# Appendix 2.3-6

## Infiltration Testing Memorandum

LANGAN

# Memorandum

**Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.**
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**To:** Joel Richardson, Brian Murell - H2M
Marc Gross, Michael Levoff - Las Vegas Sands Corp

**From:** Saul Shapiro, P.E.

**Info:** Julia Langewis, P.E. - Langan
File

**Date:** 14 September 2023

**Re:** Preliminary Infiltration Testing - Summary Memorandum
Project Maximus - Confidential
Hempstead, New York
Langan Project No. 170754501

We have prepared this memorandum to summarize the findings of the drainage structure borings and infiltration testing performed at the project site for the purpose of establishing preliminary design parameters for stormwater management systems. The following sections provide a brief description of the project site, as well as observations from the subsurface investigation program and infiltration testing.

Elevations were taken from the project survey titled "ALTA/NSPS Land Title Survey," Sheet VL103, prepared by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C., dated 14 March 2023 and updated 22 May 2023. All elevations contained herein are considered approximate and reference the North American Vertical Datum of 1988 (NAVD88)[1].

## SITE DESCRIPTION

The project site consists of Nassau Coliseum and surrounding parking lots located at 1255 Hempstead Turnpike in Uniondale, New York and is comprised of multiple parcels referenced on the Nassau County Tax Maps as Section F, Block 44, Lots 351, 411, 412, and 415. The site is generally bound by Charles Lindbergh Boulevard to the north, James Doolittle Boulevard to the east, Hempstead Turnpike to the south, and Earle Ovington Boulevard to the west.

Surface grades in the general area are relatively flat, varying from about el 79.3 ft and el 82.5 ft. A site location map is presented in Figure 1.

[1] Elevations are with respect to the North American Vertical Datum of 1988 (NAVD88), which is reported to be 1.092 feet above the Mean Sea Level at Sandy Hook, New Jersey, 1929 (NGVD 1929) and the Nassau County Datum.

## SUBSURFACE INVESTIGATION AND OBSERVED CONDITIONS

The subsurface investigation included: (1) drilling eight borings with in situ testing and sampling of soil; (2) conducting infiltration testing in four of the borings; and (3) laboratory testing of recovered soil samples.

Geotechnical Test Borings

Eight geotechnical test borings identified as LBD-01 to LBD-08 were drilled by Craig Geotechnical Drilling Co. Inc. of Mays Landing, New Jersey on 17 and 18 August and 6 September 2023. All borings were drilled using a CME75 truck-mounted drill rig. Langan provided full-time special inspection of all drilling operations in accordance with the NYSBC. The borings were generally advanced to depths between 20 feet and 25 feet below grade. The approximate locations of the borings are shown on the subsurface investigation plan in Figure 2 and Figure 3.

The borings were advanced through soil by continuous sampling and by using mud-rotary drilling techniques and a tri-cone roller bit. Temporary flush-joint steel casing was used to stabilize the boreholes and facilitate performance of infiltration testing. The first 5 feet of all borings were hand cleared. The Standard Penetration Test (SPT)[2] was performed in general accordance with ASTM D1586. SPT N-values[3], visual soil classifications, and other field observation were recorded by Langan's engineers. Soils were sampled using a 2-inch outer-diameter split-spoon sampler and all recovered soil samples were visually classified in the field in accordance with ASTM D2487 and the Unified Soil Classification System (USCS). Boring logs are presented in Appendix A.

Infiltration Testing

Four infiltration tests were conducted within boreholes LBD-02, LBD-05, LBD-07, and LBD-08 in general accordance with the procedures outlined in Appendix D of the Draft New York State Stormwater Management Design Manual (New York State Department of Environmental Conservation, 2022). Four trials were conducted within each borehole at about 20 feet below grade corresponding to about el 61.6 ft, el 56.5 ft, el 57.3 ft, and el 57.5 ft in LBD-02, LBD-05, LBD-07, and LBD-08, respectively. The infiltration test data is included in Appendix B.

Laboratory Testing

Laboratory testing was performed on select soil samples to evaluate engineering properties and parameters of the soils within the drainage structure design borings. Laboratory testing of soil samples included:

- Particle Size Distribution – ASTM D6913 (32 tests)

[2] The Standard Penetration Test is a measure of soil density and consistency. The testing involves driving a 2-inch outer-diameter split-spoon sampler, using a 140-lb hammer free falling from a height of 30 inches.

[3] N-value – The number of blows required to drive a 2-inch diameter split-spoon sampler 12 inches after an initial "seating" penetration of 6 inches, using a 140-pound hammer falling freely from a drop height of 30 inches.

- Atterberg Limits – ASTM D4318 (4 tests)

The laboratory test results are provided in Appendix C.

## SUBSURFACE CONDITIONS

The general subsurface stratigraphy encountered in the borings consists of fill underlain by sand with variable concentrations of gravel and silt; in some cases a layer of and silt and clay was present within the sand layer. Bedrock is known to be at great depth in the vicinity of the site. A brief description of each layer is presented below in order of increasing depth.

### Stratum 1 - Fill

Fill was observed in all borings and generally consists of medium to fine sand with variable concentrations of gravel and silt. The fill layer generally extended to depths of about 5 feet to 9 feet below the ground surface, corresponding to about el 76.6 ft and el 71.6 ft. SPT N-values typically varied from 26 to 46 bpf (blows per foot). The fill layer is generally considered to be in a medium dense to dense condition and appears to generally be reworked native soil materials.

One particle size distribution analysis was performed on a selected sample from the fill layer. The sample had a fines content (material passing a No. 200 US sieve) of 6.8 percent and an effective size ($D_{10}$) of 0.18 mm.

The fill generally classifies as SP-SM (poorly graded sands with gravel and silt) in accordance with ASTM D2487 and the USCS.

### Stratum 2 – Granular Soil

A layer of granular soil was generally observed below the fill layer and extended through the depth of exploration in each of the borings. The granular soil stratum was generally comprised of medium to fine or coarse to fine sand with variable concentrations of gravel and silt. We note that a layer of silt and clay was interspersed sporadically within the granular soil layer. SPT N-values varied from 3 to 94 bpf and were typically greater than 30 bpf. The granular soils are generally considered to be in a dense to very dense condition.

Thirty-one particle size distribution analyses were performed on selected samples from the granular soil layer. The samples had fines contents varying from 2.6 percent to 18.6 percent and effective sizes ($D_{10}$) varying from 0.08 mm to 0.35 mm.

The granular soil layer generally classifies as SP-SM (poorly graded sands with gravel and silt) in accordance with ASTM D2487 and the USCS.

### Stratum 2a – Silt and Clay

As noted prior, a thin layer of silt and clay was observed sporadically within granular soils of Stratum 2. Where present, these soils generally consist of silt and clay with variable concentrations of coarse to fine sand and gravel. The top of the silt and clay layer was

encountered as shallow as 5 feet and as deep as 8 feet below existing grade, corresponding to about el 76.6 ft and el 72.9 ft. Where observed, the silt and clay layer thickness varied from about 0.8 feet to 2 feet. SPT N-values varied from 21 to 53 bpf within the silt and clay soils. The soil stratum is generally considered to be in a stiff to very stiff condition for clay rich soils and in a medium dense to very dense condition for silt rich soils.

Four Atterberg Limits tests were performed on selected samples from the silt and clay layer. The samples had Liquid Limits varying from 25 percent to 27 percent, Plastic Limits varying from 17 percent to 18 percent, and Plasticity Indices varying from 6 to 10.

The silt and clay layer generally classifies as ML (non-plastic silt to medium plastic clayey silt) or CL (inorganic clays of low to medium plasticity) in accordance with ASTM D2487 and the USCS.

### Groundwater

Groundwater was not encountered in the drainage structure borings. Based on data from nearby monitoring wells and review of historic boring data, the groundwater elevation is expected to be present at about 25 feet to 30 feet below the ground surface, corresponding to elevations varying from about el 52 to el 56 ft. Please note that the groundwater level may vary seasonally and with changes in precipitation.

### Infiltration Testing

Infiltration rates varied from 48 in/hr to 19.2 in/hr in LBD-02, 3.6 in/hr to 1.2 in/hr in LBD-05, and 17.5 in/hr to 13.1 in/hr in LBD-08. During infiltration testing in LBD-07, the water in the casing drained faster than was possible to measure at regular intervals and the water level dropped more than 6 inches in 1 minute. The testing at LBD-07 was considered anomalous based on the typical soil properties observed in the borehole and as such the test at LBD-07 was considered invalid. A copy of the field infiltration test data is included in Appendix B.

Permeability rates were also estimated using the Allen Hazen formula for soils sampled from the drainage structure borings. The effective size ($D_{10}$) was obtained from laboratory gradation testing and the empirical coefficient (C) was assumed as 100. The estimated permeability rates varied from a high of 177 in/hr to a low 9 in/hr. The permeability rates estimated using Hazen's formula are also included in Appendix B.

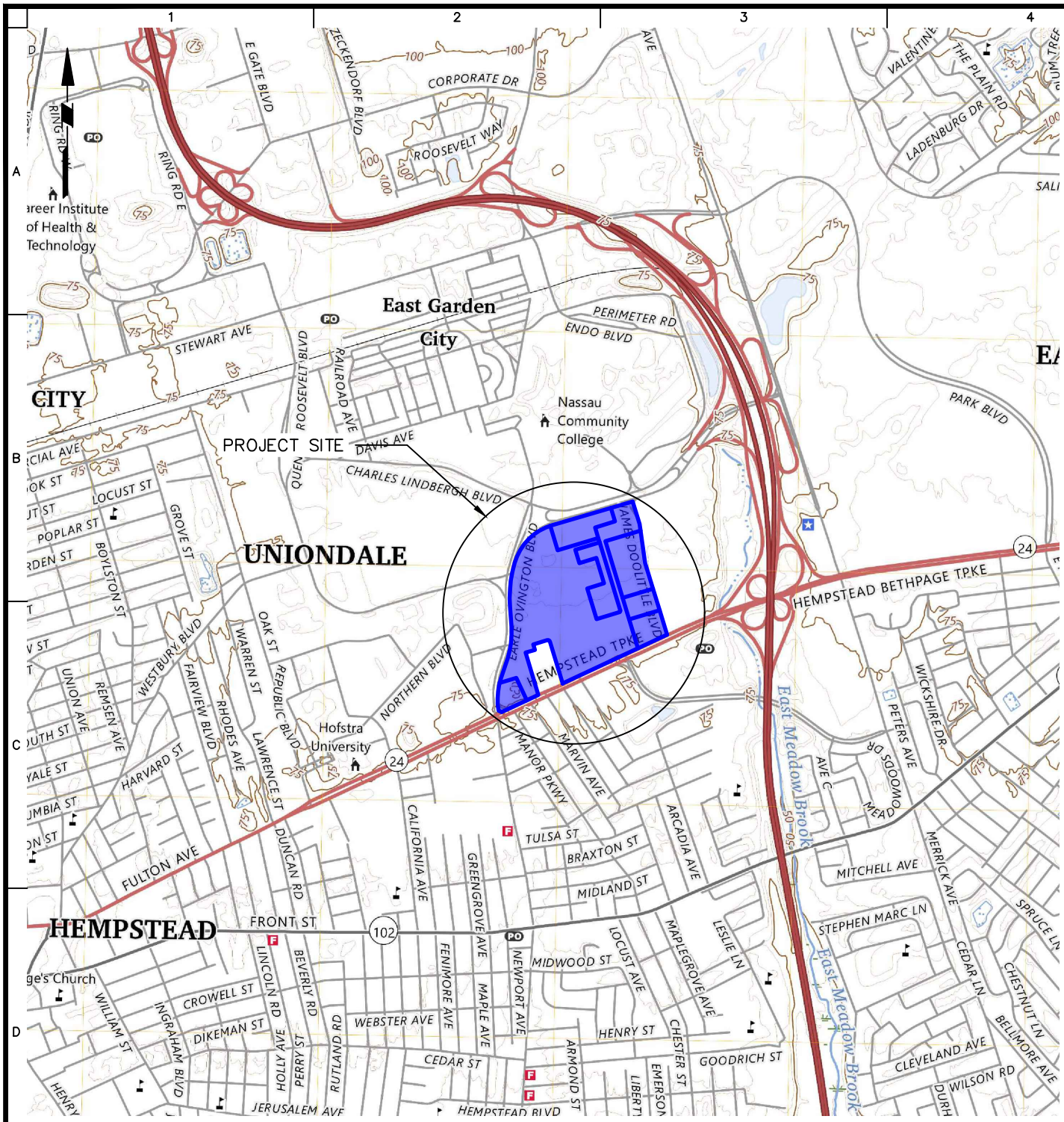
## LIMITATIONS

This memorandum has been prepared to assist the project team in the design process and is only applicable to the envisioned project discussed herein. Langan cannot assume responsibility for use of this memorandum for any areas beyond the limits of this study or for any projects not specifically discussed herein.

Information on subsurface strata provided herein and in the attached appendices represent conditions encountered only at the locations indicated and at the time of investigation. If different

conditions are encountered during construction, they should immediately be brought to our attention for evaluation.

# FIGURES




SOURCE: "FREEPORT QUADRANGLE MAP, NEW YORK–NASSAU COUNTY 7.5–MINUTE SERIES", U.S. GEOLOGICAL SURVEY, 2023.

NOTE: ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

**WARNING:** IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

2000 0 1000 2000

SCALE: 1 INCH = 2000 FEET


LANGAN

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Project

**PROJECT MAXIMUS**

SECTION No. 44, BLOCK F
LOTS No. 326, 401, 402, 411, 412, 415, AND 351
TOWN OF HEMPSTEAD

NASSAU COUNTY NEW YORK

Figure Title

**SITE LOCATION MAP**

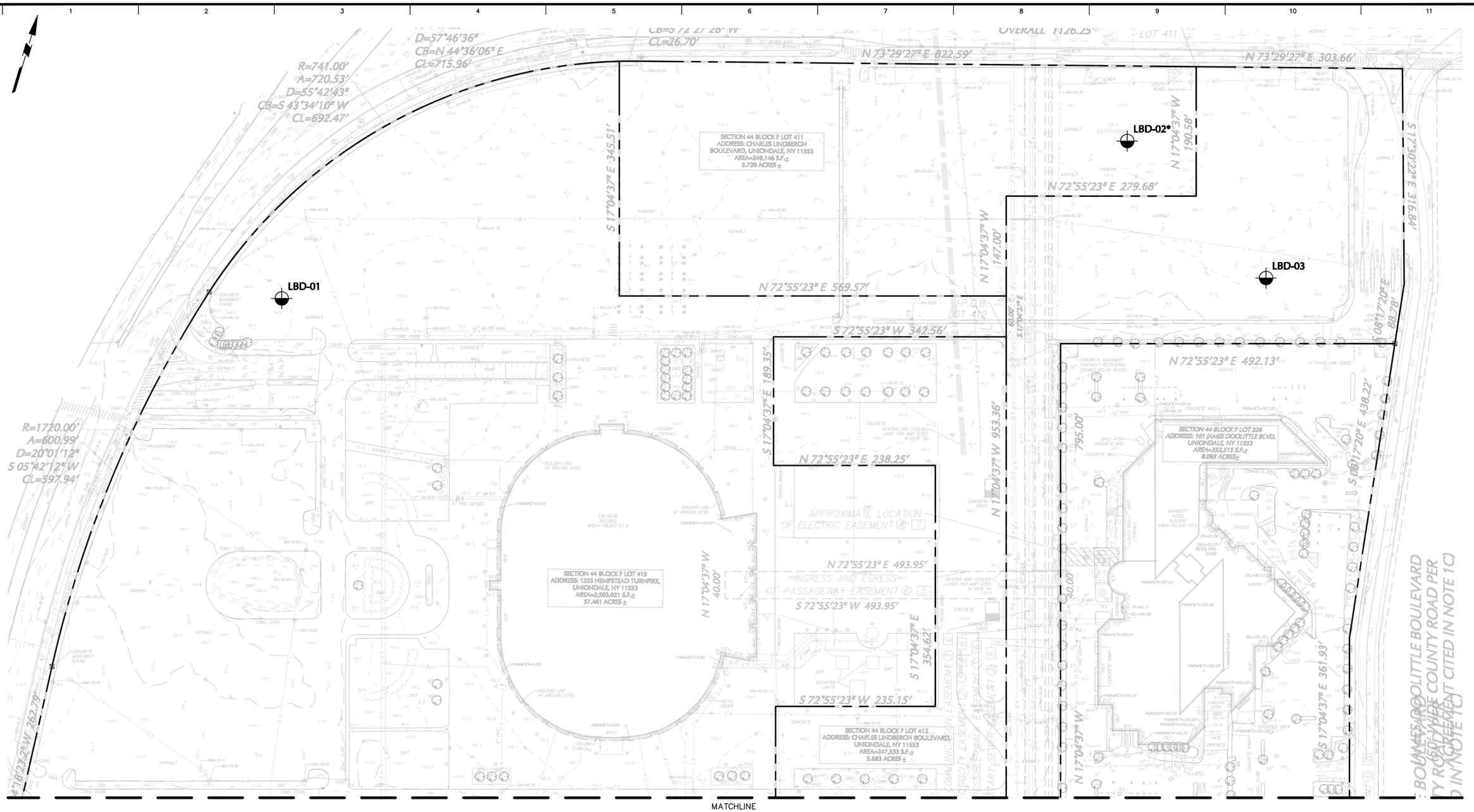
| | |
|---|---|
| Project No. | 170754501 |
| Date | 08/21/2023 |
| Drawn By | MG/TK |
| Checked By | JJL |

Figure 1

Sheet 1 of 3



Filename: \\langan.com\data\NYC\data5\170754501\Project Data\CAD-Geotech\01\Sheet Files\GER\170754501-BI001-0101.dwg Date: 8/28/2023 Time: 13:00 User: jlangewis Style Table: Langan.stb Layout: Figure 1 - Site Location Map




GENERAL NOTES:

1. ALL ELEVATIONS SHOWN HEREIN ARE WITH RESPECT TO THE NORTH AMERICAN VERTICAL DATUM (NAVD88). TYPICAL DATUM CONVERSIONS ARE AS FOLLOWS:

   NGVD = NAVD88 + 1.1 FEET
   NASSAU COUNTY DATUM = NAVD88 + 1.1 FEET

2. SURVEY BASE MAP TAKEN FROM SURVEY TITLED "ALTA/NSPS LAND TITLE SURVEY, PROJECT MAXIMUS, SECTION NO. 44, BLOCK F, LOTS NO. 326, 401, 402, 411, 412, 415 AND 351, TOWN OF HEMPSTEAD, NASSAU COUNTY, NEW YORK", PREPARED BY LANGAN ENGINEERING, ENVIRONMENTAL, SURVEYING, LANDSCAPE ARCHITECTURE AND GEOLOGY, D.P.C., DATED 22 MAY 2023.

3. ALL LANGAN BORINGS WERE DRILLED UNDER THE FULL-TIME INSPECTION OF A LANGAN REPRESENTATIVE. ALL DRAINAGE BORING DRILLING WAS PERFORMED BY CRAIG GEOTECHNICAL DRILLING CO. INC. ON 17 AND 18 AUGUST AND 6 SEPTEMBER 2023.

4. DISTURBED SAMPLES WERE TAKEN USING A 2-INCH DIAMETER SPLIT-SPOON SAMPLER DRIVEN BY A 140-LB AUTOMATIC HAMMER FREE-FALLING 30-INCHES.

5. ALL BORING LOCATIONS WERE LAID OUT BY LANGAN REPRESENTATIVES BY MEASURING FROM EXISTING SITE FEATURES. ALL LOCATIONS SHOULD BE CONSIDERED APPROXIMATE.

LEGEND:

- **LBD-#** — LANGAN DRAINAGE BORING
- * — DENOTES PERCOLATION TEST LOCATION
- PROPERTY LINE

100 0 50 100
SCALE IN FEET

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Project
**PROJECT MAXIMUS**
**SECTION No. 44, BLOCK F**
**LOTS No. 326, 401, 402, 411, 412, 415 AND 351**
**TOWN OF HEMPSTEAD**
**NASSAU COUNTY** **NEW YORK**

Figure Title
**SUBSURFACE INVESTIGATION PLAN - PART A**

| | |
|---|---|
| Project No. | 170754501 |
| Date | 09/06/2023 |
| Drawn By | JJL |
| Checked By | SS |

Figure **2**

Sheet 2 of 3

LANGAN
PROJECT NO. 170754501



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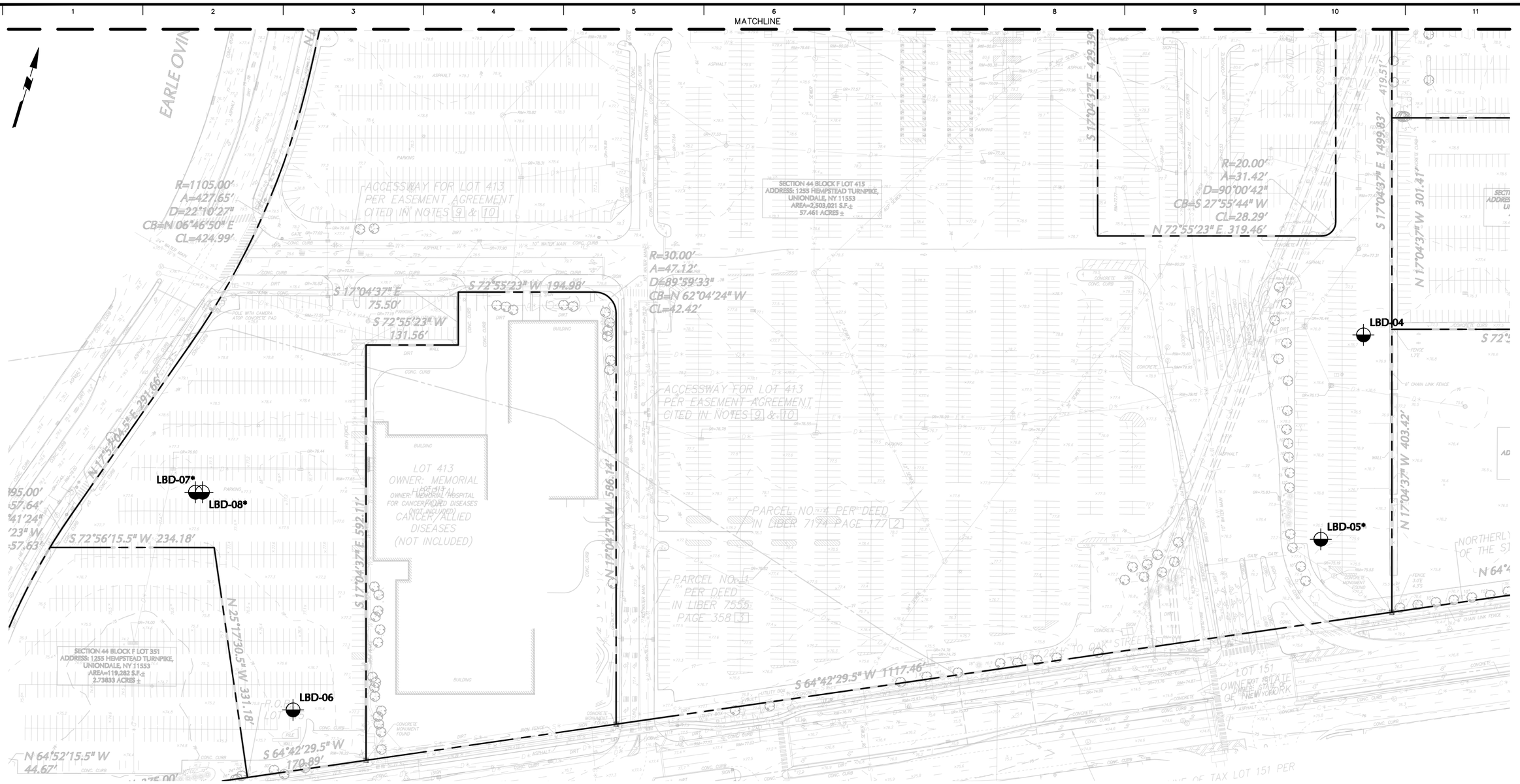


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2. SURVEY BASE MAP TAKEN FROM SURVEY TITLED "ALTA/NSPS LAND TITLE SURVEY, PROJECT MAXIMUS, SECTION NO. 44, BLOCK F, LOTS NO. 326, 401, 402, 411, 412, 415 AND 351, TOWN OF HEMPSTEAD, NASSAU COUNTY, NEW YORK", PREPARED BY LANGAN ENGINEERING, ENVIRONMENTAL, SURVEYING, LANDSCAPE ARCHITECTURE AND GEOLOGY, D.P.C., DATED 22 MAY 2023.

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LEGEND:

- LBD-# — LANGAN DRAINAGE BORING
- * — DENOTES PERCOLATION TEST LOCATION
- PROPERTY LINE

100 0 50 100
SCALE IN FEET

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Project
PROJECT MAXIMUS
SECTION No. 44, BLOCK F
LOTS No. 326, 401, 402, 411, 412, 415 AND 351
TOWN OF HEMPSTEAD
NASSAU COUNTY NEW YORK

Figure Title
SUBSURFACE INVESTIGATION PLAN - PART B

Project No. 170754501
Date 09/06/2023
Drawn By JJL
Checked By SS

Figure 3
Sheet 3 of 3

LANGAN
PROJECT NO. 170754501



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# APPENDIX A

(LANGAN BORING LOGS)

# LANGAN

Log of Boring **LBD-01** Sheet 1 of 2

| | |
|---|---|
| Project: Project Maximus | Project No.: 170754501 |
| Location: Nassau Coliseum | Elevation and Datum: Approx. el. 80.6 ± (NAVD 88) |
| Drilling Company: Craig Geotechnical Drilling | Date Started: 8/18/2023 — Date Finished: 8/18/2023 |
| Drilling Equipment: CME75 | Completion Depth: 25.0 ft — Rock Depth: N/E |
| Size and Type of Bit: 3-7/8in Tricone Roller Bit | Number of Samples: Disturbed 10 — Undisturbed 0 — Core 0 |
| Casing Diameter (in): 4 Flush Joint Steel — Casing Depth (ft): 14.0 | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ▼ N/A |
| Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | Drilling Foreman: Shane Frick |
| Sampler: 2in OD Split Spoon | Field Engineer: Michael Gillooley |
| Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +80.6 | | | | | | | 10 20 30 40 | |
| | +80.1 | 3" ASPHALT | 0 | | | | | | 8/18/2023 |
| | | FILL | 1 | | | | | | Hand clear to 5ft. |
| | | Brown medium to fine SAND, trace coarse Sand, trace Silt, trace fine Gravel (dry) [FILL] | 2 | | | | | | Collect Grab Sample G-1 from 0.5ft to 4ft. |
| | | | 3 | | | | | | |
| | | Brown medium to fine SAND, some fine Gravel. some coarse Sand trace Silt (dry) [FILL] | 4 | S-1 | SS | 14 | 9 13 13 18 | 26 | Take S-1 from 4ft to 6ft. -#4 = 83.1% -#200 = 6.8% |
| | | | 5 | | | | | | |
| | | | 6 | | | | | | |
| | | Brown medium to fine SAND, trace Silt, trace fine Gravel, trace coarse Sand (dry) [FILL] | 7 | | | | | | Take S-2 from 7ft to 9ft. |
| | | | 8 | S-2 | SS | 20 | 18 22 24 29 | 46 | Drive casing to 9ft. Dril to 9ft. Smooth drilling, brown wash. |
| | +71.6 | | 9 | | | | | | Take S-3 from 9ft to 11ft. |
| | | Brown medium to fine SAND, trace Silt, trace coarse Sand (moist) [SP-SM] | 10 | S-3 | SS | 10 | 12 13 15 15 | 28 | |
| | | | 11 | | | | | | Take S-4 from 11ft to 13ft. |
| | | Brown medium to fine SAND, trace Silt, trace coarse Sand (moist) [SP-SM] | 12 | S-4 | SS | 11 | 16 16 14 16 | 30 | |
| | | | 13 | | | | | | Take S-5 from 13ft to 15ft. |
| | | Brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (moist) [SP-SM] | 14 | S-5 | SS | 9 | 10 12 13 18 | 25 | Drive casing to 14ft. Drill to 15ft. Smooth drilling, brown wash. |
| | | | 15 | | | | | | Take S-6 from 15ft to 17ft. -#4 = 65.2% -#200 = 4.2% |
| | | Brown to light brown medium to fine SAND, some fine Gravel, some coarse Sand, trace Silt (moist) [SP] | 16 | S-6 | SS | 9 | 15 16 18 18 | 34 | |
| | | | 17 | | | | | | Take S-7 from 17ft to 19ft. |
| | | Light brown to gray coarse to fine SAND, some Gravel, trace Silt (moist) [SP-SM] | 18 | S-7 | SS | 4 | 5 7 17 18 | 24 | Drill to 19ft. Smooth drilling, brown wash. |
| | | | 19 | | | | | | Take S-8 from 19ft to 21ft. -#4 = 79.3% -#200 = 5.3% |
| | | Brown coarse to medium SAND, some fine Gravel, some fine Sand, trace Silt (moist) [SP-SM] | 20 | | SS | | 14 14 | | |

# LANGAN

Log of Boring **LBD-01** Sheet 2 of 2

| Project | Project No. |
|---|---|
| Project Maximus | 170754501 |
| **Location** | **Elevation and Datum** |
| Nassau Coliseum | Approx. el. 80.6 ± (NAVD 88) |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +60.6 | | 20 | S-8 | | 10 | 17 | 31 | |
| | | Light brown coarse to fine SAND, some fine Gravel, trace Silt (moist) [SP-SM] | 21 | | | | 19 | | Take S-9 from 21ft to 23ft.<br>-#4 = 75.8%<br>-#200 = 8.6% |
| | | | 22 | S-9 | SS | 7 | 11<br>19<br>17 | 36 | Drill to 23ft. Smooth drilling, brown wash. |
| | | | 23 | | | | 19 | | |
| | | Light brown medium to fine SAND, trace Silt, trace fine Gravel, trace coarse Sand (moist) [SP-SM] | | | | | 21<br>18 | | Take S-10 from 23ft to 25ft. |
| | | | 24 | S-10 | SS | 8 | 18 | 36 | |
| | +55.6 | | 25 | | | | 15 | | Bottom of boring at 25ft.<br>Extract casing. Backfill hole with cuttings.<br>Patch to match existing surface. |
| | | End of Boring at 25ft. | 26 | | | | | | |
| | | | 27 | | | | | | |
| | | | 28 | | | | | | |
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# LANGAN

Log of Boring **LBD-02** Sheet 1 of 2

| | |
|---|---|
| Project: Project Maximus | Project No.: 170754501 |
| Location: Nassau Coliseum | Elevation and Datum: Approx. el. 81.6 ± (NAVD 88) |
| Drilling Company: Craig Geotechnical Drilling | Date Started: 8/17/2023 — Date Finished: 8/17/2023 |
| Drilling Equipment: CME75 | Completion Depth: 20.0 ft — Rock Depth: N/E |
| Size and Type of Bit: 3-7/8in Tricone Roller Bit | Number of Samples: Disturbed 7 — Undisturbed 0 — Core 0 |
| Casing Diameter (in): 4 Flush Joint Steel — Casing Depth (ft): 20.0 | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ⧩ N/A |
| Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | Drilling Foreman: Shane Frick |
| Sampler: 2in OD Split Spoon | Field Engineer: Michael Gillooley |
| Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +81.6 | | | | | | | | |
| | +81.1 | 3" ASPHALT<br>FILL<br>Brown medium to fine SAND, trace fine Gravel, trace Silt (moist) [FILL] | 0 | | | | | | 8/17/2023<br>Hand clear to 5ft.<br>Collect Grab Sample G-1 from 0.5ft to 3ft.<br>Collect Grab Sample G-2 from 3ft to 5ft. |
| | +76.6 | Brown to gray SILT and CLAY, trace fine Gravel, trace coarse to fine Sand (moist) [CL] | 5 | S-1 | SS | 14 | 5<br>7<br>11 | 18 | Take S-1 from 5ft to 7ft.<br>LL = 25<br>PL = 17<br>PI = 8 |
| | +74.6 | Brown medium to fine SAND, trace Silt, trace coarse Sand (moist) [SP-SM] | 7 | S-2 | SS | 15 | 10<br>27<br>22<br>15<br>15 | 37 | Take S-2 from 7ft to 9ft.<br>Drive casing to 9ft.<br>Drill to 9ft. Smooth drilling, brown wash. |
| | | Brown coarse to fine SAND, trace some Gravel, trace Silt (moist) [SP] | 9 | S-3 | SS | 10 | 10<br>8<br>10<br>9 | 18 | Take S-3 from 9ft to 11ft.<br>-#4 = 85.1%<br>-#200 = 2.6% |
| | | Brown medium to fine SAND, trace fine Gravel, trace coarse Sand, trace Silt (moist) [SP-SM] | 11 | S-4 | SS | 15 | 15<br>15<br>17<br>14 | 32 | Take S-4 from 11ft to 13ft. |
| | | Brown coarse to fine SAND, some fine Gravel, trace Silt (moist) [SP] | 13 | S-5 | SS | 15 | 16<br>13<br>14<br>13 | 27 | Take S-5 from 13ft to 15ft.<br>-#4 = 61.4%<br>-#200 = 2.9%<br>Drive casing to 15ft.<br>Drill to 16ft. Smooth drilling, brown wash. |
| | | Brown gravelly coarse to fine SAND, trace Silt (moist) [SP] | 16 | S-6 | SS | 10 | 7<br>12<br>15<br>13 | 27 | Take S-6 from 16ft to 18ft.<br>-#4 = 53.3%<br>-#200 = 3.1% |
| | | Brown coarse to fine SAND, trace fine Gravel, trace Silt (moist) [SP-SM] | 18 | S-7 | SS | 14 | 15<br>22<br>21<br>20 | 43 | Take S-7 from 18ft to 20ft.<br>Drive casing to 20ft.<br>Clean out casing. Soak casing for infiltration test. |
| | +61.6 | | 20 | | | | | | |

Template: Log-BH; Strip: BH-GEO; Printed on 09/08/2023

# LANGAN

Log of Boring **LBD-02** Sheet 2 of 2

| Project | Project No. |
|---|---|
| Project Maximus | 170754501 |
| **Location** | **Elevation and Datum** |
| Nassau Coliseum | Approx. el. 81.6 ± (NAVD 88) |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +61.6 | End of Boring at 20ft. | 20 | | | | | | Bottom of boring at 20ft.<br><br>8/18/2023<br>Perform infiltration test. Extract casing. Backfill hole, patch to match existing surface. |
| | | | 21 | | | | | | |
| | | | 22 | | | | | | |
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# LANGAN

Log of Boring **LBD-03** Sheet 1 of 2

| | |
|---|---|
| Project: Project Maximus | Project No.: 170754501 |
| Location: Nassau Coliseum | Elevation and Datum: Approx. el. 80.9 ± (NAVD 88) |
| Drilling Company: Craig Geotechnical Drilling | Date Started: 8/18/2023 — Date Finished: 8/18/2023 |
| Drilling Equipment: CME75 | Completion Depth: 25.0 ft — Rock Depth: N/E |
| Size and Type of Bit: 3-7/8in Tricone Roller Bit | Number of Samples: Disturbed 10 — Undisturbed 0 — Core 0 |
| Casing Diameter (in): 4 Flush Joint Steel — Casing Depth (ft): 14.0 | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ⧩ N/A |
| Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | Drilling Foreman: Shane Frick |
| Sampler: 2in OD Split Spoon | Field Engineer: Michael Gillooley |
| Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +80.9 | | | | | | | 10 20 30 40 | |
| | +80.4 | 3" ASPHALT<br>FILL | 0 | | | | | | 8/18/2023<br>Hand clear to 5ft. |
| | | Brown medium to fine SAND, trace fine Gravel, trace coarse Sand, trace Silt (dry) [FILL] | 1 | | | | | | Collect Grab Sample G-1 from 0.5ft to 5ft. |
| | +75.9 | Brown coarse to medium SAND, some fine Gravel, trace Silt, trace fine Sand (dry) [SP-SM] | 5 | S-1 | SS | 14 | 11<br>11<br>10<br>12 | 21 | Take S-1 from 5ft to 7ft.<br>-#4 = 68.9%<br>-#200 = 5.7% |
| | | Light brown medium to fine SAND, trace fine Gravel, trace coarse Sand, trace Silt (dry) [SP-SM] | 7 | S-2A<br>S-2B | SS<br>SS | 14 | 12<br>11<br>6<br>9 | 17 | Take S-2 from 7ft to 9ft.<br>LL = 27<br>PL = 17<br>PI = 10<br>Drive casing to 9ft. Drill to 9ft. Smooth drilling, brown wash. |
| | +72.9 | Gray to brown SILT and CLAY, some coarse to fine Sand (moist) [CL] | 8 | | | | | | |
| | | Gray to brown sandy SILT and CLAY, some fine Gravel (moist) [CL] | 9 | | | | | | Take S-3 from 9ft to 11ft.<br>-#4 = 85.9%<br>-#200 = 41.6% |
| | +70.9 | Light brown medium to fine SAND, trace Silt (moist) [SP-SM] | 10 | S-3A<br>S-3B | SS<br>SS | 17 | 9<br>9<br>15<br>20 | 24 | |
| | | Brown medium to fine SAND, trace Silt, trace fine Gravel, trace coarse Sand (moist) [SP-SM] | 11 | | | | | | Take S-4 from 11ft to 13ft.<br>-#4 = 92.3%<br>-#200 = 5.1% |
| | | | 12 | S-4 | SS | 9 | 5<br>9<br>16<br>20 | 25 | |
| | | Brown medium to fine SAND, some fine Gravel, trace coarse Sand, trace Silt (moist) [SP-SM] | 13 | | | | | | Take S-5 from 13ft to 15ft.<br>-#4 = 80.9%<br>-#200 = 6.4%<br>Drive casing to 14ft. Drill to 15ft. Smooth drilling, brown wash. |
| | | | 14 | S-5 | SS | 7 | 10<br>17<br>20<br>21 | 37 | |
| | | Brown medium SAND, trace Silt, trace coarse Sand, trace Gravel (moist) [SP-SM] | 15 | | | | | | Take S-6 from 15ft to 17ft. |
| | | | 16 | S-6 | SS | 5 | 9<br>10<br>11<br>13 | 21 | Drill to 17ft. Smooth drilling, brown wash. |
| | | Brown to light brown coarse to fine SAND, some fine Gravel, trace Silt (moist) [SP-SM] | 17 | | | | | | Take S-7 from 17ft to 19ft.<br>-#4 = 78.8%<br>-#200 = 8.9% |
| | | | 18 | S-7 | SS | 9 | 15<br>18<br>21<br>22 | 39 | |
| | | Light brown coarse to fine SAND, trace Silt, trace fine Gravel (moist) [SP-SM] | 19 | | | | | | Take S-8 from 19ft to 21ft. |
| | | | 20 | | SS | | 20<br>23 | | |

# LANGAN

Log of Boring **LBD-03** Sheet 2 of 2

| Project | Project No. |
|---|---|
| Project Maximus | 170754501 |
| **Location** | **Elevation and Datum** |
| Nassau Coliseum | Approx. el. 80.9 ± (NAVD 88) |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +60.9 | | 20 | S-8 | | 5 | 29<br>30 | 52 | Drill to 21ft. Smooth drilling, brown wash. |
| | | Light brown gravelly coarse to fine SAND, trace Silt (moist) [SP-SM] | 21 | | | | | | Take S-9 from 21ft to 23ft.<br>-#4 = 62.4%<br>-#200 = 6.2% |
| | | | 22 | S-9 | SS | 7 | 17<br>18<br>16<br>18 | 34 | |
| | | Brown to light brown medium to fine SAND, trace Silt, trace fine Gravel, trace coarse Sand (moist) [SP-SM] | 23 | | | | | | Take S-10 from 23ft to 25ft.<br>-#4 = 87.3%<br>-#200 = 6.1% |
| | +55.9 | | 24 | S-10 | SS | 8 | 19<br>17<br>20<br>23 | 37 | |
| | | End of Boring at 25ft. | 25 | | | | | | Bottom of boring at 25ft.<br>Extract casing. Backfill hole with cuttings.<br>Patch to match existing surface. |
| | | | 26 | | | | | | |
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# LANGAN

Log of Boring **LBD-04** Sheet 1 of 2

| | | | |
|---|---|---|---|
| Project: Project Maximus | | Project No.: 170754501 | |
| Location: Nassau Coliseum | | Elevation and Datum: Approx. el. 76.7 ± (NAVD 88) | |
| Drilling Company: Craig Geotechnical Drilling | | Date Started: 8/18/2023 | Date Finished: 8/18/2023 |
| Drilling Equipment: CME75 | | Completion Depth: 25.0 ft | Rock Depth: N/E |
| Size and Type of Bit: 3-7/8in Tricone Roller Bit | | Number of Samples: Disturbed 10 | Undisturbed 0 / Core 0 |
| Casing Diameter (in): 4 Flush Joint Steel | Casing Depth (ft): 14.0 | Water Level (ft.): First ▽ N/A | Completion ▼ N/A / 24 HR. ▼ N/A |
| Casing Hammer: Automatic | Weight (lbs): 140 / Drop (in): 30 | Drilling Foreman: Shane Frick | |
| Sampler: 2in OD Split Spoon | | Field Engineer: Michael Gillooley | |
| Sampler Hammer: Automatic | Weight (lbs): 140 / Drop (in): 30 | | |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +76.7 | | | | | | | | 8/18/2023<br>Hand clear to 5ft. |
| | +76.2 | 3" ASPHALT<br>FILL | 0 | | | | | | |
| | | Brown medium to fine SAND, trace Silt, trace fine Gravel, trace coarse Sand (dry) [FILL] | 1 | | | | | | Collect Grab Sample G-1 from 0.5ft to 3ft. |
| | | | 2 | | | | | | |
| | | | 3 | | | | | | Collect Grab Sample G-2 from 3ft to 5ft. |
| | | | 4 | | | | | | |
| | +71.7 | | 5 | | | | | | Take S-1 from 5ft to 7ft. |
| | | Brown medium to fine SAND, trace Silt, trace fine Gravel, trace coarse Sand (dry) [SP-SM] | 6 | S-1 | SS | 13 | 17<br>14<br>12<br>10 | 26 | |
| | +69.2 | Brown medium to fine SAND, trace Silt, trace fine Gravel, trace coarse Sand (dry) [SP-SM] | 7 | S-2A | SS | 20 | 11<br>16<br>18<br>16 | 34 | Take S-2 from 7ft to 9ft.<br>LL = 26<br>PL = 18<br>PI = 8 |
| | +68.2 | Brownish gray SILT, some Clay, some coarse to fine Sand, trace fine Gravel (moist) [ML] | 8 | S-2B | SS | | | | |
| | | Brown medium to fine SAND, trace coarse Sand, trace fine Gravel, trace Silt (moist) [SP-SM] | 9 | S-2C | SS | | | | Drive casing to 9ft. Drill to 9ft. Smooth drilling, brown wash. |
| | | Light brown medium to fine SAND, trace Silt, trace coarse Sand (moist) [SP-SM] | 10 | S-3 | SS | 7 | 8<br>16<br>18<br>14 | 34 | Take S-3 from 9ft to 11ft. |
| | | Light brown medium to fine SAND, some coarse Sand, trace fine Gravel, trace Silt (moist) [SP] | 11 | S-4 | SS | 6 | 16<br>20<br>18<br>20 | 38 | Take S-4 from 11ft to 13ft.<br>-#4 = 92.5%<br>-#200 = 4.9% |
| | | Light brown coarse to fine SAND, trace Silt, some fine Gravel (moist) [SP-SM] | 12 | S-5A | SS | 16 | 43<br>26<br>22 | 48 | Take S-5 from 13ft to 15ft. |
| | | Light brown medium to fine SAND, trace Silt, trace coarse Sand (moist) [SP-SM] | 13 | S-5B | SS | | 24 | | Drive casing to 14ft. Drill to 15ft. Smooth drilling, brown wash. |
| | | Light brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (moist) [SP-SM] | 14 | S-6 | SS | 8 | 20<br>23<br>22<br>23 | 45 | Take S-6 from 15ft to 17ft.<br>Drill to 17ft. Smooth drilling, brown wash. |
| | | Light brown medium to fine SAND, trace Silt, trace coarse Sand (moist) [SP-SM] | 15 | S-7 | SS | 8 | 27<br>30<br>29<br>29 | 59 | Take S-7 from 17ft to 19ft. |
| | | Light brown to dark brown coarse to fine SAND, some fine Gravel, trace Silt (moist) [SP-SM] | 16 | | SS | | 9<br>15 | | Take S-8 from 19ft to 21ft.<br>-#4 = 66.1%<br>-#200 = 9.7% |
| | | | 17 | | | | | | |
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# LANGAN

Log of Boring **LBD-04** Sheet 2 of 2

| Project | Project No. |
|---|---|
| Project Maximus | 170754501 |
| **Location** | **Elevation and Datum** |
| Nassau Coliseum | Approx. el. 76.7 ± (NAVD 88) |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +56.7 | | 20 | | | | | 10 20 30 40 | |
| | | Light brown medium to fine SAND, trace Silt (moist) [SP-SM] | 21 | S-8 | | 10 | 23<br>26 | 38 | Drill to 21ft. Smooth drilling, brown wash.<br><br>Take S-9 from 21ft to 23ft. |
| | | | 22 | S-9 | SS | 3 | 10<br>15<br>16<br>16 | 31 | |
| | | Light brown medium to fine SAND, trace Silt, trace fine Gravel (moist) [SP-SM] | 23 | | | | | | Take S-10 from 23ft to 25ft.<br>-#4 = 92.0%<br>-#200 = 5.4% |
| | | | 24 | S-10 | SS | 7 | 24<br>16<br>16<br>17 | 32 | |
| | +51.7 | End of Boring at 25ft. | 25 | | | | | | Bottom of boring at 25ft.<br>Extract casing. Backfill with cuttings.<br>Patch to match existing surface. |
| | | | 26 | | | | | | |
| | | | 27 | | | | | | |
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# LANGAN

Log of Boring **LBD-05** Sheet 1 of 2

| | | | |
|---|---|---|---|
| Project: Project Maximus | | Project No.: 170754501 | |
| Location: Nassau Coliseum | | Elevation and Datum: Approx. el. 76.2 ± (NAVD 88) | |
| Drilling Company: Craig Geotechnical Drilling | | Date Started: 8/17/2023 | Date Finished: 8/17/2023 |
| Drilling Equipment: CME75 | | Completion Depth: 20.0 ft | Rock Depth: N/E |
| Size and Type of Bit: 3-7/8in Tricone Roller Bit | | Number of Samples: Disturbed 7 | Undisturbed 0 / Core 0 |
| Casing Diameter (in): 4 Flush Joint Steel | Casing Depth (ft): 20.0 | Water Level (ft.): First ▽ N/A | Completion ▼ N/A / 24 HR. ▼ N/A |
| Casing Hammer: Automatic | Weight (lbs): 140 / Drop (in): 30 | Drilling Foreman: Shane Frick | |
| Sampler: 2in OD Split Spoon | | Field Engineer: Michael Gillooley | |
| Sampler Hammer: Automatic | Weight (lbs): 140 / Drop (in): 30 | | |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +76.2 | | | | | | | 10 20 30 40 | |
| | +75.7 | 3" ASPHALT | 0 | | | | | | 8/17/2023<br>Hand clear to 6ft. |
| | | FILL | 1 | | | | | | |
| | | Brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (moist) [FILL] | 2 | | | | | | Collect Grab Sample G-1 from 0.5ft to 3ft. |
| | | | 3 | | | | | | |
| | | | 4 | | | | | | Collect Grab Sample G-2 from 3ft to 6ft. |
| | | | 5 | | | | | | |
| | +70.2 | Orangish brown coarse to fine SAND, some fine Gravel, trace Silt (dry) [SP-SM] | 6 | S-1A | SS | 16 | 11<br>12 | | Take S-1 from 6ft to 8ft.<br>1A:<br>-#4 = 74.6%<br>-#200 = 10.5% |
| | +69.0 | Grayish brown SILT and CLAY, trace coarse to fine Sand, trace fine Gravel (dry) [CL] | 7 | S-1B | SS | | 8<br>10 | 20 | 1B:<br>LL = 24<br>PL = 18<br>PI = 6 |
| | +68.2 | Orangish brown coarse to fine SAND, some fine Gravel, trace Silt (dry) [SP-SM] | 8 | S-2 | SS | 18 | 14<br>23<br>20<br>18 | 43 | Take S-2 from 8ft to 10ft.<br>-#4 = 81.7%<br>-#200 = 9.2%<br>Drive casing to 10ft. |
| | | Light brown medium to fine SAND, some fine Gravel, trace Silt (moist) [SP-SM] | 9<br>10 | | | | | | Drill to 10ft. Smooth drilling, brown wash. |
| | | | 11 | S-3 | SS | 11 | 12<br>16<br>16<br>17 | 32 | Take S-3 from 10ft to 12ft.<br>Drill to 12ft. Smooth drilling, orangish brown wash. |
| | | Light brown gravelly coarse to medium SAND, trace Silt (moist) [SP] | 12 | | | | | | Take S-4 from 12ft to 14ft.<br>-#4 = 52.6%<br>-#200 = 2.8% |
| | | | 13 | S-4 | SS | 11 | 4<br>9<br>13<br>14 | 22 | |
| | | Light brown coarse to fine SAND, trace Silt (moist) [SP-SM] | 14 | S-5A | SS | 15 | 20<br>19 | | Take S-5 from 14ft to 16ft. |
| | | Tannish brown medium to fine SAND, trace fine Gravel, trace Silt (moist) [SP-SM] | 15 | S-5B | SS | | 23<br>21 | 42 | Drive casing to 15ft.<br>Drill to 16ft. Smooth drilling, brown wash. |
| | | Tannish brown medium to fine SAND, trace fine Gravel, trace Silt (moist) [SP-SM] | 16 | S-6A | SS | 10 | 9<br>17 | | Take S-6 from 16ft to 18ft. |
| | | Tannish brown coarse to fine SAND, trace fine Gravel, trace Silt (moist) [SP-SM] | 17 | S-6B | SS | | 23<br>25 | 40 | |
| | | Light brown coarse to fine SAND, some fine Gravel, some Silt (moist) [SM] | 18 | S-7 | SS | 17 | 24<br>26<br>36<br>29 | 62 | Take S-7 from 18ft to 20ft.<br>-#4 = 79.4%<br>-#200 = 18.6%<br>Drive casing to 20ft.<br>Clean out casing. Soak casing for infiltration test. |
| | +56.2 | | 19<br>20 | | | | | | |

# LANGAN

Log of Boring **LBD-05** Sheet 2 of 2

| Project | Project No. |
|---|---|
| Project Maximus | 170754501 |
| **Location** | **Elevation and Datum** |
| Nassau Coliseum | Approx. el. 76.2 ± (NAVD 88) |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +56.2 | End of Boring at 20ft. | 20 | | | | | | Bottom of boring at 20ft.<br><br>8/18/2023<br>Perform infiltration test. Extract casing. Backfill hole, patch to match existing surface. |
| | | | 21 | | | | | | |
| | | | 22 | | | | | | |
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# LANGAN

Log of Boring **LBD-06** Sheet 1 of 2

| | |
|---|---|
| Project: Project Maximus | Project No.: 170754501 |
| Location: Nassau Coliseum | Elevation and Datum: Approx. el. 76.2 ± (NAVD 88) |
| Drilling Company: Craig Geotechnical Drilling | Date Started: 8/18/2023 — Date Finished: 8/18/2023 |
| Drilling Equipment: CME75 | Completion Depth: 25.0 ft — Rock Depth: N/E |
| Size and Type of Bit: 3-7/8in Tricone Roller Bit | Number of Samples: Disturbed 10 — Undisturbed 0 — Core 0 |
| Casing Diameter (in): 4 Flush Joint Steel — Casing Depth (ft): 14.0 | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ⧩ N/A |
| Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | Drilling Foreman: Shane Frick |
| Sampler: 2in OD Split Spoon | Field Engineer: David Mcveety |
| Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +76.2 | | 0 | | | | | | |
| | +75.7 | 3" ASPHALT | | | | | | | 08/18/2023<br>Hand clear to 5ft. |
| | | FILL | 1 | | | | | | |
| | | Dark brown medium to fine SAND, some fine Gravel, trace Silt (wet) [FILL] | 2 | | | | | | Collect Grab Sample G-1 from 0.5ft to 3ft. |
| | | | 3 | | | | | | Collect Grab Sample G-2 from 3ft to 5ft. |
| | | | 4 | | | | | | |
| | +71.2 | | 5 | | | | | | |
| | | Brown medium to fine SAND, some fine Gravel, trace Silt (moist) [SP] | 6 | S-1 | SS | 16 | 5<br>12<br>17<br>18 | 29 | Take S-1 from 5ft to 7ft.<br>-#4 = 83.8%<br>-#200 = 3.9% |
| | | Brown medium to fine SAND, trace fine Gravel, trace Silt (moist) [SP] | 7 | S-2 | SS | 11 | 21<br>31<br>28<br>24 | 59 | Take S-2 from 7ft to 9ft.<br>-#4 = 94.2%<br>-#200 = 4.9%<br>Drive casing to 9ft. Drill to 9ft. Smooth drilling, brown wash. |
| | | Brown medium to fine SAND, trace Silt, trace fine Gravel (moist) [SP] | 9 | S-3 | SS | 8 | 10<br>10<br>10<br>10 | 20 | Take S-3 from 9ft to 11ft.<br>-#4 = 90.5%<br>-#200 = 4.1% |
| | | Light brown medium SAND, trace Silt, trace fine Gravel (moist) [SP-SM] | 11 | S-4 | SS | 11 | 15<br>11<br>11<br>11 | 22 | Take S-4 from 11ft to 13ft. |
| | | Light brown coarse to fine SAND, some fine Gravel, trace Silt (moist) [SP] | 13 | S-5 | SS | 8 | 13<br>13<br>13<br>11 | 26 | Take S-5 from 13ft to 15ft.<br>-#4 = 75.3%<br>-#200 = 4.2%<br>Drive casing to 14ft.<br>Drill to 15ft. Smooth drilling, brown wash. |
| | | Brown coarse to fine SAND, some fine Gravel, trace Silt (moist) [SP-SM] | 15 | S-6 | SS | 9 | 22<br>19<br>19<br>18 | 38 | Take S-6 from 15ft to 17ft.<br>-#4 = 71.3%<br>-#200 = 6.9% |
| | | Brown medium SAND, trace Silt, some fine Gravel, trace coarse Sand (moist) [SP-SM] | 17 | S-7 | SS | 8 | 13<br>18<br>23<br>20 | 41 | Take S-7 from 17ft to 19ft. |
| | | Reddish brown to light brown gravelly coarse to fine SAND, trace Silt (wet) [SP-SM] | 19 | | SS | | 27<br>38 | | Take S-8 from 19ft to 21ft.<br>-#4 = 55.7%<br>-#200 = 5.8% |
| | | | 20 | | | | | | |

# LANGAN

Log of Boring **LBD-06** Sheet 2 of 2

| Project | Project No. |
|---|---|
| Project Maximus | 170754501 |
| **Location** | **Elevation and Datum** |
| Nassau Coliseum | Approx. el. 76.2 ± (NAVD 88) |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +56.2 | | 20 | | | | | | |
| | | Light brown coarse SAND, trace Silt, some fine Gravel (wet) [SP-SM] | 21 | S-8 | | 8 | 33<br>30 | 71 | Drill to 21ft. Smooth drilling, brown wash.<br>Take S-9 from 21ft to 23ft. |
| | | | 22 | S-9 | SS | 3 | 3<br>5<br>13<br>13 | 18 | |
| | | Light brown coarse to fine SAND, some fine Gravel, trace Silt (moist) [SP-SM] | 23 | | | | | | Take S-10 from 23ft to 25ft.<br>-#4 = 75.1%<br>-#200 = 8.4% |
| | | | 24 | S-10 | SS | 10 | 32<br>22<br>30<br>18 | 52 | |
| | +51.2 | End of Boring at 25ft. | 25 | | | | | | Bottom of boring at 25ft.<br>Extract casing. Backfill hole with cuttings.<br>Patch to match existing surface. |
| | | | 26 | | | | | | |
| | | | 27 | | | | | | |
| | | | 28 | | | | | | |
| | | | 29 | | | | | | |
| | | | 30 | | | | | | |
| | | | 31 | | | | | | |
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| | | | 44 | | | | | | |
| | | | 45 | | | | | | |

# LANGAN

Log of Boring **LBD-07** Sheet 1 of 2

| | |
|---|---|
| Project: Project Maximus | Project No.: 170754501 |
| Location: Nassau Coliseum | Elevation and Datum: Approx. el. 77.2 ± (NAVD 88) |
| Drilling Company: Craig Geotechnical Drilling | Date Started: 8/17/2023 — Date Finished: 8/17/2023 |
| Drilling Equipment: CME75 | Completion Depth: 20.0 ft — Rock Depth: N/E |
| Size and Type of Bit: 3-7/8in Tricone Roller Bit | Number of Samples: Disturbed 7 — Undisturbed 0 — Core 0 |
| Casing Diameter (in): 4 Flush Joint Steel — Casing Depth (ft): 20.0 | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ▼ N/A |
| Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | Drilling Foreman: Shane Frick |
| Sampler: 2in OD Split Spoon | Field Engineer: Michael Gillooley |
| Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +77.2 | | | | | | | | |
| | +76.7 | 3" ASPHALT | 0 | | | | | | 8/17/2023<br>Hand clear to 6ft. |
| | | FILL | 1 | | | | | | |
| | | Dark brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (moist) [FILL] | 2 | | | | | | Collect Grab Sample G-1 from 0.5ft to 3ft. |
| | | | 3 | | | | | | |
| | | | 4 | | | | | | Collect Grab Sample G-2 from 3ft to 6ft.<br>Creosote odor detected. |
| | | | 5 | | | | | | |
| | +71.0 | Dark brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (moist) [FILL] | 6 | S-1A | SS | 6 | 40<br>8 | | Take S-1 from 6ft to 8ft. Creosote odor detected. |
| | | Tannish brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (moist) [SP-SM] | 7 | S-1B | SS | | 6<br>6 | 14 | |
| | | Tannish brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (moist) [SP-SM] | 8 | S-2 | SS | 4 | 4<br>6<br>8<br>16 | 14 | Take S-2 from 8ft to 10ft.<br>Drive casing to 10ft.<br>Drill to 10ft. Smooth drilling, brown wash. |
| | | Tannish brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (moist) [SP] | 10 | S-3 | SS | 7 | 10<br>9<br>11<br>10 | 20 | Take S-3 from 10ft to 12ft.<br>-#4 = 93.3%<br>-#200 = 4.1%<br>Drill to 12ft. Smooth drilling, brown wash. |
| | | Tannish brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (moist) [SP-SM] | 12 | S-4 | SS | 12 | 11<br>12<br>11<br>12 | 23 | Take S-4 from 12ft to 14ft. |
| | | Tannish brown gravelly medium to fine SAND, trace Silt, trace coarse Sand (wet) [SP-SM] | 14 | S-5A | SS | | 7<br>7 | | Take S-5 from 14ft to 16ft.<br>-#4 = 89.0%<br>-#200 = 4.0% |
| | | Tannish brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (wet) [SP] | 15 | S-5B | SS | | 13<br>13 | 20 | Drive casing to 15ft.<br>Drill to 16ft. Smooth drilling, brown wash. |
| | | Tannish brown medium to fine SAND, trace Silt, trace coarse Sand, trace fine Gravel (wet) [SP-SM] | 16 | S-6 | SS | 11 | 6<br>7<br>11<br>12 | 18 | Take S-6 from 16ft to 18ft. |
| | | Tannish brown gravelly coarse to fine SAND, trace Silt (wet) [SP-SM] | 18 | S-7A | SS | | 14<br>13 | | Take S-7 from 18ft to 20ft.<br>7A:<br>-#4 = 64.2%<br>-#200 = 7.5% |
| | | Light brown medium to fine SAND, trace fine Gravel, trace Silt (moist) [SP] | 19 | S-7B | SS | 17 | 13<br>12 | 26 | 7B:<br>-#4 = 96.6% |
| | +57.2 | | 20 | | | | | | |

# LANGAN

Log of Boring **LBD-07** Sheet 2 of 2

| Project | Project No. |
|---|---|
| Project Maximus | 170754501 |
| **Location** | **Elevation and Datum** |
| Nassau Coliseum | Approx. el. 77.2 ± (NAVD 88) |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +57.2 | End of Boring at 20ft. | 20 | | | | | | -#200 = 4.1%<br>Drive casing to 20ft.<br>Clean out casing. Soak casing for infiltration test.<br>Bottom of boring at 20ft.<br><br>8/18/2023<br>Perform infiltration test. Extract casing. Backfill hole, patch to match existing surface. |
| | | | 21 | | | | | | |
| | | | 22 | | | | | | |
| | | | 23 | | | | | | |
| | | | 24 | | | | | | |
| | | | 25 | | | | | | |
| | | | 26 | | | | | | |
| | | | 27 | | | | | | |
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| | | | 32 | | | | | | |
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| | | | 44 | | | | | | |
| | | | 45 | | | | | | |

# LANGAN

Log of Boring **LBD-08** Sheet 1 of 2

| | |
|---|---|
| Project: Project Maximus | Project No.: 170754501 |
| Location: | Elevation and Datum: Approx. el. 77.5 ± (NAVD 88) |
| Drilling Company: Craig Geotechnical Drilling | Date Started: 9/6/2023 — Date Finished: 9/6/2023 |
| Drilling Equipment: CME75 | Completion Depth: 20.0 ft — Rock Depth: N/E |
| Size and Type of Bit: 3-7/8in Drag Bit | Number of Samples: Disturbed 7 — Undisturbed 0 — Core 0 |
| Casing Diameter (in): 4 Flush Joint Steel — Casing Depth (ft): 20.0 | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ⧩ N/A |
| Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | Drilling Foreman: Shane Frick |
| Sampler: 2in OD Split Spoon | Field Engineer: Thomas Keane |
| Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30 | |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +77.5 | | | | | | | 10 20 30 40 | |
| | +77.2 | 3" ASPHALT<br>FILL | 0 | | | | | | 9/6/2023<br>Hand clear to 6ft. |
| | | Light brown medium to fine SAND, trace Silt, trace fine Gravel (moist) [FILL] | 1 | | | | | | Collect Grab Sample G-1 from 0.5ft to 3ft. |
| | | | 2 | | | | | | |
| | | | 3 | | | | | | |
| | | | 4 | | | | | | Collect Grab Sample G-2 from 3ft to 6ft. |
| | | | 5 | | | | | | |
| | +71.5 | Gray to tan GRAVEL, some coarse Sand, trace Silt (moist) [GP] | 6 | | | | | | Take S-1 from 6ft to 8ft. |
| | | | 7 | S-1 | SS | 22 | 1<br>2<br>1<br>1 | 3 | |
| | | Light brown coarse to medium SAND, trace Silt, trace fine Gravel (moist) [SP-SM] | 8 | | | | | | Take S-2 from 8ft to 10ft. |
| | | | 9 | S-2 | SS | 16 | 19<br>16<br>15<br>15 | 31 | Drive casing to 10ft.<br>Drill to 10ft. Smooth drilling, brown wash. |
| | | Light brown medium to fine SAND, trace Silt, trace fine Gravel (moist) [SP-SM] | 10 | | | | | | Take S-3 from 10ft to 12ft. |
| | | | 11 | S-3 | SS | 12 | 6<br>6<br>8<br>9 | 14 | |
| | | Light brown medium to fine SAND, trace Silt (moist) [SP-SM] | 12 | | | | | | Take S-4 from 12ft to 14ft. |
| | | | 13 | S-4 | SS | 14 | 11<br>15<br>16<br>14 | 31 | |
| | | Light brown medium to fine SAND, trace Silt, trace fine Gravel (moist) [SP-SM] | 14 | | | | | | Take S-5 from 14ft to 16ft. |
| | | | 15 | S-5 | SS | 9 | 5<br>8<br>12<br>15 | 20 | Drive casing to 15ft.<br>Drill to 15ft. Smooth drilling, brown wash. |
| | | Light brown medium to fine SAND, trace Silt, trace fine Gravel (moist) [SP-SM] | 16 | | | | | | Take S-6 from 16ft to 18ft. |
| | | | 17 | S-6 | SS | 15 | 10<br>18<br>15<br>14 | 33 | |
| | | Light brown gravelly fine to medium SAND, trace Silt (moist) [SP-SM] | 18 | | | | | | Take S-7 from 18ft to 20ft. |
| | | | 19 | S-7 | SS | 14 | 11<br>15<br>22<br>18 | 37 | Drive casing to 20ft.<br>Clean out casing. Soak casing for infiltration test. |
| | +57.5 | | 20 | | | | | | |

# LANGAN

Log of Boring **LBD-08** Sheet 2 of 2

| Project | Project No. |
|---|---|
| Project Maximus | 170754501 |
| **Location** | **Elevation and Datum** |
| | Approx. el. 77.5 ± (NAVD 88) |

| Material Symbol | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | N-Value (Blows/ft) 10 20 30 40 | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|
| | +57.5 | End of Boring at 20ft. | 20 | | | | | | Bottom of boring at 20ft.<br><br>9/7/2023<br>Perform infiltration test. Extract casing. Backfill hole, patch to match existing surface. |

# APPENDIX B

(LANGAN INFILTRATION TEST DATA)

**LBD-02**

| ***Test 1*** | |
|---|---|
| *Start Time* | *9:28 AM* |
| Time (min) | Drop (in) |
| 5 | 2.4 |
| 10 | 4.8 |
| 15 | 7.2 |
| 20 | 8.4 |
| 30 | 12 |
| 40 | 14.4 |
| 50 | 16.8 |
| 60 | 19.2 |
| Overall (in/hr) | 19.2 |

| ***Test 2*** | |
|---|---|
| *Start Time* | *10:56 AM* |
| Time (min) | Drop (in) |
| 5 | 2.4 |
| 10 | 3.6 |
| 15 | 4.8 |
| 20 | 6 |
| 30 | 9.6 |
| 40 | 14.4 |
| 50 | 19.2 |
| 60 | 19.2 |
| Overall (in/hr) | 19.2 |

**LBD-02, Continued**

| ***Test 3*** | |
|---|---|
| *Start Time* | *12:00 PM* |
| Time (min) | Drop (in) |
| 5 | 4.8 |
| 10 | 8.4 |
| 15 | 12 |
| 20 | 18 |
| 30 | 24 (bottom of casing) |
| 40 | - |
| 50 | - |
| 60 | - |
| Overall (in/hr) | 48 |

| ***Test 4*** | |
|---|---|
| *Start Time* | *12:40 PM* |
| Time (min) | Drop (in) |
| 5 | 1.2 |
| 10 | 2.4 |
| 15 | 7.2 |
| 20 | 9.6 |
| 30 | 15.6 |
| 40 | 16.8 |
| 50 | 24 (bottom of casing) |
| 60 | - |
| Overall (in/hr) | 29 |

**LBD-05**

| ***Test 1*** | |
|---|---|
| *Start Time* | *10:19 AM* |
| Time (min) | Drop (in) |
| 5 | 0 |
| 10 | 0 |
| 15 | 0 |
| 20 | 1.2 |
| 30 | 1.2 |
| 40 | 1.2 |
| 50 | 1.2 |
| 60 | 1.2 |
| Overall (in/hr) | 1.2 |

| ***Test 2*** | |
|---|---|
| *Start Time* | *11:19 AM* |
| Time (min) | Drop (in) |
| 5 | 0 |
| 10 | 0 |
| 15 | 1.2 |
| 20 | 1.2 |
| 30 | 1.8 |
| 40 | 1.8 |
| 50 | 3.6 |
| 60 | 3.6 |
| Overall (in/hr) | 3.6 |

**LBD-05, Continued**

| ***Test 3*** | |
|---|---|
| *Start Time* | *12:21 PM* |
| Time (min) | Drop (in) |
| 5 | 0 |
| 10 | 0 |
| 15 | 0 |
| 20 | 1.2 |
| 30 | 1.2 |
| 40 | 1.2 |
| 50 | 1.8 |
| 60 | 2.4 |
| Overall (in/hr) | 2.4 |

| ***Test 4*** | |
|---|---|
| *Start Time* | *1:15 PM* |
| Time (min) | Drop (in) |
| 5 | 0 |
| 10 | 0 |
| 15 | 1.2 |
| 20 | 3.6 |
| 30 | 3.6 |
| 40 | 3.6 |
| 50 | 3.6 |
| 60 | 3.6 |
| Overall (in/hr) | 3.6 |

**LBD-07**

| ***Test 1*** | |
|---|---|
| *Start Time* | *2:00 PM* |
| Time (min) | Drop (in) |
| 0.82 | 6* |
| 10 | - |
| 15 | - |
| 20 | - |
| 30 | - |
| 40 | - |
| 50 | - |
| 60 | - |
| Overall (in/hr) | - |

* Water in casing draining too fast to measure in regular intervals, test considered invalid

| ***Test 2*** | |
|---|---|
| *Start Time* | *2:05 PM* |
| Time (min) | Drop (in) |
| 0.77 | 6* |
| 10 | - |
| 15 | - |
| 20 | - |
| 30 | - |
| 40 | - |
| 50 | - |
| 60 | - |
| Overall (in/hr) | - |

* Water in casing draining too fast to measure in regular intervals, test considered invalid

**LBD-07, Continued**

| ***Test 3*** | |
|---|---|
| *Start Time* | *2:10 PM* |
| Time (min) | Drop (in) |
| 0.77 | 6* |
| 10 | - |
| 15 | - |
| 20 | - |
| 30 | - |
| 40 | - |
| 50 | - |
| 60 | - |
| Overall (in/hr) | - |

* Water in casing draining too fast to measure in regular intervals, test considered invalid

| ***Test 4*** | |
|---|---|
| *Start Time* | *2:15 PM* |
| Time (min) | Drop (in) |
| 0.80 | 6* |
| 10 | - |
| 15 | - |
| 20 | - |
| 30 | - |
| 40 | - |
| 50 | - |
| 60 | - |
| Overall (in/hr) | - |

* Water in casing draining too fast to measure in regular intervals, test considered invalid

**LBD-08**

| ***Test 1*** | |
|---|---|
| *Start Time* | *11:30 AM* |
| Time (min) | Drop (in) |
| 5 | 2.25 |
| 10 | 3.75 |
| 15 | 5.25 |
| 20 | 6.75 |
| 30 | 9.5 |
| 40 | 12.5 |
| 50 | 15.25 |
| 60 | 17.5 |
| Overall (in/hr) | 17.5 |

| ***Test 2*** | |
|---|---|
| *Start Time* | *12:30 PM* |
| Time (min) | Drop (in) |
| 5 | 2 |
| 10 | 3.25 |
| 15 | 4 |
| 20 | 4.75 |
| 30 | 7.5 |
| 40 | 10.25 |
| 50 | 12.75 |
| 60 | 15.125 |
| Overall (in/hr) | 15.1 |

**LBD-08, Continued**

| ***Test 3*** | |
|---|---|
| *Start Time* | *1:30 PM* |
| Time (min) | Drop (in) |
| 5 | 1.875 |
| 10 | 2.5 |
| 15 | 4 |
| 20 | 4.75 |
| 30 | 7 |
| 40 | 9.5 |
| 50 | 11.75 |
| 60 | 13.75 |
| Overall (in/hr) | 13.75 |

| ***Test 4*** | |
|---|---|
| *Start Time* | *2:30 PM* |
| Time (min) | Drop (in) |
| 5 | 2 |
| 10 | 2.5 |
| 15 | 3.5 |
| 20 | 4.5 |
| 30 | 6.75 |
| 40 | 9.125 |
| 50 | 11 |
| 60 | 13.125 |
| Overall (in/hr) | 13.1 |

Estimated Permeability Rate from Hazen's Formula

$$k = 100\ (D_{10})^2$$ Hazen's Formula

where: $k$ is the estimated permeability rate

$D_{10}$ is the effective diameter in centimeters

| Boring ID | Sample # | Sample mid-pt. Depth (feet) | $D_{10}$ (cm) | k (in/hr) | Percent Passing No. 200 Sieve (%) | USCS Class |
|---|---|---|---|---|---|---|
| LBD-01 | S-1 | 5 | 0.01833 | 48 | 6.8 | SP-SM |
| LBD-01 | S-6 | 16 | 0.02498 | 88 | 4.2 | SP |
| LBD-01 | S-8 | 20 | 0.01924 | 52 | 5.3 | SP-SM |
| LBD-01 | S-9 | 22 | 0.0099 | 14 | 8.6 | SP-SM |
| LBD-02 | S-3 | 10 | 0.02924 | 121 | 2.6 | SP |
| LBD-02 | S-5 | 14 | 0.03197 | 145 | 2.9 | SP |
| LBD-02 | S-6 | 17 | 0.03259 | 151 | 3.1 | SP |
| LBD-03 | S-1 | 6 | 0.02553 | 92 | 5.7 | SP-SM |
| LBD-03 | S-3A | 10 | NA | NA | 41.6 | SM |
| LBD-03 | S-4 | 12 | 0.01713 | 42 | 5.1 | SP-SM |
| LBD-03 | S-5 | 14 | 0.01633 | 38 | 6.4 | SP-SM |
| LBD-03 | S-7 | 18 | 0.01002 | 14 | 8.9 | SP-SM |
| LBD-03 | S-9 | 22 | 0.02003 | 57 | 6.2 | SP-SM |
| LBD-03 | S-10 | 24 | 0.01838 | 48 | 6.1 | SP-SM |
| LBD-04 | S-4 | 12 | 0.02057 | 60 | 4.9 | SP |
| LBD-04 | S-8B | 20 | 0.00791 | 9 | 9.7 | SP-SM |
| LBD-04 | S-10 | 24 | 0.01834 | 48 | 5.4 | SP-SM |
| LBD-05 | S-1A | 7 | NA | NA | 10.5 | SP-SM |
| LBD-05 | S-2 | 9 | 0.00978 | 14 | 9.2 | SP-SM |
| LBD-05 | S-4 | 13 | 0.03534 | 177 | 2.8 | SP |
| LBD-05 | S-7 | 19 | NA | NA | 18.6 | SM |
| LBD-06 | S-1 | 6 | 0.02232 | 71 | 3.9 | SP |
| LBD-06 | S-2 | 8 | 0.02048 | 59 | 4.9 | SP |
| LBD-06 | S-3 | 10 | 0.0222 | 70 | 4.1 | SP |
| LBD-06 | S-5 | 14 | 0.02216 | 70 | 4.2 | SP |
| LBD-06 | S-6 | 16 | 0.01466 | 30 | 6.9 | SP-SM |
| LBD-06 | S-8 | 20 | 0.01937 | 53 | 5.8 | SP-SM |
| LBD-06 | S-10 | 24 | 0.01057 | 16 | 8.4 | SP-SM |
| LBD-07 | S-3 | 11 | 0.02249 | 72 | 4.1 | SP |
| LBD-07 | S-5B | 15 | 0.024 | 82 | 4 | SP |
| LBD-07 | S-7A | 19 | 0.01307 | 24 | 7.5 | SP-SM |
| LBD-07 | S-7B | 19 | 0.01885 | 50 | 4.1 | SP |

# APPENDIX C

(LANGAN LABORATORY TESTING RESULTS)

RSA GEOLAB

1017 Greeley Ave N
Union, NJ 07083
908-964-0786
www.RSAGeolab.com

**Letter of Transmittal**

Date: 9-5-23 Job No.: 869 Lab Log: 23-2893

Attention: Julia Langewis
Langan Engineering & Environmental Services
360 West 31st Street, 8th Floor
New York, New York 10001

CC:

Re: Project Maximus, Hempstead, NY
Langan# not provided

Sample(s) ID: **LBD-01 S-1 thru LBD-07 S-7B** (36 samples)

Dear Ms. Langewis,

Please find attached results for the samples referenced above. The following lab testing was performed:

- ASTM D422 Washed Sieve Analysis (32 tests)
- ASTM D4318 Atterberg Limits (4 tests)

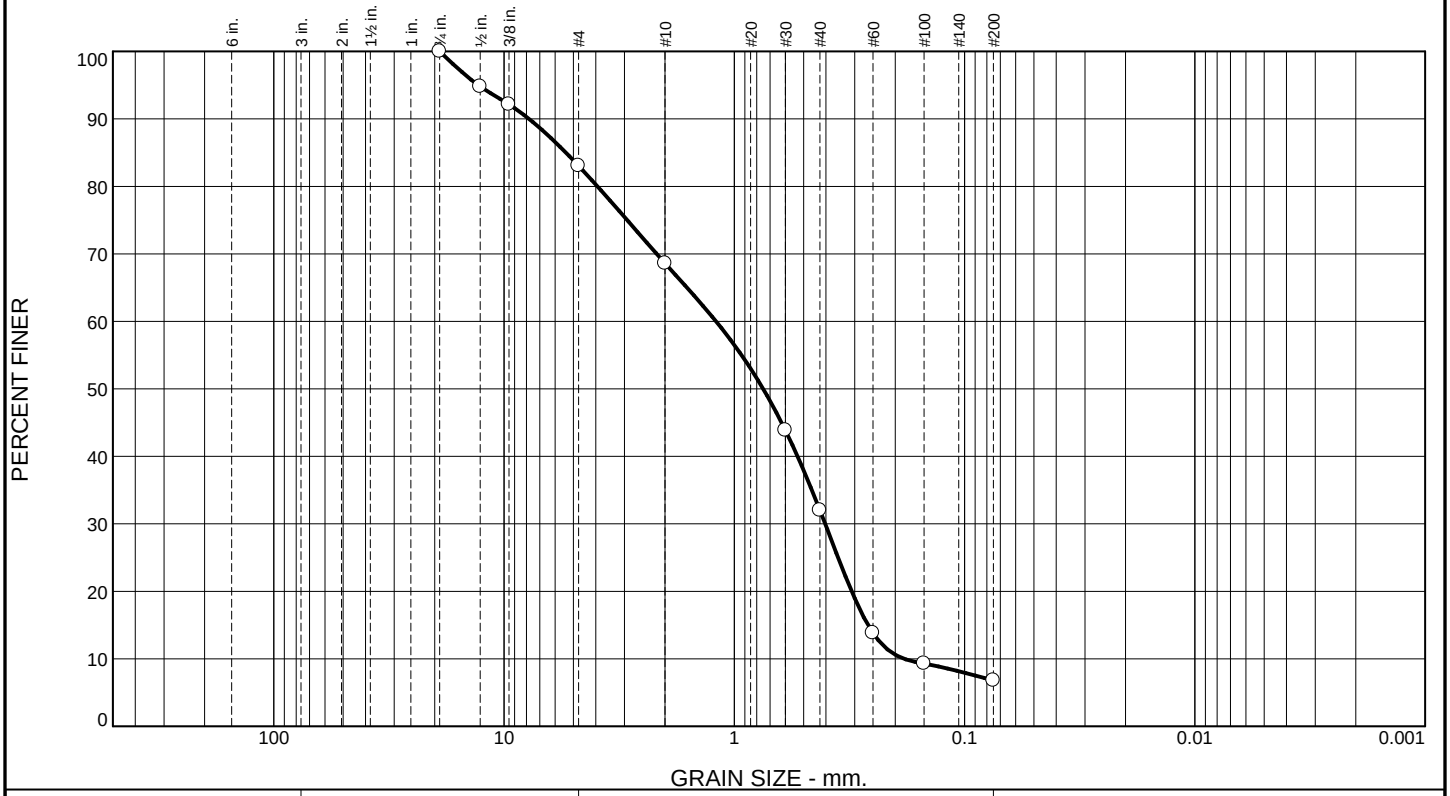
Regards,
RSA Geolab, LLC

Remarks: If you have any questions, please call 908-964-0786.

Signed: _____

Dr. Raza S. Ahmed
President RSA Geolab, LLC

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 16.9 | 14.5 | 36.6 | 25.2 | 6.8 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 94.8 | | |
| .375 | 92.2 | | |
| #4 | 83.1 | | |
| #10 | 68.6 | | |
| #30 | 43.8 | | |
| #40 | 32.0 | | |
| #60 | 13.8 | | |
| #100 | 9.3 | | |
| #200 | 6.8 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 7.7924 $D_{85}$= 5.3916 $D_{60}$= 1.2007
$D_{50}$= 0.7497 $D_{30}$= 0.4033 $D_{15}$= 0.2626
$D_{10}$= 0.1833 $C_u$= 6.55 $C_c$= 0.74

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-01 S-1 4-6

**Date:** 9-5-23

**RSA Geolab**

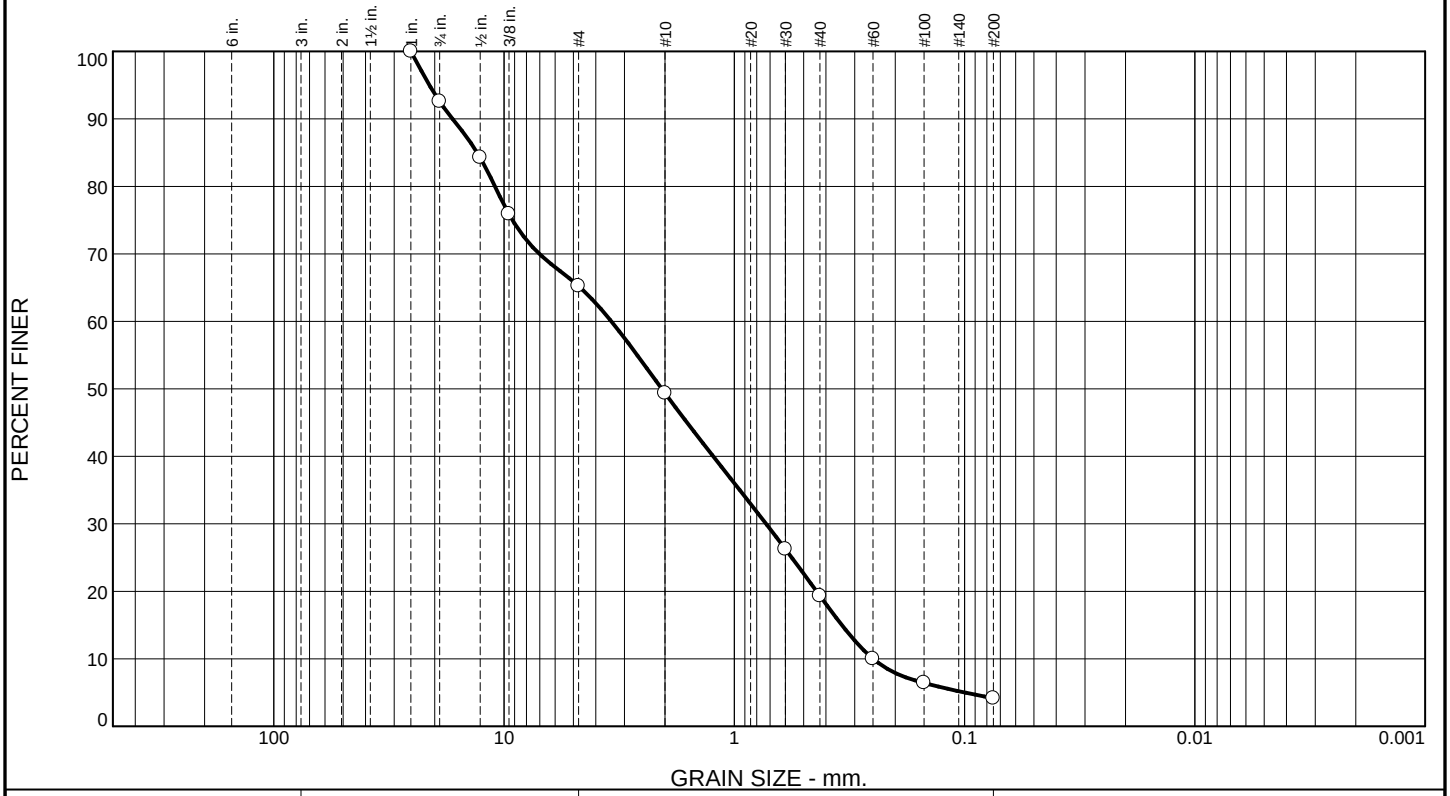
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 7.4 | 27.4 | 15.8 | 30.1 | 15.1 | 4.2 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1 | 100.0 | | |
| .75 | 92.6 | | |
| .5 | 84.3 | | |
| .375 | 75.9 | | |
| #4 | 65.2 | | |
| #10 | 49.4 | | |
| #30 | 26.2 | | |
| #40 | 19.3 | | |
| #60 | 10.0 | | |
| #100 | 6.4 | | |
| #200 | 4.2 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 16.7401 $D_{85}$= 13.0777 $D_{60}$= 3.4212
$D_{50}$= 2.0652 $D_{30}$= 0.7280 $D_{15}$= 0.3413
$D_{10}$= 0.2498 $C_u$= 13.70 $C_c$= 0.62

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-01 S-6 15-17

**Date:** 9-5-23

**RSA Geolab**

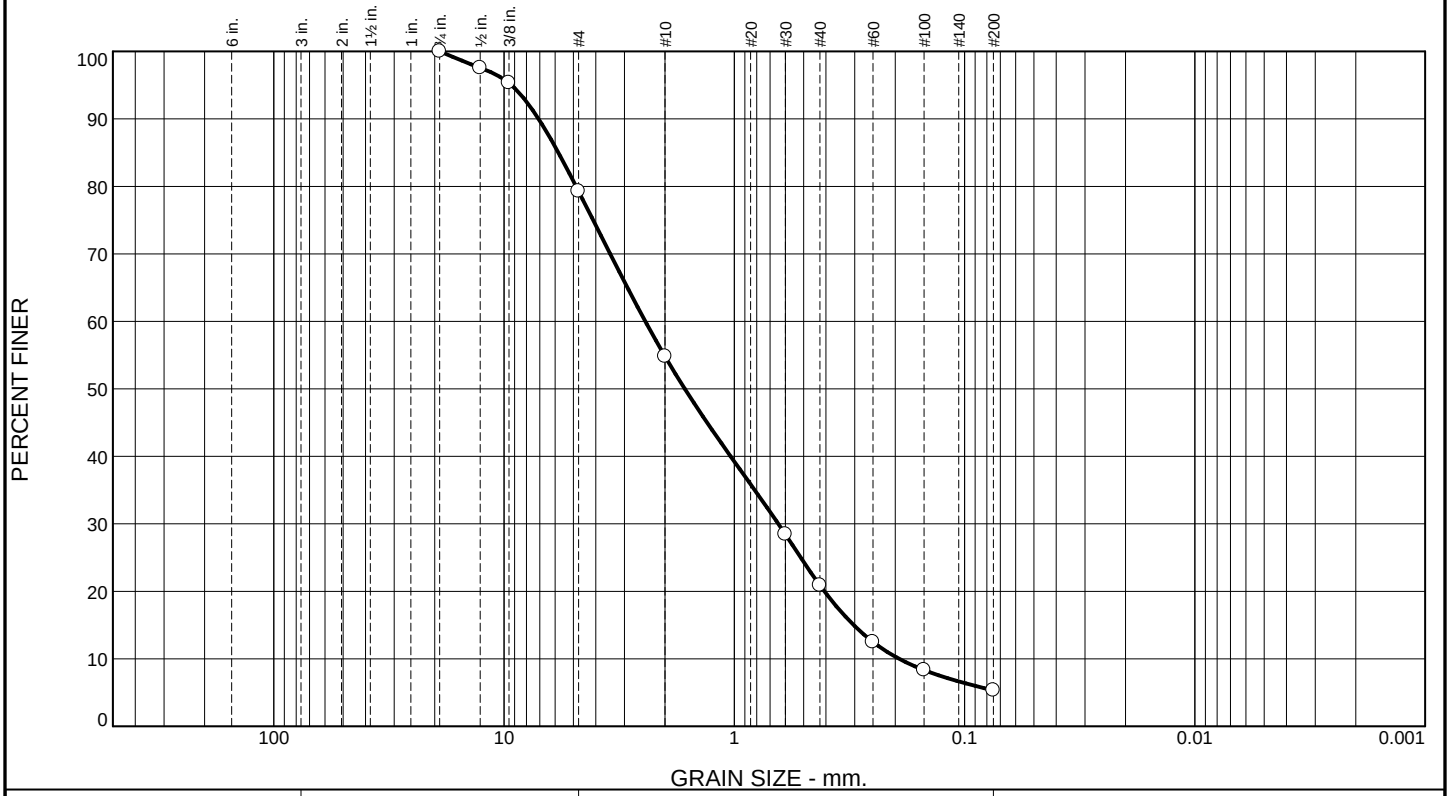
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 20.7 | 24.5 | 33.9 | 15.6 | 5.3 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 97.6 | | |
| .375 | 95.3 | | |
| #4 | 79.3 | | |
| #10 | 54.8 | | |
| #30 | 28.4 | | |
| #40 | 20.9 | | |
| #60 | 12.5 | | |
| #100 | 8.3 | | |
| #200 | 5.3 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 7.0811 $D_{85}$= 5.8109 $D_{60}$= 2.4358
$D_{50}$= 1.6413 $D_{30}$= 0.6445 $D_{15}$= 0.3031
$D_{10}$= 0.1924 $C_u$= 12.66 $C_c$= 0.89

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-01 S-8 19-21

**Date:** 9-5-23

**RSA Geolab**

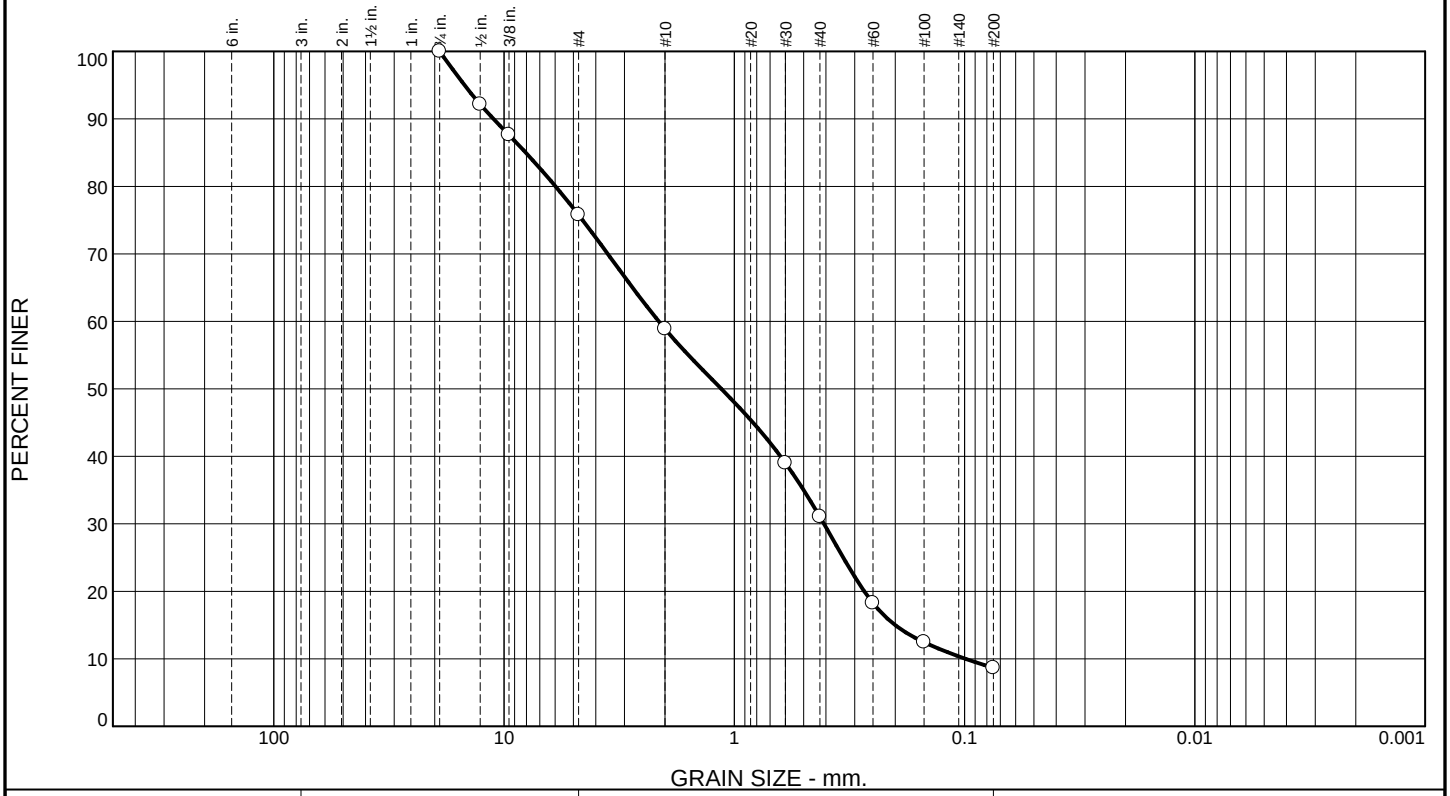
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 24.2 | 16.9 | 27.9 | 22.4 | 8.6 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 92.2 | | |
| .375 | 87.6 | | |
| #4 | 75.8 | | |
| #10 | 58.9 | | |
| #30 | 39.0 | | |
| #40 | 31.0 | | |
| #60 | 18.3 | | |
| #100 | 12.5 | | |
| #200 | 8.6 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 11.1243 $D_{85}$= 8.0560 $D_{60}$= 2.1298
$D_{50}$= 1.1391 $D_{30}$= 0.4081 $D_{15}$= 0.2002
$D_{10}$= 0.0990 $C_u$= 21.51 $C_c$= 0.79

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-01 S-9 21-23

**Date:** 9-5-23

**RSA Geolab**

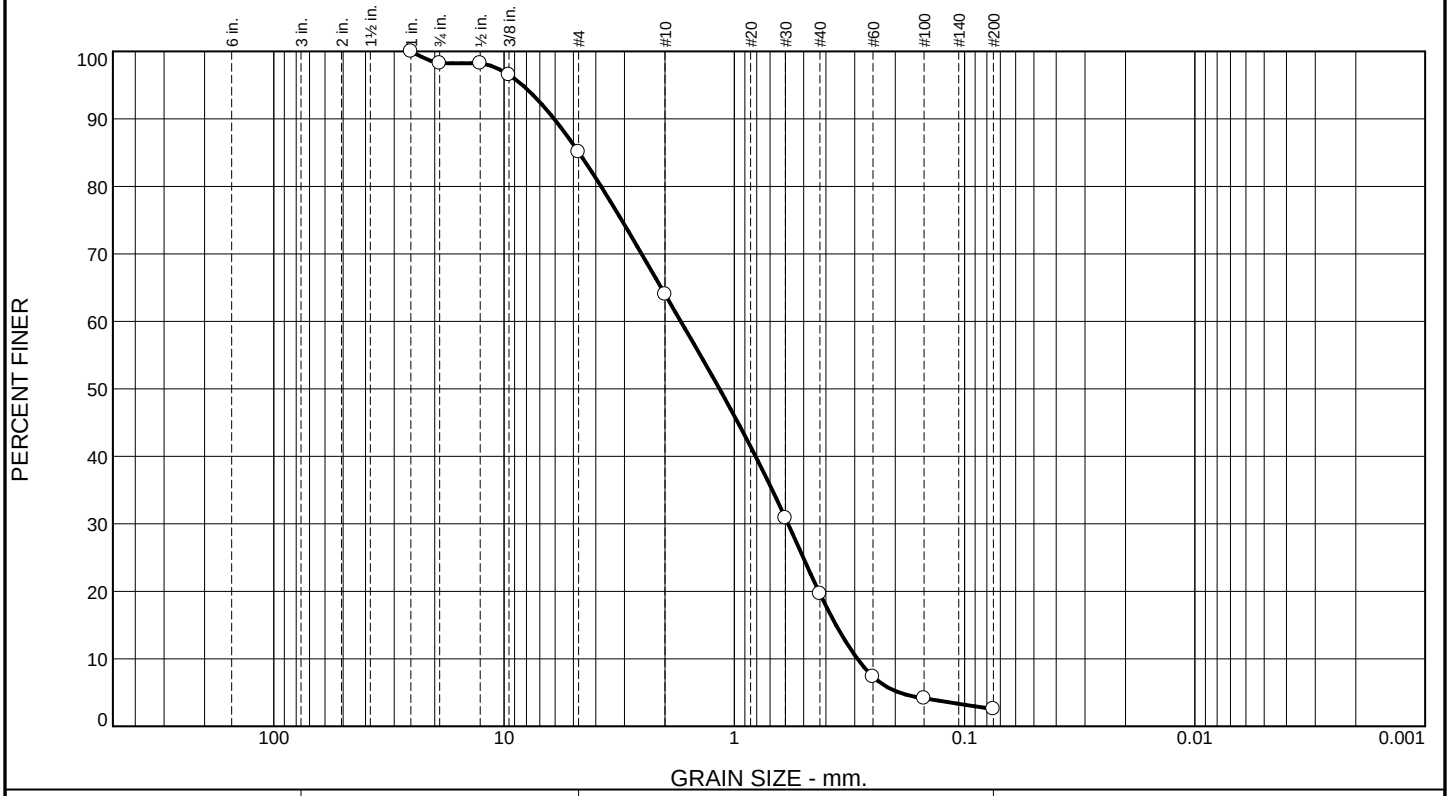
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 1.8 | 13.1 | 21.1 | 44.3 | 17.1 | 2.6 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1 | 100.0 | | |
| .75 | 98.2 | | |
| .5 | 98.2 | | |
| .375 | 96.5 | | |
| #4 | 85.1 | | |
| #10 | 64.0 | | |
| #30 | 30.9 | | |
| #40 | 19.7 | | |
| #60 | 7.4 | | |
| #100 | 4.2 | | |
| #200 | 2.6 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 6.0598 $D_{85}$= 4.7290 $D_{60}$= 1.7082
$D_{50}$= 1.1604 $D_{30}$= 0.5842 $D_{15}$= 0.3617
$D_{10}$= 0.2924 $C_u$= 5.84 $C_c$= 0.68

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-02 S-3 9-11

**Date:** 9-5-23

**RSA Geolab**

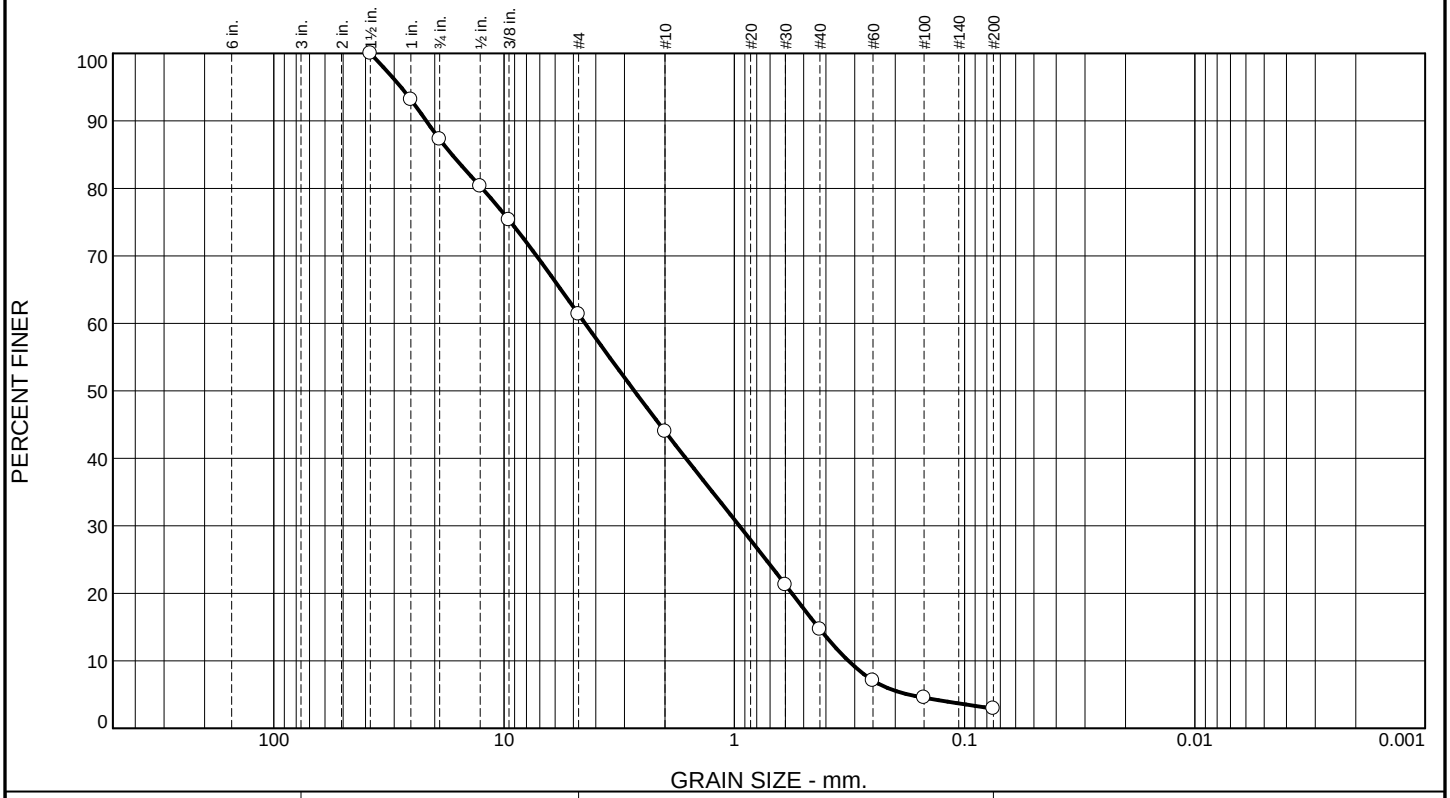
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 12.7 | 25.9 | 17.4 | 29.3 | 11.8 | 2.9 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1.5 | 100.0 | | |
| 1 | 93.1 | | |
| .75 | 87.3 | | |
| .5 | 80.3 | | |
| .375 | 75.3 | | |
| #4 | 61.4 | | |
| #10 | 44.0 | | |
| #30 | 21.3 | | |
| #40 | 14.7 | | |
| #60 | 7.1 | | |
| #100 | 4.5 | | |
| #200 | 2.9 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 21.7761 $D_{85}$= 16.8364 $D_{60}$= 4.4487
$D_{50}$= 2.7192 $D_{30}$= 0.9507 $D_{15}$= 0.4328
$D_{10}$= 0.3197 $C_u$= 13.91 $C_c$= 0.64

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-02 S-5 13-15

**Date:** 9-5-23

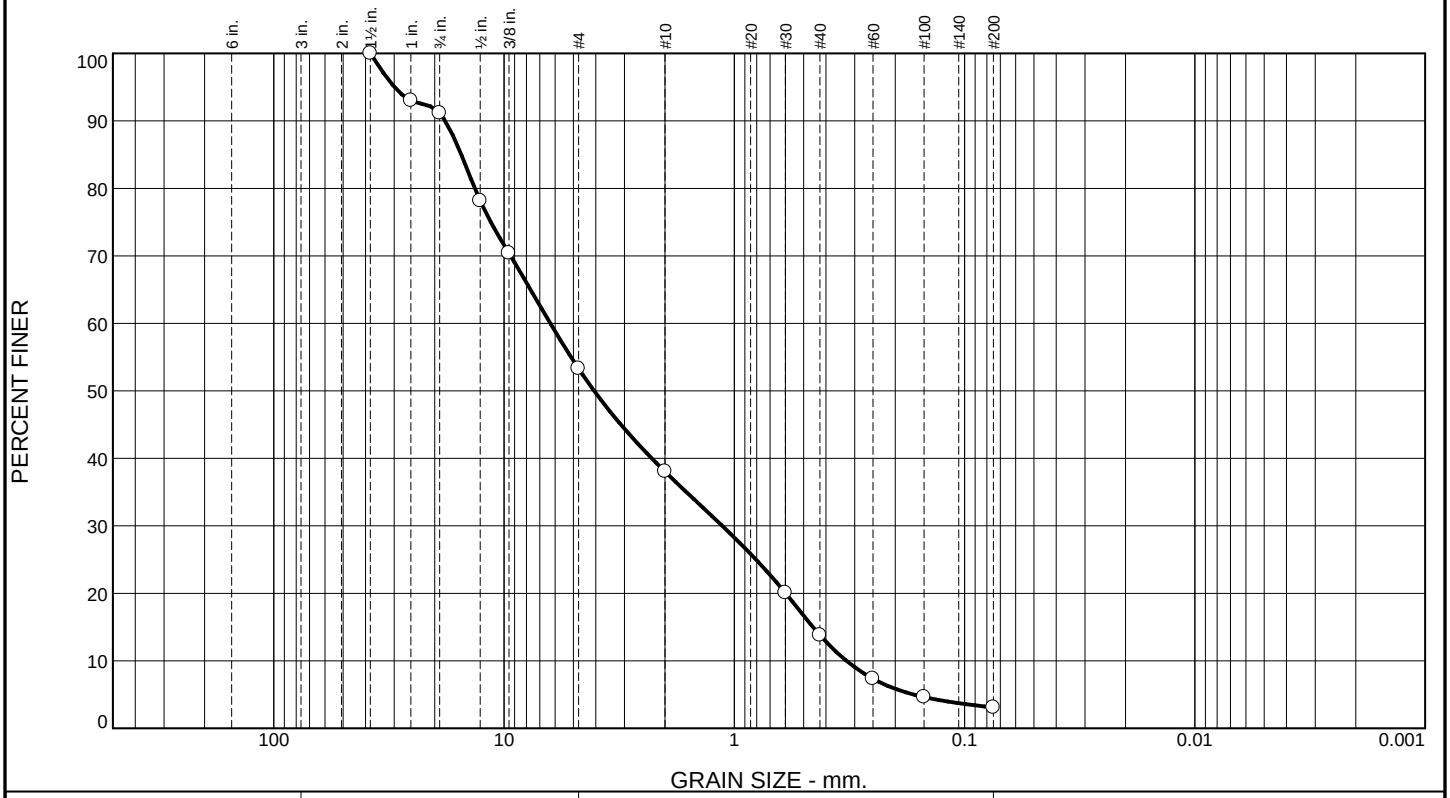
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 8.8 | 37.9 | 15.3 | 24.2 | 10.7 | 3.1 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1.5 | 100.0 | | |
| 1 | 93.0 | | |
| .75 | 91.2 | | |
| .5 | 78.2 | | |
| .375 | 70.4 | | |
| #4 | 53.3 | | |
| #10 | 38.0 | | |
| #30 | 20.1 | | |
| #40 | 13.8 | | |
| #60 | 7.3 | | |
| #100 | 4.6 | | |
| #200 | 3.1 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 18.0104 $D_{85}$= 15.3448 $D_{60}$= 6.2967
$D_{50}$= 4.0632 $D_{30}$= 1.1286 $D_{15}$= 0.4557
$D_{10}$= 0.3259 $C_u$= 19.32 $C_c$= 0.62

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-02 S-6 16-18

**Date:** 9-5-23

**RSA Geolab**

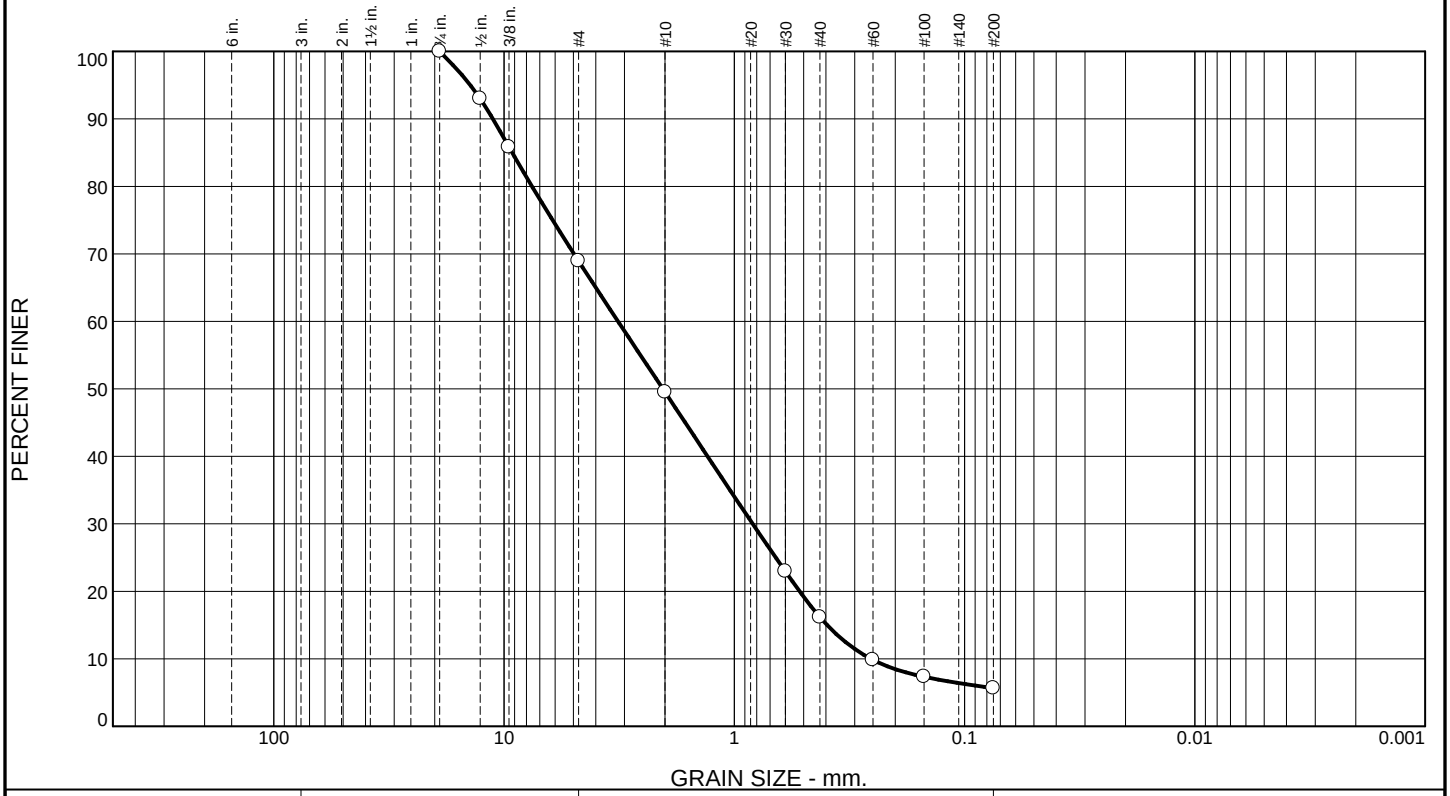
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 31.1 | 19.4 | 33.3 | 10.5 | 5.7 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 93.0 | | |
| .375 | 85.8 | | |
| #4 | 68.9 | | |
| #10 | 49.5 | | |
| #30 | 22.9 | | |
| #40 | 16.2 | | |
| #60 | 9.8 | | |
| #100 | 7.3 | | |
| #200 | 5.7 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 11.1894 $D_{85}$= 9.2228 $D_{60}$= 3.2004
$D_{50}$= 2.0437 $D_{30}$= 0.8325 $D_{15}$= 0.3955
$D_{10}$= 0.2553 $C_u$= 12.54 $C_c$= 0.85

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-03 S-1 5-7

**Date:** 9-5-23

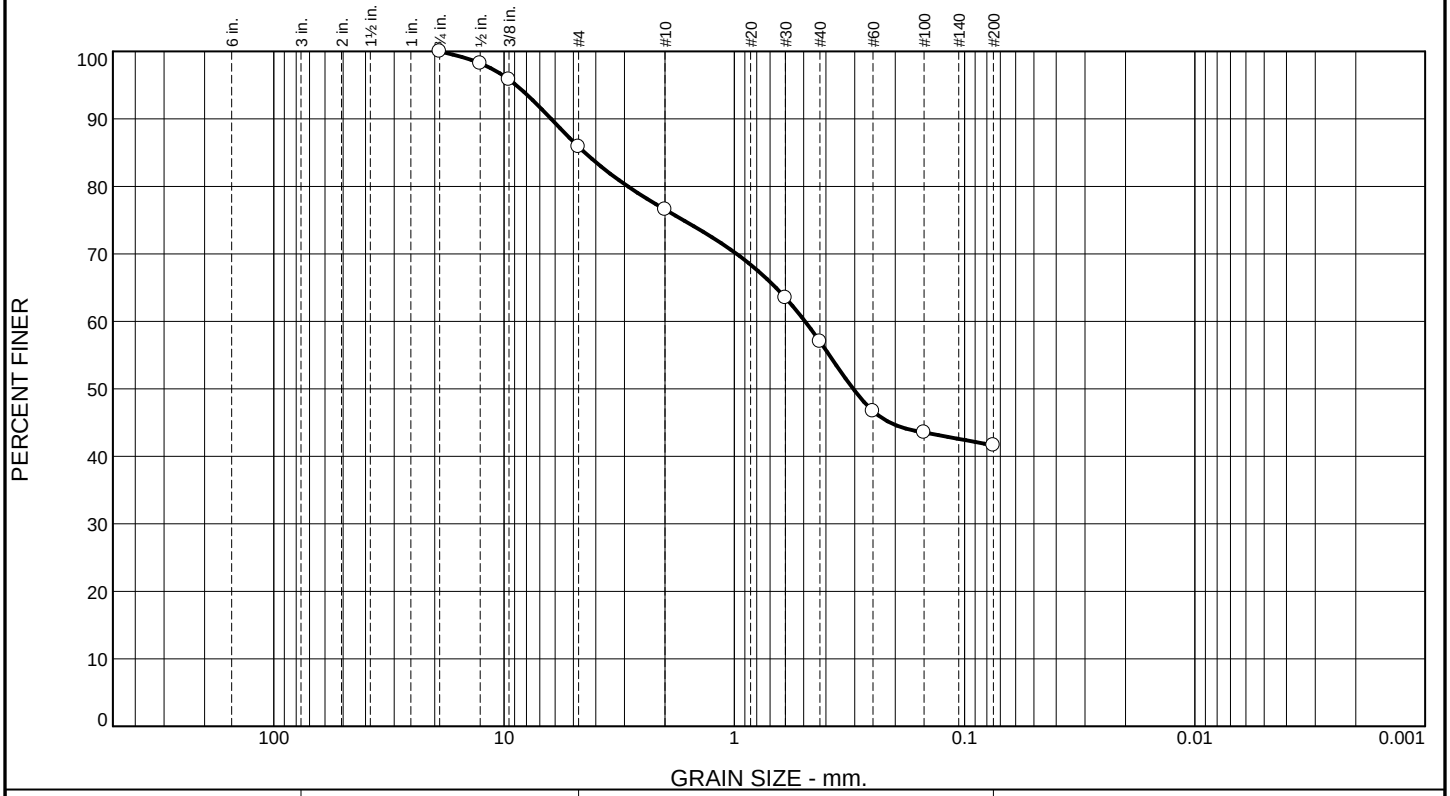
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 14.1 | 9.3 | 19.6 | 15.4 | 41.6 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 98.2 | | |
| .375 | 95.8 | | |
| #4 | 85.9 | | |
| #10 | 76.6 | | |
| #30 | 63.5 | | |
| #40 | 57.0 | | |
| #60 | 46.7 | | |
| #100 | 43.5 | | |
| #200 | 41.6 | | |

* (no specification provided)

**Material Description**

Yellowish Brown

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 6.2455 $D_{85}$= 4.4576 $D_{60}$= 0.4932
$D_{50}$= 0.3047 $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-03 S-3A 9-11

**Date:** 9-5-23

**RSA Geolab**

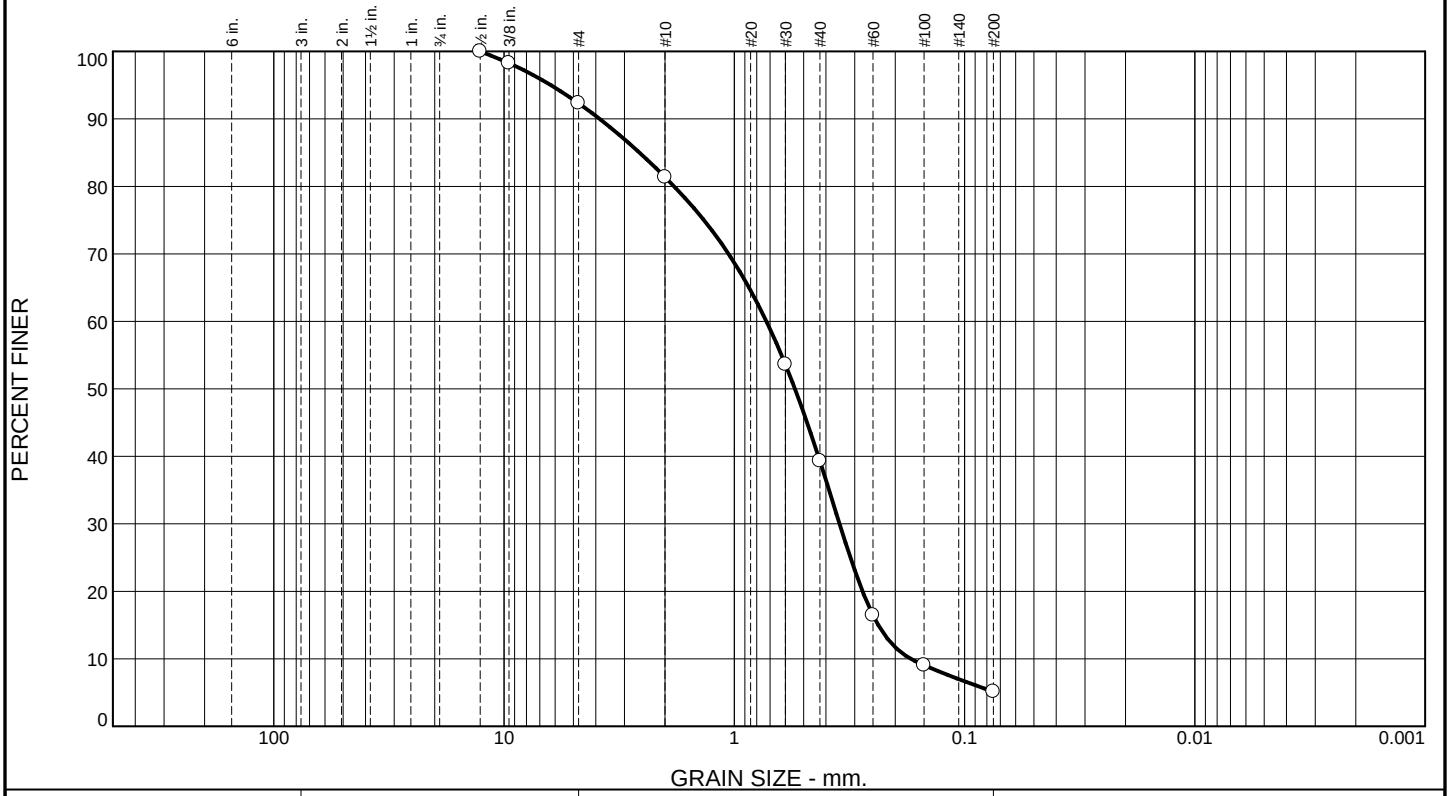
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 7.7 | 10.9 | 42.1 | 34.2 | 5.1 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .5 | 100.0 | | |
| .375 | 98.3 | | |
| #4 | 92.3 | | |
| #10 | 81.4 | | |
| #30 | 53.6 | | |
| #40 | 39.3 | | |
| #60 | 16.5 | | |
| #100 | 9.1 | | |
| #200 | 5.1 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 3.8446 $D_{85}$= 2.5817 $D_{60}$= 0.7256
$D_{50}$= 0.5456 $D_{30}$= 0.3493 $D_{15}$= 0.2371
$D_{10}$= 0.1713 $C_u$= 4.24 $C_c$= 0.98

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-03 S-4 11-13

**Date:** 9-5-23

**RSA Geolab**

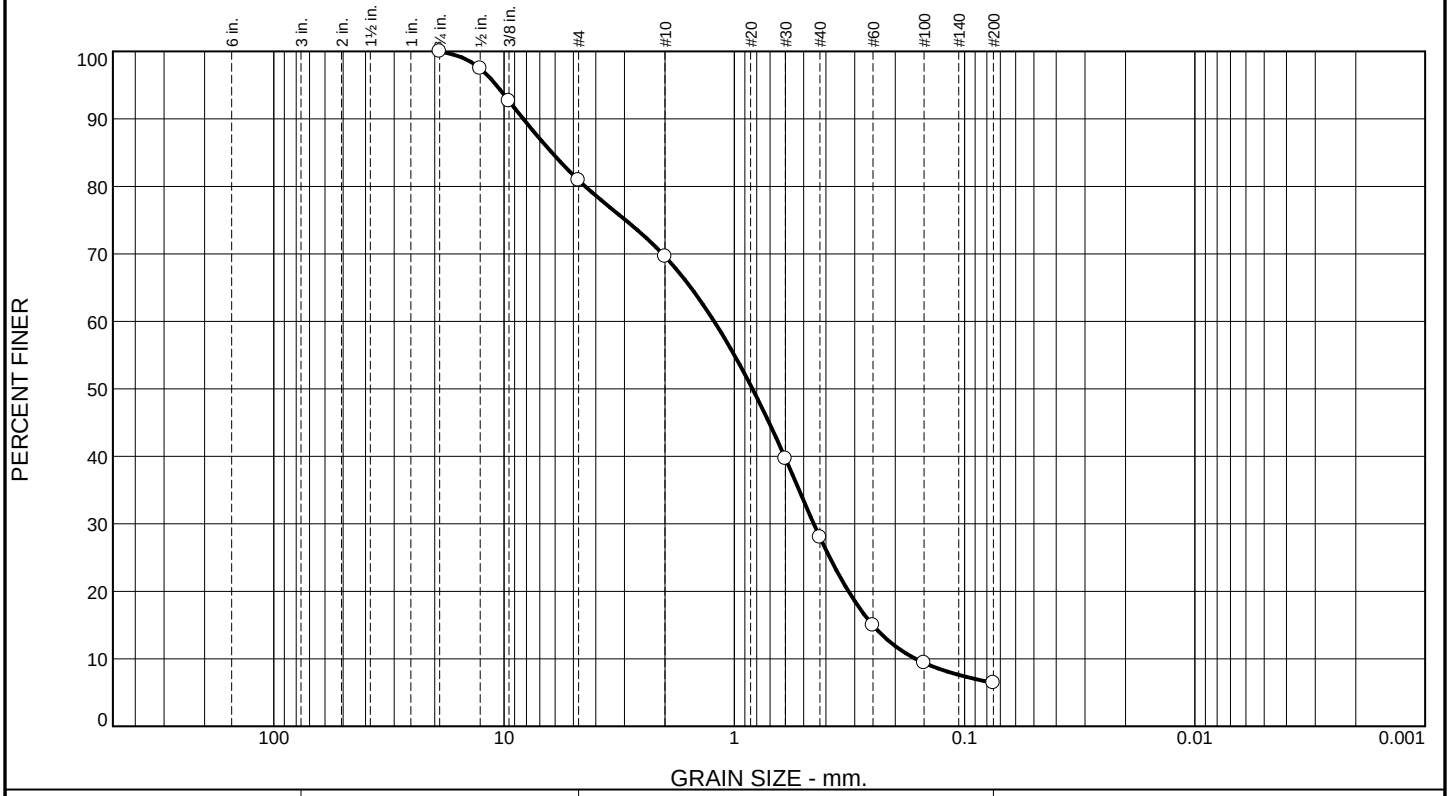
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 19.1 | 11.3 | 41.6 | 21.6 | 6.4 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 97.5 | | |
| .375 | 92.7 | | |
| #4 | 80.9 | | |
| #10 | 69.6 | | |
| #30 | 39.7 | | |
| #40 | 28.0 | | |
| #60 | 15.0 | | |
| #100 | 9.4 | | |
| #200 | 6.4 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 8.2506 $D_{85}$= 6.1981 $D_{60}$= 1.2237
$D_{50}$= 0.8341 $D_{30}$= 0.4520 $D_{15}$= 0.2505
$D_{10}$= 0.1633 $C_u$= 7.49 $C_c$= 1.02

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-03 S-5 13-15

**Date:** 9-5-23

**RSA Geolab**

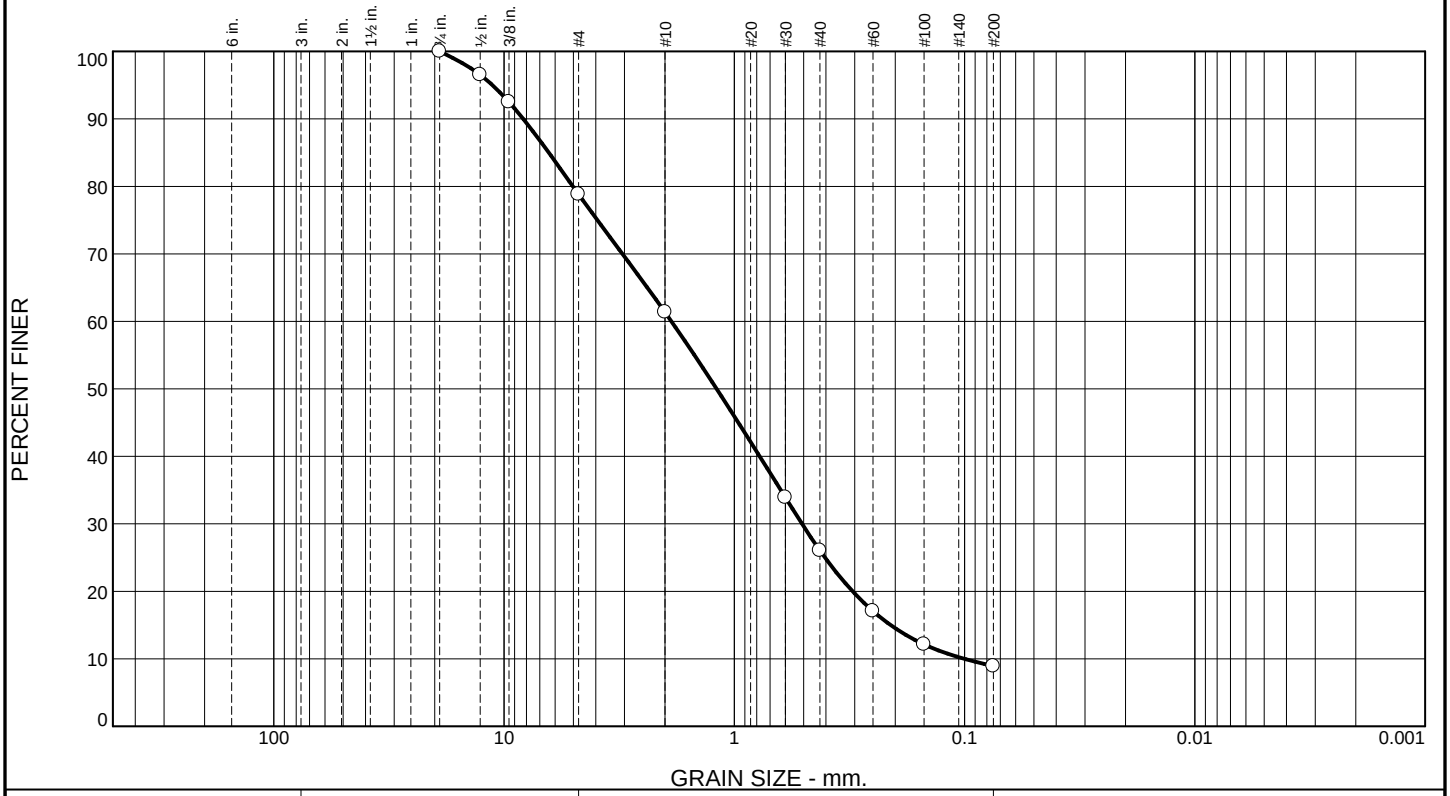
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 21.2 | 17.5 | 35.3 | 17.1 | 8.9 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 96.5 | | |
| .375 | 92.5 | | |
| #4 | 78.8 | | |
| #10 | 61.3 | | |
| #30 | 33.9 | | |
| #40 | 26.0 | | |
| #60 | 17.1 | | |
| #100 | 12.1 | | |
| #200 | 8.9 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 8.2580 $D_{85}$= 6.3962 $D_{60}$= 1.8767
$D_{50}$= 1.1937 $D_{30}$= 0.5082 $D_{15}$= 0.2094
$D_{10}$= 0.1002 $C_u$= 18.73 $C_c$= 1.37

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-03 S-7 17-19

**Date:** 9-5-23

**RSA Geolab**

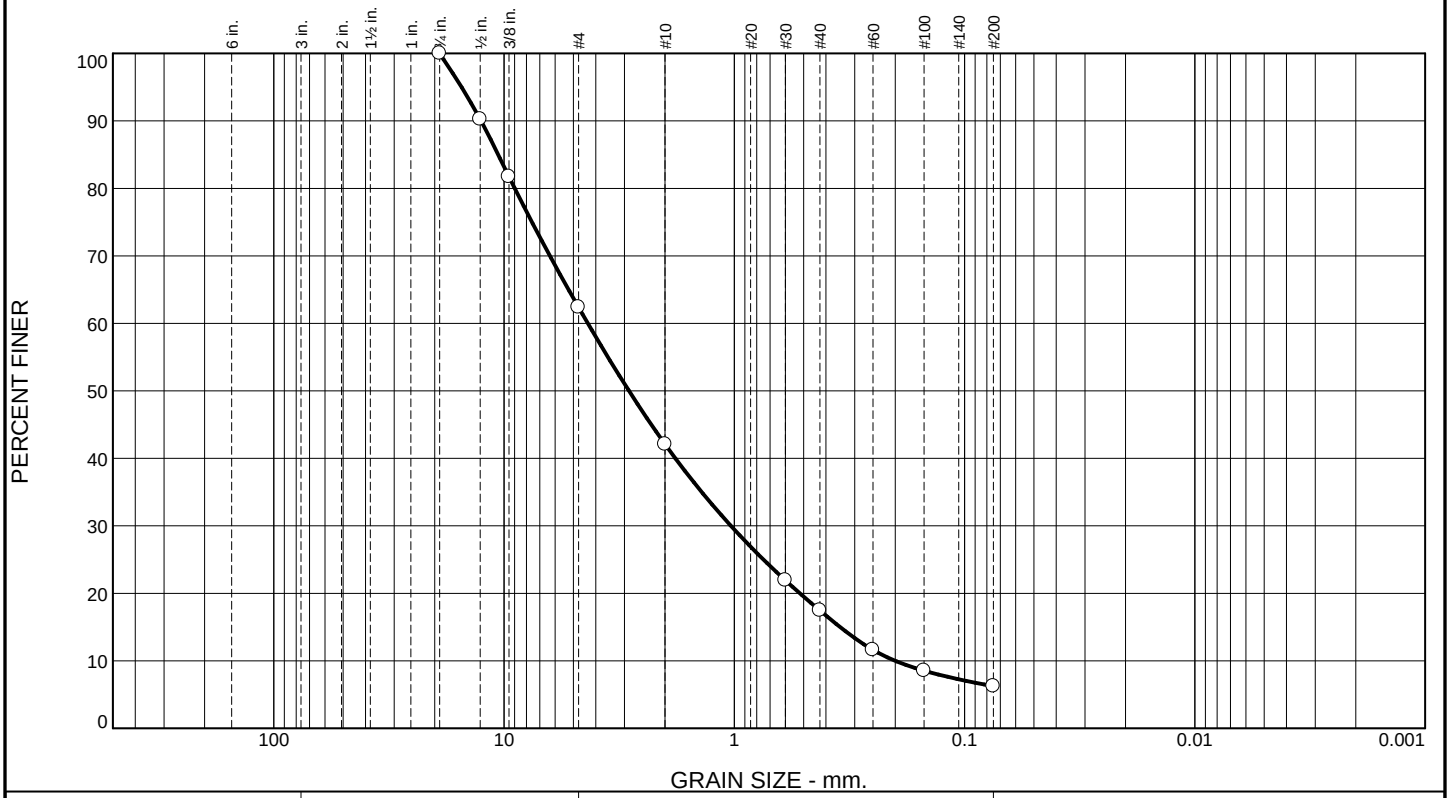
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 37.6 | 20.3 | 24.6 | 11.3 | 6.2 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 90.2 | | |
| .375 | 81.7 | | |
| #4 | 62.4 | | |
| #10 | 42.1 | | |
| #30 | 21.9 | | |
| #40 | 17.5 | | |
| #60 | 11.6 | | |
| #100 | 8.5 | | |
| #200 | 6.2 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 12.5887 $D_{85}$= 10.6112 $D_{60}$= 4.3270
$D_{50}$= 2.8683 $D_{30}$= 1.0348 $D_{15}$= 0.3472
$D_{10}$= 0.2003 $C_u$= 21.60 $C_c$= 1.24

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-03 S-9 21-23

**Date:** 9-5-23

**RSA Geolab**

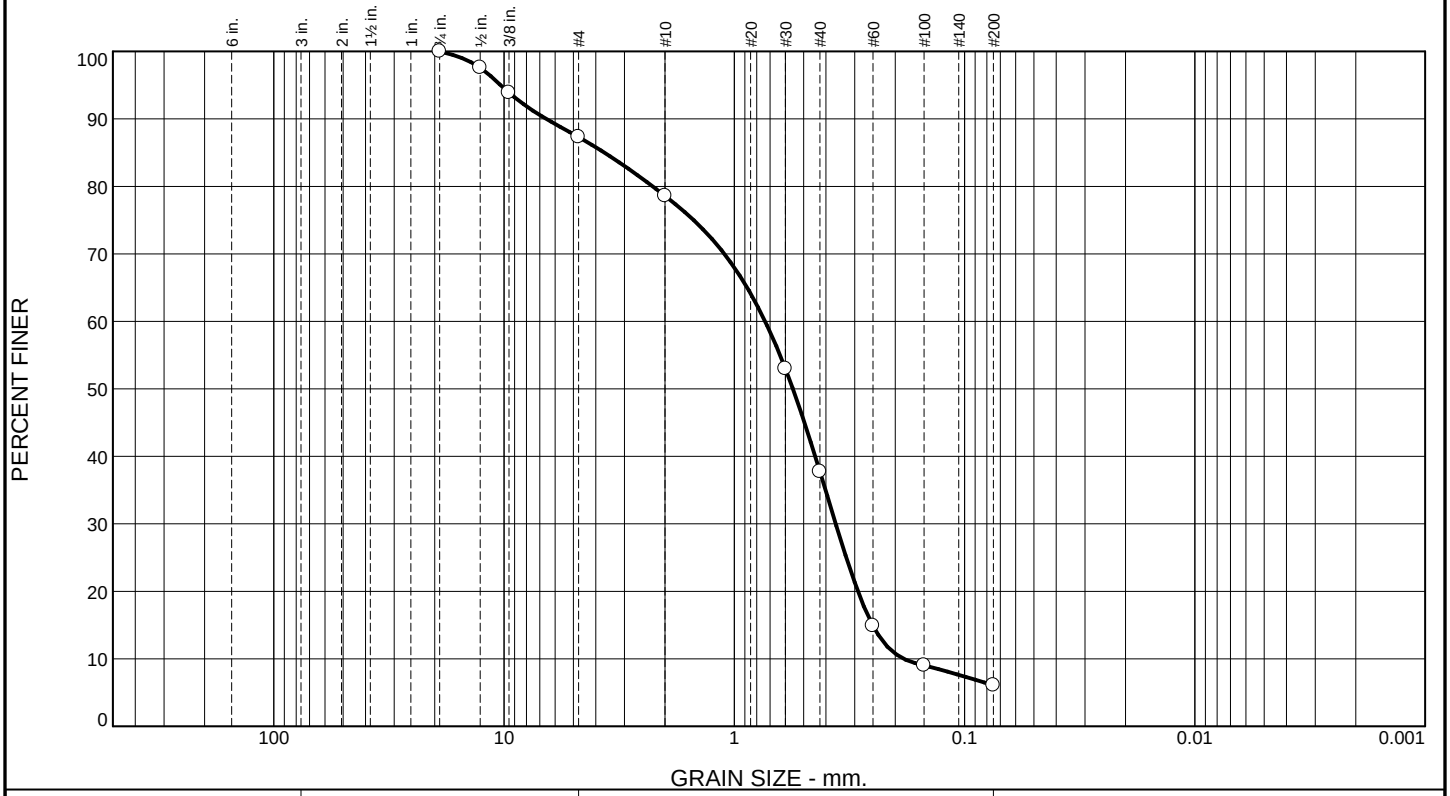
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 12.7 | 8.7 | 40.9 | 31.6 | 6.1 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 97.6 | | |
| .375 | 93.9 | | |
| #4 | 87.3 | | |
| #10 | 78.6 | | |
| #30 | 53.0 | | |
| #40 | 37.7 | | |
| #60 | 14.9 | | |
| #100 | 9.0 | | |
| #200 | 6.1 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 6.5615 $D_{85}$= 3.6704 $D_{60}$= 0.7352
$D_{50}$= 0.5568 $D_{30}$= 0.3629 $D_{15}$= 0.2510
$D_{10}$= 0.1838 $C_u$= 4.00 $C_c$= 0.97

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-03 S-10 23-25

**Date:** 9-5-23

**RSA Geolab**

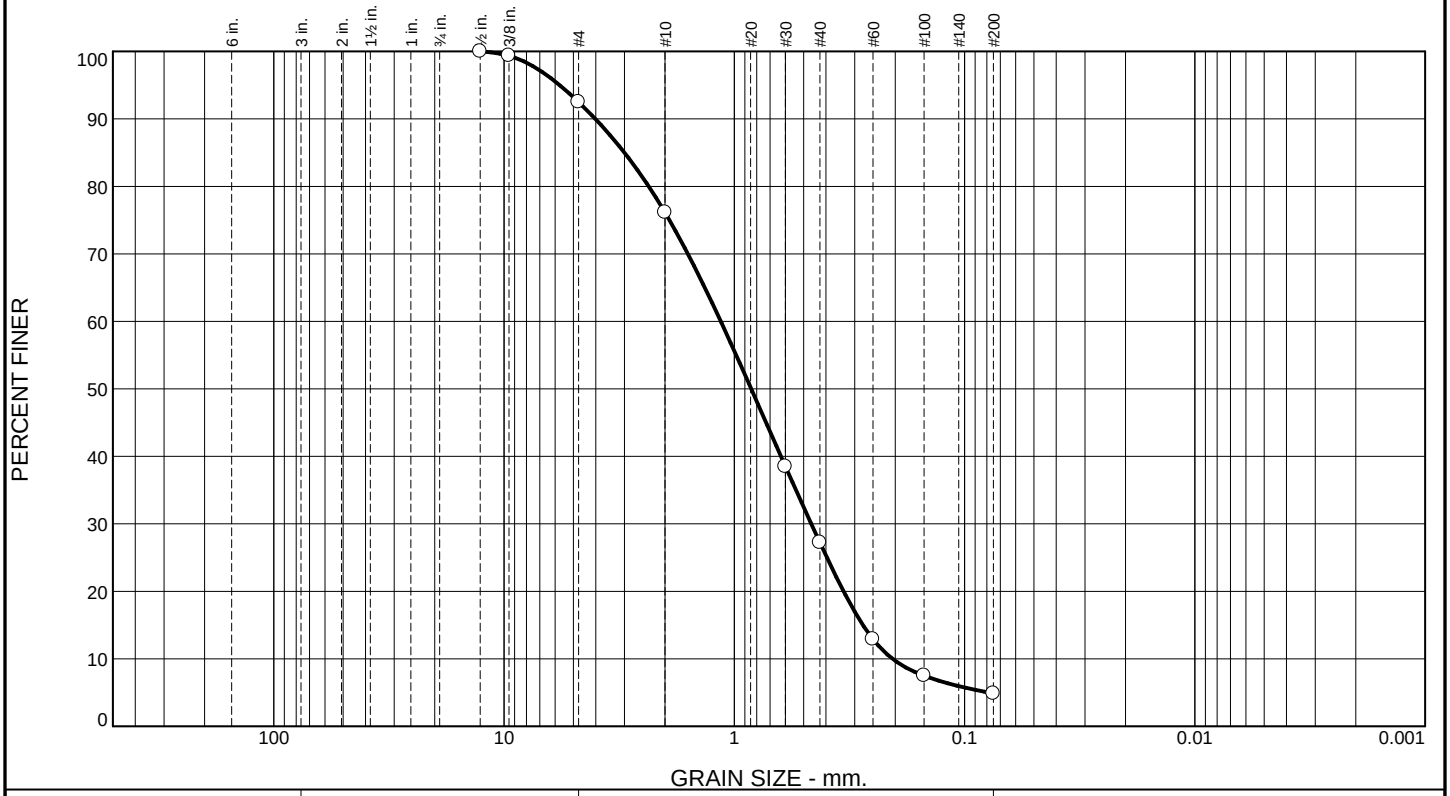
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 7.5 | 16.4 | 48.9 | 22.3 | 4.9 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .5 | 100.0 | | |
| .375 | 99.4 | | |
| #4 | 92.5 | | |
| #10 | 76.1 | | |
| #30 | 38.5 | | |
| #40 | 27.2 | | |
| #60 | 12.9 | | |
| #100 | 7.5 | | |
| #200 | 4.9 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 4.0147 $D_{85}$= 3.0020 $D_{60}$= 1.1452
$D_{50}$= 0.8448 $D_{30}$= 0.4634 $D_{15}$= 0.2765
$D_{10}$= 0.2057 $C_u$= 5.57 $C_c$= 0.91

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-04 S-4 11-13

**Date:** 9-5-23

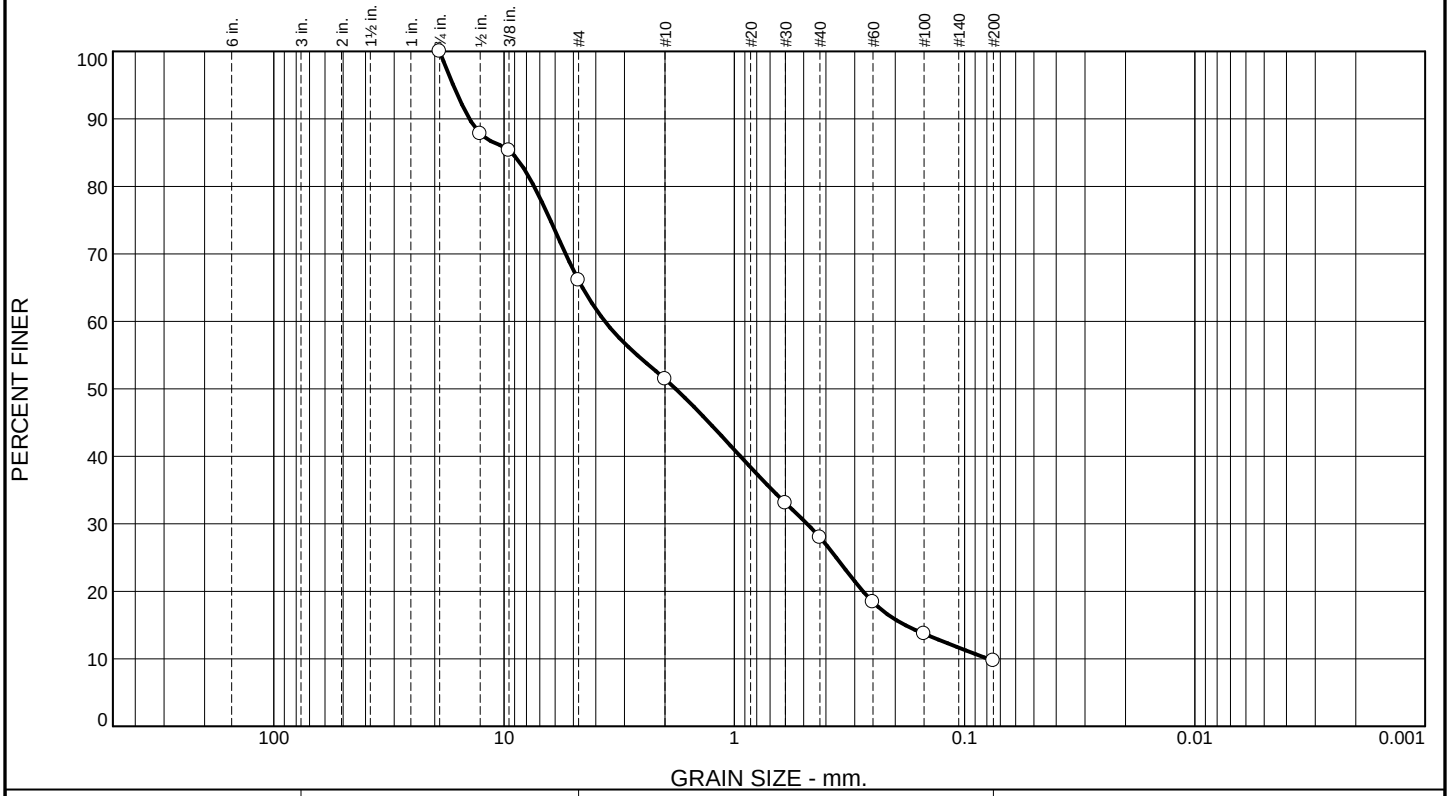
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 33.9 | 14.6 | 23.5 | 18.3 | 9.7 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 87.8 | | |
| .375 | 85.3 | | |
| #4 | 66.1 | | |
| #10 | 51.5 | | |
| #30 | 33.1 | | |
| #40 | 28.0 | | |
| #60 | 18.4 | | |
| #100 | 13.7 | | |
| #200 | 9.7 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 14.1345 $D_{85}$= 9.2906 $D_{60}$= 3.6499
$D_{50}$= 1.7977 $D_{30}$= 0.4830 $D_{15}$= 0.1812
$D_{10}$= 0.0791 $C_u$= 46.13 $C_c$= 0.81

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-04 S-8B 19-21

**Date:** 9-5-23

**RSA Geolab**

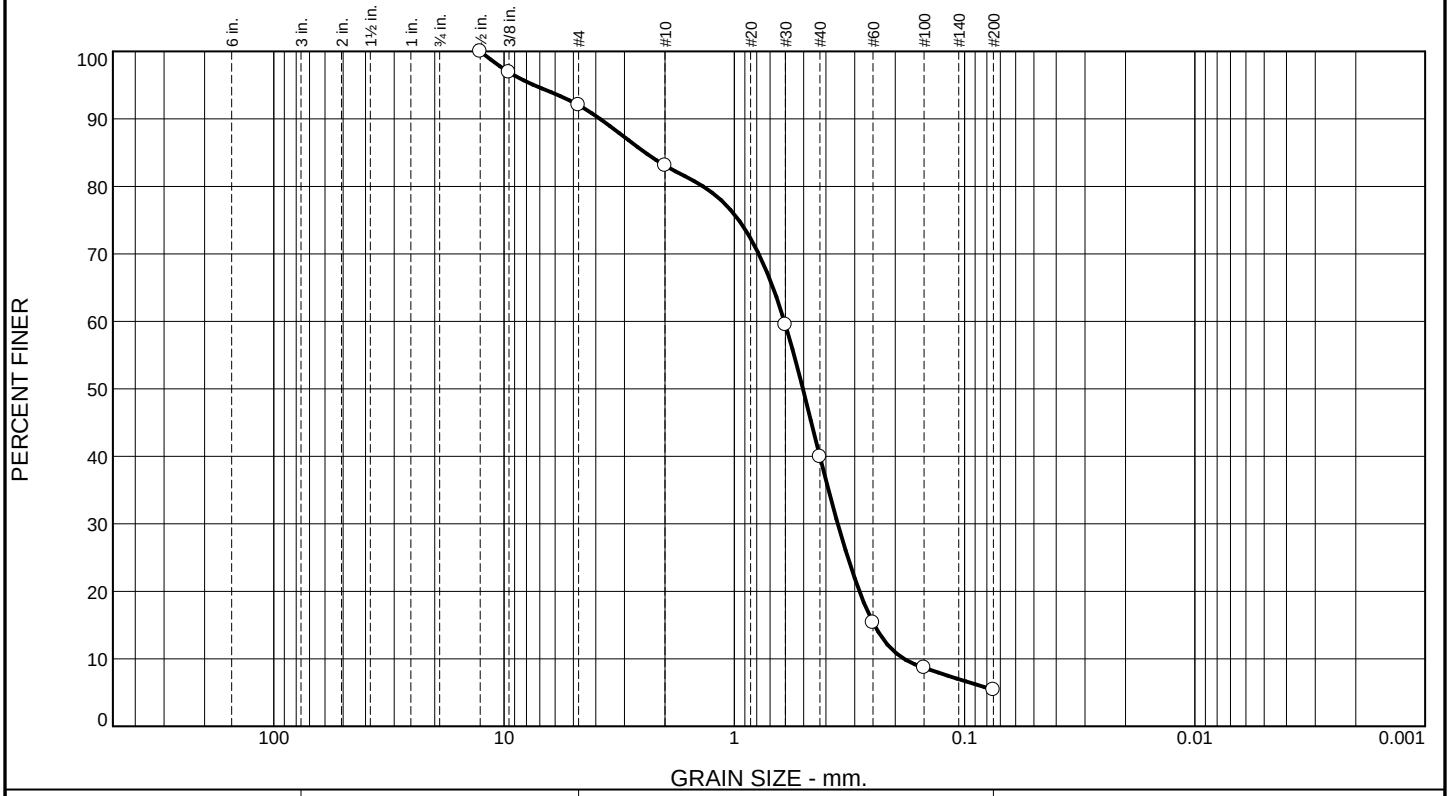
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 8.0 | 8.9 | 43.2 | 34.5 | 5.4 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .5 | 100.0 | | |
| .375 | 96.9 | | |
| #4 | 92.0 | | |
| #10 | 83.1 | | |
| #30 | 59.5 | | |
| #40 | 39.9 | | |
| #60 | 15.4 | | |
| #100 | 8.7 | | |
| #200 | 5.4 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 3.8278 $D_{85}$= 2.4346 $D_{60}$= 0.6061
$D_{50}$= 0.5038 $D_{30}$= 0.3555 $D_{15}$= 0.2466
$D_{10}$= 0.1834 $C_u$= 3.31 $C_c$= 1.14

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-04 S-10 23-25

**Date:** 9-5-23

**RSA Geolab**

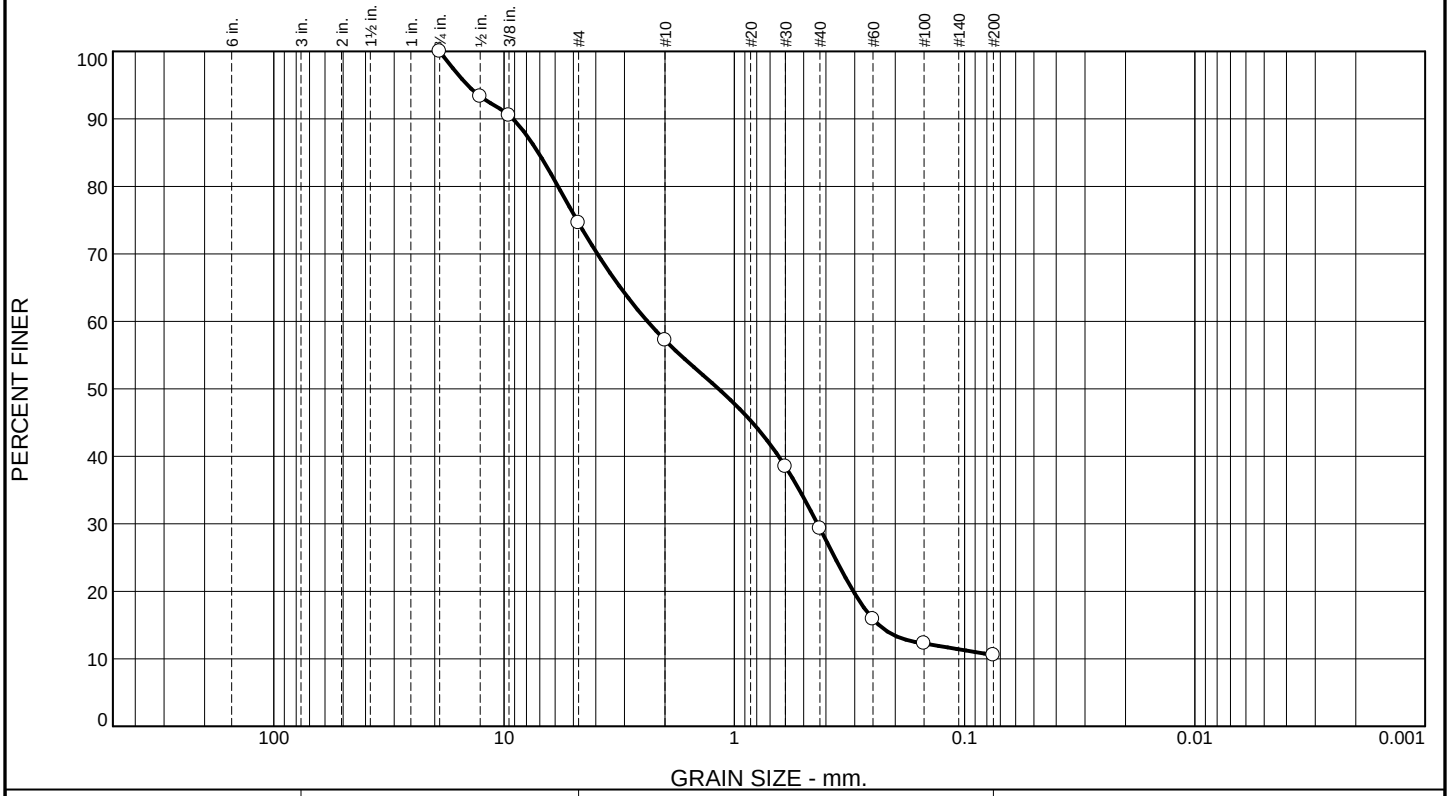
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 25.4 | 17.4 | 27.9 | 18.8 | 10.5 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 93.3 | | |
| .375 | 90.5 | | |
| #4 | 74.6 | | |
| #10 | 57.2 | | |
| #30 | 38.5 | | |
| #40 | 29.3 | | |
| #60 | 15.9 | | |
| #100 | 12.3 | | |
| #200 | 10.5 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 9.1601 $D_{85}$= 7.0993 $D_{60}$= 2.3831
$D_{50}$= 1.1711 $D_{30}$= 0.4352 $D_{15}$= 0.2353
$D_{10}$= $C_u$= $C_c$=

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-05 S-1A 6-8

**Date:** 9-5-23

**RSA Geolab**

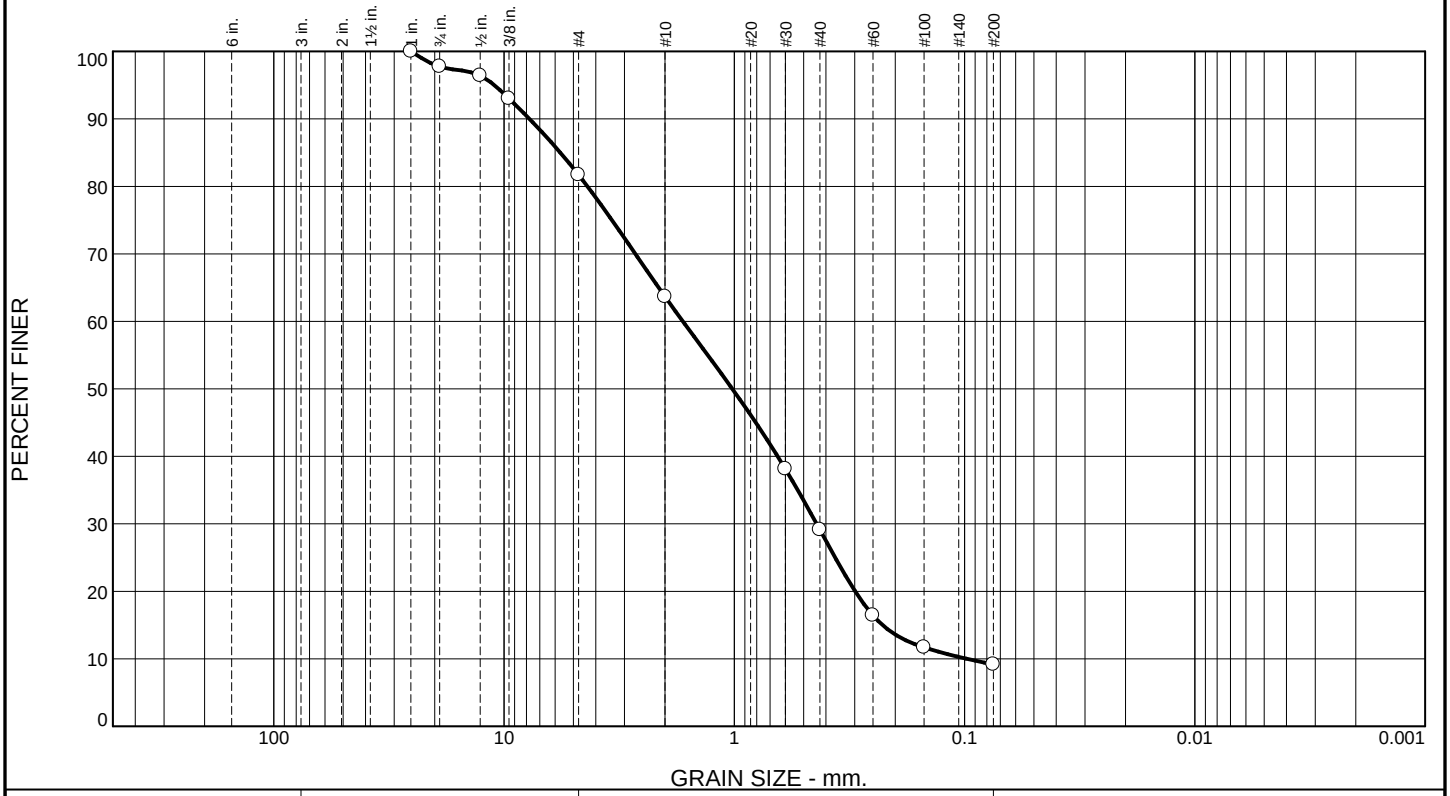
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 2.3 | 16.0 | 18.0 | 34.6 | 19.9 | 9.2 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1 | 100.0 | | |
| .75 | 97.7 | | |
| .5 | 96.4 | | |
| .375 | 93.0 | | |
| #4 | 81.7 | | |
| #10 | 63.7 | | |
| #30 | 38.1 | | |
| #40 | 29.1 | | |
| #60 | 16.4 | | |
| #100 | 11.7 | | |
| #200 | 9.2 | | |

* (no specification provided)

**Material Description**

Strong Brown

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 7.7631 $D_{85}$= 5.7000 $D_{60}$= 1.6731
$D_{50}$= 1.0205 $D_{30}$= 0.4392 $D_{15}$= 0.2271
$D_{10}$= 0.0978 $C_u$= 17.11 $C_c$= 1.18

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-05 S-2 8-10

**Date:** 9-5-23

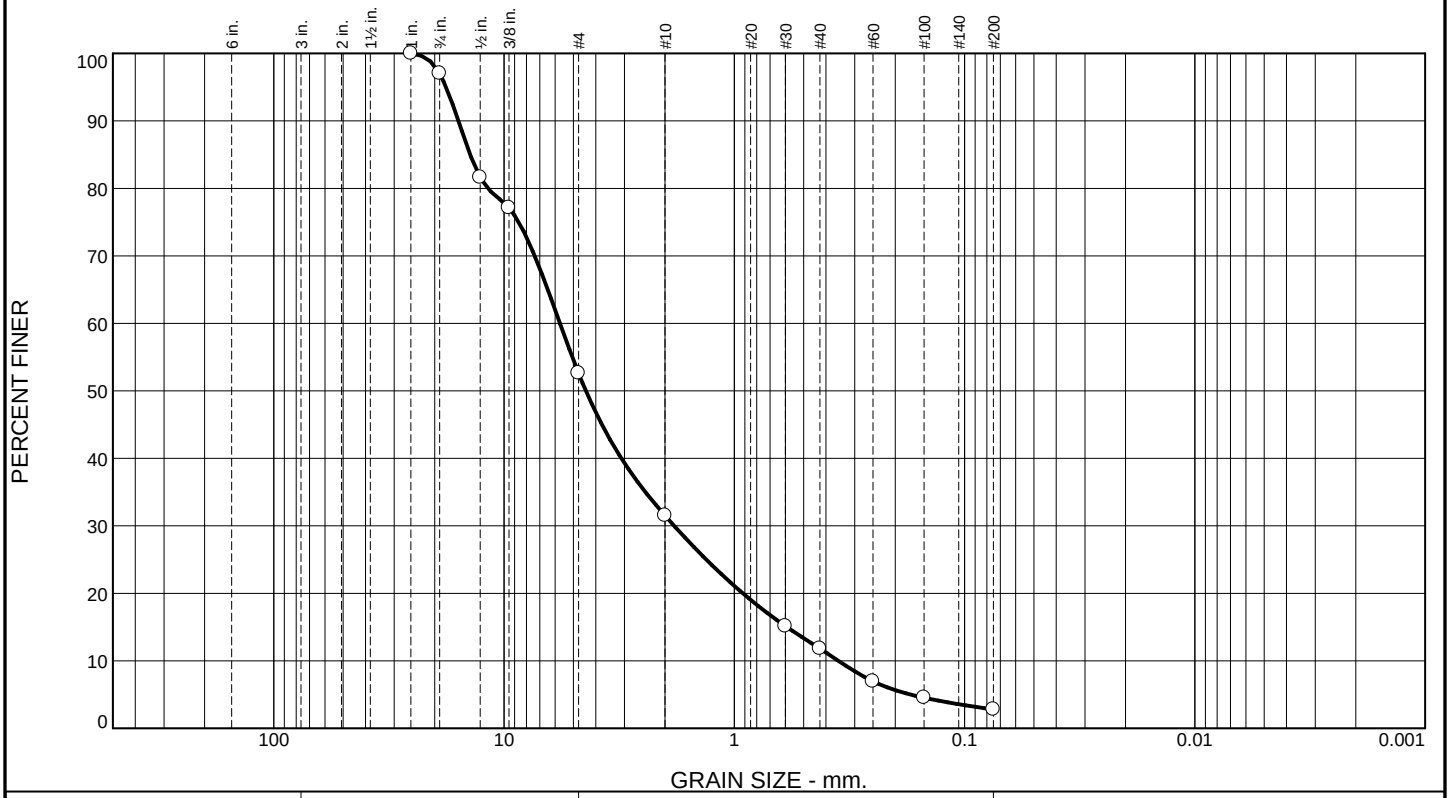
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 3.0 | 44.4 | 21.1 | 19.7 | 9.0 | 2.8 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1 | 100.0 | | |
| .75 | 97.0 | | |
| .5 | 81.6 | | |
| .375 | 77.1 | | |
| #4 | 52.6 | | |
| #10 | 31.5 | | |
| #30 | 15.1 | | |
| #40 | 11.8 | | |
| #60 | 7.0 | | |
| #100 | 4.5 | | |
| #200 | 2.8 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 15.7895 $D_{85}$= 14.0331 $D_{60}$= 5.7196
$D_{50}$= 4.4124 $D_{30}$= 1.8246 $D_{15}$= 0.5918
$D_{10}$= 0.3534 $C_u$= 16.18 $C_c$= 1.65

**Classification**

USCS= SW AASHTO=

**Remarks**

**Sample Number:** LBD-05 S-4 12-14

**Date:** 9-5-23

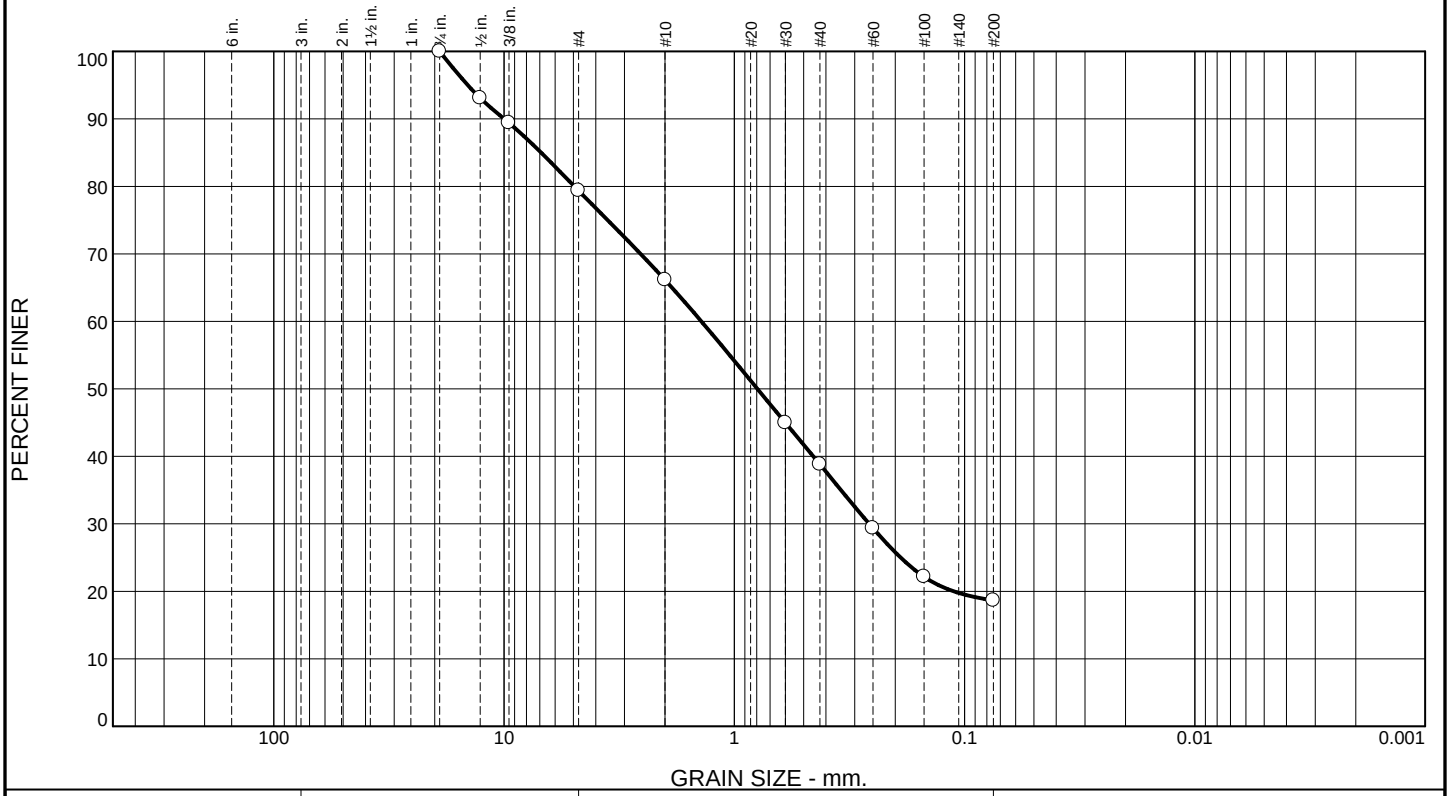
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 20.6 | 13.3 | 27.3 | 20.2 | 18.6 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 93.1 | | |
| .375 | 89.4 | | |
| #4 | 79.4 | | |
| #10 | 66.1 | | |
| #30 | 45.0 | | |
| #40 | 38.8 | | |
| #60 | 29.4 | | |
| #100 | 22.2 | | |
| #200 | 18.6 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 9.9877 $D_{85}$= 6.9062 $D_{60}$= 1.3906
$D_{50}$= 0.7942 $D_{30}$= 0.2597 $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-05 S-7 18-20

**Date:** 9-5-23

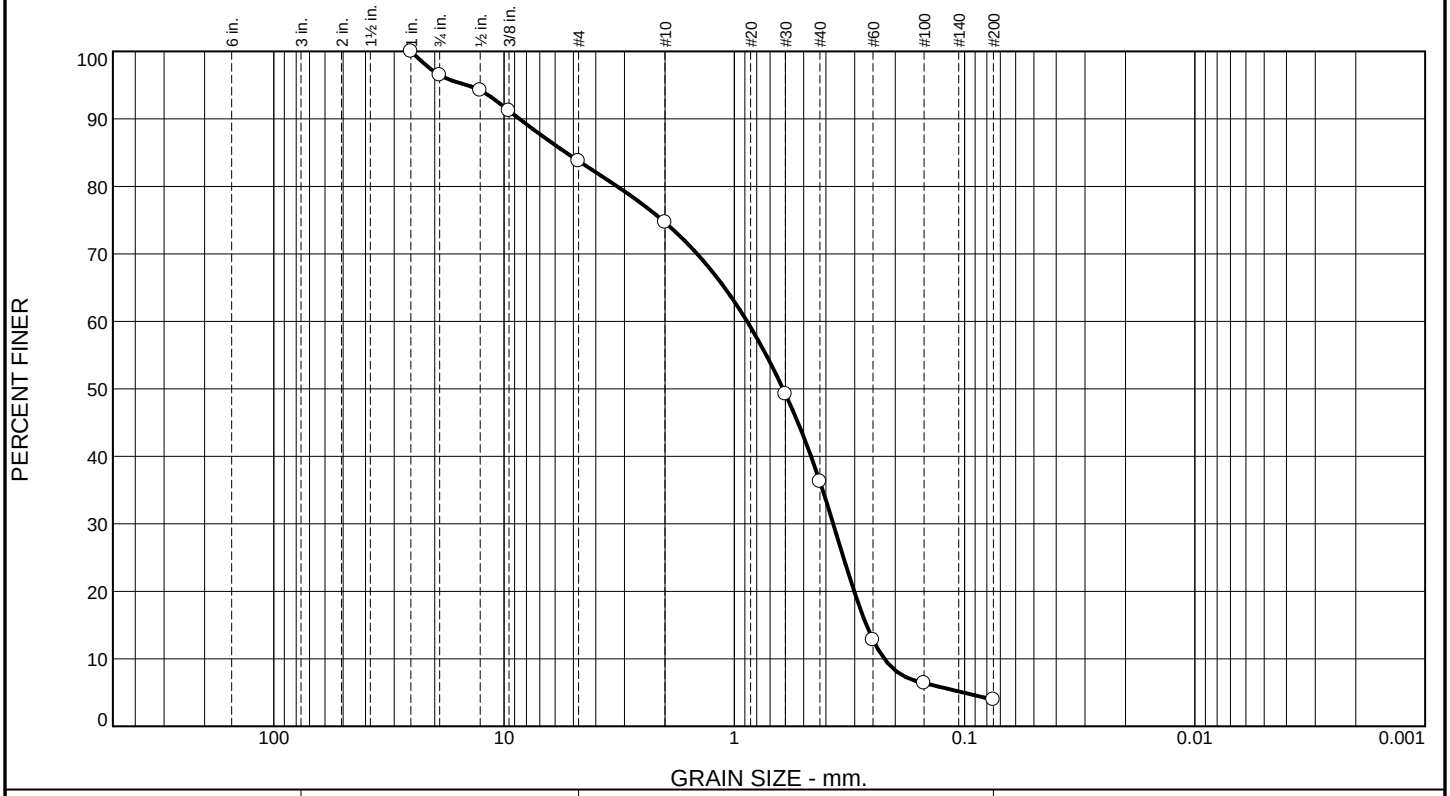
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 3.5 | 12.7 | 9.1 | 38.4 | 32.4 | 3.9 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1 | 100.0 | | |
| .75 | 96.5 | | |
| .5 | 94.2 | | |
| .375 | 91.2 | | |
| #4 | 83.8 | | |
| #10 | 74.7 | | |
| #30 | 49.2 | | |
| #40 | 36.3 | | |
| #60 | 12.8 | | |
| #100 | 6.4 | | |
| #200 | 3.9 | | |

* (no specification provided)

**Material Description**

Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 8.5766 $D_{85}$= 5.3735 $D_{60}$= 0.8803
$D_{50}$= 0.6144 $D_{30}$= 0.3721 $D_{15}$= 0.2670
$D_{10}$= 0.2232 $C_u$= 3.94 $C_c$= 0.70

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-06 S-1 5-7

**Date:** 9-5-23

**RSA Geolab**

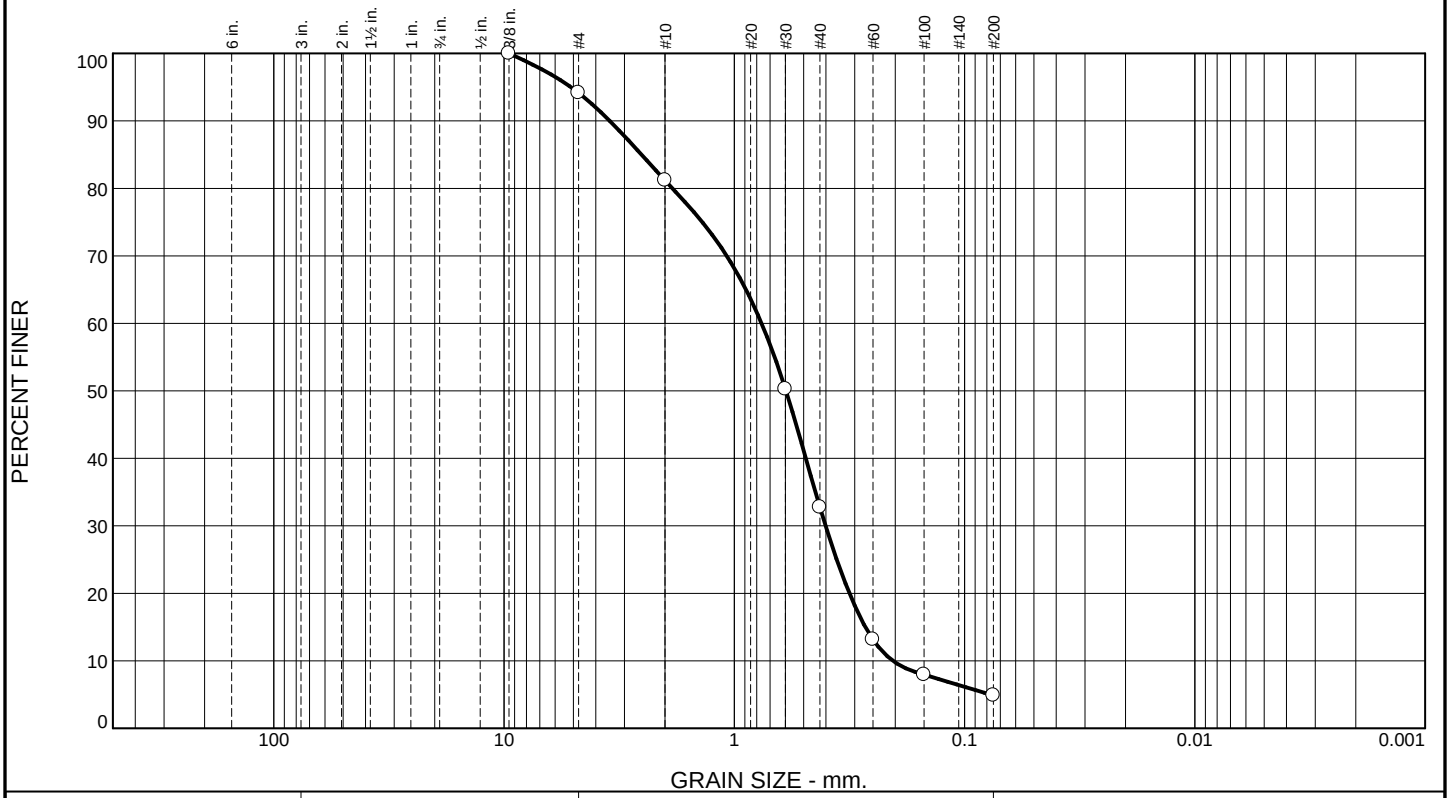
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 5.8 | 13.0 | 48.4 | 27.9 | 4.9 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .375 | 100.0 | | |
| #4 | 94.2 | | |
| #10 | 81.2 | | |
| #30 | 50.3 | | |
| #40 | 32.8 | | |
| #60 | 13.2 | | |
| #100 | 7.9 | | |
| #200 | 4.9 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 3.4772 $D_{85}$= 2.5291 $D_{60}$= 0.7618
$D_{50}$= 0.5965 $D_{30}$= 0.4015 $D_{15}$= 0.2698
$D_{10}$= 0.2048 $C_u$= 3.72 $C_c$= 1.03

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-06 S-2 7-9

**Date:** 9-5-23

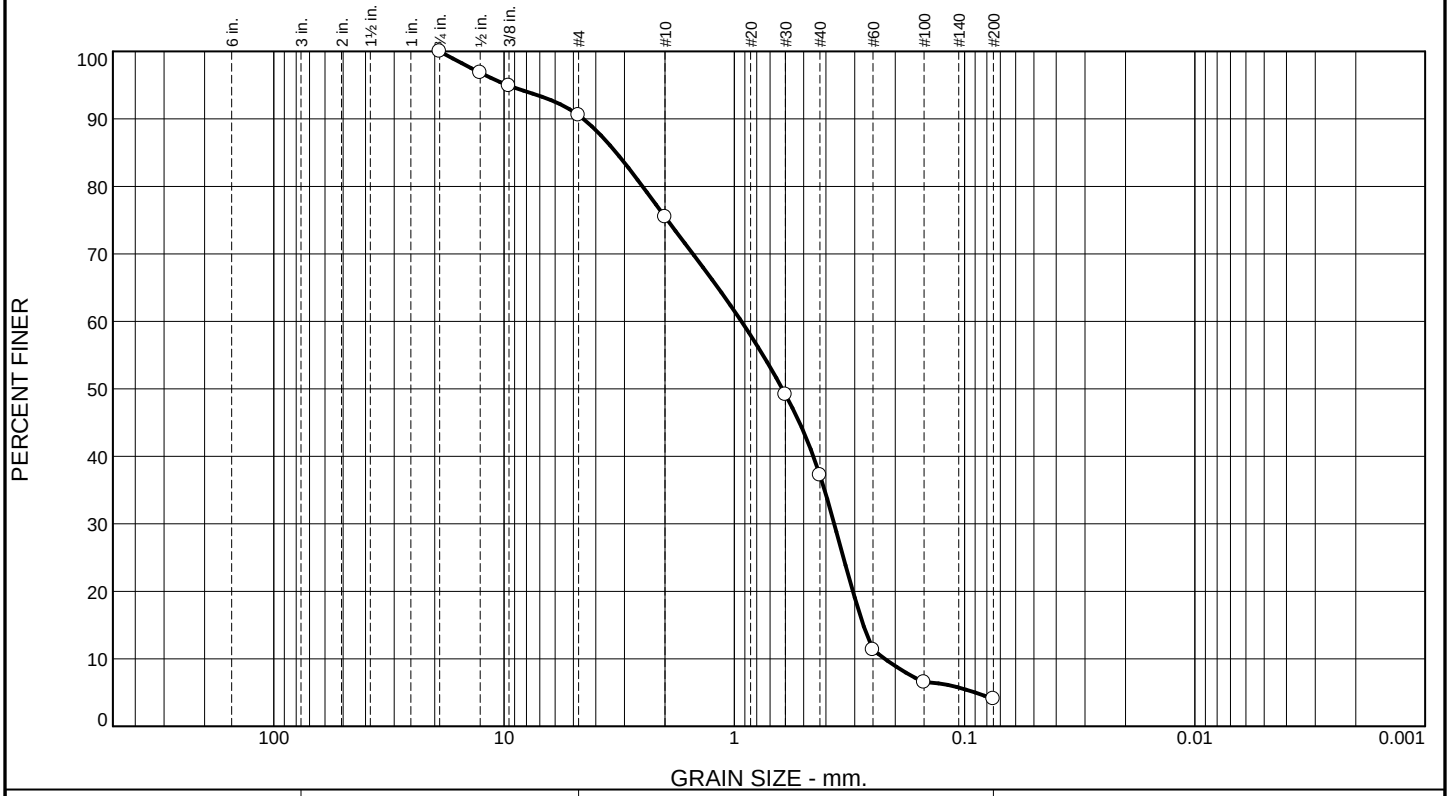
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 9.5 | 15.0 | 38.3 | 33.1 | 4.1 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 96.8 | | |
| .375 | 94.9 | | |
| #4 | 90.5 | | |
| #10 | 75.5 | | |
| #30 | 49.1 | | |
| #40 | 37.2 | | |
| #60 | 11.4 | | |
| #100 | 6.5 | | |
| #200 | 4.1 | | |

* (no specification provided)

**Material Description**

Yellowish Brown

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 4.5293 $D_{85}$= 3.2579 $D_{60}$= 0.9314
$D_{50}$= 0.6189 $D_{30}$= 0.3683 $D_{15}$= 0.2753
$D_{10}$= 0.2220 $C_u$= 4.20 $C_c$= 0.66

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-06 S-3 9-11

**Date:** 9-5-23

**RSA Geolab**

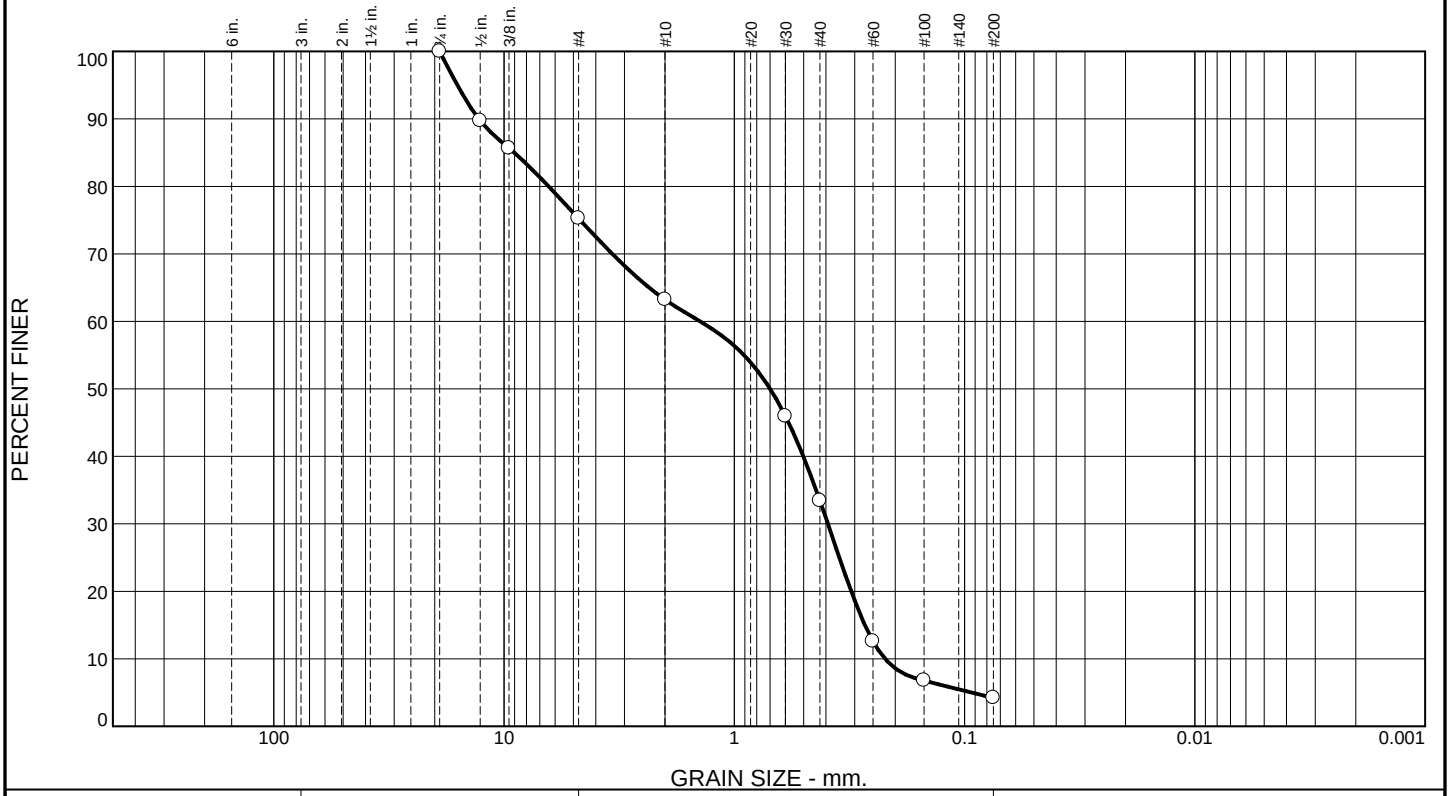
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 24.7 | 12.1 | 29.8 | 29.2 | 4.2 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 89.7 | | |
| .375 | 85.7 | | |
| #4 | 75.3 | | |
| #10 | 63.2 | | |
| #30 | 46.0 | | |
| #40 | 33.4 | | |
| #60 | 12.6 | | |
| #100 | 6.8 | | |
| #200 | 4.2 | | |

* (no specification provided)

**Material Description**

Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 12.8897 $D_{85}$= 9.0375 $D_{60}$= 1.4076
$D_{50}$= 0.6991 $D_{30}$= 0.3924 $D_{15}$= 0.2712
$D_{10}$= 0.2216 $C_u$= 6.35 $C_c$= 0.49

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-06 S-5 13-15

**Date:** 9-5-23

**RSA Geolab**

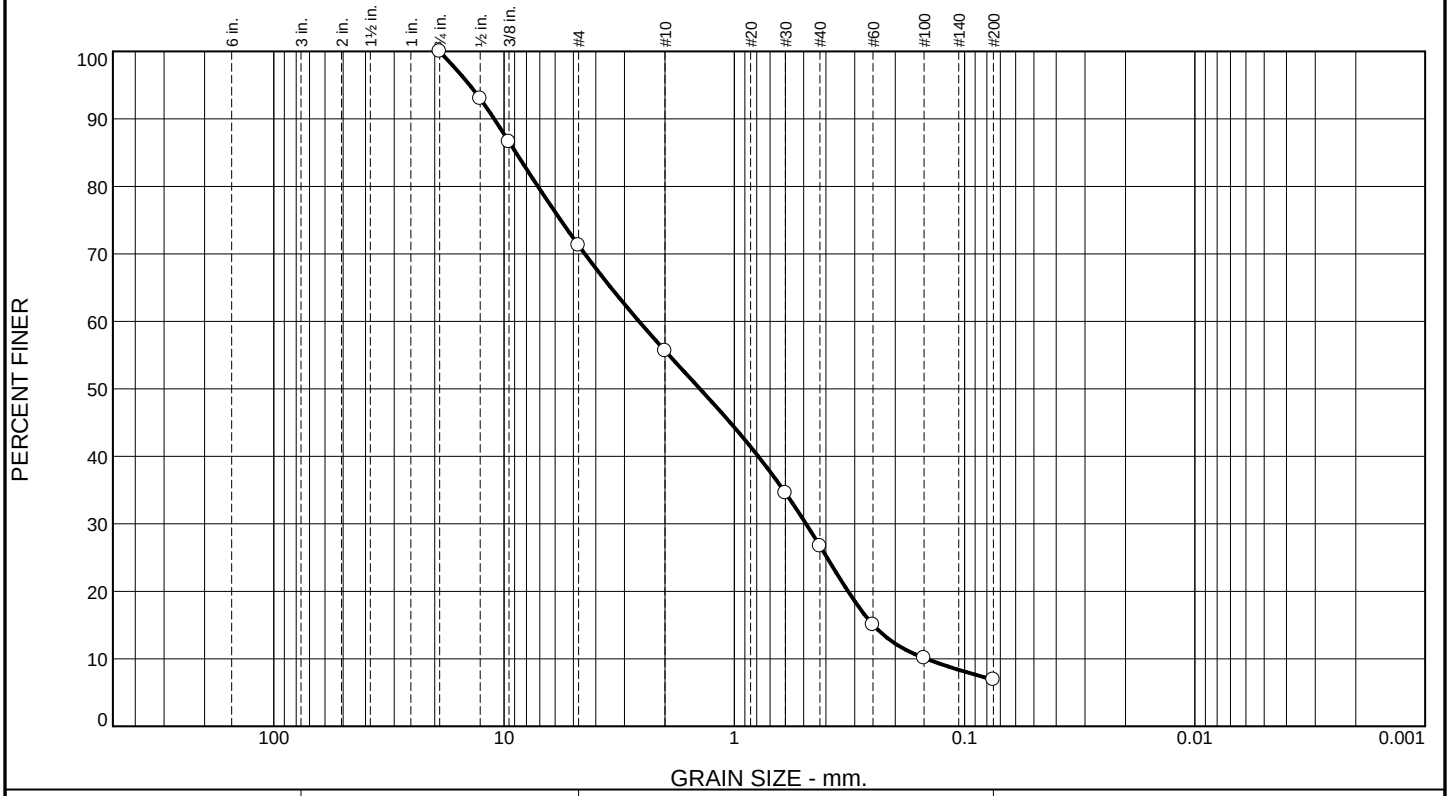
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 28.7 | 15.7 | 28.9 | 19.8 | 6.9 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 93.0 | | |
| .375 | 86.6 | | |
| #4 | 71.3 | | |
| #10 | 55.6 | | |
| #30 | 34.6 | | |
| #40 | 26.7 | | |
| #60 | 15.1 | | |
| #100 | 10.1 | | |
| #200 | 6.9 | | |

* (no specification provided)

**Material Description**

Brownish Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 11.0432 $D_{85}$= 8.8855 $D_{60}$= 2.5927
$D_{50}$= 1.4101 $D_{30}$= 0.4882 $D_{15}$= 0.2490
$D_{10}$= 0.1466 $C_u$= 17.68 $C_c$= 0.63

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-06 S-6 15-17

**Date:** 9-5-23

**RSA Geolab**

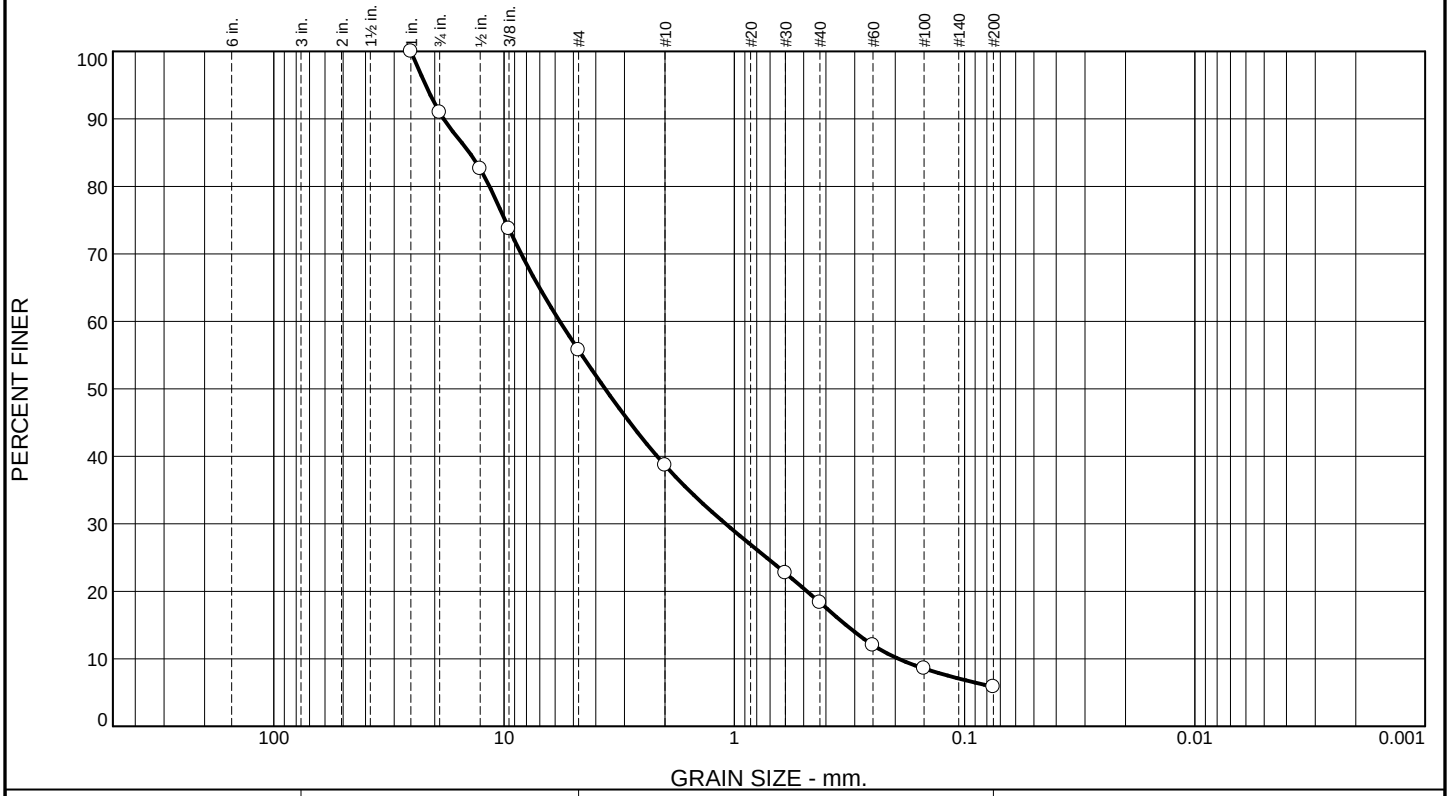
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 9.0 | 35.3 | 17.0 | 20.4 | 12.5 | 5.8 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1 | 100.0 | | |
| .75 | 91.0 | | |
| .5 | 82.6 | | |
| .375 | 73.7 | | |
| #4 | 55.7 | | |
| #10 | 38.7 | | |
| #30 | 22.7 | | |
| #40 | 18.3 | | |
| #60 | 12.0 | | |
| #100 | 8.6 | | |
| #200 | 5.8 | | |

* (no specification provided)

**Material Description**

Pale Brown

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 18.2951 $D_{85}$= 14.1357 $D_{60}$= 5.7288
$D_{50}$= 3.6393 $D_{30}$= 1.0906 $D_{15}$= 0.3270
$D_{10}$= 0.1937 $C_u$= 29.58 $C_c$= 1.07

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-06 S-8 19-21

**Date:** 9-5-23

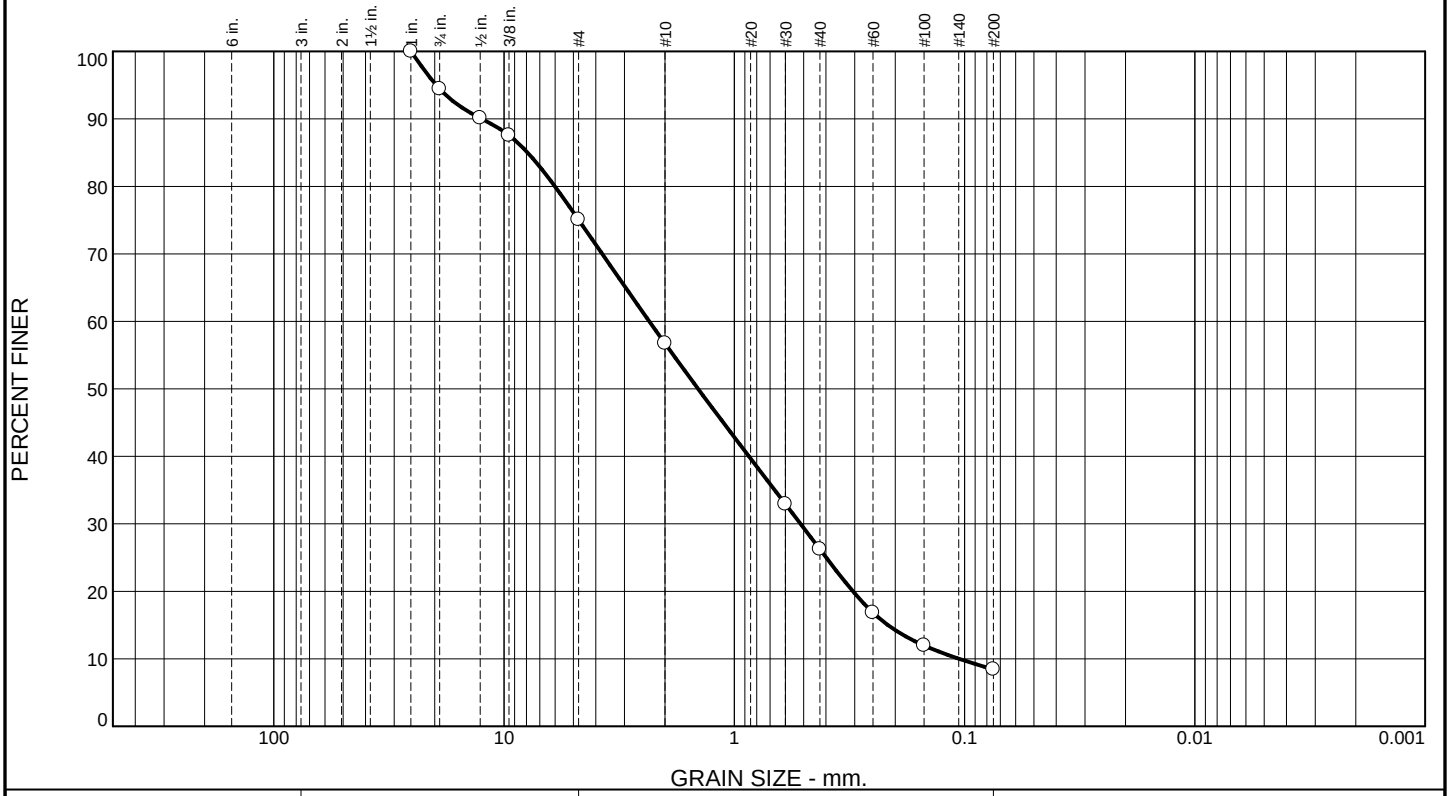
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 5.6 | 19.3 | 18.4 | 30.5 | 17.8 | 8.4 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1 | 100.0 | | |
| .75 | 94.4 | | |
| .5 | 90.1 | | |
| .375 | 87.6 | | |
| #4 | 75.1 | | |
| #10 | 56.7 | | |
| #30 | 32.9 | | |
| #40 | 26.2 | | |
| #60 | 16.8 | | |
| #100 | 12.0 | | |
| #200 | 8.4 | | |

* (no specification provided)

**Material Description**

Very Pale Brown

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 12.4959 $D_{85}$= 7.9043 $D_{60}$= 2.3413
$D_{50}$= 1.4364 $D_{30}$= 0.5159 $D_{15}$= 0.2153
$D_{10}$= 0.1057 $C_u$= 22.15 $C_c$= 1.08

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-06 S-10 23-25

**Date:** 9-5-23

**RSA Geolab**

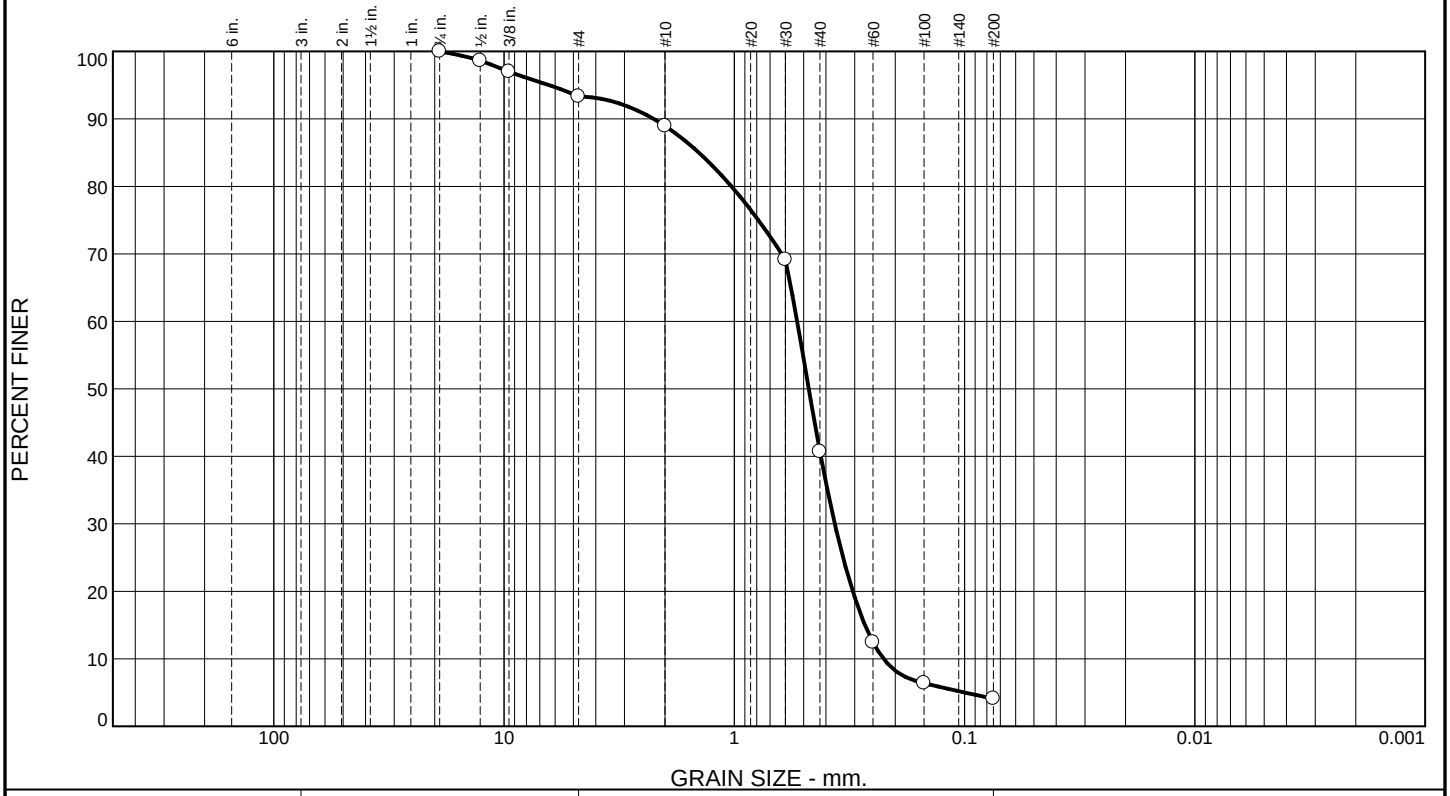
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 6.7 | 4.3 | 48.3 | 36.6 | 4.1 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 98.6 | | |
| .375 | 97.0 | | |
| #4 | 93.3 | | |
| #10 | 89.0 | | |
| #30 | 69.1 | | |
| #40 | 40.7 | | |
| #60 | 12.5 | | |
| #100 | 6.4 | | |
| #200 | 4.1 | | |

* (no specification provided)

**Material Description**

Yellowish Brown

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 2.2401 $D_{85}$= 1.4255 $D_{60}$= 0.5338
$D_{50}$= 0.4750 $D_{30}$= 0.3663 $D_{15}$= 0.2710
$D_{10}$= 0.2249 $C_u$= 2.37 $C_c$= 1.12

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-07 S-3 10-12

**Date:** 9-5-23

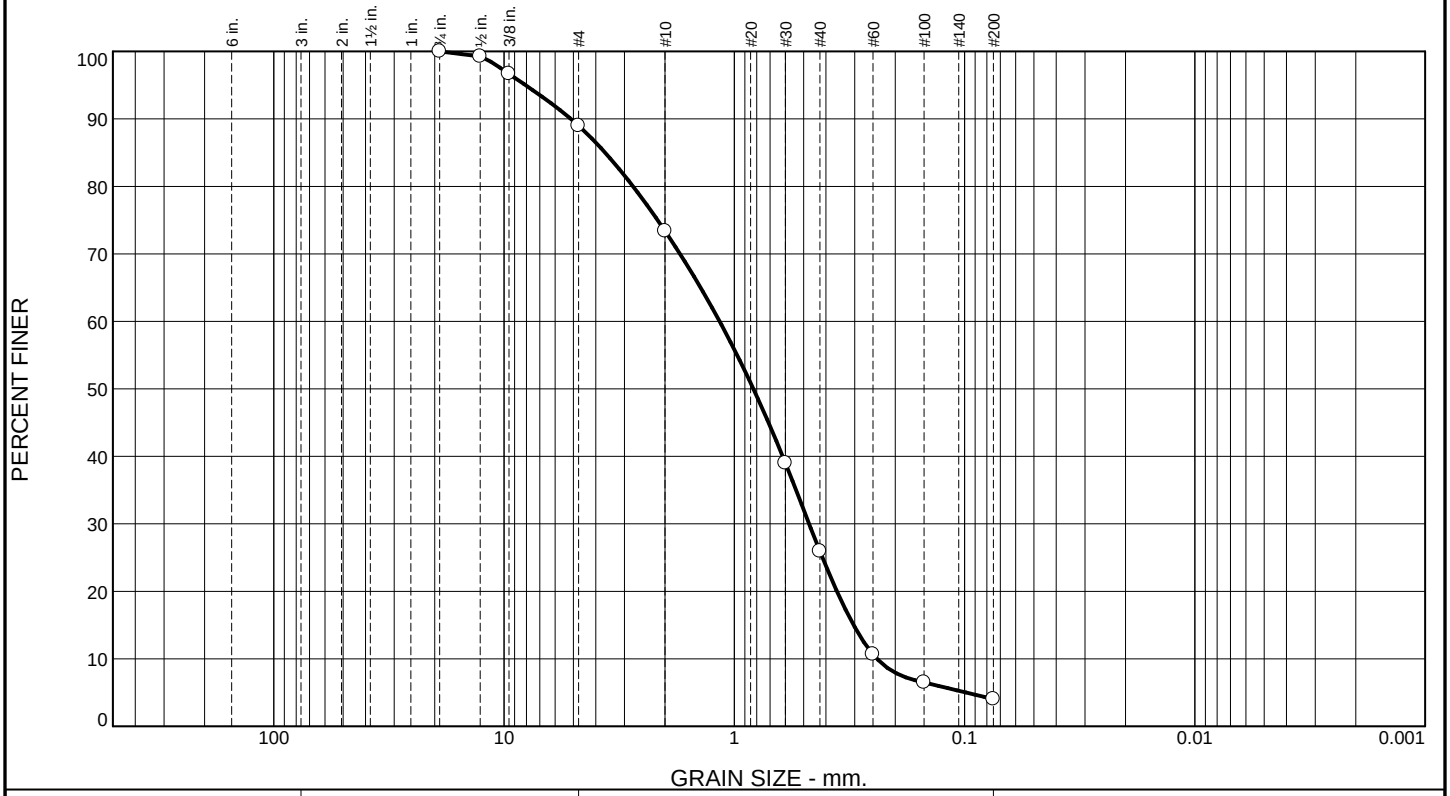
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 11.0 | 15.6 | 47.5 | 21.9 | 4.0 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 99.3 | | |
| .375 | 96.7 | | |
| #4 | 89.0 | | |
| #10 | 73.4 | | |
| #30 | 39.0 | | |
| #40 | 25.9 | | |
| #60 | 10.7 | | |
| #100 | 6.5 | | |
| #200 | 4.0 | | |

* (no specification provided)

**Material Description**

Pale Brown

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 5.1317 $D_{85}$= 3.6419 $D_{60}$= 1.1591
$D_{50}$= 0.8267 $D_{30}$= 0.4736 $D_{15}$= 0.3034
$D_{10}$= 0.2400 $C_u$= 4.83 $C_c$= 0.81

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-07 S-5B 14-16

**Date:** 9-5-23

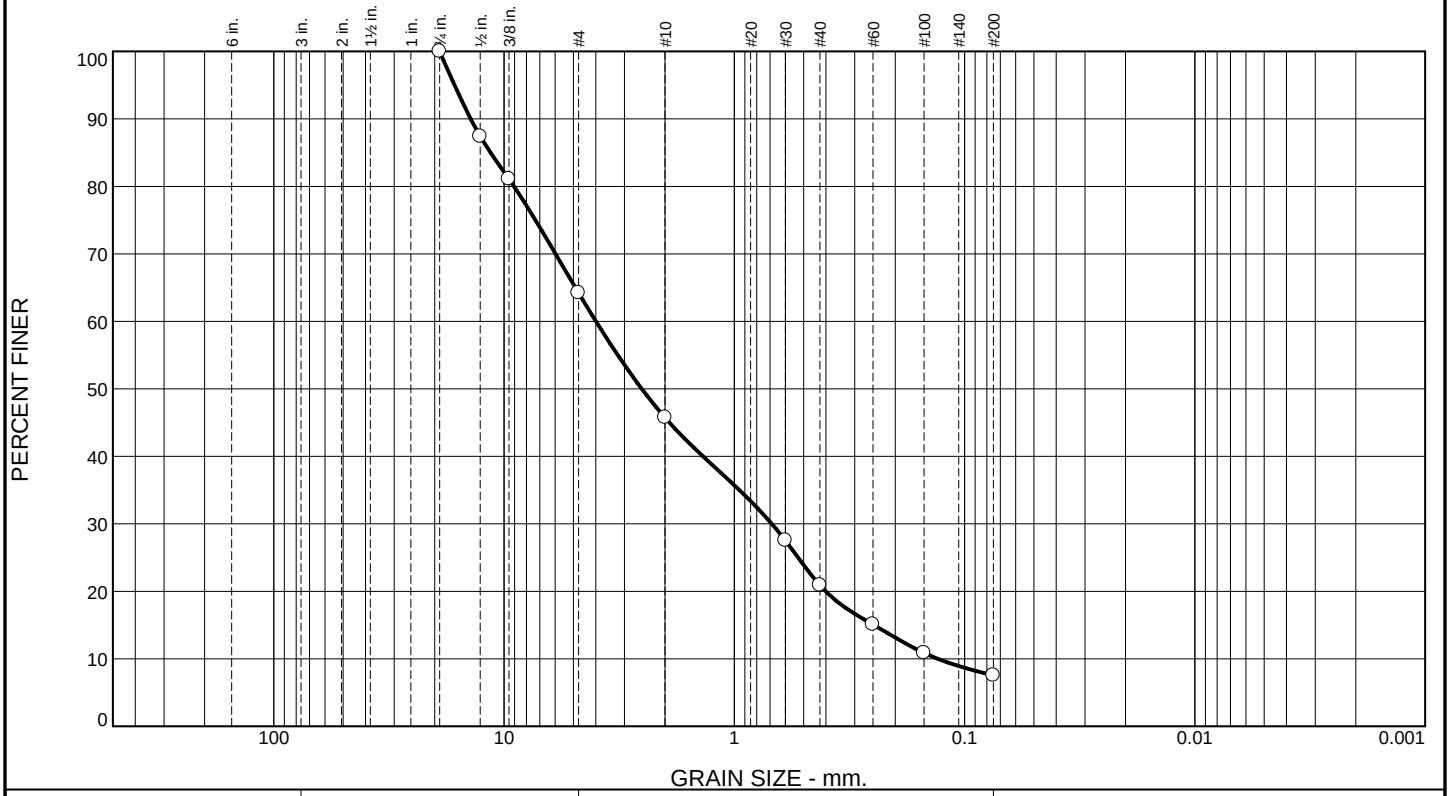
**RSA Geolab**

**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869 **Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 35.8 | 18.5 | 24.8 | 13.4 | 7.5 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 | 100.0 | | |
| .5 | 87.4 | | |
| .375 | 81.1 | | |
| #4 | 64.2 | | |
| #10 | 45.7 | | |
| #30 | 27.5 | | |
| #40 | 20.9 | | |
| #60 | 15.1 | | |
| #100 | 10.9 | | |
| #200 | 7.5 | | |

* (no specification provided)

**Material Description**

Pale Brown

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 13.9682 $D_{85}$= 11.4588 $D_{60}$= 3.9901
$D_{50}$= 2.5233 $D_{30}$= 0.6877 $D_{15}$= 0.2476
$D_{10}$= 0.1307 $C_u$= 30.53 $C_c$= 0.91

**Classification**

USCS= AASHTO=

**Remarks**

**Sample Number:** LBD-07 S-7A 18-20

**Date:** 9-5-23

**RSA Geolab**

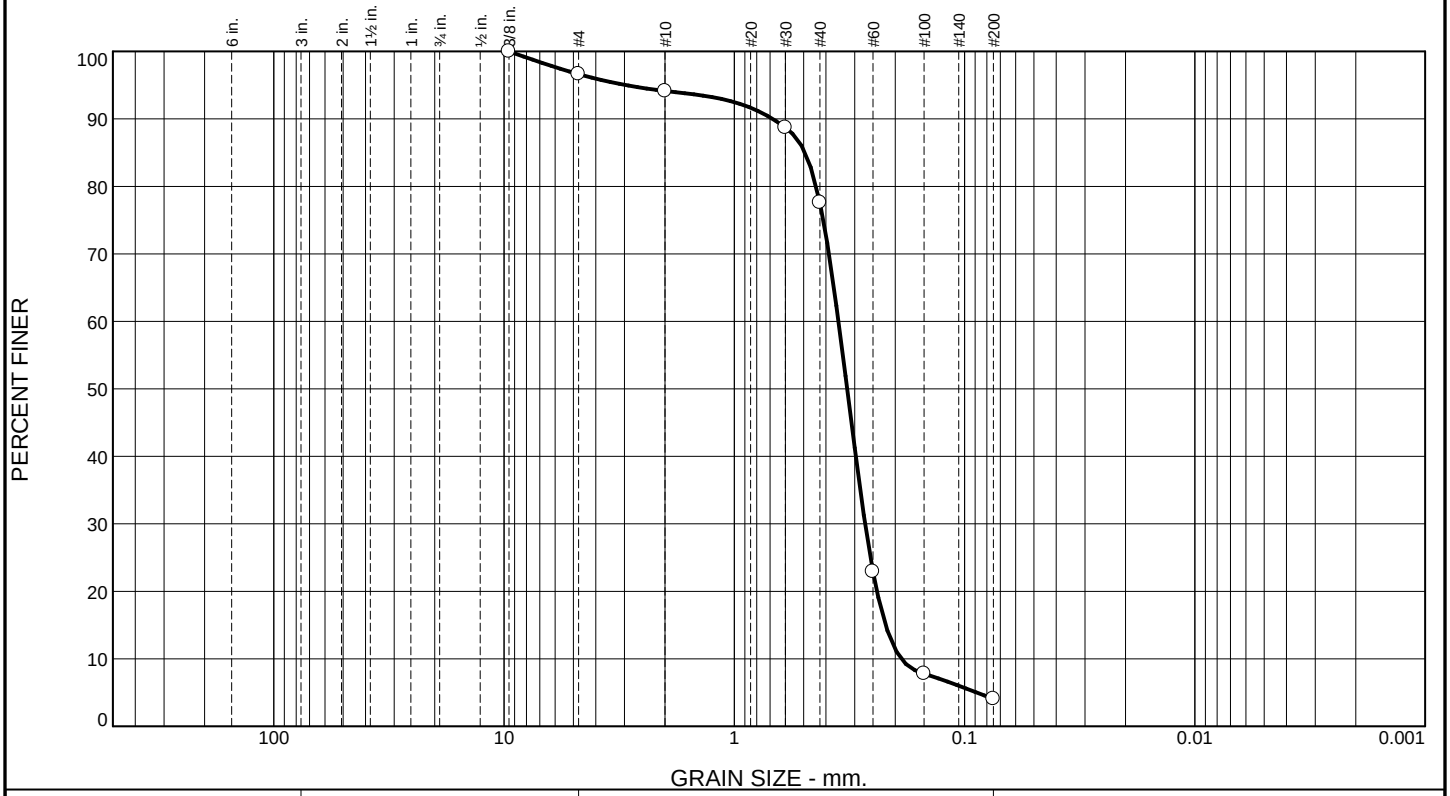
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 3.4 | 2.5 | 16.5 | 73.5 | 4.1 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .375 | 100.0 | | |
| #4 | 96.6 | | |
| #10 | 94.1 | | |
| #30 | 88.7 | | |
| #40 | 77.6 | | |
| #60 | 22.9 | | |
| #100 | 7.8 | | |
| #200 | 4.1 | | |

* (no specification provided)

**Material Description**

Yellow

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 0.6818 $D_{85}$= 0.4929 $D_{60}$= 0.3530
$D_{50}$= 0.3237 $D_{30}$= 0.2704 $D_{15}$= 0.2203
$D_{10}$= 0.1885 $C_u$= 1.87 $C_c$= 1.10

**Classification**

USCS= SP AASHTO=

**Remarks**

**Sample Number:** LBD-07 S-7B 18-20

**Date:** 9-5-23

**RSA Geolab**

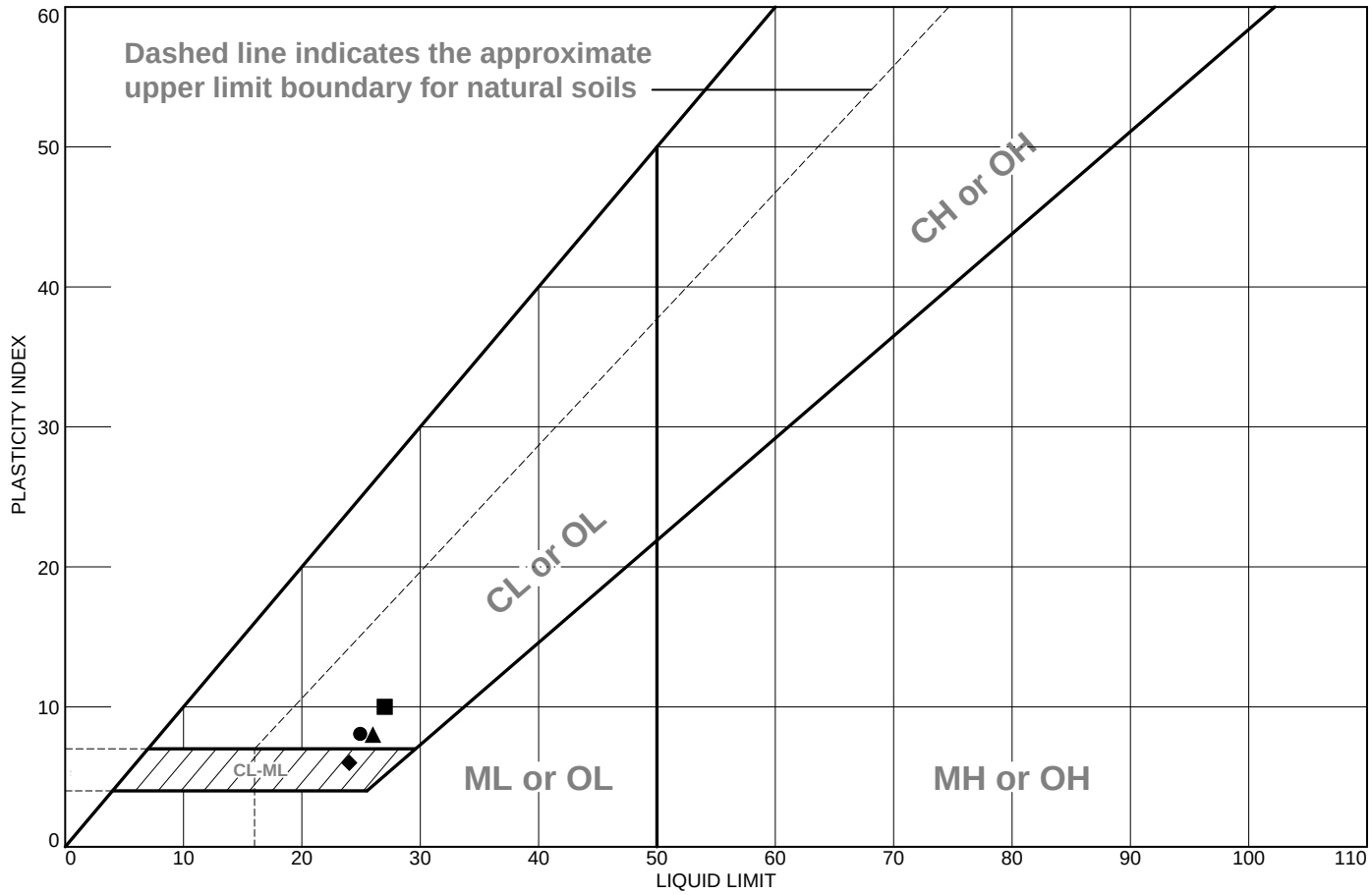
**Union, New Jersey**

**Client:** Langan Engineering
**Project:** Project Maximus, Hempstead, NY
Project# not provided
**Project No:** 869

**Figure**

**Tested By:** ER/OH **Checked By:** KP

# LIQUID AND PLASTIC LIMITS TEST REPORT




| | MATERIAL DESCRIPTION | LL | PL | PI | %<#40 | %<#200 | USCS |
|---|---|---|---|---|---|---|---|
| ● | Yellowish Brown Clay & Silt, little cmf Sand (visual) | 25 | 17 | 8 | | | |
| ■ | Brownish Yellow Clay & Silt, trace cmf Sand (visual) | 27 | 17 | 10 | | | |
| ▲ | Yellowish Brown Clay & Silt, little cmf Sand (visual) | 26 | 18 | 8 | | | |
| ◆ | Very Pale Brown Clay & Silt little, f Gravel, trace cmf Sand (visual) | 24 | 18 | 6 | | | |
| | | | | | | | |

**Project No.** 869 **Client:** Langan Engineering

**Project:** Project Maximus, Hempstead, NY

Project# not provided

●**Sample Number:** LBD-02 S-1 5-7

■**Sample Number:** LBD-03 S-2B 7-9

▲**Sample Number:** LBD-04 S-2B 7-9

◆**Sample Number:** LBD-05 S-1B 6-8

**RSA Geolab**

**Union, New Jersey**

**Remarks:**

●9-5-23

**Figure**

**Tested By:** VS **Checked By:** KP