APPENDIX F
GEOTECHNICAL REPORT

Prepared by Whitestone Associates, March 17, 2021

WHITESTONE
ASSOCIATES, INC.
Environmental & Geotechnical Engineers & Consultants

30 INDEPENDENCE BOULEVARD
SUITE 250
WARREN, NJ 07059
908.668.7777
whitestoneassoc.com

March 17, 2021

via email

BRISTOL GROUP, INC.
350 Sansome Street, Suite 900
San Francisco, California 94104

Attention: Mr. David Williams

Regarding: PRELIMINARY GEOTECHNICAL INVESTIGATION
PROPOSED WAREHOUSE DEVELOPMENT
LITTLE EAST NECK ROAD & LONG ISLAND AVENUE
WYANDANCH, SUFFOLK COUNTY, NEW YORK
WHITESTONE PROJECT NO.: GJ2117765.000

Dear Mr. Williams:

Whitestone Associates, Inc. (Whitestone) has completed a preliminary geotechnical investigation at the above referenced site. The results of the limited evaluation and preliminary recommendations presented below are based on the soil conditions disclosed from a limited number of borings performed during Whitestone's field investigation. Recommendations for further investigation also are included herein.

The purpose of the preliminary subsurface soils investigation was to assess anticipated geologic features, shallow groundwater and/or estimated seasonal high groundwater, refusal depths, existing fill, and the potential feasibility of shallow foundations and/or expected earthwork requirements. While the scope of this preliminary investigation will not be sufficient to formulate detailed design recommendations and a more comprehensive geotechnical investigation ultimately will be required, this preliminary investigation may be used to assess potentially development impactive geotechnical issues to support preliminary studies regarding the feasibility of developing the property.

1.0 SUMMARY OF FINDINGS

In general, the subsurface conditions preliminarily indicate conditions suitable for shallow foundation design. The exploration indicated the presence of relatively loose natural soils within the upper two feet to four feet that will require improvement prior to structural support. Depending on the time of year of construction, site work should anticipate overexcavation of moisture sensitive soils in structural areas, using mechanical and/or chemical subgrade stabilization techniques, and exercising detailed attention to construction methods while maintaining moisture control.

2.0 PROJECT DESCRIPTION

2.1 Site Location and Existing Conditions

The subject site located at the northeastern quadrant of the intersection of Little East Neck Road and Long Island Avenue in Wyandanch, Suffolk County, New York currently consists of an approximately 98.85 acre moderately- to heavily-wooded, undeveloped parcel.

2.2 Site Geology

The subject site is situated within the Coastal Plain Geomorphic Province of Central Long Island, New York. The area generally is underlain by marine and alluvial deposits of clay, silt, sand, and gravel deposited during the late Cretaceous age. Surficial materials typically include glacial deposits associated with the Wisconsinan Advance that ended approximately 10,000 years ago. Long Island is the result of glacial ice sheet advances and retreats. The uplands of Long Island are a product of moraines and kames, while depressed areas are associated with kettles or valleys carved by meltwater.

2.3 Proposed Construction

Based on the December 17, 2020 *Exhibit D - Proposed Site Plan* prepared by Ware Malcomb, the proposed development is anticipated to include clearing the wooded area and constructing nine multi-tenant warehouse buildings including two stormwater management (SWM) detention basins with associated loading docks, pavements, landscaping, and utilities. The proposed buildings will have an interior clearance height of 32 feet and range in footprint from approximately 121,680 square feet to 243,360 square feet. The proposed buildings are not anticipated to contain below-grade levels. No SWM infiltration facilities and/or retaining walls, with the exception of the below-grade walls for the loading docks, are planned.

Final details of the proposed building structural loads, column spacing, and floor loads were not developed at the time of this report. Based on past experience with similar facilities, Whitestone anticipates that maximum column, wall, and floor loads will be less than 150 kips, 2.0 kips per foot, and 250 pounds per square foot, respectively. Detailed grading information also was not developed at the time of this report. Whitestone anticipates that the site will be redeveloped at or near existing grades with maximum cuts/fills on the order of one foot to five feet.

3.0 FIELD EXPLORATION & LABORATORY TESTING

3.1 Field Exploration

Field exploration at the project site was conducted by means of 11 soil borings (identified as B-1 through B-11) performed with a track-mounted drill rig using hollow stem augers and split-spoon sampling techniques. The soil borings were performed within the proposed redevelopment areas and were terminated at depths ranging from approximately 10 feet below ground surface (fbgs) to 42 fbgs. The soil borings subsequently were backfilled to the surface with excavated soils from the investigation. The locations of the subsurface tests are shown on the *Boring Location Plan* included as Figure 1. *Records of Subsurface Exploration* are provided in Appendix A.

The subsurface tests were conducted in the presence of a Whitestone engineer who performed field tests, recorded visual classifications, and collected samples of the various strata encountered. The tests were located in the field using normal taping procedures and estimated right angles. These locations are presumed to be accurate within a few feet.

Soil borings and Standard Penetration Tests (SPTs) were conducted in general accordance with ASTM International (ASTM) designation D 1586. The SPT resistance value (N) can be used as an indicator of the consistency of fine-grained soils and the relative density of coarse-grained soils. The N-value for various soil types can be correlated with the engineering behavior of earthworks and foundations.

Groundwater level observations, where encountered, were recorded during and immediately after the completion of field operations prior to backfilling the tests. Seasonal variations, temperature effects, man-made effects, and recent rainfall conditions may influence the levels of the groundwater, and the observed levels will depend on the permeability of the soils. Groundwater elevations derived from sources other than seasonally observed groundwater monitor wells may not be representative of true groundwater levels.

3.2 Laboratory Program

Representative samples of a selected strata encountered were subjected to a laboratory program that included Atterberg limits determination (ASTM D-4318), moisture content determinations (ASTM D-2216), and washed gradation analyses (ASTM D-422) in order to perform supplementary engineering soil classifications in general accordance with ASTM D-2487. The soil stratum tested was classified by the Unified Soil Classification System (USCS) and results of the laboratory testing are summarized in the following table. Quantitative test results are provided in Appendix B.

PHYSICAL/TEXTURAL ANALYSES SUMMARY							
Boring	**Sample**	**Depth (fbgs)**	**% Passing No. 200 Sieve**	**Moisture Content (%)**	**Liquid Limit**	**Plastic Index**	**USCS Classification**
B-2	S-3	4.0 - 6.0	0.3	2.9	NP	NP	SP
B-3	S-1	0.0 - 2.0	69.6	23.8	30	8	CL

Notes: NP = Non-Plastic

4.0 SUBSURFACE CONDITIONS

The subsurface soil conditions encountered within the borings associated with this investigation consisted of the following generalized strata in order of increasing depth. *Records of Subsurface Exploration* are provided in Appendix A.

Surface Materials: The borings were performed within existing grass-covered areas and encountered approximately four inches to seven inches of topsoil at the surface.

Glacial Deposits: Underlying the surface cover, the borings encountered natural glacially deposited soils generally consisting of silty sand (USCS: SM) with variable amounts of gravel, poorly graded sand (USCS: SP and SP-SM) with variable amounts of silt and gravel, sandy silt (USCS: ML), and/or sandy lean clay (USCS: CL). The borings were terminated within the glacial deposits at depths ranging from approximately 10 fbgs to 42 fbgs. SPT N-values within coarse-grained portions of this stratum ranged between one blow per foot (bpf) and 46 bpf, generally indicating very loose to dense relative density and averaging approximately 20 bpf. Pocket penetrometer tests performed within fine-grained portions of this stratum resulted in unconfined compressive strengths of approximately 0.5 ton per square foot (tsf), generally indicating medium stiff consistency.

Groundwater: Groundwater was encountered within the deeper borings at depths ranging from approximately 22 fbgs to 31 fbgs. Seasonal variations, temperature effects, and recent rainfall conditions may influence the levels of the groundwater. Groundwater elevations derived from sources other than seasonally observed groundwater monitor wells may not be representative of true groundwater level.

5.0 CONCLUSIONS AND PRELIMINARY RECOMMENDATIONS

The following discussion is based on the subsurface conditions encountered during Whitestone's limited subsurface investigation for the proposed development and is intended to provide general characteristics of the subsurface conditions for preliminary planning purposes and should not be utilized for final design of structural foundations, floor slabs, or pavements. These preliminary considerations and site development options should be confirmed or revised upon development of the final project design concept and completion of a site-specific subsurface investigation and engineering analyses.

Foundations: Whitestone preliminarily anticipates that the structures may be supported on conventional spread and continuous wall footings designed to bear either within the underlying improved natural soils or controlled structural fill, provided these materials are properly evaluated, placed, compacted, and prepared to control their moisture content. Portions of the upper two feet to four feet of natural site soils were relatively loose and will require improvement through in-place compaction prior to structural support. Foundations bearing within these materials preliminarily may be designed to impart a maximum allowable net bearing pressure of 2,000 pounds per square foot (psf) to 4,000 psf depending on confirmation of final design column and wall loading, column spacing, settlement tolerances, and the final geotechnical investigation.

Floor Slabs and Pavements: Whitestone preliminarily anticipates that the properly evaluated, prepared, improved, and approved natural site subgrade soils and/or controlled structural imported fill will be suitable for support of the proposed floor slabs and pavements. Recompaction should be performed within the entirety of the proposed building footprints and pavement areas due to the low N-values found within the upper zones of the natural soils. Subgrade stabilization and protection may be necessary during wet conditions to obtain a stable surface. Subgrade protection may be achieved through the use of separation geotextiles, geogrids, and/or the addition of lime-cement to the subgrade. Localized areas of overexcavation may be anticipated where subgrades are exposed to precipitation.

On-Site Soil Reusability: Whitestone preliminarily anticipates that the majority of the underlying natural site soils generally will be suitable for selective reuse as structural fill and/or backfill where moisture contents are controlled within two percent of the optimum and the soils are placed during favorable weather conditions. Based on the conditions disclosed by the subsurface exploration and the results of the laboratory test results, the on-site soils with an appreciable amount of fines are not anticipated to be immediately suitable for reuse as structural fill and/or backfill due to high moisture content characteristics. Disturbance of these soils should be minimized. The on-site moisture sensitive soils, while stable and often hard when in a dry natural state, will degrade when wetted or disturbed. Whitestone anticipates that the sandy site soils may be suitable for reuse as structural fill and/or backfill provided moisture contents are controlled within two percent of the optimum only during favorable weather conditions. Due to moisture sensitivity, use of portions of the on-site soils should expect mixing with a more granular material, extensive moisture conditioning, and/or drying to facilitate their reuse, workability, and compaction in fill areas. These materials will become increasingly difficult to reuse and compact where wetted beyond the optimum moisture content. Materials that become exceedingly wet likely will require discing and aerating and extended time to dry during favorable weather. The stripped surface cover materials including topsoil should not be reused as structural fill and/or backfill.

Supplemental Borings: A supplemental subsurface investigation designed to address site-specific conditions for proposed construction should be performed following the finalization of the design concept, grading, and general site layout. The final subsurface investigation and geotechnical evaluation should be performed to obtain subsurface information across the site at more closely spaced intervals within the proposed structures.

6.0 CLOSING

Whitestone appreciates the opportunity to be of continued service to Bristol Group, Inc. Please note that Whitestone has the capability to perform the additional geotechnical engineering services recommended herein. Please contact us at (908) 668-7777 with any questions or comments regarding this report.

Sincerely,

WHITESTONE ASSOCIATES, INC.

Mudar Khantamr, P.E.
Project Manager

Kevin A. Feath, P.E.
Associate

MK/pwd L:\Job Folders\2021\2117765GJ\Reports and Submittals\17765 PreGI.doc
Enclosures
Copy: Ryan Pasquale, Bristol Group, Inc.
Dale Koch, P.E., Bohler Engineering NY, PLLC
Laurence W. Keller, P.E., Whitestone Associates, Inc.

WHITESTONE
ASSOCIATES, INC.

FIGURE 1
Boring Location Plan

LEGEND

B–1 BORING LOCATION (APPROX.)

SUBJECT PROPERTY BOUNDARY (APPROX.)

REFERENCE

THIS PLAN IS BASED ON A DECEMBER 17, 2020 EXHIBIT D - PROPOSED SITE PLAN PREPARED BY WARE MALCOMB & ALL SITE LOCATIONS ARE APPROXIMATE.

WHITESTONE ASSOCIATES, INC.
Environmental & Geotechnical Engineers & Consultants
30 INDEPENDENCE BOULEVARD, SUITE 250, WARREN, NJ 07059
908.668.7777 WHITESTONEASSOC.COM

DRAWING TITLE: **BORING LOCATION PLAN**

CLIENT: **BRISTOL GROUP, INC.**

PROJECT: PROPOSED WAREHOUSE DEVELOPMENT
LITTLE EAST NECK ROAD & LONG ISLAND AVENUE
WYANDANCH, SUFFOLK COUNTY, NY

PROJECT #: GJ2117765.000	
DESIGNED BY: GR	PROJ. MGR.: KAF
DATE: 3/12/21	FIGURE: 1
SCALE: 1" = 250'	

WHITESTONE ASSOCIATES, INC.

APPENDIX A
Records of Subsurface Exploration

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-1

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/4/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/4/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	25.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	25.0 | ---	**At Completion:**	18.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.5	TOPSOIL		6" Topsoil	
0 - 2	S-1	X	2 - 2 - 1 - 2	14	3		GLACIAL DEPOSITS		Brown Silty Sand, Moist, Very Loose (SM)	Trace Roots
						2.0				
2 - 4	S-2	X	4 - 8 - 12 - 15	16	20				Brown Poorly Graded Sand with Gravel, Moist, Medium Dense (SP)	
4 - 6	S-3	X	4 - 10 - 11 - 12	16	21	5.0			As Above (SP)	
6 - 8	S-4	X	6 - 8 - 9 - 8	18	17				As Above (SP)	
						10.0				
10 - 12	S-5	X	3 - 7 - 9 - 10	NR	16				No Recovery, Presumed As Above (SP)	Gravel in Spoon Tip
						15.0				
15 - 17	S-6	X	4 - 6 - 6 - 6	20	12				As Above (SP)	Less Gravel Content
						20.0				
20 - 22	S-7	X	4 - 4 - 6 - 6	20	10				As Above (SP)	
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-1

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/4/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/4/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	25.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	25.0 | ---	**At Completion:**	18.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						25.0				
25 - 27	S-8	X	7 - 6 - 6 - 7	22	12		GLACIAL DEPOSITS		As Above, Wet (SP)	
						27.0			Boring Log B-1 Terminated at a Depth of 27.0 Feet Below Ground Surface	
						30.0				
						35.0				
						40.0				
						45.0				
						50.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-2

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/4/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/4/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	25.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	25.0 | ---	**At Completion:**	18.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.3	TOPSOIL		4" Topsoil	
0 - 2	S-1	X	1 - 2 - 3 - 5	16	5		GLACIAL DEPOSITS		Brown Silty Sand, Moist, Loose (SM)	
						2.0				
2 - 4	S-2	X	10 - 15 - 18 - 17	18	33				Brown Poorly Graded Sand with Gravel, Moist, Dense (SP)	
4 - 6	S-3	X	12 - 14 - 18 - 21	22	32	5.0			As Above (SP)	
6 - 8	S-4	X	15 - 18 - 20 - 23	20	38				As Above (SP)	
						10.0				
10 - 12	S-5	X	8 - 10 - 11 - 13	20	21				As Above, Medium Dense (SP)	Less Gravel Content
						15.0				
15 - 17	S-6	X	6 - 8 - 10 - 11	20	18				As Above (SP)	
						20.0				
20 - 22	S-7	X	8 - 8 - 10 - 11	22	18				As Above (SP)	Trace Gravel
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-2

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/4/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/4/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	25.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	25.0 | ---	**At Completion:**	18.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						25.0 ▽▼				
25 - 27	S-8	X	8 - 15 - 15 - 15	20	30		GLACIAL DEPOSITS		As Above, Wet, Dense (SP)	
						27.0			Boring Log B-2 Terminated at a Depth of 27.0 Feet Below Ground Surface	
						30.0				
						35.0				
						40.0				
						45.0				
						50.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-3

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/4/2021	**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**	
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/4/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	NE | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	NE | ---	**At Completion:**	--- | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.4	TOPSOIL		5" Topsoil	
0 - 2	S-1	X	1 - 1 - 1 - 1	20	2		GLACIAL DEPOSITS		Brown Sandy Lean Clay, Moist, Soft (CL)	LL = 30, PI = 8
						2.0				
2 - 4	S-2	X	6 - 15 - 16 - 18	16	31				Brown Poorly Graded Sand with Gravel, Moist, Medium Dense (SP)	
4 - 6	S-3	X	14 - 18 - 25 - 23	20	43	5.0			As Above (SP)	
6 - 8	S-4	X	4 - 18 - 19 - 17	22	37				As Above (SP)	
						10.0				
10 - 12	S-5	X	5 - 7 - 8 - 8	22	15				As Above, Medium Dense (SP)	Less Gravel
						15.0				
15 - 17	S-6	X	5 - 7 - 7 - 10	22	14				As Above (SP)	Trace Gravel
						20.0				
20 - 22	S-7	X	5 - 7 - 11 - 15	22	18				As Above (SP)	
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-3

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/4/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/4/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	NE | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	--- | ---	**At Completion:**	--- | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						25.0				
25 - 27	S-8	X	5 - 7 - 9 - 9	20	16		GLACIAL DEPOSITS		As Above (SP)	
						27.0			Boring Log B-3 Terminated at a Depth of 27.0 Feet Below Ground Surface	
						30.0				
						35.0				
						40.0				
						45.0				
						50.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-4

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/4/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/4/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	25.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	25.0 | ---	**At Completion:**	17.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.5	TOPSOIL		6" Topsoil	
0 - 2	S-1	X	1 - 2 - 2 - 4	16	4		GLACIAL DEPOSITS		Brown Silty Sand, Moist, Loose (SM)	
						2.0				
2 - 4	S-2	X	7 - 9 - 13 - 17	16	22				Brown Poorly Graded Sand with Gravel, Moist, Medium Dense (SP)	
4 - 6	S-3	X	10 - 20 - 21 - 23	18	41	5.0			As Above, Dense (SP)	
6 - 8	S-4	X	18 - 23 - 23 - 23	16	46				As Above (SP)	
						10.0				
10 - 12	S-5	X	6 - 7 - 9 - 10	20	16				As Above, Medium Dense (SP)	
						15.0				
15 - 17	S-6	X	5 - 7 - 9 - 9	22	16				As Above (SP)	
						20.0				
20 - 22	S-7	X	6 - 7 - 9 - 12	22	16				As Above (SP)	Trace Gravel
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-4

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/4/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/4/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	25.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	25.0 | ---	**At Completion:**	17.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						25.0				
25 - 27	S-8	X	2 - 3 - 3 - 3	18	6		GLACIAL DEPOSITS		As Above, Wet, Loose (SP)	
						27.0			Boring Log B-4 Terminated at a Depth of 27.0 Feet Below Ground Surface	
						30.0				
						35.0				
						40.0				
						45.0				
						50.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-5

Page 1 of 1

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± NS feet	**Date Started:**	3/4/2021		
Termination Depth:	10.0 feet bgs	**Date Completed:**	3/4/2021		
Proposed Location:	Pavement	**Logged By:**	MH	**During:** NE | ---	
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:** --- | ---	**At Completion:** --- | ---
		Equipment:	Power Probe	**24 Hours:** --- | ---	**24 Hours:** --- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1		1 - 1 - 1 - 3	16	2	0.6	TOPSOIL		7" Topsoil	
						2.0	GLACIAL DEPOSITS		Brown Silty Sand, Moist, Very Loose (SM)	
2 - 4	S-2		2 - 3 - 2 - 9	14	5				Brown Poorly Graded Sand, Moist, Loose (SP)	
4 - 6	S-3		8 - 12 - 16 - 17	20	28	5.0			As Above, Gravel, Medium Dense (SP)	
6 - 8	S-4		12 - 15 - 16 - 15	20	31				As Above, Dense (SP)	
8 - 10	S-5		12 - 15 - 16 - 16	20	31	10.0			As Above (SP)	
									Boring Log B-5 Terminated at a Depth of 10.0 Feet Below Ground Surface	
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-6

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/5/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	42.0 feet bgs	**Date Completed:**	3/5/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	30.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	30.0 | ---	**At Completion:**	--- | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.5	TOPSOIL		6" Topsoil	
0 - 2	S-1	X	1 - 2 - 2 - 4	18	4		GLACIAL DEPOSITS		Brown Sandy Silt, Moist, Medium Stiff (ML)	Qu = 0.5 tsf
						2.0				
2 - 4	S-2	X	9 - 12 - 14 - 14	20	26				Brown Poorly Graded Sand with Gravel, Moist, Medium Dense (SP)	
4 - 6	S-3	X	16 - 18 - 21 - 20	18	39	5.0			As Above, Dense (SP)	
6 - 8	S-4	X	14 - 16 - 17 - 17	20	33				As Above (SP)	
						10.0				
10 - 12	S-5	X	5 - 6 - 6 - 8	20	12				As Above, Medium Dense (SP)	
						15.0				
15 - 17	S-6	X	4 - 6 - 6 - 7	22	12				As Above (SP)	
						20.0				
20 - 22	S-7	X	4 - 5 - 8 - 9	20	13				As Above (SP)	Less Gravel Content
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-6

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/5/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	42.0 feet bgs	**Date Completed:**	3/5/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	30.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	30.0 | ---	**At Completion:**	--- | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						25.0				
25 - 27	S-8	X	7 - 9 - 11 - 11	20	20		GLACIAL DEPOSITS		As Above (SP)	
						30.0 ▽				
30 - 32	S-9	X	5 - 6 - 5 - 6	18	11				As Above, Wet (SP)	
						35.0				
35 - 37	S-10	X	2 - 4 - 4 - 5	16	8				As Above, Loose (SP)	Running Sands 35.0 fbgs to 40.0 fbgs Coarser Sand
						40.0				
40 - 42	S-11	X	4 - 5 - 7 - 8	12	12				As Above, Medium Dense (SP)	
						45.0			Boring Log B-6 Terminated at a Depth of 42.0 Feet Below Ground Surface	
						50.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-7

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.
Surface Elevation:	± NS feet	**Date Started:**	3/5/2021
Termination Depth:	42.0 feet bgs	**Date Completed:**	3/5/2021
Proposed Location:	Building	**Logged By:**	MH
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG
		Equipment:	Power Probe

Water Depth | Elevation (feet bgs) | (feet)		Cave-In Depth | Elevation (feet bgs) | (feet)	
During:	25.0 | ---		
At Completion:	22.0 | ---	**At Completion:**	--- | ---
24 Hours:	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)			
						0.0			
							TOPSOIL	7" Topsoil	
0 - 2	S-1	X	1 - 3 - 3 - 5	20	6	0.6	GLACIAL DEPOSITS	Brown Sandy Silt, Moist, Medium Stiff (ML)	Qu = 0.5 tsf
						2.0			
2 - 4	S-2	X	9 - 9 - 11 - 13	12	20			Brown Poorly Graded Sand with Gravel, Moist, Medium Dense (SP)	
4 - 6	S-3	X	11 - 12 - 12 - 11	20	24	5.0		As Above (SP)	
6 - 8	S-4	X	10 - 11 - 11 - 12	20	22			As Above (SP)	
						10.0			
10 - 12	S-5	X	5 - 8 - 10 - 9	22	18			As Above (SP)	Less Gravel
						15.0			
15 - 17	S-6	X	4 - 5 - 8 - 8	22	13			As Above (SP)	Trace Gravel
						20.0			
20 - 22	S-7	X	4 - 5 - 6 - 6	22	11			As Above (SP)	
						25.0			

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-7

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/5/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	42.0 feet bgs	**Date Completed:**	3/5/2021				
Proposed Location:	Building	**Logged By:**	MH	**During:**	25.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	22.0 | ---	**At Completion:**	--- | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)			
						25.0 ▼			
25 - 27	S-8	X	6 - 9 - 12 - 12	12	21		GLACIAL DEPOSITS	As Above, Gravel, Wet (SP)	
						30.0			
30 - 32	S-9	X	5 - 5 - 6 - 7	18	11			As Above (SP)	Running Sands 30.0 fbgs to 40.0 fbgs
						35.0			
35 - 37	S-10	X	20 - 13 - 15 - 12	NR	28			No Recovery, Presumed As Above (SP)	
						40.0			
40 - 42	S-11	X	4 - 7 - 11 - 12	20	18			As Above (SP)	More Gravel Content
						45.0		Boring Log B-7 Terminated at a Depth of 42.0 Feet Below Ground Surface	
						50.0			

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-8

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.
Surface Elevation:	± NS feet	**Date Started:**	3/5/2021
Termination Depth:	22.0 feet bgs	**Date Completed:**	3/5/2021
Proposed Location:	Pavement	**Logged By:**	MH
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG
		Equipment:	Power Probe

Water Depth | Elevation (feet bgs) | (feet)		Cave-In Depth | Elevation (feet bgs) | (feet)	
During:	22.0 | ---		
At Completion:	--- | ---	**At Completion:**	19.0 | ---
24 Hours:	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.3	TOPSOIL		4" Topsoil	
0 - 2	S-1	X	3 - 3 - 8 - 9	18	11		GLACIAL DEPOSITS		Brown Silty Sand, Moist, Medium Dense (SM)	
						2.0				
2 - 4	S-2	X	10 - 15 - 17 - 16	22	32				Brown Poorly Graded Sand with Gravel, Moist, Dense (SP)	
4 - 6	S-3	X	14 - 16 - 18 - 19	20	34	5.0			As Above (SP)	
6 - 8	S-4	X	7 - 17 - 16 - 15	20	33				As Above (SP)	
						10.0				
10 - 12	S-5	X	6 - 5 - 6 - 6	18	11				As Above, Medium Dense (SP)	Less Gravel Content
						15.0				
15 - 17	S-6	X	4 - 4 - 7 - 8	22	11				As Above (SP)	
						20.0				
20 - 22	S-7	X	5 - 7 - 8 - 9	22	15				As Above (SP)	Trace Gravel
						22.0				
									Boring Log B-8 Terminated at a Depth of 22.0 Feet Below Ground Surface	
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-9

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/8/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	42.0 feet bgs	**Date Completed:**	3/8/2021				
Proposed Location:	Building	**Logged By:**	MR	**During:**	31.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	--- | ---	**At Completion:**	27.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.4	TOPSOIL		5" Topsoil	
0 - 2	S-1	X	1/12" - 1/12"	15	1		GLACIAL DEPOSITS		Brown Silty Sand with Gravel, Moist, Very Loose (SM)	
						2.0				
2 - 4	S-2	X	2/12" - 6 - 7	17	7				Brown Poorly Graded Sand with Silt and Gravel, Moist, Loose (SP-SM)	
						4.0				
4 - 6	S-3	X	23 - 20 - 23 - 24	22	43	5.0			Brown Poorly Graded Sand with Gravel, Moist, Dense (SP)	
6 - 8	S-4	X	20 - 20 - 23 - 21	21	43				As Above (SP)	
						10.0				
10 - 12	S-5	X	5 - 9 - 9 - 8	20	18				As Above, Medium Dense (SP)	
						15.0				
15 - 17	S-6	X	1 - 6 - 7 - 8	18	13				As Above, Less Gravel (SP)	
						20.0				
20 - 22	S-7	X	5 - 6 - 9 - 13	24	15				As Above (SP)	
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-9

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/8/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	42.0 feet bgs	**Date Completed:**	3/8/2021				
Proposed Location:	Building	**Logged By:**	MR	**During:**	31.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	--- | ---	**At Completion:**	27.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)			
						25.0			
25 - 27	S-8	X	5 - 8 - 10 - 10	18	18		GLACIAL DEPOSITS	As Above, Orange-Yellow (SP)	
						30.0			
30 - 32	S-9	X	14 - 11 - 14 - 16	14	25			As Above, Wet, Medium Dense (SP)	
						35.0			
35 - 37	S-10	X	5 - 13 - 21 - 19	17	34			As Above, Dense (SP)	
						40.0			
40 - 42	S-11	X	5 - 13 - 11 - 8	18	34			As Above (SP)	
						45.0		Boring Log B-9 Terminated at a Depth of 42.0 Feet Below Ground Surface	
						50.0			

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-10

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/8/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/8/2021				
Proposed Location:	Building	**Logged By:**	MR	**During:**	26.8 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	--- | ---	**At Completion:**	25.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.5	TOPSOIL		6" Topsoil	
0 - 2	S-1	X	1 - 1 - 1 - 5	22	2		GLACIAL DEPOSITS		Brown Silty Sand, Moist, Very Loose (SM)	
						2.0				
2 - 4	S-2	X	7 - 9 - 15 - 17	14	24				Yellow-Brown Poorly Graded Sand with Silt, Moist, Medium Dense (SP-SM)	
						4.0				
4 - 6	S-3	X	10 - 12 - 13 - 16	20	25	5.0			Yellow-Brown Poorly Graded Sand, Moist, Medium Dense (SP)	
6 - 8	S-4	X	8 - 13 - 15 - 16	21	28				As Above (SP)	
						10.0				
10 - 12	S-5	X	6 - 5 - 9 - 10	14	14				As Above, Less Gravel (SP)	
						15.0				
15 - 17	S-6	X	5 - 6 - 8 - 8	12	14				As Above (SP)	
						20.0				
20 - 22	S-7	X	4 - 5 - 8 - 9	18	13				As Above (SP)	
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-10

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/8/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/8/2021				
Proposed Location:	Building	**Logged By:**	MR	**During:**	26.8 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	--- | ---	**At Completion:**	25.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						25.0				
25 - 27	S-8	X	6 - 7 - 16 - 11	15	23	27.0	GLACIAL DEPOSITS		As Above, Wet (SP)	
									Boring Log B-10 Terminated at a Depth of 27.0 Feet Below Ground Surface	
						30.0				
						35.0				
						40.0				
						45.0				
						50.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-11

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/8/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/8/2021				
Proposed Location:	Building	**Logged By:**	MR	**During:**	26.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	--- | ---	**At Completion:**	24.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.3	TOPSOIL		4" Topsoil	
0 - 2	S-1	X	3/12" - 4 - 8	17	6		GLACIAL DEPOSITS		Brown Silty Sand with Gravel, Moist, Loose (SM)	
						2.0				
2 - 4	S-2	X	8 - 12 - 13 - 17	18	25				Yellow-Brown Poorly Graded Sand with Gravel, Moist, Medium Dense (SP)	
4 - 6	S-3	X	10 - 15 - 16 - 19	15	31	5.0			As Above, Dense (SP)	
6 - 8	S-4	X	9 - 14 - 15 - 15	12	29				As Above, Medium Dense (SP)	
						10.0				
10 - 12	S-5	X	5 - 6 - 9 - 9	18	15				As Above, Less Gravel (SP)	
						15.0				
15 - 17	S-6	X	5 - 7 - 6 - 7	17	13				As Above (SP)	
						20.0				
20 - 22	S-7	X	4 - 5 - 7 - 7	18	12				As Above (SP)	
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-11

Project:	Proposed Warehouse Development	**WAI Project No.:**	GJ2117765.000
Location:	Little East Neck Road and Long Island Avenue; Wyandanch, Suffolk County, New York	**Client:**	Bristol Group, Inc.

Surface Elevation:	± NS feet	**Date Started:**	3/8/2021		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	27.0 feet bgs	**Date Completed:**	3/8/2021				
Proposed Location:	Building	**Logged By:**	MR	**During:**	26.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	ECG	**At Completion:**	--- | ---	**At Completion:**	24.0 | ---
		Equipment:	Power Probe	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

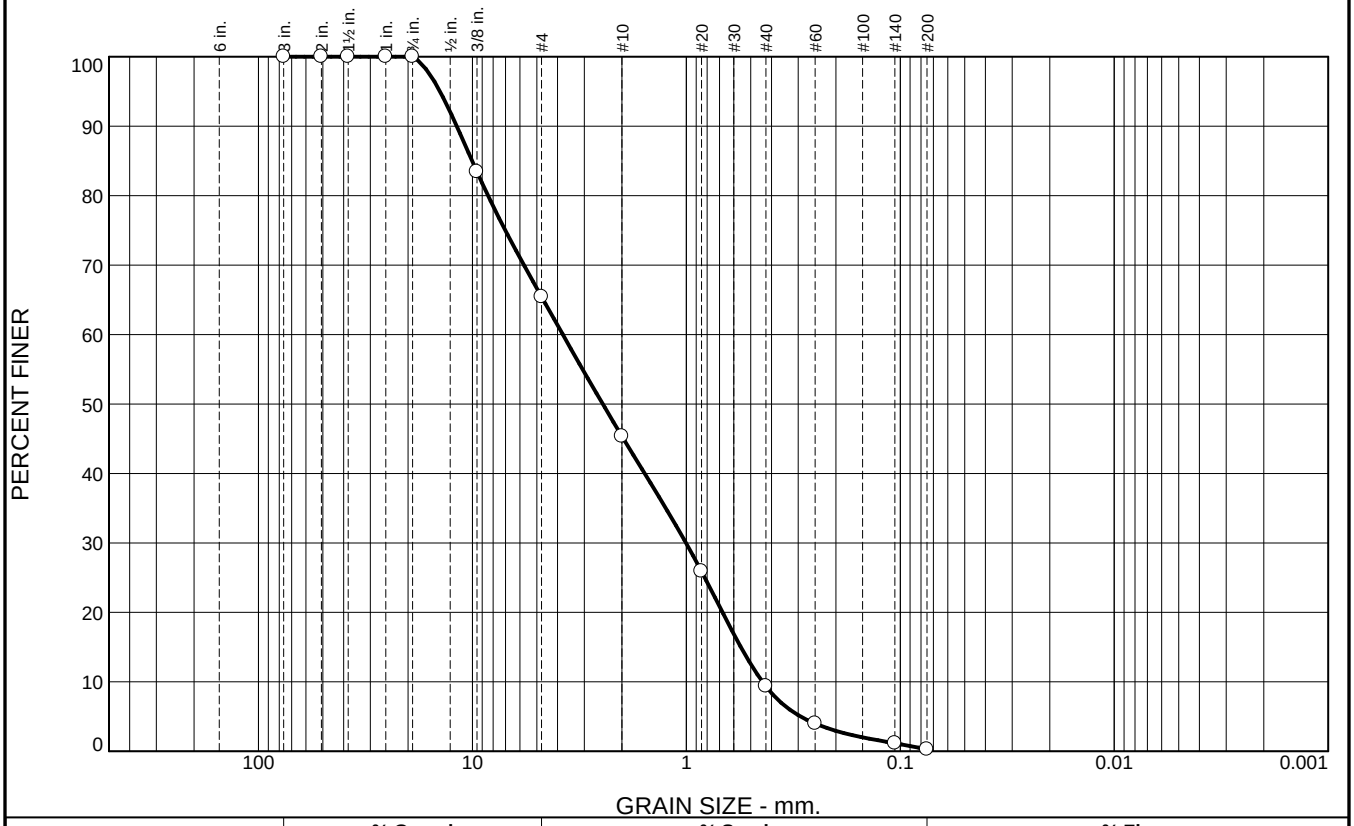
SAMPLE INFORMATION						DEPTH	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)			
						25.0			
25 - 27	S-8	X	6 - 7 - 11 - 11	15	18		GLACIAL DEPOSITS	As Above, Moist to Wet (SP)	
						27.0			
								Boring Log B-11 Terminated at a Depth of 27.0 Feet Below Ground Surface	
						30.0			
						35.0			
						40.0			
						45.0			
						50.0			

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE ASSOCIATES, INC.

APPENDIX B
Laboratory Test Results

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	34.6	20.0	36.0	9.1	0.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0		
1.5	100.0		
1	100.0		
.75	100.0		
.375	83.4		
#4	65.4		
#10	45.4		
#20	25.9		
#40	9.4		
#60	4.0		
#140	1.2		
#200	0.3		

* (no specification provided)

Material Description

Poorly Graded Sand with Gravel

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 11.8359 D_{85}= 10.0385 D_{60}= 3.7805
D_{50}= 2.4592 D_{30}= 1.0044 D_{15}= 0.5562
D_{10}= 0.4406 C_u= 8.58 C_c= 0.61

Classification

USCS= SP AASHTO= A-1-a

Remarks

W_n = 2.9 %

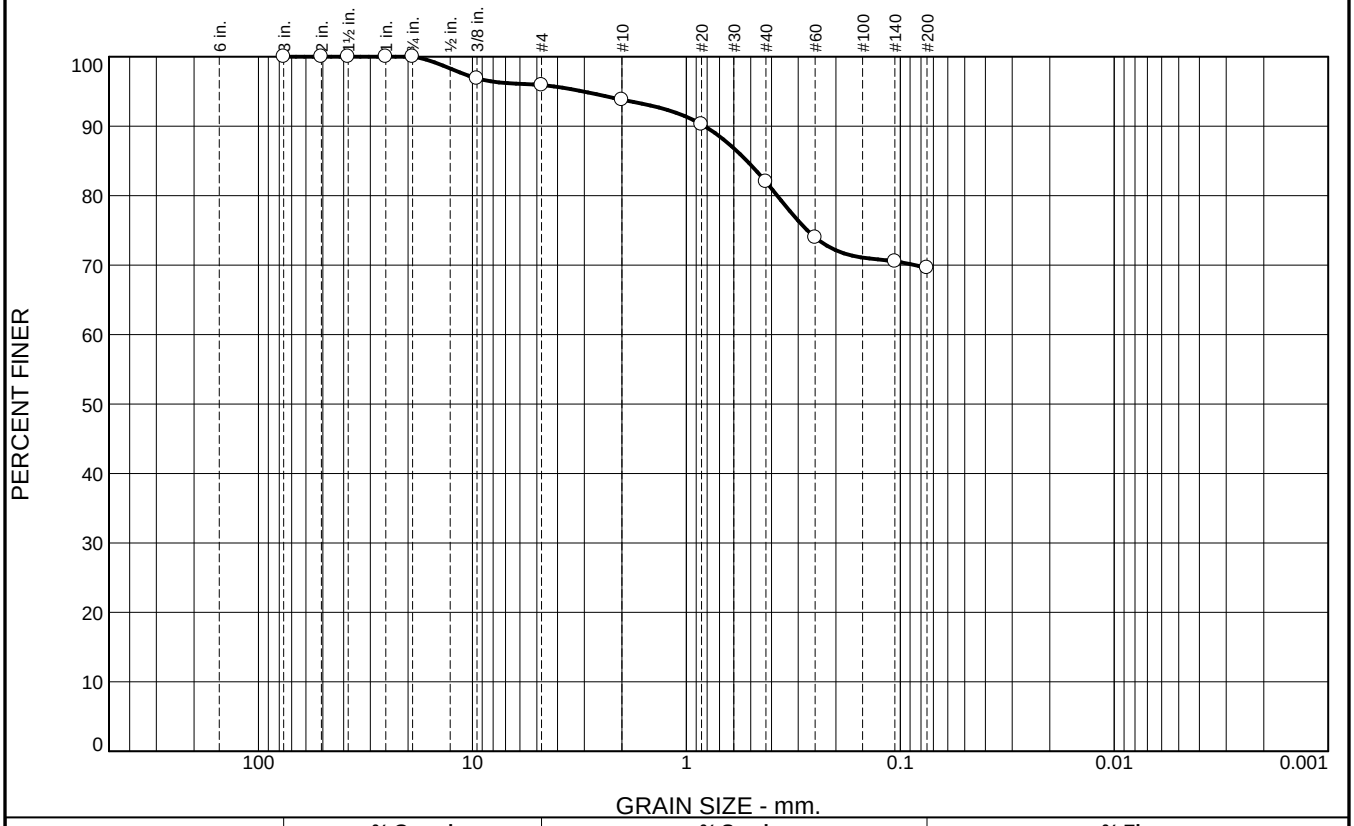
Source of Sample: B-2 **Depth:** 4.0' - 6.0'
Sample Number: S-3

Date: 03/17/2021

WHITESTONE ASSOCIATES, INC.
Warren, New Jersey

Client: Bristol Group, Inc.
Project: Proposed Warehouse Development
Little East Neck Rd & Long Island Ave, Wyandanch, NY
Project No: GJ2117765.000 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.1	2.1	11.8	12.4	69.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
2	100.0		
1.5	100.0		
1	100.0		
.75	100.0		
.375	96.9		
#4	95.9		
#10	93.8		
#20	90.3		
#40	82.0		
#60	74.0		
#140	70.5		
#200	69.6		

* (no specification provided)

Material Description

Sandy Lean Clay

Atterberg Limits

PL= 22 LL= 30 PI= 8

Coefficients

D_{90}= 0.8217 D_{85}= 0.5212 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-4(4)

Remarks

W_n = 23.8 %

Source of Sample: B-3 **Depth:** 0.0' - 2.0'
Sample Number: S-1

Date: 03/17/2021

WHITESTONE ASSOCIATES, INC.
Warren, New Jersey

Client: Bristol Group, Inc.
Project: Proposed Warehouse Development
Little East Neck Rd & Long Island Ave, Wyandanch, NY
Project No: GJ2117765.000 **Figure**

WHITESTONE ASSOCIATES, INC.

APPENDIX C
Supplemental Information (USCS, Terms and Symbols)

WHITESTONE ASSOCIATES, INC.
Environmental & Geotechnical Engineers & Consultants

30 INDEPENDENCE BOULEVARD
SUITE 250
WARREN, NJ 07059
908.668.7777
whitestoneassoc.com

UNIFIED SOIL CLASSIFICATION SYSTEM

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMITS LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMITS GREATER THAN 50	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS FOR SAMPLES WITH 5% TO 12% FINES

GRADATION*

% FINER BY WEIGHT

TRACE..... 1% TO 10%
LITTLE..... 10% TO 20%
SOME..... 20% TO 35%
AND..... 35% TO 50%

COMPACTNESS*
Sand and/or Gravel

RELATIVE DENSITY

LOOSE. ..... 0% TO 40%
MEDIUM DENSE.... 40% TO 70%
DENSE..... 70% TO 90%
VERY DENSE..... 90% TO 100%

CONSISTENCY*
Clay and/or Silt

RANGE OF SHEARING STRENGTH IN POUNDS PER SQUARE FOOT

VERY SOFT..... LESS THAN 250
SOFT..... ..... 250 TO 500
MEDIUM..... 500 TO 1000
STIFF..... 1000 TO 2000
VERY STIFF..... 2000 TO 4000
HARD..... GREATER THAN 4000

** VALUES ARE FROM LABORATORY OR FIELD TEST DATA, WHERE APPLICABLE. WHEN NO TESTING WAS PERFORMED, VALUES ARE ESTIMATED.*

L:\Geotechnical Forms and References\Reports\USCSTRMSSYM NJ.docx

Other Office Locations:

CHALFONT, PA 215.712.2700
SOUTHBOROUGH, MA 508.485.0755
ROCKY HILL, CT 860.726.7889
WALL, NJ 732.592.2101
PHILADELPHIA, PA 215.848.2323

WHITESTONE ASSOCIATES, INC.
Environmental & Geotechnical Engineers & Consultants

30 INDEPENDENCE BOULEVARD
SUITE 250
WARREN, NJ 07059
908.668.7777
whitestoneassoc.com

GEOTECHNICAL TERMS AND SYMBOLS

SAMPLE IDENTIFICATION

The Unified Soil Classification System is used to identify the soil unless otherwise noted.

SOIL PROPERTY SYMBOLS

N: Standard Penetration Value: Blows per ft. of a 140 lb. hammer falling 30" on a 2" O.D. split-spoon.
Qu: Unconfined compressive strength, TSF.
Qp: Penetrometer value, unconfined compressive strength, TSF.
Mc: Moisture content, %.
LL: Liquid limit, %.
PI: Plasticity index, %.
δd: Natural dry density, PCF.
▼: Apparent groundwater level at time noted after completion of boring.

DRILLING AND SAMPLING SYMBOLS

NE: Not Encountered (Groundwater was not encountered).
SS: Split-Spoon - 1 ⅜" I.D., 2" O.D., except where noted.
ST: Shelby Tube - 3" O.D., except where noted.
AU: Auger Sample.
OB: Diamond Bit.
CB: Carbide Bit
WS: Washed Sample.

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

Term (Non-Cohesive Soils)	Standard Penetration Resistance
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

Term (Cohesive Soils)	Qu (TSF)
Very Soft	0 - 0.25
Soft	0.25 - 0.50
Firm (Medium)	0.50 - 1.00
Stiff	1.00 - 2.00
Very Stiff	2.00 - 4.00
Hard	4.00+

PARTICLE SIZE

Boulders	8 in.+	Coarse Sand	5mm-0.6mm	Silt	0.074mm-0.005mm
Cobbles	8 in.-3 in.	Medium Sand	0.6mm-0.2mm	Clay	-0.005mm
Gravel	3 in.-5mm	Fine Sand	0.2mm-0.074mm		

Other Office Locations:

CHALFONT, PA 215.712.2700
SOUTHBOROUGH, MA 508.485.0755
ROCKY HILL, CT 860.726.7889
WALL, NJ 732.592.2101
PHILADELPHIA, PA 215.848.2323