Appendix H-2
Geotechnical Engineering Investigation and Slope Stability Analysis
PS&S

April 15, 2008

January 14, 2019
Revised April 15, 2019
03571-0002

Mr. Jim Tsunis
The Northwind Group, LLC
Indian Hills Country Club
One Rabro Drive, Suite 100
Hauppauge, New York 11788

Education
Energy
Federal
Healthcare
Hospitality
Infrastructure
Real Estate
Science & Technology

Re: Geotechnical Engineering Investigation and Slope Stability Analysis
The Preserve at Indian Hills
Northport, Town of Huntington, Suffolk County, New York

Dear Mr. Tsunis:

Paulus, Sokolowski and Sartor Engineering, PC (PS&S) is pleased to present this Geotechnical Engineering Investigation and Slope Stability Analysis report to Northwind Group, LLC for The Preserve at Indian Hills project in Northport, New York. PS&S's engineering services were performed in accordance with our proposal dated June 4, 2018.

FIELD EXPLORATION PROGRAM

PS&S conducted a subsurface exploration program from June 25, 2018 through July 2, 2018, consisting of three test borings at the locations shown on Figure 1. The test borings were performed by PS&S's subcontracted driller, Allied Drilling, Inc. (Allied) of Sparkill, New York, under the full-time technical monitoring by a geotechnical representative of PS&S. The test borings at the site were drilled using track-mounted drilling equipment and mud-rotary drilling techniques. Representative soil samples were obtained using the Standard Penetration Test (SPT)[1] in accordance with ASTM D1586. Soil samples were obtained continuously to a depth of 12 feet and then at five-foot depth intervals to the boring completion depths. Upon completion of the field program, the borings were backfilled using drill cuttings. The borings were terminated at depths ranging from about 47 feet to 102 feet below the surface.

[1] The Standard Penetration Test (SPT) refers to the resistance to penetration of a 2-inch O.D. split spoon sampler driven into a soil by a 140-pound weight freely falling a distance of 30 inches. The SPT N-value is defined as the number of hammer blows required to advance the sampler the last 12 inches of an 18-inch sampling interval. When a 24-inch sampling interval is used, the middle 12 inches of penetration is used to determine the N-value.

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All fieldwork was performed under the full time technical direction of a geotechnical representative from PS&S who maintained a log for each exploration, obtained and field classified samples of the encountered soils, and made observations for interpretative evidence of subsurface water (i.e., presence of wet soil samples) in each boring during drilling. Upon completion of the fieldwork, the samples were brought to our Warren, New Jersey soils laboratory. All work was monitored by a professional engineer licensed in the State of New York.

LABORATORY TESTS

Laboratory testing included visual classification of all soil samples in accordance with classification system presented on Appendix A. Atterberg Limits were performed in accordance with ASTM D4318 on eight selected representative samples. The atterberg limits testing was performed by TerraSense, LLC of Totowa, New Jersey under subcontract to PS&S. The results of the analysis are presented in Appendix B.

SUBSURFACE CONDITIONS

Beneath the surface cover, the subsurface conditions disclosed by the borings generally consist of fill materials overlying sand, clay and sand deposits to the explored depths. The following paragraphs briefly describe the strata encountered in order of increasing depth. Additional details of our findings are presented on the boring logs included in Appendix A.

Fill Materials (Stratum F): Beneath the surface cover, the borings encountered fill materials generally consisting of brown, fine to coarse sand with variable amounts of silty clay, clayey silt, and silt and trace amounts of gravel. The fill materials typically extended to depths ranging from about two feet to four feet below the ground surface, and generally appear to be reworked on-site soils. SPT N-values recorded within the fill materials ranged from four blows per foot to 39 blows per foot and averaged about 16 blows per foot.

Sand (Stratum S1): Beneath the fill materials, the borings encountered natural, fine to medium sand with varying amounts of silt and clayey silt and trace amounts of gravel. SPT N-values ranged from 16 blows per foot to 43 blows per foot and average about 29 blows per foot. The thickness of this layer ranged from four feet to nine feet.

Clay (Stratum C): Below the Stratum S1 sand, the borings encountered clayey silt and silty clay with varying amount of sand in lenses. Borings B-2 and B-3 were terminated in this stratum at a depth of about 47 feet below the surface. In boring B-1, this stratum extended to a depth of about 86 feet below the surface. SPT N-values ranged from 14 blows per foot to 53 blows per foot and averaged about 30 blows per foot.

Sand (Stratum S2): Beneath the clay stratum, boring B-1 encountered yellow brown, coarse to fine sand with varying amounts of silt, silty clay and clayey silt. SPT N-values were generally greater than 50 blows per foot, indicates a very dense relative density. Boring B-1 was terminated in this stratum at about 102 feet below the surface.

Groundwater: The borings were performed using mud-rotary drilling techniques, so accurate groundwater measurements were not observed. The installation of piezometers would be needed to monitor long-term static groundwater levels which are expected to fluctuate seasonally, following periods of heavy precipitation, and are expected to possibly be tidally influenced due to the proximity of the Long Island Sound.

STABILITY ANALYSIS

PS&S performed the global stability analyses for the proposed development at Section 1-1' shown on Figure 1. The analyses were performed using the computer program SLOPE/W, part of the GeoStudio 2007 suite programs. The program considers various heterogeneous soil systems, anisotropic soil strength properties, and various groundwater and surface water regimes and conditions. SLOPE/W is a limit-equilibrium program that utilizes methods of slices to determine a stability factor of safety against slope failure.

The subsurface data obtained from investigation program and laboratory testing data were used to evaluate the soil parameters for analysis and are presented on Section 1-1' in Appendix B. PS&S performed numerous stability analysis for the following cases, and the computer output from the stability analyses are provided in Appendix B.

Slope Stability Analysis	Description	Factor of Safety
Case 1	Existing Conditions	FS = 1.0
Case 2	Proposed Development	FS = 0.86
Case 3	Proposed Development with 120-Foot Buffer	FS = 1.0
Case 3a	Proposed Development with 120-Foot Buffer Flood Conditions	FS = 1.0
Case 3b	Proposed Development with 120-Foot Buffer Drawdown Conditions	FS = 1.0

The results of the stability analyses, summarized in the above table, indicate that the proximity of the proposed development to the existing slope has a considerable effect on the factor of safety of the existing slope. The closer the proposed development is to the existing crest of the slope, the more the factor of safety decreases and the greater potential for increased slope instability. Through numerous analysis and modelling, PS&S calculated that a minimum 120-foot buffer from the crest of the existing slope should be maintained so as not to adversely impact the existing slope condition, provided the surcharge load from the proposed development (buildings, construction loads, landscaping, etc.) is maintained less than 300

pounds per square foot (psf). The analyses indicate that by maintaining a minimum 120-foot buffer, the slope stability factor-of-safety for the proposed development was calculated to be the same as for the current existing conditions and therefore would not have an adverse impact on existing conditions. It is PS&S's recommendation that all proposed site improvements, including buildings, landscaping, etc., be maintained outside the 120-foot buffer zone. If any site improvements, including proposed landscaping, or any changes in site grades are proposed within the 120-foot buffer zone, these site improvements must be evaluated and approved by a geotechnical engineer familiar with the site conditions. PS&S also recommends that the buildings closest to the buffer zone consist of light weight construction (i.e., wood frame, stick-build) and be no more than two stories to maintain a surcharge load less than 300 psf.

CLOSURE

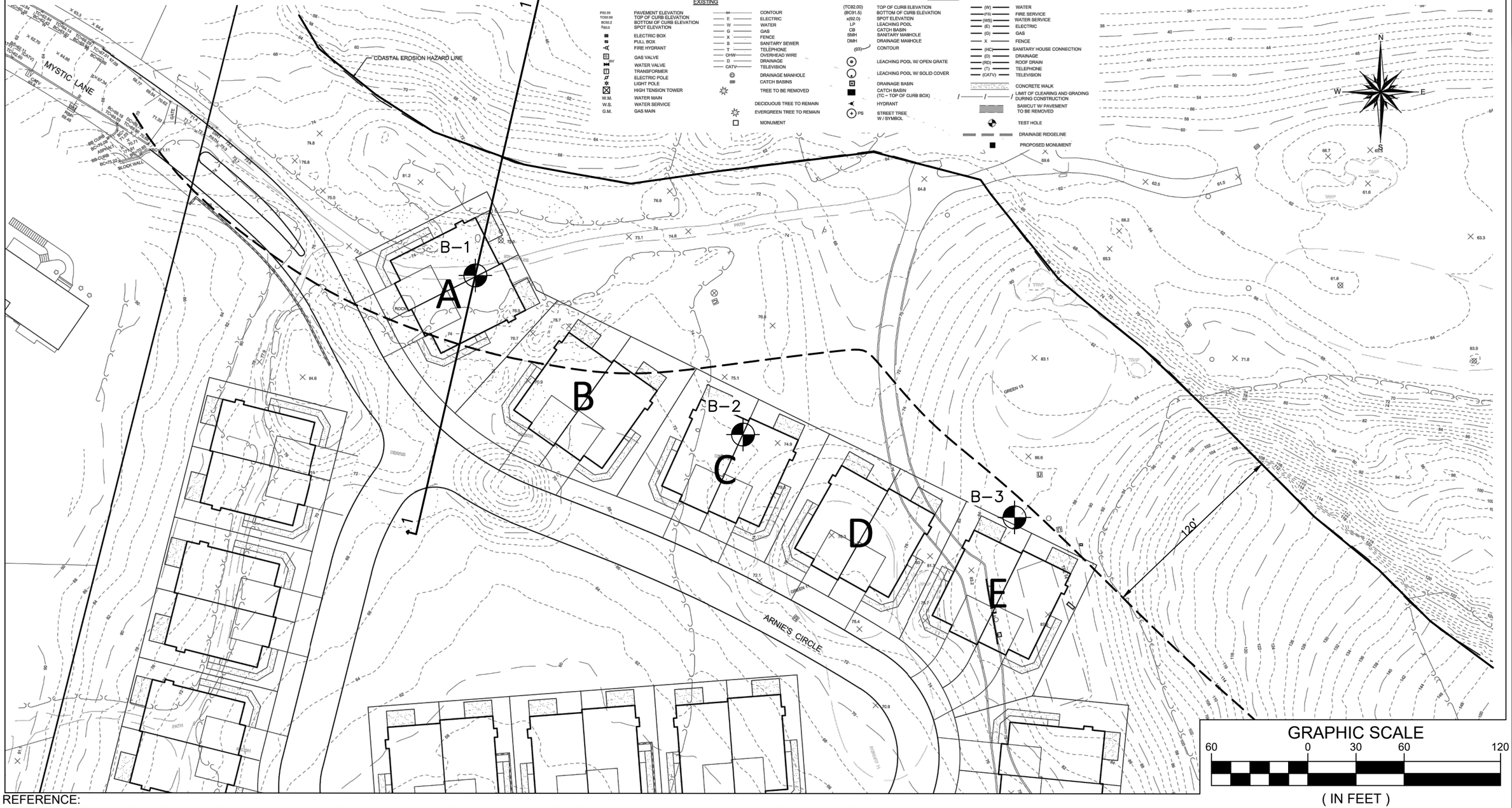
If any changes of the proposed project are planned, PS&S should be made aware of the changes, review the recommendations contained in this report, and modify or supplement them, as appropriate and necessary. The analyses and recommendations in this report are based in part upon data interpreted from the results of our field explorations. The nature and extent of site-wide subsurface soil variations that may be present beyond the explorations may not become evident until construction. PS&S recommends that a geotechnical representative familiar with site soil conditions monitor and document relevant site construction activities and verify the recommendations presented herein. If significant variations are encountered during construction, it may be necessary to re-evaluate recommendations presented in this report.

Very truly yours,

PAULUS, SOKOLOWSKI AND SARTOR ENGINEERING, PC

Marc G. Dyer, P.E.
Vice President

Enclosures



GRAPHIC SCALE

60 0 30 60 120

(IN FEET)

1 inch = 60 ft.

REFERENCE:
BASE PLAN OBTAINED FROM "GRADING PLAN 1 FOR THE PRESERVE AT INDIAN HILLS" BY NESLSON & POPE ENGINEERS & SURVEYORS, C-104, DATED DECEMBER 2017

LEGEND:

B–1 APPROXIMATE BORING LOCATION

PAULUS, SOKOLOWSKI AND SARTOR, LLC.

67A MOUNTAIN BLVD EXT.
P.O. BOX 4039
WARREN, NEW JERSEY 07059
PHONE: (732) 560-9700
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT TITLE

THE PRESERVE AT INDIAN HILLS

TOWN OF HUNTINGTON SUFFOLK COUNTY NEW YORK

SHEET TITLE

EXPLORATION LOCATION PLAN

PROJ. NO.:	03571.0002
DATE:	01/10/2019
DRN. BY:	J.Y.
CK'D BY:	M.D.
SCALE:	1"=60'
	FIGURE 1

FILE NAME: P:\03571\0002\Reports\D-Geo\CAD\03571.0002 Boring Location Plan.dwg LAST EDIT: 01/10/2019 – 04:29:57 PM LOGIN: jyarleque
XREFS: IMAGE:

APPENDIX A

SOIL CLASSIFICATION SYSTEM

MAJOR DIVISION				GROUP SYMBOL (ASTM D2487)	TYPICAL DESCRIPTION
COARSE-GRAINED SOIL (MORE THAN 50% RETAINED ON NO. 200 SIEVE*)	GRAVEL (50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SIEVE)	CLEAN GRAVEL (LESS THAN 5% FINES**)		GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURES
				GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES
		GRAVEL WITH FINES (MORE THAN 10% FINES**)		GM	GRAVEL-SAND-SILT MIXTURES
				GC	GRAVEL-SAND-CLAY MIXTURES
	SAND (MORE THAN 50% OF COURSE FRACTION PASSES NO. 4 SIEVE)	CLEAN SAND (LESS THAN 5% FINES**)		SW	WELL GRADED SAND, SAND-GRAVEL MIXTURES
				SP	POORLY GRADED SAND, SAND-GRAVEL MIXTURES
		SAND WITH FINES (MORE THAN 10% FINES**)		SM	SAND-SILT MIXTURES
				SC	SAND-CLAY MIXTURES
FINE-GRAINED SOIL (50% OR MORE PASSES NO. 200 SIEVE*)	SILT & CLAY (LIQUID LIMIT 50% OR LESS)			ML	INORGANIC SILT, CLAYEY SILT, LOW PLASTICITY
				CL	INORGANIC CLAY, SILTY CLAY, MEDIUM PLASTICITY
				OL	ORGANIC, LOW PLASTICITY, SILT-CLAY MIXTURES, LESS THAN 30% ORGANICS
	SILT & CLAY (LIQUID LIMIT GREATER THAN 50%)			MH	INORGANIC SILT, HIGH PLASTICITY
				CH	INORGANIC CLAY, HIGH PLASTICITY
				OH	ORGANIC, MEDIUM TO HIGH PLASTICITY, SILT-CLAY MIXTURES, LESS THAN 30% ORGANICS
HIGHLY ORGANIC SOIL 30% OR MORE ORGANICS				PT	PEAT, MUCK, OTHER HIGHLY ORGANIC SOIL

* BASED ON MATERIAL PASSING THE 3" (75MM) SIEVE; COBBLES 3" TO 12"; BOULDERS > 12"
** MATERIALS WITH 5% TO 10% FINES ARE BORDERLINE CASES, DESIGNATED: GW-GM, SW-SC, ETC.

GRADATION

TERM	% BY DRY WEIGHT
TRACE	< 10
LITTLE	10 to 20
SOME	20 to 35
AND	35 to 50
&	Equal Proportions

TERM	% BY VOLUME
OCCASIONAL	< 1
FREQUENT	1 to 10
NUMEROUS	> 10

RELATIVE DENSITY (COARSE-GRAINED SOIL)

TERM	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	0 to 4
LOOSE	5 to 10
MEDIUM DENSE	11 to 30
DENSE	31 to 50
VERY DENSE	> 50

TERM	PLASTICITY
SILT	NON-PLASTIC (PI < 1)
CLAYEY SILT	LOW (1 < PI < 20)
SILTY CLAY	MEDIUM (20 < PI < 40)
CLAY	HIGH (PI > 40)

CONSISTENCY (FINE-GRAINED SOIL)

TERM	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	0 to 2
SOFT	3 to 4
MEDIUM STIFF	5 to 8
STIFF	9 to 15
VERY STIFF	16 to 30
HARD	31 to 50
VERY HARD	> 50

VALUES OF PERCENT CONTENT ARE FROM LABORATORY OR FIELD TEST DATA, WHERE APPLICABLE.
WHEN NO TESTING WAS PERFORMED, VALUES OF PERCENT CONTENT ARE ESTIMATED BASED ON VISUAL OBSERVATION.

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Log of Boring: **B-1**

Project: The Preserve at Indian Hills	Project Number: 03571.0002	Elevation (ft): 73.0	Datum: Site Datum
Location: Northport, NY	Logged By: J. Yarleque	Date Started: 6/25/2018	Date Completed: 6/26/2018
Drilling Contractor: Allied Drilling, Inc.		Drilling Foreman: B. Albanez	Completion Depth (ft): 102.0
Sampler: 2" O.D. Split Spoon		Casing Diameter (in): 4	Casing Depth (ft): 10
Drilling Equipment: 3 7/8" Tricone		Sampler Hammer: Safety	Weight (lbs): 140 / Drop (in): 30
Drilling Rig: DIEDRICH D-50	Drilling Mud: None	Water Level (ft) First: ▽	Completion: ▼ / 24 HR: ▼

Elev. (ft)	Strata	Material Symbol	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. Resist BL/6in	N-Value (Blows/foot)	Remarks
	F		S1A: Brown fine to coarse SAND, some fine gravel, trace silty clay, occasional roots (FILL)	0	S1A	SS		17		
			S1B: Yellow brown fine to coarse SAND, some fine gravel (FILL)	1	S1B	SS		24 15 14	39	8" Topsoil
71.0				2						
			S2: Tan/ white brown coarse to fine SAND, trace fine gravel	3	S2	SS		23 14 13 13	27	S2: Color layering
			S3A: "Do S2"	4	S3A	SS		17 17 14 14	31	S3, S4: SILT Layers < 6"
			S3B: Tan brown/Light brown SILT and fine SAND, trace coarse sand	5	S3B	SS				
	S1		S4: Tan brown/Light brown fine to coarse SAND, some silt	6	S4	SS		10 13 15 10	28	
			S5A: "Do S4", trace fine gravel	7	S5A	SS		16 17 17 18	34	
			S5B: Tan brown SILT, trace clay	8	S5B	SS				S5B: Moist
			S6A: Tan brown/ light brown fine to coarse SAND	9	S6A	SS		15 16 14 16	30	
61.5			S6B: Red brown/ yellow brown CLAYEY SILT, trace medium to coarse sand	10	S6B	SS				
				11						
				12						
				13						
				14						
			S7: Red brown SILTY CLAY, occasional fine sand layers	15	S7	SS		5 7 12 16	19	
	C			16						
				17						
				18						
				19						
				20						
			S8: Red brown SILTY CLAY	21	S8	SS		7 8 13 13	21	
				22						
				23						
				24						
				25						

Plate No: **B-1**

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Log of Boring: **B-1**

Elev. (ft)	Strata	Material Symbol	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. Resist BL/6in	N-Value (Blows/foot)	Remarks
			S9: "Do S8"	25–26	S9	SS		7 9 13 16	22	
				27–30						
			S10A: Brown SILTY CLAY	30–31	S10A	SS		10 10 18 23	28	S10A: Moist
			S10B: Brown SILTY CLAY	31–32	S10B					S10B: Damp, easy drilling
				32–35						
			S11: Brown CLAYEY SILT, little fine sand	35–36	S11	SS		9 12 19 24	31	
				36–40						
	C		S12: Brown CLAYEY SILT, little fine sand	40–41	S12	SS		12 18 15 24	33	S2: Poor recovery
				41–45						
			S13: Brown SILTY CLAY, frequent lenses of fine sand, trace clay	45–46	S13	SS		19 22 29 31	51	
				46–50						
			S14: "Do S13"	50–51	S14	SS		12 17 22 26	39	
				51–55						
			S15: "Do S13"	55–56	S15	SS		10 13 22 25	35	
				56–57						

N-Value (Blows/foot) scale: 0 10 20 30 40 50

Plate No: **B-1**

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Log of Boring: **B-1**

Elev. (ft)	Strata	Material Symbol	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. Resist BL/6in	N-Value (Blows/foot)	Remarks
			S16: Brown SILTY CLAY	58–61	S16	SS		11 10 17 27	27	
			S17: "Do S16"	62–66	S17	SS		10 17 24 34	41	
	C		S18: Brown/ Gray brown CLAY	67–71	S18	SS		12 21 26 33	47	S8: Color layering
			S19: "Do S18"	72–76	S19	SS		12 15 23 28	38	
			S20A: "Do S18" S20B: Brown/ gray brown SILTY CLAY. occasional lenses of brown fine sand	77–81	S20A S20B	SS		13 20 33 35	53	S20: A piece of gravel in the middle of spoon
-13.0			S21A: Brown SILTY CLAY, frequent lenses of fine sand S21B: Yellow brown SILT, frequent lenses of fine sand, trace clay	82–86	S21A S21B	SS		16 20 29 40	49	
	S2			87–89						

Plate No: **B-1**

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Log of Boring: **B-1**

Elev. (ft)	Strata	Material Symbol	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. Resist BL/6in	N-Value (Blows/foot)	Remarks
			S22: Yellow brown fine to coarse SAND, little clayey silt	90–91	S22	SS		43 72 71 72	143	
				92–94						
	S2		S23A: Tan brown/ yellow brown fine SAND and SILT, trace clay becoming to tan brown/ light gray SILTY CLAY, frequent lenses of fine sand S23B: Tan brown/ yellow brown coarse to fine SAND, little clayey silt	95–97	S23A S23B	SS		33 30 39 77	69	
				98–100						
			S24: Light yellow brown coarse to medium SAND, little fine gravel	101	S24	SS		42 44 62 71	106	
-29.0			End Boring at 102.0'	102–121						

Plate No: **B-1**

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Log of Boring: **B-2**

Project: The Preserve at Indian Hills	Project Number: 03571.0002	Elevation (ft): 74.0	Datum: Site Datum
Location: Northport, NY	Logged By: J. Yarleque	Date Started: 6/27/2018	Date Completed: 6/27/2018
Drilling Contractor: Allied Drilling, Inc.		Drilling Foreman: B. Albanez	Completion Depth (ft): 47.0
Sampler: 2" O.D. Split Spoon		Casing Diameter (in): 4	Casing Depth (ft): 10
Drilling Equipment: 3 7/8" Tricone		Sampler Hammer: Safety	Weight (lbs): 140 / Drop (in): 30
Drilling Rig: DIEDRICH D-50	Drilling Mud: Quickgel	Water Level (ft)	First: ▽ / Completion: ▼ / 24 HR: ▼

Elev. (ft)	Strata	Material Symbol	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. Resist BL/6in	N-Value (Blows/foot)	Remarks
				0					0 10 20 30 40 50	
	F		S1: Yellow brown CLAYEY SILT, and fine to coarse sand (FILL)	1	S1	SS		3 6 6 10	12	6" Topsoil
			S2: "Do S1", trace fine gravel (FILL)	2 3	S2	SS		7 8 11 13	19	
70.0				4						
	S1		S3: Yellow brown coarse SAND & CLAYEY SILT, some fine gravel	5	S3	SS		11 13 13 30	26	
			S4: Yellow brown/ brown fine to coarse GRAVEL, and fine to coarse sand, trace silt	6 7	S4	SS		25 18 25 22	43	
66.0				8						
			S5: Red brown very fine SAND, some clayey silt, little coarse sand	9	S5	SS		13 12 11 16	23	
			S6: Red brown very fine SAND, some clayey silt, occasional lenses of lignite	10 11	S6	SS		13 11 13 13	24	
				12 13 14						
	C		S7: "Do S6"	15 16	S7	SS		7 8 11 15	19	
				17 18 19						
			S8: Red brown very fine SAND, and silty clay, frequent lenses of lignite	20 21	S8	SS		8 10 11 18	21	
				22 23 24 25						

Plate No: **B-2**

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Log of Boring: **B-2**

Elev. (ft)	Strata	Material Symbol	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. Resist BL/6in	N-Value (Blows/foot)	Remarks
			S9A: "Do S8"	25						
			S9B: Red brown SILTY CLAY, some coarse to fine sand	26	S9A	SS		7 7 7 15	14	
				27	S9B					
				28						
				29						
			S10A: "Do S9B", occasional layers of very fine sand	30						
			S10B: Red brown SILTY CLAY, occasional lenses of very fine sand	31	S10A	SS		14 14 13 18	27	
				32	S10B					
				33						
				34						
				35						
	C		S11: Red brown SILTY CLAY, trace fine sands	36	S11	SS		8 11 13 16	24	
				37						
				38						
				39						
				40						
			S12A: Red brown SILTY CLAY	41	S12A	SS		11 14 22 23	36	
			S12B: Red brown/ dark brown CLAYEY SILT, occasional lenses of very fine sand	42	S12B					
				43						
				44						
				45						
			S13: "Do S12B"	46	S13	SS		15 13 23 30	36	
27.0			End Boring at 47.0'	47						
				48						
				49						
				50						
				51						
				52						
				53						
				54						
				55						
				56						
				57						

Plate No: **B-2**

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Log of Boring: **B-3**

Project: The Preserve at Indian Hills	Project Number: 03571.0002	Elevation (ft): 85.5	Datum: Site Datum
Location: Northport, NY	Logged By: J. Yarleque	Date Started: 7/2/2018	Date Completed: 7/2/2018
Drilling Contractor: Allied Drilling, Inc.		Drilling Foreman: B. Albanez	Completion Depth (ft): 47.0
Sampler: 2" O.D. Split Spoon		Casing Diameter (in): 4	Casing Depth (ft): 10
Drilling Equipment: 3 7/8" Tricone		Sampler Hammer: Safety	Weight (lbs): 140 / Drop (in): 30
Drilling Rig: DIEDRICH D-50	Drilling Mud: None	Water Level (ft)	First: ▽ / Completion: ▼ / 24 HR: ▼

Elev. (ft)	Strata	Material Symbol	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. Resist BL/6in	N-Value (Blows/foot)	Remarks
	F		S1: Dark brown/ brown fine SAND, and silty clay, some fine gravel, occasional roots (FILL)	0–1	S1	SS		2 2 2 3	4	8" Topsoil
			S2A: "Do S1" (FILL)	1–3	S2A	SS		3 4 3 5	7	
			S2B: Brown fine SAND & SILTY CLAY, some fine gravel (FILL)		S2B					
81.5				4						
	S1		S3: Tan brown/ red brown fine SAND & SILTY CLAY, some fine gravel	4–5	S3	SS		9 10 6 10	16	
			S4A: "Do S3"	6–7	S4A	SS		18 19 19 21	38	
			S4B: White/tan brown fine to coarse SAND, some fine gravel, trace silt		S4B					
			S5A: "Do S4B"	8–9	S5A	SS		11 8 10 14	18	
76.5					S5B					
			S5B: Red brown SILTY CLAY, trace coarse sand							
			S6: Red brown SILTY CLAY, occasional lignite lenses	10–11	S6	SS		14 18 17 25	35	S6: Occasional lignite lenses
	C		S7: Red brown SILTY CLAY, frequent lignite lenses	15–16	S7	SS		6 12 16 21	28	
			S8A: Red brown SILTY CLAY, occasional lignite lenses, and occasional fine sand layers	20–21	S8A	SS		4 9 12 17	21	
			S8B: Tan brown/ yellowish brown/ brown fine SAND, and silty clay layers		S8B					S8B: Color layering

N-Value (Blows/foot) scale: 0 10 20 30 40 50

Plate No: **B-3**

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Log of Boring: **B-3**

Elev. (ft)	Strata	Material Symbol	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. Resist BL/6in	N-Value (Blows/foot)	Remarks
			S9: "Do S8B"	25–26	S9	SS		9 13 14 16	27	
				26–30						
			S10A: Red brown fine SAND, some silty clay S10B: Red brown CLAYEY SILT, little fine sand	30–32	S10A S10B	SS		13 18 20 22	38	
				32–35						
	C		S11: Dark brown/ brown/ yellow brown very fine SAND, some clayey silt	35–37	S11	SS		9 17 25 24	42	S11: Color layering
				37–41						
			S12: Red brown SILTY CLAY, occasional very fine sand layers	41–45	S12	SS		9 12 20 25	32	
				45–46						
			S13: Red brown very fine SAND, and silty clay	46–47	S13	SS		13 24 29 34	53	
38.5			End Boring at 47.0'	47–57						

N-Value (Blows/foot) scale: 0 10 20 30 40 50

Plate No: **B-3**

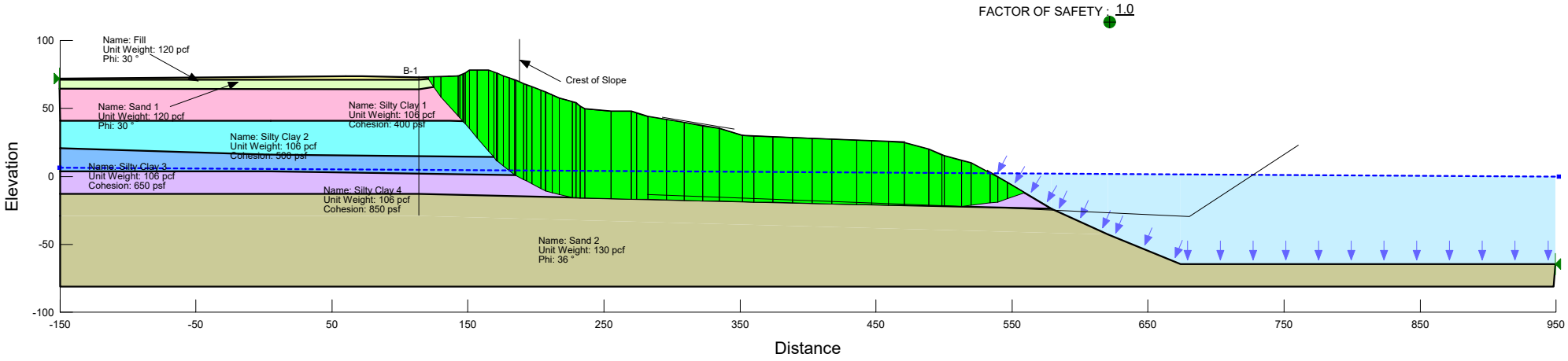
APPENDIX B

PS&S #03571-0002
The Preserve at Indian Hills - Northport, NY
LABORATORY TESTING DATA SUMMARY

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS						REMARKS
			WATER CONTENT (%)	LIQUID LIMIT (-)	PLASTIC LIMIT (-)	PLAS. INDEX (-)	USCS SYMB. (1)	SIEVE MINUS NO. 200 (%)	
B-1	S-8	20-22	30.6	43	20	23	CL	97.2	
B-1	S-10B	31.5-32	55.9	45	22	23	CL	98.5	
B-1	S-14	50-52	26.2	43	19	24	CL	95.9	
B-1	S-16	60-62	26.2	45	22	23	CL	99.5	
B-1	S-19	75-77	33.3	74	26	48	CH	98.3	
B-2	S-6	10-12	19.5				SM	35.7	
B-2	S-11	35-37	29.3	49	23	26	CL	95.2	
B-3	S-7	15-17	24.2	45	22	23	CL	96.9	

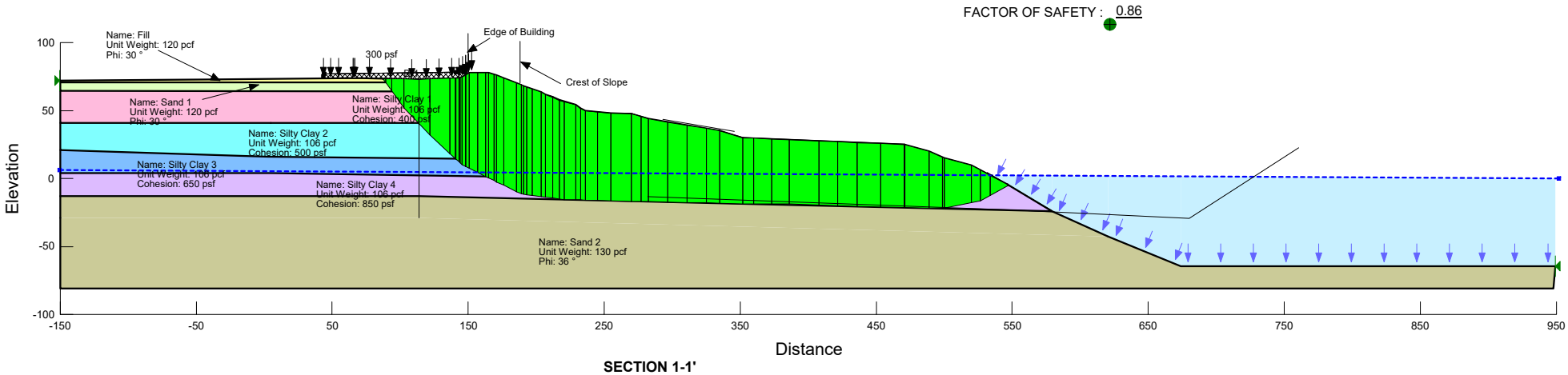
Note: (1) USCS symbol based on visual observation and Sieve and Atterberg limits reported.

THE PRESERVE AT INDIAN HILLS
CASE 1: EXISTING CONDITIONS



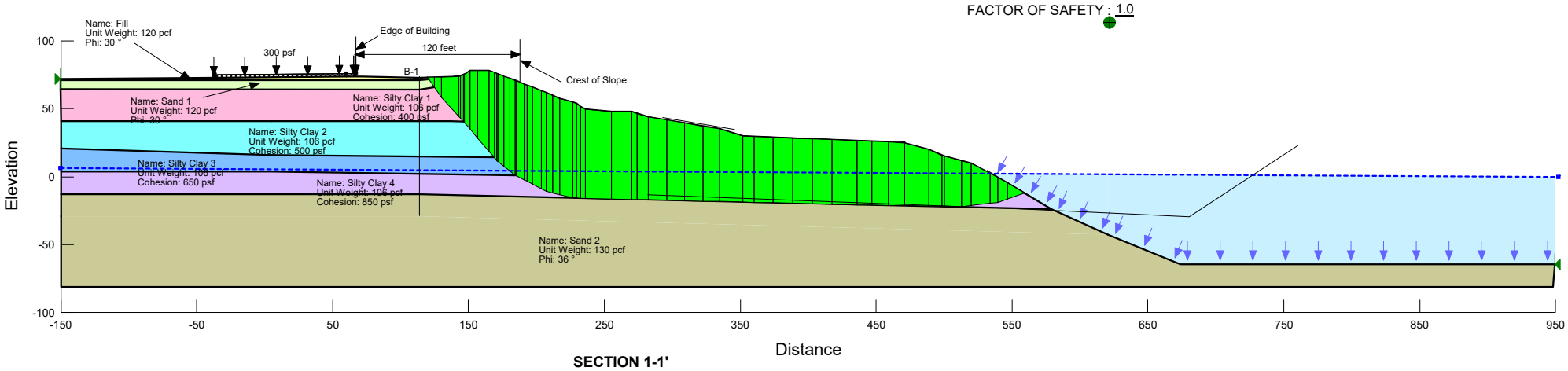
SECTION 1-1'

THE PRESERVE AT INDIAN HILLS
CASE 2: PROPOSED DEVELOPMENT



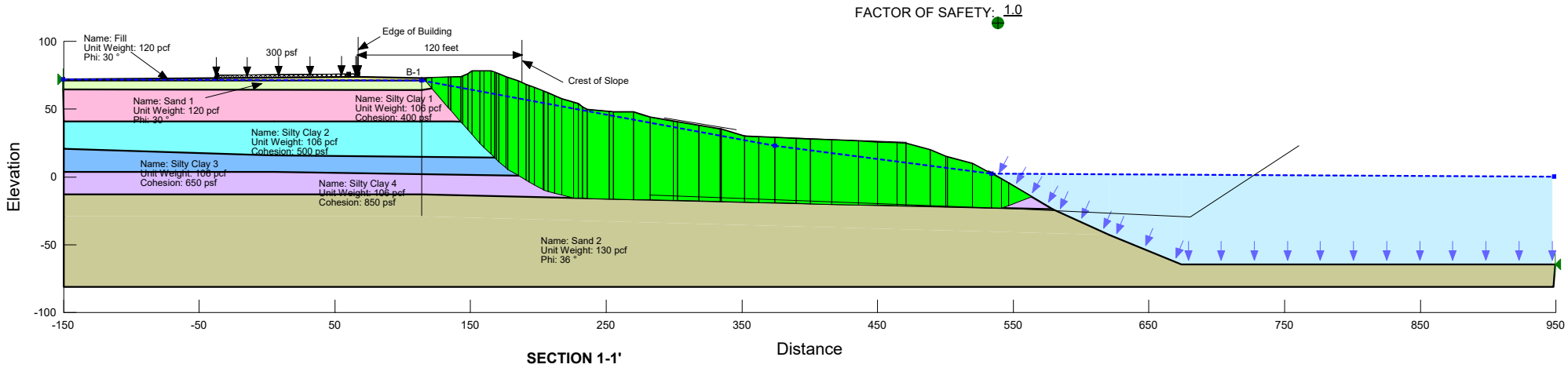
SECTION 1-1'

THE PRESERVE AT INDIAN HILLS
CASE 3: PROPOSED DEVELOPMENT WITH 120 FOOT BUFFER



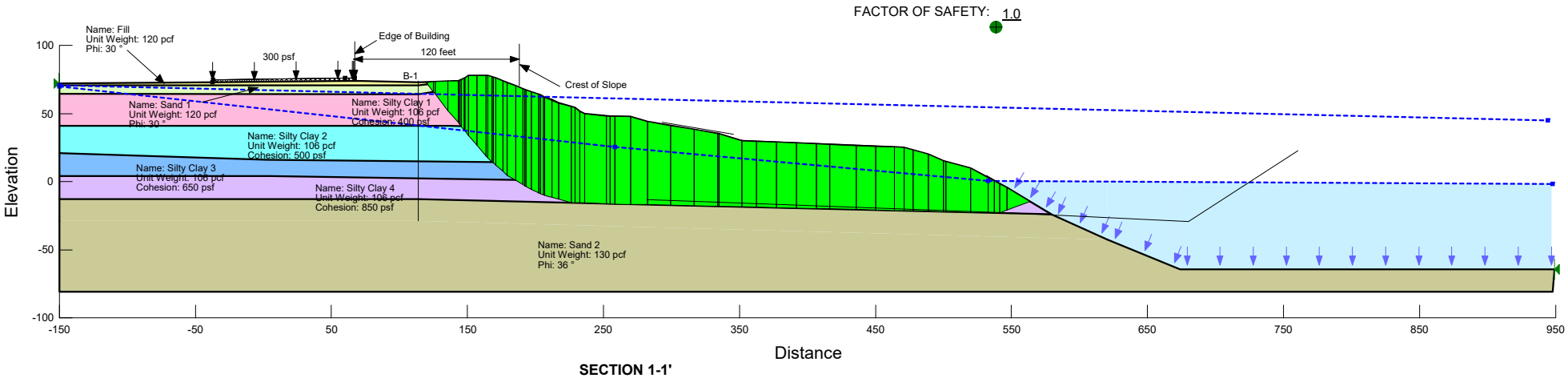
SECTION 1-1'

THE PRESERVE AT INDIAN HILLS
CASE 3a: PROPOSED DEVELOPMENT WITH 120 FOOT BUFFER - FLOOD CONDITION



SECTION 1-1'

THE PRESERVE AT INDIAN HILLS
CASE 3b: PROPOSED DEVELOPMENT WITH 120 FOOT BUFFER - DRAWDOWN CONDITIONS



SECTION 1-1'