APPENDIX I-4

SLOPE STABILITY EVALUATION

Dynamic Earth, LLC

August 3, 2020

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August 3, 2020
Via email: jtunis@northwindgroup.com

THE PRESERVE AT INDIAN HILLS, LLC
c/o THE NORTHWIND GROUP, LLC
One Rabro Drive, Suite 100
Hauppauge, New York 11788

Attn: Mr. Jim Tsunis

RE: The Preserve at Indian Hills
21 Breeze Hill Road
Northport, Town of Huntington
Suffolk County, NY
Dynamic Earth Job# 3114-99-001EC

Dear Mr. Tsunis:

Dynamic Earth, LLC (Dynamic) has completed a supplemental geotechnical field investigation and slope stability analysis for the proposed Preserve at Indian Hills residential development.

These supplemental services were conducted in response to peer review comments provided AECOM regarding slope stability analyses previously completed for the aforementioned project by Paulus, Sokolowski, and Sartor Engineering, PC (PS&S). Dynamic's geotechnical engineering services were performed in general accordance with our May 6, 2020 Contract Amendment Request (CAR) No.1. Dynamic's scope of services included geotechnical investigation and evaluation of slope stability relevant to a proposed 120 foot buffer from the crest of slope undergoing a documented ongoing landslide. Our scope of services was limited to the slope stability evaluation as described herein.

Project Understanding

The project site is located on the existing Indian Hills Country Club (IHCC) property at 21 Breeze Hill Road in Northport, Town of Huntington, Suffolk County, New York. The subject site is bound to the north by the Long Island Sound; to the south and west by residential properties; and to the east by Fresh Pond Road. The northern portion of the IHCC consists of bluffs with beach shorelines and is located within an existing coastal erosion zone. It is our understanding that this erosion zone has been undergoing continual movement toward the Long Island Sound since about 1904. The site of the proposed construction is shown on the attached *Boring Location Plan*.

Based on the February 2020 (last revised) *The Preserve at Indian Hills* plan set, prepared by Nelson & Pope Engineers and Surveyors (N&P), the proposed site development relevant to this report includes construction of a twin-home residential development within the northwest portion of the existing Indian Hills Country Club. Earth fills ranging between of approximately two feet and 17 feet are currently proposed in order to achieve design subgrade elevations.

PS&S previously conducted a geotechnical evaluation to evaluate the potential effects of development near the coastal erosion zone. The results of their evaluation indicated that the proposed development would not adversely impact the landslide area provided that a minimum 120-foot buffer from the crest of the slope is maintained; and, that the proposed construction closest to the buffer zone consisted of conventional light-weight construction (i.e. wood-framed structures) so that the surcharge load from the proposed development is limited to 300 psf. Dynamic understands that proposed earth fills as noted above have been added to the proposed development plans since the completion of PS&S's evaluation.

At the request of the Town of Huntington, AECOM conducted a peer review of PS&S's geotechnical evaluation and presented their findings in memoranda dated Ocober 23, 2019 and March 24, 2020. AECOM provided their professional opinion that the slope stability evaluation by PS&S was inadequate to confirm the 120 foot buffer proposed and provided recommendations including the following:

- Utilizing a factor of safety equal to or greater than 1.3 to develop the required setback distance from the escarpment;
- Employing soil borings with continuous split-spoon sampling in an effort to identify potential slip-plane surfaces;
- Performing one boring upslope from the failure zone;
- Obtaining accurate groundwater readings from groundwater observation wells; and
- Developing site-specific soil properties from laboratory and field testing.

Field Exploration

Field exploration of the project site was conducted by means of three soil borings, (identified as borings B-1, B-2, and B-3) and the installation of two temporary piezometers. The soil borings were drilled using both mud- and wash-rotary drilling and continuous split-spoon sampling techniques with a truck-mounted drill rig.

Temporary piezometers were installed to the bottom of borings B-2 and B-3. Groundwater levels were monitored throughout the field investigation. Each well was removed prior to demobilizing from the site.

The test locations and depths are tabulated below. The approximate test locations are shown on the accompanying *Boring Location Plan.*

TEST LOCATION SUMMARY TABLE		
Number	**Proposed Location**	**Final Depth (feet)**
B-1	Existing Slope	101.0
B-2	Existing Slope	66.0
B-3	Existing Slope	46.0

The soil borings were completed in the presence of a Dynamic Earth engineer who performed field tests, recorded visual classifications, and collected samples of the various strata encountered. The test locations were initially located in the field using conventional taping procedures with estimated right angles. Upon completion, each test location was surveyed in the field by N&P.

Soil borings and standard penetration tests (SPTs) were conducted in general accordance with ASTM D5783 (*Standard Guide for Use of Direct Rotary Drilling with water based drilling fluid for Geoenvironmental Exploration and the installation of subsurface water quality monitoring devices)* and ASTM D1586 (*Standard Test Method for Standard Penetration Test and Split Barrel Sampling of Soils)*, respectively. The SPT resistance value (N) can be used as an indicator of the consistency of fine-grained soils and relatively density of coarse-grained soils. Unconfined compressive strength (Q_p) values within the fine-grained soils were obtained with a pocket penetrometer. The SPT N-value and unconfined compressive strength are correlated with the engineering behavior of soil to develop geotechnical recommendations in fine-grained soils. Due to the very stiff conditions encountered, no relatively undisturbed samples (Shelby tubes) could be obtained.

Groundwater level observations were recorded throughout the field operations. Seasonal variations, temperature, anthropogenic, seasonality, soil permeability, and precipitation will influence the actual and observed groundwater levels.

Laboratory Testing Program

Each sample was visually classified in accordance with ASTM D 2488. In addition, representative samples of selected strata encountered were subjected to a laboratory testing program which included 35 Atterberg limits determinations (ASTM D 4318), 36 moisture content determinations (ASTM D 2216), 29 washed gradation analyses (ASTM D 422), and four Hydrometer Analyses (ASTM D 7928) in order to perform supplementary engineering soil classifications in accordance with ASTM D 2487.

The soils encountered were too stiff to obtain relatively undisturbed samples; therefore, Unconsolidated Undrained (UU) Triaxial Compression testing could not be conducted in strict accordance with ASTM D 2850. However, in an effort to aid in the assessment of undrained compressive and shear strength parameters of cohesive soils obtained from the potential slip plane surfaces, intact portions of split spoon samples were submitted to TerraSense, LLC of Totowa, New Jersey. These samples were tested for Unconsolidated Undrained (UU) Triaxial Compression testing and results were interpreted with consideration of the noted sampling limitations. The results of the laboratory testing program are provided as an attachment.

Subsurface Profile

Details of the subsurface materials encountered are presented on the *Records of Subsurface Exploration* presented in the Appendix of this report. The subsurface soil conditions encountered in the soil test borings consisted of the following generalized strata in order of increasing depth.

Surface Cover: The borings were performed within grass-covered areas of the IHCC and encountered approximately two inches of topsoil at the surface.

Existing Fill Materials: Beneath the surface cover material, each test location encountered existing fill materials that generally consisted of sand with variable amounts of silt, clay, and rootlet debris. This stratum extended to depths ranging between approximately 1.5 feet and 10 feet below the surface, corresponding to elevations ranging between approximately 65.6 feet and 13.9 feet above NAVD88. Standard Penetration Test (SPT) N-values recorded within this stratum ranged between four blows per foot (bpf) and 36 bpf.

Natural Glacial Deposits: Beneath the existing fill material, natural glacial deposits consisting of silt, elastic silt, lean clay, highly plastic (fat) clay, and sand with lesser amounts of clay (USCS: ML, MH, CL, CH, SC) were encountered to boring termination depths ranging between approximately 101 feet and 46 feet below the ground surface, corresponding to elevations ranging between approximately -22.1 feet and -33.9 feet above NAVD88. A single SPT N-value of 36 bpf was recorded within the granular portions of this stratum; generally indicating a dense condition. Unconfined compressive strength (Qp) values obtained from pocket penetrometer tests within the fine-grained portions of the glacial deposits ranged between approximately 0.25 ton per square foot (tsf) and greater than 4.0 tsf; and average approximately 3.3 tsf, generally indicating a relatively very stiff consistency, except at observed apparent slip planes.

During the field investigation, each sample was reviewed for evidence of potential slide/slip-plane surfaces. Based on Dynamic's review, three potential slip-plane surfaces were noted within boring B-2, while one potential slip-plane surface was observed within boring B-3. No potential slip-planes were encountered within boring B-1 conducted upslope of the existing coastal erosion zone. The potential slip-planes encountered were noted to consist of either thin seams of soil (typically six inches or less) with visibly higher moisture contents than the surrounding soils or lower unconfined compressive strength values (as determined from pocket penetrometer tests). An apparent slip-plane encountered in boring B-2 consisted of a noticeable discontinuity within the glacial deposits consisting of a nearly vertical sand lense.

Groundwater: Groundwater measurements were obtained while drilling and prior to backfilling boring B-1. Additionally, the groundwater levels were monitored throughout the fieldd investigation within the temporary piezometers installed in borings B-2 and B-3. A summary of the stabilized groundwater levels recorded are outlined I the table below:

SUMMARY OF GROUNDWATER READINGS		
Boring No.	**Approximate Depth to Groundwater (ft)**	**Approximate Groundwater Elevation (NAVD88)**
B-1	4.0	63.1
B-2	6.8	33.6
B-2	2.9	21.0

Monitoring of Existing Structures & Ground Movements

On May 5, 2020, Nelson & Pope established a total of 12 surface monitoring points throughout the subject area. Monitoring points MM-1 through MM-6 were installed outside of the coastal erosion zone, while the remaining monitoring points (MM-7 through MM-11) were placed within the landslide area. Location MM-12 appears to be near the edge of the coastal erosion zone. The horizontal and vertical ground movements were periodically monitored over the period of about eight weeks, between May 5, 2020 and June 30, 2020.

During the monitoring period, surface monitoring points located within the coastal erosion zone identified maximum northward movements ranging between approximately 1.3 to 1.9 inches. Negligible northward movement was recorded at location MM-11; however, a westward movement of approximately 0.58 inches was recorded for this monitoring point. Horizontal movement of the monitoring points located outside of the landslide area shifted a maximum of 0.12 inches. Measurable settlement was observed only at monitoring points MM-7 and MM-8, where recorded settlements ranged between approximately 0.12 and 0.24 inches. It should be noted that the reported measurement accuracy of the surveying equipment used during the monitoring program was ± 1/8-inch (or 0.12 inches).

Additionally, an existing residential structure is located on a neighboring property at 9 Mystic Lane. This structure was completed circa November 2017 and is within approximately 36 feet of the coastal erosion zone. Suddell Architects & Builders was contacted in an effort to inquire whether this structure has experienced signs of distress. Based on their June 26, 2002 response letter, the existing residential structure has not experienced shifting or cracking of the foundation walls. This response letter is included as an attachment.

Stability Analysis

Dynamic evaluated the stability for the proposed development using classical limit equilibrium methods. The limit equilibrium method requires information about the soil strength characteristics to compute a factor of safety along a potential sliding mass. The factor of safety is the ratio between the soil shear strength and the shear stress required to stabilize the slope. The Soilworks computer program by Midas software was used to conduct the slope stability analyses.

A factor of safety of 1.0 or lower indicates a failing slope condition. Industry standards and various codes generally consider a factor of safety of 1.5 or higher to be indicative of a stable slope under normal, permanent conditions and 1.1 or higher under seismic loading. Soil parameters were developed based on subsurface data and both field and laboratory test results obtained from Dynamic's June 2020 investigation, with appropriate interpretation. The parameters were then used to evaluate the failure surfaces and factors of safety for the proposed development at the subject site.

The various models evaluated included a failure surface occurring between boring location B-1 and the existing escarpment (i.e. the estimated actual existing location associated with on-going landslide zone); a hypothetical failure surface occurring at a distance of approximately 100 feet from the existing escarpment (i.e. between the 120-foot setback and B-1); and a hypothetical failure surface occurring at approximately 190 feet from the existing escarpment (i.e. beyond the 120-foot buffer, beneath the proposed development). Furthermore, two cases were evaluated for each model: Case 1 - Pre-Development/Existing Conditions and Case 2- Post-Development/Proposed Conditions. The Case 2 models incorporated the proposed new fills and a 300 psf surcharge associated with proposed residential development. The proposed fills were added to the model as a distinct soil layer, using its self-weight to impose a load on the subsurface model. The proposed construction was incorporated to the model as the 300 psf surcharge load. A third case (Case 3) was used to evaluate the 100-foot and 190-foot setback models under proposed and seismic loading conditions. The results of Dynamic's analysis are summarized below.

SLOPE STABILITY ANALYSIS SUMMARY	
Model Description	**Factor of Safety**
Actual Failure Surface Between B-1 & Escarpment – Case 1	0.94
Actual Failure Surface Between B-1 & Escarpment – Case 2	0.94
Hypothetical Failure Surface at 100-ft Setback – Case 1	1.50
Hypothetical Failure Surface at 100-ft Setback – Case 2	1.50
Hypothetical Failure Surface at 100-ft Setback – Case 3 (Seismic)	1.34
Hypothetical Failure Surface at 190-ft Setback – Case 1	1.95
Hypothetical Failure Surface at 190-ft Setback – Case 2	1.92
Hypothetical Failure Surface at 190-ft Setback – Case 3 (Seismic)	1.69

As would be expected, the slope stability analysis for the actual conditions (with a failure surface between B-1 and the escarpment) are less than 1.0, indicative of the documented landslide area. The additional cases were modelled with forced hypothetical failure surfaces both within and beyond the proposed 120 foot setback to evaluate the factors of safety relevant to the proposed development, which exceed 1.5. Furthermore, safety factors exceeded 1.1, and even exceeded 1.3, when both hypothetical failure surfaces were modeled under both proposed development and seismic loading conditions.

Evaluation Summary

Dynamic Earth's evaluation of the existing slope included observing ground movements via a surface monitoring program, performance review of an existing structure located near the coastal erosion zone, and a slope stability analysis using classical limit equilibrium methods. The results of the evaluation are summarized below:

- Ground movement observed within the existing landslide area continued to generally shift in a northward direction toward the Long Island Sound. However, both horizontal (north-south) and vertical movements outside this area shifted a maximum of 0.12 inches which is within the reported measurement accuracy of the survey equipment.

- Review of the performance of a nearby structure, located within 36 feet of the coastal erosion zone, indicates that it has not experienced any shifting or cracking of the foundation walls since its completion circa November 2017.

- The results of the slope stability analysis indicate that the factors of safety estimated for hypothetical failure planes that extend beyond the 120-foot development setback requirement and into the proposed development exceed 1.5. Additionally, the calculated factors of safety for hypothetical failure planes at approximately 100 feet for the existing escarpment also exceed 1.5.

- Estimated factors of safety under seismic loading conditions exceed 1.1 and even exceeded 1.3.

In conclusion, the results of Dynamic's slope stability evaluation (as outlined above) indicate that maintaining the 120-foot setback requirement for the proposed development will not adversely affect the factor of safety of the existing slope.

This report is limited to addressing the site conditions as they relate to the evaluation of the existing slope. The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been promulgated after being prepared in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology. No other warranties are implied or expressed.

Should you have any question regarding this matter, do not hesitate to contact our office.

Sincerely,

DYNAMIC EARTH, LLC

Gregory J. Fritts, P.E.
Senior Geotechnical Engineer

Jeffrey W. Schaumburg, P.E.
Principal

GF/JWS O:\EARTH Projects\3114 The Northwind Group LLC\99-001EC Huntington\Reports by Dearth\FINAL REPORTS\3114-99-001EC_Preserve at Indian Hills - Stability Evaluation_REV 1.doc

cc: Charles J. Voorhis (Nelson Pope Voorhis)
Mark Haley (Haley & Aldrich, Inc.)
Carrie Layhee, P.E. (Haley & Aldrich, Inc.)

Boring Location Plan

SCALE: N.T.S.	JOB No: 3114-99-001EC
SHEET No: 1 OF 1	DRAWN BY: SH DESIGNED BY: - CHECKED BY: GF DATE: 5/29/2020

TITLE:

BORING LOCATION PLAN

PROJECT: **THE NORTHWIND GROUP, LLC**
THE PRESERVE AT INDIAN HILLS
21 BREEZE HILL ROAD
TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK

Rev. # 0 | DEC Client Code: 3114

LEGEND:

B-X — APPROXIMATE LOCATION OF SOIL BORING

NOTES:
1. THIS PLAN IS NOT FOR CONSTRUCTION AND WAS PREPARED TO ILLUSTRATE TEST LOCATIONS ONLY AND MAY NOT REFLECT THE MOST CURRENT REVISION OF THE BASE PLAN.
2. THIS PLAN HAS BEEN PREPARED BASED ON A MAY 29, 2020 GOOGLE MARS AERIAL.

DYNAMIC EARTH, LLC
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Records of Subsurface Exploration

DYNAMIC EARTH

BOREHOLE LOG

Boring No : B-1

Project:	The Preserve at Indian Hills	**Proj. No.:**	3114-99-001EC
Location:	21 Breeze Hill Road, Town of Huntington, Suffolk County, New York	**Client:**	The Northwind Group, LLC

Surface Elevation:	67.1 feet	**Date Started:**	05-19-2020	**Groundwater Data**	**Depth**	**El.**	**Additional Groundwater Data**	**Depth**	**El.**
Termination Depth:	101.0 feet	**Date Completed:**	05-21-2020		**(ft)**	**(ft)**		**(ft)**	**(ft)**
Proposed Location:	Existing Slope	**Logged by:**	S. Hume	**While Drilling:** ▽	4.0	63.1			
Drill/Test Method:	Mud Rot./SPT	**Contractor:**	Allied Drilling	**At Completion:** ▼	4.0	63.1			
Hammer Type:	Donut	**Rig Type:**	Diedrich D-50						

Sample Information										Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
Depth (Feet)	Number	Type	Rec (in)	RQD %	Blows per 6" or drill time (mm:ss)		N						
0.0-2.0	S-1	SS	16	--	5	9	16				Surface Cover	2" Topsoil	
					7	8					FILL	Dark brown medium to fine sand, some silt, little fine gravel, mosit (FILL)	Qp = 1.5 tsf
2.0-4.0	S-2	SS	16	--	9	10	22					Brown silt, some fine sand, moist, very stiff (ML)	
					12	15						As above , very stiff (ML)	Qp = 2.5 tsf
4.0-6.0	S-3	SS	8	--	11	10	22			5		As above, wet, stiff (ML)	Qp = 1.75 tsf
					12	12							
6.0-8.0	S-4	SS	14	--	10	11	23					As above , wet, stiff (ML)	Qp = 2.0 tsf
					12	12							
8.0-10.0	S-5	SS	20	--	16	19	46					As above, wet, very stiff (ML)	Qp = 2.75 tsf
					27	22				10			
10.0-12.0	S-6	SS	22	--	15	29	54					As above, very dense (ML)	Qp = 3.5 tsf
					25	22							
12.0-14.0	S-7	SS	16	--	5	11	27					Brown clayey silt, some fine sand, wet, very stiff (ML)	Qp = 3.25 tsf
					16	15					Glacial Deposits		
14.0-16.0	S-8	SS	24	--	9	15	24			15		Brown silt trace fined sand, wet, hard (ML)	Qp = 4.0 tsf
					9	21							
16.0-18.0	S-9	SS	16	--	6	8	26					As above, wet, very stiff (ML)	Qp = 3.0 tsf
					18	23							
18.0-20.0	S-10	SS	14	--	15	27	51					As above, wet, hard (ML)	Qp = 4.25 tsf
					24	34				20			
20.0-22.0	S-11	SS	16	--	11	12	26					As above , wet, hard (ML)	Qp = 4.0 tsf
					14	19							
22.0-24.0	S-12	SS	14	--	19	25	55					Brown clayey silt, little fine sand, wet, very dense (ML)	Qp = 1.5 tsf
					30	42							
24.0-26.0	S-13	SS	10	--	6	10	30			25		Brown silty clay, trace fine sand, wet, very stiff (CL)	Qp = 3.25 tsf
					20	27							

DYNAMIC EARTH

BOREHOLE LOG

Boring No : B-1

Project:	The Preserve at Indian Hills	**Proj. No.:**	3114-99-001EC
Location:	21 Breeze Hill Road, Town of Huntington, Suffolk County, New York	**Client:**	The Northwind Group, LLC

Surface Elevation:	67.1 feet	**Date Started:**	05-19-2020	**Groundwater Data**	**Depth**	**El.**	**Additional Groundwater Data**	**Depth**	**El.**
Termination Depth:	101.0 feet	**Date Completed:**	05-21-2020		**(ft)**	**(ft)**		**(ft)**	**(ft)**
Proposed Location:	Existing Slope	**Logged by:**	S. Hume	**While Drilling:** ▽	4.0	63.1			
Drill/Test Method:	Mud Rot./SPT	**Contractor:**	Allied Drilling	**At Completion:** ▼	4.0	63.1			
Hammer Type:	Donut	**Rig Type:**	Diedrich D-50						

Sample Information								Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
Depth (Feet)	Number	Type	Rec (in)	RQD %	Blows per 6" or drill time (mm:ss)	N					
26.0-28.0	S-14	SS	18	--	16 22 / 31 27	53				Brown clayey silt, trace fine sand, wet, very dense (ML)	Qp = 2.75 tsf
28.0-30.0	S-15	SS	12	--	15 22 / 21 29	43				Brown silty clay, trace fine sand, wet, very stiff (CL)	Qp = 3.5 tsf
30.0-32.0	S-16	SS	18	--	28 44 / 35 32	79		30		As above, wet, very stiff (CL)	Qp = 4.0 tsf
32.0-34.0	S-17	SS	16	--	7 12 / 17 18	29				As above, wet, very stiff (CL)	Qp = 3.0 tsf
34.0-36.0	S-18	SS	20	--	18 20 / 20 25	40		35		As above, wet, very stiff (CL)	Qp = 3.25 tsf
36.0-38.0	S-19	SS	22	--	10 14 / 25 25	39				As above , wet, very stiff (CL)	Qp = 3.0 tsf
38.0-40.0	S-20	SS	24	--	18 21 / 35 32	56			Glacial Deposits	Brown elastic silt, trace fine sand, wet, very stiff (MH)	Qp = 2.25 tsf
40.0-42.0	S-21	SS	24	--	12 21 / 32 32	53		40		As above, wet, very stiff (MH)	Qp = 3.5 tsf
42.0-44.0	S-22	SS	22	--	27 46 / 38 39	84				Brown silty clay, trace fine sand, wet hard (CL)	Qp = 4.25 tsf
44.0-46.0	S-23	SS	18	--	6 18 / 26 37	44		45		As above , wet, hard (CL)	Qp > 4.5 tsf
46.0-48.0	S-24	SS	10	--	18 26 / 27 20	53				As above, wet, very stiff (CL)	Qp = 4.0 tsf
48.0-50.0	S-25	SS	18	--	10 16 / 26 33	42				As above, wet, hard (CL)	Qp = 4.25 tsf
50.0-52.0	S-26	SS	18	--	17 29 / 41 40	70		50		As above (CL)	Qp = 4.0 tsf

DYNAMIC EARTH

BOREHOLE LOG

Boring No : B-1

Project:	The Preserve at Indian Hills	**Proj. No.:**	3114-99-001EC
Location:	21 Breeze Hill Road, Town of Huntington, Suffolk County, New York	**Client:**	The Northwind Group, LLC

Surface Elevation:	67.1 feet	**Date Started:**	05-19-2020	**Groundwater Data**	**Depth**	**El.**	**Additional Groundwater Data**	**Depth**	**El.**
Termination Depth:	101.0 feet	**Date Completed:**	05-21-2020		**(ft)**	**(ft)**		**(ft)**	**(ft)**
Proposed Location:	Existing Slope	**Logged by:**	S. Hume	**While Drilling:** ▽	4.0	63.1			
Drill/Test Method:	Mud Rot./SPT	**Contractor:**	Allied Drilling	**At Completion:** ▼	4.0	63.1			
Hammer Type:	Donut	**Rig Type:**	Diedrich D-50						

Sample Information								Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
Depth (Feet)	Number	Type	Rec (in)	RQD %	Blows per 6" or drill time (mm:ss)		N				
52.0-54.0	S-27	SS	22	--	13 25 / 35 41		60			Brown silt, trace fine sand, wet, very stiff (ML)	Qp = 3.5 tsf
54.0-56.0	S-28	SS	18	--	33 38 / 42 40		80	55		As above , wet, very stiff (ML)	Qp = 3.0 tsf
56.0-58.0	S-29	SS	16	--	12 20 / 30 36		50			As above, wet, very stiff (ML)	Qp = 3.25 tsf
58.0-60.0	S-30	SS	18	--	20 31 / 45 42		76			As above, wet, very stiff (ML)	Qp = 4.0 tsf
60.0-62.0	S-31	SS	20	--	12 20 / 29 30		49	60		As above, wet, hard (ML)	Qp > 4.5 tsf
62.0-64.0	S-32	SS	18	--	14 33 / 41 42		74			As above, wet ,hard (ML)	Qp > 4.5 tsf
64.0-66.0	S-33	SS	20	--	12 14 / 25 34		39	65	Glacial Deposits	As above , wet, hard (ML)	Qp > 4.5 tsf
66.0-68.0	S-34	SS	16	--	10 15 / 23 26		38			Grayish brown elastic silt, trace fine sand, wet, hard (MH)	Qp > 4.5 tsf
68.0-70.0	S-35	SS	18	--	11 21 / 21 24		42			As above, wet, hard (MH)	Qp > 4.5 tsf
70.0-72.0	S-36	SS	18	--	11 15 / 20 26		35	70		As above, wet, hard (MH)	Qp > 4.5 tsf
72.0-74.0	S-37	SS	20	--	33 38 / 26 29		64			As above, wet, hard (MH)	Qp > 4.5 tsf
74.0-76.0	S-38	SS	14	--	10 13 / 27 29		40	75		Grayish brown highly plastic clay, trace fine sand, wet, very stiff (CH)	Qp = 3.75 tsf
76.0-78.0	S-39	SS	20	--	10 13 / 27 29		40			As above, wet, very stiff (CH)	Qp = 3.25 tsf

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BOREHOLE LOG

Boring No : B-1

Project:	The Preserve at Indian Hills	**Proj. No.:**	3114-99-001EC
Location:	21 Breeze Hill Road, Town of Huntington, Suffolk County, New York	**Client:**	The Northwind Group, LLC

Surface Elevation:	67.1 feet	**Date Started:**	05-19-2020	**Groundwater Data**	**Depth (ft)**	**El. (ft)**	**Additional Groundwater Data**	**Depth (ft)**	**El. (ft)**
Termination Depth:	101.0 feet	**Date Completed:**	05-21-2020						
Proposed Location:	Existing Slope	**Logged by:**	S. Hume	**While Drilling:** ▽	4.0	63.1			
Drill/Test Method:	Mud Rot./SPT	**Contractor:**	Allied Drilling	**At Completion:** ▼	4.0	63.1			
Hammer Type:	Donut	**Rig Type:**	Diedrich D-50						

Sample Information								Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
Depth (Feet)	Number	Type	Rec (in)	RQD %	Blows per 6" or drill time (mm:ss)	N					
78.0-80.0	S-40	SS	8	--	11 12 / 18 28	30		80	Glacial Deposits	As above, wet, very stiff (CH)	Qp = 2.75 tsf
80.0-82.0	S-41	SS	18	--	7 13 / 20 35	33				As above, wet, very stiff (CH)	Qp = 3.5 tsf
82.0-84.0	S-42	SS	14	--	24 26 / 26 27	52				As above, wet, very stiff (CH)	Qp = 3.5 tsf
84.0-86.0	S-43	SS	18	--	6 15 / 16 16	31		85		As above, wet, very stiff (CH)	Qp = 3.5 tsf
86.0-88.0	S-44	SS	12	--	15 19 / 20 26	39				As above, wet, very stiff (CH)	Qp = 3.5 tsf
88.0-90.0	S-45	SS	14	--	5 15 / 19 23	34				As above , wet, very stiff (CH)	Qp = 4.0 tsf
90.0-92.0	S-46	SS	16	--	21 22 / 24 27	46		90		As above, wet, very stiff (CH)	Qp = 3.5 tsf
92.0-94.0	S-47	SS	22	--	7 13 / 19 23	32				As above, wet, very stiff (CH)	Qp = 3.5 tsf
94.0-96.0	S-48	SS	16	--	27 25 / 30 33	55		95		As above, wet, very stiff (CH)	Qp = 4.0 tsf
96.0-98.0	S-49	SS	18	--	18 19 / 26 36	45				As above, wet, hard (CH)	Qp = 4.25 tsf
98.0-100.0	S-50	SS	16	--	18 24 / 25 28	49				As above, wet, hard (CH)	Qp > 4.5 tsf
100.0-101.0	S-51	SS	12	--	-- -- / -- --			100		As above (CH)	Qp = 4.25 tsf
										Boring B-1 was terminated at approximately 101 feet below ground surface.	Sample S-51 was pushed approx. 1 ft.

DYNAMIC EARTH

BOREHOLE LOG

Boring No : B-2

Project: The Preserve at Indian Hills — **Proj. No.:** 3114-99-001EC

Location: 21 Breeze Hill Road, Town of Huntington, Suffolk County, New York — **Client:** The Northwind Group, LLC

Surface Elevation:	40.4 feet	**Date Started:**	05-26-2020	**Groundwater Data**	**Depth (ft)**	**El. (ft)**	**Additional Groundwater Data**	**Depth (ft)**	**El. (ft)**
Termination Depth:	66.0 feet	**Date Completed:**	05-27-2020						
Proposed Location:	Existing Slope	**Logged by:**	S. Hume	**While Drilling:** ▽	5.5	34.9			
Drill/Test Method:	Wash Rotary/SPT	**Contractor:**	Allied Drilling	**At Completion:** ▼	6.8	33.6			
Hammer Type:	Donut	**Rig Type:**	Diedrich D-50						

Sample Information								Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
Depth (Feet)	Number	Type	Rec (in)	RQD %	Blows per 6" or drill time (mm:ss)	N					
0.0-2.0	S-1	SS	8	--	1 3 / 2 2	5			Surface Cover	2" Topsoil	
									FILL	Brown coarse to fine sand, some silt, moist (FILL)	
2.0-4.0	S-2	SS	4	--	2 3 / 3 2	6				As above, little roots (FILL)	
4.0-6.0	S-3	SS	4	--	3 2 / 2 2	4		5 ▽		As above (FILL)	
										Brown silty clay, wet, stiff (CL)	Qp = 1.75 tsf
6.0-8.0	S-4	SS	4	--	4 8 / 7 7	15	▼			As above (CL)	Qp = 1.5 tsf
8.0-10.0	S-5	SS	12	--	5 9 / 9 12	18				Brown highly plastic clay, trace fine sand, wet, stiff (CH)	Qp = 1.25 tsf
								10		As above, very soft (CH)	Apparent discontinuity 10 ft - 10.5 ft. Qp = 0.25 tsf
10.0-12.0	S-6	SS	8	--	7 8 / 9 11	17				As above, stiff (CH)	Qp = 1.5 tsf
										As above (CH)	Qp = 1.5 tsf
12.0-14.0	S-7	SS	22	--	11 13 / 14 13	27				Brown medium to fine sand, and silty clay, wet, medium dense (SC)	
										Brown Highly plastic clay, wet, stiff (CH)	Qp = 1.25 tsf
14.0-16.0	S-8	SS	10	--	4 5 / 9 10	14		15	Glacial Deposits	As above (CH)	Qp = 1.75 tsf
16.0-18.0	S-9	SS	20	--	14 15 / 12 19	27				Brown clay, trace fine sand, wet, very stiff (CL)	Qp = 2.0 tsf
18.0-20.0	S-10	SS	22	--	5 8 / 13 14	21				Brown highly plastic clay, trace fine sand, wet, very stiff (CH)	Qp = 2.75 tsf
								20			
20.0-22.0	S-11	SS	8	--	12 11 / 9 12	20				As above, wet, very stiff (CH)	Qp = 3.5 tsf
22.0-24.0	S-12	SS	16	--	7 12 / 15 20	27				As above, wet, very stiff (CH)	Qp = 3.0 tsf
24.0-26.0	S-13	SS	8	--	9 12 /	23					Qp = 3.75 tsf

DYNAMIC EARTH

BOREHOLE LOG

Boring No : B-2

Project:	The Preserve at Indian Hills	**Proj. No.:**	3114-99-001EC
Location:	21 Breeze Hill Road, Town of Huntington, Suffolk County, New York	**Client:**	The Northwind Group, LLC

Surface Elevation:	40.4 feet	**Date Started:**	05-26-2020	**Groundwater Data**	**Depth**	**El.**	**Additional Groundwater Data**	**Depth**	**El.**
Termination Depth:	66.0 feet	**Date Completed:**	05-27-2020		**(ft)**	**(ft)**		**(ft)**	**(ft)**
Proposed Location:	Existing Slope	**Logged by:**	S. Hume	**While Drilling:** ▽	5.5	34.9			
Drill/Test Method:	Wash Rotary/SPT	**Contractor:**	Allied Drilling	**At Completion:** ▼	6.8	33.6			
Hammer Type:	Donut	**Rig Type:**	Diedrich D-50						

Sample Information								Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
Depth (Feet)	Number	Type	Rec (in)	RQD %	Blows per 6" or drill time (mm:ss)		N				
					11	15				As above, wet, very stiff (CH)	
26.0-28.0	S-14	SS	16	--	5 19	13 25	32			Brown silty clay, trace fine sand, wet, very stiff (CL-ML)	Qp = 3.0 tsf
28.0-30.0	S-15	SS	12	--	11 18	13 16	31			Brown highly plastic clay, wet, hard (CH)	Qp = 4.25 tsf
30.0-32.0	S-16	SS	18	--	6 14	12 22	26	30		As above, wet, very stiff (CH)	Qp = 4.0 tsf
32.0-34.0	S-17	SS	10	--	17 23	25 22	48			As above, wet, very stiff (CH)	Apparent 0.5" discontinuity at 31.5 ft Qp = 4.0 tsf
34.0-36.0	S-18	SS	22	--	7 12	8 21	20	35		As above, very stiff (CH)	Qp = 3.5 tsf
36.0-38.0	S-19	SS	8	--	12 20	18 27	38		Glacial Deposits	As above, wet, very stiff (CH)	Qp = 3.5 tsf
38.0-40.0	S-20	SS	18	--	7 16	12 23	28			As above, trace fine gravel, hard (CH)	Qp = 4.0 tsf
40.0-42.0	S-21	SS	12	--	19 19	22 20	41	40		As above, wet, hard (CH)	Qp = 4.5 tsf
42.0-44.0	S-22	SS	0	--	9 20	14 25	34			No Recovery - Presumed As Above	
44.0-46.0	S-23	SS	22	--	22 24	27 28	51	45		Brown highly plastic clay, trace fine sand, wet, hard (CH)	Qp = 4.0 tsf
46.0-48.0	S-24	SS	18	--	9 27	18 35	45			As above, grayish brown, wet, hard (CH)	Qp= 4.5 tsf
48.0-50.0	S-25	SS	20	--	31 50	43 55	93			Brown - dark brown elastic silt, trace fine sand, wet, hard (MH)	Qp = 4.0 tsf

DYNAMIC EARTH

BOREHOLE LOG

Boring No : B-2

Project:	The Preserve at Indian Hills	**Proj. No.:**	3114-99-001EC
Location:	21 Breeze Hill Road, Town of Huntington, Suffolk County, New York	**Client:**	The Northwind Group, LLC

Surface Elevation:	40.4 feet	**Date Started:**	05-26-2020	**Groundwater Data**	**Depth**	**El.**	**Additional Groundwater Data**	**Depth**	**El.**
Termination Depth:	66.0 feet	**Date Completed:**	05-27-2020		**(ft)**	**(ft)**		**(ft)**	**(ft)**
Proposed Location:	Existing Slope	**Logged by:**	S. Hume	**While Drilling:** ▽	5.5	34.9			
Drill/Test Method:	Wash Rotary/SPT	**Contractor:**	Allied Drilling	**At Completion:** ▼	6.8	33.6			
Hammer Type:	Donut	**Rig Type:**	Diedrich D-50						

Sample Information								Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
Depth (Feet)	Number	Type	Rec (in)	RQD %	Blows per 6" or drill time (mm:ss)	N					
50.0-52.0	S-26	SS	20	--	13 21 / 26 41	47			Glacial Deposits	As above, no sand (MH)	Qp > 4.5 tsf
52.0-54.0	S-27	SS	12	--	36 55 / 58 62	113				As above, wet, hard (MH)	Qp > 4.5 tsf
54.0-56.0	S-28	SS	12	--	12 27 / 34 41	61		55		As above, dark brown, wet, hard (MH)	Qp > 4.5 tsf
56.0-58.0	S-29	SS	22	--	34 52 / 53 56	105				As above , wet, hard (MH)	Qp > 4.5 tsf
58.0-60.0	S-30	SS	20	--	15 26 / 29 41	55				As above, wet, hard (MH)	Qp > 4.5 tsf
60.0-62.0	S-31	SS	18	--	31 56 / 57 60	113		60		As above, wet, very stiff (MH)	Qp = 4.0 tsf
62.0-64.0	S-32	SS	22	--	11 20 / 25 30	45				As above , wet, stiff (MH)	Qp = 2.0 tsf
64.0-66.0	S-33	SS	20	--	34 49 / 35 48	84		65		Gray highly plastic clay, some medium to fine sand seams, wet, stiff (CH)	Apparent discontinuity at 63.5' to 64' Qp = 2.5 tsf
										Grayish brown highly plastic clay, wet, stiff (CH)	Qp = 3.5 tsf Temporary Piezometer installed to 66 ft. upon completion of the borehole.
								70		Boring B-2 was terminated at approximately 66 feet below ground surface.	

DYNAMIC EARTH

BOREHOLE LOG

Boring No : B-3

Project:	The Preserve at Indian Hills	**Proj. No.:**	3114-99-001EC
Location:	21 Breeze Hill Road, Town of Huntington, Suffolk County, New York	**Client:**	The Northwind Group, LLC

				Groundwater Data	Depth (ft)	El. (ft)	Additional Groundwater Data	Depth (ft)	El. (ft)
Surface Elevation:	23.9 feet	**Date Started:**	05-22-2020						
Termination Depth:	46.0 feet	**Date Completed:**	05-22-2020						
Proposed Location:	Existing Slope	**Logged by:**	S. Hume	**While Drilling:** ▽	6.0	17.9			
Drill/Test Method:	Wash Rotary/SPT	**Contractor:**	Allied Drilling	**At Completion:** ▼	2.9	21.0			
Hammer Type:	Donut	**Rig Type:**	Diedrich D-50						

Sample Information										
Depth (Feet)	Number	Type	Rec (in)	RQD %	Blows per 6" or drill time (mm:ss)	N	Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
0.0-2.0	S-1	SS	6	--	6 9 / 8 10	17		Surface Cover	2" Topsoil Dark brown medium to fine sand, some silt, little fine gravel, mosit (FILL)	
2.0-4.0	S-2	SS	0	--	7 18 / 18 12	36	▼		No Recovery	
4.0-6.0	S-3	SS	0	--	8 9 / 7 7	16	5 ▽	FILL	No Recovery	
6.0-8.0	S-4	SS	6	--	7 9 / 11 8	20			Brown and gray silty clay and coarse to fine sand, trace fine gravel, moist (FILL)	
8.0-10.0	S-5	SS	4	--	5 6 / 8 8	14			Brown medium to fine sand, some silty clay, moist (FILL)	
10.0-12.0	S-6	SS	8	--	8 14 / 17 16	31	10		Gray coarse to fine sand, some silty clay, trace fine gravel, wet, dense (SC)	
12.0-14.0	S-7	SS	16	--	8 7 / 11 22	18			As above (SC) Brown highly plastic clay, some medium to fine sand, moist, very stiff (CH)	Qp = 2.0 tsf
14.0-16.0	S-8	SS	0	--	10 19 / 14 16	33	15		No Recovery - Presumed As Above	
16.0-18.0	S-9	SS	16	--	12 9 / 8 9	17		Glacial Deposits	Brown fine sand, some silt, wet, medium dense (SM)	Qp = 1.0 tsf
18.0-20.0	S-10	SS	18	--	9 8 / 10 16	18			As above, and clayey silt (SM)	Qp = 1.0 tsf
20.0-22.0	S-11	SS	0	--	5 8 / 11 14	19	20		No Recovery	
22.0-24.0	S-12	SS	14	--	14 17 / 16 16	33			Brown silt, some fine sand, wet, dense (ML)	Qp= 1.5 tsf
24.0-26.0	S-13A/B	SS	18	--	6 5 /	11			Brown highly plastic clay, trace fine sand, wet, stiff (CH)	Qp = 1.5 tsf Highly saturated clay seam 24.5'-25'

DYNAMIC EARTH

BOREHOLE LOG

Boring No : B-3

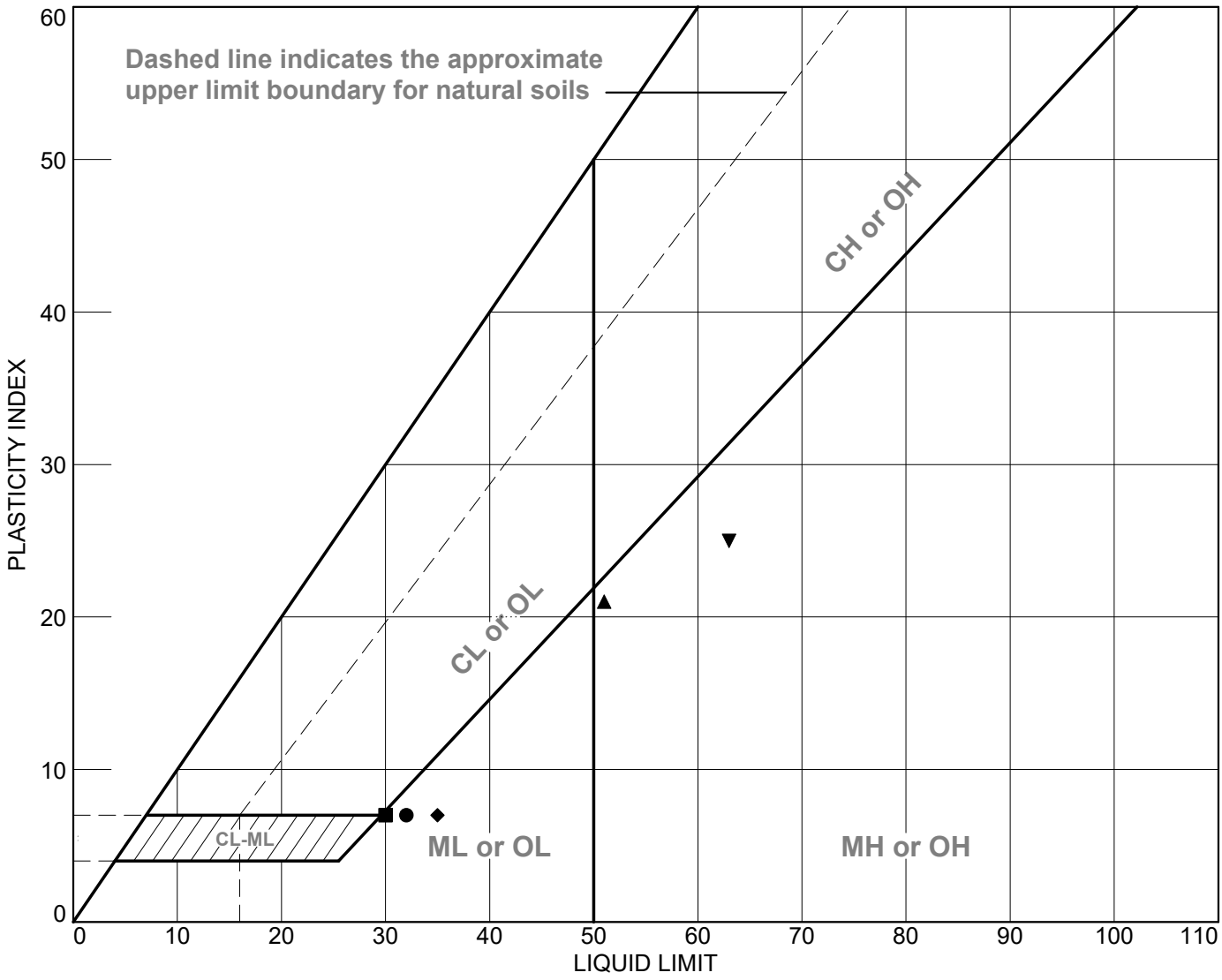
Project:	The Preserve at Indian Hills	**Proj. No.:**	3114-99-001EC
Location:	21 Breeze Hill Road, Town of Huntington, Suffolk County, New York	**Client:**	The Northwind Group, LLC

Surface Elevation:	23.9 feet	**Date Started:**	05-22-2020	**Groundwater Data**	**Depth**	**El.**	**Additional Groundwater Data**	**Depth**	**El.**
Termination Depth:	46.0 feet	**Date Completed:**	05-22-2020		**(ft)**	**(ft)**		**(ft)**	**(ft)**
Proposed Location:	Existing Slope	**Logged by:**	S. Hume	**While Drilling:** ▽	6.0	17.9			
Drill/Test Method:	Wash Rotary/SPT	**Contractor:**	Allied Drilling	**At Completion:** ▼	2.9	21.0			
Hammer Type:	Donut	**Rig Type:**	Diedrich D-50						

Sample Information								Depth (ft)	Strata	DESCRIPTION OF MATERIALS (Classification)	Remarks
Depth (Feet)	Number	Type	Rec (in)	RQD %	Blows per 6" or drill time (mm:ss)		N				
					6	8				As above, wet, very soft (CH)	Qp <0.25 tsf
											Qp = 1.5 tsf
26.0-28.0	S-14	SS	16	--	5	9	26			As above, wet, stiff (CH)	
					17	19				As above, wet, very stiff (CH)	Qp = 2.75 tsf
28.0-30.0	S-15	SS	20	--	7	11	26				
					15	22				As above, wet, hard (CH)	Qp = 4.5 tsf
30.0-32.0	S-16	SS	18	--	16	23	45	30			
					22	25				As above, wet, hard (CH)	Qp > 4.5 tsf
32.0-34.0	S-17	SS	14	--	4	12	29				
					17	18				As above, wet, hard (CH)	Qp > 4.5 tsf
34.0-36.0	S-18	SS	16	--	17	20	43				
					23	37		35	Glacial Deposits	As above, wet, hard (CH)	Qp > 4.5 tsf
36.0-38.0	S-19	SS	20	--	11	14	36				
					22	28				As above, little medium to fine sand, wet, hard (CH)	Qp > 4.5 tsf
38.0-40.0	S-20	SS	16	--	30	37	70				
					33	39				As above, grayish brown, wet, hard (CH)	Qp > 4.5 tsf
40.0-42.0	S-21	SS	22	--	12	23	51	40			
					28	32				As above, wet, hard (CH)	Qp > 4.5 tsf
42.0-44.0	S-22	SS	24	--	27	30	61				
					31	37				As above, wet, hard (CH)	Qp > 4.5 tsf
44.0-46.0	S-23	SS	18	--	9	18	44				
					26	27		45		As above, wet, hard (CH)	Qp = 4.5 tsf
										Boring B-3 was terminated at approximately 46 feet below ground surface.	Temporary piezometer installed to 46 ft. upon completion of borehole.

Laboratory Test Results

LIQUID AND PLASTIC LIMITS TEST REPORT

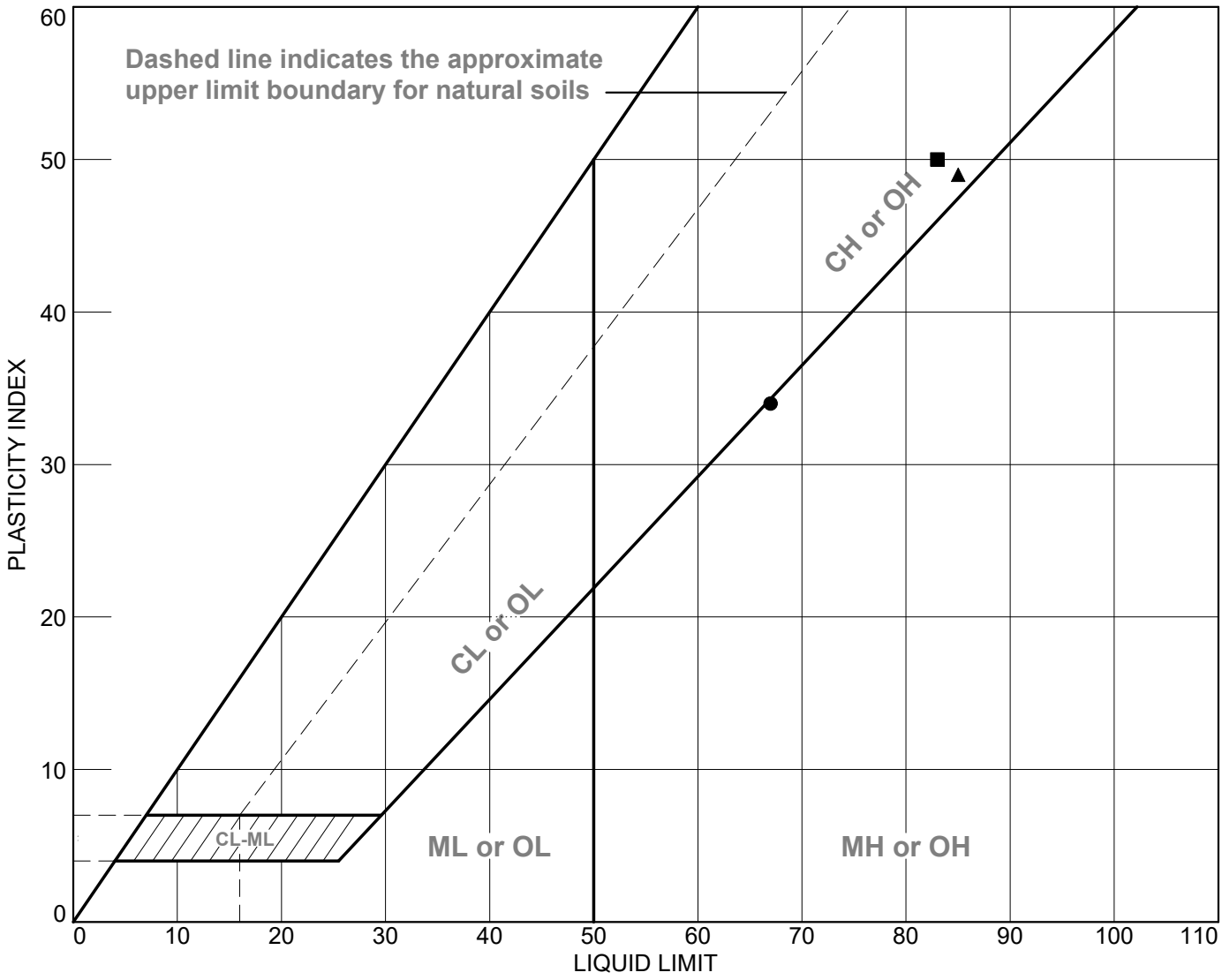


SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-1	S-8	14'-16'	27.7	25	32	7	ML
■	B-1	S-12	22'-24'	22.7	23	30	7	ML
▲	B-1	S-20	38'-40'	24.7	30	51	21	MH
◆	B-1	S-27	52'-54'	27.7	28	35	7	ML
▼	B-1	S-34	66'68'	24.7	38	63	25	MH

DYNAMIC EARTH

Client: The Northwind Group LLC
Project: The Preserve at Indian Hills
Huntington, New York
Project No.: 3114-99-001EC **Figure** 13

LIQUID AND PLASTIC LIMITS TEST REPORT



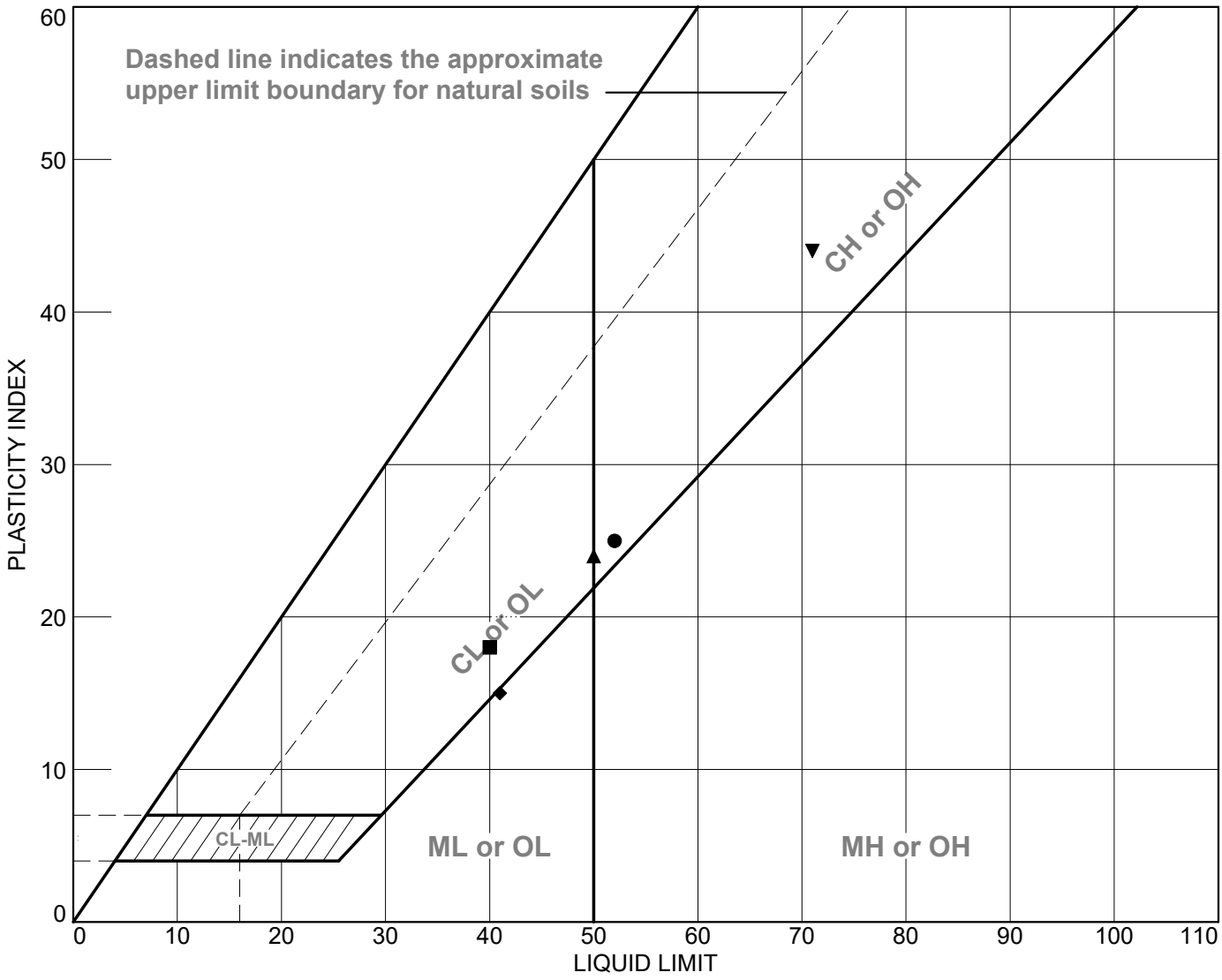
SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-1	S-40	78'-80'	27.2	33	67	34	CH
■	B-1	S-46	90'-92'	29.3	33	83	50	CH
▲	B-1	S-48	94'-96'	32.7	36	85	49	CH

DYNAMIC EARTH

Client: The Northwind Group LLC
Project: The Preserve at Indian Hills
Huntington, New York
Project No.: 3114-99-001EC **Figure** 14

LIQUID AND PLASTIC LIMITS TEST REPORT

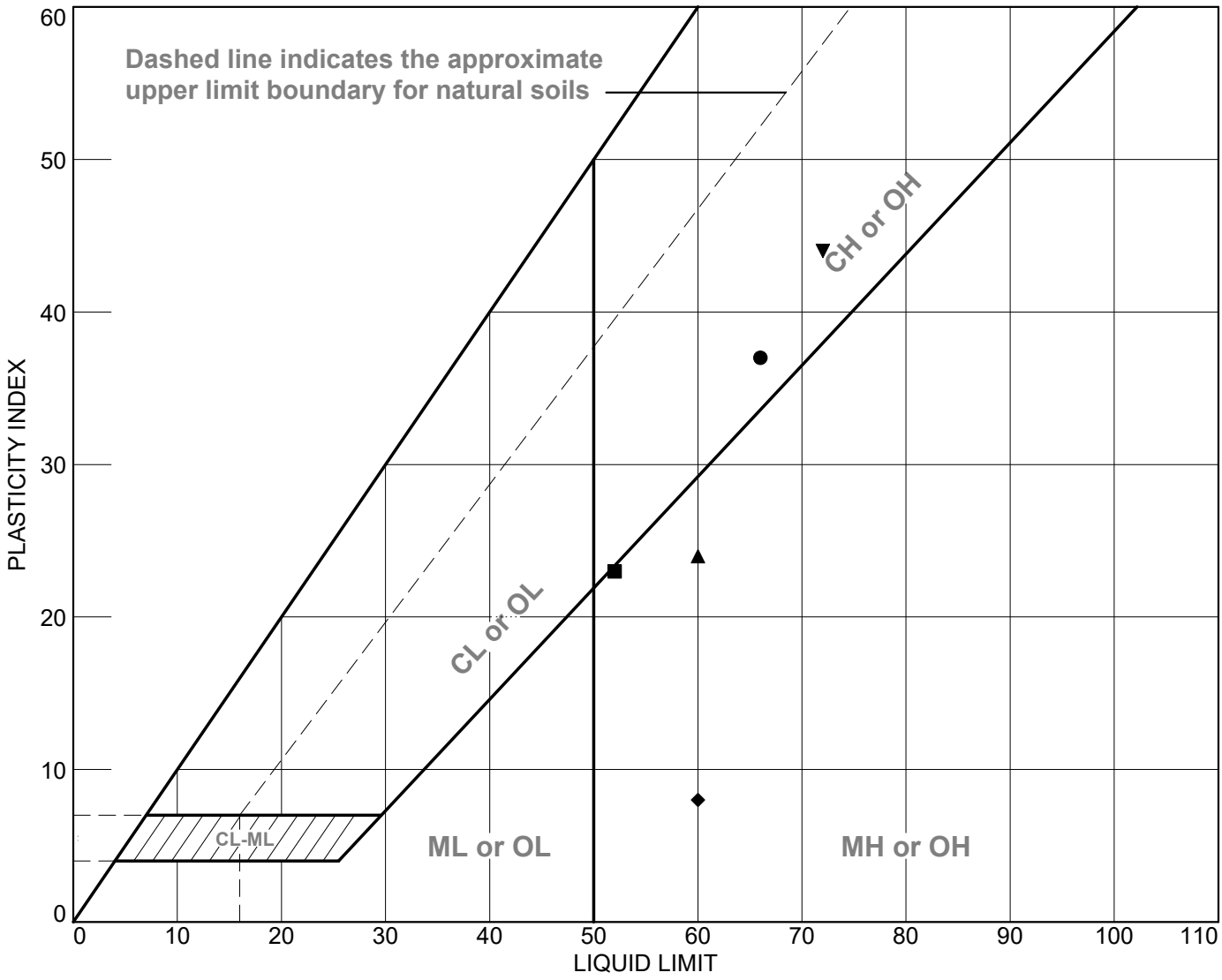


SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-2	S-5	8'-10'	27.4	27	52	25	CH
■	B-2	S-9	16'-18'	26.8	22	40	18	CL
▲	B-2	S-10	18'-20'	28.8	26	50	24	CH
◆	B-2	S-14	26'-28'	23.5	26	41	15	CL-ML
▼	B-2	S-20	38'-40'	26.7	27	71	44	CH

DYNAMIC EARTH

Client: The Northwind Group LLC
Project: The Preserve at Indian Hills
Huntington, New York
Project No.: 3114-99-001EC **Figure** 15

LIQUID AND PLASTIC LIMITS TEST REPORT

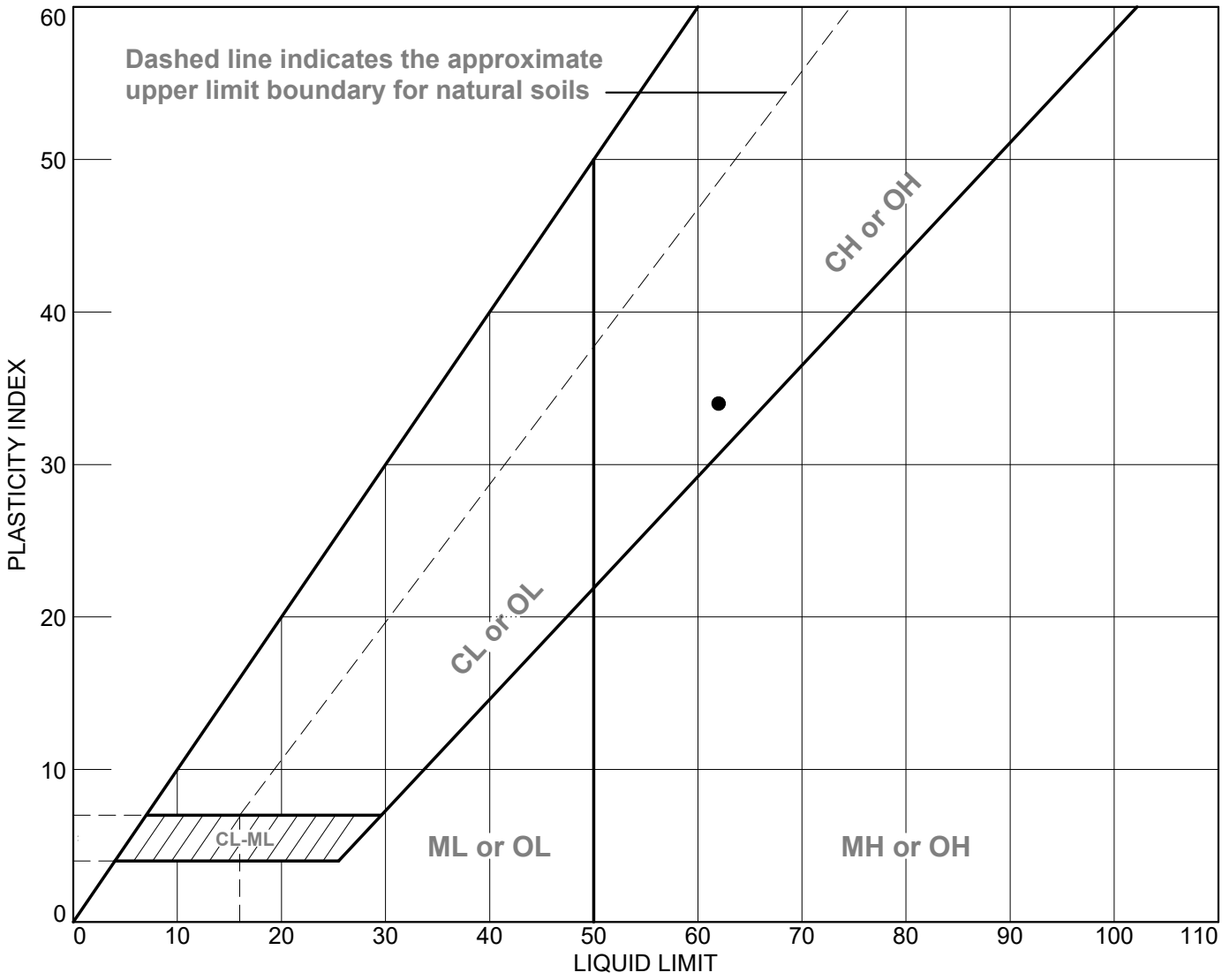


SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-2	S-23	44'-46'	27.0	29	66	37	CH
■	B-2	S-25	48'-50'	25.0	29	52	23	MH
▲	B-2	S-29	56'-58'	23.3	36	60	24	MH
◆	B-2	S-32A	62'-63.5"	29.0	52	60	8	MH
▼	B-2	S-32B	63.5'-64'	20.0	28	72	44	CH

DYNAMIC EARTH

Client: The Northwind Group LLC
Project: The Preserve at Indian Hills
Huntington, New York
Project No.: 3114-99-001EC **Figure** 16

LIQUID AND PLASTIC LIMITS TEST REPORT

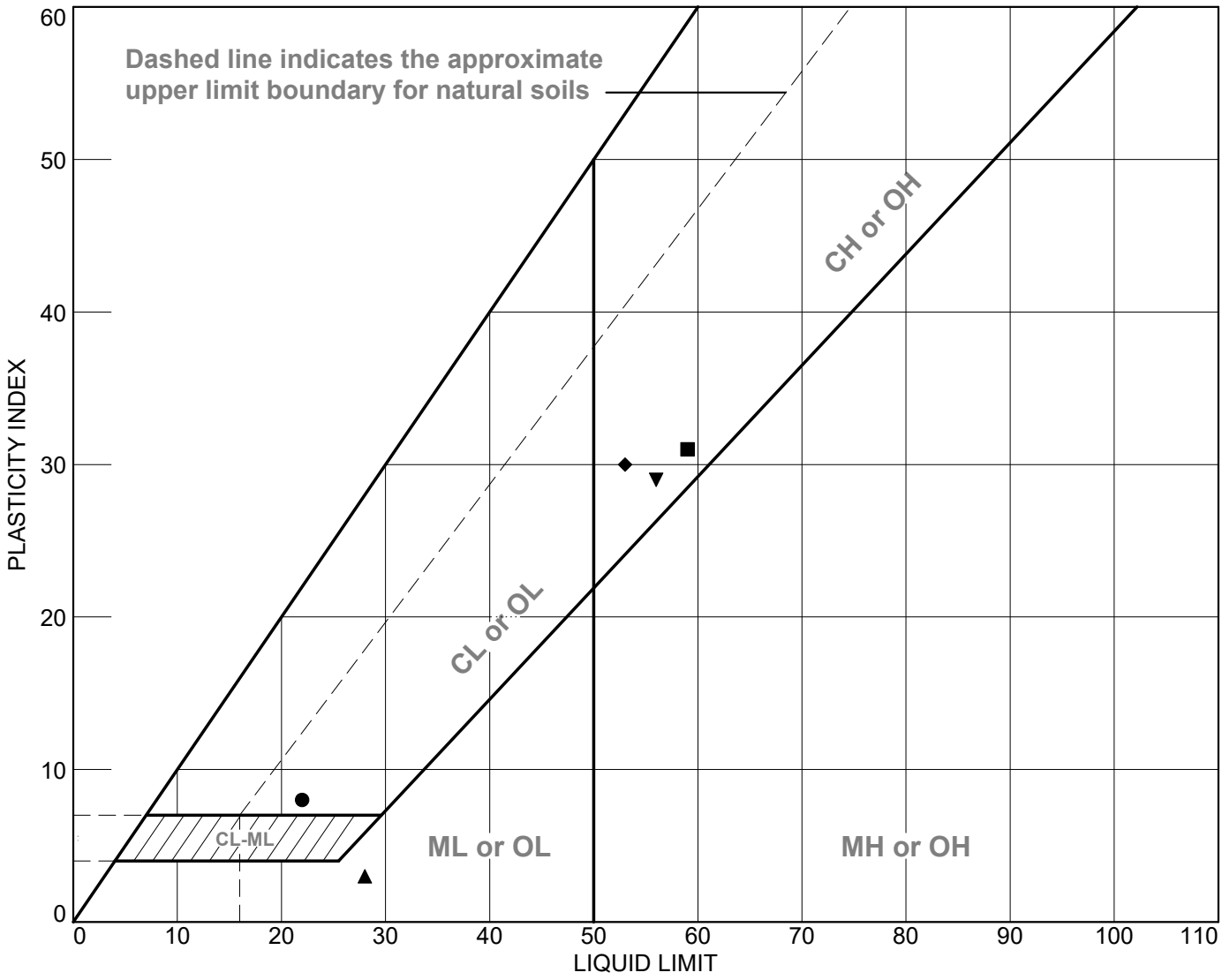


SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-2	S-33	66'-64'	24.4	28	62	34	CH

DYNAMIC EARTH

Client: The Northwind Group LLC
Project: The Preserve at Indian Hills
Huntington, New York
Project No.: 3114-99-001EC **Figure** 17

LIQUID AND PLASTIC LIMITS TEST REPORT



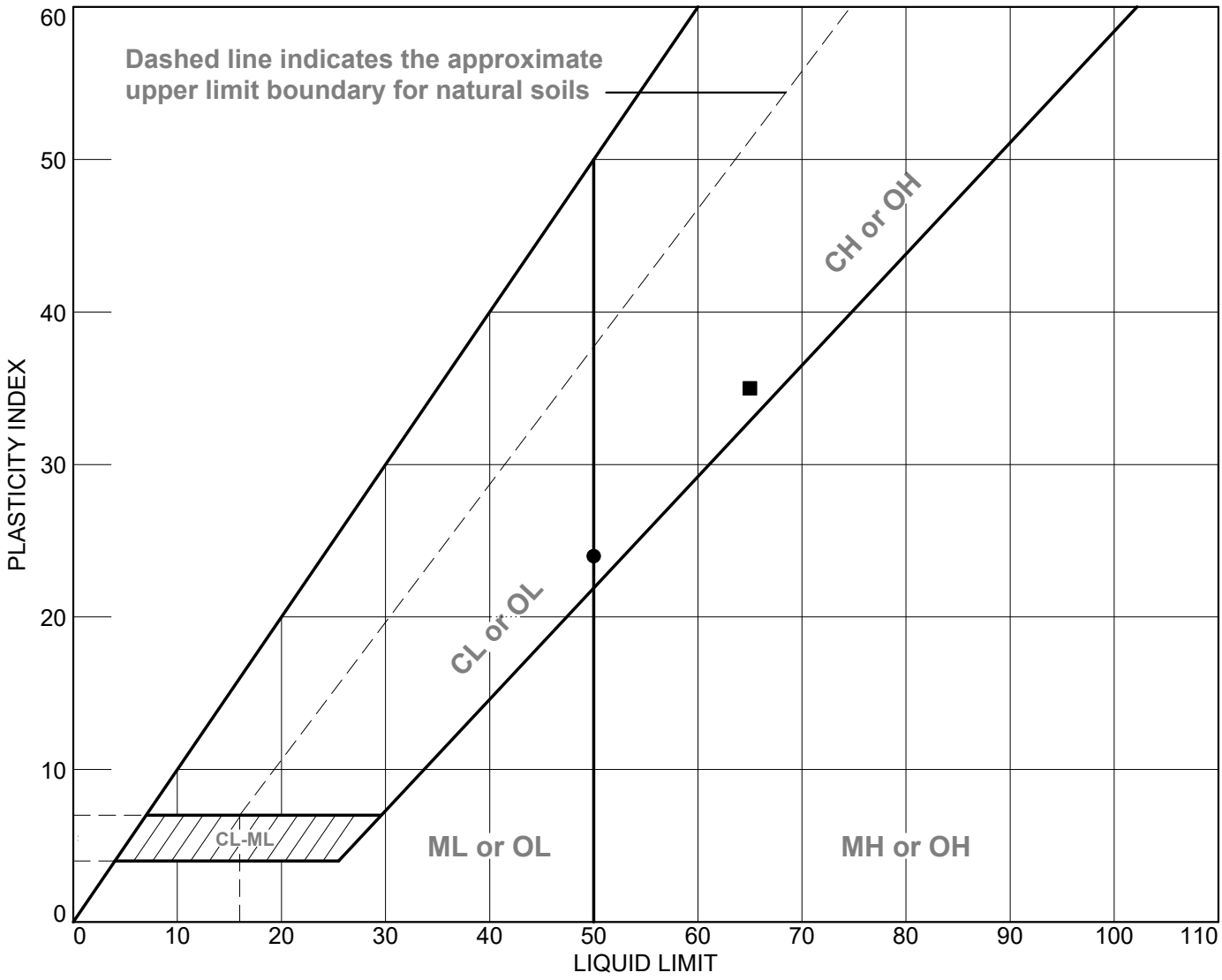
SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-3	S-6	10'-12'	11.8	14	22	8	SC
■	B-3	S-7	12'-14'	22.2	28	59	31	CH
▲	B-3	S-12	22'-24'	25.3	25	28	3	ML
◆	B-3	S-14	26'-28'	23.9	23	53	30	CH
▼	B-3	S-17	32'-34'	24.2	27	56	29	CH

DYNAMIC EARTH

Client: The Northwind Group LLC
Project: The Preserve at Indian Hills
Huntington, New York
Project No.: 3114-99-001EC **Figure** 18

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-3	S-19	36'-38'	23.5	26	50	24	CH
■	B-3	S-21	40'-42'	24.1	30	65	35	CH

DYNAMIC EARTH

Client: The Northwind Group LLC
Project: The Preserve at Indian Hills
Huntington, New York
Project No.: 3114-99-001EC **Figure** 19

Particle Size Distribution Report

	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	0.0	0.1	0.7	7.9	91.3
□	0.0	0.0	0.0	0.0	0.8	16.8	82.4
△							99.7

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-1	S-3	4'-6'	5/19/2020	ML	Brown silt, trace coarse to fine sand	29.1		
□	B-1	S-7	12'-14'	5/19/2020	ML	Brown silt, little fine sand	27.0		
△	B-1	S-8	14'-16'	5/19/2020	ML	Brown silt, trace fine sand	27.7	32	25

Client The Northwind Group LLC

Project The Preserve at Indian Hills

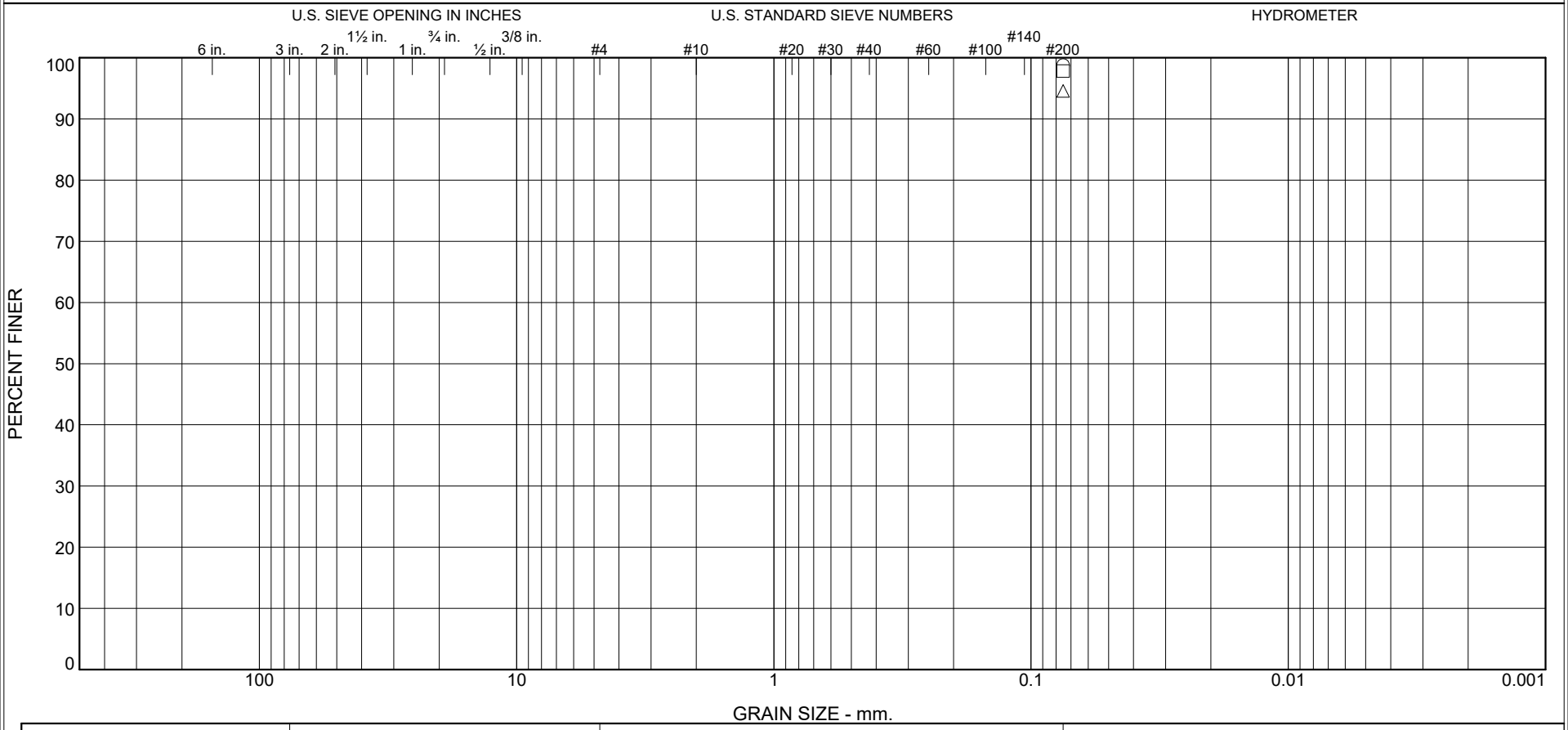
Huntington, New York

Project No. 3114-99-001EC

Figure 1

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○							98.8
□							97.8
△							94.6

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-1	S-12	22'-24'	5/19/2020	ML	Brown clayey silt, little fine sand	22.7	30	23
□	B-1	S-20	38'-40'	5/19/2020	MH	Brown elastic silt, trace fine sand	24.7	51	30
△	B-1	S-27	52'-54'	5/19/2020	ML	Brown silty clay, trace fine sand	27.7	35	28

Client The Northwind Group LLC

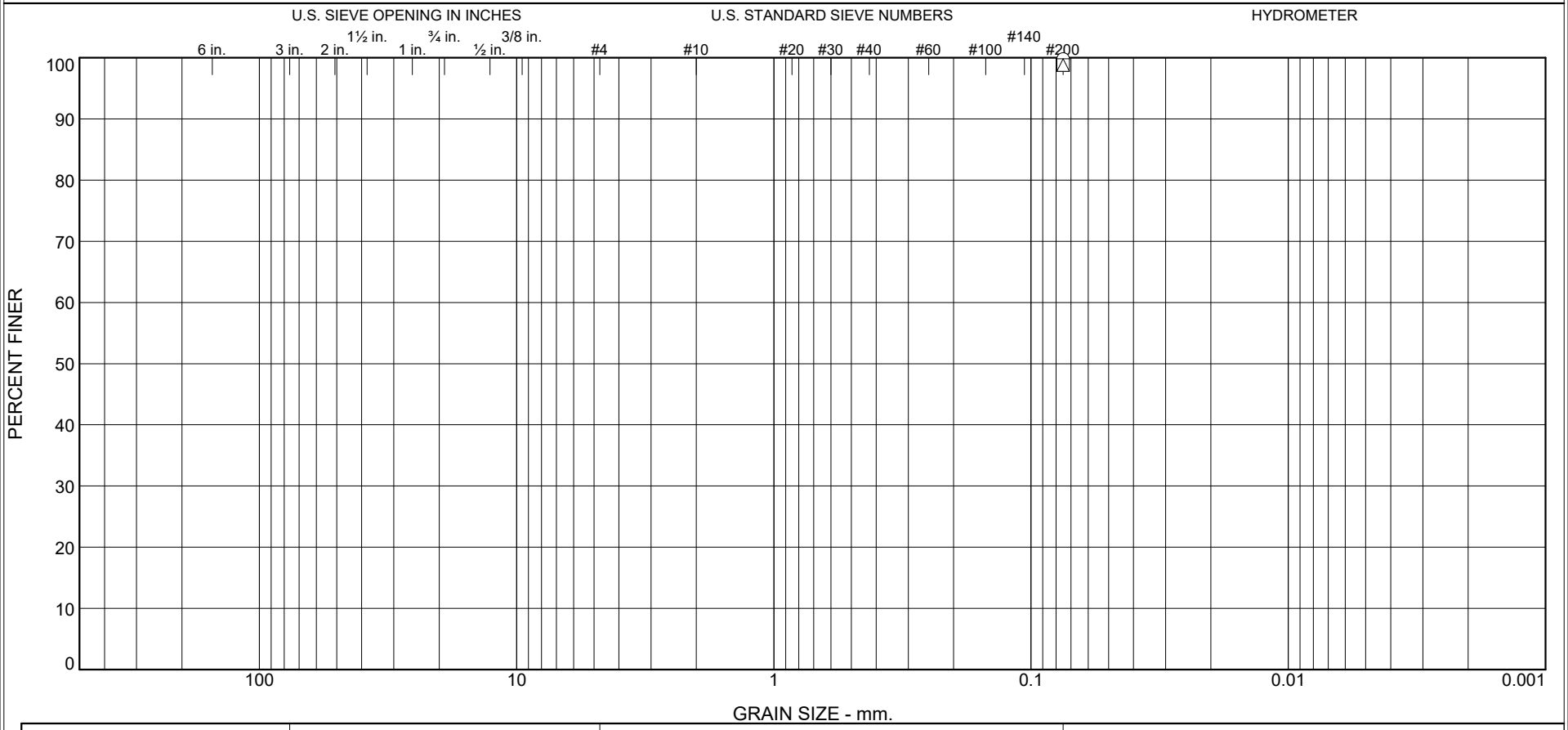
Project The Preserve at Indian Hills

Huntington, New York

Project No. 3114-99-001EC | Figure 2

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○							99.8
□							98.8
△							98.8

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-1	S-34	66'68'	5/19/2020	MH	Grayish brown elastic silt, trace fine sand	24.7	63	38
□	B-1	S-40	78'-80'	5/19/2020	CH	Grayish brown highly plastic (fat) clay, trace fine sand	27.2	67	33
△	B-1	S-46	90'-92'	5/19/2020	CH	Grayish brown high plastic (fat) clay, trace fine sand	29.3	83	33

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Project The Preserve at Indian Hills

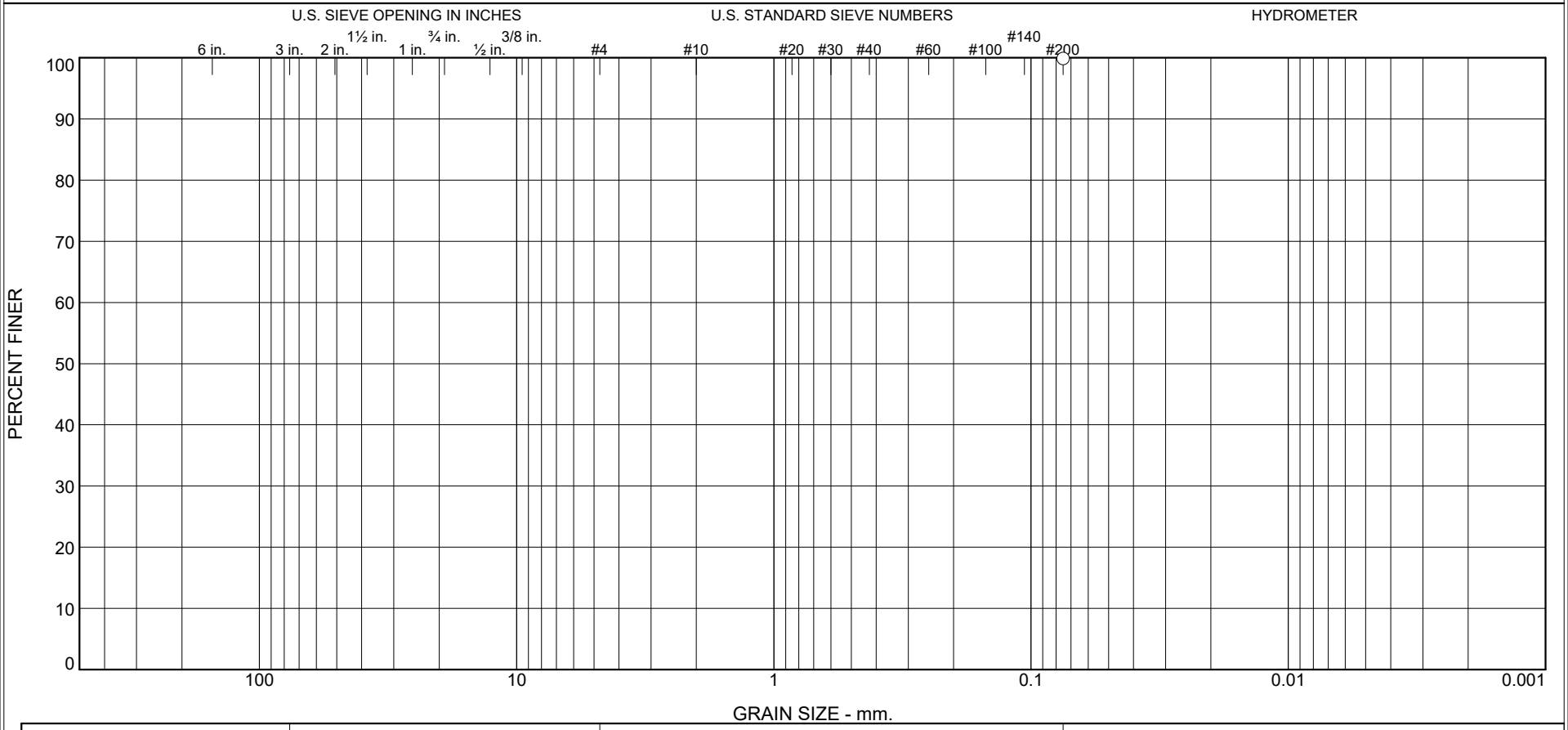
Huntington, New York

Project No. 3114-99-001EC

Figure 3

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○							99.9

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-1	S-48	94'-96'	5/19/2020	CH	Grayish brown highly plastic (fat) clay, trace fine sand	32.7	85	36

Client The Northwind Group LLC

Project The Preserve at Indian Hills

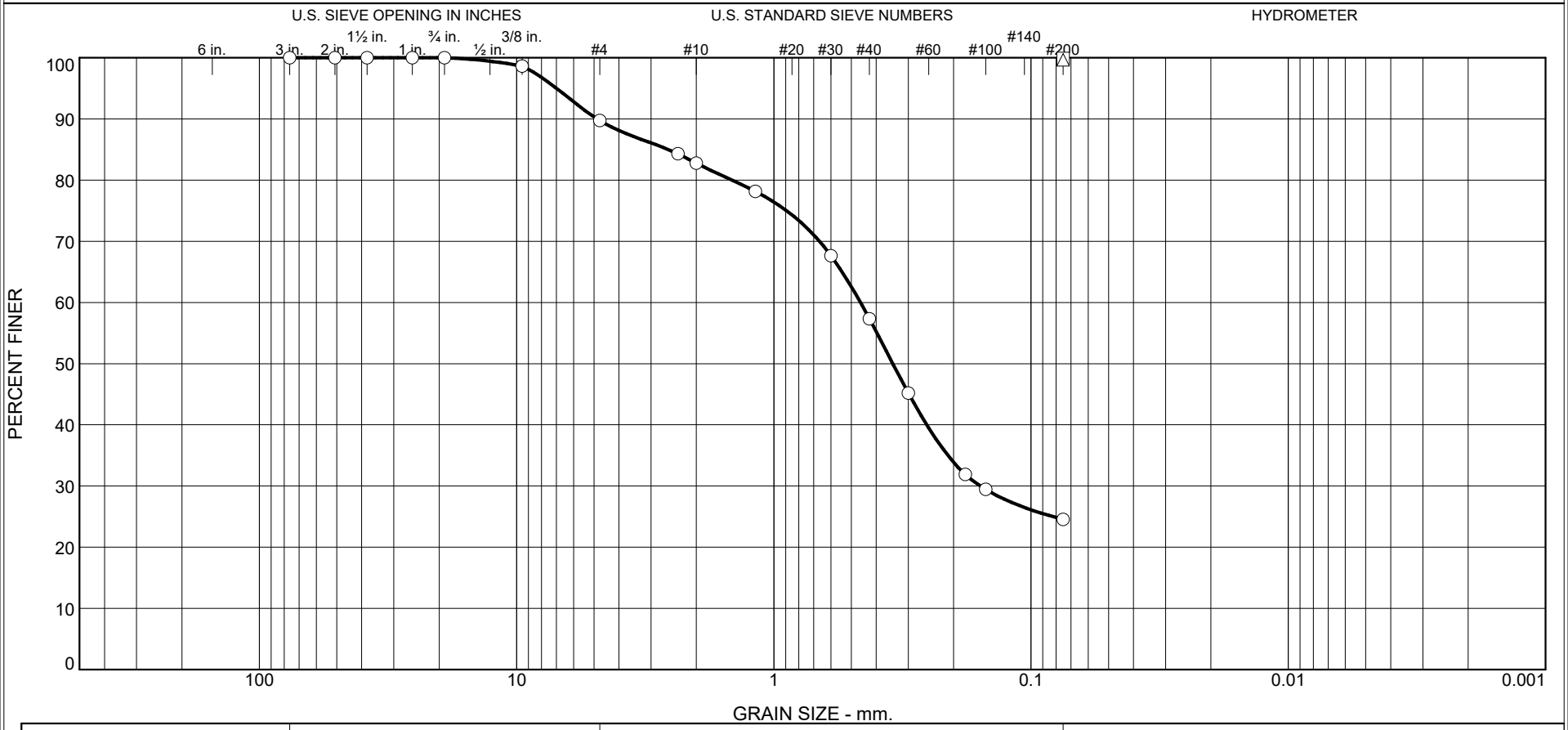
Huntington, New York

Project No. 3114-99-001EC

Figure 4

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	10.2	7.0	25.5	32.8	24.5
□							99.9
△							99.6

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-2	S-2	2'-4'	5/19/2020	SM	Brown coarse to fine sand, some silt, little fine gravel	11.0		
□	B-2	S-5	8'-10'	5/19/2020	CH	Brown highly plastic (fat) clay, trace fine sand	27.4	52	27
△	B-2	S-9	16'-18'	5/19/2020	CL	Brown clay, trace fine sand	26.8	40	22

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Project The Preserve at Indian Hills

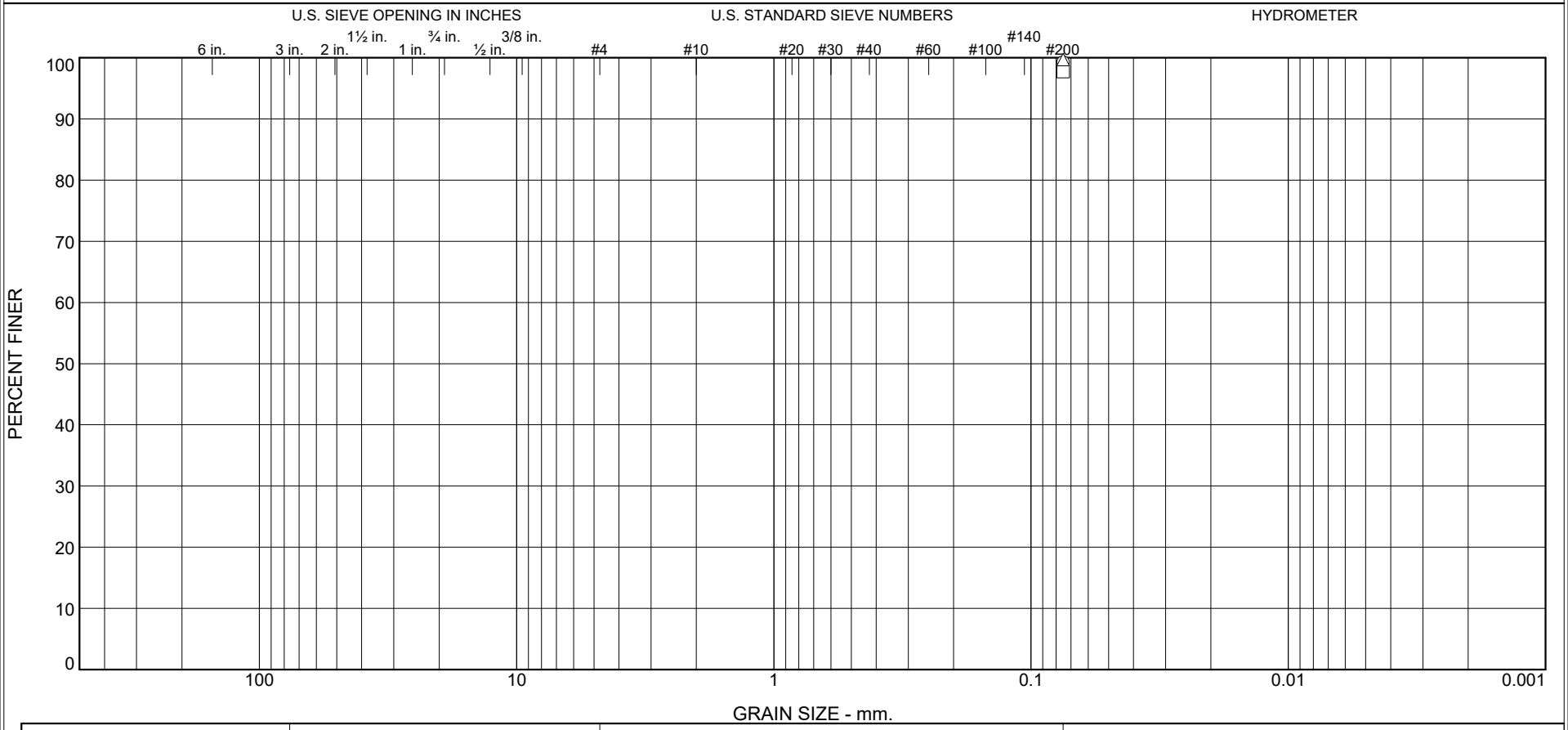
Huntington, New York

Project No. 3114-99-001EC

Figure 5

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○							99.3
□							97.8
△							99.7

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-2	S-10	18'-20'	5/19/2020	CH	Brown highly plastic (fat) clay, trace fine sand	28.8	50	26
□	B-2	S-14	26'-28'	5/19/2020	CL-ML	Brown silty clay, trace fine sand	23.5	41	26
△	B-2	S-20	38'-40'	5/19/2020	CH	Brown highly plastic (fat) clay, trace fine gravel	26.7	71	27

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Project The Preserve at Indian Hills

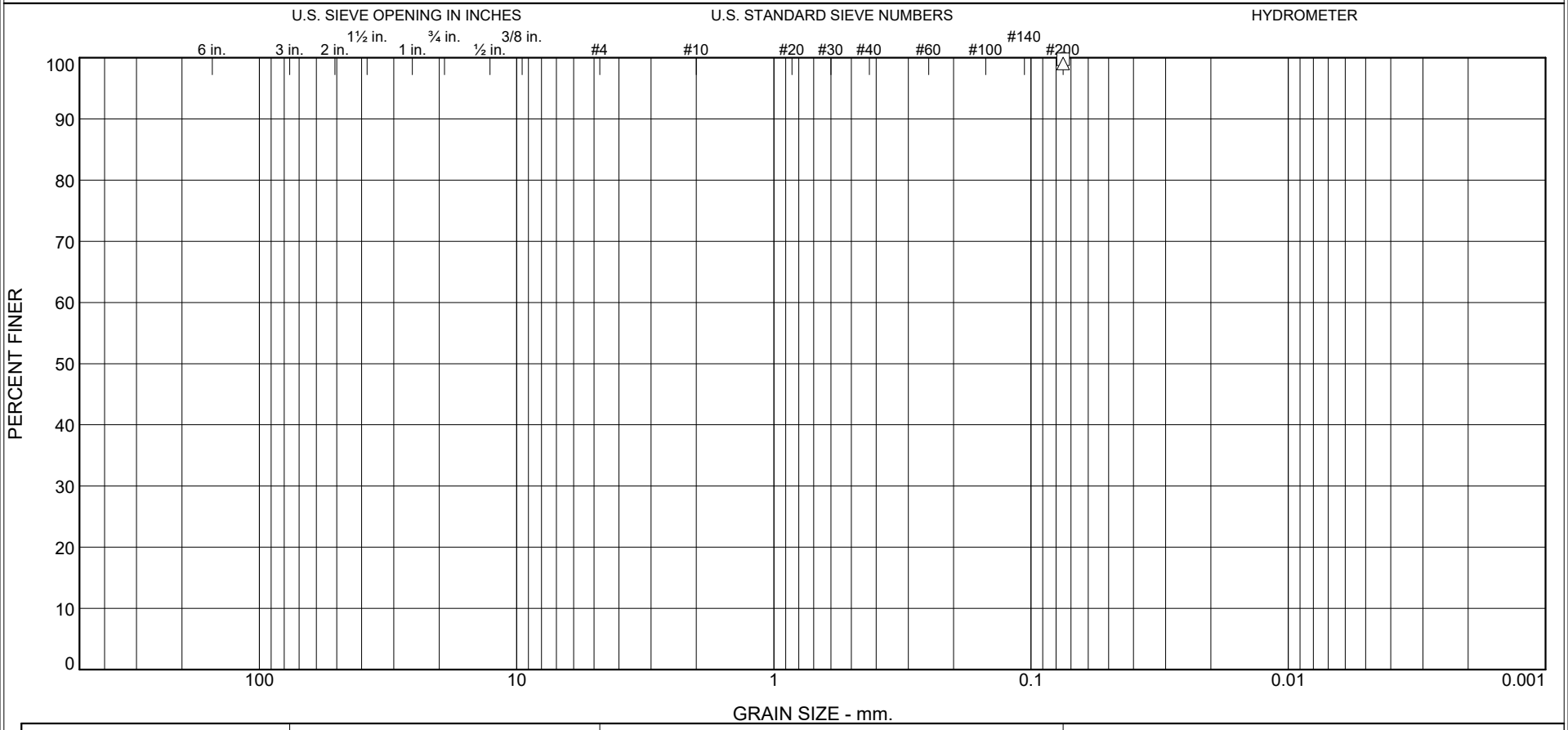
Huntington, New York

Project No. 3114-99-001EC

Figure 6

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○							99.9
□							99.7
△							99.1

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-2	S-23	44'-46'	5/19/2020	CH	Brown highly plastic (fat) clay, trace fine sand	27.0	66	29
□	B-2	S-25	48'-50'	5/19/2020	MH	Brown and dark brown elastic silt, trace fine sand	25.0	52	29
△	B-2	S-29	56'-58'	5/19/2020	MH	Brown elastic silt, trace fine sand	23.3	60	36

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Project The Preserve at Indian Hills

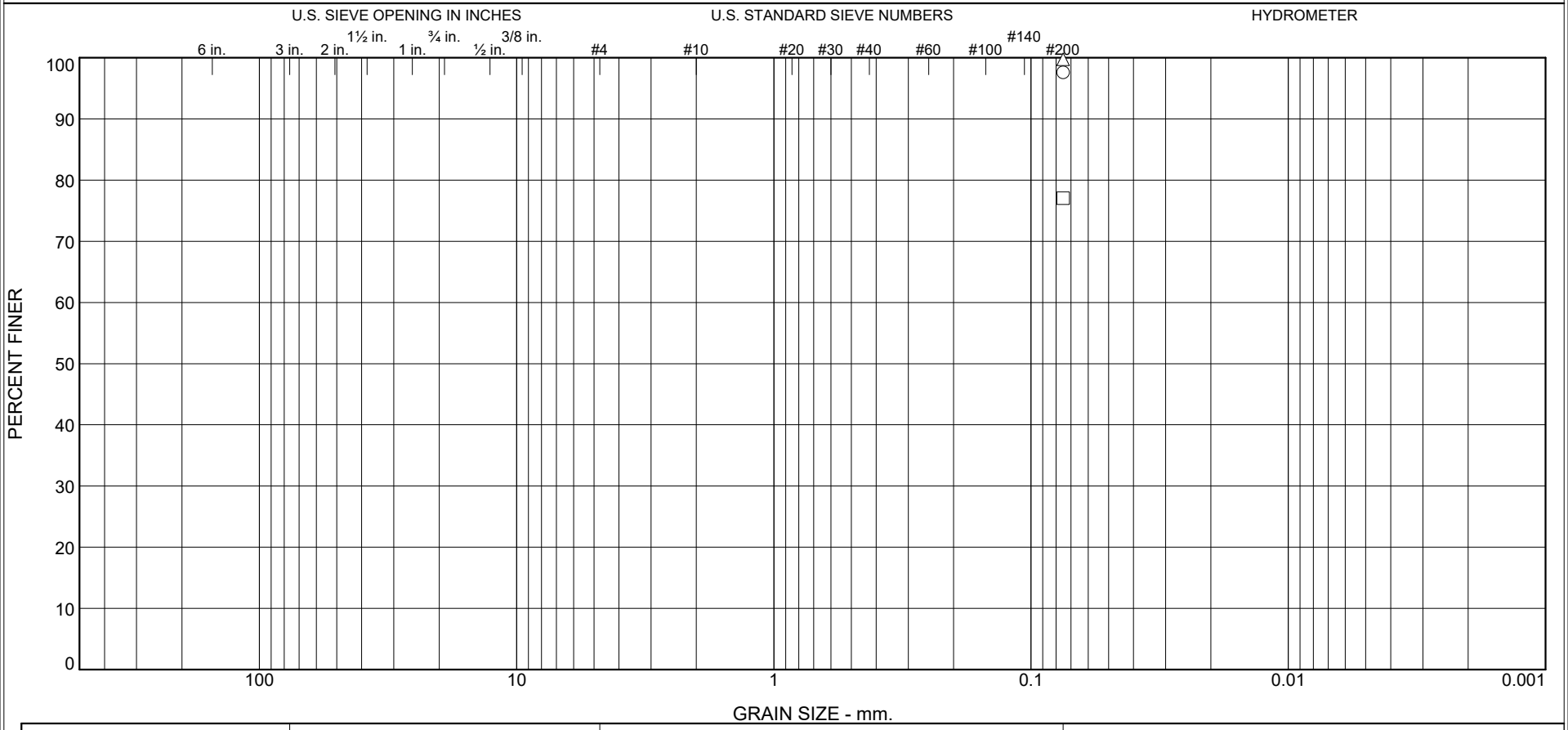
Huntington, New York

Project No. 3114-99-001EC

Figure 7

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○							97.6
□							77.0
△							99.7

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-2	S-32A	62'-63.5"	5/19/2020	MH	Brown elastic silt, trace fine sand	29.0	60	52
□	B-2	S-32B	63.5'-64'	5/19/2020	CH	Gray stratified (vertically) highly plastic (fat) clay, some m-f sand	20.0	72	28
△	B-2	S-33	66'-64'	5/19/2020	CH	Grayish Brown highly plastic (fat) clay, trace fine sand	24.4	62	28

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Project The Preserve at Indian Hills

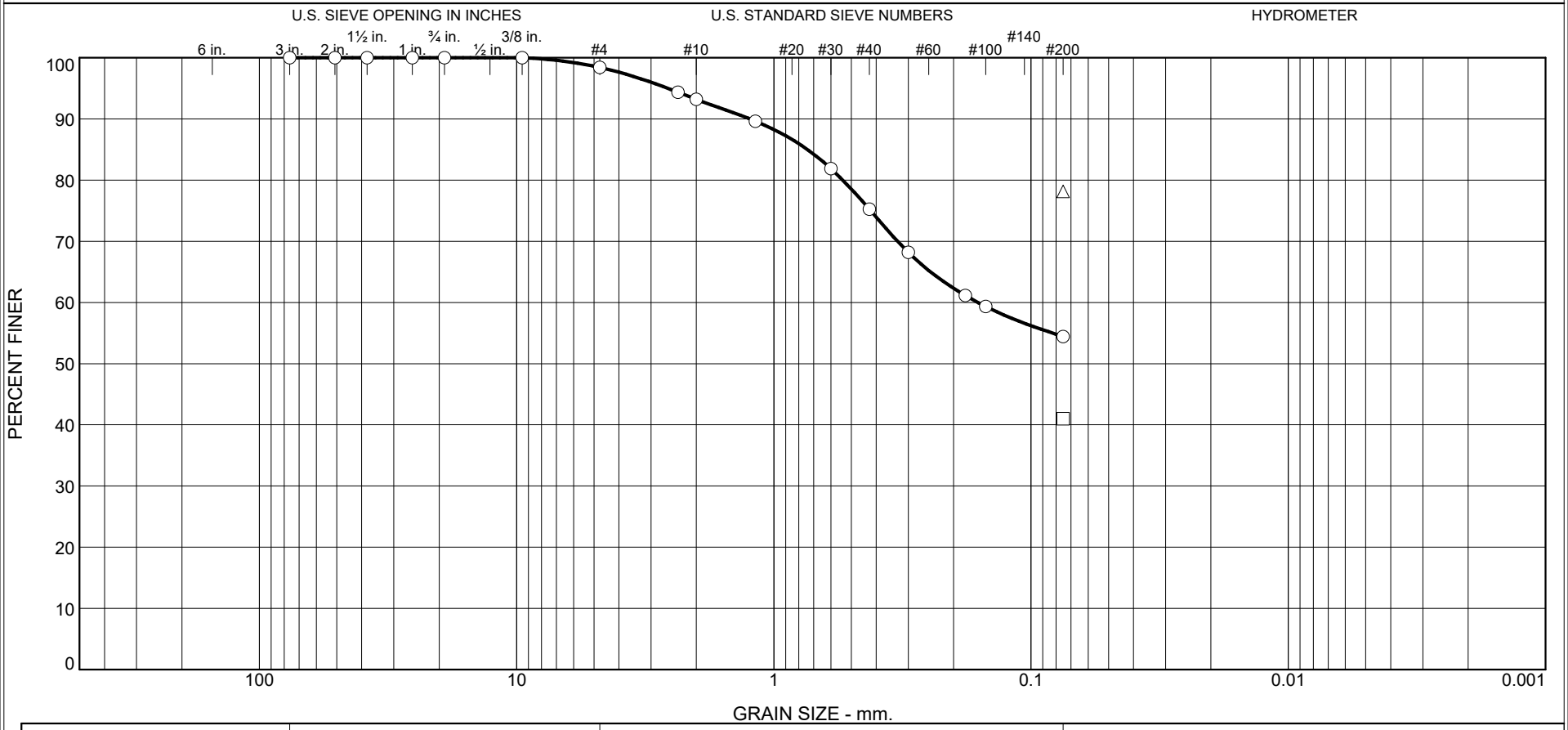
Huntington, New York

Project No. 3114-99-001EC

Figure 8

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	1.6	5.2	18.0	20.8	54.4
□							41.0
△							78.2

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-3	S-4	6'-8'	5/22/2020	CL (Fill)	Grayish brown silty clay and coarse to fine sand, trace fine gravel	16.3		
□	B-3	S-6	10'-12'	5/22/2020	SC	Gray coarse to fine sand, some silty clay, trace fine gravel	11.8	22	14
△	B-3	S-7	12'-14'	5/22/2020	CH	Brown highly plastic (fat) clay, some medium to fine sand	22.2	59	28

Client The Northwind Group LLC

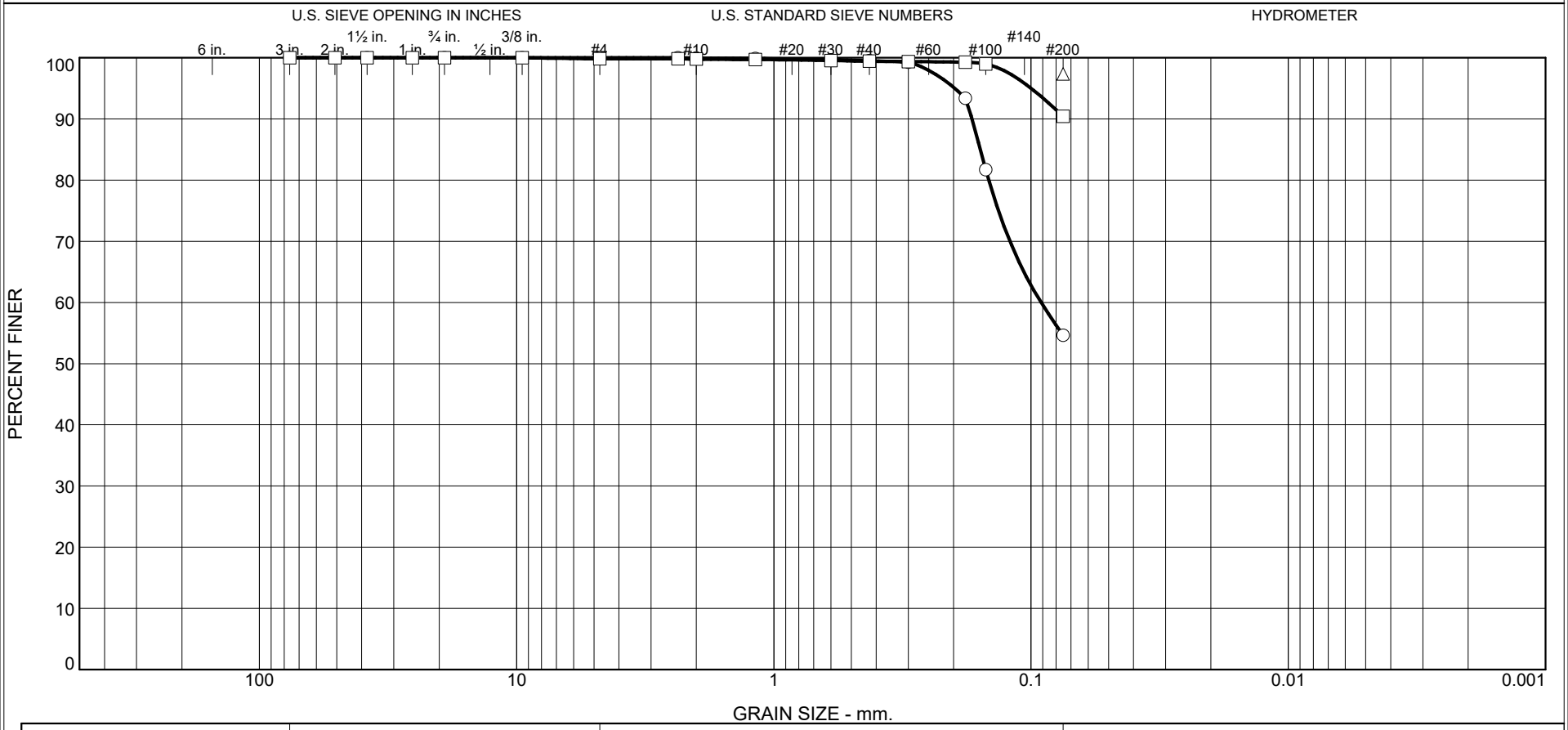
Project The Preserve at Indian Hills

Huntington, New York

Project No. 3114-99-001EC Figure 9

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	0.0	0.1	0.4	44.9	54.6
□	0.0	0.0	0.2	0.0	0.4	9.0	90.4
△							97.3

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-3	S-9	16'-18'	5/22/2020	ML	Brown silt, coarse to fine sand	27.3		
□	B-3	S-10	18'-20'	5/22/2020	ML	Brown clayey silt, trace medium to fine sand, trace fine gravel	20.8		
△	B-3	S-12	22'-24'	5/22/2020	ML	Brown silt, trace fine sand	25.3	28	25

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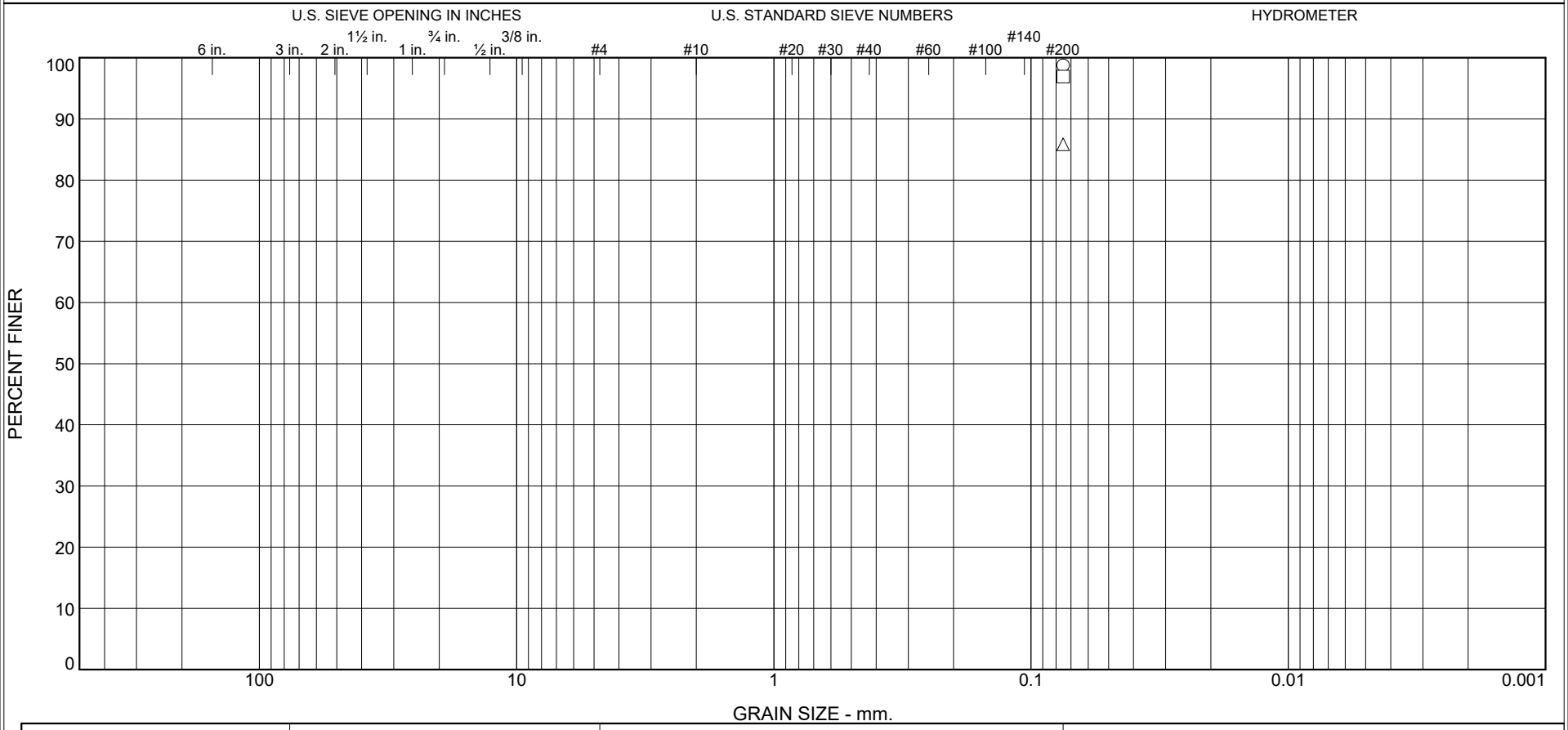
Project The Preserve at Indian Hills

Huntington, New York

Project No. 3114-99-001EC Figure 10

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○							98.8
□							96.9
△							85.8

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-3	S-14	26'-28'	5/22/2020	CH	Brown highly plastic (fat) clay, trace fine sand	23.9	53	23
□	B-3	S-17	32'-34'	5/22/2020	CH	Brown highly plastic (fat) clay, trace fine sand	24.2	56	27
△	B-3	S-19	36'-38'	5/22/2020	CH	Brown highly plastic (fat) clay, little medium to fine sand	23.5	50	26

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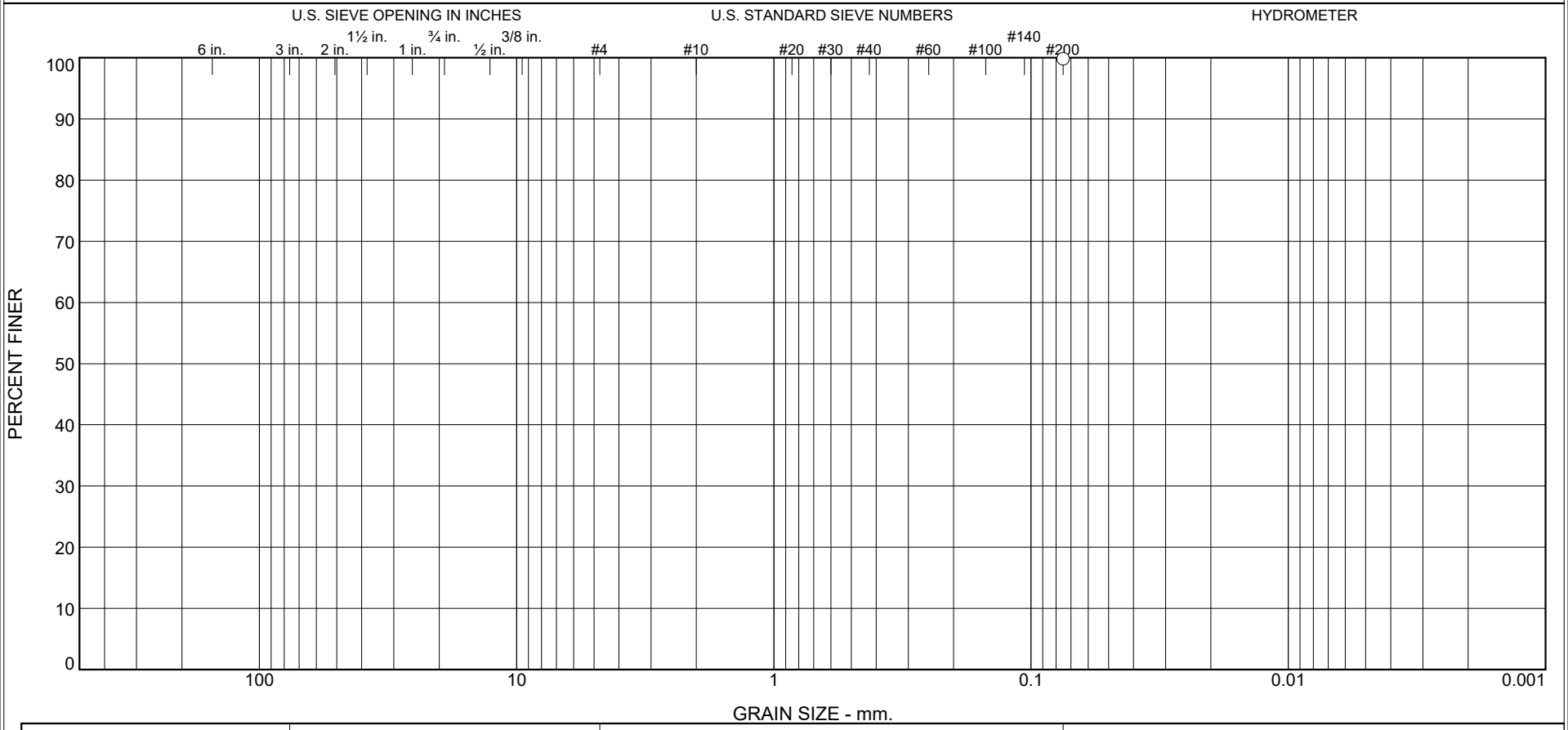
Project The Preserve at Indian Hills

Huntington, New York

Project No. 3114-99-001EC Figure 11

DYNAMIC EARTH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○							99.8

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	B-3	S-21	40'-42'	5/22/2020	CH	Brown highly plastic (fat) clay, trace fine sand	24.1	65	30

Client The Northwind Group LLC

Project The Preserve at Indian Hills

Huntington, New York

Project No. 3114-99-001EC

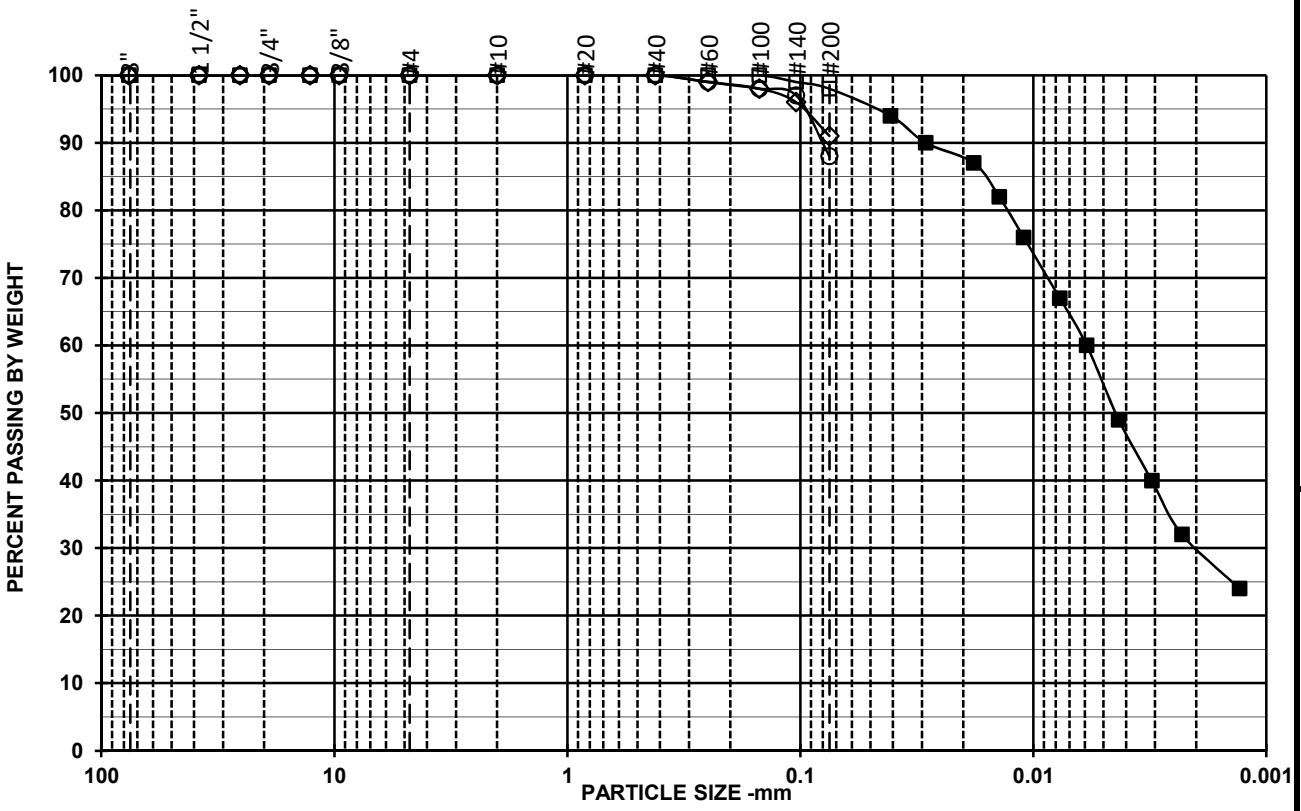
Figure 12

DYNAMIC EARTH

Dynamic Earth #3114-99-001EC
Preserve at Indian Hills
LABORATORY TESTING DATA SUMMARY

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS												REMARKS / TEST ID
			WATER CONTENT (%)	LIQUID LIMIT (-)	PLASTIC LIMIT (-)	PLAS. INDEX (-)	USCS SYMB. (1)	SIEVE MINUS NO. 200 (%)	HYDROMETER % MINUS 2 μm (%)	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	Type Test	PEAK DEVIATOR STRESS (ksf)	AXIAL STRAIN @ PEAK STRESS (%)	
B-2	S-16A Top	30-31	31.0				CL	98	30	124.0	94.6				
B-2	S-16A Middle	30-31	24.1				ML	91							
B-2	S-16A Bottom	30-31	24.8				ML	88		126.0	100.9				
B-2	S-16	31-32	27.9	42	21	21	CL	99		124.9	97.6	UU@3.7ksf	2.4	13.5	UU157f
B-3	S-13	24-25	26.0	31	21	10	CL	98	11	130.1	103.2	UU@3.0ksf	1.6	15.0	UU160d
B-3	S-13B	25-25.5	28.4				ML	90	4						

Note: (1) USCS symbol based on visual observation and Sieve and Atterberg limits reported.



Open Symbols: Sieve analysis by ASTM D6913
Filled symbols: Hydrometer analysis by ASTM D7928 corrected for complete sample

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	31.0				CL		Brown, Lean clay, Insufficient sample size	06/05/20
◇	24.1				ML		Reddish brown, Silt shear zone, Insufficient sample size	06/05/20
○	24.8				ML		Brown, Silt unit weight, Insufficient sample size	06/05/20

Dynamic Earth #3114-99-001EC

TerraSense, LLC #7922-20020

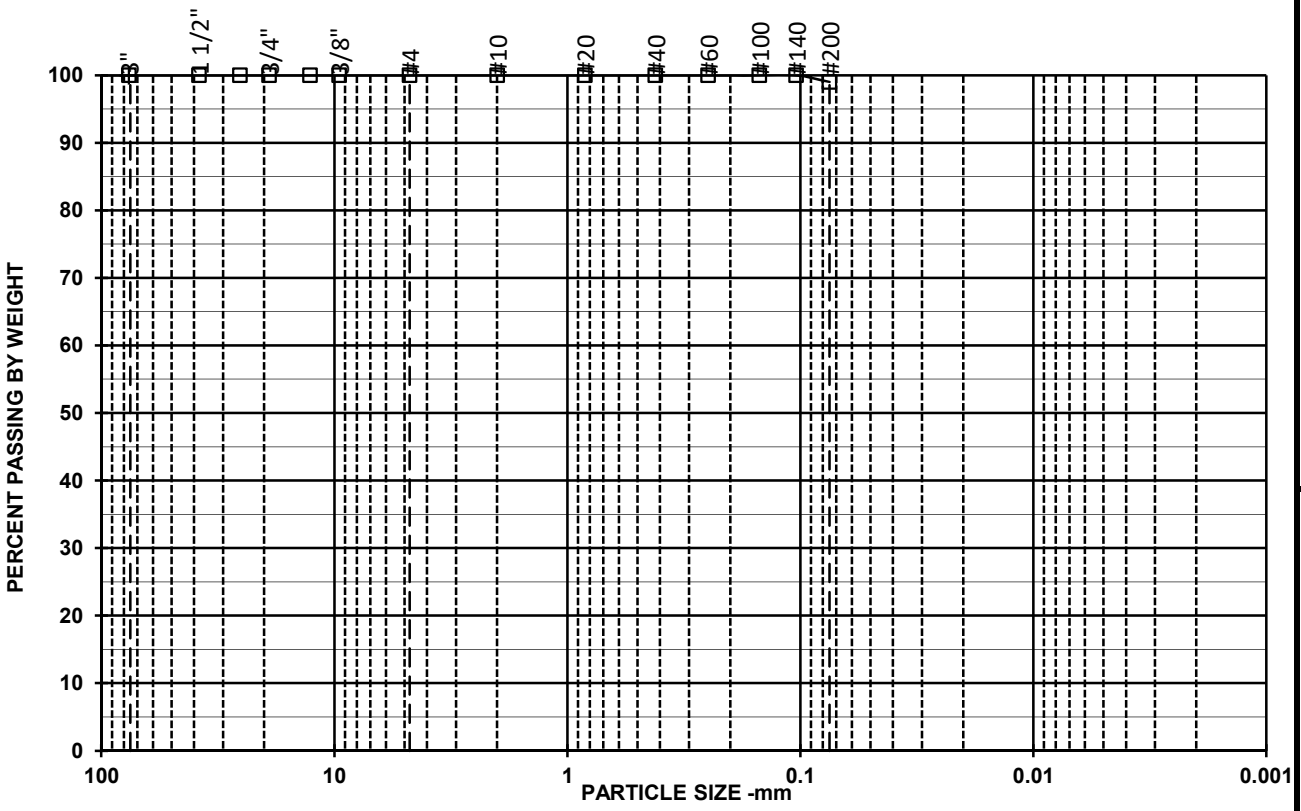
Preserve at Indian Hills

Symbol	□	◇	○
Boring	B-2	B-2	B-2
Sample	S-16A Top	S-16A Middle	S-16A Bottom
Depth	30-31	30-31	30-31
% +3"	0	0	0
% Gravel	0	0	0
% SAND	2	9	12
%C SAND	0	0	0
%M SAND	0	0	0
%F SAND	2	9	12
% FINES	98	91	88
D_{100} (mm)	0.419	0.841	2
D_{60} (mm)	0.006		
D_{30} (mm)	0.002		
D_{10} (mm)			
Cc			
Cu			

Sieve Size/ID #	Percent Finer Data		
6"	100	100	100
4"	100	100	100
3"	100	100	100
1 1/2"	100	100	100
1"	100	100	100
3/4"	100	100	100
1/2"	100	100	100
3/8"	100	100	100
#4	100	100	100
#10	100	100	100
#20	100	100	100
#40	100	100	100
#60	100	99	99
#100	100	98	98
#140	99	96	97
#200	98	91	88
5μ m	54		
2μ m	30		
1μ m	20		

PARTICLE SIZE DISTRIBUTION
ASTM D6913 & ASTM D7928

COBBLES	GRAVEL		SAND			SILT or CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	



Open Symbols: Sieve analysis by ASTM D6913
Filled symbols: Hydrometer analysis by ASTM D7928 corrected for complete sample

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	27.9	42	21	21	CL		Brown, Lean clay	06/10/20
◇								
○								

Symbol	□	◇	○
Boring	B-2		
Sample	S-16		
Depth	31-32		
% +3"	0		
% Gravel	0		
% SAND	1		
%C SAND	0		
%M SAND	0		
%F SAND	1		
% FINES	99		
D_{100} (mm)	4.75		
D_{60} (mm)			
D_{30} (mm)			
D_{10} (mm)			
Cc			
Cu			

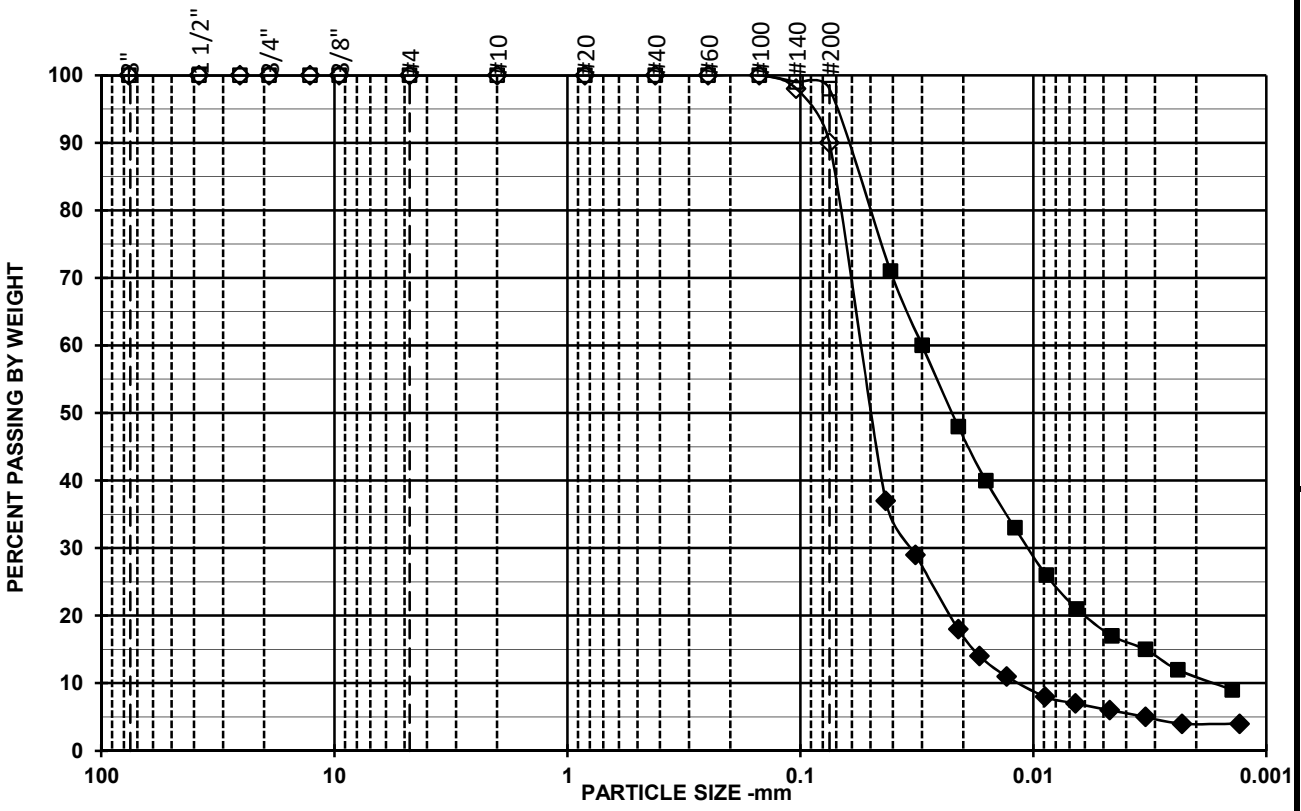
Sieve Size/ID #	Percent Finer Data		
6"	100		
4"	100		
3"	100		
1 1/2"	100		
1"	100		
3/4"	100		
1/2"	100		
3/8"	100		
#4	100		
#10	100		
#20	100		
#40	100		
#60	100		
#100	100		
#140	100		
#200	99		
5μ m			
2μ m			
1μ m			

Dynamic Earth #3114-99-001EC

TerraSense, LLC #7922-20020

Preserve at Indian Hills

PARTICLE SIZE DISTRIBUTION
ASTM D6913 & ASTM D7928



Open Symbols: Sieve analysis by ASTM D6913
Filled symbols: Hydrometer analysis by ASTM D7928 corrected for complete sample

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	26.0				CL		Brown, Lean clay, Insufficient sample size	06/10/20
◇	28.4				ML		Brown, Silt, Insufficient sample size	06/05/20
○								

Symbol	□	◇	○
Boring	B-3	B-3	
Sample	S-13	S-13B	
Depth	24-25	25-25.5	
% +3"	0	0	
% Gravel	0	0	
% SAND	2	10	
%C SAND	0	0	
%M SAND	0	0	
%F SAND	2	10	
% FINES	98	90	
D_{100} (mm)	2	0.841	
D_{60} (mm)	0.03	0.0547	
D_{30} (mm)	0.011	0.033	
D_{10} (mm)	0.0017	0.011	
Cc	2.4	1.8	
Cu	17.6	5	

Sieve Size/ID #	Percent Finer Data		
6"	100	100	
4"	100	100	
3"	100	100	
1 1/2"	100	100	
1"	100	100	
3/4"	100	100	
1/2"	100	100	
3/8"	100	100	
#4	100	100	
#10	100	100	
#20	100	100	
#40	100	100	
#60	100	100	
#100	100	100	
#140	99	98	
#200	98	90	
5μ m	18	6	
2μ m	11	4	
1μ m	7	4	

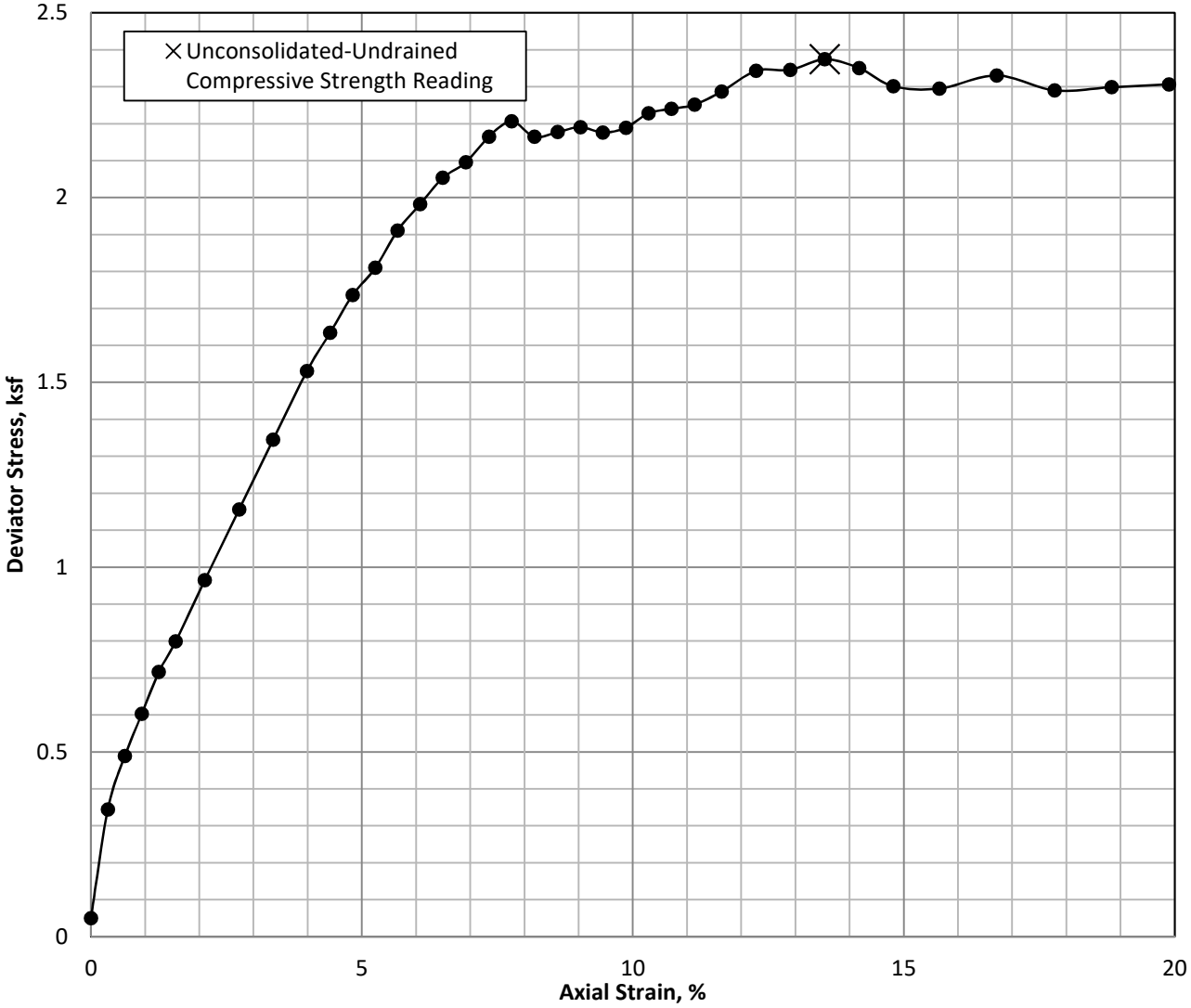
Dynamic Earth #3114-99-001EC

TerraSense, LLC #7922-20020

Preserve at Indian Hills

PARTICLE SIZE DISTRIBUTION
ASTM D6913 & ASTM D7928

UNCONSOLIDATED-UNDRAINED COMPRESSIVE STRENGTH TEST, ASTM METHOD D2850



Specimen and Material Property Information

Sample Type: Intact, split spoon sample

Description and/or Classification: CL, Brown, lean clay

Cell Pressure (ksf)	Water [1] Content (%)	Wet Unit Weight (pcf)	Dry Unit [1] Weight (pcf)	Void Ratio (-)	Saturation [2] (%)	Length (inch)	Diameter (inch)	L/D (-)	LL/ PL (-)	PI (-)	Specific [2] Gravity (-)
0 (Initial)	27.9	124.9	97.6	0.79	98.9	3.282	1.409	2.3	42	21	2.80
3.7	27.9	125.2	97.9	0.79	99.5	3.279	1.407	2.3	21		

Failure Summary

U-U Compressive Strength (ksf)	U-U Shear Strength, s_u (ksf)	Strain to Peak (%)	Strain Rate (%/min)
2.37	1.185	13.5	0.63

FAILURE SKETCH

Remarks and Notes:

(1) Water Content determined after shear from partial specimen.

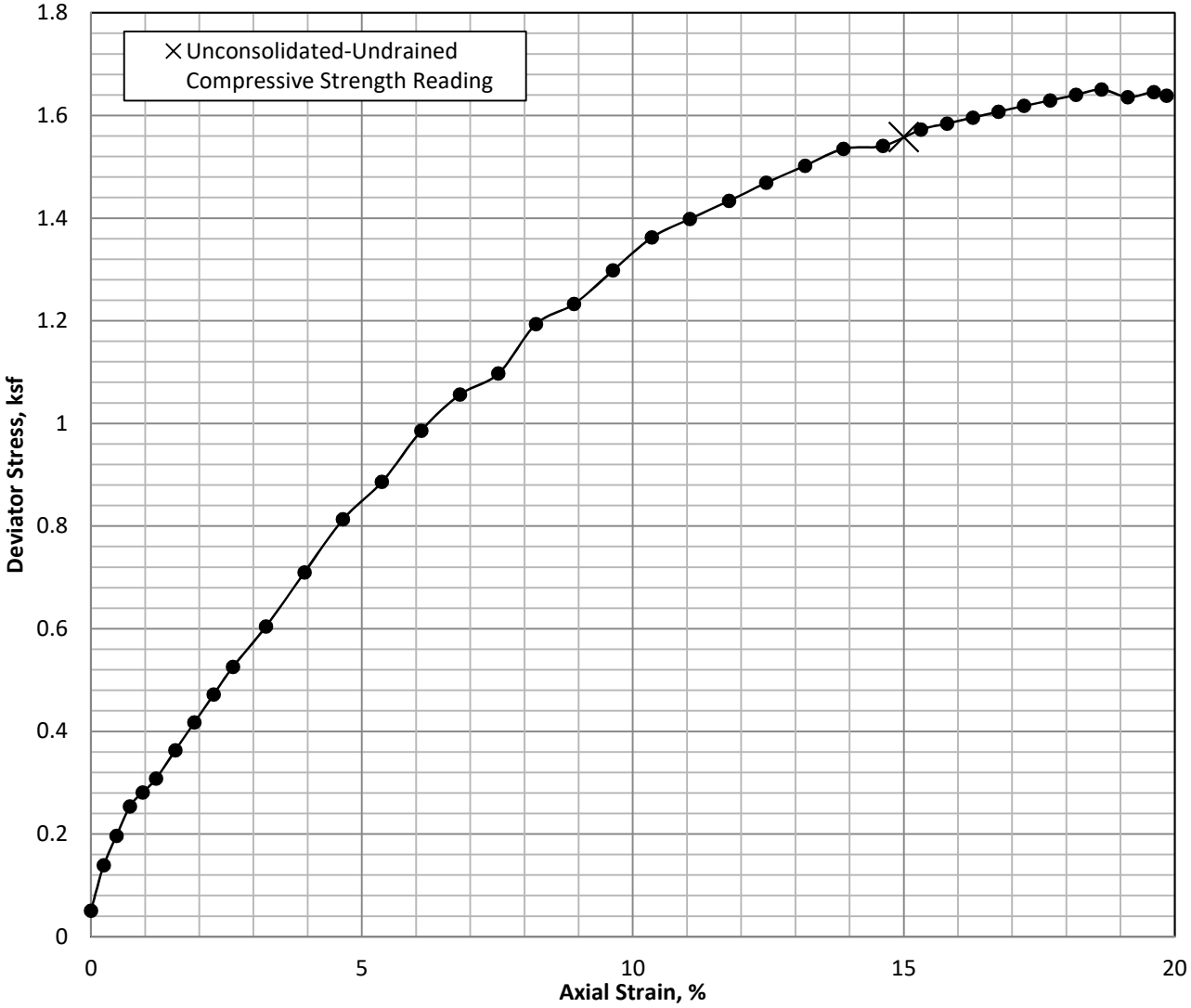
(2) Assumed specific gravity

Tested by: BB Reviewed by: GET

Test Date: 6/5/2020 Review Date: 6/12/2020

Dynamic Earth **Project # 3114-99-001EC**	**Preserve at Indian Hills**	**UNCONSOLIDATED-UNDRAINED COMPRESSION TEST**
TerraSense, LLC **Project # 7922-20020**		**Boring: B-2 Sample: S-16** **Section: Depth: 31-32 ft.**

UNCONSOLIDATED-UNDRAINED COMPRESSIVE STRENGTH TEST, ASTM METHOD D2850



Specimen and Material Property Information

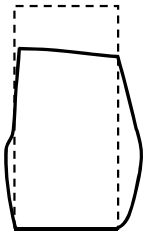
Sample Type: Intact, split spoon sample

Description and/or Classification: CL, Brown, lean clay

Cell Pressure (ksf)	Water [1] Content (%)	Wet Unit Weight (pcf)	Dry Unit [1] Weight (pcf)	Void Ratio (-)	Saturation [2] (%)	Length (inch)	Diameter (inch)	L/D (-)	LL/PL (-)	PI (-)	Specific [2] Gravity (-)
0 (Initial)	26.0	130.1	103.2	0.76	99.6	2.892	1.397	2.1	31	10	2.91
3.0	26.0	130.2	103.4	0.76	99.8	2.891	1.397	2.1	21		

Failure Summary

U-U Compressive Strength (ksf)	U-U Shear Strength, s_u (ksf)	Strain to Peak (%)	Strain Rate (%/min)
1.56	0.78	15.0	0.71



FAILURE SKETCH

Remarks and Notes:

(1) Water Content determined after shear from partial specimen.

(2) Assumed specific gravity

Tested by: BB Reviewed by: GET

Test Date: 6/8/2020 Review Date: 6/14/2020

Dynamic Earth **Project # 3114-99-001EC**	**Preserve at Indian Hills**	**UNCONSOLIDATED-UNDRAINED COMPRESSION TEST**
TerraSense, LLC **Project # 7922-20020**		**Boring: B-3 Sample: S-13** **Section: Depth: 24-25 ft.**

Settlement Monitoring Data

WEEKLY MONITORING TABLE

MONITORING STATION NAME	DATE	MOVEMENT NORTH/SOUTH	MOVEMENT EAST/WEST	MOVEMENT ELEVATION
MM-1	5/5/20	N/A	N/A	N/A
	5/12/20	0.00'N	0.00'E	0.00'
	5/19/20	0.01'N	0.00'E	0.00'
	5/26/20	0.00'N	0.00'E	0.00'
	6/2/20	0.00'N	0.00'E	0.00'
	6/16/20	0.00'N	0.00'E	0.00'
	6/30/20	0.00'N	0.01'E	0.00'
MM-2	5/5/20	N/A	N/A	N/A
	5/12/20	0.00'N	0.00'E	0.00'
	5/19/20	0.01'N	0.00'E	0.00'
	5/26/20	0.01'N	0.01'W	0.00'
	6/2/20	0.01'N	0.01'W	0.00'
	6/16/20	0.01'N	0.01'W	0.00'
	6/30/20	0.01'N	0.00'E	+0.01'
MM-3	5/5/20	N/A	N/A	N/A
	5/12/20	0.00'N	0.00'E	0.00
	5/19/20	0.00'N	0.00'E	+0.01'
	5/26/20	0.00'N	0.00'E	+0.01'
	6/2/20	0.01'N	0.00'E	0.00
	6/16/20	0.00'N	0.00'E	+0.01'
	6/30/20	0.00'N	0.00'E	+0.01'
MM-4	5/5/20	N/A	N/A	N/A
	5/12/20	0.01'N	0.00'E	-0.01'
	5/19/20	0.01'N	0.01'W	-0.01'
	5/26/20	0.01'N	0.01'W	-0.01'
	6/2/20	0.01'N	0.01'W	-0.01'
	6/16/20	0.00'N	0.01'W	-0.01'
	6/30/20	0.01'N	0.01'W	0.00
MM-5	5/5/20	N/A	N/A	N/A
	5/12/20	0.00'N	0.00'E	0.00'
	5/19/20	0.01'N	0.00'E	0.00'
	5/26/20	0.00'N	0.01'W	+0.01'
	6/2/20	0.01'N	0.01'W	0.00
	6/16/20	0.00'N	0.01'W	+0.01'
	6/30/20	0.00'N	0.00'E	+0.01'
MM-6	5/5/20	N/A	N/A	N/A
	5/12/20	0.02'S	0.02'W	-0.01'
	5/19/20	0.00'N	0.02'W	-0.01'
	5/26/20	0.01'S	0.02'W	-0.01'
	6/2/20	0.00'N	0.02'W	-0.01'
	6/16/20	0.01'S	0.02'W	-0.01'
	6/30/20	0.01'S	0.02'W	0.00'
MM-7	5/5/20	N/A	N/A	N/A
	5/12/20	0.04'N	0.01'E	-0.01'
	5/19/20	0.07'N	0.00'E	+0.01'
	5/26/20	0.09'N	0.00'E	-0.01'
	6/2/20	0.12'N	0.00'E	-0.01'
	6/16/20	0.12'N	0.00'E	-0.01'
	6/30/20	0.15'N	0.01'E	-0.01'
MM-8	5/5/20	N/A	N/A	N/A
	5/12/20	0.02'N	0.00'E	-0.02'
	5/19/20	0.06'N	0.00'E	-0.02'
	5/26/20	0.08'N	0.01'W	-0.02'
	6/2/20	0.11'N	0.01'W	-0.02'
	6/16/20	0.11'N	0.01'W	-0.02'
	6/30/20	0.14'N	0.01'W	-0.02'
MM-9	5/5/20	N/A	N/A	N/A
	5/12/20	0.05'N	0.01'W	0.00'
	5/19/20	0.08'N	0.01'W	0.00'
	5/26/20	0.10'N	0.01'W	0.00'
	6/2/20	0.12'N	0.01'W	0.00'
	6/16/20	0.12'N	0.01'W	0.00'
	6/30/20	0.14'N	0.02'W	0.00'
MM-10	5/5/20	N/A	N/A	N/A
	5/12/20	0.05'N	0.01'W	+0.02'
	5/19/20	0.06'N	0.01'W	+0.05'
	5/26/20	0.09'N	0.01'W	+0.01'
	6/2/20	0.09'N	0.01'W	+0.01'
	6/16/20	0.10'N	0.01'W	+0.01'
	6/30/20	0.11'N	0.00'E	+0.01'
MM-11	5/5/20	N/A	N/A	N/A
	5/12/20	0.00'N	0.03'W	+0.02'
	5/19/20	0.00'N	0.03'W	+0.05'
	5/26/20	0.00'N	0.05'W	+0.02'
	6/2/20	0.00'N	0.04'W	+0.02'
	6/16/20	0.00'N	0.05'W	+0.02'
	6/30/20	0.01'N	0.05'W	+0.01'
MM-12	5/5/20	N/A	N/A	N/A
	5/12/20	0.01'S	0.01'E	+0.02'
	5/19/20	0.00'N	0.00'E	+0.01'
	5/26/20	0.00'N	0.01'E	+0.01'
	6/2/20	0.00'N	0.00'E	0.00'
	6/16/20	0.00'N	0.00'E	0.00'
	6/30/20	0.00'N	0.01'E	0.00'

WEEKLY TEST BORING LOCATION TABLE

TEST BORING NAME	DATE	LATITUDE (NORTH)	LONGITUDE (WEST)	ELEVATION
TB-1	5/26/20	40°55'28.40"	-73°18'19.33"	67.09
TB-2	6/2/20	40°55'29.65"	-73°18'18.03"	40.41
TB-3	6/2/20	40°55'30.46"	-73°18'17.87"	23.92

LEGEND

MONITORING MONUMENT ⊙MM

TEST HOLE BORING ⊕TB

NOTES:

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APPROXIMATE LOCATION OF THE COASTAL EROSION HAZARD LINE IS SHOWN BASED ON THE COASTAL EROSION HAZARD AREA MAP DATED 12/5/1988 BY NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION COASTAL MANAGEMENT PROGRAM.

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ALL ELEVATIONS SHOWN ON THIS SURVEY REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

No.	REVISION	DATE
4	ADD PROPOSED BUILDINGS	7/31/2020
3	ADD IN 2019 AERIAL IMAGING AND SHOW APPROXIMATE LOCATION OF THE COASTAL EROSION HAZARD LINE	7/30/2020
2	ADD IN COSTAL EROSION HAZARD LINE AND PROPOSED SUBDIVISION FROM N&P SITE PLANS	7/21/2020
1	UPDATE WEEKLY MONITORING TABLE (BASED ON FIELD DATA FROM 6/30/2020)	7/10/2020

MAP OF MONITORING STATIONS AND TEST BORING LOCATIONS INDIAN HILLS COUNTRY CLUB

SITUATED AT

NORTHPORT

TOWN OF HUNTINGTON, SUFFOLK COUNTY, NEW YORK

S.C.T.M. DISTRICT 0400, SECTION 014, BLOCK 04, LOT 01

NELSON+POPE

engineers • architects • surveyors

70 Maxess Road, Melville, NY 11747 • 631.427.5665 • nelsonpope.com

DRAWN BY:	CB	CADD: 86047_Monitoring Stations & Boring Locations_2020	SCALE:	DRAWING NO.:	
CHECKED BY:	EP	FILE NO.: 400-14-04	1"=60'		
DATE:	JUNE 25, 2020	PROJECT NO.: 86047		SHEET NO.:	1 OF 1

Job Number: 86047

Indian Hills Golf Course

MONITORING STATION NAME	DATE	NORTHING	*DELTA NORTHING (FEET)*	*DELTA NORTHING (INCHES)*	EASTING	*DELTA EASTING (FEET)*	*DELTA EASTING (INCHES)*	LATITUDE (NORTH)	*DELTA LATITUDE (NORTH)*	LONGITUDE (WEST)	*DELTA LONGITUDE (WEST)*	ELEVATION	*DELTA ELEVATION (FEET)*	*DELTA ELEVATION (INCHES)*
MM-1	5/5/2020	277001.8013	-	-	1175796.0434	-	-	40°55'29.63"	-	-73°18'24.67"	-	64.92	-	
MM-1	5/12/2020	277001.7991	0.00	0	1175796.0458	0.00	0	40°55'29.63"	0°00'00.00"	-73°18'24.67"	0°00'00.00"	64.92	0.00	0
MM-1	5/19/2020	277001.8069	0.01	1/8	1175796.0415	0.00	0	40°55'29.63"	0°00'00.00"	-73°18'24.67"	0°00'00.00"	64.92	0.00	0
MM-1	5/26/2020	277001.8043	0.00	0	1175796.0406	0.00	O	40°55'29.63"	0°00'00.00"	-73°18'24.67"	0°00'00.00"	64.92	0.00	0
MM-1	6/2/2020	277001.8027	0.00	0	1175796.0452	0.00	0	40°55'29.63"	0°00'00.00"	-73°18'24.67"	0°00'00.00"	64.92	0.00	0
MM-1	6/16/2020	277001.7997	0.00	0	1175796.0459	0.00	0	40°55'29.63"	0°00'00.00"	-73°18'24.67"	0°00'00.00"	64.92	0.00	0
MM-1	**6/30/2020**	**277001.8050**	***0.00***	***0***	**1175796.0531**	***0.01***	***1/8***	**40°55'29.63"**	***0°00'00.00"***	**-73°18'24.67"**	***0°00'00.00"***	**64.92**	***0.00***	***0***
MM-2	5/5/2020	276871.8838	-	-	1175893.0543	-	-	40°55'28.34"	-	-73°18'23.42"	-	73.14	-	-
MM-2	5/12/2020	276871.8880	0.00	0	1175893.0572	0.00	0	40°55'28.34"	0°00'00.00"	-73°18'23.42"	0°00'00.00"	73.14	0.00	0
MM-2	5/19/2020	276871.8962	0.01	1/8	1175893.0552	0.00	0	40°55'28.34"	0°00'00.00"	-73°18'23.42"	0°00'00.00"	73.14	0.00	0
MM-2	5/26/2020	276871.8966	0.01	1/8	1175893.0425	-0.01	- 1/8	40°55'28.34"	0°00'00.00"	-73°18'23.42"	0°00'00.00"	73.14	0.00	0
MM-2	6/2/2020	276871.8891	0.01	1/8	1175893.0476	-0.01	- 1/8	40°55'28.34"	0°00'00.00"	-73°18'23.42"	0°00'00.00"	73.14	0.00	0
MM-2	6/16/2020	276871.8984	0.01	1/8	1175893.0459	-0.01	- 1/8	40°55'28.34"	0°00'00.00"	-73°18'23.42"	0°00'00.00"	73.14	0.00	0
MM-2	**6/30/2020**	**276871.8917**	***0.01***	***1/8***	**1175893.0520**	***0.00***	***0***	40°55'28.34"	***0°00'00.00"***	-73°18'23.42"	***0°00'00.00"***	**73.15**	***0.01***	***1/8***

MONITORING STATION NAME	DATE	NORTHING	*DELTA NORTHING (FEET)*	*DELTA NORTHING (INCHES)*	EASTING	*DELTA EASTING (FEET)*	*DELTA EASTING (INCHES)*	LATITUDE (NORTH)	*DELTA LATITUDE (NORTH)*	LONGITUDE (WEST)	*DELTA LONGITUDE (WEST)*	ELEVATION	*DELTA ELEVATION (FEET)*	*DELTA ELEVATION (INCHES)*
MM-3	5/5/2020	276869.1424	-	-	1176001.7508	-	-	40°55'28.31"	-	-73°18'22.00"	-	73.12	-	-
MM-3	5/12/2020	276869.1409	0.00	0	1176001.7503	0.00	0	40°55'28.31"	0°00'00.00"	-73°18'22.00"	0°00'00.00"	73.12	0.00	0
MM-3	5/19/2020	276869.1455	0.00	0	1176001.7498	0.00	0	40°55'28.31"	0°00'00.00"	-73°18'22.00"	0°00'00.00"	73.13	0.01	1/8
MM-3	5/26/2020	276869.1473	0.00	0	1176001.7476	0.00	0	40°55'28.31"	0°00'00.00"	-73°18'22.00"	0°00'00.00"	73.13	0.01	1/8
MM-3	6/2/2020	276869.1523	0.01	1/8	1176001.7460	0.00	0	40°55'28.31"	0°00'00.00"	-73°18'22.00"	0°00'00.00"	73.13	0.00	0
MM-3	6/16/2020	276869.1462	0.00	0	1176001.7464	0.00	0	40°55'28.31"	0°00'00.00"	-73°18'22.00"	0°00'00.00"	73.13	0.01	0
MM-3	**6/30/2020**	**276869.1453**	***0.00***	***0***	**1176001.7502**	***0.00***	***0***	40°55'28.31"	***0°00'00.00"***	-73°18'22.00"	***0°00'00.00"***	**73.13**	***0.01***	***1/8***
MM-4	5/5/2020	276872.8173	-	-	1176142.6320	-	-	40°55'28.33"	-	-73°18'20.17"	-	74.27	-	-
MM-4	5/12/2020	276872.8231	0.01	1/8	1176142.6312	0.00	0	40°55'28.33"	0°00'00.00"	-73°18'20.17"	0°00'00.00"	74.26	-0.01	1/8
MM-4	5/19/2020	276872.8294	0.01	1/8	1176142.6211	-0.01	- 1/8	40°55'28.33"	0°00'00.00"	-73°18'20.17"	0°00'00.00"	74.26	-0.01	- 1/8
MM-4	5/26/2020	276872.8291	0.01	1/8	1176142.6247	-0.01	- 1/8	40°55'28.33"	0°00'00.00"	-73°18'20.17"	0°00'00.00"	74.26	-0.01	- 1/8
MM-4	6/2/2020	276872.8320	0.01	1/8	1176142.6192	-0.01	- 1/8	40°55'28.33"	0°00'00.00"	-73°18'20.17"	0°00'00.00"	74.26	-0.01	- 1/8
MM-4	6/16/2020	276872.8169	0.00	0	1176142.6186	-0.01	- 1/8	40°55'28.33"	0°00'00.00"	-73°18'20.17"	0°00'00.00"	74.26	-0.01	- 1/8
MM-4	**6/30/2020**	**276872.8228**	***0.01***	***0***	**1176142.6220**	***-0.01***	***- 1/8***	**40°55'28.33"**	***0°00'00.00"***	**-73°18'20.17"**	***0°00'00.00"***	**74.27**	***0.00***	**0**

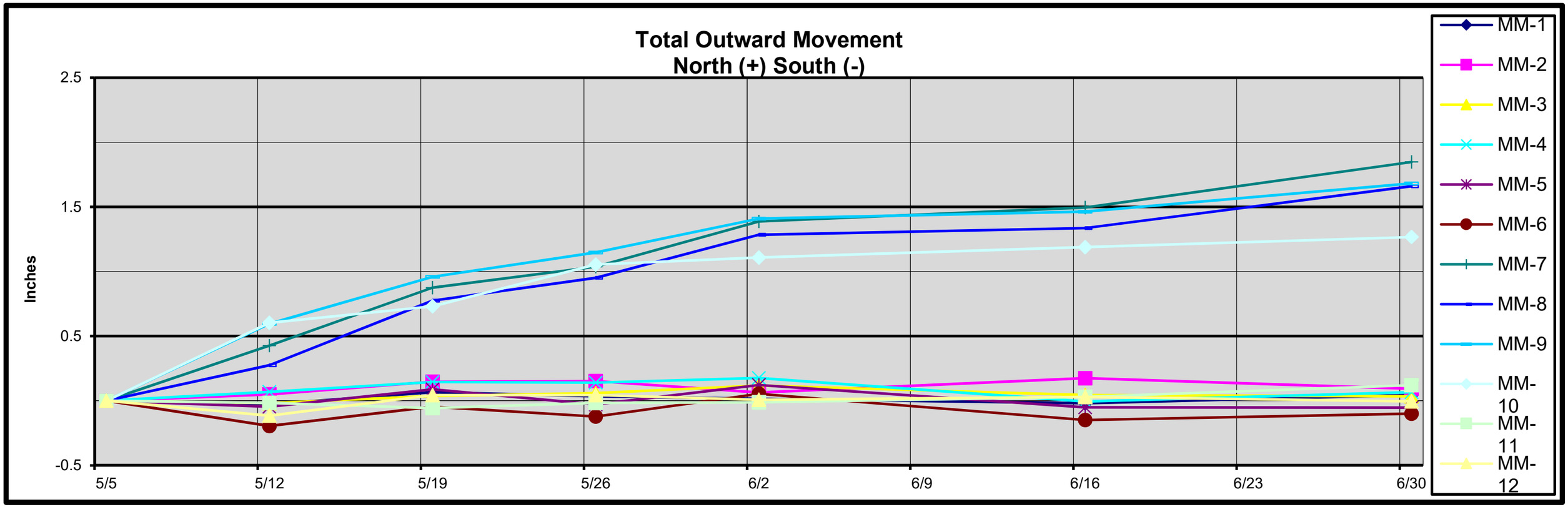
MONITORING STATION NAME	DATE	NORTHING	*DELTA NORTHING (FEET)*	*DELTA NORTHING (INCHES)*	EASTING	*DELTA EASTING (FEET)*	*DELTA EASTING (INCHES)*	LATITUDE (NORTH)	*DELTA LATITUDE (NORTH)*	LONGITUDE (WEST)	*DELTA LONGITUDE (WEST)*	ELEVATION	*DELTA ELEVATION (FEET)*	*DELTA ELEVATION (INCHES)*
MM-5	5/5/2020	276866.0765	-	-	1176255.7521	-	-	40°55'28.26"	-	-73°18'18.70"	-	67.61	-	-
MM-5	5/12/2020	276866.0728	0.00	0	1176255.7522	0.00	0	40°55'28.26"	0°00'00.00"	-73°18'18.70"	0°00'00.00"	67.61	0.00	0
MM-5	5/19/2020	276866.0840	0.01	1/8	1176255.7521	0.00	0	40°55'28.26"	0°00'00.00"	-73°18'18.70"	0°00'00.00"	67.61	0.00	0
MM-5	5/26/2020	276866.0742	0.00	0	1176255.7428	-0.01	- 1/8	40°55'28.26"	0°00'00.00"	-73°18'18.70"	0°00'00.00"	67.62	0.01	1/8
MM-5	6/2/2020	276866.0867	0.01	1/8	1176255.7459	-0.01	- 1/8	40°55'28.26"	0°00'00.00"	-73°18'18.70"	0°00'00.00"	67.62	0.00	0
MM-5	6/16/2020	276866.0722	0.00	0	1176255.7451	-0.01	- 1/8	40°55'28.26"	0°00'00.00"	-73°18'18.70"	0°00'00.00"	67.62	0.01	0
MM-5	**6/30/2020**	**276866.0721**	***0.00***	***-0***	**1176255.7489**	***0.00***	***-0***	**40°55'28.26"**	***0°00'00.00"***	**-73°18'18.70"**	***0°00'00.00"***	**67.62**	***0.01***	***0***
MM-6	5/5/2020	276746.1157	-	-	1176369.1851	-	-	40°55'27.06"	-	-73°18'17.23"	-	86.50	-	-
MM-6	5/12/2020	276746.0995	-0.02	- 1/4	1176369.1700	-0.02	- 1/4	40°55'27.06"	0°00'00.00"	-73°18'17.23"	0°00'00.00"	86.48	-0.01	- 1/8
MM-6	5/19/2020	276746.1120	0.00	0	1176369.1657	-0.02	- 1/4	40°55'27.06"	0°00'00.00"	-73°18'17.23"	0°00'00.00"	86.49	-0.01	- 1/8
MM-6	5/26/2020	276746.1055	-0.01	- 1/8	1176369.1621	-0.02	- 1/4	40°55'27.06"	0°00'00.00"	-73°18'17.23"	0°00'00.00"	86.49	-0.01	- 1/8
MM-6	6/2/2020	276746.1202	0.00	0	1176369.1609	-0.02	- 1/4	40°55'27.06"	0°00'00.00"	-73°18'17.23"	0°00'00.00"	86.49	-0.01	- 1/8
MM-6	6/16/2020	276746.1033	-0.01	- 1/8	1176369.1647	-0.02	- 1/4	40°55'27.06"	0°00'00.00"	-73°18'17.23"	0°00'00.00"	86.49	-0.01	- 1/8
MM-6	**6/30/2020**	**276746.1075**	***-0.01***	***-0***	**1176369.1687**	***-0.02***	***- 1/4***	40°55'27.06"	***0°00'00.00"***	-73°18'17.23"	***0°00'00.00"***	**86.50**	***0.00***	***0***

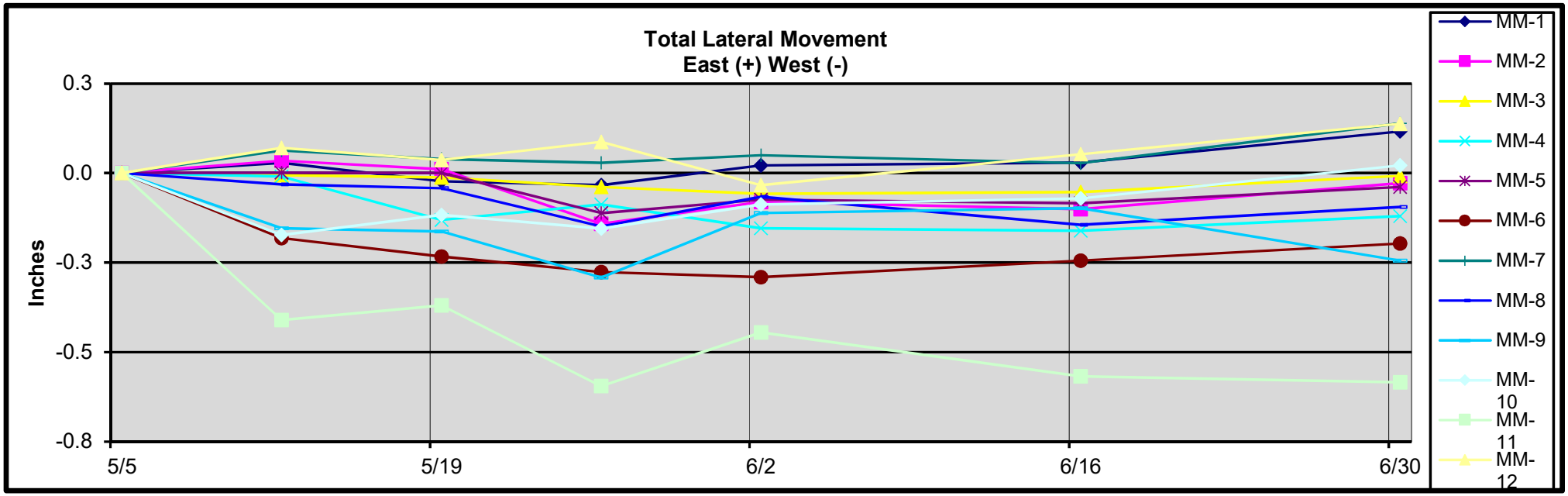
MONITORING STATION NAME	DATE	NORTHING	*DELTA NORTHING (FEET)*	*DELTA NORTHING (INCHES)*	EASTING	*DELTA EASTING (FEET)*	*DELTA EASTING (INCHES)*	LATITUDE (NORTH)	*DELTA LATITUDE (NORTH)*	LONGITUDE (WEST)	*DELTA LONGITUDE (WEST)*	ELEVATION	*DELTA ELEVATION (FEET)*	*DELTA ELEVATION (INCHES)*
MM-7	5/5/2020	276914.5515	-	-	1176360.2471	-	-	40°55'28.73"	-	-73°18'17.33"	-	59.70	-	-
MM-7	5/12/2020	276914.5871	0.04	1/2	1176360.2524	0.01	1/8	40°55'28.73"	0°00'00.00"	-73°18'17.33"	0°00'00.00"	59.70	-0.01	- 1/8
MM-7	5/19/2020	276914.6244	0.07	5/6	1176360.2504	0.00	0	40°55'28.73"	0°00'00.00"	-73°18'17.33"	0°00'00.00"	59.71	0.01	1/8
MM-7	5/26/2020	276914.6379	0.09	1	1176360.2495	0.00	0	40°55'28.73"	0°00'00.00"	-73°18'17.33"	0°00'00.00"	59.70	-0.01	- 1/8
MM-7	6/2/2020	276914.6672	0.12	1 4/9	1176360.2513	0.00	0	40°55'28.73"	0°00'00.00"	-73°18'17.33"	0°00'00.00"	59.70	-0.01	- 1/8
MM-7	6/16/2020	276914.6762	0.12	1 1/2	1176360.2494	0.00	0	40°55'28.73"	0°00'00.00"	-73°18'17.33"	0°00'00.00"	59.69	-0.01	- 1/8
MM-7	**6/30/2020**	**276914.7055**	***0.15***	***1 6/7***	**1176360.2587**	***0.01***	***1/8***	**40°55'28.73"**	***0°00'00.00"***	**-73°18'17.33"**	***0°00'00.00"***	**59.69**	***-0.01***	***- 1/8***
MM-8	5/5/2020	276800.9520	-	-	1176465.1213	-	-	40°55'27.60"	-	-73°18'15.98"	-	69.28	-	-
MM-8	5/12/2020	276800.9750	0.02	1/4	1176465.1187	0.00	0	40°55'27.60"	0°00'00.00"	-73°18'15.98"	0°00'00.00"	69.26	-0.02	- 1/4
MM-8	5/19/2020	276801.0167	0.06	5/7	1176465.1178	0.00	0	40°55'27.60"	0°00'00.00"	-73°18'15.98"	0°00'00.00"	69.26	-0.02	- 1/4
MM-8	5/26/2020	276801.0313	0.08	1	1176465.1089	-0.01	- 1/8	40°55'27.60"	0°00'00.00"	-73°18'15.98"	0°00'00.00"	69.26	-0.02	- 1/4
MM-8	6/2/2020	276801.0590	0.11	1 1/3	1176465.1158	-0.01	- 1/8	40°55'27.60"	0°00'00.00"	-73°18'15.98"	0°00'00.00"	69.26	-0.02	- 1/4
MM-8	6/16/2020	276801.0634	0.11	1 1/3	1176465.1093	-0.01	- 1/8	40°55'27.60"	0°00'00.00"	-73°18'15.98"	0°00'00.00"	69.26	-0.02	- 1/4
MM-8	**6/30/2020**	**276801.0904**	***0.14***	***1 2/3***	**1176465.1134**	***-0.01***	***- 1/8***	**40°55'27.60"**	***0°00'00.00"***	**-73°18'15.98"**	***0°00'00.00"***	**69.26**	***-0.02***	***- 1/4***

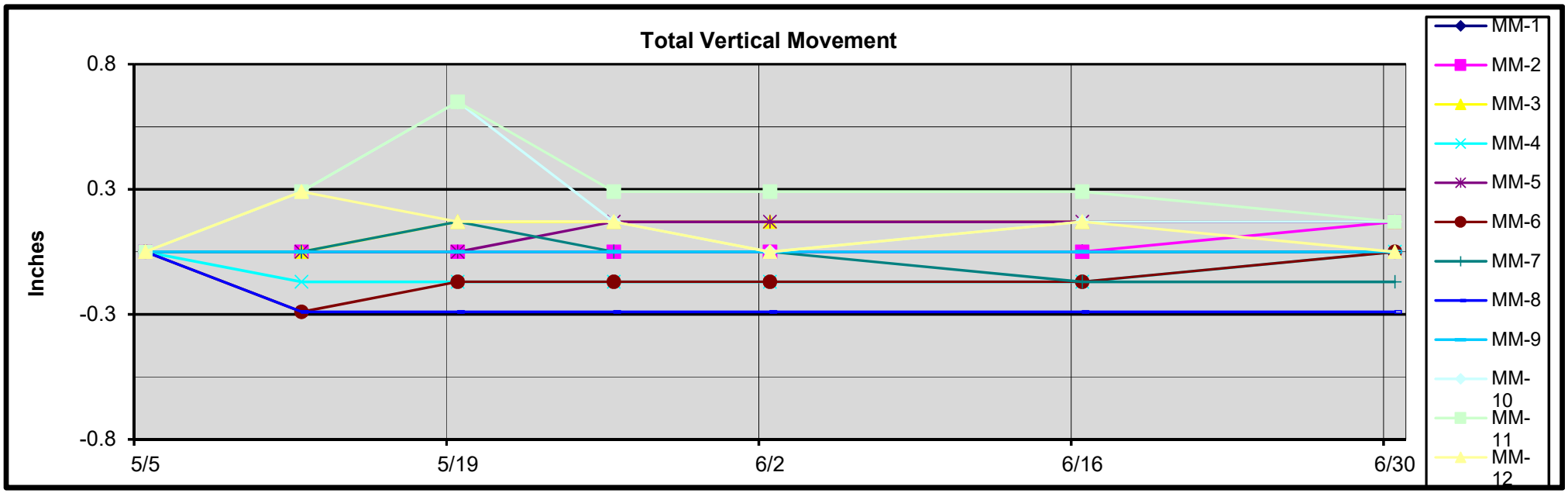
MONITORING STATION NAME	DATE	NORTHING	*DELTA NORTHING (FEET)*	*DELTA NORTHING (INCHES)*	EASTING	*DELTA EASTING (FEET)*	*DELTA EASTING (INCHES)*	LATITUDE (NORTH)	*DELTA LATITUDE (NORTH)*	LONGITUDE (WEST)	*DELTA LONGITUDE (WEST)*	ELEVATION	*DELTA ELEVATION (FEET)*	*DELTA ELEVATION (INCHES)*
MM-9	5/5/2020	277004.3164	-	-	1176313.5355	-	-	40°55'29.62"	-	-73°18'17.93"	-	41.02	-	-
MM-9	5/12/2020	277004.3661	0.05	3/5	1176313.5227	-0.01	- 1/8	40°55'29.62"	0°00'00.00"	-73°18'17.93"	0°00'00.00"	41.02	0.00	0
MM-9	5/19/2020	277004.3964	0.08	1	1176313.5219	-0.01	- 1/8	40°55'29.62"	0°00'00.00"	-73°18'17.93"	0°00'00.00"	41.02	0.00	0
MM-9	5/26/2020	277004.4121	0.10	1 1/5	1176313.5112	-0.01	- 1/8	40°55'29.62"	0°00'00.00"	-73°18'17.93"	0°00'00.00"	41.02	0.00	0
MM-9	6/2/2020	277004.4340	0.12	1 4/9	1176313.5262	-0.01	- 1/8	40°55'29.62"	0°00'00.00"	-73°18'17.93"	0°00'00.00"	41.02	0.00	0
MM-9	6/16/2020	277004.4385	0.12	1 1/2	1176313.5273	-0.01	- 1/8	40°55'29.62"	0°00'00.00"	-73°18'17.93"	0°00'00.00"	41.02	0.00	0
MM-9	**6/30/2020**	**277004.4566**	***0.14***	***1 2/3***	**1176313.5151**	***-0.02***	***- 1/4***	**40°55'29.62"**	***0°00'00.00"***	**-73°18'17.93"**	***0°00'00.00"***	**41.02**	***0.00***	***0***
MM-10	5/5/2020	277032.7663	-	-	1176145.2139	-	-	40°55'29.91"	-	-73°18'20.12"	-	36.34	-	-
MM-10	5/12/2020	277032.8167	0.05	3/5	1176145.1995	-0.01	- 1/8	40°55'29.91"	0°00'00.00"	-73°18'20.12"	0°00'00.00"	36.36	0.02	1/4
MM-10	5/19/2020	277032.8272	0.06	5/7	1176145.2042	-0.01	- 1/8	40°55'29.91"	0°00'00.00"	-73°18'20.12"	0°00'00.00"	36.39	0.05	3/5
MM-10	5/26/2020	277032.8541	0.09	1	1176145.2010	-0.01	- 1/8	40°55'29.91"	0°00'00.00"	-73°18'20.12"	0°00'00.00"	36.35	0.01	1/8
MM-10	6/2/2020	277032.8587	0.09	1 1/8	1176145.2066	-0.01	- 1/8	40°55'29.91"	0°00'00.00"	-73°18'20.12"	0°00'00.00"	36.34	0.01	1/8
MM-10	6/16/2020	277032.8654	0.10	1 1/5	1176145.2080	-0.01	- 1/8	40°55'29.91"	0°00'00.00"	-73°18'20.12"	0°00'00.00"	36.35	0.01	1/8
MM-10	**6/30/2020**	**277032.8719**	***0.11***	***1 1/4***	**1176145.2157**	***0.00***	***0***	**40°55'29.91"**	***0°00'00.00"***	**-73°18'20.12"**	***0°00'00.00"***	**36.35**	***0.01***	***1/8***

MONITORING STATION NAME	DATE	NORTHING	*DELTA NORTHING (FEET)*	*DELTA NORTHING (INCHES)*	EASTING	*DELTA EASTING (FEET)*	*DELTA EASTING (INCHES)*	LATITUDE (NORTH)	*DELTA LATITUDE (NORTH)*	LONGITUDE (WEST)	*DELTA LONGITUDE (WEST)*	ELEVATION	*DELTA ELEVATION (FEET)*	*DELTA ELEVATION (INCHES)*
MM-11	5/5/2020	276972.2624	-	-	1176086.9161	-	-	40°55'29.32"	-	-73°18'20.88"	-	45.20	-	-
MM-11	5/12/2020	276972.2610	0.00	0	1176086.8819	-0.03	- 1/3	40°55'29.32"	0°00'00.00"	-73°18'20.88"	0°00'00.00"	45.22	0.02	1/4
MM-11	5/19/2020	276972.2577	0.00	0	1176086.8853	-0.03	- 1/3	40°55'29.32"	0°00'00.00"	-73°18'20.88"	0°00'00.00"	45.25	0.05	3/5
MM-11	5/26/2020	276972.2610	0.00	0	1176086.8665	-0.05	- 3/5	40°55'29.32"	0°00'00.00"	-73°18'20.88"	0°00'00.00"	45.22	0.02	1/4
MM-11	6/2/2020	276972.2614	0.00	0	1176086.8790	-0.04	- 1/2	40°55'29.32"	0°00'00.00"	-73°18'20.88"	0°00'00.00"	45.22	0.02	1/4
MM-11	6/16/2020	276972.2650	0.00	0	1176086.8688	-0.05	- 3/5	40°55'29.32"	0°00'00.00"	-73°18'20.88"	0°00'00.00"	45.22	0.02	1/4
MM-11	**6/30/2020**	**276972.2725**	***0.01***	***1/8***	**1176086.8674**	***-0.05***	***- 3/5***	**40°55'29.32"**	***0°00'00.00"***	**-73°18'20.88"**	***0°00'00.00"***	**45.21**	***0.01***	***1/8***
MM-12	5/5/2020	276999.2052	-	-	1175969.3444	-	-	40°55'29.60"	-	-73°18'22.41"	-	53.19	-	-
MM-12	5/12/2020	276999.1956	-0.01	- 1/8	1175969.3503	0.01	1/8	40°55'29.60"	0°00'00.00"	-73°18'22.41"	0°00'00.00"	53.21	0.02	1/4
MM-12	5/19/2020	276999.2089	0.00	0	1175969.3475	0.00	0	40°55'29.60"	0°00'00.00"	-73°18'22.41"	0°00'00.00"	53.20	0.01	1/8
MM-12	5/26/2020	276999.2089	0.00	0	1175969.3517	0.01	1/8	40°55'29.60"	0°00'00.00"	-73°18'22.41"	0°00'00.00"	53.20	0.01	1/8
MM-12	6/2/2020	276999.2058	0.00	0	1175969.3416	0.00	0	40°55'29.60"	0°00'00.00"	-73°18'22.41"	0°00'00.00"	53.19	0.00	0
MM-12	6/16/2020	276999.2077	0.00	0	1175969.3488	0.00	0	40°55'29.60"	0°00'00.00"	-73°18'22.41"	0°00'00.00"	53.20	0.00	0
MM-12	**6/30/2020**	**276999.2049**	***0.00***	***0***	**1175969.3559**	***0.01***	***1/8***	**40°55'29.60"**	***0°00'00.00"***	**-73°18'22.41"**	***0°00'00.00"***	**53.19**	***0.00***	***0***

TEST BORING STATION NAME	DATE	NORTHING	*DELTA NORTHING (FEET)*	*DELTA NORTHING (INCHES)*	EASTING	*DELTA EASTING (FEET)*	*DELTA EASTING (INCHES)*	LATITUDE (NORTH)	*DELTA LATITUDE (NORTH)*	LONGITUDE (WEST)	*DELTA LONGITUDE (WEST)*	ELEVATION	*DELTA ELEVATION (FEET)*	*DELTA ELEVATION (INCHES)*
TB-1	**5/26/2020**	**276880.2544**	**-**	**-**	**1176207.0070**	**-**	**-**	**40°55'28.40"**	**-**	**-73°18'19.33"**	**-**	**67.09**	**-**	**-**
TB-2	**6/2/2020**	**277007.6379**	**-**	**-**	**1176305.6901**	**-**	**-**	**40°55'29.65"**	**-**	**-73°18'18.03"**	**-**	**40.41**	**-**	**-**
TB-3	**6/2/2020**	**277089.5121**	**-**	**-**	**1176317.6751**	**-**	**-**	**40°55'30.46"**	**-**	**-73°18'17.87"**	**-**	**23.92**	**-**	**-**


Total Outward Movement
North (+) South (-)
Inches
2.5
1.5
0.5
-0.5
5/5
5/12
5/19
5/26
6/2
6/9
6/16
6/23
6/30
MM-1
MM-2
MM-3
MM-4
MM-5
MM-6
MM-7
MM-8
MM-9
MM-10
MM-11
MM-12


Total Lateral Movement
East (+) West (-)
Inches
0.3
0.0
-0.3
-0.5
-0.8
5/5
5/19
6/2
6/16
6/30
MM-1
MM-2
MM-3
MM-4
MM-5
MM-6
MM-7
MM-8
MM-9
MM-10
MM-11
MM-12


Total Vertical Movement
Inches
0.8
0.3
-0.3
-0.8
5/5
5/19
6/2
6/16
6/30
MM-1
MM-2
MM-3
MM-4
MM-5
MM-6
MM-7
MM-8
MM-9
MM-10
MM-11
MM-12

Existing Structure Review Letter

George H. Suddell, Architect
Suddell Builders, Inc.

202-11 EAST SHORE ROAD HUNTINGTON, NEW YORK 11743

June 26, 2020

Mr. Chic Voorhees
Nelson & Pope
572 Walt Whitman Rd
Melville, NY 11747

Re: 9 Mystic Lane, Northport Sec 014.00 Block 01.00 Lot 010.005

Dear Mr. Voorhees,

I am the Architect and Builder of the home located at 9 Mystic Lane. The property is located west of the CEHA (Coastal Erosion Hazard Area) that runs East-West along the shore of the LI Sound. Prior to construction, we obtained soil borings that revealed brown silt and clay with traces of sand and gravel. Taking into account the existing soil conditions, we constructed the foundation with ample rebar and moment footings. The foundation was poured in October 2016 and the house was completed in November 2017.

Over the years, I have had many opportunities to observe the home's construction performance. Visual observations were made of the exposed foundation perimeter and the interior walls on the first and second floors. To the best of my knowledge, I have never observed any evidence of shifting or cracking in the foundation.

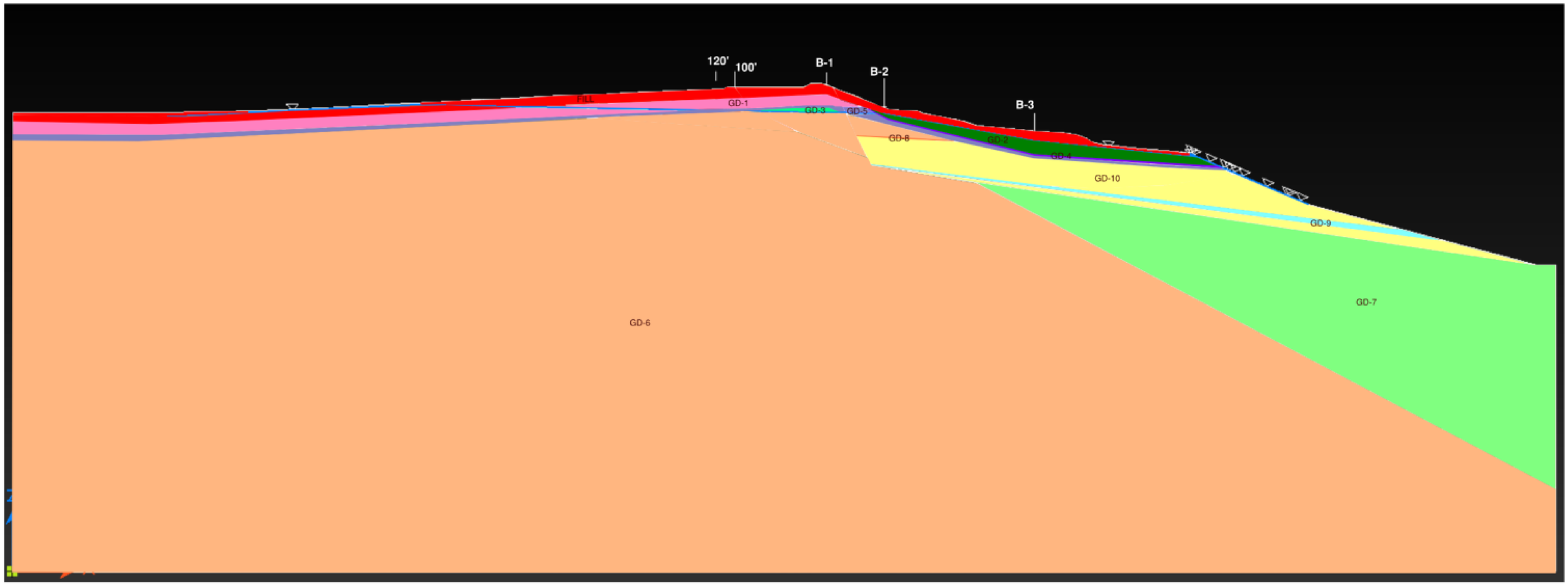
This month I had the occasion to be on site and used the opportunity to visually inspect the exposed foundation perimeter and I see no evidence of movement or tell tale signs of failure.

Sincerely,

George H. Suddell
Architect
President - Suddell Builders, Inc.

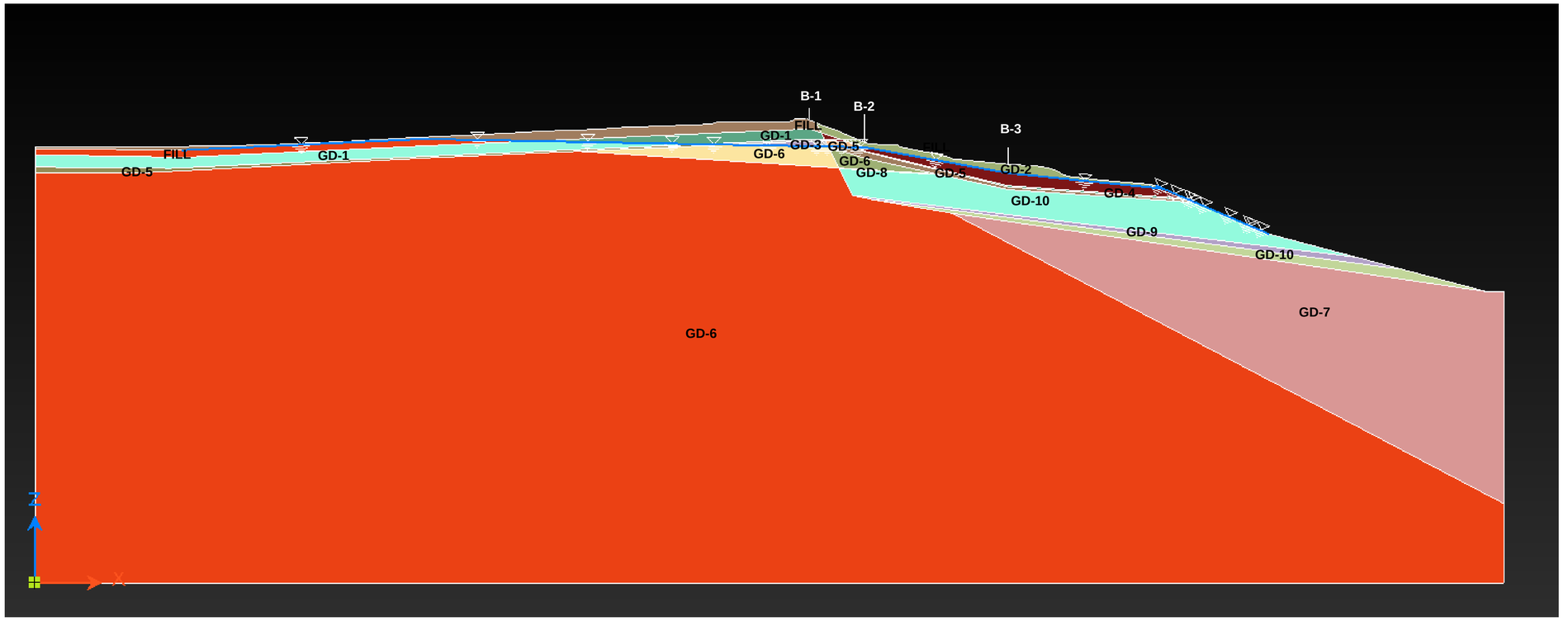
Results of Slope Stability Analysis

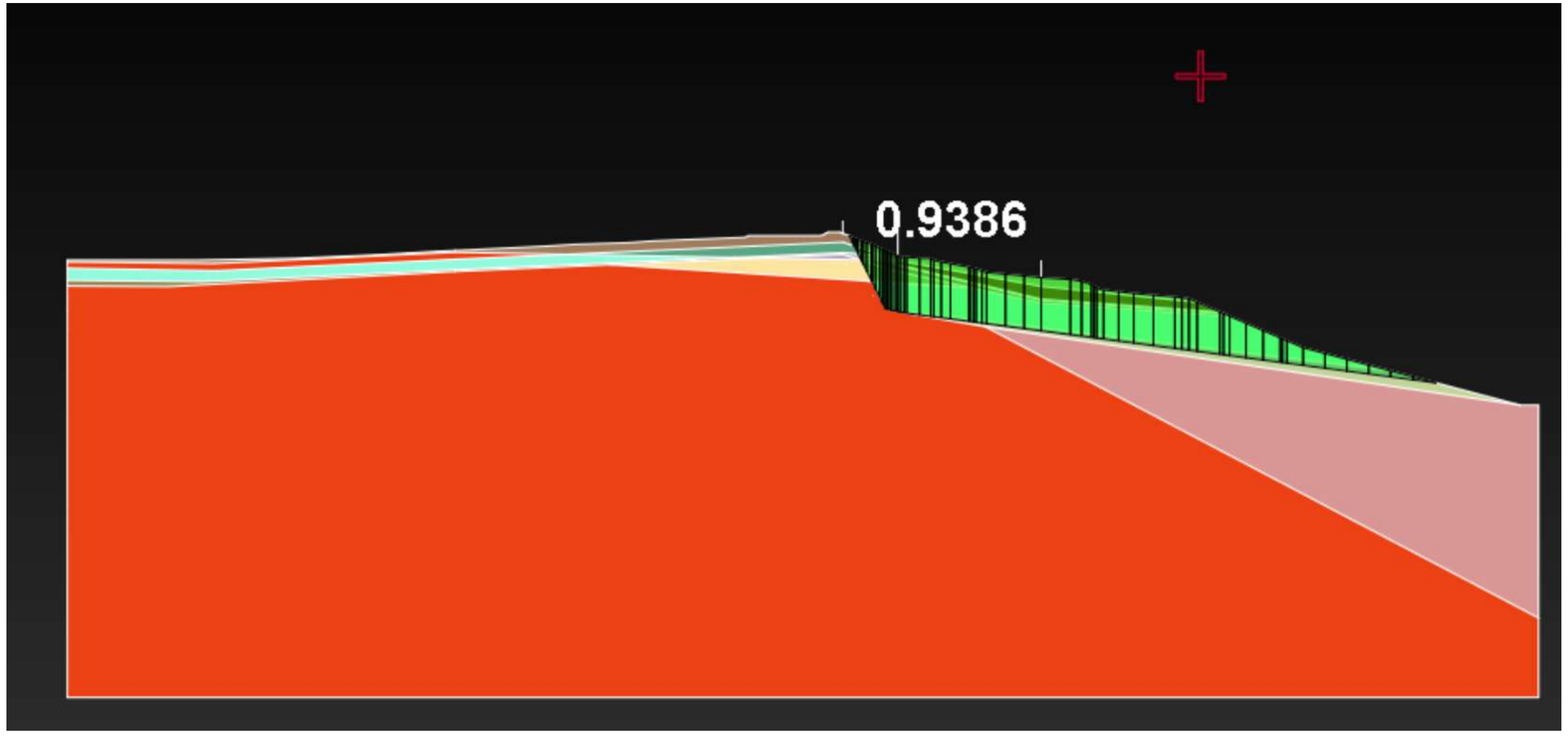
Subsurface Model



LEGEND				
SOIL LAYER	UNIT WEIGHT	SAT UNIT WEIGHT	COHESION	FRICTION ANGLE
FILL	100	120	0	28
GD-1	100	125	2000	0
GD-2	100	125	1400	0
GD-3	100	125	3700	0
GD-4	90	100	250	0
GD-5	100	125	1200	0
GD-6	100	125	3300	0
GD-7	100	125	4000	0
GD-8	100	125	250	0
GD-9	100	125	500	0
GD-10	100	125	500	0
Proposed Fill	120	140	0	30

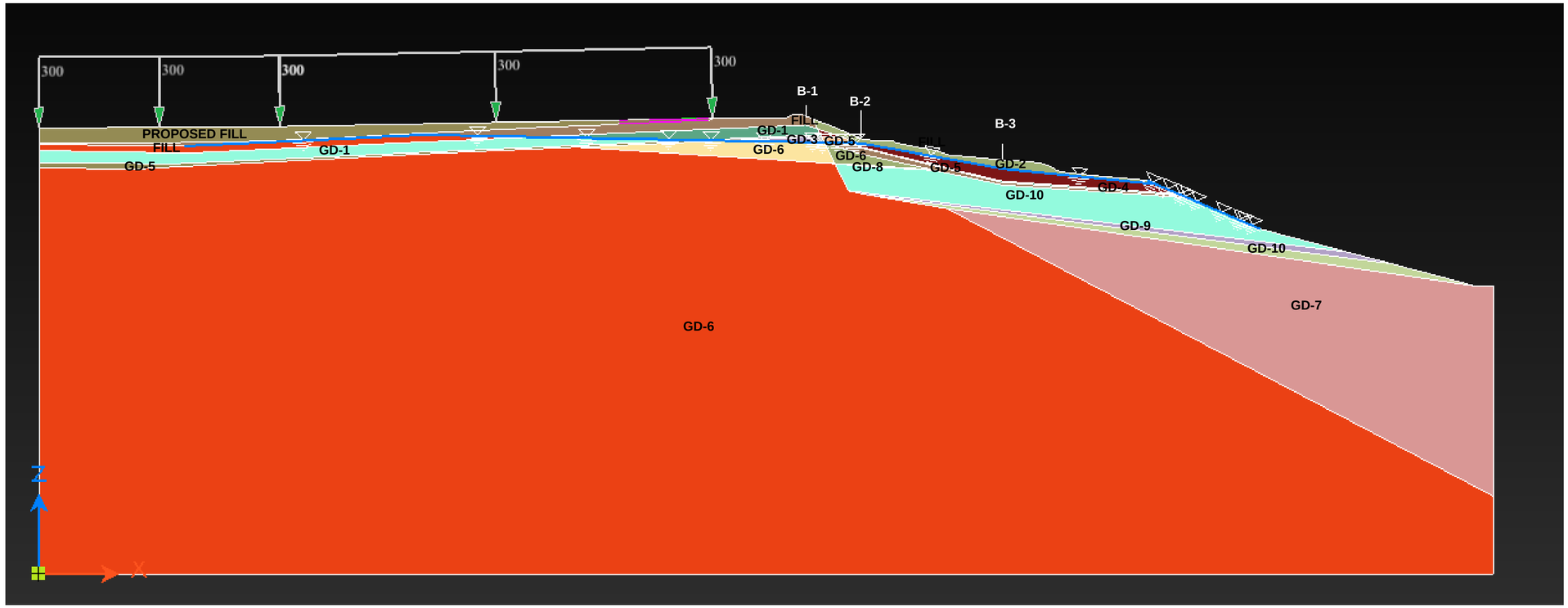
EXISTING CONDITIONS - SLIP PLANE BEFORE B-1

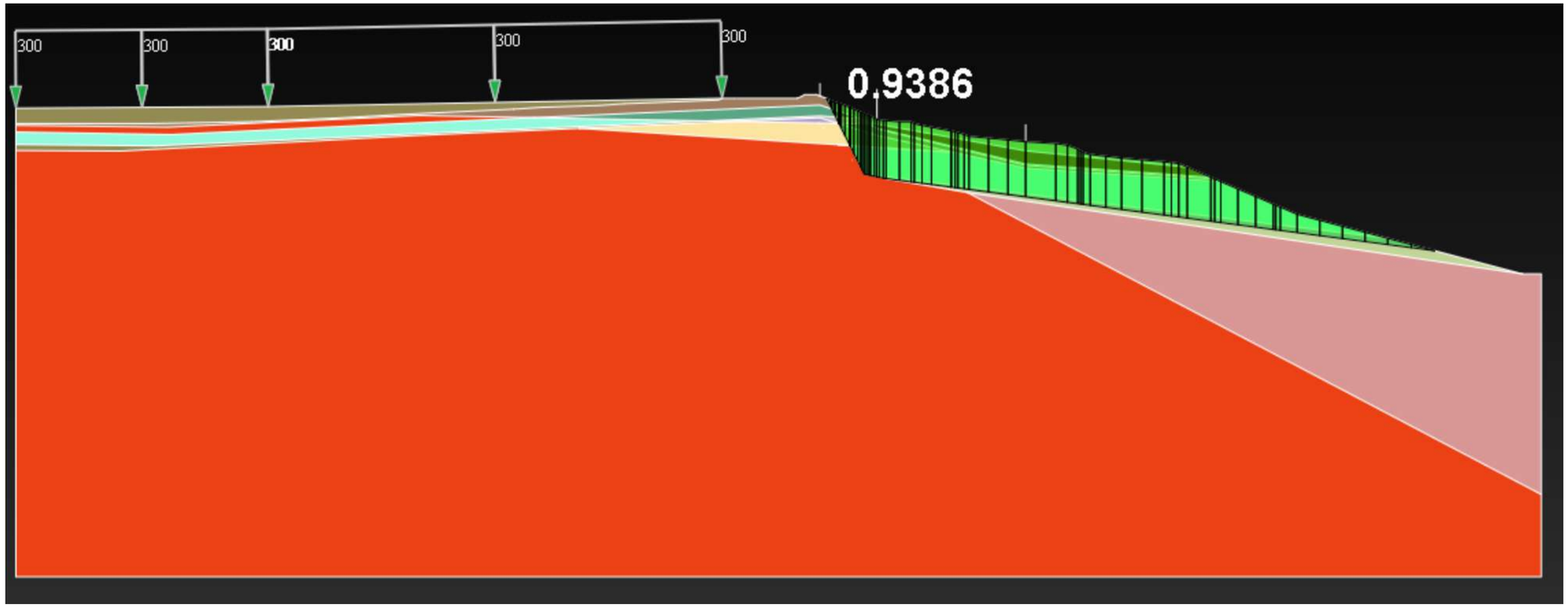




LEGEND				
SOIL LAYER	UNIT WEIGHT	SAT UNIT WEIGHT	COHESION	FRICTION ANGLE
FILL	100	120	0	28
GD-1	100	125	2000	0
GD-2	100	125	1400	0
GD-3	100	125	3700	0
GD-4	90	100	250	0
GD-5	100	125	1200	0
GD-6	100	125	3300	0
GD-7	100	125	4000	0
GD-8	100	125	250	0
GD-9	100	125	500	0
GD-10	100	125	500	0
Proposed Fill	120	140	0	30

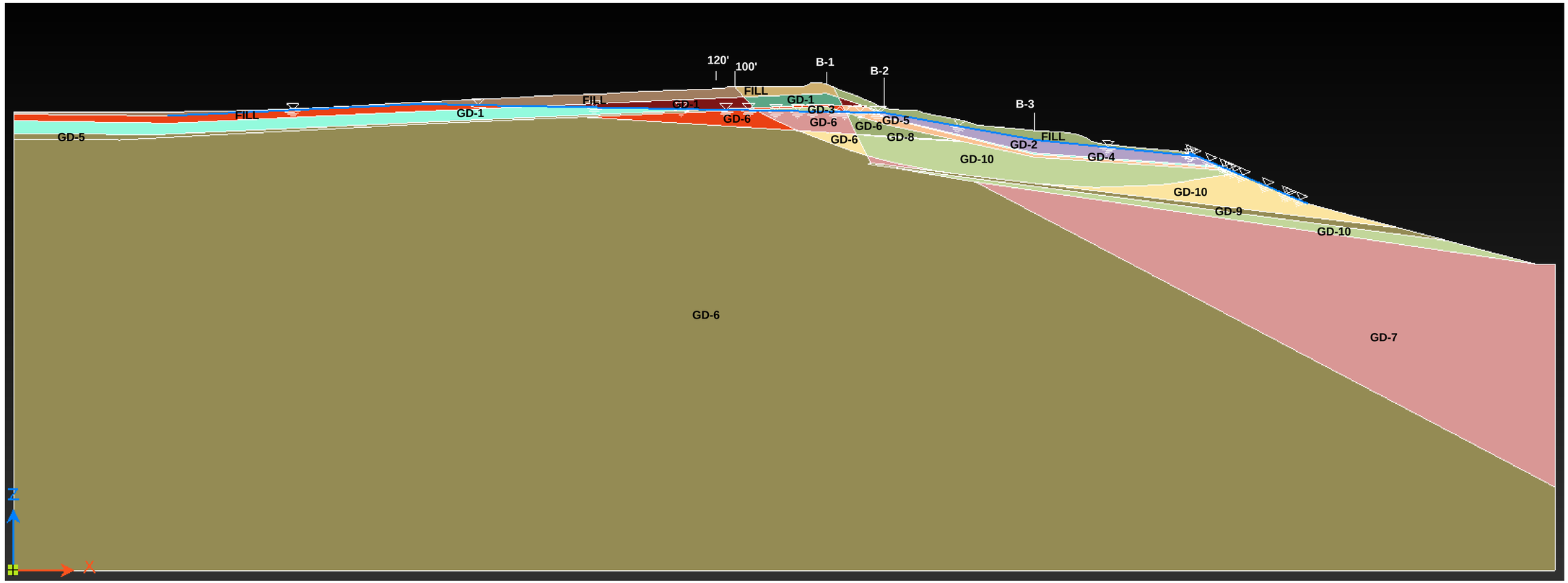
PROPOSED CONDITIONS - SLIP PLANE BEFORE B-1

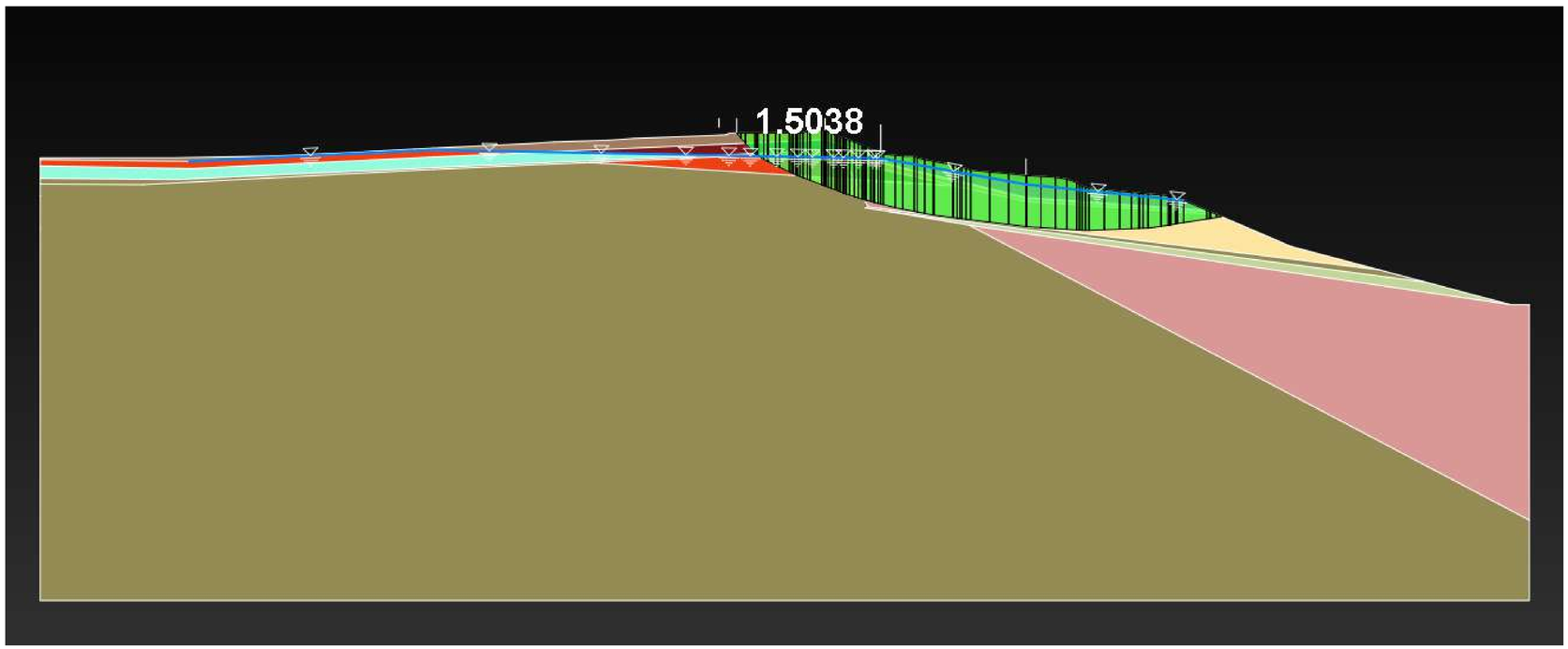




LEGEND				
SOIL LAYER	UNIT WEIGHT	SAT UNIT WEIGHT	COHESION	FRICTION ANGLE
FILL	100	120	0	28
GD-1	100	125	2000	0
GD-2	100	125	1400	0
GD-3	100	125	3700	0
GD-4	90	100	250	0
GD-5	100	125	1200	0
GD-6	100	125	3300	0
GD-7	100	125	4000	0
GD-8	100	125	250	0
GD-9	100	125	500	0
GD-10	100	125	500	0
Proposed Fill	120	140	0	30

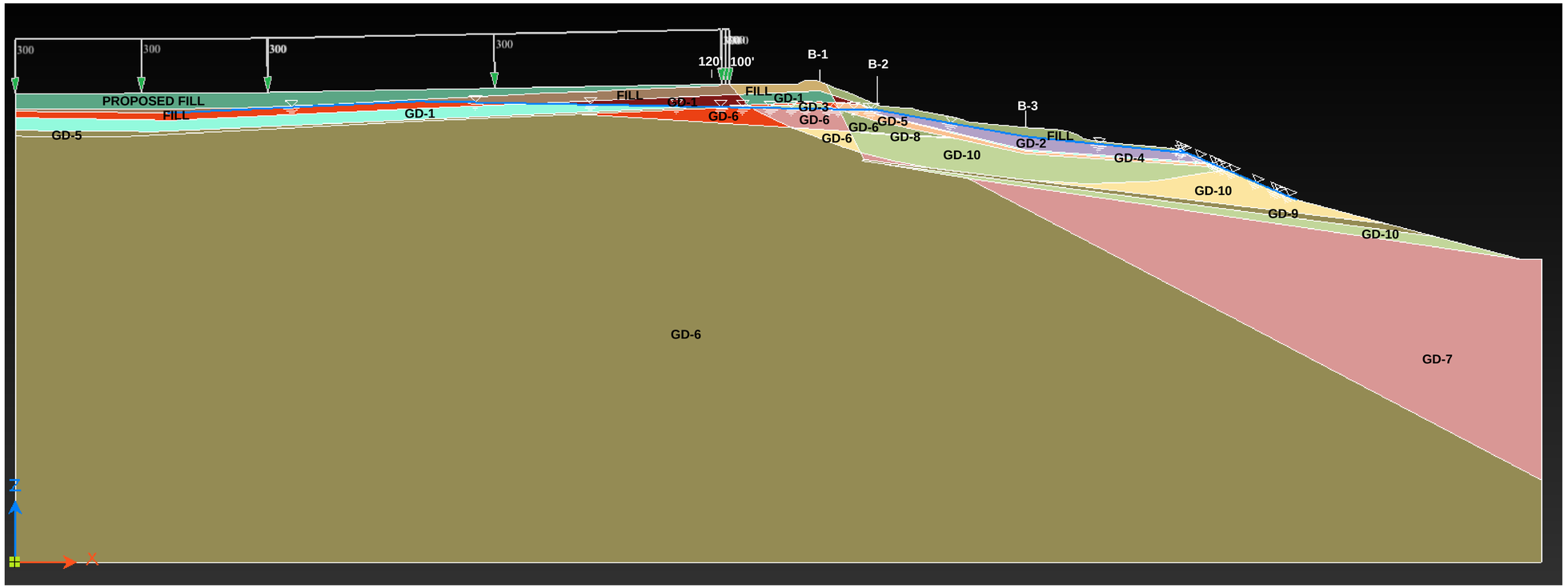
EXISTING CONDITIONS -SLIP PLANE 100' SET BACK

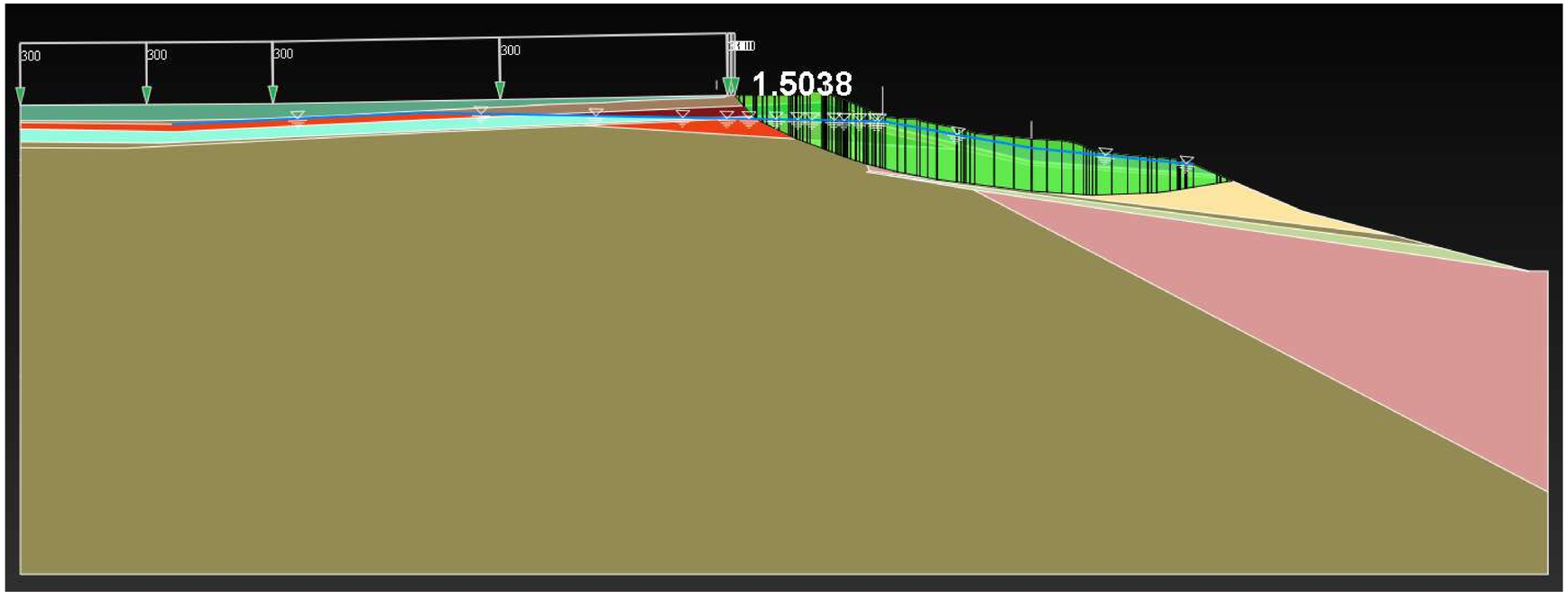




LEGEND				
SOIL LAYER	UNIT WEIGHT	SAT UNIT WEIGHT	COHESION	FRICTION ANGLE
FILL	100	120	0	28
GD-1	100	125	2000	0
GD-2	100	125	1400	0
GD-3	100	125	3700	0
GD-4	90	100	250	0
GD-5	100	125	1200	0
GD-6	100	125	3300	0
GD-7	100	125	4000	0
GD-8	100	125	250	0
GD-9	100	125	500	0
GD-10	100	125	500	0
Proposed Fill	120	140	0	30

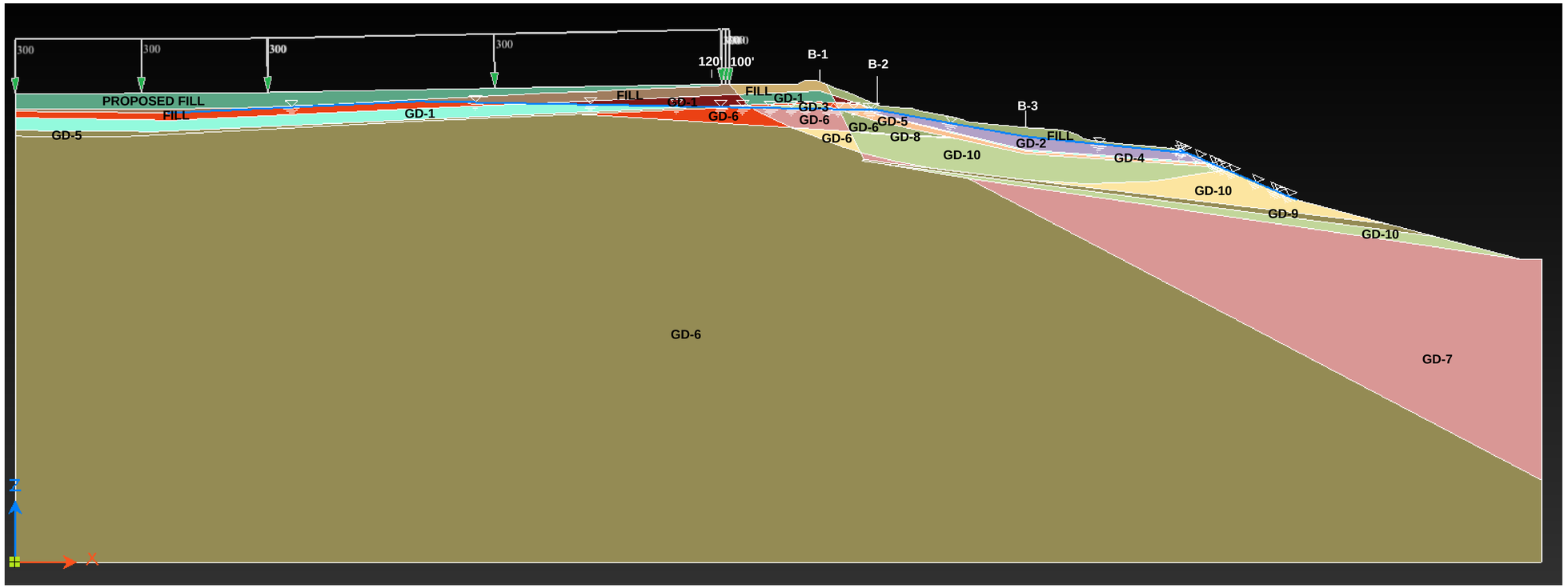
PROPOSED CONDITIONS -SLIP PLANE 100' SET BACK

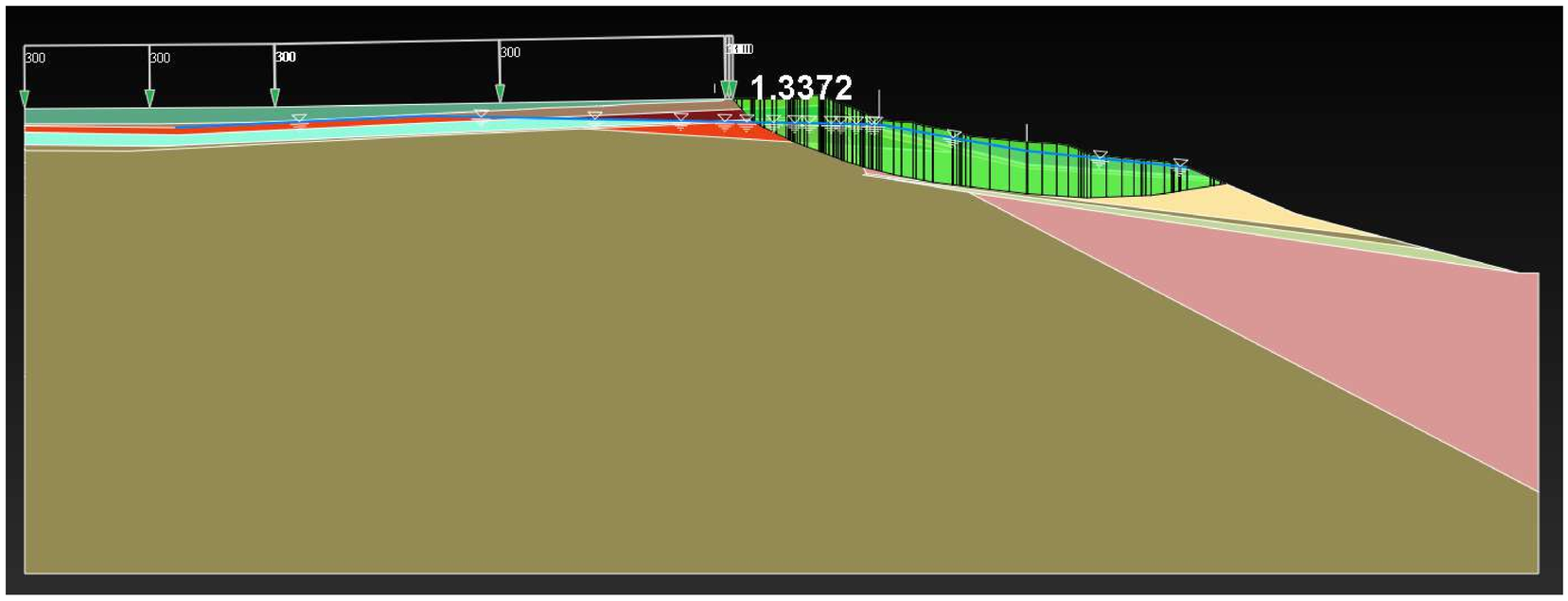




LEGEND				
SOIL LAYER	UNIT WEIGHT	SAT UNIT WEIGHT	COHESION	FRICTION ANGLE
FILL	100	120	0	28
GD-1	100	125	2000	0
GD-2	100	125	1400	0
GD-3	100	125	3700	0
GD-4	90	100	250	0
GD-5	100	125	1200	0
GD-6	100	125	3300	0
GD-7	100	125	4000	0
GD-8	100	125	250	0
GD-9	100	125	500	0
GD-10	100	125	500	0
Proposed Fill	120	140	0	30

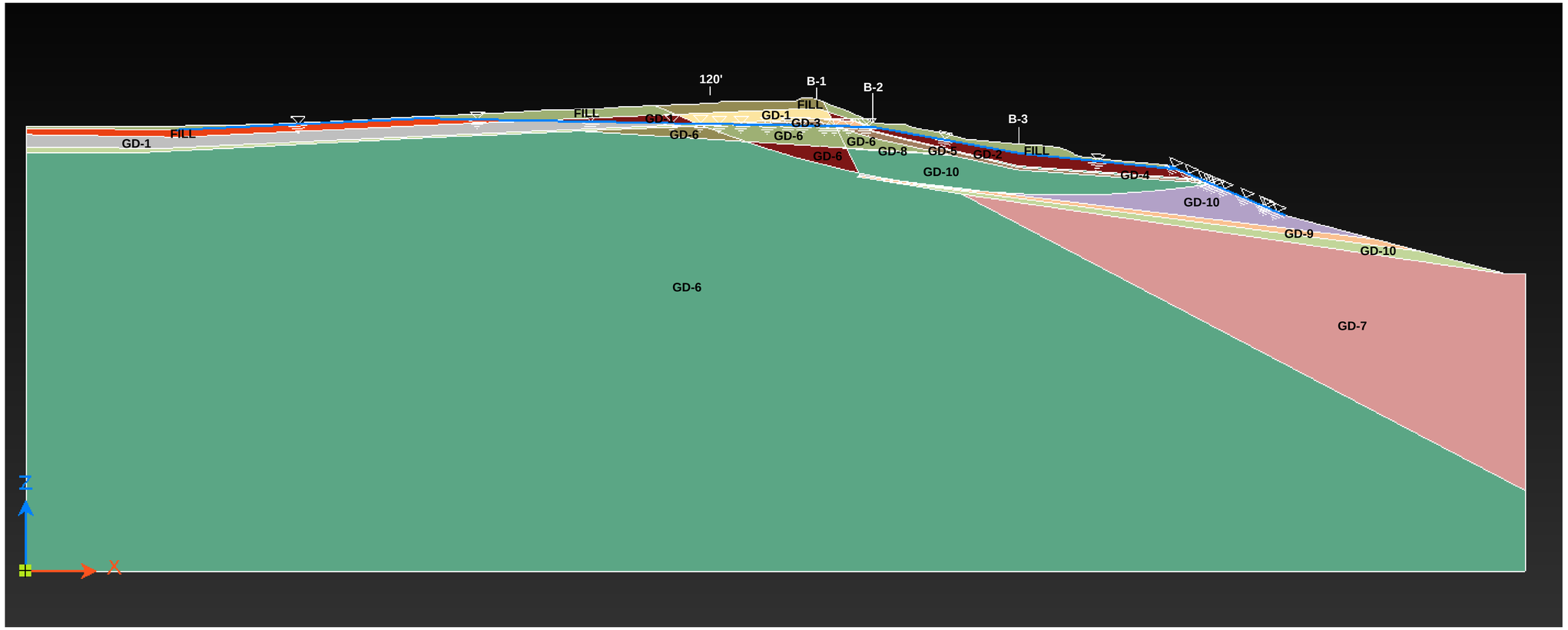
PROPOSED CONDITIONS -SLIP PLANE 100' SET BACK WITH SEISMIC

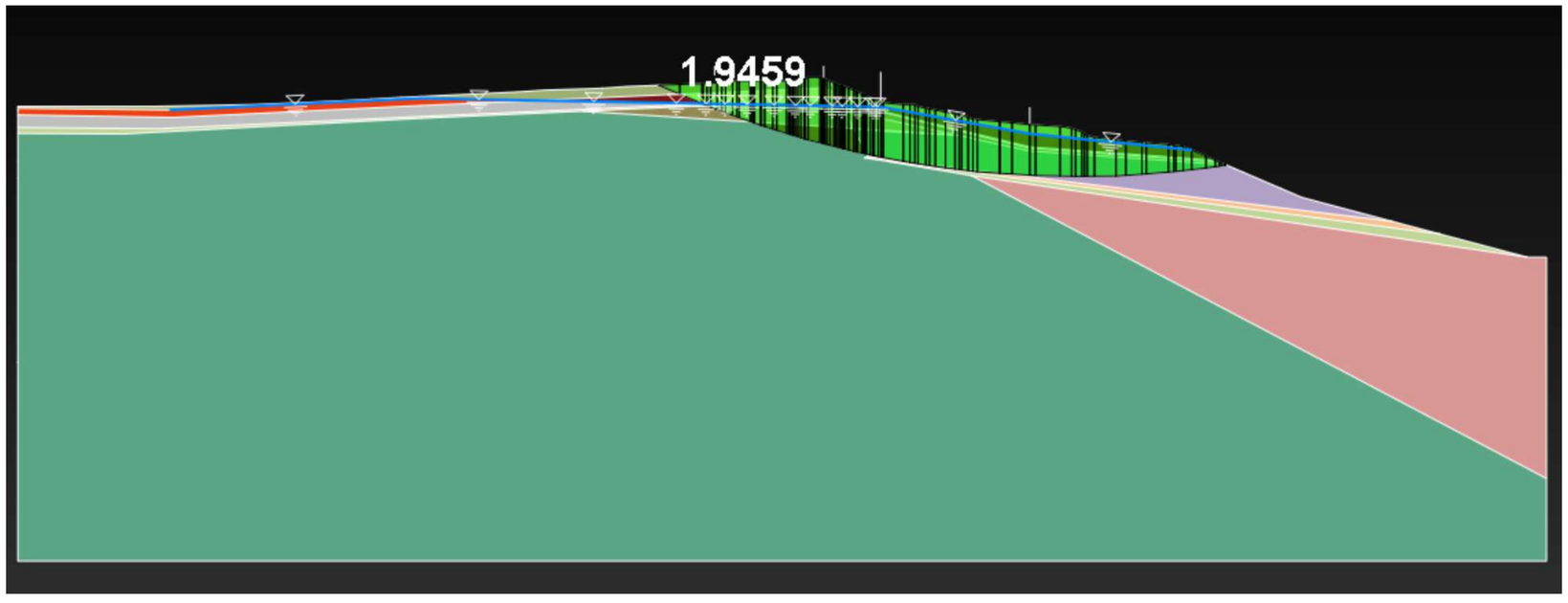




LEGEND				
SOIL LAYER	UNIT WEIGHT	SAT UNIT WEIGHT	COHESION	FRICTION ANGLE
FILL	100	120	0	28
GD-1	100	125	2000	0
GD-2	100	125	1400	0
GD-3	100	125	3700	0
GD-4	90	100	250	0
GD-5	100	125	1200	0
GD-6	100	125	3300	0
GD-7	100	125	4000	0
GD-8	100	125	250	0
GD-9	100	125	500	0
GD-10	100	125	500	0
Proposed Fill	120	140	0	30

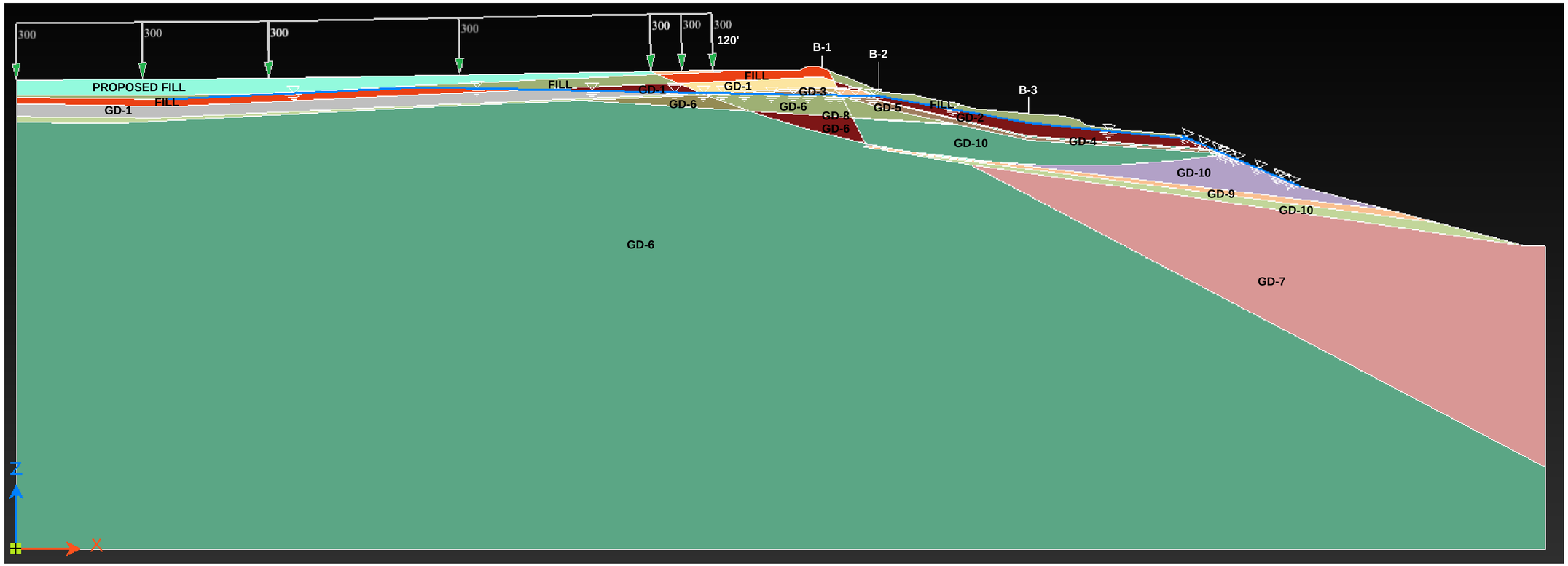
EXISTING CONDITIONS - SLIP PLANE 190' SET BACK BENEATH PROPOSED DEVELOPMENT

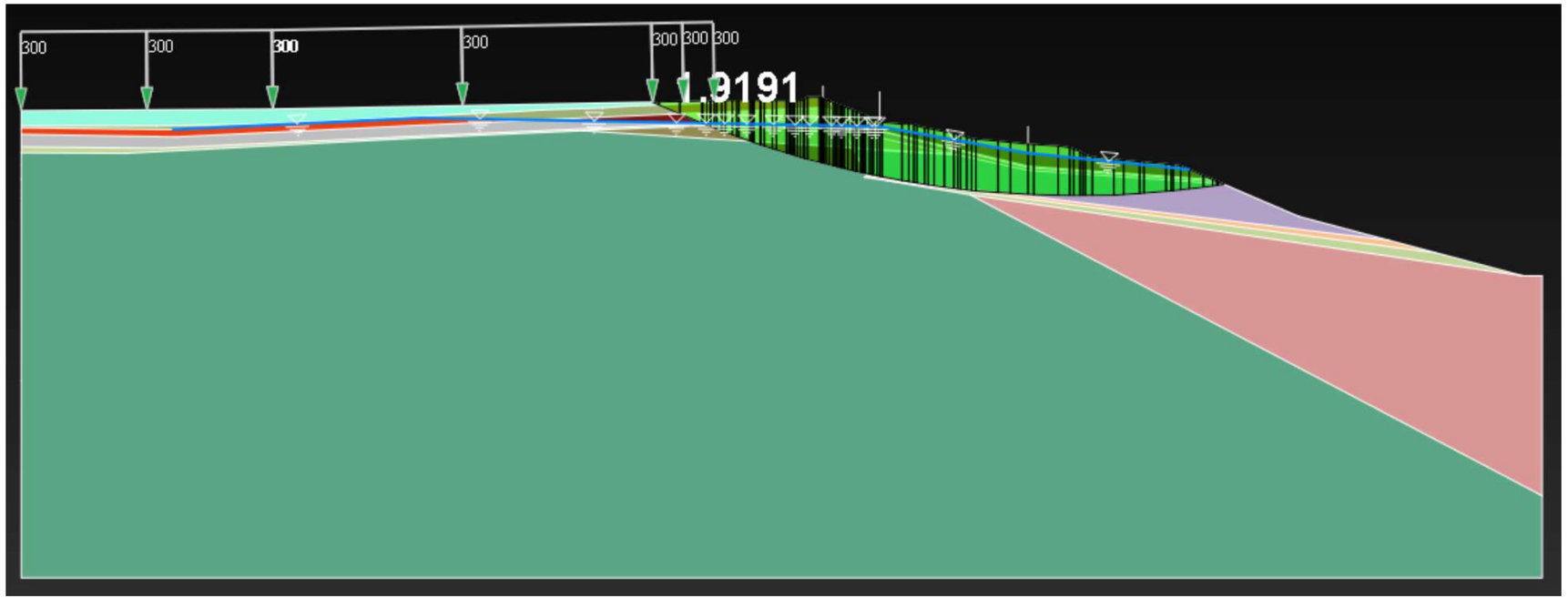




LEGEND				
SOIL LAYER	UNIT WEIGHT	SAT UNIT WEIGHT	COHESION	FRICTION ANGLE
FILL	100	120	0	28
GD-1	100	125	2000	0
GD-2	100	125	1400	0
GD-3	100	125	3700	0
GD-4	90	100	250	0
GD-5	100	125	1200	0
GD-6	100	125	3300	0
GD-7	100	125	4000	0
GD-8	100	125	250	0
GD-9	100	125	500	0
GD-10	100	125	500	0
Proposed Fill	120	140	0	30

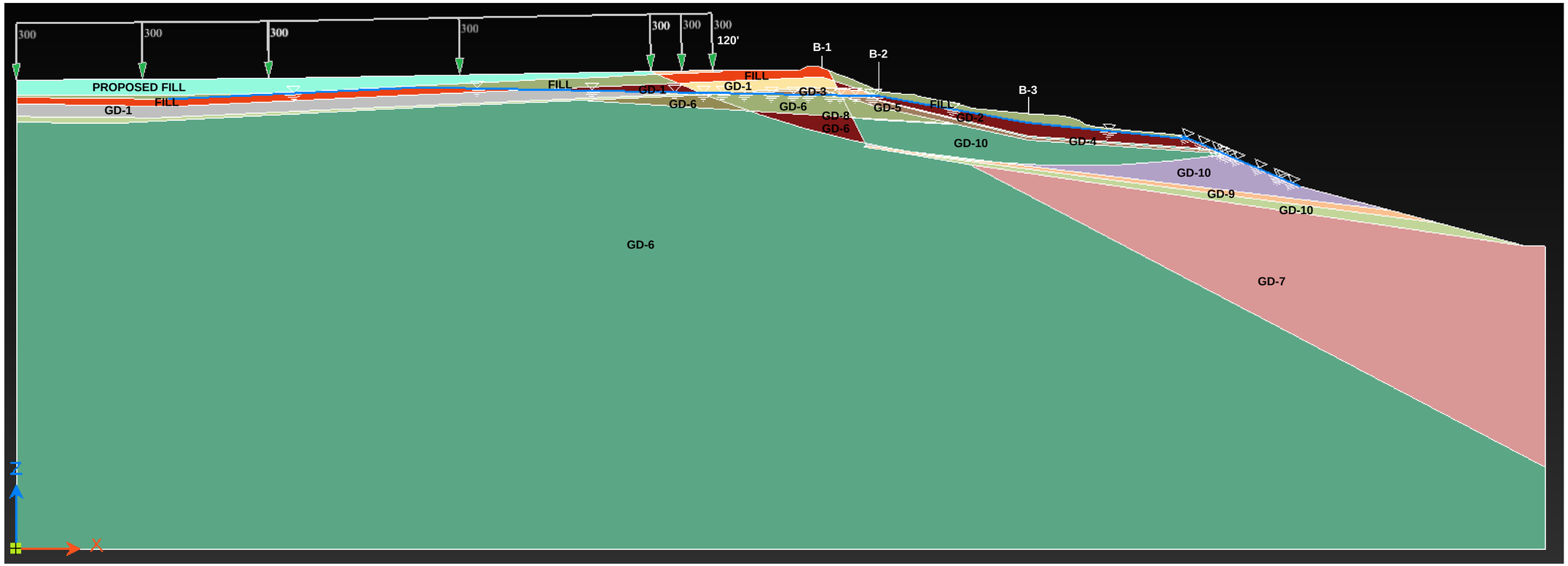
PROPOSED CONDITIONS - SLIP PLANE 190' SET BACK BENEATH PROPOSED DEVELOPMENT

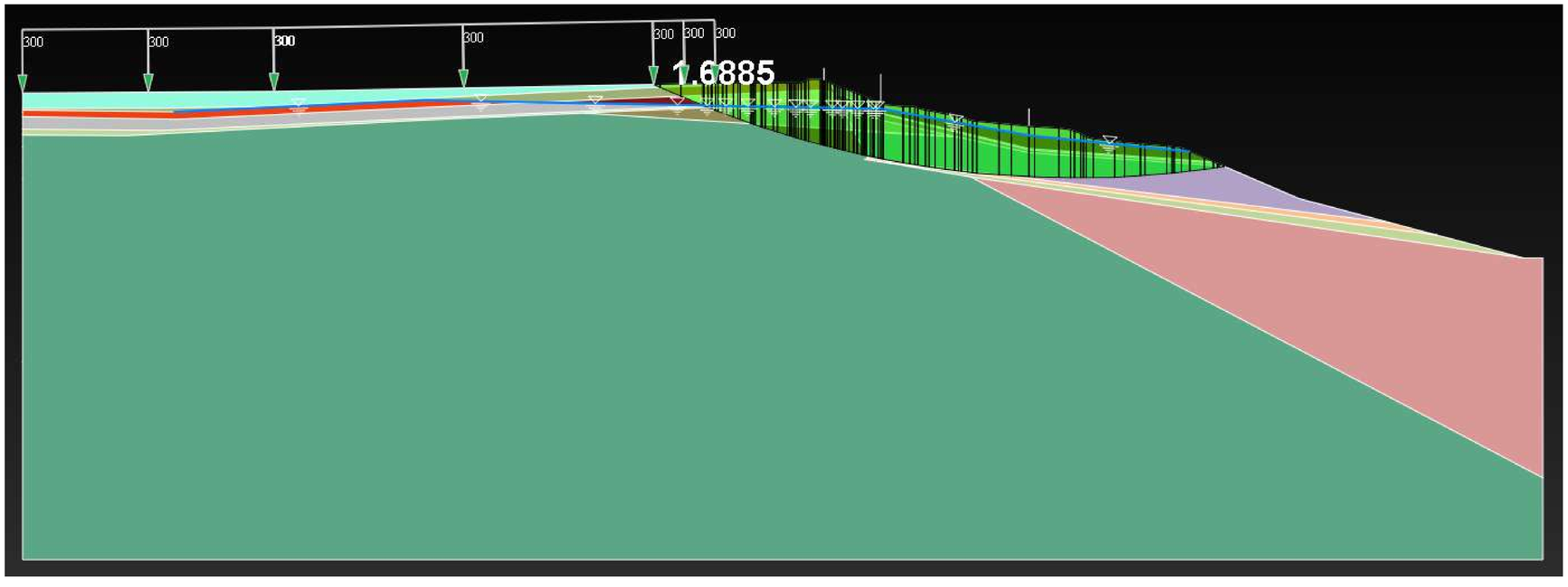




LEGEND				
SOIL LAYER	UNIT WEIGHT	SAT UNIT WEIGHT	COHESION	FRICTION ANGLE
FILL	100	120	0	28
GD-1	100	125	2000	0
GD-2	100	125	1400	0
GD-3	100	125	3700	0
GD-4	90	100	250	0
GD-5	100	125	1200	0
GD-6	100	125	3300	0
GD-7	100	125	4000	0
GD-8	100	125	250	0
GD-9	100	125	500	0
GD-10	100	125	500	0
Proposed Fill	120	140	0	30

PROPOSED CONDITIONS - SLIP PLANE 190' SET BACK BENEATH PROPOSED DEVELOPMENT WITH SEISMIC





LEGEND				
SOIL LAYER	UNIT WEIGHT	SAT UNIT WEIGHT	COHESION	FRICTION ANGLE
FILL	100	120	0	28
GD-1	100	125	2000	0
GD-2	100	125	1400	0
GD-3	100	125	3700	0
GD-4	90	100	250	0
GD-5	100	125	1200	0
GD-6	100	125	3300	0
GD-7	100	125	4000	0
GD-8	100	125	250	0
GD-9	100	125	500	0
GD-10	100	125	500	0
Proposed Fill	120	140	0	30