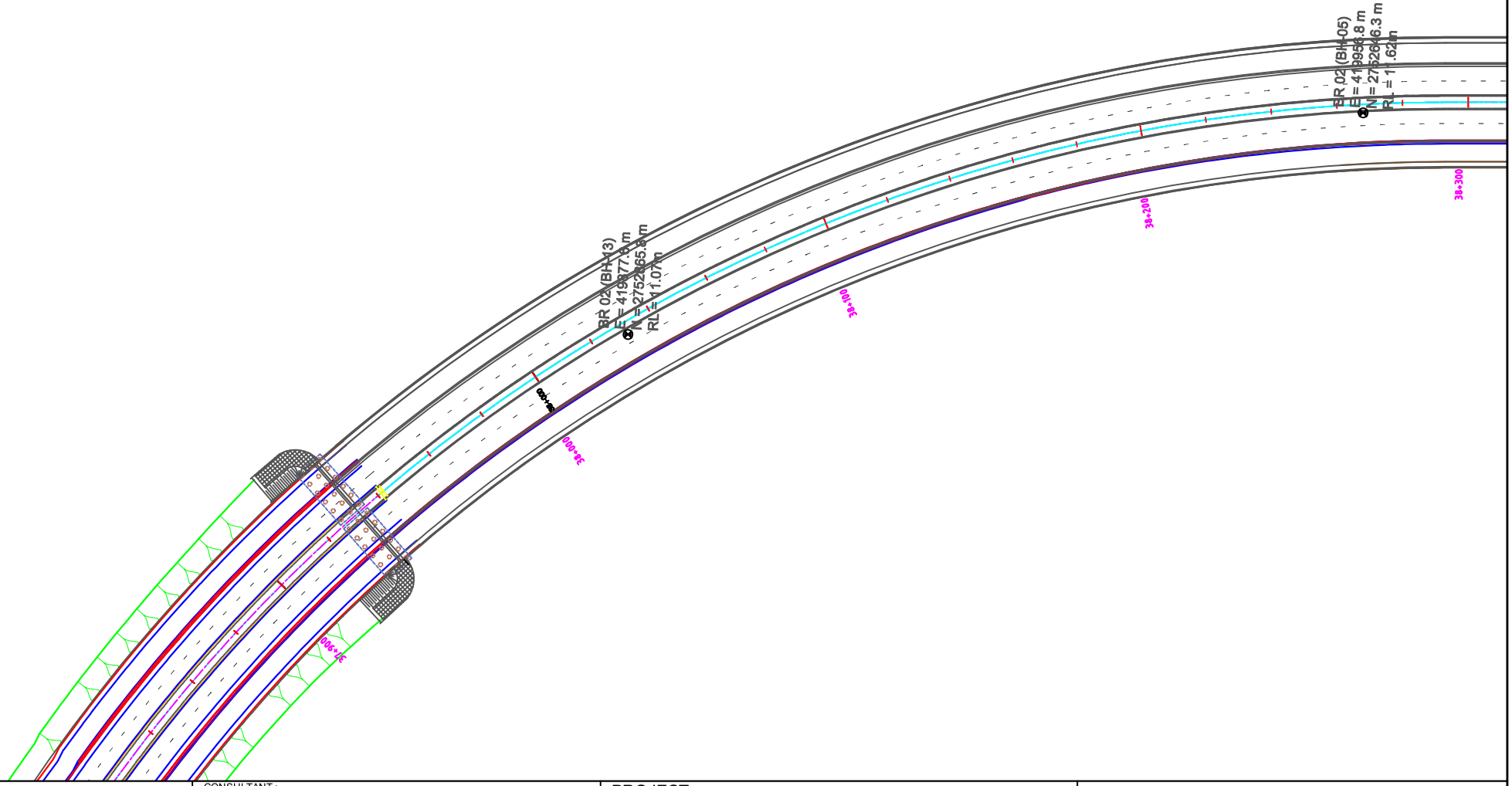
PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:

BORE HOLE LAYOUT PLAN OF BRIDGE - 01 AT CHAINAGE 34+400, 34+500 & 34+600.

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PROJECT:

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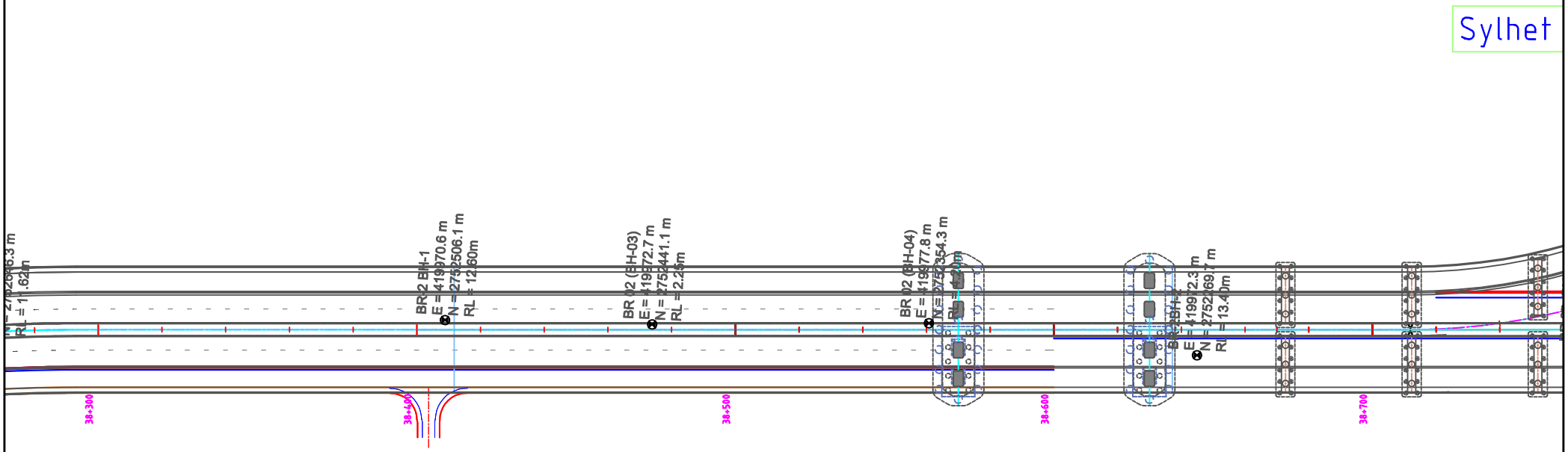
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:
BORE HOLE LAYOUT PLAN OF BRIDGE - 02 AT CHAINAGE 38+000.
PART-BR2_A




| | | | |
|---|---|---|---|
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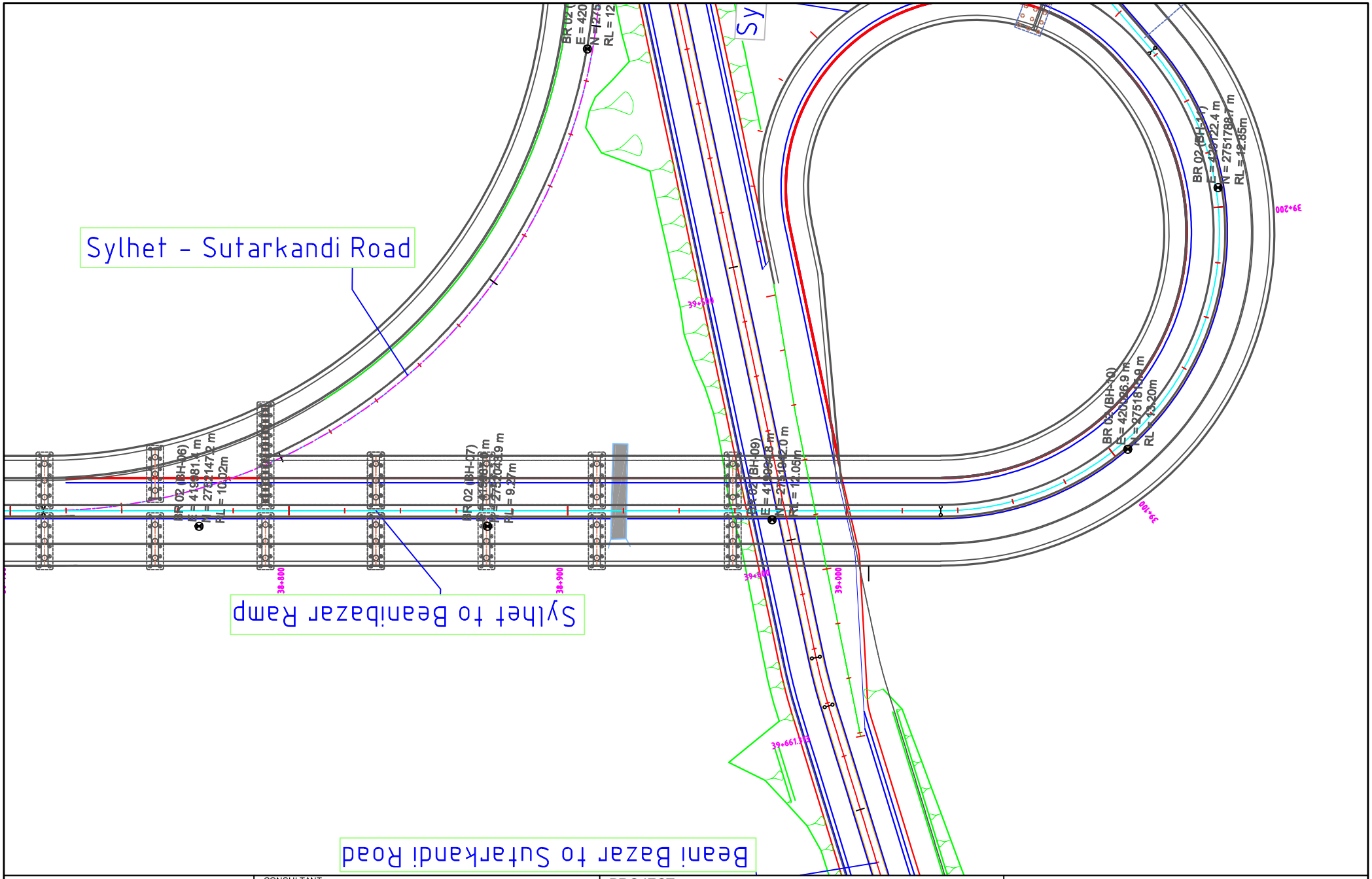


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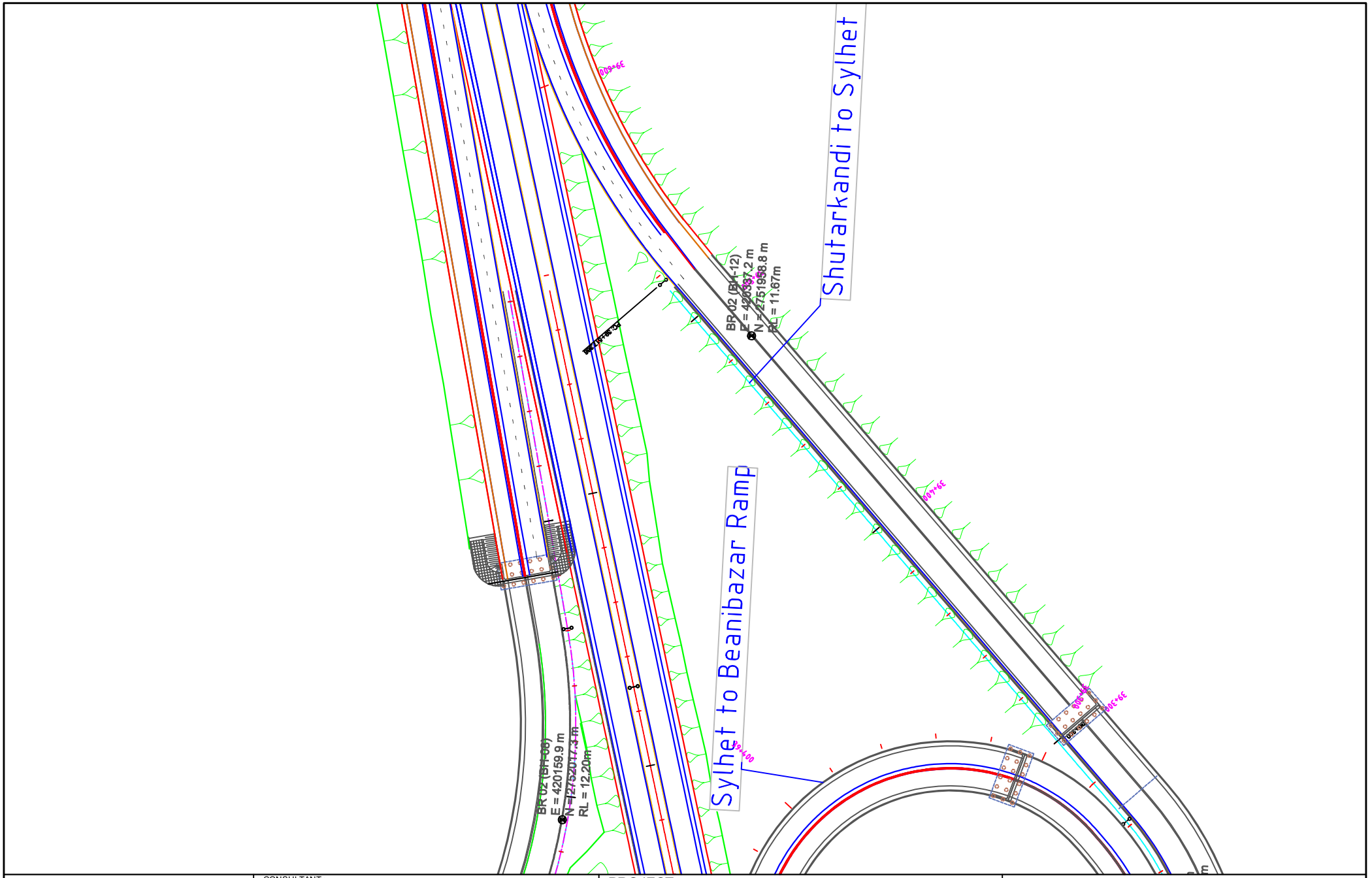
PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:
BORE HOLE LAYOUT PLAN OF BRIDGE - 02 AT CHAINAGE 38+700.
PART-BR2_C

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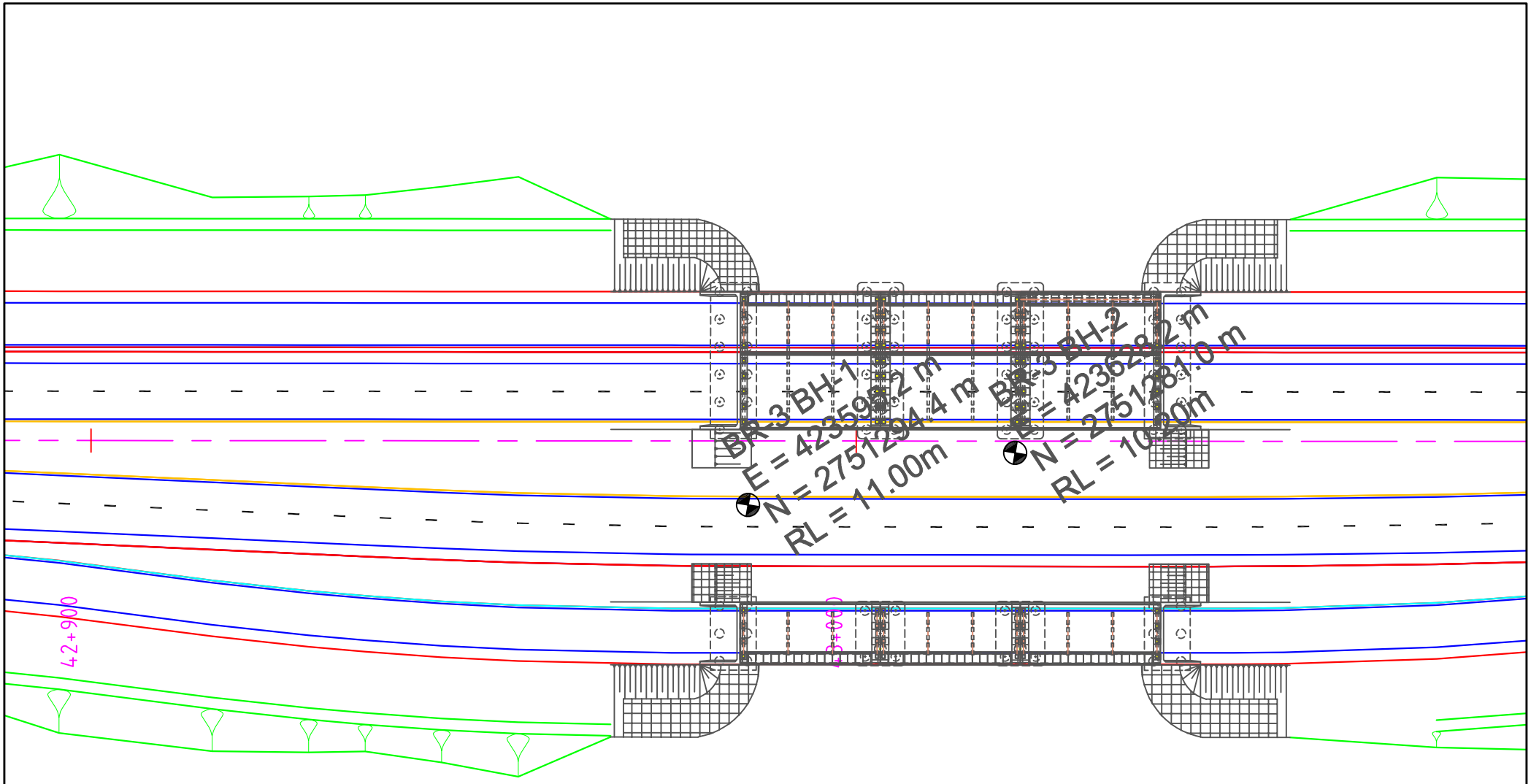
PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:
BORE HOLE LAYOUT PLAN OF BRIDGE - 02 AT CHAINAGE 39+300.
PART-BR2_D




**Roads and Highways Department**
Ministry of Road Transport and Bridges
Government of the People's Republic of Bangladesh

CONSULTANT :
Hifab International AB, Sweden

SUB-CONSULTANT :
AL - MAYEDA SURVEY CONSULTANTS
House # 609, Road # 11, Baitul Aman Housing Society Adabor,
Dhaka - 1207, Phone - 01711266857, Email: almayedabd@gmail.com

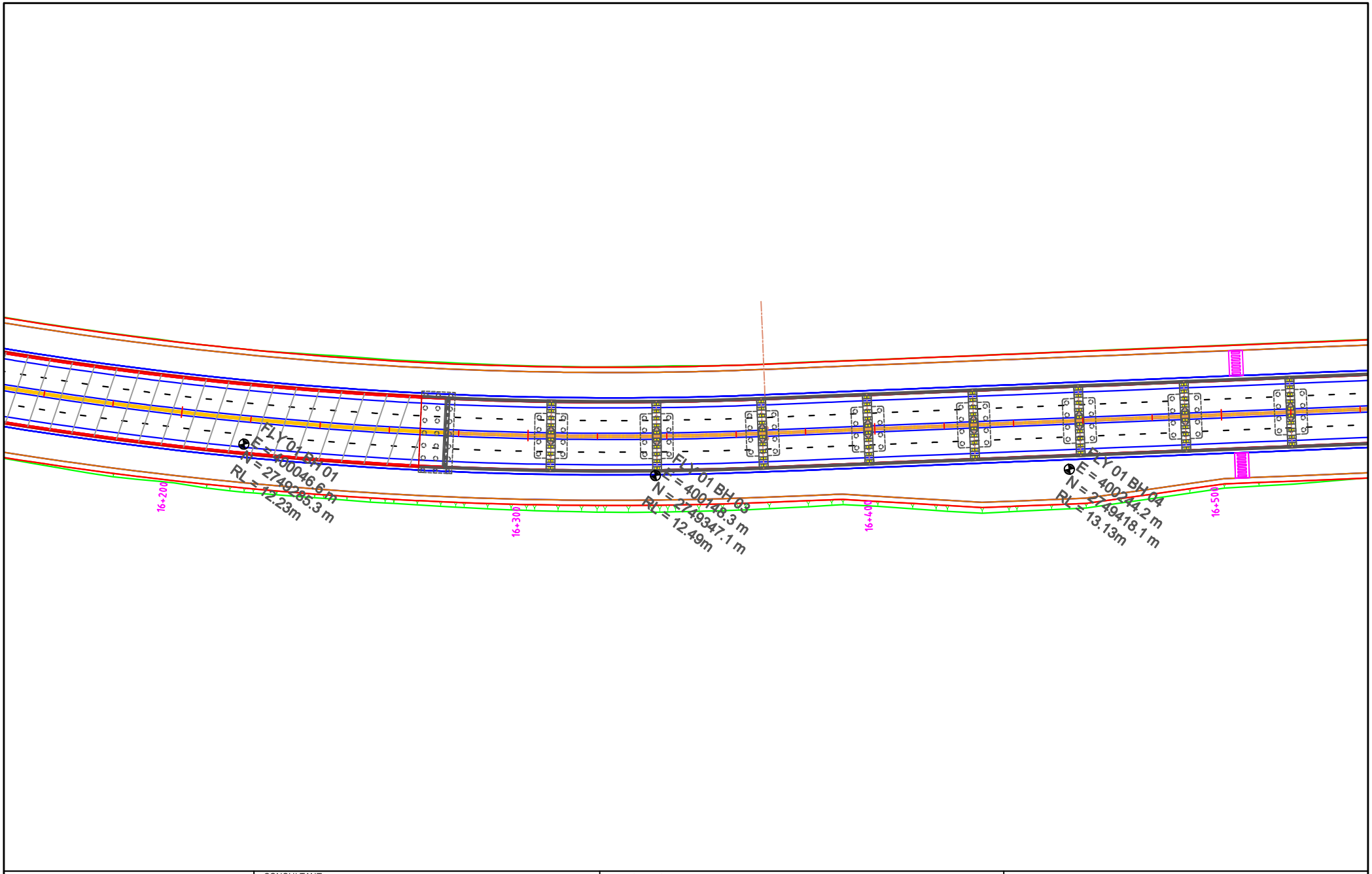
PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:

BORE HOLE LAYOUT PLAN OF BRIDGE - 03 AT CHAINAGE 42+900 & 43+000.

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Government of the People's Republic of Bangladesh

CONSULTANT :
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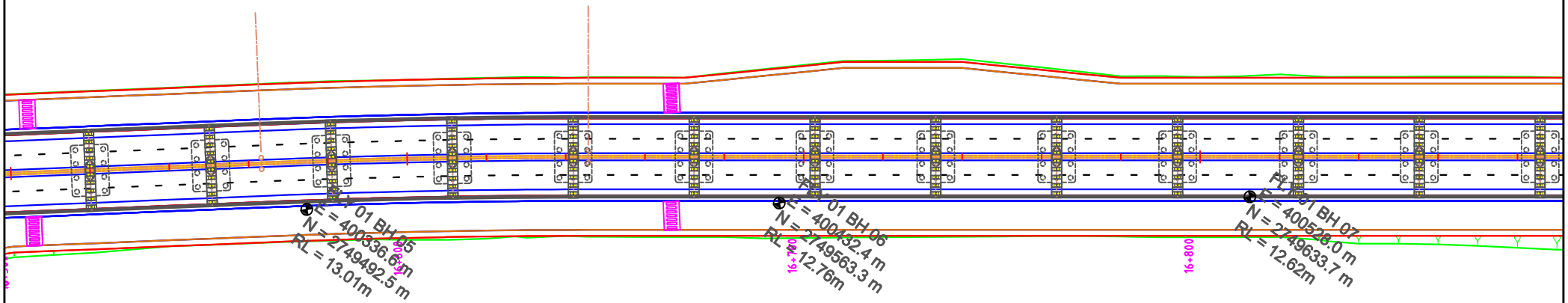
Dhaka - 1207, Phone - 01711266857, Email: almayedabd@gmail.com

PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:
BORE HOLE LAYOUT PLAN OF FLYOVER - 01 AT CHAINAGE 16+200.
PART 01_A

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Ministry of Road Transport and Bridges
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CONSULTANT :
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SUB-CONSULTANT :
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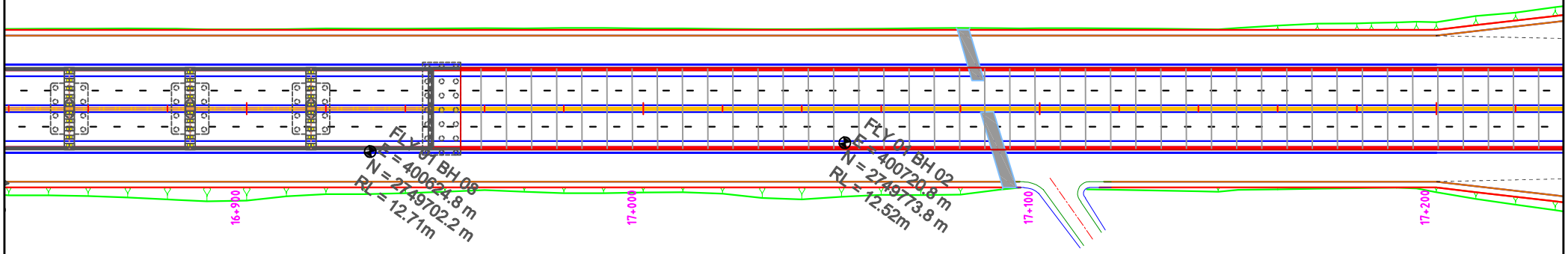
Dhaka - 1207, Phone - 01711266857, Email: almayedabd@gmail.com

PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:
BORE HOLE LAYOUT PLAN OF FLYOVER - 01 AT CHAINAGE 16+600.
PART 01_B

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Ministry of Road Transport and Bridges
Government of the People's Republic of Bangladesh

CONSULTANT :
Hifab International AB, Sweden

SUB-CONSULTANT :
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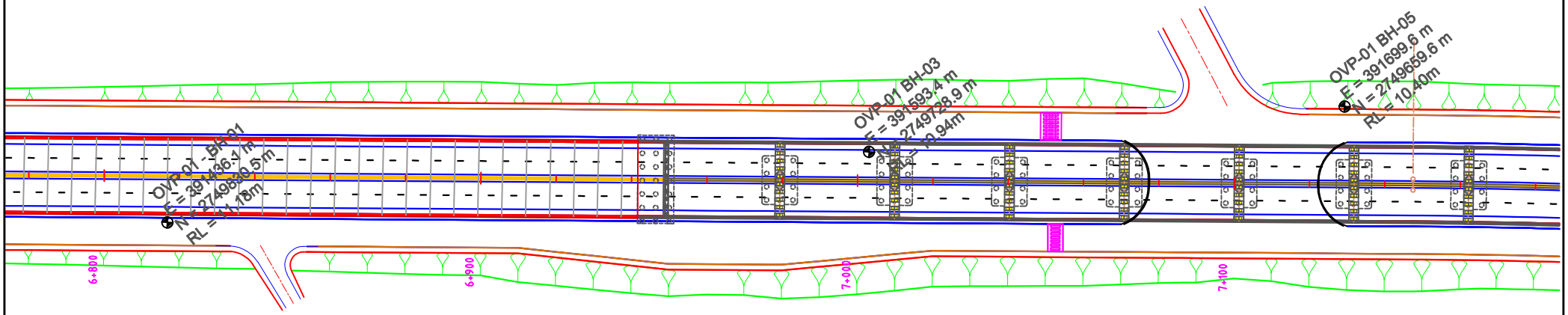
PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:
BORE HOLE LAYOUT PLAN OF FLYOVER - 01 AT CHAINAGE 16+900.
PART 01_C




**Roads and Highways Department**
Ministry of Road Transport and Bridges
Government of the People's Republic of Bangladesh

CONSULTANT :
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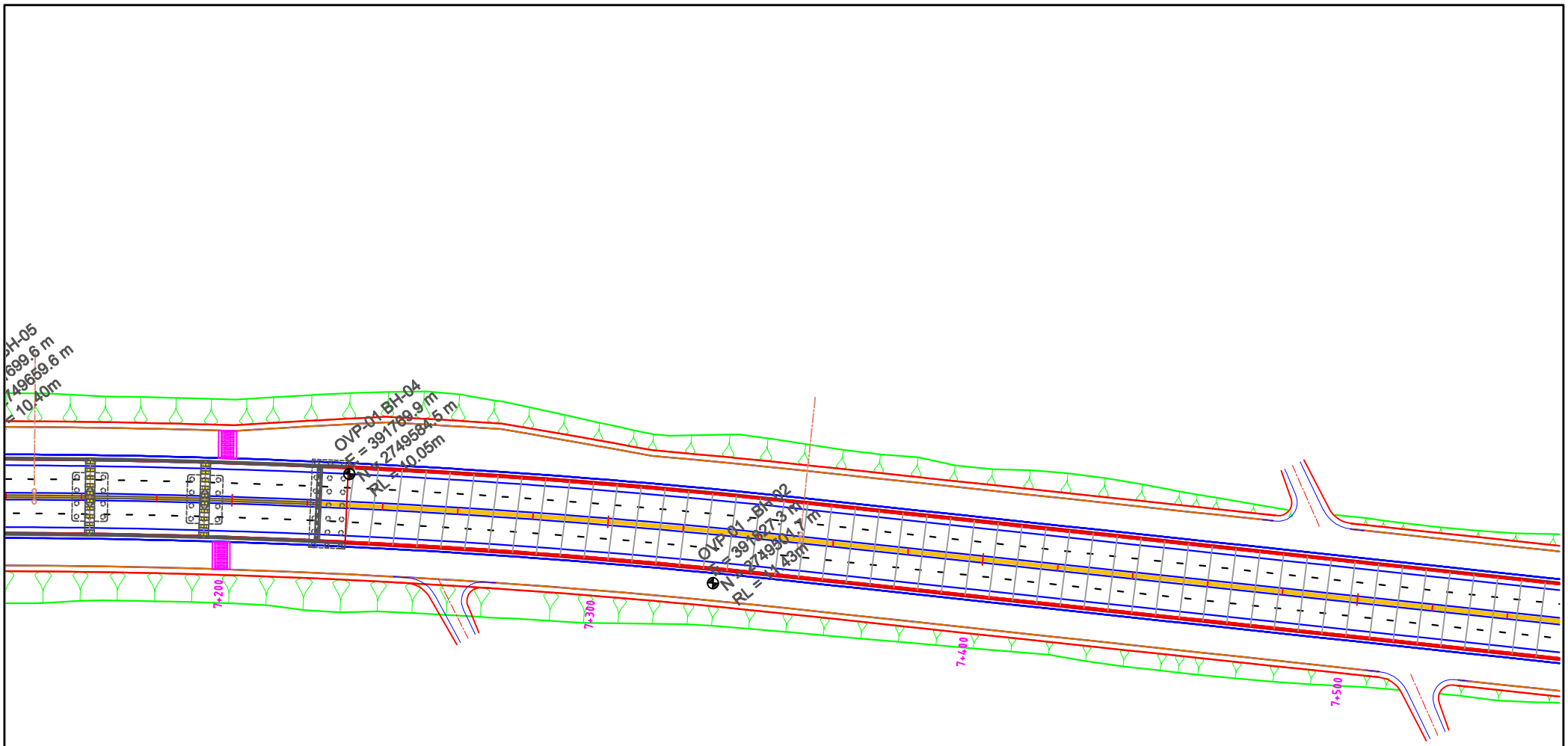
Dhaka - 1207, Phone - 01711266857, Email: almayedabd@gmail.com

PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:
BORE HOLE LAYOUT PLAN OF OVER PASS - 03 AT CHAINAGE 6+800,
PART OVP 01_A.

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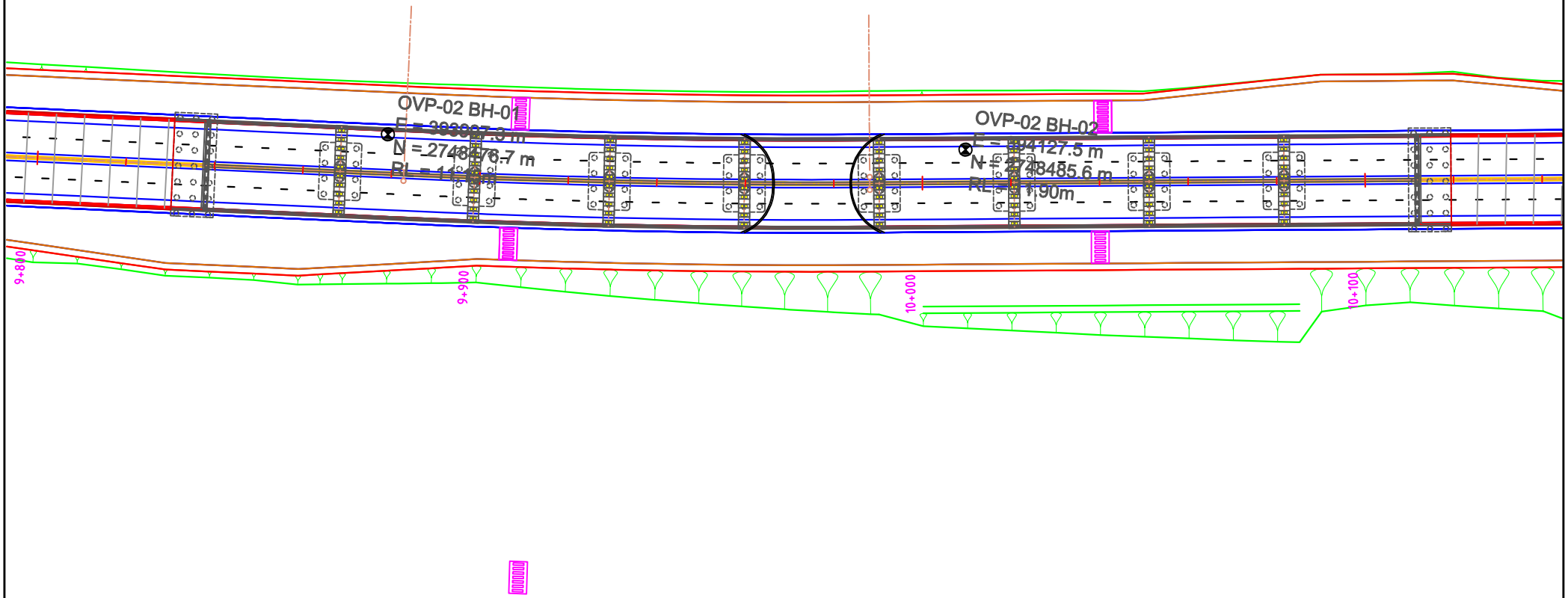
PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:
BORE HOLE LAYOUT PLAN OF OVER PASS - 03 AT CHAINAGE 7+200,
PART OVP 01_B.

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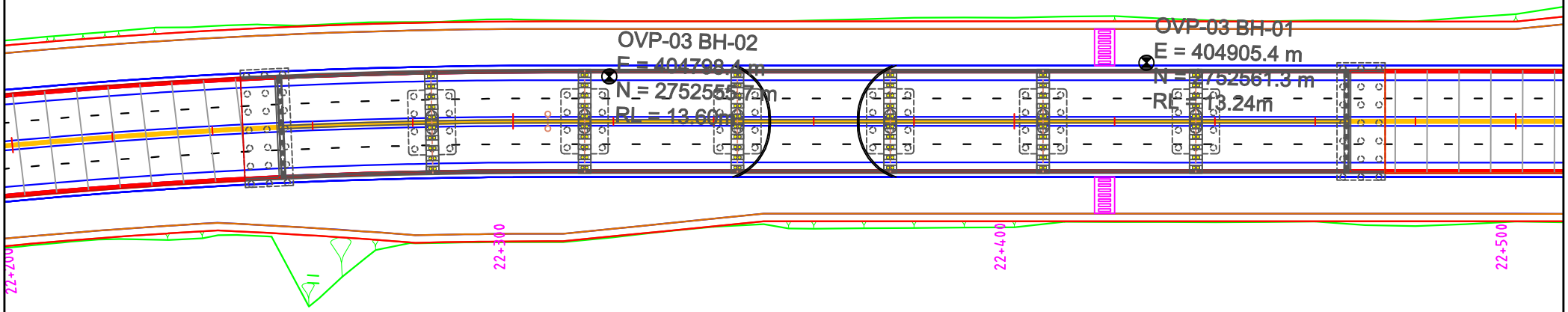
PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:

BORE HOLE LAYOUT PLAN OF OVER PASS - 02 AT CHAINAGE 9+900.

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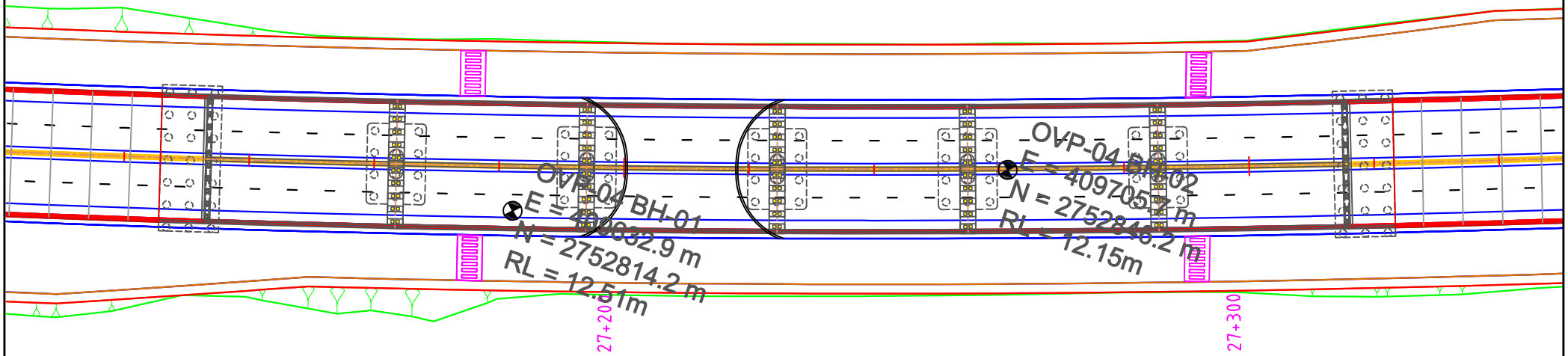
PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:

BORE HOLE LAYOUT PLAN OF OVER PASS - 03 AT CHAINAGE 22+300.

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Dhaka - 1207, Phone - 01711266857, Email: almayedabd@gmail.com

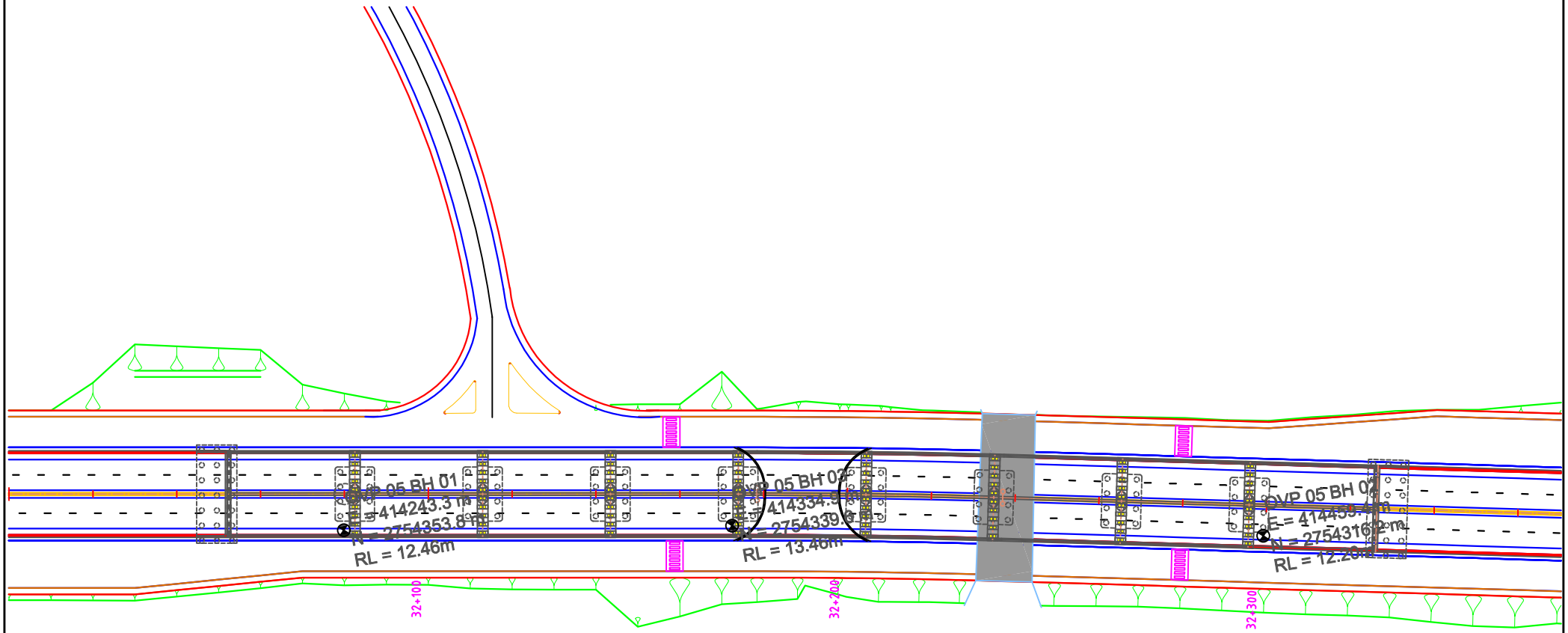
PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:

BORE HOLE LAYOUT PLAN OF OVER PASS - 04 AT CHAINAGE 27+200.




**Roads and Highways Department**
Ministry of Road Transport and Bridges
Government of the People's Republic of Bangladesh

CONSULTANT :
Hifab International AB, Sweden

SUB-CONSULTANT :
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Dhaka - 1207, Phone - 01711266857, Email: almayedabd@gmail.com

PROJECT:

SUB REGIONAL ROAD TRANSPORT PROJECT
PREPARATORY FACILITY-II

ROAD NAME: SYLHET ROAD

DWG TITLE:

BORE HOLE LAYOUT PLAN OF OVER PASS - 05 AT CHAINAGE 32+100.

APPENDIX- B

# Borehole Logs

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** ovp-01,BH-01
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 45.0 m

**Reduced level(m):** 11.18m
**Water level(m):** -4.870 from existing ground
**Date of Start:** 04.03.2019
**Date of End:** 05.03.2019

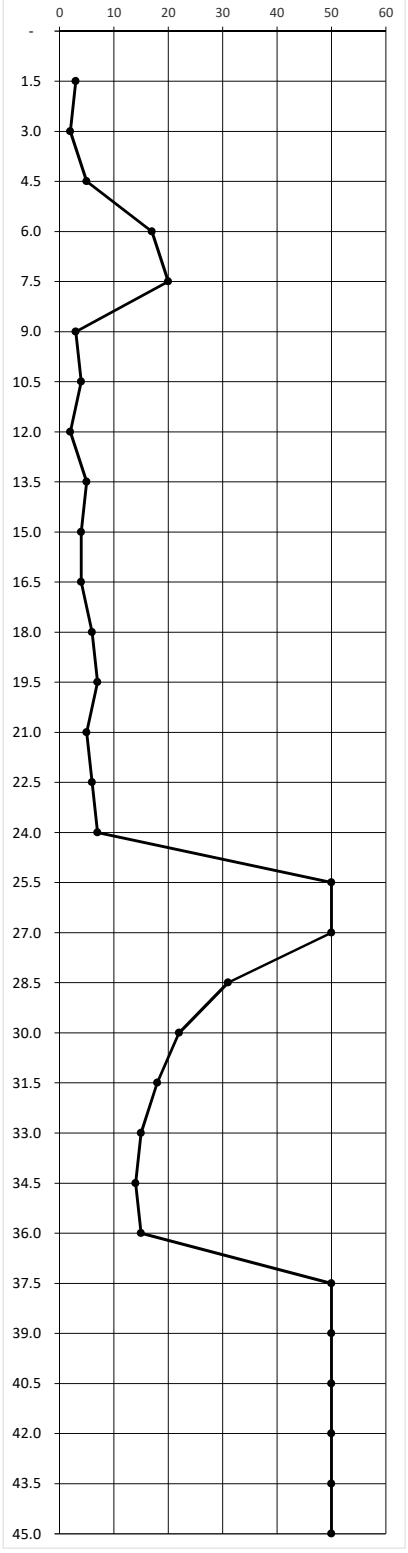
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Chainage - 6 + 850 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 391436.131m N - 2749830.489m

| Depth (m) | Description | UCS Classifi-caton | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff,grey,clayey SILT. | ML | | | D1 | 8.25 | 1 | 1 | 2 | 3 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 1 | 2 | 3 | 5 |
| 6.0 | | | | | D4 | | 4 | 7 | 10 | 17 |
| 7.5 | | | | | D5 | | 5 | 8 | 12 | 20 |
| 9.0 | Soft to medium stiff,grey,clayey SILT. | ML | | | D6 | 16.50 | 1 | 1 | 2 | 3 |
| 10.5 | | | | | D7 | | 1 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 1 | 1 | 1 | 2 |
| 13.5 | | | | | D9 | | 1 | 2 | 3 | 5 |
| 15.0 | | | | | D10 | | 1 | 2 | 2 | 4 |
| 16.5 | | | | | D11 | | 1 | 2 | 2 | 4 |
| 18.0 | Medium stiff,dark grey,clayey SILT,few organic,trace of mica. | | | | D12 | | 1 | 2 | 4 | 6 |
| 19.5 | | | | | D13 | | 2 | 3 | 4 | 7 |
| 21.0 | Medium stiff,grey clayey SILT. | | | | D14 | | 2 | 2 | 3 | 5 |
| 22.5 | | | | | D15 | | 2 | 3 | 3 | 6 |
| 24.0 | | | | | D16 | | 2 | 3 | 4 | 7 |
| 25.5 | very dense to dense,grey silty fine SAND. | SM | | | D17 | 6.00 | 17 | 24 | 26 | 50 |
| 27.0 | | | | | D18 | | 18 | 30 | 20 | 50 |
| 28.5 | | | | | D19 | | 8 | 13 | 18 | 31 |
| 30.0 | | | | | D20 | | 7 | 10 | 12 | 22 |
| 31.5 | Very dense,grey Sandy SILT. | ML | | | D21 | 16.50 | 5 | 7 | 11 | 18 |
| 33.0 | | | | | D22 | | 4 | 6 | 9 | 15 |
| 34.5 | | | | | D23 | | 4 | 6 | 8 | 14 |
| 36.0 | | | | | D24 | | 4 | 7 | 8 | 15 |
| 37.5 | | | | | D25 | | 20 | 30 | 20 | 50 |
| 39.0 | | | | | D26 | | 22 | 34 | 16 | 50 |
| 40.5 | | | | | D27 | | 25 | 50 | - | 50 |
| 42.0 | | | | | D28 | | 27 | 50 | - | 50 |
| 43.5 | | | | | D29 | | 30 | 50 | - | 50 |
| 45.0 | | | | | D30 | | 35 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Ovp-01,BH-03
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 43.5 m

**Reduced level(m):** 10.94 m
**Water level(m):** -5.486 from existing ground
**Date of Start:** 04.03.2019
**Date of End:** 05.03.2019

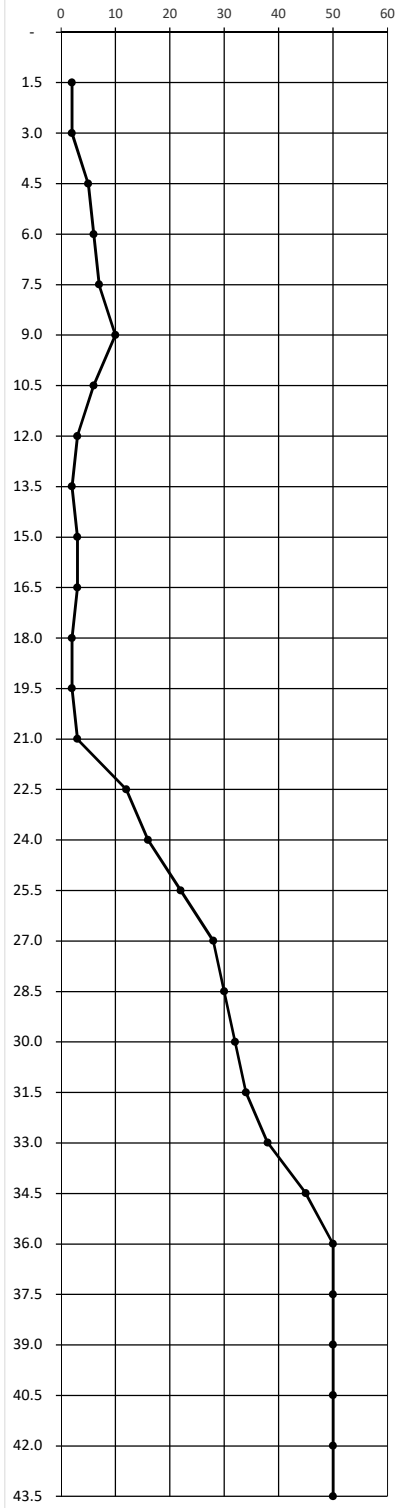
**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 6 + 950 ,Sylhet.

**Legend:** Clay Silt Sand

**Coordinates:** E - 391593.39m N - 2749728.89m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff,grey clayey SILT. | ML | | | D1 | 23.25 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 2 | 2 | 3 | 5 |
| 6.0 | | | | | D4 | | 2 | 2 | 4 | 6 |
| 7.5 | | | | | D5 | | 3 | 3 | 4 | 7 |
| 9.0 | | | | | D6 | | 3 | 4 | 6 | 10 |
| 10.5 | | | | | D7 | | 2 | 2 | 4 | 6 |
| 12.0 | | | | | D8 | | 1 | 1 | 2 | 3 |
| 13.5 | | | | | D9 | | 1 | 1 | 1 | 2 |
| 15.0 | | | | | D10 | | 1 | 1 | 2 | 3 |
| 16.5 | | | | | D11 | | 1 | 1 | 2 | 3 |
| 18.0 | | | | | D12 | | 1 | 1 | 1 | 2 |
| 19.5 | | | | | D13 | | 1 | 1 | 1 | 2 |
| 21.0 | | | | | D14 | | 1 | 1 | 2 | 3 |
| 22.5 | | | | | D15 | | 5 | 5 | 7 | 12 |
| 24.0 | Very stiff,grey,clayey SILT. | ML | | | D16 | 15.00 | 6 | 7 | 9 | 16 |
| 25.5 | | | | | D17 | | 7 | 10 | 12 | 22 |
| 27.0 | | | | | D18 | | 7 | 12 | 16 | 28 |
| 28.5 | | | | | D19 | | 8 | 13 | 17 | 30 |
| 30.0 | | | | | D20 | | 8 | 15 | 17 | 32 |
| 31.5 | | | | | D21 | | 9 | 16 | 18 | 34 |
| 33.0 | | | | | D22 | | 12 | 18 | 20 | 38 |
| 34.5 | | | | | D23 | | 14 | 20 | 25 | 45 |
| 36.0 | | | | | D24 | | 18 | 32 | 18 | 50 |
| 37.5 | Very dense,grey,silty fine SAND | SM | | | D25 | 8.50 | 20 | 35 | 15 | 50 |
| 39.0 | | | | | D26 | | 24 | 40 | 10 | 50 |
| 40.5 | | | | | D27 | | 28 | 35 | 15 | 50 |
| 42.0 | | | | | D28 | | 30 | 50 | - | 50 |
| 43.5 | | | | | D29 | | 32 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** OVP-01,BH-05
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 43.5m

**Reduced level(m):** 10.4 m
**Water level(m):** -2.0 from existing ground
**Date of Start:** 19.07.2019
**Date of End:** 20.07.2019

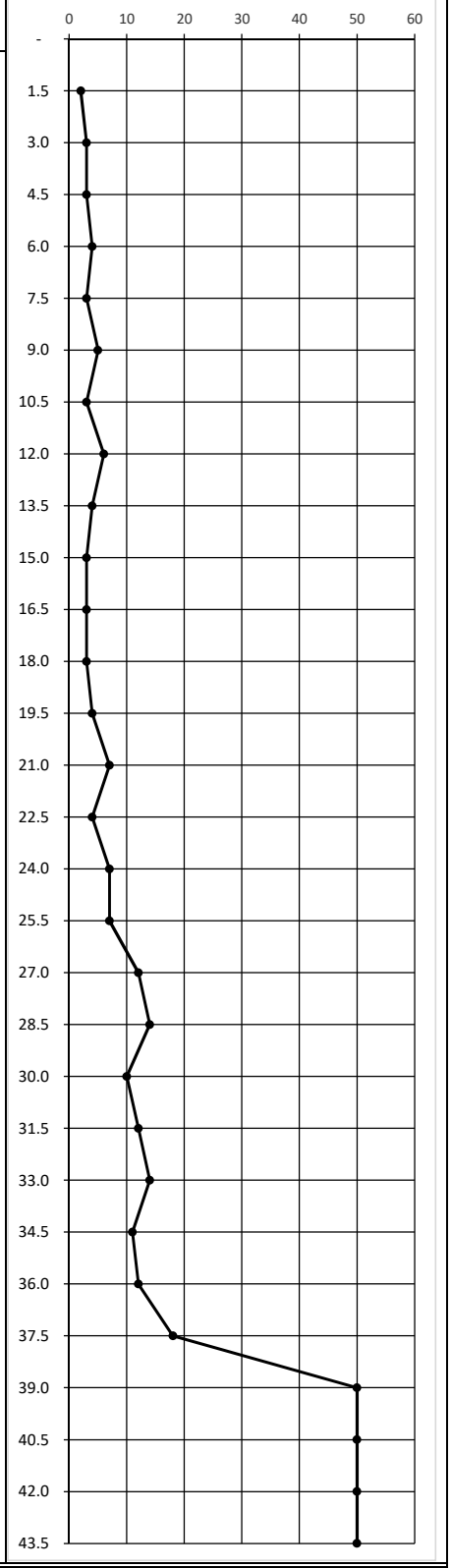
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 7 + 100 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 391699.559m N - 2749659.587m

| Depth (m) | Description | UCS Classification | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff grey clayey SILT | ML | D1 | 18.75 | 1 | 1 | 1 | 2 |
| 3.0 | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | | | D3 | | 1 | 1 | 2 | 3 |
| 6.0 | | | D4 | | 1 | 2 | 2 | 4 |
| 7.5 | | | D5 | | 1 | 1 | 2 | 3 |
| 9.0 | | | D6 | | 2 | 2 | 3 | 5 |
| 10.5 | | | D7 | | 1 | 1 | 2 | 3 |
| 12.0 | | | D8 | | 1 | 3 | 3 | 6 |
| 13.5 | | | D9 | | 1 | 2 | 2 | 4 |
| 15.0 | | | D10 | | 1 | 1 | 2 | 3 |
| 16.5 | | | D11 | | 1 | 1 | 2 | 3 |
| 18.0 | | | D12 | | 1 | 1 | 2 | 3 |
| 19.5 | Loose medium to fine silty SAND | SM | D13 | 9.00 | 2 | 2 | 2 | 4 |
| 21.0 | | | D14 | | 2 | 3 | 4 | 7 |
| 22.5 | | | D15 | | 2 | 2 | 2 | 4 |
| 24.0 | | | D16 | | 2 | 3 | 4 | 7 |
| 25.5 | | | D17 | | 2 | 3 | 4 | 7 |
| 27.0 | | | D18 | | 3 | 5 | 7 | 12 |
| 28.5 | Stiff brown medium plastic silty CLAY | CL | D19 | 11.25 | 4 | 6 | 8 | 14 |
| 30.0 | | | D20 | | 3 | 4 | 6 | 10 |
| 31.5 | | | D21 | | 3 | 5 | 7 | 12 |
| 33.0 | | | D22 | | 3 | 6 | 8 | 14 |
| 34.5 | | | D23 | | 3 | 4 | 7 | 11 |
| 36.0 | | | D24 | | 4 | 5 | 7 | 12 |
| 37.5 | | | D25 | | 7 | 8 | 10 | 18 |
| 39.0 | Hard grey non plastic sandy SILT | ML | D26 | 3.25 | 11 | 23 | 27 | 50 |
| 40.5 | | | D27 | | 14 | 20 | 30 | 50 |
| 42.0 | | | D28 | | 17 | 24 | 26 | 50 |
| 43.5 | | | D29 | | 18 | 25 | 25 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Ovp-01,BH-04
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 48.0 m

**Reduced level(m):** 10.05 m
**Water level(m):** -1.500 from existing ground
**Date of Start:** 04.03.2019
**Date of End:** 05.03.2019

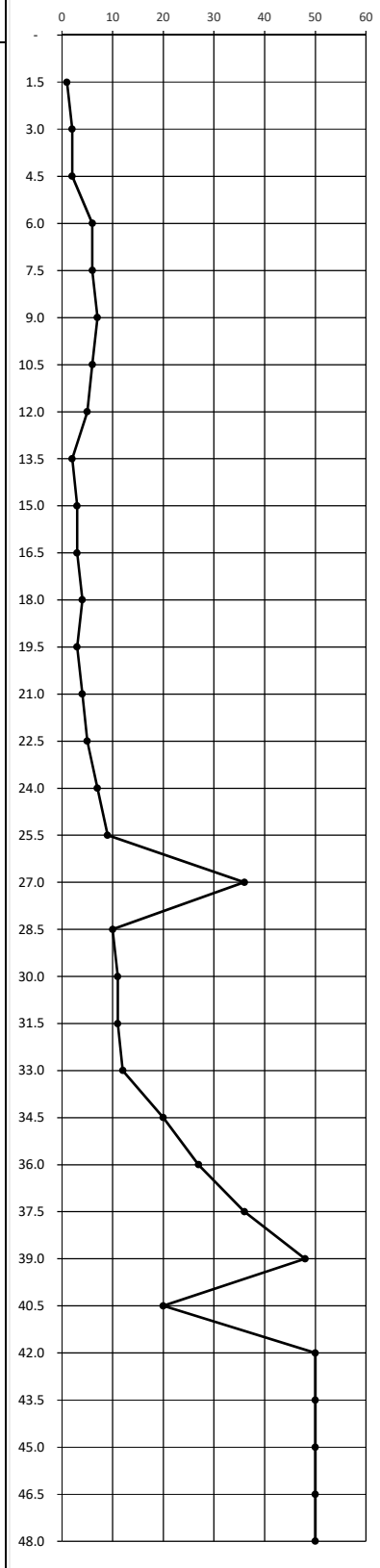
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Chainage - 7 + 230 ,Sylhet.

**Legend:** Clay Silt Sand

**Coordinates:** E - 391769.942m N - 2749584.475m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft,grey.clayey SILT. | ML | | | D1 | | 1 | 0 | 1 | 1 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| 6.0 | Medium stiff,grey silty CLAY. | CL | | | D4 | | 1 | 2 | 4 | 6 |
| 7.5 | | | | | D5 | | 1 | 2 | 4 | 6 |
| 9.0 | | | | | D6 | | 2 | 3 | 4 | 7 |
| 10.5 | | | | | D7 | 21.75 | 2 | 2 | 4 | 6 |
| 12.0 | | | | | D8 | | 1 | 2 | 3 | 5 |
| 13.5 | Very soft to soft,grey.clayey SILT. | ML | | | D9 | | 1 | 1 | 1 | 2 |
| 15.0 | | | | | D10 | | 1 | 1 | 2 | 3 |
| 16.5 | | | | | D11 | | 1 | 1 | 2 | 3 |
| 18.0 | | | | | D12 | | 1 | 2 | 2 | 4 |
| 19.5 | | | | | D13 | | 1 | 1 | 2 | 3 |
| 21.0 | | | | | D14 | | 1 | 2 | 2 | 4 |
| 22.5 | Loose to dense medium to fine silty SAND | SM | | | D15 | | 1 | 2 | 3 | 5 |
| 24.0 | | | | | D16 | | 3 | 3 | 4 | 7 |
| 25.5 | | | | | D17 | | 3 | 4 | 5 | 9 |
| 27.0 | | | | | D18 | | 10 | 16 | 20 | 36 |
| 28.5 | | | | | D19 | | 3 | 4 | 6 | 10 |
| 30.0 | | | | | D20 | | 4 | 5 | 6 | 11 |
| 31.5 | | | | | D21 | | 2 | 4 | 7 | 11 |
| 33.0 | | | | | D22 | | 3 | 5 | 7 | 12 |
| 34.5 | | | | | D23 | | 5 | 8 | 12 | 20 |
| 36.0 | | | | | D24 | 26.25 | 8 | 12 | 15 | 27 |
| 37.5 | | | | | D25 | | 12 | 16 | 20 | 36 |
| 39.0 | | | | | D26 | | 18 | 22 | 26 | 48 |
| 40.5 | | | | | D27 | | 6 | 8 | 12 | 20 |
| 42.0 | | | | | D28 | | 14 | 22 | 28 | 50 |
| 43.5 | | | | | D29 | | 30 | 50 | - | 50 |
| 45.0 | | | | | D30 | | 28 | 44 | 6 | 50 |
| 46.5 | | | | | D31 | | 31 | 50 | - | 50 |
| 48.0 | | | | | D32 | | 39 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** OVP-01,BH-02
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 43.5m

**Reduced level(m):** 11. 43 m
**Water level(m):** -1.4 from existing ground
**Date of Start:** 19.07.2019
**Date of End:** 20.07.2019

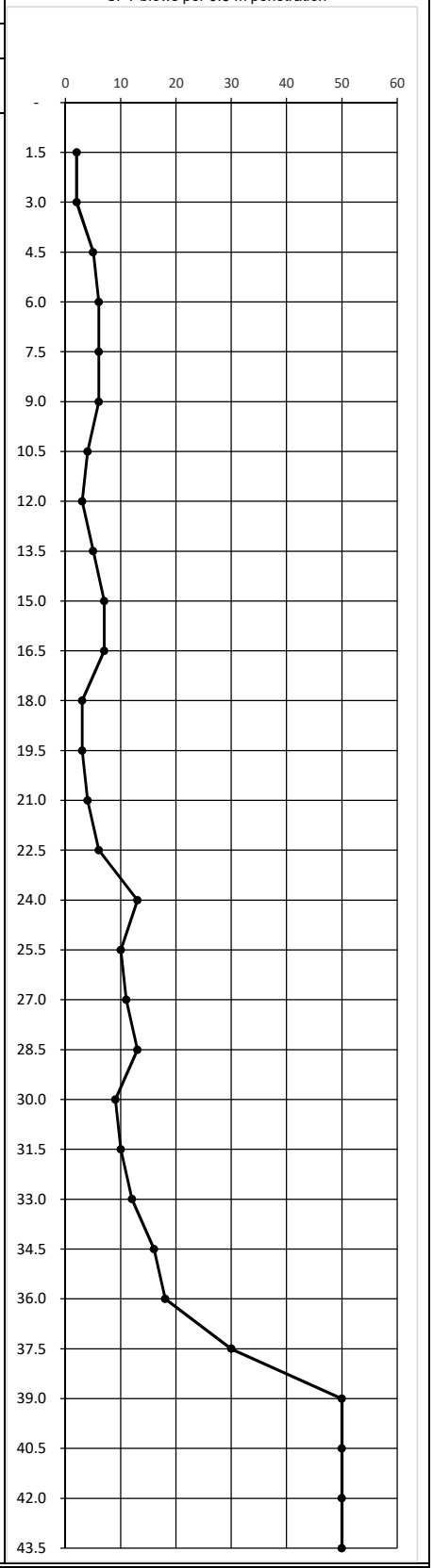
**Project:**Sub-Regional Road Transportation Project
**Client:**Roads and Highways Department (RHD)
**Location:** Chainage - 7 + 300 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 391827.306m N - 2749501.653m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very loose brown to grey silty fine SAND | SM | | | D1 | 6.75 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 1 | 2 | 3 | 5 |
| 6.0 | | | | | D4 | | 1 | 2 | 4 | 6 |
| 7.5 | Soft to stiff clayey silt | ML | | | D5 | 35.25 | 2 | 3 | 3 | 6 |
| 9.0 | | | | | D6 | | 1 | 2 | 4 | 6 |
| 10.5 | | | | | D7 | | 1 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 1 | 2 | 1 | 3 |
| 13.5 | | | | | D9 | | 1 | 2 | 3 | 5 |
| 15.0 | | | | | D10 | | 2 | 3 | 4 | 7 |
| 16.5 | | | | | D11 | | 2 | 3 | 4 | 7 |
| 18.0 | | | | | D12 | | 1 | 1 | 2 | 3 |
| 19.5 | | | | | D13 | | 1 | 1 | 2 | 3 |
| 21.0 | | | | | D14 | | 1 | 2 | 2 | 4 |
| 22.5 | | | | | D15 | | 2 | 3 | 3 | 6 |
| 24.0 | | | | | D16 | | 3 | 5 | 8 | 13 |
| 25.5 | | | | | D17 | | 3 | 4 | 6 | 10 |
| 27.0 | | | | | D18 | | 3 | 5 | 6 | 11 |
| 28.5 | | | | | D19 | | 3 | 5 | 8 | 13 |
| 30.0 | | | | | D20 | | 3 | 4 | 5 | 9 |
| 31.5 | | | | | D21 | | 3 | 4 | 6 | 10 |
| 33.0 | | | | | D22 | | 3 | 5 | 7 | 12 |
| 34.5 | | | | | D23 | | 4 | 6 | 10 | 16 |
| 36.0 | | | | | D24 | | 4 | 7 | 11 | 18 |
| 37.5 | | | | | D25 | | 8 | 10 | 20 | 30 |
| 39.0 | | | | | D26 | | 15 | 23 | 27 | 50 |
| 40.5 | | | | | D27 | | 16 | 22 | 28 | 50 |
| 42.0 | | | | | D28 | | 15 | 26 | 24 | 50 |
| 43.5 | | | | | D29 | | 18 | 30 | 20 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** OVP-02,BH-01
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 60.0 m

**Reduced level(m):** 11.15 m
**Water level(m):** -2.5 from existing ground
**Date of Start:** 21.07.2019
**Date of End:** 23.07.2019

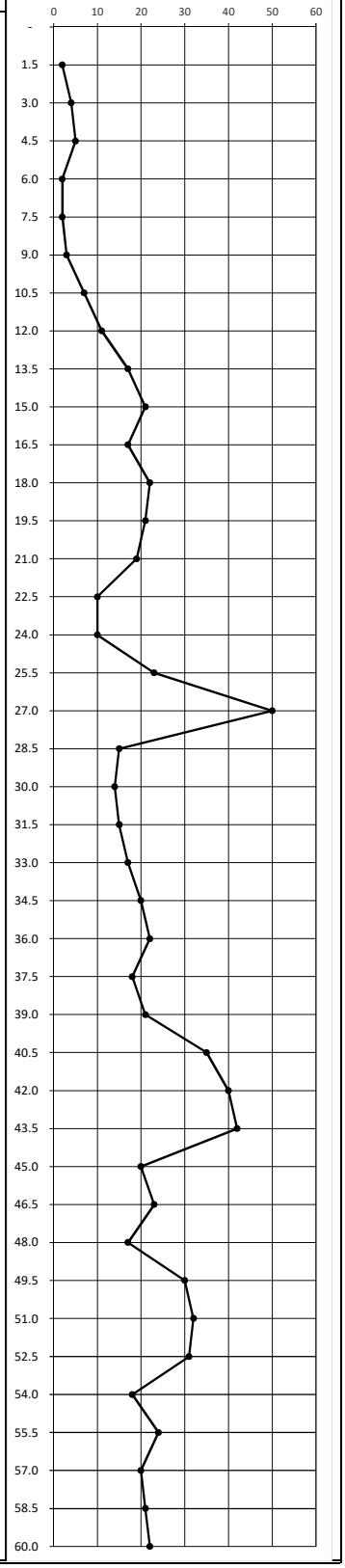
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 9 + 930 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 393997.34m N - 2748476.66m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft brown medium plastic silty CLAY | CL | | | D1 | 5.25 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 2 | 2 | 2 | 4 |
| 4.5 | | | | | D3 | | 1 | 2 | 3 | 5 |
| 6.0 | Stiff to very stiff grey clayey SILT | ML | | | D4 | 13.50 | 1 | 1 | 1 | 2 |
| 7.5 | | | | | D5 | | 1 | 1 | 1 | 2 |
| 9.0 | | | | | D6 | | 1 | 1 | 2 | 3 |
| 10.5 | | | | | D7 | | 2 | 3 | 4 | 7 |
| 12.0 | | | | | D8 | | 3 | 5 | 6 | 11 |
| 13.5 | | | | | D9 | | 5 | 7 | 10 | 17 |
| 15.0 | | | | | D10 | | 6 | 9 | 12 | 21 |
| 16.5 | | | | | D11 | | 5 | 8 | 9 | 17 |
| 18.0 | | | | | D12 | | 6 | 10 | 12 | 22 |
| 19.5 | Medium dense to dense gery silty fine SAND | SM | | | D13 | 4.50 | 9 | 10 | 11 | 21 |
| 21.0 | | | | | D14 | | 10 | 9 | 10 | 19 |
| 22.5 | | | | | D15 | | 4 | 4 | 6 | 10 |
| 24.0 | Stiff to very stiff grey clayey SILT | CL | | | D16 | 3.00 | 2 | 4 | 6 | 10 |
| 25.5 | | | | | D17 | | 7 | 11 | 12 | 23 |
| 27.0 | Medium dense to very dense gery silty fine SAND | SM | | | D18 | 3.00 | 17 | 30 | 20 | 50 |
| 28.5 | | | | | D19 | | 4 | 6 | 9 | 15 |
| 30.0 | Very stiff grey medium plastic silty CLAY | CL | | | D20 | 10.50 | 3 | 6 | 8 | 14 |
| 31.5 | | | | | D21 | | 4 | 6 | 9 | 15 |
| 33.0 | | | | | D22 | | 4 | 7 | 10 | 17 |
| 34.5 | | | | | D23 | | 5 | 8 | 12 | 20 |
| 36.0 | | | | | D24 | | 5 | 8 | 14 | 22 |
| 37.5 | | | | | D25 | | 6 | 8 | 10 | 18 |
| 39.0 | | | | | D26 | | 5 | 8 | 13 | 21 |
| 40.5 | Dense brown silty fine SAND | SM | | | D27 | 4.50 | 8 | 15 | 20 | 35 |
| 42.0 | | | | | D28 | | 9 | 17 | 23 | 40 |
| 43.5 | | | | | D29 | | 11 | 20 | 22 | 42 |
| 45.0 | Very stiff grey medium plastic silty CLAY | CL | | | D30 | 4.50 | 5 | 8 | 12 | 20 |
| 46.5 | | | | | D31 | | 5 | 10 | 13 | 23 |
| 48.0 | | | | | D32 | | 4 | 7 | 10 | 17 |
| 49.5 | Dense grey silty fine SAND | SM | | | D33 | 4.50 | 6 | 12 | 18 | 30 |
| 51.0 | | | | | D34 | | 7 | 14 | 18 | 32 |
| 52.5 | | | | | D35 | | 9 | 14 | 17 | 31 |
| 54.0 | Very stiff grey medium plastic silty CLAY | CL | | | D36 | 3.00 | 6 | 8 | 10 | 18 |
| 55.5 | | | | | D37 | | 5 | 11 | 13 | 24 |
| 57.0 | Medium dense grey silty fine SAND | SM | | | D38 | 3.75 | 7 | 9 | 11 | 20 |
| 58.5 | | | | | D39 | | 4 | 10 | 11 | 21 |
| 60.0 | | | | | D40 | | 6 | 9 | 13 | 22 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** OVP-02,BH-02
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 34.5 m

**Reduced level(m):** 11.9 m
**Water level(m):** -1.5 from existing ground
**Date of Start:** 21.07.2019
**Date of End:** 23.07.2019

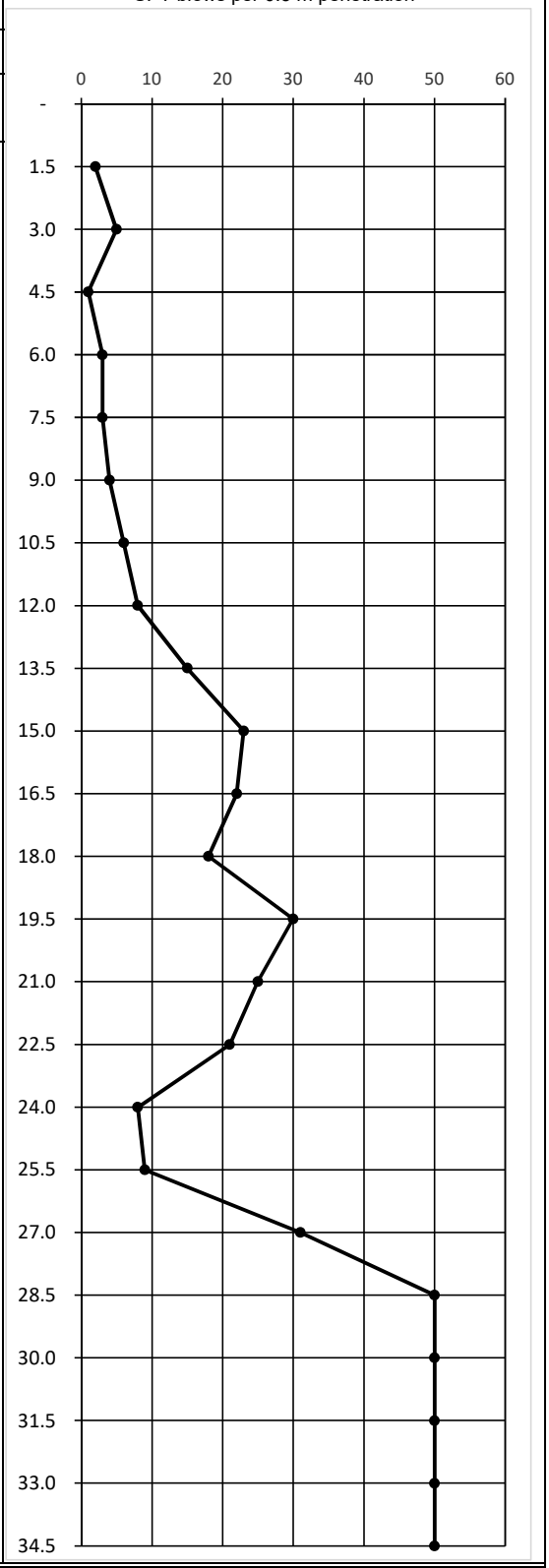
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 10 + 100 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 394127.542m N - 2748485.622m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff brown medium plastic silty CLAY | CL | | | D1 | 3.75 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 2 | 2 | 3 | 5 |
| 4.5 | Soft to medium stiff to hard grey low plastic clayey SILT | ML | | | D3 | 10.50 | 1 | 0 | 1 | 1 |
| 6.0 | | | | | D4 | | 1 | 2 | 1 | 3 |
| 7.5 | | | | | D5 | | 1 | 1 | 2 | 3 |
| 9.0 | | | | | D6 | | 2 | 2 | 2 | 4 |
| 10.5 | | | | | D7 | | 1 | 2 | 4 | 6 |
| 12.0 | | | | | D8 | | 2 | 3 | 5 | 8 |
| 13.5 | | | | | D9 | | 3 | 5 | 10 | 15 |
| 15.0 | | | | | D10 | 20.50 | 10 | 11 | 12 | 23 |
| 16.5 | | | | | D11 | | 7 | 10 | 12 | 22 |
| 18.0 | | | | | D12 | | 8 | 8 | 10 | 18 |
| 19.5 | | | | | D13 | | 7 | 13 | 17 | 30 |
| 21.0 | | | | | D14 | | 10 | 12 | 13 | 25 |
| 22.5 | | | | | D15 | | 12 | 10 | 11 | 21 |
| 24.0 | | | | | D16 | | 8 | 3 | 5 | 8 |
| 25.5 | | | | | D17 | | 3 | 4 | 5 | 9 |
| 27.0 | | | | | D18 | | 10 | 14 | 17 | 31 |
| 28.5 | | | | | D19 | | 13 | 25 | 25 | 50 |
| 30.0 | | | | | D20 | | 15 | 20 | 30 | 50 |
| 31.5 | | | | | D21 | | 18 | 22 | 28 | 50 |
| 33.0 | | | | | D22 | | 19 | 28 | 22 | 50 |
| 34.5 | | | | | D23 | | 22 | 35 | 15 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** FLY-01,BH-1
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 45 m

**Reduced level(m):** 12.23 m
**Water level(m):** -3.00 from existing ground
**Date of Start:** 06.03.2019
**Date of End:** 08.03.2019

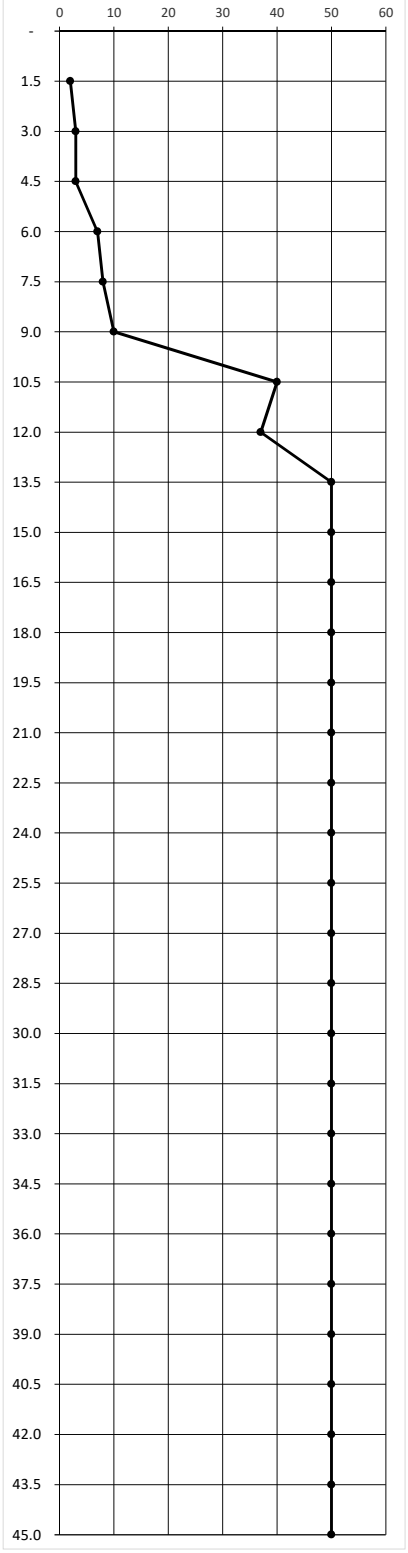
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Chainage - 16 + 230 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E-400046.611m N-2749285.342m

| Depth (m) | Description | UCS Classifi-caton | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Grey loose very silty medium to fine SAND | SM | | | D1 | 3.75 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | Very soft to soft,light grey,silty CLAY. | CL | | | D3 | | 1 | 1 | 2 | 3 |
| | | | | | UD-1 | | | | | |
| 6.0 | | | | | D4 | | 2 | 3 | 4 | 7 |
| 7.5 | | | | | D5 | | 3 | 3 | 5 | 8 |
| 9.0 | | | | | D6 | | 3 | 4 | 6 | 10 |
| 10.5 | Very stiff to Hard,greyto light grey,clyey SILT. | ML | | | D7 | 13.50 | 8 | 13 | 27 | 40 |
| 12.0 | | | | | D8 | | 10 | 17 | 20 | 37 |
| 13.5 | | | | | D9 | | 28 | 38 | 12 | 50 |
| 15.0 | | | | | D10 | | 30 | 50 | - | 50 |
| 16.5 | | | | | D11 | | 28 | 42 | 8 | 50 |
| 18.0 | Hard,light grey,sandy SILT. | ML | | | D12 | | 30 | 50 | - | 50 |
| 19.5 | | | | | D13 | | 32 | 50 | - | 50 |
| 21.0 | | | | | D14 | | 25 | 35 | 15 | 50 |
| 22.5 | | | | | D15 | | 27 | 38 | 12 | 50 |
| 24.0 | | | | | D16 | | 30 | 43 | 7 | 50 |
| 25.5 | | | | | D17 | | 22 | 30 | 20 | 50 |
| 27.0 | | | | | D18 | | 20 | 28 | 22 | 50 |
| 28.5 | | | | | D19 | | 34 | 50 | - | 50 |
| 30.0 | | | | | D20 | | 36 | 50 | - | 50 |
| 31.5 | Very dense,light grey,silty fine SAND. | SM | | | D21 | 27.75 | 40 | 50 | - | 50 |
| 33.0 | | | | | D22 | | 45 | 50 | - | 50 |
| 34.5 | | | | | D23 | | 36 | 50 | - | 50 |
| 36.0 | | | | | D24 | | 35 | 50 | - | 50 |
| 37.5 | | | | | D25 | | 37 | 50 | - | 50 |
| 39.0 | | | | | D26 | | 38 | 50 | - | 50 |
| 40.5 | | | | | D27 | | 30 | 42 | 8 | 50 |
| 42.0 | | | | | D28 | | 40 | 50 | - | 50 |
| 43.5 | | | | | D29 | | 41 | 50 | - | 50 |
| 45.0 | | | | | D30 | | 38 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** FLY-01,BH-03
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 12.49 m
**Water level(m):** -2.2 from existing ground
**Date of Start:** 22.07.2019
**Date of End:** 23.07.2019

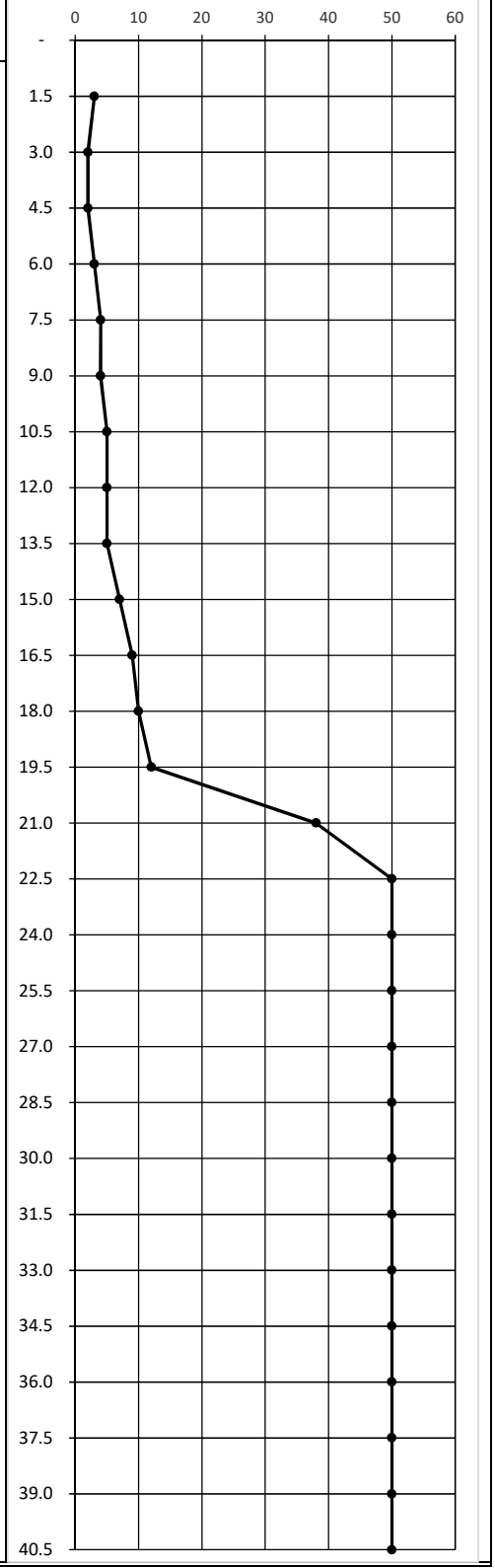
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location: Chainage - 16 + 330 ,Sylhet.**

**Legend:** Clay Silt Sand

**Coordinates:** E - 400148.28m N - 2749347.1m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to stiff grey clayey SILT | ML | | | D1 | 20.25 | 1 | 1 | 2 | 3 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| 6.0 | | | | | D4 | | 1 | 1 | 2 | 3 |
| 7.5 | | | | | D5 | | 1 | 2 | 2 | 4 |
| 9.0 | | | | | D6 | | 1 | 2 | 2 | 4 |
| 10.5 | | | | | D7 | | 2 | 2 | 3 | 5 |
| 12.0 | | | | | D8 | | 1 | 2 | 3 | 5 |
| 13.5 | | | | | D9 | | 1 | 3 | 2 | 5 |
| 15.0 | | | | | D10 | | 1 | 3 | 4 | 7 |
| 16.5 | | | | | D11 | | 2 | 4 | 5 | 9 |
| 18.0 | | | | | D12 | | 3 | 4 | 6 | 10 |
| 19.5 | | | | | D13 | | 3 | 5 | 7 | 12 |
| 21.0 | Medium dense to very dense grey silty fine sand | SM | | | D14 | 20.25 | 11 | 16 | 22 | 38 |
| 22.5 | | | | | D15 | | 15 | 30 | 20 | 50 |
| 24.0 | | | | | D16 | | 11 | 23 | 27 | 50 |
| 25.5 | | | | | D17 | | 12 | 24 | 26 | 50 |
| 27.0 | | | | | D18 | | 14 | 25 | 25 | 50 |
| 28.5 | | | | | D19 | | 14 | 28 | 22 | 50 |
| 30.0 | | | | | D20 | | 16 | 31 | 19 | 50 |
| 31.5 | | | | | D21 | | 17 | 33 | 17 | 50 |
| 33.0 | | | | | D22 | | 18 | 36 | 14 | 50 |
| 34.5 | | | | | D23 | | 20 | 40 | 10 | 50 |
| 36.0 | | | | | D24 | | 20 | 50 | - | 50 |
| 37.5 | | | | | D25 | | 23 | 50 | - | 50 |
| 39.0 | | | | | D26 | | 20 | 50 | - | 50 |
| 40.5 | | | | | D27 | | 21 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** FLY-01,BH-4
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 45 m

**Reduced level(m):** 13.13 m
**Water level(m):** -1.07 from existing ground
**Date of Start:** 06.03.2019
**Date of End:** 08.03.2019

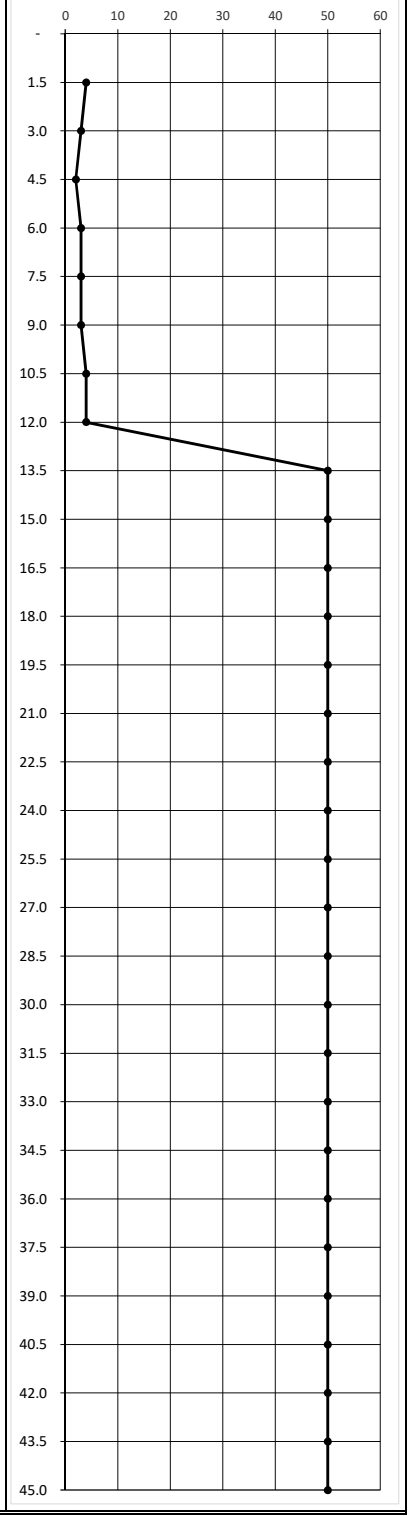
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Chainage - 16 + 430 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 400244.155m N - 2749418.093m

| Depth (m) | Description | UCS Classifi-caton | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to very soft ,grey,clayey SILT. | ML | | | D1 | 17.25 | 1 | 2 | 2 | 4 |
| 3.0 | | | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| 6.0 | | | | | D4 | | 1 | 1 | 2 | 3 |
| 7.5 | | | | | D5 | | 1 | 1 | 2 | 3 |
| 9.0 | | | | | D6 | | 1 | 1 | 2 | 3 |
| 10.5 | | | | | D7 | | 1 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 1 | 2 | 2 | 4 |
| 13.5 | Hard,grey Sandy SILT. | | | | D9 | | 18 | 28 | 22 | 50 |
| 15.0 | | | | | D10 | | 20 | 30 | 20 | 50 |
| 16.5 | | | | | D11 | | 19 | 28 | 22 | 50 |
| 18.0 | Very dense,grey silty Fine SAND (trace of mica). | SM | | | D12 | 6.00 | 18 | 32 | 18 | 50 |
| 19.5 | | | | | D13 | | 15 | 25 | 25 | 50 |
| 21.0 | | | | | D14 | | 16 | 27 | 23 | 50 |
| 22.5 | | | | | D15 | | 18 | 30 | 20 | 50 |
| 24.0 | Hard grey medium to high plastic silty CLAY | CL | | | D16 | 6.75 | 20 | 43 | 7 | 50 |
| 25.5 | | | | | D17 | | 23 | 50 | - | 50 |
| 27.0 | | | | | D18 | | 24 | 50 | - | 50 |
| 28.5 | | | | | D19 | | 22 | 50 | - | 50 |
| 30.0 | | | | | D20 | | 35 | 50 | - | 50 |
| 31.5 | | | | | D21 | 15.00 | 37 | 50 | - | 50 |
| 33.0 | | | | | D22 | | 40 | 50 | - | 50 |
| 34.5 | | | | | D23 | | 28 | 50 | - | 50 |
| 36.0 | | | | | D24 | | 30 | 50 | - | 50 |
| 37.5 | | | | | D25 | | 32 | 50 | - | 50 |
| 39.0 | | | | | D26 | | 34 | 50 | - | 50 |
| 40.5 | | | | | D27 | | 36 | 50 | - | 50 |
| 42.0 | | | | | D28 | | 37 | 50 | - | 50 |
| 43.5 | | | | | D29 | | 35 | 50 | - | 50 |
| 45.0 | | | | | D30 | | 38 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** FLY-01,BH-05
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

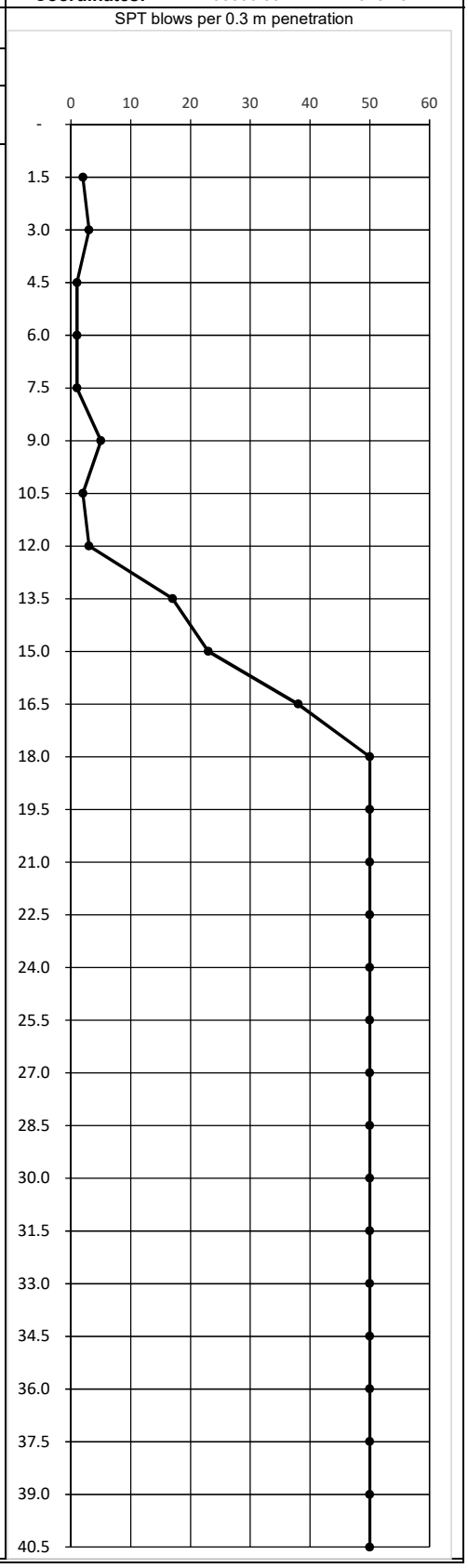
**Reduced level(m):** 13. 01 m
**Water level(m):** -1.5 from existing ground
**Date of Start:** 22.07.2019
**Date of End:** 23.07.2019

**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location: Chainage - 16 + 550 ,Sylhet.**

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 400336.55m N - 2749492.5m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to hard grey low plastic clayey SILT | ML | | | D1 | 24.75 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | | | | | D3 | | 1 | 0 | 1 | 1 |
| 6.0 | | | | | D4 | | 1 | 0 | 1 | 1 |
| 7.5 | | | | | D5 | | 1 | 0 | 1 | 1 |
| 9.0 | | | | | D6 | | 1 | 2 | 3 | 5 |
| 10.5 | | | | | D7 | | 1 | 1 | 1 | 2 |
| 12.0 | | | | | D8 | | 1 | 1 | 2 | 3 |
| 13.5 | | | | | D9 | | 9 | 9 | 8 | 17 |
| 15.0 | | | | | D10 | | 11 | 10 | 13 | 23 |
| 16.5 | | | | | D11 | | 12 | 15 | 23 | 38 |
| 18.0 | | | | | D12 | | 15 | 25 | 25 | 50 |
| 19.5 | | | | | D13 | | 16 | 30 | 20 | 50 |
| 21.0 | | | | | D14 | | 10 | 25 | 25 | 50 |
| 22.5 | | | | | D15 | | 12 | 28 | 22 | 50 |
| 24.0 | | | | | D16 | | 15 | 30 | 20 | 50 |
| 25.5 | Stiff grey medium to low plastic silty CLAY | CL | | | D17 | 15.75 | 17 | 18 | 32 | 50 |
| 27.0 | | | | | D18 | | 19 | 32 | 18 | 50 |
| 28.5 | | | | | D19 | | 21 | 35 | 15 | 50 |
| 30.0 | | | | | D20 | | 25 | 40 | 10 | 50 |
| 31.5 | | | | | D21 | | 28 | 42 | 8 | 50 |
| 33.0 | | | | | D22 | | 30 | 50 | - | 50 |
| 34.5 | | | | | D23 | | 34 | 50 | - | 50 |
| 36.0 | | | | | D24 | | 35 | 42 | 8 | 50 |
| 37.5 | | | | | D25 | | 30 | 50 | - | 50 |
| 39.0 | | | | | D26 | | 32 | 50 | - | 50 |
| 40.5 | | | | | D27 | | 35 | 50 | - | 50 |




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** FLY-01,BH-6
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 45

**Reduced level(m):** 12.76 m
**Water level(m):** -2.0 from existing ground
**Date of Start:** 09.03.2019
**Date of End:** 11.03.2019

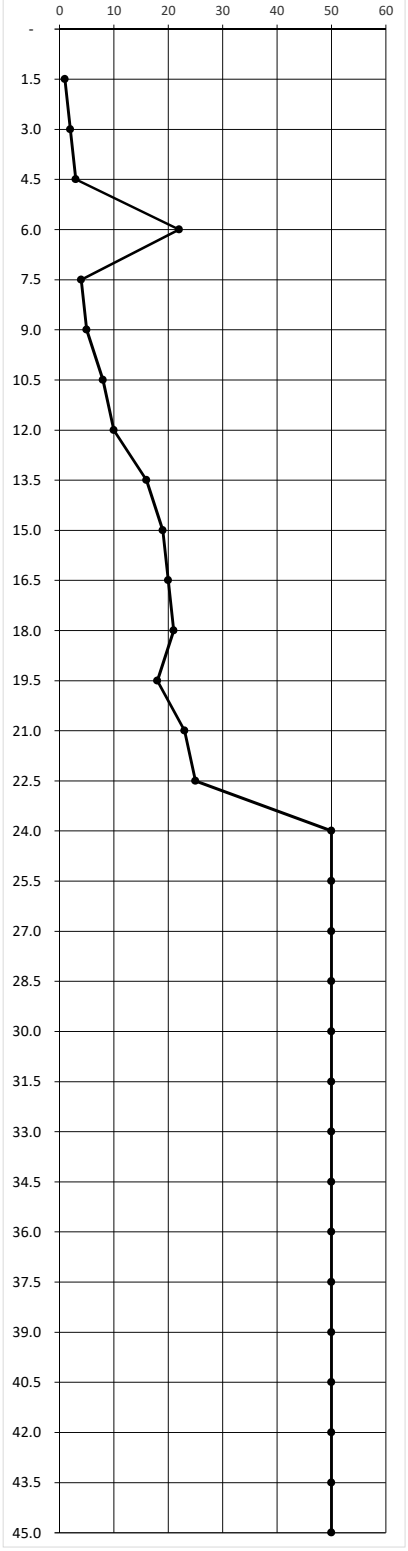
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Chainage - 16 + 700 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 400432.450m N - 2749563.271m

| Depth (m) | Description | UCS Classifi-caton | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft,grey,clayey SILT. | ML | | D1 | 5.25 | 1 | 0 | 1 | 1 |
| 3.0 | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | D3 | | 1 | 1 | 2 | 3 |
| | | | | UD-1 | | | | | |
| 6.0 | Very stiff,light grey,silty fine SAND. | SM | | D4 | 1.50 | 6 | 8 | 14 | 22 |
| 7.5 | | | | D5 | | 1 | 2 | 2 | 4 |
| 9.0 | Medium stiff,gray,clayey SILT. | ML | | D6 | 23.25 | 1 | 2 | 3 | 5 |
| 10.5 | | | | D7 | | 2 | 3 | 5 | 8 |
| 12.0 | | | | D8 | | 3 | 4 | 6 | 10 |
| 13.5 | | | | D9 | | 5 | 7 | 9 | 16 |
| 15.0 | | | | D10 | | 6 | 8 | 11 | 19 |
| 16.5 | Very stiff to hard,grey,clayey SILT. | | | D11 | | 5 | 8 | 12 | 20 |
| 18.0 | | | | D12 | | 6 | 9 | 12 | 21 |
| 19.5 | | | | D13 | | 4 | 7 | 11 | 18 |
| 21.0 | | | | D14 | | 7 | 10 | 13 | 23 |
| 22.5 | | | | D15 | | 8 | 10 | 15 | 25 |
| 24.0 | | | | D16 | | 22 | 38 | 12 | 50 |
| 25.5 | | | | D17 | | 18 | 30 | 20 | 50 |
| 27.0 | | | | D18 | | 24 | 35 | 15 | 50 |
| 28.5 | | | | D19 | | 20 | 34 | 16 | 50 |
| 30.0 | | | | D20 | | 22 | 36 | 14 | 50 |
| 31.5 | Very dense,light grey,silty fine SAND. | SM | | D21 | 15.00 | 21 | 33 | 17 | 50 |
| 33.0 | | | | D22 | | 24 | 38 | 12 | 50 |
| 34.5 | | | | D23 | | 25 | 37 | 13 | 50 |
| 36.0 | | | | D24 | | 27 | 40 | 10 | 50 |
| 37.5 | | | | D25 | | 26 | 38 | 12 | 50 |
| 39.0 | | | | D26 | | 21 | 34 | 16 | 50 |
| 40.5 | | | | D27 | | 23 | 36 | 14 | 50 |
| 42.0 | | | | D28 | | 27 | 38 | 12 | 50 |
| 43.5 | | | | D29 | | 30 | 40 | 10 | 50 |
| 45.0 | | | | D30 | | 34 | 44 | 6 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** FLY-01,BH-02
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 12.52 m
**Water level(m):** -3.0 from existing ground
**Date of Start:** 24.07.2019
**Date of End:** 25.07.2019

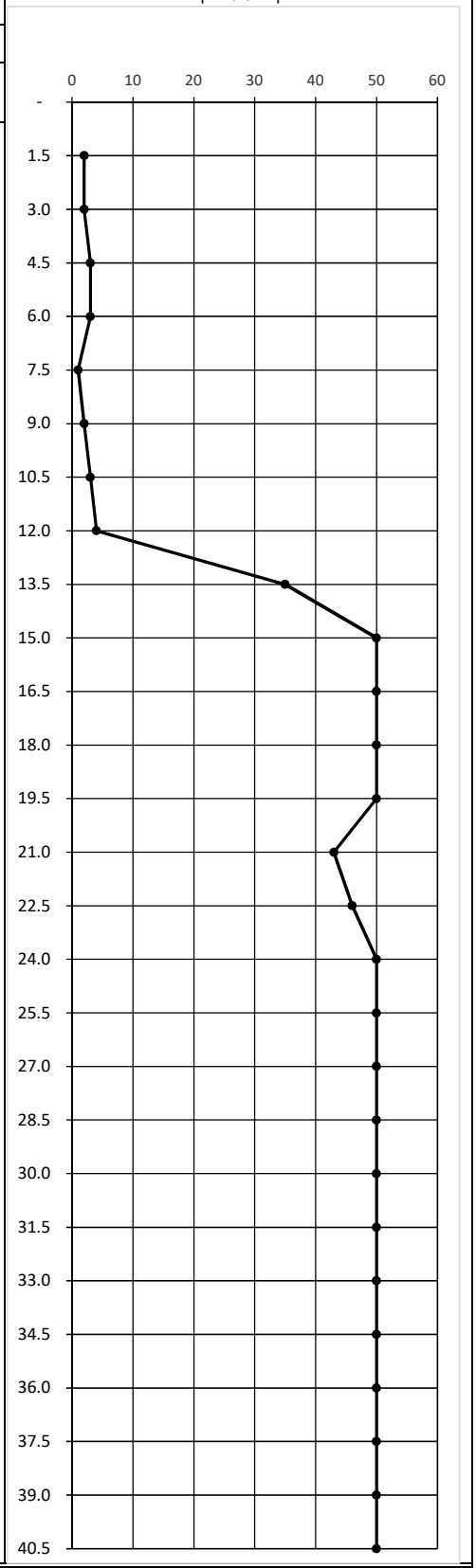
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 16 + 750 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 400720.79m N - 2749773.79m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft grey low plastic clayey SILT | ML | | | D1 | 14.25 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 1 | 1 | 2 | 3 |
| 6.0 | | | | | D4 | | 1 | 1 | 2 | 3 |
| 7.5 | | | | | D5 | | 1 | 0 | 1 | 1 |
| 9.0 | | | | | D6 | | 1 | 1 | 1 | 2 |
| 10.5 | | | | | D7 | | 1 | 1 | 2 | 3 |
| 12.0 | | | | | D8 | | 1 | 2 | 2 | 4 |
| 13.5 | | | | | D9 | | 10 | 15 | 20 | 35 |
| 15.0 | Dense to very dense grey silty medium SAND | SM | | | D10 | 6.00 | 12 | 23 | 27 | 50 |
| 16.5 | | | | | D11 | | 13 | 26 | 24 | 50 |
| 18.0 | | | | | D12 | | 15 | 30 | 20 | 50 |
| 19.5 | | | | | D13 | | 14 | 20 | 30 | 50 |
| 21.0 | Hard grey to brown low plastic clayey SILT | ML | | | D14 | 20.25 | 14 | 17 | 26 | 43 |
| 22.5 | | | | | D15 | | 15 | 18 | 28 | 46 |
| 24.0 | | | | | D16 | | 16 | 20 | 30 | 50 |
| 25.5 | | | | | D17 | | 17 | 22 | 28 | 50 |
| 27.0 | | | | | D18 | | 18 | 23 | 27 | 50 |
| 28.5 | | | | | D19 | | 21 | 27 | 23 | 50 |
| 30.0 | | | | | D20 | | 24 | 31 | 19 | 50 |
| 31.5 | | | | | D21 | | 23 | 32 | 18 | 50 |
| 33.0 | | | | | D22 | | 25 | 34 | 16 | 50 |
| 34.5 | | | | | D23 | | 27 | 50 | - | 50 |
| 36.0 | | | | | D24 | | 30 | 50 | - | 50 |
| 37.5 | | | | | D25 | | 32 | 50 | - | 50 |
| 39.0 | | | | | D26 | | 32 | 50 | - | 50 |
| 40.5 | | | | | D27 | | 36 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** FLY-01,BH-07
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

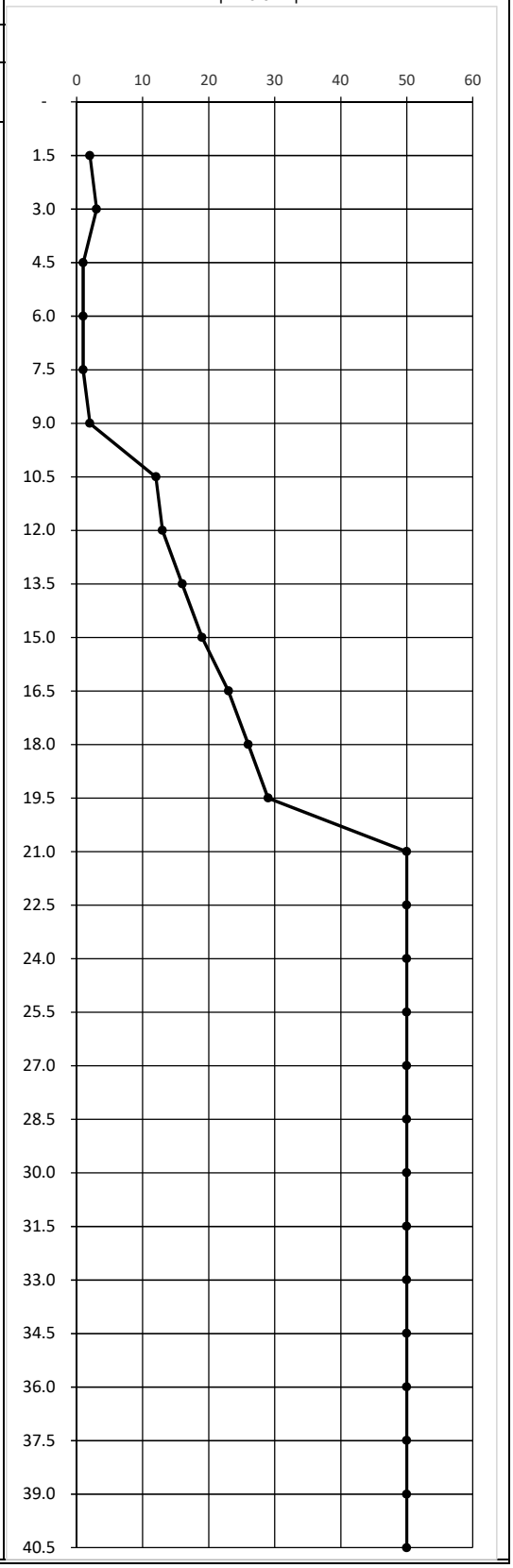
**Reduced level(m):** 12.62 m
**Water level(m):** -1.7 from existing ground
**Date of Start:** 24.07.2019
**Date of End:** 25.07.2019

**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 16 + 810 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 400528.028m N - 2749633.712m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft grey low to medium platic silty CLAY | CL | | | D1 | 9.75 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | | | | | D3 | | 1 | 0 | 1 | 1 |
| 6.0 | | | | | D4 | | 1 | 0 | 1 | 1 |
| 7.5 | | | | | D5 | | 1 | 0 | 1 | 1 |
| 9.0 | | | | | D6 | | 1 | 1 | 1 | 2 |
| 10.5 | Medium dense to dense to very dense brown to grey silty fine to medium sand | SM | | | D7 | 12.00 | 1 | 6 | 6 | 12 |
| 12.0 | | | | | D8 | | 6 | 7 | 6 | 13 |
| 13.5 | | | | | D9 | | 5 | 6 | 10 | 16 |
| 15.0 | | | | | D10 | | 4 | 11 | 8 | 19 |
| 16.5 | | | | | D11 | | 6 | 11 | 12 | 23 |
| 18.0 | | | | | D12 | | 7 | 10 | 16 | 26 |
| 19.5 | | | | | D13 | | 8 | 17 | 12 | 29 |
| 21.0 | | | | | D14 | | 10 | 25 | 25 | 50 |
| 22.5 | | | | | D15 | | 12 | 28 | 22 | 50 |
| 24.0 | Very stiff grey low platic clayey SILT | ML | | | D16 | | 15 | 30 | 20 | 50 |
| 25.5 | | | | | D17 | | 17 | 18 | 32 | 50 |
| 27.0 | | | | | D18 | | 19 | 32 | 18 | 50 |
| 28.5 | | | | | D19 | | 21 | 35 | 15 | 50 |
| 30.0 | | | | | D20 | | 25 | 40 | 10 | 50 |
| 31.5 | | | | | D21 | | 28 | 42 | 8 | 50 |
| 33.0 | | | | | D22 | | 30 | 50 | - | 50 |
| 34.5 | Hard grey high to medium plastic silty CLAY | CL | | | D23 | 6.75 | 34 | 50 | - | 50 |
| 36.0 | | | | | D24 | | 36 | 42 | 8 | 50 |
| 37.5 | | | | | D25 | | 30 | 50 | - | 50 |
| 39.0 | | | | | D26 | | 33 | 50 | - | 50 |
| 40.5 | | | | | D27 | | 35 | 50 | - | 50 |




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** FLY-01,BH-8
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 45 m

**Reduced level(m):** 12.71 m
**Water level(m):** -2.3 from existing ground
**Date of Start:** 09.03.2019
**Date of End:** 11.03.2019

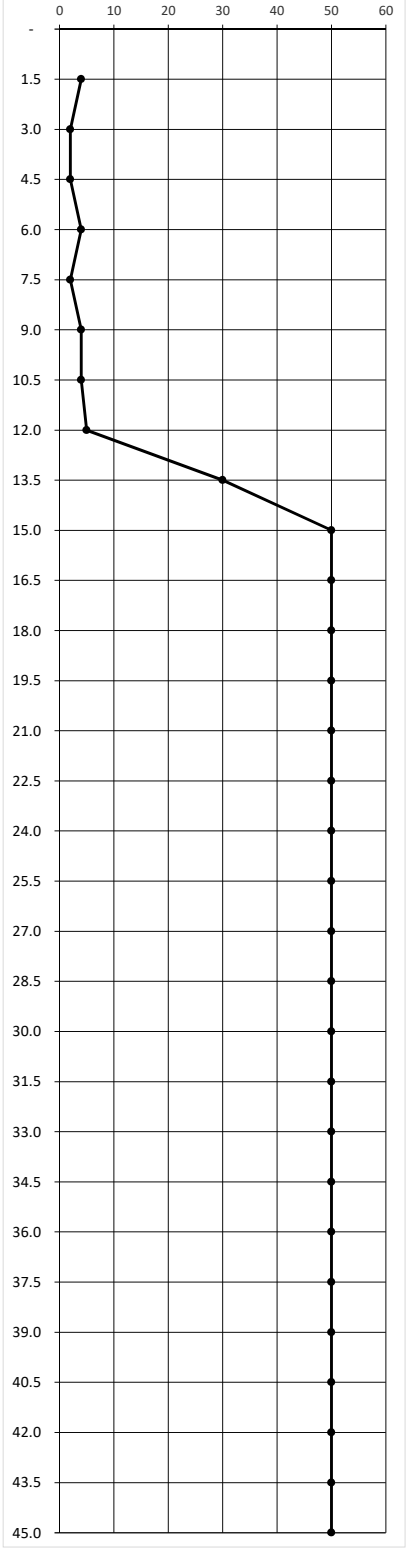
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Chainage - 16 + 920 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 400624.812m N - 2749702.209m

| Depth (m) | Description | UCS Classifi-caton | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft grey low to medium plastic silty CLAY | CL | | D1 | 14.25 | 1 | 2 | 2 | 4 |
| 3.0 | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | D3 | | 1 | 1 | 1 | 2 |
| | | | | UD-1 | | | | | |
| 6.0 | | | | D4 | | 1 | 2 | 2 | 4 |
| 7.5 | | | | D5 | | 1 | 1 | 1 | 2 |
| 9.0 | | | | D6 | | 1 | 2 | 2 | 4 |
| 10.5 | | | | D7 | | 1 | 2 | 2 | 4 |
| 12.0 | | | | D8 | | 1 | 2 | 3 | 5 |
| 13.5 | | | | D9 | | 7 | 12 | 18 | 30 |
| 15.0 | Dense to very dense,light grey,Silty fine SAND. | SM | | D10 | 6.00 | 12 | 23 | 27 | 50 |
| 16.5 | | | | D11 | | 18 | 22 | 28 | 50 |
| 18.0 | | | | D12 | | 20 | 27 | 23 | 50 |
| 19.5 | | | | D13 | | 20 | 28 | 22 | 50 |
| 21.0 | Hard,grey,clayey SILT. | ML | | D14 | 9.75 | 21 | 30 | 20 | 50 |
| 22.5 | | | | D15 | | 22 | 32 | 18 | 50 |
| 24.0 | | | | D16 | | 23 | 30 | 20 | 50 |
| 25.5 | | | | D17 | | 24 | 33 | 17 | 50 |
| 27.0 | | | | D18 | | 25 | 35 | 15 | 50 |
| 28.5 | | | | D19 | | 18 | 23 | 27 | 50 |
| 30.0 | Hard grey high to medium plastic silty CLAY | CL | | D20 | 15.00 | 20 | 28 | 22 | 50 |
| 31.5 | | | | D21 | | 22 | 32 | 18 | 50 |
| 33.0 | | | | D22 | | 24 | 35 | 15 | 50 |
| 34.5 | | | | D23 | | 25 | 36 | 14 | 50 |
| 36.0 | | | | D24 | | 28 | 40 | 10 | 50 |
| 37.5 | | | | D25 | | 30 | 50 | - | 50 |
| 39.0 | | | | D26 | | 32 | 50 | - | 50 |
| 40.5 | | | | D27 | | 30 | 50 | - | 50 |
| 42.0 | | | | D28 | | 33 | 50 | - | 50 |
| 43.5 | | | | D29 | | 33 | 50 | - | 50 |
| 45.0 | | | | D30 | | 40 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** OVP-03,BH-01
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 34.5 m

**Reduced level(m):** 13.24 m
**Water level(m):** -3.4 from existing ground
**Date of Start:** 28.07.2019
**Date of End:** 29.07.2019

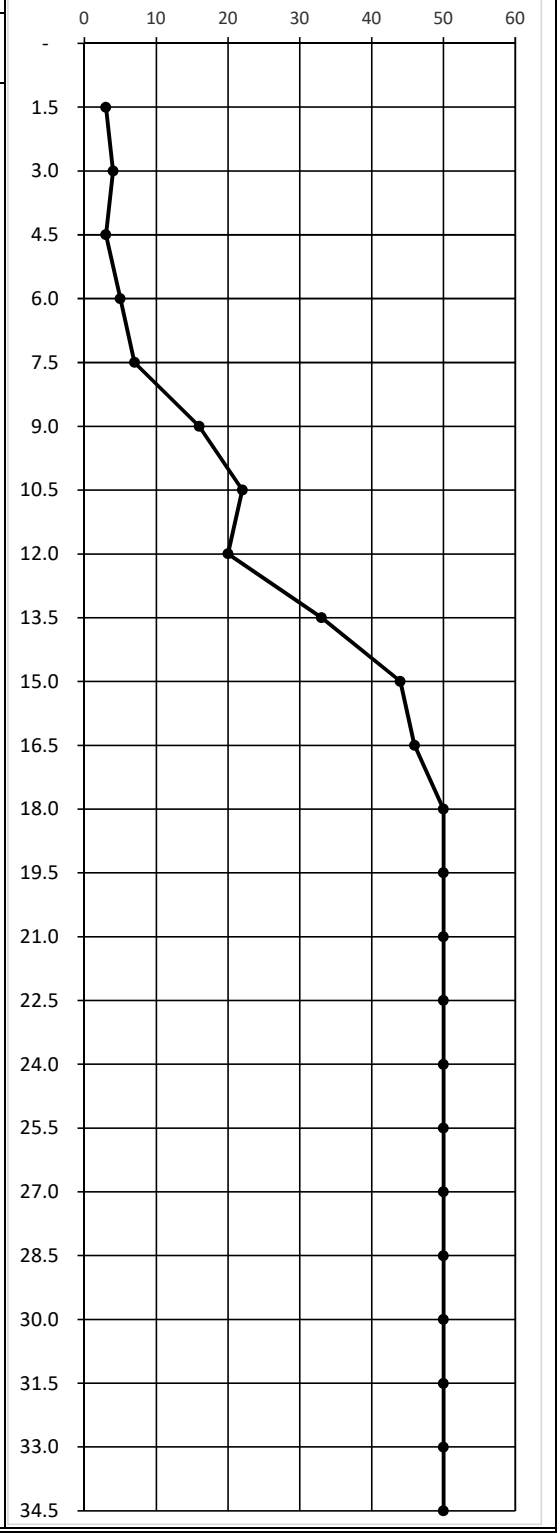
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 22 + 350 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 404905.418m N - 2752561.300m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft brown low plastic clayey SILT | ML | | | D1 | 3.75 | 1 | 1 | 2 | 3 |
| 3.0 | | | | | D2 | | 1 | 2 | 2 | 4 |
| 4.5 | Very loose to loose brown silty fine SAND | SM | | | D3 | 3.00 | 1 | 1 | 2 | 3 |
| 6.0 | | | | | D4 | | 1 | 2 | 3 | 5 |
| 7.5 | Very stiff to hard grey low plastic clayey SILT | ML | | | D5 | 27.75 | 2 | 3 | 4 | 7 |
| 9.0 | | | | | D6 | | 3 | 7 | 9 | 16 |
| 10.5 | | | | | D7 | | 4 | 12 | 10 | 22 |
| 12.0 | | | | | D8 | | 5 | 8 | 12 | 20 |
| 13.5 | | | | | D9 | | 7 | 15 | 18 | 33 |
| 15.0 | | | | | D10 | | 10 | 20 | 24 | 44 |
| 16.5 | | | | | D11 | | 11 | 20 | 26 | 46 |
| 18.0 | | | | | D12 | | 10 | 23 | 27 | 50 |
| 19.5 | | | | | D13 | | 11 | 22 | 28 | 50 |
| 21.0 | | | | | D14 | | 10 | 25 | 25 | 50 |
| 22.5 | | | | | D15 | | 11 | 26 | 24 | 50 |
| 24.0 | | | | | D16 | | 12 | 28 | 22 | 50 |
| 25.5 | | | | | D17 | | 14 | 30 | 20 | 50 |
| 27.0 | | | | | D18 | | 15 | 32 | 18 | 50 |
| 28.5 | | | | | D19 | | 17 | 33 | 17 | 50 |
| 30.0 | | | | | D20 | | 18 | 34 | 16 | 50 |
| 31.5 | | | | | D21 | | 21 | 50 | - | 50 |
| 33.0 | | | | | D22 | | 25 | 50 | - | 50 |
| 34.5 | | | | | D23 | | 32 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Ovp-03,BH-02
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 36.0 m

**Reduced level(m):** 13.6 m
**Water level(m):** -2.0 from existing ground
**Date of Start:** 12.03.2019
**Date of End:** 13.03.2019

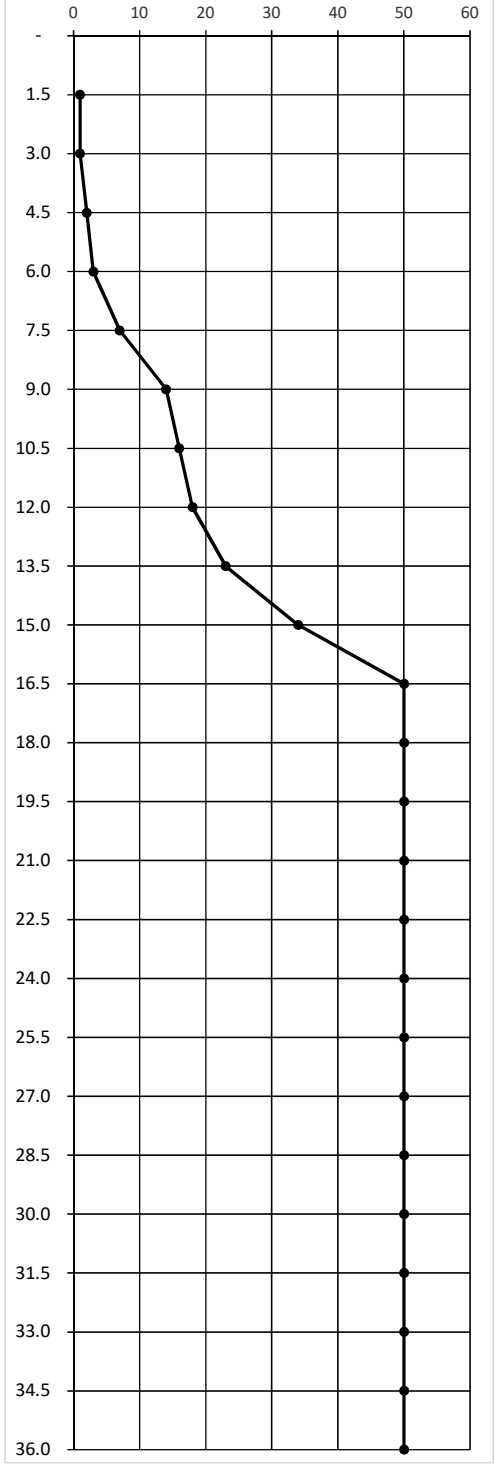
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Chainage - 22+ 450 ,Sylhet.

**Legend:** Clay Silt Sand

**Coordinates:** E - 404798.36m N - 2752555.71m

| Depth (m) | Description | UCS Classifi-caton | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft grey clayey SILT | ML | | | D1 | 17.25 | 1 | 0 | 1 | 1 |
| 3.0 | | | | | D2 | | 1 | 0 | 1 | 1 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| 6.0 | | | | | D4 | | 1 | 1 | 2 | 3 |
| 7.5 | Stiff to very stiff grey clayey SILT | | | | D5 | | 3 | 2 | 5 | 7 |
| 9.0 | | | | | D6 | | 4 | 6 | 8 | 14 |
| 10.5 | | | | | D7 | | 4 | 7 | 9 | 16 |
| 12.0 | | | | | D8 | | 5 | 8 | 10 | 18 |
| 13.5 | | | | | D9 | | 6 | 9 | 14 | 23 |
| 15.0 | Hard grey clayey SILT | | | | D10 | | 8 | 14 | 20 | 34 |
| 16.5 | | | | | D11 | | 18 | 23 | 27 | 50 |
| 18.0 | Very dense grey silty fine SAND | SM | | | D12 | 6.00 | 22 | 32 | 18 | 50 |
| 19.5 | | | | | D13 | | 20 | 20 | 30 | 50 |
| 21.0 | | | | | D14 | | 21 | 33 | 17 | 50 |
| 22.5 | | | | | D15 | | 16 | 23 | 27 | 50 |
| 24.0 | Hard grey clayey SILT | ML | | | D16 | 12.25 | 14 | 22 | 28 | 50 |
| 25.5 | | | | | D17 | | 17 | 26 | 24 | 50 |
| 27.0 | | | | | D18 | | 18 | 24 | 26 | 50 |
| 28.5 | | | | | D19 | | 20 | 28 | 22 | 50 |
| 30.0 | | | | | D20 | | 21 | 30 | 20 | 50 |
| 31.5 | | | | | D21 | | 23 | 32 | 18 | 50 |
| 33.0 | | | | | D22 | | 22 | 34 | 16 | 50 |
| 34.5 | | | | | D23 | | 26 | 37 | 13 | 50 |
| 36.0 | | | | | D24 | | 25 | 36 | 14 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Ovp-04,BH-01
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 36.0 m

**Reduced level(m):** 12.51m
**Water level(m):** -4.870 from existing ground
**Date of Start:** 12.03.2019
**Date of End:** 12.03.2019

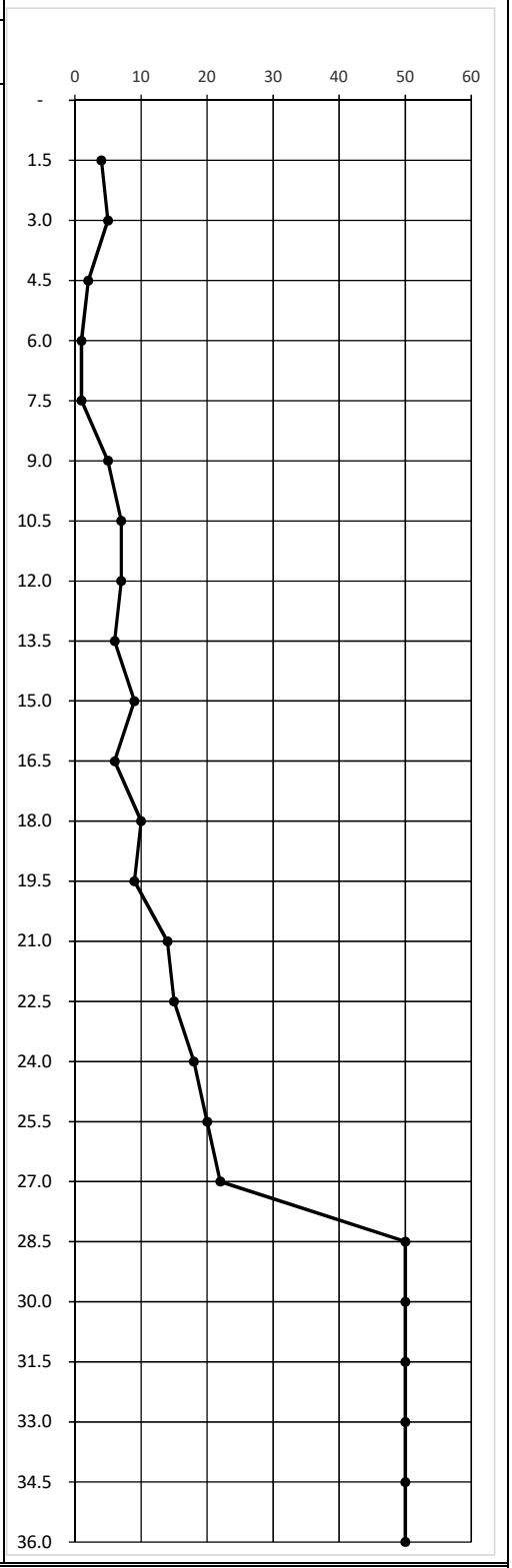
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Chainage - 27 + 200 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 409632.926m N - 2752814.212m

| Depth (m) | Description | UCS Classification | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|
| 1.5 | Medium stiff to very soft,grey,clayey SILT. | ML | D1 | | 1 | 2 | 2 | 4 |
| 3.0 | | | D2 | | 1 | 2 | 3 | 5 |
| 4.5 | | | D3 | | 1 | 1 | 1 | 2 |
| 6.0 | | | D4 | | 1 | 0 | 1 | 1 |
| 7.5 | | | D5 | | 1 | 0 | 1 | 1 |
| 9.0 | Medium stiff,grey,silty CLAY. | CL | D6 | | 2 | 2 | 3 | 5 |
| 10.5 | | | D7 | | 2 | 3 | 4 | 7 |
| 12.0 | Medium stiff,grey,clayey SILT. | ML | D8 | | 2 | 3 | 4 | 7 |
| 13.5 | | | D9 | 26.25 | 2 | 2 | 4 | 6 |
| 15.0 | Stiff to medium stiff,grey clayey SILT. | | D10 | | 2 | 4 | 5 | 9 |
| 16.5 | | | D11 | | 2 | 2 | 4 | 6 |
| 18.0 | Stiff,grey,clayey SILT. | | D12 | | 2 | 3 | 7 | 10 |
| 19.5 | | | D13 | | 3 | 4 | 5 | 9 |
| 21.0 | | | D14 | | 4 | 6 | 8 | 14 |
| 22.5 | | | D15 | | 4 | 7 | 8 | 15 |
| 24.0 | Very stiff,grey,clayey SILT. | | D16 | | 5 | 8 | 10 | 18 |
| 25.5 | | | D17 | | 6 | 8 | 12 | 20 |
| 27.0 | Medium dense to very dense,grey silty fine SAND. | SM | D18 | | 7 | 10 | 12 | 22 |
| 28.5 | | | D19 | | 10 | 22 | 28 | 50 |
| 30.0 | | | D20 | | 16 | 25 | 25 | 50 |
| 31.5 | | | D21 | 9.75 | 18 | 30 | 20 | 50 |
| 33.0 | | | D22 | | 22 | 32 | 18 | 50 |
| 34.5 | | | D23 | | 23 | 28 | 22 | 50 |
| 36.0 | | | D24 | | 25 | 30 | 20 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Ovp-04,BH-02
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 39.0 m

**Reduced level(m):** 12.15m
**Water level(m):** -4.570 from existing ground
**Date of Start:** 12.03.2019
**Date of End:** 12.03.2019

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

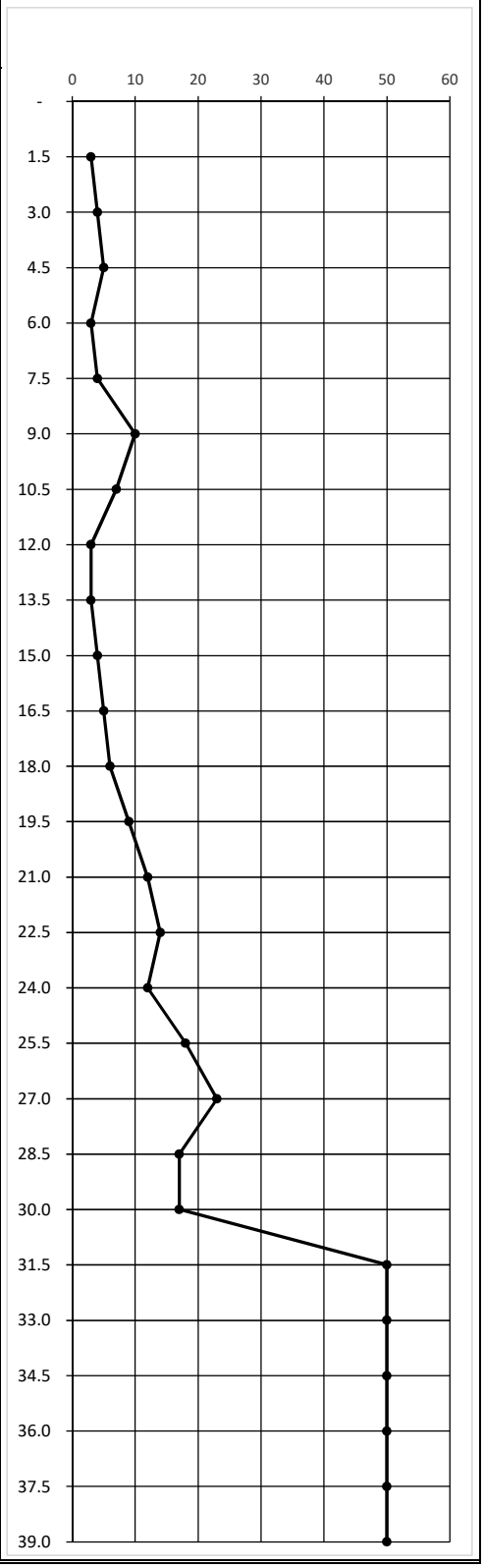
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 27 + 300 ,Sylhet.

**Legend:** Clay Silt Sand

**Coordinates:** E - 409705.671m N - 2752846.215m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff light grey clayey SILT | ML | | | D1 | 14.25 | 1 | 1 | 2 | 3 |
| 3.0 | | | | | D2 | | 1 | 2 | 2 | 4 |
| 4.5 | | | | | D3 | | 2 | 2 | 3 | 5 |
| 6.0 | | | | | D4 | | 1 | 1 | 2 | 3 |
| 7.5 | | | | | D5 | | 2 | 2 | 2 | 4 |
| 9.0 | Stiff grey clayey SILT | | | | D6 | | 2 | 4 | 6 | 10 |
| 10.5 | | | | | D7 | | 2 | 3 | 4 | 7 |
| 12.0 | | | | | D8 | | 1 | 1 | 2 | 3 |
| 13.5 | | | | | D9 | | 1 | 1 | 2 | 3 |
| 15.0 | Very loose to loose grey silty fine SAND | SM | | | D10 | 15.00 | 1 | 2 | 2 | 4 |
| 16.5 | | | | | D11 | | 2 | 2 | 3 | 5 |
| 18.0 | | | | | D12 | | 2 | 3 | 3 | 6 |
| 19.5 | | | | | D13 | | 2 | 4 | 5 | 9 |
| 21.0 | Medium dense grey silty fine SAND | | | | D14 | | 3 | 5 | 7 | 12 |
| 22.5 | | | | | D15 | | 3 | 6 | 8 | 14 |
| 24.0 | | | | | D16 | | 3 | 5 | 7 | 12 |
| 25.5 | | | | | D17 | | 5 | 8 | 10 | 18 |
| 27.0 | | | | | D18 | | 6 | 10 | 13 | 23 |
| 28.5 | | | | | D19 | | 4 | 7 | 10 | 17 |
| 30.0 | | | | | D20 | | 5 | 8 | 9 | 17 |
| 31.5 | Very dense light grey silty fine SAND | | | | D21 | 9.00 | 25 | 42 | 8 | 50 |
| 33.0 | | | | | D22 | | 29 | 50 | - | 50 |
| 34.5 | | | | | D23 | | 33 | 50 | - | 50 |
| 36.0 | | | | | D24 | | 30 | 50 | - | 50 |
| 37.5 | | | | | D25 | | 35 | 50 | - | 50 |
| 39.0 | | | | | D26 | | 38 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** OVP-05,BH-01
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5 m

**Reduced level(m):** 12.46 m
**Water level(m):** -1.5 from existing ground
**Date of Start:** 13.03.2019
**Date of End:** 14.03.2019

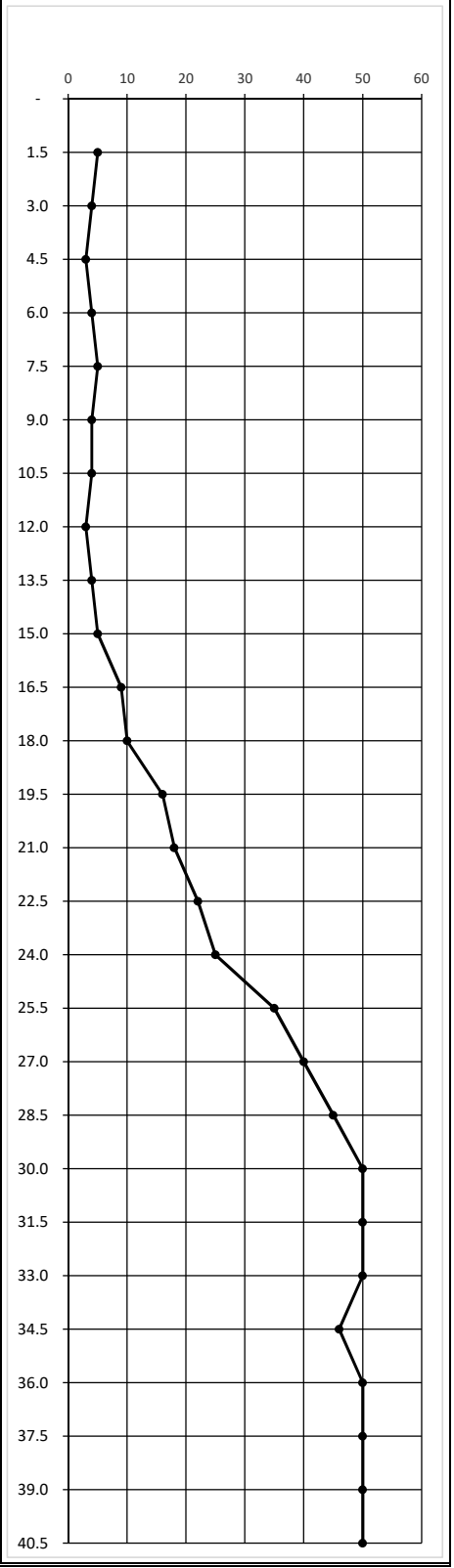
**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 32+ 050 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 414243.32m N - 2754353.84m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Medium stiff,grey silty CLAY. | CL | | | D1 | 23.25 | 2 | 2 | 3 | 5 |
| 3.0 | | | | | D2 | | 2 | 2 | 2 | 4 |
| 4.5 | | | | | D3 | | 1 | 1 | 2 | 3 |
| 6.0 | | | | | D4 | | 2 | 2 | 2 | 4 |
| 7.5 | | | | | D5 | | 2 | 2 | 3 | 5 |
| 9.0 | | | | | D6 | | 2 | 2 | 2 | 4 |
| 10.5 | | | | | D7 | | 2 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 1 | 1 | 2 | 3 |
| 13.5 | | | | | D9 | | 1 | 2 | 2 | 4 |
| 15.0 | | | | | D10 | | 2 | 2 | 3 | 5 |
| 16.5 | | | | | D11 | | 3 | 4 | 5 | 9 |
| 18.0 | | | | | D12 | | 3 | 4 | 6 | 10 |
| 19.5 | | | | | D13 | | 4 | 7 | 9 | 16 |
| 21.0 | | | | | D14 | | 5 | 8 | 10 | 18 |
| 22.5 | | | | | D15 | | 7 | 10 | 12 | 22 |
| 24.0 | Dense to very dense,grey,silty fine SAND. | SM | | | D16 | 17.25 | 9 | 12 | 13 | 25 |
| 25.5 | | | | | D17 | | 10 | 15 | 20 | 35 |
| 27.0 | | | | | D18 | | 12 | 18 | 22 | 40 |
| 28.5 | | | | | D19 | | 15 | 20 | 25 | 45 |
| 30.0 | | | | | D20 | | 18 | 23 | 27 | 50 |
| 31.5 | | | | | D21 | | 10 | 25 | 25 | 50 |
| 33.0 | | | | | D22 | | 20 | 26 | 24 | 50 |
| 34.5 | | | | | D23 | | 20 | 19 | 27 | 46 |
| 36.0 | | | | | D24 | | 22 | 27 | 23 | 50 |
| 37.5 | | | | | D25 | | 23 | 30 | 20 | 50 |
| 39.0 | | | | | D26 | | 50 | 50 | - | 50 |
| 40.5 | | | | | D27 | | 50 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** OVP-05,BH-03
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 13.46 m
**Water level(m):** -1.9 from existing ground
**Date of Start:** 26.07.2019
**Date of End:** 27.07.2019

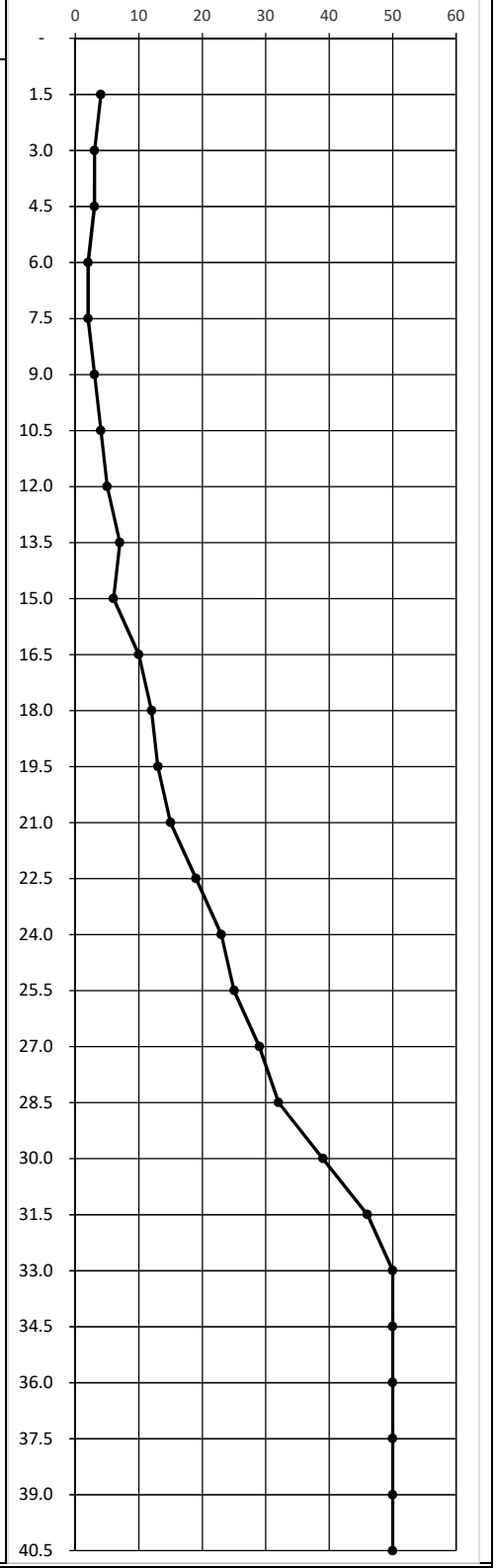
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 32 + 200 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 414334.85m N - 2754339.56m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to very soft to medium stiff to stiff to hard low to medium plastic silty CLAY | CL | | | D1 | 35.25 | 1 | 2 | 2 | 4 |
| 3.0 | | | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | | | | | D3 | | 1 | 1 | 2 | 3 |
| 6.0 | | | | | D4 | | 1 | 1 | 1 | 2 |
| 7.5 | | | | | D5 | | 1 | 1 | 1 | 2 |
| 9.0 | | | | | D6 | | 1 | 1 | 2 | 3 |
| 10.5 | | | | | D7 | | 1 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 1 | 2 | 3 | 5 |
| 13.5 | | | | | D9 | | 2 | 3 | 4 | 7 |
| 15.0 | | | | | D10 | | 2 | 3 | 3 | 6 |
| 16.5 | | | | | D11 | | 3 | 4 | 6 | 10 |
| 18.0 | | | | | D12 | | 3 | 5 | 7 | 12 |
| 19.5 | | | | | D13 | | 3 | 5 | 8 | 13 |
| 21.0 | | | | | D14 | | 4 | 6 | 9 | 15 |
| 22.5 | | | | | D15 | | 5 | 8 | 11 | 19 |
| 24.0 | | | | | D16 | | 6 | 10 | 13 | 23 |
| 25.5 | | | | | D17 | | 6 | 12 | 13 | 25 |
| 27.0 | | | | | D18 | | 8 | 14 | 15 | 29 |
| 28.5 | | | | | D19 | | 9 | 15 | 17 | 32 |
| 30.0 | | | | | D20 | | 9 | 17 | 22 | 39 |
| 31.5 | | | | | D21 | | 14 | 20 | 26 | 46 |
| 33.0 | | | | | D22 | | 15 | 22 | 28 | 50 |
| 34.5 | | | | | D23 | | 16 | 24 | 26 | 50 |
| 36.0 | Very dense grey silty fine SAND | SM | | | D24 | 4.25 | 18 | 30 | 20 | 50 |
| 37.5 | | | | | D25 | | 20 | 34 | 16 | 50 |
| 39.0 | | | | | D26 | | 21 | 50 | - | 50 |
| 40.5 | | | | | D27 | | 23 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** OVP-05,BH-02
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 12.2 m
**Water level(m):** -1.2 from existing ground
**Date of Start:** 26.07.2019
**Date of End:** 27.07.2019

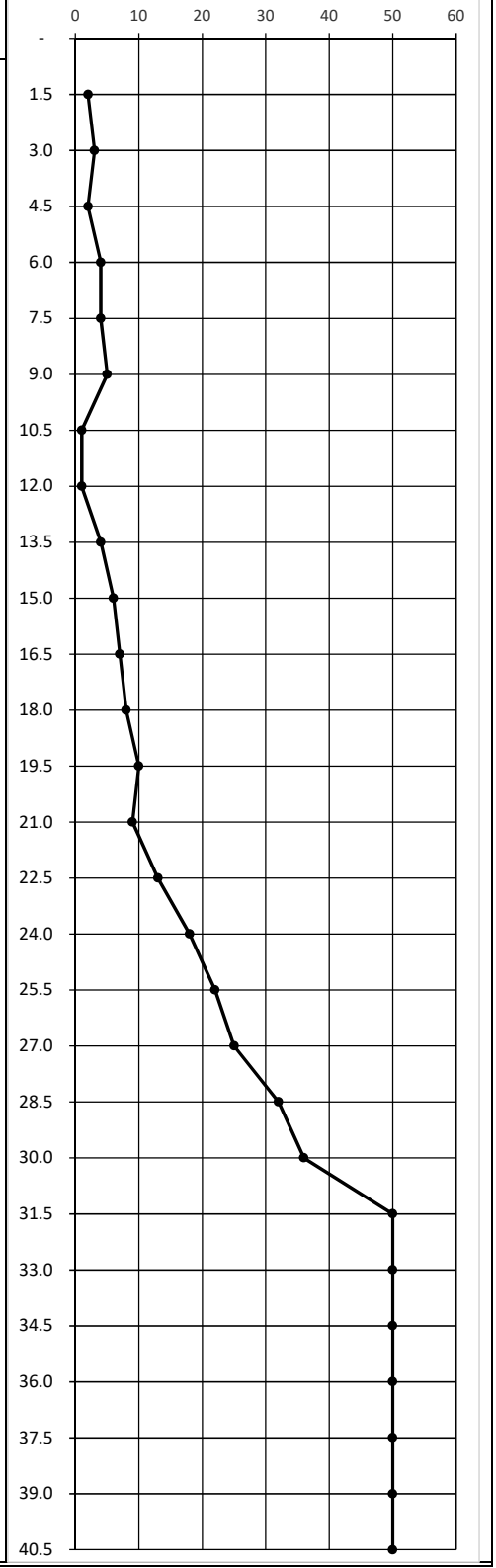
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage - 32 + 300 ,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 414459.432m N - 2754316.155m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft to medium stiff to stiff to very stiff to hard medium to high plastic silty CLAY | CL | | | D1 | 40.50 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| 6.0 | | | | | D4 | | 1 | 2 | 2 | 4 |
| 7.5 | | | | | D5 | | 1 | 2 | 2 | 4 |
| 9.0 | | | | | D6 | | 1 | 2 | 3 | 5 |
| 10.5 | | | | | D7 | | 1 | 0 | 1 | 1 |
| 12.0 | | | | | D8 | | 1 | 0 | 1 | 1 |
| 13.5 | | | | | D9 | | 1 | 2 | 2 | 4 |
| 15.0 | | | | | D10 | | 2 | 3 | 3 | 6 |
| 16.5 | | | | | D11 | | 2 | 3 | 4 | 7 |
| 18.0 | | | | | D12 | | 2 | 3 | 5 | 8 |
| 19.5 | | | | | D13 | | 3 | 4 | 6 | 10 |
| 21.0 | | | | | D14 | | 3 | 4 | 5 | 9 |
| 22.5 | | | | | D15 | | 5 | 7 | 6 | 13 |
| 24.0 | | | | | D16 | | 7 | 10 | 8 | 18 |
| 25.5 | | | | | D17 | | 8 | 10 | 12 | 22 |
| 27.0 | | | | | D18 | | 10 | 11 | 14 | 25 |
| 28.5 | | | | | D19 | | 12 | 19 | 13 | 32 |
| 30.0 | | | | | D20 | | 12 | 19 | 17 | 36 |
| 31.5 | | | | | D21 | | 15 | 22 | 28 | 50 |
| 33.0 | | | | | D22 | | 17 | 25 | 25 | 50 |
| 34.5 | | | | | D23 | | 20 | 28 | 22 | 50 |
| 36.0 | | | | | D24 | | 22 | 30 | 20 | 50 |
| 37.5 | | | | | D25 | | 25 | 32 | 18 | 50 |
| 39.0 | | | | | D26 | | 27 | 37 | 13 | 50 |
| 40.5 | | | | | D27 | | 30 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-13)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 11.07 m
**Water level(m):** -0.90 from existing ground
**Date of Start:** 21.04.2019
**Date of End:** 22.04.2019

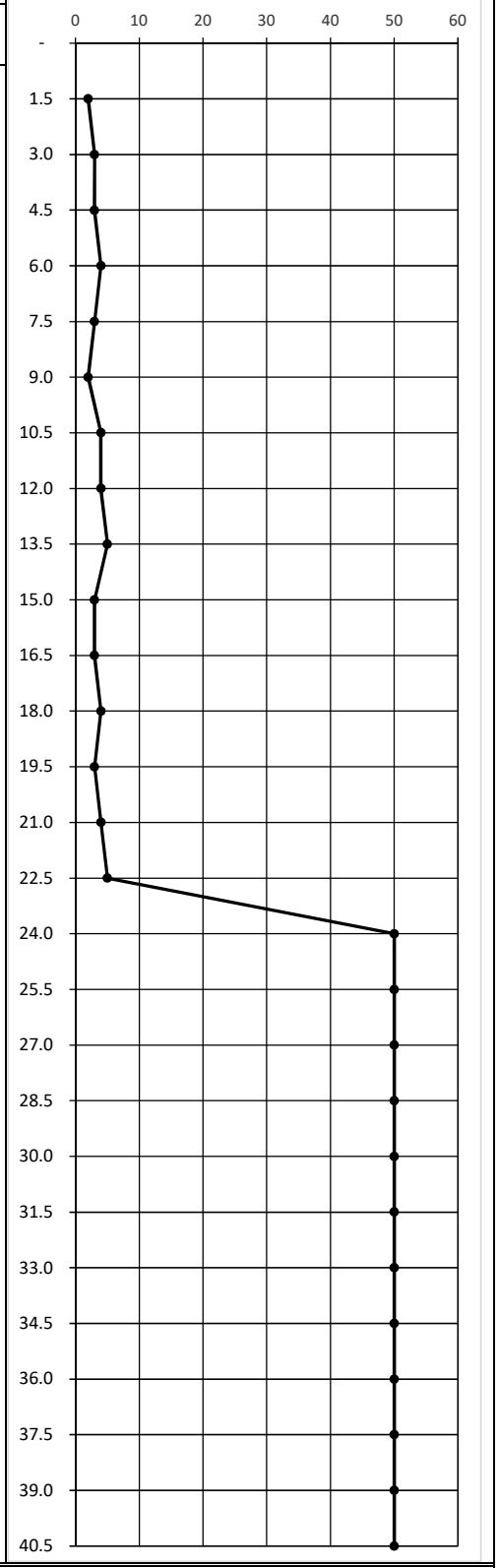
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location: Chainage 38 +00, Sylhet**

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 419877.55m N - 2752865.80m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft to medium stiff to stiff brown to grey medium plastic silty CLAY | CH | | | D1 | 23.25 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | | | | | D3 | | 1 | 1 | 2 | 3 |
| 6.0 | | | | | D4 | | 1 | 2 | 2 | 4 |
| 7.5 | | | | | D5 | | 1 | 1 | 2 | 3 |
| 9.0 | | | | | D6 | | 1 | 1 | 1 | 2 |
| 10.5 | | | | | D7 | | 1 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 2 | 2 | 2 | 4 |
| 13.5 | | | | | D9 | | 1 | 2 | 3 | 5 |
| 15.0 | | | | | D10 | | 1 | 1 | 2 | 3 |
| 16.5 | | | | | D11 | | 1 | 1 | 2 | 3 |
| 18.0 | | | | | D12 | | 2 | 2 | 2 | 4 |
| 19.5 | | | | | D13 | | 1 | 1 | 2 | 3 |
| 21.0 | | | | | D14 | | 1 | 2 | 2 | 4 |
| 22.5 | | | | | D15 | | 1 | 2 | 3 | 5 |
| 24.0 | Very dense grey silty medium to fine SAND | SM | | | D16 | 17.25 | 15 | 33 | 17 | 50 |
| 25.5 | | | | | D17 | | 19 | 30 | 20 | 50 |
| 27.0 | | | | | D18 | | 15 | 27 | 23 | 50 |
| 28.5 | | | | | D19 | | 20 | 24 | 26 | 50 |
| 30.0 | | | | | D20 | | 23 | 35 | 15 | 50 |
| 31.5 | | | | | D21 | | 25 | 39 | 11 | 50 |
| 33.0 | | | | | D22 | | 12 | 20 | 30 | 50 |
| 34.5 | | | | | D23 | | 14 | 25 | 25 | 50 |
| 36.0 | | | | | D24 | | 20 | 36 | 14 | 50 |
| 37.5 | | | | | D25 | | 21 | 38 | 12 | 50 |
| 39.0 | | | | | D26 | | 15 | 28 | 22 | 50 |
| 40.5 | | | | | D27 | | 22 | 32 | 18 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-05)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 11.62m
**Water level(m):** -0.9 from existing ground
**Date of Start:** 21.04.2019
**Date of End:** 22.04.2019

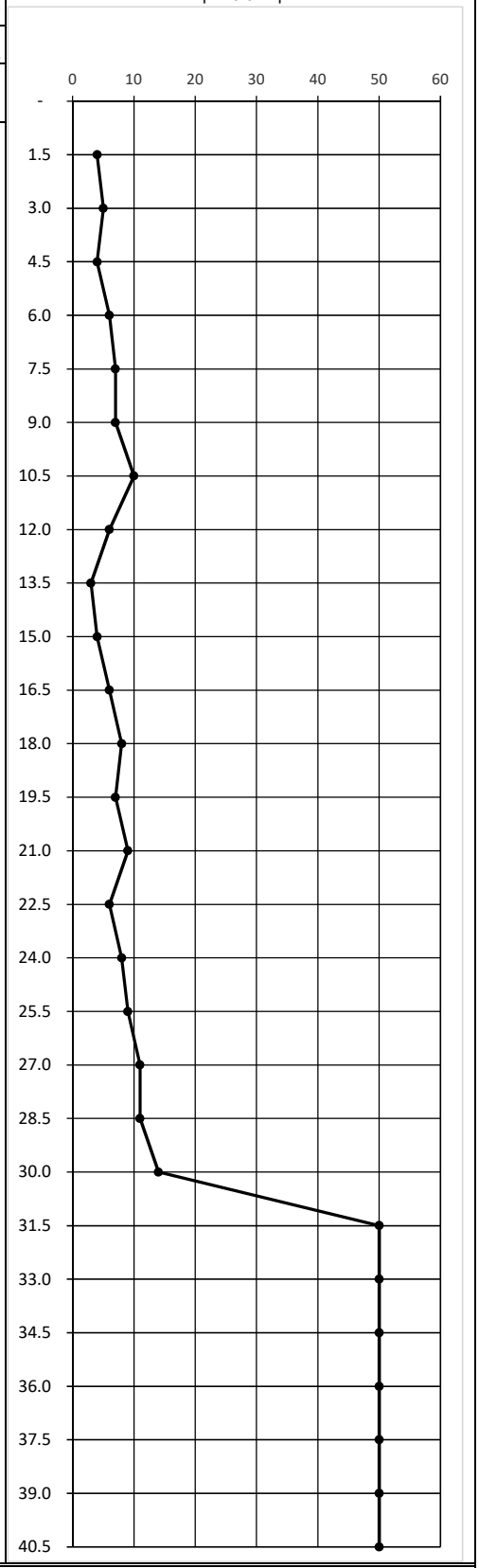
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 38 +280, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 419956.81m N - 2752646.32m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff to stiff grey low to medium plastic silty CLAY | CL | | | D1 | 30.75 | 1 | 2 | 2 | 4 |
| 3.0 | | | | | D2 | | 2 | 2 | 3 | 5 |
| 4.5 | | | | | D3 | | 1 | 2 | 2 | 4 |
| | | | | | UD-1 | | | | | |
| 6.0 | | | | | D4 | | 2 | 3 | 3 | 6 |
| 7.5 | | | | | D5 | | 2 | 3 | 4 | 7 |
| 9.0 | | | | | D6 | | 3 | 3 | 4 | 7 |
| 10.5 | | | | | D7 | | 2 | 4 | 6 | 10 |
| 12.0 | | | | | D8 | | 1 | 2 | 4 | 6 |
| 13.5 | | | | | D9 | | 1 | 2 | 1 | 3 |
| 15.0 | | | | | D10 | | 2 | 2 | 2 | 4 |
| 16.5 | | | | | D11 | | 2 | 3 | 3 | 6 |
| 18.0 | | | | | D12 | | 3 | 3 | 5 | 8 |
| 19.5 | | | | | D13 | | 2 | 3 | 4 | 7 |
| 21.0 | | | | | D14 | | 3 | 4 | 5 | 9 |
| 22.5 | | | | | D15 | | 1 | 2 | 4 | 6 |
| 24.0 | | | | | D16 | | 2 | 3 | 5 | 8 |
| 25.5 | | | | | D17 | | 3 | 3 | 6 | 9 |
| 27.0 | | | | | D18 | | 3 | 5 | 6 | 11 |
| 28.5 | | | | | D19 | | 4 | 4 | 7 | 11 |
| 30.0 | | | | | D20 | | 3 | 6 | 8 | 14 |
| 31.5 | Very dense grey silty medium to fine SAND | SM | | | D21 | 9.75 | 35 | 50 | - | 50 |
| 33.0 | | | | | D22 | | 40 | 50 | - | 50 |
| 34.5 | | | | | D23 | | 39 | 50 | - | 50 |
| 36.0 | | | | | D24 | | 42 | 50 | - | 50 |
| 37.5 | | | | | D25 | | 40 | 50 | - | 50 |
| 39.0 | | | | | D26 | | 35 | 50 | - | 50 |
| 40.5 | | | | | D27 | | 38 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-03)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 66.0m

**Reduced level(m):** 2.25m
**Water level(m):** -4.5 from existing ground
**Date of Start:** 27.04.2019
**Date of End:** 30.04.2019

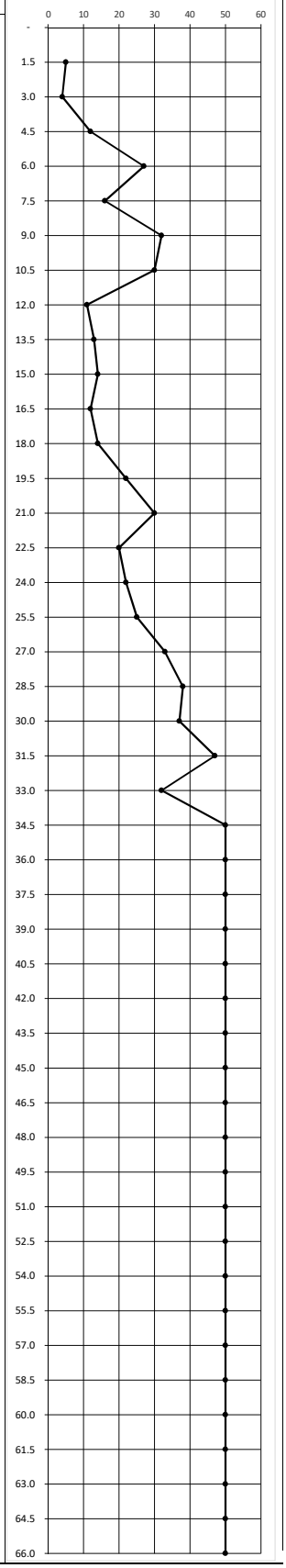
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 38 +450, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 419972.72m N - 2752441.06m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very loose to loose grey silty fine SAND | SM | | | D1 | 3.75 | 1 | 2 | 3 | 5 |
| 3.0 | | | | | D2 | | 1 | 2 | 2 | 4 |
| 4.5 | Stiff to very stiff to stiff grey low plastic silty CLAY | CL | | | D3 | 6.00 | 4 | 5 | 7 | 12 |
| | | | | | UD-1 | | | | | |
| 6.0 | | | | | D4 | | 8 | 11 | 16 | 27 |
| 7.5 | | | | | D5 | | 6 | 6 | 10 | 16 |
| 9.0 | | | | | D6 | | 12 | 15 | 17 | 32 |
| 10.5 | | | | | D7 | | 10 | 15 | 15 | 30 |
| 12.0 | | | | | D8 | 4.50 | 3 | 5 | 6 | 11 |
| 13.5 | | | | | D9 | | 4 | 6 | 7 | 13 |
| 15.0 | Medium dense grey silty medium to fine SAND | SM | | | D10 | 13.50 | 4 | 7 | 7 | 14 |
| 16.5 | | | | | D11 | | 3 | 5 | 7 | 12 |
| 18.0 | | | | | D12 | | 4 | 6 | 8 | 14 |
| 19.5 | | | | | D13 | | 8 | 10 | 12 | 22 |
| 21.0 | | | | | D14 | | 7 | 12 | 18 | 30 |
| 22.5 | | | | | D15 | | 9 | 10 | 10 | 20 |
| 24.0 | | | | | D16 | | 6 | 9 | 13 | 22 |
| 25.5 | | | | | D17 | | 7 | 11 | 14 | 25 |
| 27.0 | | | | | D18 | | 10 | 15 | 18 | 33 |
| 28.5 | Dense to very dense Brown medium to fine SAND | | | | D19 | 38.25 | 11 | 18 | 20 | 38 |
| 30.0 | | | | | D20 | | 13 | 22 | 15 | 37 |
| 31.5 | | | | | D21 | | 13 | 25 | 22 | 47 |
| 33.0 | | | | | D22 | | 11 | 15 | 17 | 32 |
| 34.5 | | | | | D23 | | 19 | 30 | 20 | 50 |
| 36.0 | | | | | D24 | | 20 | 33 | 17 | 50 |
| 37.5 | | | | | D25 | | 21 | 35 | 15 | 50 |
| 39.0 | | | | | D26 | | 20 | 33 | 17 | 50 |
| 40.5 | | | | | D27 | | 18 | 27 | 23 | 50 |
| 42.0 | | | | | D28 | | 23 | 34 | 16 | 50 |
| 43.5 | | | | | D29 | | 22 | 35 | 15 | 50 |
| 45.0 | | | | | D30 | | 25 | 38 | 12 | 50 |
| 46.5 | | | | | D31 | | 28 | 33 | 17 | 50 |
| 48.0 | | | | | D32 | | 20 | 30 | 20 | 50 |
| 49.5 | | | | | D33 | | 23 | 29 | 21 | 50 |
| 51.0 | | | | | D34 | | 21 | 32 | 18 | 50 |
| 52.5 | | | | | D35 | | 26 | 39 | 11 | 50 |
| 54.0 | | | | | D36 | | 29 | 40 | 10 | 50 |
| 55.5 | | | | | D37 | | 30 | 42 | 8 | 50 |
| 57.0 | | | | | D38 | | 40 | 50 | - | 50 |
| 58.5 | | | | | D39 | | 35 | 38 | 12 | 50 |
| 60.0 | | | | | D40 | | 42 | 50 | - | 50 |
| 61.5 | | | | | D41 | | 39 | 40 | 10 | 50 |
| 63.0 | | | | | D42 | | 43 | 50 | - | 50 |
| 64.5 | | | | | D43 | | 44 | 50 | - | 50 |
| 66.0 | | | | | D44 | | 40 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-04)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 66.0m

**Reduced level(+)** 4.2m
**Water** -3.5 from existing ground
**Date of Start:** 30.04.2019
**Date of End:** 02.05.2019

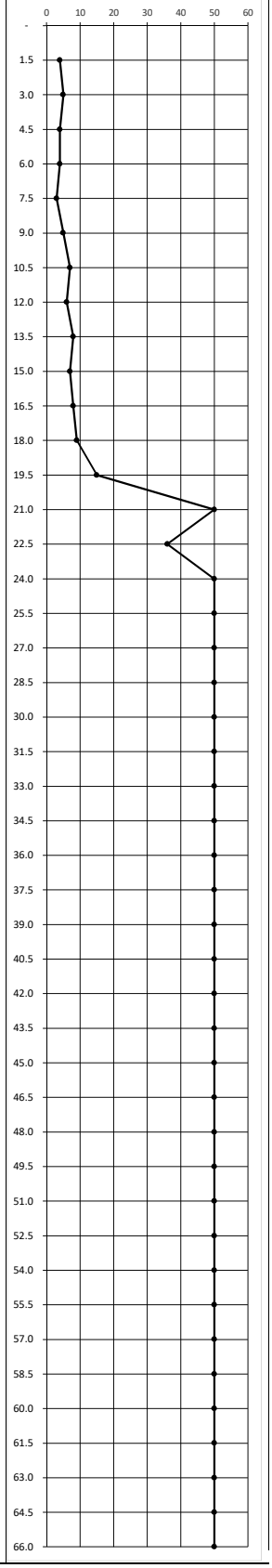
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 38 +550, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 419977.833m N - 2752354.288m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very loose to loose grey silty medium to fine SAND | CL | | | D1 | 20.25 | 1 | 2 | 2 | 4 |
| 3.0 | | | | | D2 | | 2 | 2 | 3 | 5 |
| 4.5 | | | | | D3 | | 2 | 2 | 2 | 4 |
| 6.0 | | | | | D4 | | 1 | 2 | 2 | 4 |
| 7.5 | | | | | D5 | | 1 | 1 | 2 | 3 |
| 9.0 | | | | | D6 | | 1 | 2 | 3 | 5 |
| 10.5 | | | | | D7 | | 2 | 3 | 4 | 7 |
| 12.0 | | | | | D8 | | 2 | 3 | 3 | 6 |
| 13.5 | | | | | D9 | | 2 | 4 | 4 | 8 |
| 15.0 | | | | | D10 | | 3 | 3 | 4 | 7 |
| 16.5 | | | | | D11 | | 2 | 3 | 5 | 8 |
| 18.0 | | | | | D12 | | 3 | 4 | 5 | 9 |
| 19.5 | | | | | D13 | | 5 | 6 | 9 | 15 |
| 21.0 | Dense to very dense Brown silty fine SAND | SM | | | D14 | 45.50 | 15 | 20 | 30 | 50 |
| 22.5 | | | | | D15 | | 16 | 16 | 20 | 36 |
| 24.0 | | | | | D16 | | 20 | 26 | 24 | 50 |
| 25.5 | | | | | D17 | | 22 | 30 | 20 | 50 |
| 27.0 | | | | | D18 | | 19 | 35 | 15 | 50 |
| 28.5 | | | | | D19 | | 23 | 40 | 10 | 50 |
| 30.0 | | | | | D20 | | 15 | 30 | 20 | 50 |
| 31.5 | | | | | D21 | | 16 | 32 | 18 | 50 |
| 33.0 | | | | | D22 | | 19 | 29 | 21 | 50 |
| 34.5 | | | | | D23 | | 23 | 30 | 20 | 50 |
| 36.0 | | | | | D24 | | 15 | 26 | 24 | 50 |
| 37.5 | | | | | D25 | | 30 | 50 | - | 50 |
| 39.0 | | | | | D26 | | 25 | 40 | 10 | 50 |
| 40.5 | | | | | D27 | | 24 | 35 | 15 | 50 |
| 42.0 | | | | | D28 | | 20 | 30 | 20 | 50 |
| 43.5 | | | | | D29 | | 22 | 32 | 18 | 50 |
| 45.0 | | | | | D30 | | 25 | 35 | 15 | 50 |
| 46.5 | | | | | D31 | | 24 | 33 | 17 | 50 |
| 48.0 | | | | | D32 | | 19 | 30 | 20 | 50 |
| 49.5 | | | | | D33 | | 20 | 28 | 22 | 50 |
| 51.0 | | | | | D34 | | 23 | 31 | 19 | 50 |
| 52.5 | | | | | D35 | | 20 | 32 | 18 | 50 |
| 54.0 | | | | | D36 | | 22 | 35 | 15 | 50 |
| 55.5 | | | | | D37 | | 18 | 29 | 21 | 50 |
| 57.0 | | | | | D38 | | 26 | 38 | 12 | 50 |
| 58.5 | | | | | D39 | | 21 | 33 | 17 | 50 |
| 60.0 | | | | | D40 | | 28 | 40 | 10 | 50 |
| 61.5 | | | | | D41 | | 26 | 36 | 14 | 50 |
| 63.0 | | | | | D42 | | 25 | 34 | 16 | 50 |
| 64.5 | | | | | D43 | | 30 | 45 | 5 | 50 |
| 66.0 | | | | | D44 | | 35 | 48 | 2 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-06)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 10.02m
**Water level(m):** -1.7 from existing ground
**Date of Start:** 22.04.2019
**Date of End:** 23.04.2019

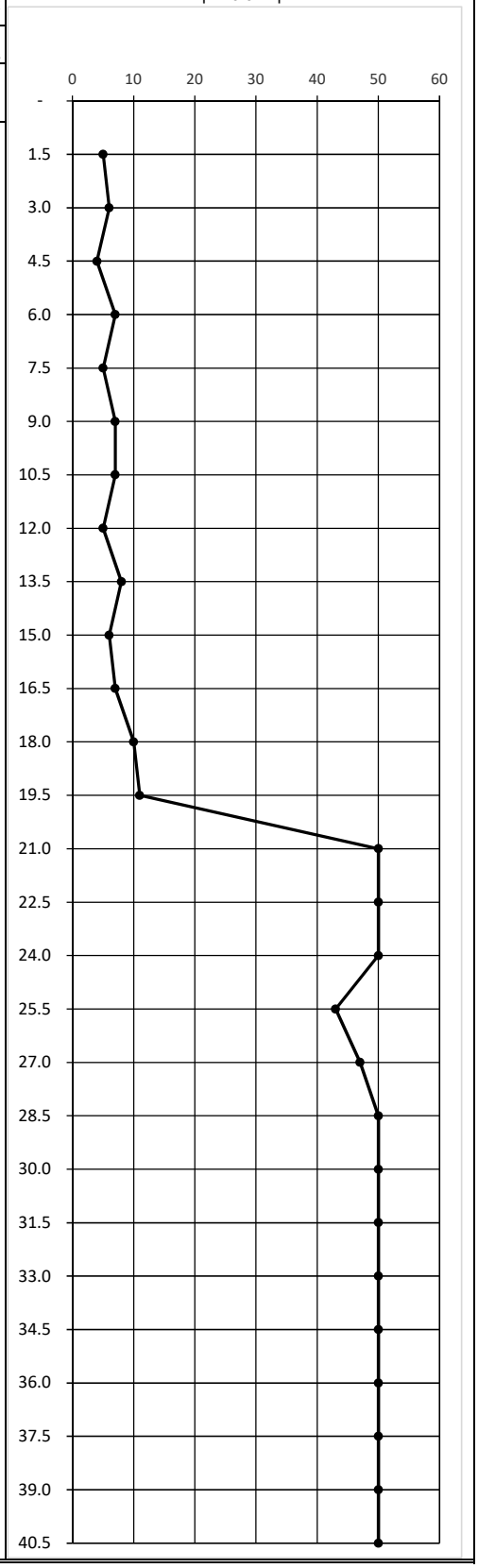
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 38 +760, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 419981.39m N - 2752147.24m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Medium stiff to stiff brown to grey medium plastic silty CLAY | CL | | | D1 | 20.25 | 1 | 2 | 3 | 5 |
| 3.0 | | | | | D2 | | 2 | 2 | 4 | 6 |
| 4.5 | | | | | D3 | | 1 | 2 | 2 | 4 |
| | | | | | UD-1 | | | | | |
| 6.0 | | | | | D4 | | 2 | 3 | 4 | 7 |
| 7.5 | | | | | D5 | | 2 | 3 | 2 | 5 |
| 9.0 | | | | | D6 | | 2 | 3 | 4 | 7 |
| 10.5 | | | | | D7 | | 3 | 3 | 4 | 7 |
| 12.0 | | | | | D8 | | 2 | 2 | 3 | 5 |
| 13.5 | | | | | D9 | | 3 | 4 | 4 | 8 |
| 15.0 | | | | | D10 | | 3 | 3 | 3 | 6 |
| 16.5 | | | | | D11 | | 2 | 3 | 4 | 7 |
| 18.0 | | | | | D12 | | 4 | 5 | 5 | 10 |
| 19.5 | | | | | D13 | | 4 | 4 | 7 | 11 |
| 21.0 | Dense to very dense grey to brown silty medium to fine SAND | SM | | | D14 | 45.50 | 19 | 24 | 26 | 50 |
| 22.5 | | | | | D15 | | 15 | 22 | 28 | 50 |
| 24.0 | | | | | D16 | | 17 | 27 | 23 | 50 |
| 25.5 | | | | | D17 | | 14 | 20 | 23 | 43 |
| 27.0 | | | | | D18 | | 16 | 22 | 25 | 47 |
| 28.5 | | | | | D19 | | 17 | 25 | 25 | 50 |
| 30.0 | | | | | D20 | | 17 | 22 | 28 | 50 |
| 31.5 | | | | | D21 | | 16 | 27 | 23 | 50 |
| 33.0 | | | | | D22 | | 18 | 24 | 26 | 50 |
| 34.5 | | | | | D23 | | 16 | 27 | 23 | 50 |
| 36.0 | | | | | D24 | | 20 | 30 | 20 | 50 |
| 37.5 | | | | | D25 | | 18 | 22 | 28 | 50 |
| 39.0 | | | | | D26 | | 25 | 32 | 18 | 50 |
| 40.5 | | | | | D27 | | 35 | 45 | 5 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-07)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 9.27m
**Water level(m):** -1.4 from existing ground
**Date of Start:** 24.04.2019
**Date of End:** 25.04.2019

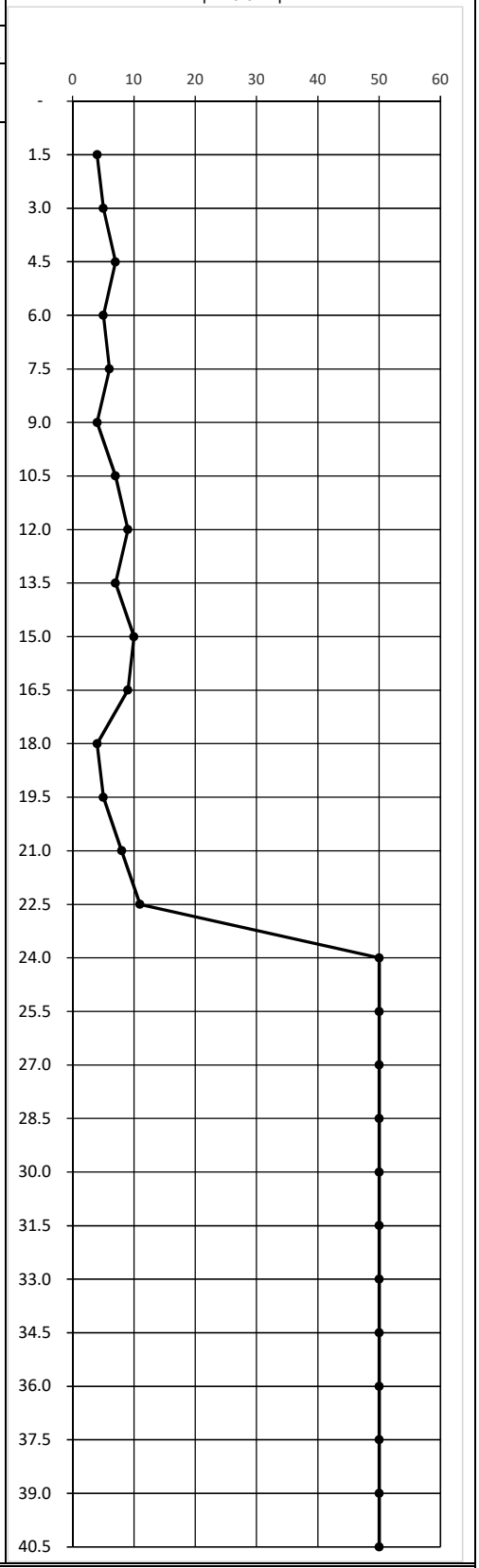
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 38 +850, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 419986.970m N - 2752043.862m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff to stiff brown to grey low plastic silty CLAY | CL | | | D1 | 23.25 | 2 | 2 | 2 | 4 |
| 3.0 | | | | | D2 | | 1 | 2 | 3 | 5 |
| 4.5 | | | | | D3 | | 2 | 3 | 4 | 7 |
| | | | | | UD-1 | | | | | |
| 6.0 | | | | | D4 | | 1 | 2 | 3 | 5 |
| 7.5 | | | | | D5 | | 2 | 3 | 3 | 6 |
| 9.0 | | | | | D6 | | 1 | 2 | 2 | 4 |
| 10.5 | | | | | D7 | | 2 | 3 | 4 | 7 |
| 12.0 | | | | | D8 | | 3 | 4 | 5 | 9 |
| 13.5 | | | | | D9 | | 3 | 3 | 4 | 7 |
| 15.0 | | | | | D10 | | 4 | 4 | 6 | 10 |
| 16.5 | | | | | D11 | | 3 | 3 | 6 | 9 |
| 18.0 | | | | | D12 | | 1 | 2 | 2 | 4 |
| 19.5 | | | | | D13 | | 2 | 2 | 3 | 5 |
| 21.0 | | | | | D14 | | 2 | 3 | 5 | 8 |
| 22.5 | | | | | D15 | | 3 | 5 | 6 | 11 |
| 24.0 | Very dense grey to brown silty fine SAND | SM | | | D16 | 17.25 | 18 | 29 | 21 | 50 |
| 25.5 | | | | | D17 | | 21 | 22 | 28 | 50 |
| 27.0 | | | | | D18 | | 24 | 32 | 18 | 50 |
| 28.5 | | | | | D19 | | 18 | 22 | 28 | 50 |
| 30.0 | Very dense grey to brown silty Fine to medium SAND | | | | D20 | | 30 | 40 | 10 | 50 |
| 31.5 | | | | | D21 | | 35 | 42 | 8 | 50 |
| 33.0 | | | | | D22 | | 30 | 41 | 9 | 50 |
| 34.5 | | | | | D23 | | 36 | 45 | 5 | 50 |
| 36.0 | | | | | D24 | | 40 | 50 | - | 50 |
| 37.5 | | | | | D25 | | 32 | 43 | 7 | 50 |
| 39.0 | | | | | D26 | | 35 | 40 | 10 | 50 |
| 40.5 | | | | | D27 | | 40 | 45 | 5 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-09)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 12.05m
**Water level(m):** -1.20 from existing ground
**Date of Start:** 24.04.2019
**Date of End:** 25.04.2019

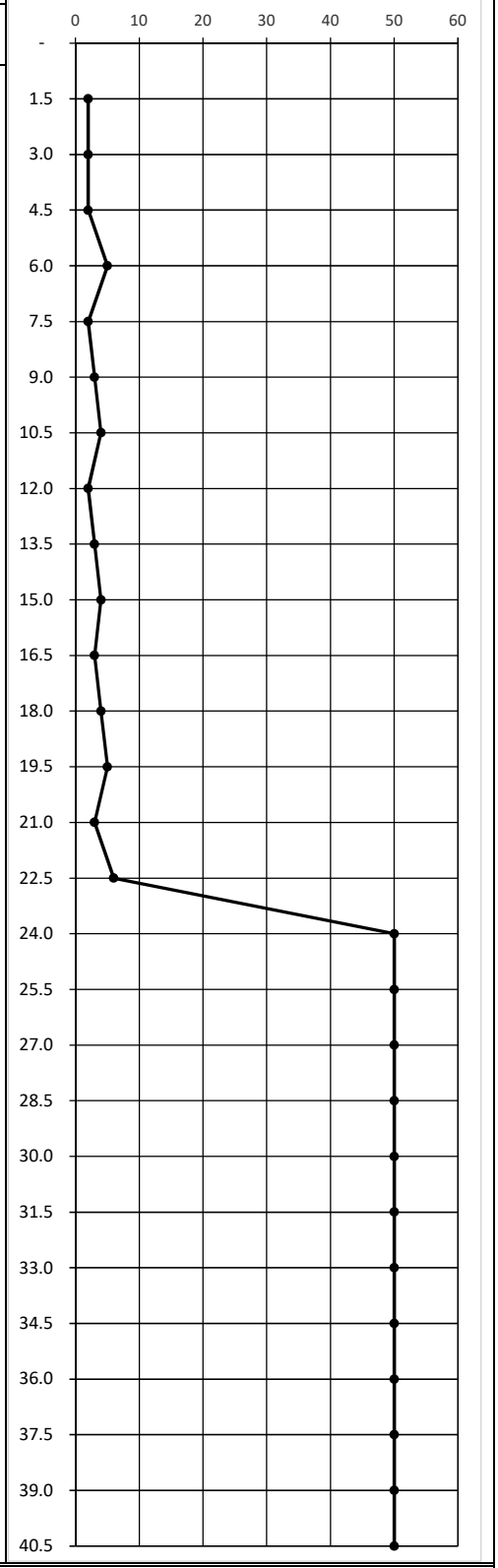
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 38 +900, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 419994.79m N - 2751942.00m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft to medium stiff to stiff grey medium plastic silty CLAY | CL | | | D1 | 23.25 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| | | | | | UD-1 | | | | | |
| 6.0 | | | | | D4 | | 1 | 2 | 3 | 5 |
| 7.5 | | | | | D5 | | 1 | 1 | 1 | 2 |
| 9.0 | | | | | D6 | | 1 | 1 | 2 | 3 |
| 10.5 | | | | | D7 | | 1 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 1 | 1 | 1 | 2 |
| 13.5 | | | | | D9 | | 1 | 1 | 2 | 3 |
| 15.0 | | | | | D10 | | 1 | 2 | 2 | 4 |
| 16.5 | | | | | D11 | | 1 | 1 | 2 | 3 |
| 18.0 | | | | | D12 | | 2 | 2 | 2 | 4 |
| 19.5 | | | | | D13 | | 1 | 2 | 3 | 5 |
| 21.0 | | | | | D14 | | 1 | 1 | 2 | 3 |
| 22.5 | | | | | D15 | | 2 | 3 | 3 | 6 |
| 24.0 | Very dense grey silty Fine to medium SAND | SM | | | D16 | 17.25 | 10 | 18 | 32 | 50 |
| 25.5 | | | | | D17 | | 8 | 23 | 27 | 50 |
| 27.0 | | | | | D18 | | 30 | 50 | - | 50 |
| 28.5 | | | | | D19 | | 25 | 35 | 15 | 50 |
| 30.0 | | | | | D20 | | 20 | 28 | 22 | 50 |
| 31.5 | | | | | D21 | | 16 | 30 | 20 | 50 |
| 33.0 | | | | | D22 | | 20 | 25 | 25 | 50 |
| 34.5 | | | | | D23 | | 20 | 30 | 20 | 50 |
| 36.0 | | | | | D24 | | 18 | 35 | 15 | 50 |
| 37.5 | | | | | D25 | | 20 | 30 | 20 | 50 |
| 39.0 | | | | | D26 | | 18 | 35 | 15 | 50 |
| 40.5 | | | | | D27 | | 25 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-08)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 12.2m
**Water level(m):** -1.05 from existing ground
**Date of Start:** 25.04.2019
**Date of End:** 26.04.2019

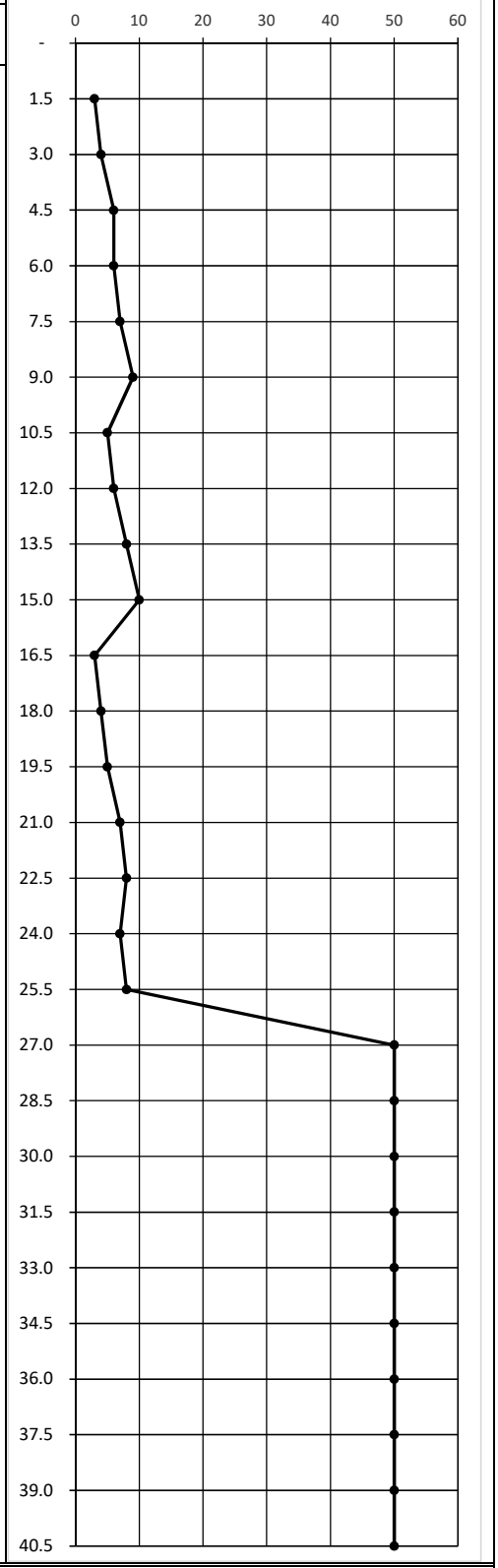
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 39 +00, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 420159.946m N - 2752017.326m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Stiff to medium stiff grey low platic clayey SILT | ML | | | D1 | 26.25 | 1 | 1 | 2 | 3 |
| 3.0 | | | | | D2 | | 1 | 2 | 2 | 4 |
| 4.5 | | | | | D3 | | 2 | 2 | 4 | 6 |
| 6.0 | | | | | D4 | | 2 | 3 | 3 | 6 |
| 7.5 | | | | | D5 | | 3 | 3 | 4 | 7 |
| 9.0 | | | | | D6 | | 3 | 4 | 5 | 9 |
| 10.5 | | | | | D7 | | 2 | 2 | 3 | 5 |
| 12.0 | | | | | D8 | | 3 | 3 | 3 | 6 |
| 13.5 | | | | | D9 | | 2 | 4 | 4 | 8 |
| 15.0 | | | | | D10 | | 3 | 4 | 6 | 10 |
| 16.5 | | | | | D11 | | 1 | 1 | 2 | 3 |
| 18.0 | | | | | D12 | | 1 | 2 | 2 | 4 |
| 19.5 | | | | | D13 | | 2 | 2 | 3 | 5 |
| 21.0 | | | | | D14 | | 3 | 3 | 4 | 7 |
| 22.5 | | | | | D15 | | 3 | 4 | 4 | 8 |
| 24.0 | | | | | D16 | | 3 | 3 | 4 | 7 |
| 25.5 | | | | | D17 | | 3 | 3 | 5 | 8 |
| 27.0 | Very dense grey to brown silty medium to fine SAND | SM | | | D18 | 14.25 | 30 | 40 | 10 | 50 |
| 28.5 | | | | | D19 | | 35 | 42 | 8 | 50 |
| 30.0 | | | | | D20 | | 19 | 24 | 26 | 50 |
| 31.5 | | | | | D21 | | 16 | 22 | 28 | 50 |
| 33.0 | | | | | D22 | | 20 | 27 | 23 | 50 |
| 34.5 | | | | | D23 | | 18 | 30 | 20 | 50 |
| 36.0 | | | | | D24 | | 20 | 36 | 14 | 50 |
| 37.5 | | | | | D25 | | 31 | 40 | 10 | 50 |
| 39.0 | | | | | D26 | | 35 | 43 | 7 | 50 |
| 40.5 | | | | | D27 | | 38 | 46 | 4 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-10)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 13.2 m
**Water level(m):** -1.20 from existing ground
**Date of Start:** 24.04.2019
**Date of End:** 25.04.2019

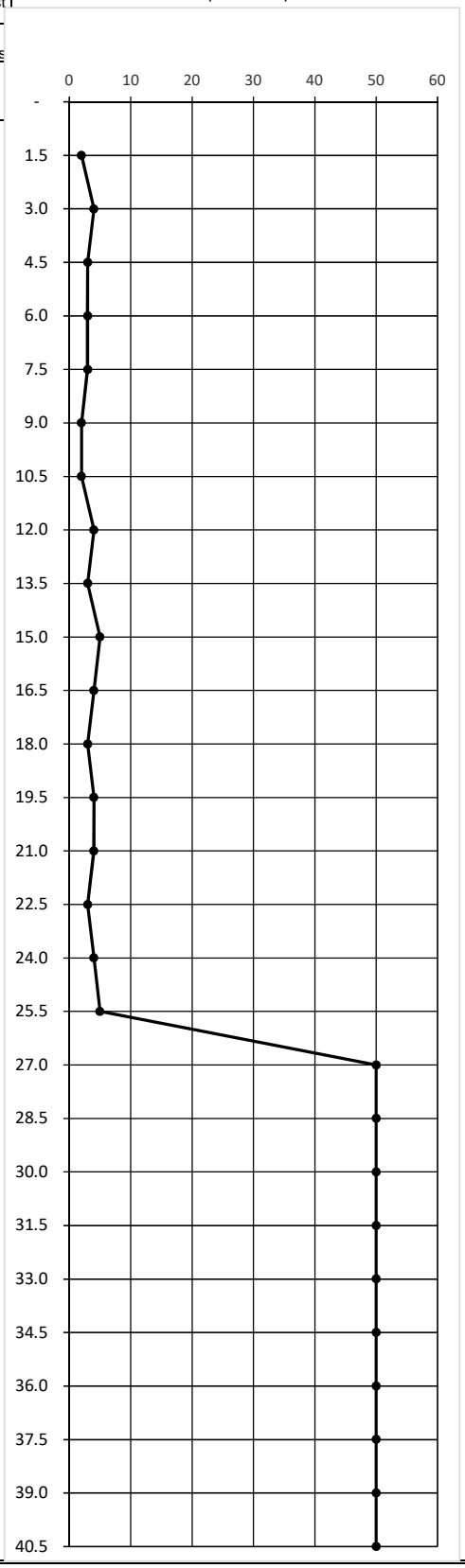
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 00 +400, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 420026.932m N - 2751815.942m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to medium stiff brown low plastic silty CLAY | CL | | | D1 | 22.50 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 2 | 2 | 4 |
| 4.5 | | | | | D3 | | 1 | 1 | 2 | 3 |
| 6.0 | | | | | D4 | | 1 | 1 | 2 | 3 |
| 7.5 | | | | | D5 | | 1 | 1 | 2 | 3 |
| 9.0 | | | | | D6 | | 1 | 1 | 1 | 2 |
| 10.5 | | | | | D7 | | 1 | 1 | 1 | 2 |
| 12.0 | | | | | D8 | | 1 | 2 | 2 | 4 |
| 13.5 | | | | | D9 | | 1 | 1 | 2 | 3 |
| 15.0 | | | | | D10 | | 1 | 2 | 3 | 5 |
| 16.5 | | | | | D11 | | 1 | 2 | 2 | 4 |
| 18.0 | | | | | D12 | | 1 | 1 | 2 | 3 |
| 19.5 | | | | | D13 | | 1 | 2 | 2 | 4 |
| 21.0 | | | | | D14 | | 1 | 2 | 2 | 4 |
| 22.5 | | | | | D15 | | 1 | 1 | 2 | 3 |
| 24.0 | | | | | D16 | | 1 | 2 | 2 | 4 |
| 25.5 | Very dense grey silty fine SAND | SM | | | D17 | 15.00 | 2 | 2 | 3 | 5 |
| 27.0 | | | | | D18 | | 15 | 22 | 18 | 50 |
| 28.5 | | | | | D19 | | 12 | 20 | 30 | 50 |
| 30.0 | | | | | D20 | | 14 | 16 | 34 | 50 |
| 31.5 | | | | | D21 | | 18 | 32 | 18 | 50 |
| 33.0 | | | | | D22 | | 20 | 40 | 10 | 50 |
| 34.5 | | | | | D23 | | 15 | 35 | 15 | 50 |
| 36.0 | | | | | D24 | | 14 | 24 | 26 | 50 |
| 37.5 | | | | | D25 | | 15 | 22 | 28 | 50 |
| 39.0 | | | | | D26 | 3.75 | 15 | 27 | 23 | 50 |
| 40.5 | | | | | D27 | | 18 | 33 | 17 | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-11)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 12.85m
**Water level(m):** -1.20 from existing ground
**Date of Start:** 26.04.2019
**Date of End:** 27.04.2019

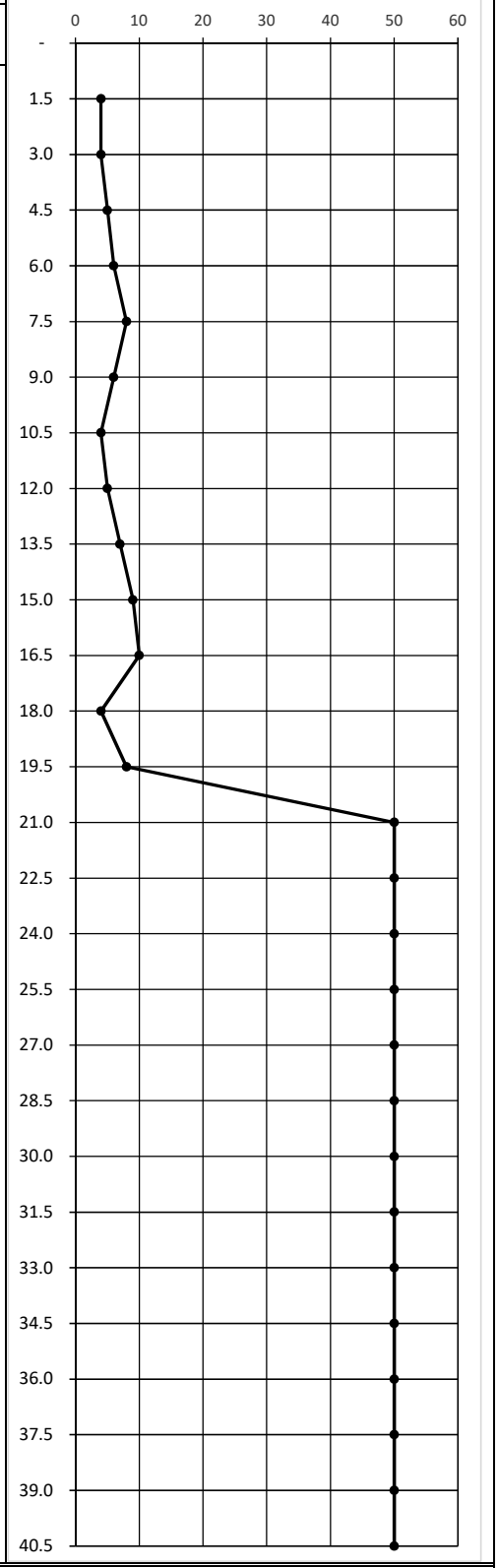
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 39 +200, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 420122.42m N - 2751788.68m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff to stiff grey to brown low plastic clayey SILT | ML | | | D1 | 20.25 | 1 | 2 | 2 | 4 |
| 3.0 | | | | | D2 | | 1 | 1 | 3 | 4 |
| 4.5 | | | | | D3 | | 2 | 2 | 3 | 5 |
| 6.0 | | | | | D4 | | 2 | 3 | 3 | 6 |
| 7.5 | | | | | D5 | | 3 | 3 | 5 | 8 |
| 9.0 | | | | | D6 | | 2 | 2 | 4 | 6 |
| 10.5 | | | | | D7 | | 1 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 2 | 2 | 3 | 5 |
| 13.5 | | | | | D9 | | 2 | 3 | 4 | 7 |
| 15.0 | | | | | D10 | | 3 | 4 | 5 | 9 |
| 16.5 | | | | | D11 | | 3 | 4 | 6 | 10 |
| 18.0 | | | | | D12 | | 2 | 2 | 2 | 4 |
| 19.5 | | | | | D13 | | 3 | 3 | 5 | 8 |
| 21.0 | Very dense Brown to grey silty medium to fine SAND | SM | | | D14 | 20.25 | 18 | 32 | 18 | 50 |
| 22.5 | | | | | D15 | | 22 | 35 | 15 | 50 |
| 24.0 | | | | | D16 | | 27 | 40 | 10 | 50 |
| 25.5 | | | | | D17 | | 23 | 35 | 15 | 50 |
| 27.0 | | | | | D18 | | 35 | 40 | 10 | 50 |
| 28.5 | | | | | D19 | | 30 | 38 | 12 | 50 |
| 30.0 | | | | | D20 | | 36 | 43 | 7 | 50 |
| 31.5 | | | | | D21 | | 27 | 36 | 14 | 50 |
| 33.0 | | | | | D22 | | 32 | 39 | 11 | 50 |
| 34.5 | | | | | D23 | | 35 | 40 | 10 | 50 |
| 36.0 | | | | | D24 | | 28 | 37 | 13 | 50 |
| 37.5 | | | | | D25 | | 37 | 40 | 10 | 50 |
| 39.0 | | | | | D26 | | 40 | 45 | 5 | 50 |
| 40.5 | | | | | D27 | | 45 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** Shiula Bridge(BH-12)
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 40.5m

**Reduced level(m):** 11.67 m
**Water level(m):** -1.25 from existing ground
**Date of Start:** 26.04.2019
**Date of End:** 27.04.2019

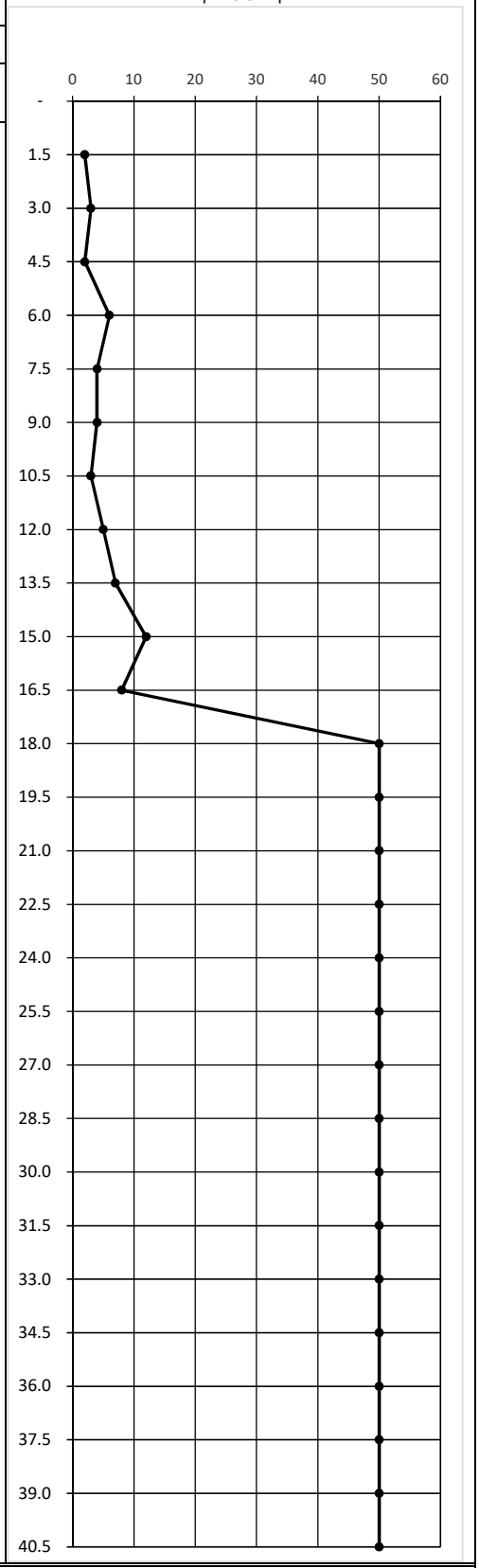
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Chainage 39 +120, Sylhet

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 420337.23m N - 2751958.77m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft to medium stiff to stiff brown to grey medium plastic silty CLAY | CL | | | D1 | 15.75 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| 6.0 | | | | | D4 | | 2 | 2 | 4 | 6 |
| 7.5 | | | | | D5 | | 2 | 2 | 2 | 4 |
| 9.0 | | | | | D6 | | 1 | 2 | 2 | 4 |
| 10.5 | | | | | D7 | | 1 | 1 | 2 | 3 |
| 12.0 | | | | | D8 | | 1 | 2 | 3 | 5 |
| 13.5 | | | | | D9 | | 2 | 3 | 4 | 7 |
| 15.0 | | | | | D10 | | 4 | 5 | 7 | 12 |
| 16.5 | Dense to very dense grey silty medium to fine SAND | SM | | | D11 | 24.75 | 2 | 3 | 5 | 8 |
| 18.0 | | | | | D12 | | 30 | 20 | 30 | 50 |
| 19.5 | | | | | D13 | | 20 | 30 | 20 | 50 |
| 21.0 | | | | | D14 | | 26 | 45 | 5 | 50 |
| 22.5 | | | | | D15 | | 22 | 35 | 15 | 50 |
| 24.0 | | | | | D16 | | 23 | 28 | 22 | 50 |
| 25.5 | | | | | D17 | | 25 | 40 | 10 | 50 |
| 27.0 | | | | | D18 | | 25 | 38 | 12 | 50 |
| 28.5 | | | | | D19 | | 26 | 45 | 5 | 50 |
| 30.0 | | | | | D20 | | 15 | 18 | 32 | 50 |
| 31.5 | | | | | D21 | | 18 | 22 | 28 | 50 |
| 33.0 | | | | | D22 | | 10 | 15 | 35 | 50 |
| 34.5 | | | | | D23 | | 12 | 23 | 27 | 50 |
| 36.0 | | | | | D24 | | 11 | 25 | 25 | 50 |
| 37.5 | | | | | D25 | | 15 | 27 | 23 | 50 |
| 39.0 | | | | | D26 | | 18 | 28 | 22 | 50 |
| 40.5 | | | | | D27 | | 20 | 50 | - | 50 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** UP-01,BH-01
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 15.0 m

**Reduced level(m):** 0.27m up from road top
**Water level(m):** -2.133 from existing ground
**Date of Start:** 04.03.2019
**Date of End:** 04.03.2019

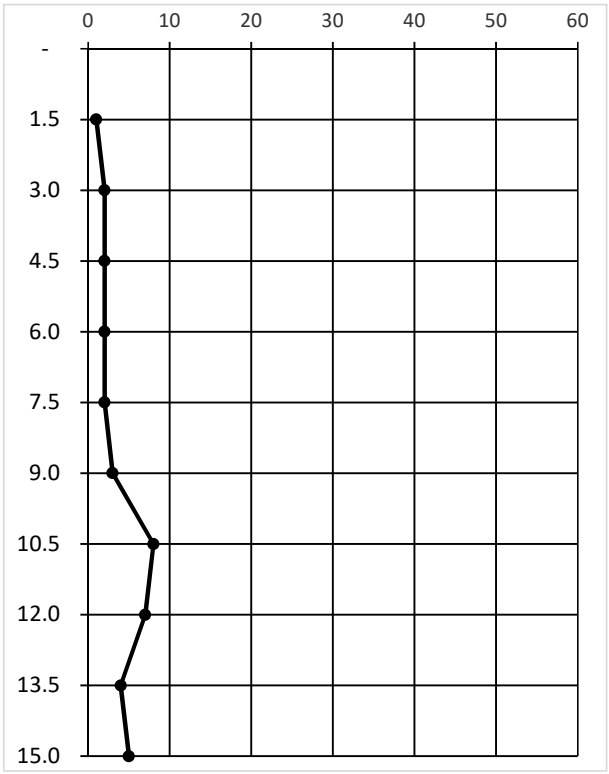
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Sutarkandi,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 386587.87 m N - 2751976.34 m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft,grey,clayey SILT. | ML | | | D1 | 15.00 | 1 | 0 | 1 | 1 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| 6.0 | | | | | D4 | | 1 | 1 | 1 | 2 |
| 7.5 | | | | | D5 | | 1 | 1 | 1 | 2 |
| 9.0 | Soft to medium stiff,grey,clayey SILT,trace of mica. | | | | D6 | | 1 | 1 | 2 | 3 |
| 10.5 | | | | | D7 | | 1 | 3 | 5 | 8 |
| 12.0 | | | | | D8 | | 2 | 3 | 4 | 7 |
| 13.5 | | | | | D9 | | 1 | 2 | 2 | 4 |
| 15.0 | | | | | D10 | | 1 | 2 | 3 | 5 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-2
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 15.0 m

**Reduced level(m):** 0.1m up from road top
**Water level(m):** -4.870 from existing ground
**Date of Start:** 12.03.2019
**Date of End:** 12.03.2019

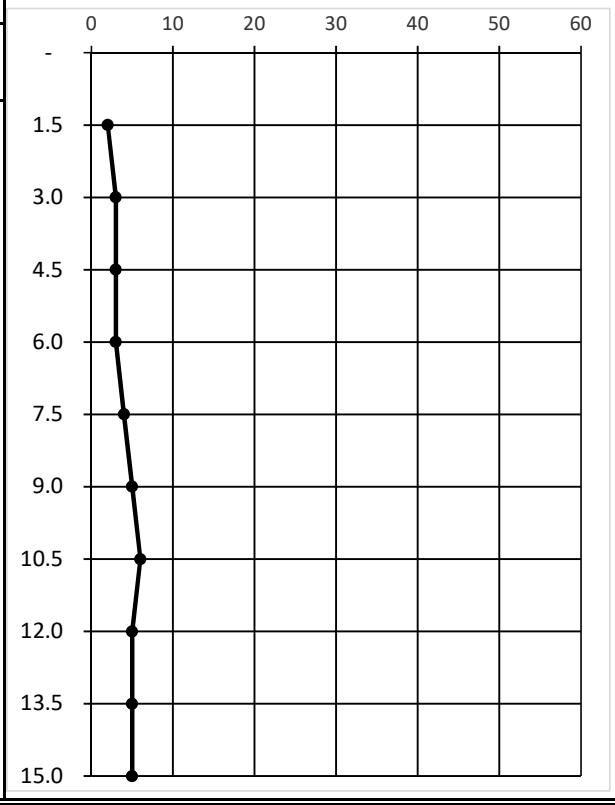
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Sutarkandi,Sylhet.

**Legend:** Clay Silt Sand

**Coordinates:** E - 409423.087m N - 2752746.685m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff grey clayey SILT | CL | | | D1 | 15.0 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 2 | 3 |
| 4.5 | | | | | D3 | | 1 | 1 | 2 | 3 |
| | | | | | UD1 | | | | | |
| 6.0 | | | | | D4 | | 1 | 1 | 2 | 3 |
| 7.5 | | | | | D5 | | 1 | 2 | 2 | 4 |
| 9.0 | | | | | D6 | | 2 | 2 | 3 | 5 |
| 10.5 | | | | | D7 | | 2 | 3 | 3 | 6 |
| 12.0 | | | | | D8 | | 2 | 2 | 3 | 5 |
| 13.5 | | | | | D9 | | 2 | 2 | 3 | 5 |
| 15.0 | | | | | D10 | | 2 | 2 | 3 | 5 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-3
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 15.0 m

**Reduced level(m):** 1.67m down from road top
**Water level(m):** -1.820 from existing ground
**Date of Start:** 13.03.2019
**Date of End:** 13.03.2019

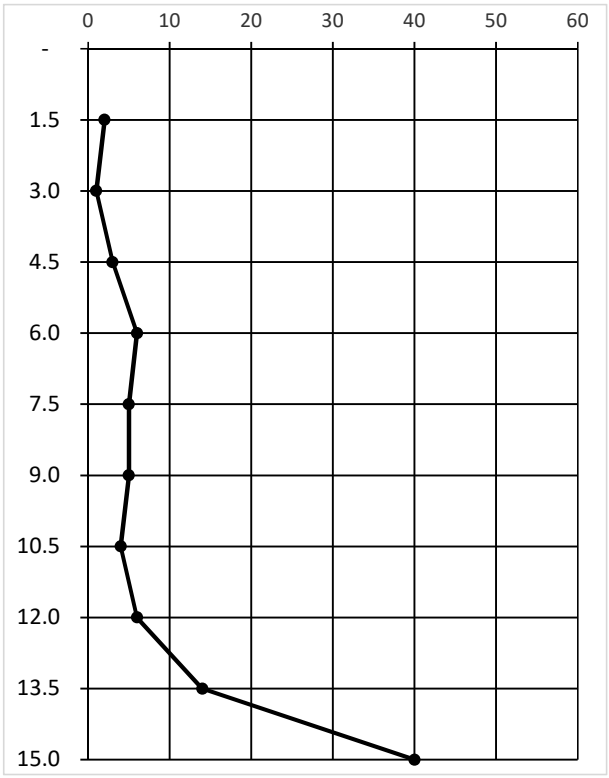
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Sutarkandi,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 412961.457m N - 2754074.363m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft to medium stiff to hard grey clayey SILT | ML | | | D1 | 12.75 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 0 | 1 | 1 |
| 4.5 | | | | | D3 | | 1 | 1 | 2 | 3 |
| 6.0 | | | | | D4 | | 2 | 3 | 3 | 6 |
| 7.5 | | | | | D5 | | 2 | 2 | 3 | 5 |
| 9.0 | | | | | D6 | | 2 | 2 | 3 | 5 |
| 10.5 | | | | | D7 | | 2 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 2 | 3 | 3 | 6 |
| 13.5 | | | | | D9 | 2.25 | 3 | 6 | 8 | 14 |
| 15.0 | | | | | D10 | | 10 | 20 | 20 | 40 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-04
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 15.0 m

**Reduced level(m):** 1.4m down from road top
**Water level(m):** -1.0 from existing ground
**Date of Start:** 14.03.2019
**Date of End:** 14.03.2019

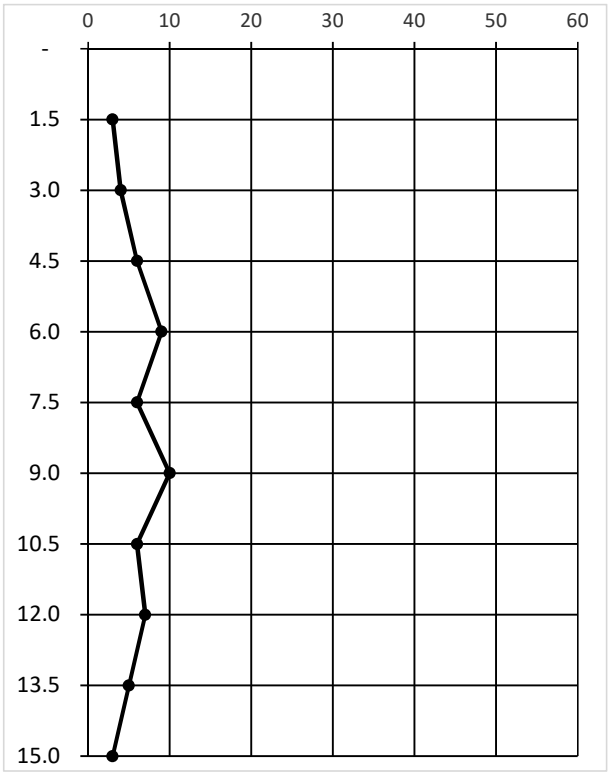
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Sutarkandi,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 415518.112m N - 2753963.296m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to stiff to medium stiff to soft grey clayey SILT | ML | | | D1 | 15.0 | 1 | 1 | 2 | 3 |
| 3.0 | | | | | D2 | | 1 | 2 | 2 | 4 |
| 4.5 | | | | | D3 | | 2 | 3 | 3 | 6 |
| | | | | | UD1 | | | | | |
| 6.0 | | | | | D4 | | 3 | 4 | 5 | 9 |
| 7.5 | | | | | D5 | | 2 | 2 | 4 | 6 |
| 9.0 | | | | | D6 | | 3 | 4 | 6 | 10 |
| 10.5 | | | | | D7 | | 2 | 2 | 4 | 6 |
| 12.0 | | | | | D8 | | 3 | 3 | 4 | 7 |
| 13.5 | | | | | D9 | | 2 | 2 | 3 | 5 |
| 15.0 | | | | | D10 | | 1 | 1 | 2 | 3 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-05
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 15.0 m

**Reduced level(m):** 3.0m down from road top
**Water level(m):** -1.067 from existing ground
**Date of Start:** 14.03.2019
**Date of End:** 14.03.2019

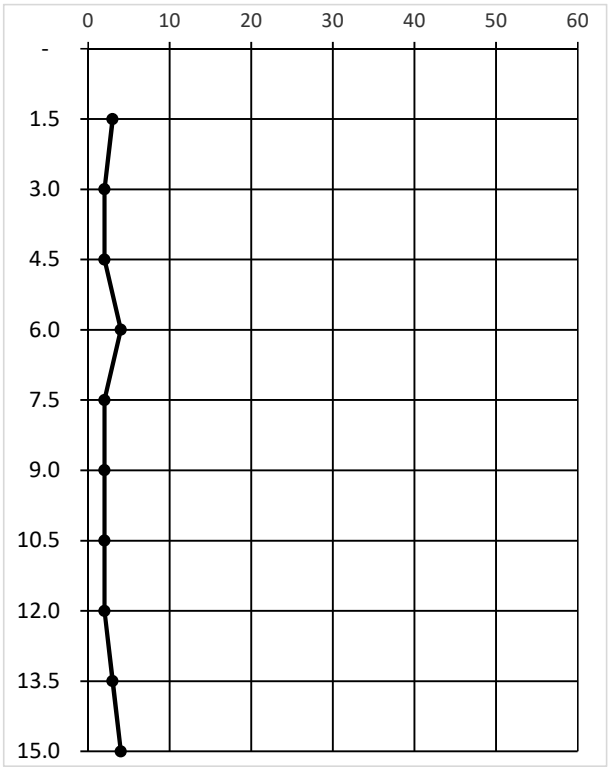
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Sutarkandi,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 416106.707m N - 2753912.626m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to Soft,grey,clayey SILT. | ML | | | D1 | 15.0 | 1 | 1 | 2 | 3 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| 6.0 | | | | | D4 | | 1 | 2 | 2 | 4 |
| 7.5 | | | | | D5 | | 1 | 1 | 1 | 2 |
| 9.0 | | | | | D6 | | 1 | 1 | 1 | 2 |
| 10.5 | | | | | D7 | | 1 | 1 | 1 | 2 |
| 12.0 | | | | | D8 | | 1 | 1 | 1 | 2 |
| 13.5 | | | | | D9 | | 1 | 1 | 2 | 3 |
| 15.0 | | | | | D10 | | 1 | 2 | 2 | 4 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-7
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 15.0 m

**Reduced level(m):** 1.8m down from road top
**Water level(m):** -3.047 from existing ground
**Date of Start:** 11.03.2019
**Date of End:** 11.03.2019

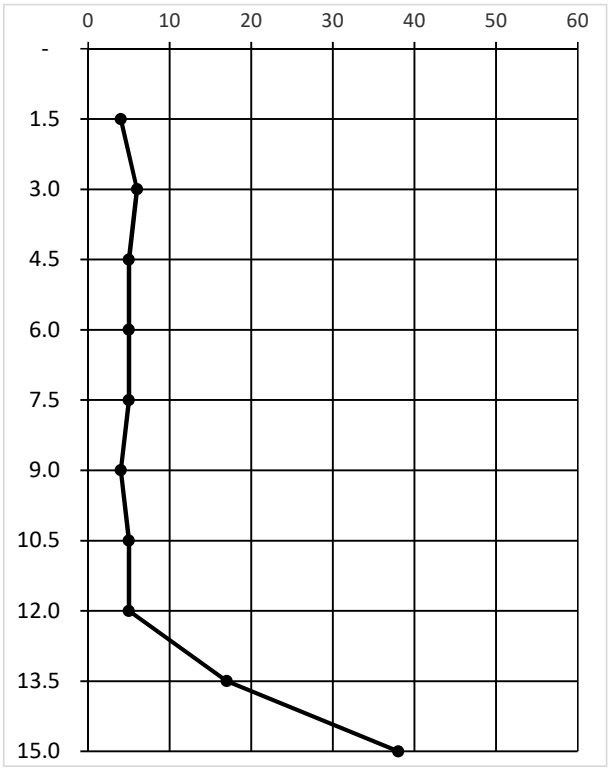
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Sutarkandi,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 392671.953m N - 2748704.730m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff,grey,clayey SILT. | ML | | | D1 | 15.00 | 2 | 2 | 2 | 4 |
| 3.0 | | | | | D2 | | 2 | 3 | 3 | 6 |
| 4.5 | | | | | D3 | | 2 | 2 | 3 | 5 |
| | | | | | UD-1 | | | | | |
| 6.0 | | | | | D4 | | 2 | 2 | 3 | 5 |
| 7.5 | | | | | D5 | | 2 | 2 | 3 | 5 |
| 9.0 | | | | | D6 | | 1 | 2 | 2 | 4 |
| 10.5 | Soft to medium stiff,grey,claey SILT. | | | | D7 | | 1 | 2 | 3 | 5 |
| 12.0 | | | | | D8 | | 2 | 2 | 3 | 5 |
| 13.5 | Very Stiff to hard,grey,clayey SILT. | | | | D9 | | 3 | 7 | 10 | 17 |
| 15.0 | | | | | D10 | | 12 | 16 | 22 | 38 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-8
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 15.0 m

**Reduced level(m):** 1.5m down from road top
**Water level(m):** -0.609 from existing ground
**Date of Start:** 11.03.2019
**Date of End:** 11.03.2019

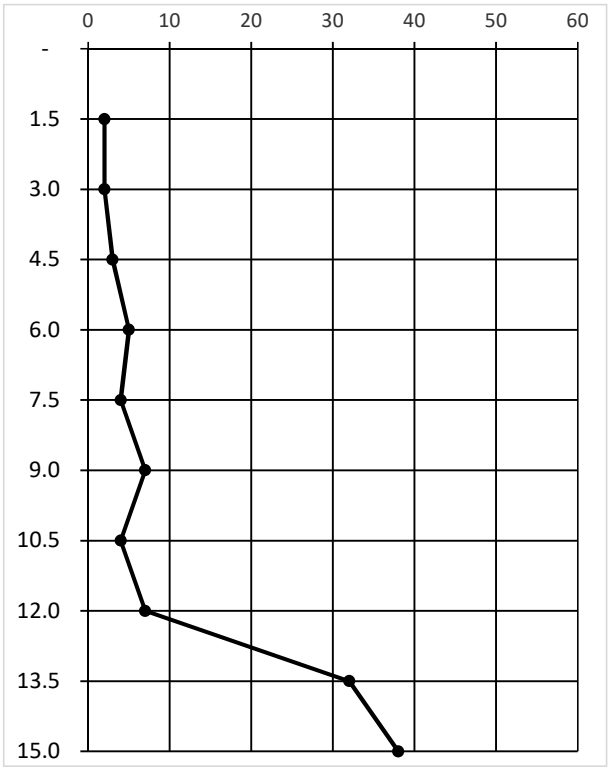
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Sutarkandi,Sylhet.

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 392824.253m N - 2748581.539m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft,grey,clayey SILT. | ML | | | D1 | 12.75 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | | 1 | 1 | 2 | 3 |
| | | | | | UD-1 | | | | | |
| 6.0 | Medium stiff,grey,clayey SILT. | | | | D4 | | 1 | 2 | 3 | 5 |
| 7.5 | | | | | D5 | | 1 | 2 | 2 | 4 |
| 9.0 | | | | | D6 | | 2 | 3 | 4 | 7 |
| 10.5 | | | | | D7 | | 2 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 2 | 3 | 4 | 7 |
| 13.5 | Dense,grey,silty fine SAND. | SM | | | D9 | 2.25 | 9 | 16 | 16 | 32 |
| 15.0 | | | | | D10 | | 12 | 19 | 19 | 38 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-9
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 13.5 m

**Reduced level(m):** 1.5m down from road top
**Water level(m):** -1.829 from existing ground
**Date of Start:** 12.03.2019
**Date of End:** 12.03.2019

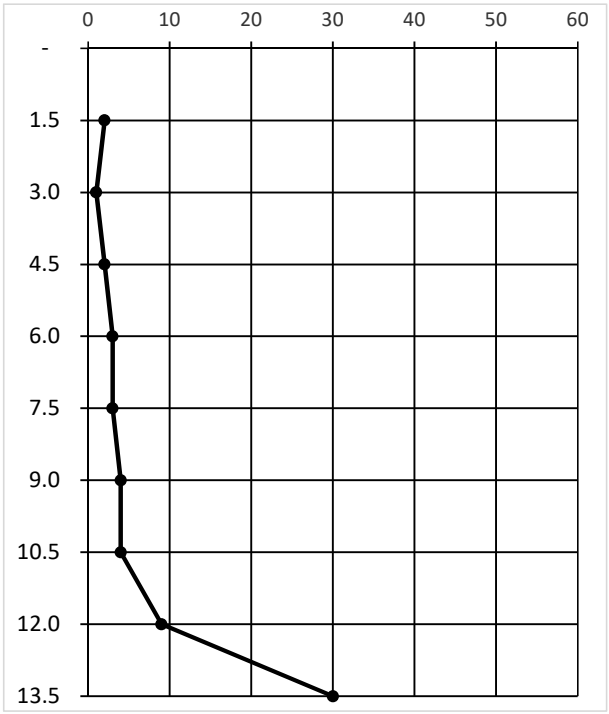
**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.
**Client:**Roads and Highways Department (RHD)
**Location:** Sutarkandi,Sylhet.

**Legend:** Clay Silt Sand

**Coordinates:** E - 393085.935m N - 2748489.802m

| Depth (m) | Description | UCS Classifi-caton | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft,grey,clayey SILT. | ML | | | D1 | 15.00 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 0 | 1 | 1 |
| 4.5 | | | | | D3 | | 1 | 1 | 1 | 2 |
| | | | | | UD-1 | | | | | |
| 6.0 | Soft to medium stiff,grey,clayey SILT. | CL | | | D4 | | 1 | 1 | 2 | 3 |
| 7.5 | | | | | D5 | | 1 | 1 | 2 | 3 |
| 9.0 | | | | | D6 | | 1 | 2 | 2 | 4 |
| 10.5 | | | | | D7 | | 1 | 2 | 2 | 4 |
| 12.0 | | | | | D8 | | 2 | 4 | 5 | 9 |
| 13.5 | Medium fine SAND | SM | | | D9 | | 7 | 12 | 18 | 30 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:Engr.** Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-10
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 10.5m

**Reduced level(m):** 1.4m Down from Road top level
**Water level(m):** -1.5 from existing ground
**Date of Start:** 03.05.2019
**Date of End:** 03.05.2019

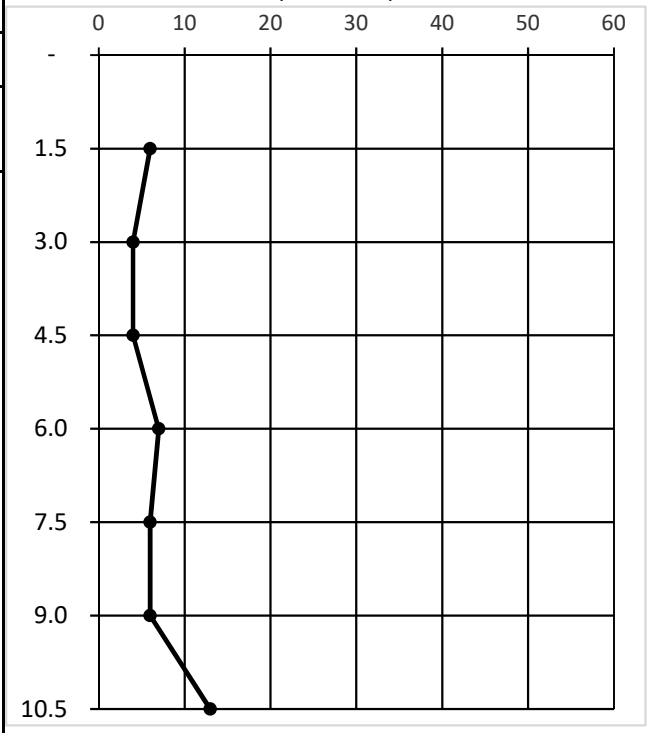
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Karimganj to Sylhet Road

**Legend:** Clay | Silt | Sand

**Coordinates:** E - 411542.26m N - 2753535.19m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft to medium stiff grey medium plastic silty CLAY | CL | | | D1 | 6.75 | 1 | 2 | 4 | 6 |
| 3.0 | | | | | D2 | | 1 | 1 | 3 | 4 |
| 4.5 | | | | | D3 | | 1 | 1 | 3 | 4 |
| 6.0 | | | | | D4 | | 2 | 2 | 5 | 7 |
| 7.5 | | | | | D5 | 1.50 | 2 | 2 | 4 | 6 |
| 9.0 | | | | | D6 | 1.50 | 1 | 2 | 4 | 6 |
| 10.5 | | | | | D7 | 0.75 | 2 | 5 | 8 | 13 |

SPT blows per 0.3 m penetration




NOTE

Disturbed Sample(Split Spoon)

Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-12
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 10.5m

**Reduced level(m):** 2.0m Down from Road top level
**Water level(m):** -0.5 from existing ground
**Date of Start:** 04.05.2019
**Date of End:** 04.05.2020

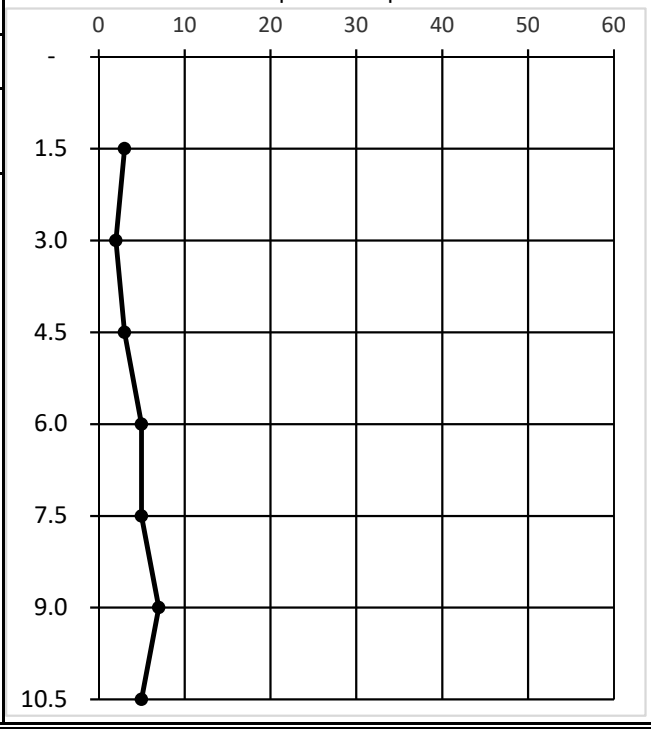
**Project:**Sub-Regional Road Transportation Project
**Client:**Roads and Highways Department (RHD)
**Location:** Karimganj to Sylhet Road

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 393068.560m N - 2748486.060m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Soft brown medium plastic silty CLAY | CL | | | D1 | 3.75 | 1 | 1 | 2 | 3 |
| 3.0 | | | | | D2 | | 2 | 1 | 1 | 2 |
| 4.5 | | | | | D3 | 6.75 | 1 | 2 | 1 | 3 |
| 6.0 | | | | | D4 | | 2 | 3 | 2 | 5 |
| 7.5 | | | | | D5 | | 1 | 2 | 3 | 5 |
| 9.0 | | | | | D6 | | 2 | 3 | 4 | 7 |
| 10.5 | | | | | D7 | | 2 | 2 | 3 | 5 |

SPT blows per 0.3 m penetration




NOTE
Disturbed Sample(Split Spoon)
Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

## AL-MAYEDA SURVEY CONSULTANTS

**Bore hole No:** RB-13
**Method of Boring:** Percussion
**Boring Dia.:** 100(mm)
**Boring Depth:** 10.5m

**Reduced level(m):** 2.25m Down from Road top level
**Water level(m):** -0.75 from existing ground
**Date of Start:** 04.05.2019
**Date of End:** 04.05.2020

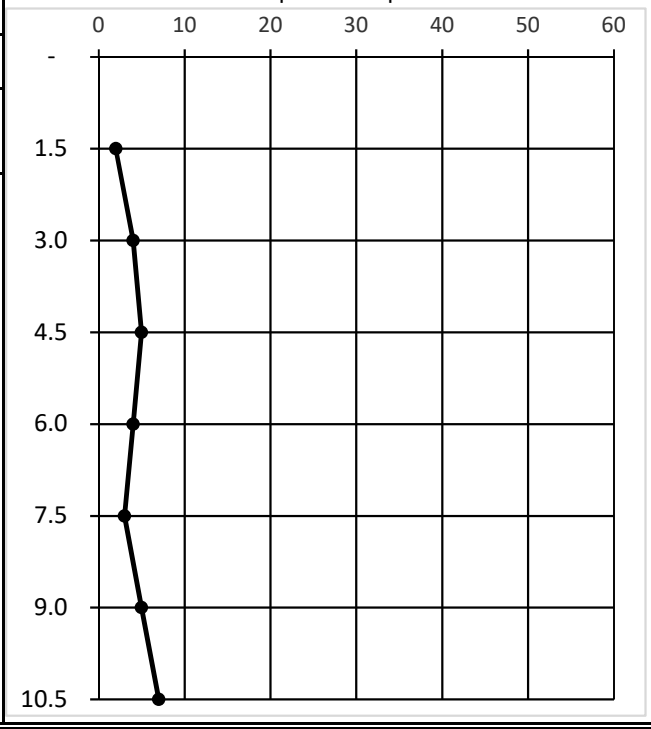
**Project:** Sub-Regional Road Transportation Project
**Client:** Roads and Highways Department (RHD)
**Location:** Karimganj to Sylhet Road

**Legend:** Clay, Silt, Sand

**Coordinates:** E - 392810.09 m N - 2748600.66 m

| Depth (m) | Description | UCS Classification | Symbols | Sample | Sample_Id | Thickness(m) | Standard Penetration Test: Blows on Spoon 15cm | 15cm | 15cm | N-Values 30cm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Very soft to soft to medium stiff brown medium plastic silty CLAY | CL | | | D1 | 10.50 | 1 | 1 | 1 | 2 |
| 3.0 | | | | | D2 | | 1 | 2 | 2 | 4 |
| 4.5 | | | | | D3 | | 2 | 3 | 2 | 5 |
| 6.0 | | | | | D4 | | 2 | 2 | 2 | 4 |
| 7.5 | | | | | D5 | | 1 | 1 | 2 | 3 |
| 9.0 | | | | | D6 | | 2 | 2 | 3 | 5 |
| 10.5 | | | | | D7 | | 2 | 3 | 4 | 7 |

SPT blows per 0.3 m penetration




NOTE

Disturbed Sample(Split Spoon)

Undisturbed Sample(Shelby Tube)

**Logged by:** Engr. Jamal Uddin

APPENDIX- C

# Summary of Laboratory Test Results

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | BR - 02 BH - 10 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 22.50 | 37.00 | | | | |
| | | to | 22.50 | 37.00 | 40.50 | | | | |
| **Soil** | | | | | | | | | |
| Moisture Content: | | | 31.38 | 23.91 | 12.89 | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 43.47 | 43.24 | | | | | |
| | Plastic Limit | % | 22.97 | 31.25 | | | | | |
| | Plasticity Index | % | 20.50 | 11.99 | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | 0.00 | 0.00 | | | | |
| | Medium Sand | | 1.00 | 1.00 | 10.00 | | | | |
| | Fine Sand | | 2.00 | 3.28 | 67.00 | | | | |
| | Silt | | 89.00 | 87.72 | 23.00 | | | | |
| | Clay | | 8.00 | 8.00 | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | |
| | Compressive Strength | kPa | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | |
| | Degree of Saturation | % | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | |
| | Compression Index, Cc | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | |
| | Phi angle | ° | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | |
| | Optimum MC | % | | | | | | | |
| **Rock** | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | |
| **Water** | | | | | | | | | |
| | Ph | | | | | | | | |
| | Chloride | mg/L | | | | | | | |
| | Sulphate | mg/L | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-01,BH-1 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 8.00 | 25.00 to 31.00 | | | 31.00 | | | | |
| | | to | 8.00 | 25.00 | | | | 45.00 | | | | |
| **Soil** | | | | | | | | | | | | |
| Natural Moisture Content: | | | 11.15 | 38.10 | 28.42 | | | | | | | |
| Bulk Density | | kN/m$^3$ | | | 17.44 | 18.40 | 19.30 | | | | | |
| Dry Density | | kN/m$^3$ | | | 14.40 | 15.70 | 16.50 | | | | | |
| Atterberg Limits | Liquid Limit | % | | 38.28 | | | | | | | | |
| | Plastic Limit | % | | 25.02 | | | | | | | | |
| | Plasticity Index | % | | 13.26 | | | | | | | | |
| Grain Size Distribution | Coarse Sand | % | | 0.00 | | | | 0.00 | | | | |
| | Medium Sand | | | 0.00 | | | | 0.00 | | | | |
| | Fine Sand | | | 3.00 | | | | 8.00 | | | | |
| | Silt | | | 94.00 | | | | 89.00 | | | | |
| | Clay | | | 3.00 | | | | 3.00 | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | 0.00 | 6.00 | 5.00 | | | | | |
| | Phi angle | ° | | | 34.00 | 37.00 | 41.00 | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | | |
| **Rock** | | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | | |
| **Water** | | | | | | | | | | | | |
| | Ph | | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-01,BH-3 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 23.00 | 37.00 to 43.50 | | | | | | | | |
| | | to | 23.00 | 37.00 | | | | | | | | | |
| **Soil** | | | | | | | | | | | | | |
| Moisture Content: | | | 24.98 | 22.61 | 10.69 | | | | | | | | |
| Bulk Density | | kN/m$^3$ | | | 17.30 | 18.70 | 19.30 | | | | | | |
| Dry Density | | kN/m$^3$ | | | 14.40 | 15.70 | 16.00 | | | | | | |
| Atterberg Limits | Liquid Limit | % | 40.17 | 38.28 | | | | | | | | | |
| | Plastic Limit | % | 28.34 | 25.02 | | | | | | | | | |
| | Plasticity Index | % | 11.84 | 13.26 | | | | | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | 0.00 | | | | | | | | | |
| | Medium Sand | | 0.00 | 0.00 | | | | | | | | | |
| | Fine Sand | | 3.00 | 6.00 | | | | | | | | | |
| | Silt | | 94.00 | 91.00 | | | | | | | | | |
| | Clay | | 3.00 | 3.00 | | | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | 6.00 | 5.00 | 4.00 | | | | | | |
| | Phi angle | ° | | | 35.00 | 38.00 | 41.00 | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | | | |
| **Rock** | | | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | | | |
| **Water** | | | | | | | | | | | | | |
| | Ph | | | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-01, BH - 05 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 19.00 | 28.00 | 38.00 | | | | | |
| | | to | 19.00 | 28.00 | 38.00 | 43.50 | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 19.00 | 26.17 | 21.56 | 33.12 | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 40.57 | | 43.44 | 22.59 | | | | | |
| | Plastic Limit | % | 27.29 | | 21.05 | 19.10 | | | | | |
| | Plasticity Index | % | 13.28 | | 22.39 | 3.49 | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | | 0.00 | | | | | | |
| | Medium Sand | | 2.00 | | 1.00 | | | | | | |
| | Fine Sand | | 22.00 | | 12.00 | | | | | | |
| | Silt | | 71.00 | | 65.00 | | | | | | |
| | Clay | | 5.00 | | 22.00 | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-01,BH-4 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 5.00 | 13.00 | 22.00 to 48.00 | | | | | | |
| | | to | 5.00 | 13.00 | 22.00 | | | | | | | |
| **Soil** | | | | | | | | | | | | |
| Moisture Content: | | % | 24.43 | 27.11 | 26.40 | 17.71 | | | | | | |
| Bulk Density | | kN/m$^3$ | | | | 1.75 | 1.88 | 1.94 | | | | |
| Dry Density | | kN/m$^3$ | | | | 1.49 | 1.60 | 1.65 | | | | |
| Atterberg Limits | Liquid Limit | % | 39.04 | 43.10 | 38.81 | | | | | | | |
| | Plastic Limit | % | 25.88 | 22.07 | 25.90 | | | | | | | |
| | Plasticity Index | % | 13.16 | 21.03 | 12.92 | | | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | 0.00 | 0.00 | 4.00 | | | | | | |
| | Medium Sand | | 0.00 | 0.00 | 0.00 | 39.00 | | | | | | |
| | Fine Sand | | 3.00 | 5.00 | 6.00 | 16.00 | | | | | | |
| | Silt | | 94.00 | 86.00 | 91.00 | 41.00 | | | | | | |
| | Clay | | 3.00 | 9.00 | 3.00 | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | 6.00 | 6.00 | 5.00 | | | | |
| | Phi angle | ° | | | | 34.00 | 36.00 | 41.00 | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | | |
| **Rock** | | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | | |
| **Water** | | | | | | | | | | | | |
| | Ph | | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

Borehole No. : **OVP-01, BH - 02**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 7.00 | 21.00 | | | | | | |
| | | to | 7.00 | 21.00 | 43.50 | | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 15.32 | 22.11 | 29.69 | | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | | 45.90 | | | | | | | |
| | Plastic Limit | % | | 29.39 | | | | | | | |
| | Plasticity Index | % | | 16.50 | | | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | 0.00 | 0.00 | | | | | | |
| | Medium Sand | | 34.00 | 3.00 | 0.00 | | | | | | |
| | Fine Sand | | 49.00 | 21.00 | 6.00 | | | | | | |
| | Silt | | 17.00 | 72.00 | 89.00 | | | | | | |
| | Clay | | | 4.00 | 5.00 | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | 59.00 | | | | | | | |
| | Compressive Strength | kPa | | 118.00 | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-02, BH - 01 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 5.00 | 19.00 | 23.00 | 29.00 | 40.00 | 44.00 | 49.00 | 53.00 | 56.00 |
| | | to | 5.00 | 19.00 | 23.00 | 29.00 | 40.00 | 44.00 | 49.00 | 53.00 | 56.00 | 60.00 |
| **Soil** | | | | | | | | | | | | |
| Moisture Content: | | | | 46.15 | | 16.32 | 31.36 | 19.21 | 31.47 | | 44.15 | 20.65 |
| Bulk Density | | $kN/m^3$ | | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 49.67 | 30.43 | | 32.57 | 48.80 | | 43.90 | | 48.50 | |
| | Plastic Limit | % | 27.32 | 29.04 | | 23.45 | 26.80 | | 26.40 | | 27.60 | |
| | Plasticity Index | % | 22.35 | 1.39 | | 9.13 | 22.10 | | 17.50 | | 20.90 | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | 0.00 | 10.00 | 1.00 | 3.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| | Medium Sand | | 3.00 | 5.00 | 50.00 | 3.00 | 45.00 | 28.00 | 2.00 | 28.00 | 3.00 | 19.00 |
| | Fine Sand | | 4.00 | 12.00 | 20.00 | 5.00 | 36.00 | 47.00 | 5.00 | 50.00 | 81.00 | 56.00 |
| | Silt | | 81.00 | 83.00 | 20.00 | 81.00 | 16.00 | 23.00 | 81.00 | 20.00 | 16.00 | 25.00 |
| | Clay | | 12.00 | | | 10.00 | | | 12.00 | | 0.000 | |
| Specific Gravity/ Particle Density | | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | | |
| **Rock** | | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | | |
| **Water** | | | | | | | | | | | | |
| | Ph | | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-02, BH - 02 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 4.00 | 16.50 | 6.00 | | | | | |
| | | to | 4.00 | 16.50 | 34.50 | 6.45 | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 34.48 | 38.91 | 25.05 | 29.12 | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 43.75 | 45.11 | | | | | | | |
| | Plastic Limit | % | 26.20 | 28.37 | | | | | | | |
| | Plasticity Index | % | 17.54 | 16.74 | | | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | 0.00 | 0.00 | | | | | | |
| | Medium Sand | | 3.00 | 0.00 | 17.00 | | | | | | |
| | Fine Sand | | 4.00 | 5.00 | 28.00 | | | | | | |
| | Silt | | 83.00 | 87.00 | 55.00 | | | | | | |
| | Clay | | 10.00 | 8.00 | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | 63.50 | | | | | |
| | Compressive Strength | kPa | | | | 127.00 | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | FLY-01,BH-1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 4.50 | 10.00 | 17.50 | 30.0 to 43.50 | | | | |
| | | to | 4.50 | 10.00 | 17.50 | 30.00 | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 14.50 | 43.33 | 8.43 | 9.54 | 17.79 | | | | |
| Bulk Density | | $kN/m^3$ | | | | | 17.1 | 18.3 | 19.2 | | |
| Dry Density | | $kN/m^3$ | | | | | 16.4 | 15.6 | 16.4 | | |
| Atterberg Limits | Liquid Limit | % | | 34.52 | 34.47 | | | | | | |
| | Plastic Limit | % | | 18.12 | 23.88 | | | | | | |
| | Plasticity Index | % | | 16.41 | 10.59 | | | | | | |
| Grain Size Distribution | Coarse Sand | % | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| | Medium Sand | | 42.00 | 2.00 | 0.00 | 18.00 | 38.00 | | | | |
| | Fine Sand | | 26.00 | 5.00 | 1.00 | 12.00 | 27.00 | | | | |
| | Silt | | 31.00 | 85.00 | 99.00 | 70.00 | 35.00 | | | | |
| | Clay | | | 8.00 | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | 56.50 | | | | | | | |
| | Compressive Strength | kPa | | 113.00 | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | 6.00 | 5.00 | 5.00 | | |
| | Phi angle | ° | | | | | 35.00 | 39.00 | 41.00 | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | FLY-01 BH - 03 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 20.00 | | | | | | |
| | | to | 20.00 | 40.50 | | | | | | |
| **Soil** | | | | | | | | | | |
| Moisture Content: | | | | 20.77 | | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 33.26 | | | | | | | |
| | Plastic Limit | % | 27.98 | | | | | | | |
| | Plasticity Index | % | 5.28 | | | | | | | |
| Grain Size Distribution | | % | 0.00 | 2.00 | | | | | | |
| | Medium Sand | | 0.00 | 19.00 | | | | | | |
| | Fine Sand | | 7.00 | 48.00 | | | | | | |
| | Silt | | 88.00 | 31.00 | | | | | | |
| | Clay | | 5.00 | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | |
| | Phi angle | ° | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | |
| | Optimum MC | % | | | | | | | | |
| **Rock** | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | |
| **Water** | | | | | | | | | | |
| | Ph | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | FLY-01,BH-4 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 12.00 | 17.50 | 23.50 | | | | |
| | | to | 12.00 | 17.50 | 23.50 | 45.00 | | | | |
| **Soil** | | | | | | | | | | |
| Moisture Content: | | | 57.37 | 19.71 | 8.16 | 8.70 | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 25.40 | | | 35.60 | | | | |
| | Plastic Limit | % | 16.80 | | | 18.50 | | | | |
| | Plasticity Index | % | 8.70 | | | 17.10 | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | | 0.00 | 0.00 | | | | |
| | Medium Sand | | 0.00 | | 38.00 | 3.00 | | | | |
| | Fine Sand | | 10.00 | | 27.00 | 8.00 | | | | |
| | Silt | | 73.00 | | 35.00 | 80.00 | | | | |
| | Clay | | 17.00 | | | 9.00 | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | |
| | Phi angle | ° | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | |
| | Optimum MC | % | | | | | | | | |
| **Rock** | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | |
| **Water** | | | | | | | | | | |
| | Ph | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | FLY-01 BH - 05 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 25.00 | | | | | | |
| | | to | 25.00 | 40.50 | | | | | | |
| **Soil** | | | | | | | | | | |
| Moisture Content: | | | 23.33 | 12.68 | | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 29.04 | 30.42 | | | | | | |
| | Plastic Limit | % | 22.49 | 22.16 | | | | | | |
| | Plasticity Index | % | 6.54 | 8.26 | | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | 0.00 | | | | | | |
| | Medium Sand | | 4.00 | 0.00 | | | | | | |
| | Fine Sand | | 3.00 | 1.00 | | | | | | |
| | Silt | | 90.00 | 91.00 | | | | | | |
| | Clay | | 3.00 | 8.00 | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | |
| | Phi angle | ° | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | |
| | Optimum MC | % | | | | | | | | |
| **Rock** | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | |
| **Water** | | | | | | | | | | |
| | Ph | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | FLY-01,BH-6 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 5.50 | 8.50 | 15.00 | 30.00 to 45.00 | | | | |
| | | to | 5.50 | 8.50 | 15.00 | 30.00 | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 19.00 | 9.75 | | 18.38 | | | | | |
| Bulk Density | | kN/m$^3$ | | | | | 17.20 | 18.50 | 19.30 | | |
| Dry Density | | kN/m$^3$ | | | | | 14.70 | 15.80 | 16.40 | | |
| Atterberg Limits | Liquid Limit | % | 34.60 | | 37.70 | | | | | | |
| | Plastic Limit | % | 22.90 | | 24.50 | | | | | | |
| | Plasticity Index | % | 11.70 | | 13.20 | | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | 0.00 | 0.00 | | 0.00 | | | | |
| | Medium Sand | | 0.00 | 30.00 | 0.00 | | 38.00 | | | | |
| | Fine Sand | | 5.00 | 23.50 | 3.00 | | 27.00 | | | | |
| | Silt | | 75.00 | 46.50 | 90.00 | | 35.00 | | | | |
| | Clay | | 20.00 | | 7.00 | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | 39.25 | | | | | | | | |
| | Compressive Strength | kPa | 78.50 | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | 0.00 | 5.00 | 4.00 | | |
| | Phi angle | ° | | | | | 36.00 | 39.00 | 41.00 | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | FLY-01 BH - 02 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 14.00 | 20.00 | | | | | |
| | | to | 14.00 | 20.00 | 40.50 | | | | | |
| **Soil** | | | | | | | | | | |
| Moisture Content: | | | 30.94 | 17.28 | 24.58 | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 29.41 | | 41.62 | | | | | |
| | Plastic Limit | % | 26.46 | | 24.95 | | | | | |
| | Plasticity Index | % | 2.95 | | 16.67 | | | | | |
| Grain Size Distribution | | % | 0.00 | 11.00 | 0.00 | | | | | |
| | Medium Sand | | 1.00 | 44.00 | 3.00 | | | | | |
| | Fine Sand | | 4.00 | 28.00 | 12.00 | | | | | |
| | Silt | | 91.00 | 17.00 | 81.00 | | | | | |
| | Clay | | 4.00 | | 4.00 | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | |
| | Phi angle | ° | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | |
| | Optimum MC | % | | | | | | | | |
| **Rock** | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | |
| **Water** | | | | | | | | | | |
| | Ph | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | FLY-01 BH - 07 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 10.00 | 23.00 | 34.00 | | | | |
| | | to | 10.00 | 23.00 | 34.00 | 40.50 | | | | |
| **Soil** | | | | | | | | | | |
| Moisture Content: | | | 18.92 | 11.87 | 15.75 | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 29.80 | | 33.34 | 27.29 | | | | |
| | Plastic Limit | % | 21.62 | | 27.98 | 21.58 | | | | |
| | Plasticity Index | % | 8.18 | | 5.36 | 5.71 | | | | |
| Grain Size Distribution | | % | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| | Medium Sand | | 3.00 | 38.00 | 0.00 | 0.00 | | | | |
| | Fine Sand | | 13.00 | 46.00 | 5.00 | 10.00 | | | | |
| | Silt | | 80.00 | 16.00 | 91.00 | 84.00 | | | | |
| | Clay | | 4.00 | | 4.00 | 6.00 | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | |
| | Phi angle | ° | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | |
| | Optimum MC | % | | | | | | | | |
| **Rock** | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | |
| **Water** | | | | | | | | | | |
| | Ph | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | FLY-01,BH-8 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 14.00 | 20.00 | 30.00 | | | | | |
| | | to | 14.00 | 20.00 | 30.00 | 45.00 | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 26.70 | 26.63 | 10.39 | | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 35.72 | | 34.25 | 42.20 | | | | | |
| | Plastic Limit | % | 17.96 | | 24.06 | 22.20 | | | | | |
| | Plasticity Index | % | 17.76 | | 10.19 | 20.00 | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | | 0.00 | 0.00 | | | | | |
| | Medium Sand | | 1.00 | | 0.00 | 0.00 | | | | | |
| | Fine Sand | | 3.00 | | 2.00 | 2.00 | | | | | |
| | Silt | | 85.00 | | 91.00 | 88.00 | | | | | |
| | Clay | | 11.00 | | 7.00 | 10.00 | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | 48.50 | | | | | | | | |
| | Compressive Strength | kPa | 97.00 | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-03, BH - 01 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 3.00 | 7.00 | | | | | |
| | | to | 3.00 | 7.00 | 34.50 | | | | | |
| **Soil** | | | | | | | | | | |
| Moisture Content: | | | 29.15 | 22.38 | 21.45 | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 28.38 | | 23.50 | | | | | |
| | Plastic Limit | % | 23.02 | | 22.53 | | | | | |
| | Plasticity Index | % | 5.36 | | 0.98 | | | | | |
| Grain Size Distribution | | % | 0.00 | 3.00 | 0.00 | | | | | |
| | Medium Sand | | 2.00 | 9.00 | 0.00 | | | | | |
| | Fine Sand | | 22.00 | 52.00 | 6.00 | | | | | |
| | Silt | | 71.00 | 36.00 | 89.00 | | | | | |
| | Clay | | 5.00 | | 5.00 | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | 27.50 | | 175.00 | | | | | |
| | Compressive Strength | kPa | 55.00 | | 350.00 | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | |
| | Phi angle | ° | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | |
| | Optimum MC | % | | | | | | | | |
| **Rock** | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | |
| **Water** | | | | | | | | | | |
| | Ph | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-03,BH-2 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 7.00 | 17.00 | 23.00 | | | | | |
| | | to | 7.00 | 17.00 | 23.00 | 36.00 | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | | | | | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | | 38.24 | | 38.50 | | | | | |
| | Plastic Limit | % | | 25.28 | | 25.37 | | | | | |
| | Plasticity Index | % | | 12.96 | | 13.13 | | | | | |
| Grain Size Distribution | Coarse Sand | % | | 0.00 | 3.00 | 0.00 | | | | | |
| | Medium Sand | | | 0.00 | 4.00 | 0.00 | | | | | |
| | Fine Sand | | | 3.00 | 49.00 | 8.00 | | | | | |
| | Silt | | | 90.00 | 44.00 | 90.00 | | | | | |
| | Clay | | | 7.00 | | 2.00 | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-04,BH-1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 8.00 | 11.00 | 26.00 | | | | | |
| | | to | 8.00 | 11.00 | 26.00 | 36.00 | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 32.37 | 17.74 | 22.33 | | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 39.21 | 39.04 | 38.38 | | | | | | |
| | Plastic Limit | % | 25.42 | 24.68 | 25.82 | | | | | | |
| | Plasticity Index | % | 13.79 | 14.36 | 12.56 | | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | 0.00 | 0.00 | 2.00 | | | | | |
| | Medium Sand | | 0.00 | 2.00 | 0.00 | 3.00 | | | | | |
| | Fine Sand | | 3.00 | 2.00 | 3.00 | 51.00 | | | | | |
| | Silt | | 82.00 | 83.00 | 86.00 | 44.00 | | | | | |
| | Clay | | 15.00 | 13.00 | 11.00 | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Project | : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road. | | | | | | | | |
| Client | : Roads and Highways Department (RHD) | | | | | | | | |
| Borehole No. : | | OVP-04,BH-2 | | | | | | | |
| Depth, m | From | 0.00 | 14.00 to 39.00 | | | | | | |
| | to | 14.00 | | | | | | | |
| **Soil** | | | | | | | | | |
| Moisture Content: | | 17.99 | 32.78 | | | | | | |
| Bulk Density | kN/m$^3$ | | 16.55 | 17.70 | 18.80 | | | | |
| Dry Density | kN/m$^3$ | | 14.60 | 15.10 | 16.10 | | | | |
| Atterberg Limits | Liquid Limit % | 38.89 | | | | | | | |
| | Plastic Limit % | 25.42 | | | | | | | |
| | Plasticity Index % | 13.48 | | | | | | | |
| Grain Size Distribution | Coarse Sand % | 0.00 | 1.00 | | | | | | |
| | Medium Sand | 0.00 | 1.00 | | | | | | |
| | Fine Sand | 3.00 | 54.00 | | | | | | |
| | Silt | 84.00 | 44.00 | | | | | | |
| | Clay | 13.00 | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | |
| Unconfined Compression | Shear Strength kPa | | | | | | | | |
| | Compressive Strength kPa | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | |
| | Degree of Saturation % | | | | | | | | |
| | Preconsol, Pressure, Pc kPa | | | | | | | | |
| | Compression Index, Cc | | | | | | | | |
| Direct Shear | Cohesion kPa | | 5.00 | 5.00 | 4.00 | | | | |
| | Phi angle ° | | 36.00 | 37.00 | 40.00 | | | | |
| Compaction | Maximum Dry Density Mg/m3 | | | | | | | | |
| | Optimum MC % | | | | | | | | |
| **Rock** | | | | | | | | | |
| Point Load | Strength Index Mpa | | | | | | | | |
| UCT | Compressive Strength Mpa | | | | | | | | |
| **Water** | | | | | | | | | |
| | Ph | | | | | | | | |
| | Chloride mg/L | | | | | | | | |
| | Sulphate mg/L | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Borehole No. : | | | OVP-05,BH-1 | | | | | |
| Depth, m | | From | 0.00 | 23.00 to 40.50 | | | | |
| | | to | 23.00 | | | | | |
| **Soil** | | | | | | | | |
| Moisture Content: | | | 24.61 | 23.89 | | | | |
| Bulk Density | | $kN/m^3$ | | 17.70 | 18.80 | 18.90 | | |
| Dry Density | | $kN/m^3$ | | 15.10 | 16.10 | 16.30 | | |
| Atterberg Limits | Liquid Limit | % | 33.37 | | | | | |
| | Plastic Limit | % | 23.18 | | | | | |
| | Plasticity Index | % | 10.19 | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | | | | | |
| | Medium Sand | | 0.00 | | | | | |
| | Fine Sand | | 2.00 | | | | | |
| | Silt | | 88.00 | | | | | |
| | Clay | | 10.00 | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | |
| | Compressive Strength | kPa | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | |
| | Degree of Saturation | % | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | |
| | Compression Index, Cc | | | | | | | |
| Direct Shear | Cohesion | kPa | | 4.00 | 6.00 | 3.00 | | |
| | Phi angle | ° | | 34.00 | 40.00 | 43.00 | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | |
| | Optimum MC | % | | | | | | |
| **Rock** | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | |
| **Water** | | | | | | | | |
| | Ph | | | | | | | |
| | Chloride | mg/L | | | | | | |
| | Sulphate | mg/L | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

Borehole No. : OVP-05, BH - 03

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 35.00 | | | | | |
| | | to | 35.00 | 40.50 | | | | | |
| **Soil** | | | | | | | | | |
| Moisture Content: | | | 42.20 | 19.14 | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 36.52 | | | | | | |
| | Plastic Limit | % | 22.09 | | | | | | |
| | Plasticity Index | % | 14.43 | | | | | | |
| Grain Size Distribution | | % | 0.00 | 7.00 | | | | | |
| | Medium Sand | | 0.00 | 39.00 | | | | | |
| | Fine Sand | | 5.00 | 34.00 | | | | | |
| | Silt | | 89.00 | 20.00 | | | | | |
| | Clay | | 6.00 | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | |
| | Compressive Strength | kPa | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | |
| | Degree of Saturation | % | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | |
| | Compression Index, Cc | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | |
| | Phi angle | ° | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | |
| | Optimum MC | % | | | | | | | |
| **Rock** | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | |
| **Water** | | | | | | | | | |
| | Ph | | | | | | | | |
| | Chloride | mg/L | | | | | | | |
| | Sulphate | mg/L | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | OVP-05, BH - 02 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 12.00 | 24.00 | | | | |
| | | to | 12.00 | 24.00 | 40.50 | | | | |
| **Soil** | | | | | | | | | |
| Moisture Content: | | | 18.69 | | 15.43 | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 41.28 | 36.45 | 21.54 | | | | |
| | Plastic Limit | % | 25.73 | 21.18 | 15.07 | | | | |
| | Plasticity Index | % | 15.55 | 15.28 | 6.47 | | | | |
| Grain Size Distribution | | % | 0.00 | 0.00 | 0.00 | | | | |
| | Medium Sand | | 0.00 | 0.00 | 0.00 | | | | |
| | Fine Sand | | 4.00 | 3.00 | 15.00 | | | | |
| | Silt | | 91.00 | 97.00 | 85.00 | | | | |
| | Clay | | 5.00 | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | 114.00 | | | | | | |
| | Compressive Strength | kPa | 228.00 | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | |
| | Degree of Saturation | % | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | |
| | Compression Index, Cc | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | |
| | Phi angle | ° | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | |
| | Optimum MC | % | | | | | | | |
| **Rock** | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | |
| **Water** | | | | | | | | | |
| | Ph | | | | | | | | |
| | Chloride | mg/L | | | | | | | |
| | Sulphate | mg/L | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | BR- 02 BH - 13 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 23.00 to 40.50 | | | | | |
| | | to | 23.00 | | | | | | |
| **Soil** | | | | | | | | | |
| Moisture Content: | | | 30.73 | 17.72 | 17.36 | | | | |
| Bulk Density | | kN/m$^3$ | | 16.4 | 17.70 | 18.90 | | | |
| Dry Density | | kN/m$^3$ | | 14 | 15.10 | 16.20 | | | |
| Atterberg Limits | Liquid Limit | % | 29.78 | | | | | | |
| | Plastic Limit | % | 18.60 | | | | | | |
| | Plasticity Index | % | 11.18 | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | | 0.00 | | | | |
| | Medium Sand | | 0.00 | | 34.00 | | | | |
| | Fine Sand | | 1.00 | | 46.00 | | | | |
| | Silt | | 92.00 | | 20.00 | | | | |
| | Clay | | 7.00 | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | |
| | Compressive Strength | kPa | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | |
| | Degree of Saturation | % | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | |
| | Compression Index, Cc | | | | | | | | |
| Direct Shear | Cohesion | kPa | | 4.00 | 2.00 | 0.00 | | | |
| | Phi angle | ° | | 38.00 | 40.00 | 42.00 | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | |
| | Optimum MC | % | | | | | | | |
| **Rock** | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | |
| **Water** | | | | | | | | | |
| | Ph | | | | | | | | |
| | Chloride | mg/L | | | | | | | |
| | Sulphate | mg/L | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | BR - 02 BH - 05 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 31.00 to 40.50 | | | | | | | |
| | | to | 31.00 | | | | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 38.74 | 26.65 | | | | | | | |
| Bulk Density | | $kN/m^3$ | | 16.4 | 17.70 | 18.90 | | | | | |
| Dry Density | | $kN/m^3$ | | 14 | 15.10 | 16.20 | | | | | |
| Atterberg Limits | Liquid Limit | % | 28.73 | | | | | | | | |
| | Plastic Limit | % | 19.35 | | | | | | | | |
| | Plasticity Index | % | 9.38 | | | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | | 0.00 | | | | | | |
| | Medium Sand | | 0.00 | | 32.00 | | | | | | |
| | Fine Sand | | 1.00 | | 44.00 | | | | | | |
| | Silt | | 91.00 | | 24.00 | | | | | | |
| | Clay | | 8.00 | | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | 50.50 | | | | | | | | |
| | Compressive Strength | kPa | 101.00 | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | 1.19 | | | | | | | | |
| | Degree of Saturation | % | 72.53 | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | 80.00 | | | | | | | | |
| | Compression Index, Cc | | 0.35 | | | | | | | | |
| Direct Shear | Cohesion | kPa | | 5.00 | 3.00 | 0.00 | | | | | |
| | Phi angle | ° | | 36.00 | 40.00 | 43.00 | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | BR - 02 BH - 03 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 3.00 | 14.00 to 66.00 | | | | |
| | | to | 3.00 | 14.00 | | | | | |
| **Soil** | | | | | | | | | |
| Moisture Content: | | | 25.23 | 20.24 | 18.71 | | | | |
| Bulk Density | | kN/m$^3$ | | | 16.4 | 17.70 | 18.90 | | |
| Dry Density | | kN/m$^3$ | | | 14 | 15.10 | 16.20 | | |
| Atterberg Limits | Liquid Limit | % | 27.70 | | | | | | |
| | Plastic Limit | % | 21.12 | | | | | | |
| | Plasticity Index | % | 6.58 | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | 0.00 | 0.00 | | | | |
| | Medium Sand | | 22.00 | 2.00 | 37.00 | | | | |
| | Fine Sand | | 51.00 | 48.00 | 52.00 | | | | |
| | Silt | | 27.00 | 42.00 | 11.00 | | | | |
| | Clay | | | 8.00 | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | |
| | Compressive Strength | kPa | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | 0.68 | | | | | | |
| | Degree of Saturation | % | 87.50 | | | | | | |
| | Preconsol, Pressure, Pc | kPa | 65.00 | | | | | | |
| | Compression Index, Cc | | 0.14 | | | | | | |
| Direct Shear | Cohesion | kPa | | | 4.00 | 3.00 | 2.00 | | |
| | Phi angle | ° | | | 37.00 | 40.00 | 42.00 | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | |
| | Optimum MC | % | | | | | | | |
| **Rock** | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | |
| **Water** | | | | | | | | | |
| | Ph | | | | | | | | |
| | Chloride | mg/L | | | | | | | |
| | Sulphate | mg/L | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | BR - 02 BH - 04 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 20.00 to 66.00 | | | | | | | |
| | | to | 20.00 | | | | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 21.72 | 16.47 | | | | | | | |
| Bulk Density | | kN/m$^3$ | | 16.4 | 17.70 | 18.90 | | | | | |
| Dry Density | | kN/m$^3$ | | 14 | 15.10 | 16.20 | | | | | |
| Atterberg Limits | Liquid Limit | % | 36.09 | | | | | | | | |
| | Plastic Limit | % | 22.82 | | | | | | | | |
| | Plasticity Index | % | 13.26 | | | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | 0.00 | | | | | | | |
| | Medium Sand | | 0.00 | 18.00 | | | | | | | |
| | Fine Sand | | 2.00 | 46.00 | | | | | | | |
| | Silt | | 90.00 | 36.00 | | | | | | | |
| | Clay | | 8.00 | | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | 5.00 | 4.00 | 0.00 | | | | | |
| | Phi angle | ° | | 36.00 | 39.00 | 42.00 | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | BR - 02 BH - 06 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 20.00 to 40.5 | | | | | | | |
| | | to | 20.00 | | | | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 31.69 | 14.68 | | | | | | | |
| Bulk Density | | kN/m$^3$ | | 16.4 | 17.70 | 18.90 | | | | | |
| Dry Density | | kN/m$^3$ | | 14 | 15.10 | 16.20 | | | | | |
| Atterberg Limits | Liquid Limit | % | 35.84 | | | | | | | | |
| | Plastic Limit | % | 22.99 | | | | | | | | |
| | Plasticity Index | % | 12.84 | | | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | 1.00 | | | | | | | |
| | Medium Sand | | 0.00 | 10.00 | | | | | | | |
| | Fine Sand | | 4.00 | 55.00 | | | | | | | |
| | Silt | | 88.00 | 34.00 | | | | | | | |
| | Clay | | 8.00 | | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | 50.50 | | | | | | | | |
| | Compressive Strength | kPa | 101.00 | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | 5.00 | 3.00 | 0.00 | | | | | |
| | Phi angle | ° | | 37.00 | 40.00 | 42.00 | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | BR - 02 BH - 07 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 23.00 to 40.5 | | | | | | | |
| | | to | 23.00 | | | | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 35.73 | 19.11 | | | | | | | |
| Bulk Density | | kN/m$^3$ | | 16.4 | 17.70 | 18.90 | | | | | |
| Dry Density | | kN/m$^3$ | | 14 | 15.10 | 16.20 | | | | | |
| Atterberg Limits | Liquid Limit | % | 26.81 | | | | | | | | |
| | Plastic Limit | % | 20.60 | | | | | | | | |
| | Plasticity Index | % | 6.21 | | | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | | 0.00 | | | | | | |
| | Medium Sand | | 0.00 | | 8.00 | | | | | | |
| | Fine Sand | | 1.00 | | 61.00 | | | | | | |
| | Silt | | 91.00 | | 31.00 | | | | | | |
| | Clay | | 8.00 | | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | 30.00 | | | | | | | | |
| | Compressive Strength | kPa | 60.00 | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | 5.00 | 3.00 | 0.00 | | | | | |
| | Phi angle | ° | | 37.00 | 40.00 | 42.00 | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | BR - 02 BH - 09 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 23.00 | | | | | | | |
| | | to | 23.00 | 40.50 | | | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 35.87 | 14.25 | | | | | | | |
| Bulk Density | | kN/m$^3$ | | | | | | | | | |
| Dry Density | | kN/m$^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 42.42 | | | | | | | | |
| | Plastic Limit | % | 21.47 | | | | | | | | |
| | Plasticity Index | % | 20.95 | | | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | 0.00 | | | | | | | |
| | Medium Sand | | 0.00 | 50.00 | | | | | | | |
| | Fine Sand | | 2.00 | 32.00 | | | | | | | |
| | Silt | | 90.00 | 18.00 | | | | | | | |
| | Clay | | 8.00 | | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | Sewla, BH - 08 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 26.00 to 40.50 | | | | | | | |
| | | to | 26.00 | | | | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 38.22 | 16.03 | | | | | | | |
| Bulk Density | | kN/m$^3$ | | 16.4 | 17.70 | 18.90 | | | | | |
| Dry Density | | kN/m$^3$ | | 14 | 15.10 | 16.20 | | | | | |
| Atterberg Limits | Liquid Limit | % | 43.40 | | | | | | | | |
| | Plastic Limit | % | 31.10 | | | | | | | | |
| | Plasticity Index | % | 12.30 | | | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | 4.00 | | | | | | | |
| | Medium Sand | | 0.00 | 35.00 | | | | | | | |
| | Fine Sand | | 26.00 | 33.00 | | | | | | | |
| | Silt | | 66.00 | 27.00 | | | | | | | |
| | Clay | | 8.00 | | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | 68.50 | | | | | | | | |
| | Compressive Strength | kPa | 137.00 | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | 5.00 | 2.00 | 0.00 | | | | | |
| | Phi angle | ° | | 38.00 | 40.00 | 42.00 | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression

OD- Direct Shear

OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | BR - 02 BH - 12 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 16.00 to 40.50 | | | | | |
| | | to | 16.00 | | | | | | |
| **Soil** | | | | | | | | | |
| Moisture Content: | | | 15.57 | 20.54 | | | | | |
| Bulk Density | | kN/m$^3$ | | 16.4 | 17.70 | 18.90 | | | |
| Dry Density | | kN/m$^3$ | | 14 | 15.10 | 16.20 | | | |
| Atterberg Limits | Liquid Limit | % | 28.60 | | | | | | |
| | Plastic Limit | % | 19.19 | | | | | | |
| | Plasticity Index | % | 9.42 | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | | 0.00 | | | | |
| | Medium Sand | | 2.00 | | 46.00 | | | | |
| | Fine Sand | | 31.00 | | 49.00 | | | | |
| | Silt | | 60.00 | | 5.00 | | | | |
| | Clay | | 7.00 | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | |
| | Compressive Strength | kPa | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | |
| | Degree of Saturation | % | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | |
| | Compression Index, Cc | | | | | | | | |
| Direct Shear | Cohesion | kPa | | 5.00 | 2.00 | 0.00 | | | |
| | Phi angle | ° | | 38.00 | 40.00 | 42.00 | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | |
| | Optimum MC | % | | | | | | | |
| **Rock** | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | |
| **Water** | | | | | | | | | |
| | Ph | | | | | | | | |
| | Chloride | mg/L | | | | | | | |
| | Sulphate | mg/L | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Borehole No. : | | | BR - 02 BH - 11 | | | | | | |
| Depth, m | | From | 0.00 | 20.00 to 40.50 | | | | | |
| | | to | 20.50 | | | | | | |
| **Soil** | | | | | | | | | |
| Moisture Content: | | | 38.00 | 18.10 | | | | | |
| Bulk Density | | $kN/m^3$ | | 16.4 | 17.70 | 18.90 | | | |
| Dry Density | | $kN/m^3$ | | 14 | 15.10 | 16.20 | | | |
| Atterberg Limits | Liquid Limit | % | 42.21 | | | | | | |
| | Plastic Limit | % | 31.09 | | | | | | |
| | Plasticity Index | % | 11.12 | | | | | | |
| Grain Size Distribution | Coarse Sand | | 0.00 | | 0.00 | | | | |
| | Medium Sand | | 0.00 | | 0.00 | | | | |
| | Fine Sand | | 4.00 | | 53.00 | | | | |
| | Silt | | 89.00 | | 41.00 | | | | |
| | Clay | | 7.00 | | 7.00 | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | |
| | Compressive Strength | kPa | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | | | |
| | Degree of Saturation | % | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | |
| | Compression Index, Cc | | | | | | | | |
| Direct Shear | Cohesion | kPa | | 5.00 | 3.00 | 2.00 | | | |
| | Phi angle | ° | | 38.00 | 40.00 | 40.00 | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | |
| | Optimum MC | % | | | | | | | |
| **Rock** | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | |
| **Water** | | | | | | | | | |
| | Ph | | | | | | | | |
| | Chloride | mg/L | | | | | | | |
| | Sulphate | mg/L | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | UP-01,BH-01 | | | | RB - 02 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | | | | 0.00 | | | | |
| | | to | 15.00 | | | | 15.00 | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 27.99 | | | | 36.09 | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 34.69 | | | | 38.24 | | | | |
| | Plastic Limit | % | 28.21 | | | | 25.01 | | | | |
| | Plasticity Index | % | 6.48 | | | | 13.22 | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | | | | 0.00 | | | | |
| | Medium Sand | | 0.00 | | | | 0.00 | | | | |
| | Fine Sand | | 4.00 | | | | 9.00 | | | | |
| | Silt | | 84.00 | | | | 82.00 | | | | |
| | Clay | | 12.00 | | | | 9.00 | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | 61.75 | | | | |
| | Compressive Strength | kPa | | | | | 123.50 | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | 1.17 | | | | |
| | Degree of Saturation | % | | | | | 96.12 | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | 80.00 | | | | |
| | Compression Index, Cc | | | | | | 0.24 | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | RB-03 | | | | RB-04 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | | | | 0.00 | | | | |
| | | to | 15.00 | | | | 15.00 | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 29.43 | | | | 34.55 | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 38.60 | | | | 34.80 | | | | |
| | Plastic Limit | % | 25.08 | | | | 27.53 | | | | |
| | Plasticity Index | % | 13.52 | | | | 7.28 | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | | | | 0.00 | | | | |
| | Medium Sand | | 0.00 | | | | 0.00 | | | | |
| | Fine Sand | | 4.00 | | | | 8.00 | | | | |
| | Silt | | 84.00 | | | | 86.00 | | | | |
| | Clay | | 12.00 | | | | 6.00 | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | 1.26 | | | | |
| | Degree of Saturation | % | | | | | 73.32 | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | 80.00 | | | | |
| | Compression Index, Cc | | | | | | 0.44 | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | RB-05 | | | | RB-07 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | | | | 0.00 | | | | |
| | | to | 15.00 | | | | 15.00 | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 40.01 | | | | 23.27 | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 34.65 | | | | 37.21 | | | | |
| | Plastic Limit | % | 25.13 | | | | 25.23 | | | | |
| | Plasticity Index | % | 9.52 | | | | 11.98 | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | | | | 0.00 | | | | |
| | Medium Sand | | 0.00 | | | | 0.00 | | | | |
| | Fine Sand | | 7.00 | | | | 4.00 | | | | |
| | Silt | | 87.00 | | | | 86.00 | | | | |
| | Clay | | 6.00 | | | | 10.00 | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | |
| Consolidation | Initial Void Ratio,$e_o$ | | | | | | 0.92 | | | | |
| | Degree of Saturation | % | | | | | 93.14 | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | 62.00 | | | | |
| | Compression Index, Cc | | | | | | 0.22 | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | RB-08 | | | | RB-09 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | 13.00 | | | 0.00 | 5.00 | 12.50 | | |
| | | to | 13.00 | 15.00 | | | 5.00 | 12.50 | 13.50 | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 24.04 | 14.87 | | | 29.81 | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 34.52 | | | | 34.94 | 34.97 | | | |
| | Plastic Limit | % | 27.69 | | | | 25.43 | 23.80 | | | |
| | Plasticity Index | % | 6.83 | | | | 9.50 | 11.18 | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | 1.00 | | | 0.00 | 0.00 | 0.00 | | |
| | Medium Sand | | 0.00 | 36.00 | | | 0.00 | 0.00 | 0.00 | | |
| | Fine Sand | | 4.00 | 28.00 | | | 8.00 | 9.00 | 67.00 | | |
| | Silt | | 85.00 | 35.00 | | | 85.00 | 83.00 | 33.00 | | |
| | Clay | | 11.00 | | | | 7.00 | 8.00 | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | 59.50 | | | | | | | | |
| | Compressive Strength | kPa | 119.00 | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | 0.80 | | | | | 0.85 | | | |
| | Degree of Saturation | % | 85.37 | | | | | 96.41 | | | |
| | Preconsol, Pressure, Pc | kPa | 80.00 | | | | | 70.00 | | | |
| | Compression Index, Cc | | 0.21 | | | | | 0.21 | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| Borehole No. : | | | RB-10 | | | | RB-12 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth, m | | From | 0.00 | | | | 0.00 | | | | |
| | | to | 10.50 | | | | 10.50 | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 33.64 | | | | 33.33 | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 43.32 | | | | 43.39 | | | | |
| | Plastic Limit | % | 23.48 | | | | 24.08 | | | | |
| | Plasticity Index | % | 19.84 | | | | 19.31 | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | | | | 0.00 | | | | |
| | Medium Sand | | 2.00 | | | | 2.00 | | | | |
| | Fine Sand | | 3.00 | | | | 3.00 | | | | |
| | Silt | | 88.00 | | | | 87.00 | | | | |
| | Clay | | 7.00 | | | | 8.00 | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

# SUMMARY OF TEST RESULTS

Project : Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client : Roads and Highways Department (RHD)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Borehole No. : | | | RB-13 | | | | | | | | |
| Depth, m | | From | 0.00 | | | | | | | | |
| | | to | 10.50 | | | | | | | | |
| **Soil** | | | | | | | | | | | |
| Moisture Content: | | | 35.13 | | | | | | | | |
| Bulk Density | | $kN/m^3$ | | | | | | | | | |
| Dry Density | | $kN/m^3$ | | | | | | | | | |
| Atterberg Limits | Liquid Limit | % | 33.71 | | | | | | | | |
| | Plastic Limit | % | 21.98 | | | | | | | | |
| | Plasticity Index | % | 11.74 | | | | | | | | |
| Grain Size Distribution | Coarse Sand | % | 0.00 | | | | | | | | |
| | Medium Sand | | 1.00 | | | | | | | | |
| | Fine Sand | | 4.00 | | | | | | | | |
| | Silt | | 88.00 | | | | | | | | |
| | Clay | | 7.00 | | | | | | | | |
| Specific Gravity/ Particle Density | | | | | | | | | | | |
| Unconfined Compression | Shear Strength | kPa | | | | | | | | | |
| | Compressive Strength | kPa | | | | | | | | | |
| Consolidation | Initial Void Ratio, $e_o$ | | | | | | | | | | |
| | Degree of Saturation | % | | | | | | | | | |
| | Preconsol, Pressure, Pc | kPa | | | | | | | | | |
| | Compression Index, Cc | | | | | | | | | | |
| Direct Shear | Cohesion | kPa | | | | | | | | | |
| | Phi angle | ° | | | | | | | | | |
| Compaction | Maximum Dry Density | Mg/m3 | | | | | | | | | |
| | Optimum MC | % | | | | | | | | | |
| **Rock** | | | | | | | | | | | |
| Point Load | Strength Index | Mpa | | | | | | | | | |
| UCT | Compressive Strength | Mpa | | | | | | | | | |
| **Water** | | | | | | | | | | | |
| | Ph | | | | | | | | | | |
| | Chloride | mg/L | | | | | | | | | |
| | Sulphate | mg/L | | | | | | | | | |

**Legend:** UC - Unconfined Compression OD- Direct Shear OED - Oedometer

**Remarks:**

APPENDIX- D

# Details Laboratory Test Results

# MOISTURE CONTENT DETERMINATION

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 27.03.2019

**TEST DATA**

| Moisture Can No. | 28 | 304 | N-51 | G | 12 |
|---|---|---|---|---|---|
| Sample No. | D4 | D17 | D21 | D28 | D1 |
| Bore Hole No. | Ovp-1,BH-1 | Ovp-1,BH-1 | Ovp-1,BH-1 | Ovp-1,BH-1 | Ovp-1,BH-2 |
| Depth (m) | 6.0 | 25.5 | 31.5 | 42.0 | 1.5 |
| Wt. of Can + Wet Specimen (A) gm | 120.14 | 122.41 | 131.99 | 119.30 | 124.52 |
| Wt. of Can + Dry Specimen (B) gm | 109.9 | 95.94 | 109.02 | 107.88 | 111.24 |
| Wt. of Water ( A - B )gm | 10.24 | 26.47 | 22.97 | 11.42 | 13.28 |
| Wt. of Can ( C ) gm | 18.08 | 26.46 | 28.19 | 29.15 | 24.54 |
| Wt. of Dry Specimen ( B - C ) gm | 91.82 | 69.48 | 80.83 | 78.73 | 86.70 |
| Moisture Content W = ( A - B / B - C) x 100 % | 11.15 | 38.10 | 28.42 | 14.51 | 15.32 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 29.03.2019

**TEST DATA**

| Moisture Can No. | 27 | 21 | C-209 | C-202 | C-212 |
|---|---|---|---|---|---|
| Sample No. | D14 | D31 | D3 | D14 | D15 |
| Bore Hole No. | Ovp-1,BH-2 | Ovp-1,BH-2 | Ovp-1,BH-3 | Ovp-1,BH-3 | Ovp-1,BH-3 |
| Depth (m) | 21.0 | 43.5 | 4.5 | 21.0 | 22.5 |
| Wt. of Can + Wet Specimen (A) gm | 119.07 | 121.59 | 112.72 | 125.36 | 80.02 |
| Wt. of Can + Dry Specimen (B) gm | 101.21 | 99.71 | 92.97 | 98.65 | 71.06 |
| Wt. of Water ( A - B )gm | 17.86 | 21.88 | 19.75 | 26.71 | 8.96 |
| Wt. of Can ( C ) gm | 21.21 | 26.02 | 13.90 | 16.14 | 14.91 |
| Wt. of Dry Specimen ( B - C ) gm | 80.00 | 73.69 | 79.07 | 82.51 | 56.15 |
| Moisture Content W = ( A - B / B - C) x 100 % | 22.33 | 29.69 | 24.98 | 32.37 | 15.96 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 29.03.2019

**TEST DATA**

| | | | | | |
|---|---|---|---|---|---|
| Moisture Can No. | 15A | N-50 | | | |
| Sample No. | D18 | D24 | | | |
| Bore Hole No. | Ovp-1,BH-4 | Ovp-1,BH-4 | | | |
| Depth (m) | 27.0 | 36.0 | | | |
| Wt. of Can + Wet Specimen (A) gm | 129.44 | 122.26 | | | |
| Wt. of Can + Dry Specimen (B) gm | 113.68 | 108.89 | | | |
| Wt. of Water ( A - B )gm | 15.76 | 13.37 | | | |
| Wt. of Can ( C ) gm | 24.68 | 29.02 | | | |
| Wt. of Dry Specimen ( B - C ) gm | 89.00 | 79.87 | | | |
| Moisture Content W = ( A - B / B - C) x 100 % | 17.71 | 16.74 | | | |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 26.07.2019

**TEST DATA**

| Moisture Can No. | 02 | 01 | 06 | 03 | 050 |
|---|---|---|---|---|---|
| Sample No. | L-2 | L-3 | L-4 | L-5 | L-1 |
| Bore Hole No. | OVP-1.BH-5 | OVP-1.BH-5 | OVP-1.BH-5 | OVP-1.BH-5 | OVP-2.BH-1 |
| Depth (m) | 7.5 | 25.5 | 39.0 | 43.5 | 1.5-4.5 |
| Wt. of Can + Wet Specimen (A) gm | 216.18 | 178.06 | 134.12 | 160.62 | 122.13 |
| Wt. of Can + Dry Specimen (B) gm | 160.5 | 147.18 | 115.51 | 127.96 | 96.74 |
| Wt. of Water ( A - B )gm | 55.68 | 30.88 | 18.61 | 32.66 | 25.39 |
| Wt. of Can ( C ) gm | 28.96 | 29.17 | 29.20 | 29.35 | 29.29 |
| Wt. of Dry Specimen ( B - C ) gm | 131.54 | 118.01 | 86.31 | 98.61 | 67.45 |
| Moisture Content W = ( A - B / B - C) x 100 % | 42.33 | 26.17 | 21.56 | 33.12 | 37.64 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 26.07.2019

**TEST DATA**

| Moisture Can No. | N-3 | 14 | 24 | 230 | 60 |
|---|---|---|---|---|---|
| Sample No. | L-1 | L-2 | L-3 | L-4 | L-5 |
| Bore Hole No. | OVP-1.BH-2 | OVP-1.BH-2 | OVP-1.BH-2 | OVP-1.BH-2 | OVP-1.BH-2 |
| Depth (m) | 0-1.5 | 3.0-4.5 | 6.0-21.0 | 22.5-43.5 | 43.5 |
| Wt. of Can + Wet Specimen (A) gm | 157.84 | 152.41 | 186.41 | 213.05 | 104.74 |
| Wt. of Can + Dry Specimen (B) gm | 123.72 | 127.95 | 144.45 | 176.39 | 87.05 |
| Wt. of Water ( A - B )gm | 34.12 | 24.46 | 41.96 | 36.66 | 17.69 |
| Wt. of Can ( C ) gm | 28.75 | 17.31 | 17.16 | 18.81 | 16.48 |
| Wt. of Dry Specimen ( B - C ) gm | 94.97 | 110.64 | 127.29 | 157.58 | 70.57 |
| Moisture Content W = ( A - B / B - C) x 100 % | 35.93 | 22.11 | 32.96 | 23.26 | 25.07 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 29.03.2019

**TEST DATA**

| Moisture Can No. | C-221 | 220 | 221 | 222 | C-6 |
|---|---|---|---|---|---|
| Sample No. | D23 | D27 | D1 | D13 | D14 |
| Bore Hole No. | Ovp-1,BH-3 | Ovp-1,BH-3 | Ovp-1,BH-4 | Ovp-1,BH-4 | Ovp-1,BH-4 |
| Depth (m) | 34.5 | 40.5 | 1.5 | 19.5 | 21.0 |
| Wt. of Can + Wet Specimen (A) gm | 98.34 | 76.72 | 131.53 | 135.77 | 149.94 |
| Wt. of Can + Dry Specimen (B) gm | 82.88 | 70.85 | 109.09 | 109.93 | 126.81 |
| Wt. of Water ( A - B )gm | 15.46 | 5.87 | 22.44 | 25.84 | 23.13 |
| Wt. of Can ( C ) gm | 14.50 | 15.93 | 17.24 | 14.63 | 39.19 |
| Wt. of Dry Specimen ( B - C ) gm | 68.38 | 54.92 | 91.85 | 95.30 | 87.62 |
| Moisture Content W = ( A - B / B - C) x 100 % | 22.61 | 10.69 | 24.43 | 27.11 | 26.40 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 26.07.2019

**TEST DATA**

| Moisture Can No. | A-17 | A-7 | 22 | D-5 | 12 |
|---|---|---|---|---|---|
| Sample No. | L-2 | L-3 | L-4 | L-5 | L-6 |
| Bore Hole No. | OVP-2.BH-1 | OVP-2.BH-1 | OVP-2.BH-1 | OVP-2.BH-1 | OVP-2.BH-1 |
| Depth (m) | 4.5 | 13.5 | 16.5 | 19.5 | 24.0 |
| Wt. of Can + Wet Specimen (A) gm | 187.66 | 135.07 | 114.12 | 121.69 | 120 |
| Wt. of Can + Dry Specimen (B) gm | 137.55 | 112.66 | 90.25 | 110.04 | 94.52 |
| Wt. of Water ( A - B )gm | 50.11 | 22.41 | 23.87 | 11.65 | 25.48 |
| Wt. of Can ( C ) gm | 28.96 | 32.70 | 29.47 | 29.73 | 28.91 |
| Wt. of Dry Specimen ( B - C ) gm | 108.59 | 79.96 | 60.78 | 80.31 | 65.61 |
| Moisture Content W = ( A - B / B - C) x 100 % | 46.15 | 28.03 | 39.27 | 14.51 | 38.84 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 26.07.2019

**TEST DATA**

| Moisture Can No. | 16 | A-2 | 32 | 19 | 270 |
|---|---|---|---|---|---|
| Sample No. | L-7 | L-8 | L-9 | L-10 | L-11 |
| Bore Hole No. | OVP-2.BH-1 | OVP-2.BH-1 | OVP-2.BH-1 | OVP-2.BH-1 | OVP-2.BH-1 |
| Depth (m) | 27.0 | 31.0 | 40.5 | 45.0 | 49.5 |
| Wt. of Can + Wet Specimen (A) gm | 156.75 | 141.46 | 135.26 | 135.82 | 160.75 |
| Wt. of Can + Dry Specimen (B) gm | 138.82 | 114.78 | 117.62 | 110.36 | 138.71 |
| Wt. of Water ( A - B )gm | 17.93 | 26.68 | 17.64 | 25.46 | 22.04 |
| Wt. of Can ( C ) gm | 28.98 | 29.70 | 29.02 | 29.46 | 29.61 |
| Wt. of Dry Specimen ( B - C ) gm | 109.84 | 85.08 | 88.60 | 80.90 | 109.10 |
| Moisture Content W = ( A - B / B - C) x 100 % | 16.32 | 31.36 | 19.91 | 31.47 | 20.20 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 26.07.2019

**TEST DATA**

| Moisture Can No. | 05 | A-1 | D-2 | 71 | N-1 |
|---|---|---|---|---|---|
| Sample No. | L-12 | L-13 | L-1 | L-2 | L-3(1) |
| Bore Hole No. | OVP-2.BH-1 | OVP-2.BH-1 | OVP-2.BH-2 | OVP-2.BH-2 | OVP-2.BH-2 |
| Depth (m) | 53.0 | 60.5 | 1.5-3.0 | 4.5-12.0 | 13.5-36.0 |
| Wt. of Can + Wet Specimen (A) gm | 132.4 | 156.24 | 158.26 | 179 | 159 |
| Wt. of Can + Dry Specimen (B) gm | 100.75 | 134.49 | 125.32 | 134.17 | 133.02 |
| Wt. of Water ( A - B )gm | 31.65 | 21.75 | 32.94 | 44.83 | 25.98 |
| Wt. of Can ( C ) gm | 29.06 | 29.17 | 29.80 | 18.97 | 29.32 |
| Wt. of Dry Specimen ( B - C ) gm | 71.69 | 105.32 | 95.52 | 115.20 | 103.70 |
| Moisture Content W = ( A - B / B - C) x 100 % | 44.15 | 20.65 | 34.48 | 38.91 | 25.05 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 26.03.2019

**TEST DATA**

| Moisture Can No. | 06 | 05 | 13 | 33 | 11 |
|---|---|---|---|---|---|
| Sample No. | D1 | D3 | D9 | D16 | D26 |
| Bore Hole No. | FLY-1,BH-1 | FLY-1,BH-1 | FLY-1,BH-1 | FLY-1,BH-1 | FLY-1,BH-1 |
| Depth (m) | 1.5 | 4.5 | 13.5 | 24.0 | 39.0 |
| Wt. of Can + Wet Specimen (A) gm | 138.08 | 117.96 | 89.35 | 111.17 | 128.95 |
| Wt. of Can + Dry Specimen (B) gm | 124.29 | 91.17 | 83.43 | 104.02 | 113.92 |
| Wt. of Water ( A - B )gm | 13.79 | 26.79 | 5.92 | 7.15 | 15.03 |
| Wt. of Can ( C ) gm | 29.17 | 29.34 | 13.19 | 29.08 | 29.43 |
| Wt. of Dry Specimen ( B - C ) gm | 95.12 | 61.83 | 70.24 | 74.94 | 84.49 |
| Moisture Content W = ( A - B / B - C) x 100 % | 14.50 | 43.33 | 8.43 | 9.54 | 17.79 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II)

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 05.08.2019

**TEST DATA**

| Moisture Can No. | N-20 | A-4 | 24 | 22 | D-4 |
|---|---|---|---|---|---|
| Sample No. | L-2 | L-1 | L-2 | L-3 | L-4 |
| Bore Hole No. | FLY-1,BH-3 | FLY-1,BH-5 | FLY-1,BH-5 | FLY-1,BH-5 | FLY-1,BH-5 |
| Depth (m) | 21.0-40.5 | 1.5 | 3.0 | 4.5-24.0 | 25.5-40.5 |
| Wt. of Can + Wet Specimen (A) gm | 158.6 | 143.85 | 161.88 | 162.34 | 179.07 |
| Wt. of Can + Dry Specimen (B) gm | 134.58 | 118.64 | 135.62 | 133.35 | 157.66 |
| Wt. of Water ( A - B )gm | 24.02 | 25.21 | 26.26 | 28.99 | 21.41 |
| Wt. of Can ( C ) gm | 18.94 | 32.73 | 17.30 | 25.34 | 29.33 |
| Wt. of Dry Specimen ( B - C ) gm | 115.64 | 85.91 | 118.32 | 108.01 | 128.33 |
| Moisture Content W = ( A - B / B - C) x 100 % | 20.77 | 29.34 | 22.19 | 26.84 | 16.68 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 26.03.2019

**TEST DATA**

| Moisture Can No. | 17 | 02 | 07 | 32 | 34 |
|---|---|---|---|---|---|
| Sample No. | D1 | D9 | D16 | D22 | D23 |
| Bore Hole No. | FLY-1,BH-4 | FLY-1,BH-4 | FLY-1,BH-4 | FLY-1,BH-4 | FLY-1,BH-4 |
| Depth (m) | 1.5 | 13.5 | 24.0 | 33.0 | 34.5 |
| Wt. of Can + Wet Specimen (A) gm | 145.95 | 109.75 | 128.86 | 126.97 | 123.58 |
| Wt. of Can + Dry Specimen (B) gm | 103.3 | 96.45 | 121.26 | 119.13 | 114.52 |
| Wt. of Water ( A - B )gm | 42.65 | 13.30 | 7.60 | 7.84 | 9.06 |
| Wt. of Can ( C ) gm | 28.96 | 28.96 | 28.11 | 29.05 | 29.65 |
| Wt. of Dry Specimen ( B - C ) gm | 74.34 | 67.49 | 93.15 | 90.08 | 84.87 |
| Moisture Content W = ( A - B / B - C) x 100 % | 57.37 | 19.71 | 8.16 | 8.70 | 10.68 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 27.03.2019

**TEST DATA**

| Moisture Can No. | 27 | 08 | 12 | 313 | 20 |
|---|---|---|---|---|---|
| Sample No. | D26 | D1 | D28 | D1 | D4 |
| Bore Hole No. | FLY-1,BH-4 | FLY-1,BH-5 | FLY-1,BH-5 | FLY-1,BH-6 | FLY-1,BH-6 |
| Depth (m) | 39.0 | 1.5 | 42.0 | 1.5 | 6.0 |
| Wt. of Can + Wet Specimen (A) gm | 109.94 | 123.77 | 137.35 | 140.0 | 106.57 |
| Wt. of Can + Dry Specimen (B) gm | 98.58 | 105.81 | 125.15 | 122.05 | 99.71 |
| Wt. of Water ( A - B )gm | 11.36 | 17.96 | 12.20 | 17.95 | 6.86 |
| Wt. of Can ( C ) gm | 19.08 | 28.84 | 28.96 | 27.58 | 29.34 |
| Wt. of Dry Specimen ( B - C ) gm | 79.50 | 76.97 | 96.19 | 94.47 | 70.37 |
| Moisture Content W = ( A - B / B - C) x 100 % | 14.29 | 23.33 | 12.68 | 19.00 | 9.75 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II)

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 02.08.2019

**TEST DATA**

| Moisture Can No. | D-4 | A-3 | 16 | 312 | 112 |
|---|---|---|---|---|---|
| Sample No. | L-1 | L-2 | L-3 | L-4 | L-1 |
| Bore Hole No. | FLY-1,BH-2 | FLY-1,BH-2 | FLY-1,BH-2 | FLY-1,BH-2 | FLY-1,BH-3 |
| Depth (m) | 4.5 | 13.5 | 18.0 | 31.5 | 1.5-19.5 |
| Wt. of Can + Wet Specimen (A) gm | 161.21 | 186.14 | 171.81 | 184.9 | 174.61 |
| Wt. of Can + Dry Specimen (B) gm | 130.05 | 152.64 | 150.77 | 153.81 | 134.08 |
| Wt. of Water ( A - B )gm | 31.16 | 33.50 | 21.04 | 31.09 | 40.53 |
| Wt. of Can ( C ) gm | 29.34 | 27.31 | 29.01 | 27.34 | 17.04 |
| Wt. of Dry Specimen ( B - C ) gm | 100.71 | 125.33 | 121.76 | 126.47 | 117.04 |
| Moisture Content W = ( A - B / B - C) x 100 % | 30.94 | 26.73 | 17.28 | 24.58 | 34.63 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet-

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 27.03.2019

**TEST DATA**

| Moisture Can No. | 306 | 22 | 16 | 15 |
|---|---|---|---|---|
| Sample No. | D26 | D28 | D1 | D4 |
| Bore Hole No. | FLY-1,BH-6 | FLY-1,BH-7 | FLY-1,BH-7 | FLY-1,BH-7 |
| Depth (m) | 18.0 | 1.5 | 15.0 | 28.5 |
| Wt. of Can + Wet Specimen (A) gm | 114.73 | 116.07 | 127.53 | 142.14 |
| Wt. of Can + Dry Specimen (B) gm | 101.52 | 102.29 | 117.07 | 126.76 |
| Wt. of Water ( A - B )gm | 13.21 | 13.78 | 10.46 | 15.38 |
| Wt. of Can ( C ) gm | 29.63 | 29.46 | 28.94 | 29.08 |
| Wt. of Dry Specimen ( B - C ) gm | 71.89 | 72.83 | 88.13 | 97.68 |
| Moisture Content W = ( A - B / B - C) x 100 % | 18.38 | 18.92 | 11.87 | 15.75 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II)

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 05.08.2019

**TEST DATA**

| Moisture Can No. | A-17 | N-1 | A-33 | N-20 | 403 |
|---|---|---|---|---|---|
| Sample No. | L-1 | L-2 | L-3 | L-4 | L-5 |
| Bore Hole No. | FLY-1,BH-7 | FLY-1,BH-7 | FLY-1,BH-7 | FLY-1,BH-7 | FLY-1,BH-7 |
| Depth (m) | 0.0-4.50 | 6.0-9.0 | 10.5-22.5 | 24.0-28.5 | 31.5 |
| Wt. of Can + Wet Specimen (A) gm | 236.46 | 189.56 | 178.54 | 185.71 | 127.4 |
| Wt. of Can + Dry Specimen (B) gm | 192.55 | 156.66 | 156.01 | 164.2 | 97.89 |
| Wt. of Water ( A - B )gm | 43.91 | 32.90 | 22.53 | 21.51 | 29.51 |
| Wt. of Can ( C ) gm | 29.00 | 29.32 | 29.06 | 18.92 | 17.95 |
| Wt. of Dry Specimen ( B - C ) gm | 163.55 | 127.34 | 126.95 | 145.28 | 79.94 |
| Moisture Content W = ( A - B / B - C) x 100 % | 26.85 | 25.84 | 17.75 | 14.81 | 36.92 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II)

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 05.08.2019

**TEST DATA**

| | | | | | |
|---|---|---|---|---|---|
| Moisture Can No. | 19 | | | | |
| Sample No. | L-6 | | | | |
| Bore Hole No. | FLY-1,BH-7 | | | | |
| Depth (m) | 33.0-40.5 | | | | |
| Wt. of Can + Wet Specimen (A) gm | 204.92 | | | | |
| Wt. of Can + Dry Specimen (B) gm | 170.59 | | | | |
| Wt. of Water ( A - B )gm | 34.33 | | | | |
| Wt. of Can ( C ) gm | 29.49 | | | | |
| Wt. of Dry Specimen ( B - C ) gm | 141.10 | | | | |
| Moisture Content W = ( A - B / B - C) x 100 % | 24.33 | | | | |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 27.03.2019

**TEST DATA**

| Moisture Can No. | 04 | 301 | 03 | 31 | 15 |
|---|---|---|---|---|---|
| Sample No. | D25 | D1 | D9 | D14 | D1 |
| Bore Hole No. | FLY-1,BH-7 | FLY-1,BH-8 | FLY-1,BH-8 | FLY-1,BH-8 | Ovp-1,BH-1 |
| Depth (m) | 37.5 | 1.5 | 15.0 | 21.0 | 1.5 |
| Wt. of Can + Wet Specimen (A) gm | 126.71 | 123.9 | 142.57 | 122.87 | 128.62 |
| Wt. of Can + Dry Specimen (B) gm | 109.11 | 103.45 | 116.36 | 113.85 | 115.02 |
| Wt. of Water ( A - B )gm | 17.60 | 20.45 | 26.21 | 9.02 | 13.60 |
| Wt. of Can ( C ) gm | 17.61 | 26.85 | 17.92 | 27.07 | 24.52 |
| Wt. of Dry Specimen ( B - C ) gm | 91.50 | 76.60 | 98.44 | 86.78 | 90.50 |
| Moisture Content W = ( A - B / B - C) x 100 % | 19.23 | 26.70 | 26.63 | 10.39 | 15.03 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 02.04.2019

**TEST DATA**

| Moisture Can No. | 08 | 02 | 270 | 06 |
|---|---|---|---|---|
| Sample No. | D2 | D8 | D1 | D5 |
| Bore Hole No. | Ovp-4,BH-2 | Ovp-4,BH-2 | Ovp-2,BH-2 | Ovp-2,BH-2 |
| Depth (m) | 3.0 | 12.0 | 1.5 | 7.5 |
| Wt. of Can + Wet Specimen (A) gm | 139.34 | 105.63 | 102.62 | 132.00 |
| Wt. of Can + Dry Specimen (B) gm | 121.85 | 86.71 | 86.91 | 111.68 |
| Wt. of Water ( A - B )gm | 17.49 | 18.92 | 15.71 | 20.32 |
| Wt. of Can ( C ) gm | 24.61 | 28.99 | 29.62 | 29.17 |
| Wt. of Dry Specimen ( B - C ) gm | 97.24 | 57.72 | 57.29 | 82.51 |
| Moisture Content W = ( A - B / B - C) x 100 % | 17.99 | 32.78 | 27.42 | 24.63 |

Tested by : Azharul.

Signed by : Engr. Ja

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 26.07.2019

**TEST DATA**

| Moisture Can No. | D-6 | 04 | M-05 | 22 | M-15 |
|---|---|---|---|---|---|
| Sample No. | L-1 | L-2 | L-3 | L-1 | L-2 |
| Bore Hole No. | OVP-3.BH-1 | OVP-3.BH-1 | OVP-3.BH-1 | OVP-5.BH-2 | OVP-5.BH-2 |
| Depth (m) | 1.5 | 4.5 | 21.0 | 0.0-21.0 | 22.5-31.5 |
| Wt. of Can + Wet Specimen (A) gm | 159.75 | 148.88 | 191.58 | 188.96 | 189.93 |
| Wt. of Can + Dry Specimen (B) gm | 130.36 | 127.05 | 162.88 | 145.67 | 145.93 |
| Wt. of Water ( A - B )gm | 29.39 | 21.83 | 28.70 | 43.29 | 44.00 |
| Wt. of Can ( C ) gm | 29.55 | 29.52 | 29.06 | 29.45 | 29.11 |
| Wt. of Dry Specimen ( B - C ) gm | 100.81 | 97.53 | 133.82 | 116.22 | 116.82 |
| Moisture Content W = ( A - B / B - C) x 100 % | 29.15 | 22.38 | 21.45 | 37.25 | 37.66 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 30.03.2019

**TEST DATA**

| Moisture Can No. | N-69 | F-4 | N-71 | C-202 | C-212 |
|---|---|---|---|---|---|
| Sample No. | D6 | D7 | D21 | D1 | D8 |
| Bore Hole No. | Ovp-3,BH-1 | Ovp-3,BH-1 | Ovp-3,BH-1 | Ovp-4,BH-1 | Ovp-4,BH-1 |
| Depth (m) | 9.0 | 10.5 | 31.5 | 1.5 | 9.0 |
| Wt. of Can + Wet Specimen (A) gm | 106.79 | 127.95 | 124.47 | 125.36 | 81.02 |
| Wt. of Can + Dry Specimen (B) gm | 92.21 | 108.96 | 108.9 | 98.65 | 71.06 |
| Wt. of Water ( A - B )gm | 14.58 | 18.99 | 15.57 | 26.71 | 9.96 |
| Wt. of Can ( C ) gm | 28.58 | 29.43 | 28.19 | 16.14 | 14.91 |
| Wt. of Dry Specimen ( B - C ) gm | 63.63 | 79.53 | 80.71 | 82.51 | 56.15 |
| Moisture Content W = ( A - B / B - C) x 100 % | 22.91 | 23.88 | 19.29 | 32.37 | 17.74 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 30.03.2019

**TEST DATA**

| Moisture Can No. | 09 | 03 | 11-2 | 07 | F-10 |
|---|---|---|---|---|---|
| Sample No. | D17 | D8 | D11 | D20 | D1 |
| Bore Hole No. | Ovp-4,BH-1 | Ovp-5,BH-1 | Ovp-5,BH-1 | Ovp-5,BH-1 | Ovp-5,BH-2 |
| Depth (m) | 25.5 | 12.0 | 16.5 | 30.0 | 1.5 |
| Wt. of Can + Wet Specimen (A) gm | 119.07 | 119.45 | 128.86 | 151.37 | 141.49 |
| Wt. of Can + Dry Specimen (B) gm | 101.21 | 99.4 | 121.26 | 127.6 | 123.91 |
| Wt. of Water ( A - B )gm | 17.86 | 20.05 | 7.60 | 23.77 | 17.58 |
| Wt. of Can ( C ) gm | 21.21 | 17.92 | 28.11 | 28.12 | 29.87 |
| Wt. of Dry Specimen ( B - C ) gm | 80.00 | 81.48 | 93.15 | 99.48 | 94.04 |
| Moisture Content W = ( A - B / B - C) x 100 % | 22.33 | 24.61 | 8.16 | 23.89 | 18.69 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sylhet Road

**Tested Date:** 02.08.2019

**TEST DATA**

| Moisture Can No. | 07 | A-10 | 02 | 050 | A-11 |
|---|---|---|---|---|---|
| Sample No. | L-3 | L-1 | L-2 | L-3 | L-3(2) |
| Bore Hole No. | OVP-5.BH-2 | OVP-5.BH-3 | OVP-5.BH-3 | OVP-5.BH-3 | OVP-2.BH-2 |
| Depth (m) | 36.0 | 6.0 | 34.5 | 39.0 | 22.5-31.5 |
| Wt. of Can + Wet Specimen (A) gm | 175.87 | 182.09 | 171 | 206.33 | 169.93 |
| Wt. of Can + Dry Specimen (B) gm | 156.28 | 136.7 | 137.42 | 177.89 | 143.21 |
| Wt. of Water ( A - B )gm | 19.59 | 45.39 | 33.58 | 28.44 | 26.72 |
| Wt. of Can ( C ) gm | 29.31 | 29.15 | 29.11 | 29.32 | 29.62 |
| Wt. of Dry Specimen ( B - C ) gm | 126.97 | 107.55 | 108.31 | 148.57 | 113.59 |
| Moisture Content W = ( A - B / B - C) x 100 % | 15.43 | 42.20 | 31.00 | 19.14 | 23.52 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 12.05.2019

**TEST DATA**

| Moisture Can No. | 270 | 08 | 04 | A-8 | 312 |
|---|---|---|---|---|---|
| Sample No. | D-4 | D-10 | D- | D-8 | D-36 |
| Bore Hole No. | BR-2.BH-03 | BR-2.BH-03 | BR-2.BH-03 | BR-2.BH-04 | BR-2.BH-04 |
| Depth (m) | 3.0 | 15.0 | 45.0 | 12.0 | 54.0 |
| Wt. of Can + Wet Specimen (A) gm | 141.71 | 120.3 | 119.64 | 137.65 | 125.63 |
| Wt. of Can + Dry Specimen (B) gm | 119.13 | 104.87 | 105.4 | 118.36 | 111.73 |
| Wt. of Water ( A - B )gm | 22.58 | 15.43 | 14.24 | 19.29 | 13.90 |
| Wt. of Can ( C ) gm | 29.62 | 28.62 | 29.29 | 29.55 | 27.32 |
| Wt. of Dry Specimen ( B - C ) gm | 89.51 | 76.25 | 76.11 | 88.81 | 84.41 |
| Moisture Content W = ( A - B / B - C) x 100 % | 25.23 | 20.24 | 18.71 | 21.72 | 16.47 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 30.04.2019

**TEST DATA**

| Moisture Can No. | R-1 | A-17 | A-10 | 311 | 301 |
|---|---|---|---|---|---|
| Sample No. | D-2 | D-12 | D-19 | D-21 | D-3 |
| Bore Hole No. | BR-2.BH-05 | BR-2.BH-05 | BR-2.BH-05 | BR-2.BH-05 | BR-2.BH-06 |
| Depth (m) | 3.0 | 18.0 | 28.5 | 36.0 | 4.5 |
| Wt. of Can + Wet Specimen (A) gm | 122.34 | 113.41 | 125.66 | 122.25 | 113.64 |
| Wt. of Can + Dry Specimen (B) gm | 96.43 | 88.41 | 105.35 | 109.86 | 92.75 |
| Wt. of Water ( A - B )gm | 25.91 | 25.00 | 20.31 | 12.39 | 20.89 |
| Wt. of Can ( C ) gm | 29.55 | 28.99 | 29.15 | 26.93 | 26.84 |
| Wt. of Dry Specimen ( B - C ) gm | 66.88 | 59.42 | 76.20 | 82.93 | 65.91 |
| Moisture Content W = ( A - B / B - C) x 100 % | 38.74 | 42.07 | 26.65 | 14.94 | 31.69 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 30.04.2019

**TEST DATA**

| Moisture Can No. | A-4 | 270 | 06 | D-4 | 07 |
|---|---|---|---|---|---|
| Sample No. | D-14 | D-20 | D-26 | D-2 | D-10 |
| Bore Hole No. | BR-2.BH-06 | BR-2.BH-06 | BR-2.BH-06 | BR-2.BH-07 | BR-2.BH-07 |
| Depth (m) | 19.0 | 30.0 | 39.0 | 3.0 | 15.0 |
| Wt. of Can + Wet Specimen (A) gm | 114.98 | 121.36 | 114.84 | 114.15 | 111.03 |
| Wt. of Can + Dry Specimen (B) gm | 101.38 | 109.62 | 102.1 | 91.81 | 89.78 |
| Wt. of Water ( A - B )gm | 13.60 | 11.74 | 12.74 | 22.34 | 21.25 |
| Wt. of Can ( C ) gm | 32.73 | 29.62 | 29.20 | 29.28 | 29.25 |
| Wt. of Dry Specimen ( B - C ) gm | 68.65 | 80.00 | 72.90 | 62.53 | 60.53 |
| Moisture Content W = ( A - B / B - C) x 100 % | 19.81 | 14.68 | 17.48 | 35.73 | 35.11 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 30.04.2019

**TEST DATA**

| Moisture Can No. | D-6 | 16 | 050 | 20 | A-9 |
|---|---|---|---|---|---|
| Sample No. | D-16 | D-23 | D-2 | D-6 | D-12 |
| Bore Hole No. | BR-2.BH-07 | BR-2.BH-07 | BR-2.BH-08 | BR-2.BH-08 | BR-2.BH-08 |
| Depth (m) | 24.0 | 34.5 | 3.0 | 9.0 | 18.0 |
| Wt. of Can + Wet Specimen (A) gm | 111.45 | 114.06 | 115.34 | 121.35 | 112.52 |
| Wt. of Can + Dry Specimen (B) gm | 98.3 | 100.53 | 91.55 | 96.66 | 89.66 |
| Wt. of Water ( A - B )gm | 13.15 | 13.53 | 23.79 | 24.69 | 22.86 |
| Wt. of Can ( C ) gm | 29.50 | 28.98 | 29.31 | 29.37 | 33.28 |
| Wt. of Dry Specimen ( B - C ) gm | 68.80 | 71.55 | 62.24 | 67.29 | 56.38 |
| Moisture Content W = ( A - B / B - C) x 100 % | 19.11 | 18.91 | 38.22 | 36.69 | 40.55 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 30.04.2019

**TEST DATA**

| Moisture Can No. | D-1 | 310 | A-5 | 32 | D-3 |
|---|---|---|---|---|---|
| Sample No. | D-18 | D-23 | D-3 | D-12 | D-17 |
| Bore Hole No. | BR-2.BH-08 | BR-2.BH-08 | BR-2.BH-11 | BR-2.BH-11 | BR-2.BH-11 |
| Depth (m) | 27.0 | 34.5 | 4.5 | 18.0 | 25.5 |
| Wt. of Can + Wet Specimen (A) gm | 112.61 | 114.28 | 112.97 | 112.42 | 113.27 |
| Wt. of Can + Dry Specimen (B) gm | 101.15 | 100.86 | 91.17 | 99.64 | 101.14 |
| Wt. of Water ( A - B )gm | 11.46 | 13.42 | 21.80 | 12.78 | 12.13 |
| Wt. of Can ( C ) gm | 29.68 | 27.14 | 33.80 | 29.04 | 29.67 |
| Wt. of Dry Specimen ( B - C ) gm | 71.47 | 73.72 | 57.37 | 70.60 | 71.47 |
| Moisture Content W = ( A - B / B - C) x 100 % | 16.03 | 18.20 | 38.00 | 18.10 | 16.97 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 12.05.2019

**TEST DATA**

| Moisture Can No. | D-1 | 301 | 02 | M-15 | 050 |
|---|---|---|---|---|---|
| Sample No. | D-4 | D-15 | D-20 | D-21 | D-3 |
| Bore Hole No. | BR-2.BH-09 | BR-2.BH-09 | BR-2.BH-09 | BR-2.BH-09 | BR-2.BH-10 |
| Depth (m) | 6.0 | 22.5 | 30.0 | 31.5 | 4.5 |
| Wt. of Can + Wet Specimen (A) gm | 178.95 | 182.34 | 129.88 | 118.8 | 210.13 |
| Wt. of Can + Dry Specimen (B) gm | 139.56 | 137.23 | 117.29 | 107.43 | 166.97 |
| Wt. of Water ( A - B )gm | 39.39 | 45.11 | 12.59 | 11.37 | 43.16 |
| Wt. of Can ( C ) gm | 29.74 | 26.82 | 28.97 | 29.11 | 29.45 |
| Wt. of Dry Specimen ( B - C ) gm | 109.82 | 110.41 | 88.32 | 78.32 | 137.52 |
| Moisture Content W = ( A - B / B - C) x 100 % | 35.87 | 40.86 | 14.25 | 14.52 | 31.38 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION
**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet-

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 02.04.2019

**TEST DATA**

| Moisture Can No. | 22 | 07 | 03 | 304 | 07 | F-10 |
|---|---|---|---|---|---|---|
| Sample No. | D1 | D1 | D8 | D4 | D1 | D9 |
| Bore Hole No. | UP1,BH-1 | RB-4 | Ovp-4,BH-1 | RB-5 | RB-3 | RB-3 |
| Depth (m) | 1.5 | 1.5 | 12.0 | 6.0 | 1.5 | 13.5 |
| Wt. of Can + Wet Specimen (A) gm | 104.37 | 116.33 | 84.90 | 103.72 | 149.82 | 116.97 |
| Wt. of Can + Dry Specimen (B) gm | 88.0 | 93.68 | 68.73 | 81.64 | 121.9 | 101.56 |
| Wt. of Water ( A - B )gm | 16.37 | 22.65 | 16.17 | 22.08 | 27.92 | 15.41 |
| Wt. of Can ( C ) gm | 29.51 | 28.12 | 17.90 | 26.45 | 27.02 | 29.27 |
| Wt. of Dry Specimen ( B - C ) gm | 58.49 | 65.56 | 50.83 | 55.19 | 94.88 | 72.29 |
| Moisture Content W = ( A - B / B - C) x 100 % | 27.99 | 34.55 | 31.81 | 40.01 | 29.43 | 21.32 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 02.04.2019

**TEST DATA**

| Moisture Can No. | N-28 | C-2 | 09 | F-10 | N-49 |
|---|---|---|---|---|---|
| Sample No. | D1 | D4 | D6 | D1 | D4 |
| Bore Hole No. | RB-2 | RB - 8 | RB - 8 | RB - 9 | RB - 7 |
| Depth (m) | 1.5 | 6.0 | 13.5 | 1.5 | 6.0 |
| Wt. of Can + Wet Specimen (A) gm | 153.18 | 124.33 | 106.32 | 107.16 | 132.73 |
| Wt. of Can + Dry Specimen (B) gm | 123.39 | 106.44 | 96.35 | 89.41 | 112.93 |
| Wt. of Water ( A - B )gm | 29.79 | 17.89 | 9.97 | 17.75 | 19.80 |
| Wt. of Can ( C ) gm | 27.39 | 32.02 | 29.30 | 29.87 | 27.84 |
| Wt. of Dry Specimen ( B - C ) gm | 96.00 | 74.42 | 67.05 | 59.54 | 85.09 |
| Moisture Content W = ( A - B / B - C) x 100 % | 31.03 | 24.04 | 14.87 | 29.81 | 23.27 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 12.05.2019

**TEST DATA**

| Moisture Can No. | A-11 | 07 | D-6 | A-9 | D-5 |
|---|---|---|---|---|---|
| Sample No. | D-9 | D-27 | D-16-19 | D-20-30 | D-24 |
| Bore Hole No. | BR-2.BH-10 | BR-2.BH-10 | BR-2.BH-10 | BR-2.BH-10 | BR-2.BH-11 |
| Depth (m) | 13.5 | 40.5 | 24.0-28.5 | 30.0-45.0 | 36.0 |
| Wt. of Can + Wet Specimen (A) gm | 205.63 | 131.28 | 159.18 | 151.05 | 112 |
| Wt. of Can + Dry Specimen (B) gm | 171.66 | 119.64 | 141.28 | 134.09 | 99.89 |
| Wt. of Water ( A - B )gm | 33.97 | 11.64 | 17.90 | 16.96 | 12.11 |
| Wt. of Can ( C ) gm | 29.59 | 29.32 | 29.52 | 33.24 | 29.72 |
| Wt. of Dry Specimen ( B - C ) gm | 142.07 | 90.32 | 111.76 | 100.85 | 70.17 |
| Moisture Content W = ( A - B / B - C) x 100 % | 23.91 | 12.89 | 16.02 | 16.82 | 17.26 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 12.05.2019

**TEST DATA**

| Moisture Can No. | 31 | 260 | 304 | 19 | A-5 |
|---|---|---|---|---|---|
| Sample No. | D-3 | D-7 | D-16 | D-19-21 | D-3 |
| Bore Hole No. | BR-2.BH-12 | BR-2.BH-12 | BR-2.BH-12 | BR-2.BH-12 | BR-2.BH-13 |
| Depth (m) | 4.5 | 10.5 | 24.0 | 28.5-31.5 | 4.5 |
| Wt. of Can + Wet Specimen (A) gm | 196.93 | 175.06 | 128.16 | 132.95 | 206.32 |
| Wt. of Can + Dry Specimen (B) gm | 174.31 | 157.8 | 110.83 | 118.29 | 165.75 |
| Wt. of Water ( A - B )gm | 22.62 | 17.26 | 17.33 | 14.66 | 40.57 |
| Wt. of Can ( C ) gm | 29.02 | 29.24 | 26.47 | 29.45 | 33.75 |
| Wt. of Dry Specimen ( B - C ) gm | 145.29 | 128.56 | 84.36 | 88.84 | 132.00 |
| Moisture Content W = ( A - B / B - C) x 100 % | 15.57 | 13.43 | 20.54 | 16.50 | 30.73 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 12.05.2019

**TEST DATA**

| Moisture Can No. | 09 | R-1 | M-05 | 03 | 20 |
|---|---|---|---|---|---|
| Sample No. | D-13 | D-16.20 | D-5 | D-7 | D-3 |
| Bore Hole No. | BH-13 | BH-13 | RB - 10 | RB - 10 | RB - 12 |
| Depth (m) | 19.5 | 24.0-30.0 | 7.5 | 10.5 | 4.5 |
| Wt. of Can + Wet Specimen (A) gm | 174.74 | 141.67 | 193.05 | 168.91 | 183.85 |
| Wt. of Can + Dry Specimen (B) gm | 152.85 | 125.09 | 151.77 | 135.61 | 145.23 |
| Wt. of Water ( A - B )gm | 21.89 | 16.58 | 41.28 | 33.30 | 38.62 |
| Wt. of Can ( C ) gm | 29.31 | 29.56 | 29.07 | 29.34 | 29.35 |
| Wt. of Dry Specimen ( B - C ) gm | 123.54 | 95.53 | 122.70 | 106.27 | 115.88 |
| Moisture Content W = ( A - B / B - C) x 100 % | 17.72 | 17.36 | 33.64 | 31.34 | 33.33 |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## MOISTURE CONTENT DETERMINATION

**(ASTM D 2216)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Tested Date:** 12.05.2019

**TEST DATA**

| | | | | | |
|---|---|---|---|---|---|
| Moisture Can No. | D-5 | A-17 | | | |
| Sample No. | D-1 | D-3 | | | |
| Bore Hole No. | RB - 13 | RB - 13 | | | |
| Depth (m) | 1.5 | 4.5 | | | |
| Wt. of Can + Wet Specimen (A) gm | 174.61 | 175.23 | | | |
| Wt. of Can + Dry Specimen (B) gm | 136.92 | 142.37 | | | |
| Wt. of Water ( A - B )gm | 37.69 | 32.86 | | | |
| Wt. of Can ( C ) gm | 29.64 | 28.97 | | | |
| Wt. of Dry Specimen ( B - C ) gm | 107.28 | 113.40 | | | |
| Moisture Content W = ( A - B / B - C) x 100 % | 35.13 | 28.98 | | | |

Tested by : Azharul.

Signed by : Engr. Jamal Uddin

# PARTICLE SIZE ANALYSIS OF SOILS BY SIEVE & HYDROMETER

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

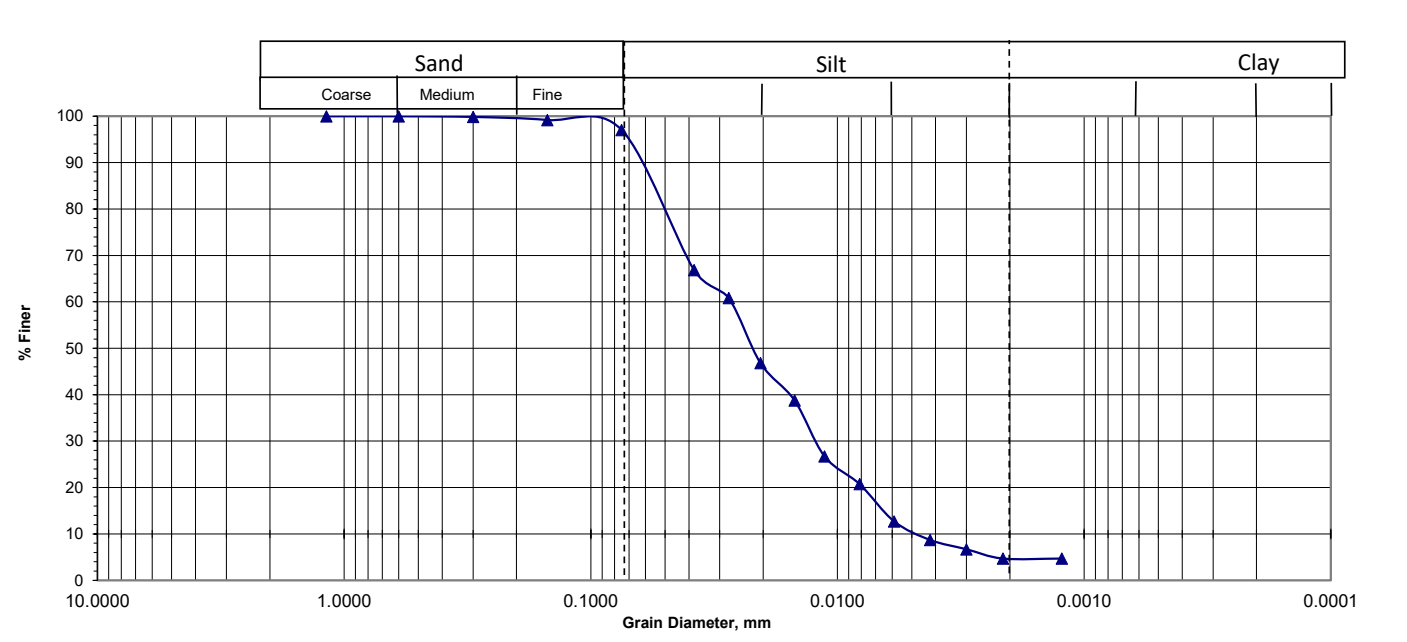
Borehole No : Ovp-1,BH-1

Depth (m) : 0.0m to 25.0m

Test Date : 26/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-1,BH-1 | 0 | 0.0m to 25.0m | 0 | 0 | 3 | 94 | 3 | 0.0050 | 0.013 | 0.0220 | 0.0280 | 5.600 | 1.207 | 0.261 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

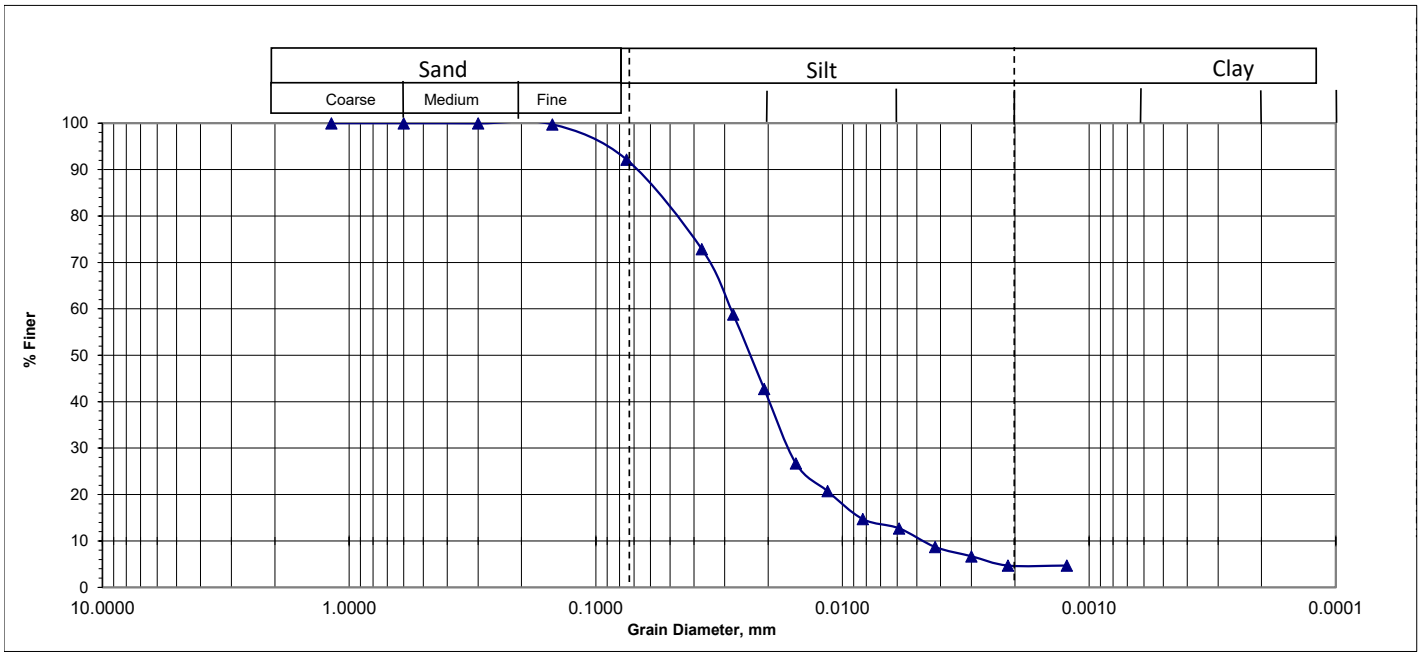
Borehole No : Ovp-1,BH-1

Depth (m) : 31.0m to 45.0m

Test Date : 26/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-1,BH-1 | 0 | 31.0m to 45.0m | 0 | 0 | 8 | 89 | 3 | 0.0048 | 0.017 | 0.0230 | 0.0190 | 3.958 | 3.169 | 0.267 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

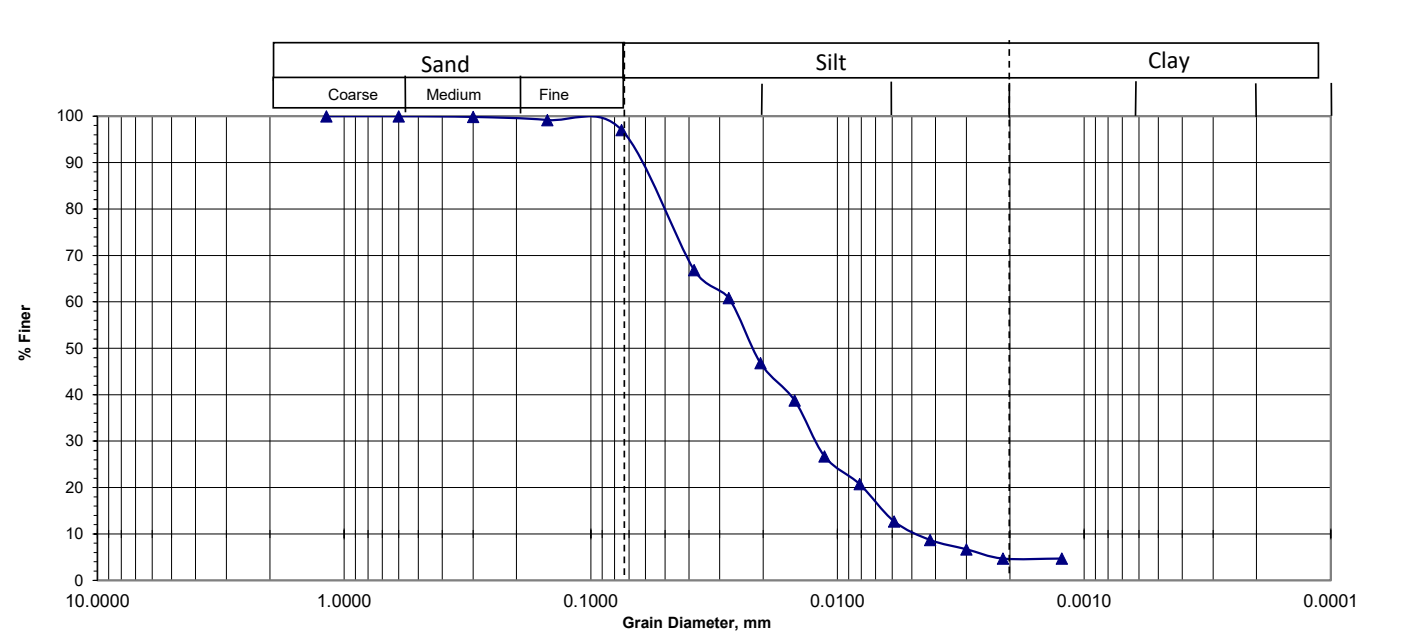
Borehole No : Ovp-1,BH-3

Depth (m) : 0.0m to 23.0m

Test Date : 26/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-1,BH-3 | 0 | 0.0m to 23.0m | 0 | 0 | 3 | 94 | 3 | 0.0050 | 0.013 | 0.0220 | 0.0280 | 5.600 | 1.207 | 0.261 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

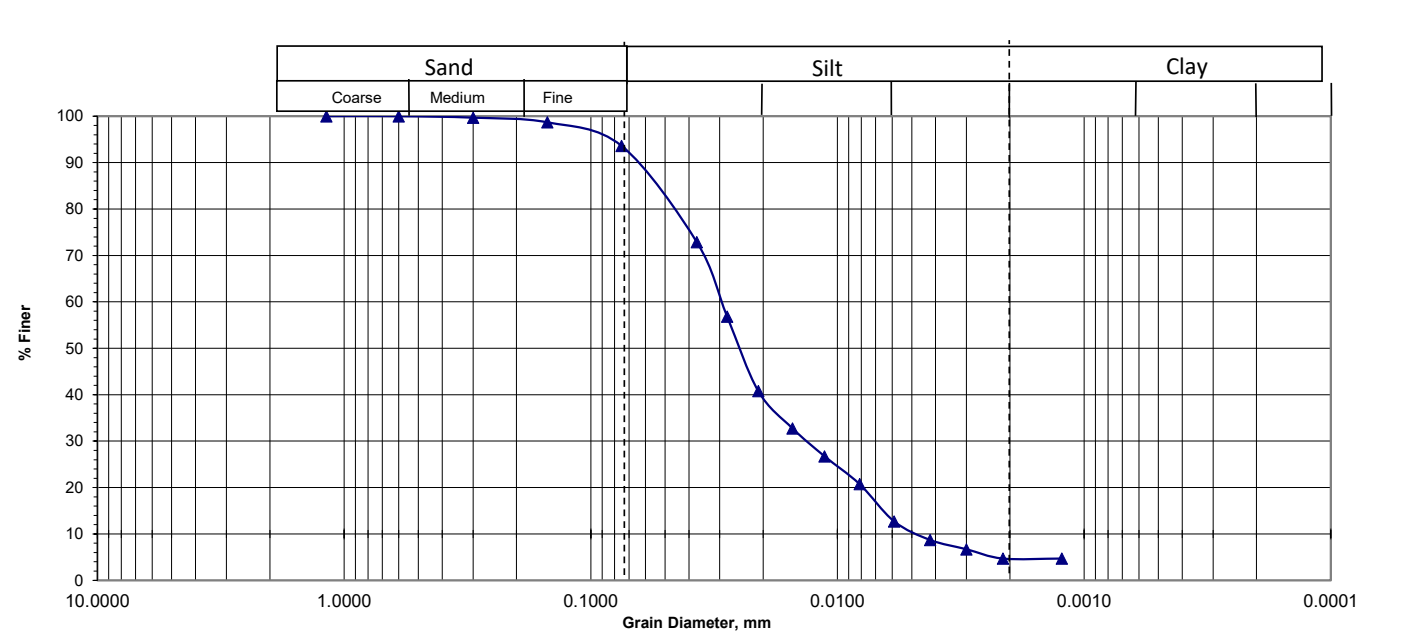
Borehole No : Ovp-1,BH-3

Depth (m) : 23.0m to 35.0m

Test Date : 26/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-1,BH-3 | 0 | 23.0m to 35.0m | 0 | 0 | 6 | 91 | 3 | 0.0050 | 0.014 | 0.0260 | 0.0300 | 6.000 | 1.307 | 0.284 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

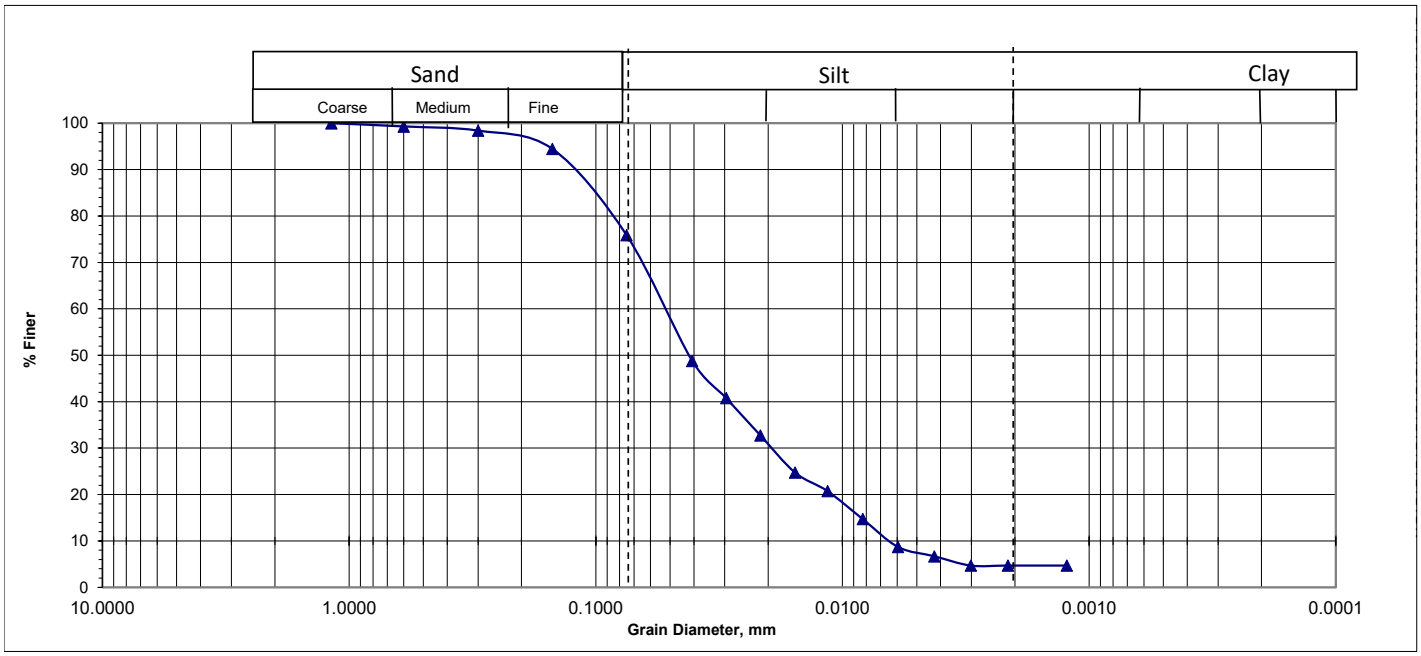
Borehole No : OVP-1.BH-5

Depth (m) : 0.0m to 19.0m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-1.BH-5 | 0 | 0.0m to 19.0m | | 2 | 22 | 71 | 5 | 0.0070 | 0.02 | 0.0425 | 0.0525 | 7.500 | 1.088 | 0.363 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

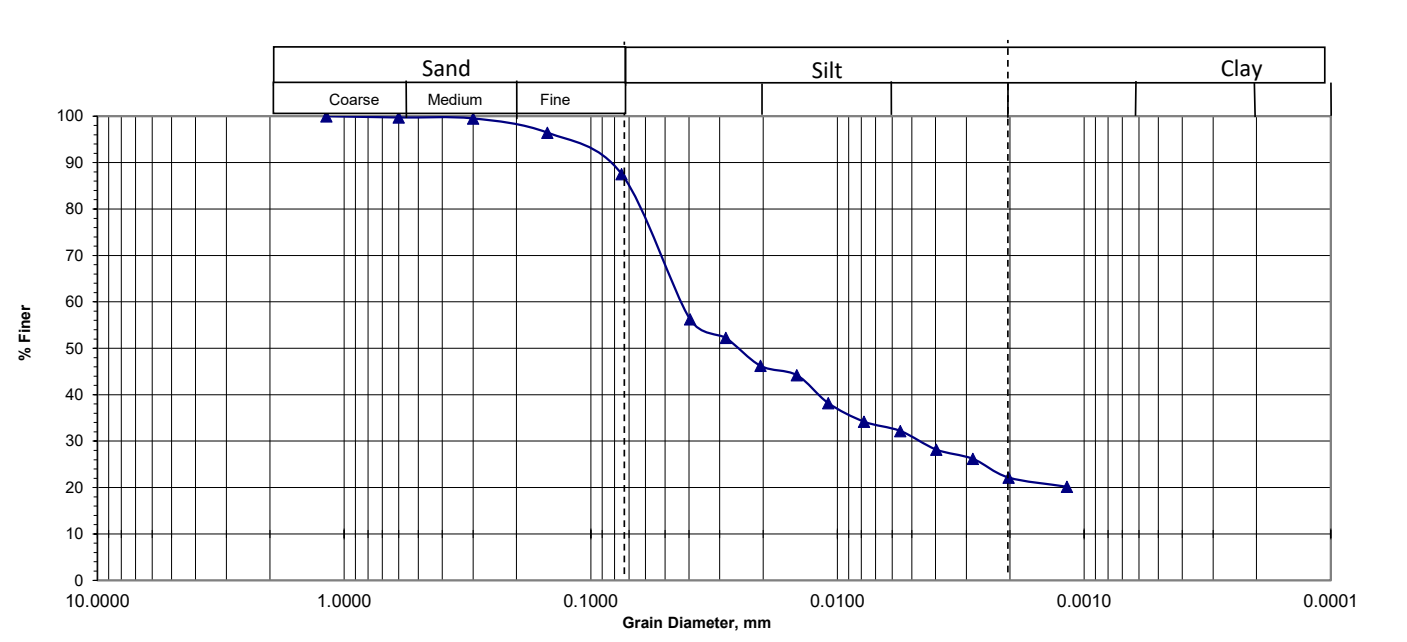
Borehole No : OVP-1.BH-5

Depth (m) : 28.0m to 38.0m

Test Date : 29.07.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-1.BH-5 | 0 | 28.0m to 38.0m | | 1 | 12 | 65 | 22 | | 0.05 | 0.0270 | 0.0430 | #DIV/0! | #DIV/0! | 0.289 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

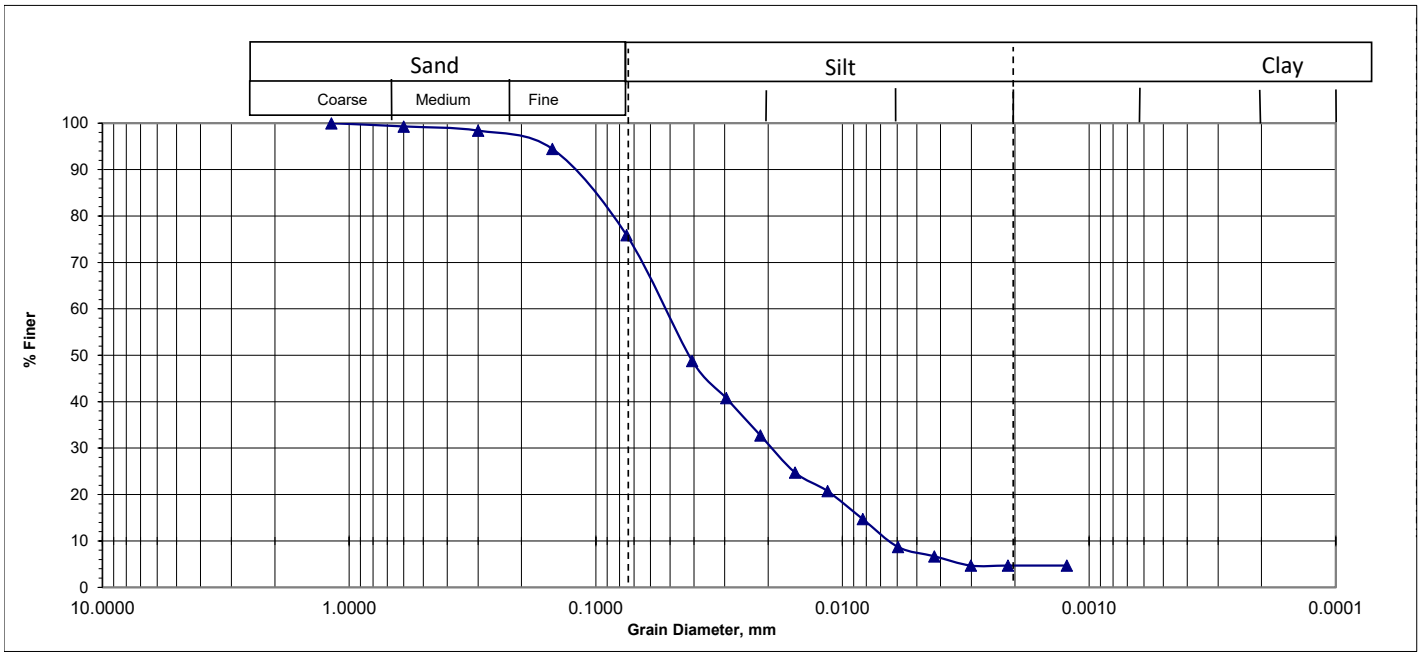
Borehole No : OVP-1.BH-5

Depth (m) : 38.0m to 43.5m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-1.BH-5 | 0 | 38.0m to 43.5m | | 3 | 21 | 72 | 4 | 0.0070 | 0.02 | 0.0425 | 0.0525 | 7.500 | 1.088 | 0.363 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

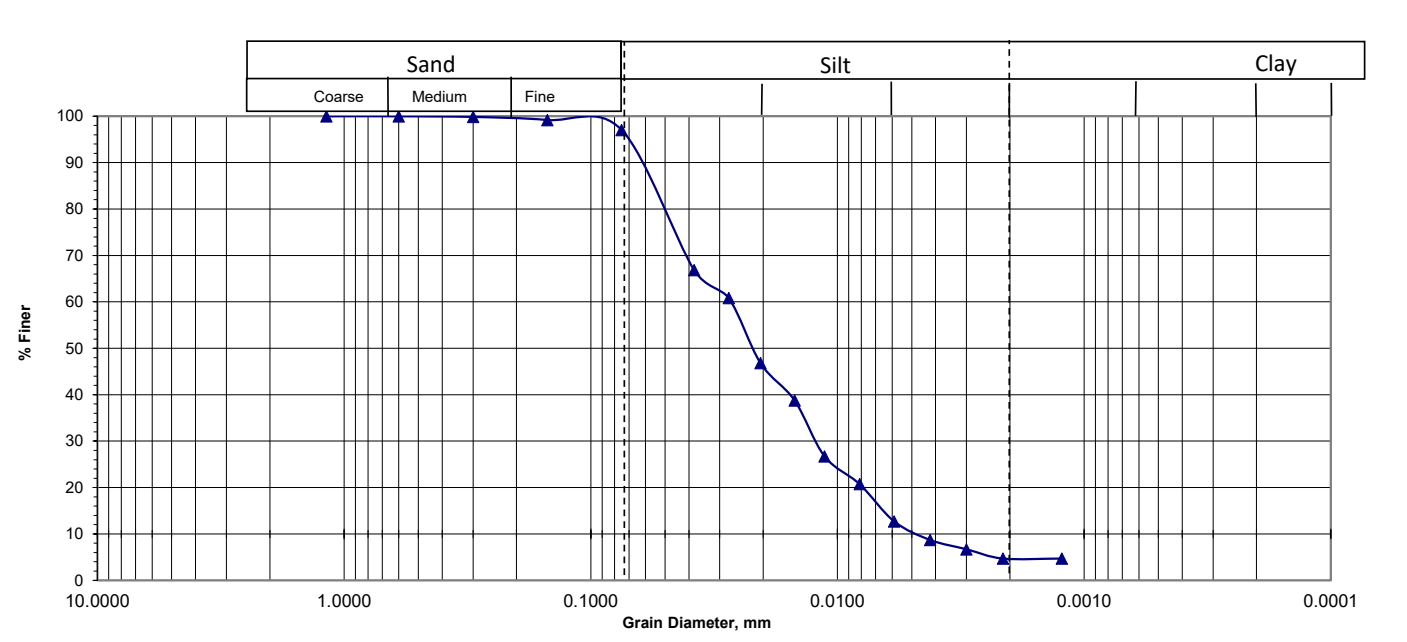
Borehole No : Ovp-1,BH-4

Depth (m) : 0.0m to 5.0m

Test Date : 26/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-1,BH-4 | 0 | 0.0m to 5.0m | 0 | 0 | 3 | 94 | 3 | 0.0050 | 0.013 | 0.0220 | 0.0280 | 5.600 | 1.207 | 0.261 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

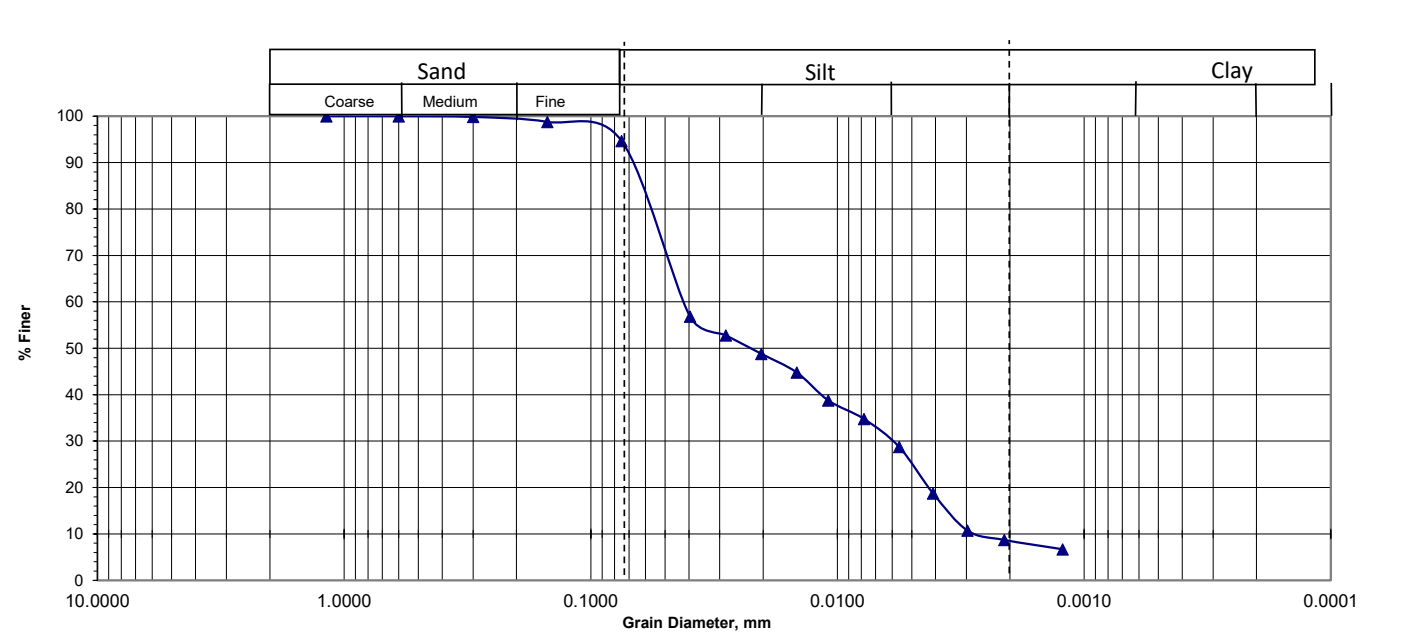
Borehole No : Ovp-1,BH-4

Depth (m) : 5.0m to 13.0m

Test Date : 26/03/2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-1,BH-4 | 0 | 5.0m to 13.0m | 0 | 0 | 5 | 86 | 9 | 0.0030 | 0.006 | 0.0220 | 0.0420 | 14.000 | 0.286 | 0.261 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

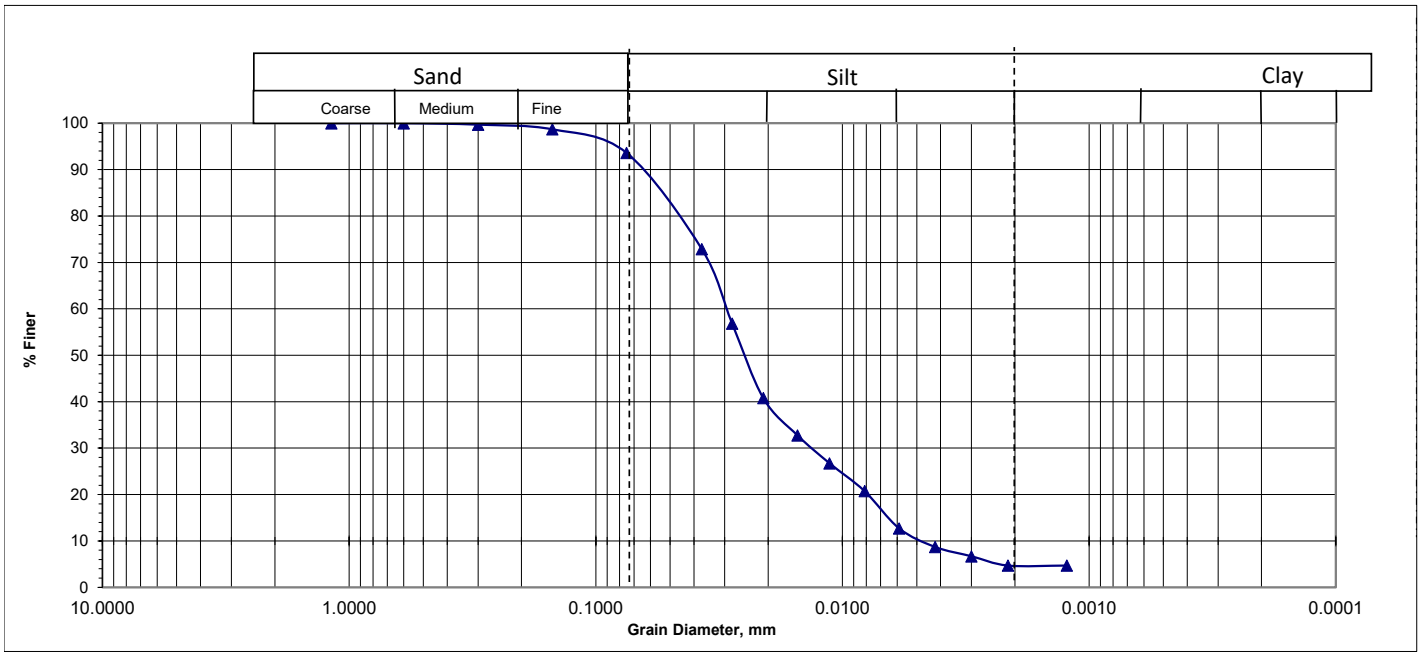
Borehole No : Ovp-1,BH-4

Depth (m) : 13.0m to 22.0m

Test Date : 26/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-1,BH-4 | 0 | 13.0m to 22.0m | 0 | 0 | 6 | 91 | 3 | 0.0050 | 0.014 | 0.0260 | 0.0300 | 6.000 | 1.307 | 0.284 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

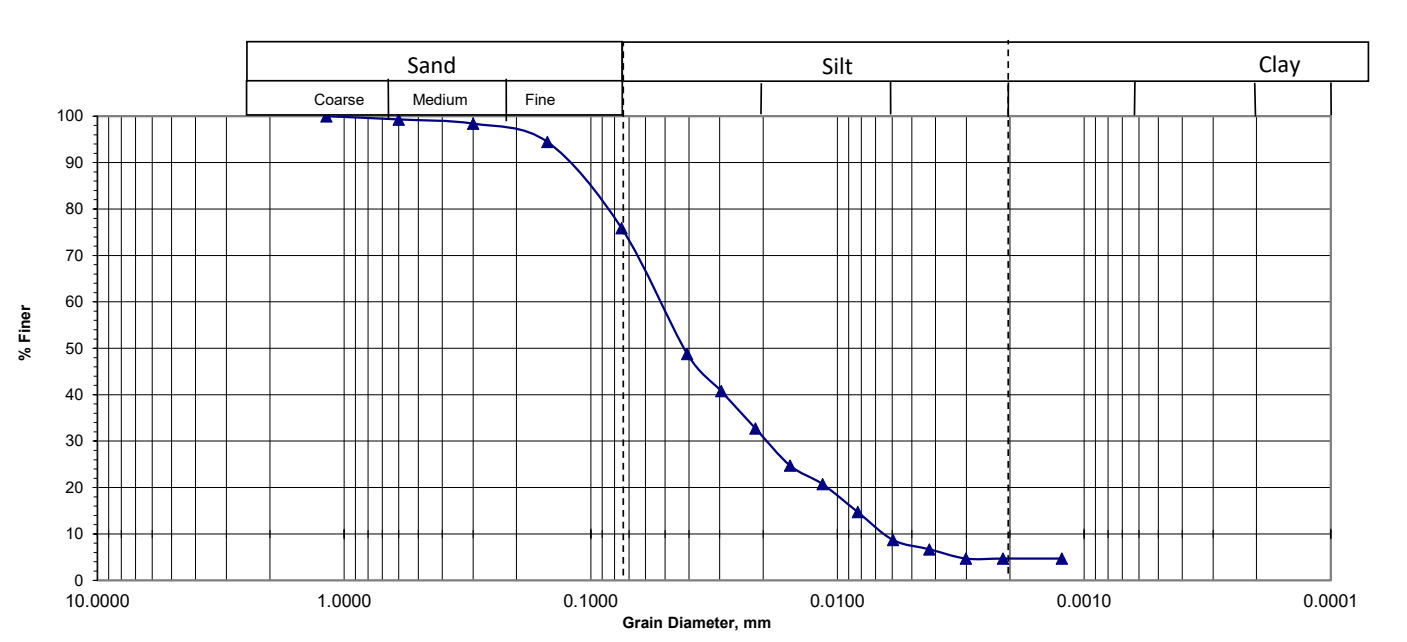
Borehole No : OVP-1.BH-2

Depth (m) : 7.0m to 21.0m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-1.BH-2 | 0 | 7.0m to 21.0m | | 3 | 21 | 72 | 4 | 0.0070 | 0.02 | 0.0425 | 0.0525 | 7.500 | 1.088 | 0.363 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

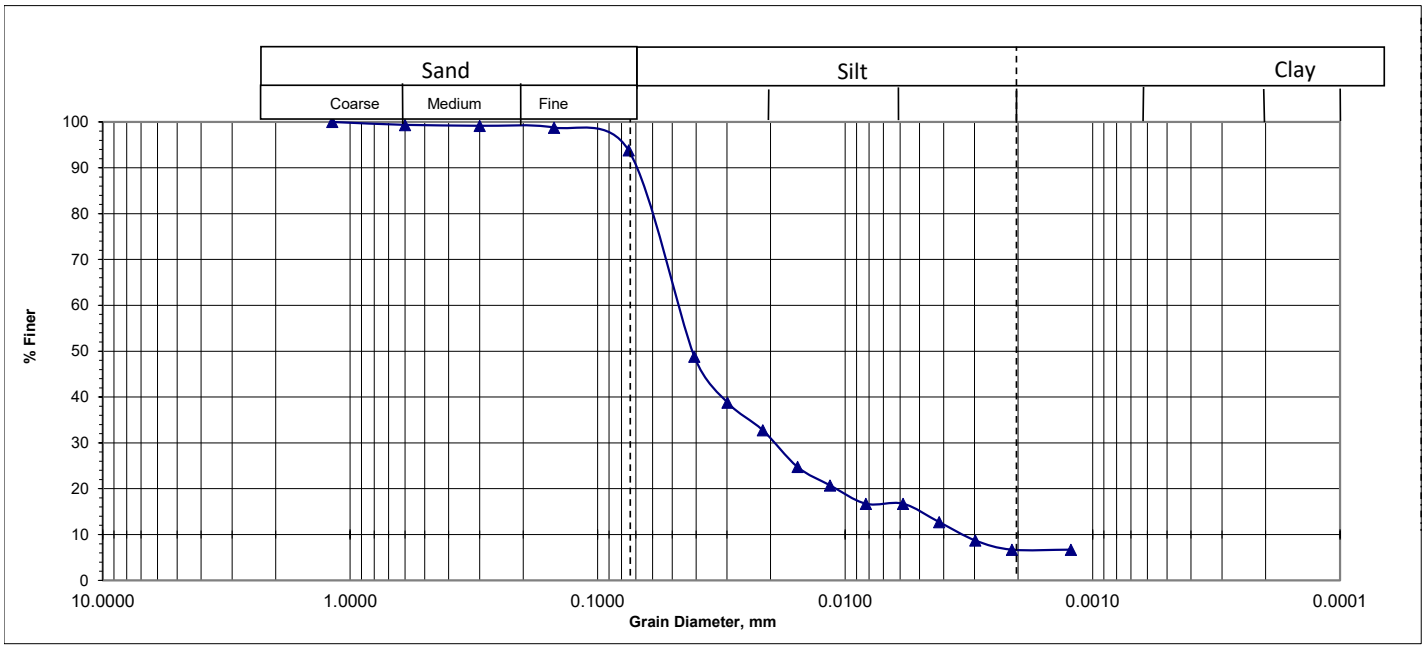
Borehole No : OVP-1.BH-2

Depth (m) : 21.0m to 43.5m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-1.BH-2 | 0 | 21.0m to 43.5m | | | 6 | 89 | 5 | 0.0035 | 0.02 | 0.0420 | 0.0480 | 13.714 | 2.381 | 0.361 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

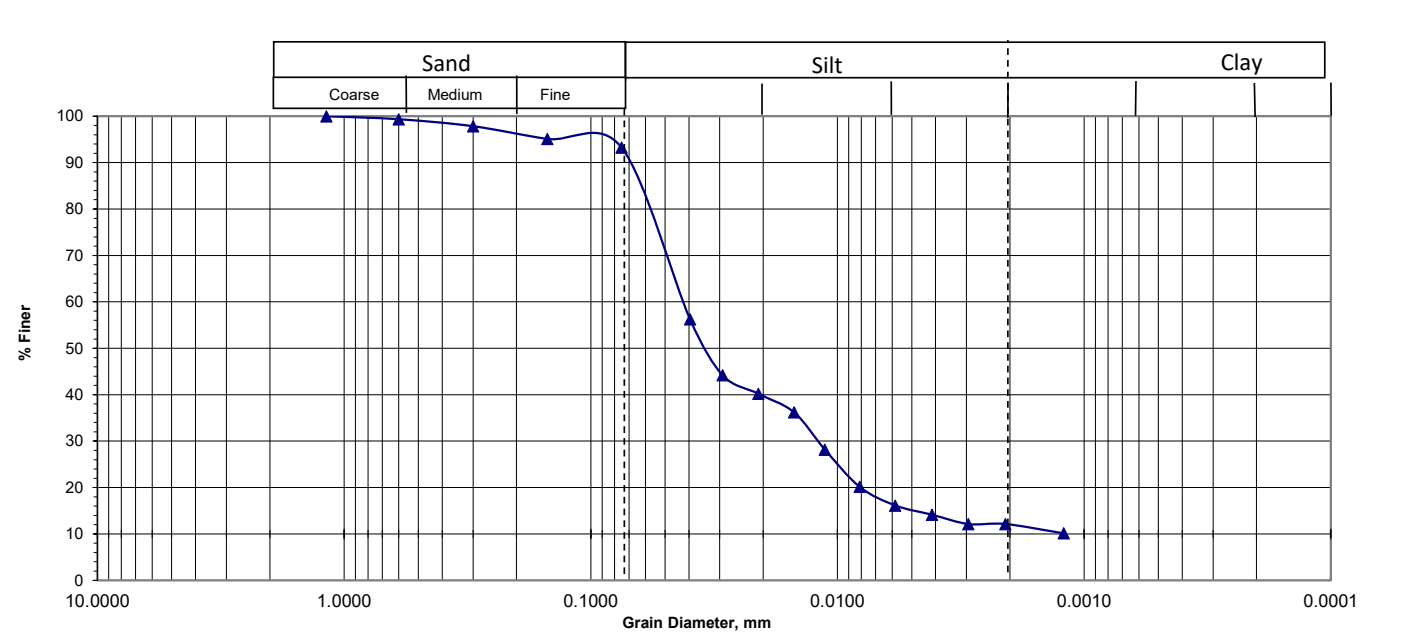
Borehole No : OVP-2.BH-1

Depth (m) : 0.0m to 5.0m

Test Date : 29.07.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 0.0m to 5.0m | | 3 | 4 | 81 | 12 | 0.0013 | 0.013 | 0.0350 | 0.0420 | 32.308 | 3.095 | 0.329 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

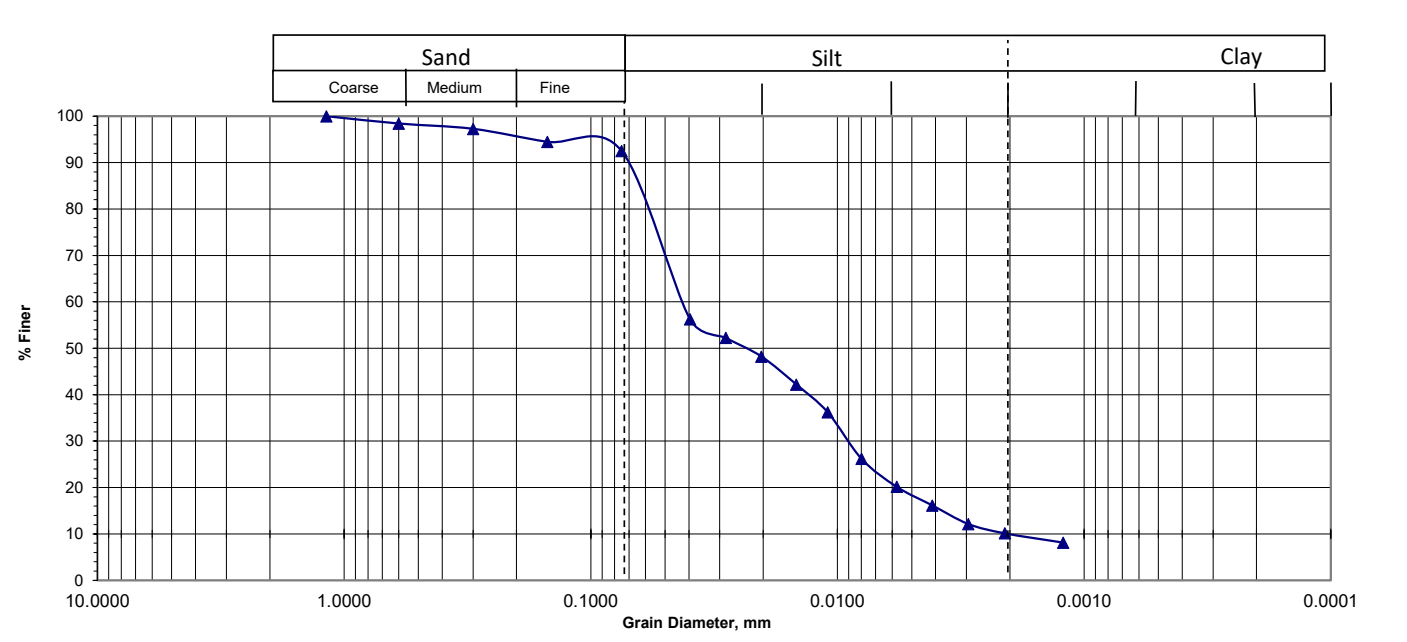
Borehole No : OVP-2.BH-1

Depth (m) : 23.0m to 26.0m

Test Date : 29.07.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 23.0m to 26.0m | 1 | 3 | 5 | 81 | 10 | 0.0020 | 0.009 | 0.0250 | 0.0425 | 21.250 | 0.953 | 0.278 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

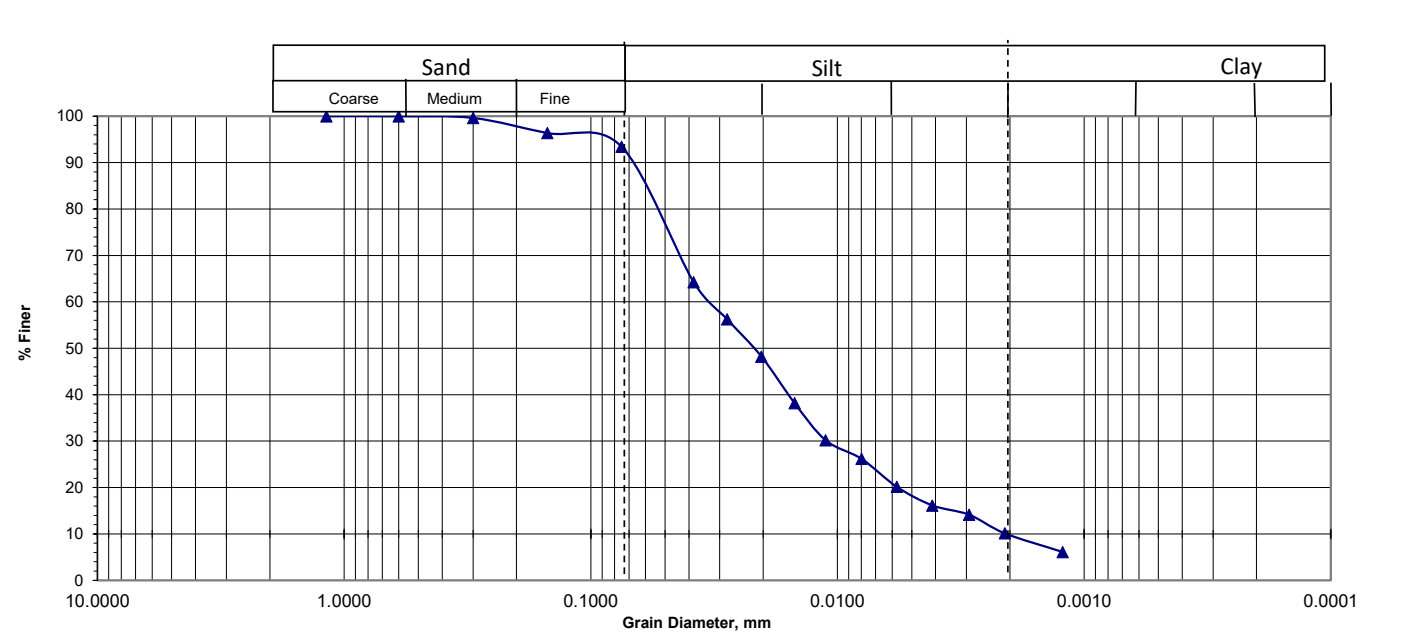
Borehole No : OVP-2.BH-1

Depth (m) : 29.0m to 40.0m

Test Date : 29.07.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 29.0m to 40.0m | | 2 | 5 | 83 | 10 | 0.0020 | 0.012 | 0.0220 | 0.0345 | 17.250 | 2.087 | 0.261 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

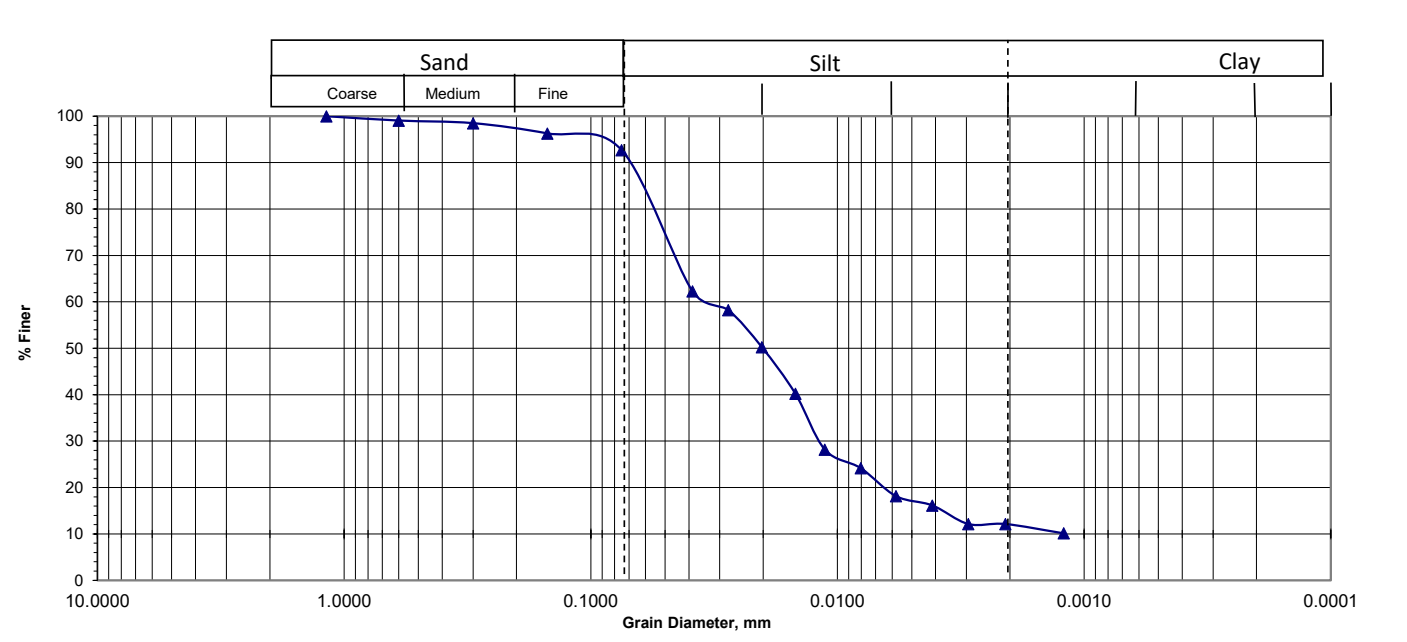
Borehole No : OVP-2.BH-1

Depth (m) : 44.0m to 49.0m

Test Date : 29.07.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 44.0m to 49.0m | | 2 | 5 | 81 | 12 | 0.0013 | 0.013 | 0.0200 | 0.0250 | 19.231 | 5.200 | 0.249 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

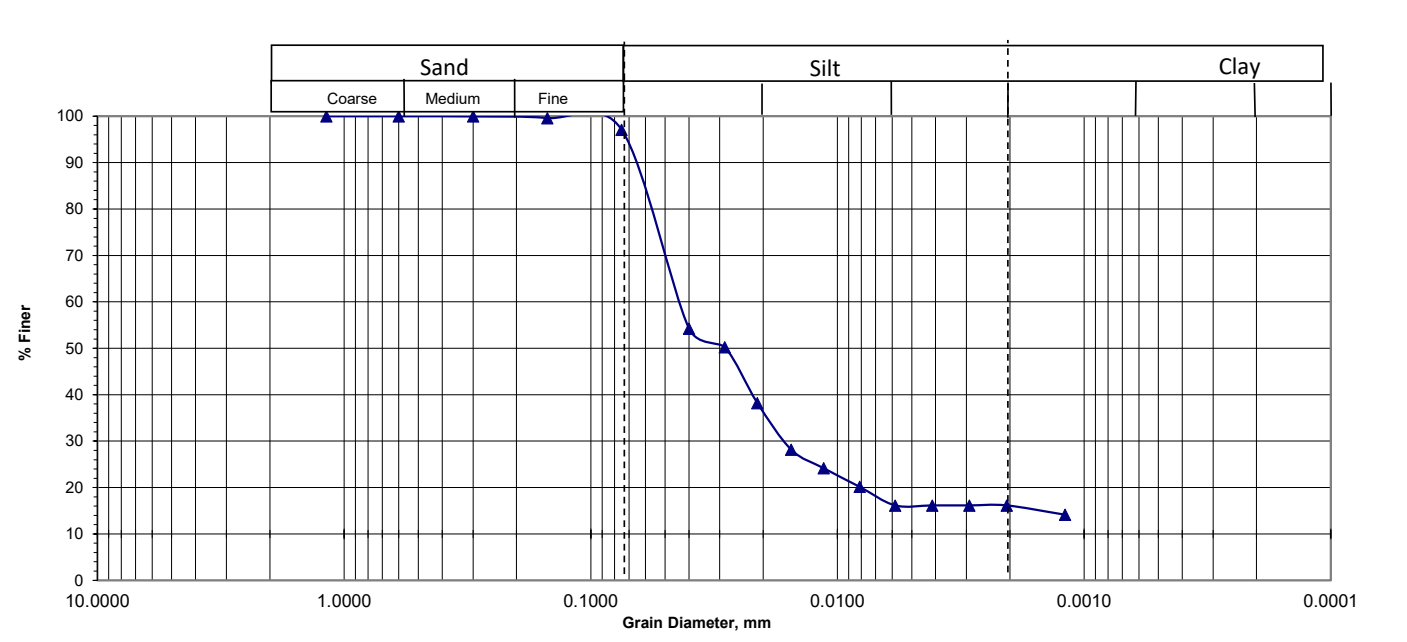
Borehole No : OVP-2.BH-1

Depth (m) : 53.0m to 56.0m

Test Date : 29.07.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 53.0m to 56.0m | | | 3 | 81 | 16 | | 0.017 | 0.0300 | 0.0450 | #DIV/0! | #DIV/0! | 0.305 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

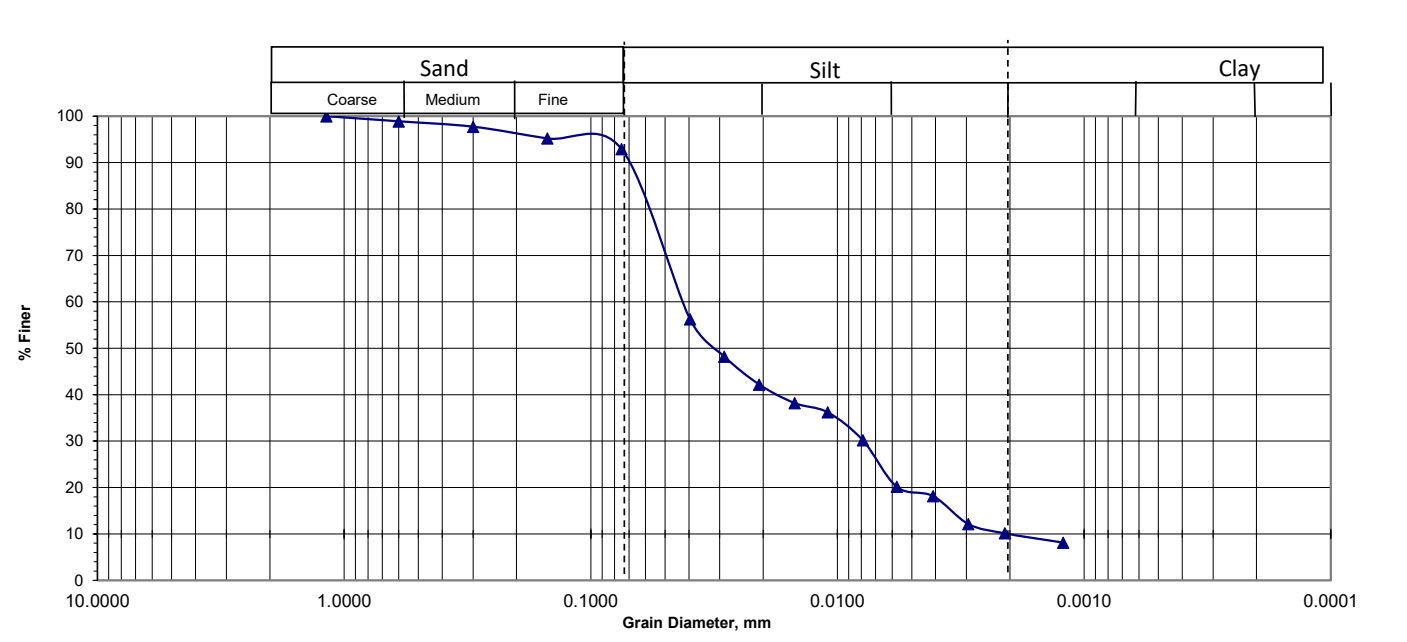
Borehole No : OVP-2.BH-2

Depth (m) : 0.0m to 4.0m

Test Date : 29.07.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-2 | 0 | 0.0m to 4.0m | | 3 | 4 | 83 | 10 | 0.0020 | 0.008 | 0.0320 | 0.0420 | 21.000 | 0.762 | 0.315 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

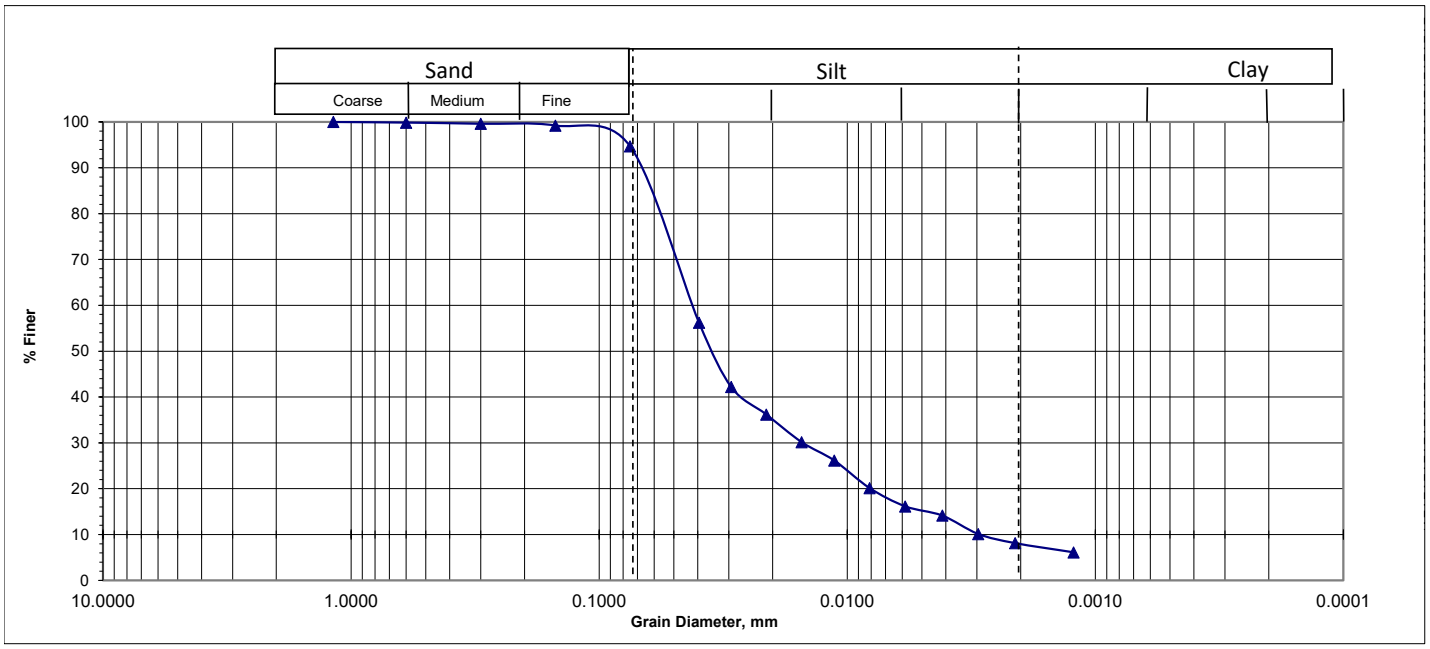
Borehole No : OVP-2.BH-2

Depth (m) : 4.0m to 34.5m

Test Date : 29.07.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-2 | 0 | 4.0m to 34.5m | | | 5 | 87 | 8 | 0.0030 | 0.016 | 0.0360 | 0.0420 | 14.000 | 2.032 | 0.334 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

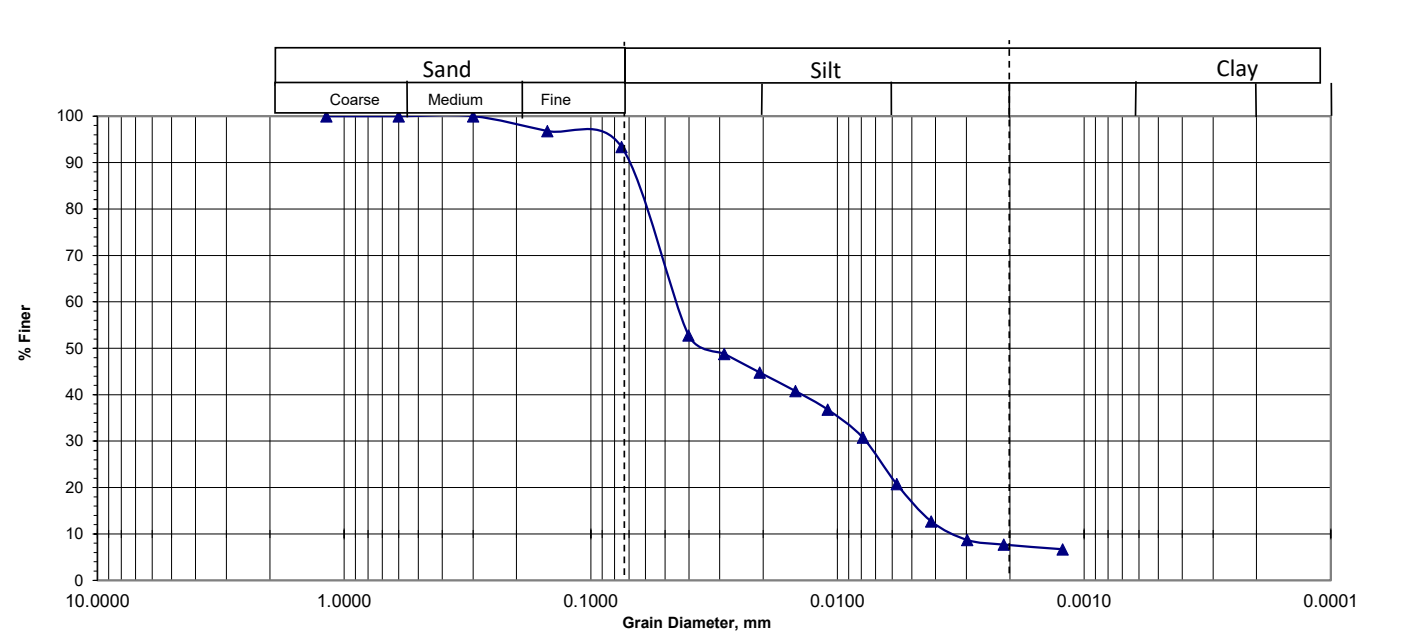
Borehole No : FLY-1,BH-1

Depth (m) : 4.5m to 10.0m

Test Date : 24/03/2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-1 | 0 | 4.5m to 10.0m | 0 | 2 | 5 | 85 | 8 | 0.0035 | 0.008 | 0.0370 | 0.0450 | 12.857 | 0.406 | 0.339 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location:,Sylhet.**

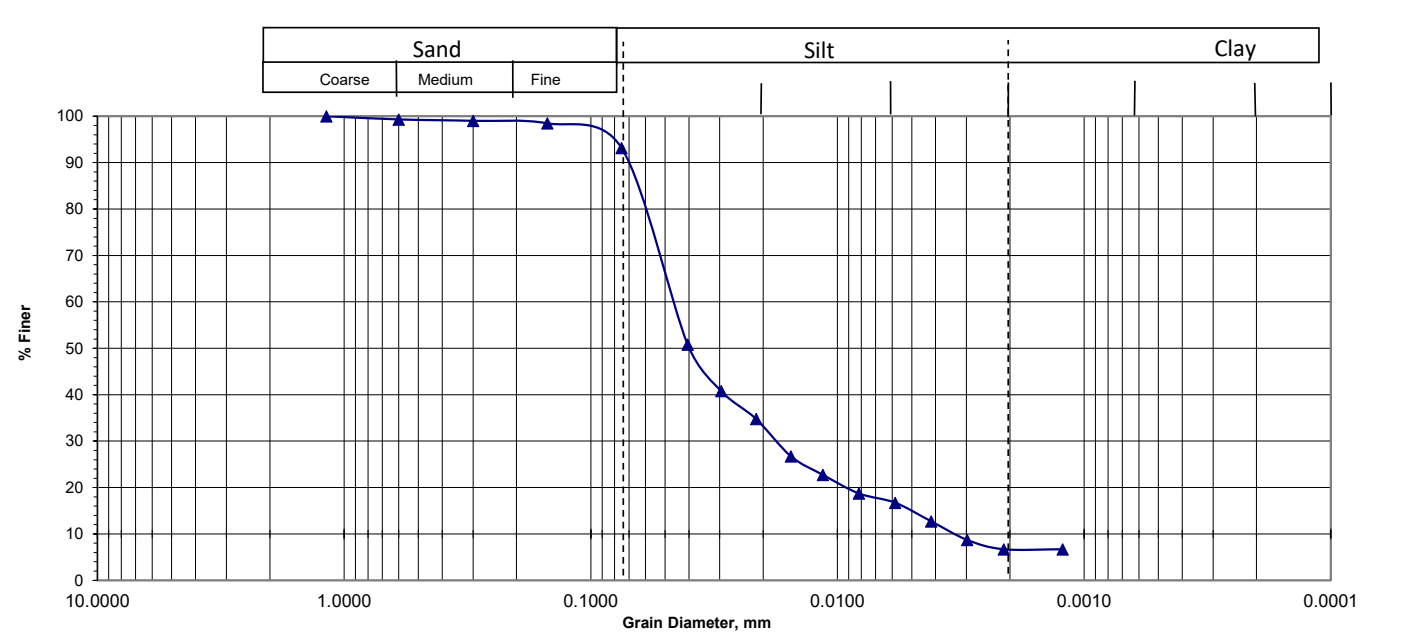
Borehole No : FLY-1.BH-3

Depth (m) : 0.0m to 20.0m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1.BH-3 | 0 | 0.0m to 20.0m | | | 7 | 88 | 5 | 0.0035 | 0.018 | 0.0400 | 0.0475 | 13.571 | 1.949 | 0.352 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

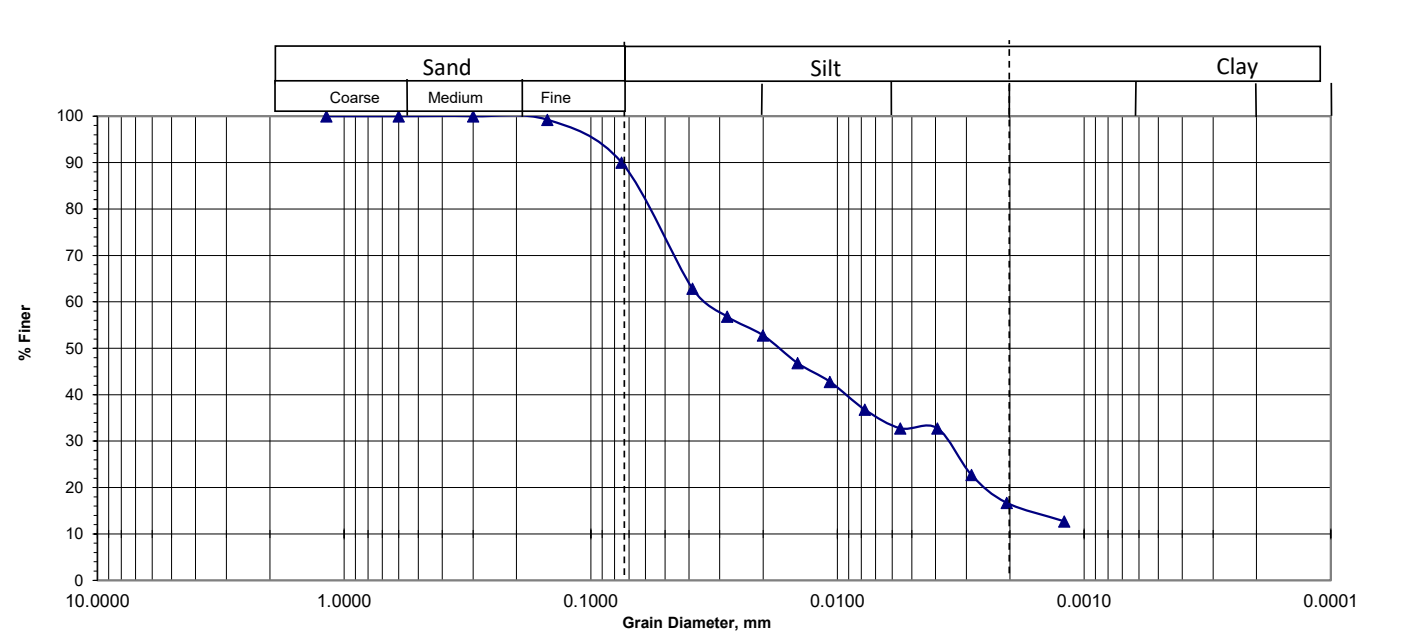
Borehole No : FLY-1,BH-4

Depth (m) : 0.0m to 17.0m

Test Date : 24/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-4 | 0 | 0.0m to 17.0m | 0 | 0 | 10 | 73 | 17 | - | 0.0037 | 0.0180 | 0.0360 | | | 0.236 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

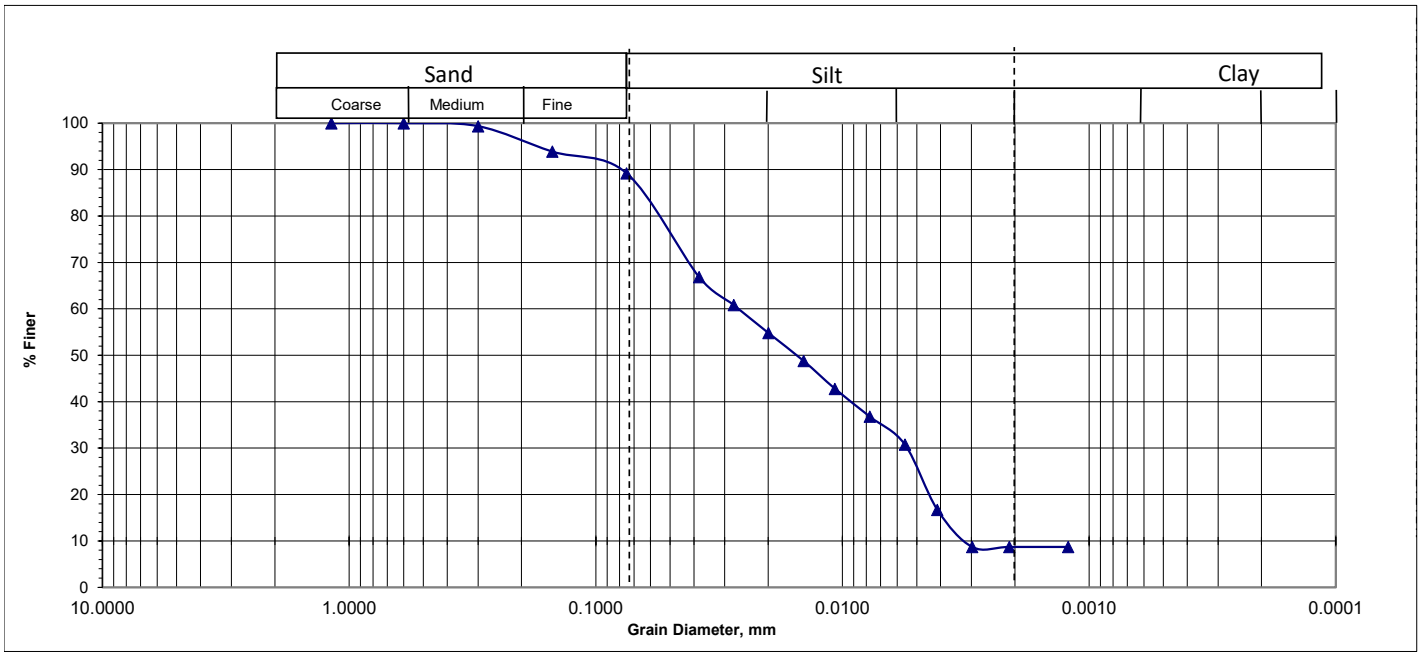
Borehole No : FLY-1,BH-4

Depth (m) : 23.0m to 45.0m

Test Date : 24/03/2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-4 | 0 | 23.0m to 45.0m | 0 | 3 | 8 | 80 | 9 | 0.0032 | 0.0055 | 0.0160 | 0.0280 | 8.750 | 0.338 | 0.223 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location:,Sylhet.**

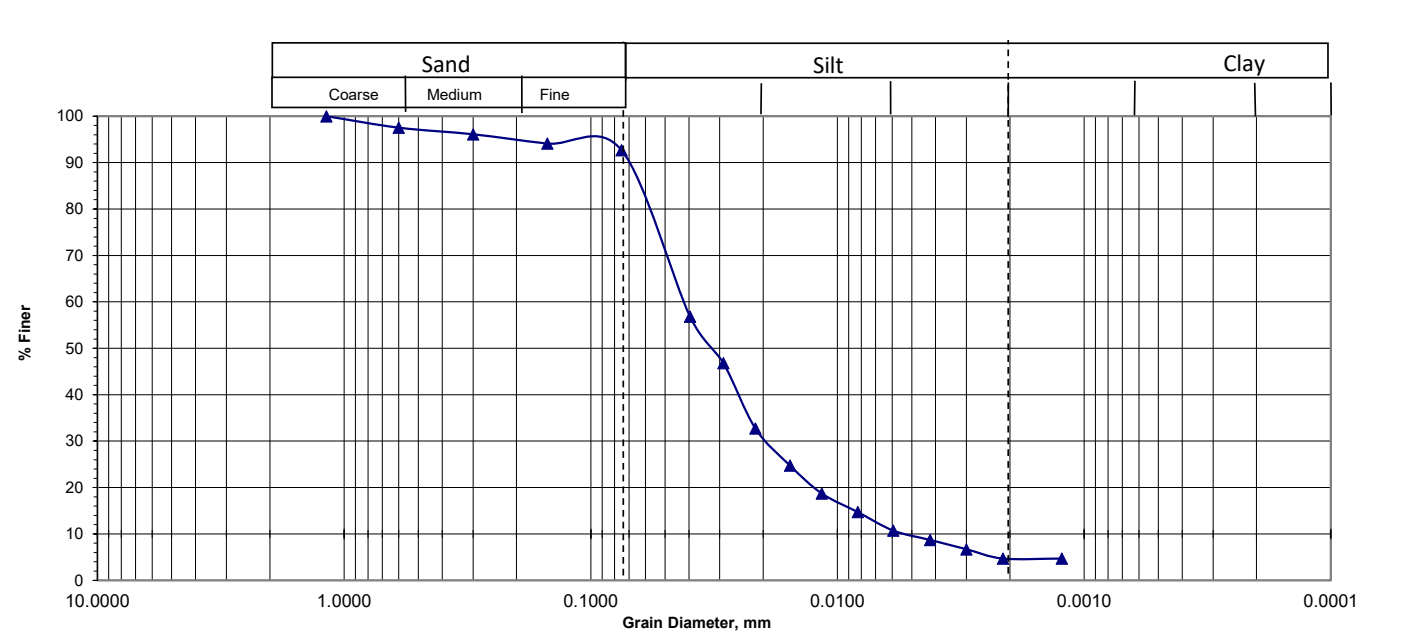
Borehole No : FLY-1.BH-5

Depth (m) : 0.0m to 25.0m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1.BH-5 | 0 | 0.0m to 25.0m | | 4 | 3 | 90 | 3 | 0.0060 | 0.2 | 0.0330 | 0.0420 | 7.000 | 158.730 | 0.320 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location:,Sylhet.**

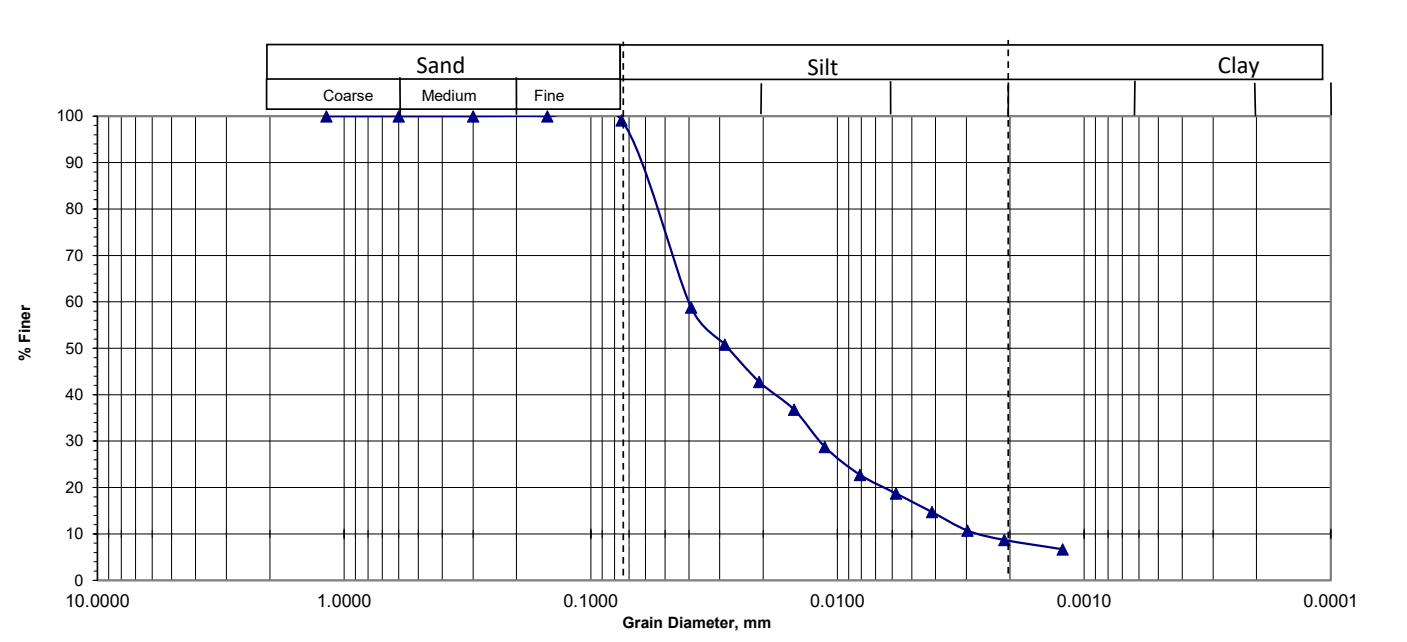
Borehole No : FLY-1.BH-5

Depth (m) : 25.0m to 41.0m

Test Date : 05.08.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1.BH-5 | 0 | 25.0m to 41.0m | | | 1 | 91 | 8 | 0.0030 | 0.13 | 0.0300 | 0.0400 | 13.333 | 140.833 | 0.305 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

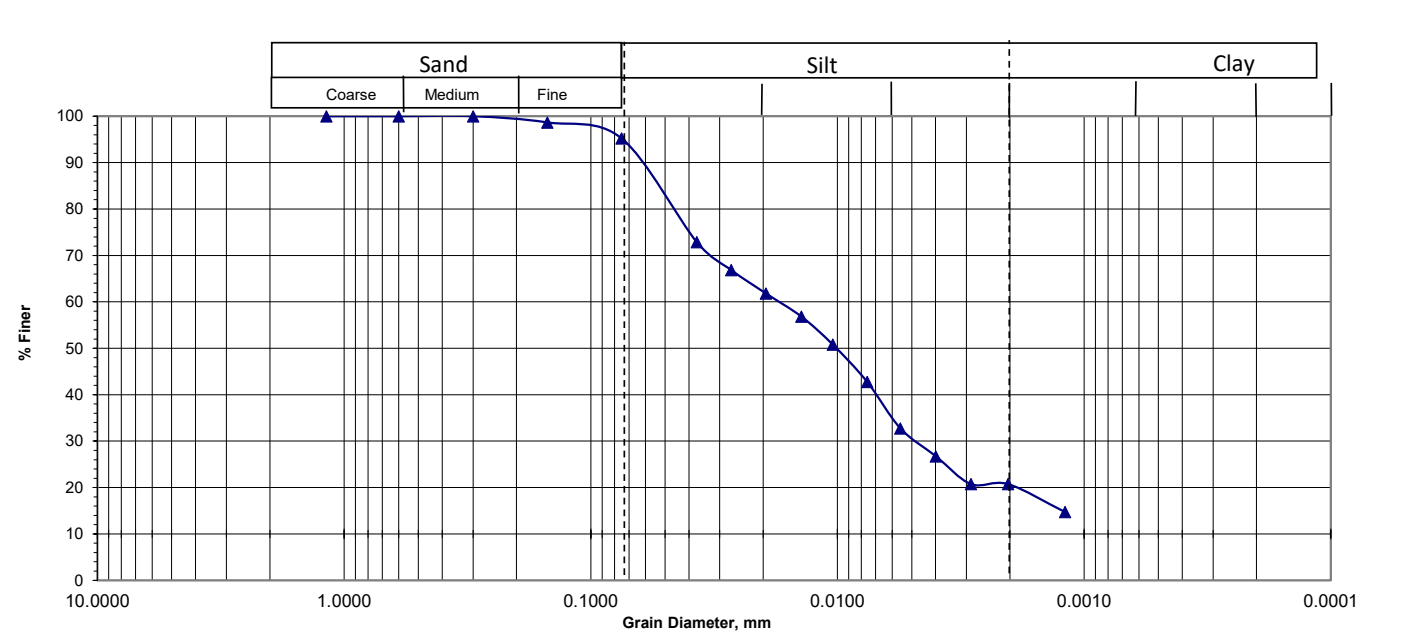
Borehole No : FLY-1,BH-6

Depth (m) : 0.0m to 5.0m

Test Date : 24/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-6 | 0 | 0.0m to 5.0m | 0 | 0 | 5 | 75 | 20 | 0.0028 | 0.005 | 0.0100 | 0.0180 | 6.429 | 0.496 | 0.176 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

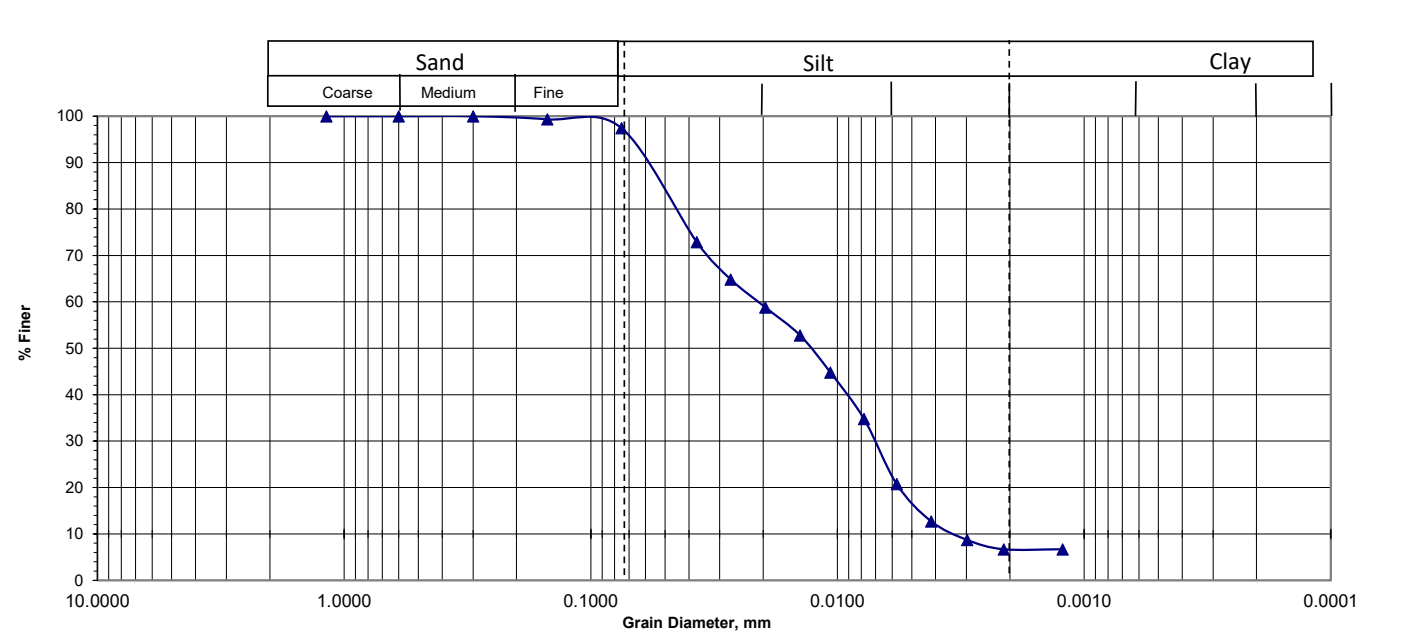
Borehole No : FLY-1,BH-6

Depth (m) : 8.0m to 30.0m

Test Date : 24/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-6 | 0 | 8.0m to 30.0m | 0 | 0 | 3 | 90 | 7 | 0.0035 | 0.007 | 0.0130 | 0.0205 | 5.857 | 0.683 | 0.201 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location:,Sylhet.**

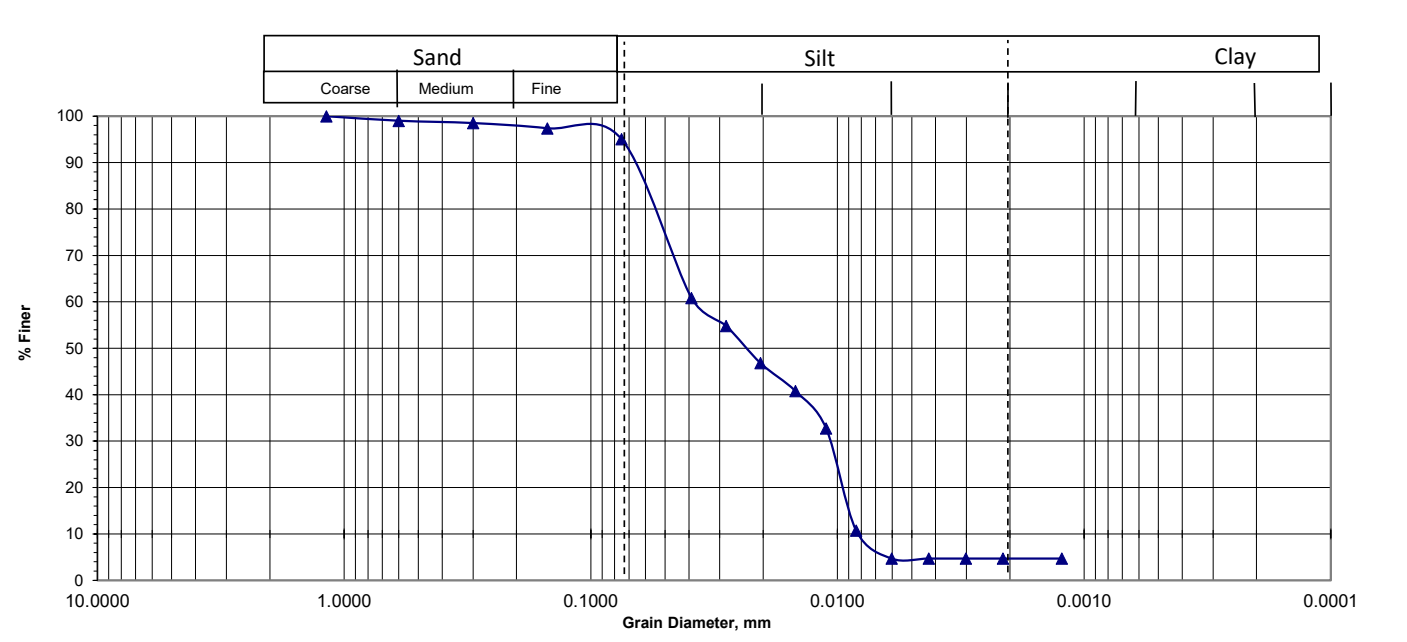
Borehole No : FLY-1.BH-2

Depth (m) : (0m to 8.0m)

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1.BH-2 | 0 | (0m to 8.0m) | 0 | 1 | 4 | 91 | 4 | 0.0090 | 0.011 | 0.0240 | 0.0400 | 4.444 | 0.336 | 0.273 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location:,Sylhet.**

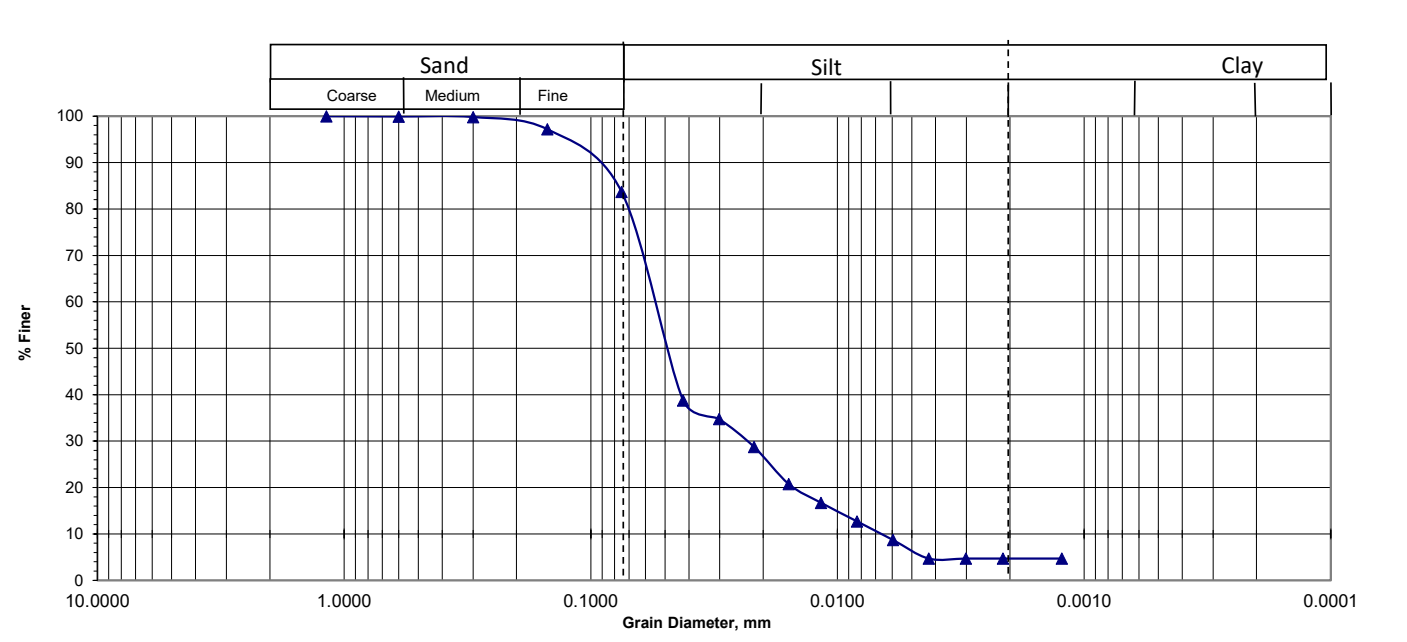
Borehole No : FLY-1.BH-2

Depth (m) : 8.0m to 14.0m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1.BH-2 | 0 | 8.0m to 14.0m | | | 16 | 80 | 4 | 0.0070 | 0.23 | 0.0500 | 0.0550 | 7.857 | 137.403 | 0.394 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location:,Sylhet.**

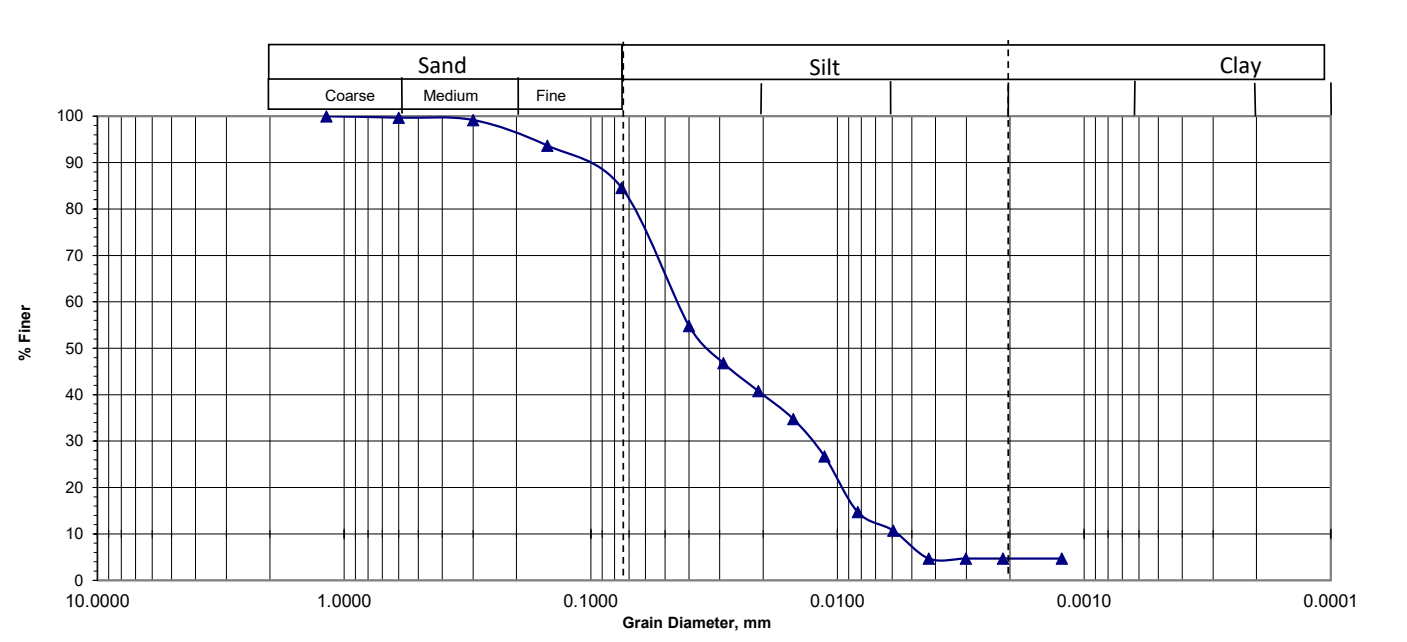
Borehole No : FLY-1.BH-2

Depth (m) : 20.0m to 41.0m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1.BH-2 | 0 | 20.0m to 41.0m | | 3 | 12 | 81 | 4 | 0.0060 | 0.14 | 0.0350 | 0.0450 | 7.500 | 72.593 | 0.329 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location:,Sylhet.**

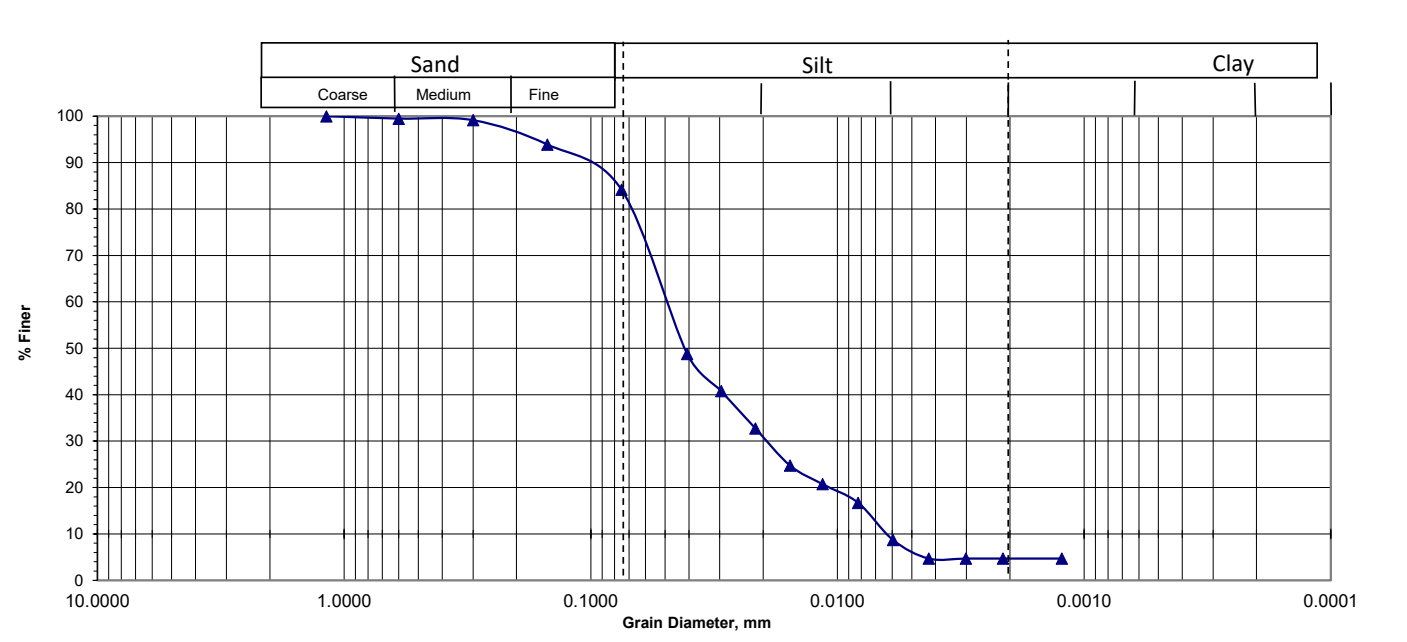
Borehole No : FLY-1.BH-7

Depth (m) : 0.0m to 10.0m

Test Date : 05.08.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1.BH-7 | 0 | 0.0m to 10.0m | | 3 | 13 | 80 | 4 | 0.0060 | 0.2 | 0.0420 | 0.0500 | 8.333 | 133.333 | 0.361 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location:,Sylhet.**

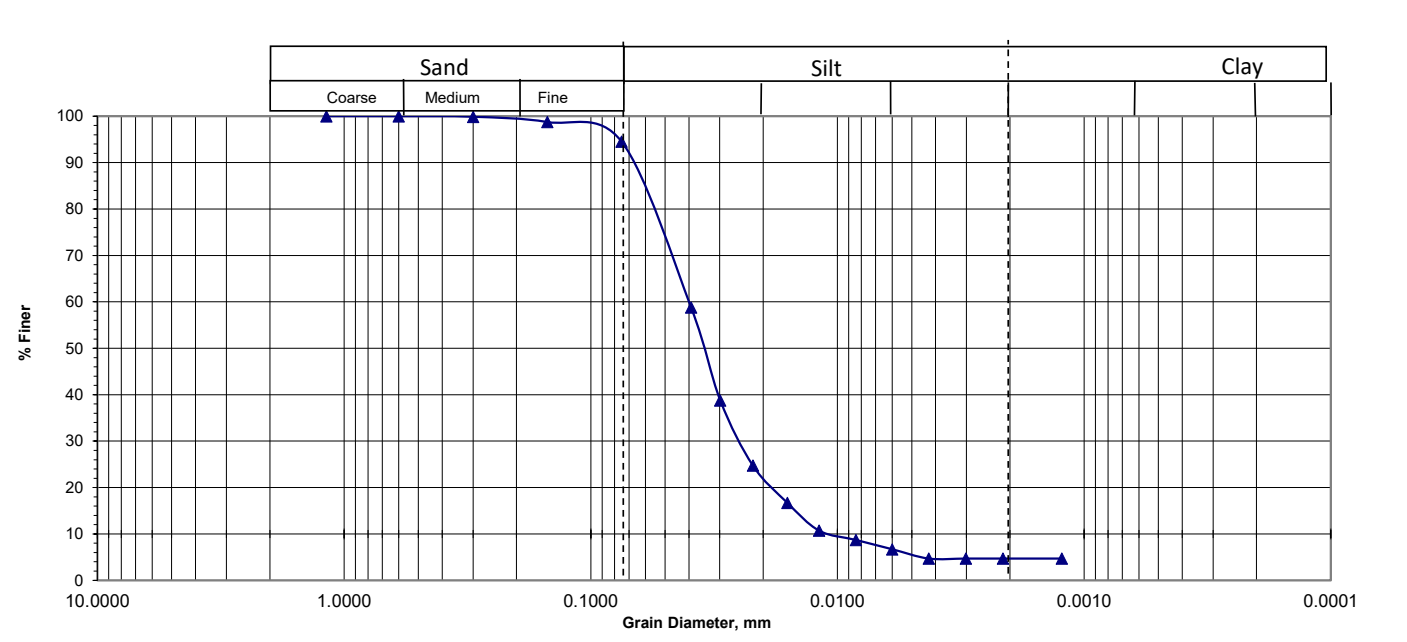
Borehole No : FLY-1.BH-7

Depth (m) : 23.0m to 34.0m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1.BH-7 | 0 | 23.0m to 34.0m | | | 5 | 91 | 4 | 0.0013 | 0.026 | 0.0350 | 0.0400 | 30.769 | 13.000 | 0.329 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location:,Sylhet.**

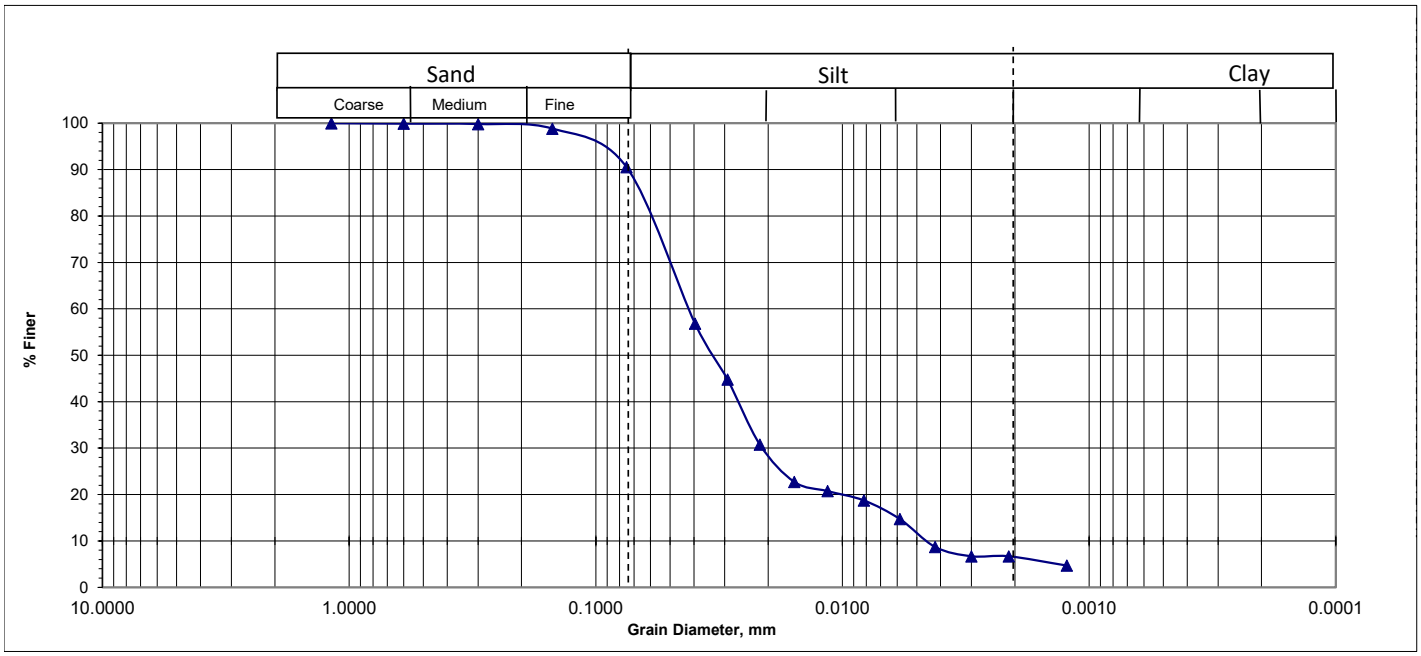
Borehole No : FLY-1.BH-7

Depth (m) : 34.0m to 41.0m

Test Date : 05.08.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1.BH-7 | 0 | 34.0m to 41.0m | | | 10 | 84 | 6 | 0.0045 | 0.021 | 0.0345 | 0.0420 | 9.333 | 2.333 | 0.327 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

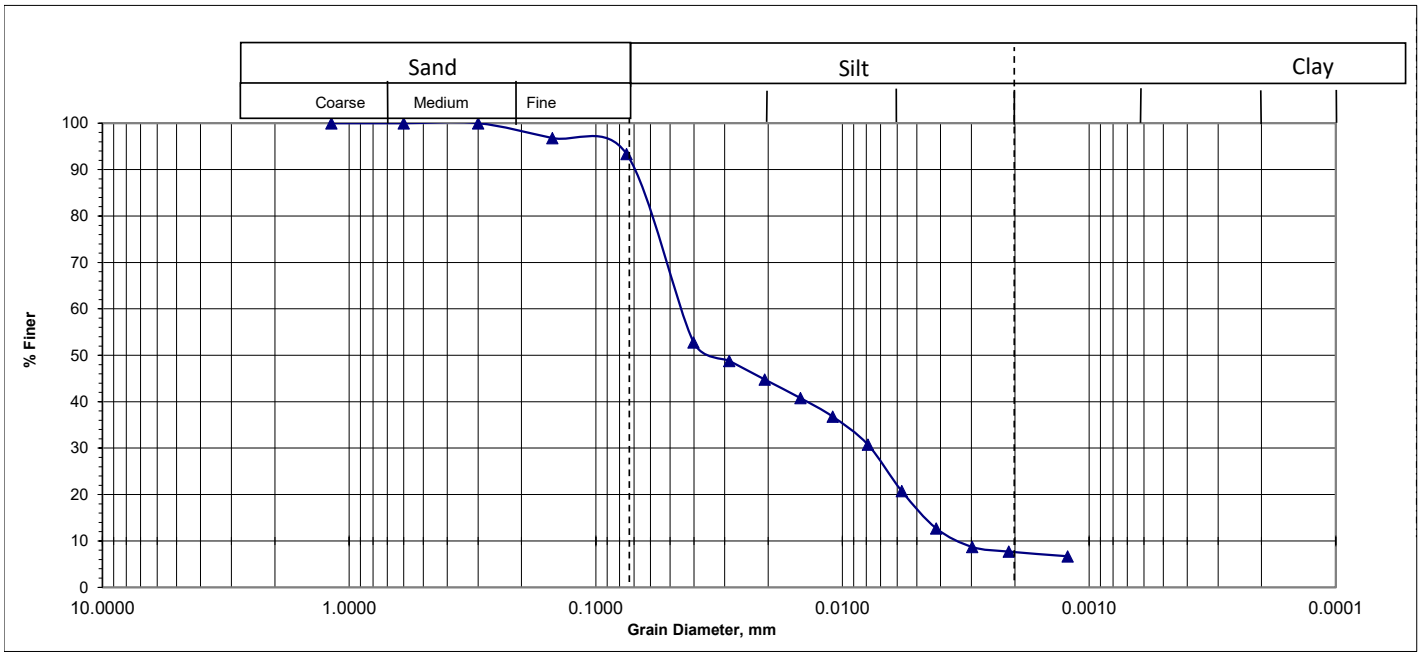
Borehole No : FLY-1,BH-8

Depth (m) : 0.0m to 14.0m

Test Date : 26/03/2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-8 | 0 | 0.0m to 14.0m | 0 | 1 | 3 | 85 | 11 | 0.0035 | 0.008 | 0.0370 | 0.0450 | 12.857 | 0.406 | 0.339 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

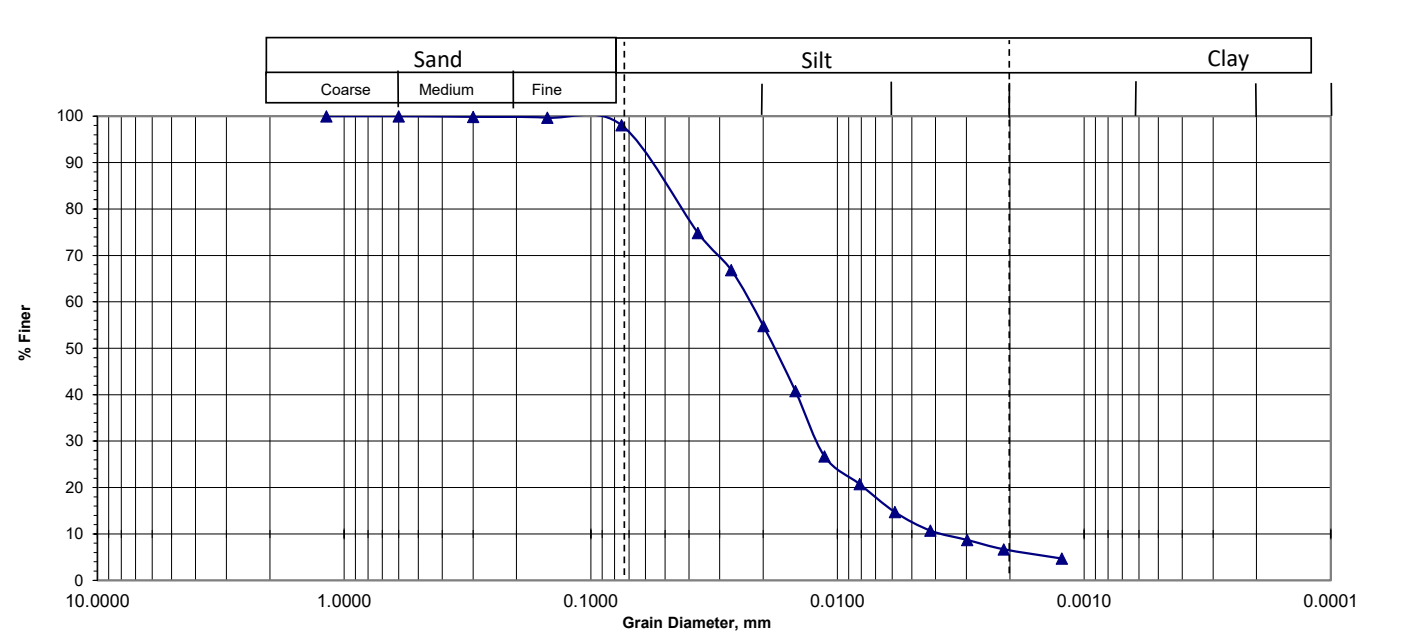
Borehole No : FLY-1,BH-8

Depth (m) : 20.0m to 30.0m

Test Date : 26/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-8 | 0 | 20.0m to 30.0m | 0 | 0 | 2 | 91 | 7 | 0.0040 | 0.012 | 0.0180 | 0.0220 | 5.500 | 1.636 | 0.236 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

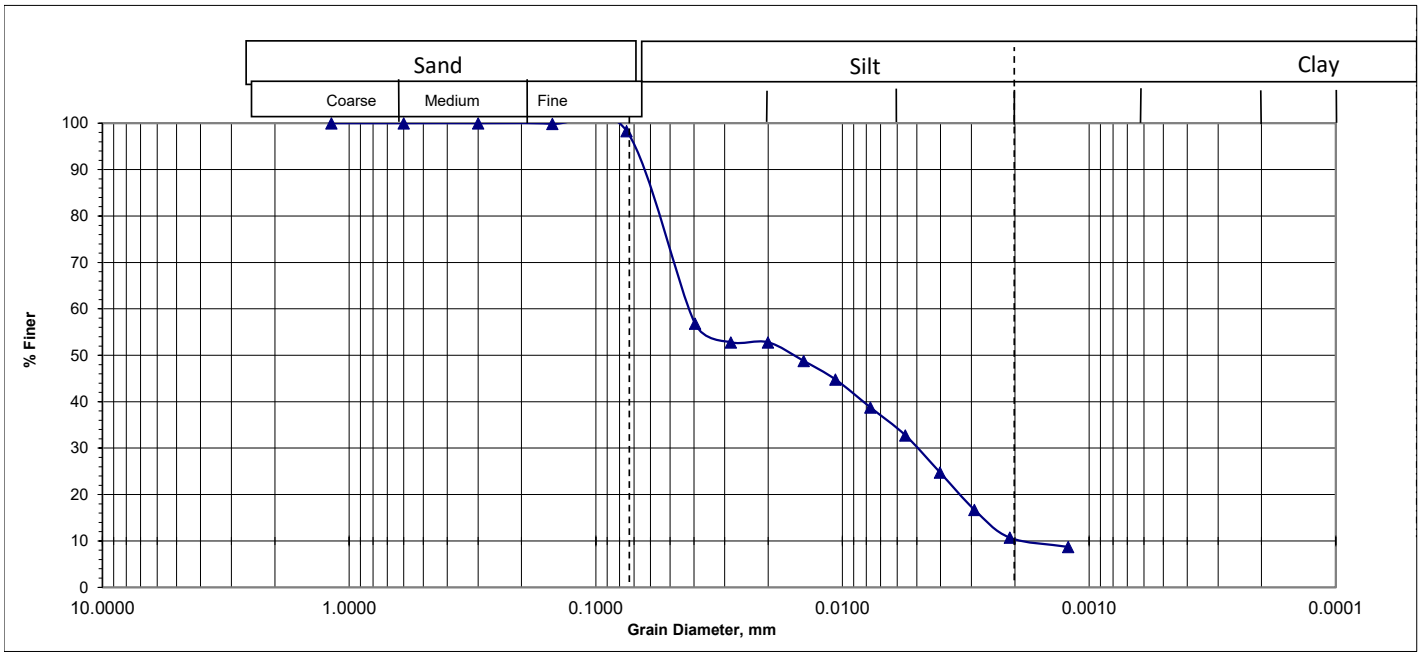
Borehole No : FLY-1,BH-8

Depth (m) : 30.0m to 45.0m

Test Date : 27/03/2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-8 | 0 | 30.0m to 45.0m | 0 | 0 | 2 | 88 | 10 | 0.0020 | 0.005 | 0.0170 | 0.0410 | 20.500 | 0.305 | 0.229 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

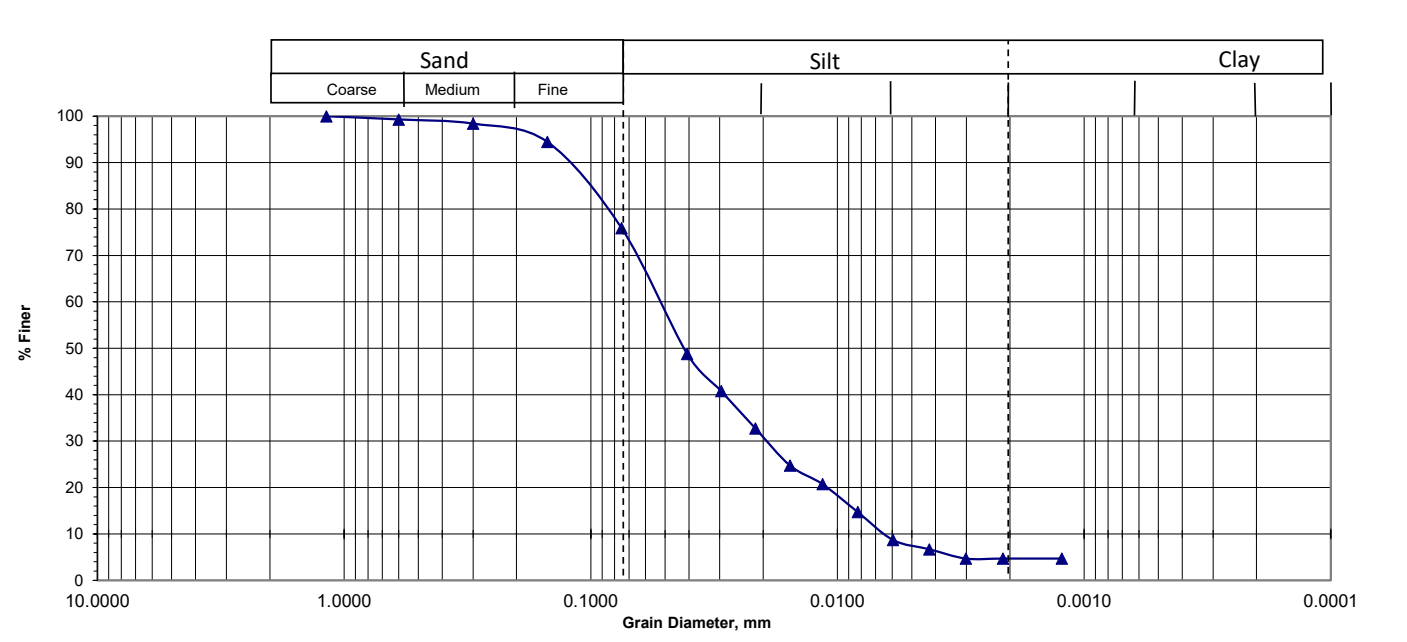
Borehole No : OVP-3.BH-1

Depth (m) : 0.0m to 4.0m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-3.BH-1 | 0 | 0.0m to 4.0m | | 2 | 22 | 71 | 5 | 0.0070 | 0.02 | 0.0425 | 0.0525 | 7.500 | 1.088 | 0.363 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

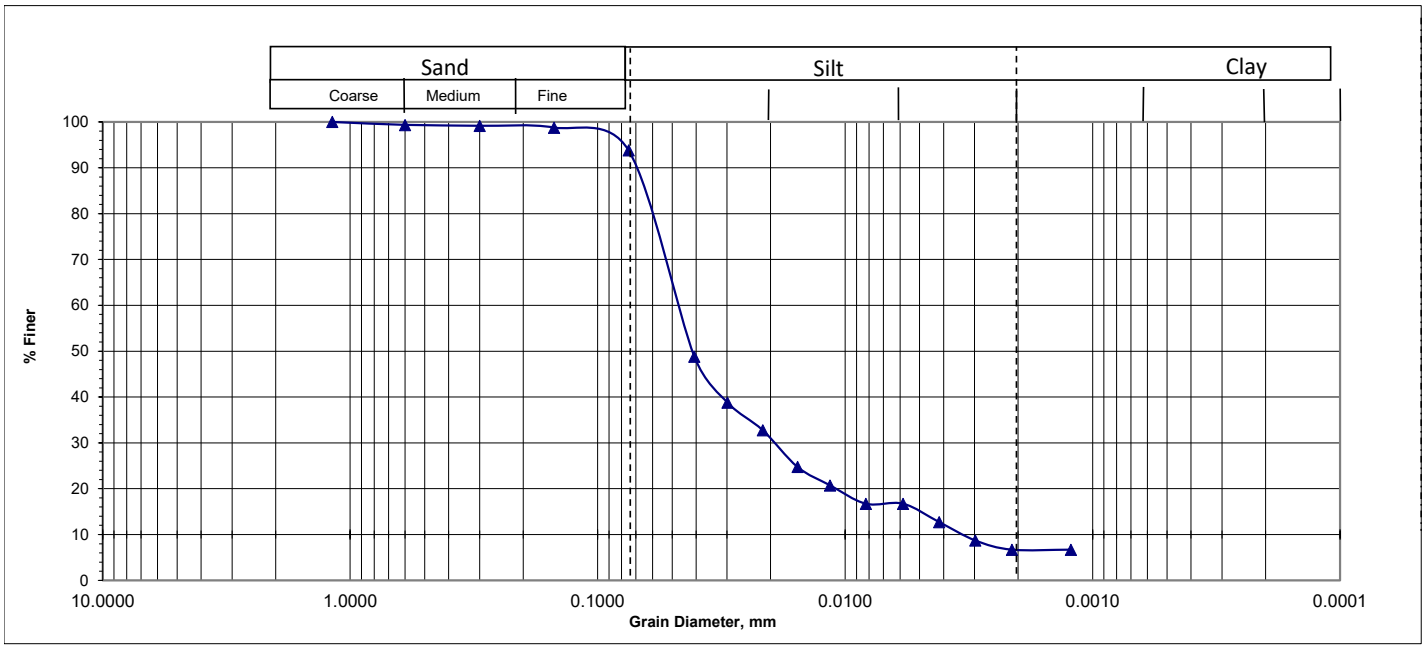
Borehole No : OVP-3.BH-1

Depth (m) : 7.0m to 34.5m

Test Date : 05.08.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-3.BH-1 | 0 | 7.0m to 34.5m | | | 6 | 89 | 5 | 0.0035 | 0.02 | 0.0420 | 0.0480 | 13.714 | 2.381 | 0.361 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

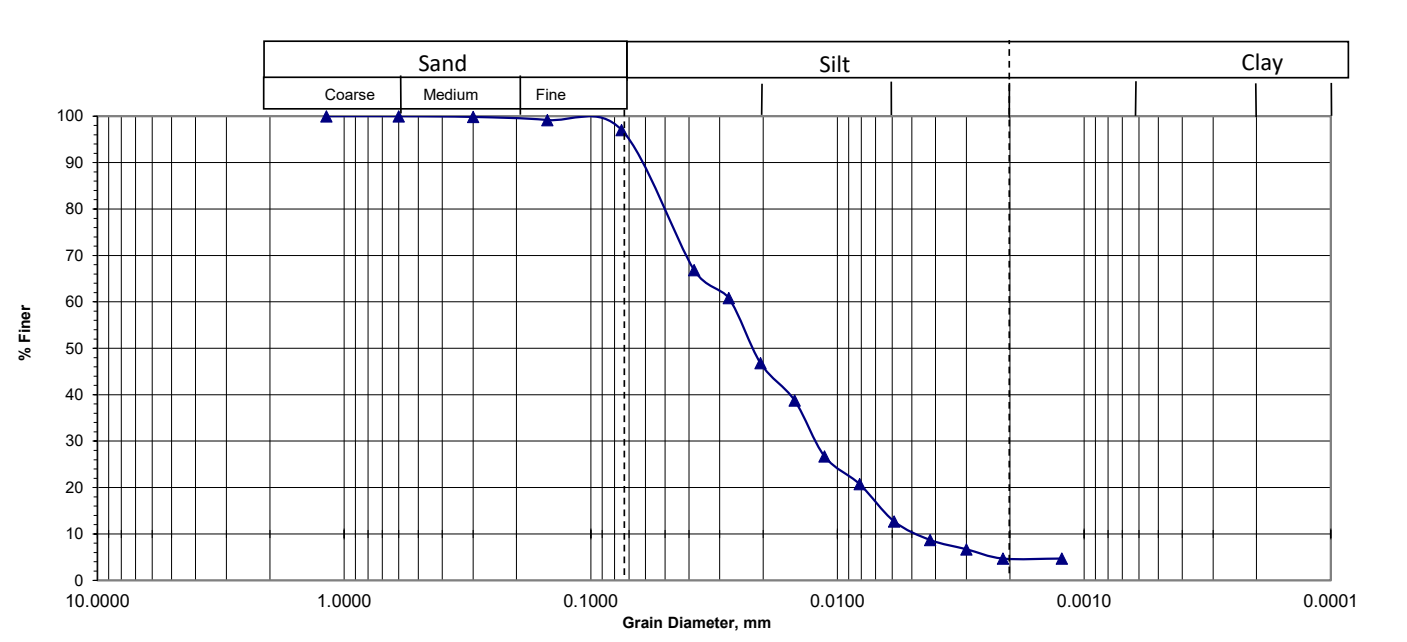
Borehole No : Ovp-3,BH-2

Depth (m) : 0.0m to 17.0m

Test Date : 26/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-3,BH-2 | 0 | 0.0m to 17.0m | 0 | 0 | 3 | 90 | 7 | 0.0051 | 0.013 | 0.0230 | 0.0280 | 5.490 | 1.183 | 0.267 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

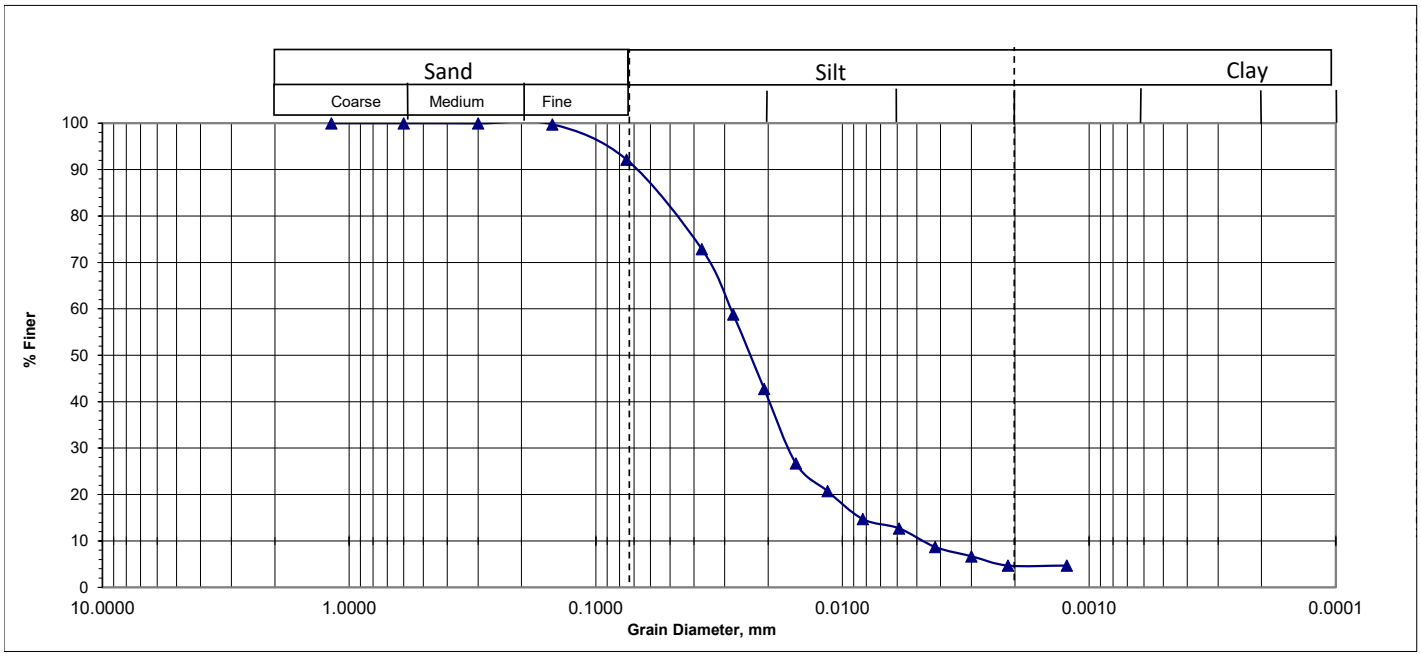
Borehole No : Ovp-3,BH-2

Depth (m) : 23.0m to 36.0m

Test Date : 26/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-3,BH-2 | 0 | 23.0m to 36.0m | 0 | 0 | 8 | 90 | 2 | 0.0049 | 0.019 | 0.0230 | 0.0180 | 3.673 | 4.093 | 0.267 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

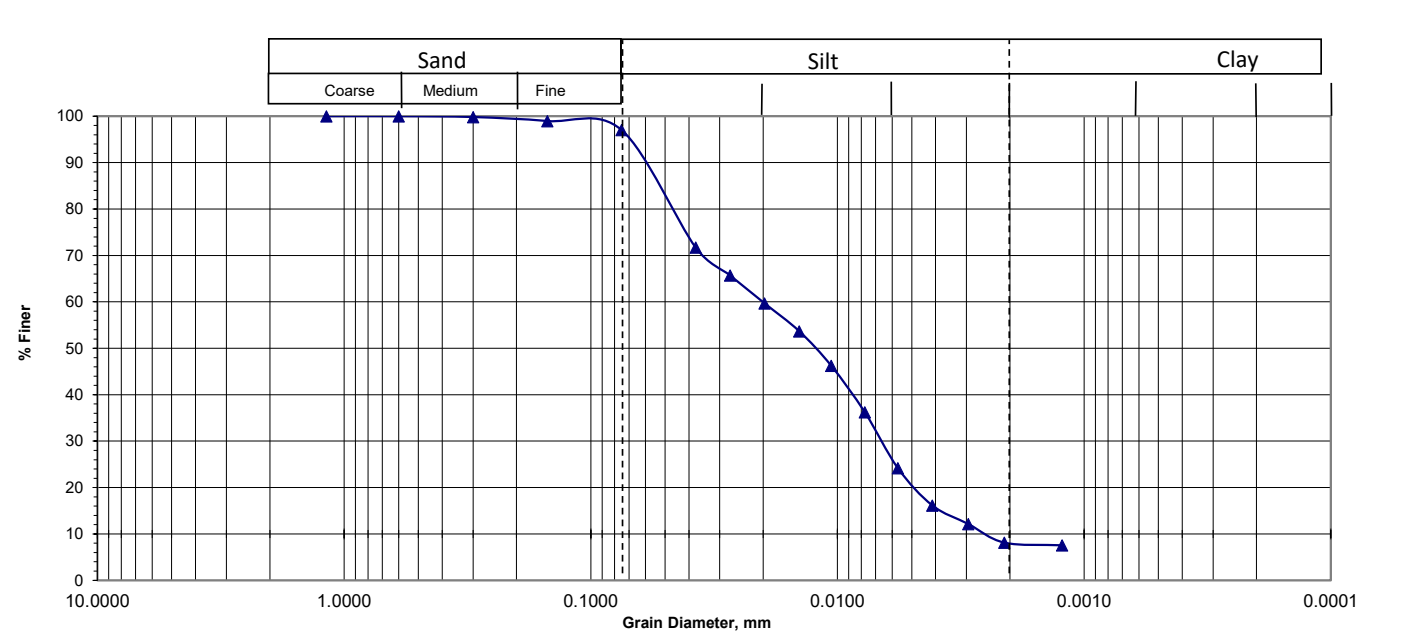
Borehole No : Ovp-4,BH-1

Depth (m) : 0.0m to 8.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-4,BH-1 | 0 | 0.0m to 8.0m | 0 | 0 | 3 | 82 | 15 | 0.0026 | 0.0065 | 0.0140 | 0.0200 | 7.692 | 0.813 | 0.208 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

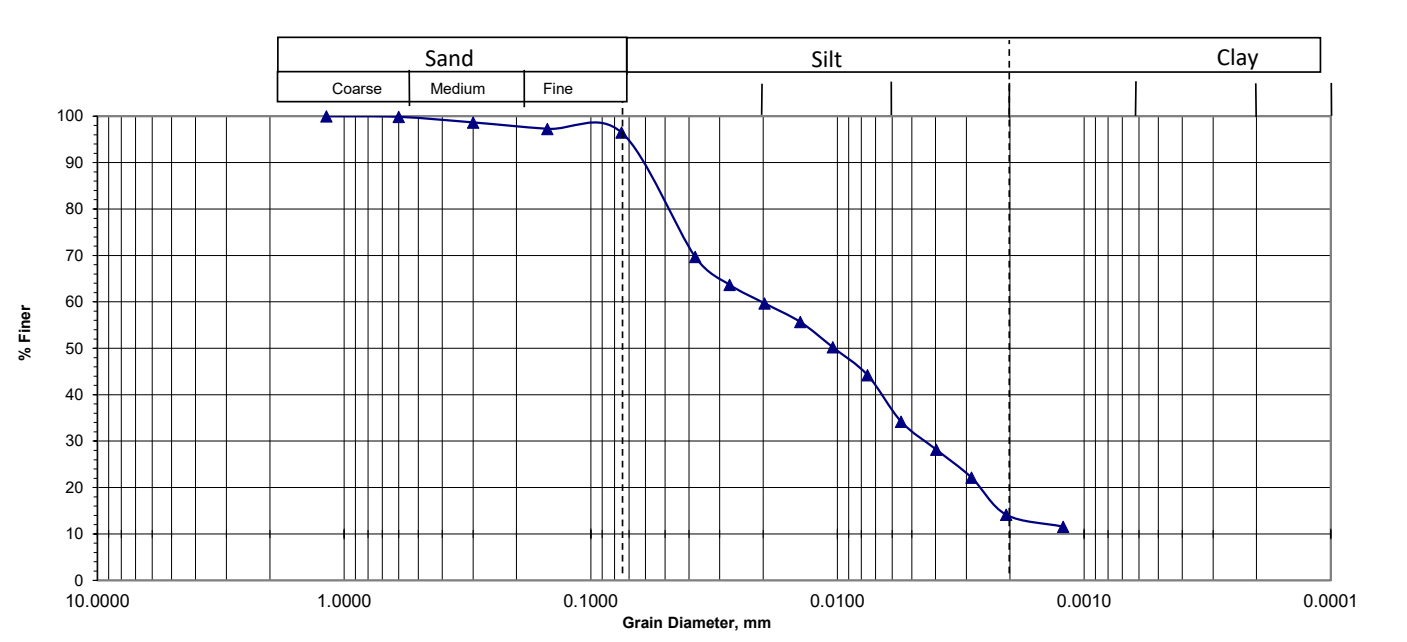
Borehole No : Ovp-4,BH-1

Depth (m) : 8.0m to 11.0m

Test Date : 28/03/2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-4,BH-1 | 0 | 8.0m to 11.0m | 0 | 2 | 2 | 83 | 13 | 0.0013 | 0.0045 | 0.0100 | 0.0200 | 15.385 | 0.779 | 0.176 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

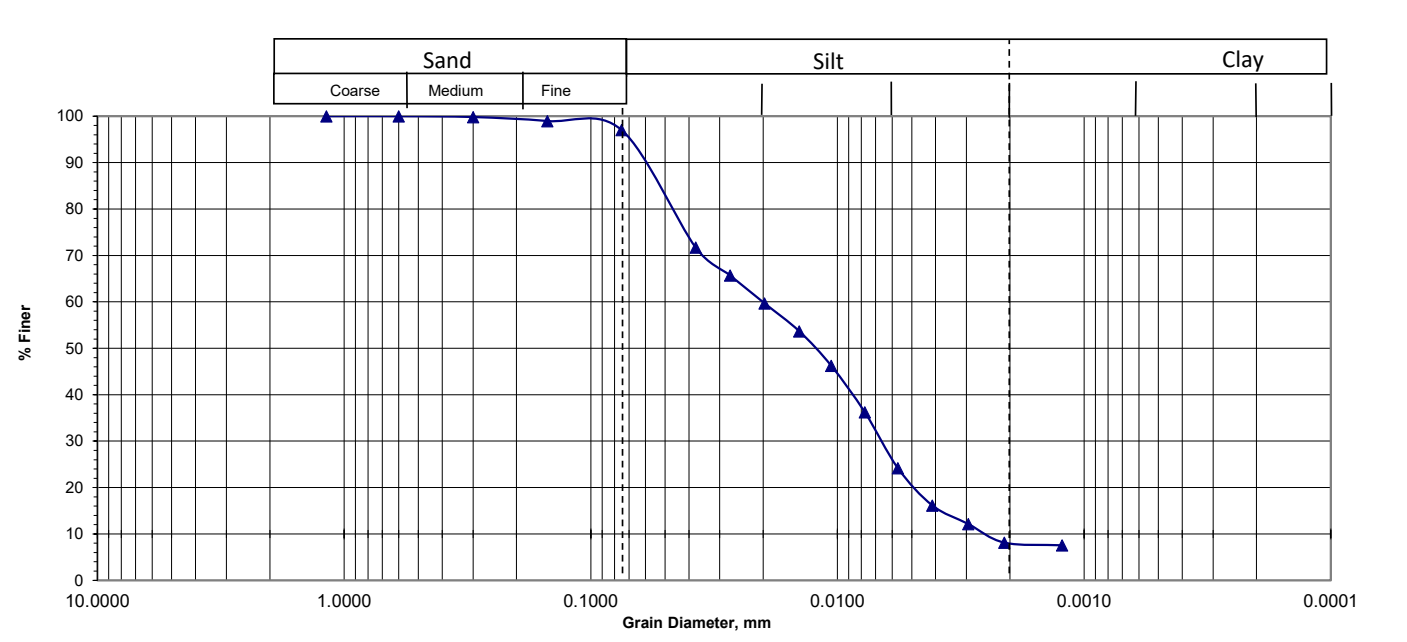
Borehole No : Ovp-4,BH-1

Depth (m) : 11.0m to 26.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-4,BH-1 | 0 | 11.0m to 26.0m | 0 | 0 | 3 | 86 | 11 | 0.0024 | 0.0064 | 0.0150 | 0.0200 | 8.333 | 0.853 | 0.216 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

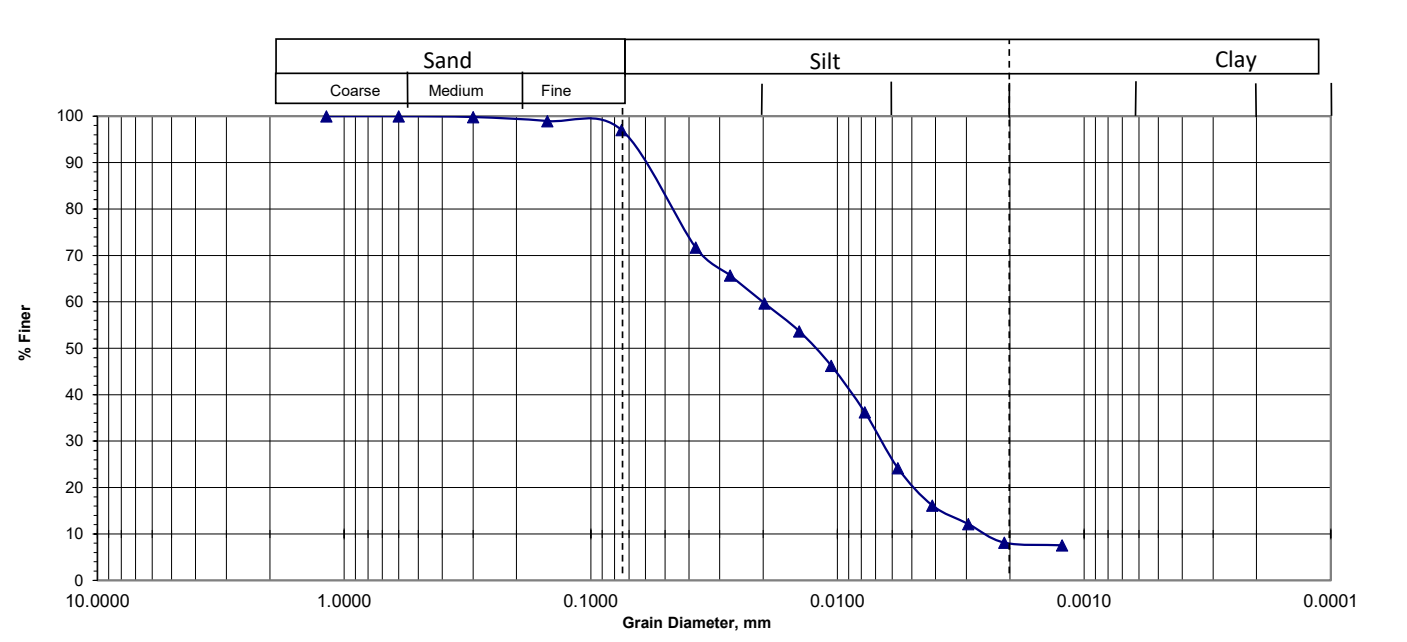
Borehole No : Ovp-4,BH-2

Depth (m) : 0.0m to 14.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-4,BH-2 | 0 | 0.0m to 14.0m | 0 | 0 | 3 | 84 | 13 | 0.0025 | 0.0065 | 0.0130 | 0.0200 | 8.000 | 0.845 | 0.201 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

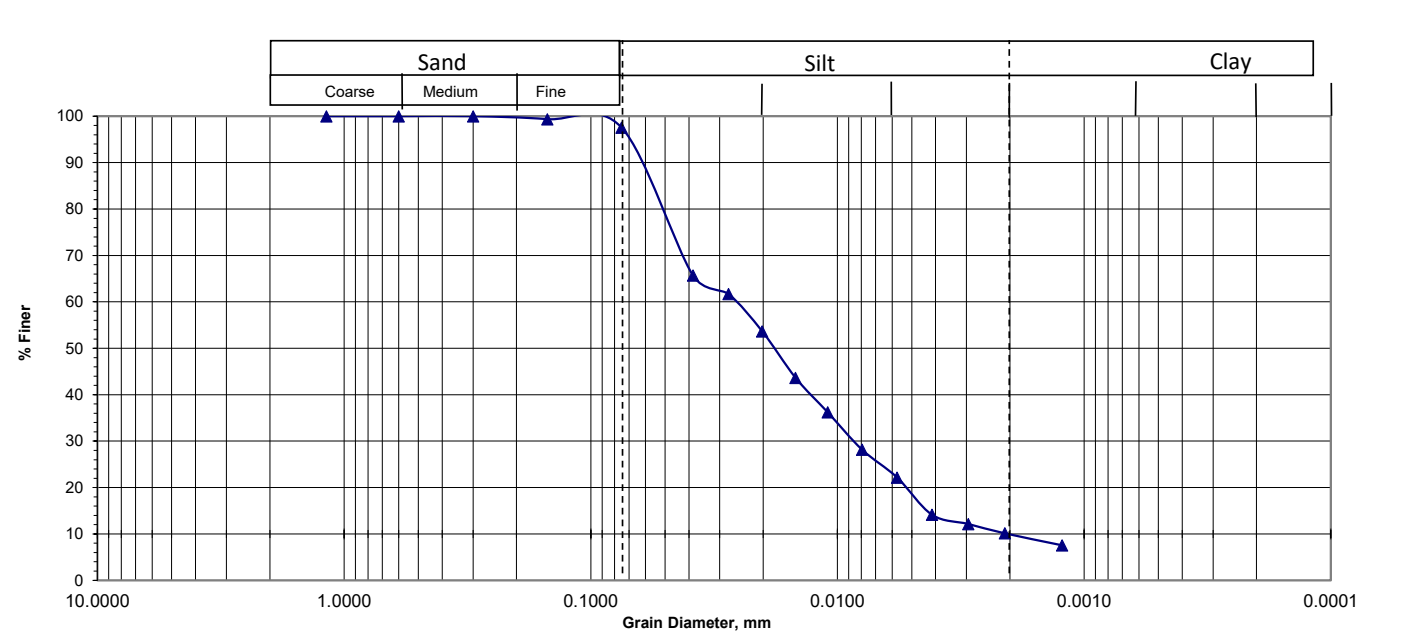
Borehole No : Ovp-5,BH-1

Depth (m) : 0.0m to 23.0m

Test Date : 28/03/2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| Ovp-5,BH-1 | 0 | 0.0m to 23.0m | 0 | 0 | 2 | 88 | 10 | 0.0020 | 0.0085 | 0.0180 | 0.0270 | 13.500 | 1.338 | 0.236 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

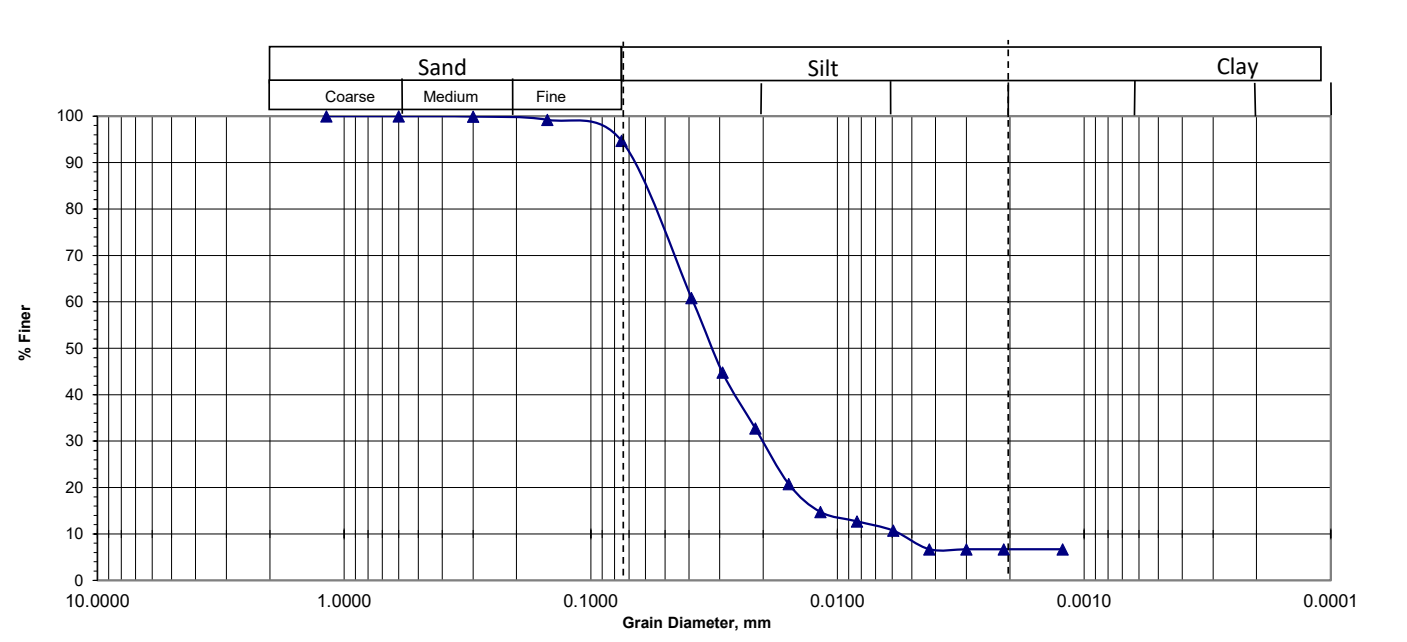
Borehole No : OVP-5.BH-3

Depth (m) : 0.0m to 32.0m

Test Date : 05.08.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-5.BH-3 | 0 | 0.0m to 32.0m | | | 5 | 89 | 6 | 0.0060 | 0.02 | 0.0325 | 0.0400 | 6.667 | 1.667 | 0.317 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet**

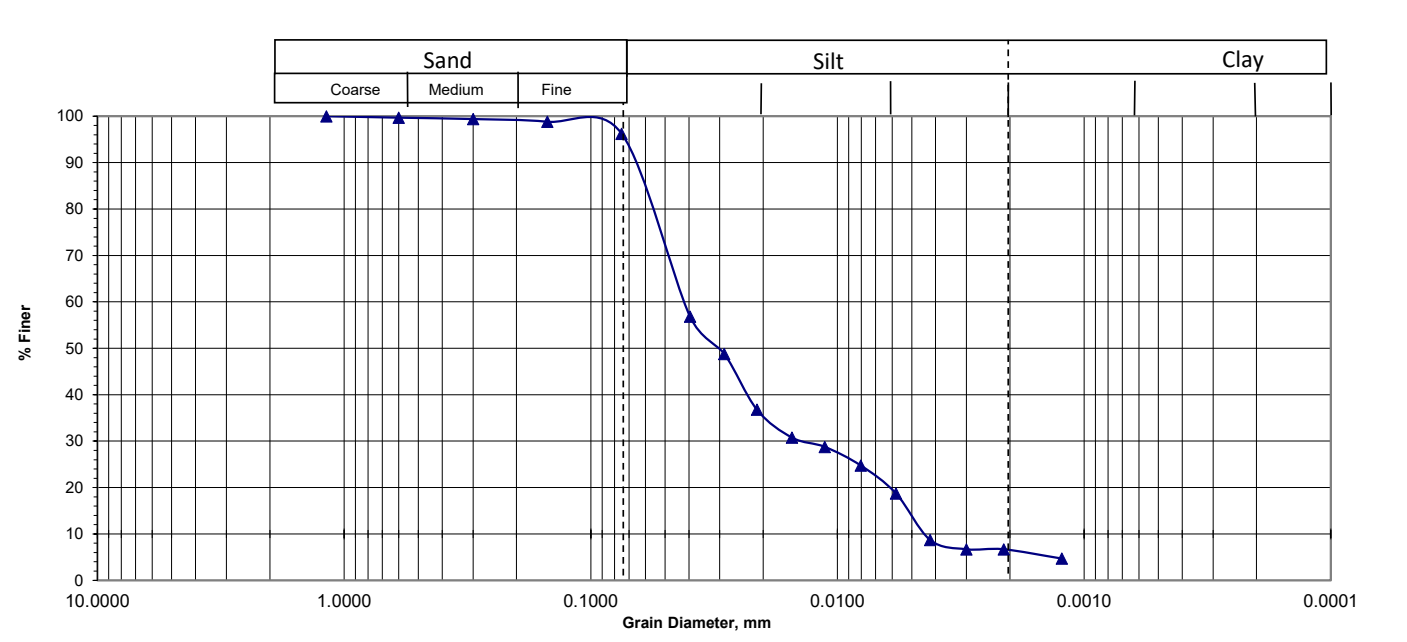
Borehole No : OVP-5.BH-2

Depth (m) : 0.0m to 12.0m

Test Date : 05.08.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-5.BH-2 | 0 | 0.0m to 12.0m | | | 4 | 91 | 5 | 0.0045 | 0.015 | 0.0300 | 0.0420 | 9.333 | 1.190 | 0.305 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

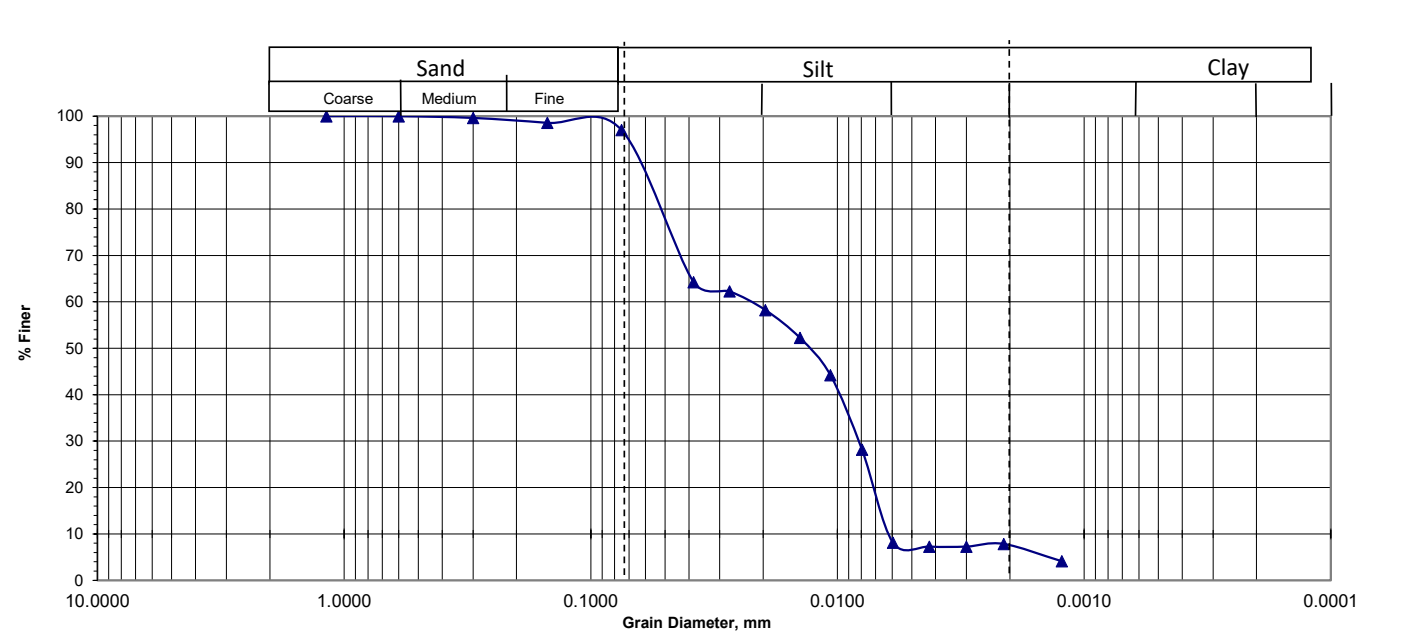
Borehole No : BR-2. BH-10

Depth (m) : 0.0m to 28.0m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-10 | 0 | 0.0m to 28.0m | 0 | 1 | 2 | 89 | 8 | 0.0060 | 0.08 | 0.0140 | 0.0220 | 3.667 | 48.485 | 0.208 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

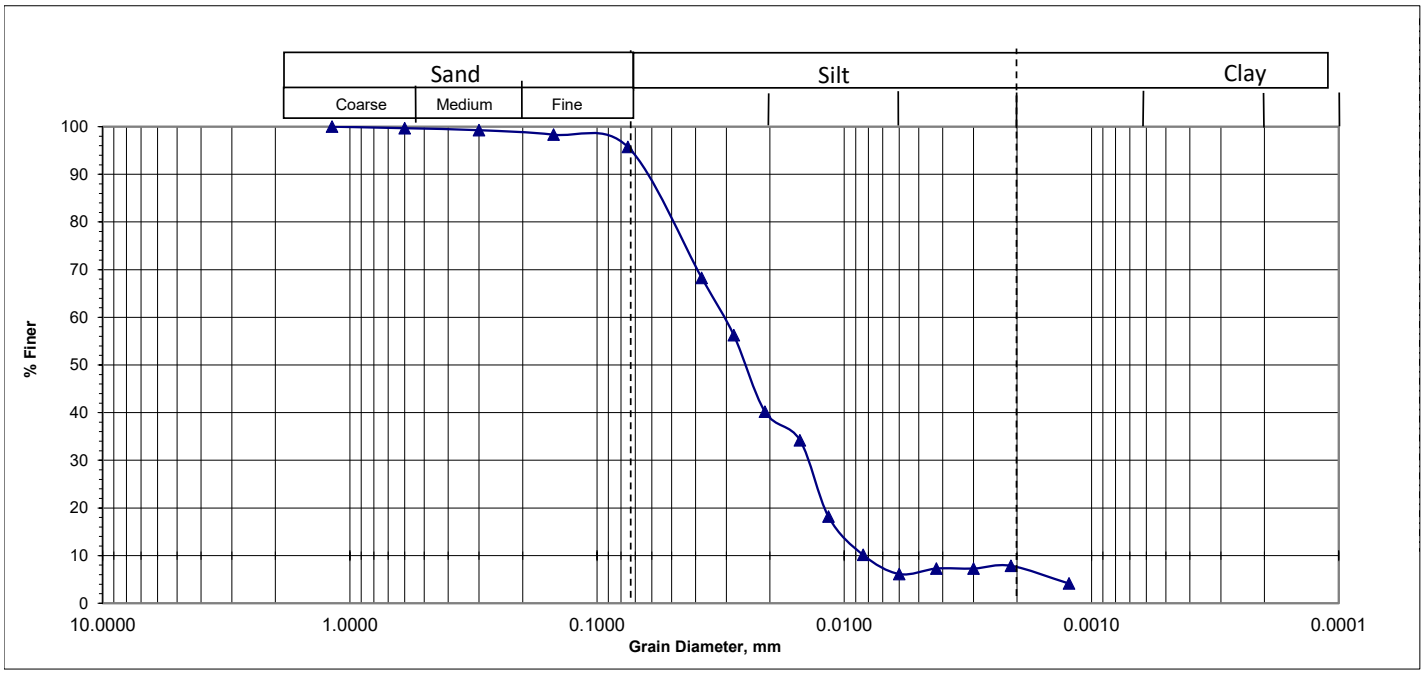
Borehole No : 0.0m to 28.0m

Depth (m) : #REF!

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| 0.0m to 28.0m | 0 | #REF! | 0 | 1 | 3 | 88 | 8 | 0.0070 | 0.015 | 0.0255 | 0.0300 | 4.286 | 1.071 | 0.281 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

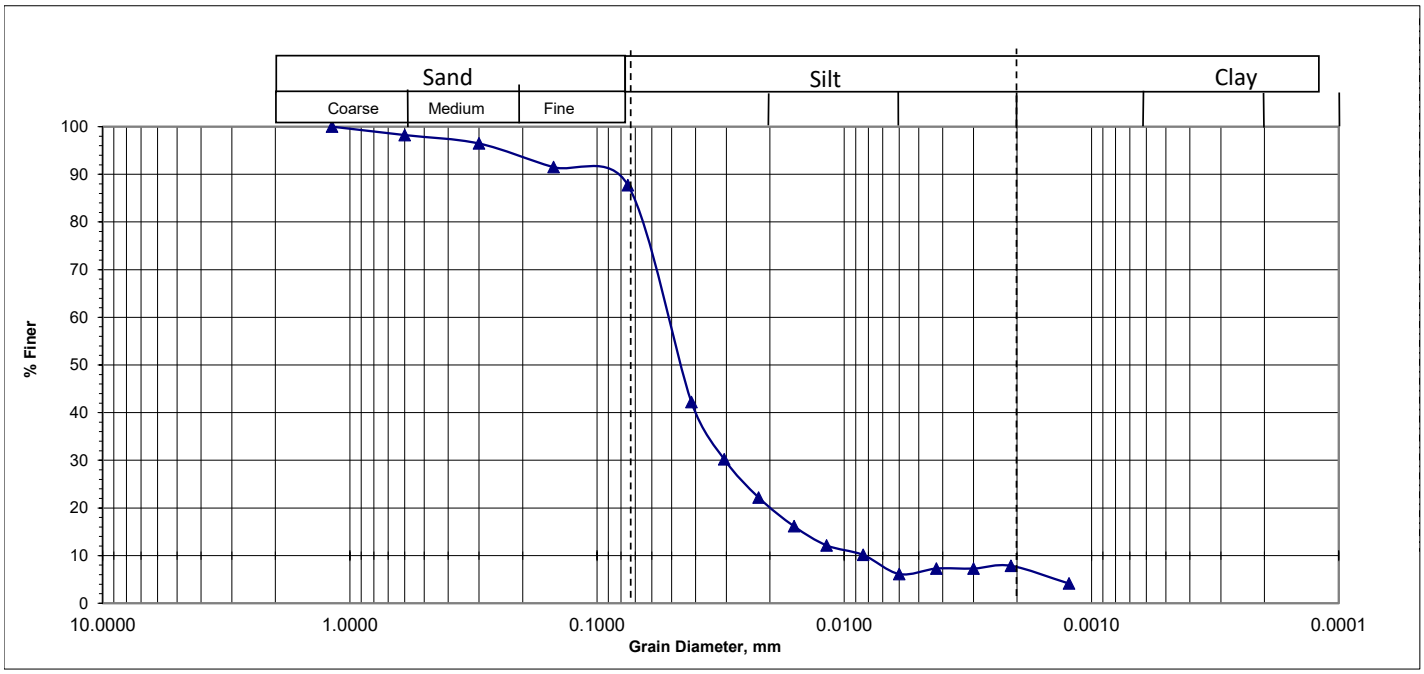
Borehole No : BR-2. BH-10

Depth (m) : 28.0m to 37.0m

Test Date : 15.05.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-10 | 0 | 28.0m to 37.0m | 2 | 5 | 5 | 76 | 12 | 0.0080 | 0.03 | 0.0470 | 0.0500 | 6.250 | 2.250 | 0.382 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

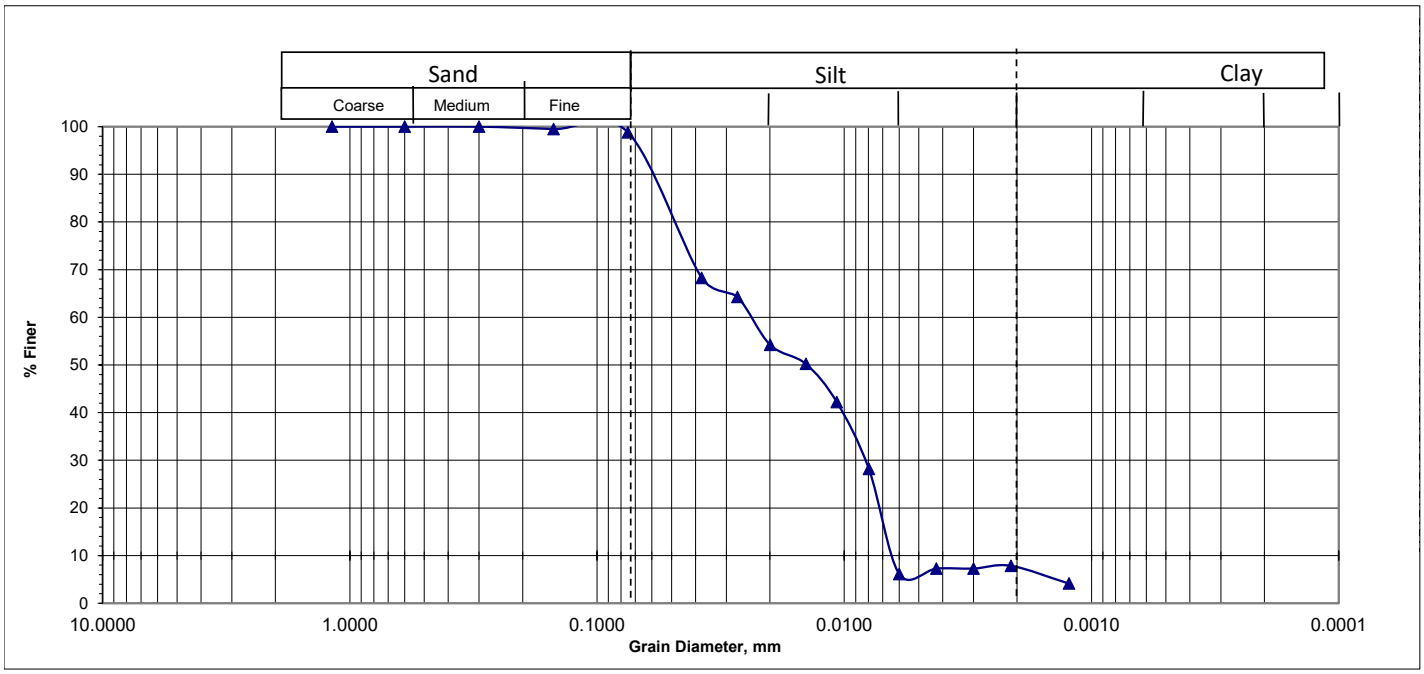
Borehole No : BR-2. BH-13

Depth (m) : 0.0m to 23.0m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-13 | 0 | 0.0m to 23.0m | | | 1 | 92 | 7 | 0.0060 | 0.0018 | 0.0150 | 0.0240 | 4.000 | 0.023 | 0.216 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

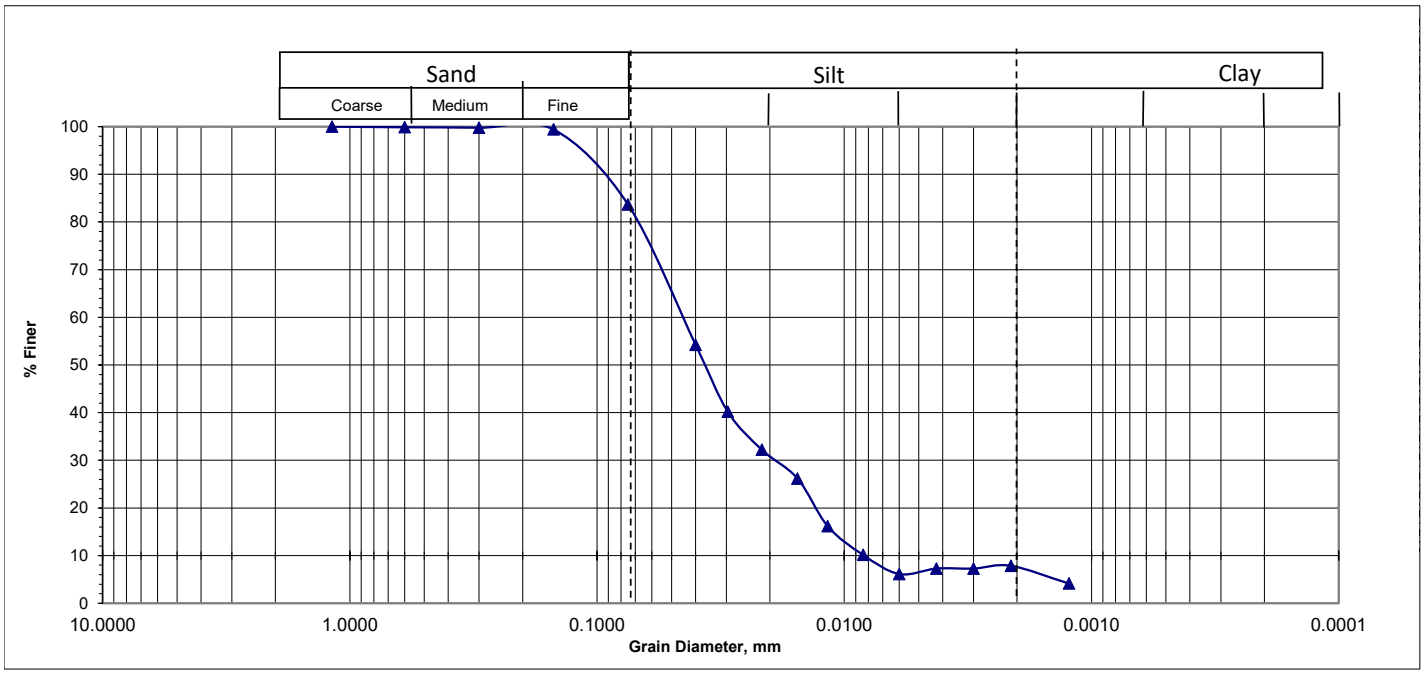
Borehole No : BR-2. BH-13

Depth (m) : 0.0m to 23.0m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-13 | 0 | 0.0m to 23.0m | | | 16 | 77 | 7 | 0.0080 | 0.0195 | 0.0375 | 0.0450 | 5.625 | 1.056 | 0.341 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet Road**

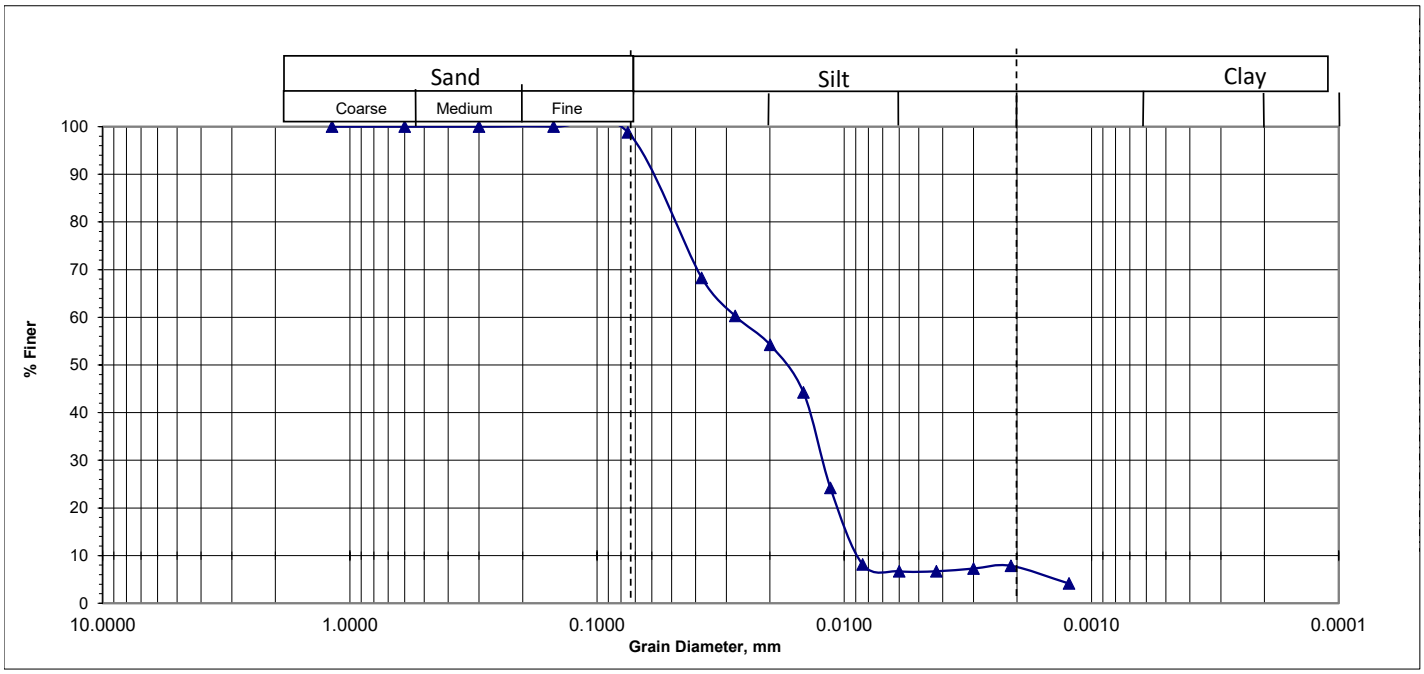
Borehole No : BR-2. BH-5

Depth (m) : 0.0m to 31.0m

Test Date : 07.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-5 | 0 | 0.0m to 31.0m | 0 | 0 | 1 | 91 | 8 | 0.0090 | 0.13 | 0.0175 | 0.0290 | 3.222 | 64.751 | 0.233 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

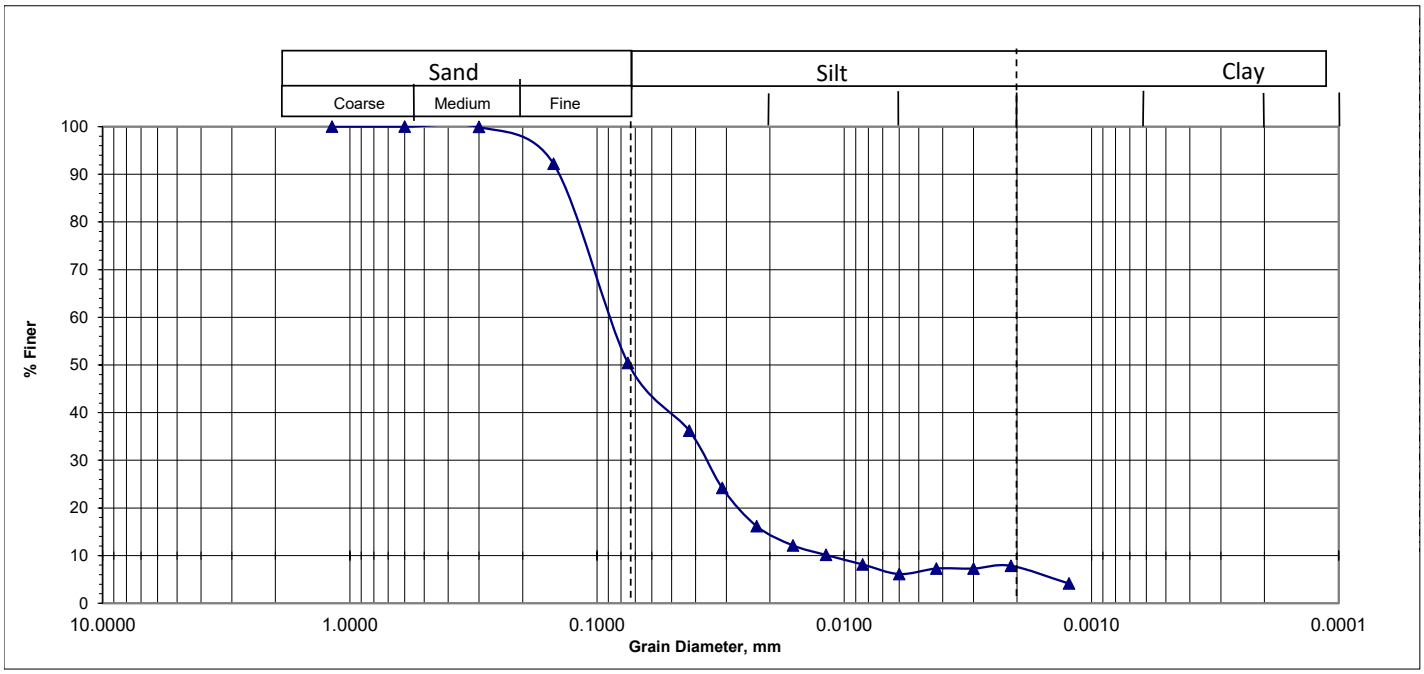
Borehole No : BR-2. BH-3

Depth (m) : 3.0m to 14.0m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-3 | 0 | 3.0m to 14.0m | 0 | 2 | 48 | 42 | 8 | 0.0120 | 0.37 | 0.0740 | 0.0900 | 7.500 | 126.759 | 0.479 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

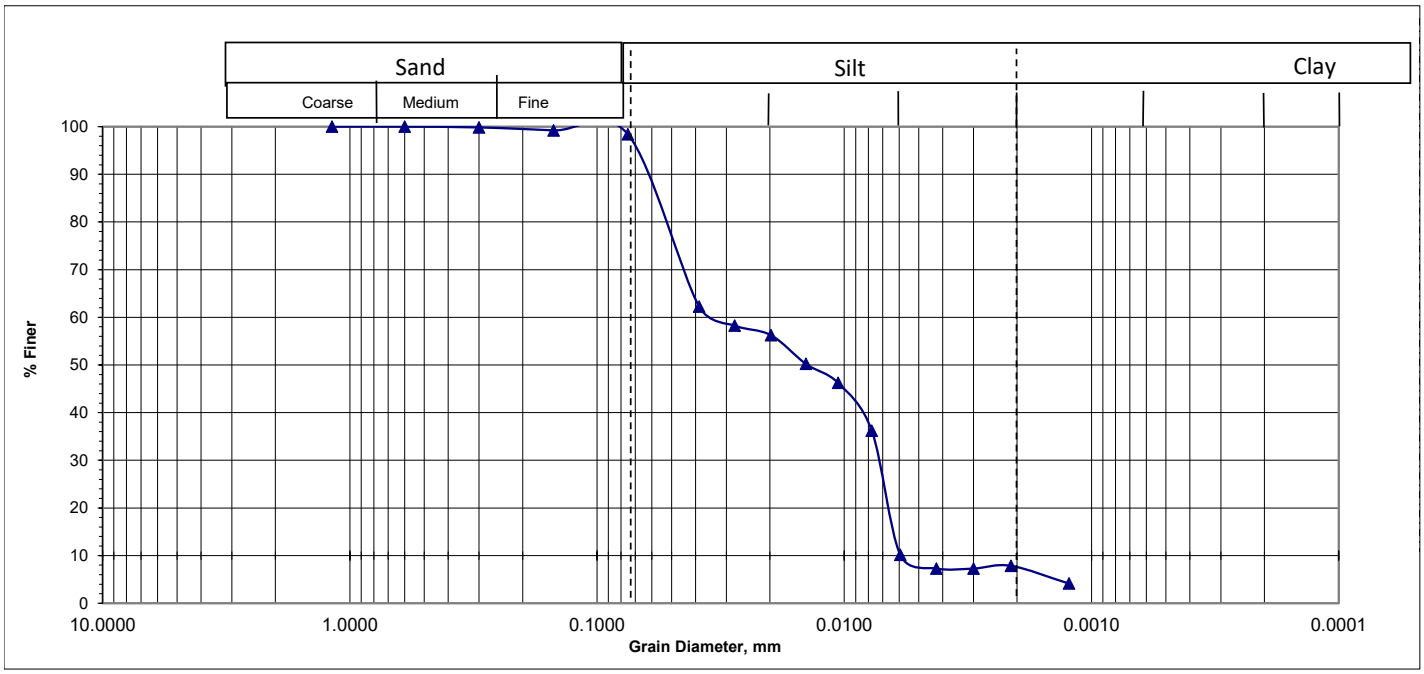
Borehole No : BR-2. BH-4

Depth (m) : 0.0m to 20.0m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-4 | 0 | 0.0m to 20.0m | 0 | 0 | 2 | 90 | 8 | 0.0060 | 0.07 | 0.0150 | 0.0350 | 5.833 | 23.333 | 0.216 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet Road**

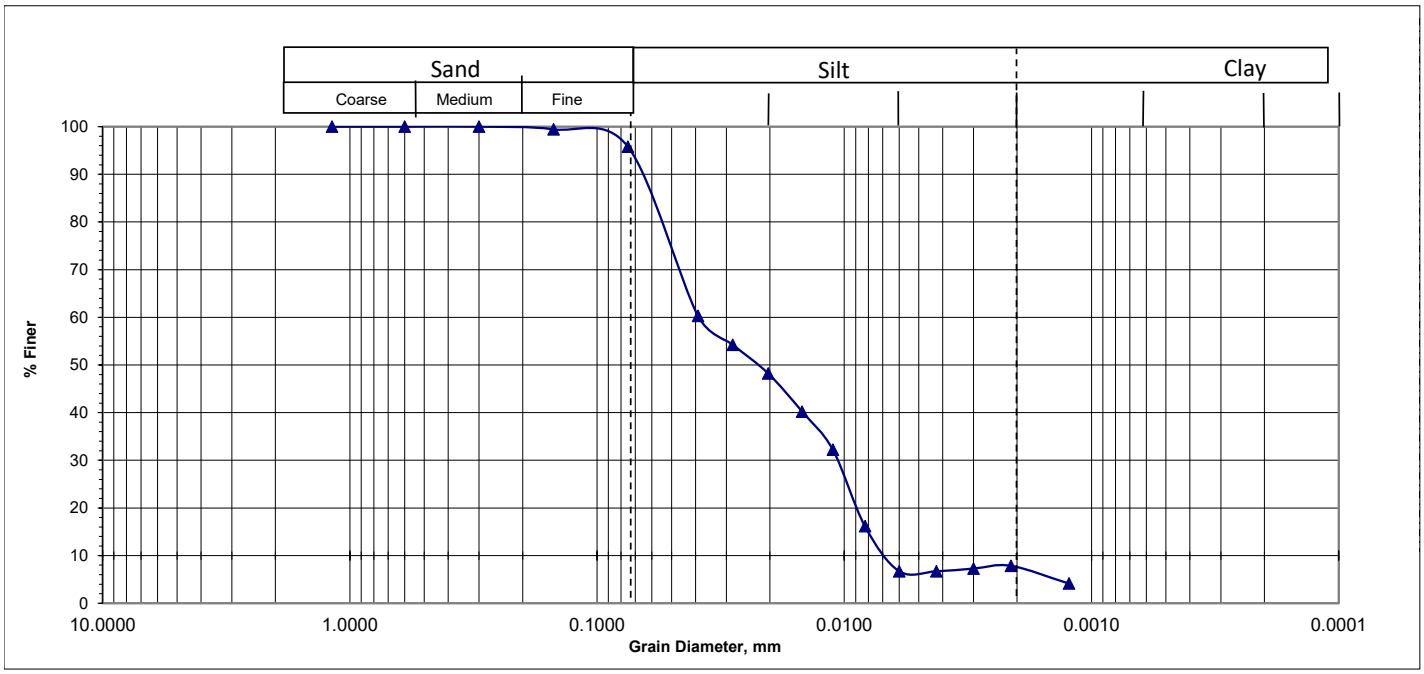
Borehole No : BR-2. BH-6

Depth (m) : 0.0m to 20.0m

Test Date : 07.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-6 | 0 | 0.0m to 20.0m | 0 | 0 | 4 | 88 | 8 | 0.0070 | 0.0105 | 0.0225 | 0.0400 | 5.714 | 0.394 | 0.264 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet Road**

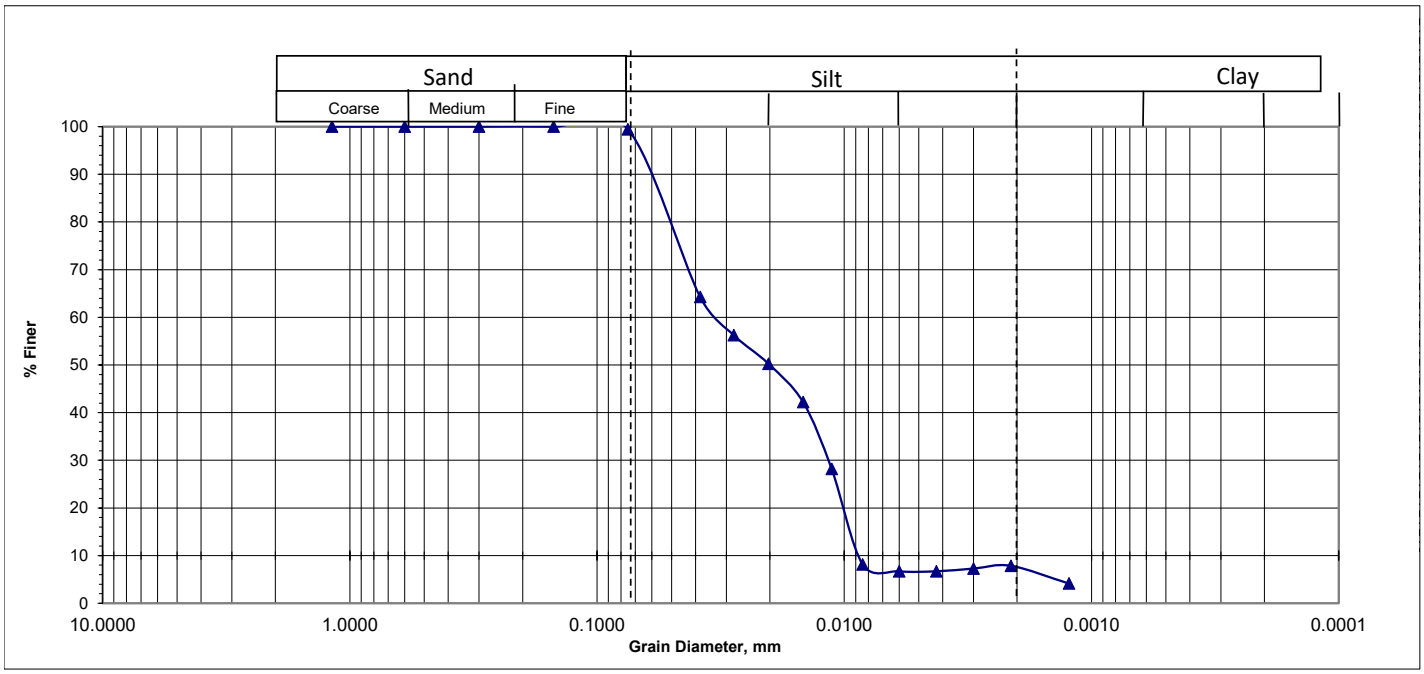
Borehole No : BR-2. BH-7

Depth (m) : 0.0m to 23.0m

Test Date : 07.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-7 | 0 | 0.0m to 23.0m | 0 | 0 | 1 | 91 | 8 | 0.0090 | 0.012 | 0.0200 | 0.0345 | 3.833 | 0.464 | 0.249 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet Road**

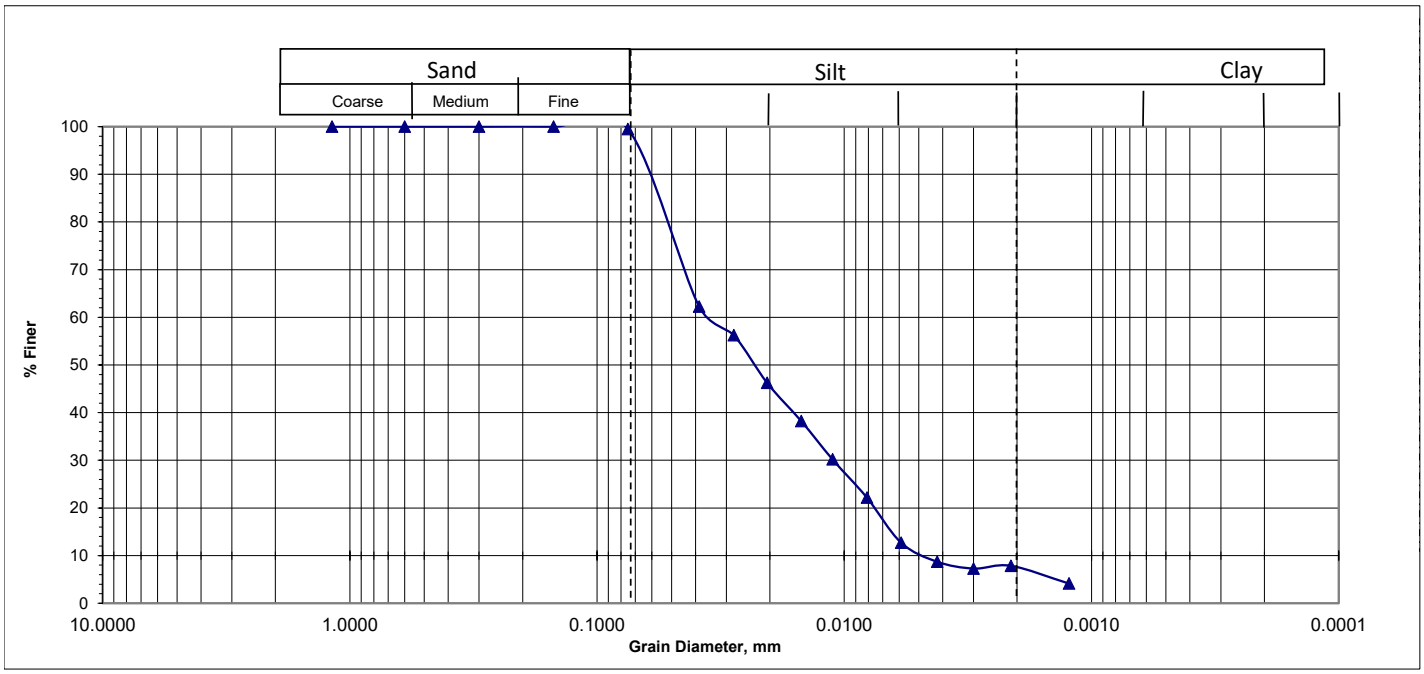
Borehole No : BR-2. BH-7

Depth (m) : 0.0m to 23.0m

Test Date : 07.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-7 | 0 | 0.0m to 23.0m | 0 | 0 | 1 | 92 | 8 | 0.0050 | 0.0115 | 0.0235 | 0.0370 | 7.400 | 0.715 | 0.270 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

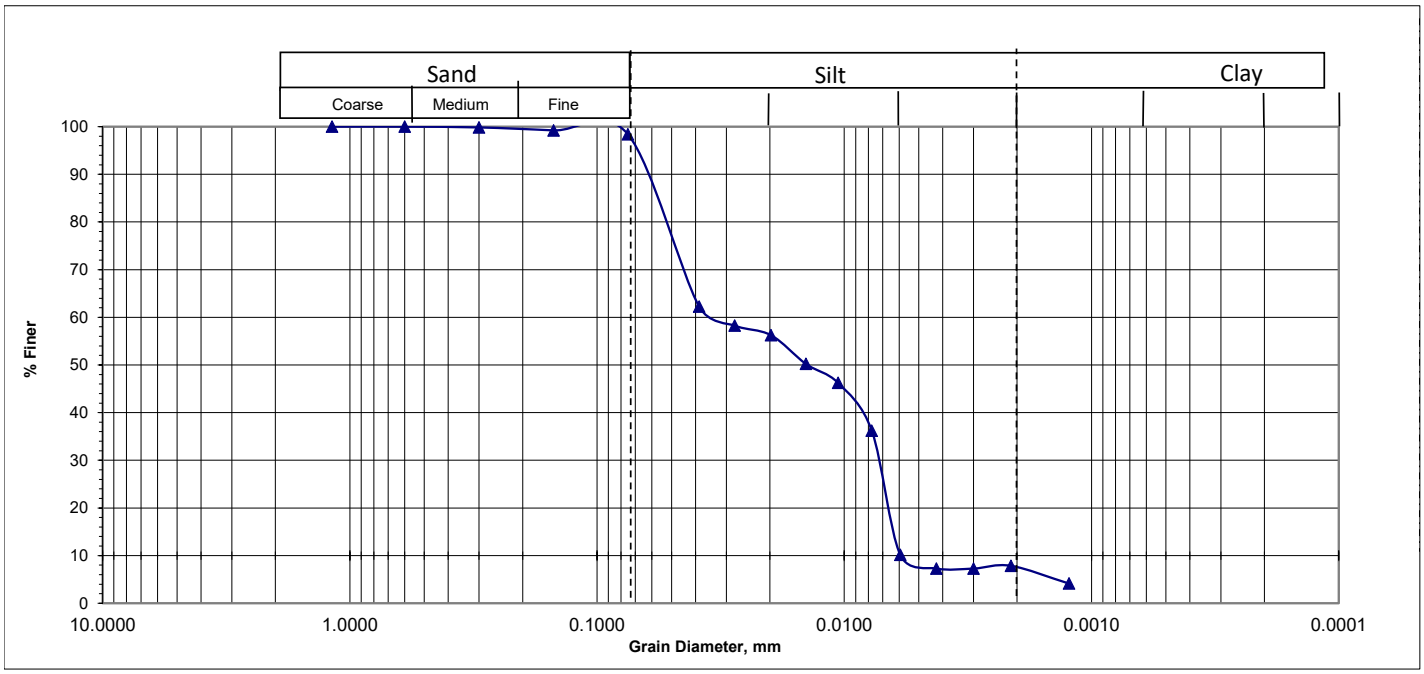
Borehole No : BR-2. BH-9

Depth (m) : 0.0m to 23.0m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-9 | 0 | 0.0m to 23.0m | 0 | 0 | 2 | 90 | 8 | 0.0060 | 0.07 | 0.0150 | 0.0350 | 5.833 | 23.333 | 0.216 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet Road**

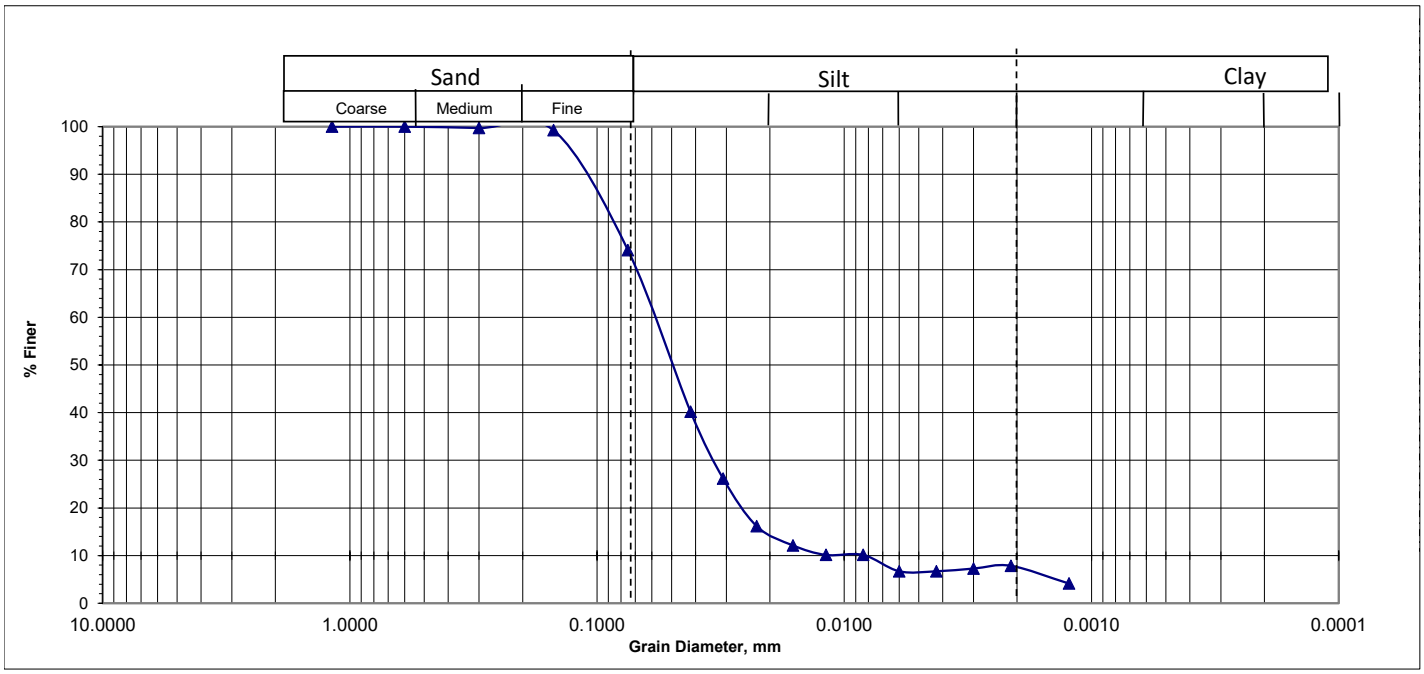
Borehole No : BR-2. BH-8

Depth (m) : 0.0m to 26.0m

Test Date : 07.05.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-8 | 0 | 0.0m to 26.0m | 0 | 0 | 26 | 66 | 8 | 0.0130 | 0.0345 | 0.0500 | 0.0600 | 4.615 | 1.526 | 0.394 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

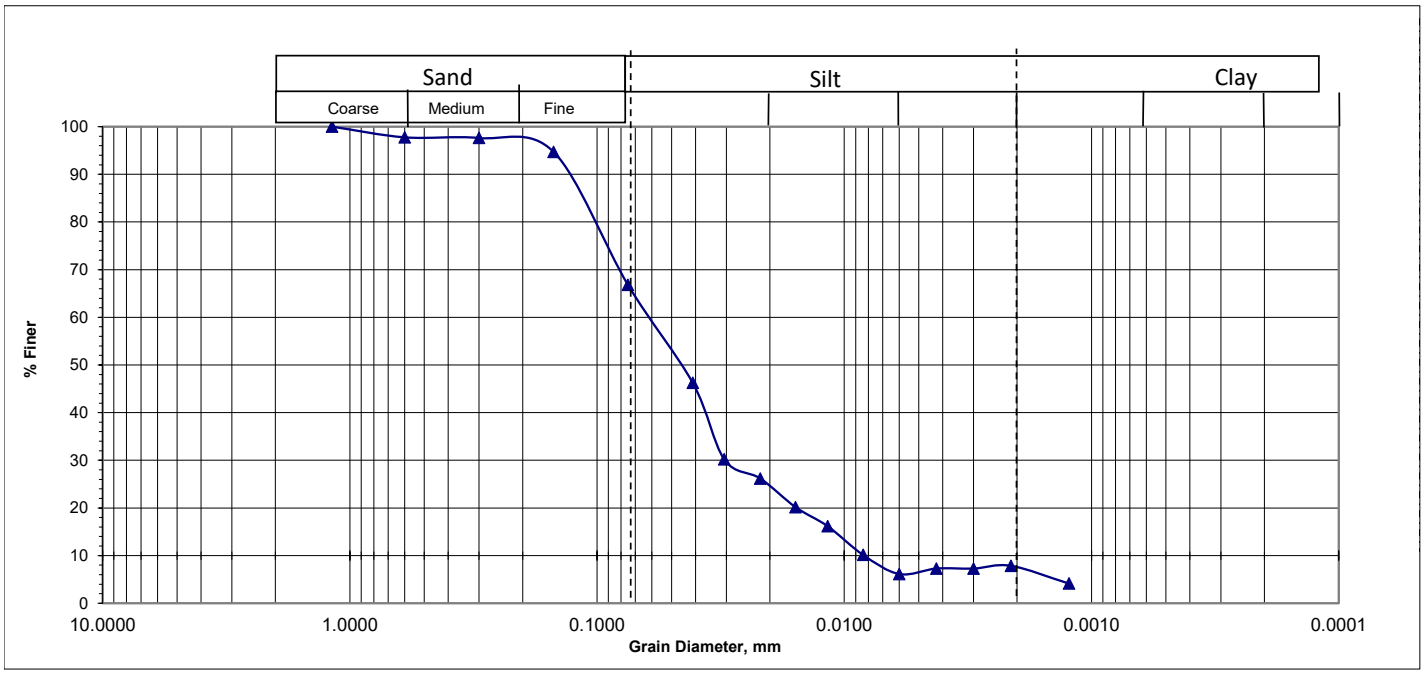
Borehole No : BR-2. BH-12

Depth (m) : 0.0m to 16.0m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-12 | 0 | 0.0m to 16.0m | 0 | 2 | 31 | 60 | 7 | 0.0080 | 0.03 | 0.0470 | 0.0600 | 7.500 | 1.875 | 0.382 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sylhet Road**

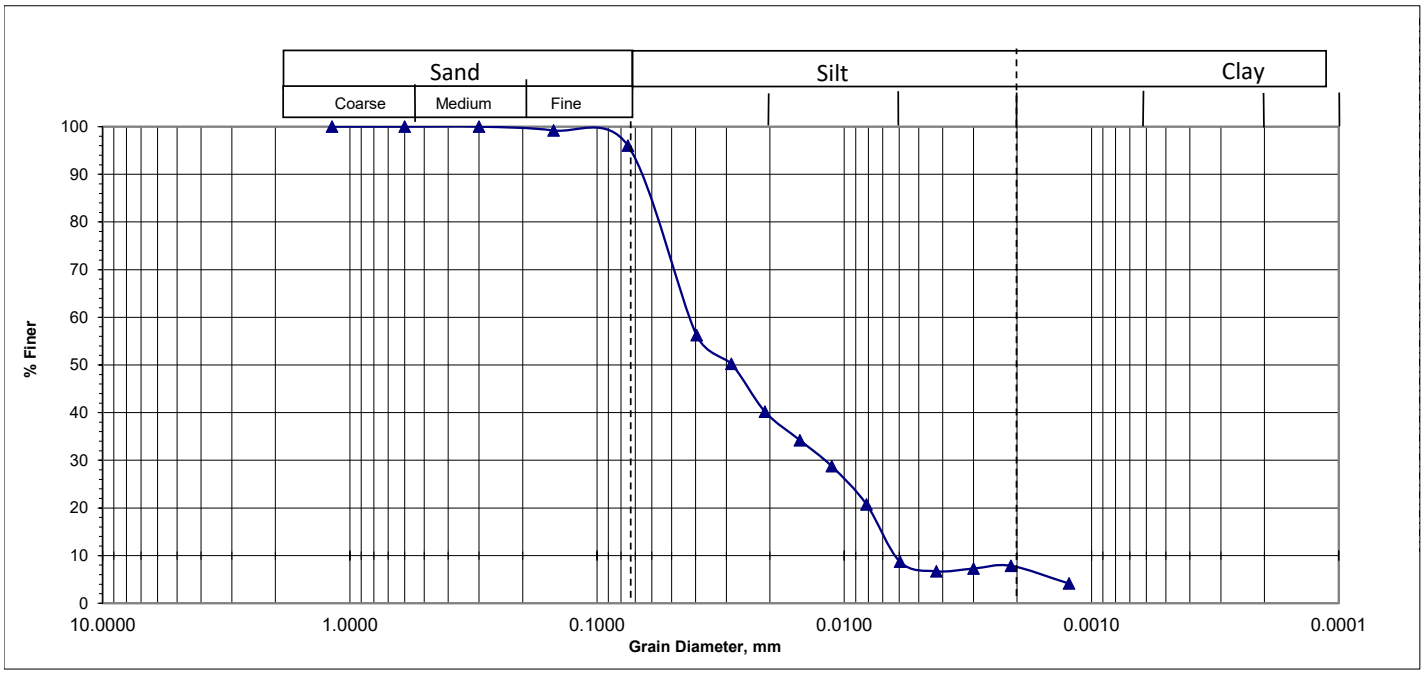
Borehole No : BR-2. BH-11

Depth (m) : 0.0m to 20.0m

Test Date : 15.05.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-11 | 0 | 0.0m to 20.0m | 0 | | 4 | 89 | 7 | 0.0050 | 0.013 | 0.0300 | 0.0420 | 8.400 | 0.805 | 0.305 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

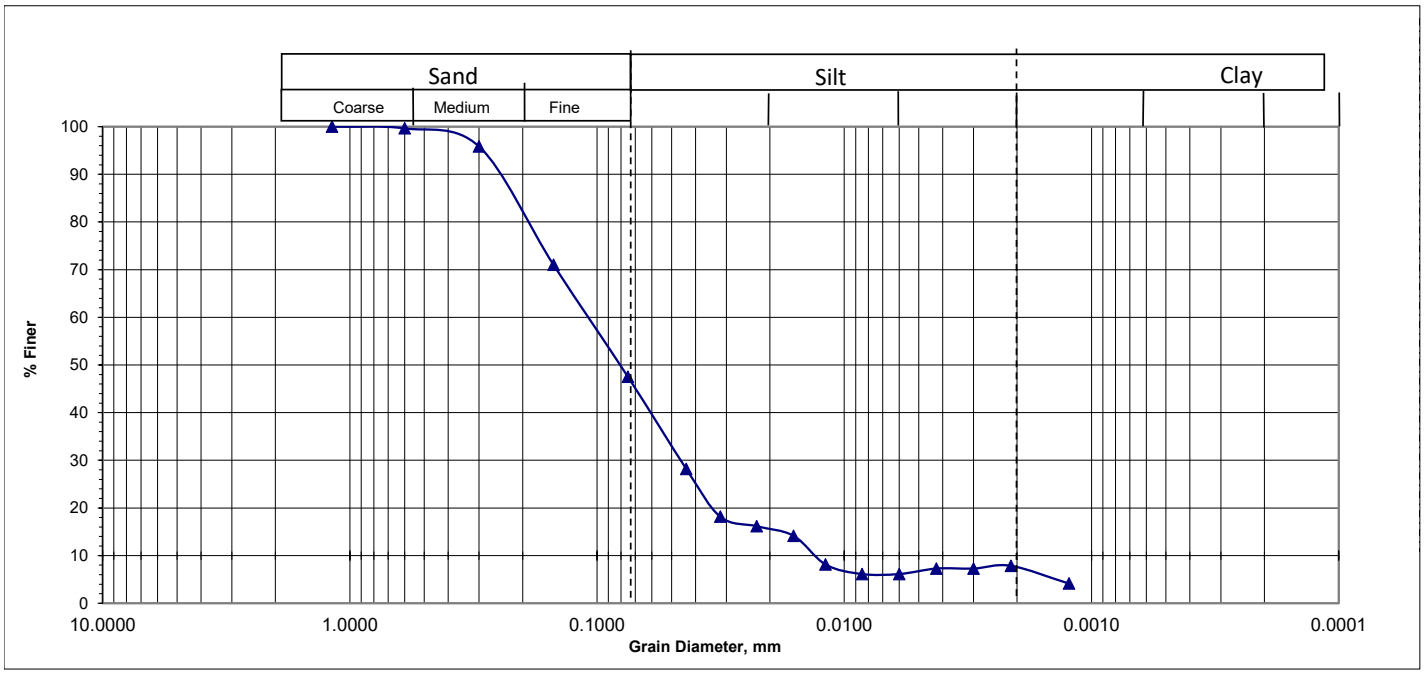
Borehole No : BR-2. BH-11

Depth (m) : 0.0m to 20.0m

Test Date : 15.05.2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-11 | 0 | 0.0m to 20.0m | | | 53 | 41 | 7 | 0.0140 | 0.047 | 0.0800 | 0.1100 | 7.857 | 1.434 | 0.498 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

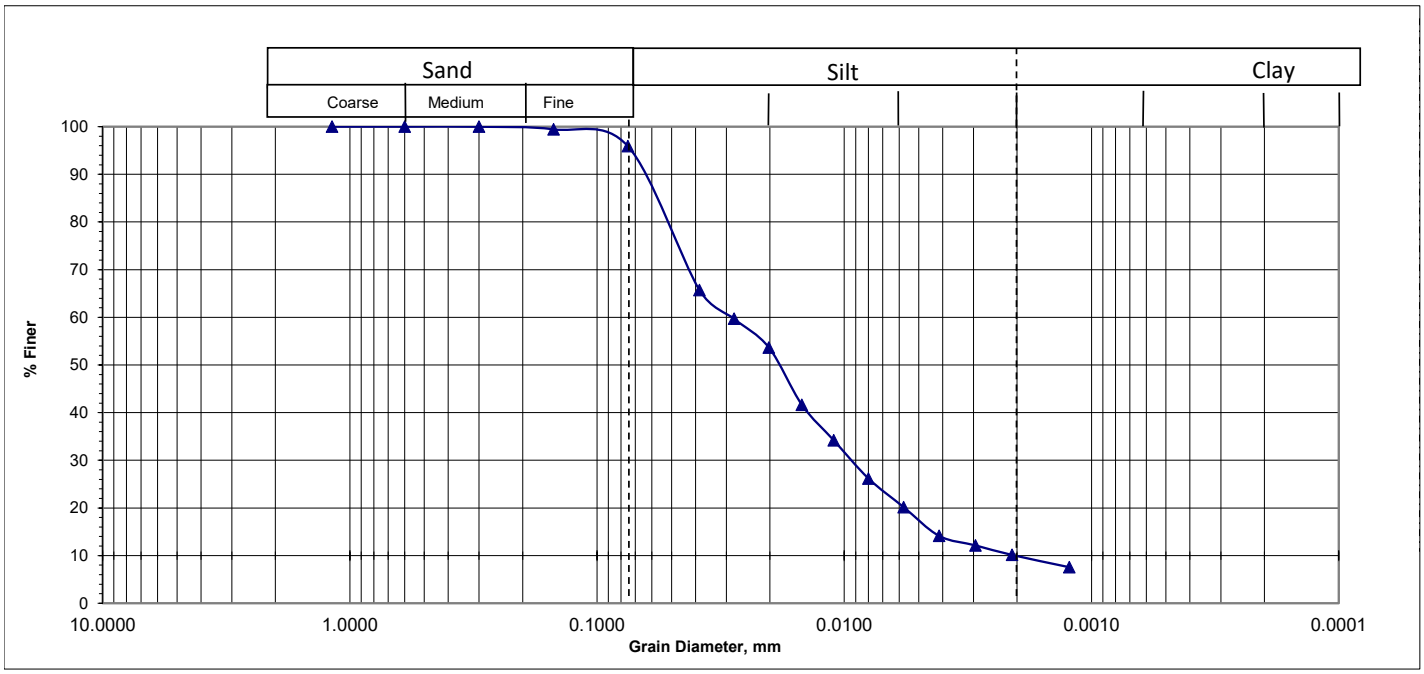
Borehole No : UP-1, BH-01

Depth (m) : 0.0m to 15.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| UP-1, BH-01 | 0 | 0.0m to 15.0m | 0 | 0 | 4 | 84 | 12 | 0.0018 | 0.0087 | 0.0180 | 0.0270 | 15.000 | 1.557 | 0.236 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

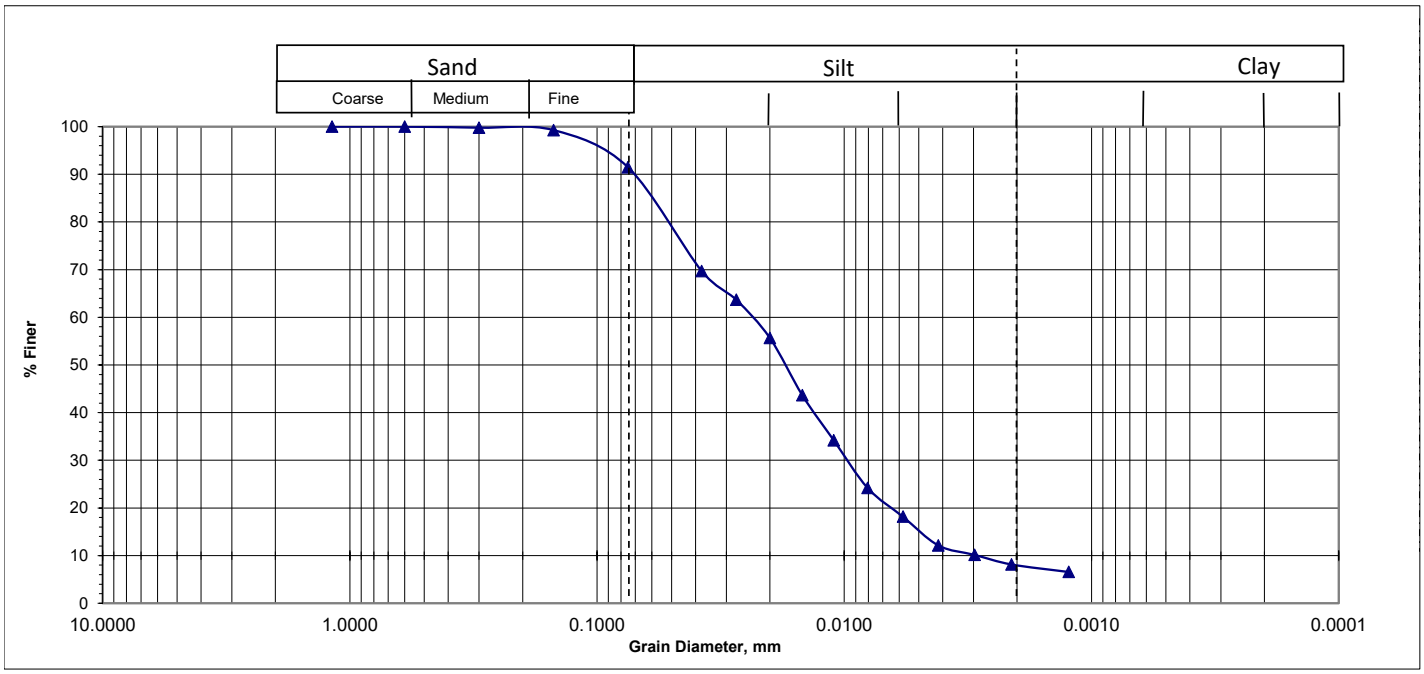
Borehole No : R.B - 02

Depth (m) : 0.0m to 15.0m

Test Date : 28/03/2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 02 | 0 | 0.0m to 15.0m | 0 | 0 | 9 | 82 | 9 | 0.0032 | 0.011 | 0.0190 | 0.0230 | 7.188 | 1.644 | 0.243 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

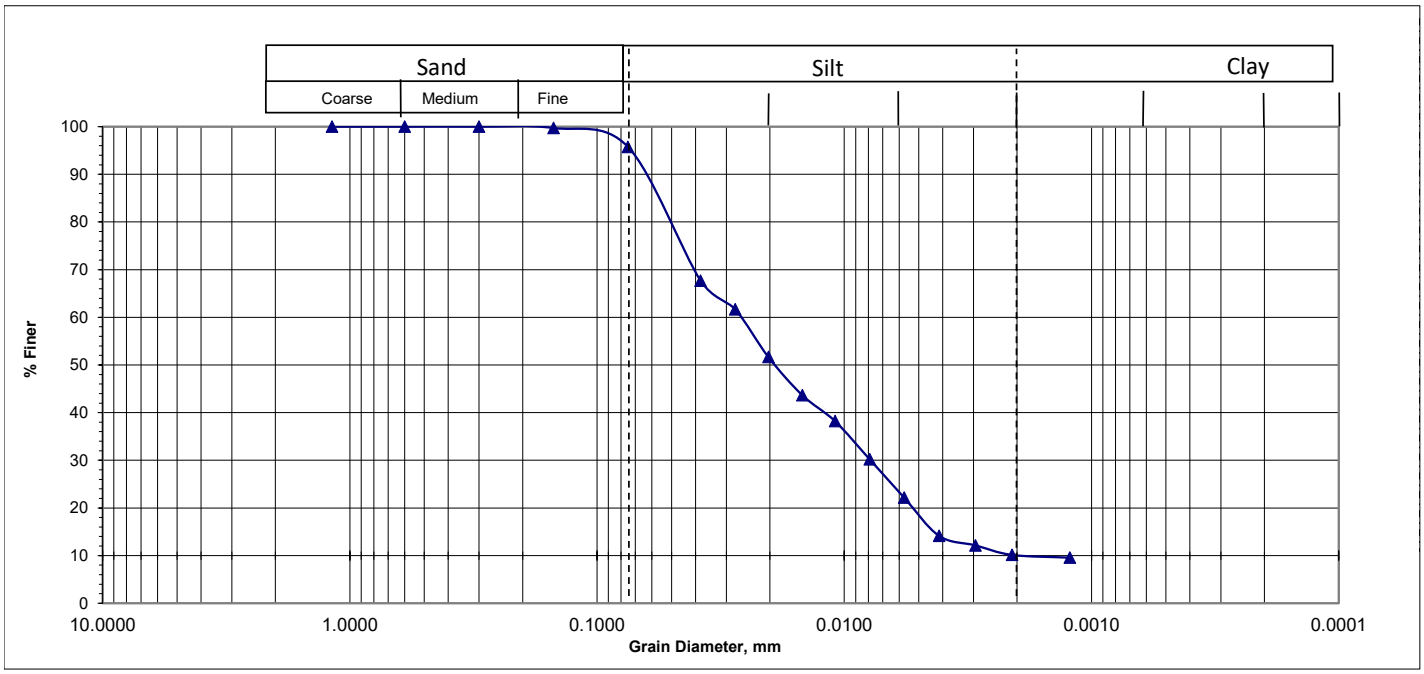
Borehole No : R.B - 03

Depth (m) : 0.0m to 15.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 03 | 0 | 0.0m to 15.0m | 0 | 0 | 4 | 84 | 12 | 0.0022 | 0.0079 | 0.0212 | 0.0280 | 12.727 | 1.013 | 0.256 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

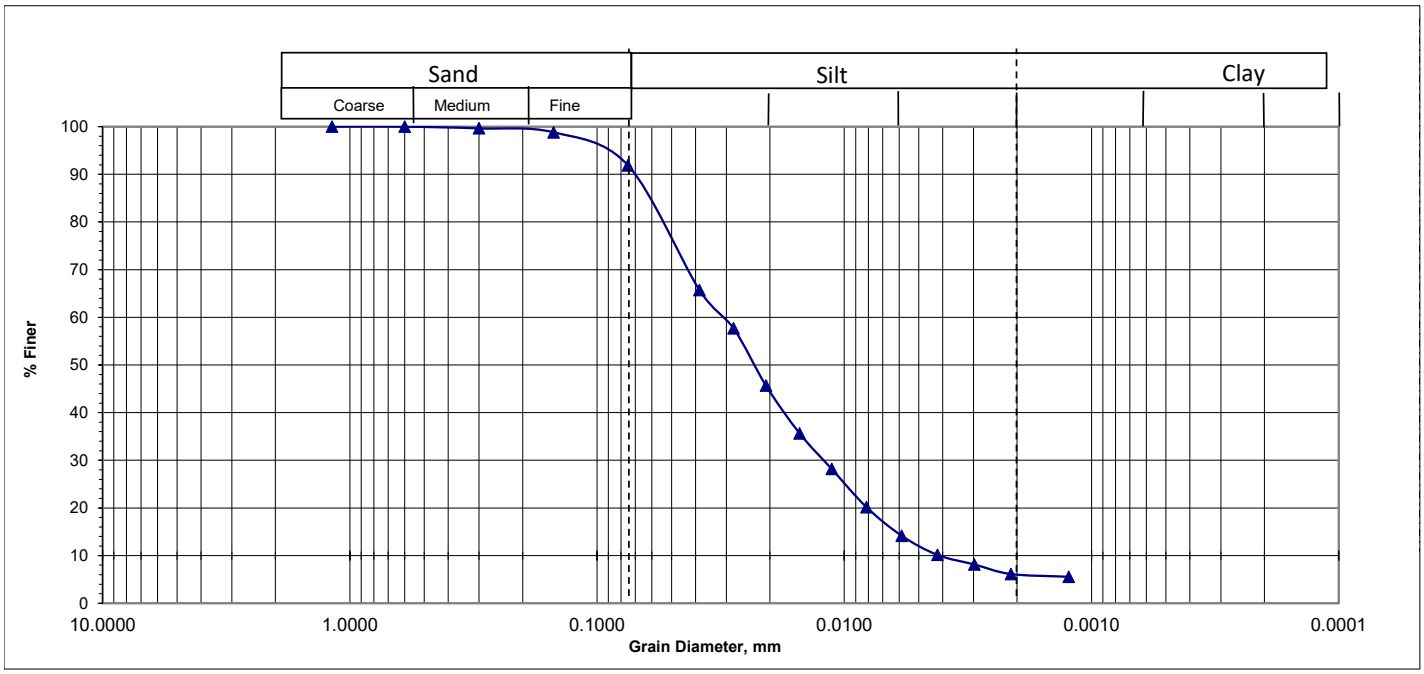
Borehole No : R.B - 04

Depth (m) : 0.0m to 15.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 04 | 0 | 0.0m to 15.0m | 0 | 0 | 8 | 86 | 6 | 0.0040 | 0.013 | 0.0230 | 0.0300 | 7.500 | 1.408 | 0.267 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

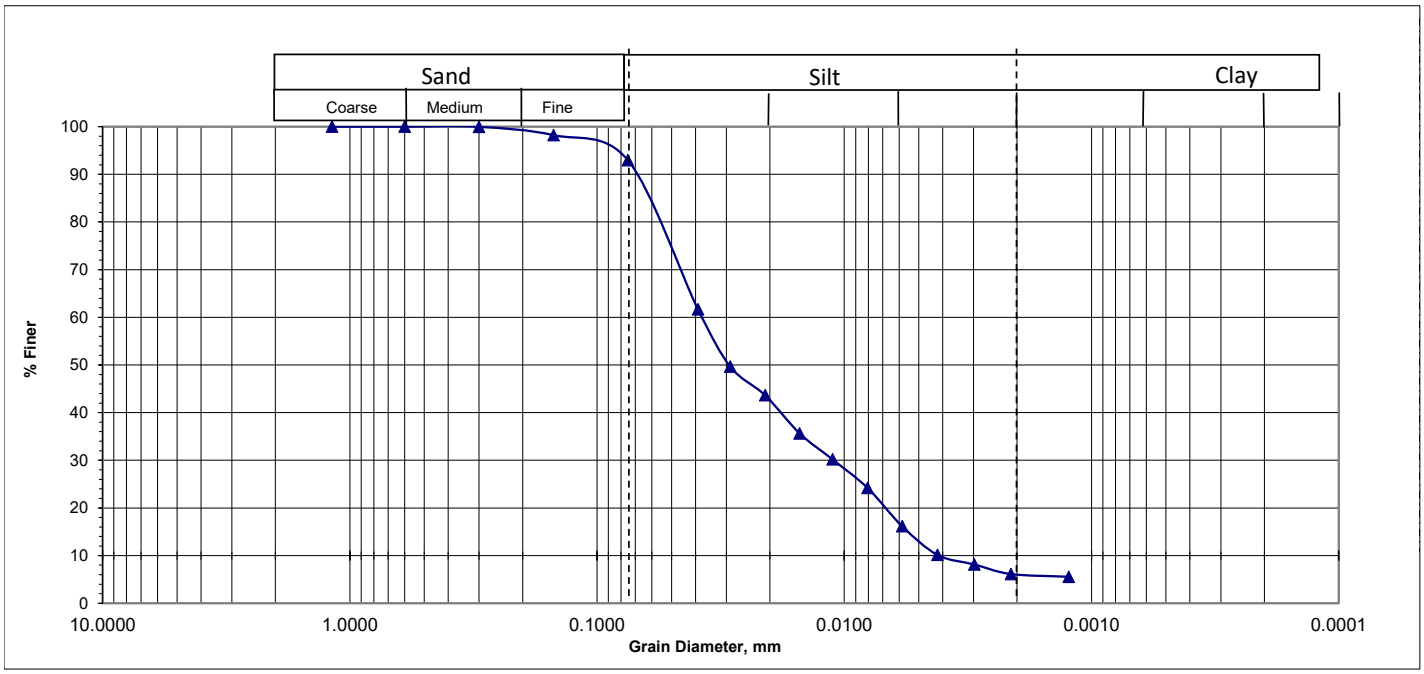
Borehole No : R.B - 05

Depth (m) : 0.0m to 15.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 05 | 0 | 0.0m to 15.0m | 0 | 0 | 7 | 87 | 6 | 0.0040 | 0.011 | 0.0300 | 0.0380 | 9.500 | 0.796 | 0.305 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

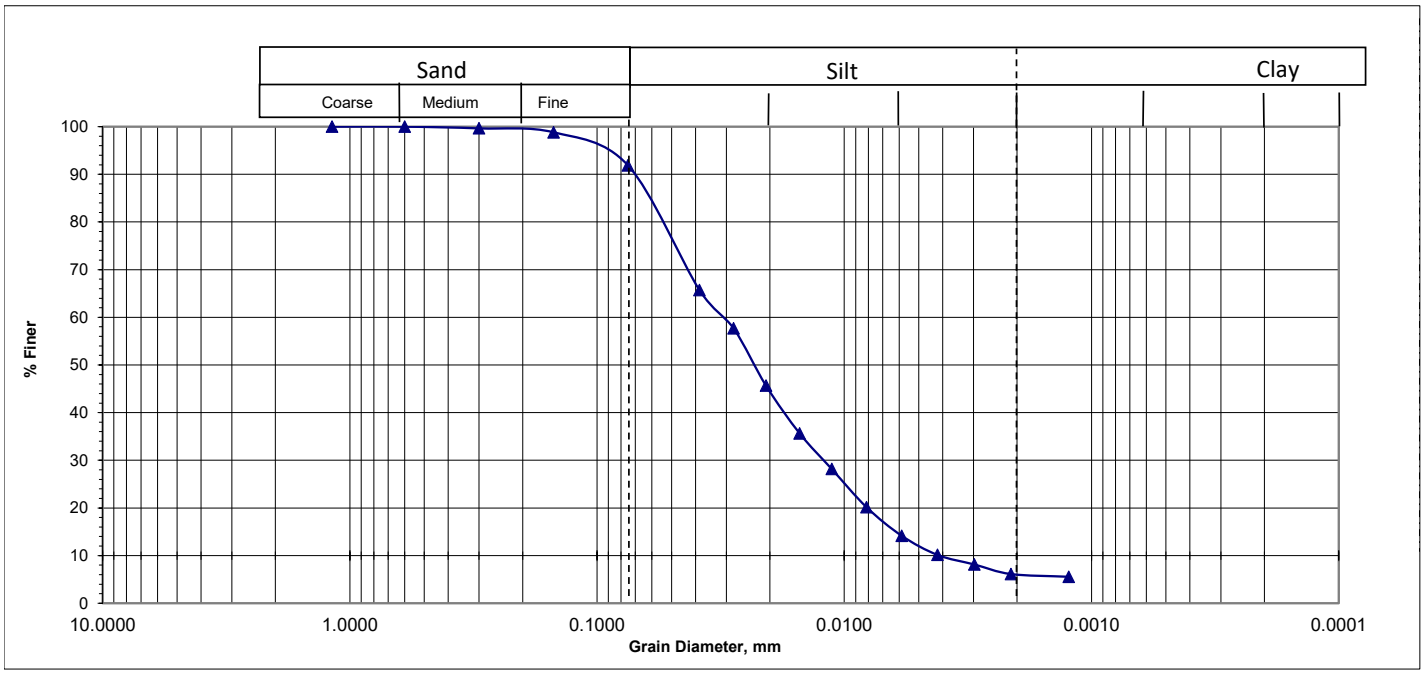
Borehole No : R.B - 09

Depth (m) : 0.0m to 5.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 09 | 0 | 0.0m to 5.0m | 0 | 0 | 8 | 85 | 7 | 0.0040 | 0.016 | 0.0260 | 0.0300 | 7.500 | 2.133 | 0.284 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

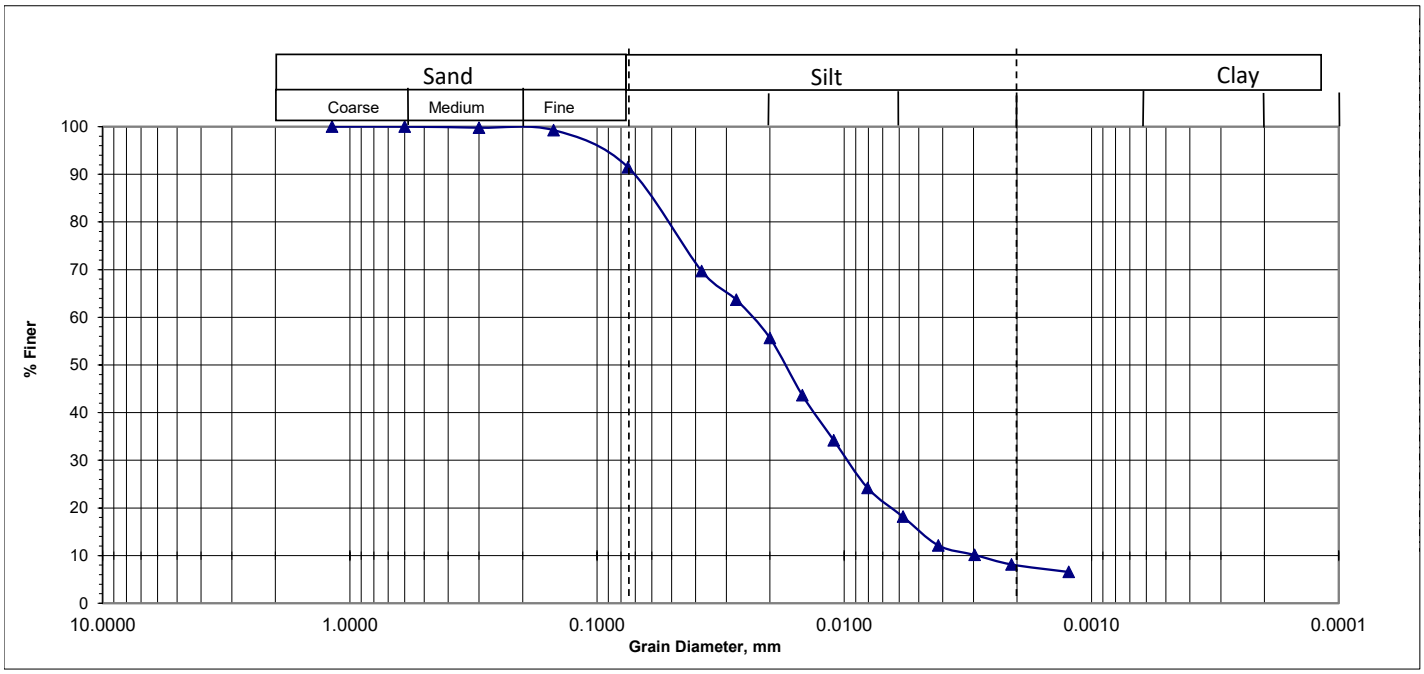
Borehole No : R.B - 09

Depth (m) : 5.0m to 12.0m

Test Date : 28/03/2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 09 | 0 | 5.0m to 12.0m | 0 | 0 | 9 | 83 | 8 | 0.0030 | 0.010 | 0.0180 | 0.0230 | 7.667 | 1.449 | 0.236 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

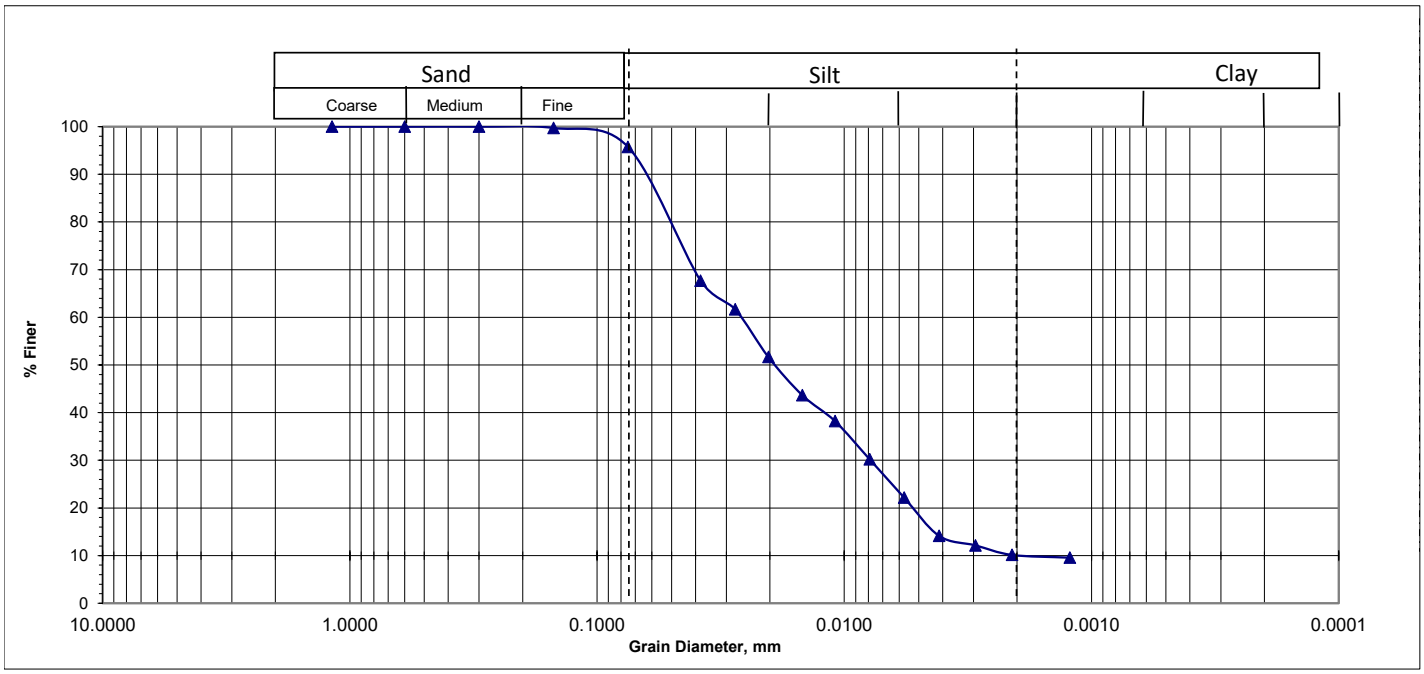
Borehole No : R.B - 07

Depth (m) : 0.0m to 15.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 07 | 0 | 0.0m to 15.0m | 0 | 0 | 4 | 86 | 10 | 0.0020 | 0.0080 | 0.0200 | 0.0270 | 13.500 | 1.185 | 0.249 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Sutarkandi,Sylhet.**

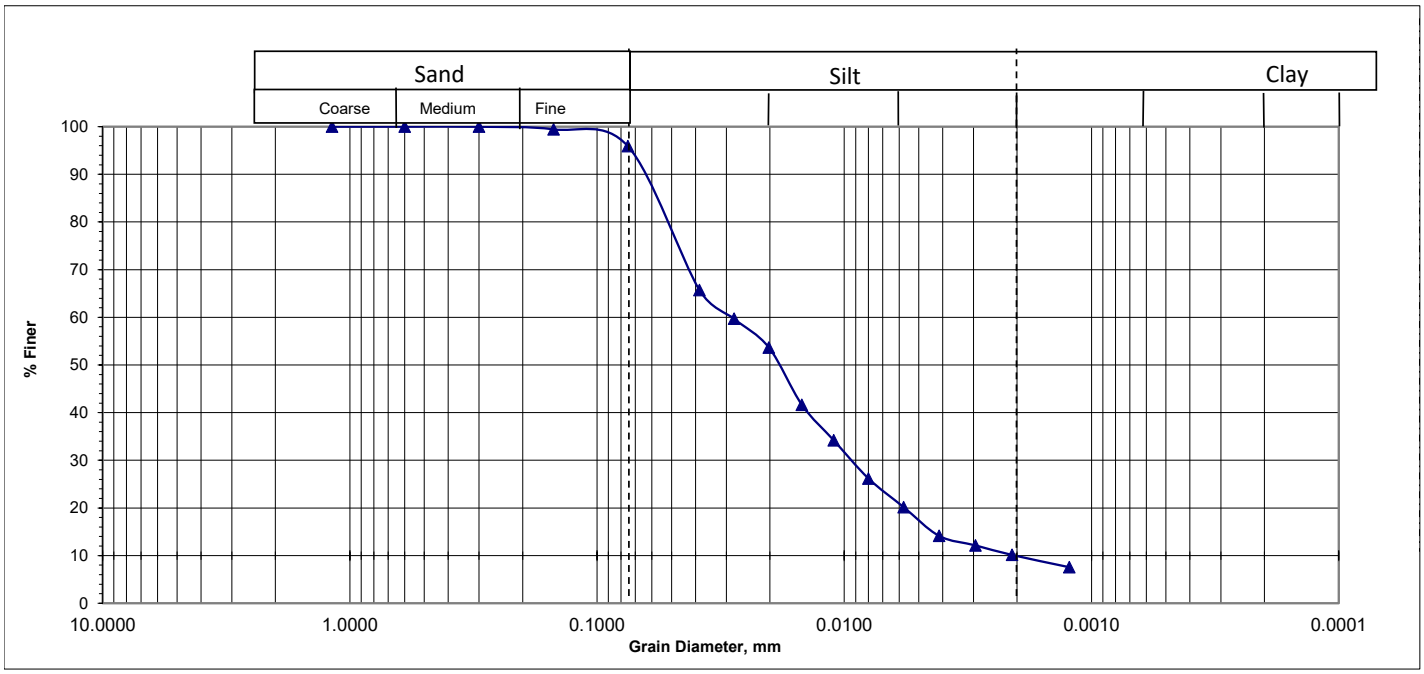
Borehole No : R.B - 08

Depth (m) : 0.0m to 13.0m

Test Date : 28/03/2019

| UCS Classification | ML |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 08 | 0 | 0.0m to 13.0m | 0 | 0 | 4 | 85 | 11 | 0.0020 | 0.0093 | 0.0182 | 0.0280 | 14.000 | 1.544 | 0.237 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

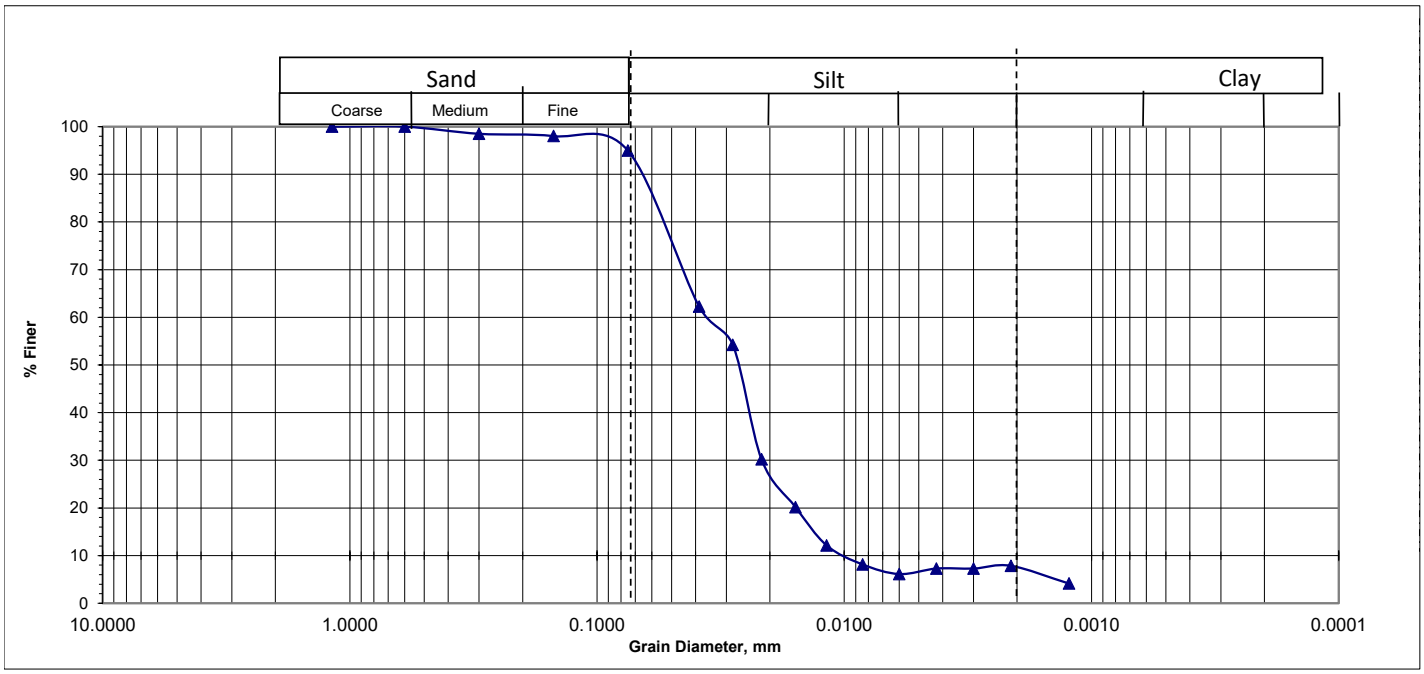
Borehole No : RB-10

Depth (m) : 0.0m to 10.5m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| RB-10 | 0 | 0.0m to 10.5m | | 2 | 3 | 88 | 7 | 0.0100 | 0.021 | 0.0270 | 0.0370 | 3.700 | 1.192 | 0.289 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

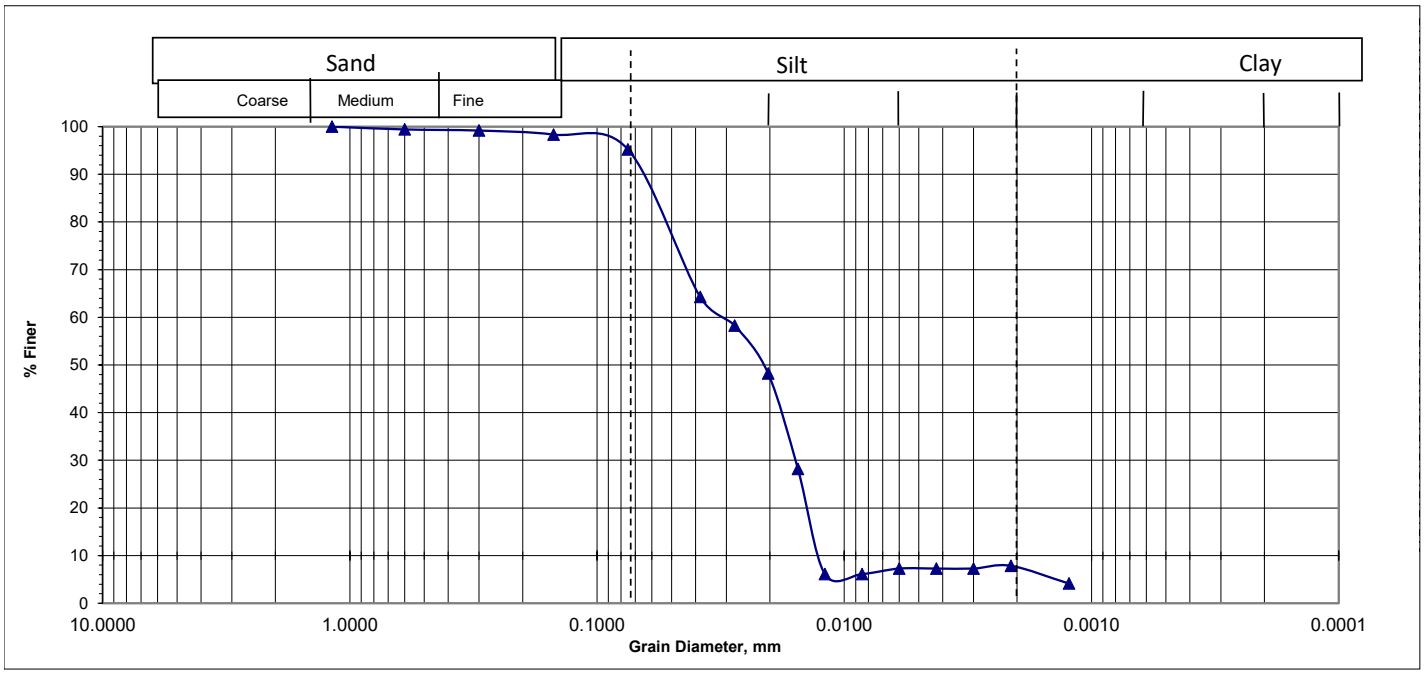
Borehole No : RB-12

Depth (m) : 0.0m to 10.5m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| RB-12 | 0 | 0.0m to 10.5m | | 2 | 3 | 87 | 8 | 0.0133 | 0.015 | 0.0210 | 0.0315 | 2.368 | 0.537 | 0.255 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS BY HYDROMETER

**Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.**

**Client:Roads and Highways Department (RHD)**

**Location: Shiula Bridge**

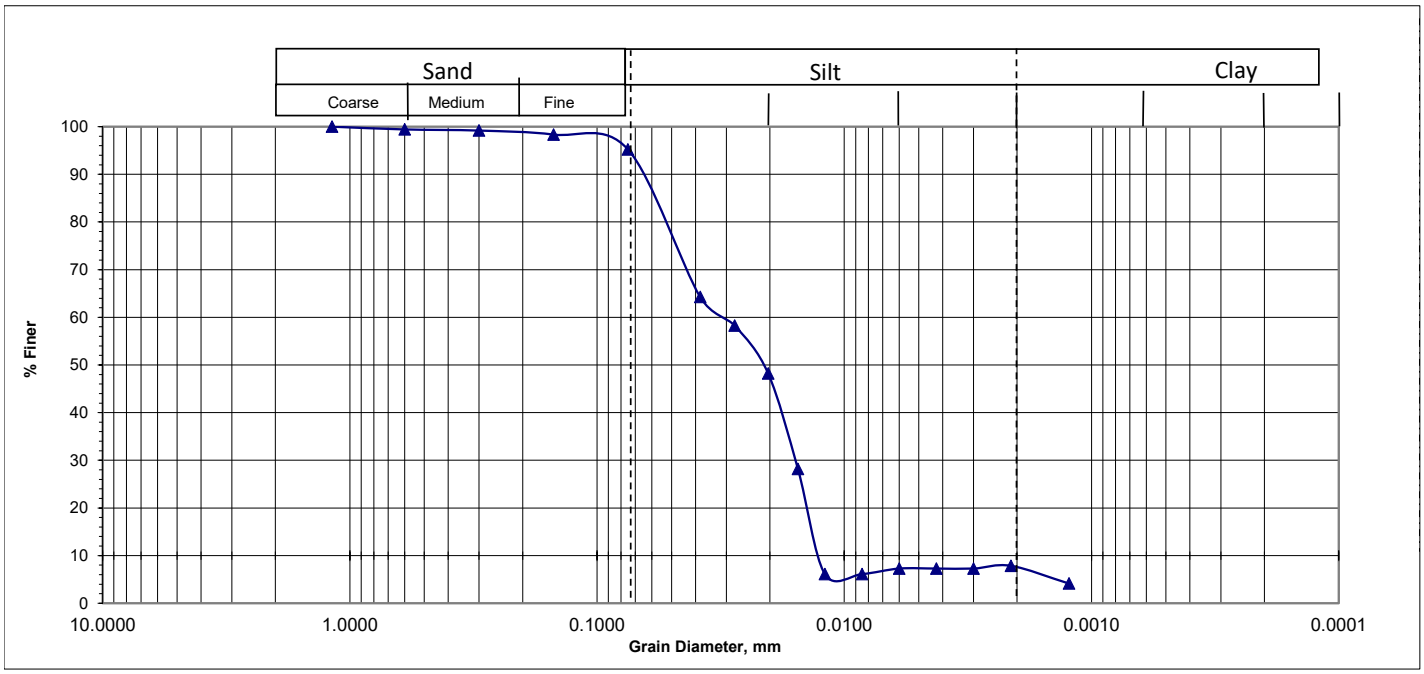
Borehole No : RB-13

Depth (m) : 0.0m to 10.5m

Test Date : 15.05.2019

| UCS Classification | CL |
|---|---|

**Graphical Representation:**




| BH No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| RB-13 | 0 | 0.0m to 10.5m | | 1 | 4 | 88 | 7 | 0.0135 | 0.016 | 0.0210 | 0.0315 | 2.333 | 0.602 | 0.255 |

Tested by : Azharul

Signed by: Engr. Jamal Uddin

# SIEVE ANALYSIS

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

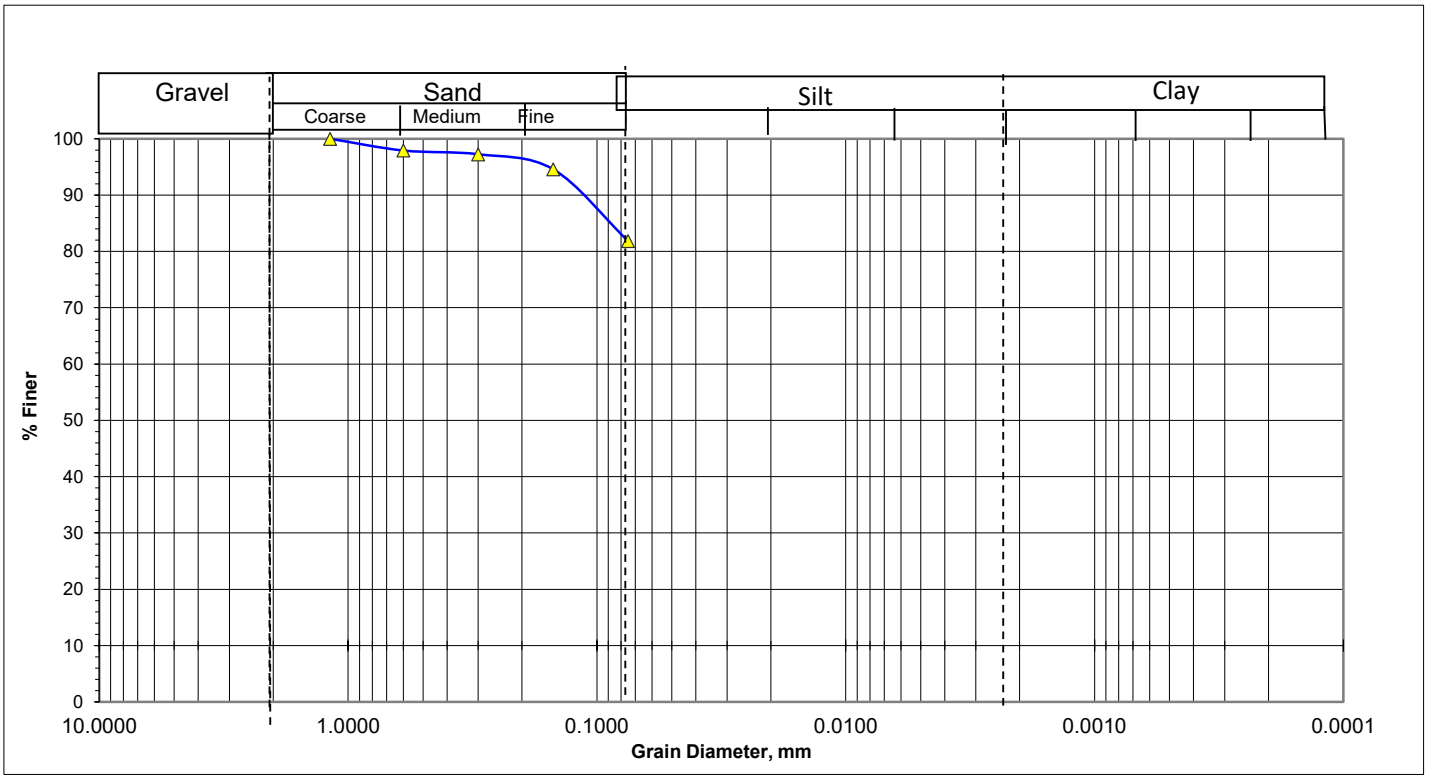
**Project Location : Sylhet Road**

**Borehole No. :** OVP-1.BH-5

**Test Date :** 28.07.2019

**Depth :** 19.0m to 28.0m

## Graphical Representation:




| | Soil Type: | Sandy SILT | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-1.BH-5 | 0 | 9.0m to 28.0 | 0 | 5 | 13 | 82 | | | | | | | | 0.000 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

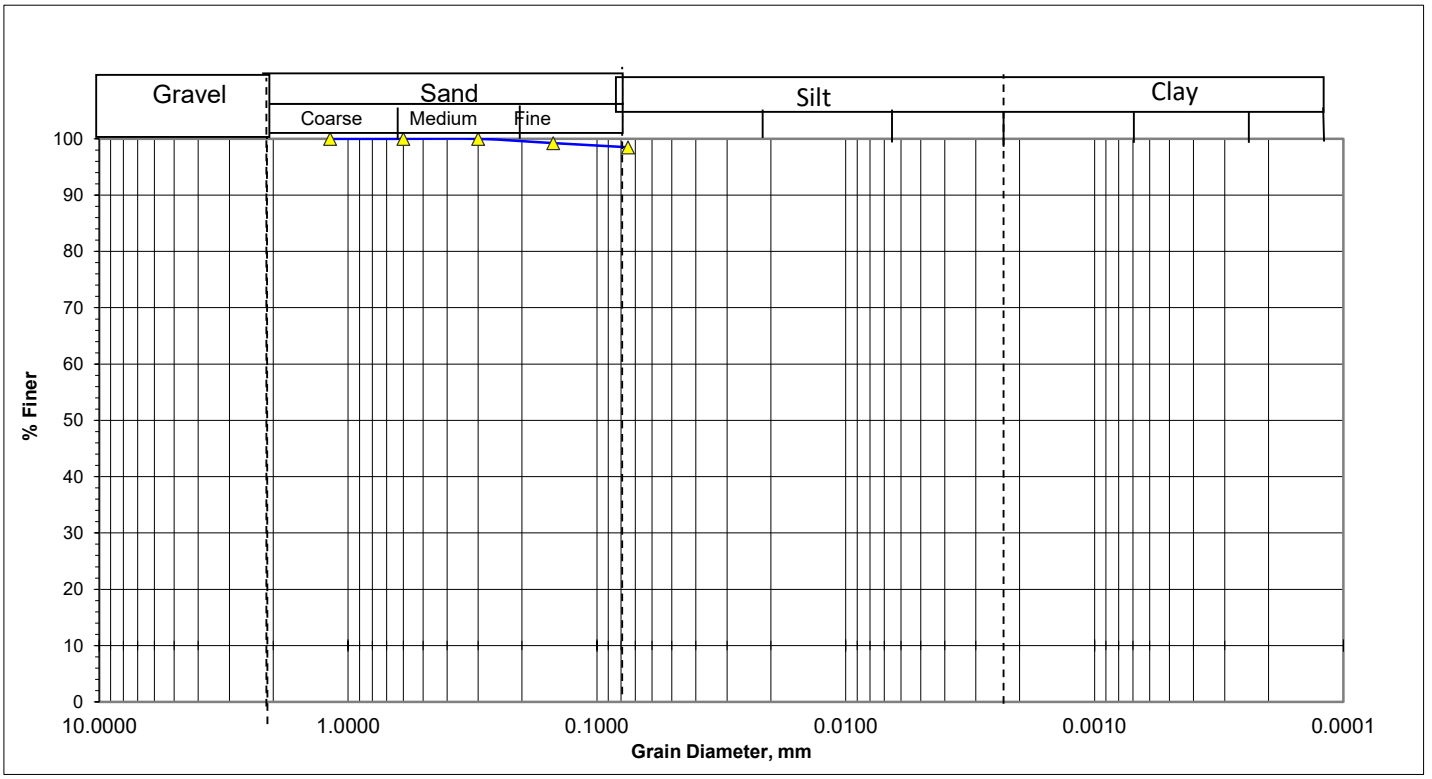
**Project Location : Sutarkandi,Sylhet.**

**Borehole No. :** OVP-1,BH-3

**Test Date :** 24.03.2019

**Depth :** 35.0m to 43.5m

## Graphical Representation:




Soil Type: Clayey SILT

| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-1,BH-3 | 0 | 5.0m to 43.5 | 0 | 1 | 1 | 98 | | 0.00 | 0.00 | 0.000 | 0.000 | | | 0.000 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

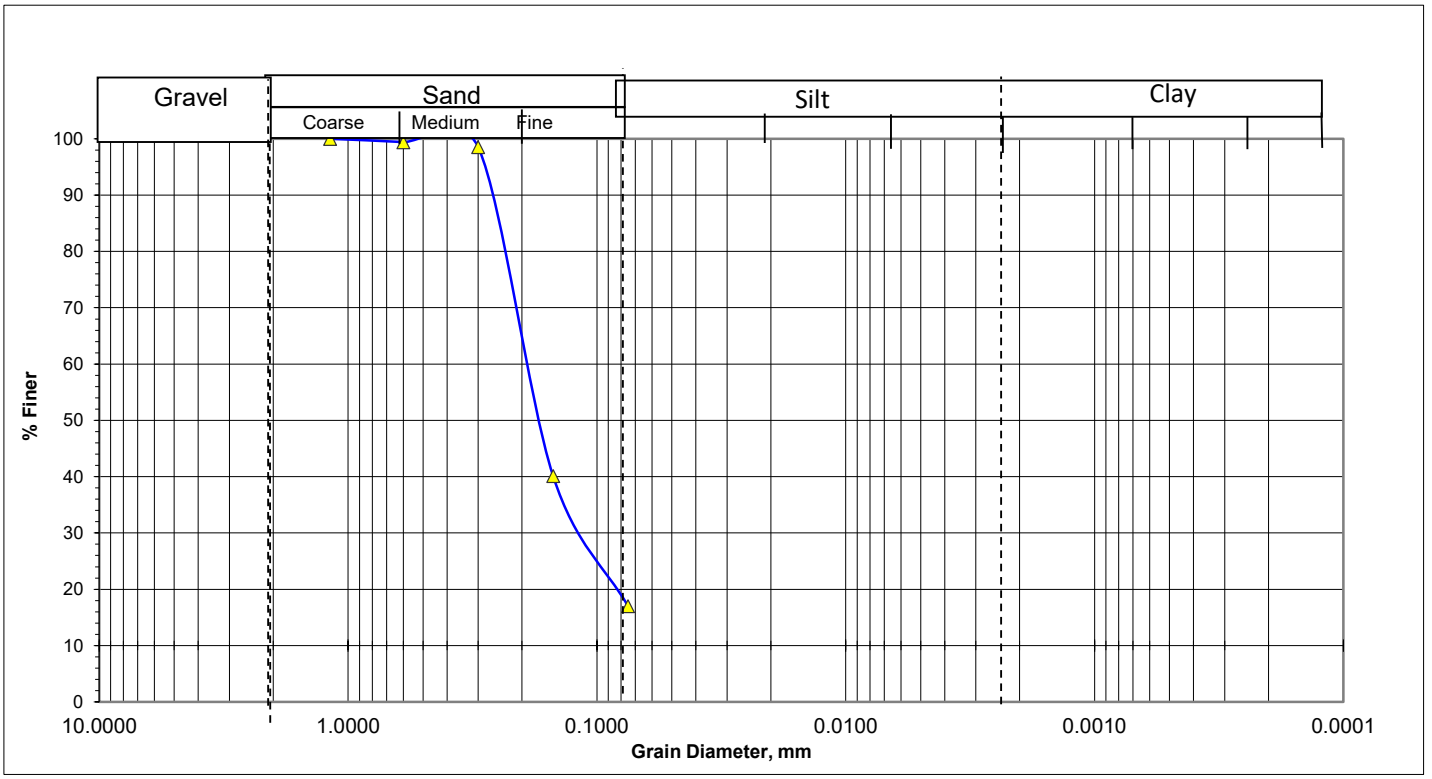
**Project Location : Sylhet Road**

**Borehole No. :** OVP-1.BH-2

**Test Date :** 28.07.2019

**Depth :** 0.0m to 7.0m

## Graphical Representation:




| | Soil Type: | Silty medium to fine SAND | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-1.BH-2 | 0 | 0.0m to 7.0m | | 34 | 49 | 17 | | 0.00 | 0.13 | 0.175 | 0.190 | | | 0.736 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

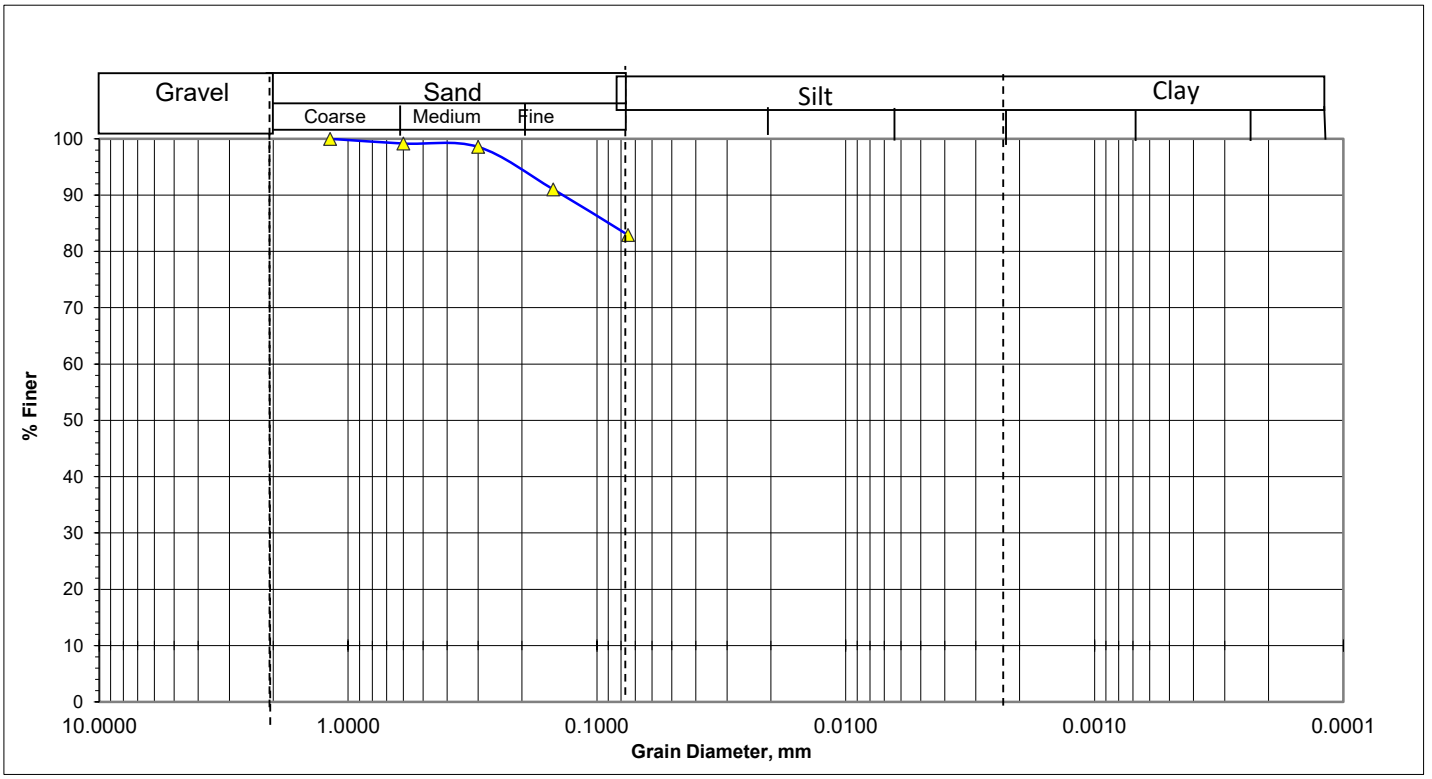
**Project Location : Sylhet Road**

**Borehole No. :** OVP-2.BH-1

**Test Date :** 28.07.2019

**Depth :** 5.0m to 19.0m

## Graphical Representation:




| | Soil Type: | Sandy SILT | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 5.0m to 19.0m | 0 | 5 | 12 | 83 | | | | | | | | 0.000 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

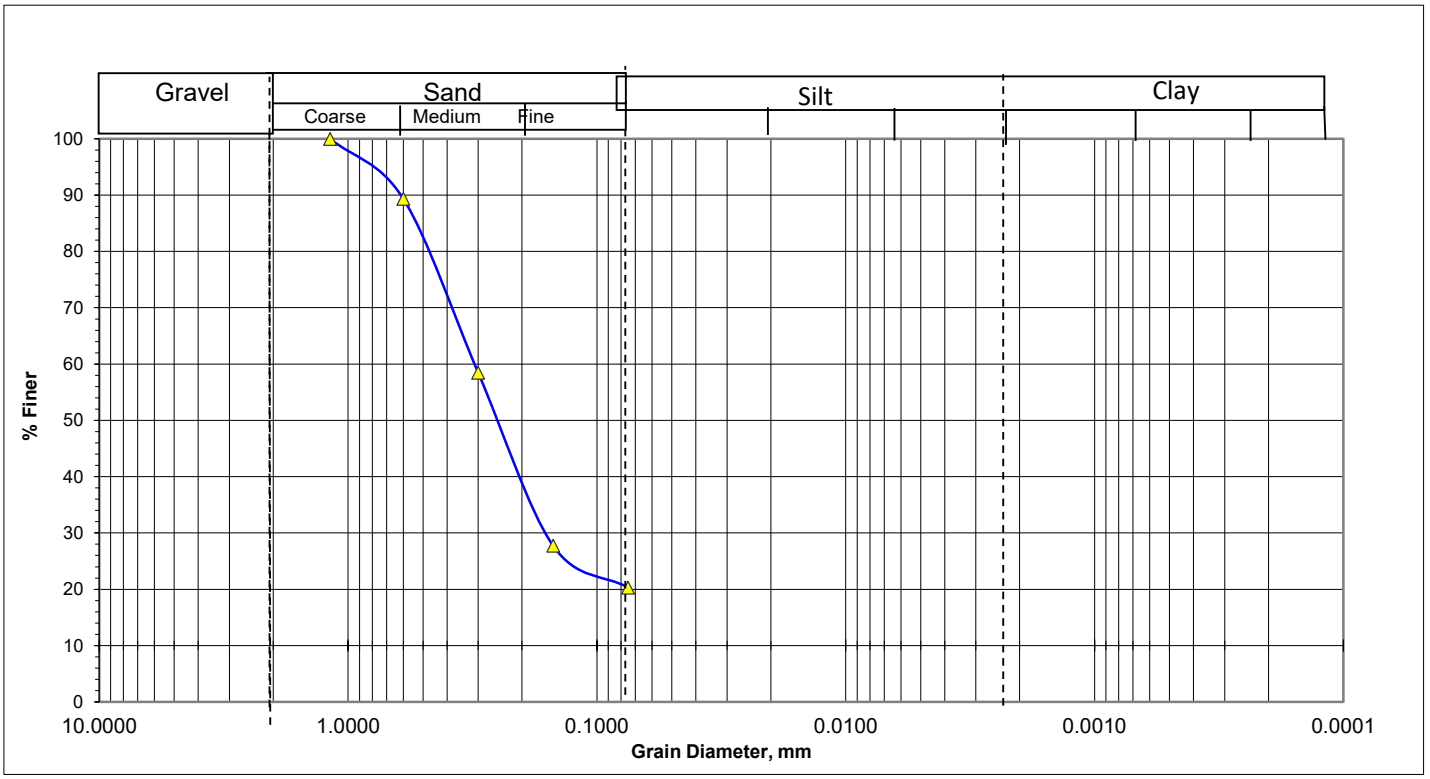
**Project Location : Sylhet Road**

**Borehole No. :** OVP-2.BH-1

**Test Date :** 28.07.2019

**Depth :** 19.0m to 23.0m

## Graphical Representation:




| | Soil Type: | Silty fine to medium SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 9.0m to 23.0 | 10 | 50 | 20 | 20 | | 0.00 | 0.16 | 0.255 | 0.310 | | | 0.889 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

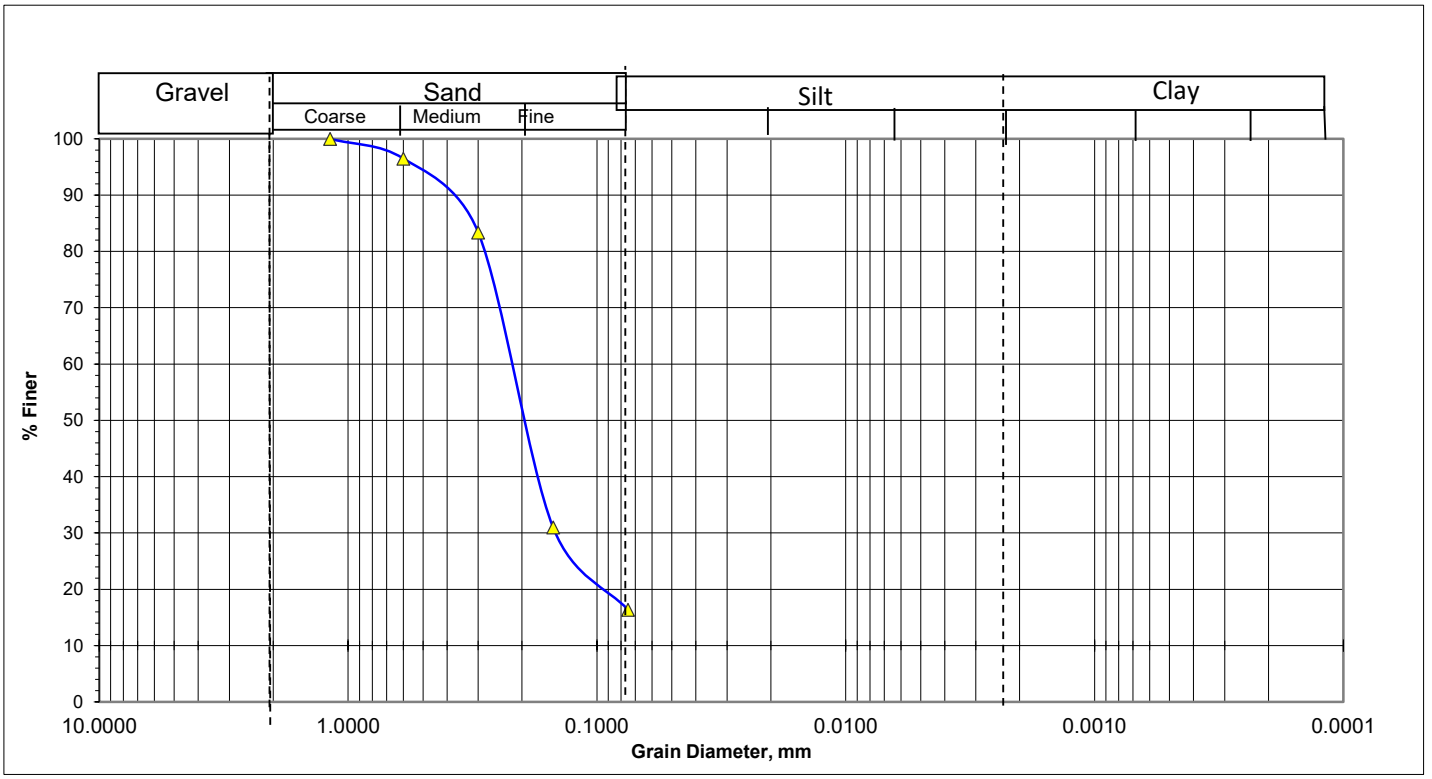
**Project Location : Sylhet Road**

**Borehole No. :** OVP-2.BH-1

**Test Date :** 28.07.2019

**Depth :** 26.0m to 29.0m

## Graphical Representation:




| | Soil Type: | Silty fine to medium SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 6.0m to 29.0 | 3 | 45 | 36 | 16 | | 0.00 | 0.16 | 0.200 | 0.220 | | | 0.787 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

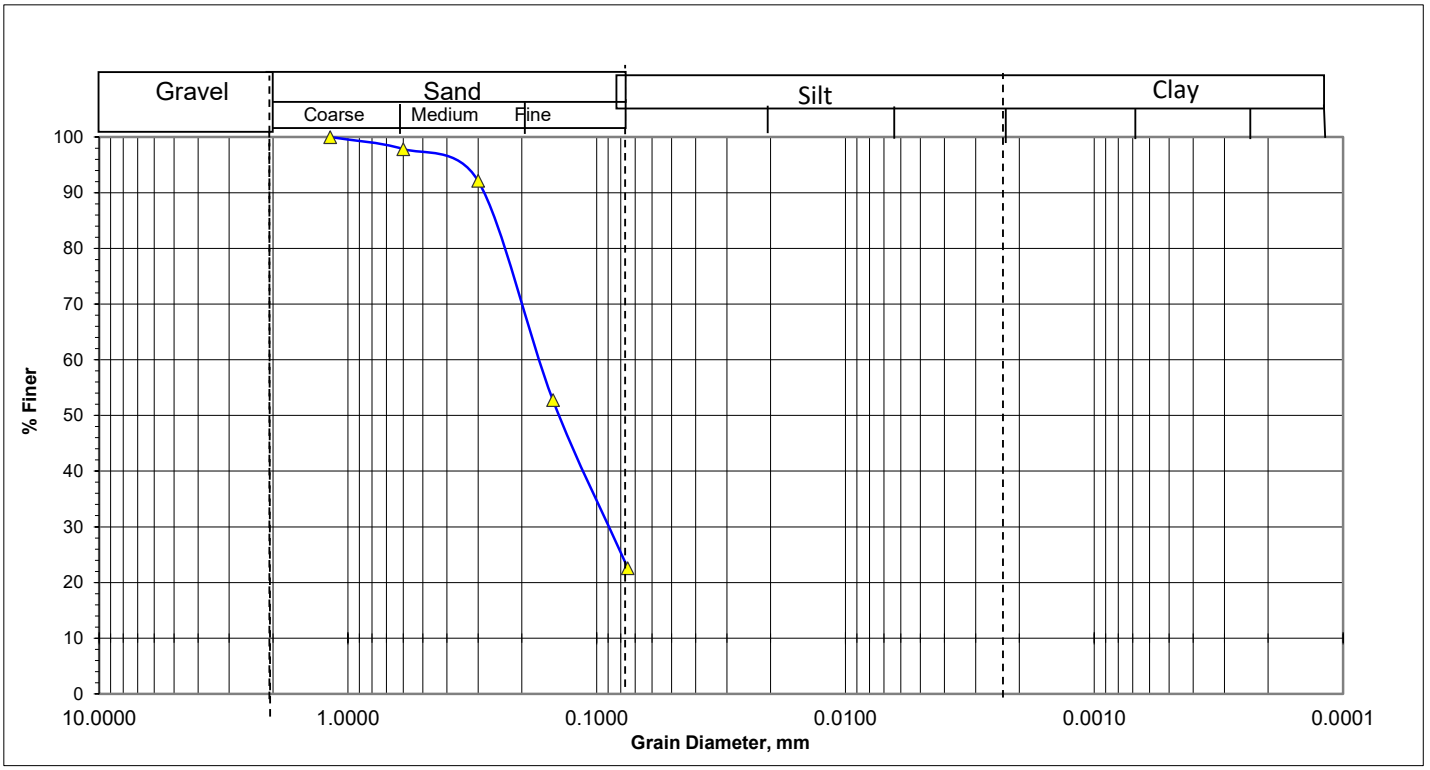
**Project Location : Sylhet Road**

**Borehole No. :** OVP-2.BH-1

**Test Date :** 28.07.2019

**Depth :** 40.0m to 44.0m

## Graphical Representation:




| | Soil Type: | Silty Fine SAND | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 40.0m to 44.0m | 2 | 28 | 47 | 23 | | 0.00 | 0.09 | 0.150 | 0.175 | | | 0.682 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

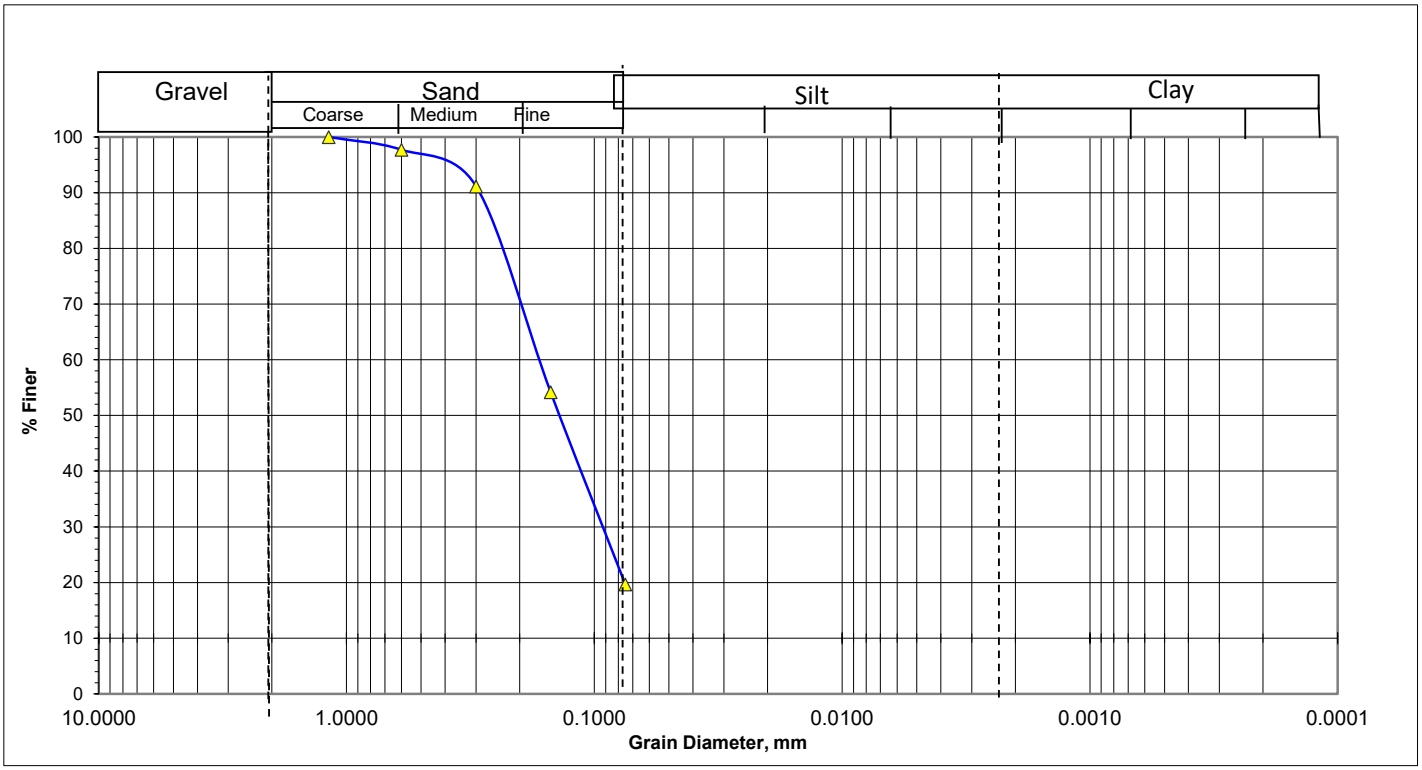
**Project Location : Sylhet Road**

**Borehole No. :** OVP-2.BH-1

**Test Date :** 28.07.2019

**Depth :** 49.0m to 53.0m

## Graphical Representation:




| | Soil Type: | Silty medium to fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 49.0m to 53.0r | 2 | 28 | 50 | 20 | | 0.00 | 0.09 | 0.150 | 0.170 | | | 0.682 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

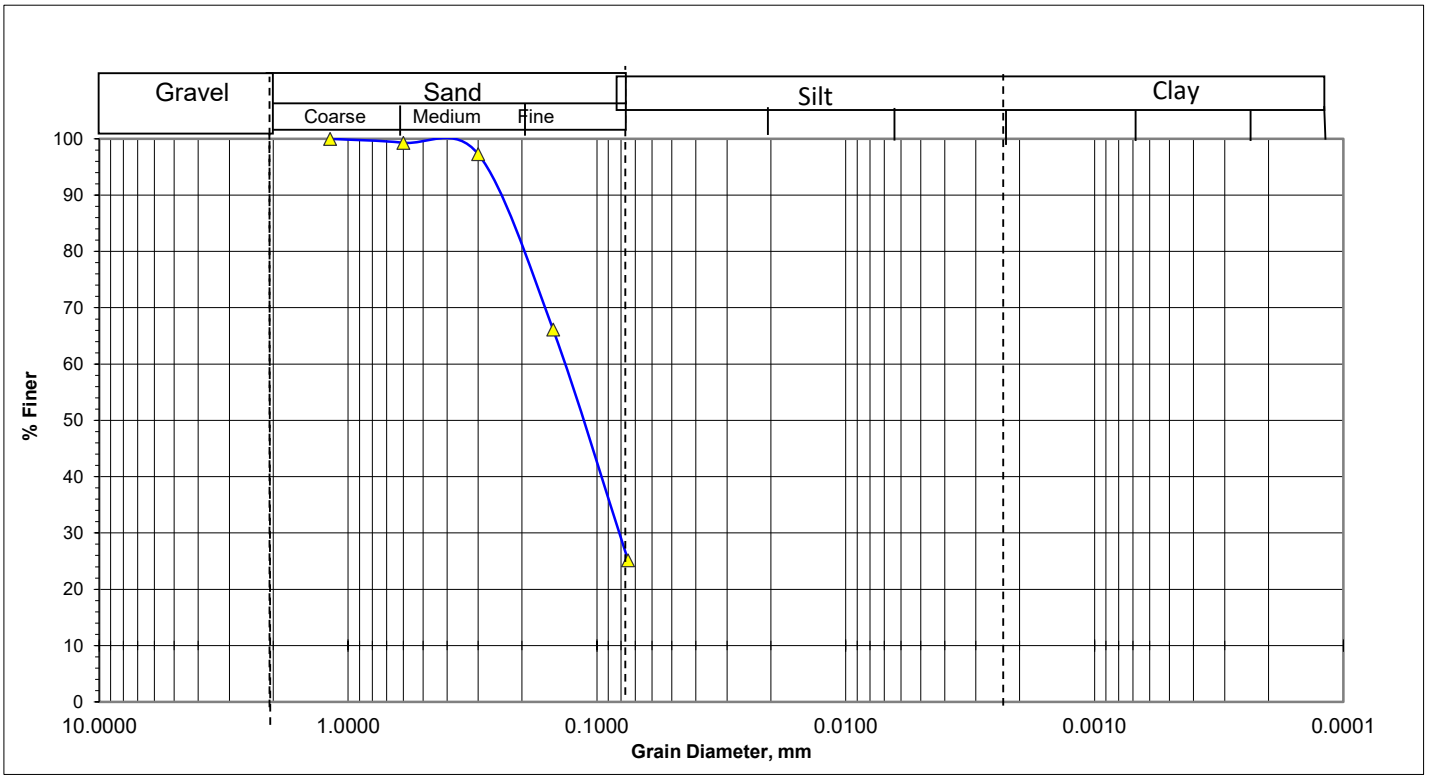
**Project Location : Sylhet Road**

**Borehole No. :** OVP-2.BH-1

**Test Date :** 28.07.2019

**Depth :** 56.0m to 61.0m

## Graphical Representation:




Soil Type: Silty Fine SAND

| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-1 | 0 | 6.0m to 61.0 | 0 | 19 | 56 | 25 | | 0.00 | 0.08 | 0.115 | 0.145 | | | 0.597 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

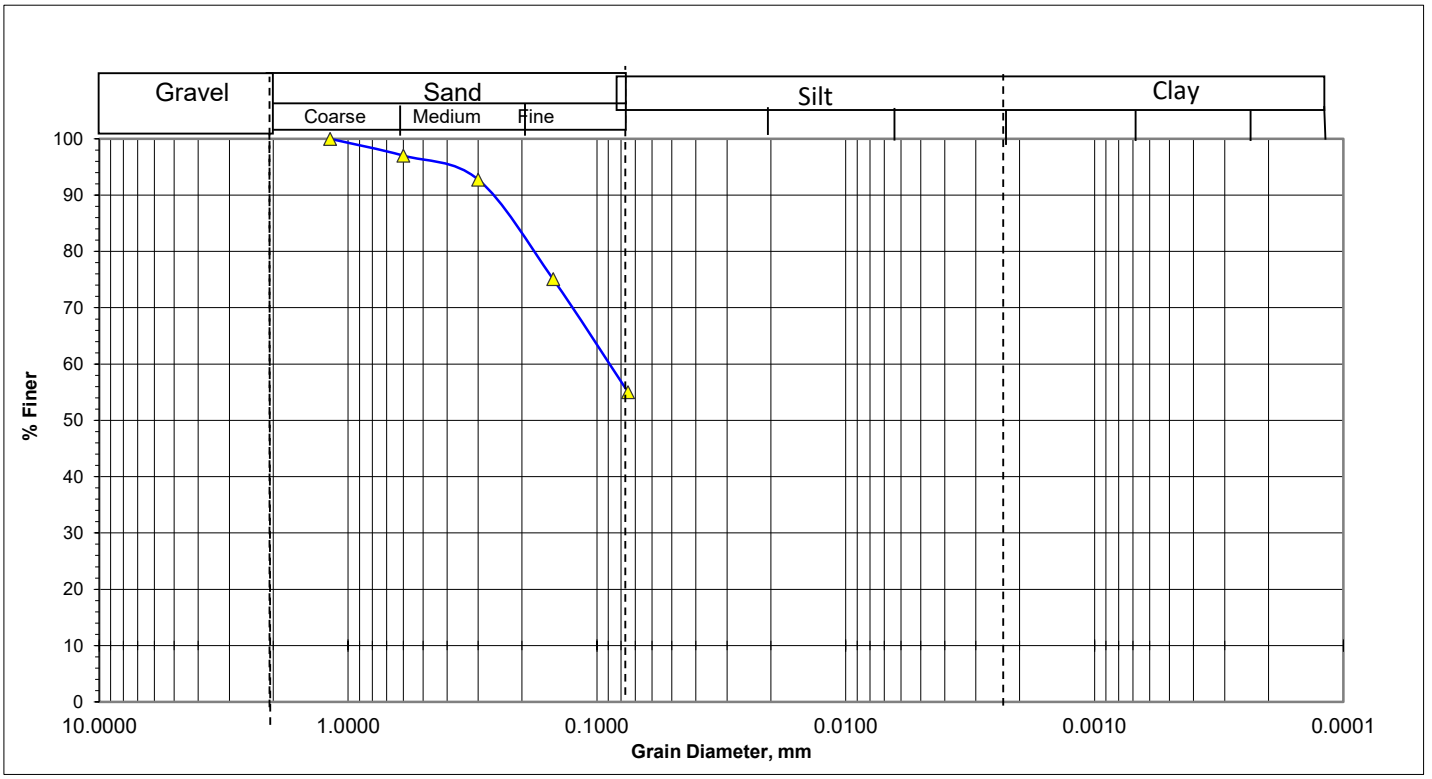
**Project Location : Sylhet Road**

**Borehole No. :** OVP-2.BH-2

**Test Date :** 28.07.2019

**Depth :** 4.0m to 34.5m

## Graphical Representation:




| | Soil Type: | Sandy SILT | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-2.BH-2 | 0 | 4.0m to 34.5m | 0 | 17 | 28 | 55 | | | | | 0.090 | | | 0.000 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

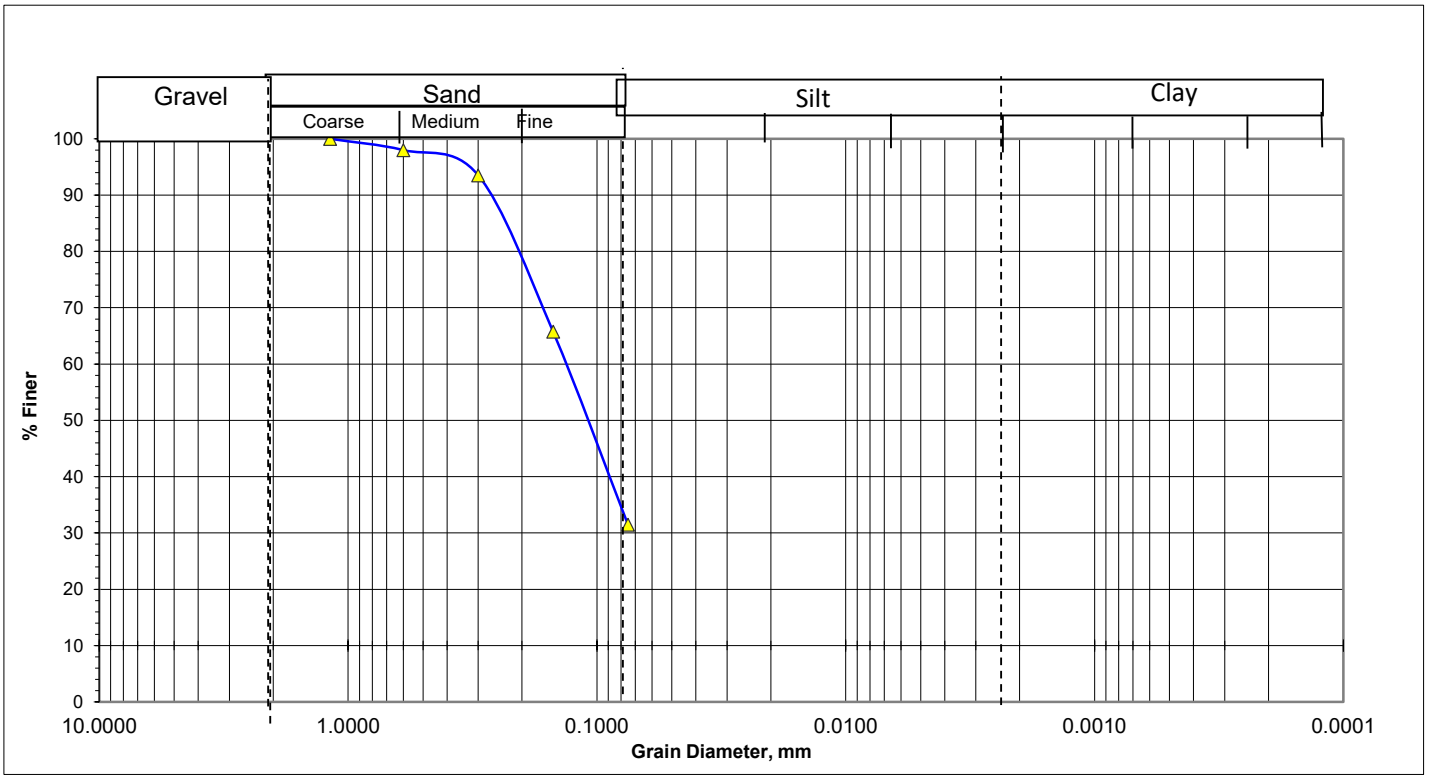
**Project Location :Sylhet Road**

**Borehole No. :** FLY-1,BH-3

**Test Date :** 06.08.2019

**Depth :** 20.0m to 41.0m

## Graphical Representation:




| | Soil Type: | Silty fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-3 | 0 | 0.0m to 41.0 | 2 | 19 | 48 | 31 | | 0.00 | 0.00 | 0.120 | 0.150 | #DIV/0! | #DIV/0! | 0.610 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

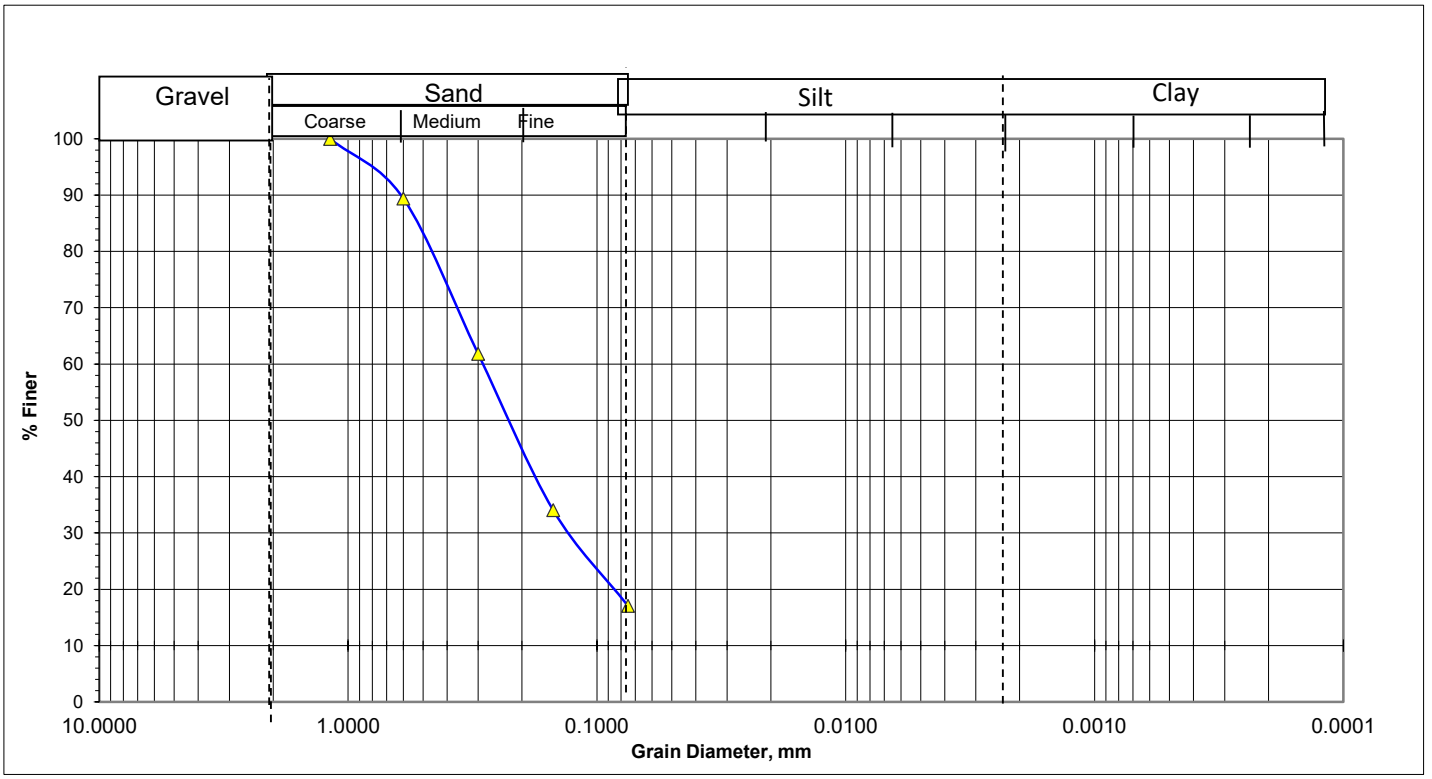
**Project Location :Sylhet Road**

**Borehole No. :** FLY-1,BH-2

**Test Date :** 02.08.2019

**Depth :** 14.0m to 20.0m

## Graphical Representation:




| | Soil Type: | fine to medium SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-2 | 0 | 4.0m to 20.0 | 11 | 44 | 28 | 17 | | | 0.13 | 0.230 | 0.290 | #DIV/0! | #DIV/0! | 0.844 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

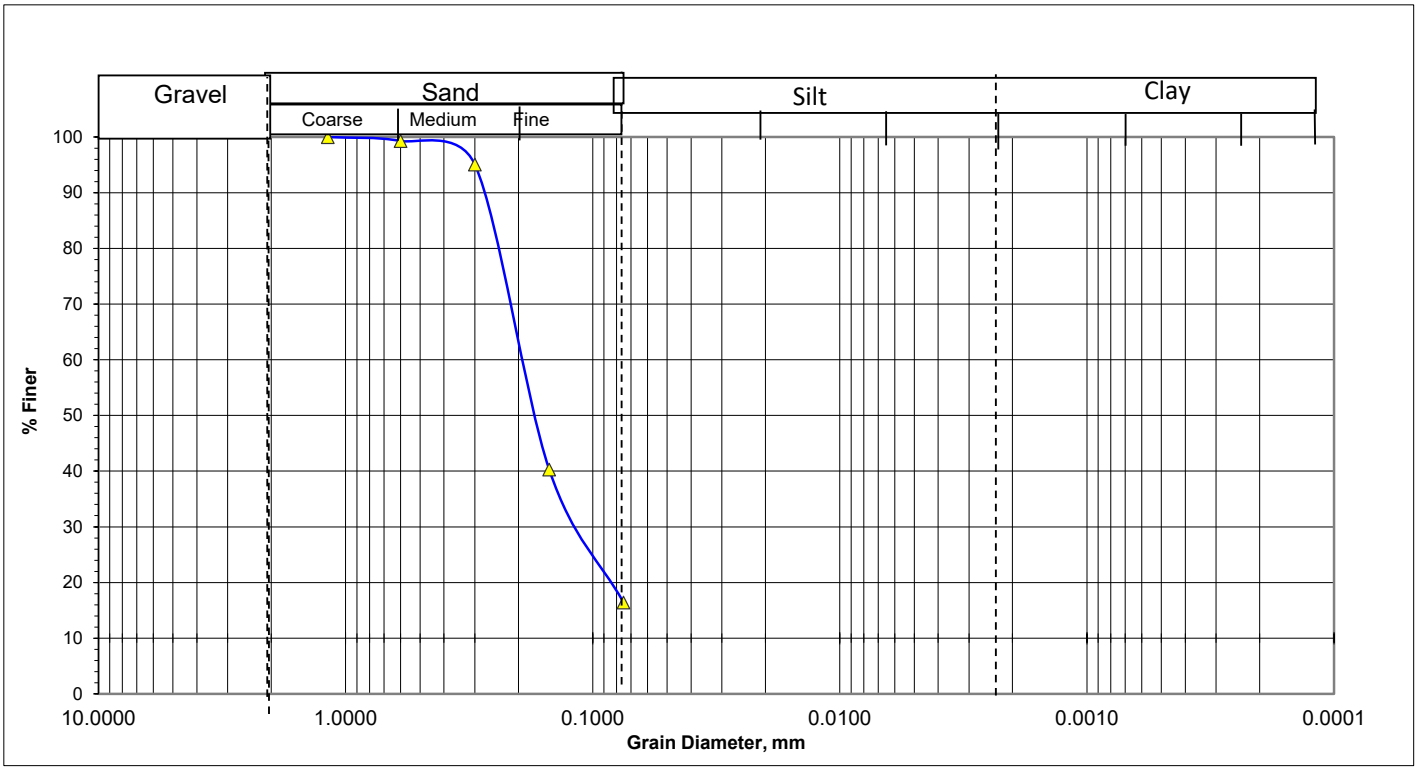
**Project Location :Sylhet Road**

**Borehole No. :** FLY-1,BH-7

**Test Date :** 02.08.2019

**Depth :** 10.0m to 23.0m

## Graphical Representation:




| | Soil Type: | Silty medium to fine SAND | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| FLY-1,BH-7 | 0 | 0.0m to 23.0m | | 38 | 46 | 16 | | | 0.13 | 0.180 | 0.195 | #DIV/0! | #DIV/0! | 0.747 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

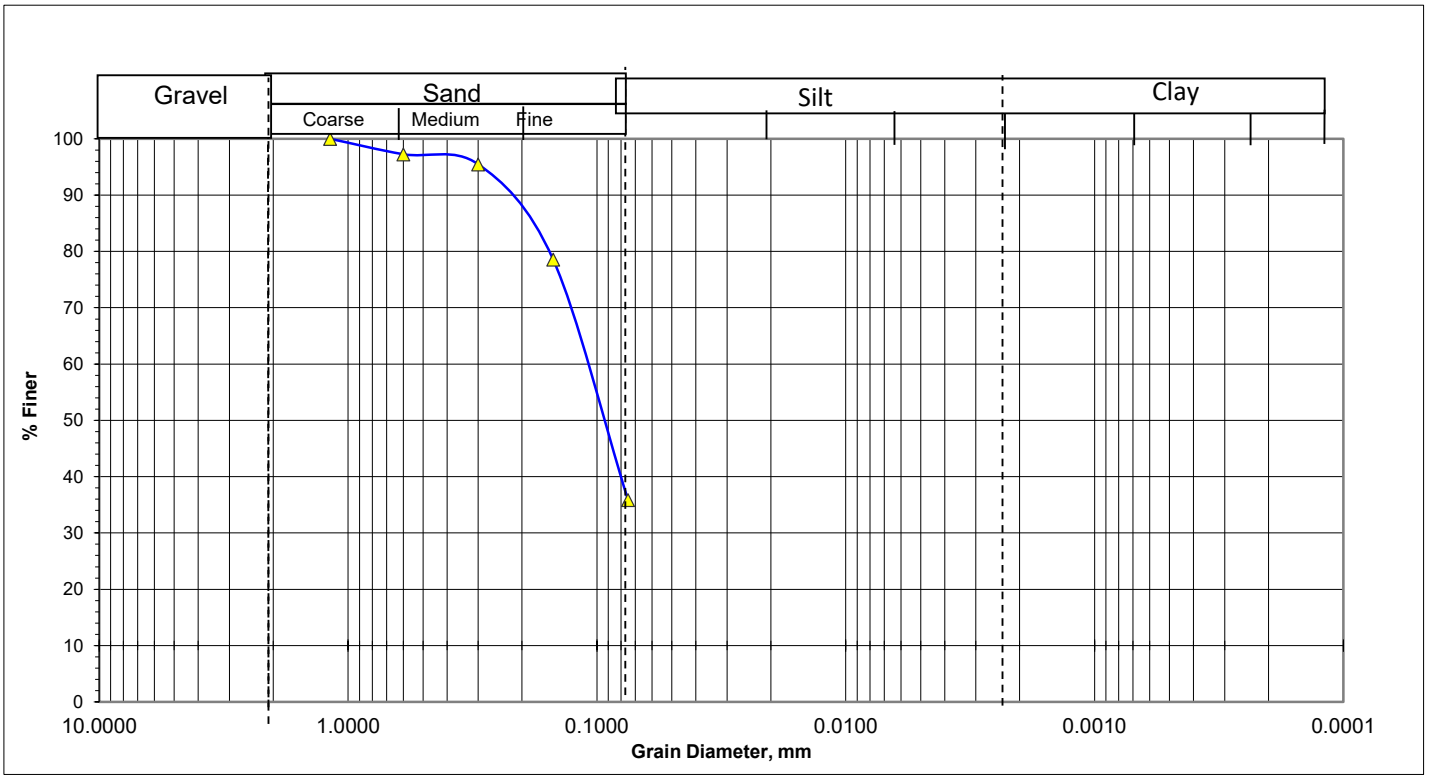
**Project Location : Sylhet Road**

**Borehole No. :** OVP-3.BH-1

**Test Date :** 02.08.2019

**Depth :** 3.0m to 7.0m

## Graphical Representation:




Soil Type: Silty fine SAND

| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-3.BH-1 | 0 | 3.0m to 7.0m | 3 | 9 | 52 | 36 | | | | 0.090 | 0.120 | | | 0.528 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

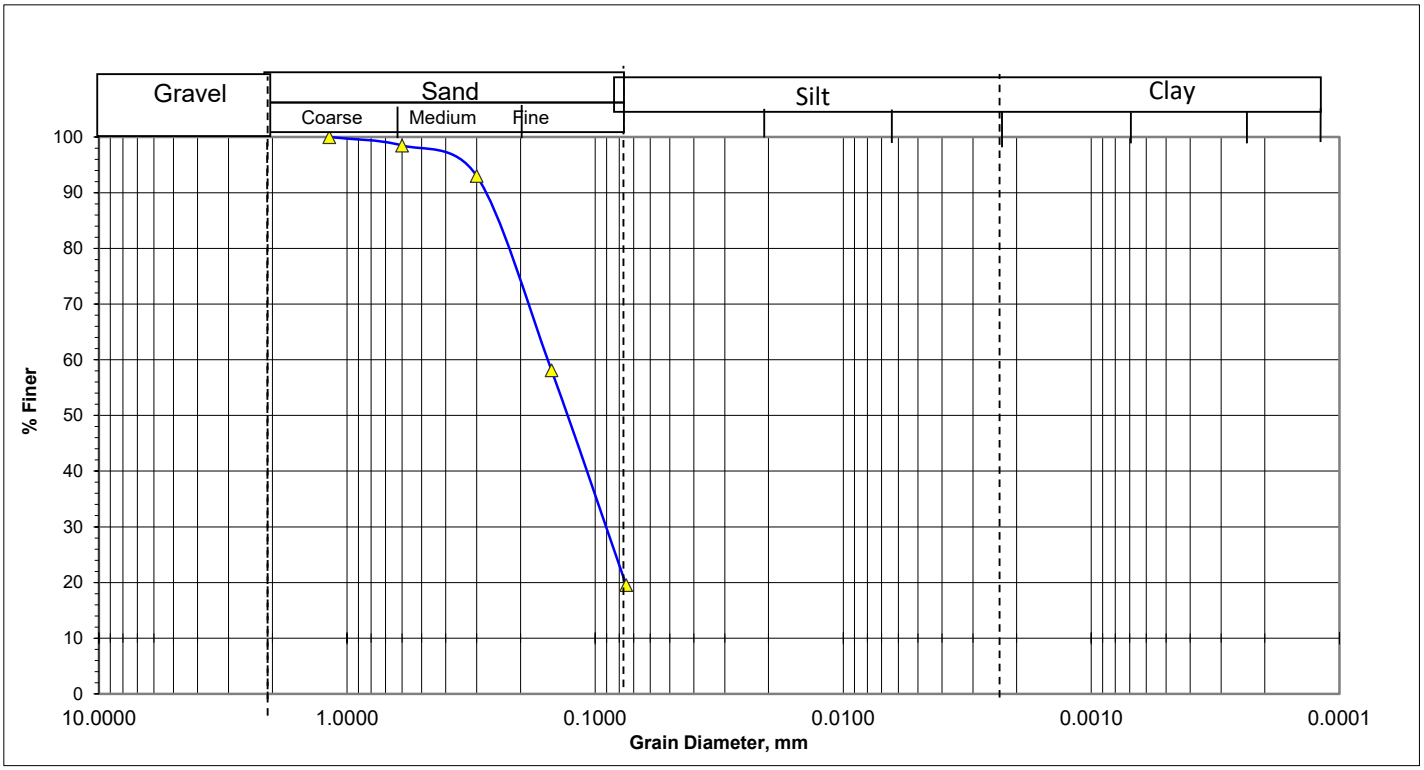
**Project Location : Sylhet Road**

**Borehole No. :** OVP-5.BH-3

**Test Date :** 02.08.2019

**Depth :** 35.0m to 40.5m

## Graphical Representation:




| | Soil Type: | silty fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-5.BH-3 | 0 | 35.0m to 40.5m | 7 | 39 | 34 | 20 | | | 0.17 | 0.250 | 0.340 | | | 0.880 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

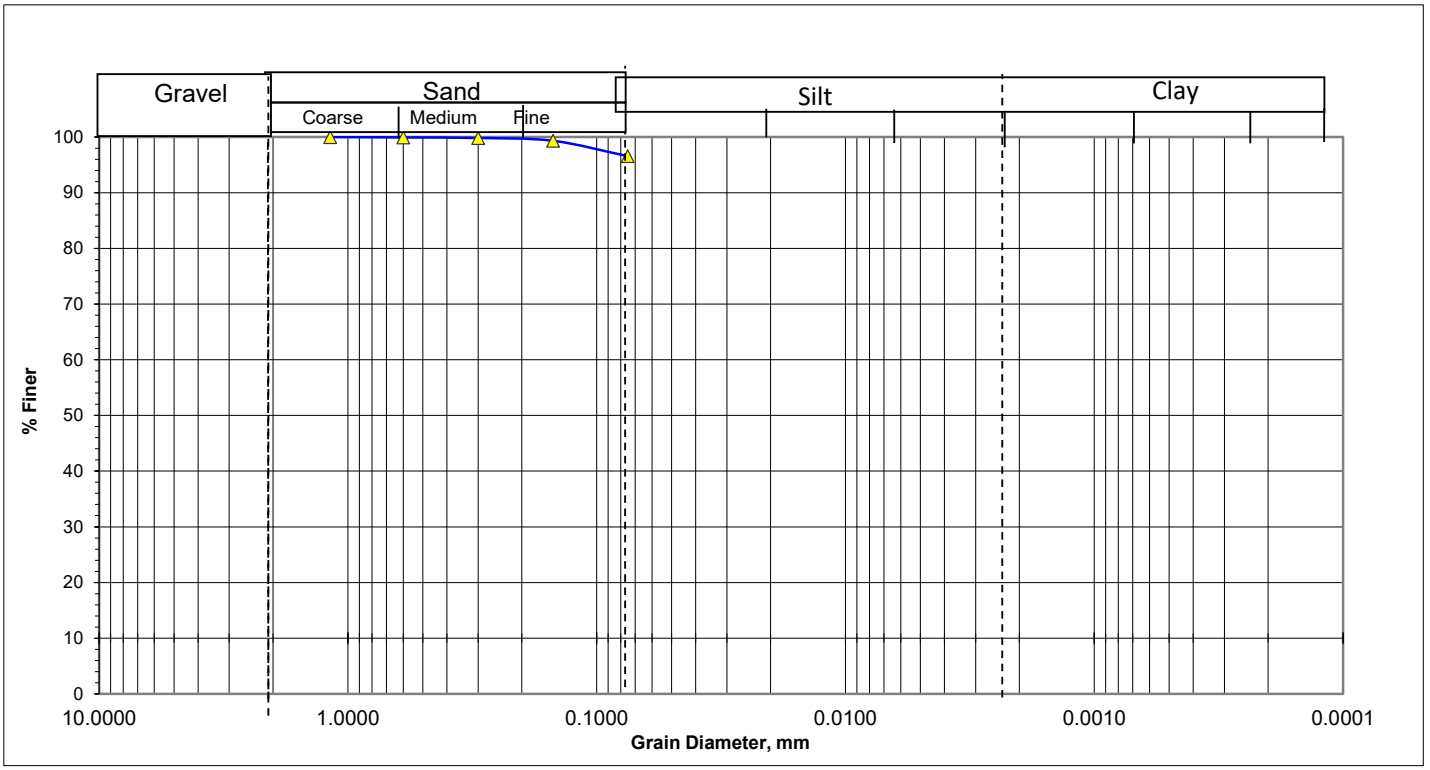
**Project Location : Sylhet Road**

**Borehole No. :** OVP-5.BH-2

**Test Date :** 02.08.2019

**Depth :** 12.0m to 24.0m

## Graphical Representation:




| | Soil Type: | sandy SILT | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-5.BH-2 | 0 | 12.0m to 24.0m | | | 3 | 97 | | | | | | | | 0.000 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

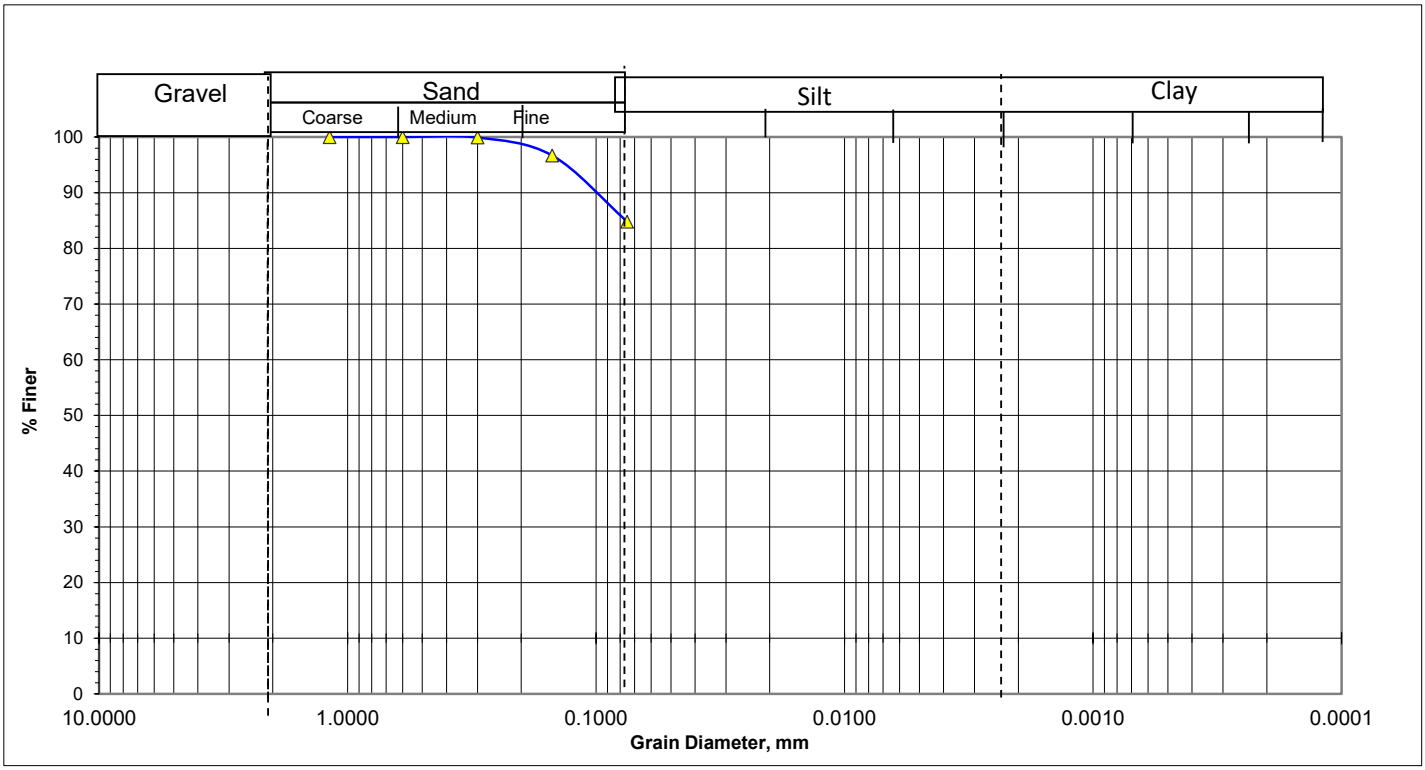
**Project Location : Sylhet Road**

**Borehole No. :** OVP-5.BH-2

**Test Date :** 02.08.2019

**Depth :** 24.0m to 40.5m

## Graphical Representation:




| | Soil Type: | Sandy SILT | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| OVP-5.BH-2 | 0 | 24.0m to 40.5m | | | 15 | 85 | | | | | | | | 0.000 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

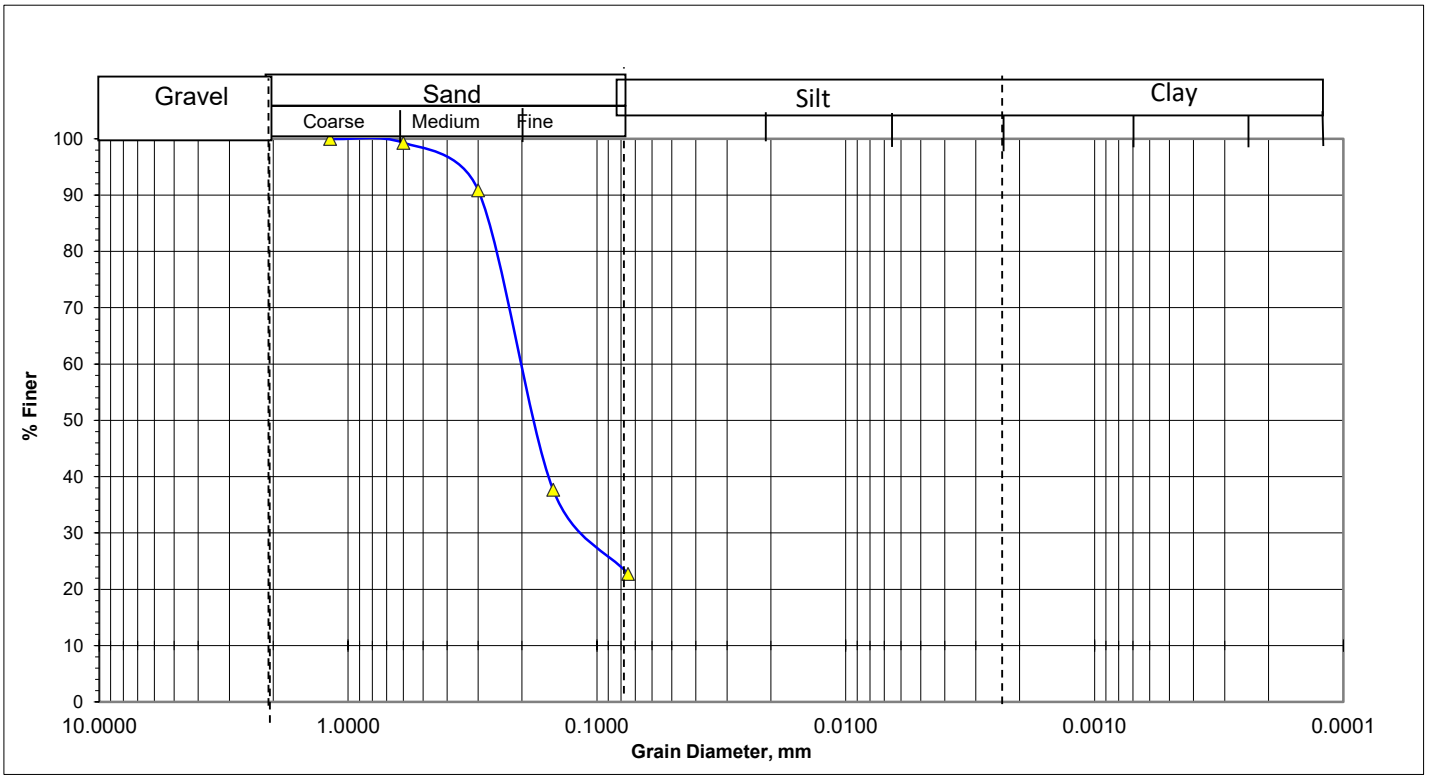
**Project Location : Shiula Bridge**

**Borehole No. :** BR-2. BH-10

**Test Date :** 12.05.2019

**Depth :** 37.0m to 40.5m

## Graphical Representation:




| | Soil Type: | Silty Fine SAND | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-10 | 0 | 7.0m to 40.5m | | 10 | 67 | 23 | | | 0.13 | 0.180 | 0.200 | | | 0.747 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

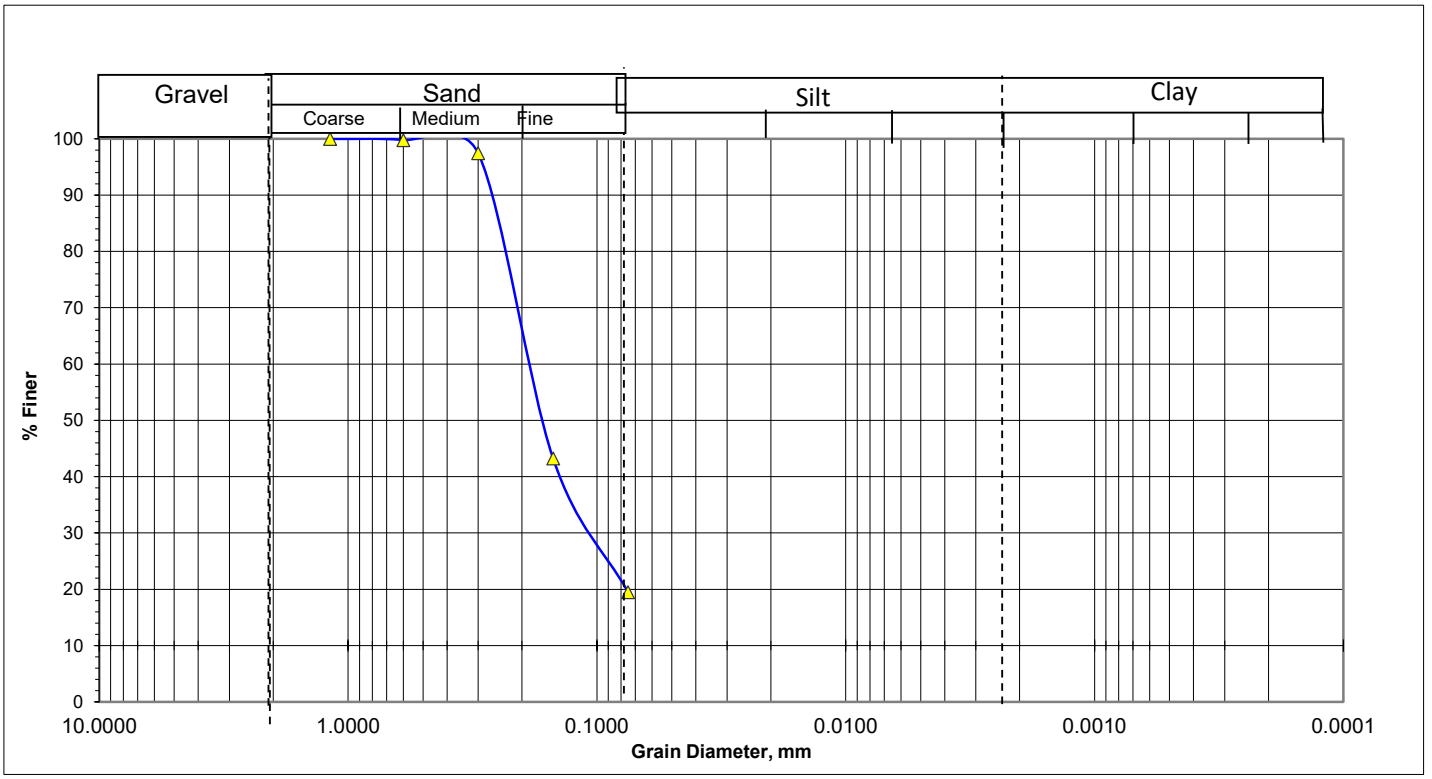
**Project Location : Shiula Bridge**

**Borehole No. :** BR-2. BH-13

**Test Date :** 12.05.2019

**Depth :** 23.0m to 40.5m

## Graphical Representation:




| | Soil Type: | medium to fine SAND | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-13 | 0 | 3.0m to 40.5m | | 34 | 46 | 20 | | | 0.11 | 0.170 | 0.195 | | | 0.726 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

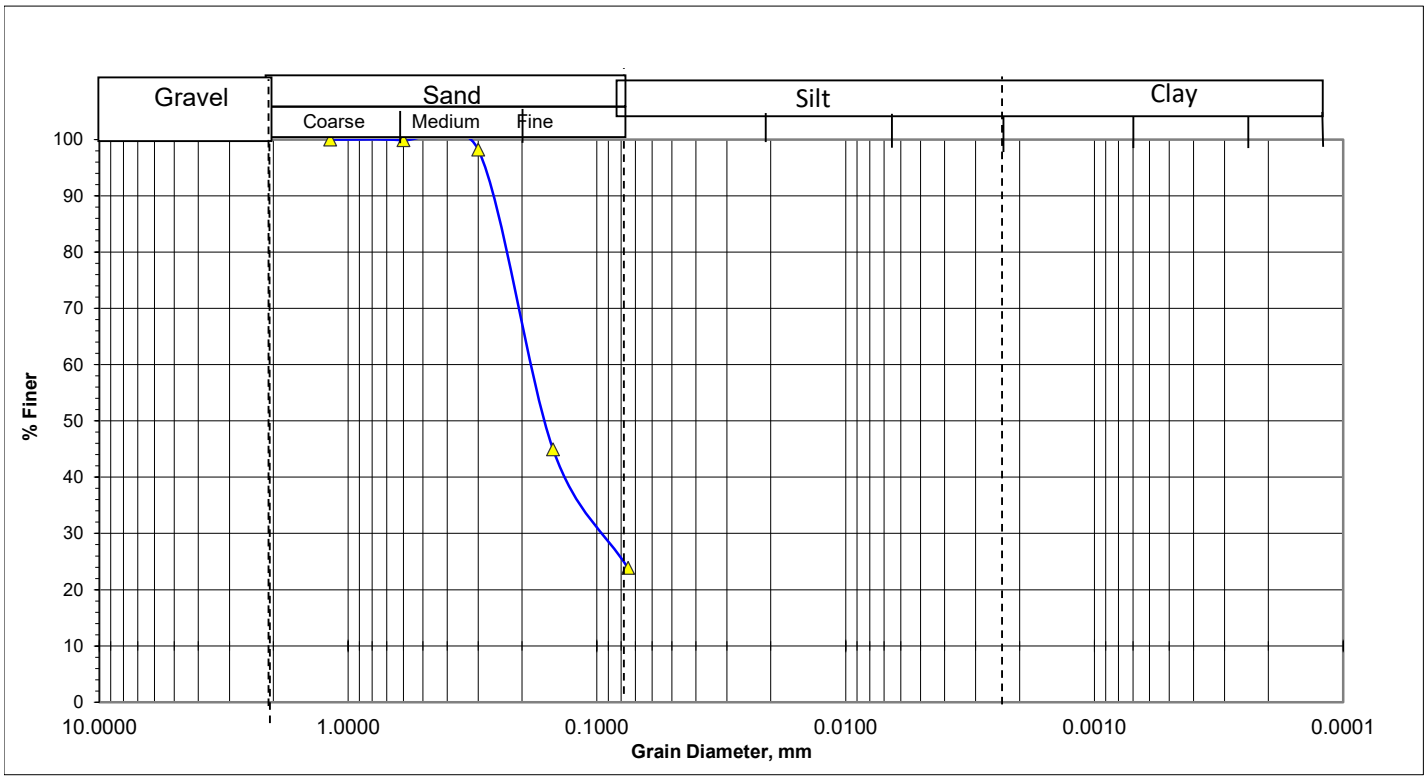
**Project Location : Sylhet**

**Borehole No. :** BR-2. BH-5

**Test Date :** 12.05.2019

**Depth :** 31.0m to 40.5m

## Graphical Representation:




| | Soil Type: | medium to fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-5 | 0 | 1.0m to 40.5 | 0 | 32 | 44 | 24 | | | 0.10 | 0.165 | 0.190 | | | 0.715 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

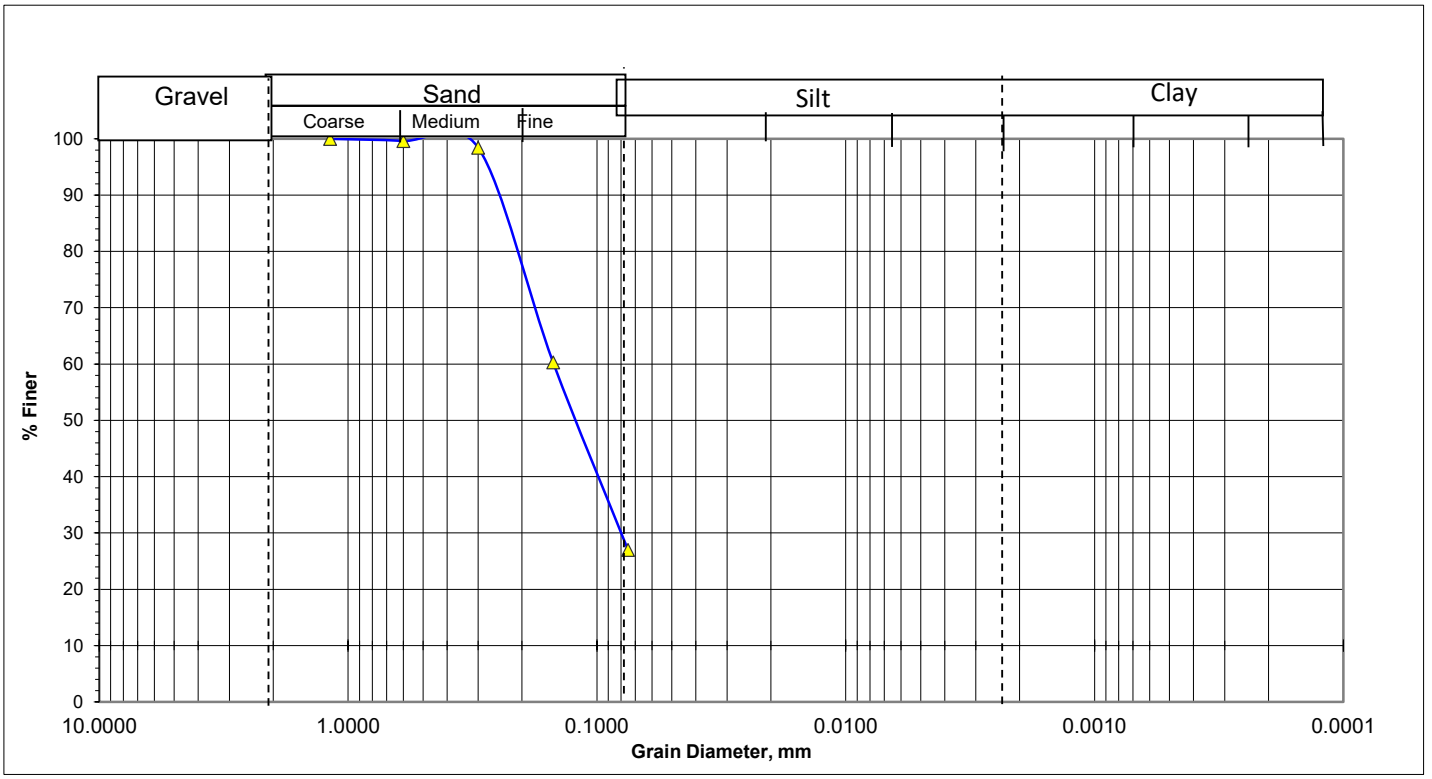
**Project Location : Shiula Bridge**

**Borehole No. :** BR-2. BH-3

**Test Date :** 12.05.2019

**Depth :** 0.0m to 3.0m

## Graphical Representation:




| | Soil Type: | medium to fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-3 | 0 | 0.0m to 3.0m | 0 | 22 | 51 | 27 | | 0.00 | 0.08 | 0.130 | 0.160 | | | 0.635 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

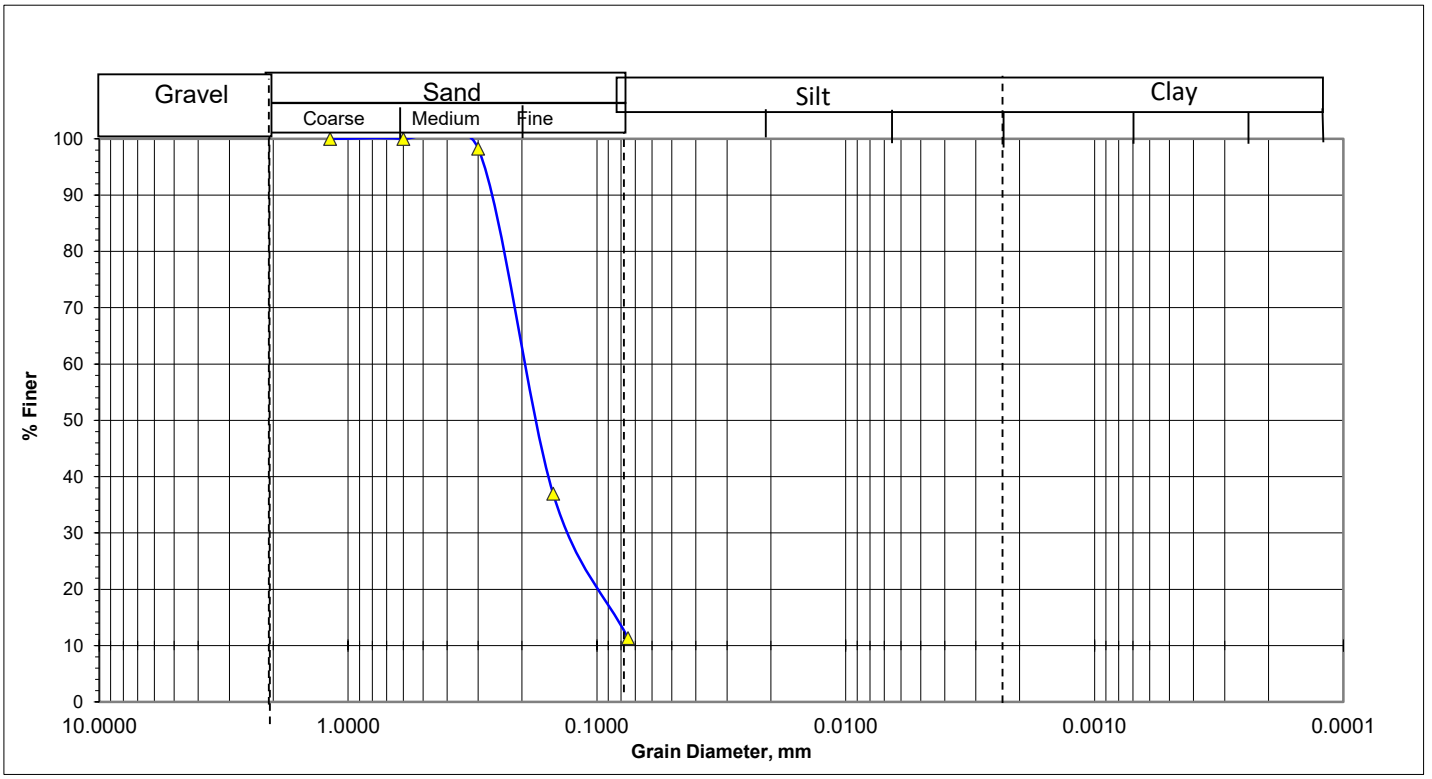
**Project Location : Shiula Bridge**

**Borehole No. :** BR-2. BH-3

**Test Date :** 12.05.2019

**Depth :** 14.0m to 66.0m

## Graphical Representation:




| | Soil Type: | medium to fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-3 | 0 | 4.0m to 66.0 | 0 | 37 | 52 | 11 | | 0.00 | 0.14 | 0.180 | 0.195 | | | 0.747 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

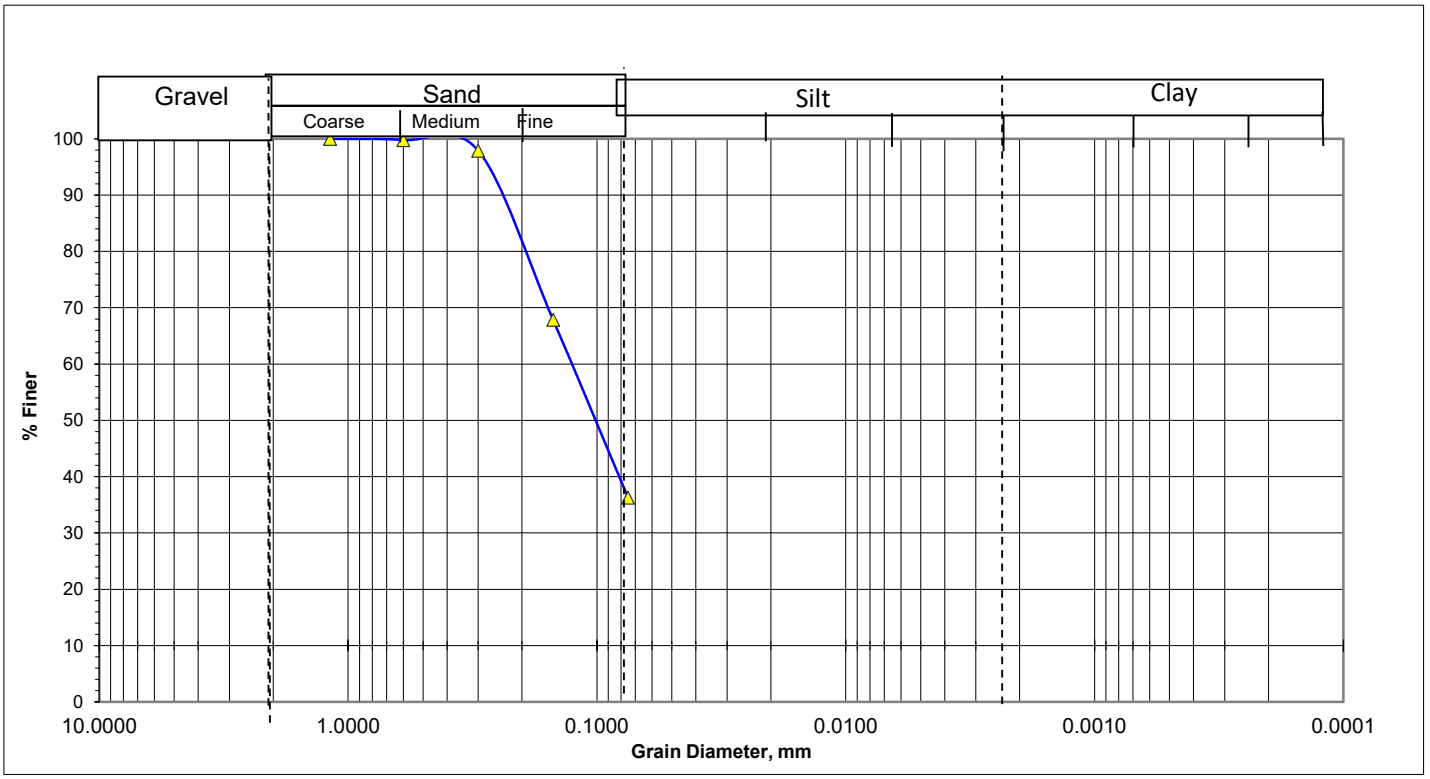
**Project Location : Shiula Bridge**

**Borehole No. :** BR-2. BH-4

**Test Date :** 12.05.2019

**Depth :** 20.0m to 66.0m

## Graphical Representation:




| | Soil Type: | medium to fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-4 | 0 | 0.0m to 66.0 | 0 | 18 | 46 | 36 | | | | 0.100 | 0.135 | | | 0.557 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

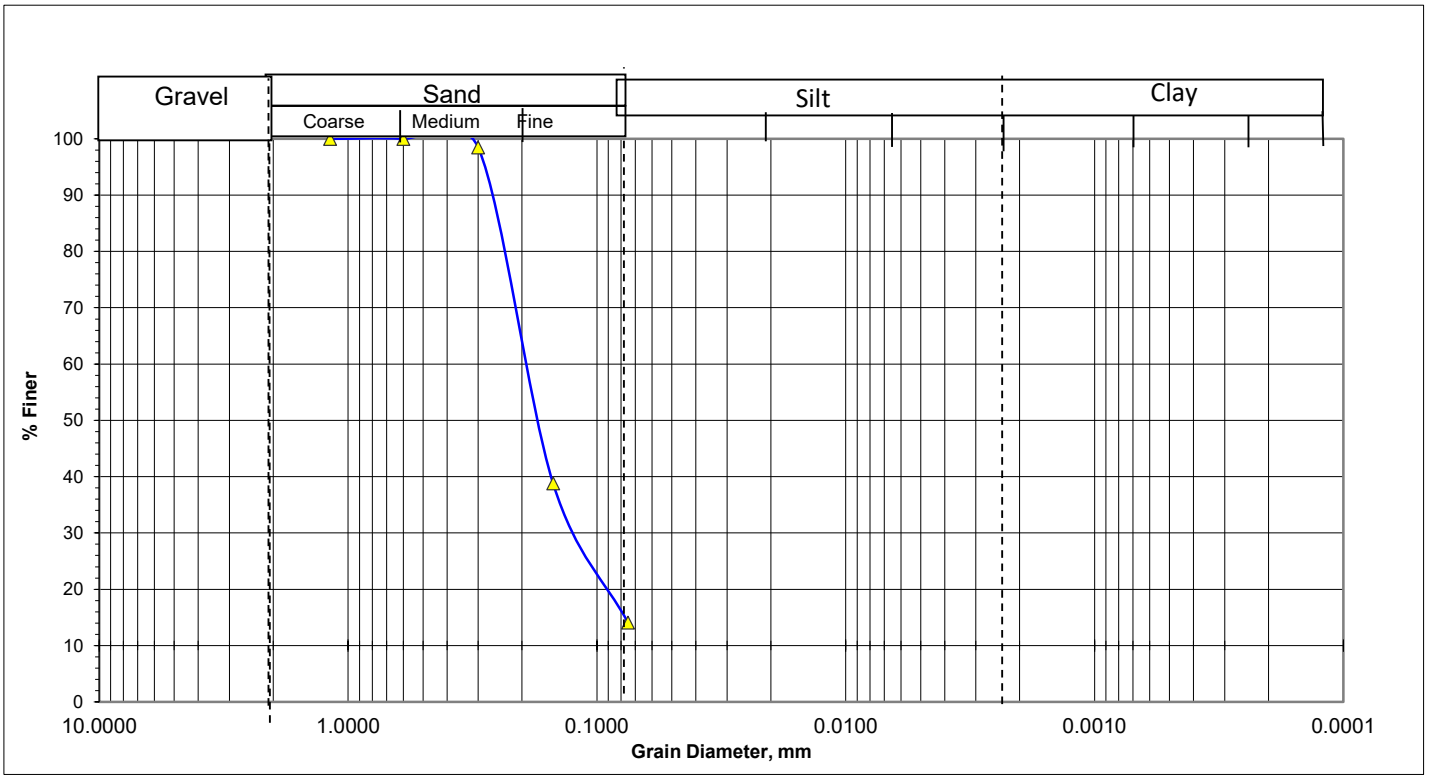
**Project Location : Shiula Bridge**

**Borehole No. :** BR-2. BH-4

**Test Date :** 12.05.2019

**Depth :** 20.0m to 66.0m

## Graphical Representation:




Soil Type: medium to fine SAND

| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-4 | 0 | 0.0m to 66.0 | 0 | 37 | 49 | 14 | | | 0.13 | 0.180 | 0.195 | | | 0.747 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

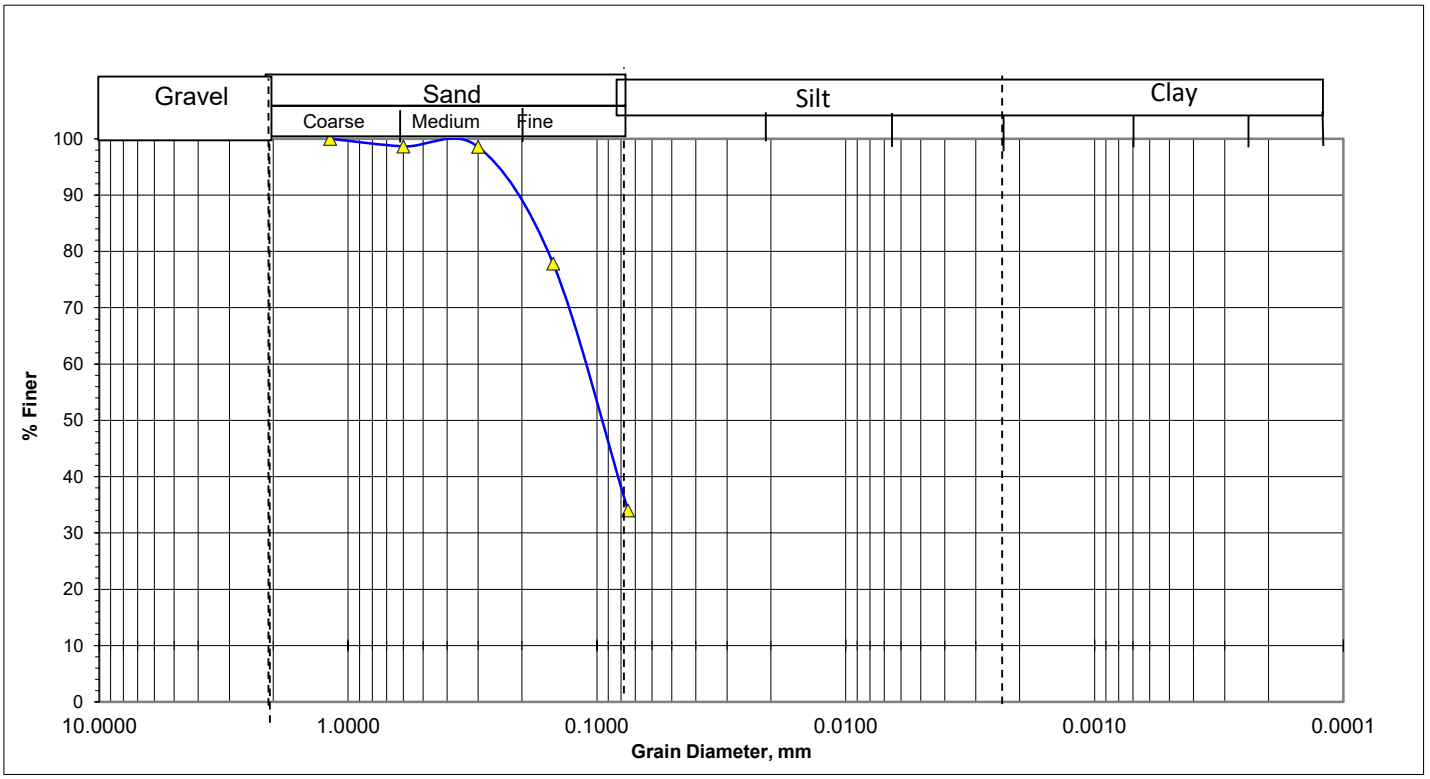
**Project Location : Sylhet**

**Borehole No. :** BR-2. BH-6

**Test Date :** 12.05.2019

**Depth :** 20.0m to 41.0m

## Graphical Representation:




| | Soil Type: | Silty Fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-6 | 0 | 0.0m to 41.0 | 1 | 10 | 55 | 34 | | | | 0.090 | 0.110 | | | 0.528 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

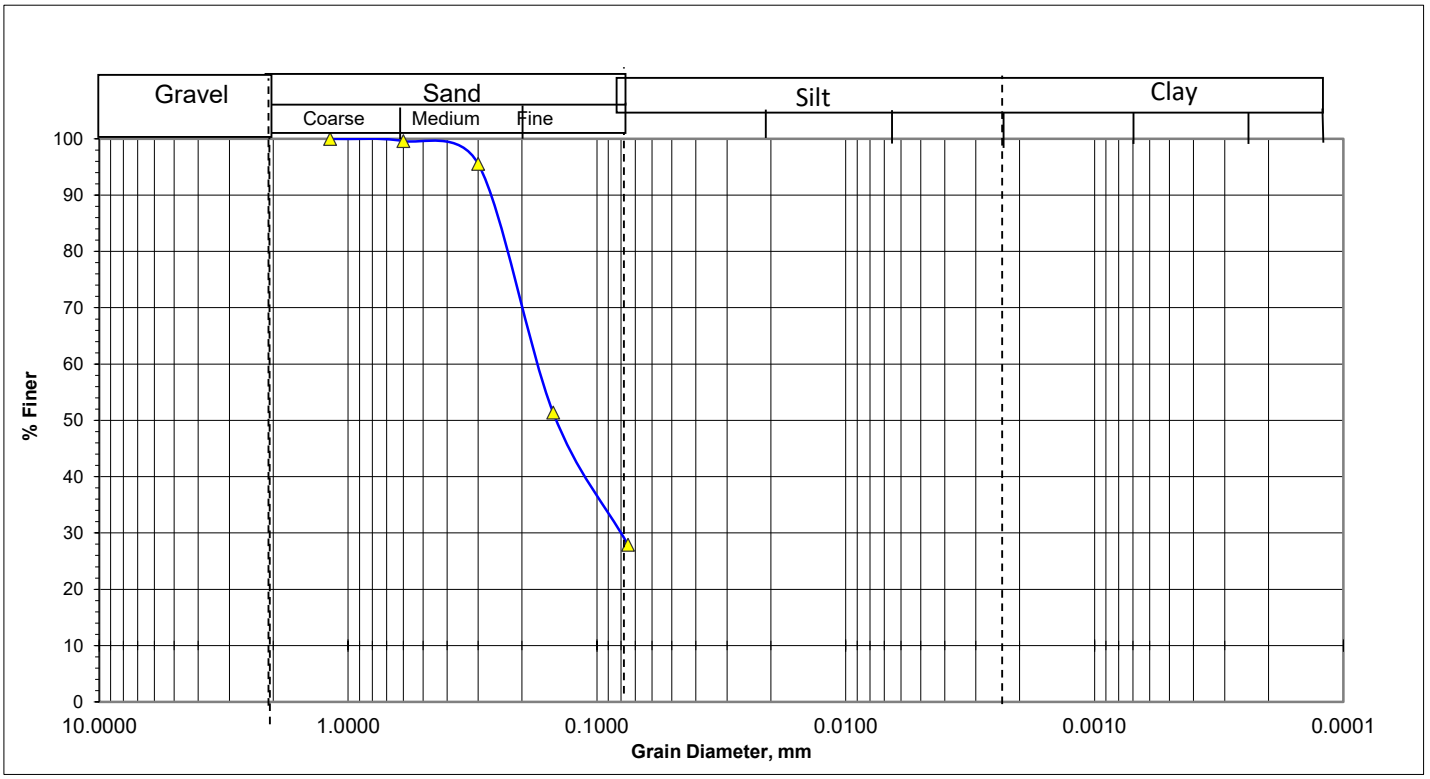
**Project Location : Sylhet Road**

**Borehole No. :** BR-2. BH-6

**Test Date :** 12.05.2019

**Depth :** 20.0m to 41.0m

## Graphical Representation:




| | Soil Type: | medium to fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-6 | 0 | 0.0m to 41.0 | 0 | 30 | 42 | 28 | | | 0.08 | 0.155 | 0.175 | | | 0.693 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

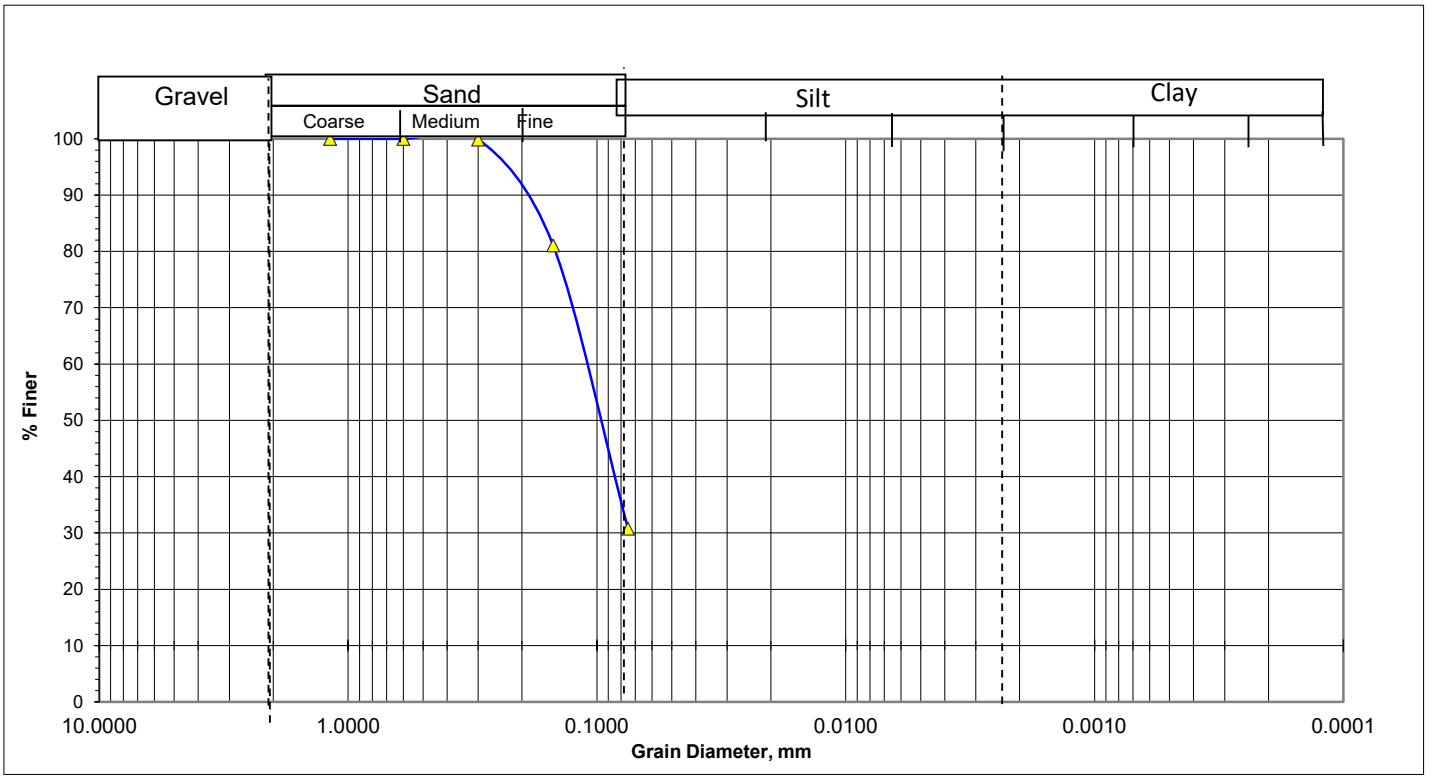
**Project Location : Sylhet**

**Borehole No. :** BR-2. BH-7

**Test Date :** 12.05.2019

**Depth :** 23.0m to 41.0m

## Graphical Representation:




| | Soil Type: | Silty Fine SAND | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-7 | 0 | 23.0m to 41.0m | | 8 | 61 | 31 | | | | 0.090 | 0.110 | | | 0.528 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

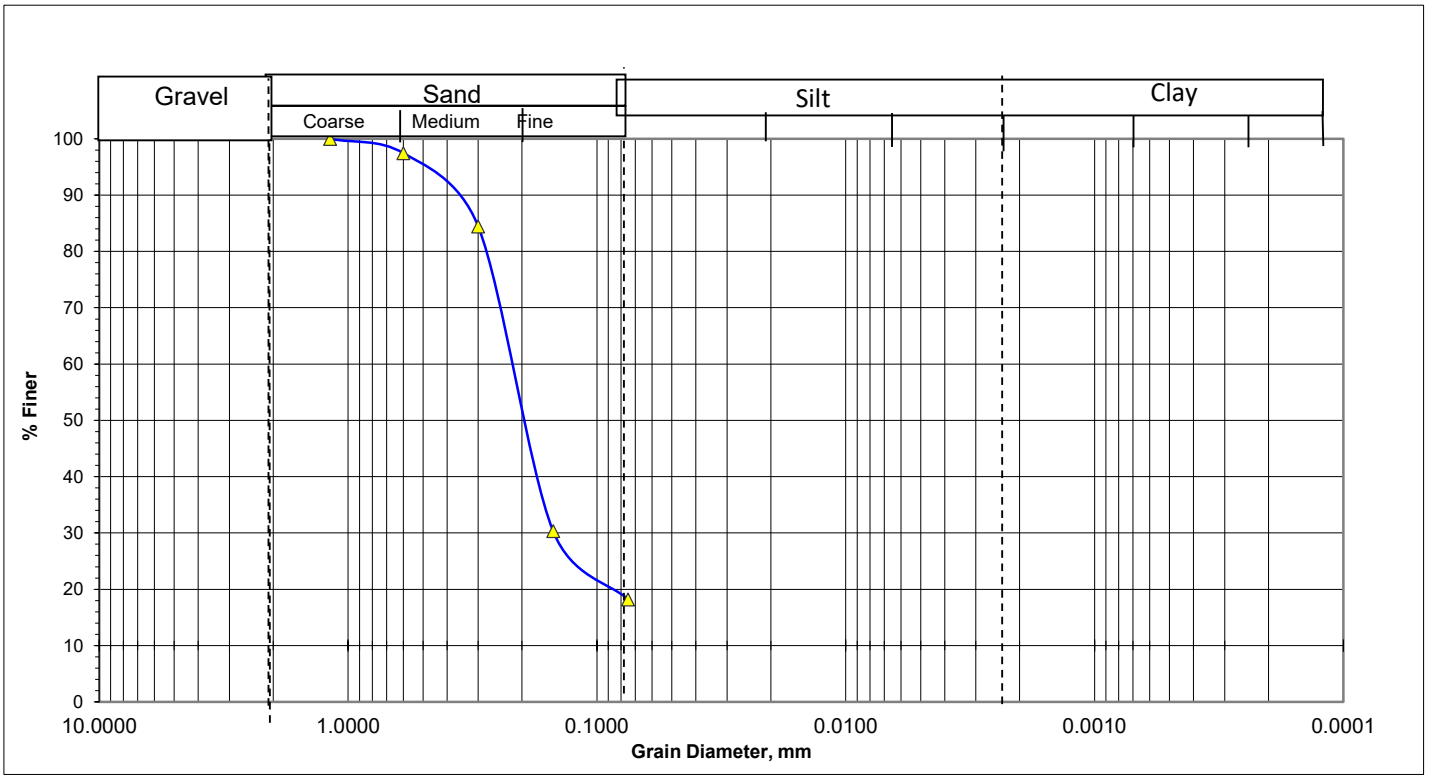
**Project Location : Shiula Bridge**

**Borehole No. :** BR-2. BH-9

**Test Date :** 12.05.2019

**Depth :** 23.0m to 40.5m

## Graphical Representation:




| | Soil Type: | Fine to medium SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-9 | 0 | 3.0m to 40.5 | 0 | 50 | 32 | 18 | | | 0.16 | 0.200 | 0.220 | | | 0.787 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

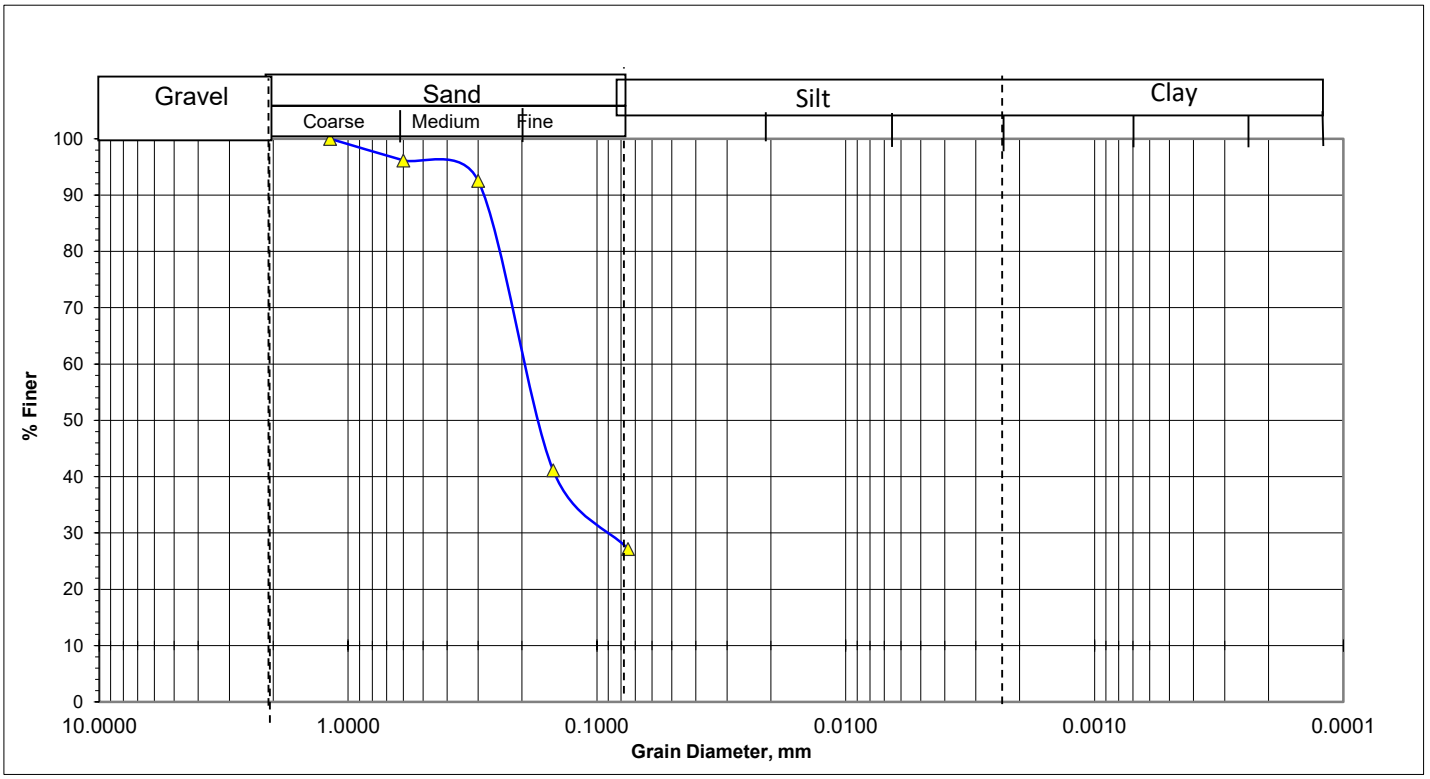
**Project Location : Sylhet**

**Borehole No. :** BR-2. BH-8

**Test Date :** 12.05.2019

**Depth :** 26.0m to 40.5m

## Graphical Representation:




| | Soil Type: | Fine to medium SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-8 | 0 | 6.0m to 40.5 | 4 | 35 | 34 | 27 | | | 0.09 | 0.180 | 0.200 | | | 0.747 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

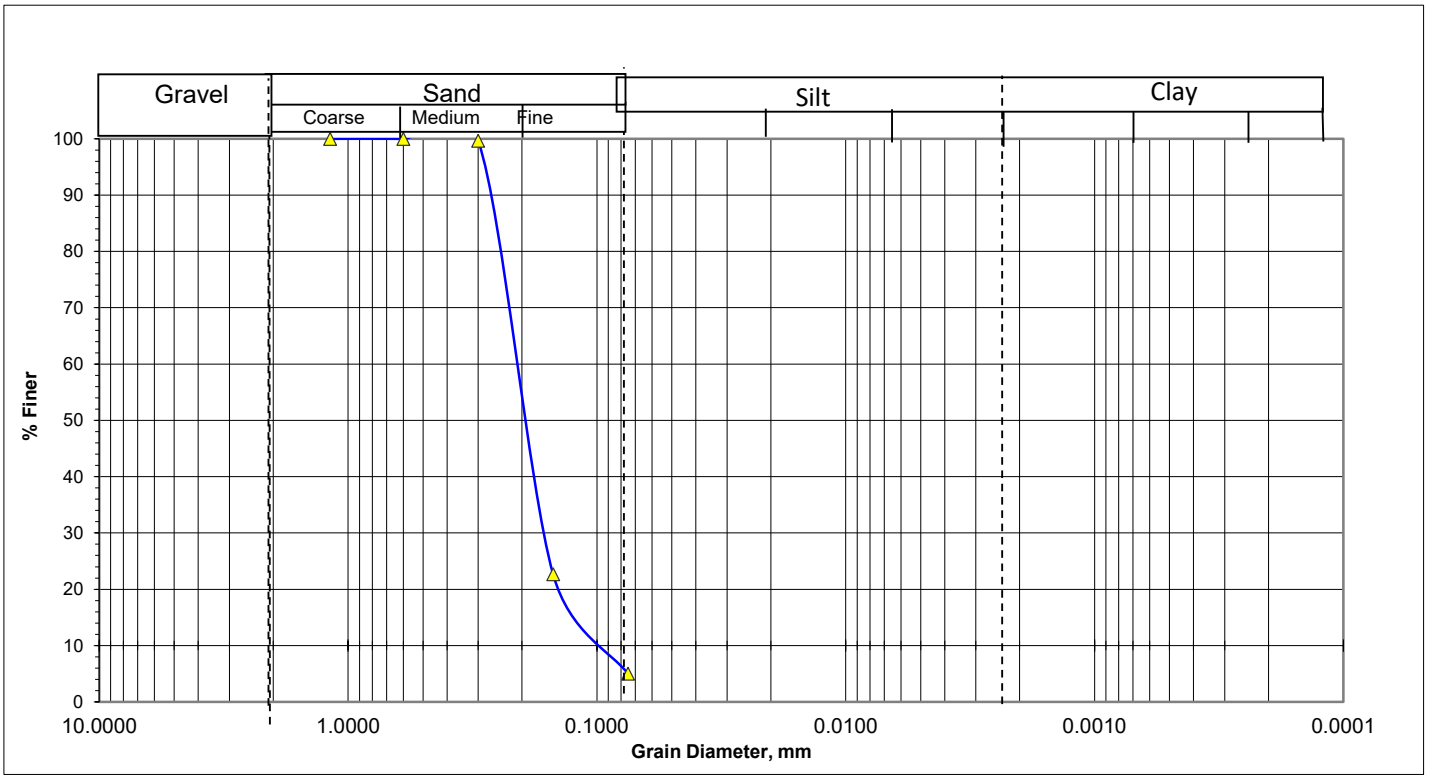
**Project Location : Shiula Bridge**

**Borehole No. :** BR-2. BH-12

**Test Date :** 12.05.2019

**Depth :** 16.0m to 40.5m

## Graphical Representation:




| | Soil Type: | medium to fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-12 | 0 | 6.0m to 40.5 | 0 | 46 | 49 | 5 | | 0.10 | 0.17 | 0.195 | 0.205 | 2.050 | 1.410 | 0.777 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

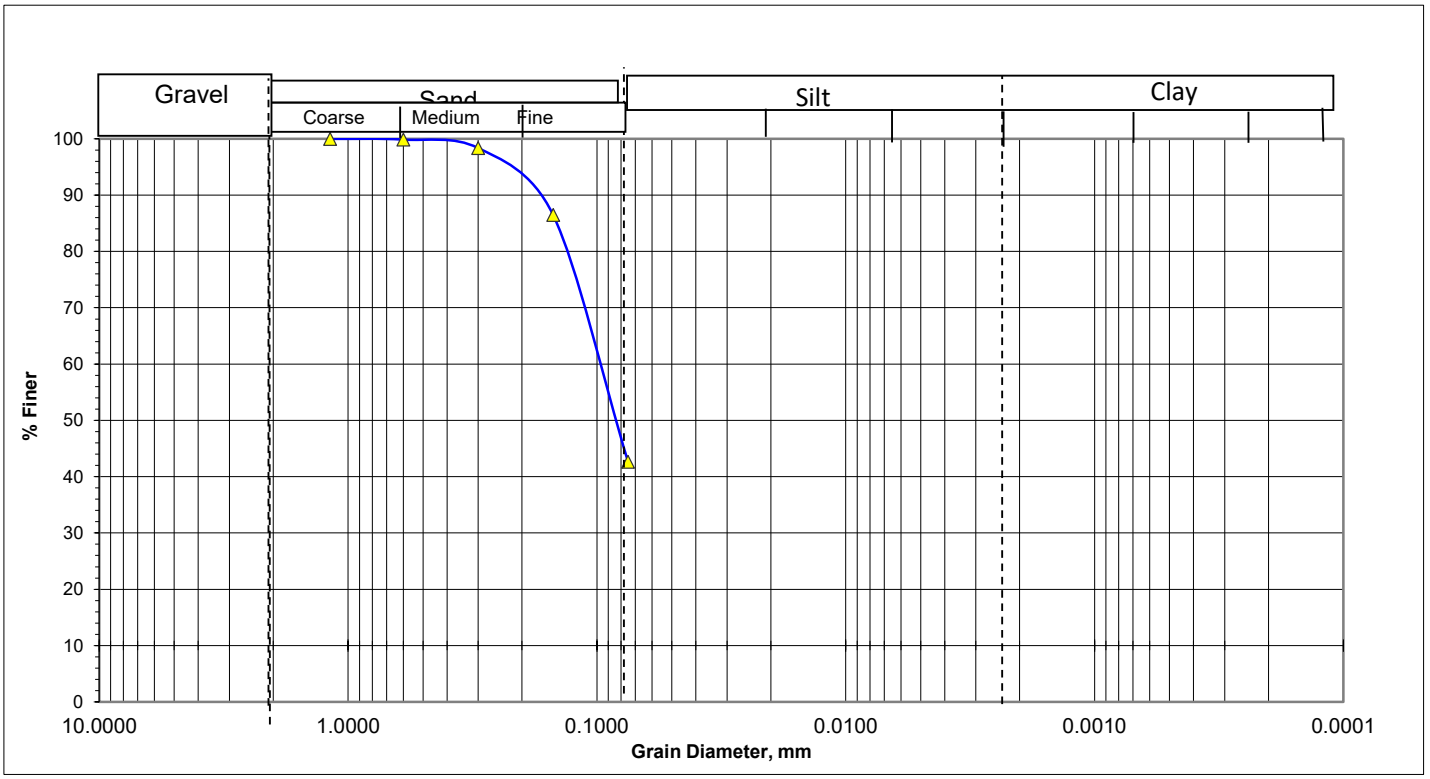
**Project Location : Sylhet**

**Borehole No. :** BR-2. BH-11

**Test Date :** 12.05.2019

**Depth :** 20.0m to 40.5m

## Graphical Representation:




| | Soil Type: | Silty Fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-11 | 0 | 0.0m to 40.5 | 0 | 6 | 51 | 43 | | | | 0.070 | 0.095 | | | 0.466 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

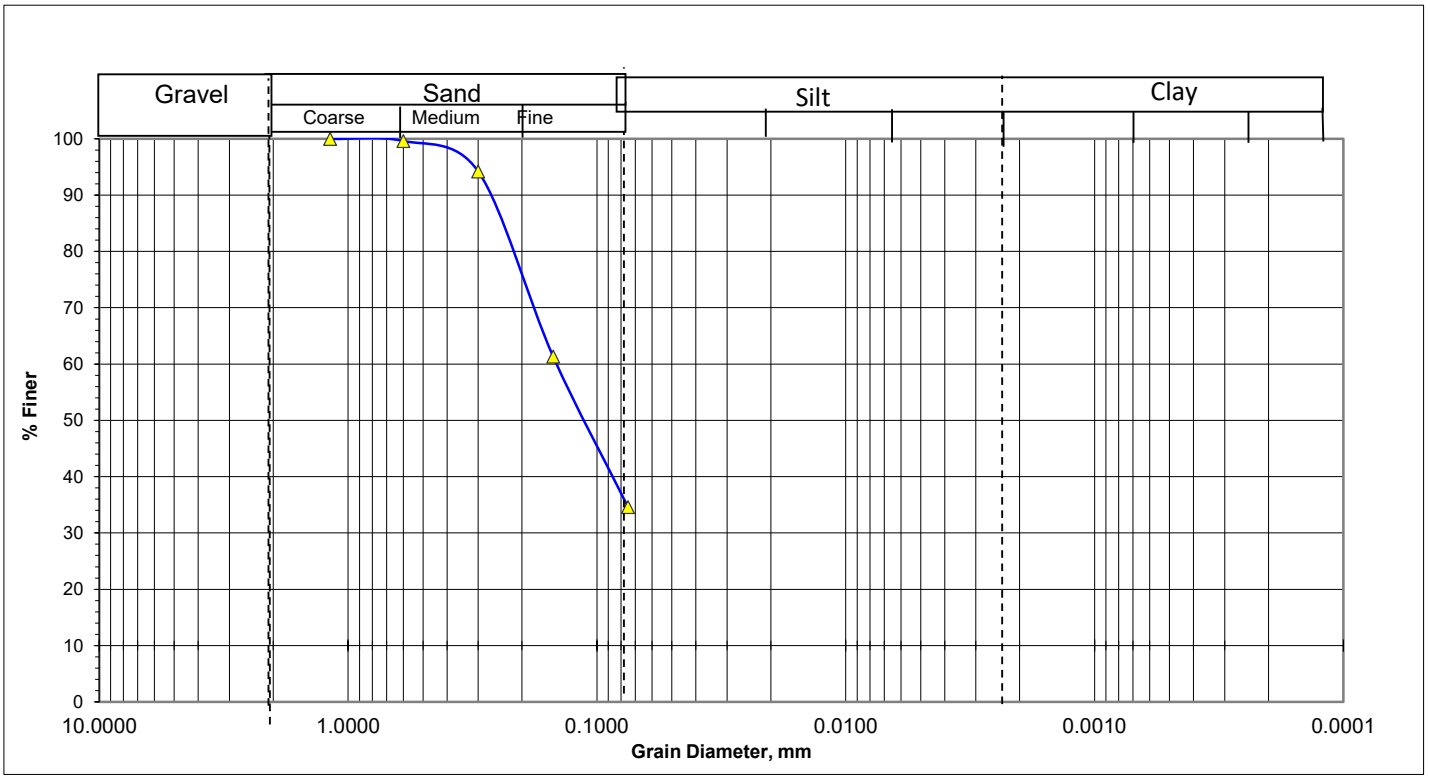
**Project Location : Sylhet**

**Borehole No. :** BR-2. BH-11

**Test Date :** 12.05.2019

**Depth :** 20.0m to 40.5m

## Graphical Representation:




| | Soil Type: | medium to fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| BR-2. BH-11 | 0 | 0.0m to 40.5 | 0 | 23 | 42 | 35 | | | | 0.110 | 0.155 | | | 0.584 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

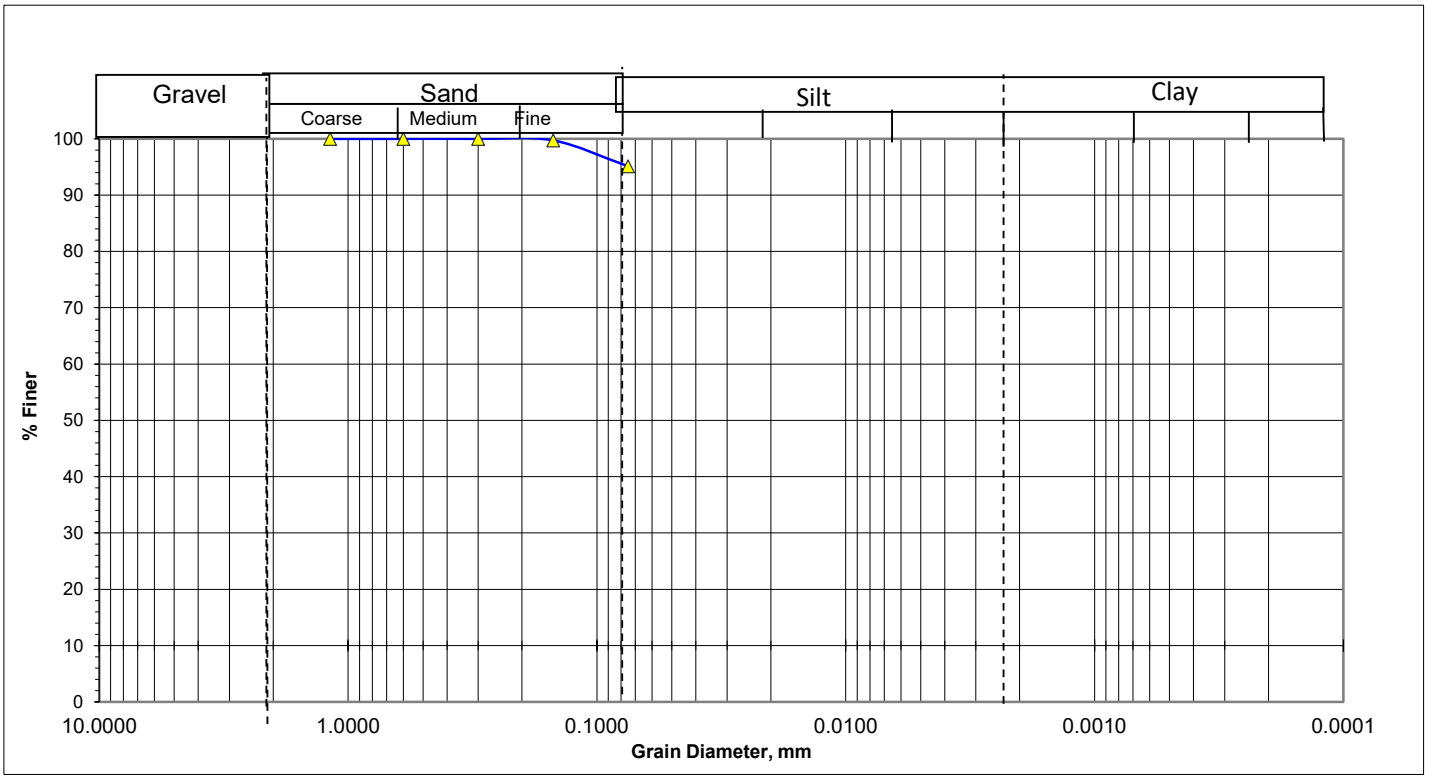
**Project Location : Sutarkandi,Sylhet.**

**Borehole No. :** R.B - 01

**Test Date :** 26.03.2019

**Depth :** 9.00 m

## Graphical Representation:




Soil Type: Clayey SILT

| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 01 | 0 | 9.0 | 0 | 0 | 5 | 95 | | 0.00 | 0.00 | 0.000 | 0.000 | | | 0.000 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

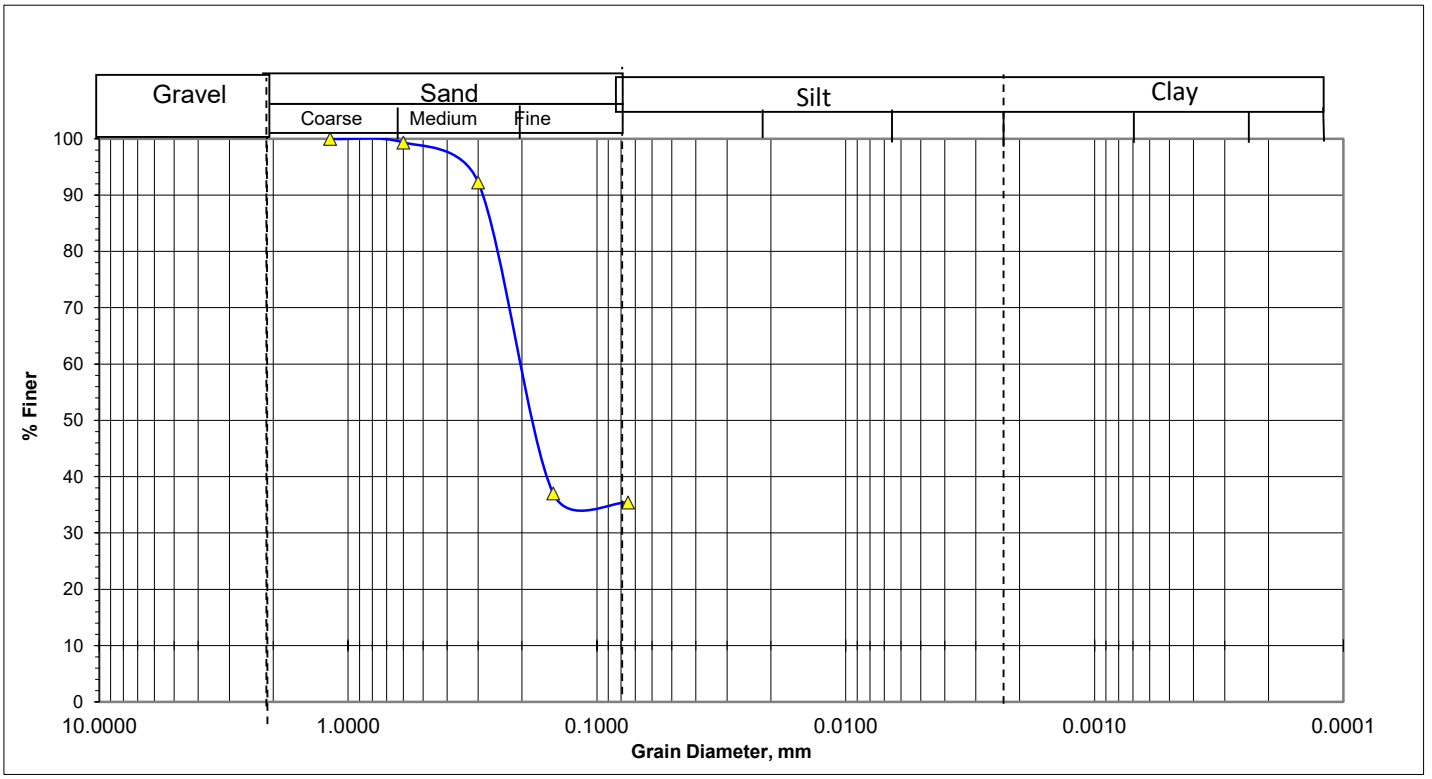
**Project Location : Sutarkandi,Sylhet.**

**Borehole No. :** R.B - 03

**Test Date :** 24.03.2019

**Depth :** 13.50 m

## Graphical Representation:




| | Soil Type: | Silty medium SAND | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 03 | 0 | 13.5 | 1 | 40 | 24 | 35 | | 0.00 | 0.00 | 0.185 | 0.210 | | | 0.757 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

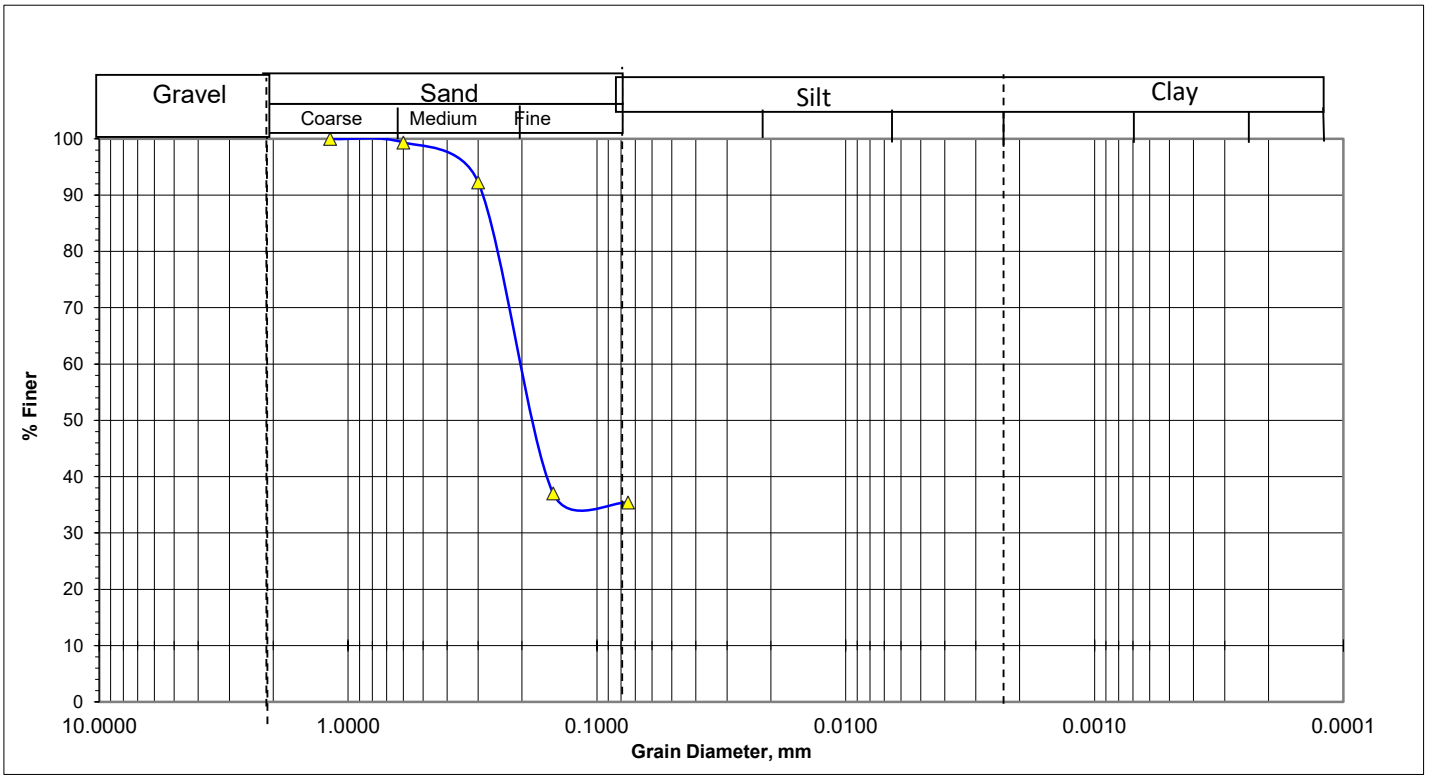
**Project Location : Sutarkandi,Sylhet.**

**Borehole No. :** R.B - 08

**Test Date :** 24.03.2019

**Depth :** 13.50 m

## Graphical Representation:




| | Soil Type: | Silty medium SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 08 | 0 | 13.5 | 1 | 36 | 28 | 35 | | 0.00 | 0.00 | 0.179 | 0.206 | | | 0.745 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# AL-MAYEDA SURVEY CONSULTANTS

## GRAIN SIZE ANALYSIS (Mechanical) OF FINE AGGREGATE, SOIL ETC.

**Client : Roads and Highways Department (RHD)**

**Project : Sub-Regional Road Transportation Project**

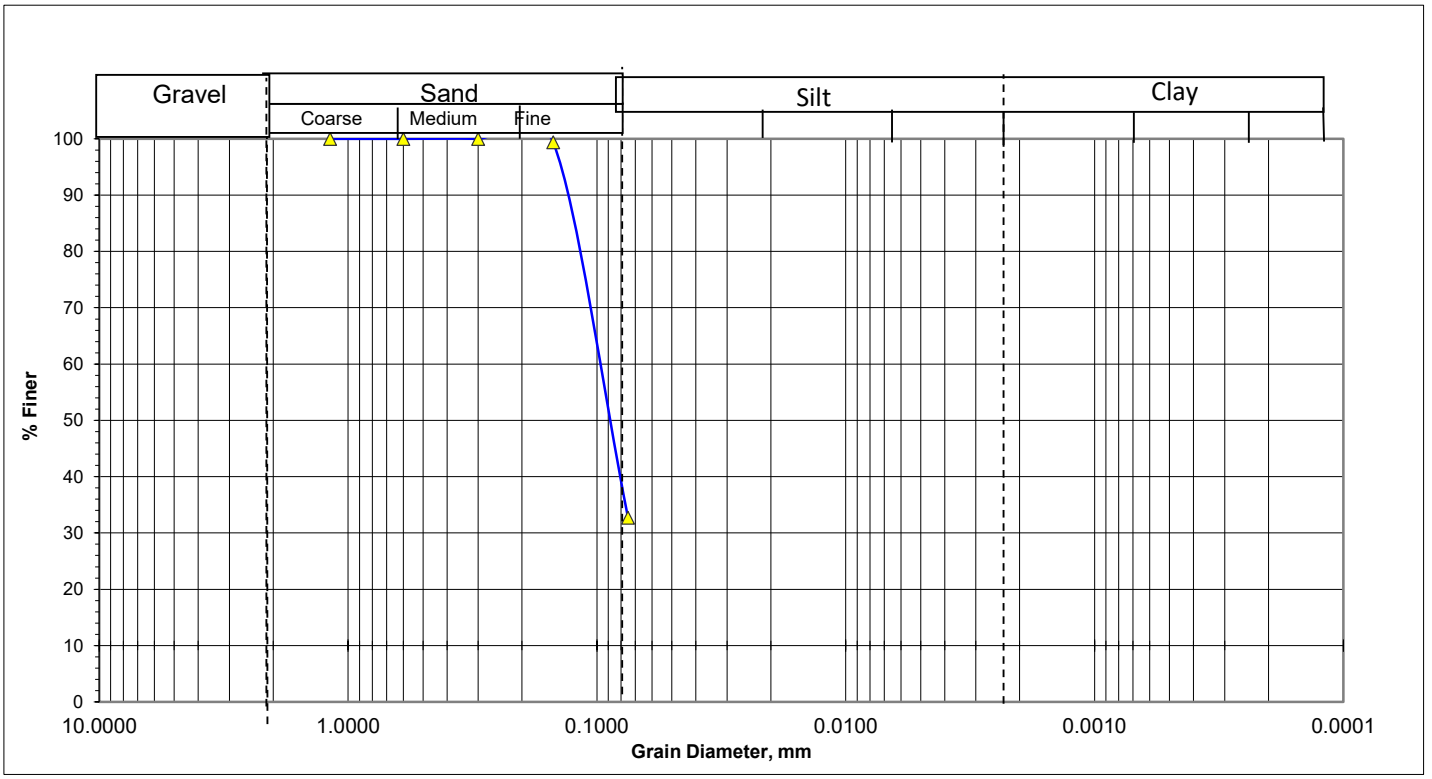
**Project Location : Sutarkandi,Sylhet.**

**Borehole No. :** R.B - 09

**Test Date :** 24.03.2019

**Depth :** 13.50 m

## Graphical Representation:




| | Soil Type: | Silty fine SAND | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Point No. | Sample No | Depth (m) | Sand % | | | Silt % | Clay % | $D_{10}$(mm) | $D_{30}$(mm) | $D_{50}$(mm) | $D_{60}$(mm) | Cu | Cc | Silt factor |
| | | | Coarse | Medium | Fine | | | | | | | | | |
| R.B - 09 | 0 | 13.5 | 0 | 0 | 67 | 33 | | 0.00 | 0.00 | 0.090 | 0.098 | | | 0.528 |

**Tested by** : Azharul

**Signed by**: Engr. Jamal Uddin.

# ATTERBERG LIMIT TESTS

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 6 + 850 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: OVP-1, BH-1

Depth of Sample: 19.5m to 25.0m

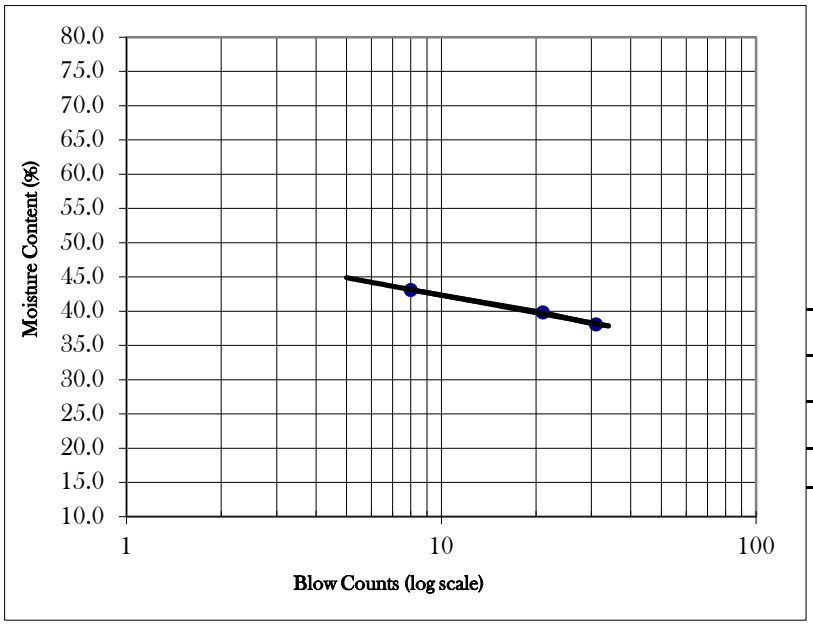
Determination of Liquid Limit

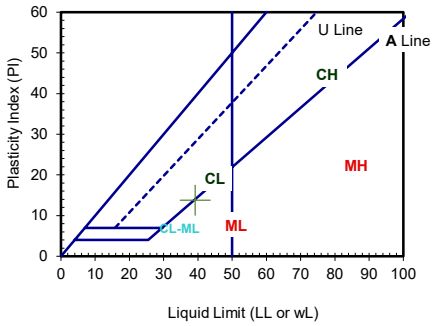
| Cup Number | M-52 | N-77 | N-12 |
|---|---|---|---|
| Weight of Cup (g) | 23.77 | 19.85 | 20.17 |
| Weight of Wet Soil and Cup (g) | 45.31 | 39.44 | 43.82 |
| Weight of Dry Soil and Cup (g) | 38.75 | 33.98 | 37.44 |
| Moisure Content (%) | 43.8 | 38.6 | 36.9 |
| Blow Counts | 8 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | M-22 | M-35 |
|---|---|---|
| Weight of Cup (g) | 14.66 | 13.27 |
| Weight of Wet Soil and Cup (g) | 24.61 | 23.55 |
| Weight of Dry Soil and Cup (g) | 22.66 | 21.45 |
| Moisure Content (%) | 24.4 | 25.7 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 38.3 |
| Plastic Limit | 25.0 |
| Plasticity Index | 13.3 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

GEO-TECHNICAL LABORATORY

# Al - Mayeda Survey Consultants

House - 609, Road - 11, Baitul aman Housing, Adabor, Dhaka

## *Test Report on Atterberg Limits of Soil*

Test Method : ASTM D 4318-1990

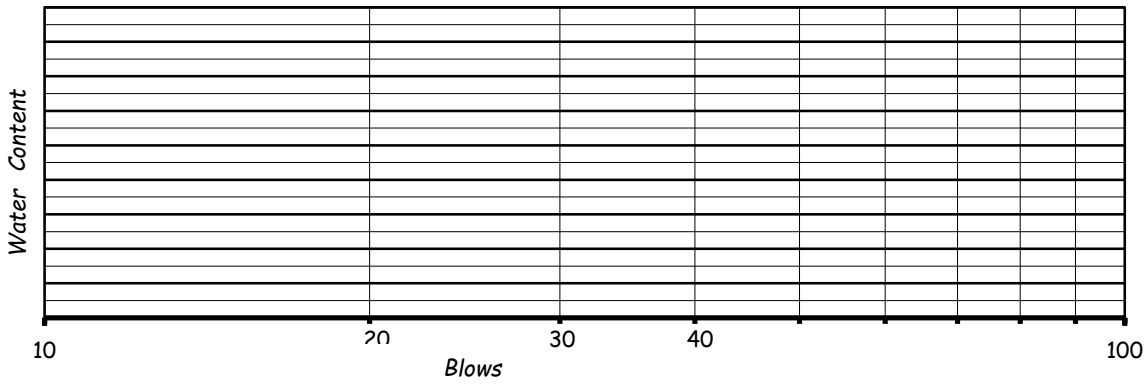
Project : Sub - Regional Road Transportation Project
Location : **Chainage - 6 + 850 ,Sylhet.**
Road Name : Sutarkandi, Sylhet
Structure ID **OVP - 01**
Sampling Date : 23/3/2019
Description : Sandy Silt

Client : RHD
Bore hole No : **BH - 01**
Sample No : D-24
Depth, m : 36.00m
Testing Date : 26/3/2019

**Data for Liquid Limit Determination**

| | | | | | |
|---|---|---|---|---|---|
| Test No. | | | | | |
| Can no. | | | | | |
| Wt. of Wet Soil + Can | | | | | |
| Wt. of Dry Soil + Can | | | | | |
| Wt. of Can | | | | | |
| Water Content | | | | | |
| No. of Blows | | | | | |

*Test could not be Performed*




**Data for Plastic limit Determination**

| | | |
|---|---|---|
| Test No. | | |
| Can no. | | |
| Wt. of Wet Soil + Can | | |
| Wt. of Dry Soil + Can | | |
| Wt. of Can | | |
| Water Content | | |
| Avg. Water Content | | |

*Test could not be Performed*

Note : Sample tested at natural moisture condition

**Test Results :**

Liquid Limit : -
Plastic Limit : -
Plasticity Index : NP
Gr. Symbol (USCS) : ML

Test Performed by : _____ Azhar

Engr. Jamal Uddin
Laboratory in Charge

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:**Chainage - 6 + 950 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: OVP-1,BH-3

Depth of Sample: 0.0m to 23.0m

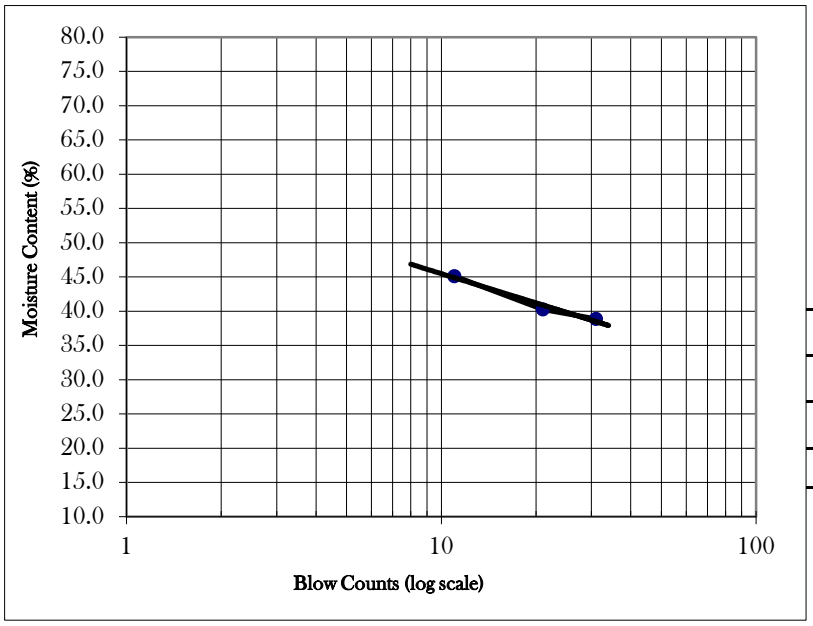
Determination of Liquid Limit

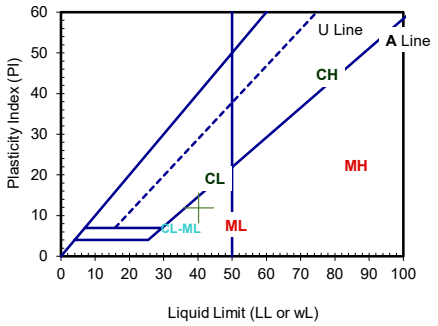
| Cup Number | L-12 | M-24 | C-209 |
|---|---|---|---|
| Weight of Cup (g) | 18.78 | 23.95 | 13.90 |
| Weight of Wet Soil and Cup (g) | 39.46 | 48.19 | 40.23 |
| Weight of Dry Soil and Cup (g) | 33.03 | 41.23 | 32.86 |
| Moisure Content (%) | 45.1 | 40.3 | 38.9 |
| Blow Counts | 11 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | 221 | C-212 |
|---|---|---|
| Weight of Cup (g) | 20.28 | 14.92 |
| Weight of Wet Soil and Cup (g) | 29.92 | 27.79 |
| Weight of Dry Soil and Cup (g) | 27.79 | 24.95 |
| Moisure Content (%) | 28.4 | 28.3 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 40.2 |
| Plastic Limit | 28.3 |
| Plasticity Index | 11.8 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:**Chainage - 6 + 950 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: OVP-1, BH-3

Depth of Sample: 23.0m to 35.0m

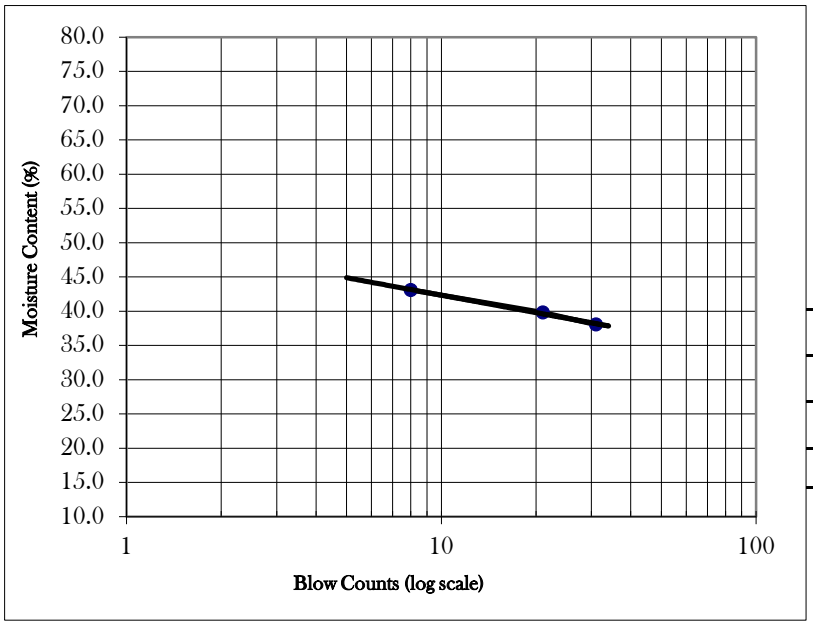
Determination of Liquid Limit

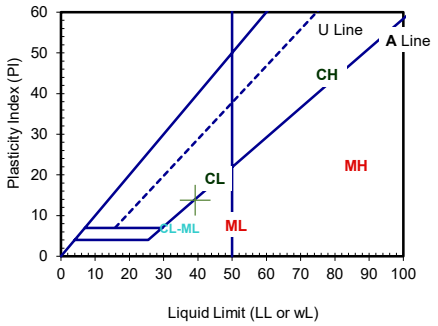
| Cup Number | M-43 | L-38 | L-12 |
|---|---|---|---|
| Weight of Cup (g) | 23.44 | 19.78 | 20.25 |
| Weight of Wet Soil and Cup (g) | 45.22 | 39.52 | 43.78 |
| Weight of Dry Soil and Cup (g) | 38.86 | 33.85 | 37.48 |
| Moisure Content (%) | 41.2 | 40.3 | 36.6 |
| Blow Counts | 8 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | M-22 | N-14 |
|---|---|---|
| Weight of Cup (g) | 14.68 | 13.27 |
| Weight of Wet Soil and Cup (g) | 24.74 | 23.55 |
| Weight of Dry Soil and Cup (g) | 22.68 | 21.43 |
| Moisure Content (%) | 25.8 | 26.0 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 38.4 |
| Plastic Limit | 25.9 |
| Plasticity Index | 12.5 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 7 + 100 ,Sylhet.

Sample Information:

Test Date: 02.08.2019

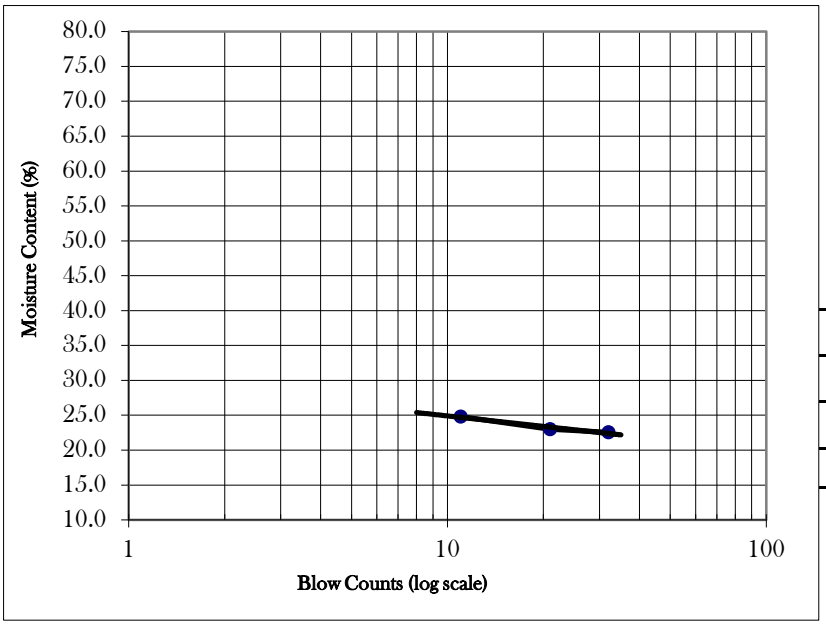
Boring Number: OVP-1.BH-5

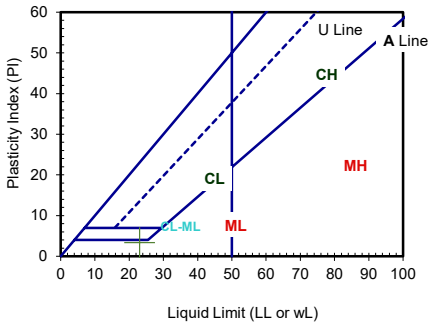
Depth of Sample: 38.0m to 43.5m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-10 | L-15 | N-11 |
| Weight of Cup (g) | 19.31 | 18.38 | 23.88 |
| Weight of Wet Soil and Cup (g) | 42.89 | 40.75 | 46.37 |
| Weight of Dry Soil and Cup (g) | 38.37 | 36.72 | 42.22 |
| Moisure Content (%) | 23.7 | 22.0 | 22.6 |
| Blow Counts | 11 | 21 | 32 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 10 | 30 |
| Weight of Cup (g) | 8.02 | 7.19 |
| Weight of Wet Soil and Cup (g) | 22.72 | 24.36 |
| Weight of Dry Soil and Cup (g) | 20.49 | 21.46 |
| Moisure Content (%) | 17.9 | 20.3 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 22.6 |
| Plastic Limit | 19.1 |
| Plasticity Index | 3.5 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 7 + 230 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: OVP-1, BH-4

Depth of Sample: 0.0m to 5.0m

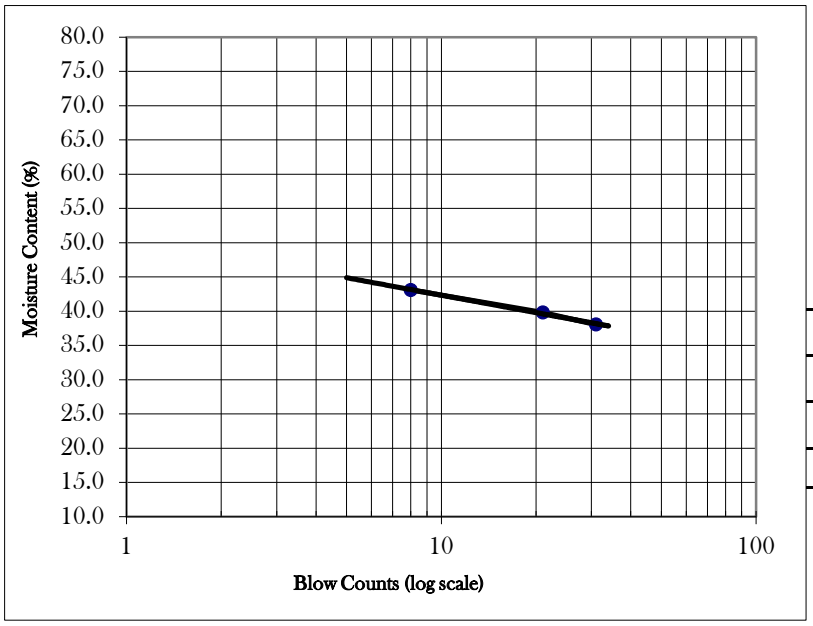
Determination of Liquid Limit

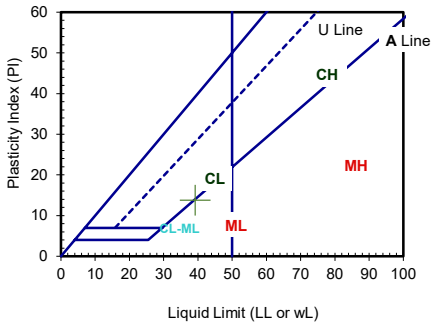
| Cup Number | L-59 | N-90 | N-12 |
|---|---|---|---|
| Weight of Cup (g) | 23.67 | 19.94 | 20.20 |
| Weight of Wet Soil and Cup (g) | 45.29 | 39.54 | 43.85 |
| Weight of Dry Soil and Cup (g) | 38.76 | 33.98 | 37.36 |
| Moisure Content (%) | 43.3 | 39.6 | 37.8 |
| Blow Counts | 8 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | M-15 | M-14 |
|---|---|---|
| Weight of Cup (g) | 14.63 | 13.21 |
| Weight of Wet Soil and Cup (g) | 24.75 | 23.57 |
| Weight of Dry Soil and Cup (g) | 22.66 | 21.45 |
| Moisure Content (%) | 26.0 | 25.7 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 39.0 |
| Plastic Limit | 25.9 |
| Plasticity Index | 13.2 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 7 + 230 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

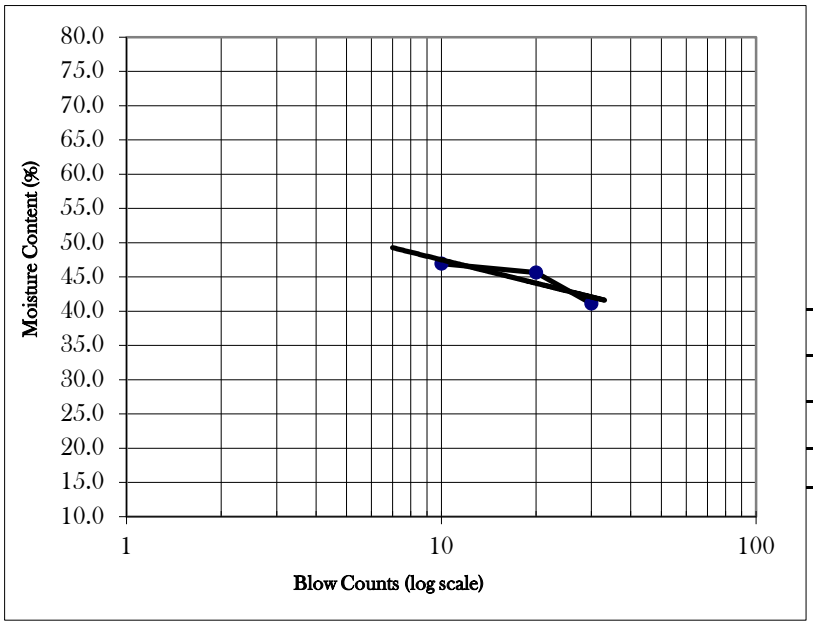
Boring Number: OVP-1,BH-4

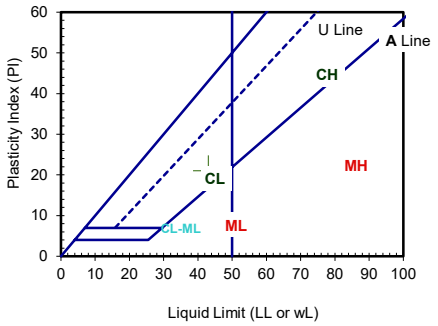
Depth of Sample: 5.0m to 13.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-13 | M-28 | C-202 |
| Weight of Cup (g) | 18.78 | 28.80 | 16.14 |
| Weight of Wet Soil and Cup (g) | 35.34 | 53.98 | 43.19 |
| Weight of Dry Soil and Cup (g) | 30.05 | 46.09 | 35.31 |
| Moisure Content (%) | 46.9 | 45.6 | 41.1 |
| Blow Counts | 10 | 20 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 18 | C-211 |
| Weight of Cup (g) | 15.34 | 12.56 |
| Weight of Wet Soil and Cup (g) | 32.29 | 25.03 |
| Weight of Dry Soil and Cup (g) | 29.22 | 22.78 |
| Moisure Content (%) | 22.1 | 22.0 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 43.1 |
| Plastic Limit | 22.1 |
| Plasticity Index | 21.0 |
| USCS Classification | **CL** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 7 + 230 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: OVP-1, BH-4

Depth of Sample: 13.0m to 22.0m

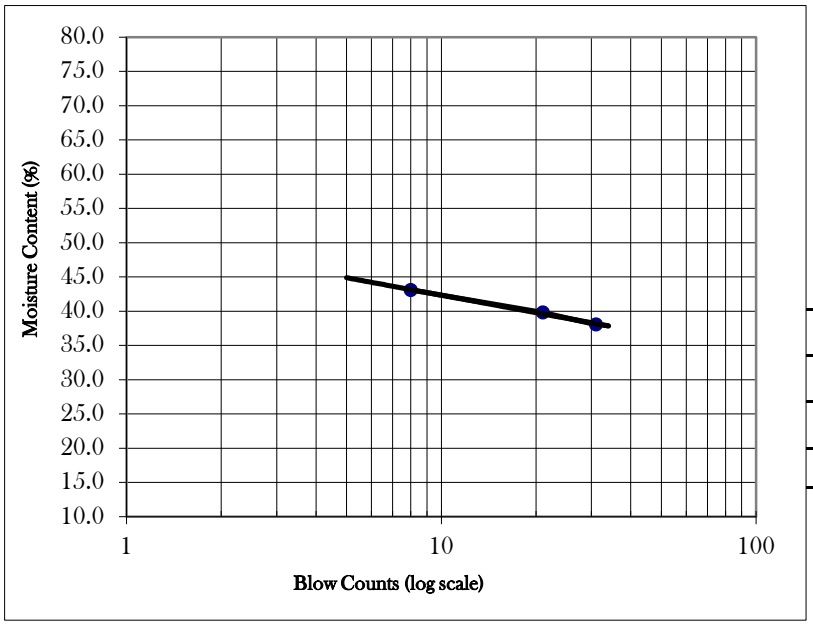
Determination of Liquid Limit

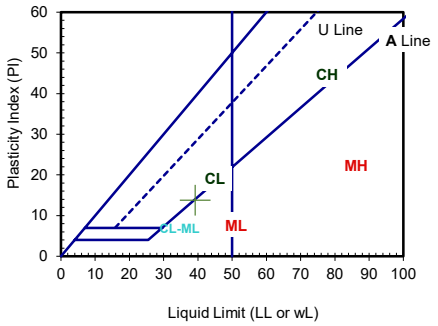
| Cup Number | N-65 | N-90 | L-12 |
|---|---|---|---|
| Weight of Cup (g) | 23.65 | 19.81 | 20.28 |
| Weight of Wet Soil and Cup (g) | 45.25 | 39.57 | 43.78 |
| Weight of Dry Soil and Cup (g) | 38.82 | 33.89 | 37.42 |
| Moisure Content (%) | 42.4 | 40.3 | 37.1 |
| Blow Counts | 8 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | L-19 | N-14 |
|---|---|---|
| Weight of Cup (g) | 14.67 | 13.28 |
| Weight of Wet Soil and Cup (g) | 24.72 | 23.55 |
| Weight of Dry Soil and Cup (g) | 22.68 | 21.41 |
| Moisure Content (%) | 25.5 | 26.3 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 38.8 |
| Plastic Limit | 25.9 |
| Plasticity Index | 12.9 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 9 + 930 ,Sylhet.

Sample Information:

Test Date: 29.07.2019

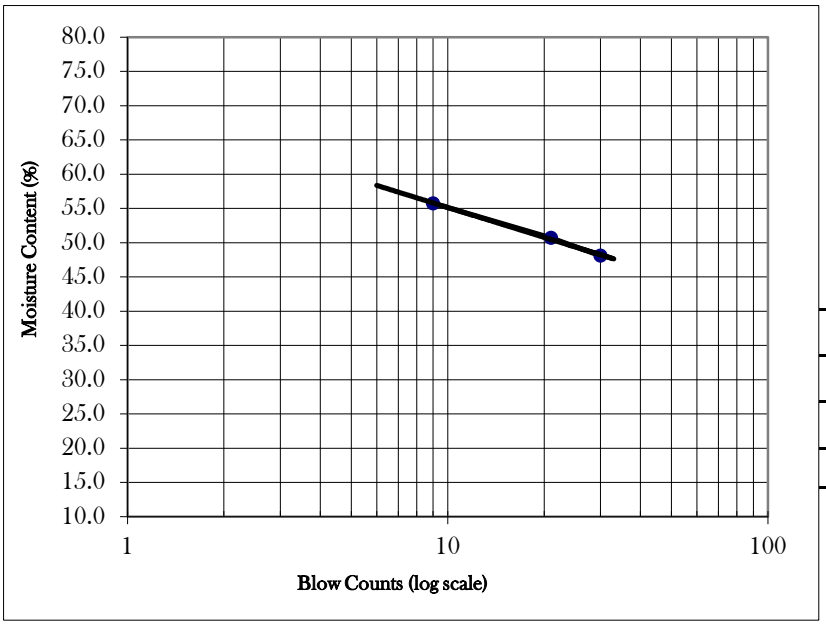
Boring Number: OVP-2,BH-1

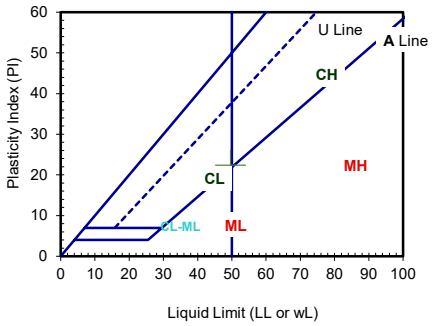
Depth of Sample: 0.0m to 5.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-6 | M-3 | M-26 |
| Weight of Cup (g) | 18.05 | 29.39 | 18.57 |
| Weight of Wet Soil and Cup (g) | 38.78 | 53.02 | 37.54 |
| Weight of Dry Soil and Cup (g) | 31.36 | 45.07 | 31.38 |
| Moisure Content (%) | 55.7 | 50.7 | 48.1 |
| Blow Counts | 9 | 21 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 8 | 20 |
| Weight of Cup (g) | 10.66 | 11.83 |
| Weight of Wet Soil and Cup (g) | 22.54 | 24.80 |
| Weight of Dry Soil and Cup (g) | 19.97 | 22.04 |
| Moisure Content (%) | 27.6 | 27.0 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 49.7 |
| Plastic Limit | 27.3 |
| Plasticity Index | 22.4 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 9 + 930 ,Sylhet.

Sample Information:

Test Date: 29.07.2019

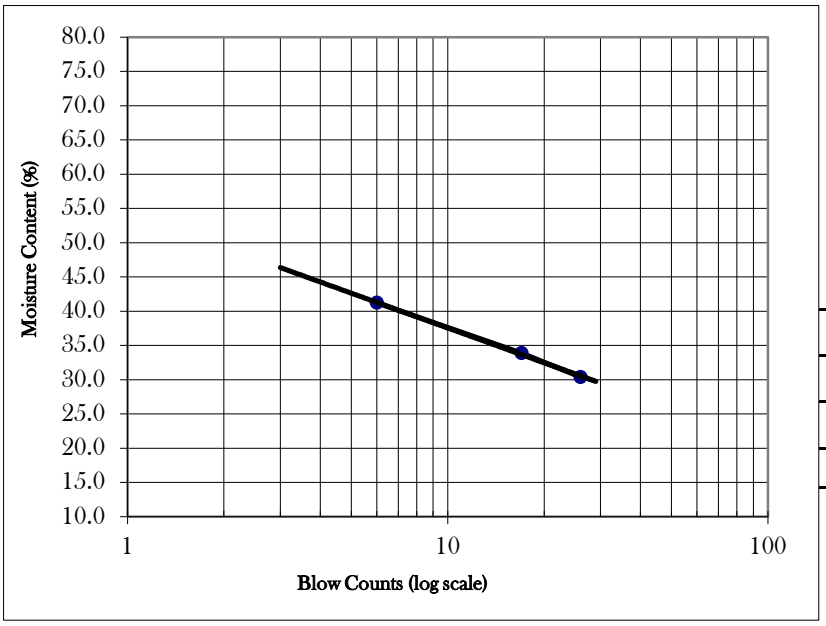
Boring Number: OVP-2,BH-1

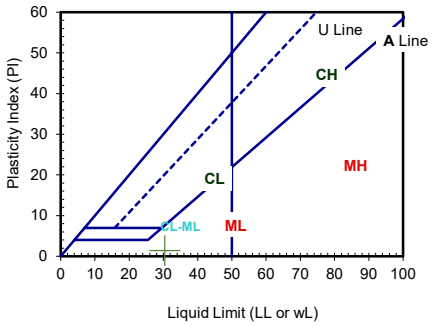
Depth of Sample: 5.0m to 19.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-14 | M-34 | N-40 |
| Weight of Cup (g) | 24.48 | 26.93 | 24.00 |
| Weight of Wet Soil and Cup (g) | 44.59 | 49.01 | 46.23 |
| Weight of Dry Soil and Cup (g) | 38.72 | 43.42 | 41.05 |
| Moisure Content (%) | 41.2 | 33.9 | 30.4 |
| Blow Counts | 6 | 17 | 26 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | N-7 | M-70 |
| Weight of Cup (g) | 7.03 | 11.38 |
| Weight of Wet Soil and Cup (g) | 36.34 | 35.84 |
| Weight of Dry Soil and Cup (g) | 29.69 | 30.38 |
| Moisure Content (%) | 29.3 | 28.7 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 30.4 |
| Plastic Limit | 29.0 |
| Plasticity Index | 1.4 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 9 + 930 ,Sylhet.

Sample Information:

Test Date: 29.07.2019

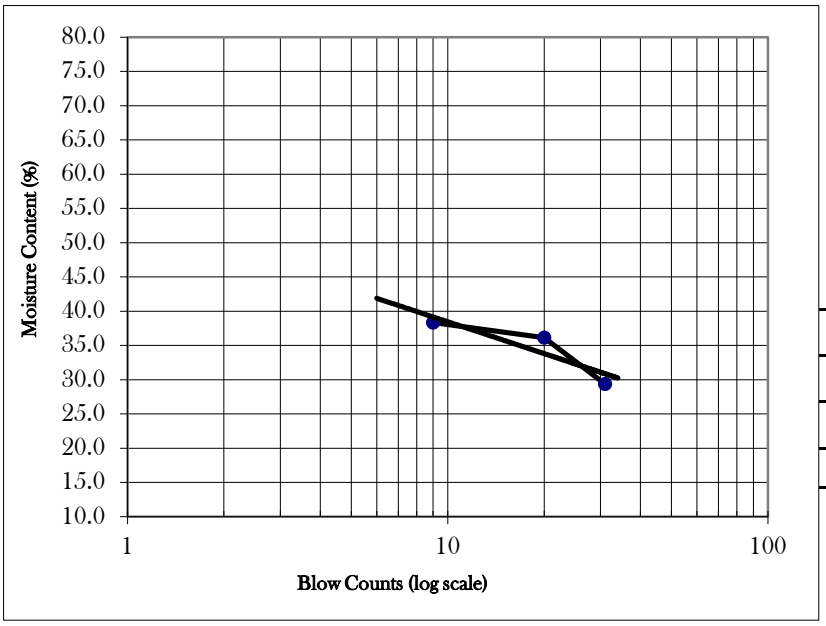
Boring Number: OVP-2,BH-1

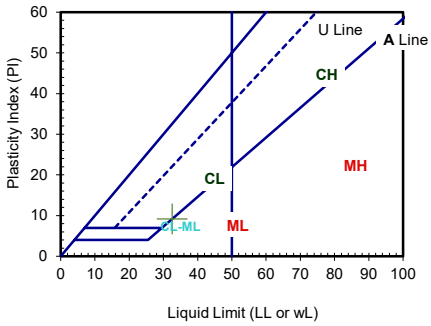
Depth of Sample: 23.0m to 26.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-20 | 410 | L-19 |
| Weight of Cup (g) | 17.5 | 17.55 | 18.29 |
| Weight of Wet Soil and Cup (g) | 38.03 | 41.36 | 43.71 |
| Weight of Dry Soil and Cup (g) | 32.34 | 35.04 | 37.94 |
| Moisure Content (%) | 38.3 | 36.1 | 29.4 |
| Blow Counts | 9 | 20 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 19-2 | N-0 |
| Weight of Cup (g) | 10.63 | 11.75 |
| Weight of Wet Soil and Cup (g) | 25.64 | 24.03 |
| Weight of Dry Soil and Cup (g) | 22.75 | 21.73 |
| Moisure Content (%) | 23.8 | 23.0 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 32.6 |
| Plastic Limit | 23.4 |
| Plasticity Index | 9.1 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 9 + 930 ,Sylhet.

Sample Information:

Test Date: 29.07.2019

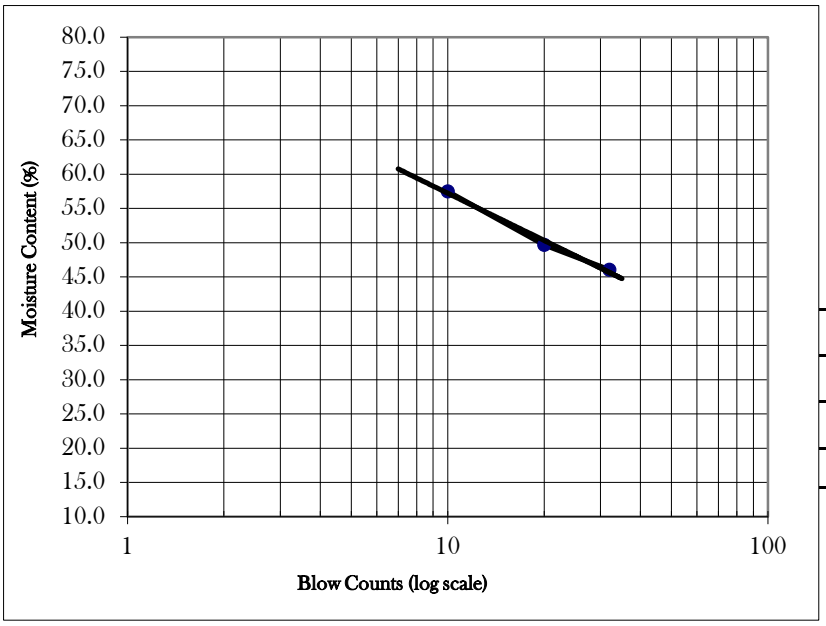
Boring Number: OVP-2,BH-1

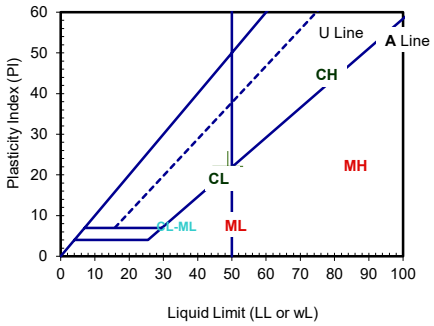
Depth of Sample: 29.0m to 40.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | 408 | M-31 | M-24 |
| Weight of Cup (g) | 15.66 | 20.40 | 24.03 |
| Weight of Wet Soil and Cup (g) | 38.7 | 45.80 | 50.39 |
| Weight of Dry Soil and Cup (g) | 30.29 | 37.37 | 42.08 |
| Moisure Content (%) | 57.5 | 49.7 | 46.0 |
| Blow Counts | 10 | 20 | 32 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 72 | M-71 |
| Weight of Cup (g) | 8.16 | 10.00 |
| Weight of Wet Soil and Cup (g) | 19.30 | 21.12 |
| Weight of Dry Soil and Cup (g) | 16.99 | 18.73 |
| Moisure Content (%) | 26.2 | 27.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 48.8 |
| Plastic Limit | 26.8 |
| Plasticity Index | 22.1 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 9 + 930 ,Sylhet.

Sample Information:

Test Date: 29.07.2019

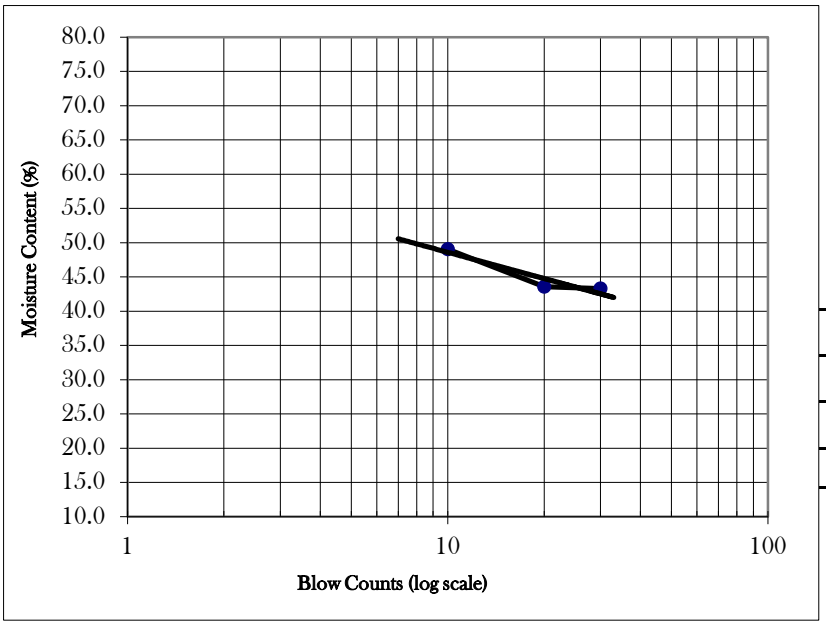
Boring Number: OVP-2,BH-1

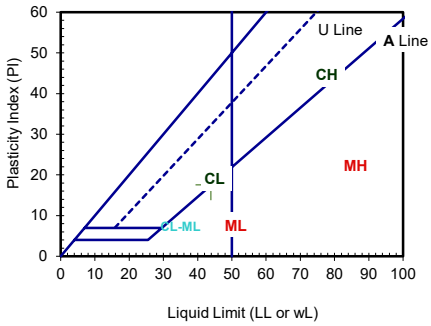
Depth of Sample: 44.0m to 49.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | 416 | 405 | L-9 |
| Weight of Cup (g) | 18.71 | 19.38 | 18.16 |
| Weight of Wet Soil and Cup (g) | 39.04 | 42.22 | 37.29 |
| Weight of Dry Soil and Cup (g) | 32.35 | 35.29 | 31.51 |
| Moisure Content (%) | 49.0 | 43.6 | 43.3 |
| Blow Counts | 10 | 20 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 11 | 19 |
| Weight of Cup (g) | 8.56 | 12.18 |
| Weight of Wet Soil and Cup (g) | 19.55 | 22.29 |
| Weight of Dry Soil and Cup (g) | 17.28 | 20.16 |
| Moisure Content (%) | 26.0 | 26.7 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 43.9 |
| Plastic Limit | 26.4 |
| Plasticity Index | 17.5 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 9 + 930 ,Sylhet.

Sample Information:

Test Date: 29.07.2019

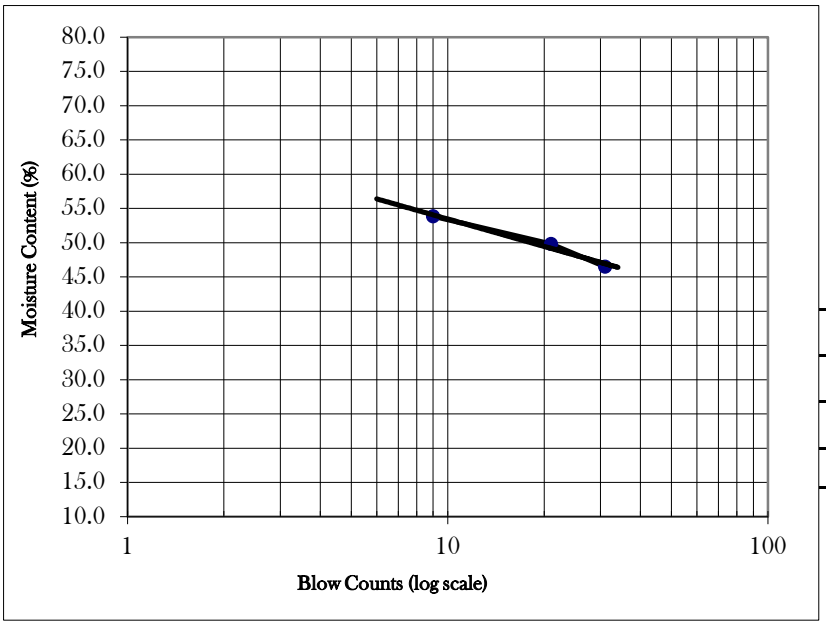
Boring Number: OVP-2,BH-1

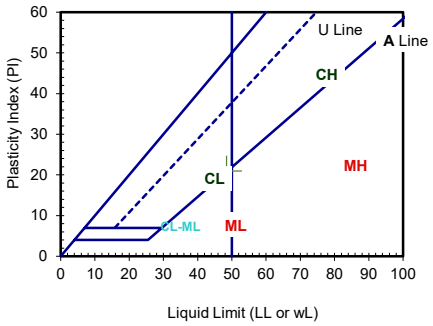
Depth of Sample: 53.0m to 56.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | 407 | M-32 | M-16 |
| Weight of Cup (g) | 19.64 | 23.63 | 29.92 |
| Weight of Wet Soil and Cup (g) | 45.72 | 47.30 | 52.10 |
| Weight of Dry Soil and Cup (g) | 36.59 | 39.43 | 45.06 |
| Moisure Content (%) | 53.9 | 49.8 | 46.5 |
| Blow Counts | 9 | 21 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | N-0 | M-71 |
| Weight of Cup (g) | 11.76 | 9.98 |
| Weight of Wet Soil and Cup (g) | 26.00 | 28.80 |
| Weight of Dry Soil and Cup (g) | 22.90 | 24.76 |
| Moisure Content (%) | 27.8 | 27.3 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 48.5 |
| Plastic Limit | 27.6 |
| Plasticity Index | 20.9 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 10 + 100 ,Sylhet.

Sample Information:

Test Date: 29.07.2019

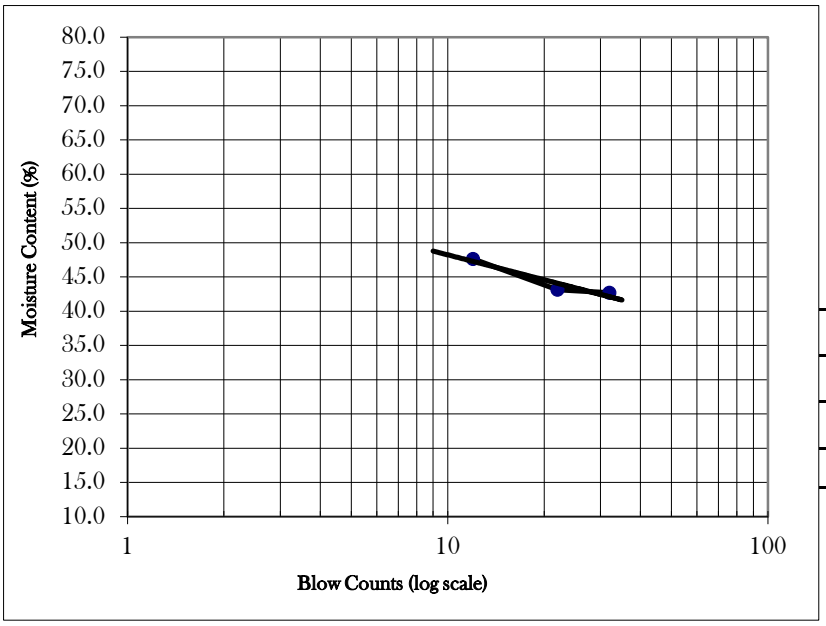
Boring Number: OVP-2,BH-2

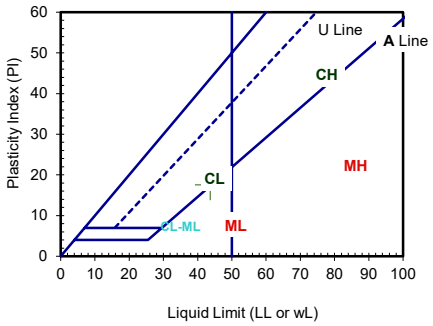
Depth of Sample: 0.0m to 4.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | 417 | M-7 | M-33 |
| Weight of Cup (g) | 18.61 | 24.58 | 23.96 |
| Weight of Wet Soil and Cup (g) | 41.98 | 53.32 | 46.92 |
| Weight of Dry Soil and Cup (g) | 34.44 | 44.66 | 40.05 |
| Moisure Content (%) | 47.6 | 43.1 | 42.7 |
| Blow Counts | 12 | 22 | 32 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 29-2 | 40-1 |
| Weight of Cup (g) | 12.23 | 7.71 |
| Weight of Wet Soil and Cup (g) | 23.00 | 19.76 |
| Weight of Dry Soil and Cup (g) | 20.78 | 17.24 |
| Moisure Content (%) | 26.0 | 26.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 43.7 |
| Plastic Limit | 26.2 |
| Plasticity Index | 17.5 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 10 + 100 ,Sylhet.

Sample Information:

Test Date: 29.07.2019

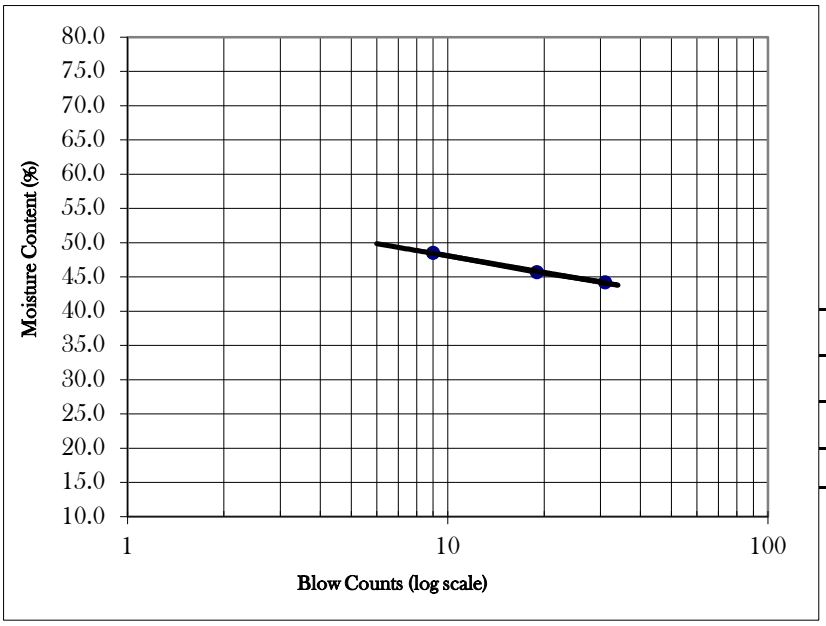
Boring Number: OVP-2,BH-2

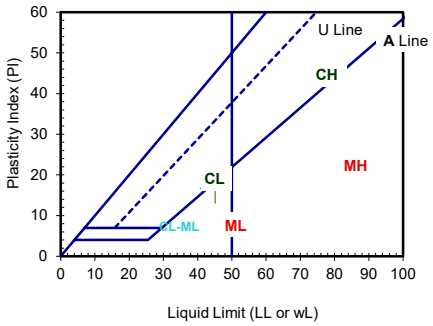
Depth of Sample: 4.0m to 34.5m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-3 | L-18 | M-39 |
| Weight of Cup (g) | 18.59 | 17.94 | 26.97 |
| Weight of Wet Soil and Cup (g) | 43.45 | 43.36 | 49.44 |
| Weight of Dry Soil and Cup (g) | 35.33 | 35.39 | 42.55 |
| Moisure Content (%) | 48.5 | 45.7 | 44.2 |
| Blow Counts | 9 | 19 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 7 | 413 |
| Weight of Cup (g) | 11.04 | 17.70 |
| Weight of Wet Soil and Cup (g) | 27.13 | 34.01 |
| Weight of Dry Soil and Cup (g) | 23.55 | 30.43 |
| Moisure Content (%) | 28.6 | 28.1 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 45.1 |
| Plastic Limit | 28.4 |
| Plasticity Index | 16.7 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 26.03.2019

Boring Number: FLY-1,BH-01

Sample Number: D5

Depth of Sample: 7.5 m

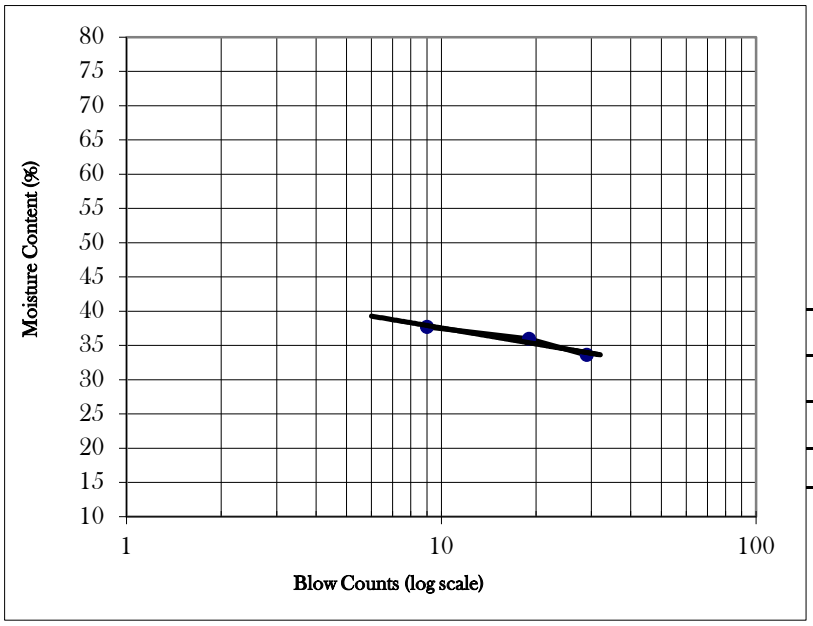
Determination of Liquid Limit

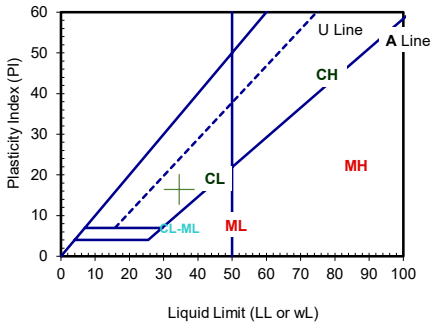
| Cup Number | M-3 | M-16 | 416 |
|---|---|---|---|
| Weight of Cup (g) | 29.32 | 29.91 | 18.74 |
| Weight of Wet Soil and Cup (g) | 54.3 | 54.18 | 45.58 |
| Weight of Dry Soil and Cup (g) | 47.46 | 47.76 | 38.83 |
| Moisure Content (%) | 37.7 | 36.0 | 33.6 |
| Blow Counts | 9 | 19 | 29 |

Determination of Plastic Limit

| Cup Number | 19 | 16 |
|---|---|---|
| Weight of Cup (g) | 10.63 | 11.37 |
| Weight of Wet Soil and Cup (g) | 24.66 | 22.14 |
| Weight of Dry Soil and Cup (g) | 22.48 | 20.51 |
| Moisure Content (%) | 18.4 | 17.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 34.5 |
| Plastic Limit | 18.1 |
| Plasticity Index | 16.4 |
| USCS Classification | **CL** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 26.03.2019

Boring Number: FLY-1,BH-01

Depth of Sample: 10.0m to 17.0m

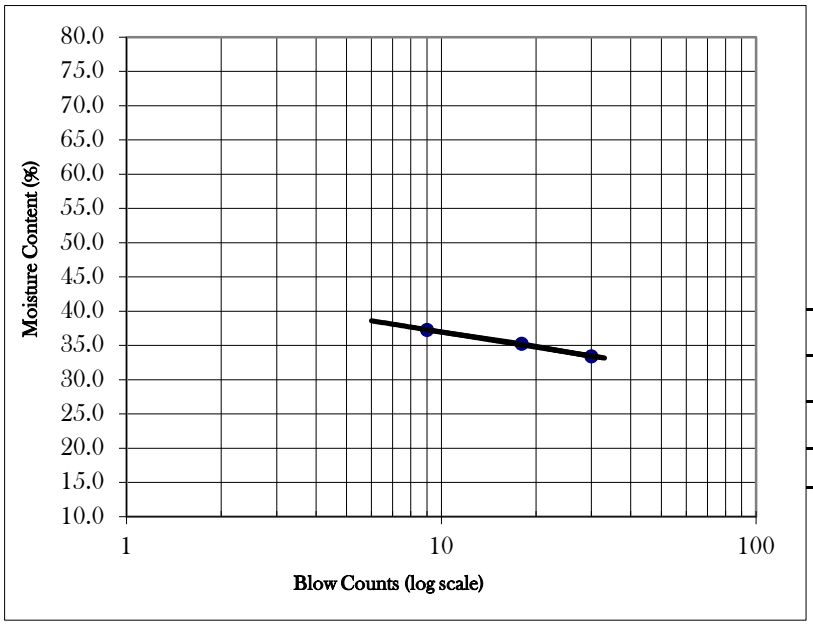
Determination of Liquid Limit

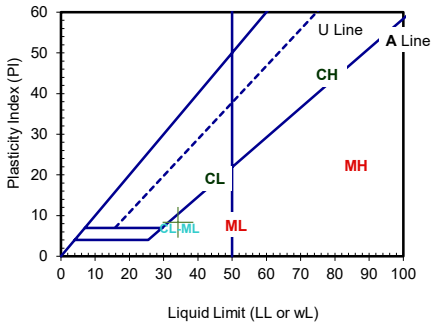
| Cup Number | L-49 | L-40 | L-57 |
|---|---|---|---|
| Weight of Cup (g) | 23.93 | 24.22 | 23.52 |
| Weight of Wet Soil and Cup (g) | 46.62 | 50.45 | 46.67 |
| Weight of Dry Soil and Cup (g) | 40.45 | 43.55 | 40.85 |
| Moisure Content (%) | 37.3 | 35.7 | 33.6 |
| Blow Counts | 9 | 18 | 30 |

Determination of Plastic Limit

| Cup Number | M-3 | M-2 |
|---|---|---|
| Weight of Cup (g) | 11.88 | 13.39 |
| Weight of Wet Soil and Cup (g) | 24.15 | 24.45 |
| Weight of Dry Soil and Cup (g) | 21.75 | 22.35 |
| Moisure Content (%) | 24.3 | 23.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 34.5 |
| Plastic Limit | 23.9 |
| Plasticity Index | 10.6 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

GEO-TECHNICAL LABORATORY

# Al - Mayeda Survey Consultants

House - 609, Road - 11, Baitul aman Housing, Adabor, Dhaka

## *Test Report on Atterberg Limits of Soil*

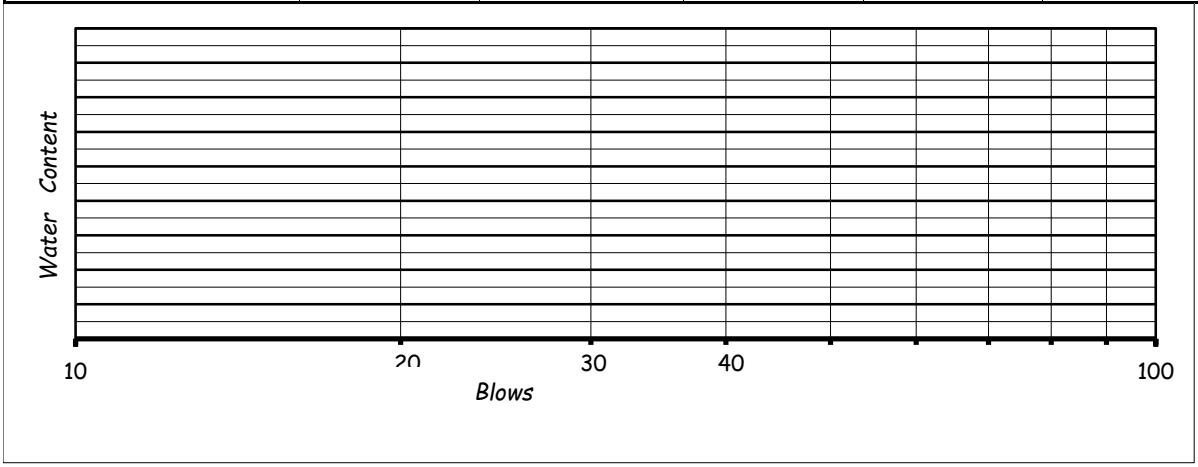
Test Method : ASTM D 4318-1990

Project : Sub - Regional Road Transportation Project
Location : **Chainage - 16 + 230 ,Sylhet.**
Road Name : Sutarkandi, Sylhet
Structure ID **FLY - 01**
Sampling Date : 19/3/2019
Description : Sandy Silt

Client : RHD
Bore hole No : **BH - 01**
Sample No : D-16
Depth, m : 24.00m
Testing Date : 26/3/2019

**Data for Liquid Limit Determination**

| | | | | | |
|---|---|---|---|---|---|
| Test No. | | | | | |
| Can no. | | | | | |
| Wt. of Wet Soil + Can | | | | | |
| Wt. of Dry Soil + Can | | *Test could not be Performed* | | | |
| Wt. of Can | | | | | |
| Water Content | | | | | |
| No. of Blows | | | | | |




**Data for Plastic limit Determination**

| | | |
|---|---|---|
| Test No. | | |
| Can no. | | |
| Wt. of Wet Soil + Can | *Test could not be Performed* | |
| Wt. of Dry Soil + Can | | |
| Wt. of Can | | |
| Water Content | | |
| Avg. Water Content | | |

Note : Sample tested at natural moisture condition

**Test Results :**

Liquid Limit : -
Plastic Limit : -
Plasticity Index : NP
Gr. Symbol (USCS) : ML

Test Performed by : _____ Azhar

Engr. Jamal Uddin
Laboratory in Charge

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 16 + 330 ,Sylhet.

Sample Information:

05.08.2019

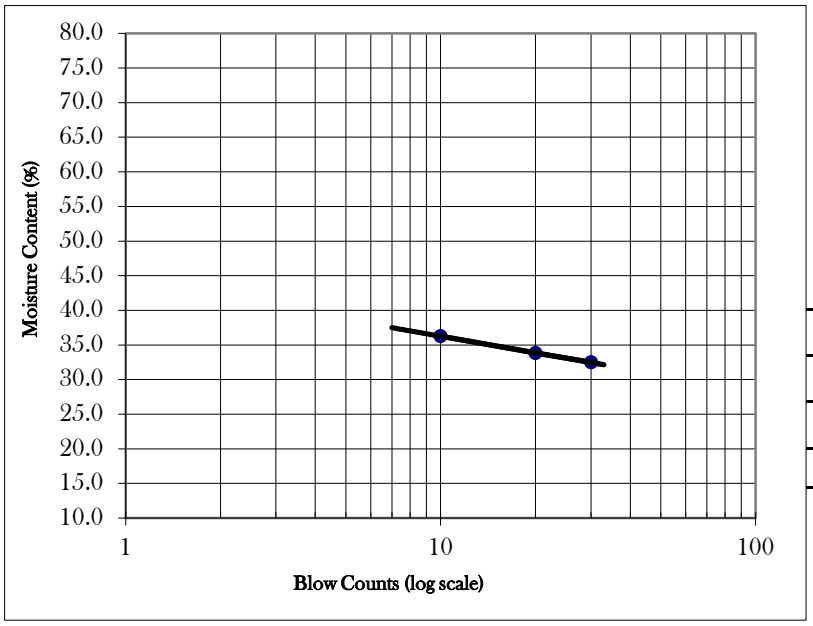
Boring Number: FLY-1.BH-3

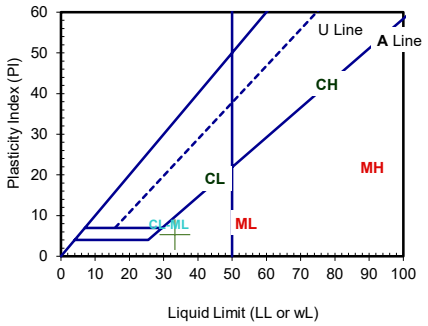
Depth of Sample: 0.0m to 20.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-76 | M-25 | 408 |
| Weight of Cup (g) | 24.27 | 19.02 | 15.59 |
| Weight of Wet Soil and Cup (g) | 48.65 | 43.87 | 39.07 |
| Weight of Dry Soil and Cup (g) | 42.16 | 37.59 | 33.31 |
| Moisure Content (%) | 36.3 | 33.8 | 32.5 |
| Blow Counts | 10 | 20 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 30-2 | N-0 |
| Weight of Cup (g) | 11.41 | 11.75 |
| Weight of Wet Soil and Cup (g) | 24.70 | 24.63 |
| Weight of Dry Soil and Cup (g) | 21.83 | 21.78 |
| Moisure Content (%) | 27.5 | 28.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 33.3 |
| Plastic Limit | 28.0 |
| Plasticity Index | 5.3 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 25.03.2019

Boring Number: FLY-01, BH-04

Depth of Sample: 0.0m to 17.0m

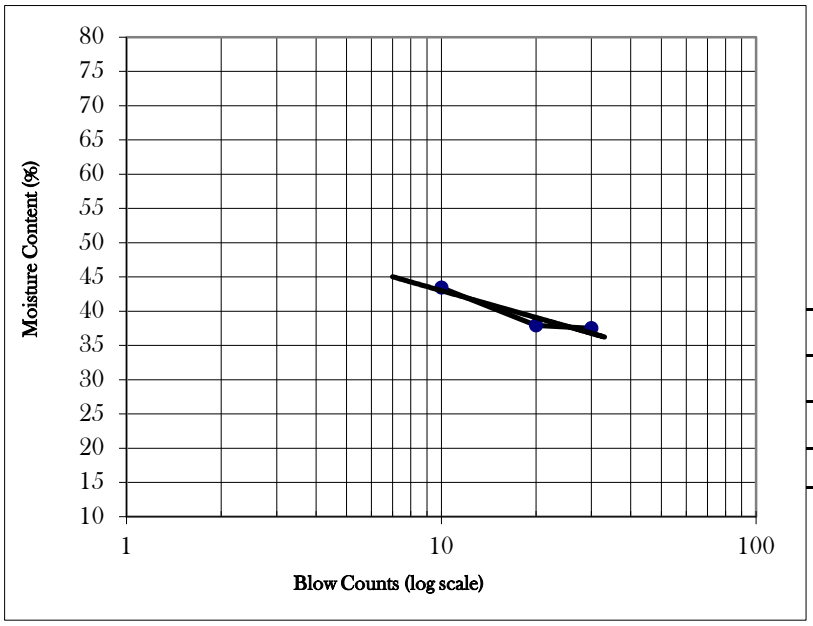
Determination of Liquid Limit

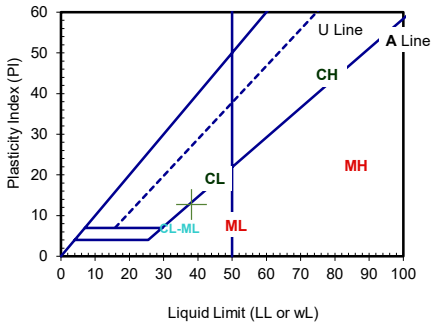
| Cup Number | L-70 | L-55 | N-57 |
|---|---|---|---|
| Weight of Cup (g) | 21.58 | 19.24 | 19.58 |
| Weight of Wet Soil and Cup (g) | 43.62 | 41.25 | 43.22 |
| Weight of Dry Soil and Cup (g) | 37.15 | 35.31 | 39.86 |
| Moisure Content (%) | 41.6 | 37.0 | 16.6 |
| Blow Counts | 10 | 20 | 30 |

Determination of Plastic Limit

| Cup Number | M-11 | N-3 |
|---|---|---|
| Weight of Cup (g) | 15.07 | 15.01 |
| Weight of Wet Soil and Cup (g) | 27.28 | 24.35 |
| Weight of Dry Soil and Cup (g) | 24.80 | 23.65 |
| Moisure Content (%) | 25.5 | 8.1 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 25.4 |
| Plastic Limit | 16.8 |
| Plasticity Index | 8.7 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 25.03.2019

Boring Number: FLY-1,BH-04

Depth of Sample: 23.0m to 45.0m

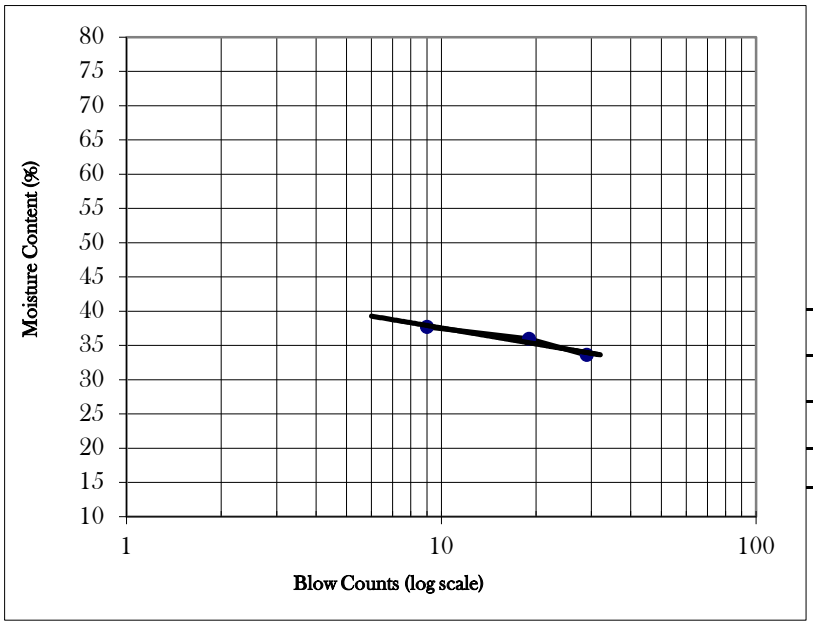
Determination of Liquid Limit

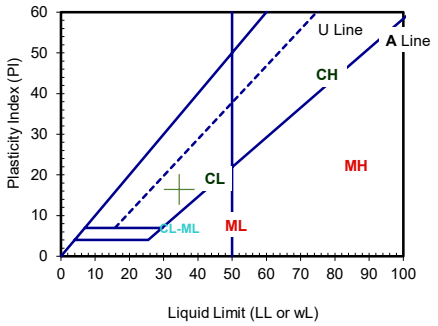
| Cup Number | M-3 | M-16 | 416 |
|---|---|---|---|
| Weight of Cup (g) | 29.33 | 29.76 | 18.75 |
| Weight of Wet Soil and Cup (g) | 54.45 | 54.29 | 45.52 |
| Weight of Dry Soil and Cup (g) | 47.66 | 47.38 | 38.79 |
| Moisure Content (%) | 37.0 | 39.2 | 33.6 |
| Blow Counts | 9 | 19 | 29 |

Determination of Plastic Limit

| Cup Number | 19 | 16 |
|---|---|---|
| Weight of Cup (g) | 10.63 | 11.37 |
| Weight of Wet Soil and Cup (g) | 24.55 | 22.25 |
| Weight of Dry Soil and Cup (g) | 22.48 | 20.47 |
| Moisure Content (%) | 17.5 | 19.6 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 35.6 |
| Plastic Limit | 18.5 |
| Plasticity Index | 17.1 |
| USCS Classification | **CL** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 16 + 550 ,Sylhet.

Sample Information:

02.08.2019

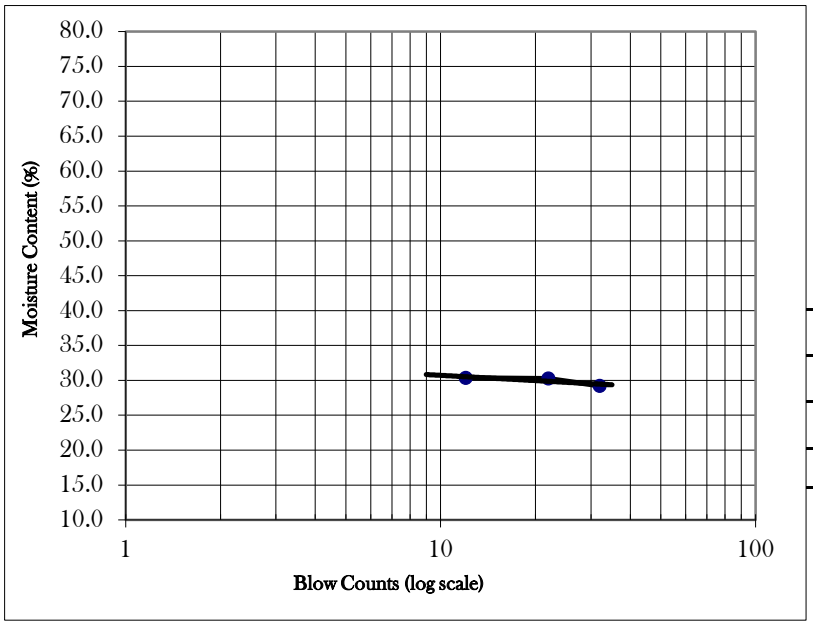
Boring Number: FLY-1.BH-5

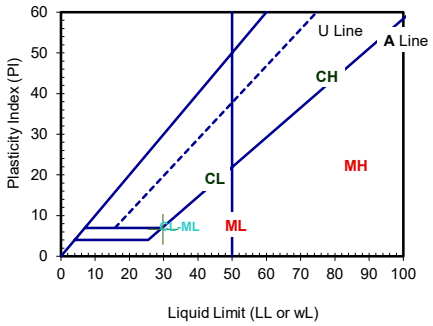
Depth of Sample: 0.0m to 25.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-19 | 40-1 | 407 |
| Weight of Cup (g) | 18.28 | 7.74 | 19.64 |
| Weight of Wet Soil and Cup (g) | 41.89 | 26.55 | 43.51 |
| Weight of Dry Soil and Cup (g) | 36.81 | 22.25 | 38.11 |
| Moisure Content (%) | 27.4 | 29.6 | 29.2 |
| Blow Counts | 12 | 22 | 32 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | M-76 | L-78 |
| Weight of Cup (g) | 24.33 | 19.29 |
| Weight of Wet Soil and Cup (g) | 40.26 | 37.91 |
| Weight of Dry Soil and Cup (g) | 37.37 | 34.45 |
| Moisure Content (%) | 22.2 | 22.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 29.0 |
| Plastic Limit | 22.5 |
| Plasticity Index | 6.5 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 16 + 550 ,Sylhet.

Sample Information:

02.08.2019

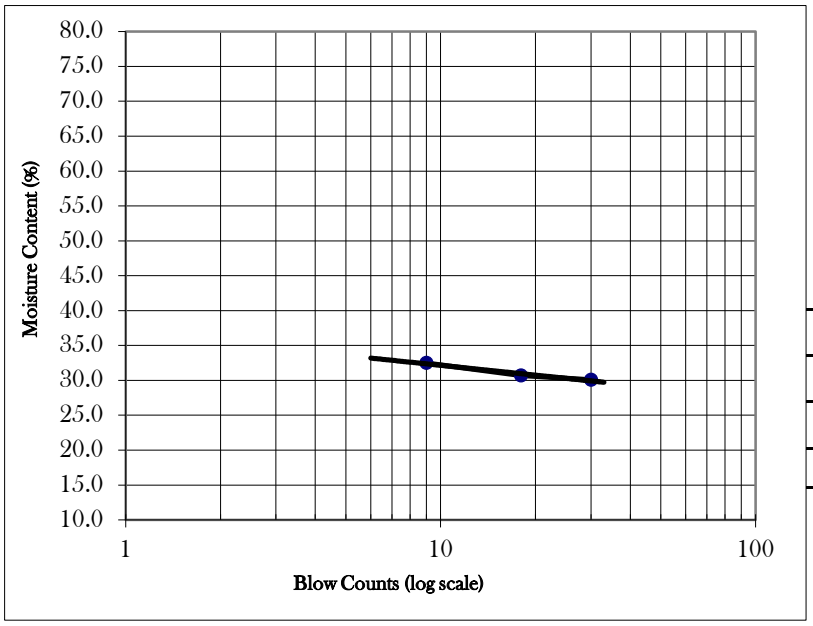
Boring Number: FLY-1.BH-5

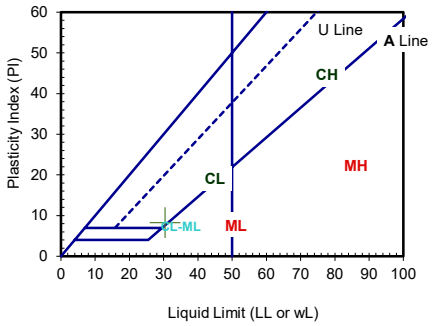
Depth of Sample: 25.0m to 41.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | 418 | M-11 | M-28 |
| Weight of Cup (g) | 18.82 | 20.79 | 28.78 |
| Weight of Wet Soil and Cup (g) | 46.43 | 42.98 | 49.84 |
| Weight of Dry Soil and Cup (g) | 39.66 | 37.77 | 44.97 |
| Moisure Content (%) | 32.5 | 30.7 | 30.1 |
| Blow Counts | 9 | 18 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 19-2 | N-9 |
| Weight of Cup (g) | 10.62 | 10.22 |
| Weight of Wet Soil and Cup (g) | 24.97 | 22.68 |
| Weight of Dry Soil and Cup (g) | 22.88 | 20.01 |
| Moisure Content (%) | 17.0 | 27.3 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 30.4 |
| Plastic Limit | 22.2 |
| Plasticity Index | 8.3 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 25.03.2019

Boring Number: FLY-01, BH-06

Depth of Sample: 0.0m to 5.0m

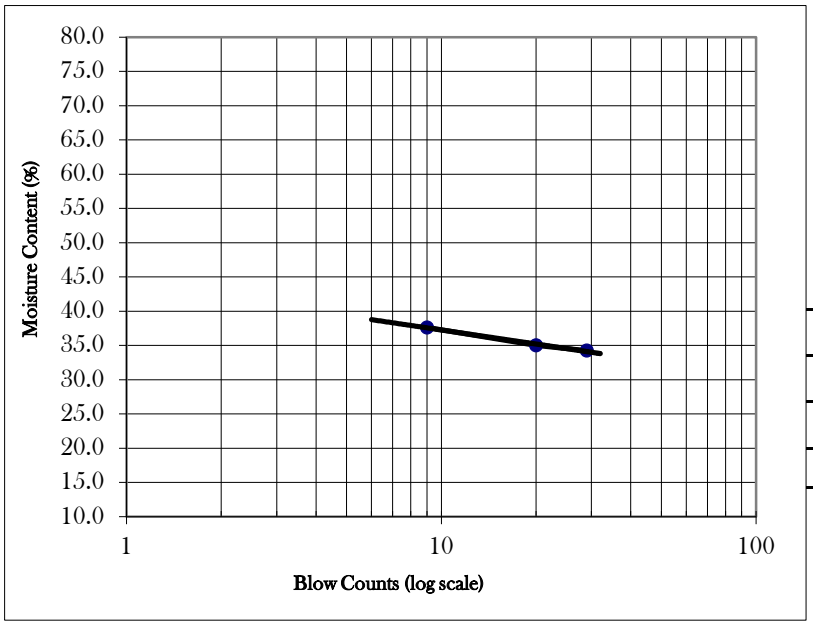
Determination of Liquid Limit

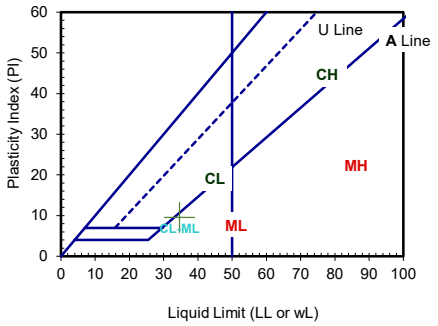
| Cup Number | M-13 | L-17 | N-24 |
|---|---|---|---|
| Weight of Cup (g) | 20.85 | 19.87 | 22.95 |
| Weight of Wet Soil and Cup (g) | 49.62 | 44.38 | 44.19 |
| Weight of Dry Soil and Cup (g) | 41.69 | 38.09 | 38.75 |
| Moisure Content (%) | 38.1 | 34.5 | 34.4 |
| Blow Counts | 9 | 20 | 29 |

Determination of Plastic Limit

| Cup Number | M-18 | M-09 |
|---|---|---|
| Weight of Cup (g) | 14.54 | 12.59 |
| Weight of Wet Soil and Cup (g) | 23.32 | 21.12 |
| Weight of Dry Soil and Cup (g) | 21.49 | 19.73 |
| Moisure Content (%) | 26.3 | 19.5 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 34.6 |
| Plastic Limit | 22.9 |
| Plasticity Index | 11.7 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 26.03.2019

Boring Number: FLY-01, BH-06

Depth of Sample: 8.0m to 30.0m

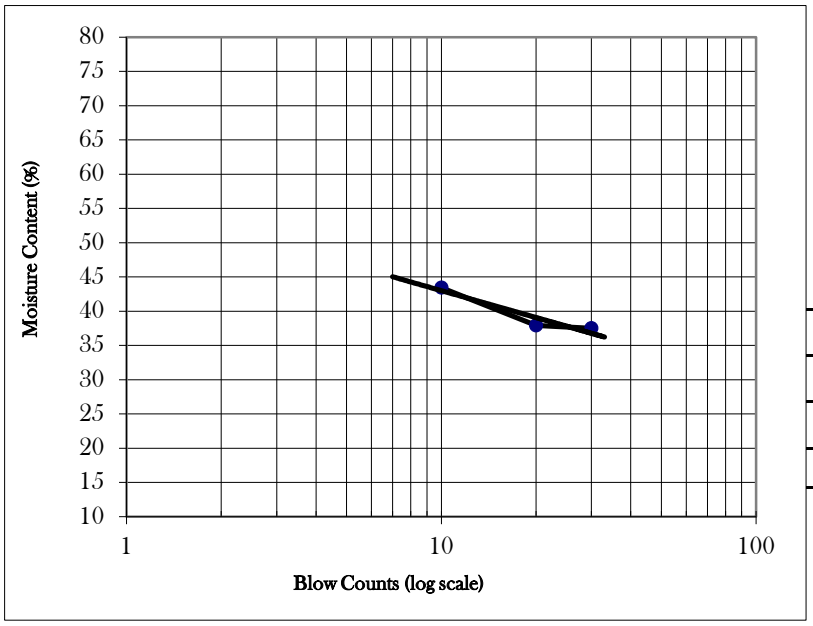
Determination of Liquid Limit

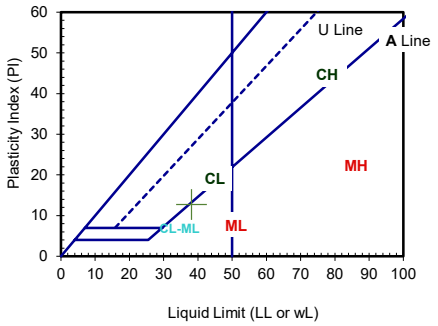
| Cup Number | L-70 | L-55 | N-57 |
|---|---|---|---|
| Weight of Cup (g) | 21.58 | 19.24 | 19.58 |
| Weight of Wet Soil and Cup (g) | 43.64 | 41.22 | 43.35 |
| Weight of Dry Soil and Cup (g) | 37.12 | 35.2 | 36.91 |
| Moisure Content (%) | 42.0 | 37.7 | 37.2 |
| Blow Counts | 10 | 20 | 30 |

Determination of Plastic Limit

| Cup Number | M-11 | N-3 |
|---|---|---|
| Weight of Cup (g) | 15.07 | 15.01 |
| Weight of Wet Soil and Cup (g) | 27.25 | 25.76 |
| Weight of Dry Soil and Cup (g) | 24.80 | 23.69 |
| Moisure Content (%) | 25.2 | 23.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 37.7 |
| Plastic Limit | 24.5 |
| Plasticity Index | 13.2 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 16 + 750 ,Sylhet.

Sample Information:

02.08.2019

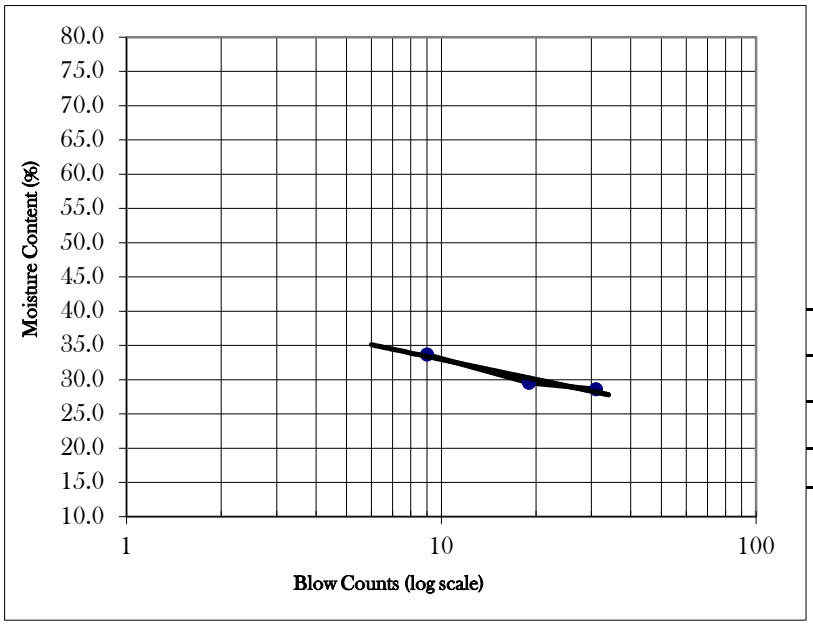
Boring Number: FLY-1.BH-2

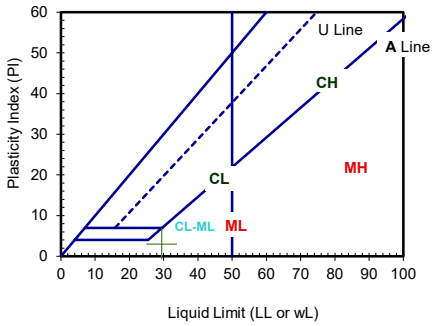
Depth of Sample: 0.0m to 8.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-11 | 413 | M-14 |
| Weight of Cup (g) | 18.53 | 17.72 | 24.49 |
| Weight of Wet Soil and Cup (g) | 39.73 | 40.91 | 47.51 |
| Weight of Dry Soil and Cup (g) | 34.39 | 35.62 | 42.39 |
| Moisure Content (%) | 33.7 | 29.6 | 28.6 |
| Blow Counts | 9 | 19 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 20 | N-0 |
| Weight of Cup (g) | 11.83 | 11.78 |
| Weight of Wet Soil and Cup (g) | 29.06 | 25.30 |
| Weight of Dry Soil and Cup (g) | 25.56 | 22.39 |
| Moisure Content (%) | 25.5 | 27.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 29.4 |
| Plastic Limit | 26.5 |
| Plasticity Index | 2.9 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 16 + 750 ,Sylhet.

Sample Information:

02.08.2019

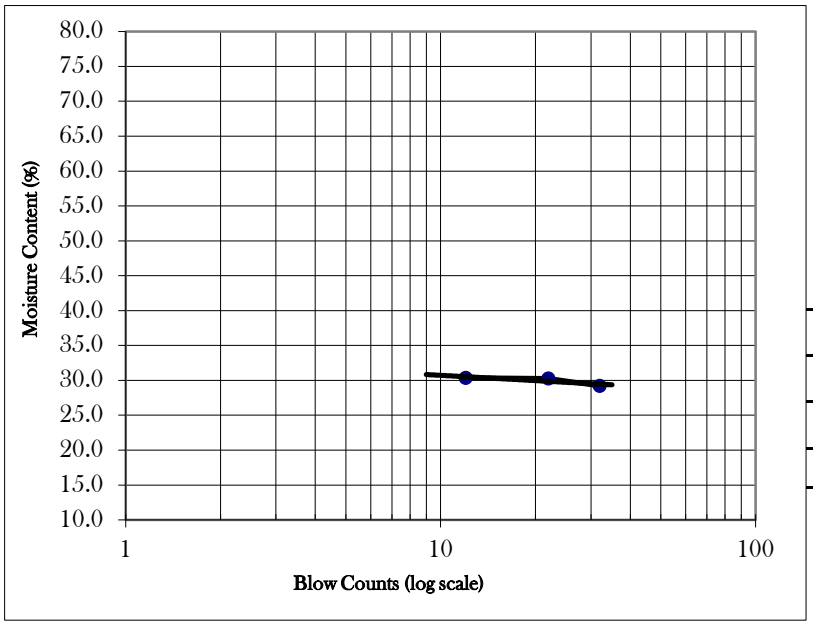
Boring Number: FLY-1.BH-2

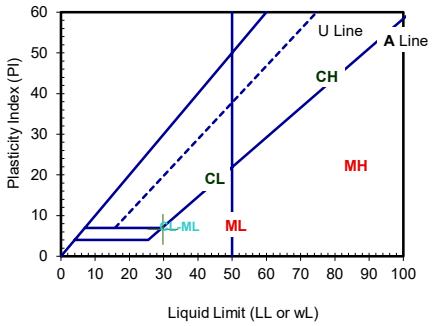
Depth of Sample: 8.0m to 14.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-19 | 40-1 | 407 |
| Weight of Cup (g) | 18.28 | 7.74 | 19.64 |
| Weight of Wet Soil and Cup (g) | 42.32 | 26.59 | 43.48 |
| Weight of Dry Soil and Cup (g) | 36.72 | 22.21 | 38.09 |
| Moisure Content (%) | 30.4 | 30.3 | 29.2 |
| Blow Counts | 12 | 22 | 32 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | M-76 | L-78 |
| Weight of Cup (g) | 24.38 | 19.29 |
| Weight of Wet Soil and Cup (g) | 40.44 | 37.91 |
| Weight of Dry Soil and Cup (g) | 37.37 | 34.45 |
| Moisure Content (%) | 23.6 | 22.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 29.8 |
| Plastic Limit | 23.2 |
| Plasticity Index | 6.5 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 16 + 750 ,Sylhet.

Sample Information:

02.08.2019

Boring Number: FLY-1.BH-2

Depth of Sample: 20.0m to 41.0m

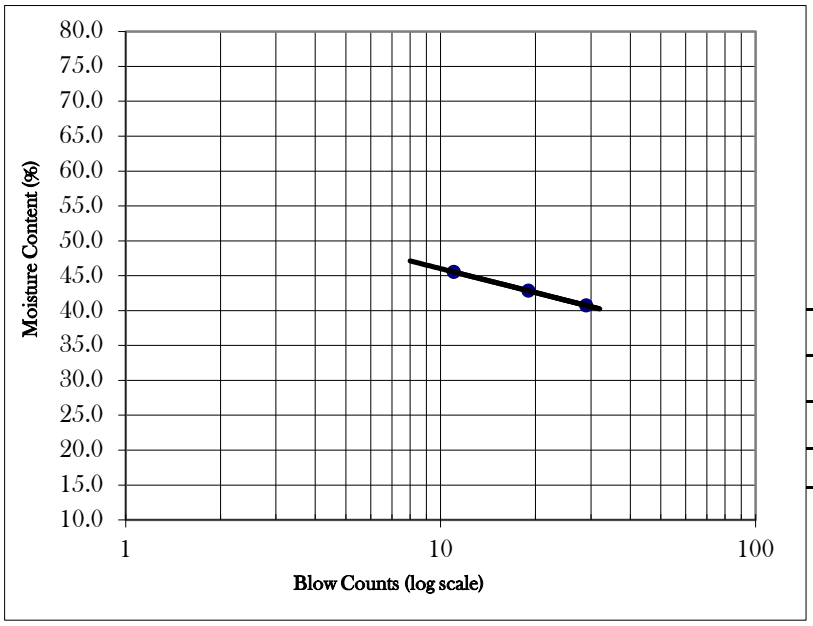
Determination of Liquid Limit

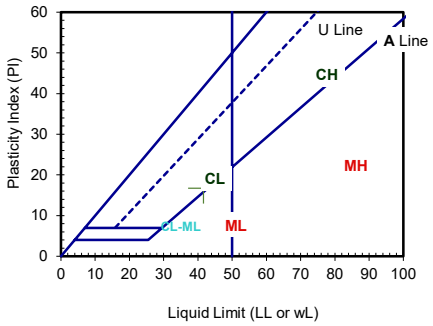
| Cup Number | M-6 | M-32 | L-1 |
|---|---|---|---|
| Weight of Cup (g) | 24.5 | 23.94 | 18.31 |
| Weight of Wet Soil and Cup (g) | 47.77 | 44.57 | 43.78 |
| Weight of Dry Soil and Cup (g) | 40.49 | 38.38 | 36.41 |
| Moisure Content (%) | 45.5 | 42.9 | 40.7 |
| Blow Counts | 11 | 19 | 29 |

Determination of Plastic Limit

| Cup Number | L-20 | M-71 |
|---|---|---|
| Weight of Cup (g) | 17.50 | 10.01 |
| Weight of Wet Soil and Cup (g) | 34.07 | 25.24 |
| Weight of Dry Soil and Cup (g) | 30.77 | 22.19 |
| Moisure Content (%) | 24.9 | 25.0 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 41.6 |
| Plastic Limit | 25.0 |
| Plasticity Index | 16.7 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 16 + 810 ,Sylhet.

Sample Information:

05.08.2019

Boring Number: FLY-1.BH-7

Depth of Sample: 23.0m to 34.0m

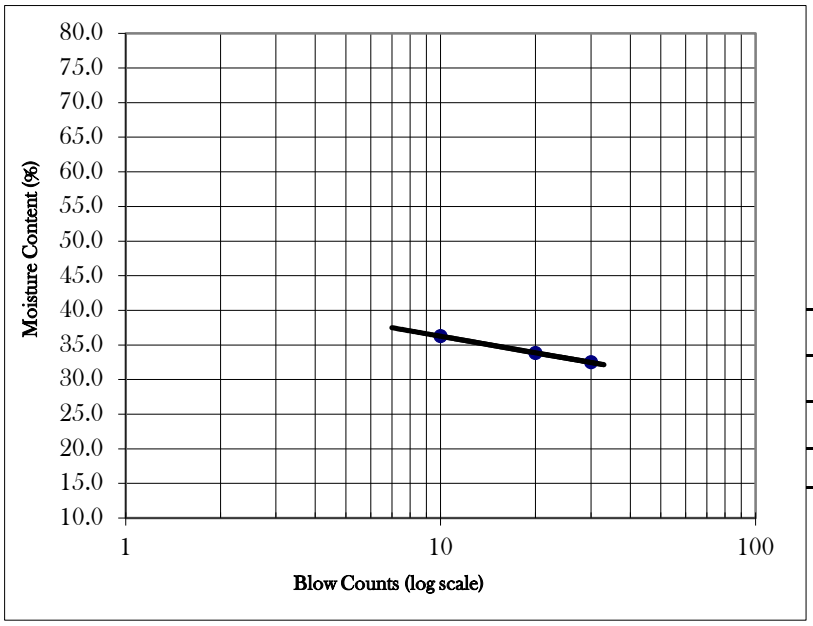
Determination of Liquid Limit

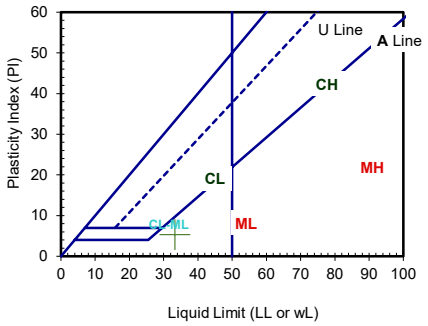
| Cup Number | M-76 | M-25 | 408 |
|---|---|---|---|
| Weight of Cup (g) | 24.27 | 19.02 | 15.59 |
| Weight of Wet Soil and Cup (g) | 48.59 | 43.82 | 39.13 |
| Weight of Dry Soil and Cup (g) | 42.16 | 37.59 | 33.31 |
| Moisure Content (%) | 35.9 | 33.5 | 32.8 |
| Blow Counts | 10 | 20 | 30 |

Determination of Plastic Limit

| Cup Number | 30-2 | N-0 |
|---|---|---|
| Weight of Cup (g) | 11.41 | 11.75 |
| Weight of Wet Soil and Cup (g) | 24.70 | 24.63 |
| Weight of Dry Soil and Cup (g) | 21.83 | 21.78 |
| Moisure Content (%) | 27.5 | 28.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 33.3 |
| Plastic Limit | 28.0 |
| Plasticity Index | 5.4 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 16 + 810 ,Sylhet.

Sample Information:

02.08.2019

Boring Number: FLY-1.BH-7

Depth of Sample: 0.0m to 10.0m

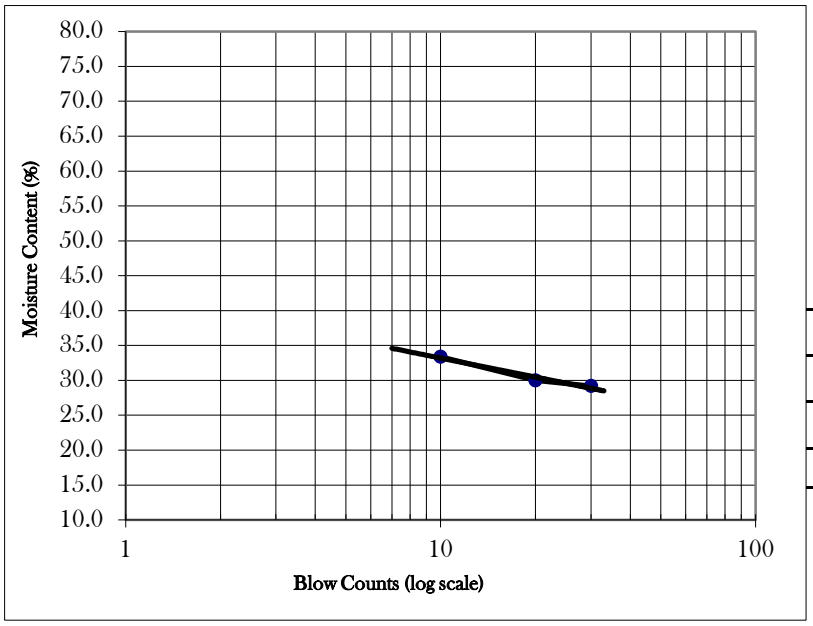
Determination of Liquid Limit

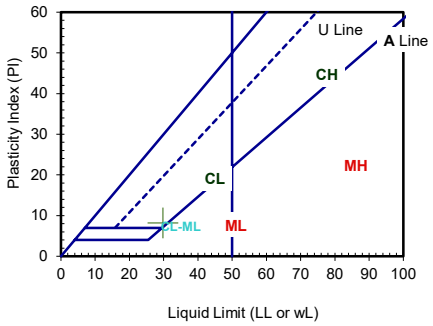
| Cup Number | M-3 | L-7 | M-05 |
|---|---|---|---|
| Weight of Cup (g) | 29.39 | 19.01 | 24.86 |
| Weight of Wet Soil and Cup (g) | 51.01 | 44.81 | 46.64 |
| Weight of Dry Soil and Cup (g) | 45.6 | 38.86 | 41.72 |
| Moisure Content (%) | 33.4 | 30.0 | 29.2 |
| Blow Counts | 10 | 20 | 30 |

Determination of Plastic Limit

| Cup Number | N-9 | 29-2 |
|---|---|---|
| Weight of Cup (g) | 10.25 | 12.22 |
| Weight of Wet Soil and Cup (g) | 25.65 | 28.04 |
| Weight of Dry Soil and Cup (g) | 22.21 | 26.04 |
| Moisure Content (%) | 28.8 | 14.5 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 29.8 |
| Plastic Limit | 21.6 |
| Plasticity Index | 8.2 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 16 + 810 ,Sylhet.

Sample Information:

02.08.2019

Boring Number: FLY-1.BH-7

Depth of Sample: 34.0m to 41.0m

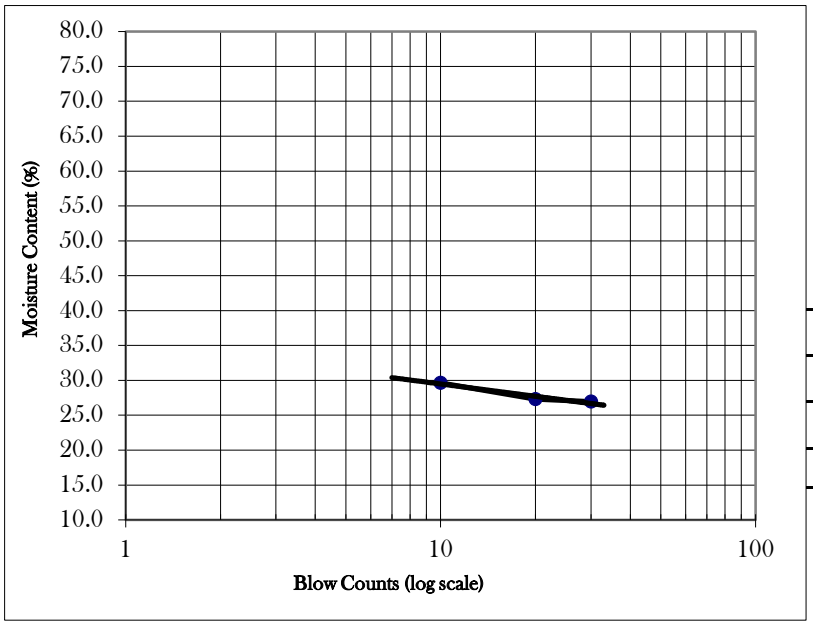
Determination of Liquid Limit

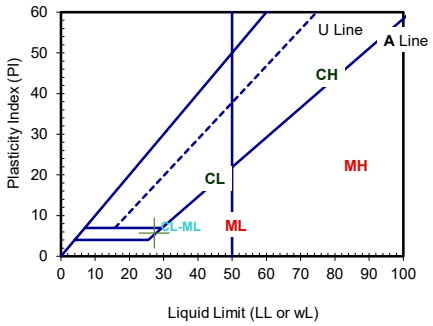
| Cup Number | L-17 | L-13 | M-24 |
|---|---|---|---|
| Weight of Cup (g) | 18.62 | 18.21 | 24.03 |
| Weight of Wet Soil and Cup (g) | 40.01 | 39.76 | 46.50 |
| Weight of Dry Soil and Cup (g) | 35.12 | 35.14 | 41.73 |
| Moisure Content (%) | 29.6 | 27.3 | 26.9 |
| Blow Counts | 10 | 20 | 30 |

Determination of Plastic Limit

| Cup Number | N-6 | 7 |
|---|---|---|
| Weight of Cup (g) | 11.40 | 11.04 |
| Weight of Wet Soil and Cup (g) | 27.06 | 25.41 |
| Weight of Dry Soil and Cup (g) | 24.28 | 22.86 |
| Moisure Content (%) | 21.6 | 21.6 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 27.3 |
| Plastic Limit | 21.6 |
| Plasticity Index | 5.7 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 26.03.2019

Boring Number: FLY-1,BH-08

Depth of Sample: 0.0m to 14.0m

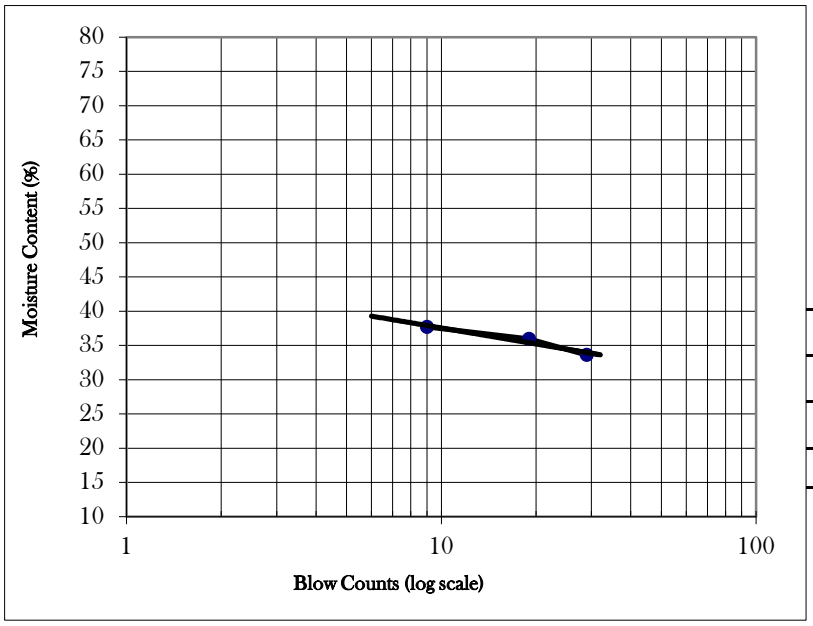
Determination of Liquid Limit

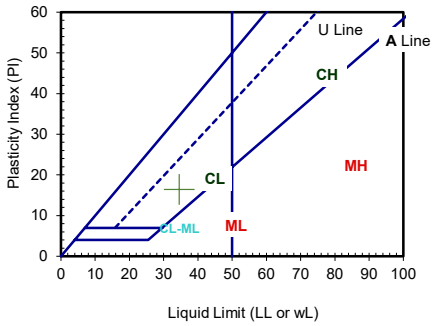
| Cup Number | M-3 | M-16 | 416 |
|---|---|---|---|
| Weight of Cup (g) | 29.35 | 29.85 | 18.72 |
| Weight of Wet Soil and Cup (g) | 54.48 | 54.22 | 45.62 |
| Weight of Dry Soil and Cup (g) | 47.62 | 47.35 | 38.83 |
| Moisure Content (%) | 37.5 | 39.3 | 33.8 |
| Blow Counts | 9 | 19 | 29 |

Determination of Plastic Limit

| Cup Number | 19 | 16 |
|---|---|---|
| Weight of Cup (g) | 10.63 | 11.37 |
| Weight of Wet Soil and Cup (g) | 24.51 | 22.18 |
| Weight of Dry Soil and Cup (g) | 22.48 | 20.47 |
| Moisure Content (%) | 17.1 | 18.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 35.7 |
| Plastic Limit | 18.0 |
| Plasticity Index | 17.8 |
| USCS Classification | **CL** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 27.03.2019

Boring Number: FLY-1,BH-08

Depth of Sample: 20.0m to 30.0m

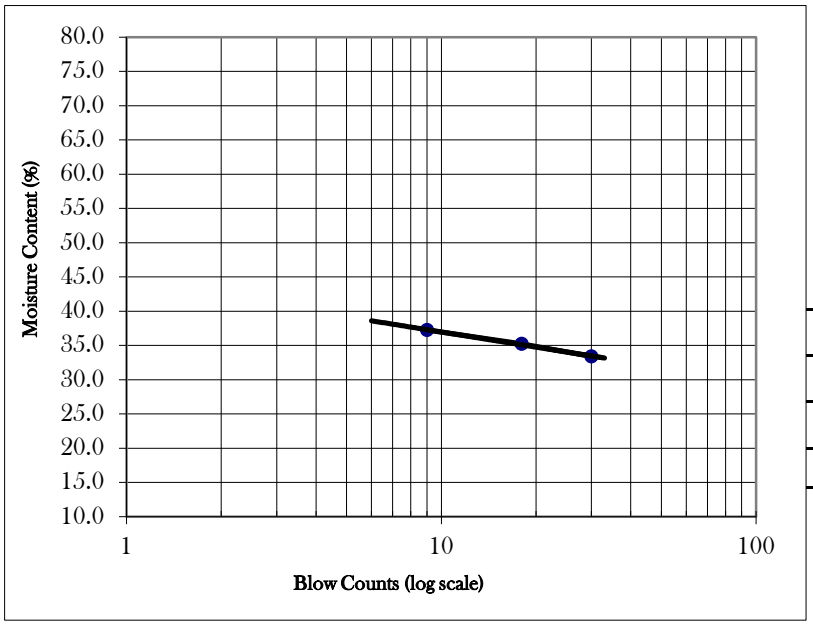
Determination of Liquid Limit

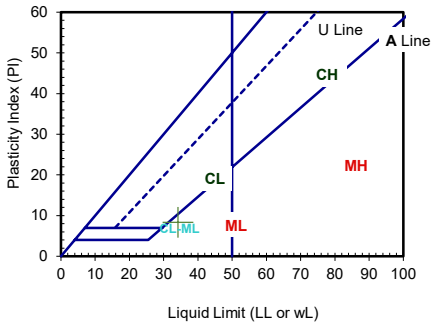
| Cup Number | L-49 | L-40 | L-57 |
|---|---|---|---|
| Weight of Cup (g) | 23.93 | 24.22 | 23.52 |
| Weight of Wet Soil and Cup (g) | 46.67 | 50.47 | 46.64 |
| Weight of Dry Soil and Cup (g) | 40.44 | 43.58 | 40.87 |
| Moisure Content (%) | 37.7 | 35.6 | 33.3 |
| Blow Counts | 9 | 18 | 30 |

Determination of Plastic Limit

| Cup Number | M-3 | M-2 |
|---|---|---|
| Weight of Cup (g) | 11.88 | 13.39 |
| Weight of Wet Soil and Cup (g) | 24.17 | 24.43 |
| Weight of Dry Soil and Cup (g) | 21.73 | 22.34 |
| Moisure Content (%) | 24.8 | 23.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 34.3 |
| Plastic Limit | 24.1 |
| Plasticity Index | 10.2 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: FLY-1,BH-08

Depth of Sample: 30.0m to 45.0m

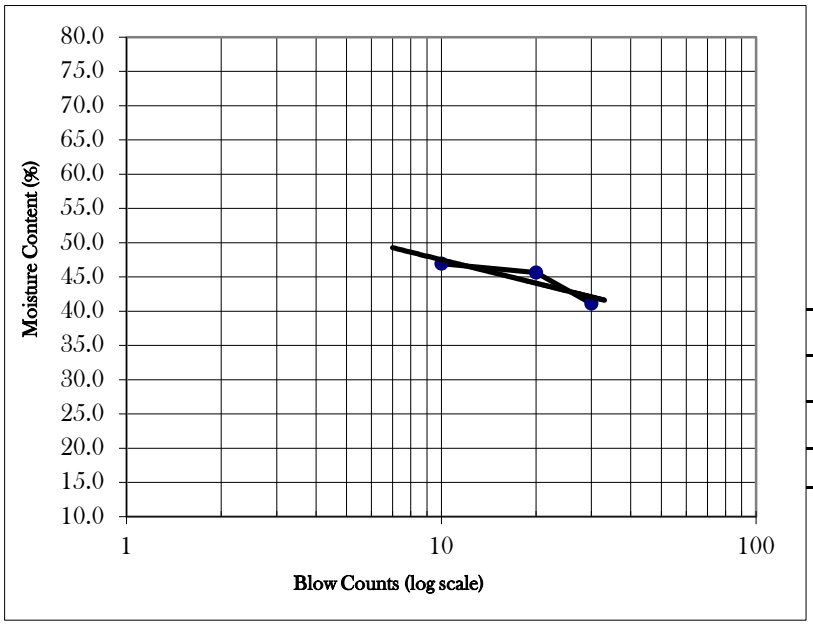
Determination of Liquid Limit

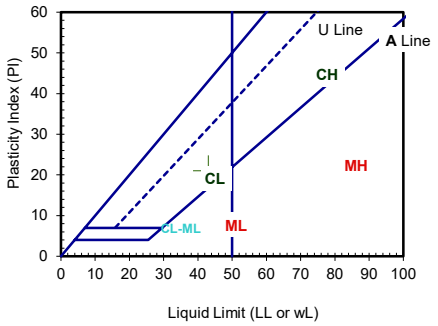
| Cup Number | L-13 | M-28 | C-202 |
|---|---|---|---|
| Weight of Cup (g) | 18.78 | 28.80 | 16.14 |
| Weight of Wet Soil and Cup (g) | 35.16 | 53.46 | 43.22 |
| Weight of Dry Soil and Cup (g) | 30.12 | 46.09 | 35.26 |
| Moisure Content (%) | 44.4 | 42.6 | 41.6 |
| Blow Counts | 10 | 20 | 30 |

Determination of Plastic Limit

| Cup Number | 18 | C-211 |
|---|---|---|
| Weight of Cup (g) | 15.34 | 12.56 |
| Weight of Wet Soil and Cup (g) | 32.43 | 25.13 |
| Weight of Dry Soil and Cup (g) | 29.46 | 22.75 |
| Moisure Content (%) | 21.0 | 23.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 42.2 |
| Plastic Limit | 22.2 |
| Plasticity Index | 20.0 |
| USCS Classification | **CL** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 22 + 350 ,Sylhet.

Sample Information:

Test Date: 02.08.2019

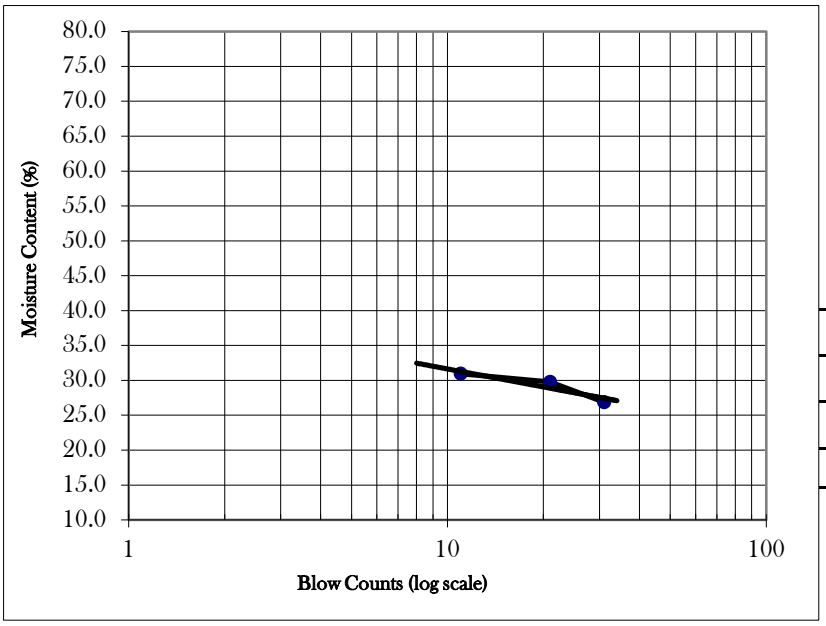
Boring Number: OVP-3.BH-1

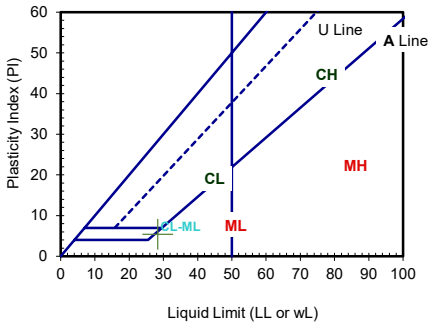
Depth of Sample: 0.0m to 4.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-26 | L-3 | M-1 |
| Weight of Cup (g) | 18.57 | 18.67 | 26.53 |
| Weight of Wet Soil and Cup (g) | 41.42 | 44.56 | 49.38 |
| Weight of Dry Soil and Cup (g) | 36.02 | 38.62 | 44.54 |
| Moisure Content (%) | 30.9 | 29.8 | 26.9 |
| Blow Counts | 11 | 21 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 24 | 19 |
| Weight of Cup (g) | 12.01 | 12.19 |
| Weight of Wet Soil and Cup (g) | 27.95 | 26.17 |
| Weight of Dry Soil and Cup (g) | 24.96 | 23.56 |
| Moisure Content (%) | 23.1 | 23.0 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 28.4 |
| Plastic Limit | 23.0 |
| Plasticity Index | 5.4 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 22 + 350 ,Sylhet.

Sample Information:

Test Date: 02.08.2019

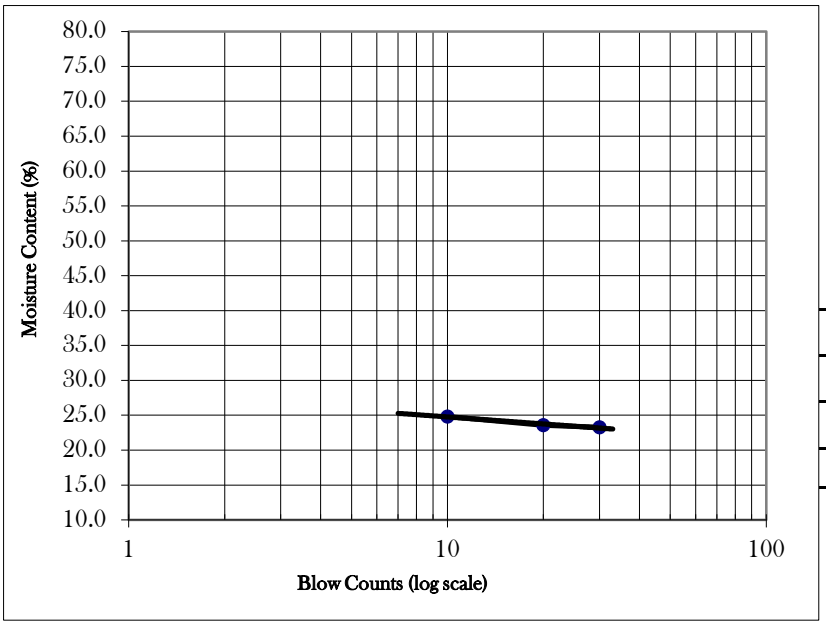
Boring Number: OVP-3.BH-1

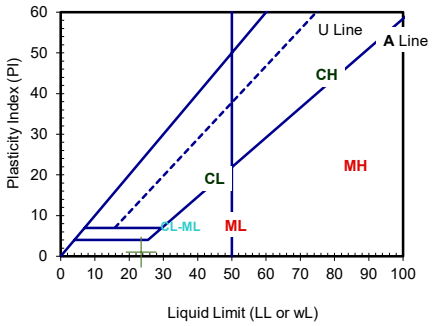
Depth of Sample: 7.0m to 34.5m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-7 | L-9 | L-6 |
| Weight of Cup (g) | 24.56 | 18.15 | 18.05 |
| Weight of Wet Soil and Cup (g) | 48.75 | 44.04 | 42.31 |
| Weight of Dry Soil and Cup (g) | 43.94 | 39.1 | 37.73 |
| Moisure Content (%) | 24.8 | 23.6 | 23.3 |
| Blow Counts | 10 | 20 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 72 | 25 |
| Weight of Cup (g) | 8.16 | 11.14 |
| Weight of Wet Soil and Cup (g) | 23.88 | 29.34 |
| Weight of Dry Soil and Cup (g) | 20.95 | 26.04 |
| Moisure Content (%) | 22.9 | 22.1 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 23.5 |
| Plastic Limit | 22.5 |
| Plasticity Index | 1.0 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 22 + 350 ,Sylhet.

Sample Information:

Test Date: 02.08.2019

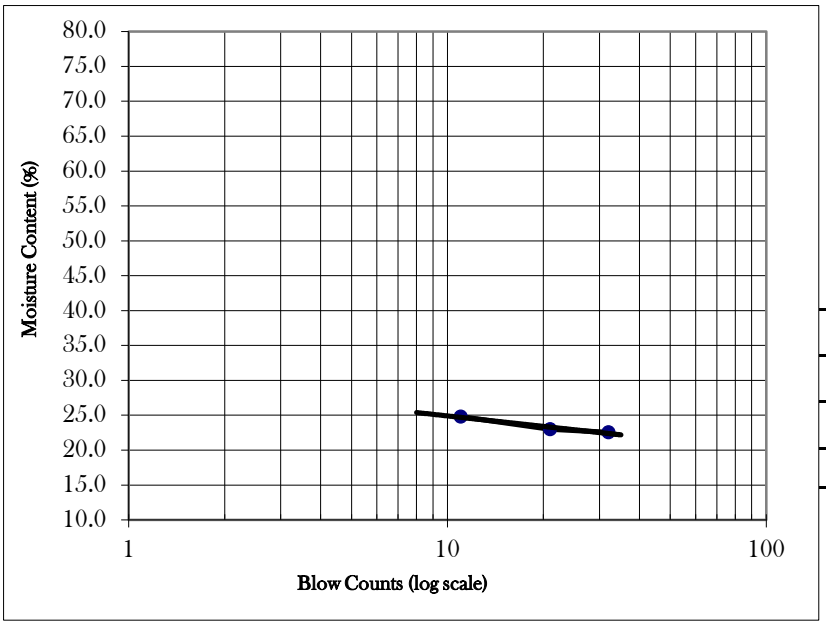
Boring Number: OVP-3.BH-1

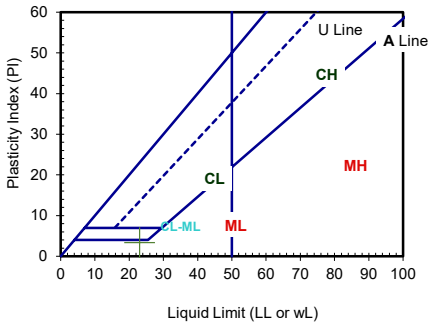
Depth of Sample: 7.0m to 34.5m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-10 | L-15 | N-11 |
| Weight of Cup (g) | 19.25 | 18.38 | 23.88 |
| Weight of Wet Soil and Cup (g) | 43.6 | 40.83 | 46.16 |
| Weight of Dry Soil and Cup (g) | 38.76 | 36.63 | 42.06 |
| Moisure Content (%) | 24.8 | 23.0 | 22.6 |
| Blow Counts | 11 | 21 | 32 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 10 | 30 |
| Weight of Cup (g) | 8.02 | 7.19 |
| Weight of Wet Soil and Cup (g) | 22.85 | 24.48 |
| Weight of Dry Soil and Cup (g) | 20.49 | 21.54 |
| Moisure Content (%) | 18.9 | 20.5 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 23.1 |
| Plastic Limit | 19.7 |
| Plasticity Index | 3.4 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 22+ 450 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

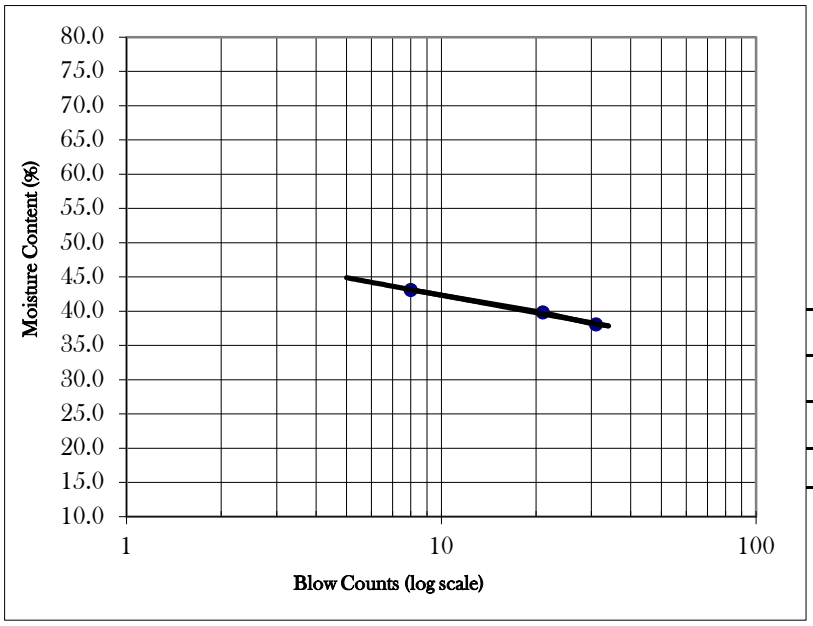
Boring Number: OVP-3, BH-2

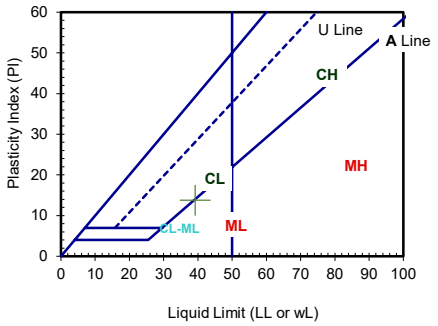
Depth of Sample: 0.0m to 17.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-43 | N-28 | N-12 |
| Weight of Cup (g) | 23.68 | 19.82 | 20.15 |
| Weight of Wet Soil and Cup (g) | 45.33 | 39.44 | 43.85 |
| Weight of Dry Soil and Cup (g) | 38.73 | 33.98 | 37.46 |
| Moisure Content (%) | 43.9 | 38.6 | 36.9 |
| Blow Counts | 8 | 21 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | M-19 | M-35 |
| Weight of Cup (g) | 14.68 | 13.41 |
| Weight of Wet Soil and Cup (g) | 24.61 | 23.55 |
| Weight of Dry Soil and Cup (g) | 22.66 | 21.45 |
| Moisure Content (%) | 24.4 | 26.1 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 38.2 |
| Plastic Limit | 25.3 |
| Plasticity Index | 13.0 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 22+ 450 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: OVP-3, BH-2

Depth of Sample: 23.0m to 36.0m

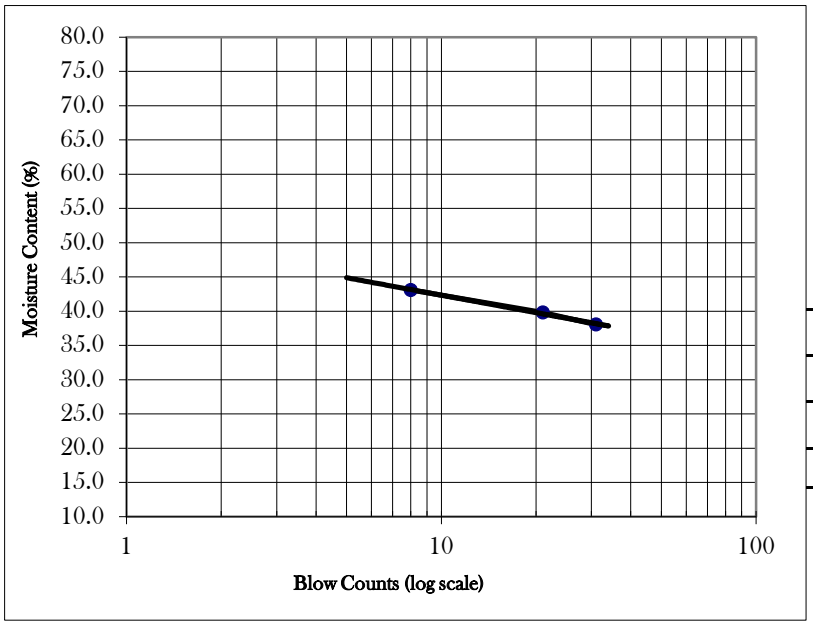
Determination of Liquid Limit

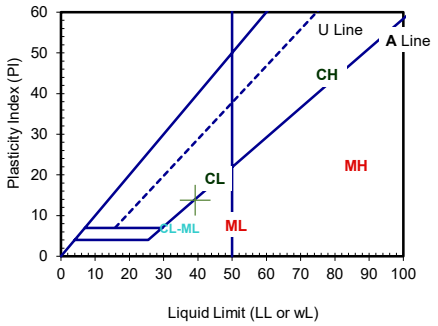
| Cup Number | M-33 | L-26 | N-12 |
|---|---|---|---|
| Weight of Cup (g) | 23.41 | 19.75 | 20.18 |
| Weight of Wet Soil and Cup (g) | 45.28 | 39.54 | 43.75 |
| Weight of Dry Soil and Cup (g) | 38.79 | 33.85 | 37.44 |
| Moisure Content (%) | 42.2 | 40.4 | 36.6 |
| Blow Counts | 8 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | L-22 | N-14 |
|---|---|---|
| Weight of Cup (g) | 14.62 | 13.25 |
| Weight of Wet Soil and Cup (g) | 24.76 | 23.47 |
| Weight of Dry Soil and Cup (g) | 22.68 | 21.43 |
| Moisure Content (%) | 25.8 | 24.9 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 38.5 |
| Plastic Limit | 25.4 |
| Plasticity Index | 13.1 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 27 + 200 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: OVP-4,BH-1

Sample Number:

Depth of Sample: 0.0m to 8.0m

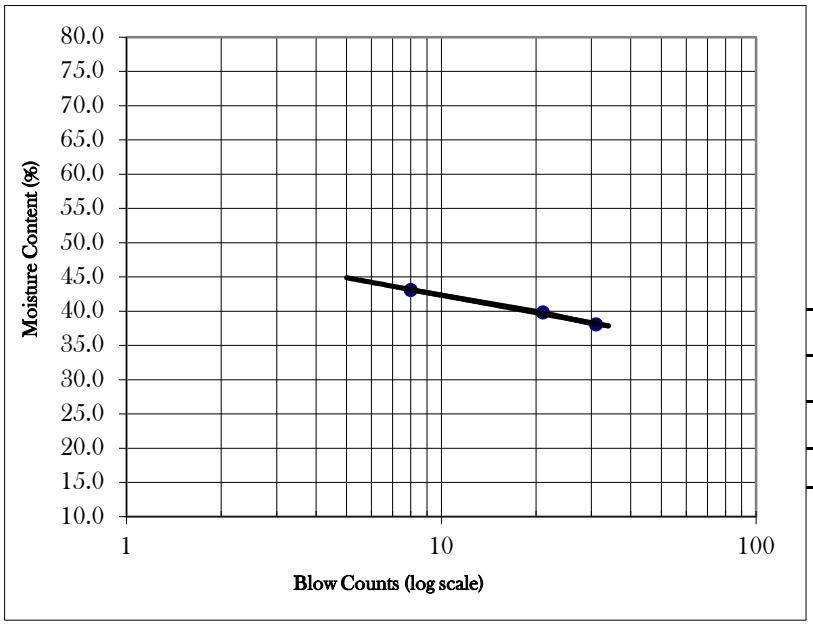
Determination of Liquid Limit

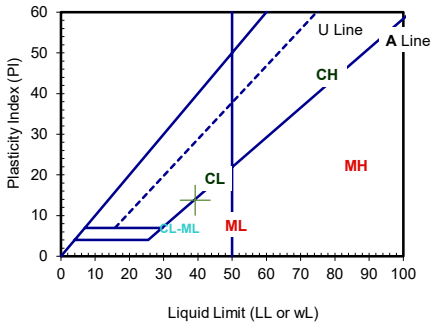
| Cup Number | L-59 | N-90 | N-12 |
|---|---|---|---|
| Weight of Cup (g) | 23.67 | 19.94 | 20.20 |
| Weight of Wet Soil and Cup (g) | 45.25 | 39.57 | 43.86 |
| Weight of Dry Soil and Cup (g) | 38.75 | 33.98 | 37.34 |
| Moisure Content (%) | 43.1 | 39.8 | 38.0 |
| Blow Counts | 8 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | M-15 | M-14 |
|---|---|---|
| Weight of Cup (g) | 14.63 | 13.21 |
| Weight of Wet Soil and Cup (g) | 24.71 | 23.51 |
| Weight of Dry Soil and Cup (g) | 22.66 | 21.43 |
| Moisure Content (%) | 25.5 | 25.3 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 39.2 |
| Plastic Limit | 25.4 |
| Plasticity Index | 13.8 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 27 + 200 ,Sylhet.

Sample Information:

Test Date: 29.03.2019

Boring Number: OVP-4,BH-1

Depth of Sample: 8.0m to 11.0m

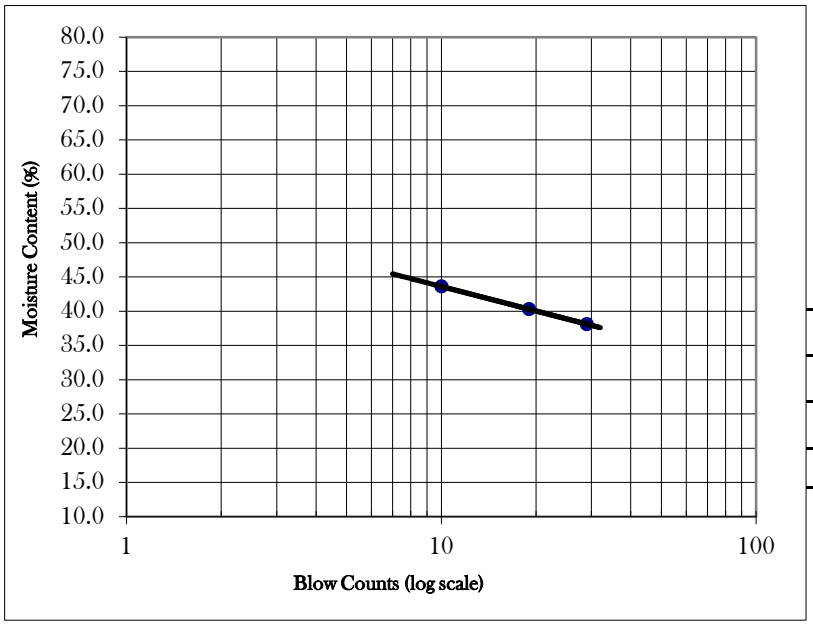
Determination of Liquid Limit

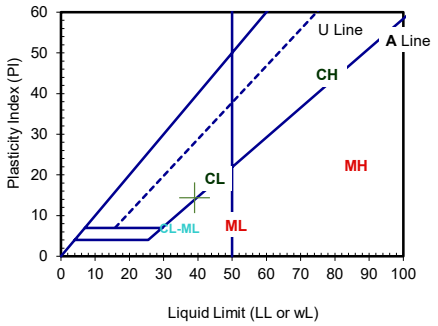
| Cup Number | L-5-2 | L-25 | L-5 |
|---|---|---|---|
| Weight of Cup (g) | 18.31 | 23.63 | 23.16 |
| Weight of Wet Soil and Cup (g) | 38.53 | 52.32 | 45.81 |
| Weight of Dry Soil and Cup (g) | 32.39 | 44.08 | 39.56 |
| Moisure Content (%) | 43.6 | 40.3 | 38.1 |
| Blow Counts | 10 | 19 | 29 |

Determination of Plastic Limit

| Cup Number | M-24 | M-28 |
|---|---|---|
| Weight of Cup (g) | 12.51 | 13.34 |
| Weight of Wet Soil and Cup (g) | 22.69 | 23.77 |
| Weight of Dry Soil and Cup (g) | 20.68 | 21.70 |
| Moisure Content (%) | 24.6 | 24.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 39.0 |
| Plastic Limit | 24.7 |
| Plasticity Index | 14.4 |
| USCS Classification | **CL** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

Client:Roads and Highways Department (RHD)

**Location:** Chainage - 27 + 200 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: OVP-4, BH-1

Depth of Sample: 11.0m to 26.0m

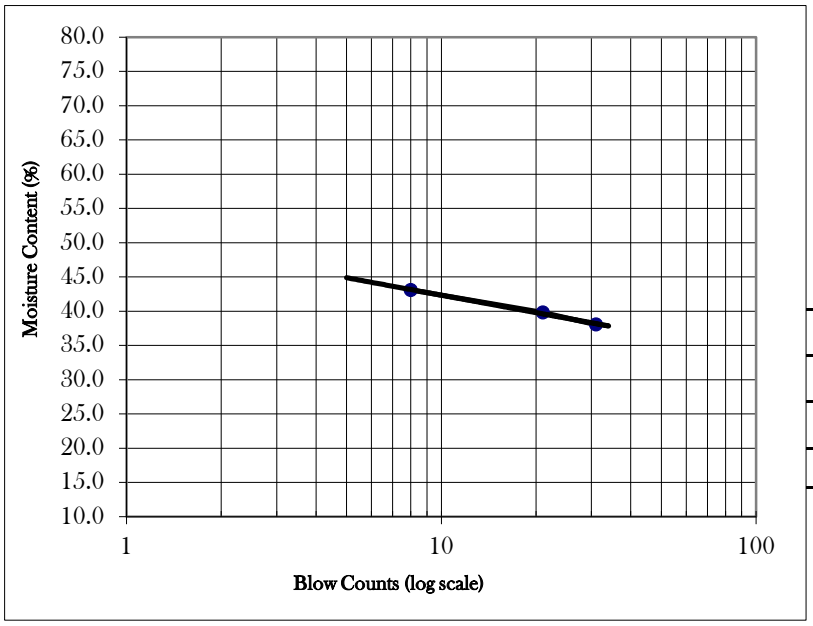
Determination of Liquid Limit

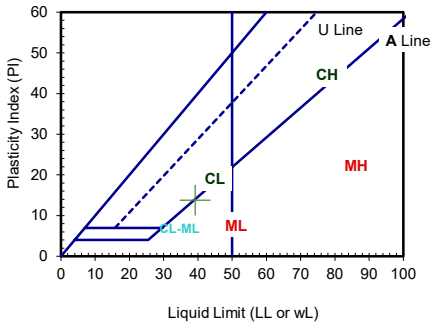
| Cup Number | M-37 | L-65 | N-44 |
|---|---|---|---|
| Weight of Cup (g) | 23.42 | 19.68 | 20.25 |
| Weight of Wet Soil and Cup (g) | 45.21 | 39.58 | 43.75 |
| Weight of Dry Soil and Cup (g) | 38.88 | 33.94 | 37.39 |
| Moisure Content (%) | 40.9 | 39.6 | 37.1 |
| Blow Counts | 8 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | L-22 | N-38 |
|---|---|---|
| Weight of Cup (g) | 14.68 | 13.34 |
| Weight of Wet Soil and Cup (g) | 24.72 | 23.52 |
| Weight of Dry Soil and Cup (g) | 22.68 | 21.41 |
| Moisure Content (%) | 25.5 | 26.1 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 38.4 |
| Plastic Limit | 25.8 |
| Plasticity Index | 12.6 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 27 + 300 ,Sylhet.

Sample Information:

Test Date: 28.03.2019

Boring Number: OVP-4,BH-2

Sample Number:

Depth of Sample: 0.0m to 14.0m

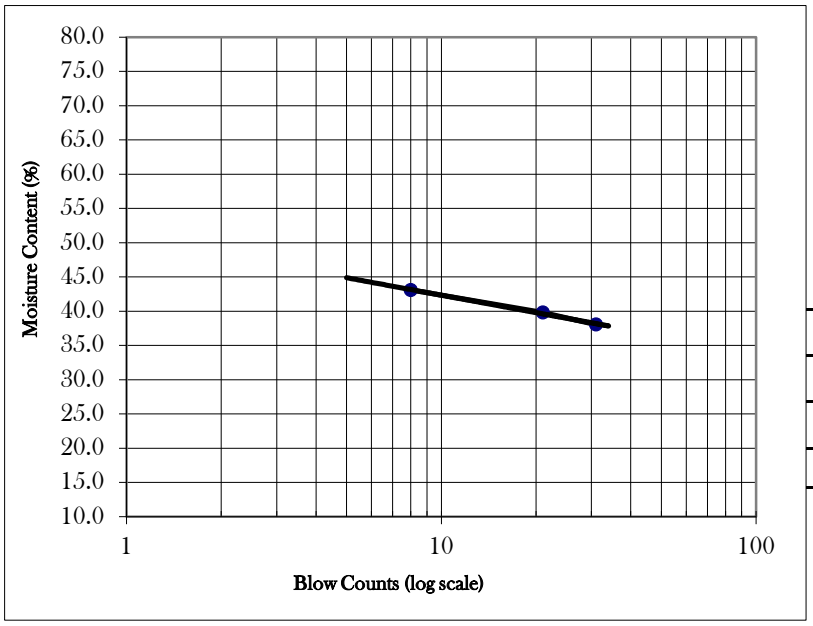
Determination of Liquid Limit

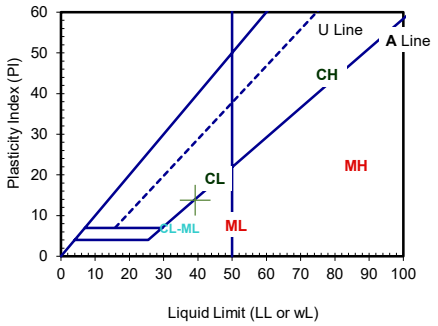
| Cup Number | M-42 | L-33 | N-12 |
|---|---|---|---|
| Weight of Cup (g) | 23.67 | 19.94 | 20.20 |
| Weight of Wet Soil and Cup (g) | 45.23 | 39.55 | 43.78 |
| Weight of Dry Soil and Cup (g) | 38.75 | 33.98 | 37.34 |
| Moisure Content (%) | 43.0 | 39.7 | 37.6 |
| Blow Counts | 8 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | N-34 | M-14 |
|---|---|---|
| Weight of Cup (g) | 14.63 | 13.21 |
| Weight of Wet Soil and Cup (g) | 24.71 | 23.51 |
| Weight of Dry Soil and Cup (g) | 22.66 | 21.43 |
| Moisure Content (%) | 25.5 | 25.3 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 38.9 |
| Plastic Limit | 25.4 |
| Plasticity Index | 13.5 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 32+ 050 ,Sylhet.

Sample Information:

Test Date: 29.03.2019

Boring Number: OVP-5,BH-1

Depth of Sample: 0.0m to 23.0m

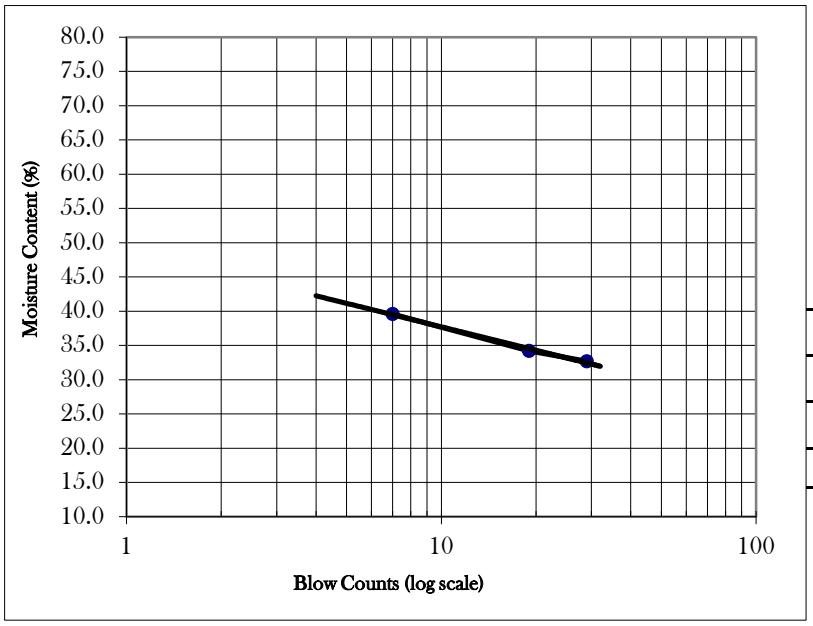
Determination of Liquid Limit

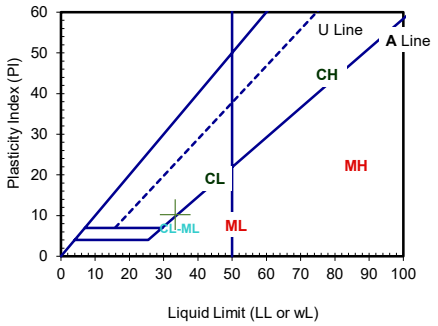
| Cup Number | 409 | M-6 | 410 |
|---|---|---|---|
| Weight of Cup (g) | 19.55 | 23.55 | 17.53 |
| Weight of Wet Soil and Cup (g) | 45.89 | 47.10 | 45.82 |
| Weight of Dry Soil and Cup (g) | 38.42 | 41.1 | 38.85 |
| Moisure Content (%) | 39.6 | 34.2 | 32.7 |
| Blow Counts | 7 | 19 | 29 |

Determination of Plastic Limit

| Cup Number | N-1 | N |
|---|---|---|
| Weight of Cup (g) | 7.05 | 11.76 |
| Weight of Wet Soil and Cup (g) | 17.63 | 23.86 |
| Weight of Dry Soil and Cup (g) | 15.65 | 21.57 |
| Moisure Content (%) | 23.0 | 23.3 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 33.4 |
| Plastic Limit | 23.2 |
| Plasticity Index | 10.2 |
| USCS Classification | **CL** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 32 + 200 ,Sylhet.

Sample Information:

Test Date: 02.08.2019

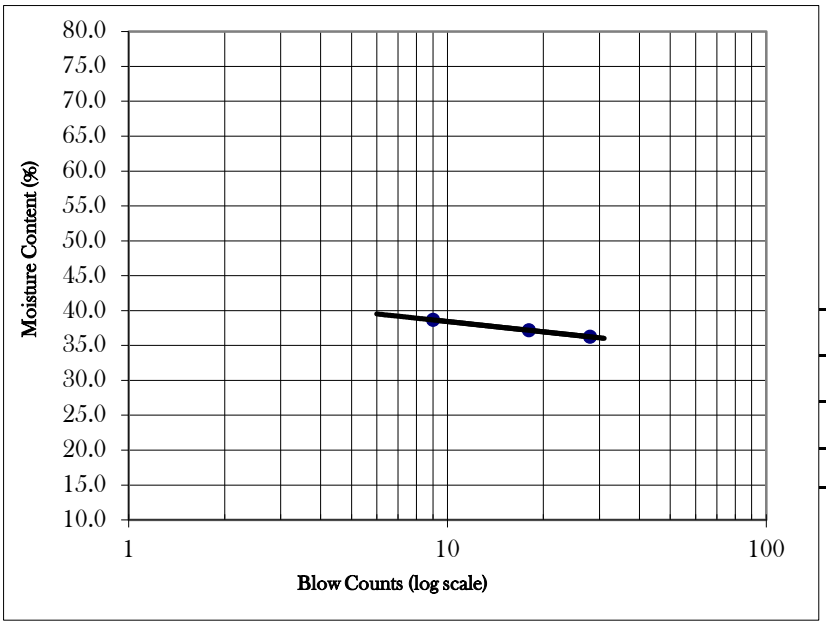
Boring Number: OVP-5.BH-3

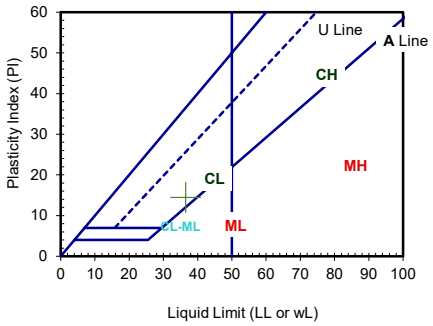
Depth of Sample: 0.0m to 32.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | N-40 | L-14 | L-4 |
| Weight of Cup (g) | 24 | 18.69 | 18.28 |
| Weight of Wet Soil and Cup (g) | 45.95 | 42.08 | 37.79 |
| Weight of Dry Soil and Cup (g) | 39.83 | 35.74 | 32.60 |
| Moisure Content (%) | 38.7 | 37.2 | 36.2 |
| Blow Counts | 9 | 18 | 28 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 8 | L-5 |
| Weight of Cup (g) | 10.67 | 18.99 |
| Weight of Wet Soil and Cup (g) | 26.13 | 33.69 |
| Weight of Dry Soil and Cup (g) | 23.14 | 31.22 |
| Moisure Content (%) | 24.0 | 20.2 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 36.5 |
| Plastic Limit | 22.1 |
| Plasticity Index | 14.4 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

**(ASTM Designation:D4318)**

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 32 + 300 ,Sylhet.

Sample Information:

Test Date: 02.08.2019

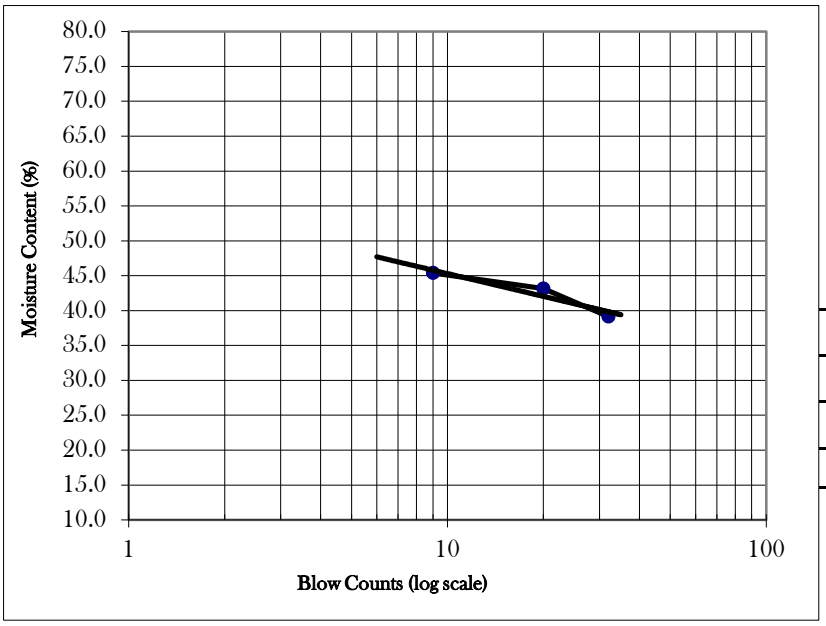
Boring Number: OVP-5.BH-2

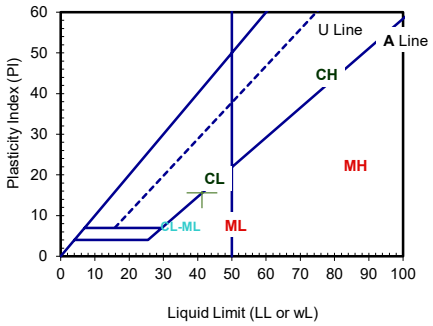
Depth of Sample: 0.0m to 12.0 m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | D-1 | M-32 | L-8 |
| Weight of Cup (g) | 20.39 | 23.62 | 18.14 |
| Weight of Wet Soil and Cup (g) | 44.35 | 47.74 | 42.85 |
| Weight of Dry Soil and Cup (g) | 36.87 | 40.47 | 35.90 |
| Moisure Content (%) | 45.4 | 43.1 | 39.1 |
| Blow Counts | 9 | 20 | 32 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 11 | N-7 |
| Weight of Cup (g) | 8.58 | 7.01 |
| Weight of Wet Soil and Cup (g) | 24.19 | 20.59 |
| Weight of Dry Soil and Cup (g) | 21.02 | 17.79 |
| Moisure Content (%) | 25.5 | 26.0 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 41.3 |
| Plastic Limit | 25.7 |
| Plasticity Index | 15.6 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 32 + 300 ,Sylhet.

Sample Information:

Test Date: 02.08.2019

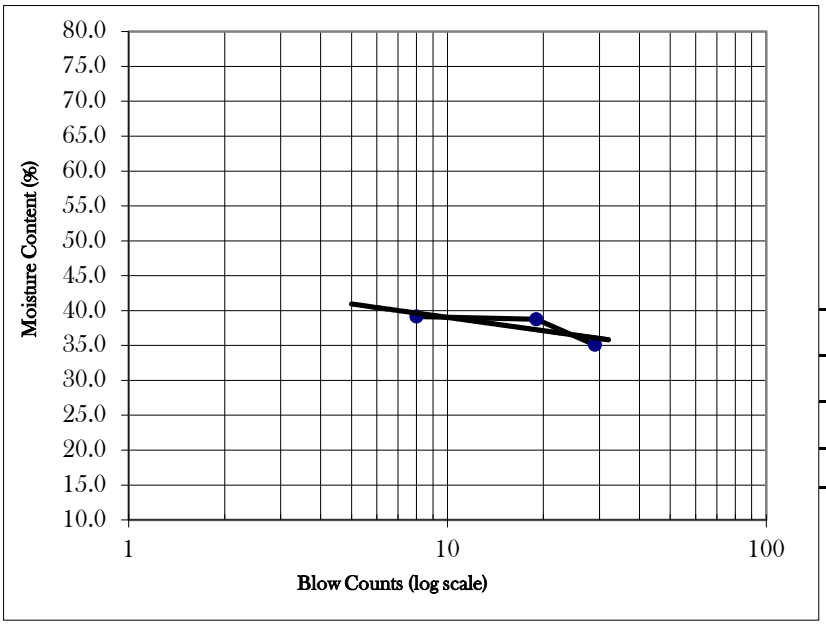
Boring Number: OVP-5.BH-2

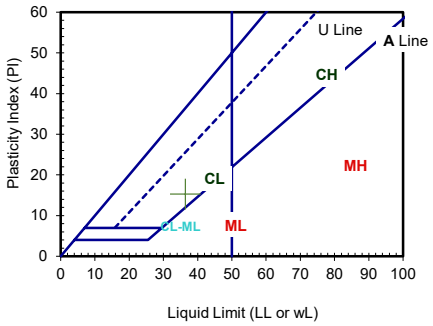
Depth of Sample: 12.0m to 24.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | 416 | L-12 | 420 |
| Weight of Cup (g) | 18.72 | 18.77 | 24.35 |
| Weight of Wet Soil and Cup (g) | 41.93 | 44.76 | 46.76 |
| Weight of Dry Soil and Cup (g) | 35.4 | 37.5 | 40.94 |
| Moisure Content (%) | 39.1 | 38.8 | 35.1 |
| Blow Counts | 8 | 19 | 29 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | N-8 | 30-2 |
| Weight of Cup (g) | 7.01 | 11.45 |
| Weight of Wet Soil and Cup (g) | 23.85 | 27.51 |
| Weight of Dry Soil and Cup (g) | 20.90 | 24.71 |
| Moisure Content (%) | 21.2 | 21.1 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 36.5 |
| Plastic Limit | 21.2 |
| Plasticity Index | 15.3 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Chainage - 32 + 300 ,Sylhet.

Sample Information:

Test Date: 02.08.2019

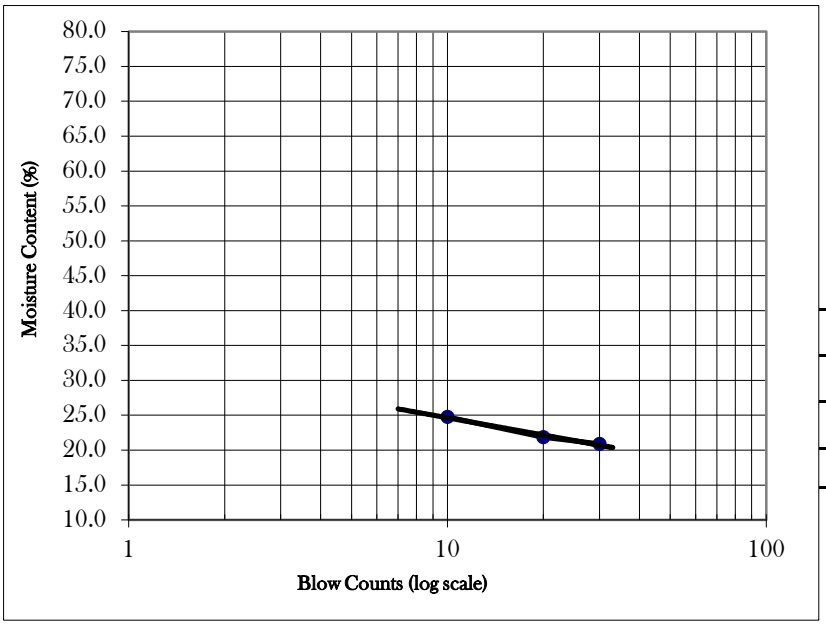
Boring Number: OVP-5.BH-2

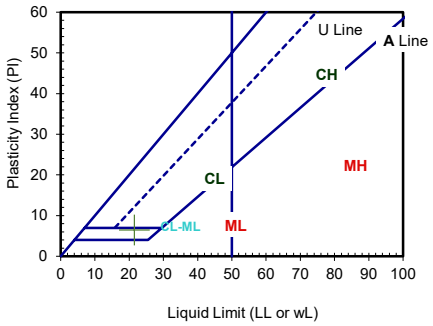
Depth of Sample: 24.0m to 40.5m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-34 | L-2 | 417 |
| Weight of Cup (g) | 26.96 | 19.08 | 18.62 |
| Weight of Wet Soil and Cup (g) | 58.77 | 41.88 | 41.65 |
| Weight of Dry Soil and Cup (g) | 52.46 | 37.79 | 37.67 |
| Moisure Content (%) | 24.7 | 21.9 | 20.9 |
| Blow Counts | 10 | 20 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 406 | 405 |
| Weight of Cup (g) | 18.36 | 19.34 |
| Weight of Wet Soil and Cup (g) | 46.02 | 48.36 |
| Weight of Dry Soil and Cup (g) | 42.34 | 44.62 |
| Moisure Content (%) | 15.3 | 14.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 21.5 |
| Plastic Limit | 15.1 |
| Plasticity Index | 6.5 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

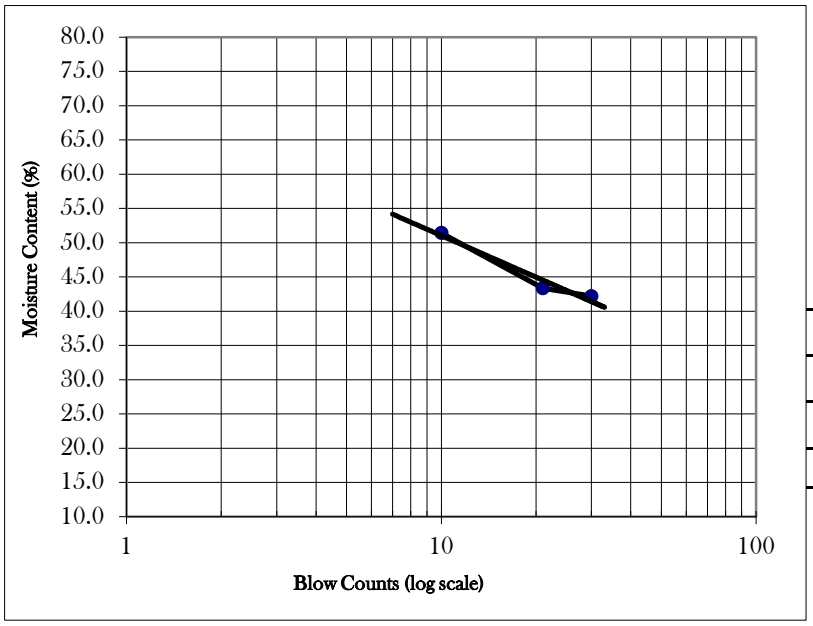
Boring Number: BR-2. BH-10

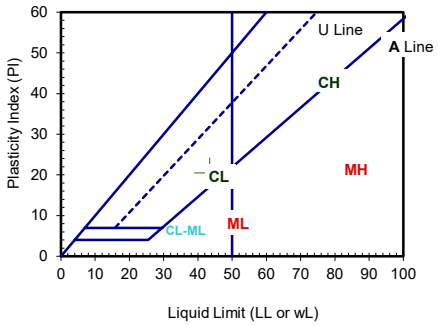
Depth of Sample: 0.0m to 28.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-15 | M-32 | 409 |
| Weight of Cup (g) | 18.37 | 23.62 | 18.85 |
| Weight of Wet Soil and Cup (g) | 35.95 | 44.05 | 40.01 |
| Weight of Dry Soil and Cup (g) | 29.98 | 37.87 | 33.73 |
| Moisure Content (%) | 51.4 | 43.4 | 42.2 |
| Blow Counts | 10 | 21 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 19 | 8 |
| Weight of Cup (g) | 12.17 | 10.65 |
| Weight of Wet Soil and Cup (g) | 23.01 | 22.30 |
| Weight of Dry Soil and Cup (g) | 20.98 | 20.13 |
| Moisure Content (%) | 23.0 | 22.9 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 43.5 |
| Plastic Limit | 23.0 |
| Plasticity Index | 20.5 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

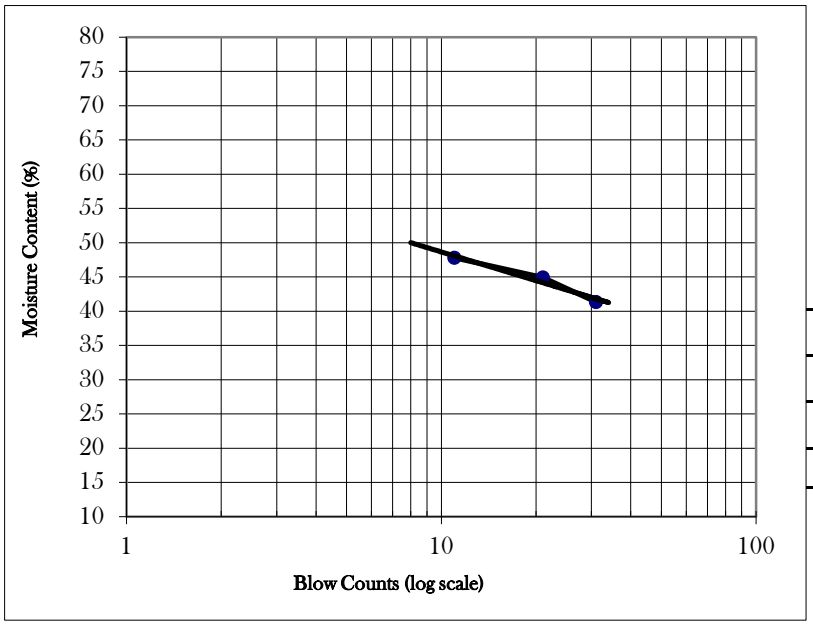
Boring Number: BR-2.BH-10

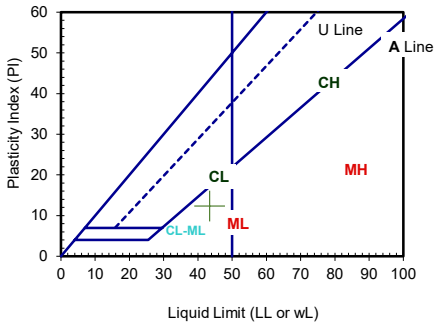
Depth of Sample: 28.0m to 37.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-2 | N-40 | M-21 |
| Weight of Cup (g) | 19.11 | 23.89 | 24.26 |
| Weight of Wet Soil and Cup (g) | 37.73 | 46.48 | 47.22 |
| Weight of Dry Soil and Cup (g) | 31.75 | 39.44 | 40.55 |
| Moisure Content (%) | 47.3 | 45.3 | 40.9 |
| Blow Counts | 11 | 21 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 420 | 406 |
| Weight of Cup (g) | 24.39 | 18.31 |
| Weight of Wet Soil and Cup (g) | 40.75 | 35.37 |
| Weight of Dry Soil and Cup (g) | 36.75 | 31.42 |
| Moisure Content (%) | 32.4 | 30.1 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 43.2 |
| Plastic Limit | 31.2 |
| Plasticity Index | 12.0 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

Boring Number: BR-2. BH-13

Depth of Sample: 0.0m to 23.0m

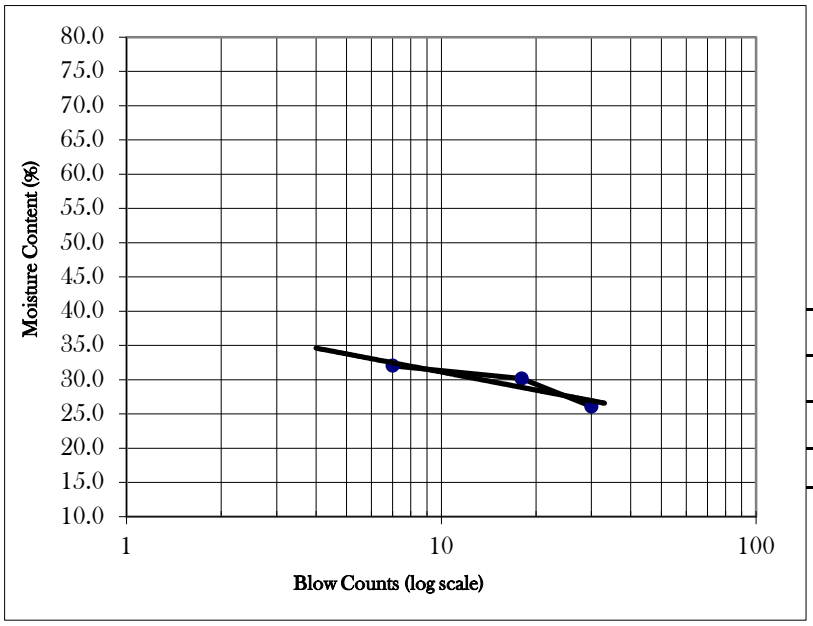
Determination of Liquid Limit

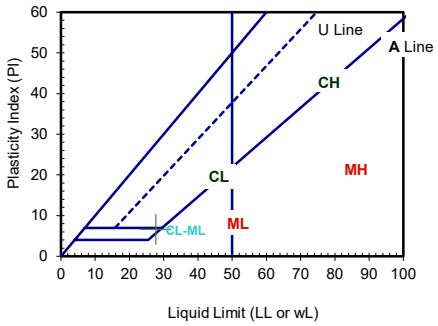
| Cup Number | M-1 | M-7 | N-90 |
|---|---|---|---|
| Weight of Cup (g) | 27.36 | 25.61 | 28.66 |
| Weight of Wet Soil and Cup (g) | 41.26 | 43.28 | 48.72 |
| Weight of Dry Soil and Cup (g) | 36.52 | 38.71 | 44.65 |
| Moisure Content (%) | 51.7 | 34.9 | 25.5 |
| Blow Counts | 7 | 18 | 30 |

Determination of Plastic Limit

| Cup Number | M-72 | 10 |
|---|---|---|
| Weight of Cup (g) | 6.43 | 8.61 |
| Weight of Wet Soil and Cup (g) | 19.76 | 18.46 |
| Weight of Dry Soil and Cup (g) | 17.76 | 16.85 |
| Moisure Content (%) | 17.7 | 19.5 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 29.8 |
| Plastic Limit | 18.6 |
| Plasticity Index | 11.2 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

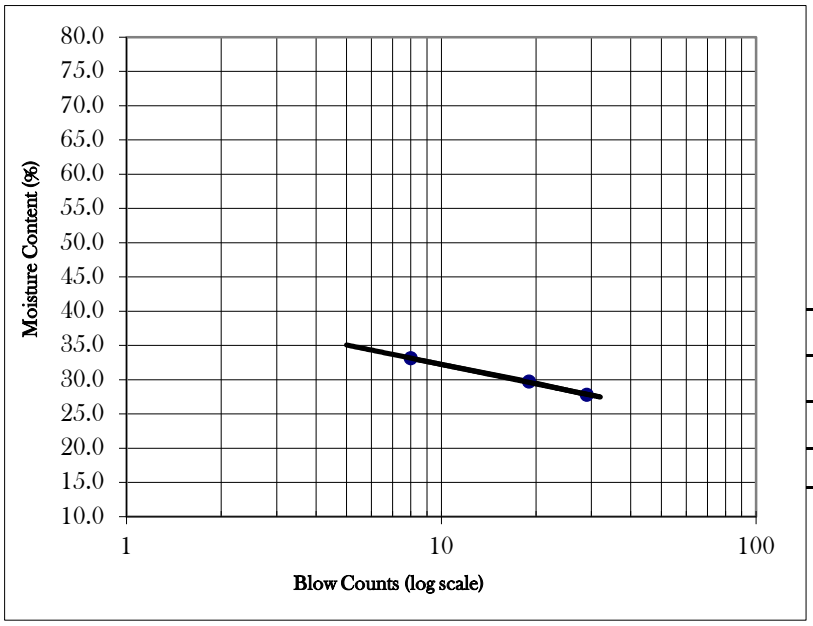
Boring Number: BR-2. BH5

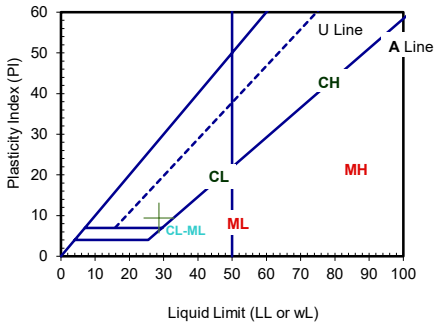
Depth of Sample: 0.0m to 31.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-8 | M-33 | L-19 |
| Weight of Cup (g) | 18.16 | 23.93 | 18.29 |
| Weight of Wet Soil and Cup (g) | 44.12 | 48.39 | 42.35 |
| Weight of Dry Soil and Cup (g) | 37.56 | 42.75 | 37.11 |
| Moisure Content (%) | 33.8 | 30.0 | 27.8 |
| Blow Counts | 8 | 19 | 29 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 20 | N-6 |
| Weight of Cup (g) | 11.42 | 11.37 |
| Weight of Wet Soil and Cup (g) | 28.72 | 27.66 |
| Weight of Dry Soil and Cup (g) | 25.82 | 25.11 |
| Moisure Content (%) | 20.1 | 18.6 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 28.7 |
| Plastic Limit | 19.3 |
| Plasticity Index | 9.4 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

Boring Number: BR-02. BH-03

Depth of Sample: 0.0m to 3.0m

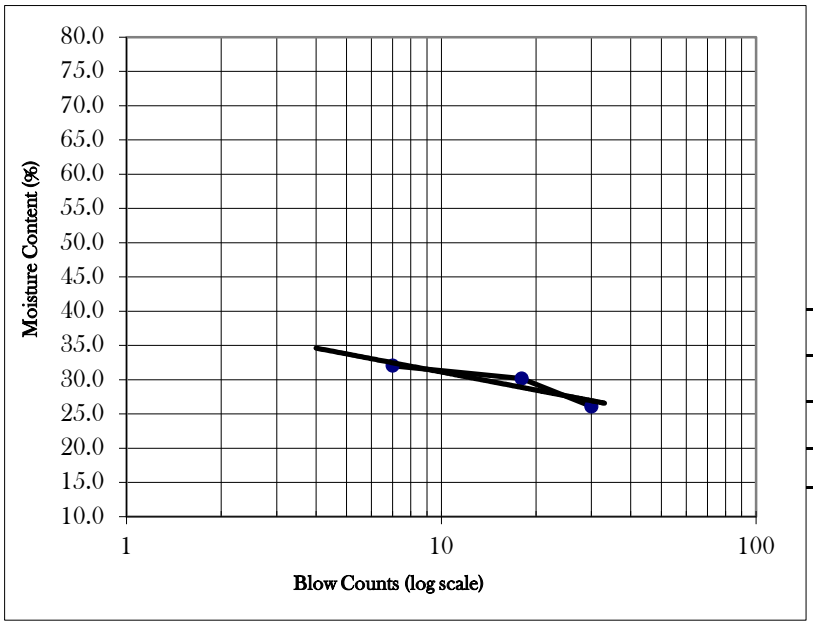
Determination of Liquid Limit

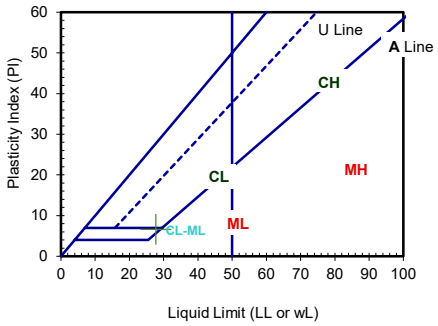
| Cup Number | M-1 | M-7 | N-90 |
|---|---|---|---|
| Weight of Cup (g) | 26.54 | 24.56 | 27.36 |
| Weight of Wet Soil and Cup (g) | 40.35 | 43.07 | 48.91 |
| Weight of Dry Soil and Cup (g) | 37 | 38.78 | 44.45 |
| Moisure Content (%) | 32.0 | 30.2 | 26.1 |
| Blow Counts | 7 | 18 | 30 |

Determination of Plastic Limit

| Cup Number | M-72 | 10 |
|---|---|---|
| Weight of Cup (g) | 8.15 | 8.01 |
| Weight of Wet Soil and Cup (g) | 19.96 | 18.67 |
| Weight of Dry Soil and Cup (g) | 17.88 | 16.83 |
| Moisure Content (%) | 21.4 | 20.9 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 27.7 |
| Plastic Limit | 21.1 |
| Plasticity Index | 6.6 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

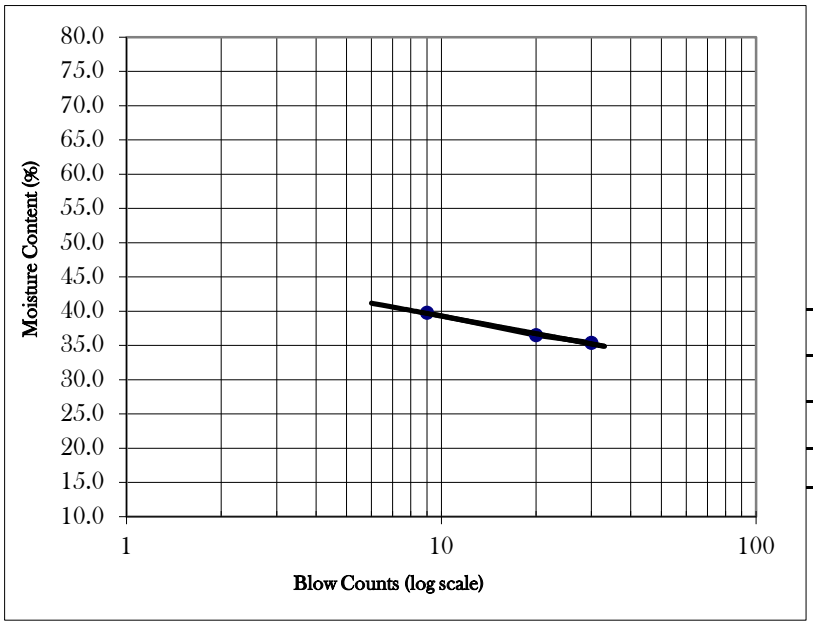
Boring Number: BR-2. BH-4

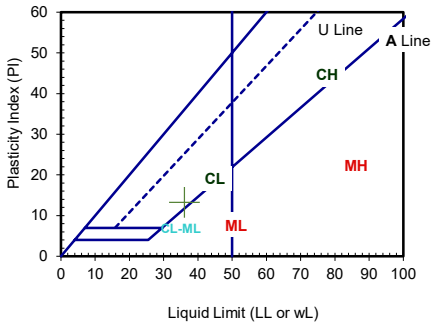
Depth of Sample: 0.0m to 20.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-28 | 416 | L-20 |
| Weight of Cup (g) | 28.78 | 18.74 | 17.50 |
| Weight of Wet Soil and Cup (g) | 50.68 | 41.90 | 39.04 |
| Weight of Dry Soil and Cup (g) | 44.45 | 35.71 | 33.41 |
| Moisure Content (%) | 39.8 | 36.5 | 35.4 |
| Blow Counts | 9 | 20 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 19-9 | 25 |
| Weight of Cup (g) | 10.63 | 11.12 |
| Weight of Wet Soil and Cup (g) | 22.75 | 24.35 |
| Weight of Dry Soil and Cup (g) | 20.49 | 21.90 |
| Moisure Content (%) | 22.9 | 22.7 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 36.1 |
| Plastic Limit | 22.8 |
| Plasticity Index | 13.3 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

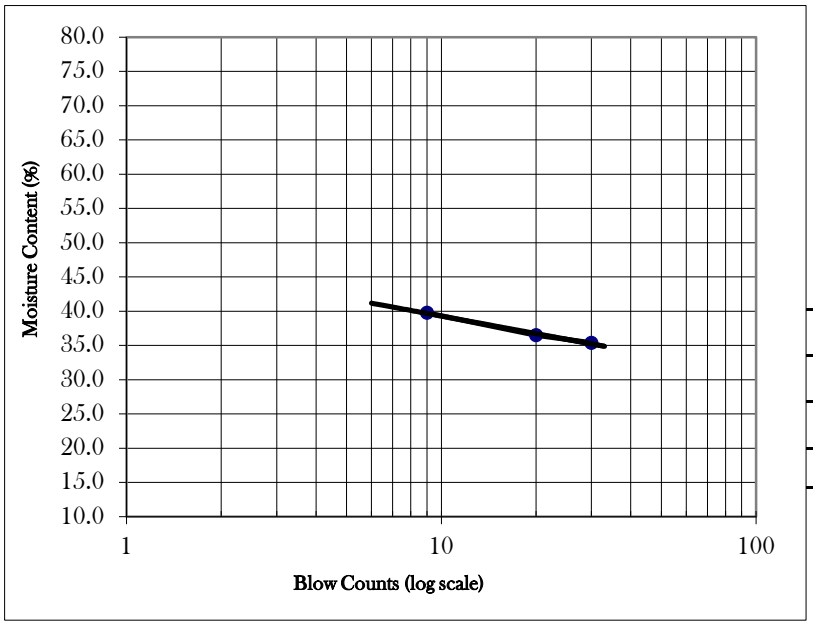
Boring Number: BR-2.BH-6

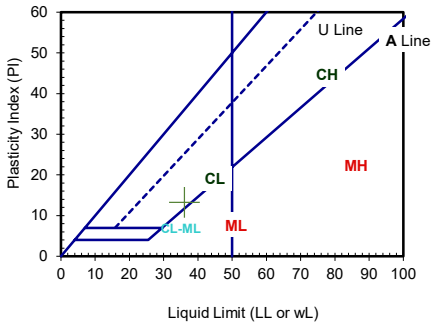
Depth of Sample: 0.0m to 20.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-28 | 416 | L-20 |
| Weight of Cup (g) | 28.78 | 18.74 | 17.50 |
| Weight of Wet Soil and Cup (g) | 50.52 | 41.86 | 39.11 |
| Weight of Dry Soil and Cup (g) | 44.53 | 35.71 | 33.47 |
| Moisure Content (%) | 38.0 | 36.2 | 35.3 |
| Blow Counts | 9 | 20 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 19-9 | 25 |
| Weight of Cup (g) | 10.63 | 11.12 |
| Weight of Wet Soil and Cup (g) | 22.71 | 24.43 |
| Weight of Dry Soil and Cup (g) | 20.49 | 21.90 |
| Moisure Content (%) | 22.5 | 23.5 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 35.8 |
| Plastic Limit | 23.0 |
| Plasticity Index | 12.8 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

Boring Number: BR-2.BH-7

Depth of Sample: 0.0m to 23.0m

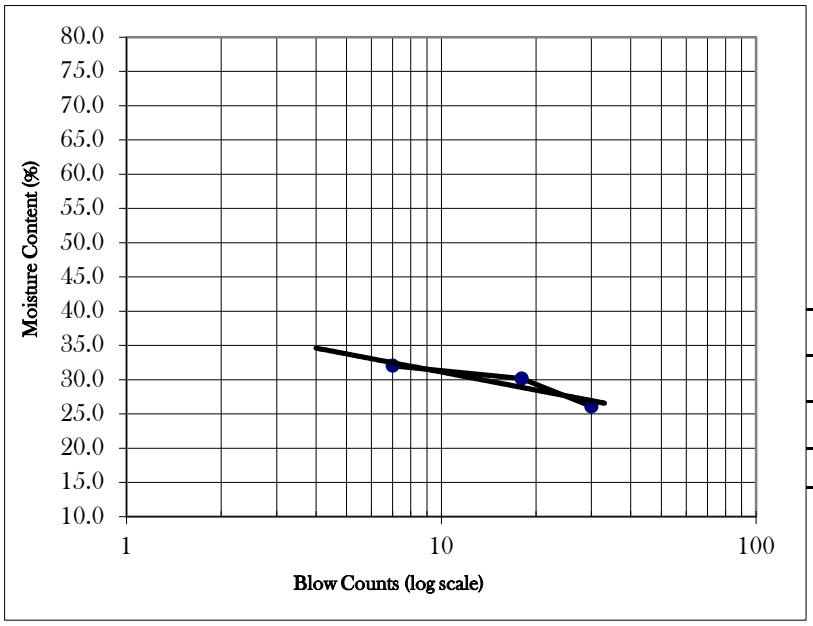
Determination of Liquid Limit

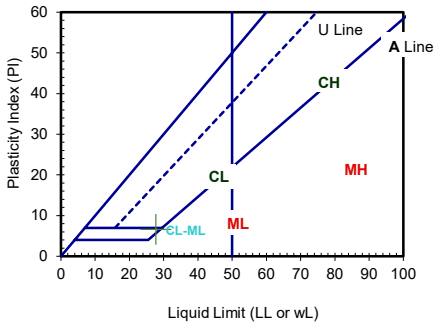
| Cup Number | M-1 | M-7 | N-90 |
|---|---|---|---|
| Weight of Cup (g) | 26.54 | 24.56 | 27.36 |
| Weight of Wet Soil and Cup (g) | 41.21 | 43.12 | 48.64 |
| Weight of Dry Soil and Cup (g) | 36.54 | 38.78 | 44.61 |
| Moisure Content (%) | 46.7 | 30.5 | 23.4 |
| Blow Counts | 7 | 18 | 30 |

Determination of Plastic Limit

| Cup Number | M-72 | 10 |
|---|---|---|
| Weight of Cup (g) | 8.15 | 8.01 |
| Weight of Wet Soil and Cup (g) | 19.76 | 18.55 |
| Weight of Dry Soil and Cup (g) | 17.69 | 16.83 |
| Moisure Content (%) | 21.7 | 19.5 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 26.8 |
| Plastic Limit | 20.6 |
| Plasticity Index | 6.2 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

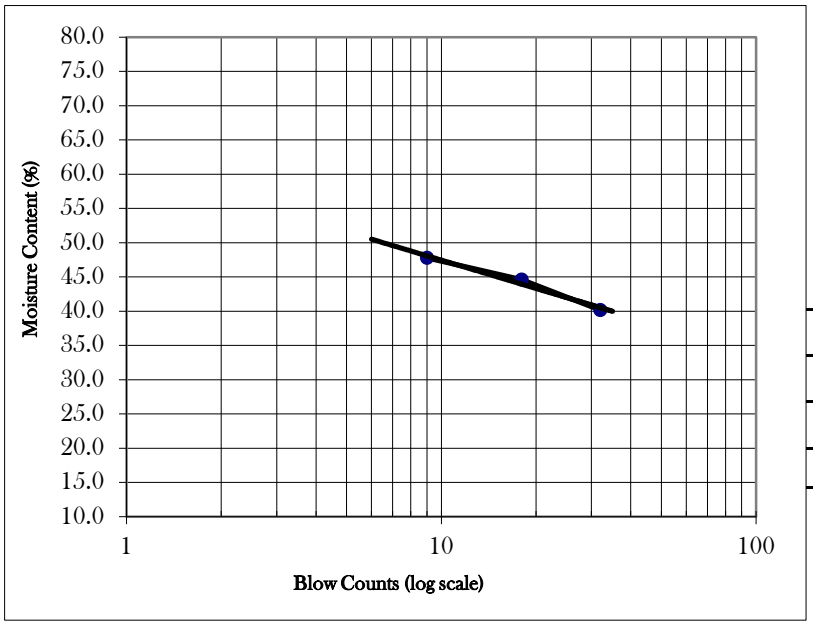
Boring Number: BR-2. BH-9

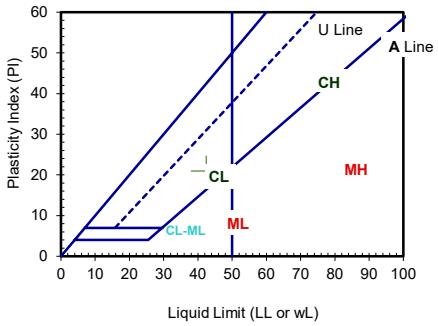
Depth of Sample: 0.0m to 23.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-11 | M-24 | L-9 |
| Weight of Cup (g) | 18.37 | 24.01 | 18.16 |
| Weight of Wet Soil and Cup (g) | 38.38 | 38.53 | 36.10 |
| Weight of Dry Soil and Cup (g) | 31.91 | 34.05 | 30.96 |
| Moisure Content (%) | 47.8 | 44.6 | 40.2 |
| Blow Counts | 9 | 18 | 32 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | L-14 | M-3 |
| Weight of Cup (g) | 18.68 | 29.37 |
| Weight of Wet Soil and Cup (g) | 30.53 | 39.19 |
| Weight of Dry Soil and Cup (g) | 28.44 | 37.45 |
| Moisure Content (%) | 21.4 | 21.5 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 42.4 |
| Plastic Limit | 21.5 |
| Plasticity Index | 21.0 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

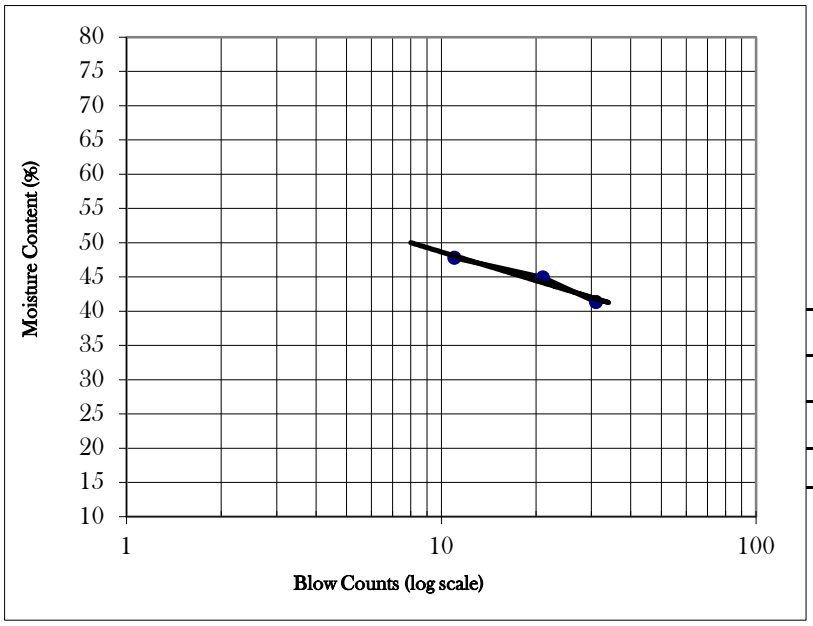
Boring Number: BR-2. BH-8

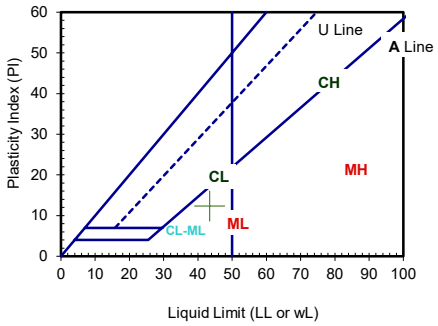
Depth of Sample: 0.0m to 26.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-2 | N-40 | M-21 |
| Weight of Cup (g) | 19.08 | 24.00 | 24.15 |
| Weight of Wet Soil and Cup (g) | 37.85 | 46.42 | 47.26 |
| Weight of Dry Soil and Cup (g) | 31.78 | 39.47 | 40.50 |
| Moisure Content (%) | 47.8 | 44.9 | 41.3 |
| Blow Counts | 11 | 21 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 420 | 406 |
| Weight of Cup (g) | 24.36 | 18.35 |
| Weight of Wet Soil and Cup (g) | 40.63 | 35.58 |
| Weight of Dry Soil and Cup (g) | 36.84 | 31.42 |
| Moisure Content (%) | 30.4 | 31.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 43.4 |
| Plastic Limit | 31.1 |
| Plasticity Index | 12.3 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

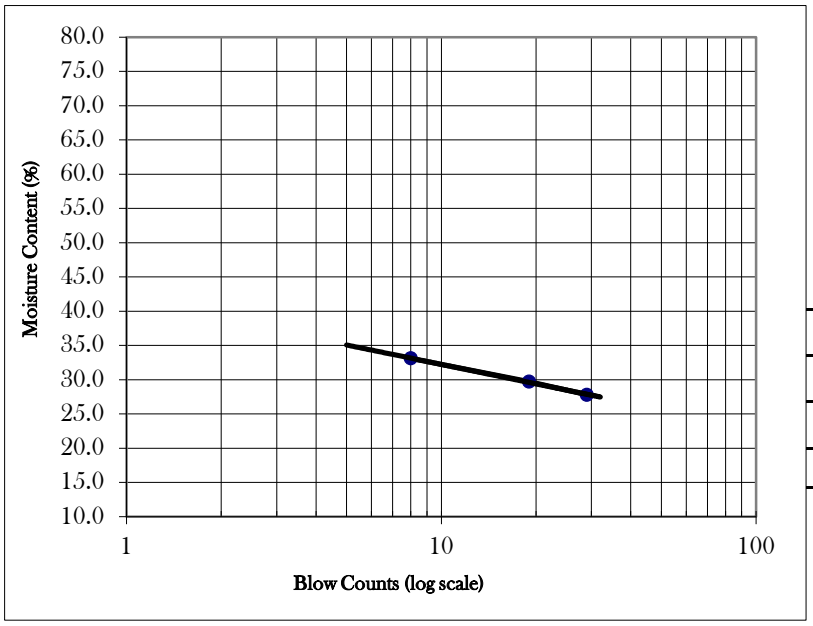
Boring Number: BR-2. BH-12

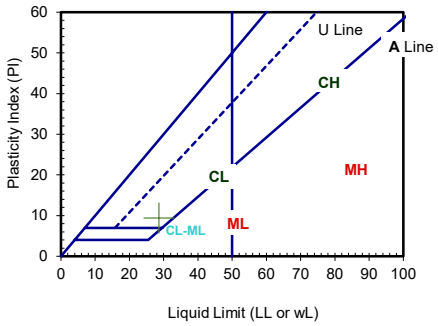
Depth of Sample: 0.0m to 16.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-8 | M-33 | L-19 |
| Weight of Cup (g) | 18.16 | 23.93 | 18.29 |
| Weight of Wet Soil and Cup (g) | 44.05 | 48.34 | 42.28 |
| Weight of Dry Soil and Cup (g) | 37.61 | 42.75 | 37.06 |
| Moisure Content (%) | 33.1 | 29.7 | 27.8 |
| Blow Counts | 8 | 19 | 29 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 20 | N-6 |
| Weight of Cup (g) | 11.42 | 11.37 |
| Weight of Wet Soil and Cup (g) | 28.72 | 27.66 |
| Weight of Dry Soil and Cup (g) | 25.89 | 25.08 |
| Moisure Content (%) | 19.6 | 18.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 28.6 |
| Plastic Limit | 19.2 |
| Plasticity Index | 9.4 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

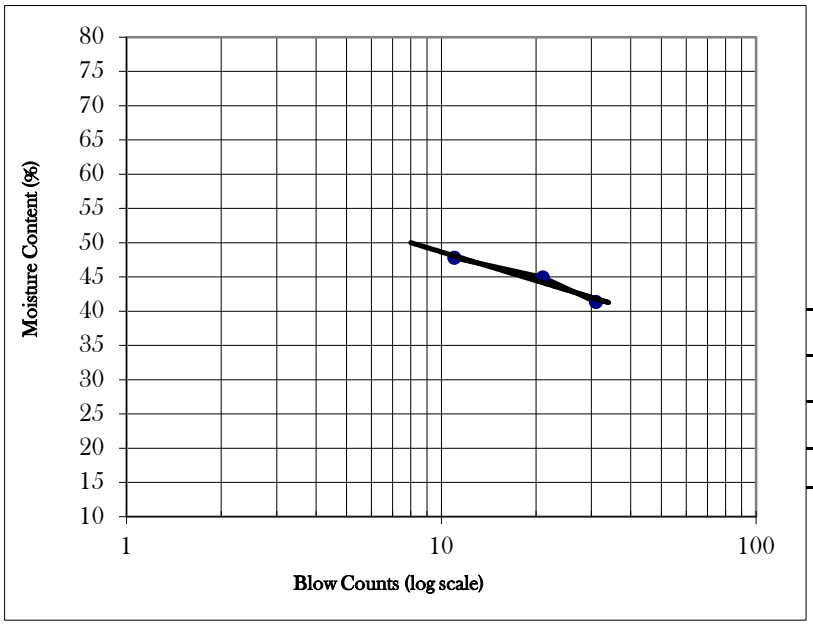
Boring Number: BR-2.BH-11

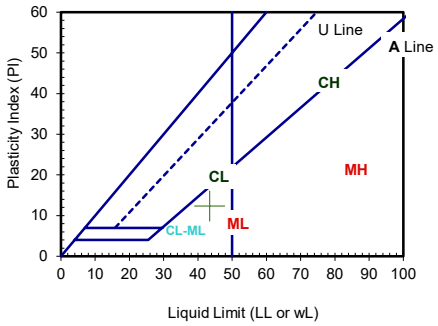
Depth of Sample: 0.0m to 20.0m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-2 | N-40 | M-21 |
| Weight of Cup (g) | 18.98 | 24.06 | 24.61 |
| Weight of Wet Soil and Cup (g) | 37.51 | 46.48 | 46.86 |
| Weight of Dry Soil and Cup (g) | 31.24 | 39.62 | 40.64 |
| Moisure Content (%) | 51.1 | 44.1 | 38.8 |
| Blow Counts | 11 | 21 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | 420 | 406 |
| Weight of Cup (g) | 24.52 | 18.33 |
| Weight of Wet Soil and Cup (g) | 40.75 | 35.46 |
| Weight of Dry Soil and Cup (g) | 36.88 | 31.42 |
| Moisure Content (%) | 31.3 | 30.9 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 42.2 |
| Plastic Limit | 31.1 |
| Plasticity Index | 11.1 |
| USCS Classification | ML |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 31.03.2019

Boring Number: UP - 01, BH - 01

Depth of Sample: 0.0m to 15.0m

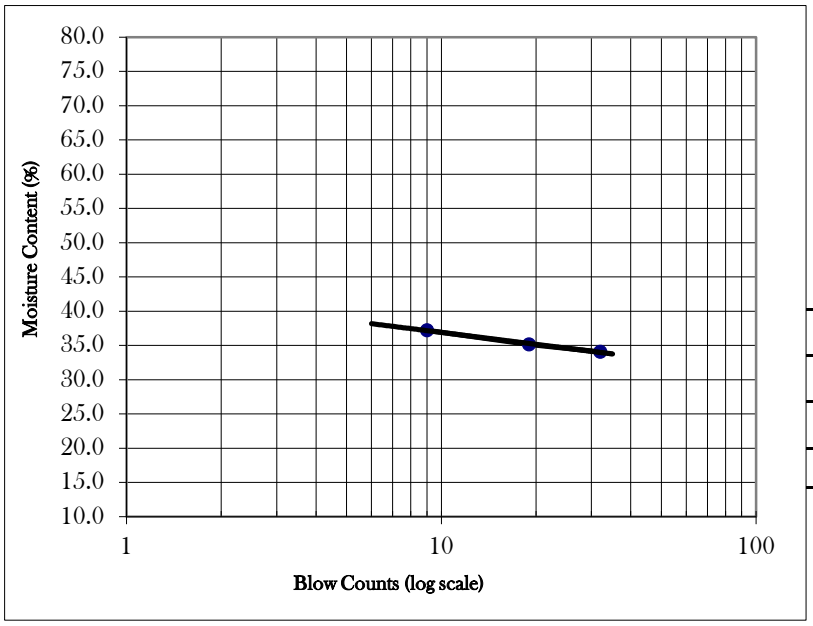
Determination of Liquid Limit

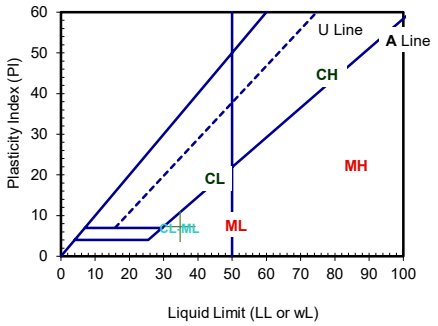
| Cup Number | L-29 | N-24 | L-33 |
|---|---|---|---|
| Weight of Cup (g) | 22.16 | 19.73 | 24.62 |
| Weight of Wet Soil and Cup (g) | 49.88 | 43.67 | 46.75 |
| Weight of Dry Soil and Cup (g) | 42.36 | 37.45 | 41.15 |
| Moisure Content (%) | 37.2 | 35.1 | 33.9 |
| Blow Counts | 9 | 19 | 32 |

Determination of Plastic Limit

| Cup Number | L-21 | M-28 |
|---|---|---|
| Weight of Cup (g) | 14.25 | 13.62 |
| Weight of Wet Soil and Cup (g) | 23.85 | 22.24 |
| Weight of Dry Soil and Cup (g) | 21.81 | 20.28 |
| Moisure Content (%) | 27.0 | 29.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 34.7 |
| Plastic Limit | 28.2 |
| Plasticity Index | 6.5 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 31.03.2019

Boring Number: R.B - 02

Depth of Sample: 0.0m to 15.0m

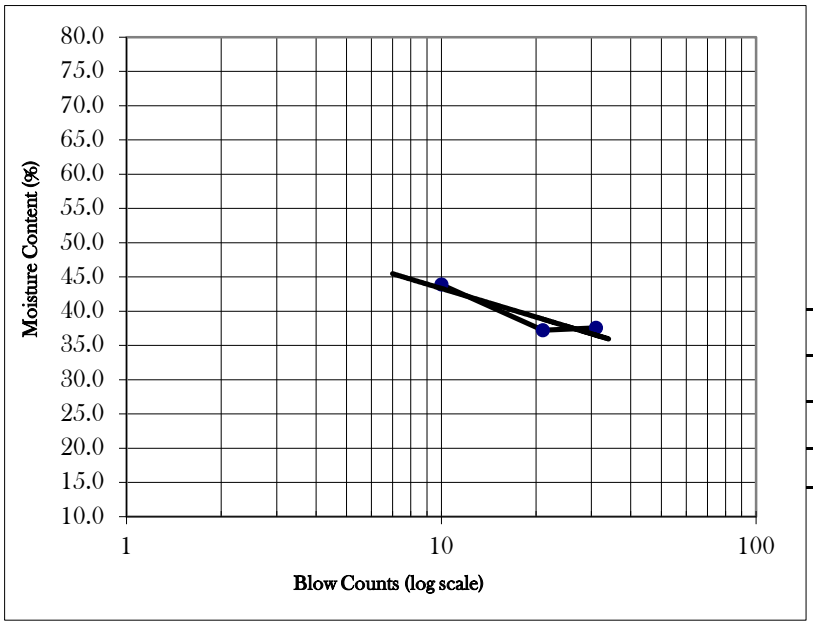
Determination of Liquid Limit

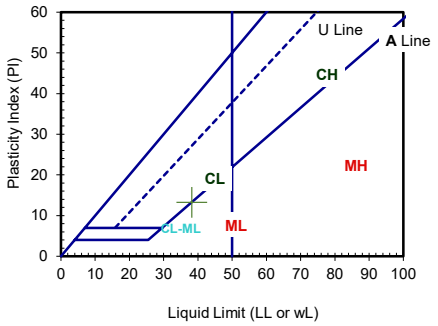
| Cup Number | M-14 | L-48 | L-33 |
|---|---|---|---|
| Weight of Cup (g) | 21.42 | 24.75 | 24.38 |
| Weight of Wet Soil and Cup (g) | 50.14 | 48.64 | 45.25 |
| Weight of Dry Soil and Cup (g) | 41.38 | 42.16 | 39.55 |
| Moisure Content (%) | 43.9 | 37.2 | 37.6 |
| Blow Counts | 10 | 21 | 31 |

Determination of Plastic Limit

| Cup Number | M-23 | M-27 |
|---|---|---|
| Weight of Cup (g) | 14.13 | 12.95 |
| Weight of Wet Soil and Cup (g) | 24.62 | 22.95 |
| Weight of Dry Soil and Cup (g) | 22.52 | 20.95 |
| Moisure Content (%) | 25.0 | 25.0 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 38.2 |
| Plastic Limit | 25.0 |
| Plasticity Index | 13.2 |
| USCS Classification | **CL** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 31.03.2019

Boring Number: R.B - 03

Depth of Sample: 0.0m to 15.0m

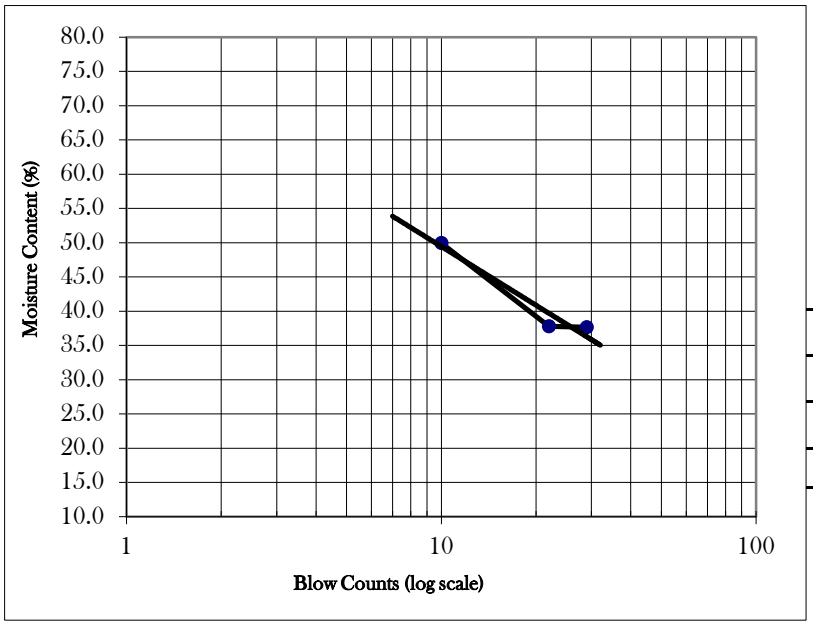
Determination of Liquid Limit

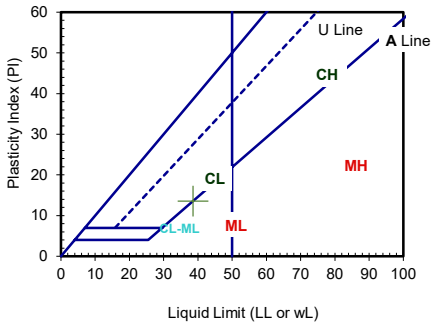
| Cup Number | 50 | L-23 | L-44 |
|---|---|---|---|
| Weight of Cup (g) | 22.1 | 18.67 | 24.18 |
| Weight of Wet Soil and Cup (g) | 45.97 | 42.00 | 50.06 |
| Weight of Dry Soil and Cup (g) | 38.02 | 35.6 | 42.98 |
| Moisure Content (%) | 49.9 | 37.8 | 37.7 |
| Blow Counts | 10 | 22 | 29 |

Determination of Plastic Limit

| Cup Number | M-4 | M-20 |
|---|---|---|
| Weight of Cup (g) | 13.17 | 14.41 |
| Weight of Wet Soil and Cup (g) | 24.34 | 26.93 |
| Weight of Dry Soil and Cup (g) | 22.10 | 24.42 |
| Moisure Content (%) | 25.1 | 25.1 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 38.6 |
| Plastic Limit | 25.1 |
| Plasticity Index | 13.5 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 31.03.2019

Boring Number: R.B - 04

Depth of Sample: 0.0m to 15.0m

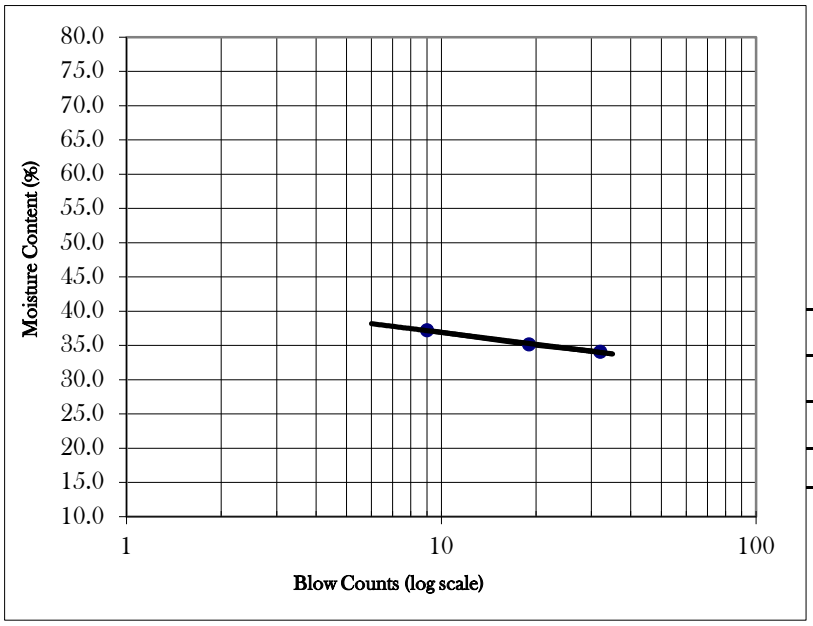
Determination of Liquid Limit

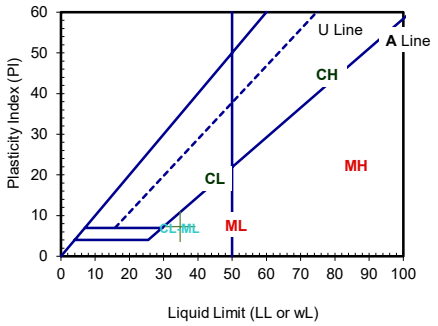
| Cup Number | L-38 | N-18 | L-20 |
|---|---|---|---|
| Weight of Cup (g) | 22.1 | 19.75 | 24.59 |
| Weight of Wet Soil and Cup (g) | 49.9 | 43.70 | 46.79 |
| Weight of Dry Soil and Cup (g) | 42.36 | 37.47 | 41.15 |
| Moisure Content (%) | 37.2 | 35.2 | 34.1 |
| Blow Counts | 9 | 19 | 32 |

Determination of Plastic Limit

| Cup Number | M-21 | M-25 |
|---|---|---|
| Weight of Cup (g) | 14.28 | 13.60 |
| Weight of Wet Soil and Cup (g) | 23.87 | 22.13 |
| Weight of Dry Soil and Cup (g) | 21.81 | 20.28 |
| Moisure Content (%) | 27.4 | 27.7 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 34.8 |
| Plastic Limit | 27.5 |
| Plasticity Index | 7.3 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 31.03.2019

Boring Number: R.B - 05

Depth of Sample: 0.0m to 15.0m

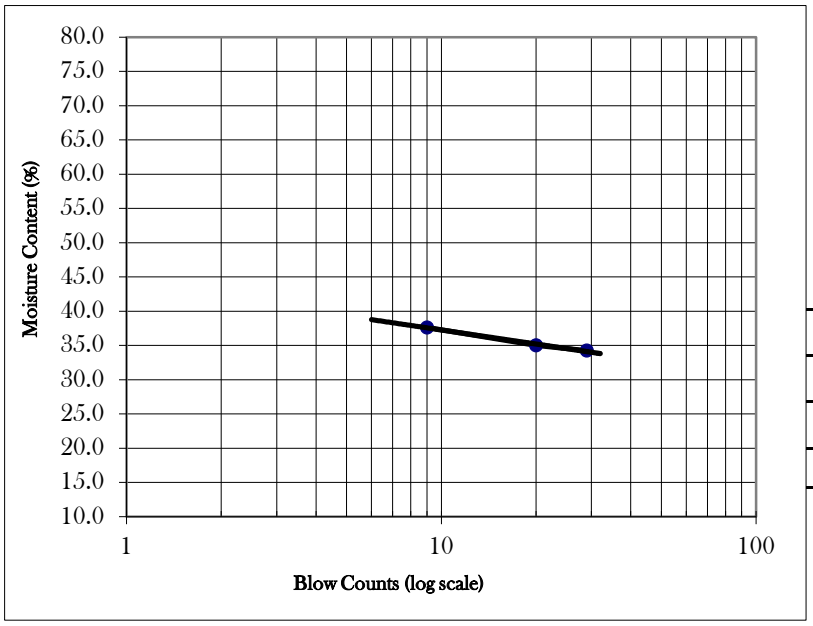
Determination of Liquid Limit

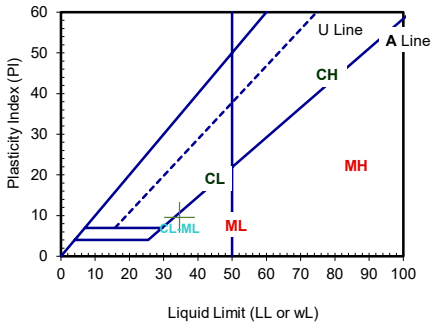
| Cup Number | N-1 | L-17 | L-3 |
|---|---|---|---|
| Weight of Cup (g) | 20.83 | 19.95 | 22.93 |
| Weight of Wet Soil and Cup (g) | 49.54 | 44.44 | 44.22 |
| Weight of Dry Soil and Cup (g) | 41.69 | 38.09 | 38.79 |
| Moisure Content (%) | 37.6 | 35.0 | 34.2 |
| Blow Counts | 9 | 20 | 29 |

Determination of Plastic Limit

| Cup Number | M-18 | M-09 |
|---|---|---|
| Weight of Cup (g) | 14.54 | 12.59 |
| Weight of Wet Soil and Cup (g) | 23.25 | 21.51 |
| Weight of Dry Soil and Cup (g) | 21.49 | 19.73 |
| Moisure Content (%) | 25.3 | 24.9 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 34.6 |
| Plastic Limit | 25.1 |
| Plasticity Index | 9.5 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 31.03.2019

Boring Number: R.B - 07

Depth of Sample: 0.0m to 15.0m

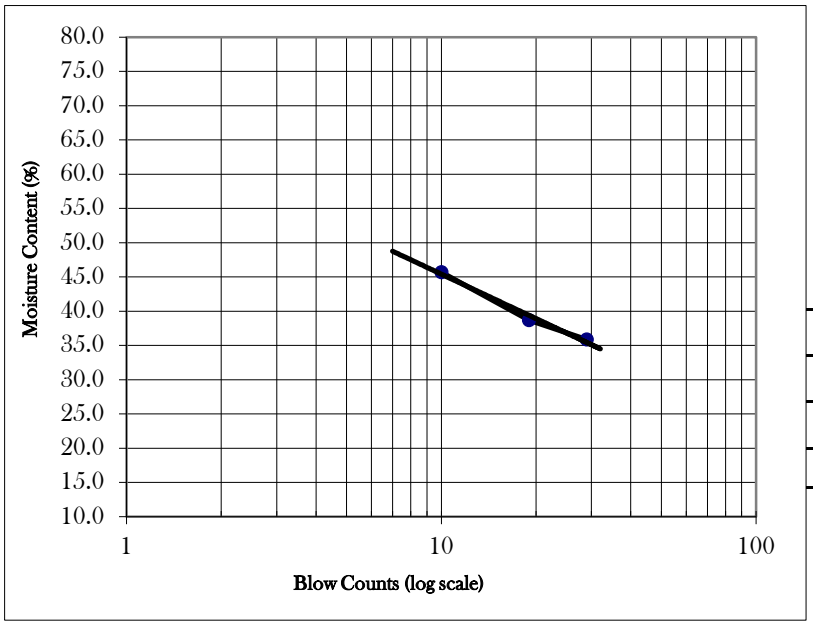
Determination of Liquid Limit

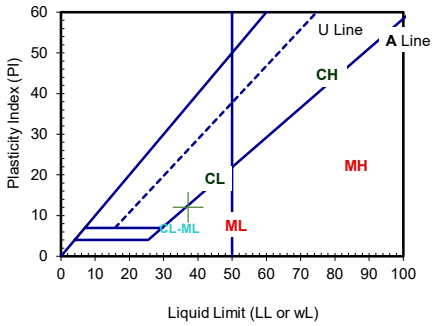
| Cup Number | M-24 | L-31 | N-38 |
|---|---|---|---|
| Weight of Cup (g) | 20.75 | 18.68 | 18.62 |
| Weight of Wet Soil and Cup (g) | 37.61 | 42.26 | 42.73 |
| Weight of Dry Soil and Cup (g) | 32.24 | 35.75 | 36.33 |
| Moisure Content (%) | 46.7 | 38.1 | 36.1 |
| Blow Counts | 10 | 19 | 29 |

Determination of Plastic Limit

| Cup Number | M-22 | M-20 |
|---|---|---|
| Weight of Cup (g) | 13.22 | 14.45 |
| Weight of Wet Soil and Cup (g) | 24.38 | 26.91 |
| Weight of Dry Soil and Cup (g) | 22.14 | 24.39 |
| Moisure Content (%) | 25.1 | 25.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 37.2 |
| Plastic Limit | 25.2 |
| Plasticity Index | 12.0 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 31.03.2019

Boring Number: R.B - 08

Depth of Sample: 0.0m to 13.0m

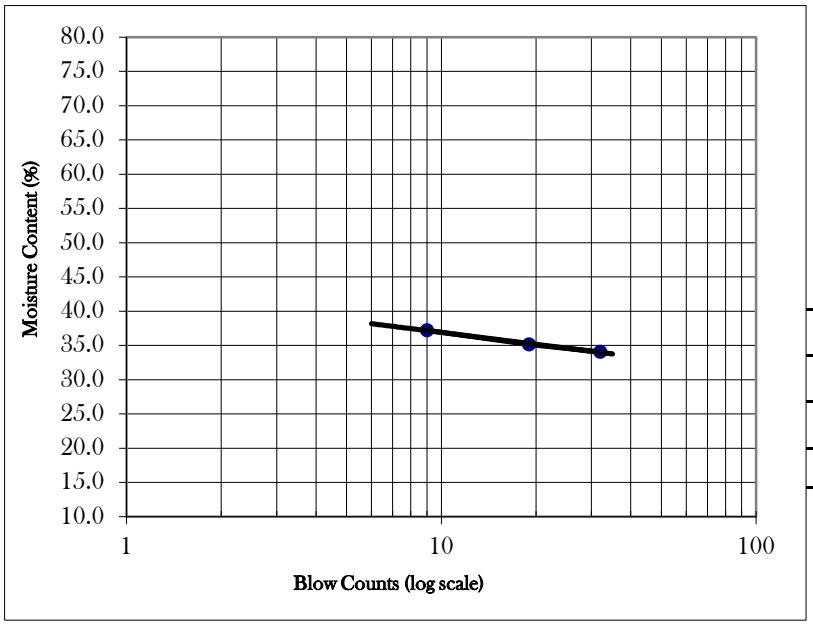
Determination of Liquid Limit

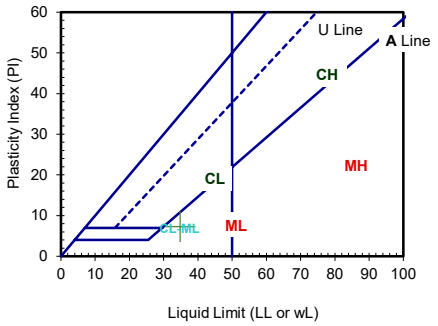
| Cup Number | N-52 | L-26 | L-20 |
|---|---|---|---|
| Weight of Cup (g) | 22.14 | 19.64 | 24.53 |
| Weight of Wet Soil and Cup (g) | 49.88 | 43.68 | 46.76 |
| Weight of Dry Soil and Cup (g) | 42.24 | 37.44 | 41.19 |
| Moisure Content (%) | 38.0 | 35.1 | 33.4 |
| Blow Counts | 9 | 19 | 32 |

Determination of Plastic Limit

| Cup Number | M-16 | L-18 |
|---|---|---|
| Weight of Cup (g) | 14.25 | 13.66 |
| Weight of Wet Soil and Cup (g) | 23.85 | 22.16 |
| Weight of Dry Soil and Cup (g) | 21.81 | 20.28 |
| Moisure Content (%) | 27.0 | 28.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 34.5 |
| Plastic Limit | 27.7 |
| Plasticity Index | 6.8 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 31.03.2019

Boring Number: R.B - 09

Depth of Sample: 0.0m to 5.0m

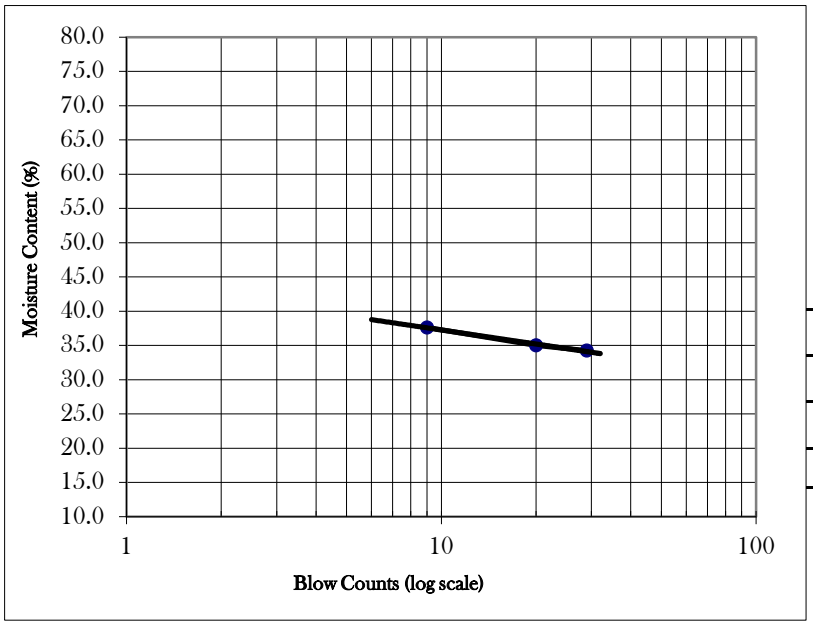
Determination of Liquid Limit

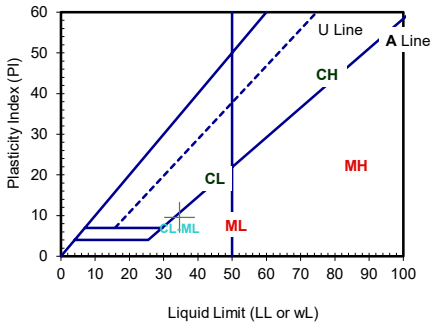
| Cup Number | N-13 | L-31 | L-25 |
|---|---|---|---|
| Weight of Cup (g) | 20.76 | 19.86 | 22.87 |
| Weight of Wet Soil and Cup (g) | 49.63 | 44.46 | 44.31 |
| Weight of Dry Soil and Cup (g) | 41.57 | 38.09 | 38.79 |
| Moisure Content (%) | 38.7 | 34.9 | 34.7 |
| Blow Counts | 9 | 20 | 29 |

Determination of Plastic Limit

| Cup Number | M-18 | M-13 |
|---|---|---|
| Weight of Cup (g) | 14.49 | 12.41 |
| Weight of Wet Soil and Cup (g) | 23.32 | 21.54 |
| Weight of Dry Soil and Cup (g) | 21.49 | 19.73 |
| Moisure Content (%) | 26.1 | 24.7 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 34.9 |
| Plastic Limit | 25.4 |
| Plasticity Index | 9.5 |
| USCS Classification | **ML** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

Sample Information:

Test Date: 31.03.2019

Boring Number: R.B - 09

Depth of Sample: 5.0m to 12.0m

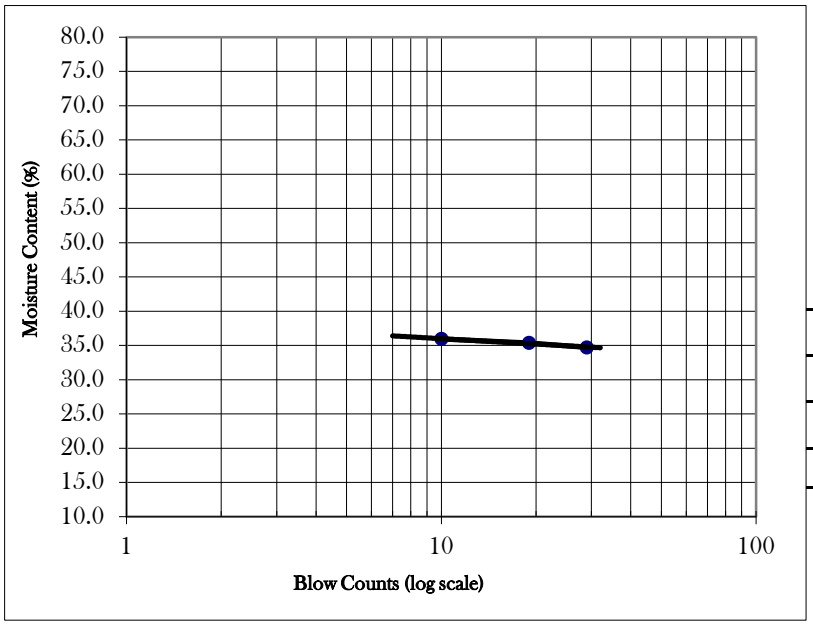
Determination of Liquid Limit

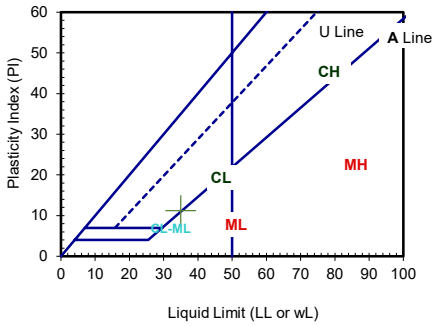
| Cup Number | M-30 | 30 | N-11 |
|---|---|---|---|
| Weight of Cup (g) | 24.33 | 7.19 | 23.88 |
| Weight of Wet Soil and Cup (g) | 52.66 | 32.52 | 48.41 |
| Weight of Dry Soil and Cup (g) | 45.17 | 25.9 | 42.09 |
| Moisure Content (%) | 35.9 | 35.4 | 34.7 |
| Blow Counts | 10 | 19 | 29 |

Determination of Plastic Limit

| Cup Number | 405 | M-5 |
|---|---|---|
| Weight of Cup (g) | 19.34 | 14.08 |
| Weight of Wet Soil and Cup (g) | 48.80 | 45.27 |
| Weight of Dry Soil and Cup (g) | 43.15 | 39.26 |
| Moisure Content (%) | 23.7 | 23.9 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 35.0 |
| Plastic Limit | 23.8 |
| Plasticity Index | 11.2 |
| USCS Classification | **CL** |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

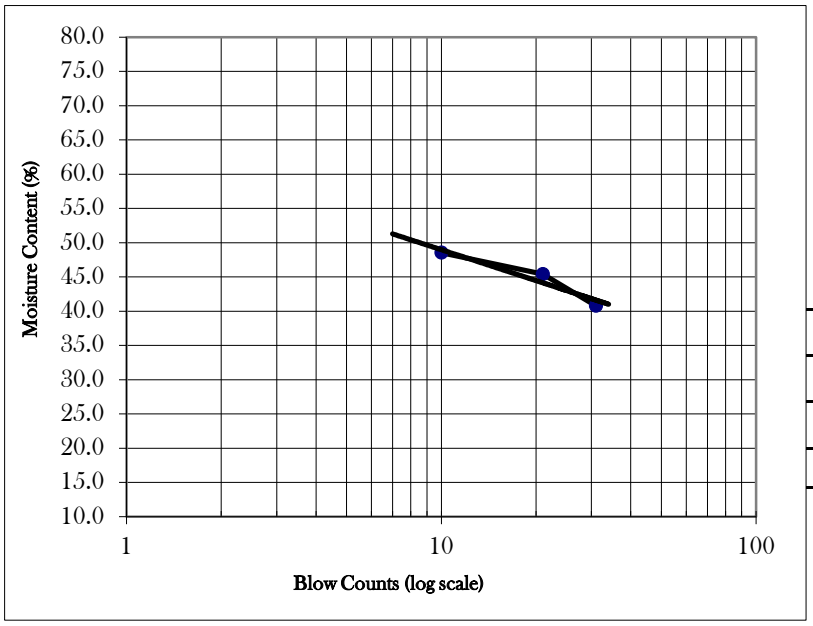
Boring Number: RB-10

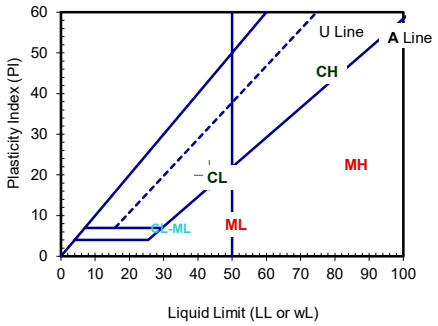
Depth of Sample: 0.0m to 10.5m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-5 | M-24 | 14 |
| Weight of Cup (g) | 19 | 26.91 | 24.47 |
| Weight of Wet Soil and Cup (g) | 38.74 | 51.43 | 48.43 |
| Weight of Dry Soil and Cup (g) | 32.29 | 43.77 | 41.49 |
| Moisure Content (%) | 48.5 | 45.4 | 40.8 |
| Blow Counts | 10 | 21 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | M-16 | 408 |
| Weight of Cup (g) | 29.92 | 15.56 |
| Weight of Wet Soil and Cup (g) | 47.15 | 34.15 |
| Weight of Dry Soil and Cup (g) | 43.87 | 30.62 |
| Moisure Content (%) | 23.5 | 23.4 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 43.3 |
| Plastic Limit | 23.5 |
| Plasticity Index | 19.8 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

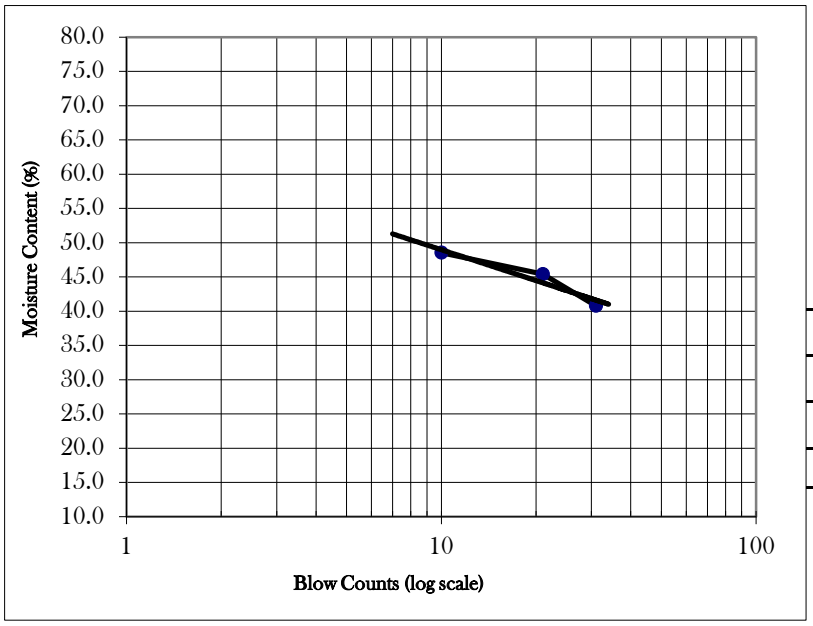
Boring Number: RB-12

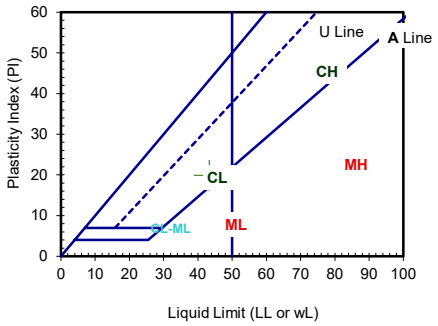
Depth of Sample: 0.0m to 10.5m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | L-5 | M-24 | 14 |
| Weight of Cup (g) | 18.64 | 26.91 | 24.47 |
| Weight of Wet Soil and Cup (g) | 38.82 | 51.44 | 48.56 |
| Weight of Dry Soil and Cup (g) | 32.35 | 43.61 | 41.64 |
| Moisure Content (%) | 47.2 | 46.9 | 40.3 |
| Blow Counts | 10 | 21 | 31 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | M-16 | 408 |
| Weight of Cup (g) | 29.88 | 15.62 |
| Weight of Wet Soil and Cup (g) | 47.25 | 34.22 |
| Weight of Dry Soil and Cup (g) | 43.87 | 30.62 |
| Moisure Content (%) | 24.2 | 24.0 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 43.4 |
| Plastic Limit | 24.1 |
| Plasticity Index | 19.3 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## Laboratory Test Results of
## Atterberg Limits of Soil

(ASTM Designation:D4318)

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Shiula Bridge

Sample Information:

Test Date:

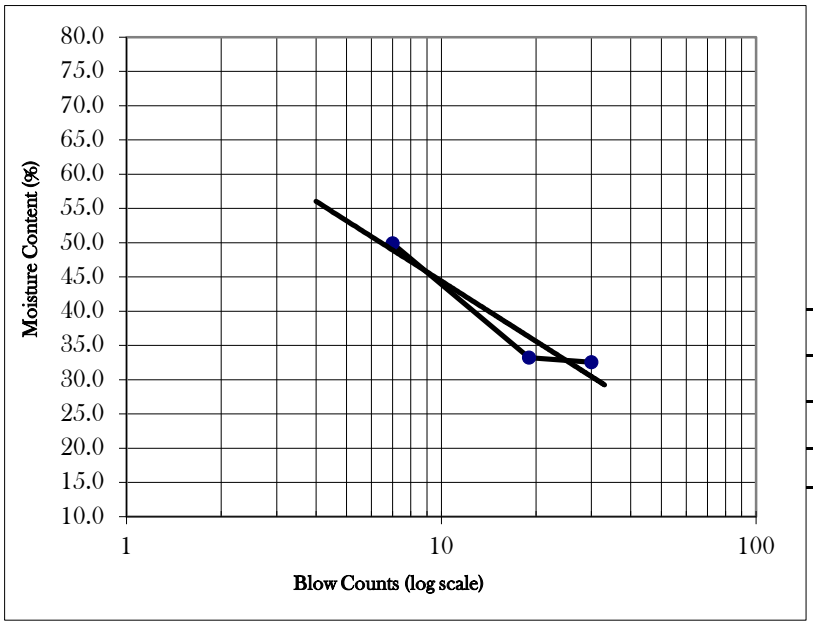
Boring Number: RB-13

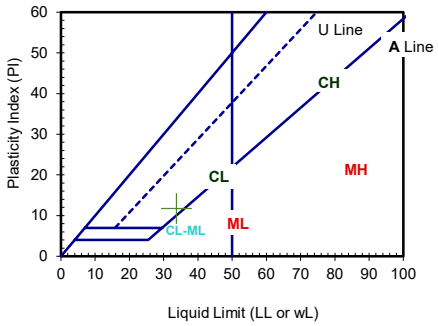
Depth of Sample: 0.0m to 10.5m

| Determination of Liquid Limit | | | |
|---|---|---|---|
| Cup Number | M-31 | M-23 | M-26 |
| Weight of Cup (g) | 26.94 | 27.12 | 18.56 |
| Weight of Wet Soil and Cup (g) | 40.31 | 49.10 | 43.77 |
| Weight of Dry Soil and Cup (g) | 35.86 | 43.62 | 37.58 |
| Moisure Content (%) | 49.9 | 33.2 | 32.5 |
| Blow Counts | 7 | 19 | 30 |

| Determination of Plastic Limit | | |
|---|---|---|
| Cup Number | L-16 | 405 |
| Weight of Cup (g) | 19.26 | 19.32 |
| Weight of Wet Soil and Cup (g) | 36.44 | 35.55 |
| Weight of Dry Soil and Cup (g) | 33.33 | 32.64 |
| Moisure Content (%) | 22.1 | 21.8 |

Compilation of Test Results




| | |
|---|---|
| Liquid Limit | 33.7 |
| Plastic Limit | 22.0 |
| Plasticity Index | 11.7 |
| USCS Classification | CL |

Tested by : Azhrul Islam.

Signed by : Jamal Uddin

# UNCONFINED COMPRESSION STRENGTH TESTS

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Bore Hole No.**:OVP-1,BH-2 **Depth:** 7.5-9.0 m

**Sample No.**: UD-1 Test Date: 02.04.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 167.2 gm | | Wt.of Test Specimen. Wt. = | | 138.02 gm | |
| Wt.of can+Dry Sample, B= | | 145.9 gm | | Av.Diameter of Specimen, D = | | 3.50 cm | |
| Wt. of Can, C = | | 29.18 gm | | Av.Ht.of Specimen, Lσ = | | 7.0 cm | |
| Wt. of moisture in sample, A-B = | | 21.3 gm | | Initial Area of Specimen, $A\sigma = \pi/4 \times D^2$ = | | 9.62 $cm^2$ | |
| Wt. of Oven Dry Sample, B-C = | | 116.72 gm | | Volume of Specimen, $Vt = \pi/4 \times D^2 \times L\sigma$ = | | 67.34 $cm^3$ | |
| Moisture Content,w= | (A-B/B-C)x100 | 18.25 | | Wet Density, $\gamma$ = Wt /Vt = | | 2.05 | gm/cc |
| | | | | | | 127.96 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 2.0 | 0.0750 | 76.85 |
| 200 | 0.20 | 0.0286 | 9.902 | 3.0 | 0.0930 | 93.92 |
| 300 | 0.30 | 0.0429 | 10.050 | 4.0 | 0.1110 | 110.45 |
| 400 | 0.40 | 0.0571 | 10.202 | 4.5 | 0.1200 | 117.62 |
| 500 | 0.50 | 0.0714 | 10.359 | 4.5 | 0.1200 | 115.84 |
| 600 | 0.60 | 0.0857 | 10.521 | 4.0 | 0.1110 | 105.50 |
| 700 | 0.70 | 0.1000 | 10.688 | 4.0 | 0.1110 | 103.85 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

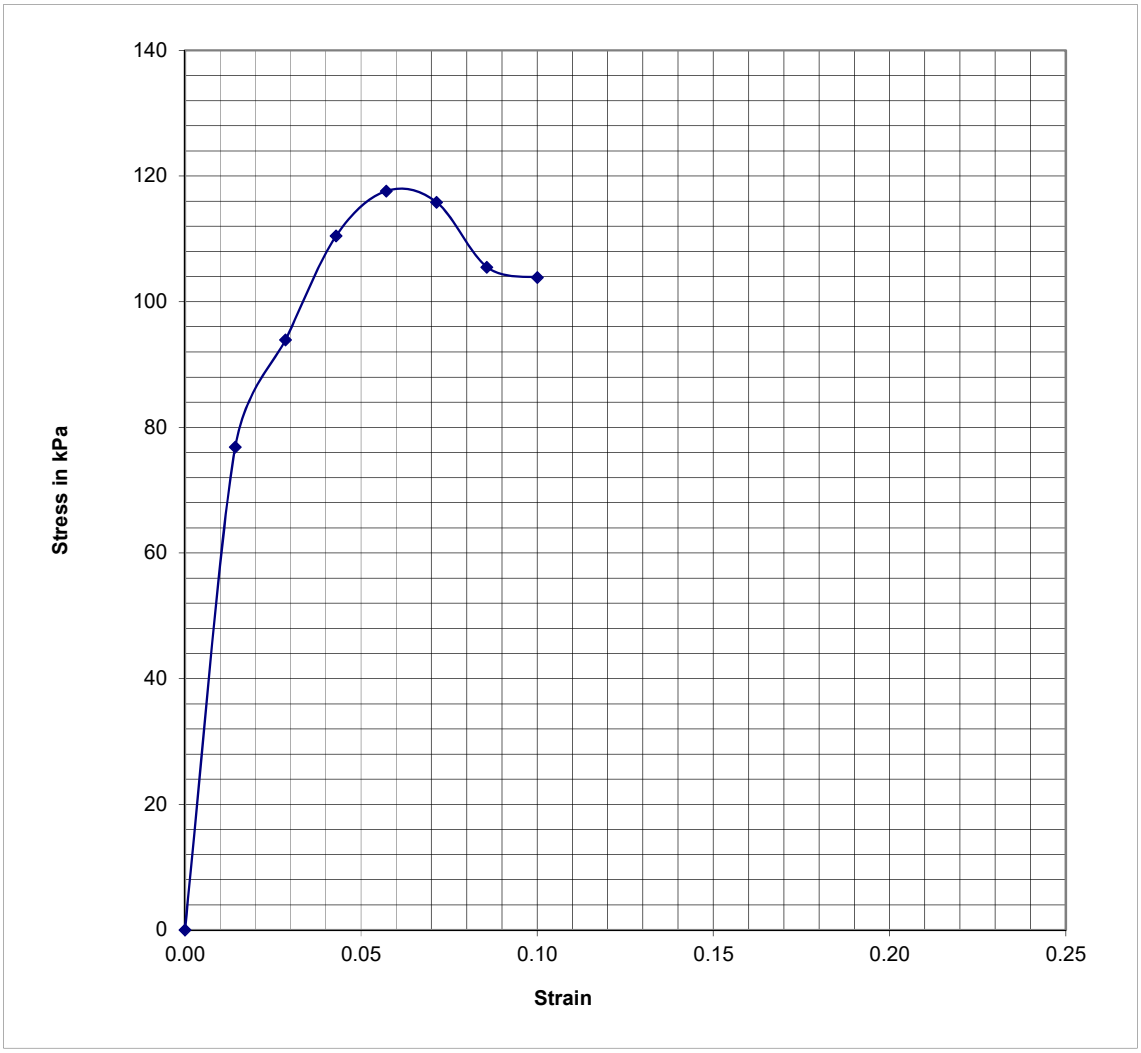
Client:Roads and Highways Department (RHD)

Location: Sutarkandi,Sylhet.

Bore Hole No.:OVP-1,BH-2 Depth: 7.5-9.0 m

Sample No.: UD-1 Test Date: 02.04.2019

Moisture Content,w= 18.25%




Unconfined Compression Strength, qu = 118 kPa = 2458.79 psf

Strain = 6.0 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 59 kPa or 1229.40 psf

SPT Value= 3

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet

**Bore Hole No.**: OVP-1.BH-2 **Depth:** 5.5m

**Sample No.**: Test Date: 02.08.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 190.45 | gm | Wt.of Test Specimen. Wt. = | | 173.5 | gm |
| Wt.of can+Dry Sample, B= | | 151.4 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 16.95 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 39.05 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 134.45 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 29.04 | | Wet Density, γ = Wt /Vt = | | 2.58 | gm/cc |
| | | | | | | 160.85 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

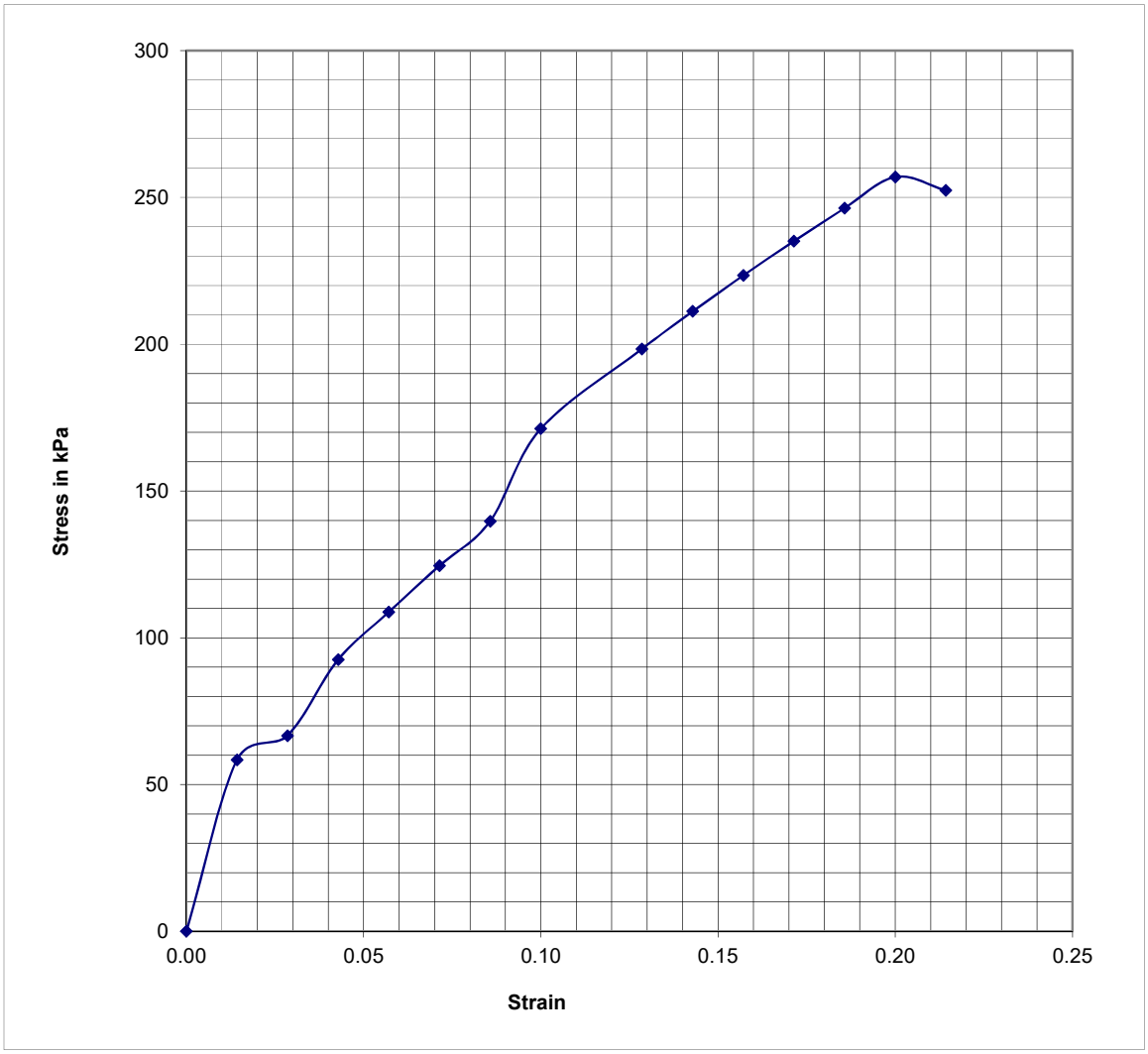
### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 1.0 | 0.0570 | 58.41 |
| 200 | 0.20 | 0.0286 | 9.902 | 1.5 | 0.0660 | 66.65 |
| 300 | 0.30 | 0.0429 | 10.050 | 3.0 | 0.0930 | 92.54 |
| 400 | 0.40 | 0.0571 | 10.202 | 4.0 | 0.1110 | 108.80 |
| 500 | 0.50 | 0.0714 | 10.359 | 5.0 | 0.1290 | 124.53 |
| 600 | 0.60 | 0.0857 | 10.521 | 6.0 | 0.1470 | 139.72 |
| 700 | 0.70 | 0.1000 | 10.688 | 8.0 | 0.1830 | 171.22 |
| 900 | 0.90 | 0.1286 | 11.039 | 10.0 | 0.2190 | 198.40 |
| 1000 | 1.00 | 0.1429 | 11.223 | 11.0 | 0.2370 | 211.18 |
| 1100 | 1.10 | 0.1571 | 11.413 | 12.0 | 0.2550 | 223.43 |
| 1200 | 1.20 | 0.1714 | 11.610 | 13.0 | 0.2730 | 235.15 |
| 1300 | 1.30 | 0.1857 | 11.813 | 14.0 | 0.2910 | 246.33 |
| 1400 | 1.40 | 0.2000 | 12.024 | 15.0 | 0.3090 | 256.98 |
| 1500 | 1.50 | 0.2143 | 12.243 | 15.0 | 0.3090 | 252.39 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Sylhet
Bore Hole No.: OVP-1.BH-2 Depth: 5.5m
Sample No.: Test Date: 02.08.2019
Moisture Content,w= 29.04%




Unconfined Compression Strength, qu = 258 kPa = 5376.00 psf
Strain = 20.0 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 129 kPa or 2688.00 psf
(Tested on undisturbed specimen)
SPT Value= 5

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet

**Bore Hole No.**: OVP-2.BH-2 **Depth:** 6.0m

**Sample No.**: Test Date: 02.08.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 202.99 | gm | Wt.of Test Specimen. Wt. = | | 173.31 | gm |
| Wt.of can+Dry Sample, B= | | 163.9 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 29.68 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 39.09 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 134.22 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 29.12 | | Wet Density, γ = Wt /Vt = | | 2.57 | gm/cc |
| | | | | | | 160.68 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

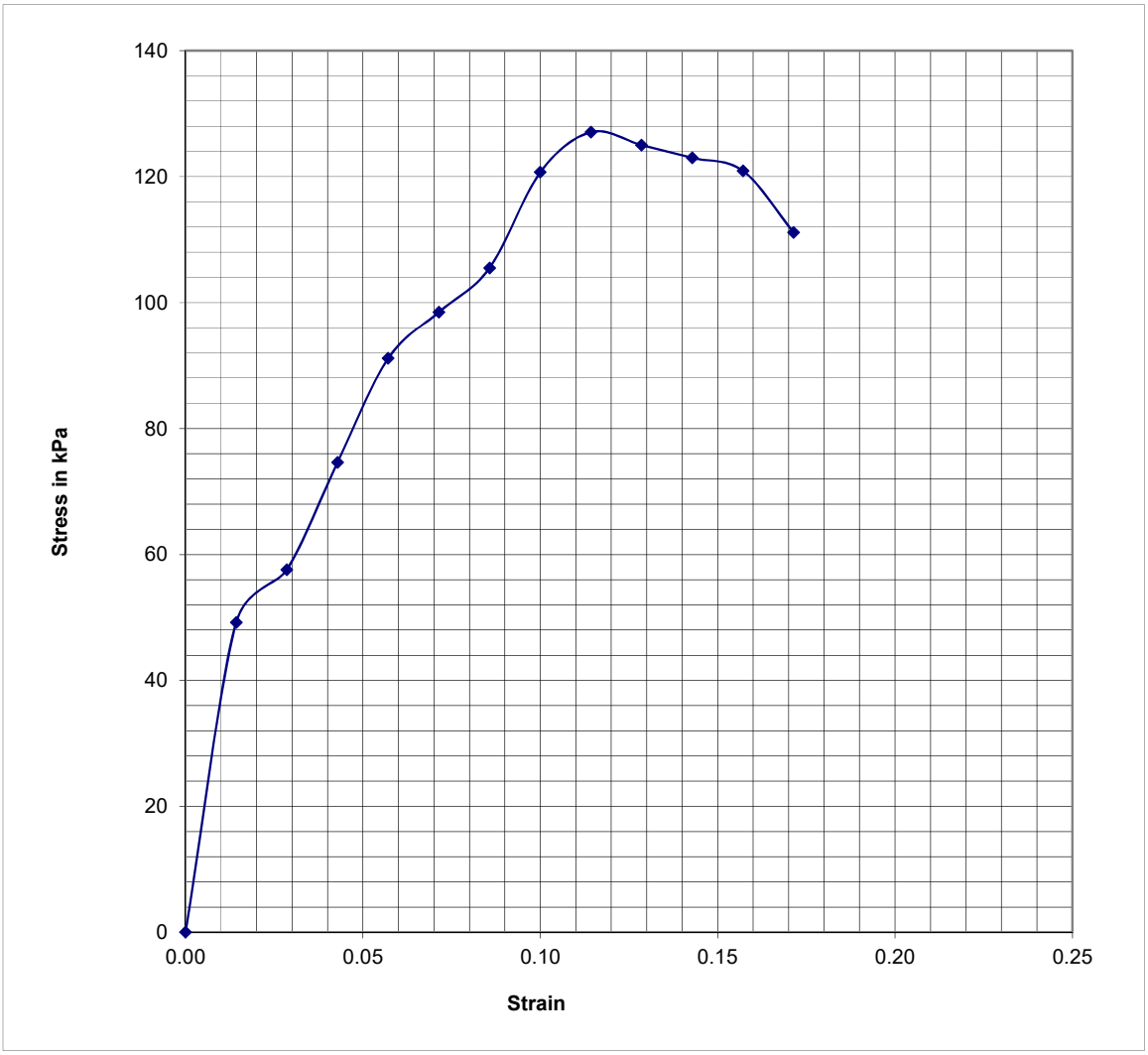
### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 0.5 | 0.0480 | 49.19 |
| 200 | 0.20 | 0.0286 | 9.902 | 1.0 | 0.0570 | 57.56 |
| 300 | 0.30 | 0.0429 | 10.050 | 2.0 | 0.0750 | 74.63 |
| 400 | 0.40 | 0.0571 | 10.202 | 3.0 | 0.0930 | 91.16 |
| 500 | 0.50 | 0.0714 | 10.359 | 3.5 | 0.1020 | 98.46 |
| 600 | 0.60 | 0.0857 | 10.521 | 4.0 | 0.1110 | 105.50 |
| 700 | 0.70 | 0.1000 | 10.688 | 5.0 | 0.1290 | 120.69 |
| 800 | 0.80 | 0.1143 | 10.861 | 5.5 | 0.1380 | 127.07 |
| 900 | 0.90 | 0.1286 | 11.039 | 5.5 | 0.1380 | 125.02 |
| 1000 | 1.00 | 0.1429 | 11.223 | 5.5 | 0.1380 | 122.97 |
| 1100 | 1.10 | 0.1571 | 11.413 | 5.5 | 0.1380 | 120.92 |
| 1200 | 1.20 | 0.1714 | 11.610 | 5.0 | 0.1290 | 111.12 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Sylhet
Bore Hole No.: OVP-2.BH-2 Depth: 6.0m
Sample No.: Test Date: 02.08.2019
Moisture Content,w= 29.12%




Unconfined Compression Strength, qu = 127 kPa = 2646.33 psf
Strain = 11.5 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 63.5 kPa or 1323.16 psf
(Tested on undisturbed specimen)
SPT Value= 3

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Bore Hole No.**: FLY-1,BH-1 **Depth:** 4.5-4.95 m

**Sample No.**: UD-1 Test Date: 01.04.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 155.65 | gm | Wt.of Test Specimen. Wt. = | | 126.65 | gm |
| Wt.of can+Dry Sample, B= | | 125.07 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 29 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 30.58 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 96.07 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 31.83 | | Wet Density, γ = Wt /Vt = | | 1.88 | gm/cc |
| | | | | | | 117.42 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

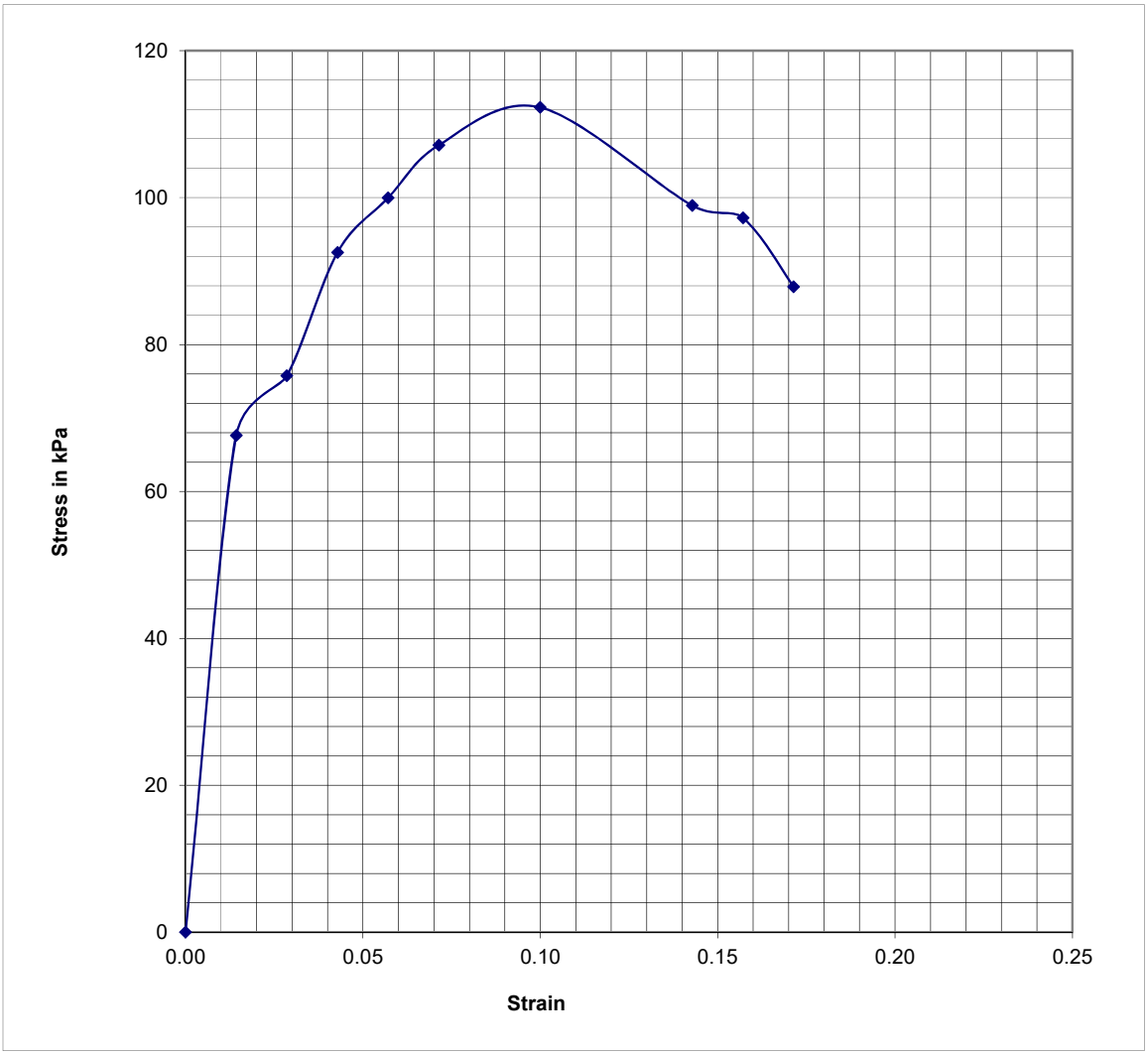
### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 1.5 | 0.0660 | 67.63 |
| 200 | 0.20 | 0.0286 | 9.902 | 2.0 | 0.0750 | 75.74 |
| 300 | 0.30 | 0.0429 | 10.050 | 3.0 | 0.0930 | 92.54 |
| 400 | 0.40 | 0.0571 | 10.202 | 3.5 | 0.1020 | 99.98 |
| 500 | 0.50 | 0.0714 | 10.359 | 4.0 | 0.1110 | 107.15 |
| 700 | 0.70 | 0.1000 | 10.688 | 4.5 | 0.1200 | 112.27 |
| 1000 | 1.00 | 0.1429 | 11.223 | 4.0 | 0.1110 | 98.91 |
| 1100 | 1.10 | 0.1571 | 11.413 | 4.0 | 0.1110 | 97.26 |
| 1200 | 1.20 | 0.1714 | 11.610 | 3.5 | 0.1020 | 87.86 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Sutarkandi,Sylhet.
Bore Hole No.: FLY-1,BH-1 Depth: 4.5-4.95 m
Sample No.: UD-1 Test Date: 01.04.2019
Moisture Content,w= 31.83%




Unconfined Compression Strength, qu = 113 kPa = 2354.60 psf
Strain = 9.5 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 56.5 kPa or 1177.30 psf
(Tested on undisturbed specimen)
SPT Value= 3

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Bore Hole No.**:FLY-1,BH-6 **Depth:** 4.5-4.95 m

**Sample No.**: UD-1 Test Date: 02.04.2019

Max.Capacity : 2 KN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 138.4 | gm | Wt.of Test Specimen. Wt. = | | 108.98 | gm |
| Wt.of can+Dry Sample, B= | | 100.26 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 29.42 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 38.14 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 70.84 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 53.84 | | Wet Density, γ = Wt /Vt = | | 1.62 | gm/cc |
| | | | | | | 101.04 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 0.5 | 0.0480 | 49.19 |
| 200 | 0.20 | 0.0286 | 9.902 | 1.0 | 0.0570 | 57.56 |
| 300 | 0.30 | 0.0429 | 10.050 | 1.5 | 0.0660 | 65.67 |
| 400 | 0.40 | 0.0571 | 10.202 | 2.0 | 0.0750 | 73.51 |
| 700 | 0.70 | 0.1000 | 10.688 | 2.5 | 0.0840 | 78.59 |
| 800 | 0.80 | 0.1143 | 10.861 | 2.5 | 0.0840 | 77.34 |
| 900 | 0.90 | 0.1286 | 11.039 | 2.5 | 0.0840 | 76.10 |
| 1000 | 1.00 | 0.1429 | 11.223 | 2.5 | 0.0840 | 74.85 |
| 1100 | 1.10 | 0.1571 | 11.413 | 2.5 | 0.0840 | 73.60 |
| 1200 | 1.20 | 0.1714 | 11.610 | 2.5 | 0.0840 | 72.35 |
| 1300 | 1.30 | 0.1857 | 11.813 | 2.0 | 0.0750 | 63.49 |
| 1400 | 1.40 | 0.2000 | 12.024 | 2.0 | 0.0750 | 62.37 |
| 1500 | 1.50 | 0.2143 | 12.243 | 2.0 | 0.0750 | 61.26 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

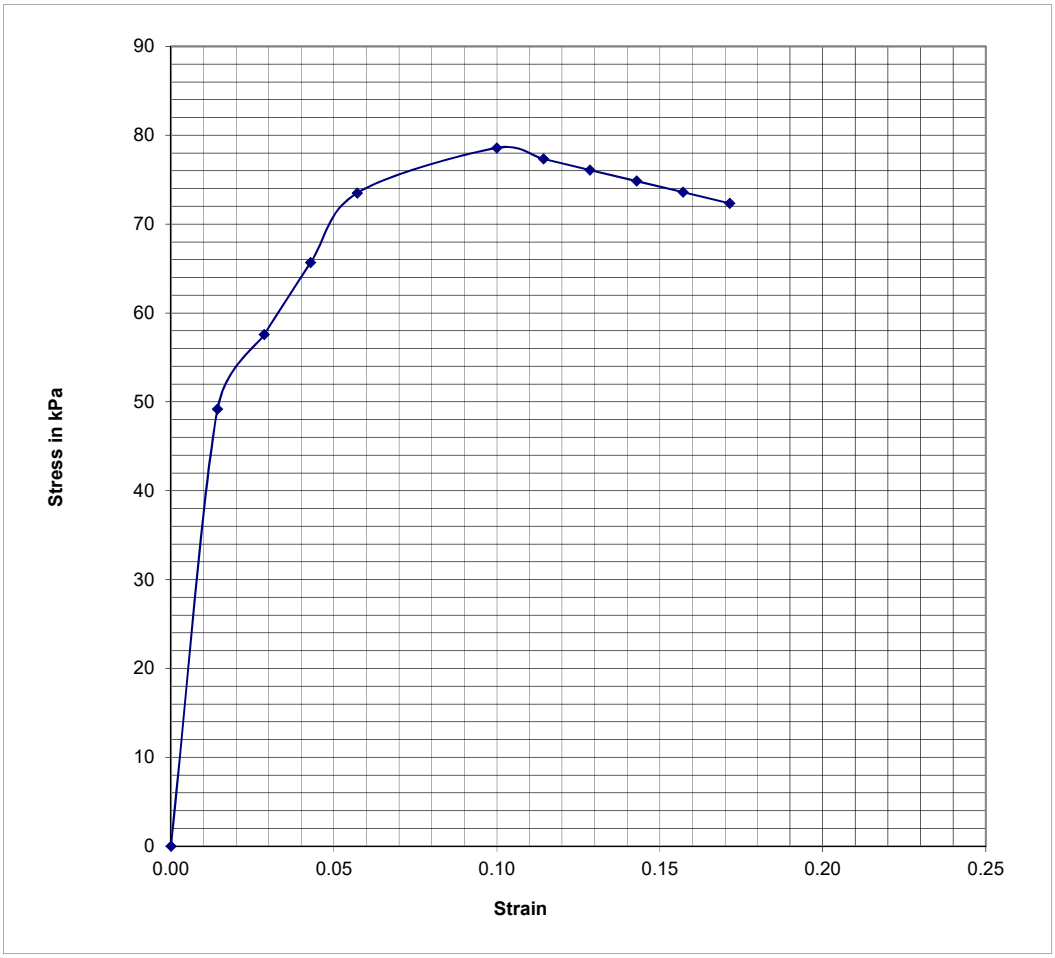
Client:Roads and Highways Department (RHD)

Location: Sutarkandi,Sylhet.

Bore Hole No.:FLY-1,BH-6 Depth: 4.5-4.95 m

Sample No.: UD-1 Test Date: 02.04.2019

Moisture Content,w= 53.84%




Unconfined Compression Strength, qu = 78.5 kPa = 1635.72 psf

Strain = 10.0 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 39.25 kPa or 817.86 psf

SPT Value= 3

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:**Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:**Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Bore Hole No.**: FLY-1,BH-8 **Depth:** 4.5-4.95 m

**Sample No.**: UD-1 Test Date: 01.04.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 154.61 | gm | Wt.of Test Specimen. Wt. = | | 125.5 | gm |
| Wt.of can+Dry Sample, B= | | 127.36 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 29.11 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 27.25 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 98.25 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 27.74 | | Wet Density, γ = Wt /Vt = | | 1.86 | gm/cc |
| | | | | | | 116.35 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

**TEST DATA**

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 0.5 | 0.0480 | 49.19 |
| 200 | 0.20 | 0.0286 | 9.902 | 1.0 | 0.0570 | 57.56 |
| 300 | 0.30 | 0.0429 | 10.050 | 1.5 | 0.0660 | 65.67 |
| 400 | 0.40 | 0.0571 | 10.202 | 2.0 | 0.0750 | 73.51 |
| 500 | 0.50 | 0.0714 | 10.359 | 3.0 | 0.0930 | 89.77 |
| 600 | 0.60 | 0.0857 | 10.521 | 3.5 | 0.1020 | 96.95 |
| 700 | 0.70 | 0.1000 | 10.688 | 3.5 | 0.1020 | 95.43 |
| 800 | 0.80 | 0.1143 | 10.861 | 3.0 | 0.0930 | 85.63 |

## AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

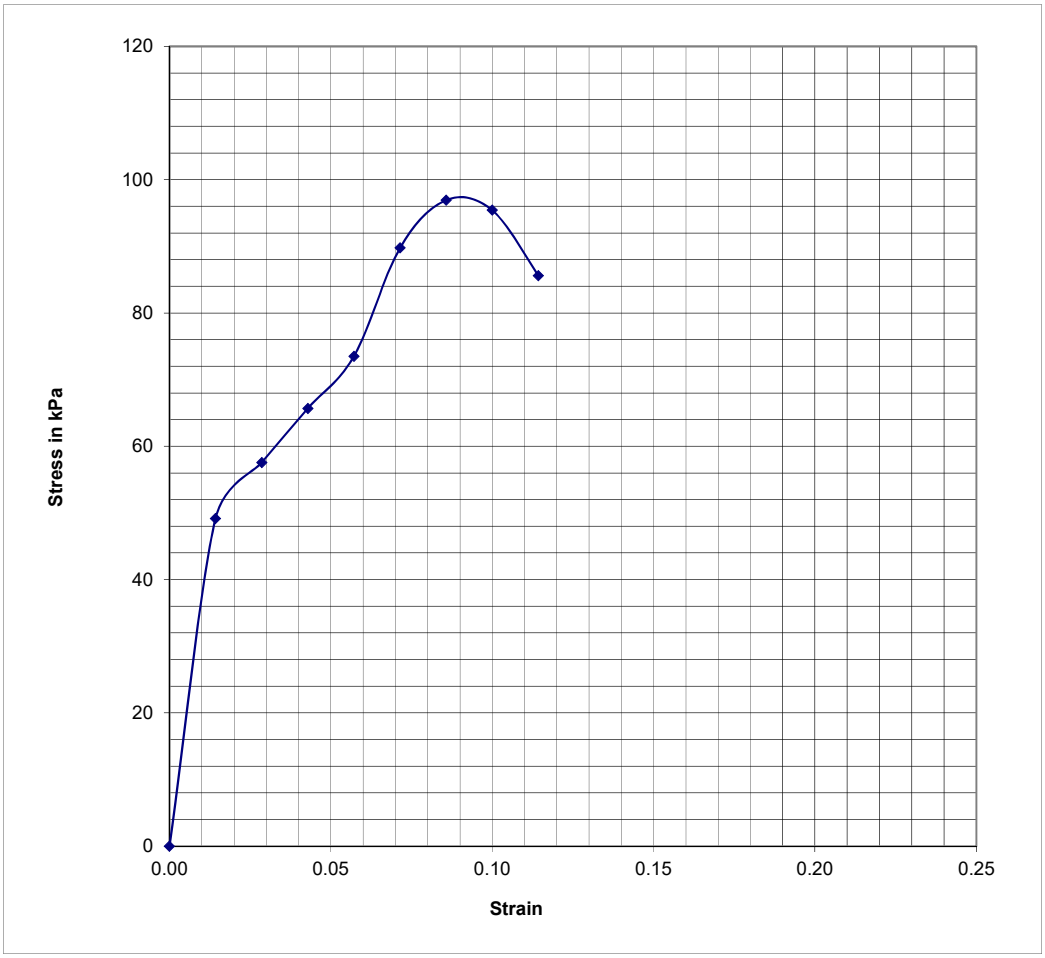
Client:Roads and Highways Department (RHD)

Location: Sutarkandi,Sylhet.

Bore Hole No.: FLY-1,BH-8 Depth: 4.5-4.95 m

Sample No.: UD-1 Test Date: 01.04.2019

Moisture Content,w= 27.74%




Unconfined Compression Strength, qu = 97 kPa = 2021.21 psf

Strain = 9.0 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 48.5 kPa or 1010.60 psf

(Tested on undisturbed specimen)

SPT Value= 2

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet

**Bore Hole No.**: OVP-3.BH-1 **Depth:** 3m

**Sample No.**: Test Date: 08.08.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 188.97 | gm | Wt.of Test Specimen. Wt. = | | 159.98 | gm |
| Wt.of can+Dry Sample, B= | | 153.8 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 28.99 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 35.17 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 124.81 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 28.18 | | Wet Density, γ = Wt /Vt = | | 2.38 | gm/cc |
| | | | | | | 148.32 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

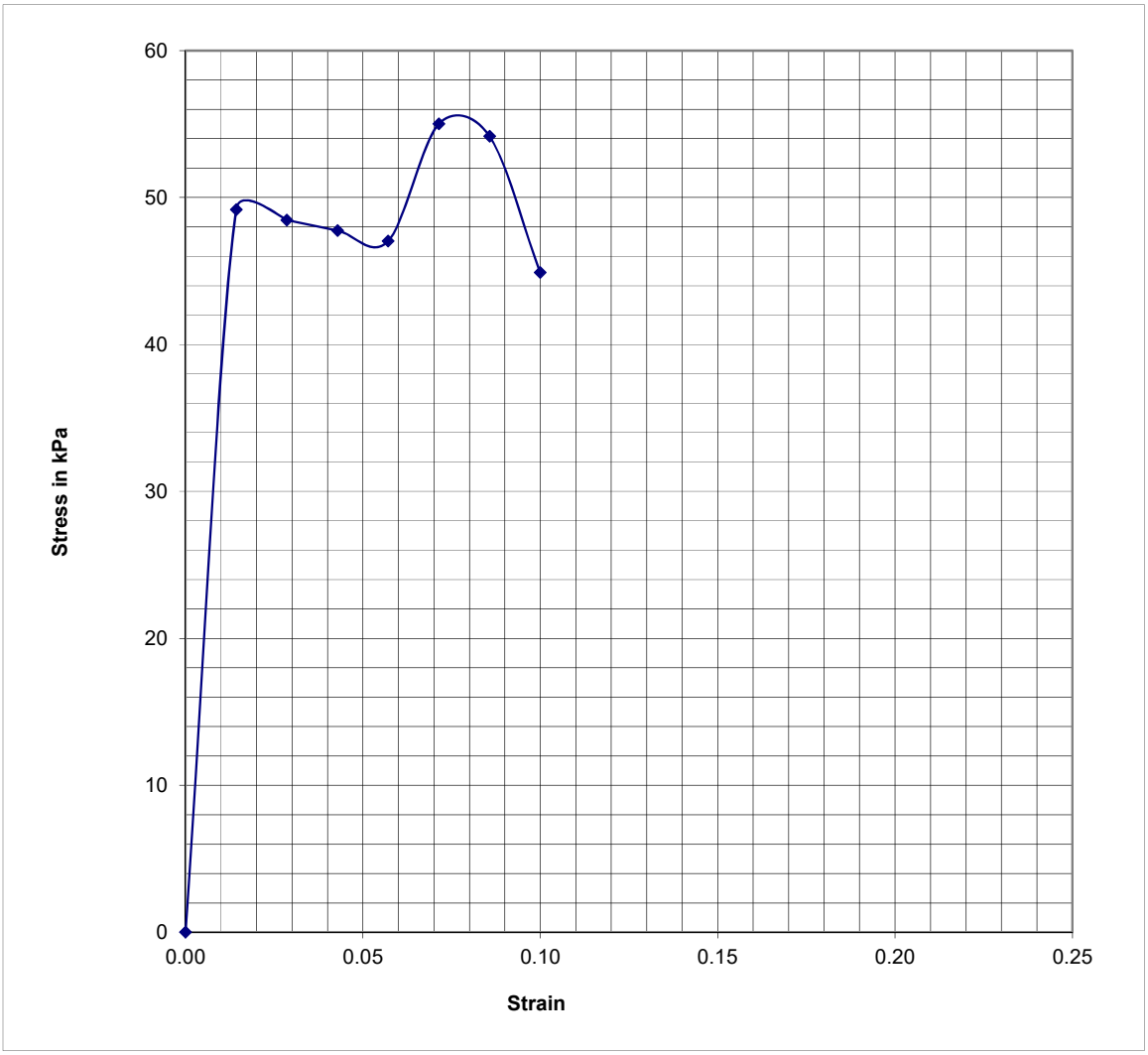
### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 0.5 | 0.0480 | 49.19 |
| 200 | 0.20 | 0.0286 | 9.902 | 0.5 | 0.0480 | 48.47 |
| 300 | 0.30 | 0.0429 | 10.050 | 0.5 | 0.0480 | 47.76 |
| 400 | 0.40 | 0.0571 | 10.202 | 0.5 | 0.0480 | 47.05 |
| 500 | 0.50 | 0.0714 | 10.359 | 1.0 | 0.0570 | 55.02 |
| 600 | 0.60 | 0.0857 | 10.521 | 1.0 | 0.0570 | 54.18 |
| 700 | 0.70 | 0.1000 | 10.688 | 0.5 | 0.0480 | 44.91 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Sylhet
Bore Hole No.: OVP-3.BH-1 Depth: 3m
Sample No.: Test Date: 08.08.2019
Moisture Content,w= 28.18%




Unconfined Compression Strength, qu = 55 kPa = 1146.05 psf
Strain = 7.5 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 27.5 kPa or 573.02 psf
(Tested on undisturbed specimen)
SPT Value= 3

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet

**Bore Hole No.**: OVP-3.BH-1 **Depth:** 13.5 m

**Sample No.**: Test Date: 02.08.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 185.31 | gm | Wt.of Test Specimen. Wt. = | | 152.57 | gm |
| Wt.of can+Dry Sample, B= | | 154.08 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 32.74 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 31.23 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 121.34 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 25.74 | | Wet Density, γ = Wt /Vt = | | 2.27 | gm/cc |
| | | | | | | 141.45 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

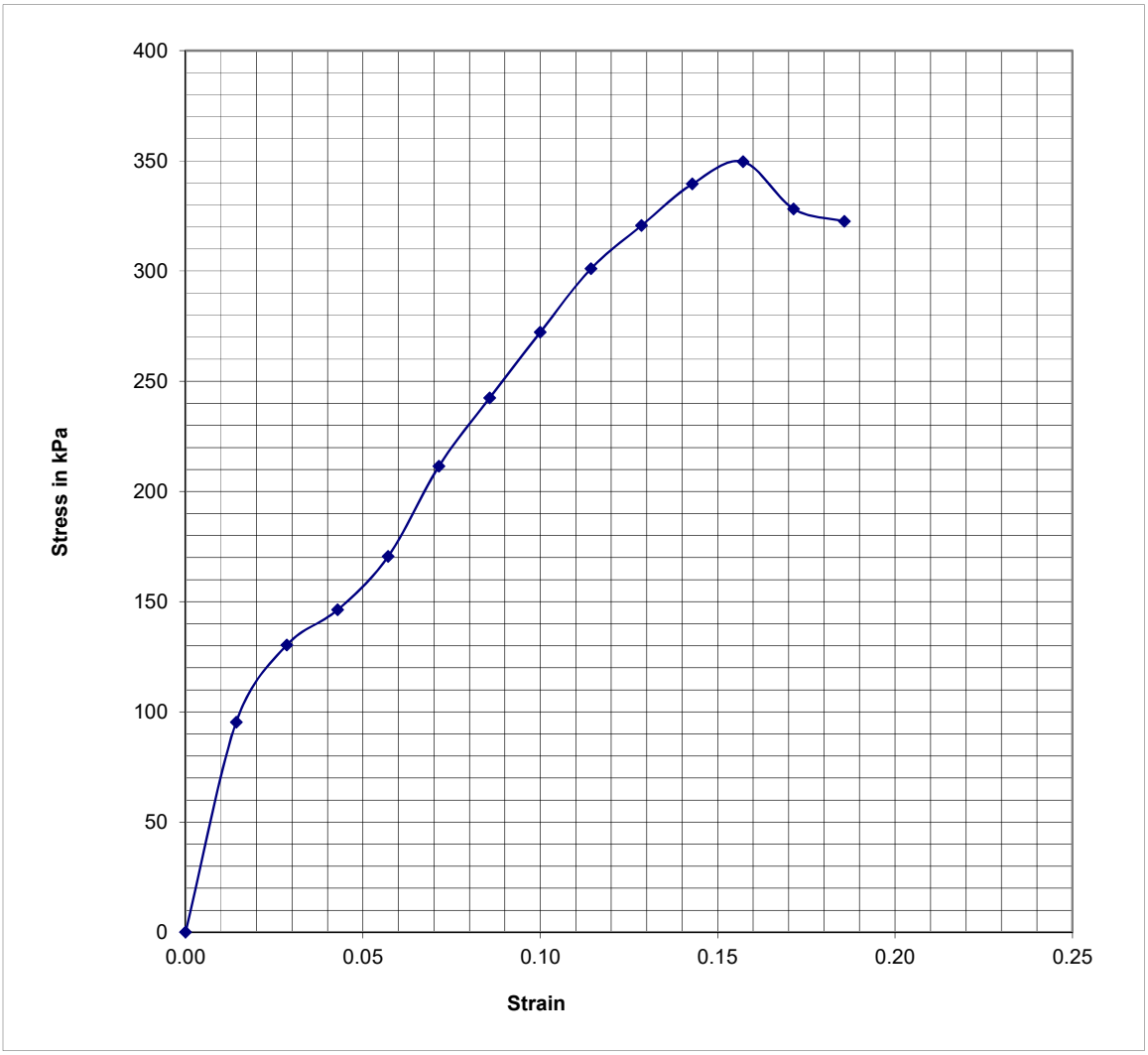
### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 3.0 | 0.0930 | 95.30 |
| 200 | 0.20 | 0.0286 | 9.902 | 5.0 | 0.1290 | 130.27 |
| 300 | 0.30 | 0.0429 | 10.050 | 6.0 | 0.1470 | 146.27 |
| 400 | 0.40 | 0.0571 | 10.202 | 7.5 | 0.1740 | 170.55 |
| 500 | 0.50 | 0.0714 | 10.359 | 10.0 | 0.2190 | 211.41 |
| 600 | 0.60 | 0.0857 | 10.521 | 12.0 | 0.2550 | 242.37 |
| 700 | 0.70 | 0.1000 | 10.688 | 14.0 | 0.2910 | 272.26 |
| 800 | 0.80 | 0.1143 | 10.861 | 16.0 | 0.3270 | 301.09 |
| 900 | 0.90 | 0.1286 | 11.039 | 17.5 | 0.3540 | 320.69 |
| 1000 | 1.00 | 0.1429 | 11.223 | 19.0 | 0.3810 | 339.50 |
| 1100 | 1.10 | 0.1571 | 11.413 | 20.0 | 0.3990 | 349.61 |
| 1200 | 1.20 | 0.1714 | 11.610 | 19.0 | 0.3810 | 328.18 |
| 1300 | 1.30 | 0.1857 | 11.813 | 19.0 | 0.3810 | 322.52 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Sylhet
Bore Hole No.: OVP-3.BH-1 Depth: 13.50 m
Sample No.: Test Date: 02.08.2019
Moisture Content,w= 25.74%




Unconfined Compression Strength, qu = 350 kPa = 7293.02 psf
Strain = 15.7 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 175 kPa or 3646.51 psf
(Tested on undisturbed specimen)
SPT Value= 33

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet

**Bore Hole No.**: OVP-5.BH-02 **Depth:** 5.5m

**Sample No.**: Test Date: 02.08.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 191.58 | gm | Wt.of Test Specimen. Wt. = | | 162.47 | gm |
| Wt.of can+Dry Sample, B= | | 163.94 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 29.11 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 27.64 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 134.83 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 20.50 | | Wet Density, γ = Wt /Vt = | | 2.41 | gm/cc |
| | | | | | | 150.63 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

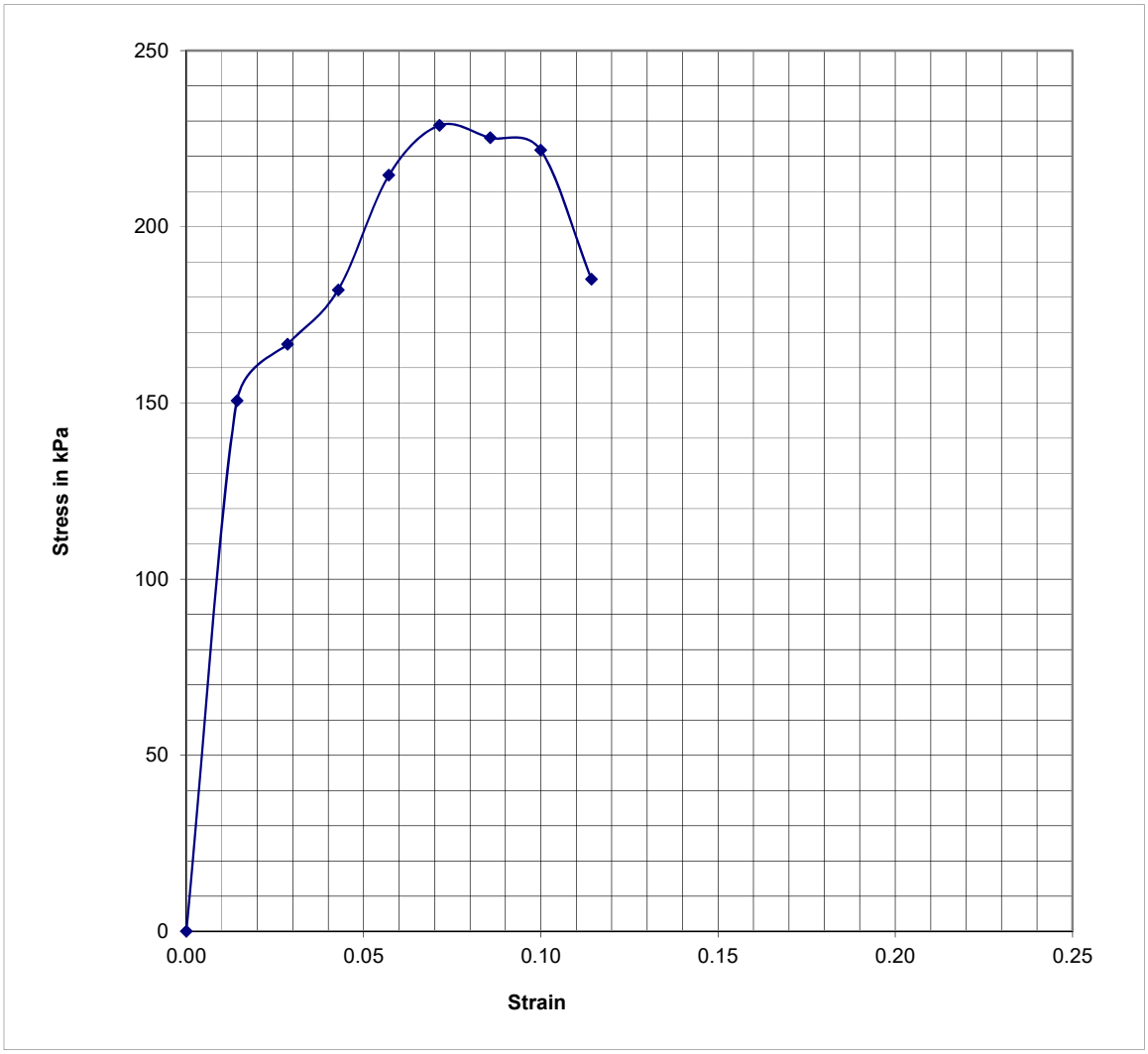
### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 6.0 | 0.1470 | 150.63 |
| 200 | 0.20 | 0.0286 | 9.902 | 7.0 | 0.1650 | 166.63 |
| 300 | 0.30 | 0.0429 | 10.050 | 8.0 | 0.1830 | 182.09 |
| 400 | 0.40 | 0.0571 | 10.202 | 10.0 | 0.2190 | 214.66 |
| 500 | 0.50 | 0.0714 | 10.359 | 11.0 | 0.2370 | 228.78 |
| 600 | 0.60 | 0.0857 | 10.521 | 11.0 | 0.2370 | 225.26 |
| 700 | 0.70 | 0.1000 | 10.688 | 11.0 | 0.2370 | 221.74 |
| 800 | 0.80 | 0.1143 | 10.861 | 9.0 | 0.2010 | 185.07 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Sylhet
Bore Hole No.: OVP-5.BH-02 Depth: 5.5m
Sample No.: Test Date: 02.08.2019
Moisture Content,w= 20.50%




Unconfined Compression Strength, qu = 228 kPa = 4750.88 psf
Strain = 7.2 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 114 kPa or 2375.44 psf
(Tested on undisturbed specimen)
SPT Value= 3

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sylhet

**Bore Hole No.**: OVP-5.BH-02 **Depth:** 33.0m

**Sample No.**: Test Date: 02.08.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 175.36 | gm | Wt.of Test Specimen. Wt. = | | 158.19 | gm |
| Wt.of can+Dry Sample, B= | | 155.7 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 17.17 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 19.66 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 138.53 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 14.19 | | Wet Density, γ = Wt /Vt = | | 2.35 | gm/cc |
| | | | | | | 146.66 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 1.0 | 0.0570 | 58.41 |
| 200 | 0.20 | 0.0286 | 9.902 | 3.0 | 0.0930 | 93.92 |
| 300 | 0.30 | 0.0429 | 10.050 | 5.0 | 0.1290 | 128.36 |
| 400 | 0.40 | 0.0571 | 10.202 | 7.0 | 0.1650 | 161.73 |
| 500 | 0.50 | 0.0714 | 10.359 | 8.0 | 0.1830 | 176.65 |
| 600 | 0.60 | 0.0857 | 10.521 | 9.0 | 0.2010 | 191.04 |
| 700 | 0.70 | 0.1000 | 10.688 | 11.0 | 0.2370 | 221.74 |
| 800 | 0.80 | 0.1143 | 10.861 | 13.5 | 0.2820 | 259.66 |
| 900 | 0.90 | 0.1286 | 11.039 | 15.5 | 0.3180 | 288.08 |
| 1000 | 1.00 | 0.1429 | 11.223 | 16.5 | 0.3360 | 299.40 |
| 1100 | 1.10 | 0.1571 | 11.413 | 19.5 | 0.3900 | 341.72 |
| 1200 | 1.20 | 0.1714 | 11.610 | 19.0 | 0.3810 | 328.18 |
| 1300 | 1.30 | 0.1857 | 11.813 | 18.5 | 0.3720 | 314.90 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

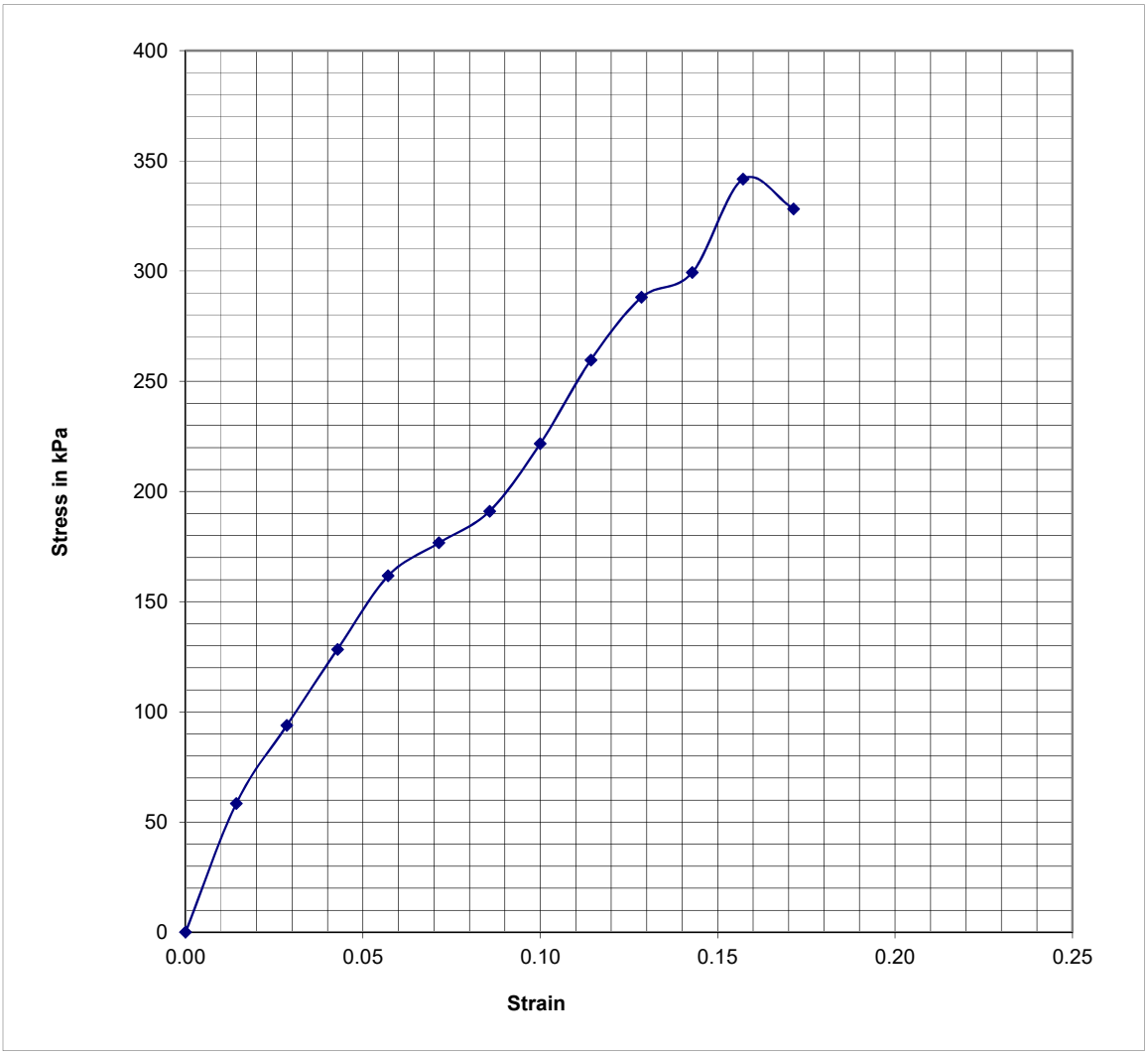
Client:Roads and Highways Department (RHD)

Location: Sylhet

Bore Hole No.: OVP-5.BH-02 Depth: 33.0m

Sample No.: Test Date: 02.08.2019

Moisture Content,w= 14.19%




Unconfined Compression Strength, qu = 342 kPa = 7126.33 psf

Strain = 16.0 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 171 kPa or 3563.16 psf

(Tested on undisturbed specimen)

SPT Value= 50

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Shiula Bridge

**Bore Hole No.**: BR-2.BH-5 **Depth(m):** 0.00m-31.00M

**Sample No.**: UD-1 Test Date: 04.05.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 161.02 gm | | Wt.of Test Specimen. Wt. = | | 128.29 gm | |
| Wt.of can+Dry Sample, B= | | 130.6 gm | | Av.Diameter of Specimen, D = | | 3.50 cm | |
| Wt. of Can, C = | | 32.73 gm | | Av.Ht.of Specimen, Lσ = | | 7.0 cm | |
| Wt. of moisture in sample, A-B = | | 30.42 gm | | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 $cm^2$ | |
| Wt. of Oven Dry Sample, B-C = | | 97.87 gm | | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 $cm^3$ | |
| Moisture Content,w= | (A-B/B-C)x100 | 31.08 | | Wet Density, γ = Wt /Vt = | | 1.91 | gm/cc |
| | | | | | | 118.94 | lb/cft |

### TEST DATA

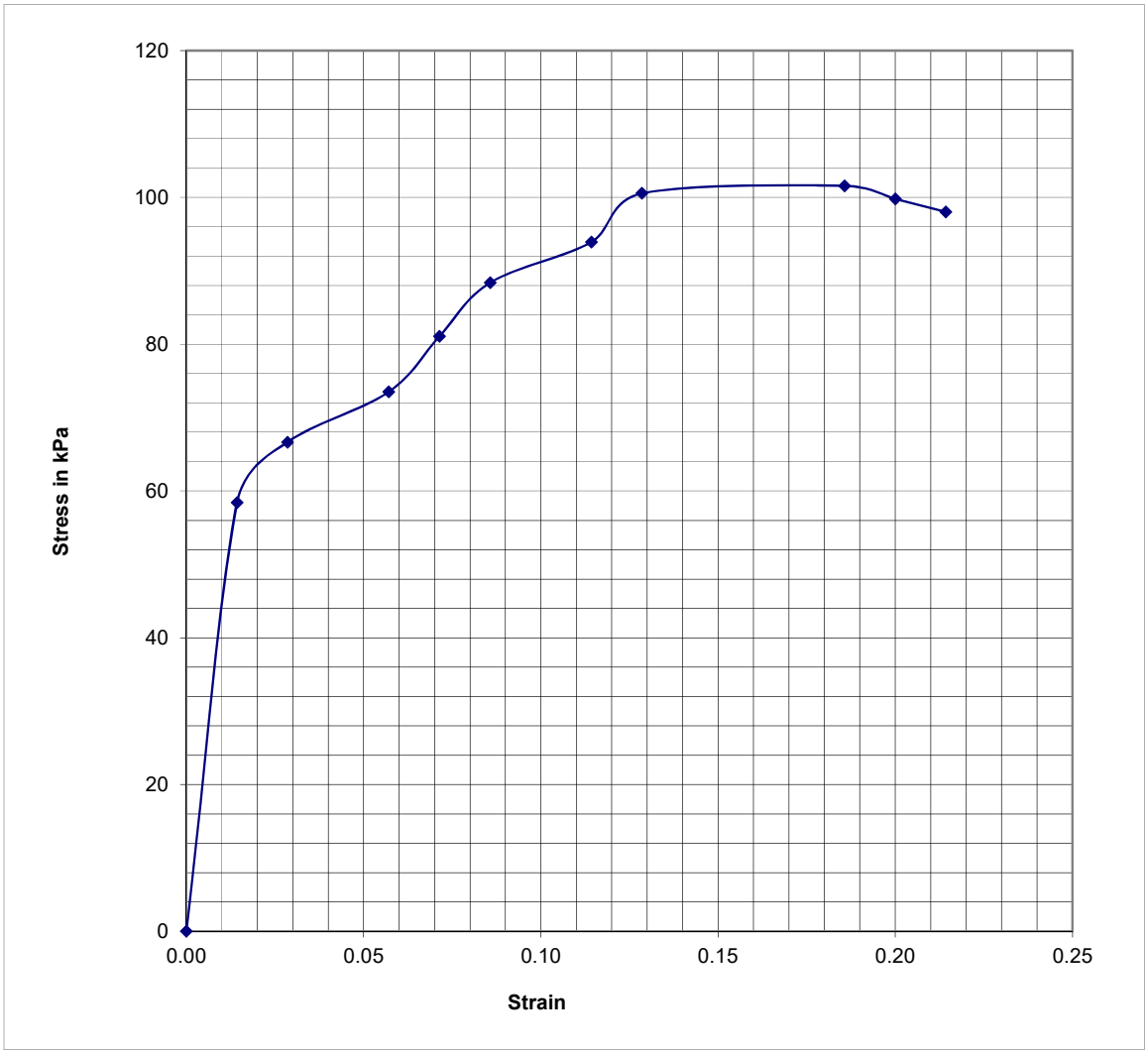
| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 1.0 | 0.0570 | 58.41 |
| 200 | 0.20 | 0.0286 | 9.902 | 1.5 | 0.0660 | 66.65 |
| 400 | 0.40 | 0.0571 | 10.202 | 2.0 | 0.0750 | 73.51 |
| 500 | 0.50 | 0.0714 | 10.359 | 2.5 | 0.0840 | 81.09 |
| 600 | 0.60 | 0.0857 | 10.521 | 3.0 | 0.0930 | 88.39 |
| 800 | 0.80 | 0.1143 | 10.861 | 3.5 | 0.1020 | 93.92 |
| 900 | 0.90 | 0.1286 | 11.039 | 4.0 | 0.1110 | 100.56 |
| 1300 | 1.30 | 0.1857 | 11.813 | 4.5 | 0.1200 | 101.58 |
| 1400 | 1.40 | 0.2000 | 12.024 | 4.5 | 0.1200 | 99.80 |
| 1500 | 1.50 | 0.2143 | 12.243 | 4.5 | 0.1200 | 98.02 |

Picture during UNCONFINED COMPRESSION TEST

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Shiula Bridge
Bore Hole No.: BR-2.BH-5 Depth(m): 0.00m-31.00M
Sample No.: UD-1 Test Date: 04.05.2019
Moisture Content,w= 31.08%




Unconfined Compression Strength, qu = 101 kPa = 2104.56 psf
Strain = 18.5 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 50.5 kPa or 1052.28 psf
(Tested on undisturbed specimen)
SPT Value= 6

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Shiula Bridge

**Bore Hole No.**: BR-2.BH-6 **Depth(m):** 0.00m-20.00M

**Sample No.**: UD-1 Test Date: 04.05.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 155.83 | gm | Wt.of Test Specimen. Wt. = | | 126.57 | gm |
| Wt.of can+Dry Sample, B= | | 122.59 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 29.26 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 33.24 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 93.33 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 35.62 | | Wet Density, γ = Wt /Vt = | | 1.88 | gm/cc |
| | | | | | | 117.34 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

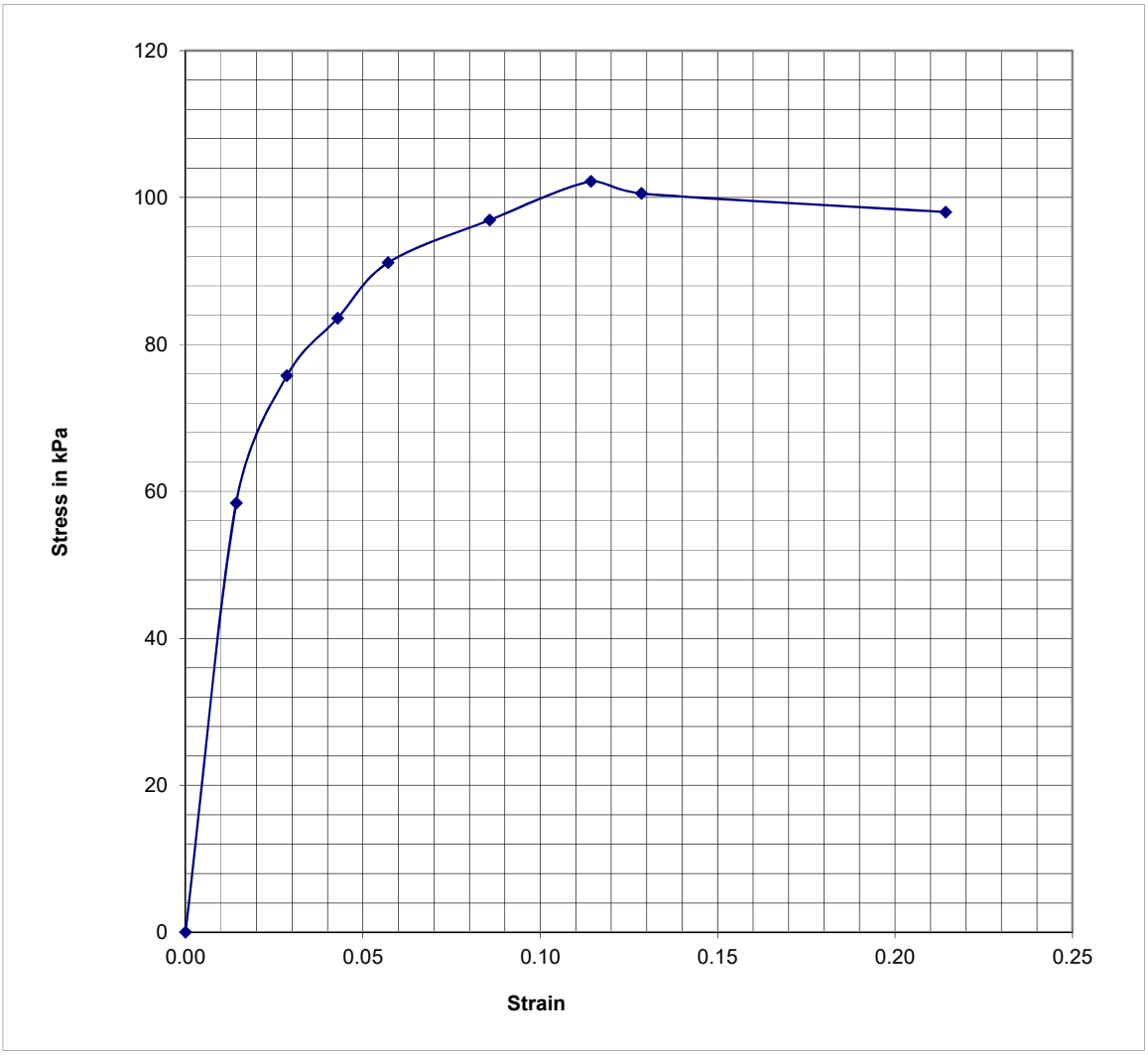
### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 1.0 | 0.0570 | 58.41 |
| 200 | 0.20 | 0.0286 | 9.902 | 2.0 | 0.0750 | 75.74 |
| 300 | 0.30 | 0.0429 | 10.050 | 2.5 | 0.0840 | 83.58 |
| 400 | 0.40 | 0.0571 | 10.202 | 3.0 | 0.0930 | 91.16 |
| 600 | 0.60 | 0.0857 | 10.521 | 3.5 | 0.1020 | 96.95 |
| 800 | 0.80 | 0.1143 | 10.861 | 4.0 | 0.1110 | 102.21 |
| 900 | 0.90 | 0.1286 | 11.039 | 4.0 | 0.1110 | 100.56 |
| 1500 | 1.50 | 0.2143 | 12.243 | 4.5 | 0.1200 | 98.02 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Shiula Bridge
Bore Hole No.: BR-2.BH-6 Depth(m): 0.00m-20.00M
Sample No.: UD-1 Test Date: 04.05.2019
Moisture Content,w= 35.62%




Unconfined Compression Strength, qu = 101 kPa = 2104.56 psf
Strain = 12.9 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 50.5 kPa or 1052.28 psf
(Tested on undisturbed specimen)
SPT Value= 7

**Tested by** : Azharul 6 **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Shiula Bridge

**Bore Hole No.**: BR-2.BH-7 **Depth(m):** 0.00m-23.00M

**Sample No.**: UD-1 Test Date: 04.05.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 152.37 | gm | Wt.of Test Specimen. Wt. = | | 123.35 | gm |
| Wt.of can+Dry Sample, B= | | 121.44 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 29.02 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 30.93 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 92.42 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 33.47 | | Wet Density, γ = Wt /Vt = | | 1.83 | gm/cc |
| | | | | | | 114.36 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

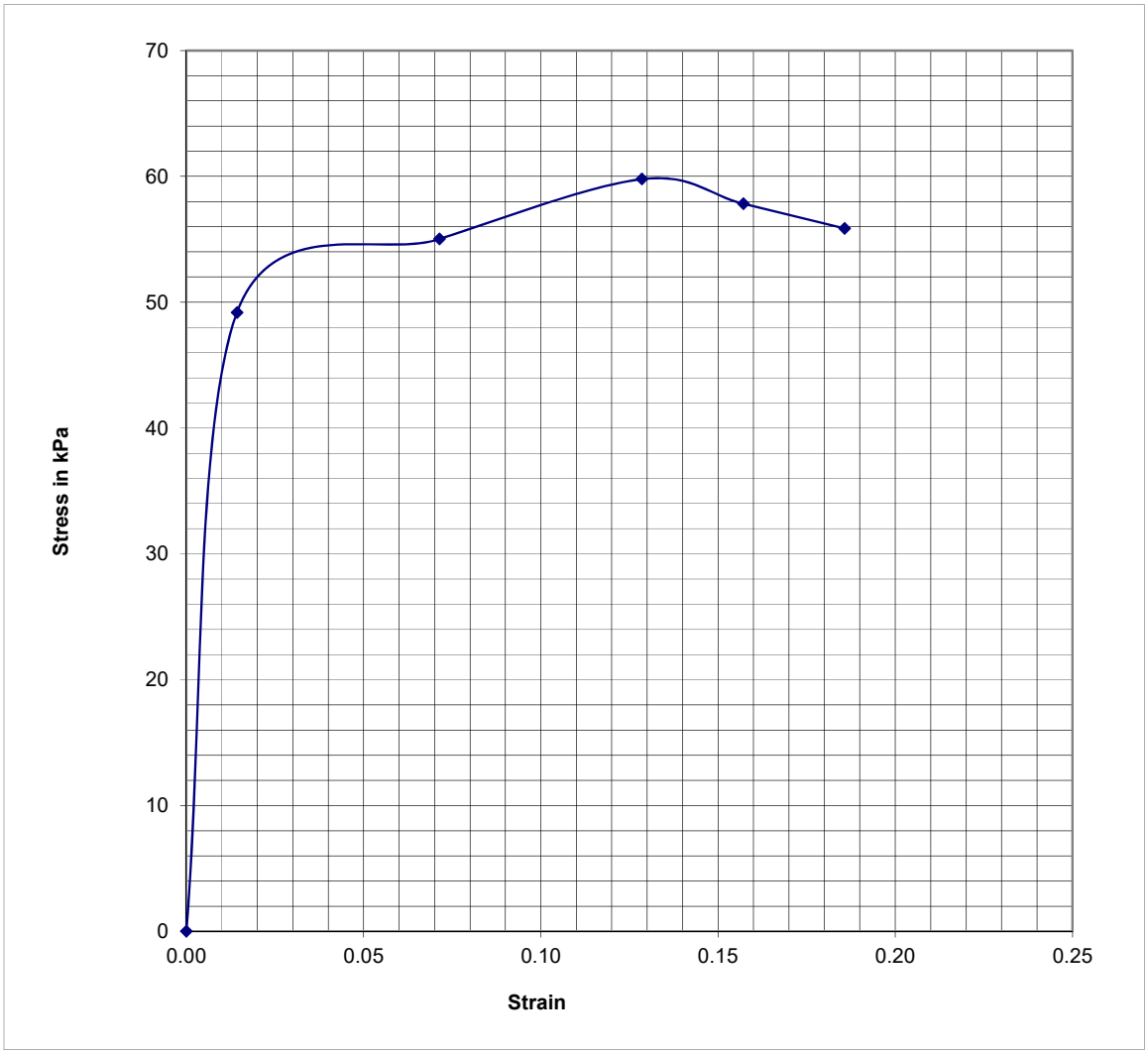
### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 0.5 | 0.0480 | 49.19 |
| 500 | 0.50 | 0.0714 | 10.359 | 1.0 | 0.0570 | 55.02 |
| 900 | 0.90 | 0.1286 | 11.039 | 1.5 | 0.0660 | 59.79 |
| 1100 | 1.10 | 0.1571 | 11.413 | 1.5 | 0.0660 | 57.83 |
| 1300 | 1.30 | 0.1857 | 11.813 | 1.5 | 0.0660 | 55.87 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Shiula Bridge
Bore Hole No.: BR-2.BH-7 Depth(m): 0.00m-23.00M
Sample No.: UD-1 Test Date: 04.05.2019
Moisture Content,w= 33.47%




Unconfined Compression Strength, qu = 60 kPa = 1250.23 psf
Strain = 15.7 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 30 kPa or 625.12 psf
(Tested on undisturbed specimen)
SPT Value= 5

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Shiula Bridge

**Bore Hole No.**: BR-2.BH-9 **Depth(m):** 0.00m-23.00M

**Sample No.**: UD-1 Test Date: 04.05.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 161.86 | gm | Wt.of Test Specimen. Wt. = | | 132.31 | gm |
| Wt.of can+Dry Sample, B= | | 131.64 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 29.55 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 30.22 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 102.09 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 29.60 | | Wet Density, γ = Wt /Vt = | | 1.96 | gm/cc |
| | | | | | | 122.67 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

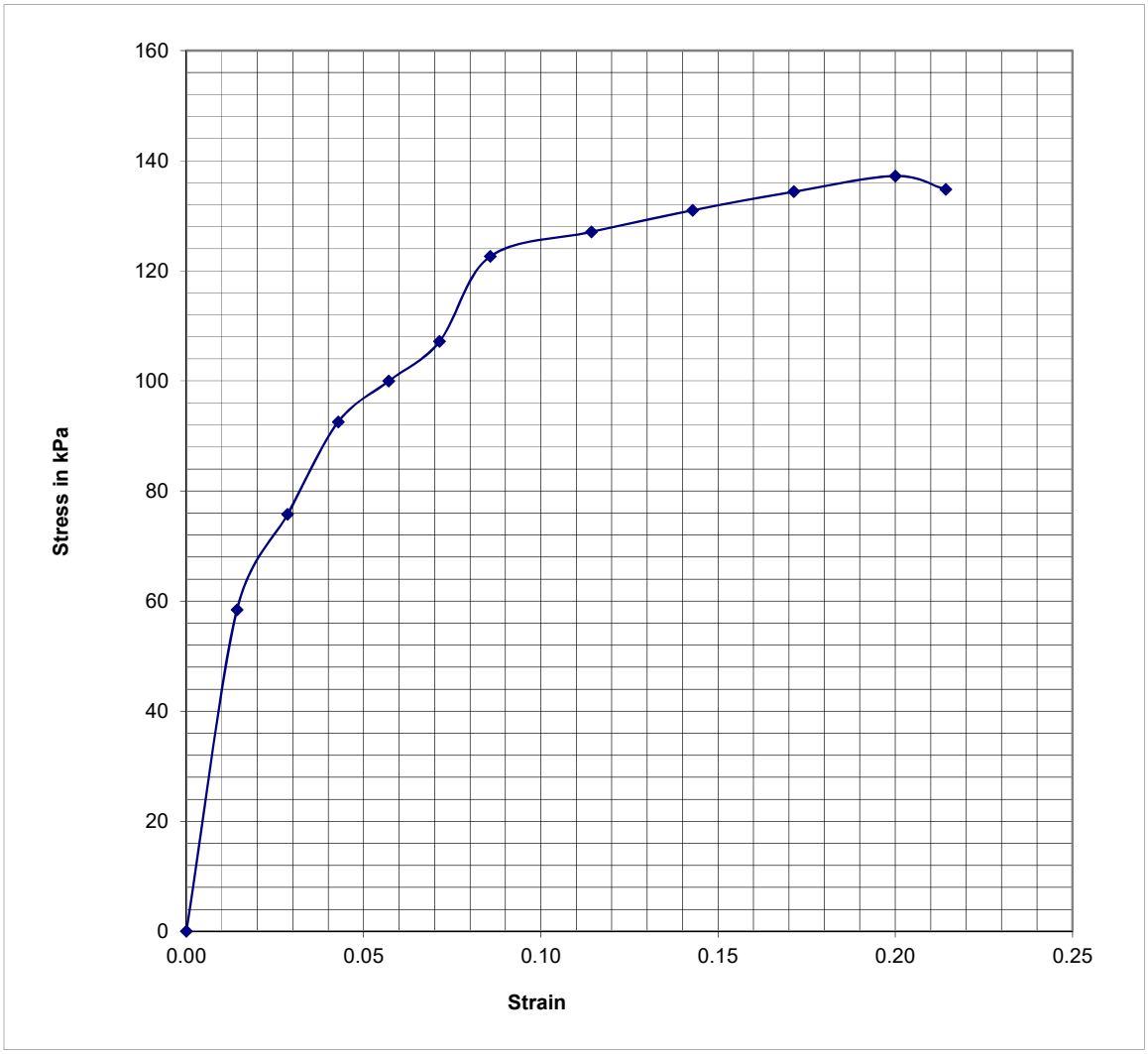
### TEST DATA

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 1.0 | 0.0570 | 58.41 |
| 200 | 0.20 | 0.0286 | 9.902 | 2.0 | 0.0750 | 75.74 |
| 300 | 0.30 | 0.0429 | 10.050 | 3.0 | 0.0930 | 92.54 |
| 400 | 0.40 | 0.0571 | 10.202 | 3.5 | 0.1020 | 99.98 |
| 500 | 0.50 | 0.0714 | 10.359 | 4.0 | 0.1110 | 107.15 |
| 600 | 0.60 | 0.0857 | 10.521 | 5.0 | 0.1290 | 122.61 |
| 800 | 0.80 | 0.1143 | 10.861 | 5.5 | 0.1380 | 127.07 |
| 1000 | 1.00 | 0.1429 | 11.223 | 6.0 | 0.1470 | 130.99 |
| 1200 | 1.20 | 0.1714 | 11.610 | 6.5 | 0.1560 | 134.37 |
| 1400 | 1.40 | 0.2000 | 12.024 | 7.0 | 0.1650 | 137.22 |
| 1500 | 1.50 | 0.2143 | 12.243 | 7.0 | 0.1650 | 134.77 |

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Shiula Bridge
Bore Hole No.: BR-2.BH-9 Depth(m): 0.00m-23.00M
Sample No.: UD-1 Test Date: 04.05.2019
Moisture Content,w= 29.60%




Unconfined Compression Strength, qu = 137 kPa = 2854.70 psf
Strain = 20.0 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 68.5 kPa or 1427.35 psf
(Tested on undisturbe 6
SPT Value= 5

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Bore Hole No.**:R.B - 02 **Depth:** 4.5-4.95 m

**Sample No.**: UD-1 Test Date: 01.04.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 151.72 gm | | Wt.of Test Specimen. Wt. = | | 124.69 gm | |
| Wt.of can+Dry Sample, B= | | 118.65 gm | | Av.Diameter of Specimen, D = | | 3.50 cm | |
| Wt. of Can, C = | | 27.03 gm | | Av.Ht.of Specimen, Lσ = | | 7.0 cm | |
| Wt. of moisture in sample, A-B = | | 33.07 gm | | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 $cm^2$ | |
| Wt. of Oven Dry Sample, B-C = | | 91.62 gm | | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 $cm^3$ | |
| Moisture Content,w= | (A-B/B-C)x100 | 36.09 | | Wet Density, γ = Wt /Vt = | | 1.85 | gm/cc |
| | | | | | | 115.60 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

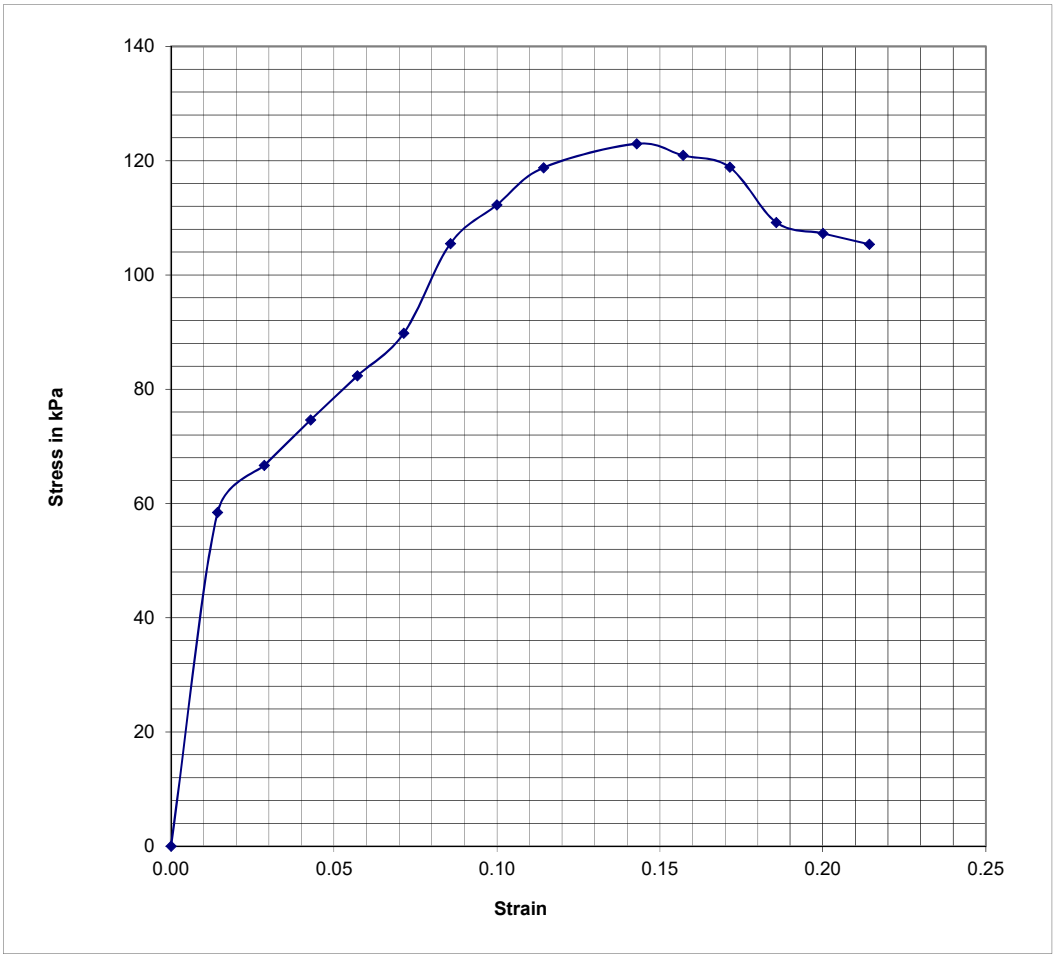
**TEST DATA**

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 1.0 | 0.0570 | 58.41 |
| 200 | 0.20 | 0.0286 | 9.902 | 1.5 | 0.0660 | 66.65 |
| 300 | 0.30 | 0.0429 | 10.050 | 2.0 | 0.0750 | 74.63 |
| 400 | 0.40 | 0.0571 | 10.202 | 2.5 | 0.0840 | 82.33 |
| 500 | 0.50 | 0.0714 | 10.359 | 3.0 | 0.0930 | 89.77 |
| 600 | 0.60 | 0.0857 | 10.521 | 4.0 | 0.1110 | 105.50 |
| 700 | 0.70 | 0.1000 | 10.688 | 4.5 | 0.1200 | 112.27 |
| 800 | 0.80 | 0.1143 | 10.861 | 5.0 | 0.1290 | 118.78 |
| 1000 | 1.00 | 0.1429 | 11.223 | 5.5 | 0.1380 | 122.97 |
| 1100 | 1.10 | 0.1571 | 11.413 | 5.5 | 0.1380 | 120.92 |
| 1200 | 1.20 | 0.1714 | 11.610 | 5.5 | 0.1380 | 118.87 |
| 1300 | 1.30 | 0.1857 | 11.813 | 5.0 | 0.1290 | 109.20 |
| 1400 | 1.40 | 0.2000 | 12.024 | 5.0 | 0.1290 | 107.28 |
| 1500 | 1.50 | 0.2143 | 12.243 | 5.0 | 0.1290 | 105.37 |

## AL-MAYEDA SURVEY CONSULTANTS

### UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.
Client:Roads and Highways Department (RHD)
Location: Sutarkandi,Sylhet.
Bore Hole No.:R.B - 02 Depth: 4.5-4.95 m
Sample No.: UD-1 Test Date: 01.04.2019
Moisture Content,w= 36.09%




Unconfined Compression Strength, qu = 123.5 kPa = 2573.40 psf
Strain = 14.5 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 61.75 kPa or 1286.70 psf
SPT Value= 3

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# AL-MAYEDA SURVEY CONSULTANTS

## UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

**Project:** Sub-Regional Road Transportation Project (SRTPPF-II), Sylhet- Sutarkandi Road.

**Client:** Roads and Highways Department (RHD)

**Location:** Sutarkandi,Sylhet.

**Bore Hole No.**: R.B - 08 **Depth:** 4.5-4.95 m

**Sample No.**: UD-1 Test Date: 01.04.2019

Max.Capacity : 2 kN **BUET Cal. Eq. y=0.018x+0.039**

| Water Content | | | | Sample Density | | | |
|---|---|---|---|---|---|---|---|
| Wt. Can + wet Sample, A= | | 161.65 | gm | Wt.of Test Specimen. Wt. = | | 132.28 | gm |
| Wt.of can+Dry Sample, B= | | 131.69 | gm | Av.Diameter of Specimen, D = | | 3.50 | cm |
| Wt. of Can, C = | | 29.37 | gm | Av.Ht.of Specimen, Lσ = | | 7.0 | cm |
| Wt. of moisture in sample, A-B = | | 29.96 | gm | Initial Area of Specimen, Aσ = π/4 x $D^2$ = | | 9.62 | $cm^2$ |
| Wt. of Oven Dry Sample, B-C = | | 102.32 | gm | Volume of Specimen, Vt = π/4 x $D^2$ x Lσ = | | 67.34 | $cm^3$ |
| Moisture Content,w= | (A-B/B-C)x100 | 29.28 | | Wet Density, γ = Wt /Vt = | | 1.96 | gm/cc |
| | | | | | | 122.64 | lb/cft |

Picture during UNCONFINED COMPRESSION TEST

**TEST DATA**

| Deformation Dial Reading (1Div.= ) | Specimen Deformation ΔL cm | Strain, E = ΔL/ Lσ | Corrected Area A' = Aσ/1-E | Load Dial Reading. | Total Load on Specimen (kN) | Sample Stress Load/Corr.Area |
|---|---|---|---|---|---|---|
| Div. | | | | Div. | | (kPa) |
| 0 | 0.00 | 0.0000 | 9.619 | 0.0 | 0.0000 | 0.00 |
| 100 | 0.10 | 0.0143 | 9.759 | 0.5 | 0.0480 | 49.19 |
| 200 | 0.20 | 0.0286 | 9.902 | 1.0 | 0.0570 | 57.56 |
| 300 | 0.30 | 0.0429 | 10.050 | 2.0 | 0.0750 | 74.63 |
| 400 | 0.40 | 0.0571 | 10.202 | 3.0 | 0.0930 | 91.16 |
| 500 | 0.50 | 0.0714 | 10.359 | 3.5 | 0.1020 | 98.46 |
| 600 | 0.60 | 0.0857 | 10.521 | 4.0 | 0.1110 | 105.50 |
| 700 | 0.70 | 0.1000 | 10.688 | 4.5 | 0.1200 | 112.27 |
| 800 | 0.80 | 0.1143 | 10.861 | 5.0 | 0.1290 | 118.78 |
| 1000 | 1.00 | 0.1429 | 11.223 | 5.0 | 0.1290 | 114.95 |
| 1100 | 1.10 | 0.1571 | 11.413 | 4.5 | 0.1200 | 105.15 |
| 1200 | 1.20 | 0.1714 | 11.610 | 4.5 | 0.1200 | 103.36 |
| 1300 | 1.30 | 0.1857 | 11.813 | 4.0 | 0.1110 | 93.96 |
| 1400 | 1.40 | 0.2000 | 12.024 | 4.0 | 0.1110 | 92.31 |
| 1500 | 1.50 | 0.2143 | 12.243 | 4.0 | 0.1110 | 90.67 |

## AL-MAYEDA SURVEY CONSULTANTS

### UNCONFINED COMPRESSION TEST OF COHESIVE SOIL

Project:Sub-Regional Road Transportation Project (SRTPPF-ll), Sylhet- Sutarkandi Road.

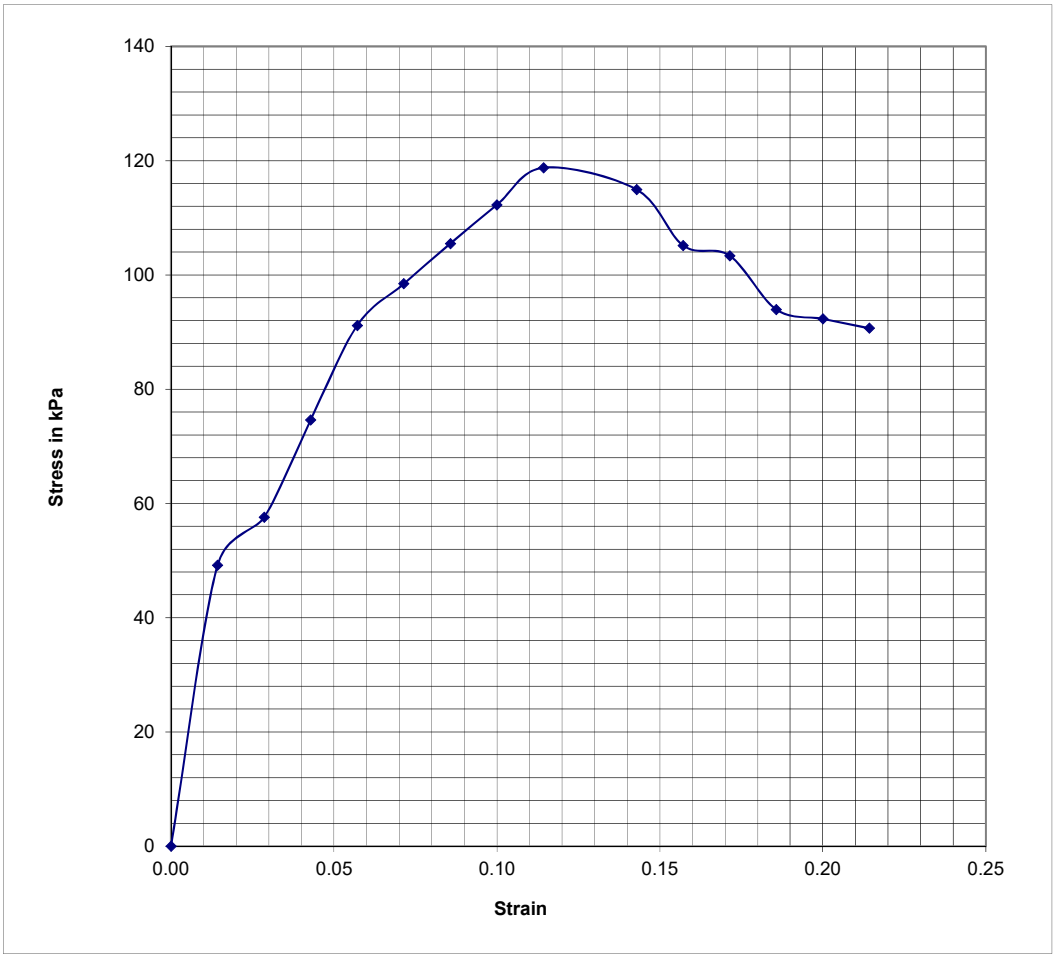
Client:Roads and Highways Department (RHD)

Location: Sutarkandi,Sylhet.

Bore Hole No.: R.B - 08 Depth: 4.5-4.95 m

Sample No.: UD-1 Test Date: 01.04.2019

Moisture Content,w= 29.28%




Unconfined Compression Strength, qu = 119 kPa = 2479.63 psf

Strain = 12.0 %

Cohesion or Undrained Shear Strength, C = Su = qu/2 = 59.5 kPa or 1239.81 psf

SPT Value= 3

**Tested by** : Azharul **Signed by** : Engr. Jamal Uddin

# CONSOLIDATION TESTS

# CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 02
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

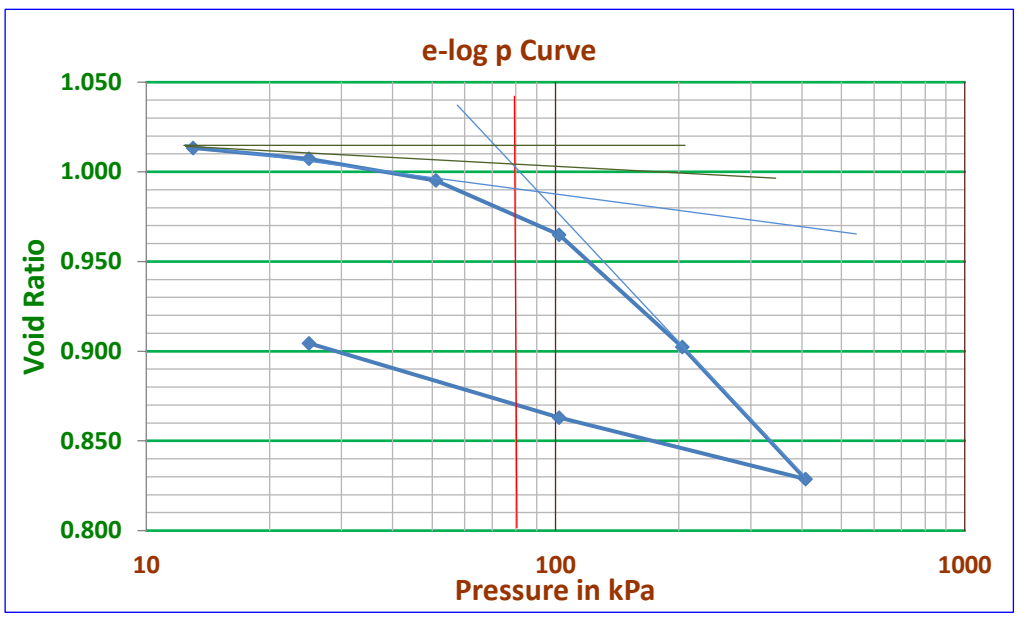
Specimen Condition:

| | | |
|---|---|---|
| Area of sample = | 38.485 | $cm^2$ |
| Vol. Of Solids = | 38.153 | $cm^3$ |
| Ht. Of Solid ($2H_o$) = | 0.991 | cm |
| Ht. Of Void = | 1.009 | cm |
| Initial Void Ratio,$e_o$ = | 1.017 | |
| Tare Weight = | 0 | lbs |
| Deformation Dial Constant = | 0.001 | mm/div. |
| Compression Index ($C_c$)= | 0.24 | |
| (Pc)= | 80 | kPa |
| Recompression Index ($C_r$)= | 0.0213 | |

Equipment used:

| | | |
|---|---|---|
| Height of ring = | 2.00 | cm |
| Dia. Of ring = | 7.00 | cm |
| Specfic gravity, $G_s$ = | 2.68 | |
| Wt. of ring = | 198.11 | gm |
| Wt. of ring + soil (B.T)= | 335.78 | gm |
| Wt. of ring + soil (A.T)= | 337.67 | gm |
| Wt. of soil( A.T.)= | 139.56 | gm |
| Water content (B.T)= | 34.64 | % |
| Wt. of dry specimen = | 102.25 | gm |
| Water content (A.T)= | 36.49 | % |
| Degree of saturation | 96.12 | % |

| Applied load, kg | Pressure, kPa | Final dial reading | Dial change ΔH mm | Sample Ht. (2H), cm | (2H-$2H_o$) | e |
|---|---|---|---|---|---|---|
| 0 | 0 | 800 | 0 | 2 | 1.0086 | 1.017 |
| 0.5 | 13 | 796 | 0.004 | 1.996 | 1.0046 | 1.013 |
| 1 | 25 | 790 | 0.01 | 1.99 | 0.9986 | 1.007 |
| 2 | 51 | 778 | 0.022 | 1.978 | 0.9866 | 0.995 |
| 4 | 102 | 748 | 0.052 | 1.948 | 0.9566 | 0.965 |
| 8 | 204 | 686 | 0.114 | 1.886 | 0.8946 | 0.902 |
| 16 | 408 | 613 | 0.187 | 1.813 | 0.8216 | 0.829 |
| 4 | 102 | 647 | 0.153 | 1.847 | 0.8556 | 0.863 |
| 1 | 25 | 688 | 0.112 | 1.888 | 0.8966 | 0.904 |

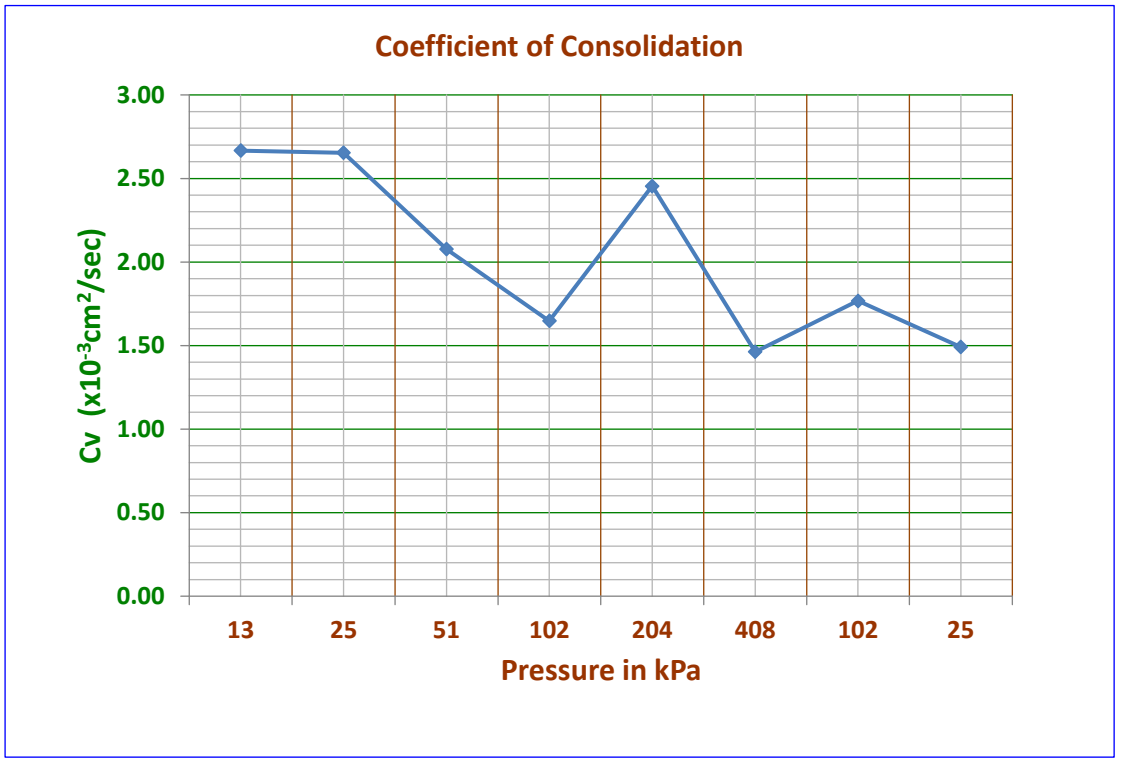


## CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 02
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

| Pressure, kPa | Av. Pressure, kPa | Sample Ht. (2H), in | $H=(H_1+H_2)/2$ mm | $t_{90}$ sec | Cv (x10$^{-3}$cm$^2$/sec) | av | mv | K (x10$^{-3}$cm$^2$/sec) |
|---|---|---|---|---|---|---|---|---|
| 0 | | 2 | | | | 0.00031 | 0.0002 | |
| 13 | 6.5 | 1.996 | 9.990 | 317.40 | 2.67 | 0.00050 | 0.0003 | 0.000668 |
| 25 | 19.0 | 1.99 | 9.965 | 317.40 | 2.65 | 0.00047 | 0.0002 | 0.000615 |
| 51 | 38.0 | 1.978 | 9.920 | 401.71 | 2.08 | 0.00059 | 0.0003 | 0.000618 |
| 102 | 76.5 | 1.948 | 9.815 | 495.94 | 1.65 | 0.00061 | 0.0003 | 0.000514 |
| 204 | 153.0 | 1.886 | 9.585 | 317.40 | 2.45 | 0.00036 | 0.0002 | 0.000466 |
| 408 | 306.0 | 1.813 | 9.248 | 495.94 | 1.46 | 0.00011 | 0.0001 | 8.96E-05 |
| 102 | 255.0 | 1.847 | 9.150 | 401.71 | 1.77 | 0.00054 | 0.0003 | 0.00051 |
| 25 | 63.5 | 1.888 | 9.338 | 495.94 | 1.49 | 0.03618 | 0.0190 | 0.02832 |



# CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 04
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

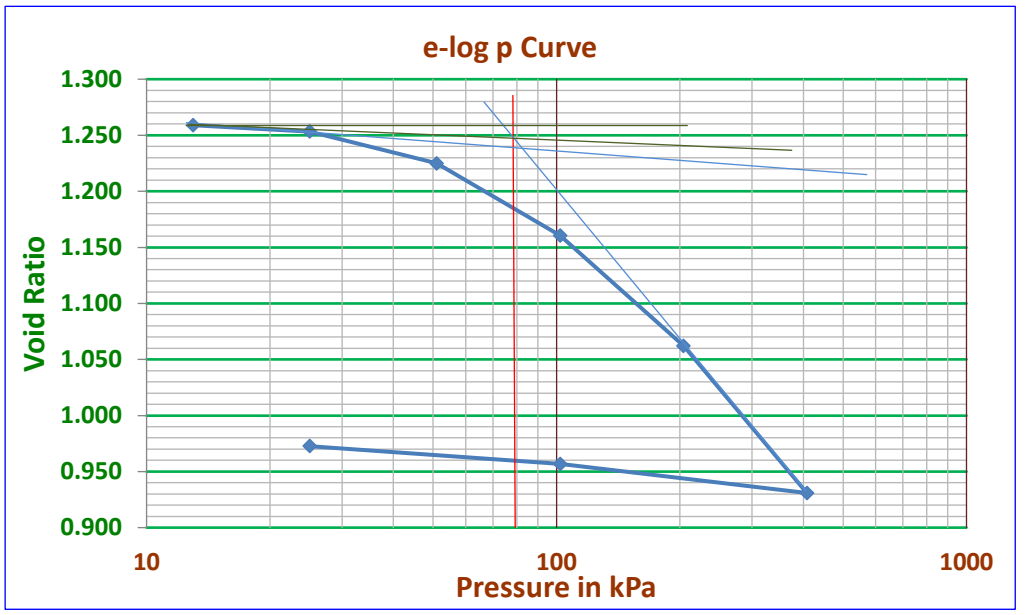
Specimen Condition:

| | | |
|---|---|---|
| Area of sample = | 38.485 | $cm^2$ |
| Vol. Of Solids = | 34.022 | $cm^3$ |
| Ht. Of Solid ($2H_o$) = | 0.884 | cm |
| Ht. Of Void = | 1.116 | cm |
| Initial Void Ratio,$e_o$ = | 1.262 | |
| Tare Weight = | 0 | lbs |
| Deformation Dial Constant = | 0.001 | mm/div. |
| Compression Index ($C_c$)= | 0.44 | |
| (Pc)= | 80 | kPa |
| Recompression Index ($C_r$)= | 0.0199 | |

Equipment used:

| | | |
|---|---|---|
| Height of ring = | 2.00 | cm |
| Dia. Of ring = | 7.00 | cm |
| Specfic gravity, $G_s$ = | 2.70 | |
| Wt. of ring = | 192.95 | gm |
| Wt. of ring + soil (B.T)= | 318.25 | gm |
| Wt. of ring + soil (A.T)= | 316.3 | gm |
| Wt. of soil( A.T.)= | 123.35 | gm |
| Water content (B.T)= | 36.40 | % |
| Wt. of dry specimen = | 91.86 | gm |
| Water content (A.T)= | 34.28 | % |
| Degree of saturation | 73.3 | % |

| Applied load, kg | Pressure, kPa | Final dial reading | Dial change ΔH mm | Sample Ht. (2H), cm | (2H-$2H_o$) | e |
|---|---|---|---|---|---|---|
| 0 | 0 | 700 | 0 | 2 | 1.1160 | 1.262 |
| 0.5 | 13 | 697 | 0.003 | 1.997 | 1.1130 | 1.259 |
| 1 | 25 | 692 | 0.008 | 1.992 | 1.1080 | 1.253 |
| 2 | 51 | 667 | 0.033 | 1.967 | 1.0830 | 1.225 |
| 4 | 102 | 610 | 0.09 | 1.91 | 1.0260 | 1.161 |
| 8 | 204 | 523 | 0.177 | 1.823 | 0.9390 | 1.062 |
| 16 | 408 | 407 | 0.293 | 1.707 | 0.8230 | 0.931 |
| 4 | 102 | 430 | 0.27 | 1.73 | 0.8460 | 0.957 |
| 1 | 25 | 444 | 0.256 | 1.744 | 0.8600 | 0.973 |

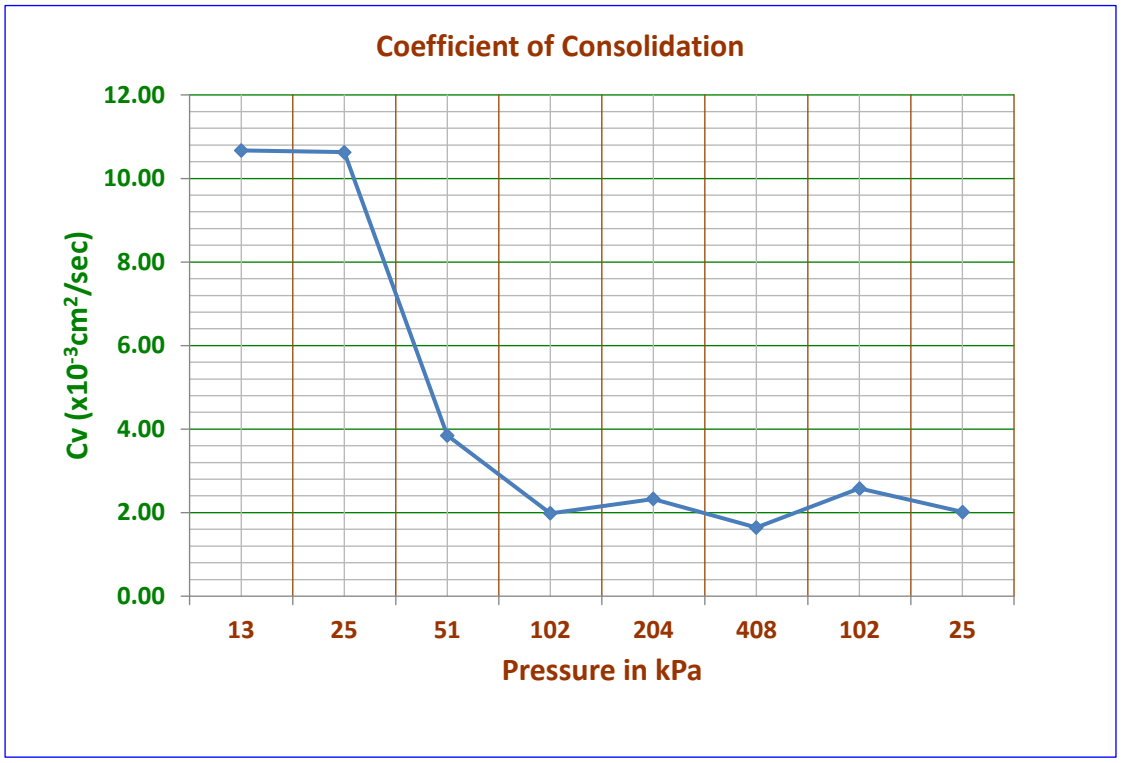


## CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 04
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

| Pressure, kPa | Av. Pressure, kPa | Sample Ht. (2H), in | H=($H_1$+$H_2$)/2 mm | $t_{90}$ sec | Cv (x10$^{-3}$cm$^2$/sec) | av | mv | K (x10$^{-3}$cm$^2$/sec) |
|---|---|---|---|---|---|---|---|---|
| 0 | | 2 | | | | 0.00026 | 0.0001 | |
| 13 | 6.5 | 1.997 | 9.993 | 79.35 | 10.67 | 0.00047 | 0.0002 | 0.002226 |
| 25 | 19.0 | 1.992 | 9.973 | 79.35 | 10.63 | 0.00109 | 0.0005 | 0.00513 |
| 51 | 38.0 | 1.967 | 9.898 | 216.03 | 3.85 | 0.00126 | 0.0006 | 0.002185 |
| 102 | 76.5 | 1.91 | 9.693 | 401.71 | 1.98 | 0.00096 | 0.0004 | 0.000886 |
| 204 | 153.0 | 1.823 | 9.333 | 317.40 | 2.33 | 0.00064 | 0.0003 | 0.000726 |
| 408 | 306.0 | 1.707 | 8.825 | 401.71 | 1.64 | 0.00009 | 0.0000 | 7.24E-05 |
| 102 | 255.0 | 1.73 | 8.593 | 243.01 | 2.58 | 0.00021 | 0.0001 | 0.000271 |
| 25 | 63.5 | 1.744 | 8.685 | 317.40 | 2.02 | 0.03891 | 0.0197 | 0.039748 |



# CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 07
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

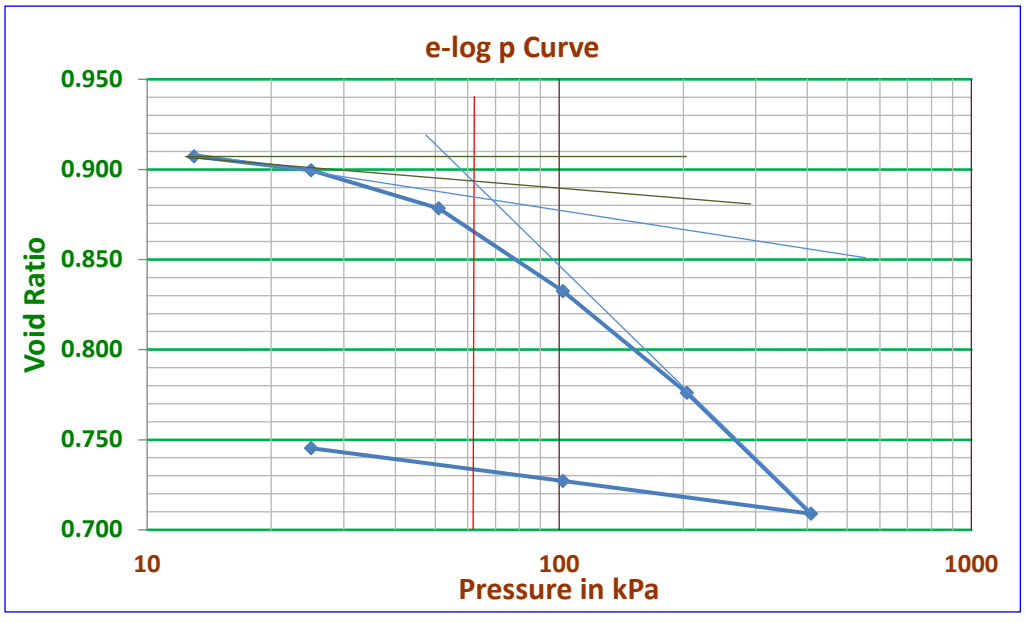
Specimen Condition:

| | | |
|---|---|---|
| Area of sample = | 38.485 | $cm^2$ |
| Vol. Of Solids = | 40.175 | $cm^3$ |
| Ht. Of Solid ($2H_o$) = | 1.044 | cm |
| Ht. Of Void = | 0.956 | cm |
| Initial Void Ratio,$e_o$ = | 0.916 | |
| Tare Weight = | 0 | lbs |
| Deformation Dial Constant = | 0.001 | mm/div. |
| Compression Index ($C_c$)= | 0.22 | |
| (Pc)= | 62 | kPa |
| Recompression Index($C_r$) | 0.027 | |

Equipment used:

| | | |
|---|---|---|
| Height of ring = | 2.00 | cm |
| Dia. Of ring = | 7.00 | cm |
| Specfic gravity, $G_s$ = | 2.69 | |
| Wt. of ring = | 191.45 | gm |
| Wt. of ring + soil (B.T)= | 338.21 | gm |
| Wt. of ring + soil (A.T)= | 333.79 | gm |
| Wt. of soil( A.T.)= | 142.34 | gm |
| Water content (B.T)= | 35.80 | % |
| Wt. of dry specimen = | 108.07 | gm |
| Water content (A.T)= | 31.71 | % |
| Degree of saturation | 93.14 | % |

| Applied load, kg | Pressure, kPa | Final dial reading | Dial change ΔH mm | Sample Ht. (2H), cm | ($2H-2H_o$) | e |
|---|---|---|---|---|---|---|
| 0 | 0 | 2000 | 0 | 2 | 0.9561 | 0.916 |
| 0.5 | 13 | 1991 | 0.009 | 1.991 | 0.9471 | 0.907 |
| 1 | 25 | 1983 | 0.017 | 1.983 | 0.9391 | 0.900 |
| 2 | 51 | 1961 | 0.039 | 1.961 | 0.9171 | 0.879 |
| 4 | 102 | 1913 | 0.087 | 1.913 | 0.8691 | 0.833 |
| 8 | 204 | 1854 | 0.146 | 1.854 | 0.8101 | 0.776 |
| 16 | 408 | 1784 | 0.216 | 1.784 | 0.7401 | 0.709 |
| 4 | 102 | 1803 | 0.197 | 1.803 | 0.7591 | 0.727 |
| 1 | 25 | 1822 | 0.178 | 1.822 | 0.7781 | 0.745 |

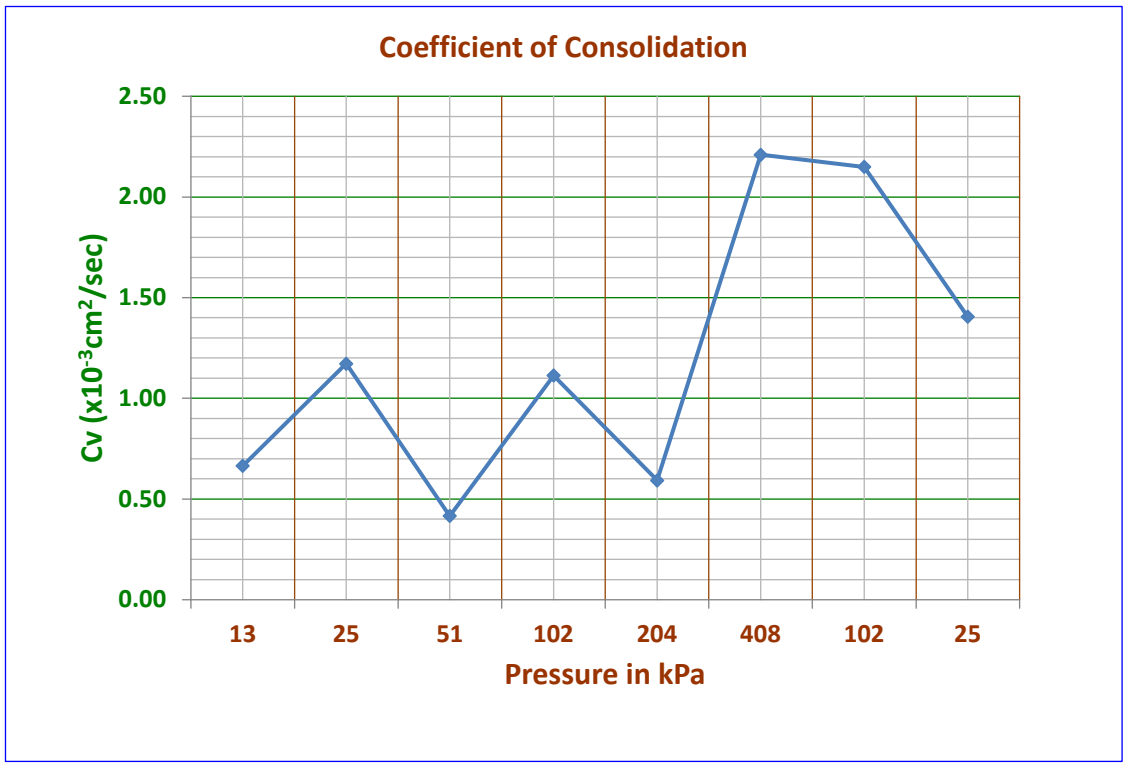


## CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 07
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

| Pressure, kPa | Av. Pressure, kPa | Sample Ht. (2H), in | $H=(H_1+H_2)/2$ mm | $t_{90}$ sec | Cv (x10$^{-3}$cm$^2$/sec) | av | mv | K (x10$^{-3}$cm$^2$/sec) |
|---|---|---|---|---|---|---|---|---|
| 0 | | 2 | | | | 0.00066 | 0.0003 | |
| 13 | 6.5 | 1.991 | 9.978 | 1269.60 | 0.66 | 0.00064 | 0.0003 | 0.000223 |
| 25 | 19.0 | 1.983 | 9.935 | 714.15 | 1.17 | 0.00081 | 0.0004 | 0.0005 |
| 51 | 38.0 | 1.961 | 9.860 | 1983.75 | 0.42 | 0.00090 | 0.0005 | 0.000199 |
| 102 | 76.5 | 1.913 | 9.685 | 714.15 | 1.11 | 0.00055 | 0.0003 | 0.000337 |
| 204 | 153.0 | 1.854 | 9.418 | 1269.60 | 0.59 | 0.00033 | 0.0002 | 0.00011 |
| 408 | 306.0 | 1.784 | 9.095 | 317.40 | 2.21 | 0.00006 | 0.0000 | 7.69E-05 |
| 102 | 255.0 | 1.803 | 8.968 | 317.40 | 2.15 | 0.00024 | 0.0001 | 0.000294 |
| 25 | 63.5 | 1.822 | 9.063 | 495.94 | 1.40 | 0.02981 | 0.0171 | 0.023988 |



# CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 08
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

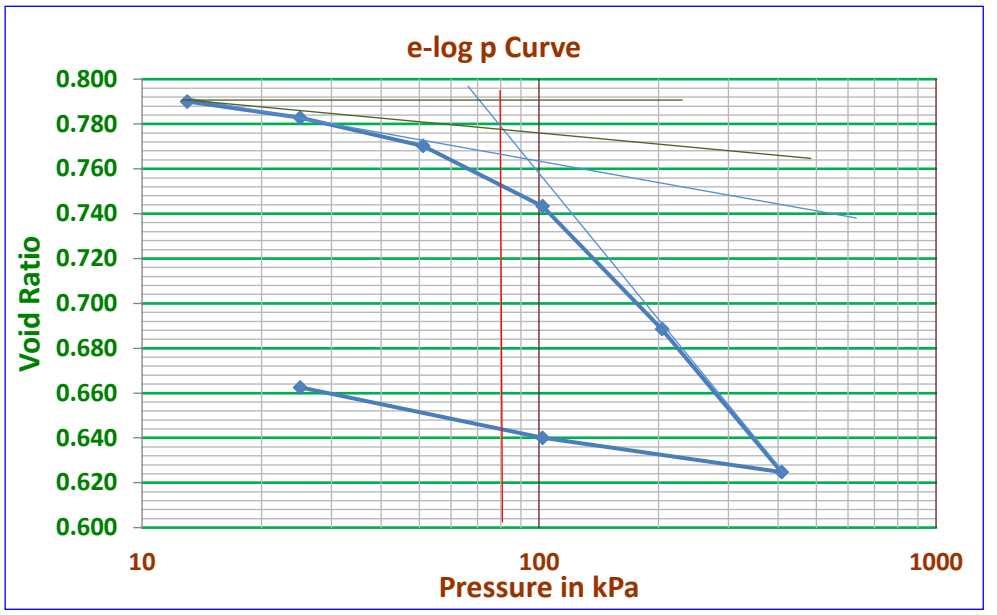
Specimen Condition:

| | | |
|---|---|---|
| Area of sample = | 38.485 | $cm^2$ |
| Vol. Of Solids = | 42.848 | $cm^3$ |
| Ht. Of Solid ($2H_o$) = | 1.113 | cm |
| Ht. Of Void = | 0.887 | cm |
| Initial Void Ratio,$e_o$ = | 0.796 | |
| Tare Weight = | 0 | lbs |
| Deformation Dial Constant = | 0.001 | mm/div. |
| Compression Index ($C_c$)= | 0.21 | |
| (Pc)= | 80 | kPa |
| Recompression Index ($C_r$)= | 0.0253 | |

Equipment used:

| | | |
|---|---|---|
| Height of ring = | 2.00 | cm |
| Dia. Of ring = | 7.00 | cm |
| Specfic gravity, $G_s$ = | 2.70 | |
| Wt. of ring = | 196.32 | gm |
| Wt. of ring + soil (B.T)= | 341.97 | gm |
| Wt. of ring + soil (A.T)= | 341.14 | gm |
| Wt. of soil( A.T.)= | 144.82 | gm |
| Water content (B.T)= | 25.90 | % |
| Wt. of dry specimen = | 115.69 | gm |
| Water content (A.T)= | 25.18 | % |
| Degree of saturation | 85.37 | % |

| Applied load, kg | Pressure, kPa | Final dial reading | Dial change ΔH mm | Sample Ht. (2H), cm | ($2H-2H_o$) | e |
|---|---|---|---|---|---|---|
| 0 | 0 | 800 | 0 | 2 | 0.8866 | 0.796 |
| 0.5 | 13 | 793 | 0.007 | 1.993 | 0.8796 | 0.790 |
| 1 | 25 | 785 | 0.015 | 1.985 | 0.8716 | 0.783 |
| 2 | 51 | 771 | 0.029 | 1.971 | 0.8576 | 0.770 |
| 4 | 102 | 741 | 0.059 | 1.941 | 0.8276 | 0.743 |
| 8 | 204 | 680 | 0.12 | 1.88 | 0.7666 | 0.689 |
| 16 | 408 | 609 | 0.191 | 1.809 | 0.6956 | 0.625 |
| 4 | 102 | 626 | 0.174 | 1.826 | 0.7126 | 0.640 |
| 1 | 25 | 651 | 0.149 | 1.851 | 0.7376 | 0.662 |

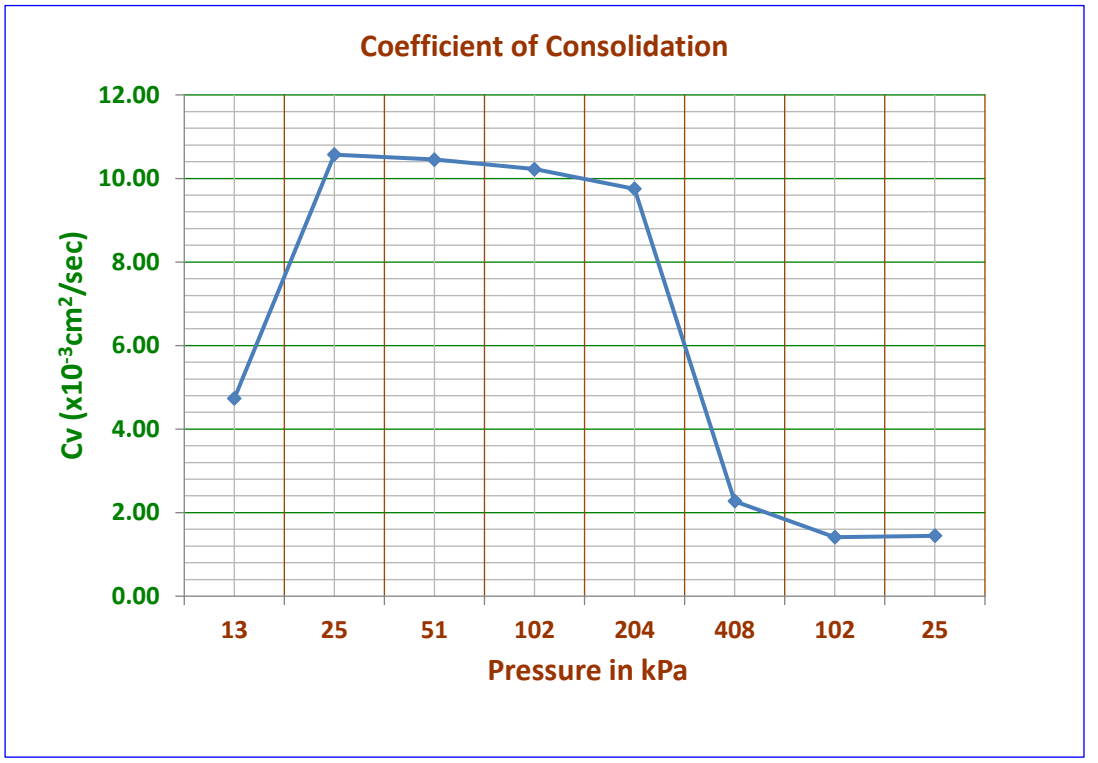


## CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 08
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

| Pressure, kPa | Av. Pressure, kPa | Sample Ht. (2H), in | H=($H_1$+$H_2$)/2 mm | $t_{90}$ sec | Cv (x10$^{-3}$cm$^2$/sec) | av | mv | K (x10$^{-3}$cm$^2$/sec) |
|---|---|---|---|---|---|---|---|---|
| 0 | | 2 | | | | 0.00048 | 0.0003 | |
| 13 | 6.5 | 1.993 | 9.983 | 178.54 | 4.73 | 0.00060 | 0.0003 | 0.001583 |
| 25 | 19.0 | 1.985 | 9.945 | 79.35 | 10.57 | 0.00048 | 0.0003 | 0.002867 |
| 51 | 38.0 | 1.971 | 9.890 | 79.35 | 10.45 | 0.00053 | 0.0003 | 0.00312 |
| 102 | 76.5 | 1.941 | 9.780 | 79.35 | 10.22 | 0.00054 | 0.0003 | 0.003149 |
| 204 | 153.0 | 1.88 | 9.553 | 79.35 | 9.75 | 0.00031 | 0.0002 | 0.001805 |
| 408 | 306.0 | 1.809 | 9.223 | 317.40 | 2.27 | 0.00005 | 0.0000 | 6.98E-05 |
| 102 | 255.0 | 1.826 | 9.088 | 495.94 | 1.41 | 0.00029 | 0.0002 | 0.000251 |
| 25 | 63.5 | 1.851 | 9.193 | 495.94 | 1.44 | 0.02650 | 0.0159 | 0.023031 |



# CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 09
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

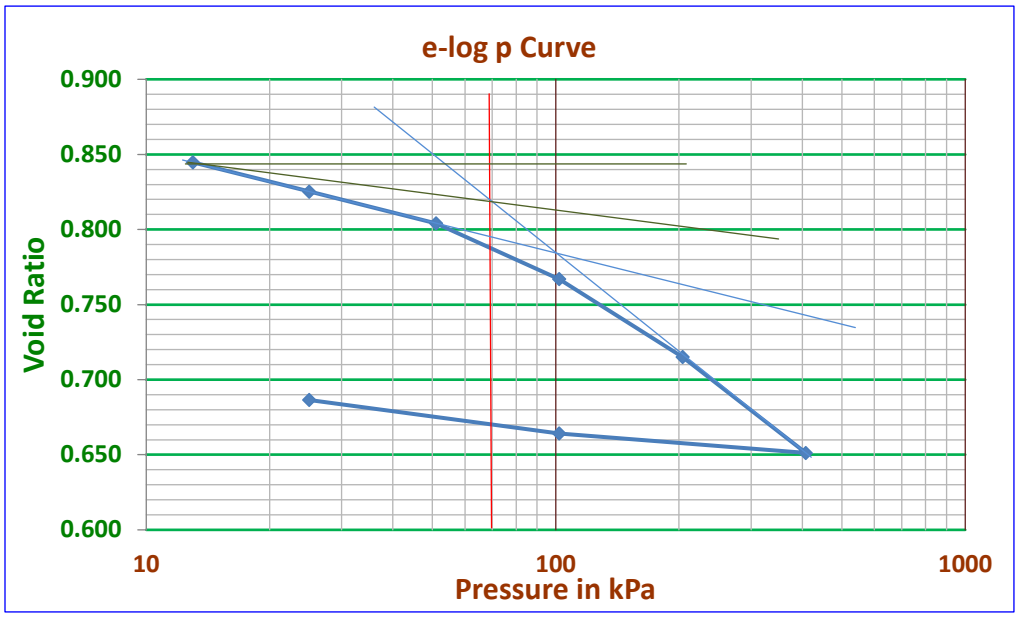
Specimen Condition:

| | | |
|---|---|---|
| Area of sample = | 38.485 | $cm^2$ |
| Vol. Of Solids = | 41.578 | $cm^3$ |
| Ht. Of Solid ($2H_o$) = | 1.080 | cm |
| Ht. Of Void = | 0.920 | cm |
| Initial Void Ratio,$e_o$ = | 0.851 | |
| Tare Weight = | 0 | lbs |
| Deformation Dial Constant = | 0.001 | mm/div. |
| Compression Index ($C_c$)= | 0.21 | |
| (Pc)= | 70 | kPa |
| Recompression Index ($C_r$)= | 0.0684 | |

Equipment used:

| | | |
|---|---|---|
| Height of ring = | 2.00 | cm |
| Dia. Of ring = | 7.00 | cm |
| Specfic gravity, $G_s$ = | 2.68 | |
| Wt. of ring = | 198.11 | gm |
| Wt. of ring + soil (B.T)= | 345.69 | gm |
| Wt. of ring + soil (A.T)= | 343.66 | gm |
| Wt. of soil( A.T.)= | 145.55 | gm |
| Water content (B.T)= | 32.44 | % |
| Wt. of dry specimen = | 111.43 | gm |
| Water content (A.T)= | 30.62 | % |
| Degree of saturation= | 96.41 | % |

| Applied load, kg | Pressure, kPa | Final dial reading | Dial change ΔH mm | Sample Ht. (2H), cm | (2H-2$H_o$) | e |
|---|---|---|---|---|---|---|
| 0 | 0 | 700 | 0 | 2 | 0.9196 | 0.851 |
| 0.5 | 13 | 693 | 0.007 | 1.993 | 0.9126 | 0.845 |
| 1 | 25 | 672 | 0.028 | 1.972 | 0.8916 | 0.825 |
| 2 | 51 | 649 | 0.051 | 1.949 | 0.8686 | 0.804 |
| 4 | 102 | 609 | 0.091 | 1.909 | 0.8286 | 0.767 |
| 8 | 204 | 553 | 0.147 | 1.853 | 0.7726 | 0.715 |
| 16 | 408 | 484 | 0.216 | 1.784 | 0.7036 | 0.651 |
| 4 | 102 | 498 | 0.202 | 1.798 | 0.7176 | 0.664 |
| 1 | 25 | 522 | 0.178 | 1.822 | 0.7416 | 0.686 |

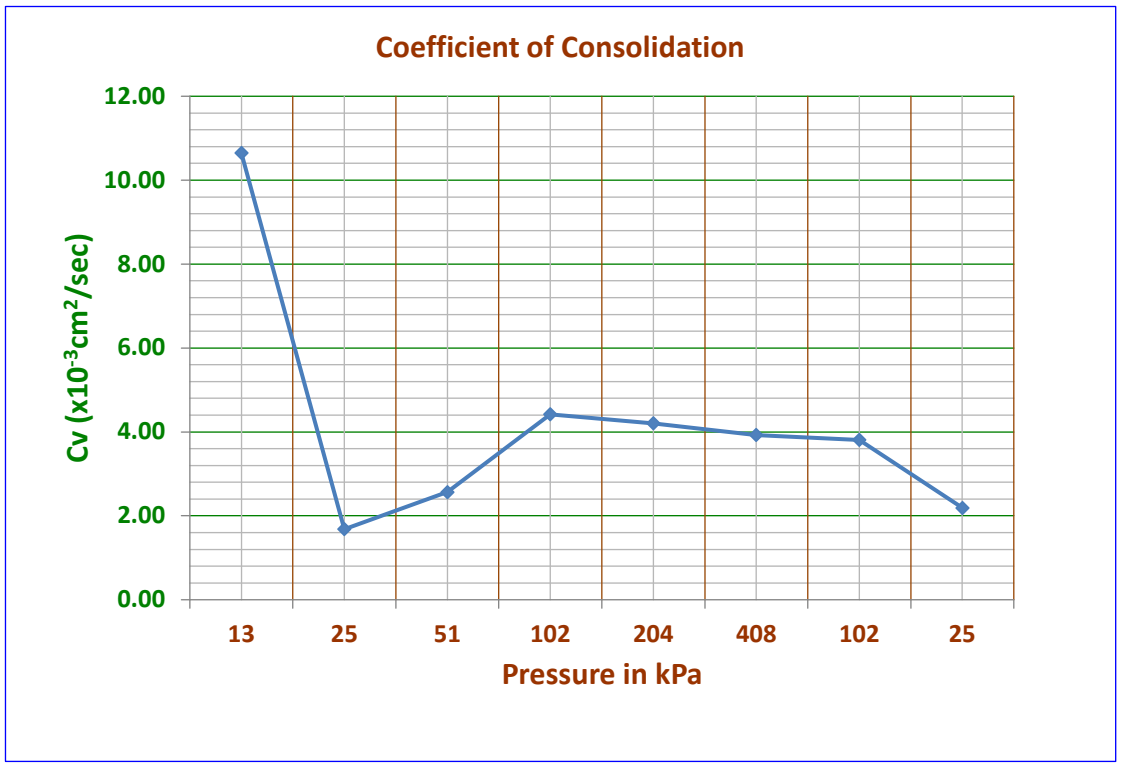


## CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sutarkandi,Sylhet.

BORE HOLE NO.: R.B - 09
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.5-4.95

| Pressure, kPa | Av. Pressure, kPa | Sample Ht. (2H), in | $H=(H_1+H_2)/2$ mm | $t_{90}$ sec | Cv ($x10^{-3}cm^2/sec$) | av | mv | K ($x10^{-3}cm^2/sec$) |
|---|---|---|---|---|---|---|---|---|
| 0 | | 2 | | | | 0.00050 | 0.0003 | |
| 13 | 6.5 | 1.993 | 9.983 | 79.35 | 10.65 | 0.00162 | 0.0009 | 0.009351 |
| 25 | 19.0 | 1.972 | 9.913 | 495.94 | 1.68 | 0.00082 | 0.0004 | 0.000754 |
| 51 | 38.0 | 1.949 | 9.803 | 317.40 | 2.57 | 0.00073 | 0.0004 | 0.001033 |
| 102 | 76.5 | 1.909 | 9.645 | 178.54 | 4.42 | 0.00051 | 0.0003 | 0.001271 |
| 204 | 153.0 | 1.853 | 9.405 | 178.54 | 4.20 | 0.00031 | 0.0002 | 0.000767 |
| 408 | 306.0 | 1.784 | 9.093 | 178.54 | 3.93 | 0.00004 | 0.0000 | 0.000101 |
| 102 | 255.0 | 1.798 | 8.955 | 178.54 | 3.81 | 0.00029 | 0.0002 | 0.00066 |
| 25 | 63.5 | 1.822 | 9.050 | 317.40 | 2.19 | 0.02746 | 0.0163 | 0.035627 |



# CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Karimgong Sylhet.

BORE HOLE NO.: RB-12
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 6.00

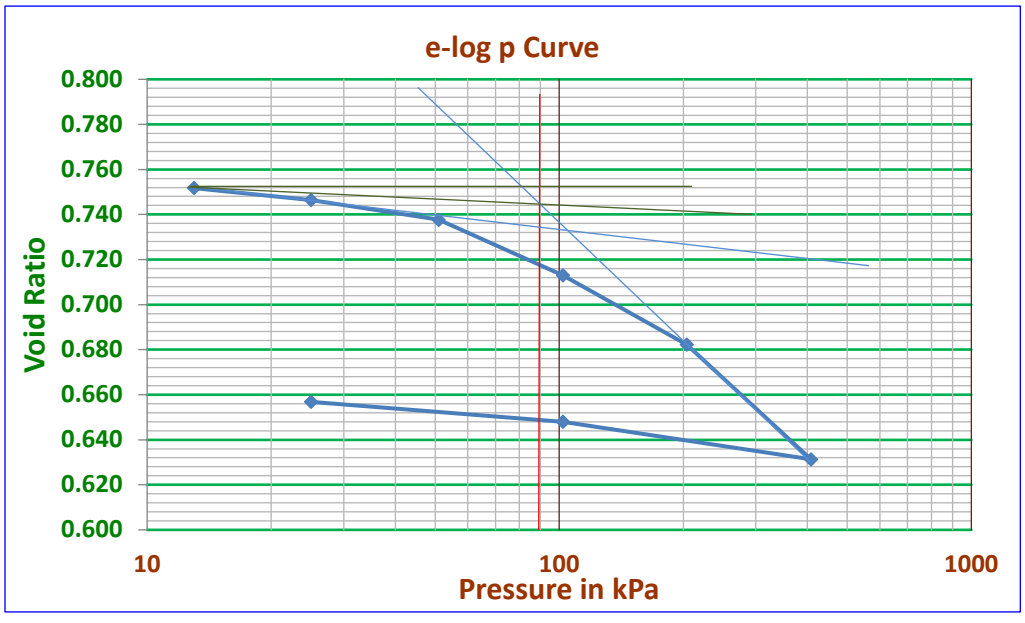
Specimen Condition:

| | | |
|---|---|---|
| Area of sample = | 38.485 | $cm^2$ |
| Vol. Of Solids = | 43.808 | $cm^3$ |
| Ht. Of Solid ($2H_o$) = | 1.138 | cm |
| Ht. Of Void = | 0.862 | cm |
| Initial Void Ratio,$e_o$ = | 0.757 | |
| Tare Weight = | 0 | lbs |
| Deformation Dial Constant = | 0.001 | mm/div. |
| Compression Index ($C_c$)= | 0.17 | |
| (Pc)= | 90 | kPa |
| Recompression Index($C_r$) | 0.0186 | |

Equipment used:

| | | |
|---|---|---|
| Height of ring = | 2.00 | cm |
| Dia. Of ring = | 7.00 | cm |
| Specfic gravity, $G_s$ = | 2.71 | |
| Wt. of ring = | 198.04 | gm |
| Wt. of ring + soil (B.T)= | 331.55 | gm |
| Wt. of ring + soil (A.T)= | 343.12 | gm |
| Wt. of soil( A.T.)= | 145.08 | gm |
| Water content (B.T)= | 12.46 | % |
| Wt. of dry specimen = | 118.72 | gm |
| Water content (A.T)= | 22.20 | % |
| Degree of saturation | 79.49 | % |

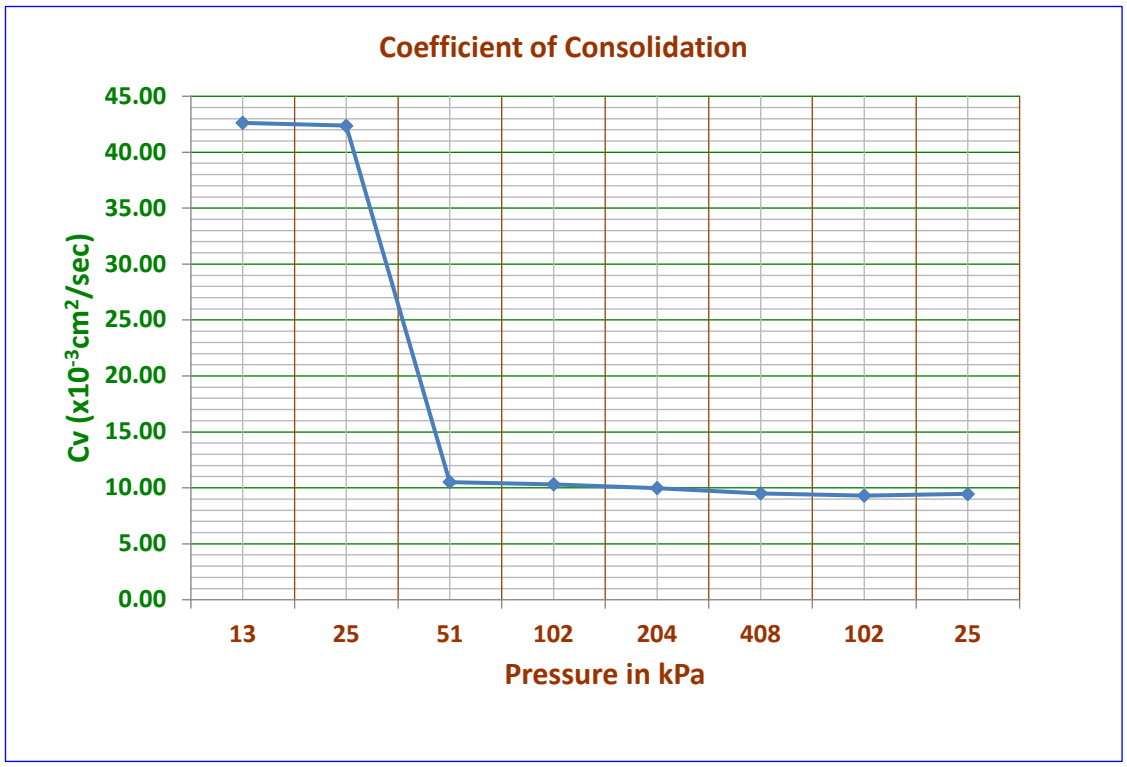
| Applied load, kg | Pressure, kPa | Final dial reading | Dial change ΔH mm | Sample Ht. (2H), cm | (2H-$2H_o$) | e |
|---|---|---|---|---|---|---|
| 0 | 0 | 500 | 0 | 2 | 0.8617 | 0.757 |
| 0.5 | 13 | 494 | 0.006 | 1.994 | 0.8557 | 0.752 |
| 1 | 25 | 488 | 0.012 | 1.988 | 0.8497 | 0.746 |
| 2 | 51 | 478 | 0.022 | 1.978 | 0.8397 | 0.738 |
| 4 | 102 | 450 | 0.05 | 1.95 | 0.8117 | 0.713 |
| 8 | 204 | 415 | 0.085 | 1.915 | 0.7767 | 0.682 |
| 16 | 408 | 357 | 0.143 | 1.857 | 0.7187 | 0.631 |
| 4 | 102 | 376 | 0.124 | 1.876 | 0.7377 | 0.648 |
| 1 | 25 | 386 | 0.114 | 1.886 | 0.7477 | 0.657 |



## CONSOLIDATION TEST

| | | | |
|---|---|---|---|
| CLIENT: | Roads and Highways Department (RHD) | BORE HOLE NO.: | RB-12 |
| PROJECT: | Sub-Regional Road Transportation Project (SRTPPF-II) | SAMPLE NO.: | UD-1 |
| LOCATION: | Karimgong Sylhet. | SAMPLE DEPTH (m): | 6.00 |

| Pressure, kPa | Av. Pressure, kPa | Sample Ht. (2H), in | $H=(H_1+H_2)/2$ mm | $t_{90}$ sec | Cv (x10$^{-3}$cm$^2$/sec) | av | mv | K (x10$^{-3}$cm$^2$/sec) |
|---|---|---|---|---|---|---|---|---|
| 0 | | 2 | | | | 0.00041 | 0.0002 | |
| 13 | 6.5 | 1.994 | 9.985 | 19.84 | 42.62 | 0.00044 | 0.0003 | 0.010687 |
| 25 | 19.0 | 1.988 | 9.955 | 19.84 | 42.36 | 0.00034 | 0.0002 | 0.008196 |
| 51 | 38.0 | 1.978 | 9.915 | 79.35 | 10.51 | 0.00048 | 0.0003 | 0.002916 |
| 102 | 76.5 | 1.95 | 9.820 | 79.35 | 10.31 | 0.00030 | 0.0002 | 0.001813 |
| 204 | 153.0 | 1.915 | 9.663 | 79.35 | 9.98 | 0.00025 | 0.0001 | 0.001481 |
| 408 | 306.0 | 1.857 | 9.430 | 79.35 | 9.50 | 0.00005 | 0.0000 | 0.000318 |
| 102 | 255.0 | 1.876 | 9.333 | 79.35 | 9.31 | 0.00011 | 0.0001 | 0.000644 |
| 25 | 63.5 | 1.886 | 9.405 | 79.35 | 9.45 | 0.02627 | 0.0159 | 0.149898 |



# CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Karimgonj Sylhet.

BORE HOLE NO.: RB-10
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 6.00

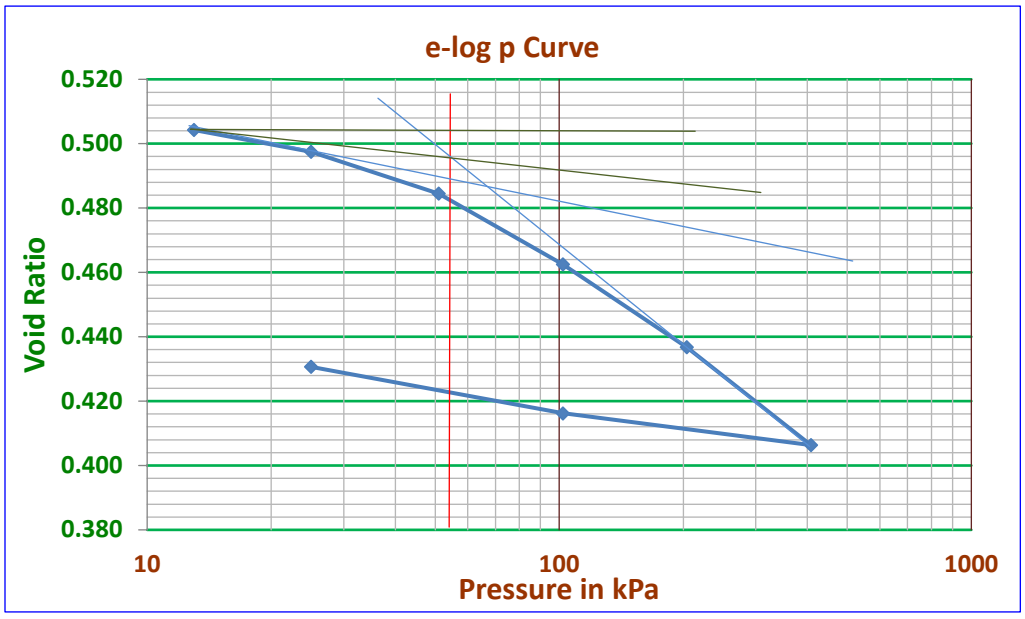
Specimen Condition:

| | | |
|---|---|---|
| Area of sample = | 38.485 | $cm^2$ |
| Vol. Of Solids = | 50.707 | $cm^3$ |
| Ht. Of Solid ($2H_o$) = | 1.318 | cm |
| Ht. Of Void = | 0.682 | cm |
| Initial Void Ratio,$e_o$ = | 0.518 | |
| Tare Weight = | 0 | lbs |
| Deformation Dial Constant = | 0.001 | mm/div. |
| Compression Index ($C_c$)= | 0.10 | |
| (Pc)= | 55 | kPa |
| Recompression Index($C_r$) | 0.0241 | |

Equipment used:

| | | |
|---|---|---|
| Height of ring = | 2.00 | cm |
| Dia. Of ring = | 7.00 | cm |
| Specfic gravity, $G_s$ = | 2.70 | |
| Wt. of ring = | 196.30 | gm |
| Wt. of ring + soil (B.T)= | 352.86 | gm |
| Wt. of ring + soil (A.T)= | 379.43 | gm |
| Wt. of soil( A.T.)= | 183.13 | gm |
| Water content (B.T)= | 14.35 | % |
| Wt. of dry specimen = | 136.91 | gm |
| Water content (A.T)= | 33.76 | % |
| Degree of saturation | 176.00 | % |

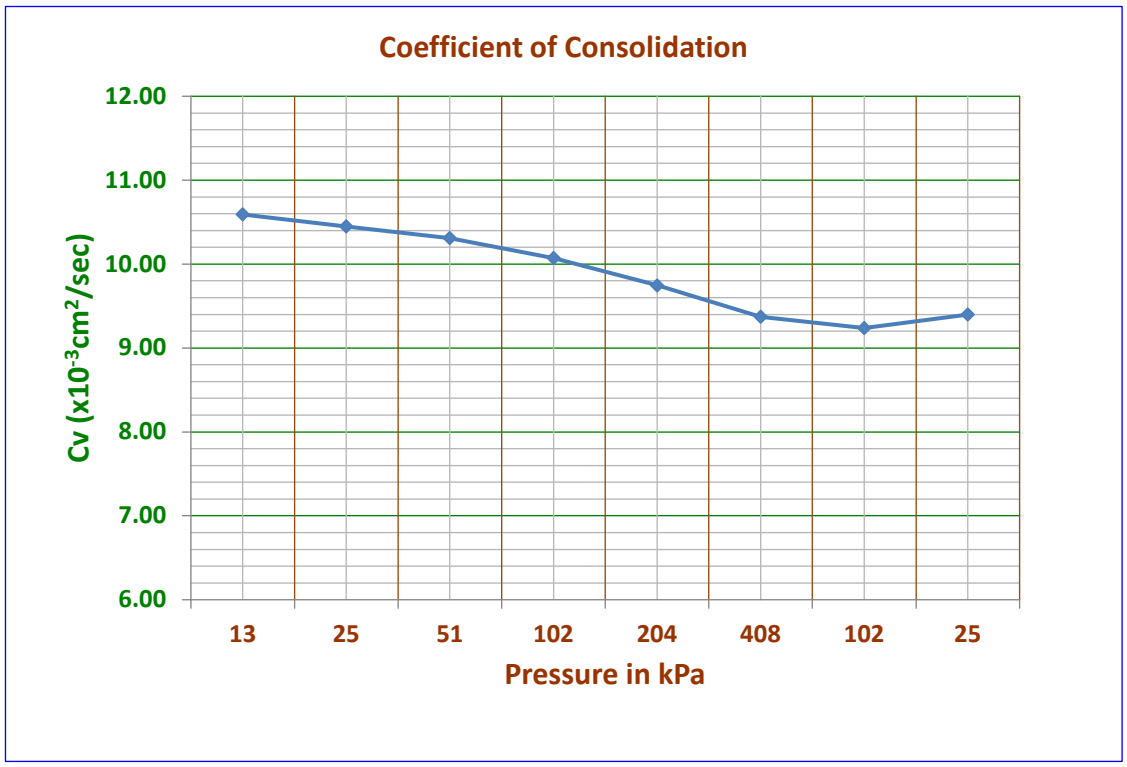
| Applied load, kg | Pressure, kPa | Final dial reading | Dial change ΔH mm | Sample Ht. (2H), cm | ($2H-2H_o$) | e |
|---|---|---|---|---|---|---|
| 0 | 0 | 500 | 0 | 2 | 0.6824 | 0.518 |
| 0.5 | 13 | 482 | 0.018 | 1.982 | 0.6644 | 0.504 |
| 1 | 25 | 473 | 0.027 | 1.973 | 0.6554 | 0.497 |
| 2 | 51 | 456 | 0.044 | 1.956 | 0.6384 | 0.485 |
| 4 | 102 | 427 | 0.073 | 1.927 | 0.6094 | 0.463 |
| 8 | 204 | 393 | 0.107 | 1.893 | 0.5754 | 0.437 |
| 16 | 408 | 353 | 0.147 | 1.853 | 0.5354 | 0.406 |
| 4 | 102 | 366 | 0.134 | 1.866 | 0.5484 | 0.416 |
| 1 | 25 | 385 | 0.115 | 1.885 | 0.5674 | 0.431 |



## CONSOLIDATION TEST

| | | | |
|---|---|---|---|
| CLIENT: | Roads and Highways Department (RHD) | BORE HOLE NO.: | RB-10 |
| PROJECT: | Sub-Regional Road Transportation Project (SRTPPF-II) | SAMPLE NO.: | UD-1 |
| LOCATION: | Karimgonj Sylhet. | SAMPLE DEPTH (m): | 6.00 |

| Pressure, kPa | Av. Pressure, kPa | Sample Ht. (2H), in | $H=(H_1+H_2)/2$ mm | $t_{90}$ sec | Cv ($x10^{-3}cm^2/sec$) | av | mv | K ($x10^{-3}cm^2/sec$) |
|---|---|---|---|---|---|---|---|---|
| 0 | | 2 | | | | 0.00105 | 0.0007 | |
| 13 | 6.5 | 1.982 | 9.955 | 79.35 | 10.59 | 0.00057 | 0.0004 | 0.004008 |
| 25 | 19.0 | 1.973 | 9.888 | 79.35 | 10.45 | 0.00050 | 0.0003 | 0.003462 |
| 51 | 38.0 | 1.956 | 9.823 | 79.35 | 10.31 | 0.00043 | 0.0003 | 0.002997 |
| 102 | 76.5 | 1.927 | 9.708 | 79.35 | 10.07 | 0.00025 | 0.0002 | 0.001742 |
| 204 | 153.0 | 1.893 | 9.550 | 79.35 | 9.75 | 0.00015 | 0.0001 | 0.00101 |
| 408 | 306.0 | 1.853 | 9.365 | 79.35 | 9.37 | 0.00003 | 0.0000 | 0.000215 |
| 102 | 255.0 | 1.866 | 9.298 | 79.35 | 9.24 | 0.00019 | 0.0001 | 0.001222 |
| 25 | 63.5 | 1.885 | 9.378 | 79.35 | 9.40 | 0.01723 | 0.0120 | 0.113151 |



# CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sylhet Road

BORE HOLE NO.: 03
SAMPLE NO.: UD-1
SAMPLE DEPTH (m): 4.50m

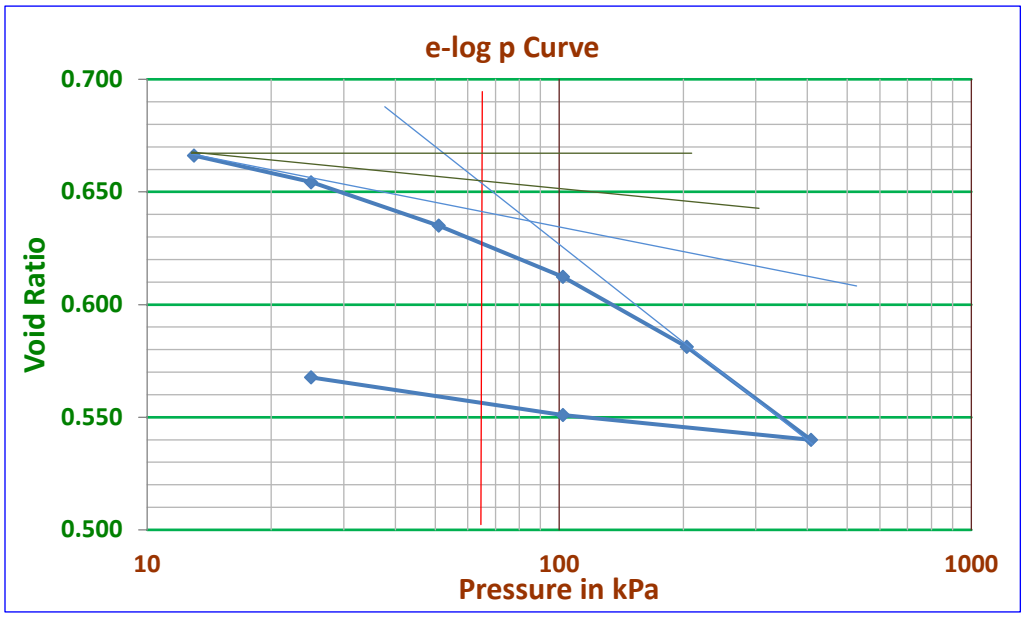
Specimen Condition:

| | | |
|---|---|---|
| Area of sample = | 38.485 | $cm^2$ |
| Vol. Of Solids = | 45.757 | $cm^3$ |
| Ht. Of Solid ($2H_o$) = | 1.189 | cm |
| Ht. Of Void = | 0.811 | cm |
| Initial Void Ratio,$e_o$ = | 0.682 | |
| Tare Weight = | 0 | lbs |
| Deformation Dial Constant = | 0.001 | mm/div. |
| Compression Index ($C_c$)= | 0.14 | |
| (Pc)= | 65 | kPa |
| Recompression Index($C_r$) | 0.0415 | |

Equipment used:

| | | |
|---|---|---|
| Height of ring = | 2.00 | cm |
| Dia. Of ring = | 7.00 | cm |
| Specfic gravity, $G_s$ = | 2.68 | |
| Wt. of ring = | 196.36 | gm |
| Wt. of ring + soil (B.T)= | 351.87 | gm |
| Wt. of ring + soil (A.T)= | 346.3 | gm |
| Wt. of soil( A.T.)= | 149.94 | gm |
| Water content (B.T)= | 26.81 | % |
| Wt. of dry specimen = | 122.63 | gm |
| Water content (A.T)= | 22.27 | % |
| Degree of saturation | 87.50 | % |

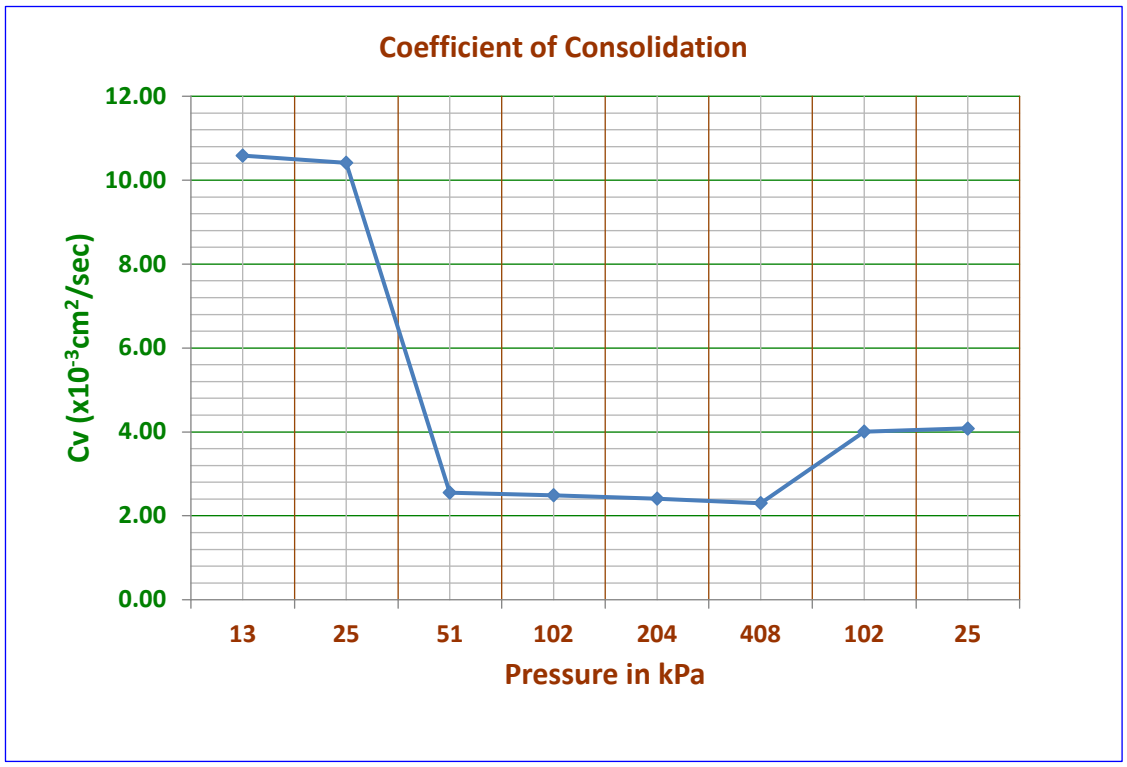
| Applied load, kg | Pressure, kPa | Final dial reading | Dial change ΔH mm | Sample Ht. (2H), cm | (2H-$2H_o$) | e |
|---|---|---|---|---|---|---|
| 0 | 0 | 400 | 0 | 2 | 0.8110 | 0.682 |
| 0.5 | 13 | 381 | 0.019 | 1.981 | 0.7920 | 0.666 |
| 1 | 25 | 367 | 0.033 | 1.967 | 0.7780 | 0.654 |
| 2 | 51 | 344 | 0.056 | 1.944 | 0.7550 | 0.635 |
| 4 | 102 | 317 | 0.083 | 1.917 | 0.7280 | 0.612 |
| 8 | 204 | 280 | 0.12 | 1.88 | 0.6910 | 0.581 |
| 16 | 408 | 231 | 0.169 | 1.831 | 0.6420 | 0.540 |
| 4 | 102 | 244 | 0.156 | 1.844 | 0.6550 | 0.551 |
| 1 | 25 | 264 | 0.136 | 1.864 | 0.6750 | 0.568 |



## CONSOLIDATION TEST

| | | | |
|---|---|---|---|
| CLIENT: | Roads and Highways Department (RHD) | BORE HOLE NO.: | 03 |
| PROJECT: | Sub-Regional Road Transportation Project (SRTPPF-II) | SAMPLE NO.: | UD-1 |
| LOCATION: | Sylhet Road | SAMPLE DEPTH (m): | 4.50m |

| Pressure, kPa | Av. Pressure, kPa | Sample Ht. (2H), in | $H=(H_1+H_2)/2$ mm | $t_{90}$ sec | Cv ($x10^{-3}cm^2/sec$) | av | mv | K ($x10^{-3}cm^2/sec$) |
|---|---|---|---|---|---|---|---|---|
| 0 | | 2 | | | | 0.00123 | 0.0007 | |
| 13 | 6.5 | 1.981 | 9.953 | 79.35 | 10.59 | 0.00098 | 0.0006 | 0.006234 |
| 25 | 19.0 | 1.967 | 9.870 | 79.35 | 10.41 | 0.00074 | 0.0004 | 0.004682 |
| 51 | 38.0 | 1.944 | 9.778 | 317.40 | 2.55 | 0.00045 | 0.0003 | 0.000696 |
| 102 | 76.5 | 1.917 | 9.653 | 317.40 | 2.49 | 0.00031 | 0.0002 | 0.000471 |
| 204 | 153.0 | 1.88 | 9.493 | 317.40 | 2.41 | 0.00020 | 0.0001 | 0.000308 |
| 408 | 306.0 | 1.831 | 9.278 | 317.40 | 2.30 | 0.00004 | 0.0000 | 5.34E-05 |
| 102 | 255.0 | 1.844 | 9.188 | 178.54 | 4.01 | 0.00022 | 0.0001 | 0.000565 |
| 25 | 63.5 | 1.864 | 9.270 | 178.54 | 4.08 | 0.02271 | 0.0145 | 0.059123 |



# CONSOLIDATION TEST

CLIENT: Roads and Highways Department (RHD)
PROJECT: Sub-Regional Road Transportation Project (SRTPPF-II)
LOCATION: Sylhet Road

BORE HOLE NO.: 05
SAMPLE NO.: UD-1
SAMPLE DEPTH (m):

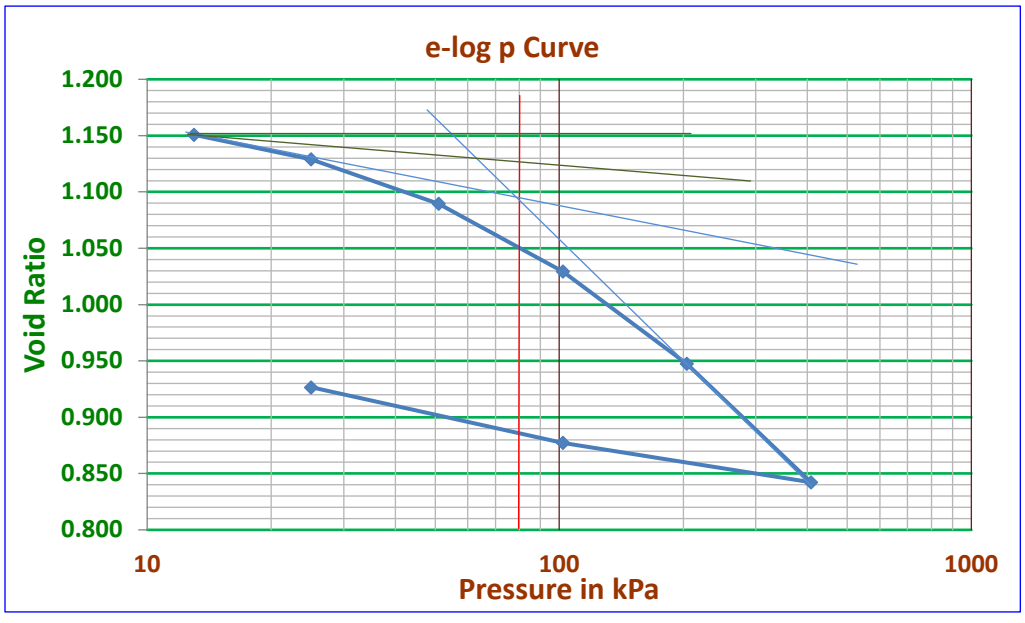
Specimen Condition:

| | | |
|---|---|---|
| Area of sample = | 38.485 | $cm^2$ |
| Vol. Of Solids = | 35.178 | $cm^3$ |
| Ht. Of Solid ($2H_o$) = | 0.914 | cm |
| Ht. Of Void = | 1.086 | cm |
| Initial Void Ratio,$e_o$ = | 1.188 | |
| Tare Weight = | 0 | lbs |
| Deformation Dial Constant = | 0.001 | mm/div. |
| Compression Index ($C_c$)= | 0.35 | |
| (Pc)= | 80 | kPa |
| Recompression Index($C_r$) | 0.077 | |

Equipment used:

| | | |
|---|---|---|
| Height of ring = | 2.00 | cm |
| Dia. Of ring = | 7.00 | cm |
| Specfic gravity, $G_s$ = | 2.69 | |
| Wt. of ring = | 198.08 | gm |
| Wt. of ring + soil (B.T)= | 332.98 | gm |
| Wt. of ring + soil (A.T)= | 323.02 | gm |
| Wt. of soil( A.T.)= | 124.94 | gm |
| Water content (B.T)= | 42.56 | % |
| Wt. of dry specimen = | 94.63 | gm |
| Water content (A.T)= | 32.03 | % |
| Degree of saturation | 72.53 | % |

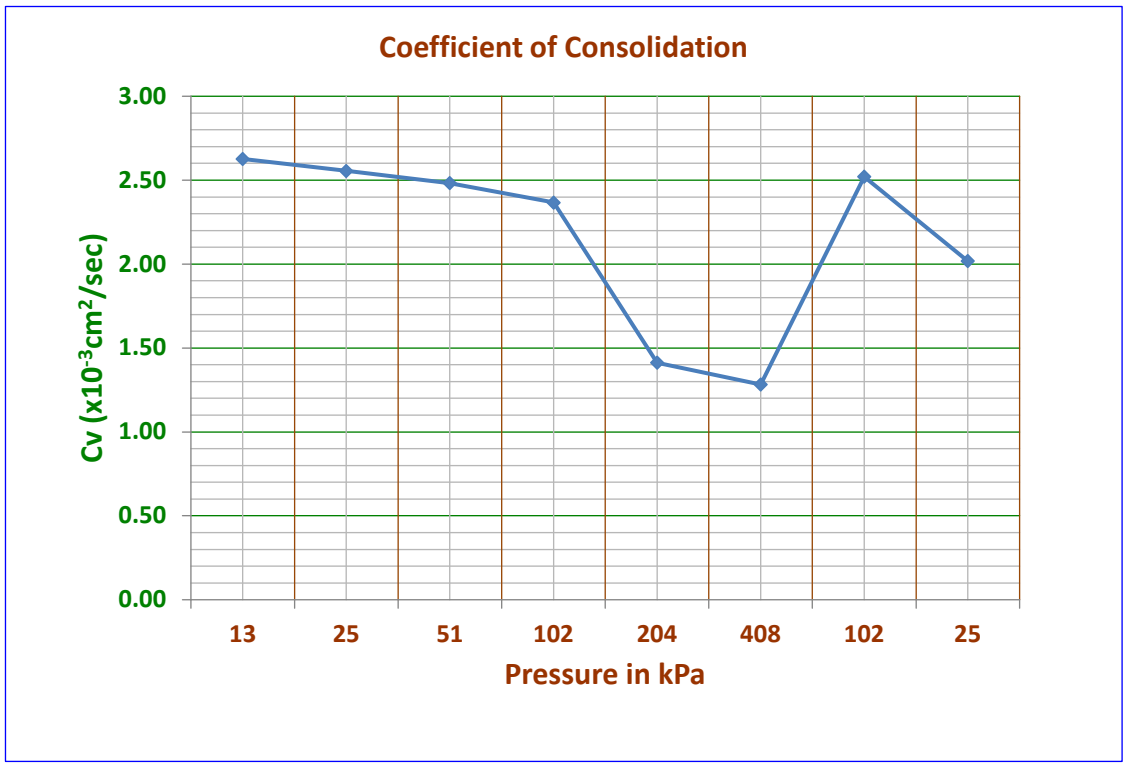
| Applied load, kg | Pressure, kPa | Final dial reading | Dial change ΔH mm | Sample Ht. (2H), cm | (2H-2$H_o$) | e |
|---|---|---|---|---|---|---|
| 0 | 0 | 500 | 0 | 2 | 1.0859 | 1.188 |
| 0.5 | 13 | 466 | 0.034 | 1.966 | 1.0519 | 1.151 |
| 1 | 25 | 446 | 0.054 | 1.946 | 1.0319 | 1.129 |
| 2 | 51 | 410 | 0.09 | 1.91 | 0.9959 | 1.090 |
| 4 | 102 | 355 | 0.145 | 1.855 | 0.9409 | 1.029 |
| 8 | 204 | 280 | 0.22 | 1.78 | 0.8659 | 0.947 |
| 16 | 408 | 184 | 0.316 | 1.684 | 0.7699 | 0.842 |
| 4 | 102 | 216 | 0.284 | 1.716 | 0.8019 | 0.877 |
| 1 | 25 | 261 | 0.239 | 1.761 | 0.8469 | 0.927 |



## CONSOLIDATION TEST

| | | | |
|---|---|---|---|
| CLIENT: | Roads and Highways Department (RHD) | BORE HOLE NO.: | 05 |
| PROJECT: | Sub-Regional Road Transportation Project (SRTPPF-II) | SAMPLE NO.: | UD-1 |
| LOCATION: | Sylhet Road | SAMPLE DEPTH (m): | 0.00 |

| Pressure, kPa | Av. Pressure, kPa | Sample Ht. (2H), in | $H=(H_1+H_2)/2$ mm | $t_{90}$ sec | Cv (x10$^{-3}$cm$^2$/sec) | av | mv | K (x10$^{-3}$cm$^2$/sec) |
|---|---|---|---|---|---|---|---|---|
| 0 | | 2 | | | | 0.00286 | 0.0013 | |
| 13 | 6.5 | 1.966 | 9.915 | 317.40 | 2.63 | 0.00182 | 0.0008 | 0.002227 |
| 25 | 19.0 | 1.946 | 9.780 | 317.40 | 2.56 | 0.00151 | 0.0007 | 0.001818 |
| 51 | 38.0 | 1.91 | 9.640 | 317.40 | 2.48 | 0.00118 | 0.0006 | 0.001402 |
| 102 | 76.5 | 1.855 | 9.413 | 317.40 | 2.37 | 0.00080 | 0.0004 | 0.000938 |
| 204 | 153.0 | 1.78 | 9.088 | 495.94 | 1.41 | 0.00051 | 0.0003 | 0.000373 |
| 408 | 306.0 | 1.684 | 8.660 | 495.94 | 1.28 | 0.00011 | 0.0001 | 7.96E-05 |
| 102 | 255.0 | 1.716 | 8.500 | 243.01 | 2.52 | 0.00064 | 0.0003 | 0.000859 |
| 25 | 63.5 | 1.761 | 8.693 | 317.40 | 2.02 | 0.03706 | 0.0192 | 0.038834 |



# DIRECT SHEAR TESTS

# DIRECT SHEAR TEST ASTM D 3080

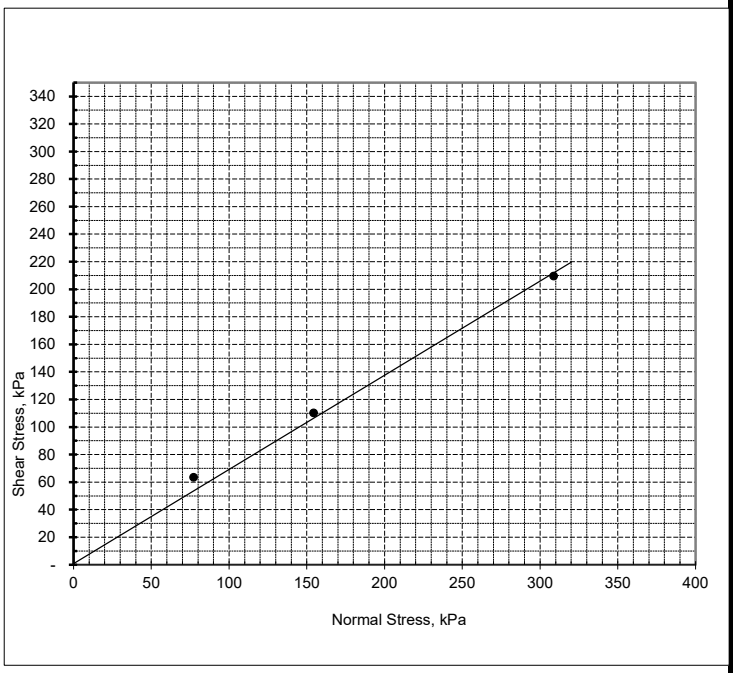
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-1,BH-01** | D19 | 28.50 | 25.4 | 76.2 | |

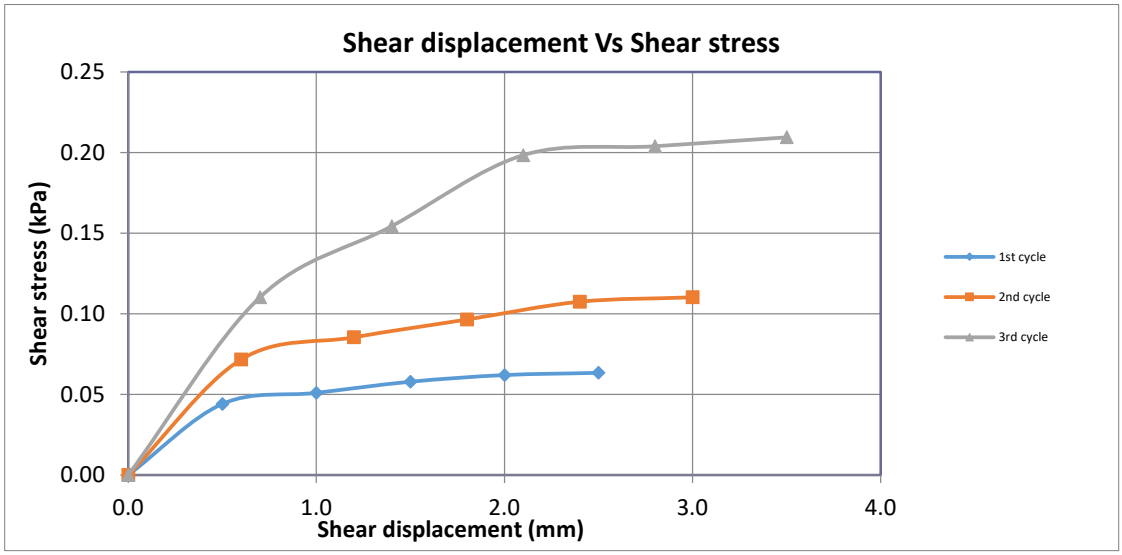
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 63.39 |
| | | 0.5 | 8.0 | 0.11200 | |
| | | 1.0 | 10.5 | 0.12950 | |
| | 77.20 | 1.5 | 13.0 | 0.14700 | |
| | | 2.0 | 14.5 | 0.15750 | |
| | | 2.5 | 15.0 | 0.16100 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 110.24 |
| | | 0.6 | 18.0 | 0.18200 | |
| | | 1.2 | 23.0 | 0.21700 | |
| | 154.40 | 1.8 | 27.0 | 0.24500 | |
| | | 2.4 | 31.0 | 0.27300 | |
| | | 3.0 | 32.0 | 0.28000 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 209.45 |
| | | 0.7 | 32.0 | 0.28000 | |
| | | 1.4 | 48.0 | 0.39200 | |
| | 308.80 | 2.1 | 64.0 | 0.50400 | |
| | | 2.8 | 66.0 | 0.51800 | |
| | | 3.5 | 68.0 | 0.53200 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 34 |
| Cohesion, c, kPa | 0 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.74
Dry Density(ɣd),gm/cc= 1.44
Moisture content(ω%)= 20.83




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

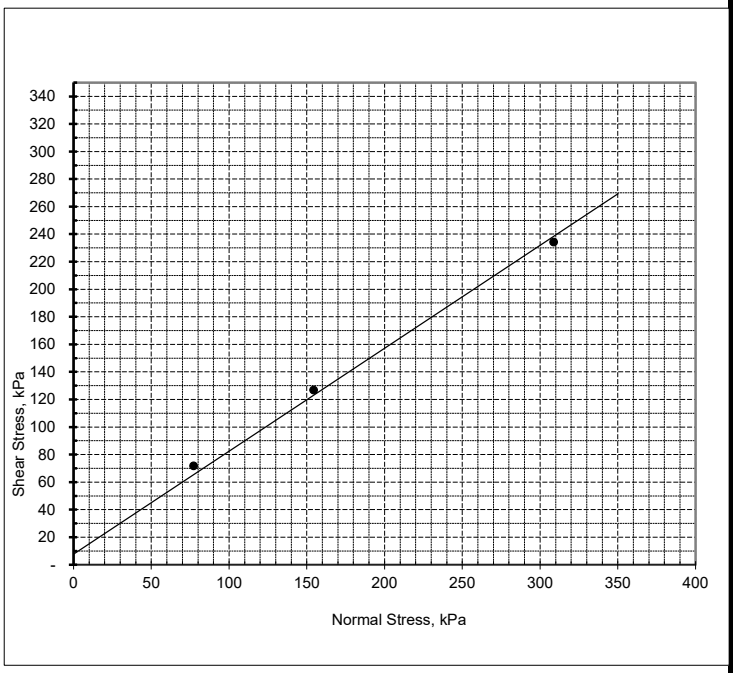
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-1,BH-01** | D19 | 28.50 | 25.4 | 76.2 | |

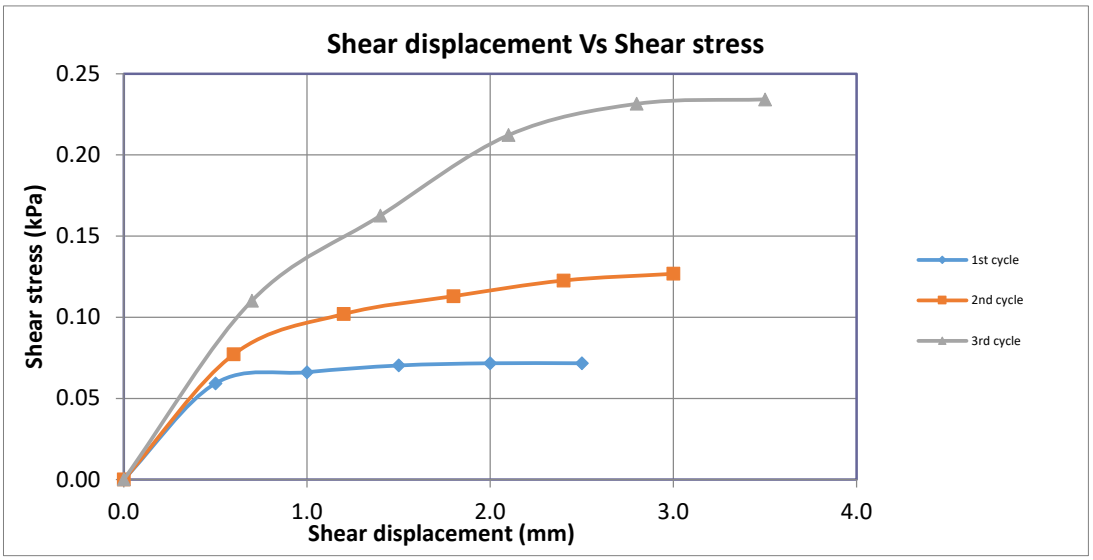
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 71.65 |
| | | 0.5 | 13.5 | 0.15050 | |
| | | 1.0 | 16.0 | 0.16800 | |
| | 77.20 | 1.5 | 17.5 | 0.17850 | |
| | | 2.0 | 18.0 | 0.18200 | |
| | | 2.5 | 18.0 | 0.18200 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 126.77 |
| | | 0.6 | 20.0 | 0.19600 | |
| | | 1.2 | 29.0 | 0.25900 | |
| | 154.40 | 1.8 | 33.0 | 0.28700 | |
| | | 2.4 | 36.5 | 0.31150 | |
| | | 3.0 | 38.0 | 0.32200 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 234.25 |
| | | 0.7 | 32.0 | 0.28000 | |
| | | 1.4 | 51.0 | 0.41300 | |
| | 308.80 | 2.1 | 69.0 | 0.53900 | |
| | | 2.8 | 76.0 | 0.58800 | |
| | | 3.5 | 77.0 | 0.59500 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 37 |
| Cohesion, c, kPa | 6 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.84
Dry Density(ɣd),gm/cc= 1.57
Moisture content(ω%)= 17.20




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

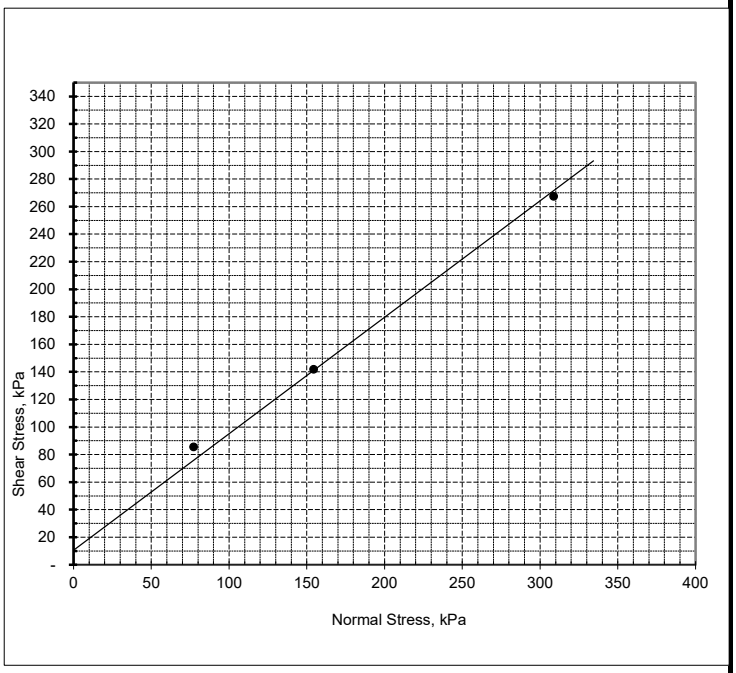
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-1,BH-01** | D19 | 28.50 | 25.4 | 76.2 | |

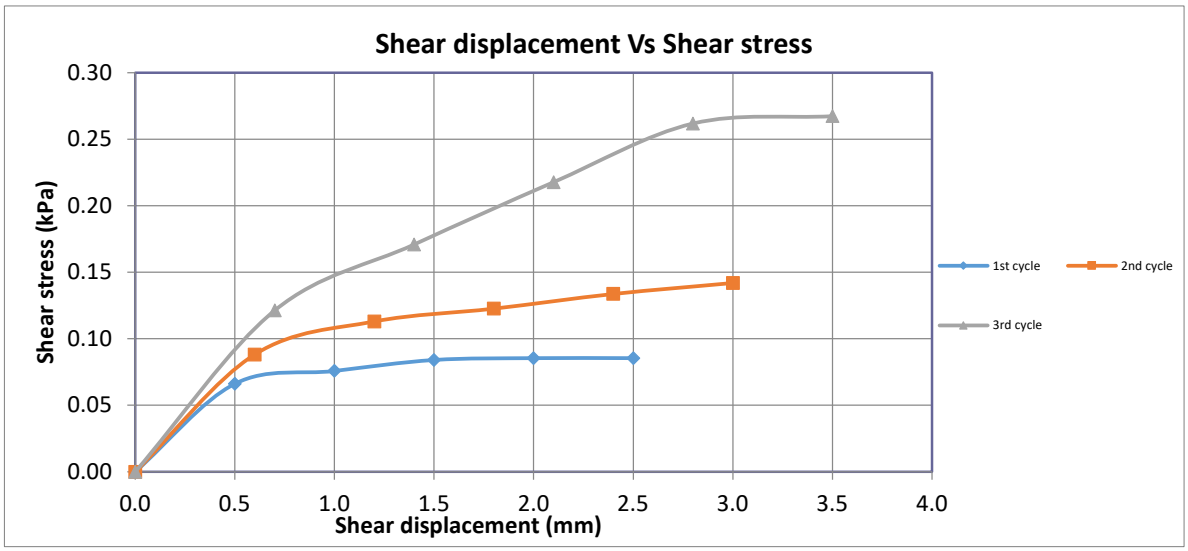
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 85.43 |
| | | 0.5 | 16.0 | 0.16800 | |
| | | 1.0 | 19.5 | 0.19250 | |
| | 77.20 | 1.5 | 22.5 | 0.21350 | |
| | | 2.0 | 23.0 | 0.21700 | |
| | | 2.5 | 23.0 | 0.21700 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 141.93 |
| | | 0.6 | 24.0 | 0.22400 | |
| | | 1.2 | 33.0 | 0.28700 | |
| | 154.40 | 1.8 | 36.5 | 0.31150 | |
| | | 2.4 | 40.5 | 0.33950 | |
| | | 3.0 | 43.5 | 0.36050 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 267.32 |
| | | 0.7 | 36.0 | 0.30800 | |
| | | 1.4 | 54.0 | 0.43400 | |
| | 308.80 | 2.1 | 71.0 | 0.55300 | |
| | | 2.8 | 87.0 | 0.66500 | |
| | | 3.5 | 89.0 | 0.67900 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 41 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.93
Dry Density(ɣd),gm/cc= 1.65
Moisture content(ω%)= 16.97




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

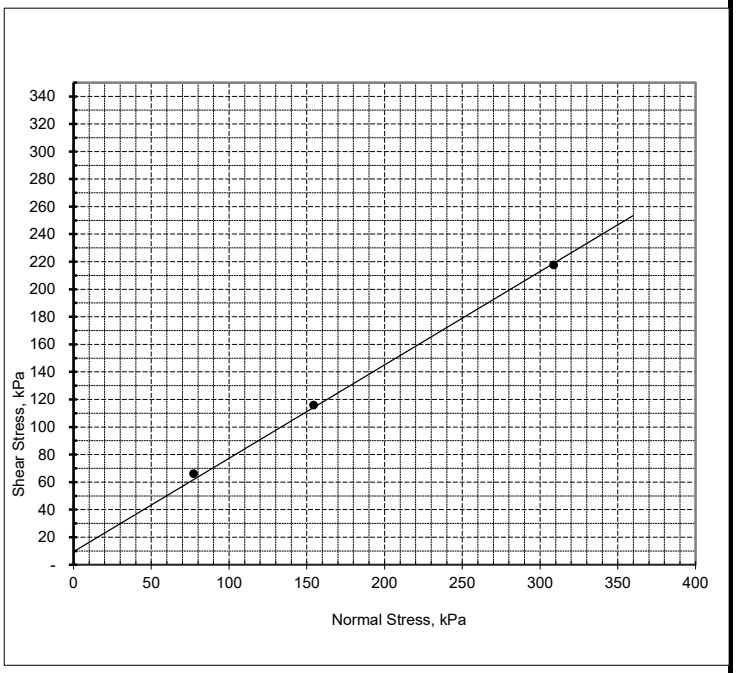
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-1,BH-03** | D27 | 40.50 | 25.4 | 76.2 | |

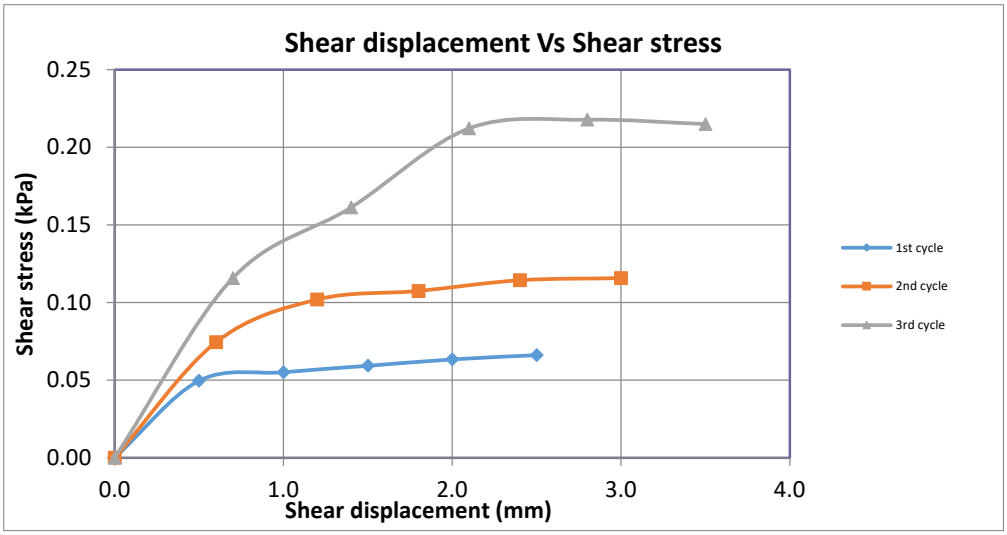
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 66.14 |
| | | 0.5 | 10.0 | 0.12600 | |
| | | 1.0 | 12.0 | 0.14000 | |
| | 77.20 | 1.5 | 13.5 | 0.15050 | |
| | | 2.0 | 15.0 | 0.16100 | |
| | | 2.5 | 16.0 | 0.16800 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 115.75 |
| | | 0.6 | 19.0 | 0.18900 | |
| | | 1.2 | 29.0 | 0.25900 | |
| | 154.40 | 1.8 | 31.0 | 0.27300 | |
| | | 2.4 | 33.5 | 0.29050 | |
| | | 3.0 | 34.0 | 0.29400 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 217.72 |
| | | 0.7 | 34.0 | 0.29400 | |
| | | 1.4 | 50.5 | 0.40950 | |
| | 308.80 | 2.1 | 69.0 | 0.53900 | |
| | | 2.8 | 71.0 | 0.55300 | |
| | | 3.5 | 70.0 | 0.54600 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 35 |
| Cohesion, c, kPa | 6 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.73
Dry Density(ɣd),gm/cc= 1.44
Moisture content(ω%)= 20.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

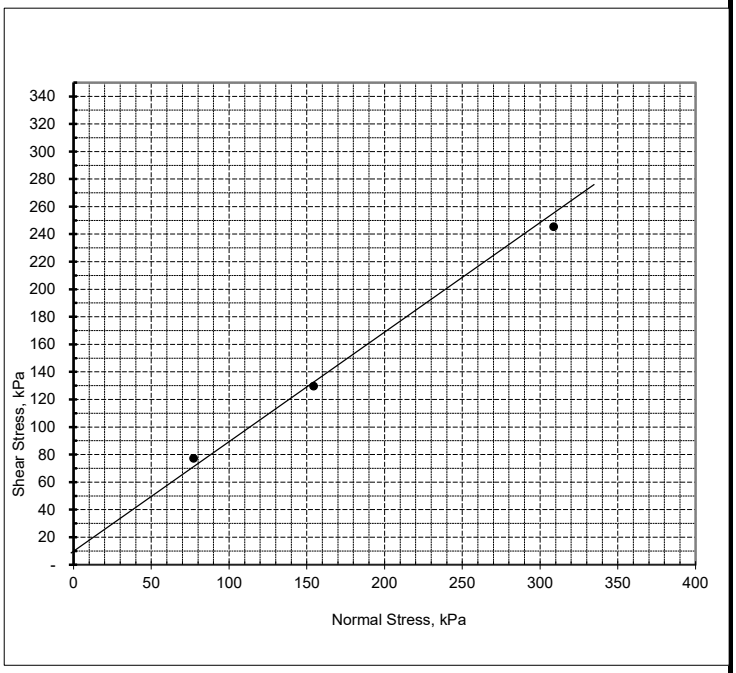
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-1,BH-03** | D27 | 40.50 | 25.4 | 76.2 | |

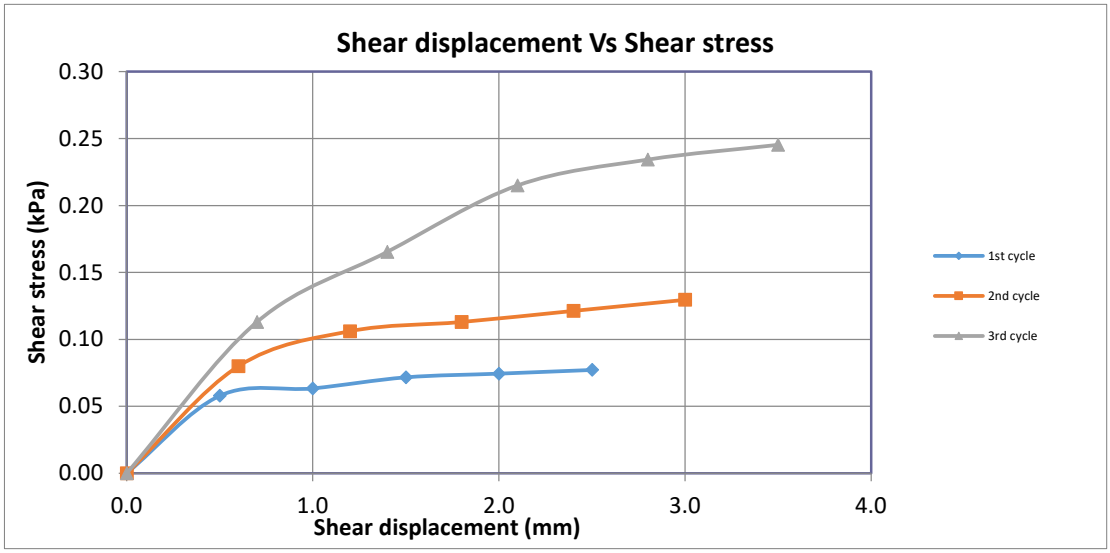
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 77.17 |
| | | 0.5 | 13.0 | 0.14700 | |
| | | 1.0 | 15.0 | 0.16100 | |
| | 77.20 | 1.5 | 18.0 | 0.18200 | |
| | | 2.0 | 19.0 | 0.18900 | |
| | | 2.5 | 20.0 | 0.19600 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 129.53 |
| | | 0.6 | 21.0 | 0.20300 | |
| | | 1.2 | 30.5 | 0.26950 | |
| | 154.40 | 1.8 | 33.0 | 0.28700 | |
| | | 2.4 | 36.0 | 0.30800 | |
| | | 3.0 | 39.0 | 0.32900 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 245.28 |
| | | 0.7 | 33.0 | 0.28700 | |
| | | 1.4 | 52.0 | 0.42000 | |
| | 308.80 | 2.1 | 70.0 | 0.54600 | |
| | | 2.8 | 77.0 | 0.59500 | |
| | | 3.5 | 81.0 | 0.62300 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 38 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.87
Dry Density(ɣd),gm/cc= 1.57
Moisture content(ω%)= 19.11




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

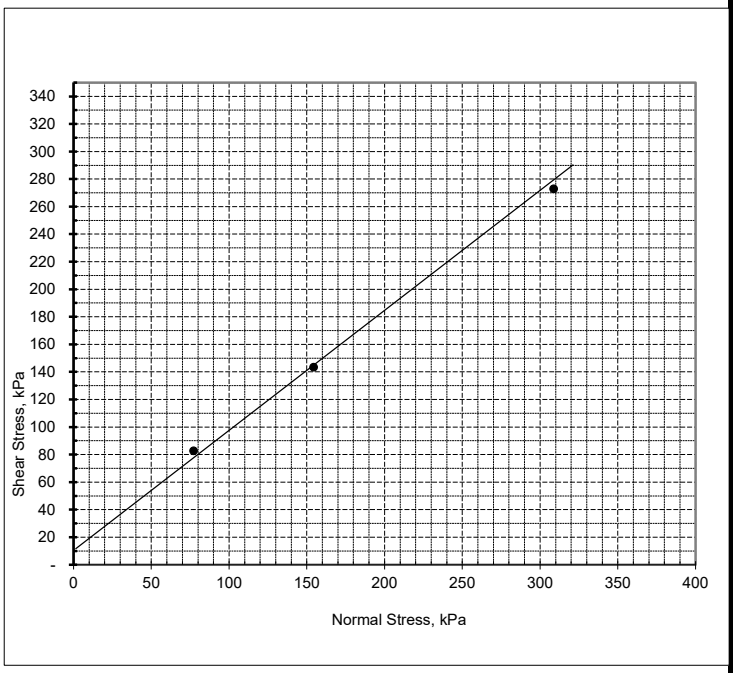
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-1,BH-03** | D27 | 40.50 | 25.4 | 76.2 | |

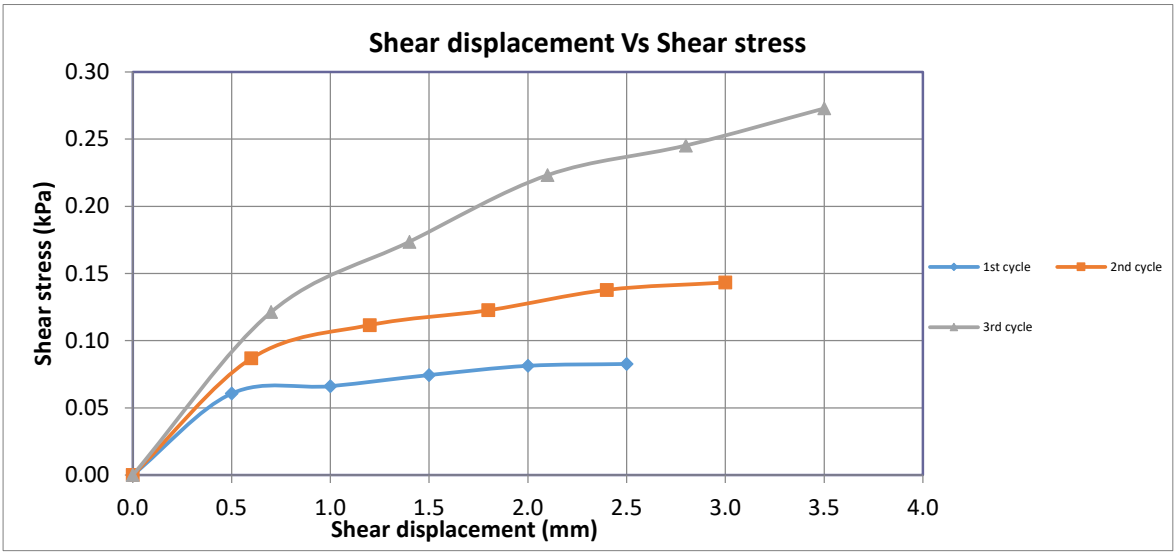
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 82.68 |
| | | 0.5 | 14.0 | 0.15400 | |
| | | 1.0 | 16.0 | 0.16800 | |
| | 77.20 | 1.5 | 19.0 | 0.18900 | |
| | | 2.0 | 21.5 | 0.20650 | |
| | | 2.5 | 22.0 | 0.21000 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 143.31 |
| | | 0.6 | 23.5 | 0.22050 | |
| | | 1.2 | 32.5 | 0.28350 | |
| | 154.40 | 1.8 | 36.5 | 0.31150 | |
| | | 2.4 | 42.0 | 0.35000 | |
| | | 3.0 | 44.0 | 0.36400 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 272.83 |
| | | 0.7 | 36.0 | 0.30800 | |
| | | 1.4 | 55.0 | 0.44100 | |
| | 308.80 | 2.1 | 73.0 | 0.56700 | |
| | | 2.8 | 81.0 | 0.62300 | |
| | | 3.5 | 91.0 | 0.69300 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 41 |
| Cohesion, c, kPa | 4 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.93
Dry Density(ɣd),gm/cc= 1.6
Moisture content(ω%)= 20.63




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

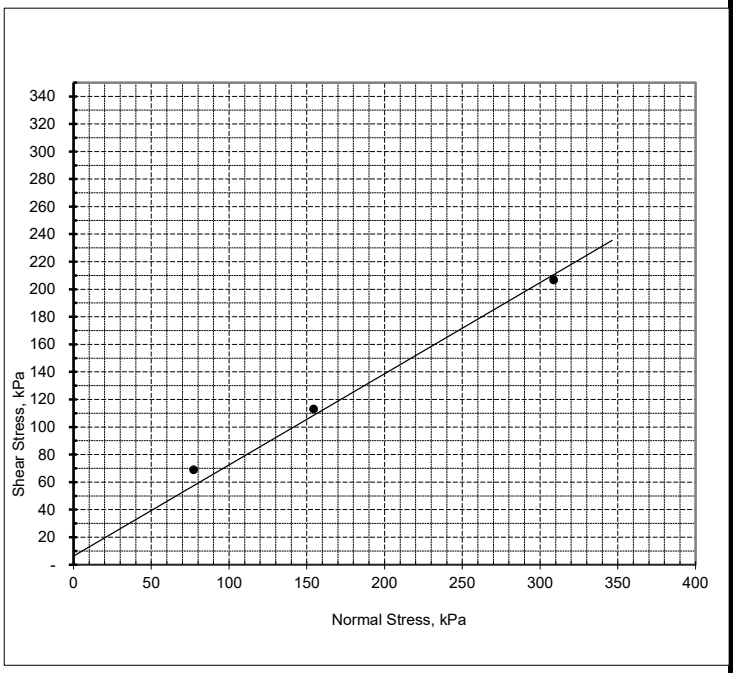
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-1,BH-04** | D29 | 43.50 | 25.4 | 76.2 | |

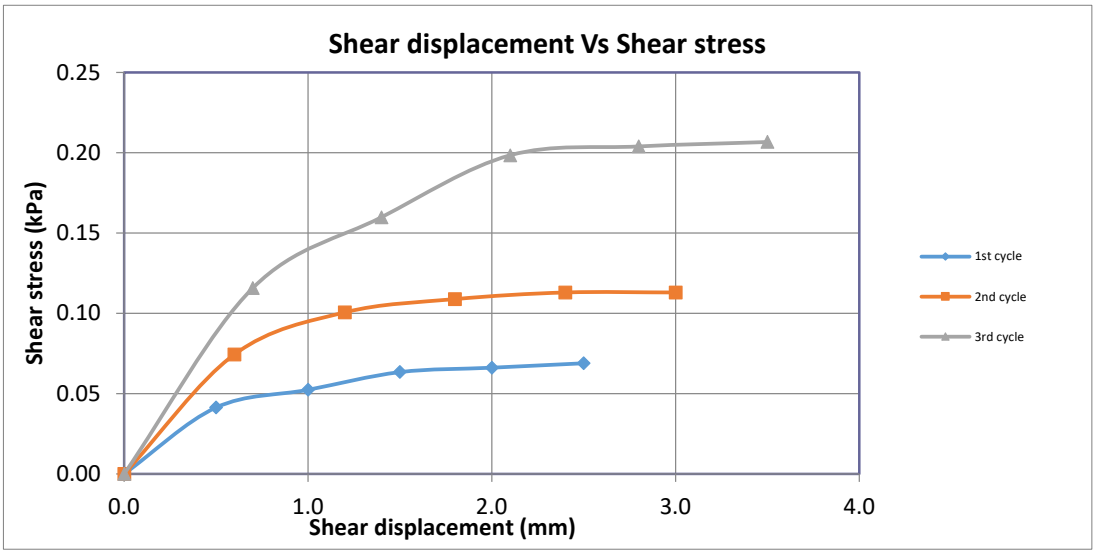
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 68.90 |
| | | 0.5 | 7.0 | 0.10500 | |
| | | 1.0 | 11.0 | 0.13300 | |
| | 77.20 | 1.5 | 15.0 | 0.16100 | |
| | | 2.0 | 16.0 | 0.16800 | |
| | | 2.5 | 17.0 | 0.17500 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 112.99 |
| | | 0.6 | 19.0 | 0.18900 | |
| | | 1.2 | 28.5 | 0.25550 | |
| | 154.40 | 1.8 | 31.5 | 0.27650 | |
| | | 2.4 | 33.0 | 0.28700 | |
| | | 3.0 | 33.0 | 0.28700 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 206.69 |
| | | 0.7 | 34.0 | 0.29400 | |
| | | 1.4 | 50.0 | 0.40600 | |
| | 308.80 | 2.1 | 64.0 | 0.50400 | |
| | | 2.8 | 66.0 | 0.51800 | |
| | | 3.5 | 67.0 | 0.52500 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 34 |
| Cohesion, c, kPa | 6 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.75
Dry Density(ɣd),gm/cc= 1.49
Moisture content(ω%)= 17.45




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

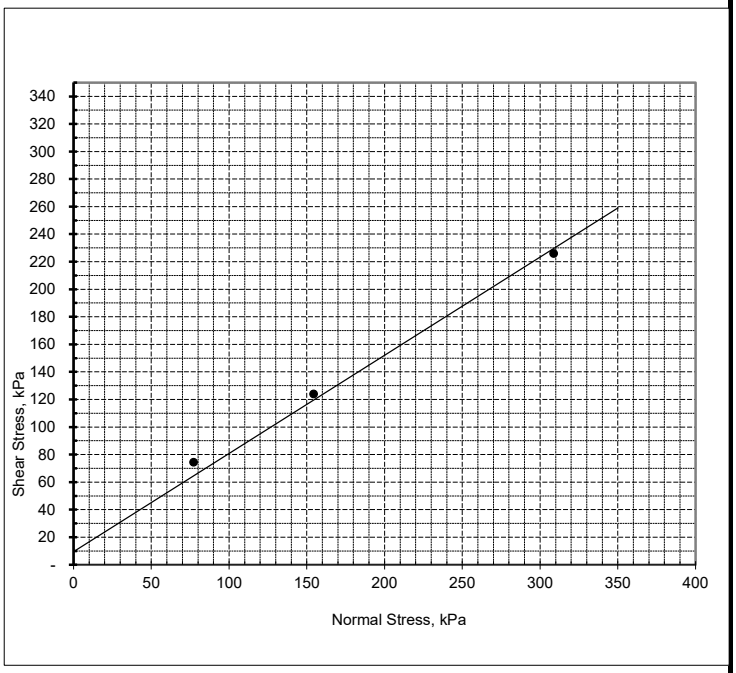
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-1,BH-04** | D29 | 43.50 | 25.4 | 76.2 | |

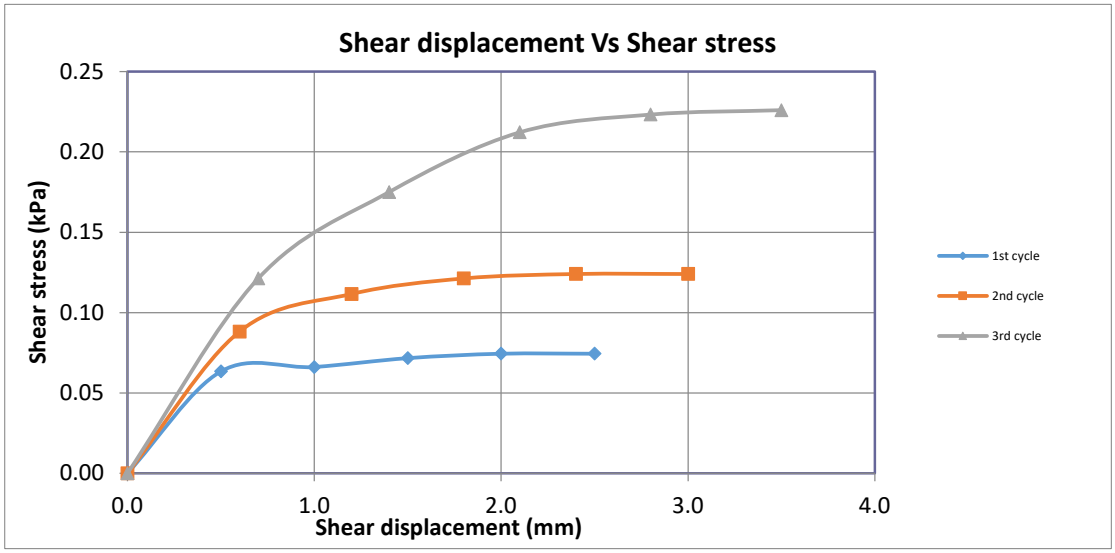
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 74.41 |
| | | 0.5 | 15.0 | 0.16100 | |
| | | 1.0 | 16.0 | 0.16800 | |
| | 77.20 | 1.5 | 18.0 | 0.18200 | |
| | | 2.0 | 19.0 | 0.18900 | |
| | | 2.5 | 19.0 | 0.18900 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 124.02 |
| | | 0.6 | 24.0 | 0.22400 | |
| | | 1.2 | 32.5 | 0.28350 | |
| | 154.40 | 1.8 | 36.0 | 0.30800 | |
| | | 2.4 | 37.0 | 0.31500 | |
| | | 3.0 | 37.0 | 0.31500 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 225.98 |
| | | 0.7 | 36.0 | 0.30800 | |
| | | 1.4 | 55.5 | 0.44450 | |
| | 308.80 | 2.1 | 69.0 | 0.53900 | |
| | | 2.8 | 73.0 | 0.56700 | |
| | | 3.5 | 74.0 | 0.57400 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 36 |
| Cohesion, c, kPa | 6 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.88
Dry Density(ɣd),gm/cc= 1.6
Moisture content(ω%)= 17.50




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

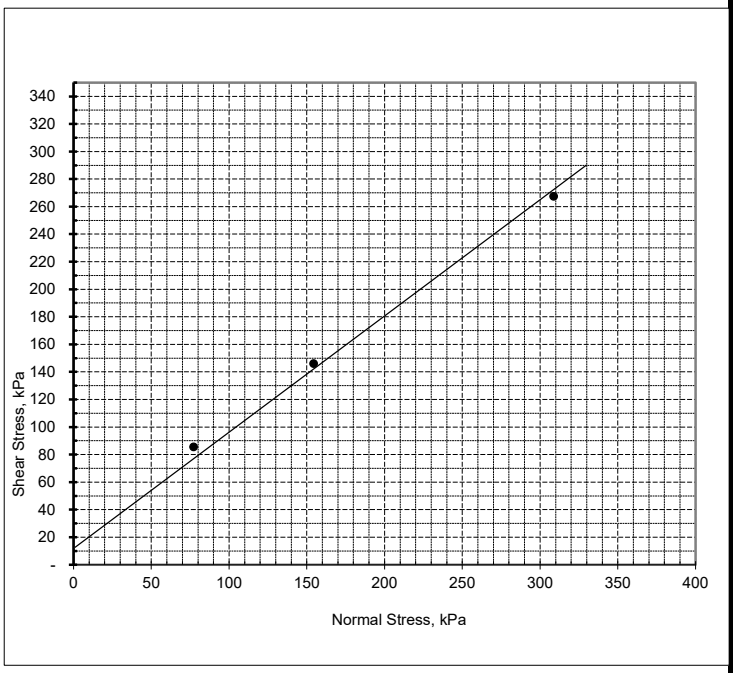
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-1,BH-04** | D29 | 43.50 | 25.4 | 76.2 | |

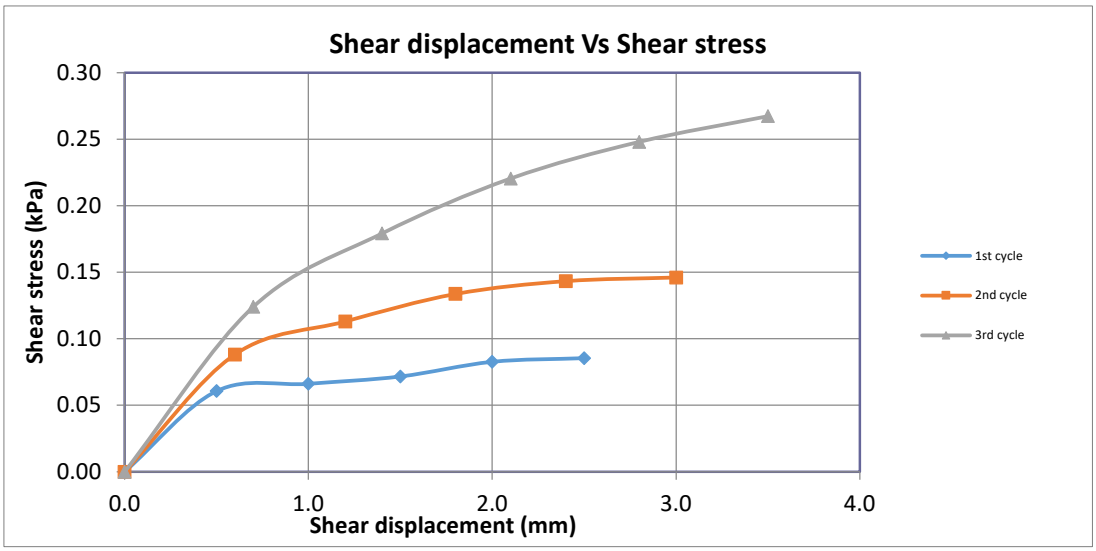
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 85.43 |
| | | 0.5 | 14.0 | 0.15400 | |
| | | 1.0 | 16.0 | 0.16800 | |
| | 77.20 | 1.5 | 18.0 | 0.18200 | |
| | | 2.0 | 22.0 | 0.21000 | |
| | | 2.5 | 23.0 | 0.21700 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 146.06 |
| | | 0.6 | 24.0 | 0.22400 | |
| | | 1.2 | 33.0 | 0.28700 | |
| | 154.40 | 1.8 | 40.5 | 0.33950 | |
| | | 2.4 | 44.0 | 0.36400 | |
| | | 3.0 | 45.0 | 0.37100 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 267.32 |
| | | 0.7 | 37.0 | 0.31500 | |
| | | 1.4 | 57.0 | 0.45500 | |
| | 308.80 | 2.1 | 72.0 | 0.56000 | |
| | | 2.8 | 82.0 | 0.63000 | |
| | | 3.5 | 89.0 | 0.67900 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 41 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.94
Dry Density(ɣd),gm/cc= 1.65
Moisture content(ω%)= 17.58




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

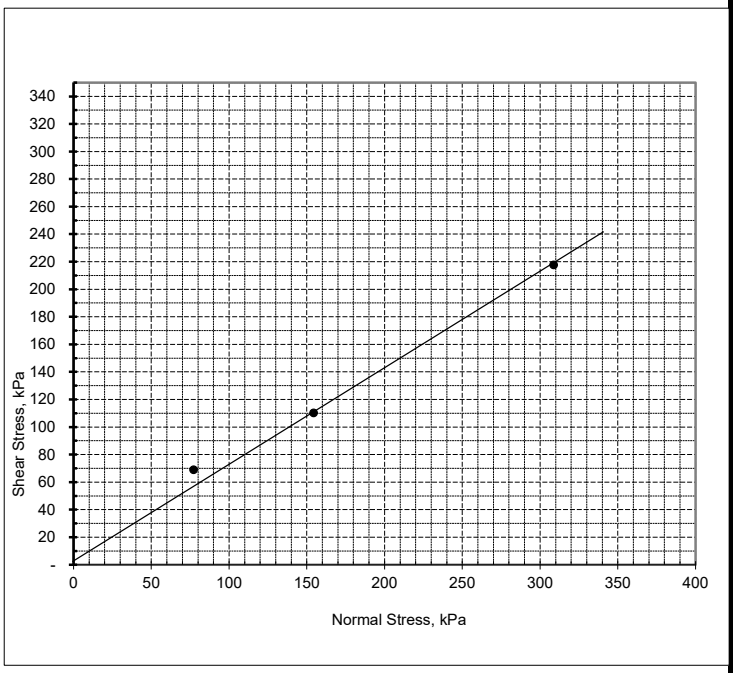
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **FLY-1,BH-06** | D29 | 43.50 | 25.4 | 76.2 | |

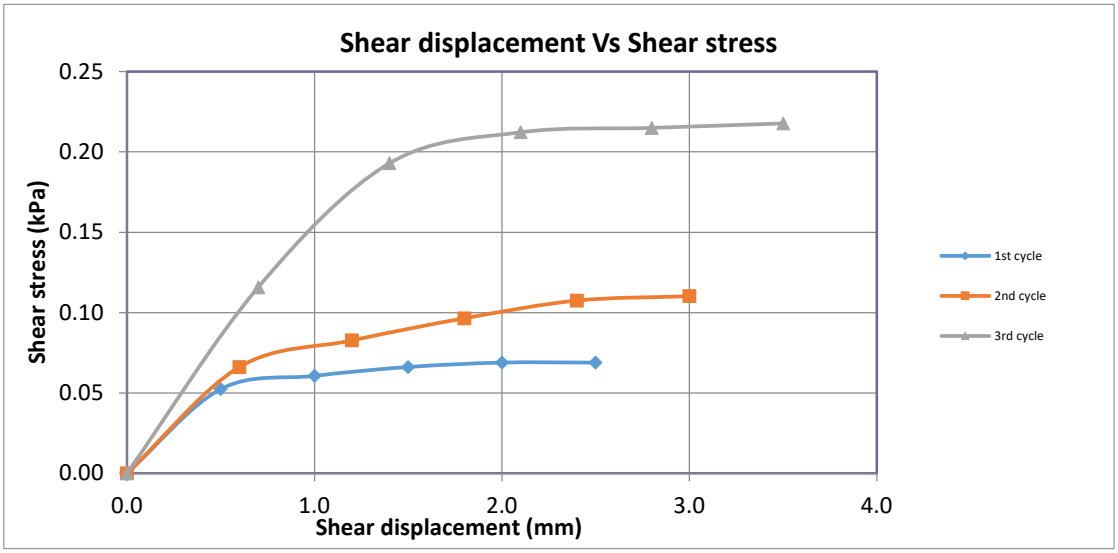
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 68.90 |
| | | 0.5 | 11.0 | 0.13300 | |
| | | 1.0 | 14.0 | 0.15400 | |
| | 77.20 | 1.5 | 16.0 | 0.16800 | |
| | | 2.0 | 17.0 | 0.17500 | |
| | | 2.5 | 17.0 | 0.17500 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 110.24 |
| | | 0.6 | 16.0 | 0.16800 | |
| | | 1.2 | 22.0 | 0.21000 | |
| | 154.40 | 1.8 | 27.0 | 0.24500 | |
| | | 2.4 | 31.0 | 0.27300 | |
| | | 3.0 | 32.0 | 0.28000 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 217.72 |
| | | 0.7 | 34.0 | 0.29400 | |
| | | 1.4 | 62.0 | 0.49000 | |
| | 308.80 | 2.1 | 69.0 | 0.53900 | |
| | | 2.8 | 70.0 | 0.54600 | |
| | | 3.5 | 71.0 | 0.55300 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 35 |
| Cohesion, c, kPa | 6 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.71
Dry Density(ɣd),gm/cc= 1.64
Moisture content(ω%)= 4.27




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

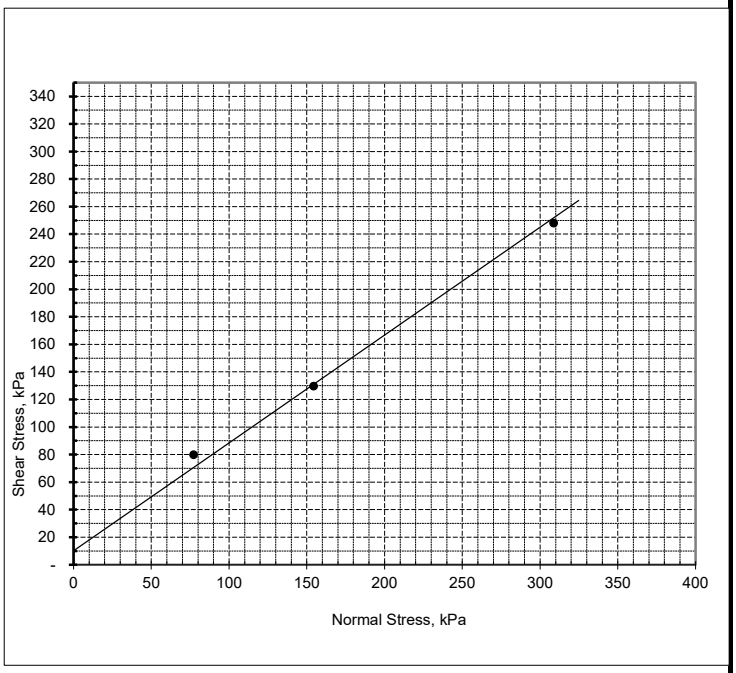
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **FLY-1,BH-06** | D29 | 43.50 | 25.4 | 76.2 | |

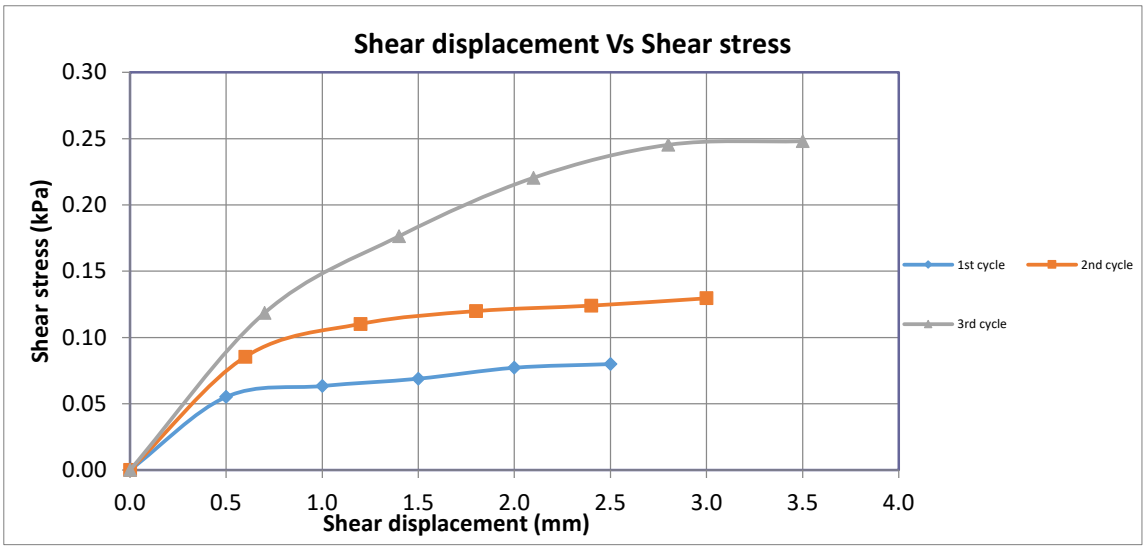
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 79.92 |
| | | 0.5 | 12.0 | 0.14000 | |
| | | 1.0 | 15.0 | 0.16100 | |
| | 77.20 | 1.5 | 17.0 | 0.17500 | |
| | | 2.0 | 20.0 | 0.19600 | |
| | | 2.5 | 21.0 | 0.20300 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 129.53 |
| | | 0.6 | 23.0 | 0.21700 | |
| | | 1.2 | 32.0 | 0.28000 | |
| | 154.40 | 1.8 | 35.5 | 0.30450 | |
| | | 2.4 | 37.0 | 0.31500 | |
| | | 3.0 | 39.0 | 0.32900 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 248.03 |
| | | 0.7 | 35.0 | 0.30100 | |
| | | 1.4 | 56.0 | 0.44800 | |
| | 308.80 | 2.1 | 72.0 | 0.56000 | |
| | | 2.8 | 81.0 | 0.62300 | |
| | | 3.5 | 82.0 | 0.63000 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 39 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.83
Dry Density(ɣd),gm/cc= 1.56
Moisture content(ω%)= 17.31




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

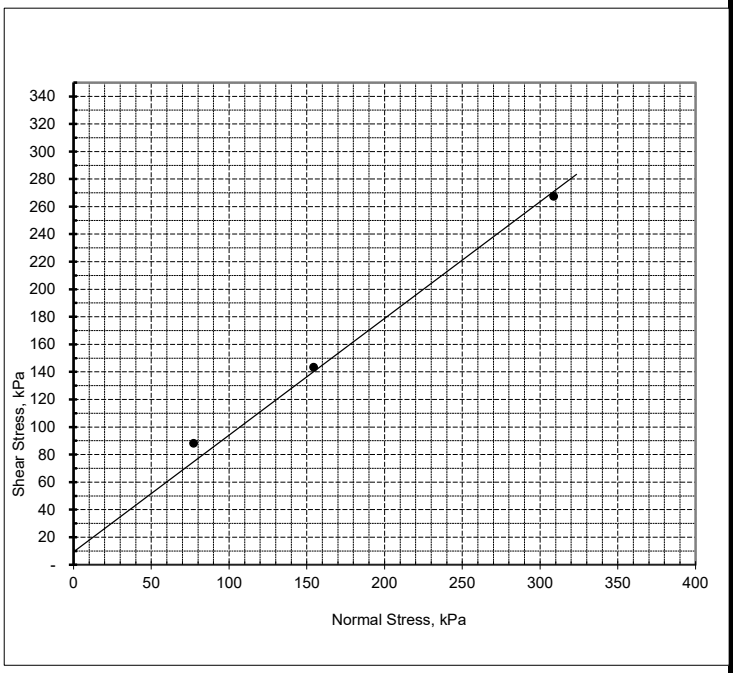
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **FLY-1,BH-06** | D29 | 43.50 | 25.4 | 76.2 | |

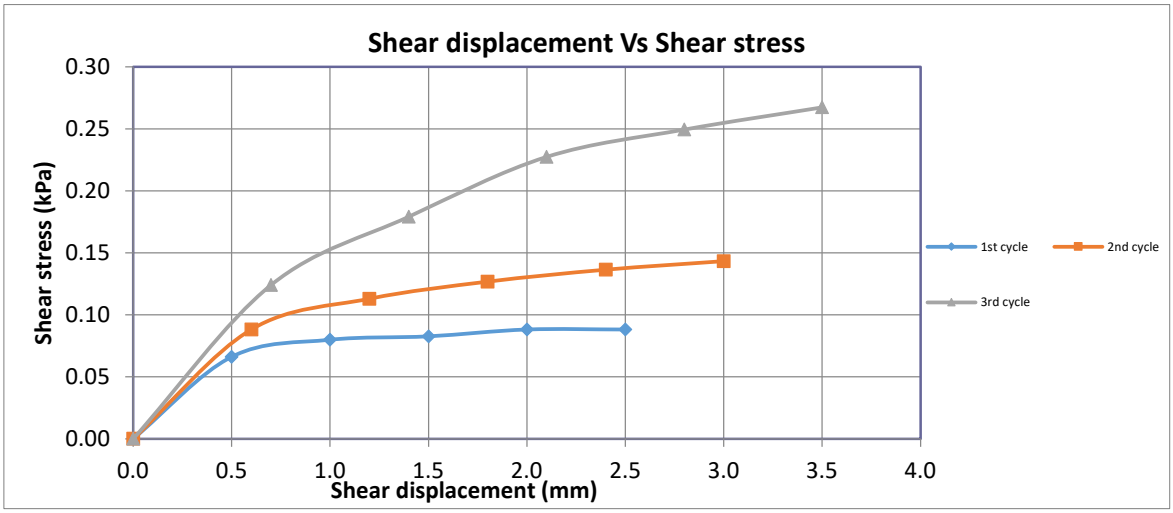
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 88.19 |
| | | 0.5 | 16.0 | 0.16800 | |
| | | 1.0 | 21.0 | 0.20300 | |
| | 77.20 | 1.5 | 22.0 | 0.21000 | |
| | | 2.0 | 24.0 | 0.22400 | |
| | | 2.5 | 24.0 | 0.22400 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 143.31 |
| | | 0.6 | 24.0 | 0.22400 | |
| | | 1.2 | 33.0 | 0.28700 | |
| | 154.40 | 1.8 | 38.0 | 0.32200 | |
| | | 2.4 | 41.5 | 0.34650 | |
| | | 3.0 | 44.0 | 0.36400 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 267.32 |
| | | 0.7 | 37.0 | 0.31500 | |
| | | 1.4 | 57.0 | 0.45500 | |
| | 308.80 | 2.1 | 74.5 | 0.57750 | |
| | | 2.8 | 82.5 | 0.63350 | |
| | | 3.5 | 89.0 | 0.67900 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 41 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.92
Dry Density(ɣd),gm/cc= 1.64
Moisture content(ω%)= 17.07




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

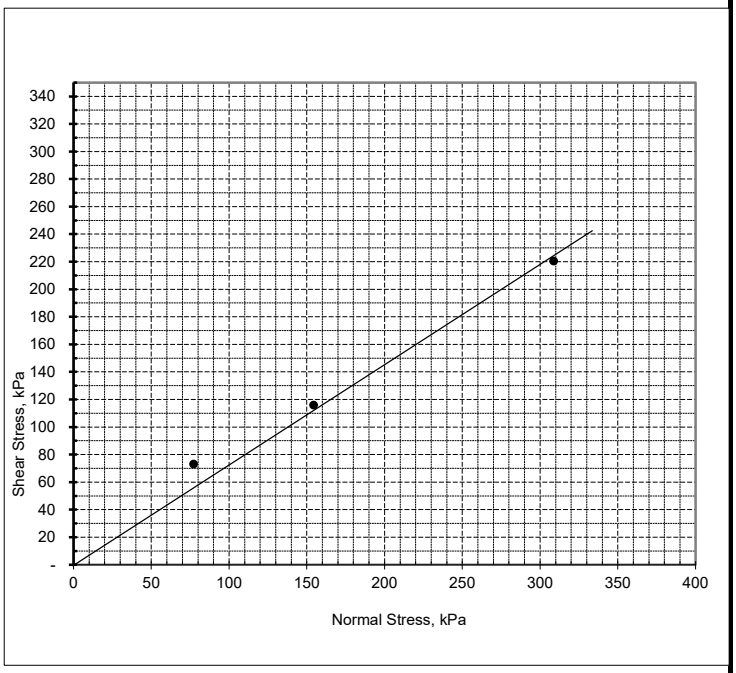
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **FLY-1,BH-06** | D26 | 39.00 | 25.4 | 76.2 | |

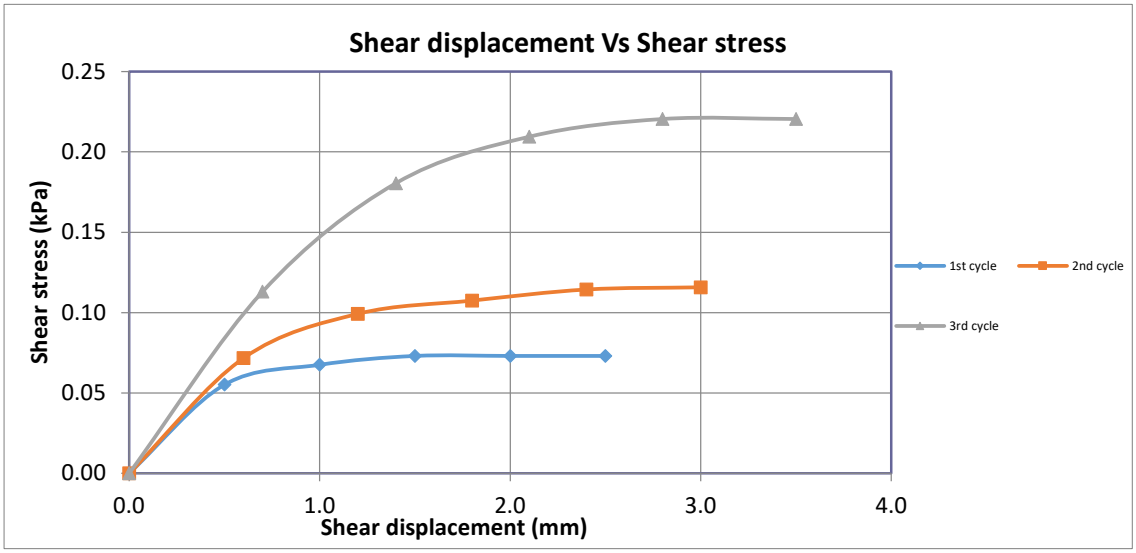
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 73.03 |
| | | 0.5 | 12.0 | 0.14000 | |
| | | 1.0 | 16.5 | 0.17150 | |
| | 77.20 | 1.5 | 18.5 | 0.18550 | |
| | | 2.0 | 18.5 | 0.18550 | |
| | | 2.5 | 18.5 | 0.18550 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 115.75 |
| | | 0.6 | 18.0 | 0.18200 | |
| | | 1.2 | 28.0 | 0.25200 | |
| | 154.40 | 1.8 | 31.0 | 0.27300 | |
| | | 2.4 | 33.5 | 0.29050 | |
| | | 3.0 | 34.0 | 0.29400 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 220.47 |
| | | 0.7 | 33.0 | 0.28700 | |
| | | 1.4 | 57.5 | 0.45850 | |
| | 308.80 | 2.1 | 68.0 | 0.53200 | |
| | | 2.8 | 72.0 | 0.56000 | |
| | | 3.5 | 72.0 | 0.56000 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 36 |
| Cohesion, c, kPa | 0 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.72
Dry Density(ɣd),gm/cc= 1.47
Moisture content(ω%)= 17.01




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

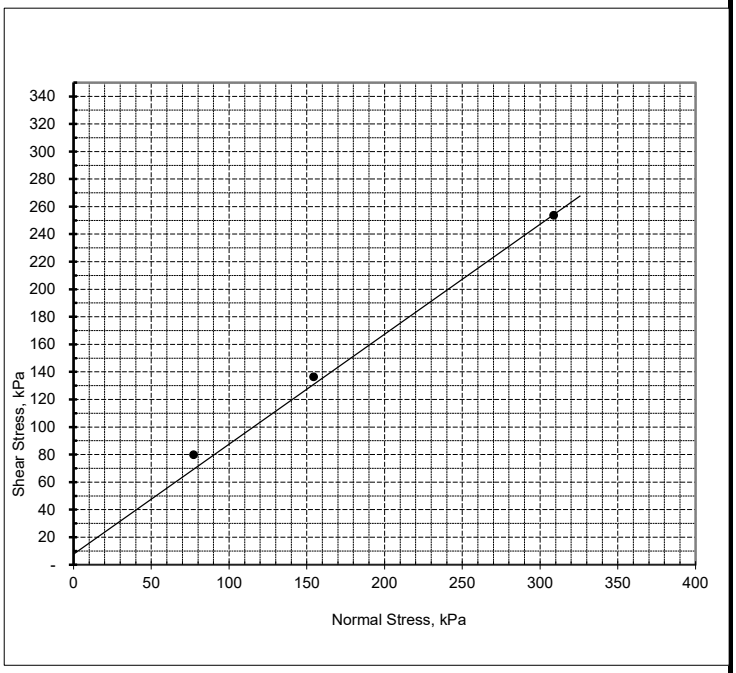
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **FLY-1,BH-06** | D26 | 39.00 | 25.4 | 76.2 | |

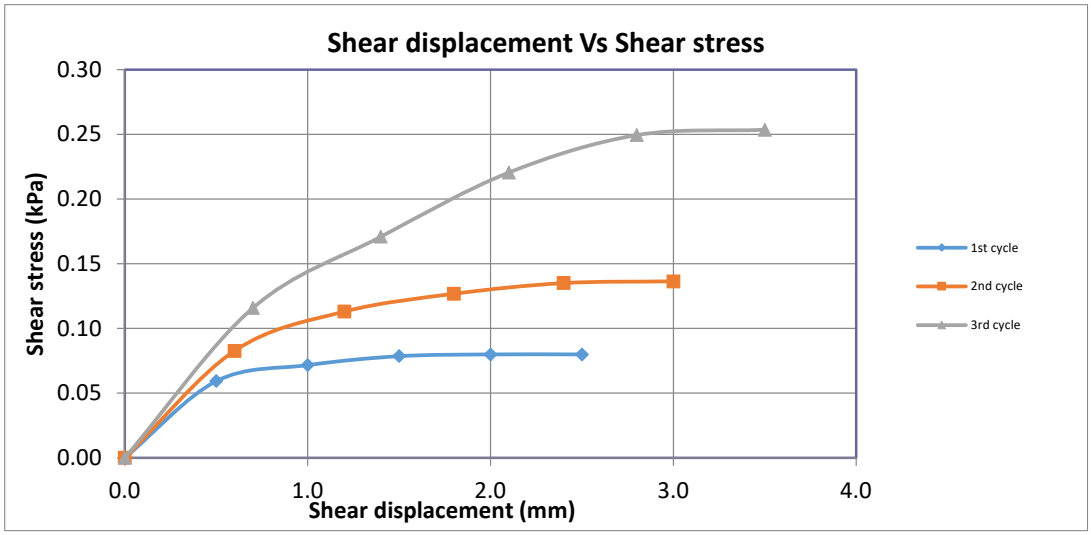
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 79.92 |
| | | 0.5 | 13.5 | 0.15050 | |
| | | 1.0 | 18.0 | 0.18200 | |
| | 77.20 | 1.5 | 20.5 | 0.19950 | |
| | | 2.0 | 21.0 | 0.20300 | |
| | | 2.5 | 21.0 | 0.20300 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 136.42 |
| | | 0.6 | 22.0 | 0.21000 | |
| | | 1.2 | 33.0 | 0.28700 | |
| | 154.40 | 1.8 | 38.0 | 0.32200 | |
| | | 2.4 | 41.0 | 0.34300 | |
| | | 3.0 | 41.5 | 0.34650 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 253.54 |
| | | 0.7 | 34.0 | 0.29400 | |
| | | 1.4 | 54.0 | 0.43400 | |
| | 308.80 | 2.1 | 72.0 | 0.56000 | |
| | | 2.8 | 82.5 | 0.63350 | |
| | | 3.5 | 84.0 | 0.64400 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 39 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.85
Dry Density(ɣd),gm/cc= 1.58
Moisture content(ω%)= 17.09




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

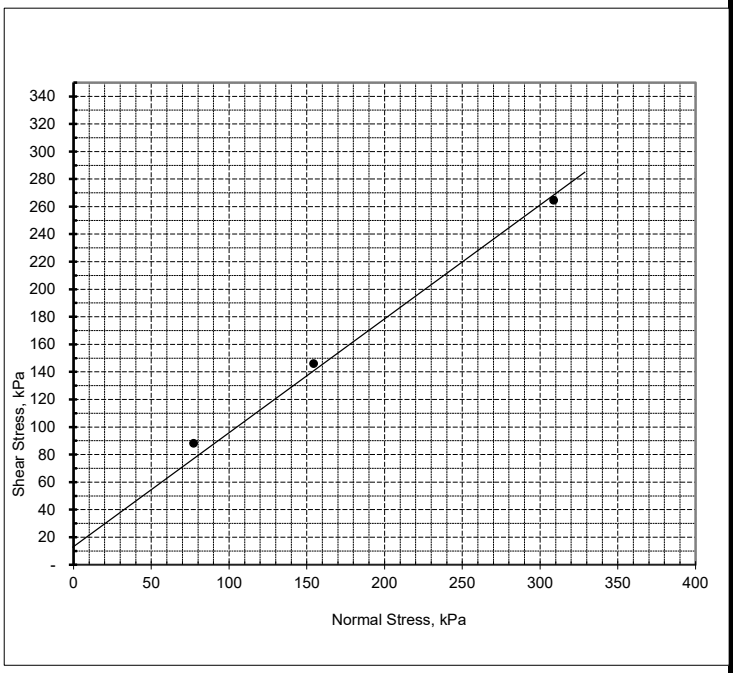
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 07.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **FLY-1,BH-06** | D26 | 39.00 | 25.4 | 76.2 | |

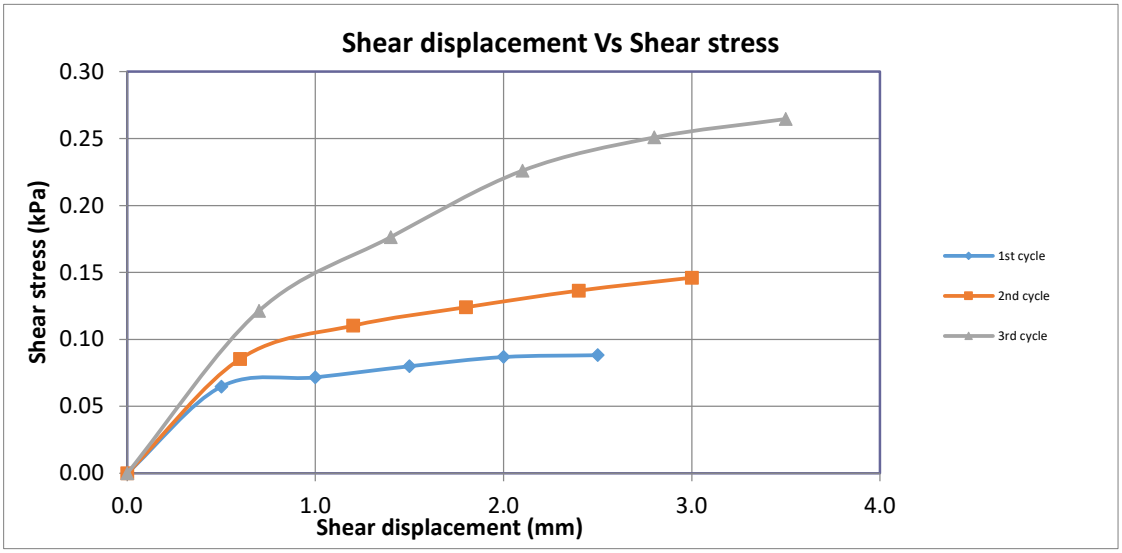
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 88.19 |
| | | 0.5 | 15.5 | 0.16450 | |
| | | 1.0 | 18.0 | 0.18200 | |
| | 77.20 | 1.5 | 21.0 | 0.20300 | |
| | | 2.0 | 23.5 | 0.22050 | |
| | | 2.5 | 24.0 | 0.22400 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 146.06 |
| | | 0.6 | 23.0 | 0.21700 | |
| | | 1.2 | 32.0 | 0.28000 | |
| | 154.40 | 1.8 | 37.0 | 0.31500 | |
| | | 2.4 | 41.5 | 0.34650 | |
| | | 3.0 | 45.0 | 0.37100 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 264.57 |
| | | 0.7 | 36.0 | 0.30800 | |
| | | 1.4 | 56.0 | 0.44800 | |
| | 308.80 | 2.1 | 74.0 | 0.57400 | |
| | | 2.8 | 83.0 | 0.63700 | |
| | | 3.5 | 88.0 | 0.67200 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 41 |
| Cohesion, c, kPa | 4 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.93
Dry Density(ɣd),gm/cc= 1.64
Moisture content(ω%)= 17.68




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

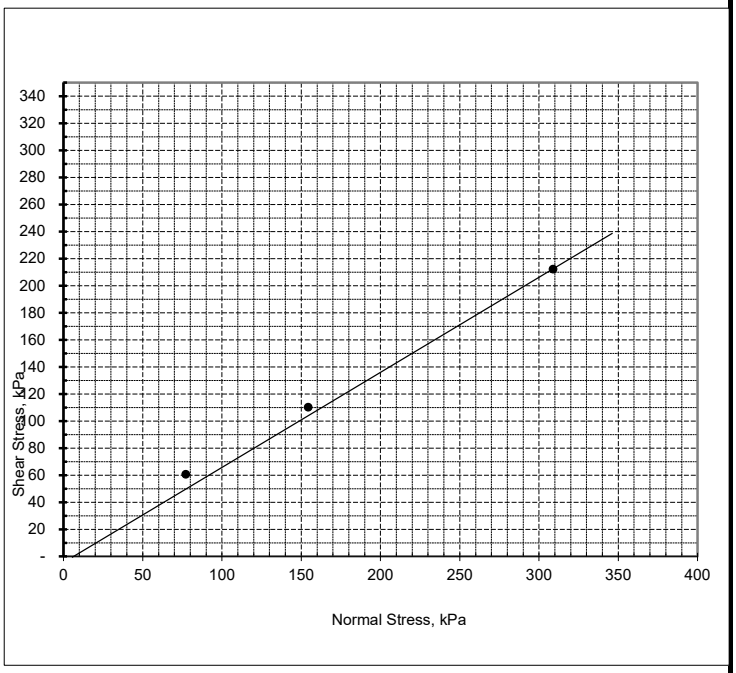
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 4-Apr-19

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-4,BH-02** | D25 | 37.50 | 25.4 | 76.2 | |

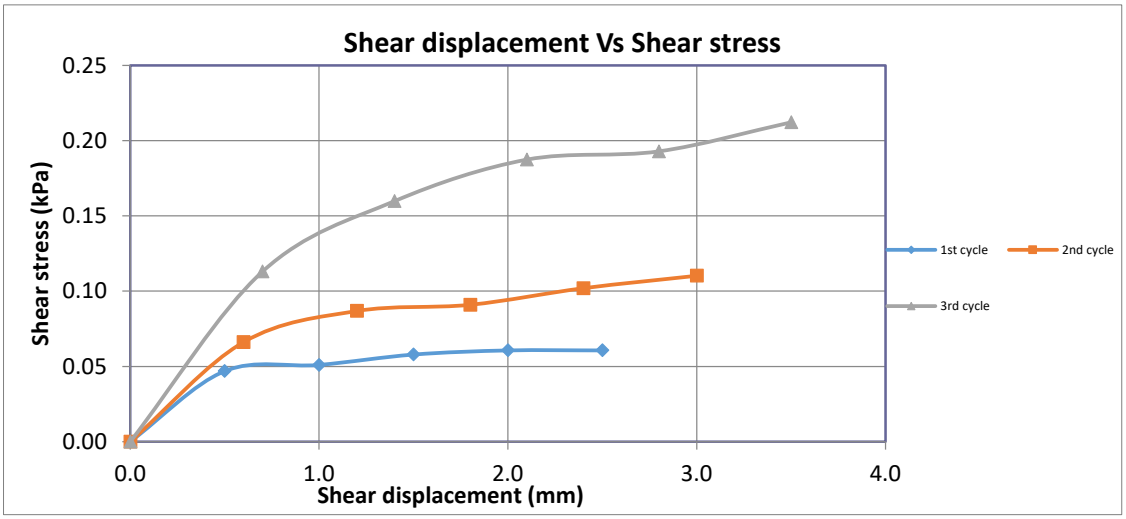
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 60.63 |
| | | 0.5 | 9.0 | 0.11900 | |
| | | 1.0 | 10.5 | 0.12950 | |
| | 77.20 | 1.5 | 13.0 | 0.14700 | |
| | | 2.0 | 14.0 | 0.15400 | |
| | | 2.5 | 14.0 | 0.15400 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 110.24 |
| | | 0.6 | 16.0 | 0.16800 | |
| | | 1.2 | 23.5 | 0.22050 | |
| | 154.40 | 1.8 | 25.0 | 0.23100 | |
| | | 2.4 | 29.0 | 0.25900 | |
| | | 3.0 | 32.0 | 0.28000 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 212.20 |
| | | 0.7 | 33.0 | 0.28700 | |
| | | 1.4 | 50.0 | 0.40600 | |
| | 308.80 | 2.1 | 60.0 | 0.47600 | |
| | | 2.8 | 62.0 | 0.49000 | |
| | | 3.5 | 69.0 | 0.53900 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 34 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(γb),gm/cc= 1.65
Dry Density(γd),gm/cc= 1.46
Moisture content(ω%)= 13.01




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

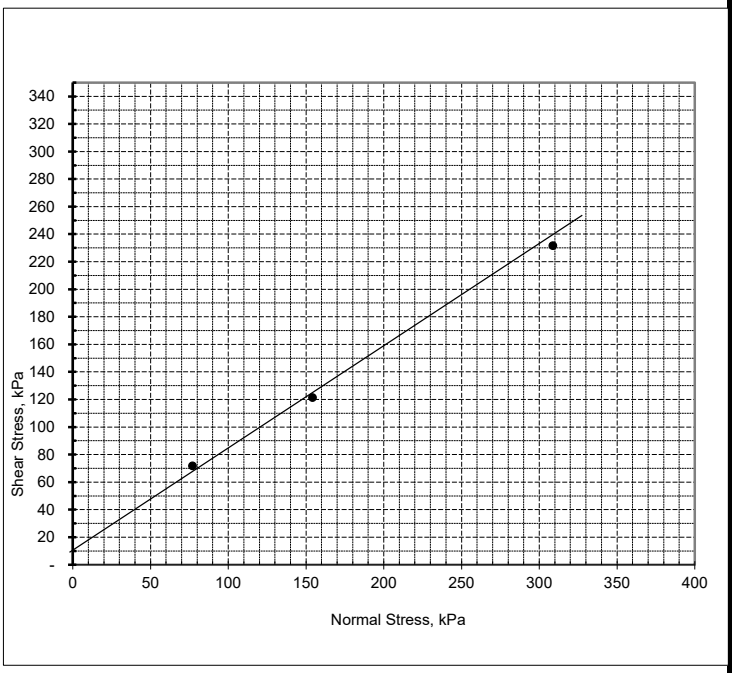
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 4-Apr-19

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-4,BH-02** | D25 | 37.50 | 25.4 | 76.2 | |

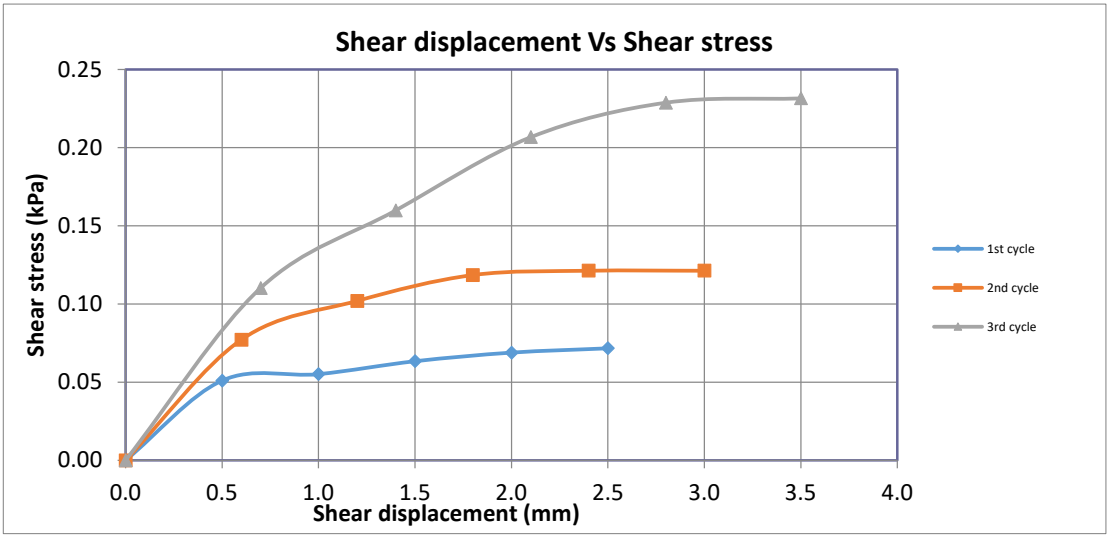
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 71.65 |
| | | 0.5 | 10.5 | 0.12950 | |
| | | 1.0 | 12.0 | 0.14000 | |
| | 77.20 | 1.5 | 15.0 | 0.16100 | |
| | | 2.0 | 17.0 | 0.17500 | |
| | | 2.5 | 18.0 | 0.18200 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 121.26 |
| | | 0.6 | 20.0 | 0.19600 | |
| | | 1.2 | 29.0 | 0.25900 | |
| | 154.40 | 1.8 | 35.0 | 0.30100 | |
| | | 2.4 | 36.0 | 0.30800 | |
| | | 3.0 | 36.0 | 0.30800 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 231.50 |
| | | 0.7 | 32.0 | 0.28000 | |
| | | 1.4 | 50.0 | 0.40600 | |
| | 308.80 | 2.1 | 67.0 | 0.52500 | |
| | | 2.8 | 75.0 | 0.58100 | |
| | | 3.5 | 76.0 | 0.58800 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 37 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.77
Dry Density(ɣd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

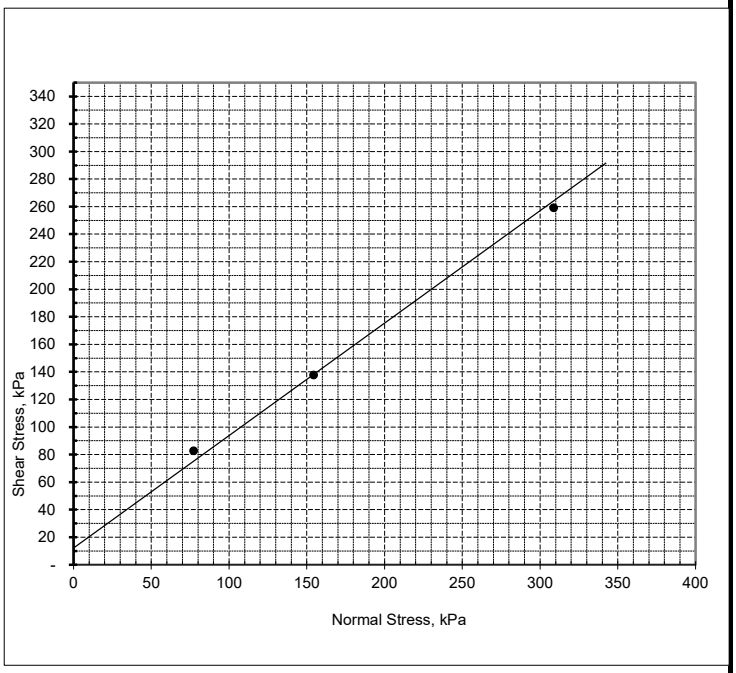
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 4-Apr-19

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-4,BH-02** | D25 | 37.50 | 25.4 | 76.2 | |

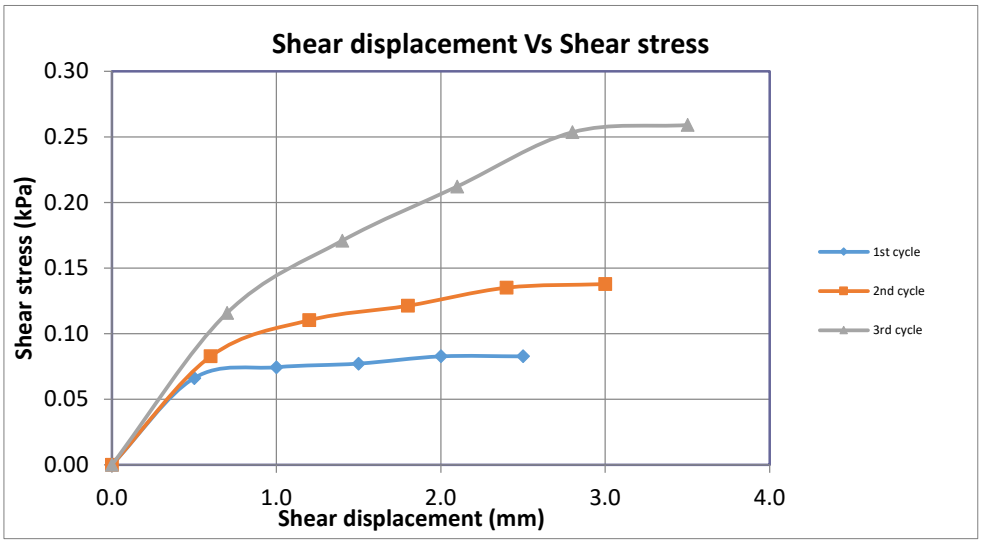
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 82.68 |
| | | 0.5 | 16.0 | 0.16800 | |
| | | 1.0 | 19.0 | 0.18900 | |
| | 77.20 | 1.5 | 20.0 | 0.19600 | |
| | | 2.0 | 22.0 | 0.21000 | |
| | | 2.5 | 22.0 | 0.21000 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 137.80 |
| | | 0.6 | 22.0 | 0.21000 | |
| | | 1.2 | 32.0 | 0.28000 | |
| | 154.40 | 1.8 | 36.0 | 0.30800 | |
| | | 2.4 | 41.0 | 0.34300 | |
| | | 3.0 | 42.0 | 0.35000 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 259.06 |
| | | 0.7 | 34.0 | 0.29400 | |
| | | 1.4 | 54.0 | 0.43400 | |
| | 308.80 | 2.1 | 69.0 | 0.53900 | |
| | | 2.8 | 84.0 | 0.64400 | |
| | | 3.5 | 86.0 | 0.65800 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 4 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.88
Dry Density(ɣd),gm/cc= 1.61
Moisture content(ω%)= 16.77




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

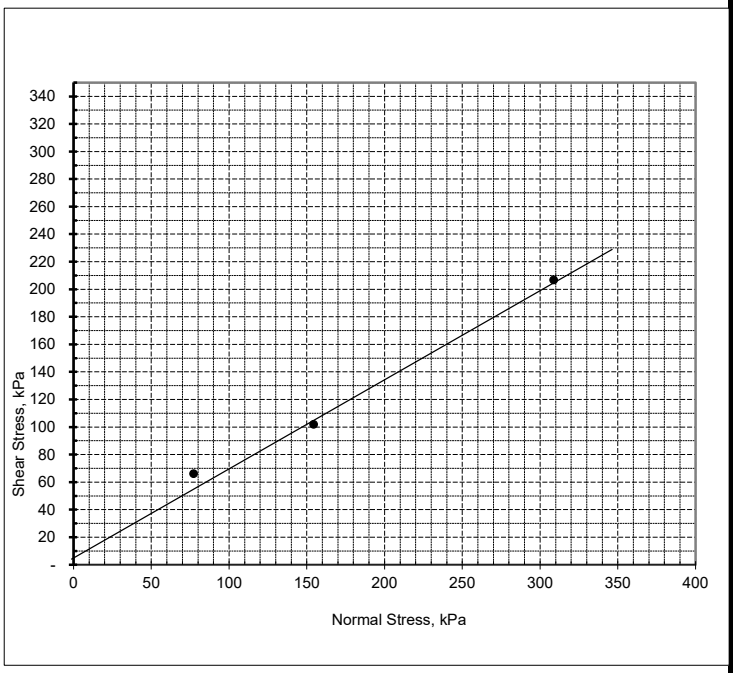
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 05.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-5,BH-01** | D26 | 39.00 | 25.4 | 76.2 | |

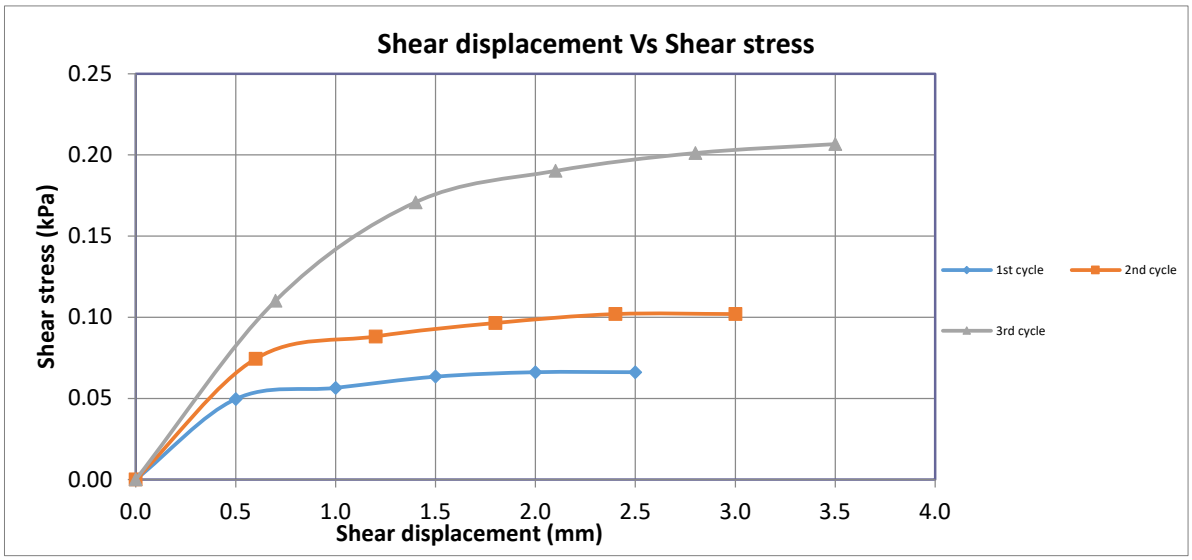
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 66.14 |
| | | 0.5 | 10.0 | 0.12600 | |
| | | 1.0 | 12.5 | 0.14350 | |
| | 77.20 | 1.5 | 15.0 | 0.16100 | |
| | | 2.0 | 16.0 | 0.16800 | |
| | | 2.5 | 16.0 | 0.16800 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 101.97 |
| | | 0.6 | 19.0 | 0.18900 | |
| | | 1.2 | 24.0 | 0.22400 | |
| | 154.40 | 1.8 | 27.0 | 0.24500 | |
| | | 2.4 | 29.0 | 0.25900 | |
| | | 3.0 | 29.0 | 0.25900 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 206.69 |
| | | 0.7 | 32.0 | 0.28000 | |
| | | 1.4 | 54.0 | 0.43400 | |
| | 308.80 | 2.1 | 61.0 | 0.48300 | |
| | | 2.8 | 65.0 | 0.51100 | |
| | | 3.5 | 67.0 | 0.52500 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 34 |
| Cohesion, c, kPa | 4 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.77
Dry Density(ɣd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

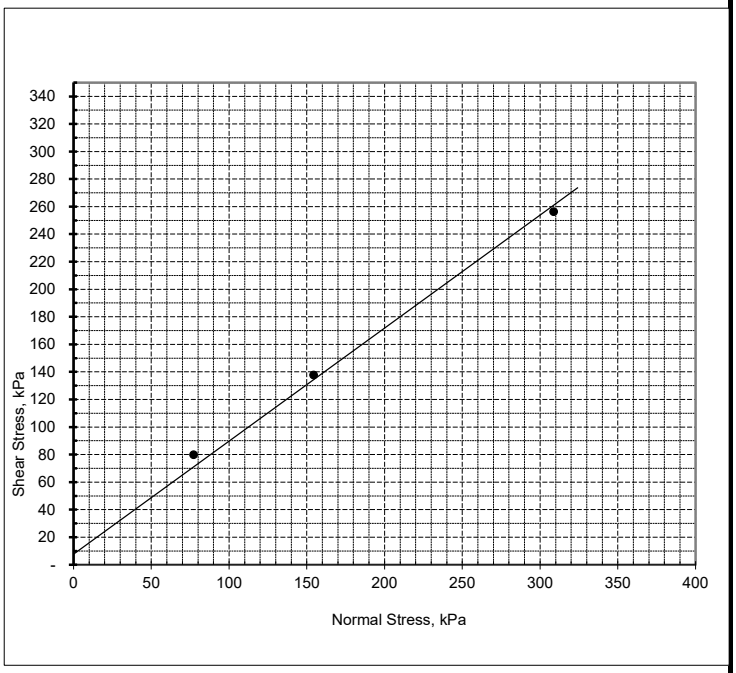
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 05.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-5,BH-01** | D26 | 39.00 | 25.4 | 76.2 | |

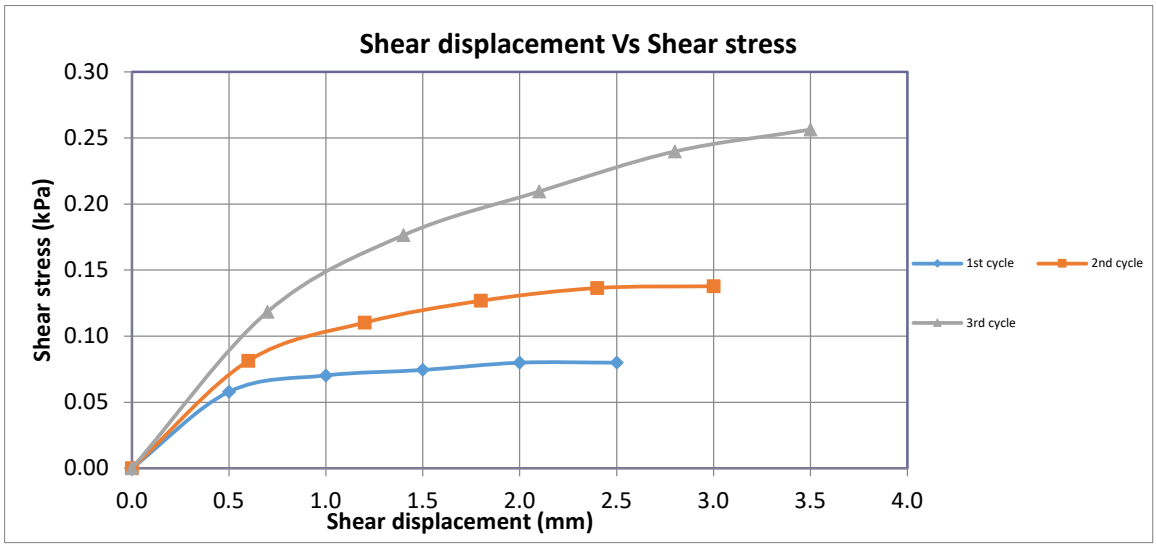
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 79.92 |
| | | 0.5 | 13.0 | 0.14700 | |
| | | 1.0 | 17.5 | 0.17850 | |
| | 77.20 | 1.5 | 19.0 | 0.18900 | |
| | | 2.0 | 21.0 | 0.20300 | |
| | | 2.5 | 21.0 | 0.20300 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 137.80 |
| | | 0.6 | 21.5 | 0.20650 | |
| | | 1.2 | 32.0 | 0.28000 | |
| | 154.40 | 1.8 | 38.0 | 0.32200 | |
| | | 2.4 | 41.5 | 0.34650 | |
| | | 3.0 | 42.0 | 0.35000 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 256.30 |
| | | 0.7 | 35.0 | 0.30100 | |
| | | 1.4 | 56.0 | 0.44800 | |
| | 308.80 | 2.1 | 68.0 | 0.53200 | |
| | | 2.8 | 79.0 | 0.60900 | |
| | | 3.5 | 85.0 | 0.65100 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 6 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.88
Dry Density(ɣd),gm/cc= 1.61
Moisture content(ω%)= 16.77




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

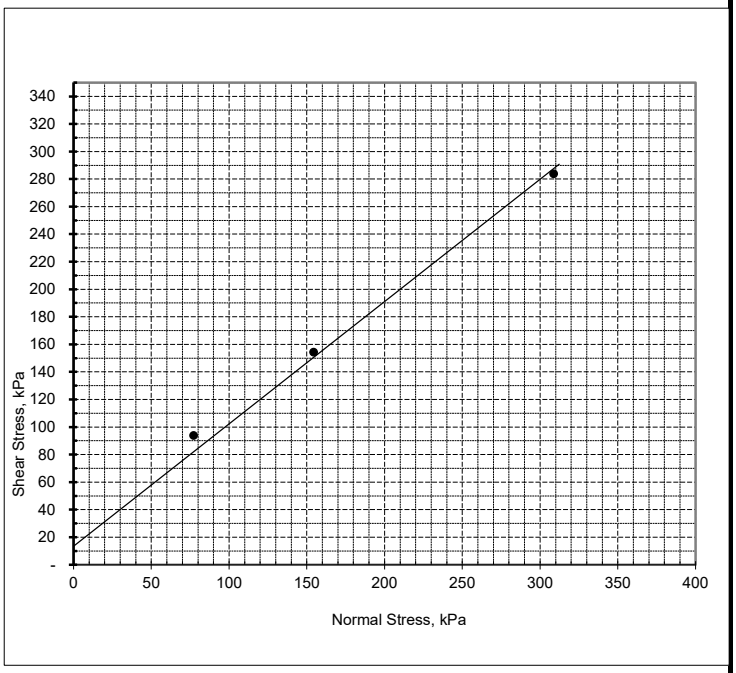
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 05.04.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **OVP-5,BH-01** | D26 | 39.00 | 25.4 | 76.2 | |

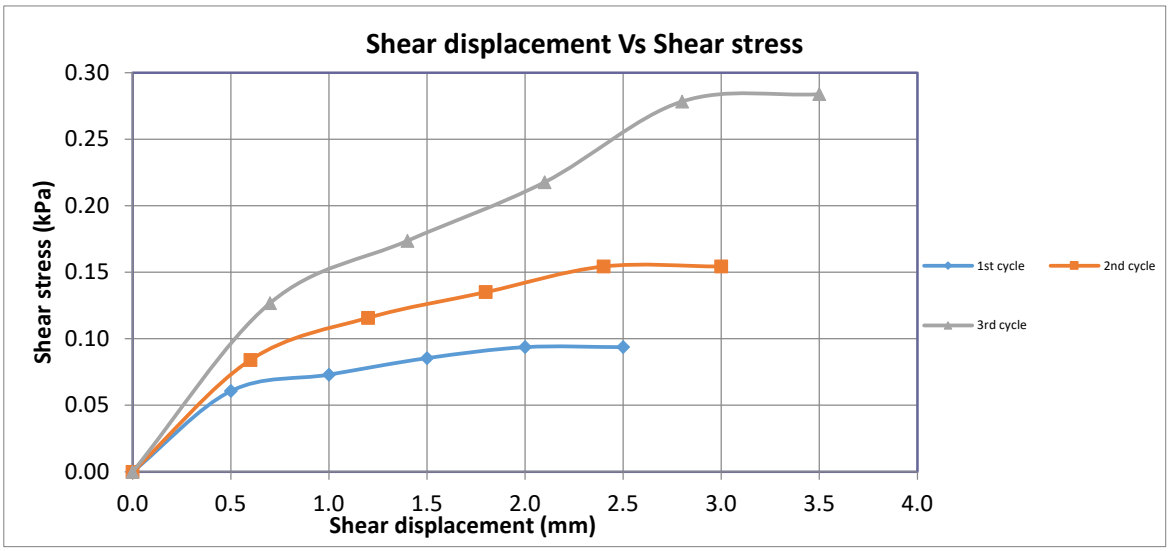
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 93.70 |
| | | 0.5 | 14.0 | 0.15400 | |
| | | 1.0 | 18.5 | 0.18550 | |
| | 77.20 | 1.5 | 23.0 | 0.21700 | |
| | | 2.0 | 26.0 | 0.23800 | |
| | | 2.5 | 26.0 | 0.23800 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 154.33 |
| | | 0.6 | 22.5 | 0.21350 | |
| | | 1.2 | 34.0 | 0.29400 | |
| | 154.40 | 1.8 | 41.0 | 0.34300 | |
| | | 2.4 | 48.0 | 0.39200 | |
| | | 3.0 | 48.0 | 0.39200 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 283.86 |
| | | 0.7 | 38.0 | 0.32200 | |
| | | 1.4 | 55.0 | 0.44100 | |
| | 308.80 | 2.1 | 71.0 | 0.55300 | |
| | | 2.8 | 93.0 | 0.70700 | |
| | | 3.5 | 95.0 | 0.72100 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 43 |
| Cohesion, c, kPa | 3 |




**Density Information:**

Wet Density(ɣb),gm/cc= 1.88
Dry Density(ɣd),gm/cc= 1.61
Moisture content(ω%)= 16.77




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

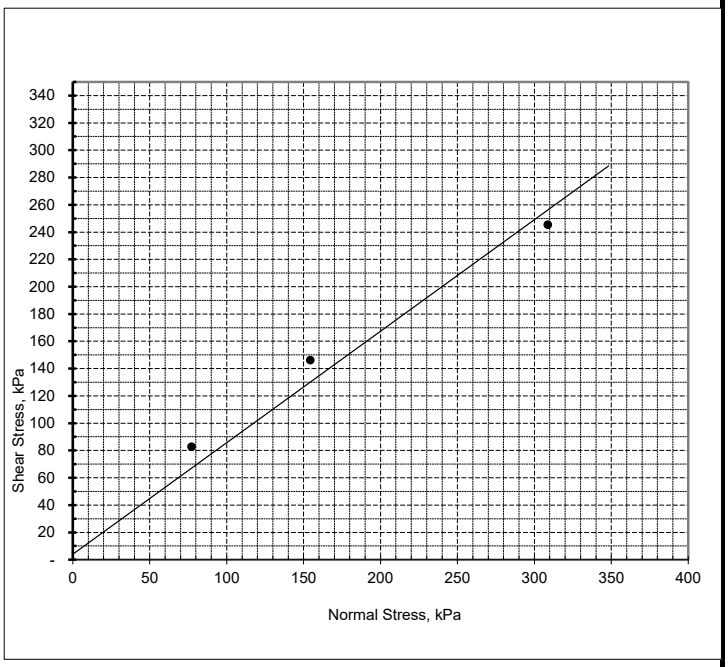
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 20.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-13 | D-21,22,23 | 31.5,33.0,34.5 | 25.4 | 76.2 | |

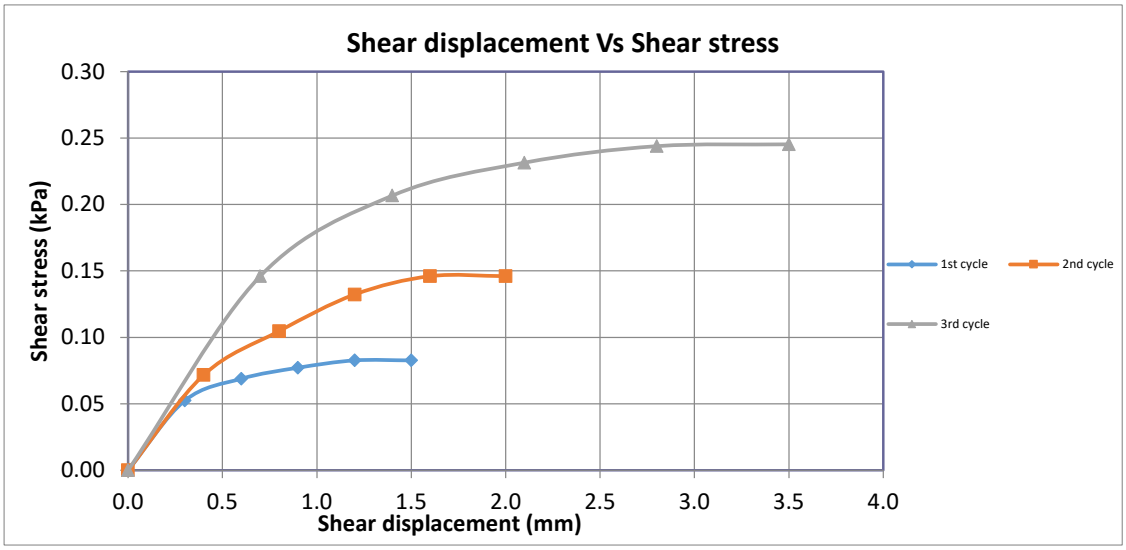
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 82.68 |
| | | 0.3 | 11.0 | 0.13300 | |
| | | 0.6 | 17.0 | 0.17500 | |
| | 77.20 | 0.9 | 20.0 | 0.19600 | |
| | | 1.2 | 22.0 | 0.21000 | |
| | | 1.5 | 22.0 | 0.21000 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 146.06 |
| | | 0.4 | 18.0 | 0.18200 | |
| | | 0.8 | 30.0 | 0.26600 | |
| | 154.40 | 1.2 | 40.0 | 0.33600 | |
| | | 1.6 | 45.0 | 0.37100 | |
| | | 2.0 | 45.0 | 0.37100 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 245.28 |
| | | 0.7 | 45.0 | 0.37100 | |
| | | 1.4 | 67.0 | 0.52500 | |
| | 308.80 | 2.1 | 76.0 | 0.58800 | |
| | | 2.8 | 80.5 | 0.61950 | |
| | | 3.5 | 81.0 | 0.62300 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 38 |
| Cohesion, c, kPa | 4 |




**Density Information:**

Wet Density(γb),gm/cc= 1.64
Dry Density(γd),gm/cc= 1.4
Moisture content(ω%)= 17.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

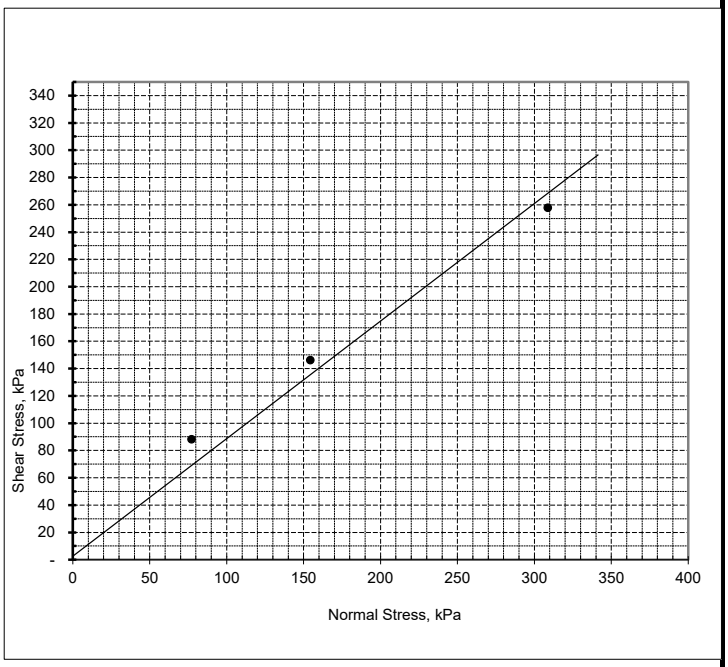
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 20.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-13 | D-21,22,23 | 31.5,33.0,34.5 | 25.4 | 76.2 | |

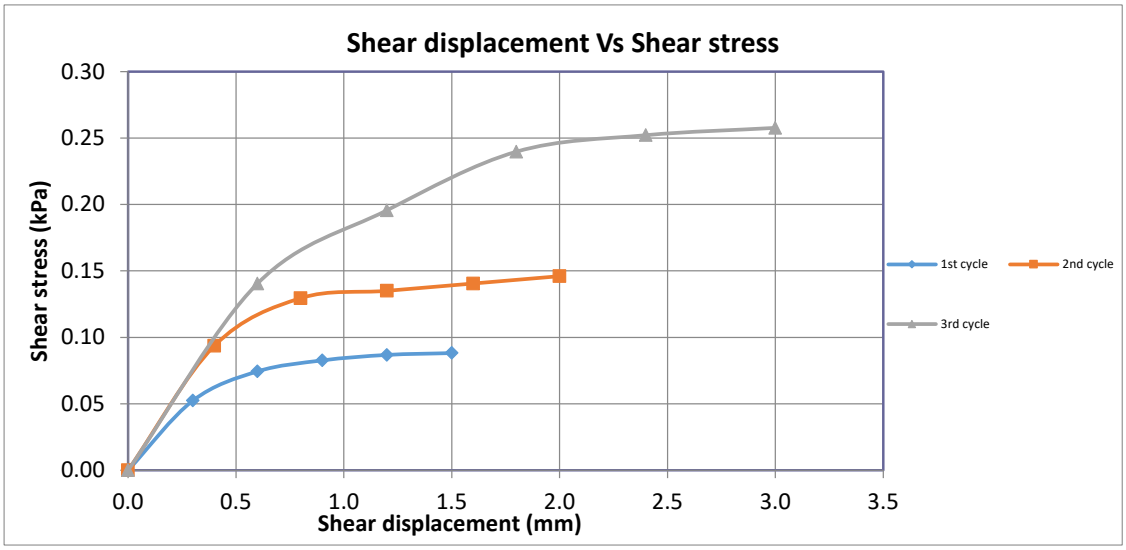
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 88.19 |
| | | 0.3 | 11.0 | 0.13300 | |
| | | 0.6 | 19.0 | 0.18900 | |
| | 77.20 | 0.9 | 22.0 | 0.21000 | |
| | | 1.2 | 23.5 | 0.22050 | |
| | | 1.5 | 24.0 | 0.22400 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 146.06 |
| | | 0.4 | 26.0 | 0.23800 | |
| | | 0.8 | 39.0 | 0.32900 | |
| | 154.40 | 1.2 | 41.0 | 0.34300 | |
| | | 1.6 | 43.0 | 0.35700 | |
| | | 2.0 | 45.0 | 0.37100 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 257.68 |
| | | 0.6 | 43.0 | 0.35700 | |
| | | 1.2 | 63.0 | 0.49700 | |
| | 308.80 | 1.8 | 79.0 | 0.60900 | |
| | | 2.4 | 83.5 | 0.64050 | |
| | | 3.0 | 85.5 | 0.65450 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 2 |




**Density Information:**

Wet Density(γb),gm/cc= 1.77
Dry Density(γd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

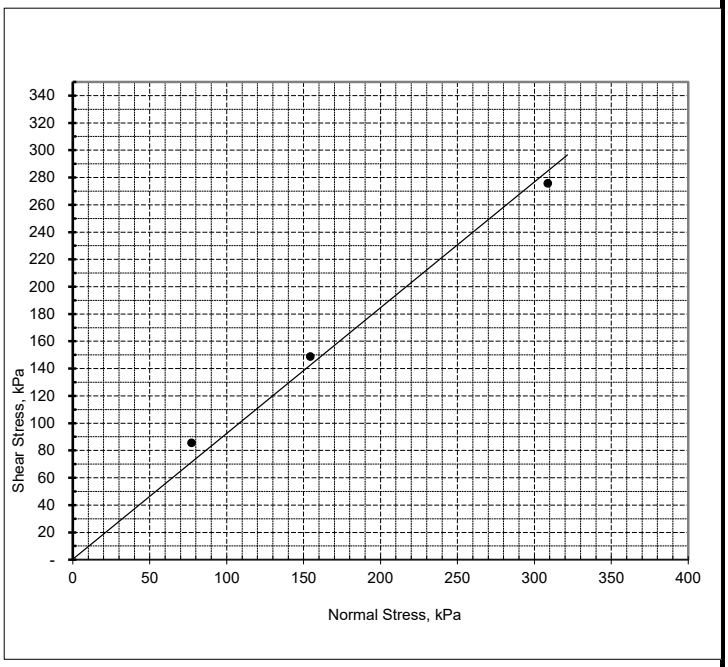
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 20.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-13 | D-21,22,23 | 31.5,33.0,34.5 | 25.4 | 76.2 | |

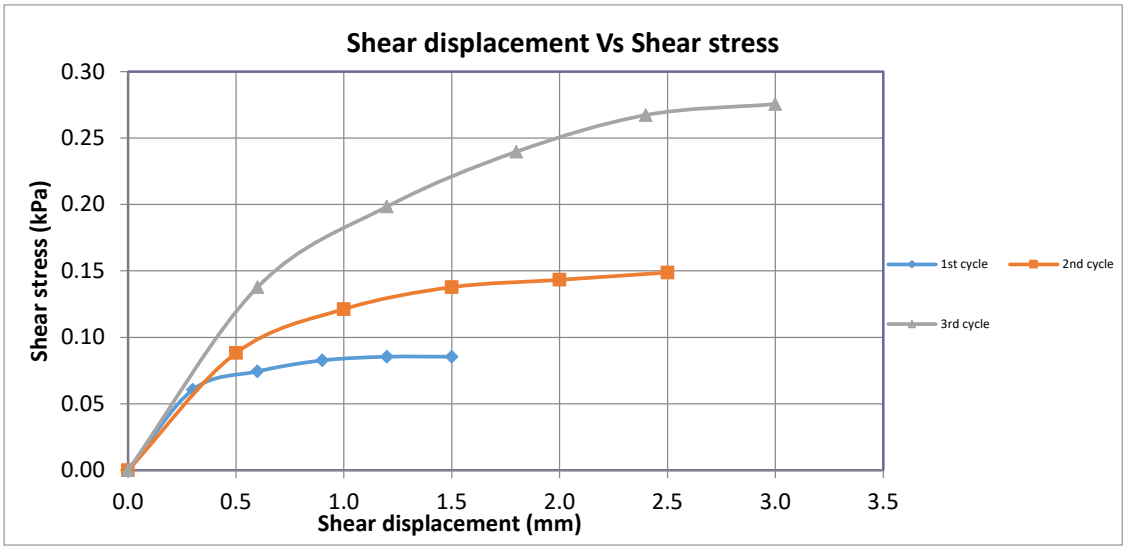
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 85.43 |
| | | 0.3 | 14.0 | 0.15400 | |
| | | 0.6 | 19.0 | 0.18900 | |
| | 77.20 | 0.9 | 22.0 | 0.21000 | |
| | | 1.2 | 23.0 | 0.21700 | |
| | | 1.5 | 23.0 | 0.21700 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 148.82 |
| | | 0.5 | 24.0 | 0.22400 | |
| | | 1.0 | 36.0 | 0.30800 | |
| | 154.40 | 1.5 | 42.0 | 0.35000 | |
| | | 2.0 | 44.0 | 0.36400 | |
| | | 2.5 | 46.0 | 0.37800 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 275.59 |
| | | 0.6 | 42.0 | 0.35000 | |
| | | 1.2 | 64.0 | 0.50400 | |
| | 308.80 | 1.8 | 79.0 | 0.60900 | |
| | | 2.4 | 89.0 | 0.67900 | |
| | | 3.0 | 92.0 | 0.70000 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 42 |
| Cohesion, c, kPa | 0 |




**Density Information:**

Wet Density(γb),gm/cc= 1.89
Dry Density(γd),gm/cc= 1.62
Moisture content(ω%)= 16.67




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

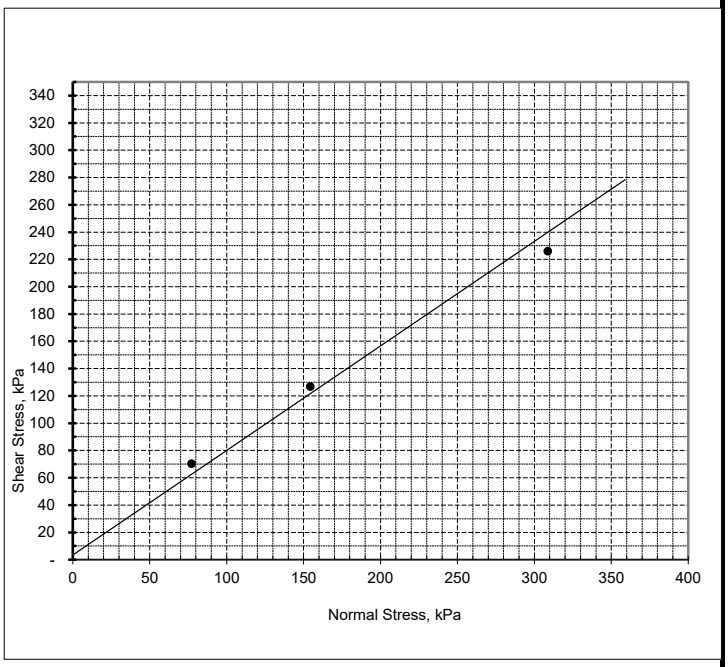
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-5** | D-24,25,26 | 36.0,37.5,39.0 | 25.4 | 76.2 | |

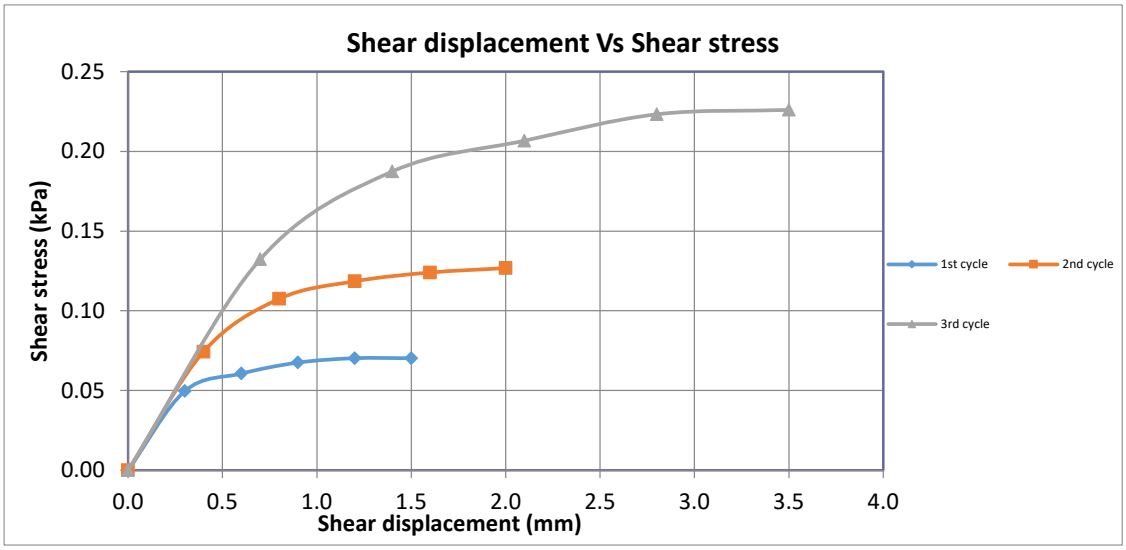
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 70.28 |
| | | 0.3 | 10.0 | 0.12600 | |
| | | 0.6 | 14.0 | 0.15400 | |
| | 77.20 | 0.9 | 16.5 | 0.17150 | |
| | | 1.2 | 17.5 | 0.17850 | |
| | | 1.5 | 17.5 | 0.17850 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 126.77 |
| | | 0.4 | 19.0 | 0.18900 | |
| | | 0.8 | 31.0 | 0.27300 | |
| | 154.40 | 1.2 | 35.0 | 0.30100 | |
| | | 1.6 | 37.0 | 0.31500 | |
| | | 2.0 | 38.0 | 0.32200 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 225.98 |
| | | 0.7 | 40.0 | 0.33600 | |
| | | 1.4 | 60.0 | 0.47600 | |
| | 308.80 | 2.1 | 67.0 | 0.52500 | |
| | | 2.8 | 73.0 | 0.56700 | |
| | | 3.5 | 74.0 | 0.57400 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 36 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(γb),gm/cc= 1.64
Dry Density(γd),gm/cc= 1.4
Moisture content(ω%)= 17.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

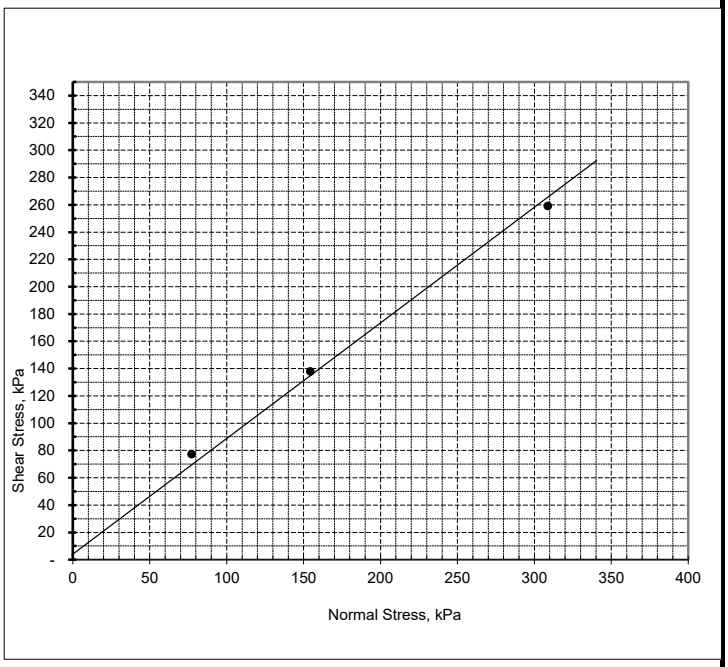
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-5** | D-24,25,26 | 36.0,37.5,39.0 | 25.4 | 76.2 | |

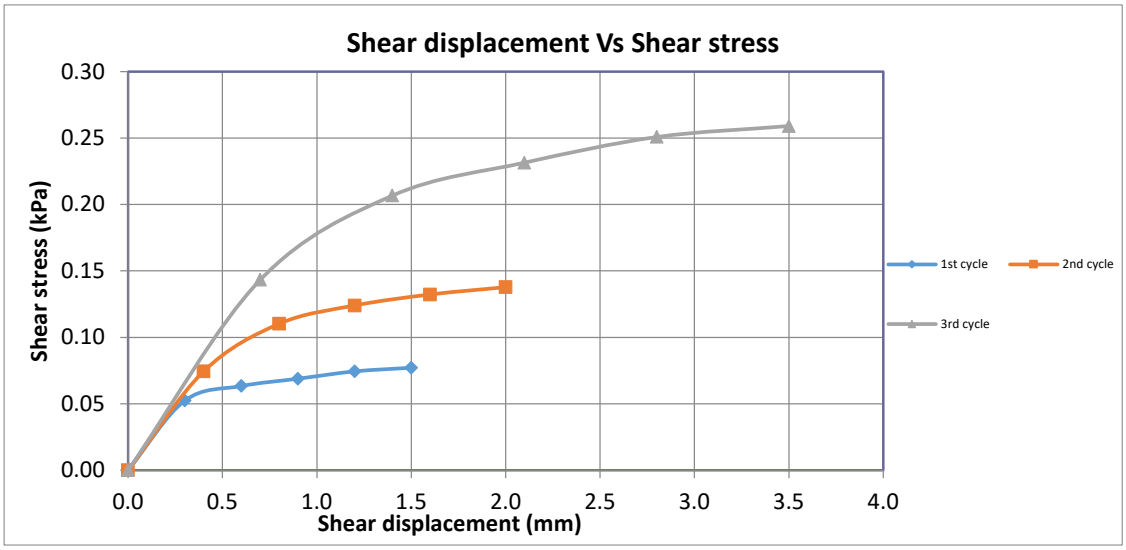
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 77.17 |
| | | 0.3 | 11.0 | 0.13300 | |
| | | 0.6 | 15.0 | 0.16100 | |
| | 77.20 | 0.9 | 17.0 | 0.17500 | |
| | | 1.2 | 19.0 | 0.18900 | |
| | | 1.5 | 20.0 | 0.19600 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 137.80 |
| | | 0.4 | 19.0 | 0.18900 | |
| | | 0.8 | 32.0 | 0.28000 | |
| | 154.40 | 1.2 | 37.0 | 0.31500 | |
| | | 1.6 | 40.0 | 0.33600 | |
| | | 2.0 | 42.0 | 0.35000 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 259.06 |
| | | 0.7 | 44.0 | 0.36400 | |
| | | 1.4 | 67.0 | 0.52500 | |
| | 308.80 | 2.1 | 76.0 | 0.58800 | |
| | | 2.8 | 83.0 | 0.63700 | |
| | | 3.5 | 86.0 | 0.65800 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 3 |




**Density Information:**

Wet Density(γb),gm/cc= 1.77
Dry Density(γd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

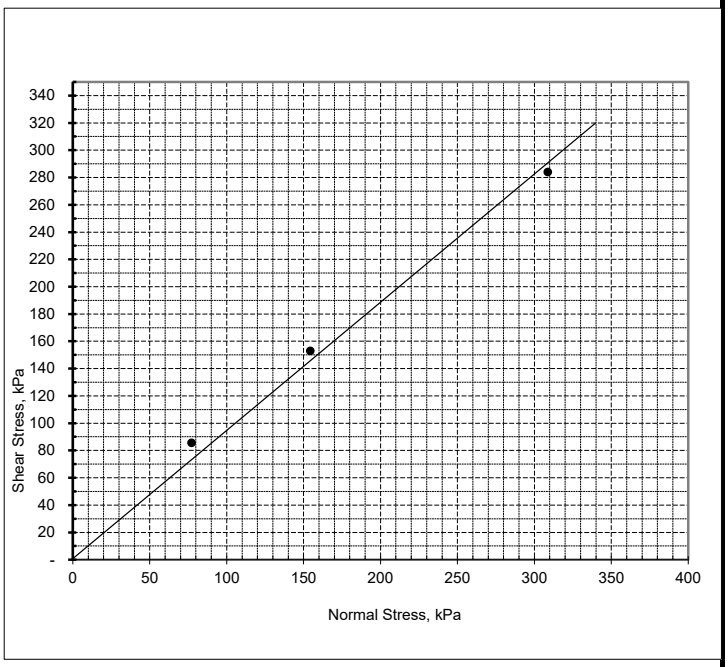
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-5** | D-24,25,26 | 36.0,37.5,39.0 | 25.4 | 76.2 | |

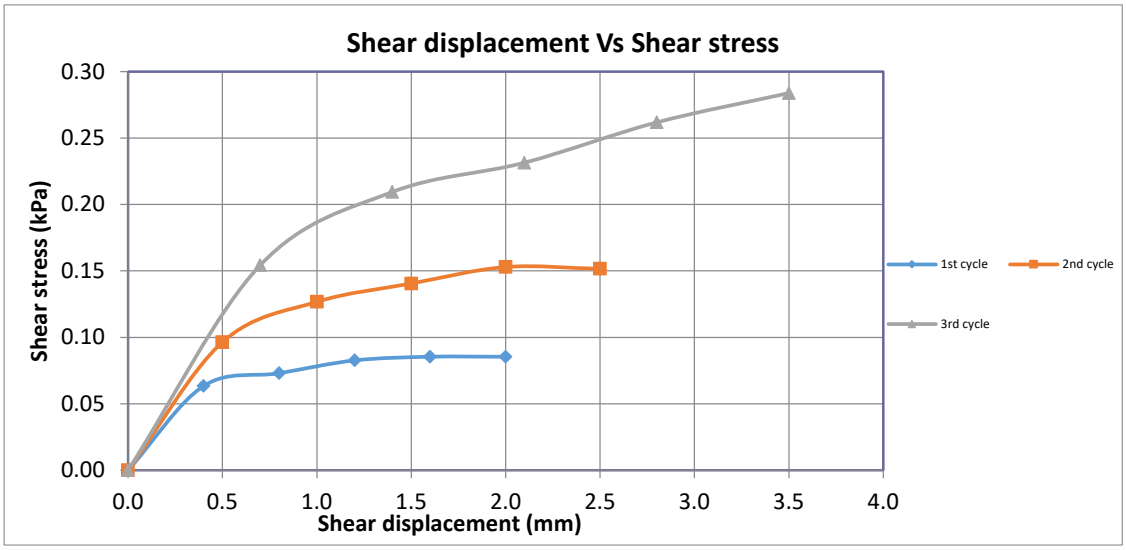
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 85.43 |
| | | 0.4 | 15.0 | 0.16100 | |
| | | 0.8 | 18.5 | 0.18550 | |
| | 77.20 | 1.2 | 22.0 | 0.21000 | |
| | | 1.6 | 23.0 | 0.21700 | |
| | | 2.0 | 23.0 | 0.21700 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 152.95 |
| | | 0.5 | 27.0 | 0.24500 | |
| | | 1.0 | 38.0 | 0.32200 | |
| | 154.40 | 1.5 | 43.0 | 0.35700 | |
| | | 2.0 | 47.5 | 0.38850 | |
| | | 2.5 | 47.0 | 0.38500 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 283.86 |
| | | 0.7 | 48.0 | 0.39200 | |
| | | 1.4 | 68.0 | 0.53200 | |
| | 308.80 | 2.1 | 76.0 | 0.58800 | |
| | | 2.8 | 87.0 | 0.66500 | |
| | | 3.5 | 95.0 | 0.72100 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 43 |
| Cohesion, c, kPa | 0 |




**Density Information:**

Wet Density(γb),gm/cc= 1.89
Dry Density(γd),gm/cc= 1.62
Moisture content(ω%)= 16.67




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

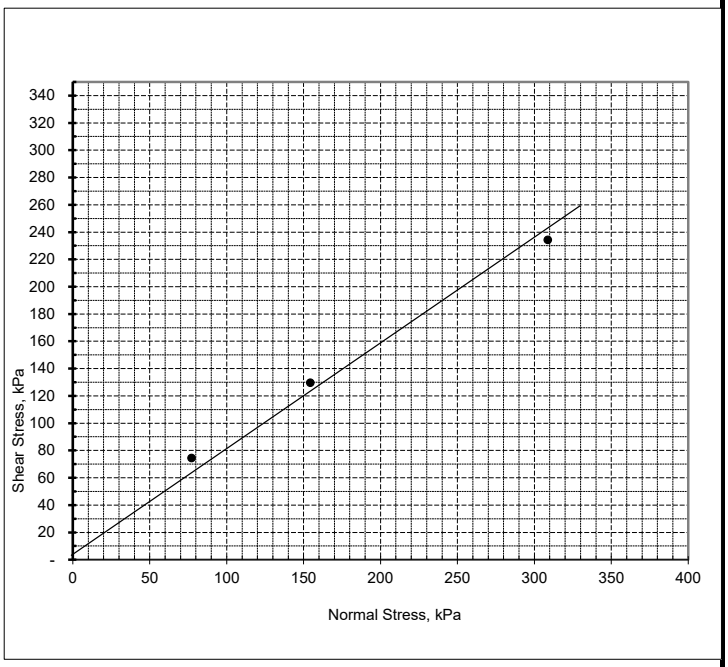
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 29.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-3** | D-24,25,26 | 36.0,37.5,39.0 | 25.4 | 76.2 | |

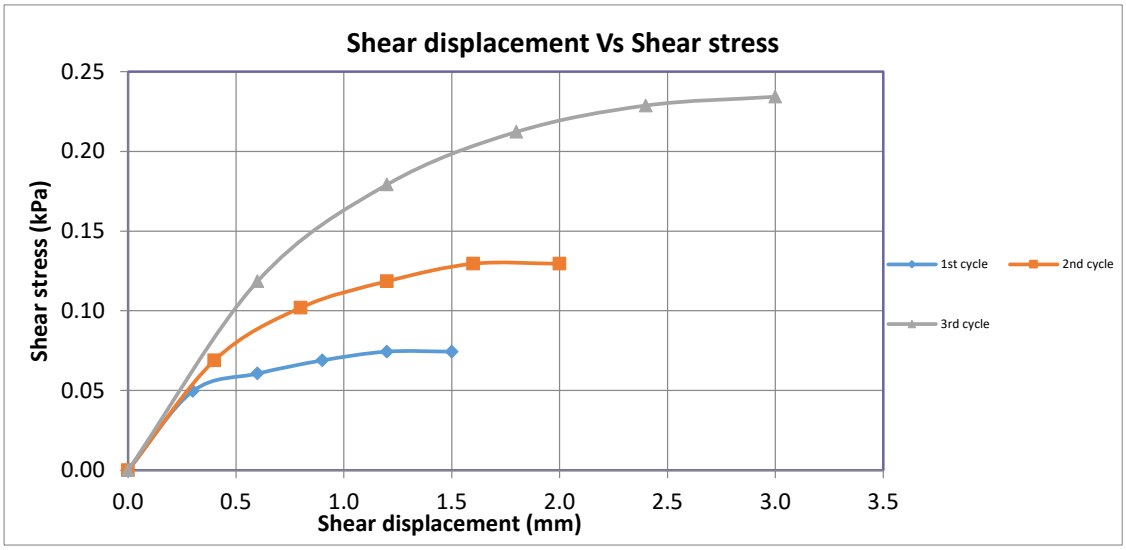
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 74.41 |
| | | 0.3 | 10.0 | 0.12600 | |
| | | 0.6 | 14.0 | 0.15400 | |
| | 77.20 | 0.9 | 17.0 | 0.17500 | |
| | | 1.2 | 19.0 | 0.18900 | |
| | | 1.5 | 19.0 | 0.18900 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 129.53 |
| | | 0.4 | 17.0 | 0.17500 | |
| | | 0.8 | 29.0 | 0.25900 | |
| | 154.40 | 1.2 | 35.0 | 0.30100 | |
| | | 1.6 | 39.0 | 0.32900 | |
| | | 2.0 | 39.0 | 0.32900 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 234.25 |
| | | 0.6 | 35.0 | 0.30100 | |
| | | 1.2 | 57.0 | 0.45500 | |
| | 308.80 | 1.8 | 69.0 | 0.53900 | |
| | | 2.4 | 75.0 | 0.58100 | |
| | | 3.0 | 77.0 | 0.59500 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 37 |
| Cohesion, c, kPa | 4 |




**Density Information:**

Wet Density(γb),gm/cc= 1.64
Dry Density(γd),gm/cc= 1.4
Moisture content(ω%)= 17.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

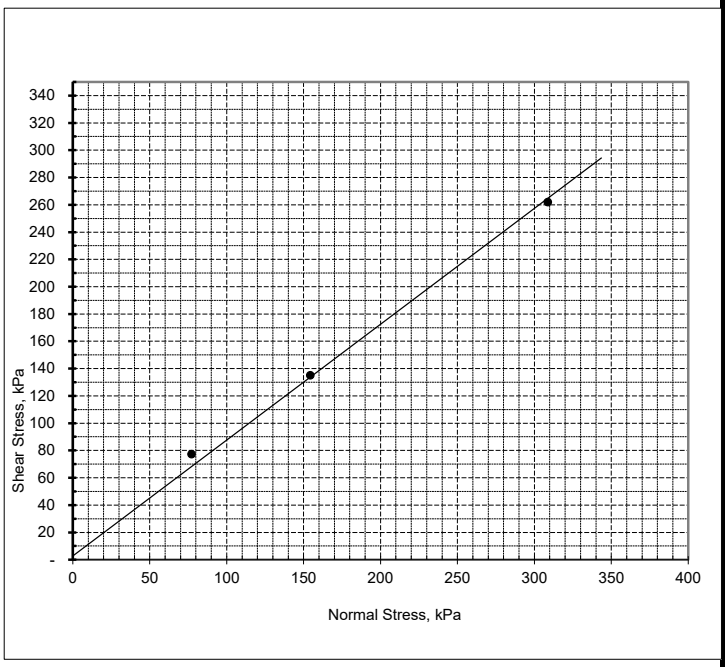
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 29.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-3 | D-24,25,26 | 36.0,37.5,39.0 | 25.4 | 76.2 | |

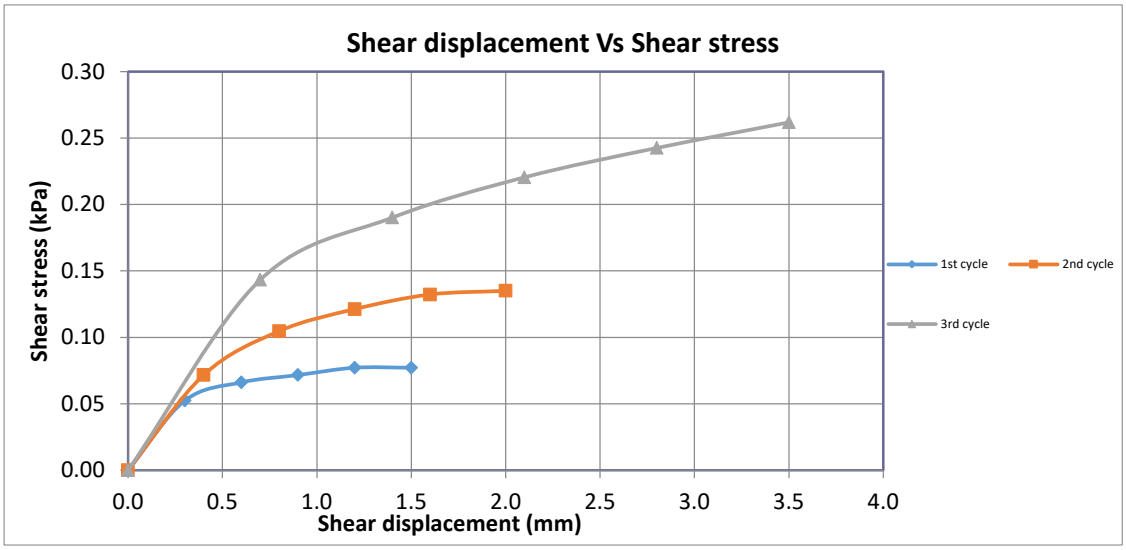
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 77.17 |
| | | 0.3 | 11.0 | 0.13300 | |
| | | 0.6 | 16.0 | 0.16800 | |
| | 77.20 | 0.9 | 18.0 | 0.18200 | |
| | | 1.2 | 20.0 | 0.19600 | |
| | | 1.5 | 20.0 | 0.19600 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 135.04 |
| | | 0.4 | 18.0 | 0.18200 | |
| | | 0.8 | 30.0 | 0.26600 | |
| | 154.40 | 1.2 | 36.0 | 0.30800 | |
| | | 1.6 | 40.0 | 0.33600 | |
| | | 2.0 | 41.0 | 0.34300 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 261.81 |
| | | 0.7 | 44.0 | 0.36400 | |
| | | 1.4 | 61.0 | 0.48300 | |
| | 308.80 | 2.1 | 72.0 | 0.56000 | |
| | | 2.8 | 80.0 | 0.61600 | |
| | | 3.5 | 87.0 | 0.66500 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 3 |




**Density Information:**

Wet Density(γb),gm/cc= 1.77
Dry Density(γd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

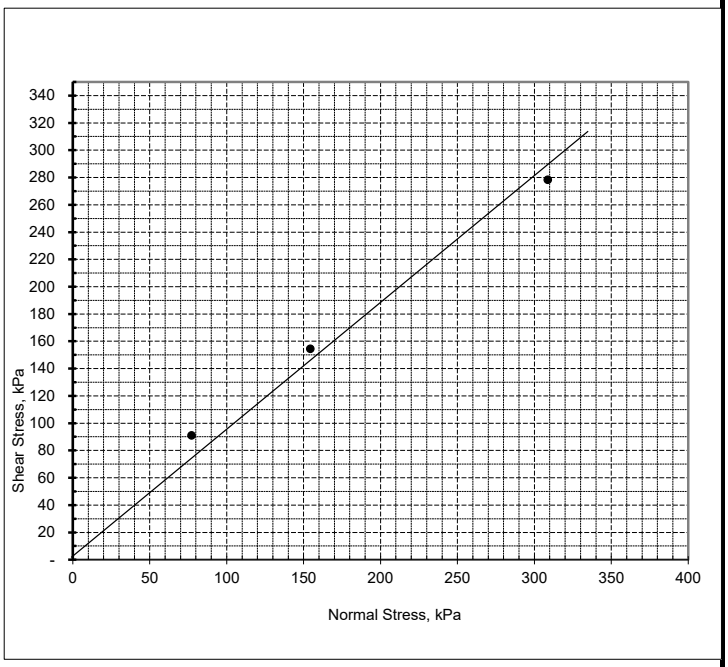
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 29.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-3** | D-24,25,26 | 36.0,37.5,39.0 | 25.4 | 76.2 | |

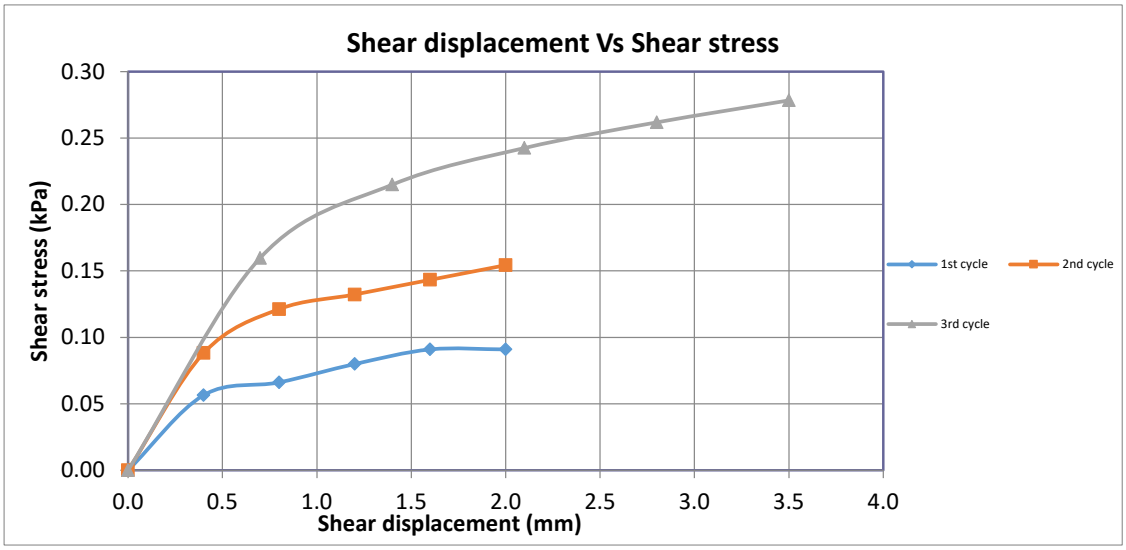
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 90.94 |
| | | 0.4 | 12.5 | 0.14350 | |
| | | 0.8 | 16.0 | 0.16800 | |
| | 77.20 | 1.2 | 21.0 | 0.20300 | |
| | | 1.6 | 25.0 | 0.23100 | |
| | | 2.0 | 25.0 | 0.23100 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 154.33 |
| | | 0.4 | 24.0 | 0.22400 | |
| | | 0.8 | 36.0 | 0.30800 | |
| | 154.40 | 1.2 | 40.0 | 0.33600 | |
| | | 1.6 | 44.0 | 0.36400 | |
| | | 2.0 | 48.0 | 0.39200 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 278.35 |
| | | 0.7 | 50.0 | 0.40600 | |
| | | 1.4 | 70.0 | 0.54600 | |
| | 308.80 | 2.1 | 80.0 | 0.61600 | |
| | | 2.8 | 87.0 | 0.66500 | |
| | | 3.5 | 93.0 | 0.70700 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 42 |
| Cohesion, c, kPa | 2 |




**Density Information:**

Wet Density(γb),gm/cc= 1.89
Dry Density(γd),gm/cc= 1.62
Moisture content(ω%)= 16.67




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

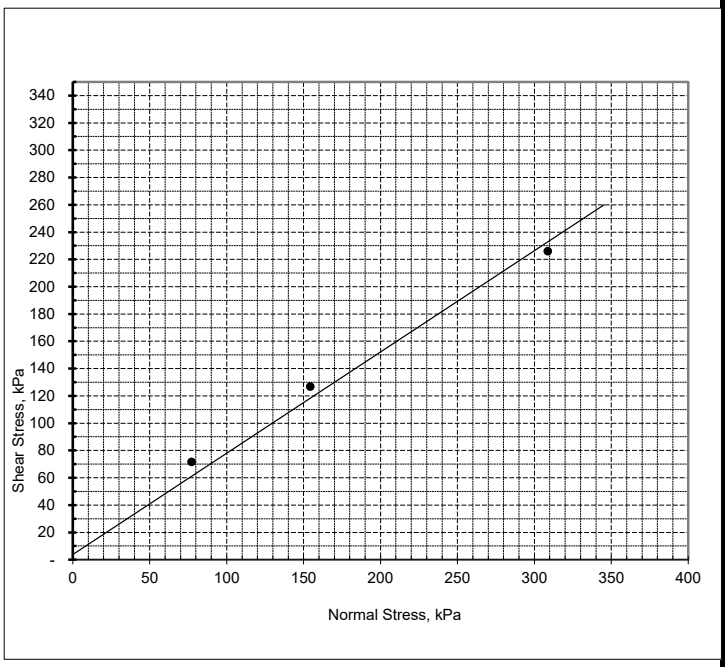
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 26.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-4** | D-28,29,30 | 42.0,43.5,45.0 | 25.4 | 76.2 | |

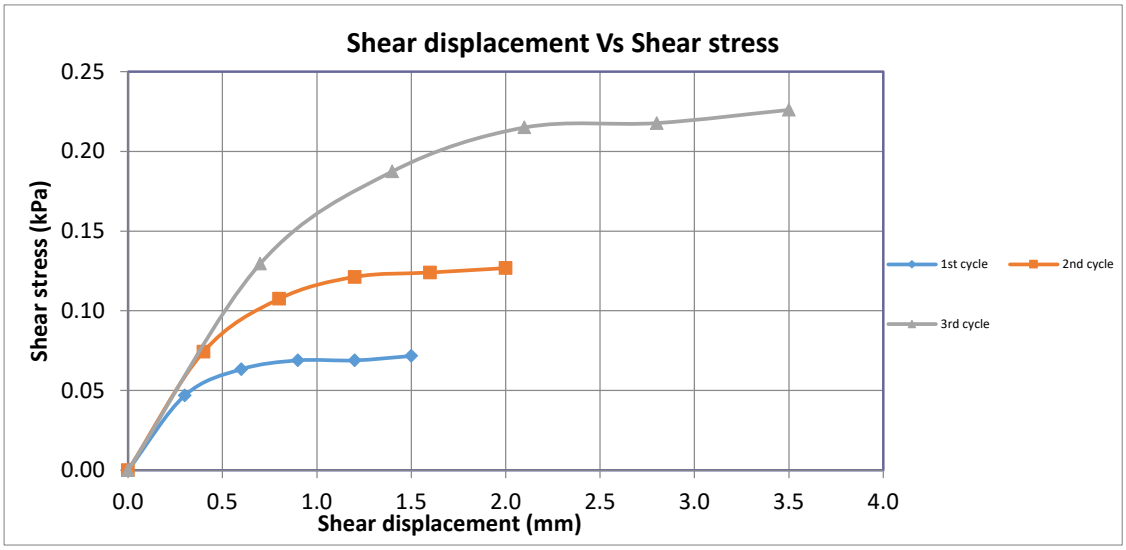
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 71.65 |
| | | 0.3 | 9.0 | 0.11900 | |
| | | 0.6 | 15.0 | 0.16100 | |
| | 77.20 | 0.9 | 17.0 | 0.17500 | |
| | | 1.2 | 17.0 | 0.17500 | |
| | | 1.5 | 18.0 | 0.18200 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 126.77 |
| | | 0.4 | 19.0 | 0.18900 | |
| | | 0.8 | 31.0 | 0.27300 | |
| | 154.40 | 1.2 | 36.0 | 0.30800 | |
| | | 1.6 | 37.0 | 0.31500 | |
| | | 2.0 | 38.0 | 0.32200 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 225.98 |
| | | 0.7 | 39.0 | 0.32900 | |
| | | 1.4 | 60.0 | 0.47600 | |
| | 308.80 | 2.1 | 70.0 | 0.54600 | |
| | | 2.8 | 71.0 | 0.55300 | |
| | | 3.5 | 74.0 | 0.57400 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 36 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(γb),gm/cc= 1.64
Dry Density(γd),gm/cc= 1.4
Moisture content(ω%)= 17.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

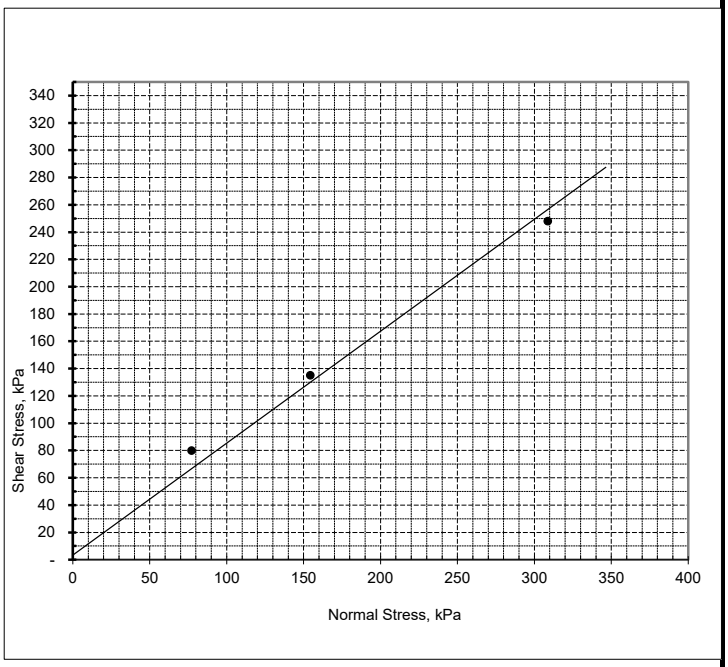
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 26.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-4** | D-28,29,30 | 42.0,43.5,45.0 | 25.4 | 76.2 | |

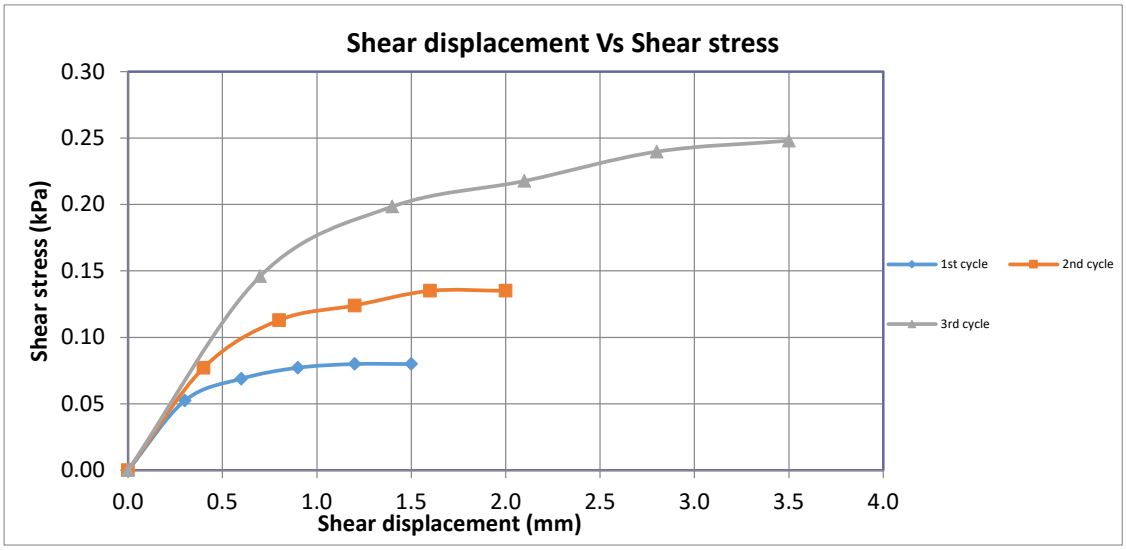
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 79.92 |
| | | 0.3 | 11.0 | 0.13300 | |
| | | 0.6 | 17.0 | 0.17500 | |
| | 77.20 | 0.9 | 20.0 | 0.19600 | |
| | | 1.2 | 21.0 | 0.20300 | |
| | | 1.5 | 21.0 | 0.20300 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 135.04 |
| | | 0.4 | 20.0 | 0.19600 | |
| | | 0.8 | 33.0 | 0.28700 | |
| | 154.40 | 1.2 | 37.0 | 0.31500 | |
| | | 1.6 | 41.0 | 0.34300 | |
| | | 2.0 | 41.0 | 0.34300 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 248.03 |
| | | 0.7 | 45.0 | 0.37100 | |
| | | 1.4 | 64.0 | 0.50400 | |
| | 308.80 | 2.1 | 71.0 | 0.55300 | |
| | | 2.8 | 79.0 | 0.60900 | |
| | | 3.5 | 82.0 | 0.63000 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 39 |
| Cohesion, c, kPa | 4 |




**Density Information:**

Wet Density(γb),gm/cc= 1.77
Dry Density(γd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

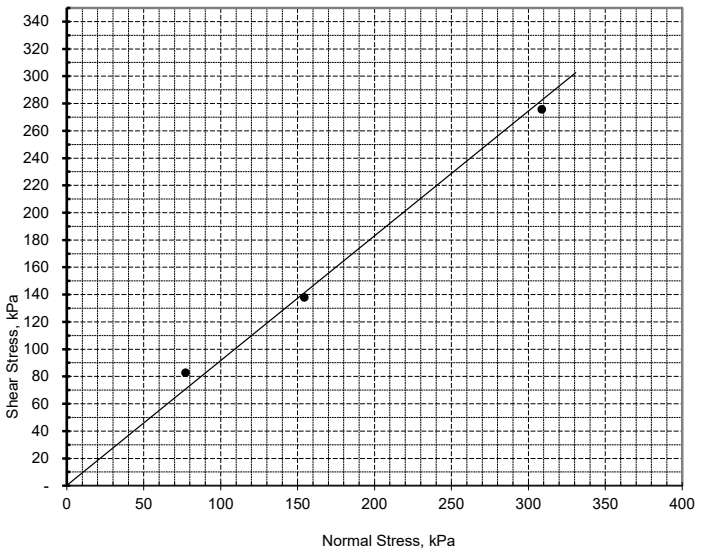
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 26.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-4** | D-28,29,30 | 42.0,43.5,45.0 | 25.4 | 76.2 | |

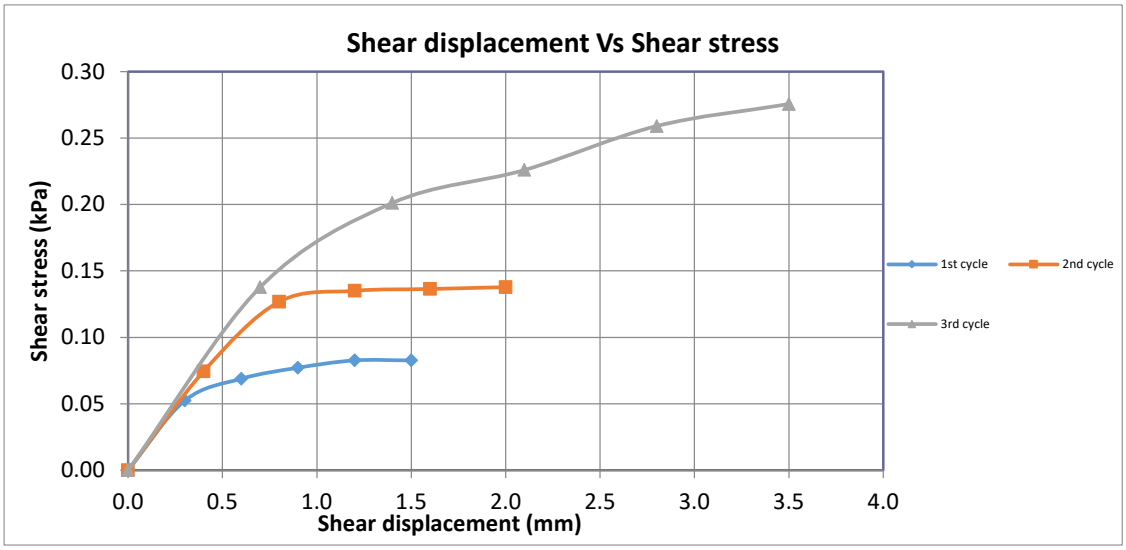
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 82.68 |
| | | 0.3 | 11.0 | 0.13300 | |
| | | 0.6 | 17.0 | 0.17500 | |
| | 77.20 | 0.9 | 20.0 | 0.19600 | |
| | | 1.2 | 22.0 | 0.21000 | |
| | | 1.5 | 22.0 | 0.21000 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 137.80 |
| | | 0.4 | 19.0 | 0.18900 | |
| | | 0.8 | 38.0 | 0.32200 | |
| | 154.40 | 1.2 | 41.0 | 0.34300 | |
| | | 1.6 | 41.5 | 0.34650 | |
| | | 2.0 | 42.0 | 0.35000 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 275.59 |
| | | 0.7 | 42.0 | 0.35000 | |
| | | 1.4 | 65.0 | 0.51100 | |
| | 308.80 | 2.1 | 74.0 | 0.57400 | |
| | | 2.8 | 86.0 | 0.65800 | |
| | | 3.5 | 92.0 | 0.70000 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 42 |
| Cohesion, c, kPa | 0 |




**Density Information:**

Wet Density(γb),gm/cc= 1.89
Dry Density(γd),gm/cc= 1.62
Moisture content(ω%)= 16.67




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

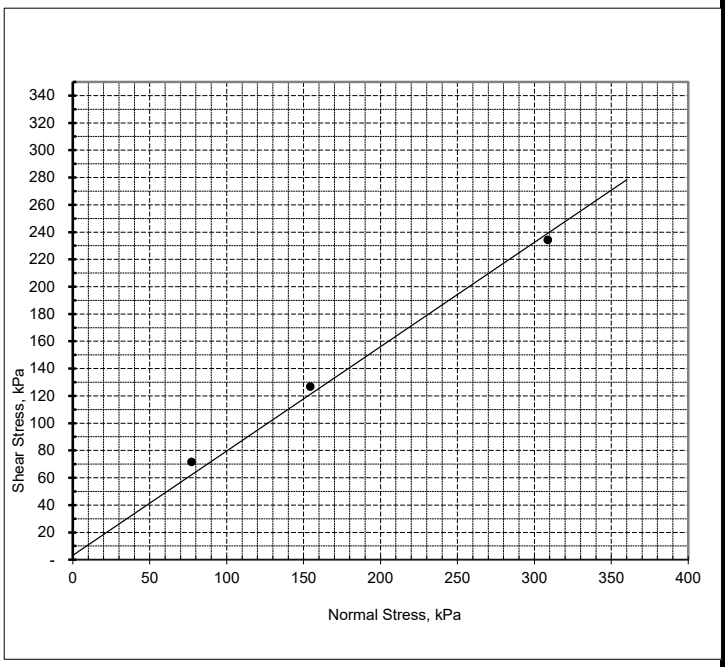
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-6** | D-15,16,17 | 22.5,24.0,25.5 | 25.4 | 76.2 | |

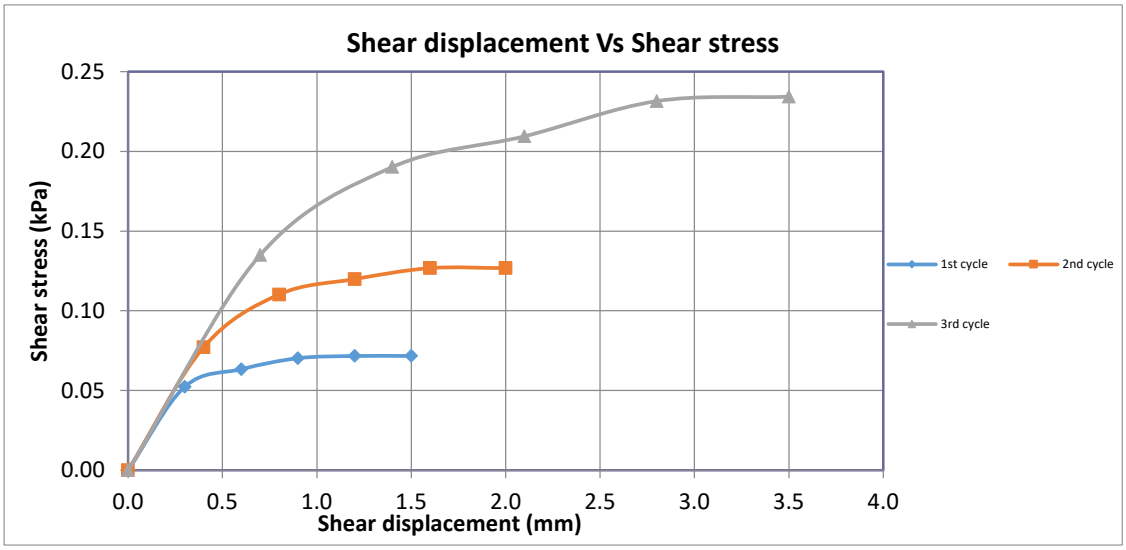
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 71.65 |
| | | 0.3 | 11.0 | 0.13300 | |
| | | 0.6 | 15.0 | 0.16100 | |
| | 77.20 | 0.9 | 17.5 | 0.17850 | |
| | | 1.2 | 18.0 | 0.18200 | |
| | | 1.5 | 18.0 | 0.18200 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 126.77 |
| | | 0.4 | 20.0 | 0.19600 | |
| | | 0.8 | 32.0 | 0.28000 | |
| | 154.40 | 1.2 | 35.5 | 0.30450 | |
| | | 1.6 | 38.0 | 0.32200 | |
| | | 2.0 | 38.0 | 0.32200 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 234.25 |
| | | 0.7 | 41.0 | 0.34300 | |
| | | 1.4 | 61.0 | 0.48300 | |
| | 308.80 | 2.1 | 68.0 | 0.53200 | |
| | | 2.8 | 76.0 | 0.58800 | |
| | | 3.5 | 77.0 | 0.59500 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 37 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(γb),gm/cc= 1.64
Dry Density(γd),gm/cc= 1.4
Moisture content(ω%)= 17.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

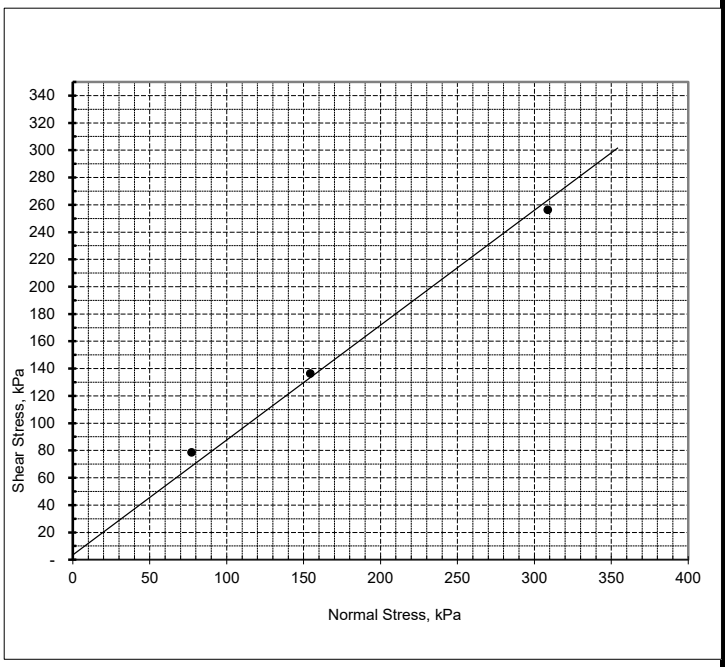
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-6** | D-15,16,17 | 22.5,24.0,25.5 | 25.4 | 76.2 | |

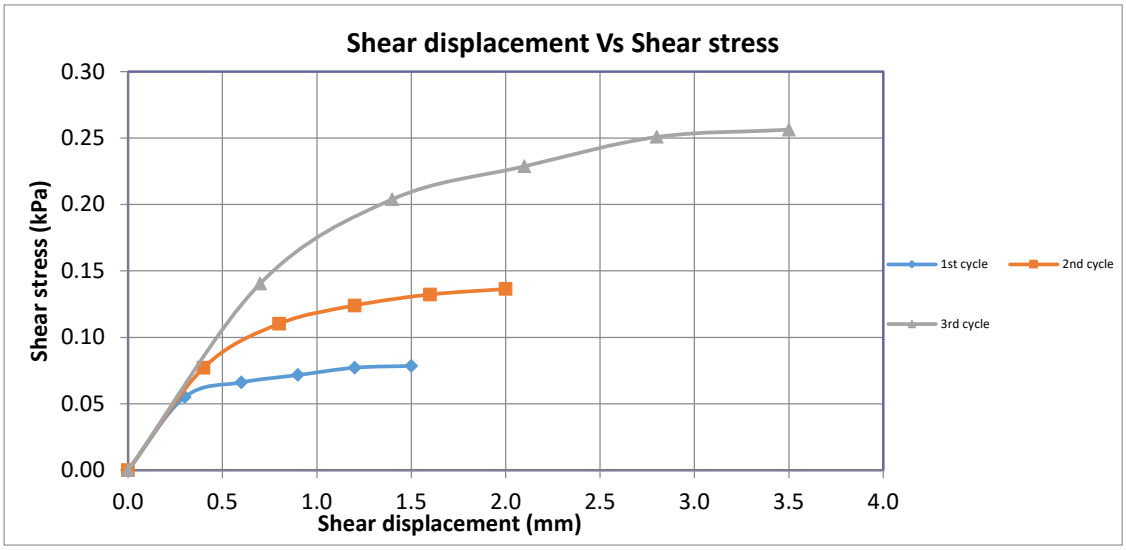
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 78.54 |
| | | 0.3 | 12.0 | 0.14000 | |
| | | 0.6 | 16.0 | 0.16800 | |
| | 77.20 | 0.9 | 18.0 | 0.18200 | |
| | | 1.2 | 20.0 | 0.19600 | |
| | | 1.5 | 20.5 | 0.19950 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 136.42 |
| | | 0.4 | 20.0 | 0.19600 | |
| | | 0.8 | 32.0 | 0.28000 | |
| | 154.40 | 1.2 | 37.0 | 0.31500 | |
| | | 1.6 | 40.0 | 0.33600 | |
| | | 2.0 | 41.5 | 0.34650 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 256.30 |
| | | 0.7 | 43.0 | 0.35700 | |
| | | 1.4 | 66.0 | 0.51800 | |
| | 308.80 | 2.1 | 75.0 | 0.58100 | |
| | | 2.8 | 83.0 | 0.63700 | |
| | | 3.5 | 85.0 | 0.65100 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 3 |




**Density Information:**

Wet Density(γb),gm/cc= 1.77
Dry Density(γd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

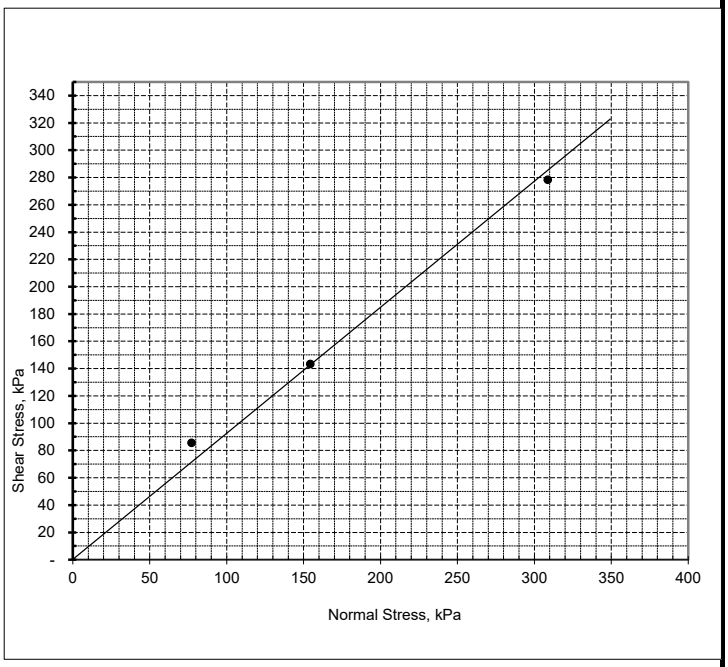
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-6** | D-15,16,17 | 22.5,24.0,25.5 | 25.4 | 76.2 | |

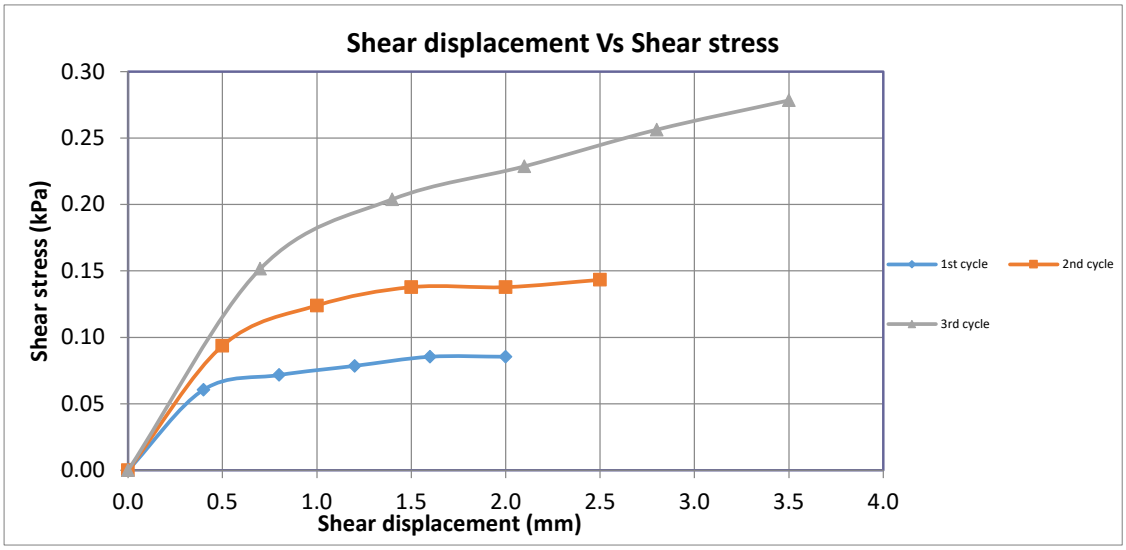
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 85.43 |
| | | 0.4 | 14.0 | 0.15400 | |
| | | 0.8 | 18.0 | 0.18200 | |
| | 77.20 | 1.2 | 20.5 | 0.19950 | |
| | | 1.6 | 23.0 | 0.21700 | |
| | | 2.0 | 23.0 | 0.21700 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 143.31 |
| | | 0.5 | 26.0 | 0.23800 | |
| | | 1.0 | 37.0 | 0.31500 | |
| | 154.40 | 1.5 | 42.0 | 0.35000 | |
| | | 2.0 | 42.0 | 0.35000 | |
| | | 2.5 | 44.0 | 0.36400 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 278.35 |
| | | 0.7 | 47.0 | 0.38500 | |
| | | 1.4 | 66.0 | 0.51800 | |
| | 308.80 | 2.1 | 75.0 | 0.58100 | |
| | | 2.8 | 85.0 | 0.65100 | |
| | | 3.5 | 93.0 | 0.70700 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 42 |
| Cohesion, c, kPa | 0 |




**Density Information:**

Wet Density(γb),gm/cc= 1.89
Dry Density(γd),gm/cc= 1.62
Moisture content(ω%)= 16.67




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

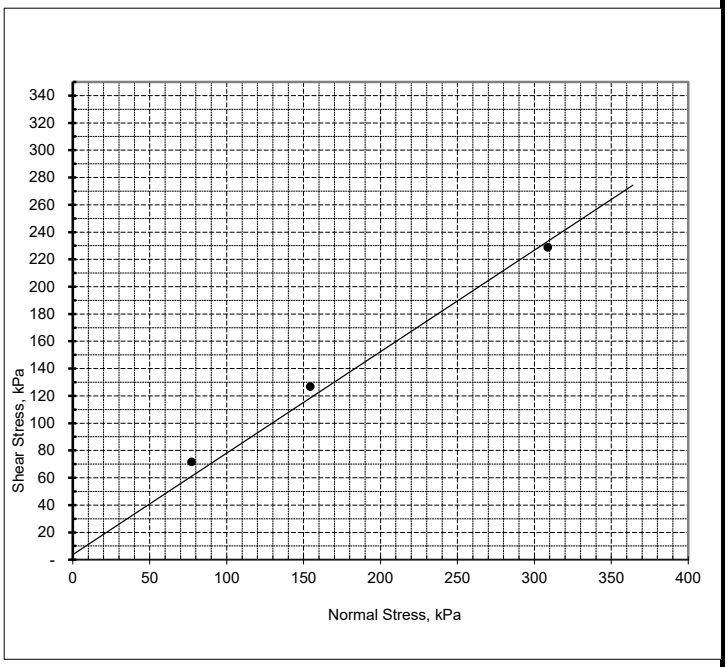
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-7** | D-1,18,197 | 25.5,27.0,28.5 | 25.4 | 76.2 | |

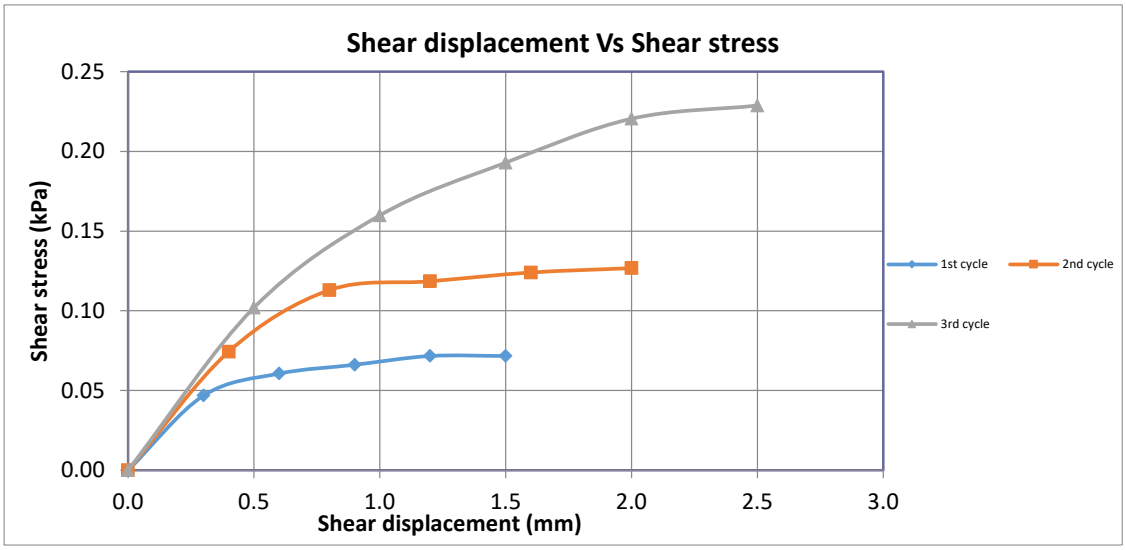
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 71.65 |
| | | 0.3 | 9.0 | 0.11900 | |
| | | 0.6 | 14.0 | 0.15400 | |
| | 77.20 | 0.9 | 16.0 | 0.16800 | |
| | | 1.2 | 18.0 | 0.18200 | |
| | | 1.5 | 18.0 | 0.18200 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 126.77 |
| | | 0.4 | 19.0 | 0.18900 | |
| | | 0.8 | 33.0 | 0.28700 | |
| | 154.40 | 1.2 | 35.0 | 0.30100 | |
| | | 1.6 | 37.0 | 0.31500 | |
| | | 2.0 | 38.0 | 0.32200 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 228.74 |
| | | 0.5 | 29.0 | 0.25900 | |
| | | 1.0 | 50.0 | 0.40600 | |
| | 308.80 | 1.5 | 62.0 | 0.49000 | |
| | | 2.0 | 72.0 | 0.56000 | |
| | | 2.5 | 75.0 | 0.58100 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 37 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(γb),gm/cc= 1.64
Dry Density(γd),gm/cc= 1.4
Moisture content(ω%)= 17.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

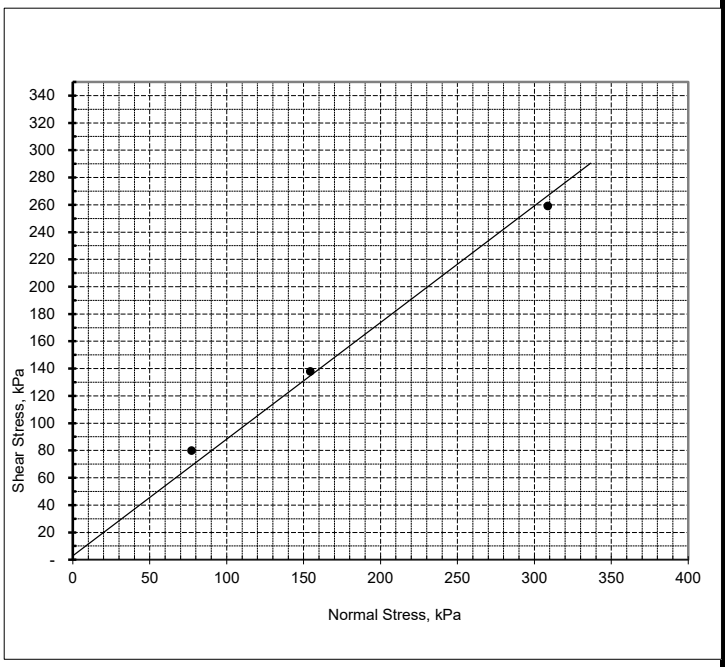
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-7** | D-1,18,197 | 25.5,27.0,28.5 | 25.4 | 76.2 | |

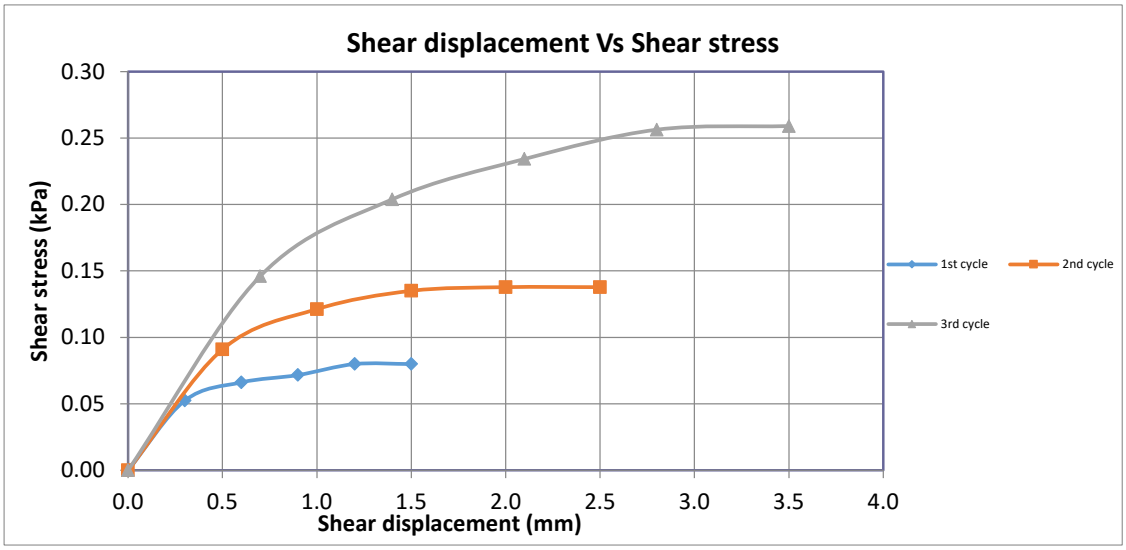
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 79.92 |
| | | 0.3 | 11.0 | 0.13300 | |
| | | 0.6 | 16.0 | 0.16800 | |
| | 77.20 | 0.9 | 18.0 | 0.18200 | |
| | | 1.2 | 21.0 | 0.20300 | |
| | | 1.5 | 21.0 | 0.20300 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 137.80 |
| | | 0.5 | 25.0 | 0.23100 | |
| | | 1.0 | 36.0 | 0.30800 | |
| | 154.40 | 1.5 | 41.0 | 0.34300 | |
| | | 2.0 | 42.0 | 0.35000 | |
| | | 2.5 | 42.0 | 0.35000 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 259.06 |
| | | 0.7 | 45.0 | 0.37100 | |
| | | 1.4 | 66.0 | 0.51800 | |
| | 308.80 | 2.1 | 77.0 | 0.59500 | |
| | | 2.8 | 85.0 | 0.65100 | |
| | | 3.5 | 86.0 | 0.65800 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 3 |




**Density Information:**

Wet Density(γb),gm/cc= 1.77
Dry Density(γd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

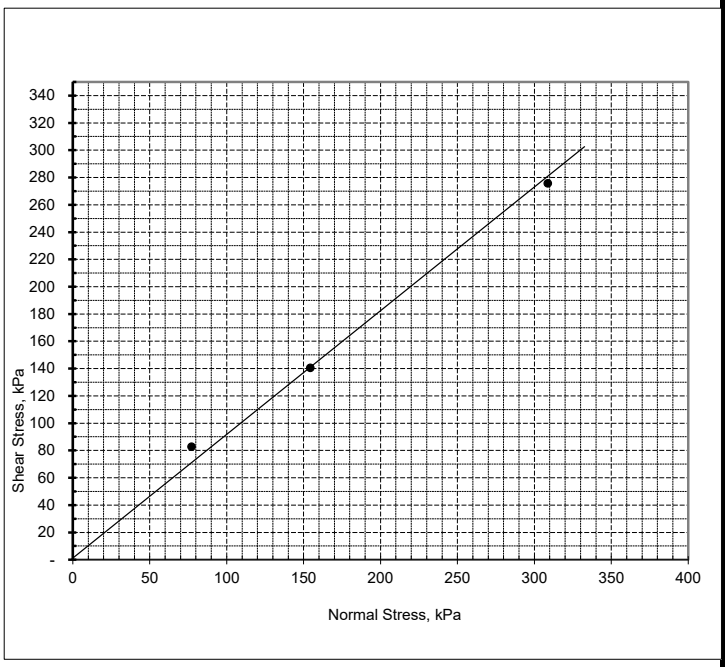
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-7** | D-17,18,19 | 25.5,27.0,28.5 | 25.4 | 76.2 | |

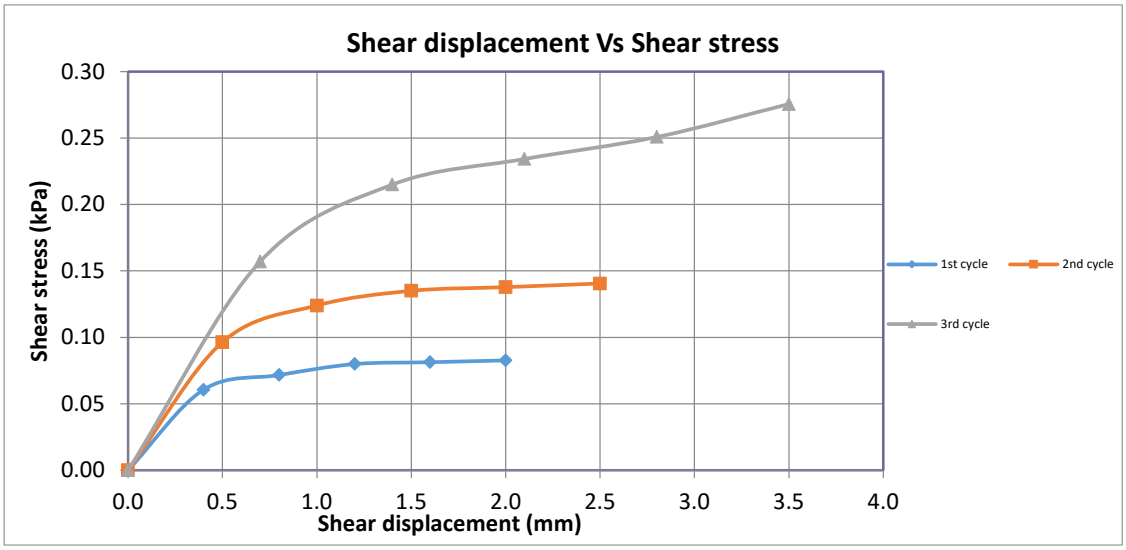
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 82.68 |
| | | 0.4 | 14.0 | 0.15400 | |
| | | 0.8 | 18.0 | 0.18200 | |
| | 77.20 | 1.2 | 21.0 | 0.20300 | |
| | | 1.6 | 21.5 | 0.20650 | |
| | | 2.0 | 22.0 | 0.21000 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 140.55 |
| | | 0.5 | 27.0 | 0.24500 | |
| | | 1.0 | 37.0 | 0.31500 | |
| | 154.40 | 1.5 | 41.0 | 0.34300 | |
| | | 2.0 | 42.0 | 0.35000 | |
| | | 2.5 | 43.0 | 0.35700 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 275.59 |
| | | 0.7 | 49.0 | 0.39900 | |
| | | 1.4 | 70.0 | 0.54600 | |
| | 308.80 | 2.1 | 77.0 | 0.59500 | |
| | | 2.8 | 83.0 | 0.63700 | |
| | | 3.5 | 92.0 | 0.70000 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 42 |
| Cohesion, c, kPa | 0 |




**Density Information:**

Wet Density(γb),gm/cc= 1.89
Dry Density(γd),gm/cc= 1.62
Moisture content(ω%)= 16.67




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

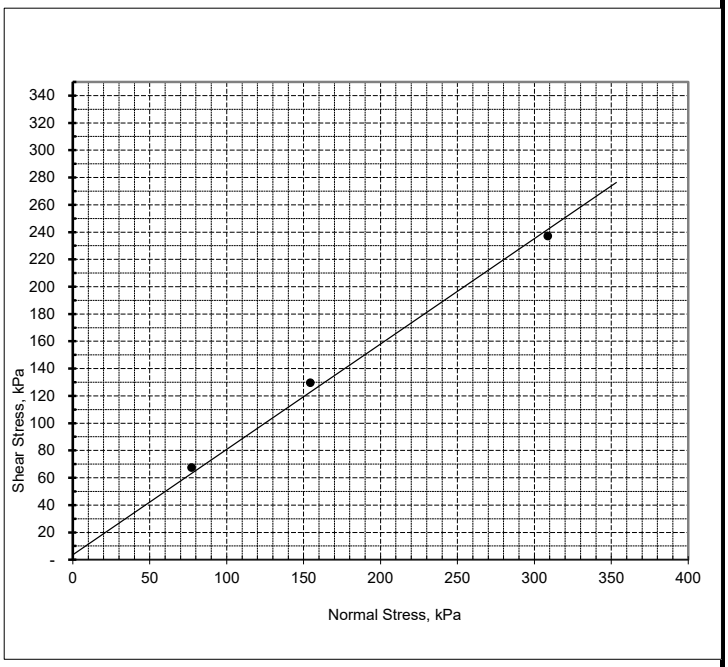
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 20.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-8** | D-25,26,27 | 37.5,39.0,40.5 | 25.4 | 76.2 | |

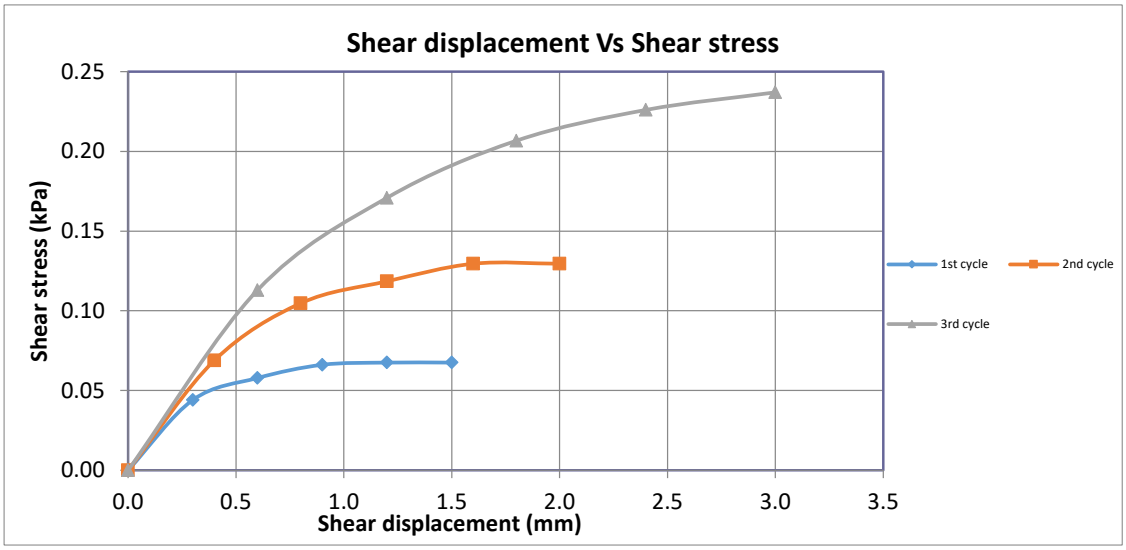
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 67.52 |
| | | 0.3 | 8.0 | 0.11200 | |
| | | 0.6 | 13.0 | 0.14700 | |
| | 77.20 | 0.9 | 16.0 | 0.16800 | |
| | | 1.2 | 16.5 | 0.17150 | |
| | | 1.5 | 16.5 | 0.17150 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 129.53 |
| | | 0.4 | 17.0 | 0.17500 | |
| | | 0.8 | 30.0 | 0.26600 | |
| | 154.40 | 1.2 | 35.0 | 0.30100 | |
| | | 1.6 | 39.0 | 0.32900 | |
| | | 2.0 | 39.0 | 0.32900 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 237.01 |
| | | 0.6 | 33.0 | 0.28700 | |
| | | 1.2 | 54.0 | 0.43400 | |
| | 308.80 | 1.8 | 67.0 | 0.52500 | |
| | | 2.4 | 74.0 | 0.57400 | |
| | | 3.0 | 78.0 | 0.60200 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 38 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(γb),gm/cc= 1.64
Dry Density(γd),gm/cc= 1.4
Moisture content(ω%)= 17.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

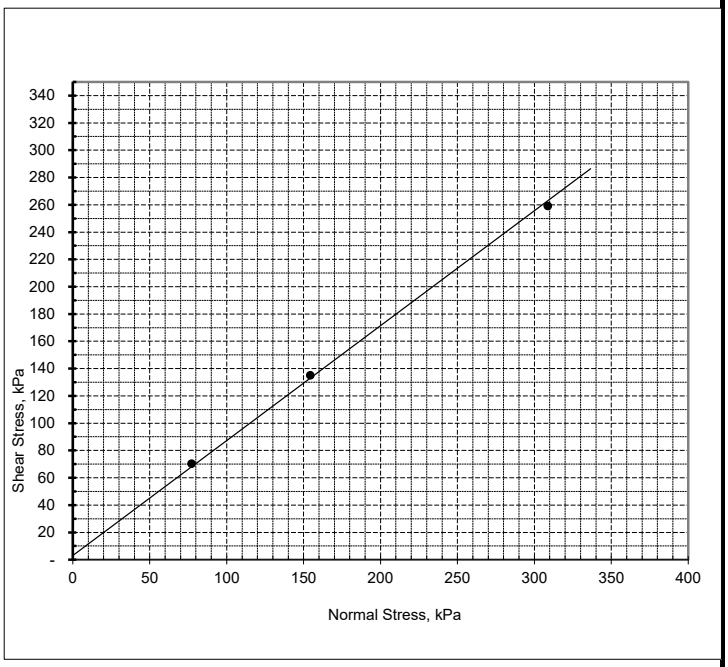
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 20.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-8** | D-25,26,27 | 37.5,39.0,40.5 | 25.4 | 76.2 | |

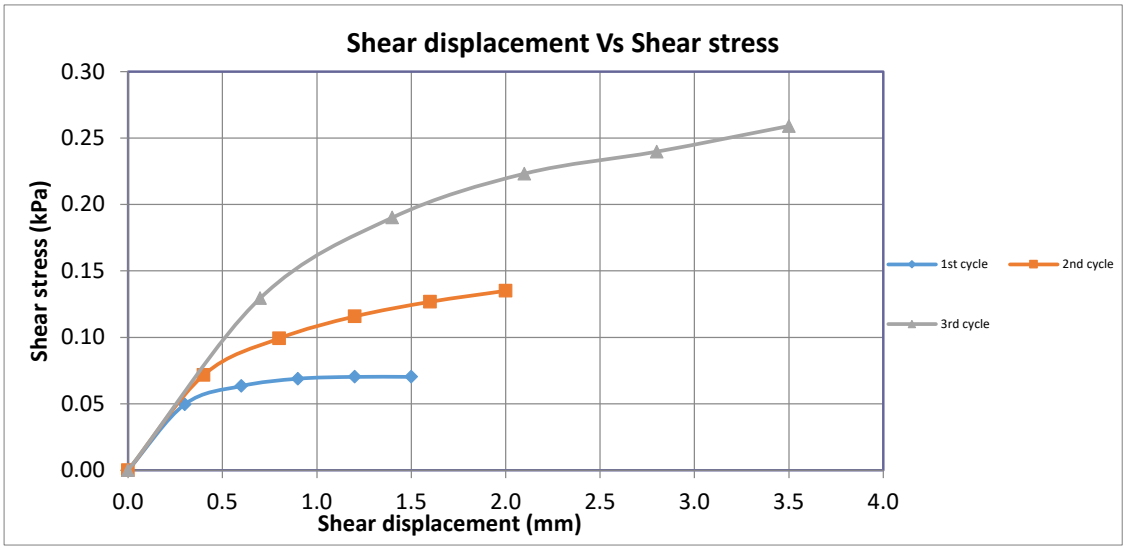
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 70.28 |
| | | 0.3 | 10.0 | 0.12600 | |
| | | 0.6 | 15.0 | 0.16100 | |
| | 77.20 | 0.9 | 17.0 | 0.17500 | |
| | | 1.2 | 17.5 | 0.17850 | |
| | | 1.5 | 17.5 | 0.17850 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 135.04 |
| | | 0.4 | 18.0 | 0.18200 | |
| | | 0.8 | 28.0 | 0.25200 | |
| | 154.40 | 1.2 | 34.0 | 0.29400 | |
| | | 1.6 | 38.0 | 0.32200 | |
| | | 2.0 | 41.0 | 0.34300 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 259.06 |
| | | 0.7 | 39.0 | 0.32900 | |
| | | 1.4 | 61.0 | 0.48300 | |
| | 308.80 | 2.1 | 73.0 | 0.56700 | |
| | | 2.8 | 79.0 | 0.60900 | |
| | | 3.5 | 86.0 | 0.65800 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 2 |




**Density Information:**

Wet Density(γb),gm/cc= 1.77
Dry Density(γd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

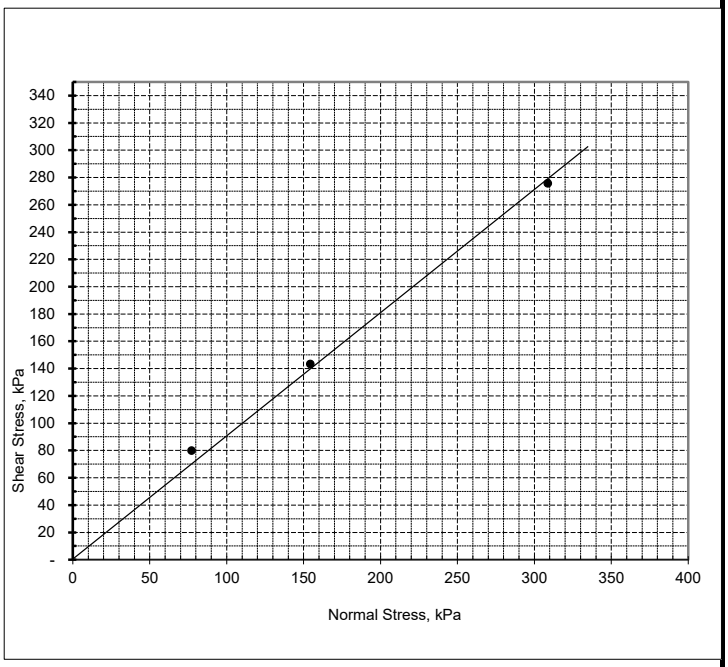
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 20.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| **BR-2. BH-8** | D-25,26,27 | 37.5,39.0,40.5 | 25.4 | 76.2 | |

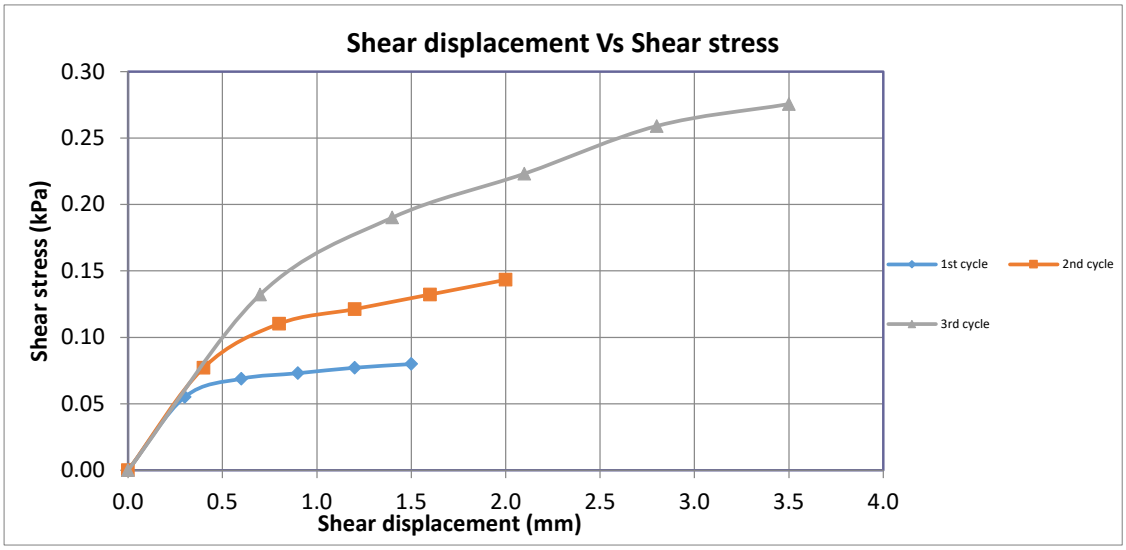
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 79.92 |
| | | 0.3 | 12.0 | 0.14000 | |
| | | 0.6 | 17.0 | 0.17500 | |
| | 77.20 | 0.9 | 18.5 | 0.18550 | |
| | | 1.2 | 20.0 | 0.19600 | |
| | | 1.5 | 21.0 | 0.20300 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 143.31 |
| | | 0.4 | 20.0 | 0.19600 | |
| | | 0.8 | 32.0 | 0.28000 | |
| | 154.40 | 1.2 | 36.0 | 0.30800 | |
| | | 1.6 | 40.0 | 0.33600 | |
| | | 2.0 | 44.0 | 0.36400 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 275.59 |
| | | 0.7 | 40.0 | 0.33600 | |
| | | 1.4 | 61.0 | 0.48300 | |
| | 308.80 | 2.1 | 73.0 | 0.56700 | |
| | | 2.8 | 86.0 | 0.65800 | |
| | | 3.5 | 92.0 | 0.70000 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 42 |
| Cohesion, c, kPa | 0 |




**Density Information:**

Wet Density(γb),gm/cc= 1.89
Dry Density(γd),gm/cc= 1.62
Moisture content(ω%)= 16.67




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

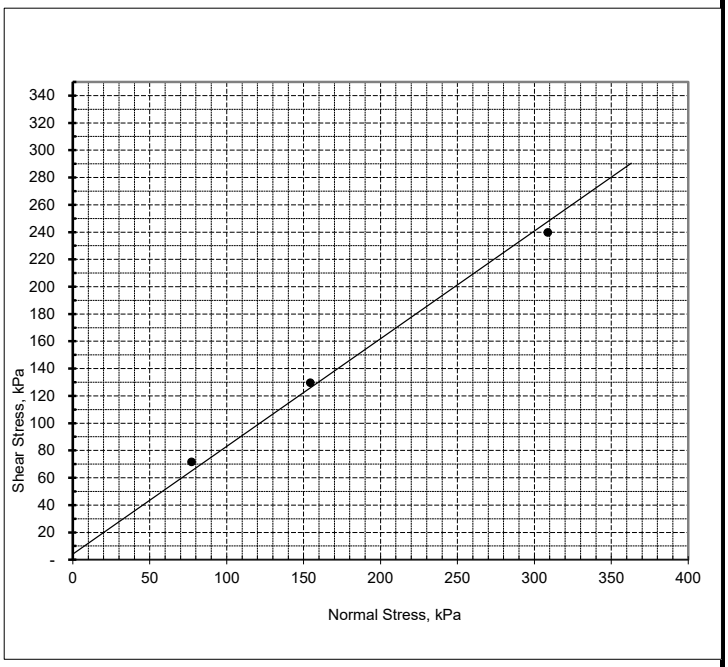
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 29.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-12 | D-22,23,24 | 33.0,34.5,36.0 | 25.4 | 76.2 | |

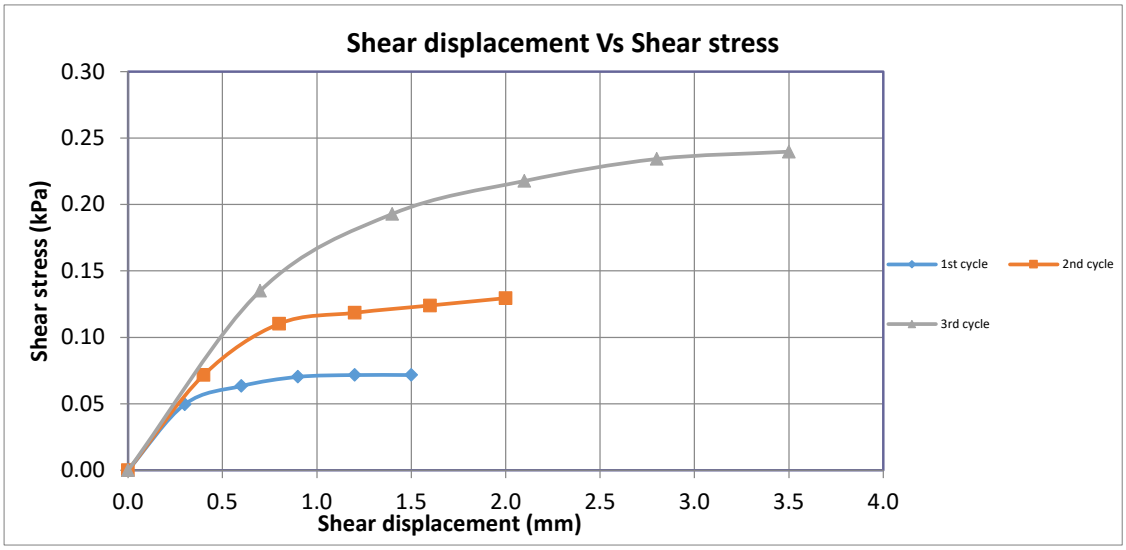
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 71.65 |
| | | 0.3 | 10.0 | 0.12600 | |
| | | 0.6 | 15.0 | 0.16100 | |
| | 77.20 | 0.9 | 17.5 | 0.17850 | |
| | | 1.2 | 18.0 | 0.18200 | |
| | | 1.5 | 18.0 | 0.18200 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 129.53 |
| | | 0.4 | 18.0 | 0.18200 | |
| | | 0.8 | 32.0 | 0.28000 | |
| | 154.40 | 1.2 | 35.0 | 0.30100 | |
| | | 1.6 | 37.0 | 0.31500 | |
| | | 2.0 | 39.0 | 0.32900 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 239.76 |
| | | 0.7 | 41.0 | 0.34300 | |
| | | 1.4 | 62.0 | 0.49000 | |
| | 308.80 | 2.1 | 71.0 | 0.55300 | |
| | | 2.8 | 77.0 | 0.59500 | |
| | | 3.5 | 79.0 | 0.60900 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 38 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(γb),gm/cc= 1.64
Dry Density(γd),gm/cc= 1.4
Moisture content(ω%)= 17.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

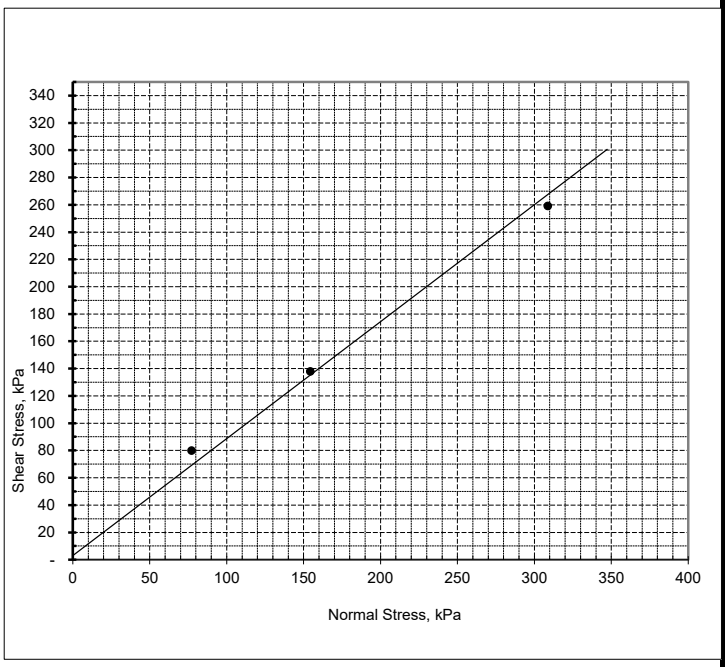
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 29.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-12 | D-22,23,24 | 33.0,34.5,36.0 | 25.4 | 76.2 | |

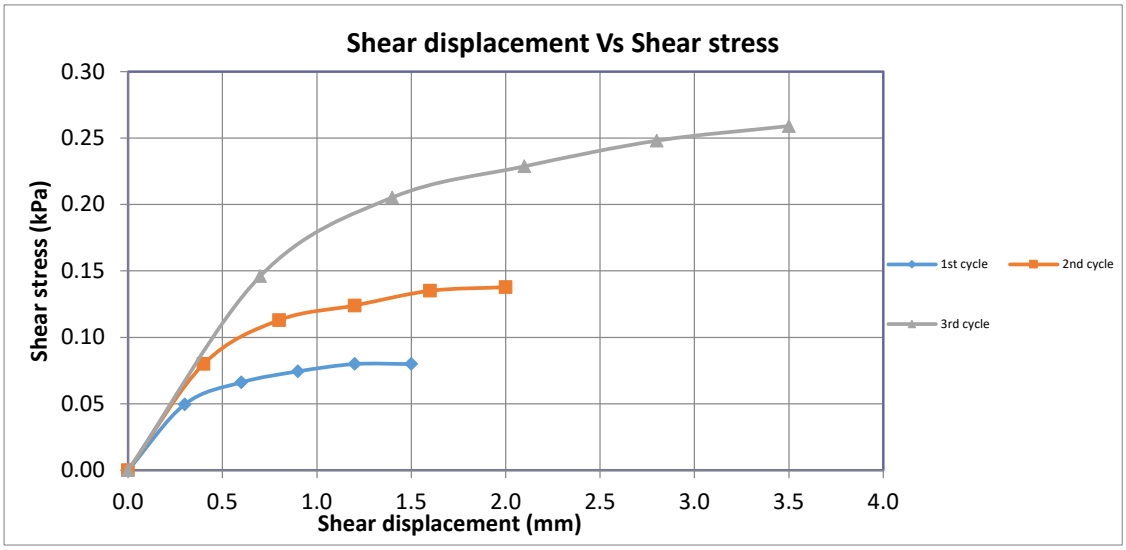
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 79.92 |
| | | 0.3 | 10.0 | 0.12600 | |
| | | 0.6 | 16.0 | 0.16800 | |
| | 77.20 | 0.9 | 19.0 | 0.18900 | |
| | | 1.2 | 21.0 | 0.20300 | |
| | | 1.5 | 21.0 | 0.20300 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 137.80 |
| | | 0.4 | 21.0 | 0.20300 | |
| | | 0.8 | 33.0 | 0.28700 | |
| | 154.40 | 1.2 | 37.0 | 0.31500 | |
| | | 1.6 | 41.0 | 0.34300 | |
| | | 2.0 | 42.0 | 0.35000 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 259.06 |
| | | 0.7 | 45.0 | 0.37100 | |
| | | 1.4 | 66.5 | 0.52150 | |
| | 308.80 | 2.1 | 75.0 | 0.58100 | |
| | | 2.8 | 82.0 | 0.63000 | |
| | | 3.5 | 86.0 | 0.65800 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 2 |




**Density Information:**

Wet Density(γb),gm/cc= 1.77
Dry Density(γd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

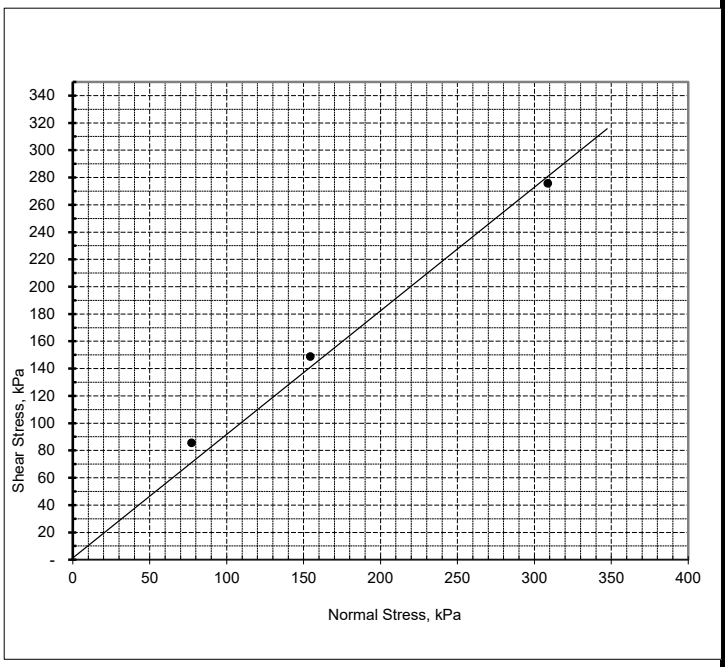
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 29.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-12 | D-22,23,24 | 33.0,34.5,36.0 | 25.4 | 76.2 | |

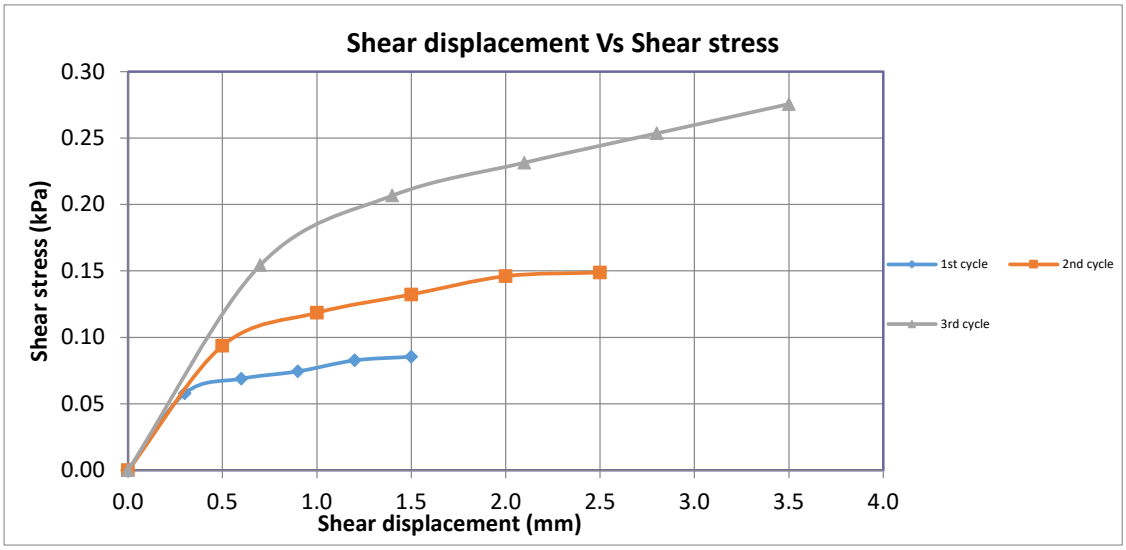
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 85.43 |
| | | 0.3 | 13.0 | 0.14700 | |
| | | 0.6 | 17.0 | 0.17500 | |
| | 77.20 | 0.9 | 19.0 | 0.18900 | |
| | | 1.2 | 22.0 | 0.21000 | |
| | | 1.5 | 23.0 | 0.21700 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 148.82 |
| | | 0.5 | 26.0 | 0.23800 | |
| | | 1.0 | 35.0 | 0.30100 | |
| | 154.40 | 1.5 | 40.0 | 0.33600 | |
| | | 2.0 | 45.0 | 0.37100 | |
| | | 2.5 | 46.0 | 0.37800 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 275.59 |
| | | 0.7 | 48.0 | 0.39200 | |
| | | 1.4 | 67.0 | 0.52500 | |
| | 308.80 | 2.1 | 76.0 | 0.58800 | |
| | | 2.8 | 84.0 | 0.64400 | |
| | | 3.5 | 92.0 | 0.70000 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 42 |
| Cohesion, c, kPa | 0 |




**Density Information:**

Wet Density(γb),gm/cc= 1.89
Dry Density(γd),gm/cc= 1.62
Moisture content(ω%)= 16.67




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

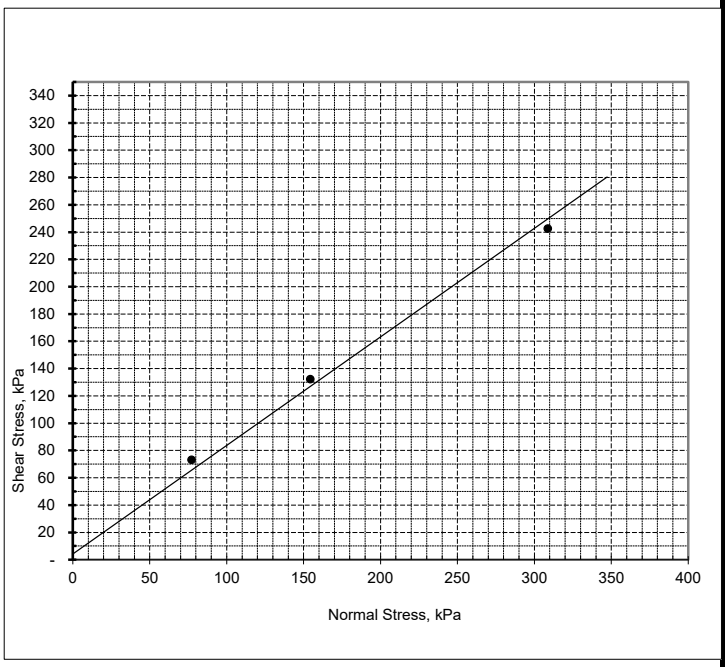
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-11 | D-18,19,20 | 27.0,28.5,30.0 | 25.4 | 76.2 | |

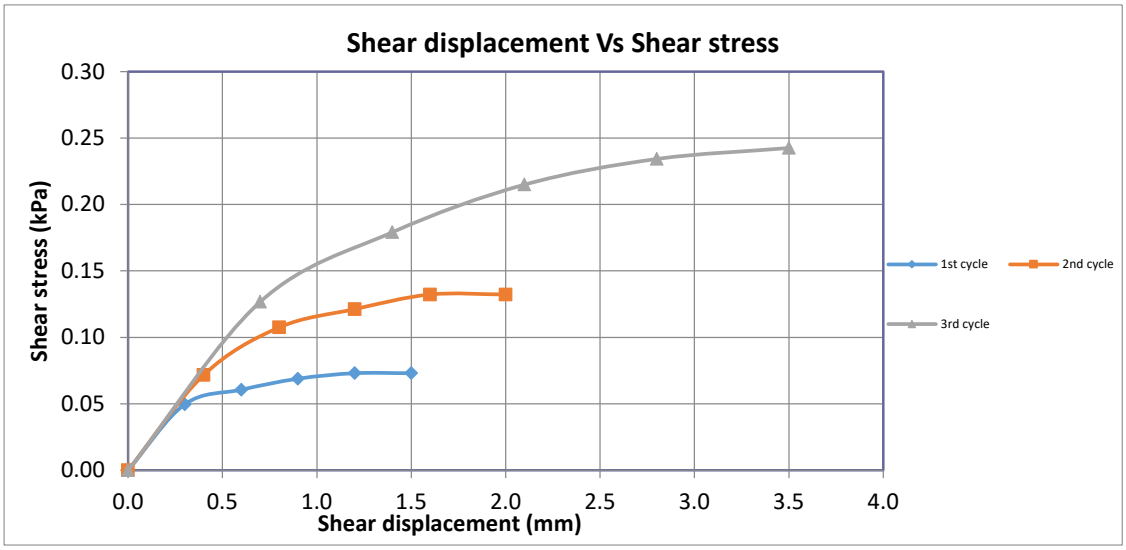
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 73.03 |
| | | 0.3 | 10.0 | 0.12600 | |
| | | 0.6 | 14.0 | 0.15400 | |
| | 77.20 | 0.9 | 17.0 | 0.17500 | |
| | | 1.2 | 18.5 | 0.18550 | |
| | | 1.5 | 18.5 | 0.18550 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 132.28 |
| | | 0.4 | 18.0 | 0.18200 | |
| | | 0.8 | 31.0 | 0.27300 | |
| | 154.40 | 1.2 | 36.0 | 0.30800 | |
| | | 1.6 | 40.0 | 0.33600 | |
| | | 2.0 | 40.0 | 0.33600 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 242.52 |
| | | 0.7 | 38.0 | 0.32200 | |
| | | 1.4 | 57.0 | 0.45500 | |
| | 308.80 | 2.1 | 70.0 | 0.54600 | |
| | | 2.8 | 77.0 | 0.59500 | |
| | | 3.5 | 80.0 | 0.61600 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 38 |
| Cohesion, c, kPa | 5 |




**Density Information:**

Wet Density(γb),gm/cc= 1.64
Dry Density(γd),gm/cc= 1.4
Moisture content(ω%)= 17.14




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

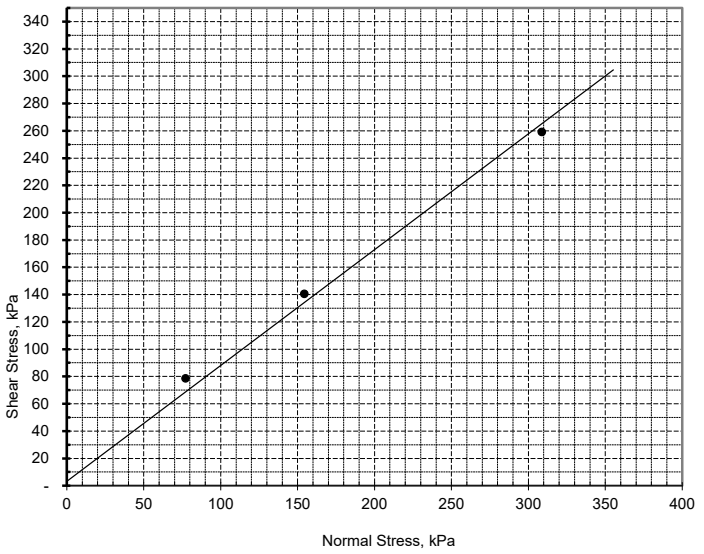
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-11 | D-18,19,20 | 27.0,28.5,30.0 | 25.4 | 76.2 | |

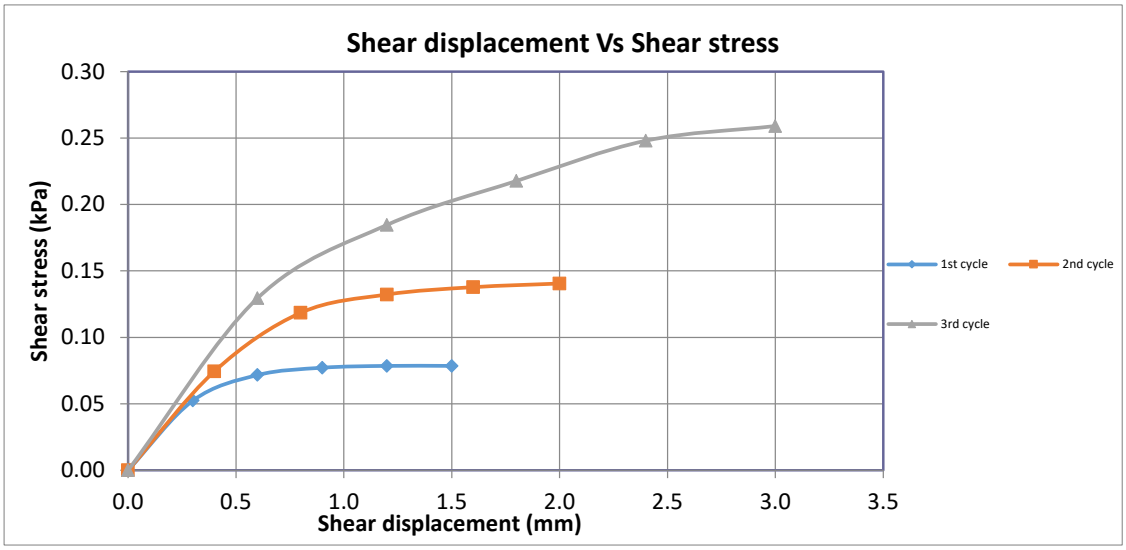
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 78.54 |
| | | 0.3 | 11.0 | 0.13300 | |
| | | 0.6 | 18.0 | 0.18200 | |
| | 77.20 | 0.9 | 20.0 | 0.19600 | |
| | | 1.2 | 20.5 | 0.19950 | |
| | | 1.5 | 20.5 | 0.19950 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 140.55 |
| | | 0.4 | 19.0 | 0.18900 | |
| | | 0.8 | 35.0 | 0.30100 | |
| | 154.40 | 1.2 | 40.0 | 0.33600 | |
| | | 1.6 | 42.0 | 0.35000 | |
| | | 2.0 | 43.0 | 0.35700 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 259.06 |
| | | 0.6 | 39.0 | 0.32900 | |
| | | 1.2 | 59.0 | 0.46900 | |
| | 308.80 | 1.8 | 71.0 | 0.55300 | |
| | | 2.4 | 82.0 | 0.63000 | |
| | | 3.0 | 86.0 | 0.65800 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 3 |




**Density Information:**

Wet Density(γb),gm/cc= 1.77
Dry Density(γd),gm/cc= 1.51
Moisture content(ω%)= 17.22




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# DIRECT SHEAR TEST ASTM D 3080

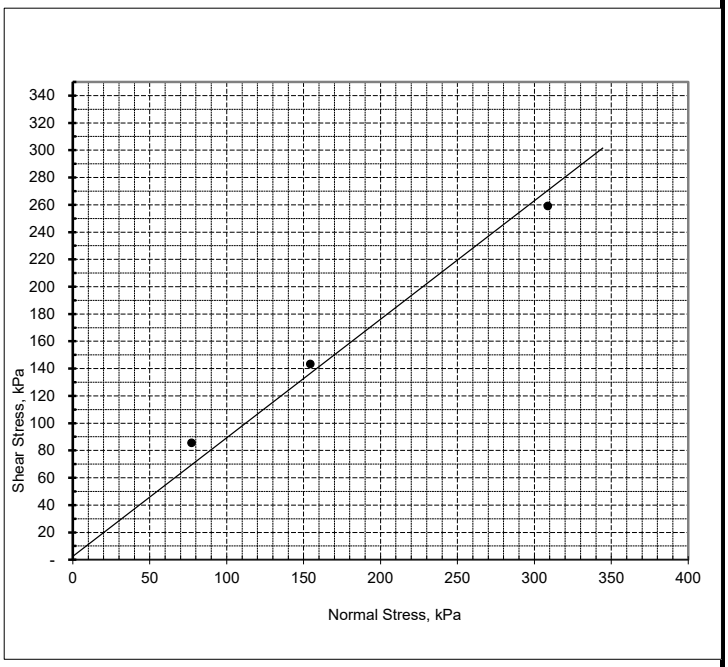
**Client : Roads and Highways Department (RHD).**
**Project :Sub-Regional Road Transportation Project .**
**Project Location Sutarkandi,Sylhet.**

**Test Date:** 30.05.2019

| BH No. | Sample No | Depth (m) | Shearing Area, $cm^2$ | Sample Vol, $cm^3$ | Buet Cal. Eq. Y = 0.007X+.056 |
|---|---|---|---|---|---|
| BR-2. BH-11 | D-18,19,20 | 27.0,28.5,30.0 | 25.4 | 76.2 | |

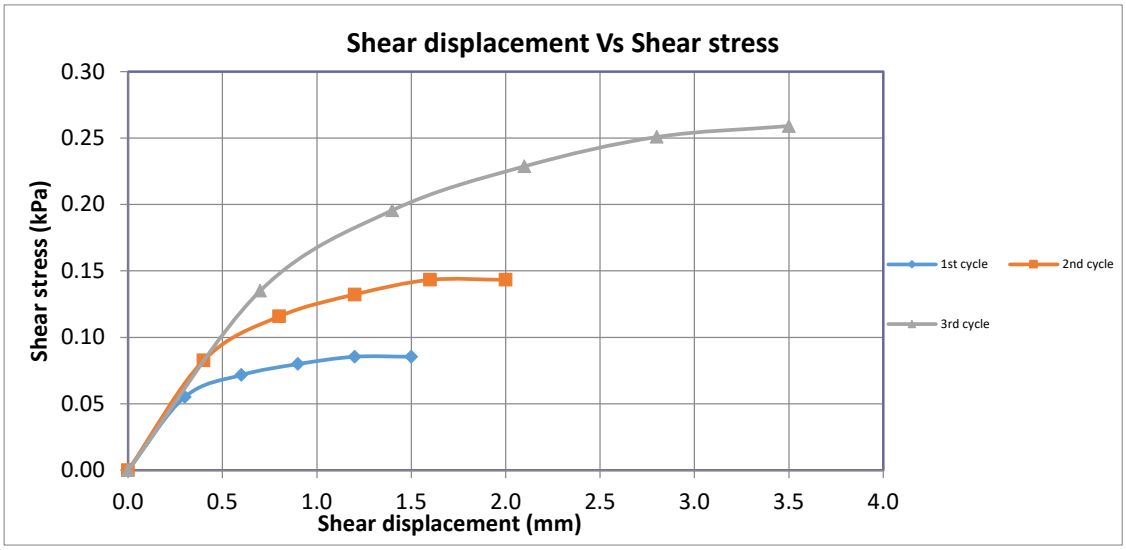
| Test Cycle | Normal Stress (kPa) | Lateral displacement (mm) | Lateral Load Dial Reading | Lateral Load, Y (KN) | Shear Stress (kPa) |
|---|---|---|---|---|---|
| 1st Cycle | | 0.0 | 0.0 | 0.00 | 85.43 |
| | | 0.3 | 12.0 | 0.14000 | |
| | | 0.6 | 18.0 | 0.18200 | |
| | 77.20 | 0.9 | 21.0 | 0.20300 | |
| | | 1.2 | 23.0 | 0.21700 | |
| | | 1.5 | 23.0 | 0.21700 | |
| 2nd Cycle | | 0.0 | 0.0 | 0.00 | 143.31 |
| | | 0.4 | 22.0 | 0.21000 | |
| | | 0.8 | 34.0 | 0.29400 | |
| | 154.40 | 1.2 | 40.0 | 0.33600 | |
| | | 1.6 | 44.0 | 0.36400 | |
| | | 2.0 | 44.0 | 0.36400 | |
| 3rd Cycle | | 0.0 | 0.0 | 0.00 | 259.06 |
| | | 0.7 | 41.0 | 0.34300 | |
| | | 1.4 | 63.0 | 0.49700 | |
| | 308.80 | 2.1 | 75.0 | 0.58100 | |
| | | 2.8 | 83.0 | 0.63700 | |
| | | 3.5 | 86.0 | 0.65800 | |

| | |
|---|---|
| Angle of internal friction, $\phi^0$ | 40 |
| Cohesion, c, kPa | 2 |




**Density Information:**

Wet Density(γb),gm/cc= 1.89
Dry Density(γd),gm/cc= 1.62
Moisture content(ω%)= 16.67




**Tested by : Azhar**

**Signed by : Engr. Jamal Uddin**

# APPENDIX- F

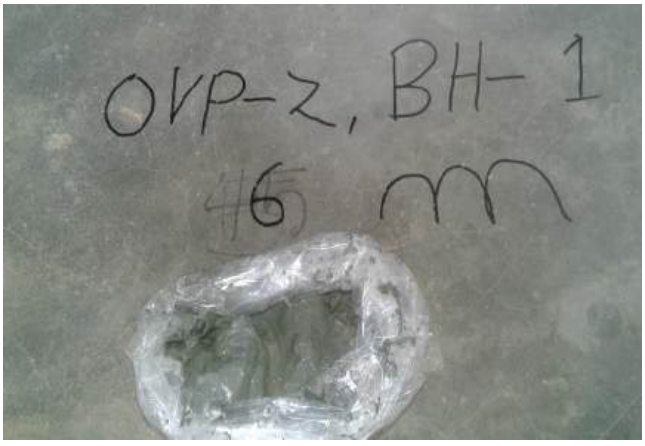
# Photographs

OVP-02,BH-02

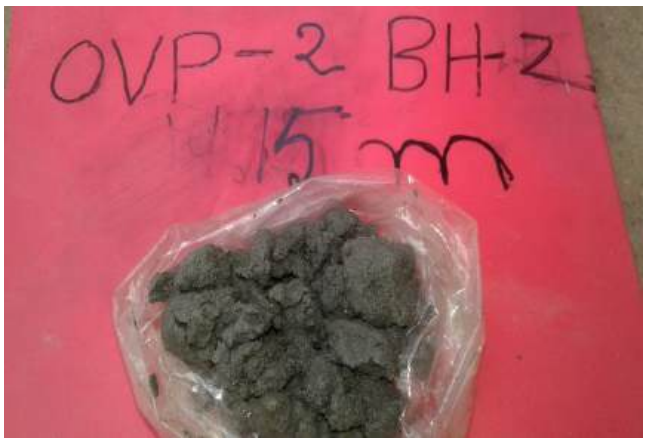
OVP-02 BH-02(Sample )

OVP-02,BH-01

OVP-02 BH-01 (Sample)




OVP-02 BH-01 (Sample)




OVP-02 BH-02 (Sample)

BR-02,BH-06

BR-02,BH-08

BR-02,BH-011

BR-02,BH-09

BR-02,BH-010

RB-13

BR-02,BH-03

BR-02,BH-03

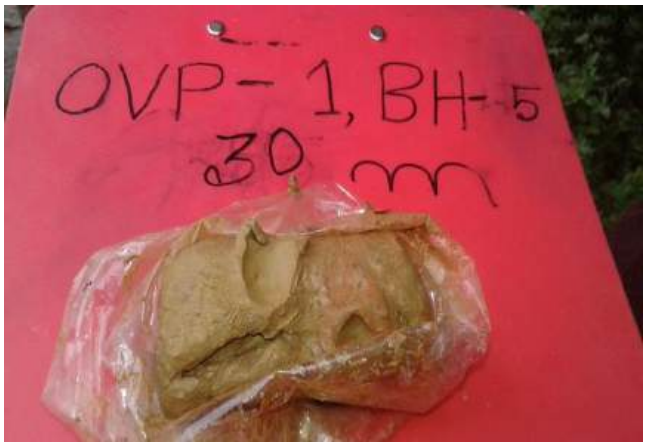
BR-02,BH-03

BR-02.BH-04

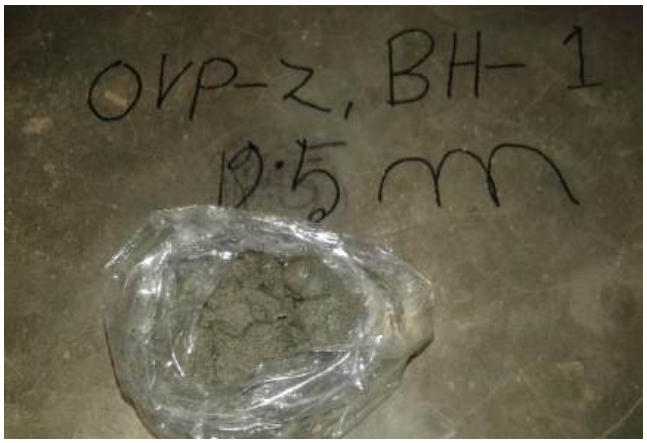
BR-02,BH-05

BR-02,BH-07

OVP-01,BH-05




OVP-01,BH-05 (Sample)



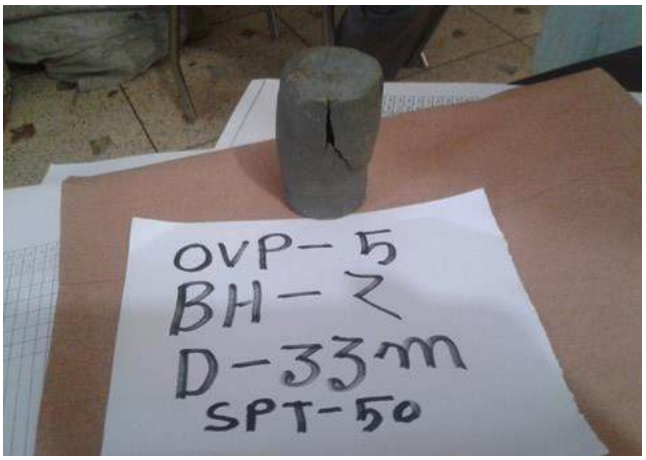

OVP-02,BH-01 (Sample)

OVP-01,BH-05

FLY-01,BH-03 (Sample)


FLY-01,BH-03 (Sample)

Unconfined Compression Test



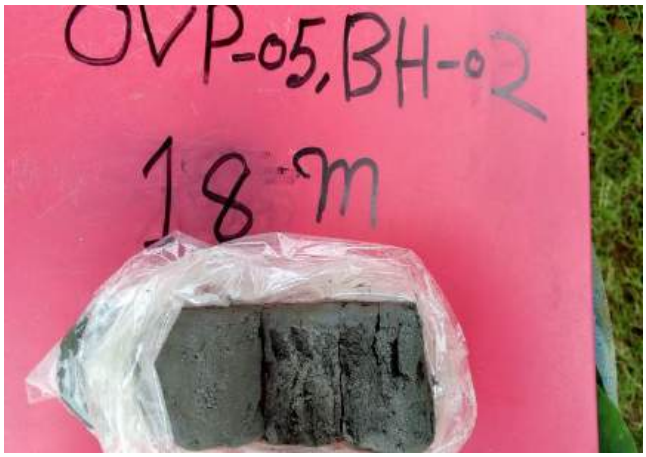

Crack pattern

Unconfined Compression Test

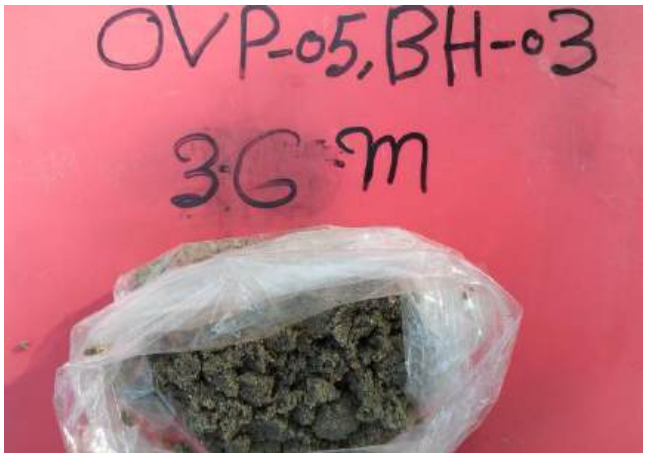
Monitoring of Lab Activities

Sample Preparation

Direct Shear Test



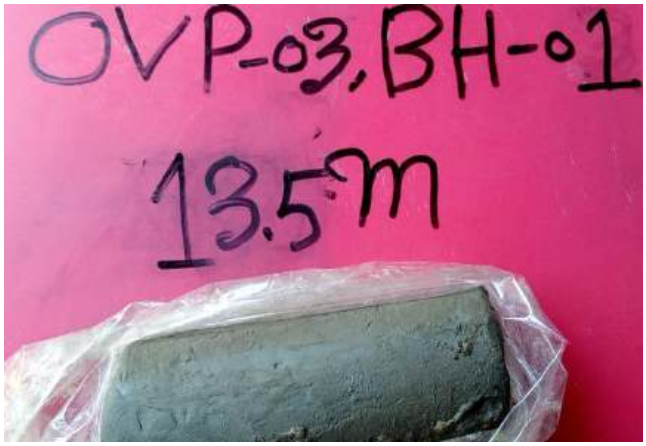

OVP-05,BH-02 (Sample)




OVP-05,BH-03 (Sample)


OVP-05,BH-03 (Sample)


OVP-03,BH-01, (Sample)




OVP-03,BH-01 (Sample)