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REPORT OF GEOTECHNICAL INVESTIGATION

PROPOSED RESIDENTIAL DEVELOPMENT
TEXAS ROAD & GREENWOOD ROAD
BLOCK 111, LOTS 4, 12 & 13
TOWNSHIP OF MARLBORO, MONMOUTH COUNTY, NEW JERSEY

Prepared for:

3 RONSON, LLC
94 Green Street
Woodbridge, New Jersey 07095

Prepared by:

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Whitestone Project No.: GS2017348.000
September 15, 2020
(Updated October 21, 2020)

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September 15, 2020
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via email

3 RONSON, LLC
94 Green Street
Woodbridge, New Jersey 07095

Attention: Mr. Sonny Adoni
Owner

Regarding: REPORT OF GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
TEXAS ROAD & GREENWOOD ROAD
BLOCK 111, LOTS 4, 12 & 13
TOWNSHIP OF MARLBORO, MONMOUTH COUNTY, NEW JERSEY
WHITESTONE PROJECT NO.: GS2017348.000

Dear Mr. Adoni:

Whitestone Associates, Inc. is pleased to submit the attached *Report of Geotechnical Investigation* for the above-referenced project. The attached report presents the results of Whitestone's soils exploration efforts and presents recommendations for design of the proposed structural foundations, floor slabs, pavements, and related earthwork associated with the proposed development.

Whitestone's Geotechnical Division appreciates the opportunity to be of service to 3 Ronson, LLC. 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 regarding the enclosed report.

Sincerely,

WHITESTONE ASSOCIATES, INC.

Kyle J. Kopacz, P.E.
Project Manager

Laurence W. Keller, P.E.
Principal, Geotechnical Services

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Enclosures
Copy Peter Mercatili, 3 Ronson, LLC
Eric Ballou, P.E., InSite Engineering, LLC

REPORT OF GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
Texas Road & Greenwood Road
Block 111, Lots 4, 12 & 13
Township of Marlboro, Monmouth County, New Jersey

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SECTION 1.0
Summary of Findings

Whitestone Associates, Inc. (Whitestone) has performed an exploration and evaluation of the subsurface conditions at the site of the proposed residential development to be located at Texas Road and Greenwood Road, Township of Marlboro, Monmouth County, New Jersey. The site of the proposed construction is shown on the *Test Location Plan* included as Figure 1.

At the time of Whitestone's investigation, the subject site consisted of an undeveloped, grass- and brush-covered parcel with moderately- to heavily-wooded areas. No utilities were noted at the site. Based on grading information provided by InSite Engineering, LLC (InSite), the subject site has a high elevation of approximately 132 feet above NAVD 88 in the northern portion of the site and a low elevation of approximately 86 feet above NAVD 88 in the southern portion of the site.

Based on the May 2, 2020 *Concept Plan* prepared by Chester, Ploussas, Lisowsky Partnership, LLC, the proposed development will include clearing the subject site and constructing a multi-family residential complex with SWM facilities, pavements, landscaped areas, and utilities. Specifically, the proposed development will include 21 three-story, multi-unit buildings that are anticipated to be less than 40 feet in height. Detailed grading or structural loading was not available at the time of this report, however, Whitestone anticipates the proposed development will be constructed at or near existing site grades with the exception of the SWM facilities, which are anticipated to be situated approximately four feet below existing grades.

The subsurface exploration included performing a reconnaissance of the project site, drilling soil test borings, excavating soil profile pits, and collecting soil samples for laboratory analyses. The data from this exploration was analyzed by Whitestone in light of the project information provided by InSite.

A summary of Whitestone's findings is presented in the following:

- **Subsurface Conditions:** The soil borings and profile pits were performed within accessible portions of the subject site and encountered up to 12 inches of topsoil at the surface. Underlying the surface cover, two of the profile pits encountered existing fill material consisting of reworked natural site soils with debris including concrete and brick. Underlying the surface cover and/or existing fill materials, the subsurface tests encountered natural coastal plains deposits. In general, the coastal plains deposits consisted of a combination of sand, silt and gravel (USCS: SP and SM) with thin seams of lean clay (USCS: CL). The coastal plains deposits were encountered to termination depths ranging from approximately 10 feet below ground surface (fbgs) to 25 fbgs. Static groundwater encountered within the soil borings at depths ranging from approximately 10 fbgs to 13 fbgs.

Recommendations developed upon consideration of these results are summarized below and presented in greater detail in the following report.

- **Foundations:** Whitestone recommends supporting the proposed structure on conventional spread and continuous wall footings designed to bear within the natural site soils and/or on properly placed and compacted structural fill. Foundations bearing within these materials may be designed using a maximum allowable net bearing pressure of 3,000 pounds per square foot (psf). Although not anticipated, existing fill materials should be overexcavated if encountered at or below proposed foundation elevations. In addition, all footing excavation bottoms should be compacted in-place in the presence of a geotechnical engineer to densify loose/soft zones and disturbed soils resulting from the excavation.

- **Floor Slabs and Pavements:** Whitestone anticipates that the underlying natural soils and/or controlled structural fill will be suitable for support of the proposed floor slabs and pavements provided these materials are properly evaluated, placed, and proofrolled as recommended herein. Any areas that become softened or disturbed as a result of wetting and/or repeated exposure to construction traffic should be removed and replaced with compacted structural fill. The upper 12 inches of all subgrades should be recompacted in-place under the observation of the owner's geotechnical engineer due to the presence of loose materials.

- **Soil Reusability:** Whitestone anticipates that a majority of the existing fill materials and underlying natural materials will be suitable for selective reuse as structural fill and/or backfill below proposed foundations, floor slabs, and pavements provided that deleterious debris is segregated and moisture contents are controlled within two percent of the optimum moisture content and objectionable materials, if present, are segregated.

More detailed design criteria and construction recommendations for proposed foundations, slabs, pavements, and earthwork are discussed in the following report.

SECTION 2.0
Introduction

2.1 AUTHORIZATION

Mr. Peter Mercatili with 3 Ronson, LLC issued authorization to Whitestone to perform the geotechnical investigation at this site relevant to the proposed site development. The geotechnical investigation was performed in general accordance with Whitestone's June 25, 2020 proposal to 3 Ronson, LLC.

2.2 PURPOSE

The purpose of this subsurface exploration and analysis was to:

- ascertain the various soil profile components at test locations;
- estimate the engineering characteristics of the proposed foundation bearing and subgrade materials;
- provide geotechnical criteria for use by the design engineers in preparing the foundation, floor slab, and pavement design;
- provide recommendations for required earthwork and subgrade preparation;
- record groundwater and estimated seasonal high groundwater levels (if encountered) at the time of the investigation and discuss the potential impact on the proposed construction; and
- recommend additional investigation and/or analysis (if warranted).

2.3 SCOPE

The scope of the exploration and analysis included the subsurface exploration, field testing and sampling, laboratory analyses, and a geotechnical engineering analysis and evaluation of the subsurface materials. This *Report of Geotechnical Investigation* is limited to addressing the site conditions related to the physical support of the proposed construction. Any references to suspicious odors, materials, or conditions are provided strictly for the client's information.

2.3.1 Field Exploration

The field exploration of the project site was conducted by means of 26 soil test borings (identified as B-1 through B-26) performed with an ATV-mounted drill rig using hollow stem augers and split-spoon sampling techniques, and 10 soil profile pits (identified as SPP-1 through SPP-10) performed with a

rubber-tire backhoe. The test locations were backfilled with soil cuttings generated from the investigation. The locations of the subsurface tests are shown on the accompanying *Test Location Plan* included as Figure 1.

The subsurface tests were conducted in the presence of Whitestone personnel who performed field tests, recorded visual classifications, and collected samples of the various strata encountered. The test locations 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 American Society for Testing Materials (ASTM) designation D 1586. The Standard Penetration 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, if encountered, were recorded during and immediately following the completion of the testing operations within the soil borings and test excavations. 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 monitoring wells may not be representative of true groundwater levels.

2.3.2 Laboratory Program

In addition to the field investigation, a laboratory program was conducted to determine additional, pertinent engineering characteristics of representative samples of on-site soils. The laboratory program was performed in general accordance with applicable ASTM standard test methods and included physical/textural testing of representative samples of various strata.

Physical/Textural Analyses: Representative samples of selected strata encountered were subjected to a laboratory program that included 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 strata tested were 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-1	S-3	4.0 - 6.0	13.5	11.4	Non-Plastic		SM
B-6	S-2	2.0 - 4.0	4.4	8.4	Non-Plastic		SP

The engineering classifications are useful when considered in conjunction with the additional site data to estimate properties of the soil types encountered and to predict the soil's behavior under construction and service loads.

SECTION 3.0
Site Description

3.1 LOCATION AND DESCRIPTION

The subject property located at Texas Road & Greenwood Road in Marlboro, Monmouth County, New Jersey consists of an undeveloped, grass- and brush-covered parcel with moderately- to heavily-wooded areas. The site is bound to the north by Texas Road and to the south, east, and west by vacant parcels. The site of the proposed construction is shown on the *Test Location Plan* included as Figure 1.

3.2 EXISTING CONDITIONS

Surface Cover/Development: At the time of Whitestone's investigation, the subject site consisted of an undeveloped, grass-covered parcel.

Topography: Based on rough grading information provided by InSite, the subject site has a high elevation of approximately 132 feet above NAVD 88 in the northern portion of the site and a low elevation of approximately 86 feet above NAVD 88 in the southern portion of the site.

Utilities: At the time of Whitestone's subsurface field investigation, utilities were not observed at the subject site by Whitestone but may be present. The utility information contained in this report is presented for general discussion only and is not intended for construction purposes.

Site Drainage: Surface runoff is anticipated to follow existing site contours draining northerly towards adjacent right-of-way inlets. The termini of these inlets are unknown.

3.3 SITE GEOLOGY

The area encompassing the subject site is situated within the Atlantic Coastal Plain Physiographic Province of New Jersey. Specifically, the site is underlain by the Tertiary-aged, Cohansey Formation. Specifically, the Cohansey Formation consists of white to yellow sand with local gravel and clay deposits. Typically, the sand is medium grained and moderately sorted but can range from very coarse to fine grained and poorly to well sorted. The sand consists of quartz and siliceous rock fragments. Locally, the sand can be stained red or orange brown by iron oxides and/or cemented into large blocks of ironstone.

3.4 PROPOSED CONSTRUCTION

Based on the *Concept Plan* prepared by Chester, Ploussas, Lisowsky Partership, LLC, the proposed development will include clearing the subject site and constructing a multi-family residential complex

with SWM facilities, pavements, landscaped areas, and utilities. Specifically, the proposed development will include 21 three-story, multi-unit buildings that are anticipated to be less than 40 feet in height. Detailed grading or structural loading was not available at the time of this report, however, Whitestone anticipates the proposed development will be constructed at or near existing site grades with the exception of the SWM facilities, which are anticipated to be situated approximately four feet below existing grades. New retaining walls are currently anticipated along the southern portion of the subject site.

The anticipated maximum loads are expected to be less than the following:

- column loads - 225 kips;
- wall loads - 3.0 kips/linear foot; and
- floor slabs - 150 pounds per square foot.

The above-referenced structural loads were assumed based upon Whitestone's previous experience with similar facilities and should be confirmed by the structural engineer. The scope of Whitestone's investigation and the professional advice contained in this report were generated based on the project details noted herein. Any revisions or additions to the design details enumerated in this report should be brought to the attention of Whitestone for additional evaluation as warranted.

SECTION 4.0
Subsurface Conditions

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

4.1 SUBSURFACE SOIL CONDITIONS

Surface Cover: The subsurface tests were performed across accessible portions of the subject site and encountered up to 12 inches of topsoil at the surface.

Existing Fill Materials: Underlying the surface cover, only three test locations encountered existing fill materials that generally consisted of reworked natural site soils with debris. The debris encountered consisted of concrete and brick. Where encountered, the existing fill materials extended to a depth of approximately four fbgs. SPT N-values recorded in this stratum ranged between 25 blows per foot (bpf) and 56 bpf.

Coastal Plains Deposits: Underlying the surface cover and/or existing fill materials, the borings encountered natural coastal plain deposits generally consisting of a combination of sand, silt and gravel (USCS: SP and SM) with thin seams of lean clay (USCS: CL). The coastal plains deposits extended to the termination depths ranging from approximately 10 fbgs to 25 fbgs. SPT N-values within coarse-grained portions of this stratum ranged between four blows per foot (bpf) and refusal (defined as more than 50 blows per six inches of split spoon sampler penetration), generally indicating a loose to very dense relative density and averaging approximately 29 bpf.

4.2 GROUNDWATER

Static groundwater was encountered within the subsurface tests at depths ranging from approximately eight fbgs to 13 fbgs. Static groundwater conditions likely will fluctuate seasonally and following periods of precipitation.

SECTION 5.0
Conclusions and Recommendations

5.1 GENERAL

Following the surficial stripping of topsoil, if encountered, Whitestone recommends supporting the proposed structure on conventional shallow foundations and a ground-supported floor slab bearing within properly approved and improved natural site soils and/or controlled structural fill soils that are properly inspected, placed, and compacted in accordance with recommendations provided herein. Although not anticipated, existing fill materials should be overexcavated beneath proposed foundation bearing elevations. Due to the presence of loose upper sand materials, all subgrades should be recompacted under the observation of the owner's geotechnical engineer.

5.2 SITE PREPARATION AND EARTHWORK

Surface Cover Stripping: Prior to stripping operations, all utilities should be identified and secured. Vegetation, trees, topsoil, and organic matter should be removed from within and at least 10 feet beyond the limits of the proposed building footprints as well as any other area that will require controlled structural fill placement. Tree and/or brush removal should include the removal of stumps and root material. All stripping and earthwork activities operations should be performed in a manner consistent with good erosion and sediment control practices.

Surface Preparation/Proofrolling: Prior to placing any fill or subbase materials to raise or restore grades to the desired subgrade elevations, the existing exposed soils should be compacted to a firm surface with several passes in two perpendicular directions of a minimum 10-ton roller. The surface then should be proofrolled with a loaded tandem axle truck in the presence of the geotechnical engineer to help identify soft or loose pockets which may require removal and replacement or further investigation. Proofrolling should be performed after a suitable period of dry weather to avoid degrading an otherwise stable subgrade. Any fill or backfill should be placed and compacted in accordance with Section 5.3.

Subgrade Protection and Inspection: Every effort should be made to minimize disturbance of the on-site materials by construction traffic and surface runoff. The on-site soils may deteriorate when subjected to repeated wetting and construction traffic and may require wetting or drying to achieve proper compaction. The site contractors should employ necessary means and methods to protect the subgrade.

5.3 STRUCTURAL FILL AND BACKFILL

Imported Fill Material: Any imported material placed as structural fill or backfill to raise elevations or restore design grades should consist of clean, relatively well graded sand or gravel with a maximum

particle size of three inches and five percent to 15 percent of material finer than a #200 sieve. Alternatively, inorganic soil types including silty and clayey sands and gravels with higher percentage of fine material and silts and clays with a liquid limit less than 40 and a plasticity index less than 20 may be considered subject to the owner's approval, provided that the required moisture content and compaction controls are met. The material should be free of clay lumps, organics and deleterious material.

On-Site Material: Based on the conditions disclosed by the soil borings, Whitestone anticipates that the majority of the underlying natural coastal plains deposits will be suitable for selective reuse as structural fill and/or backfill below proposed foundations, floor slabs, and pavements provided moisture contents are controlled within two percent of the optimum moisture content.

Materials that become exceedingly wet likely will require discing and aerating that may not be practical during wet seasons. Alternatively, imported fill materials may be used to attain the desired grades and expedite earthwork operations. The stripped topsoil or ploughed horizon should not be used as fill or backfill.

Compaction and Placement Requirements: All fill and backfill should be placed in maximum eight-inch loose lifts and compacted to 95 percent of the maximum dry density within two percent of the optimum moisture content as determined by ASTM D 1557 (Modified Proctor) unless otherwise recommended in subsequent sections of this report. Whitestone recommends using a vibratory drum roller to compact the on-site soils or a small hand-held vibratory compactor within excavations.

Structural Fill Testing: A sample of the imported fill material and on-site materials to be re-used should be submitted to the geotechnical engineer for analysis and approval prior to use. The placement of all fill and backfill should be monitored by a qualified engineering technician to ensure that the specified material and lift thicknesses are properly installed. A sufficient number of in-place density tests (methods ASTM D 6938 or ASTM D 1556) should be performed on each lift to ensure that the specified compaction is achieved throughout the height of the fill or backfill.

5.4 GROUNDWATER CONTROL

Static and/or perched groundwater was encountered as part of this investigation at depths ranging from approximately eight fbgs to 13 fbgs. Therefore, Whitestone anticipates that static groundwater will be deeper than proposed foundation and utility excavations and does not anticipate the need for extensive dewatering or permanent groundwater control. However, trapped/perched water may be expected to be encountered within the natural site soils, especially following precipitation events. As such, construction phase dewatering of trapped/perched water through the use of gravity fed sump pumps may be anticipated during excavation activities for this site. Whitestone anticipates that dewatering typically would include numerous sump pumps along the excavation perimeter and/or deep well points to lower the groundwater level.

5.5 FOUNDATIONS

Shallow Foundation Design Criteria: Following surficial stripping of the topsoil, if encountered, Whitestone recommends supporting the proposed structure on conventional spread and continuous wall footings designed to bear within the approved and improved natural site soils and/or on properly placed and compacted structural fill provided these materials are properly evaluated, placed and compacted in accordance with Sections 5.2, 5.3, and 5.11 of this report. Although not anticipated, existing fill materials should be overexcvated beneath proposed foundation bearing elevations. Due to the relatively loose existing conditions within the upper natural site soils, in-place compaction of the foundation subgrades with a 10-ton vibratory roller should be anticipated prior to structural support. Foundations bearing within these materials may be designed to impart a maximum allowable net bearing pressure of 3,000 psf, under the observation of the owner's geotechnical engineer with specific knowledge of the site subsurface conditions and design assumptions.

Regardless of loading conditions, proposed foundations should be sized no less than minimum dimensions of 24 inches for continuous wall footings and 36 inches for isolated column footings.

Below-grade footings and footings subject to overturning should be designed so that the maximum toe pressure due to the combined effect of vertical loads and overturning moment does not exceed the recommended maximum allowable net bearing pressure. In addition, positive contact pressure should be maintained throughout the base of the footings such that no uplift or tension exists between the base of the footings and the supporting soil. Uplift loads should be resisted by the weight of the concrete. Side friction should be neglected when proportioning the footings such that lateral resistance should be provided by friction resistance at the base of the footings. A coefficient of friction against sliding of 0.35 is recommended for use in the design of the foundations bearing within the existing site soils or imported structural fill soils.

Foundation Inspection: Whitestone recommends that the suitability of the bearing soils along and below the footing bottoms be verified by a geotechnical engineer performing dynamic cone penetration tests every 25 feet along wall foundations and at each spread footing location prior to placing concrete. Where areas of unsuitable materials are encountered in footing excavations, including existing fill materials and very loose site soils, in-place re-compaction or overexcavation and recompaction or replacement may be necessary to provide a suitable footing subgrade in accordance with Section 5.2. Areas of in-place compaction and/or overexcavation and replacement/recompaction of the natural site soils should be expected prior to structural support due to the relatively loose existing density of portions of the site natural soils. Any overexcavation to be restored with structural fill will need to extend at least one foot laterally beyond footing edges for each vertical foot of overexcavation. Lateral overexcavation can be reduced if the grade is restored with lean concrete or approved flowable fill. The bottom of overexcavation should be compacted with vibrating plates or plate tampers ("jumping jacks") to compact locally disturbed materials.

Settlement: Whitestone estimates post construction settlements of proposed building foundations to be approximately one inch if the recommendations outlined in this report are properly implemented. Differential settlement of building foundations should be less than one-half inch.

Frost Coverage: Footings subject to frost action should be placed at least 30 inches below adjacent exterior grades or the depth required by local building codes to provide protection from frost penetration. Interior footings not subject to frost action may be placed at a minimum depth of 18 inches below the slab subgrade.

5.6 FLOOR SLAB

Whitestone anticipates that the approved and improved existing fill materials, natural site soils and/or controlled structural fill will be suitable for support of the proposed floor slab provided these materials are properly evaluated, recompacted and proofrolled in accordance with Sections 5.2, 5.3, and 5.11 of this report during favorable weather conditions. The upper 12 inches of floor slab subgrade should be improved by in-place compaction with a minimum 20-ton drum roller and/or overexcavation and replacement/recompaction of the natural site soils prior to structural support due to the presence of deleterious debris and the relatively loose existing density of portions of the site natural soils. Areas of overexcavation should also be anticipated if the subgrades are exposed to precipitation. Any areas that become softened or disturbed as a result of wetting and/or repeated exposure to construction traffic should be removed and replaced with compacted structural backfill. The properly prepared on-site soils are expected to yield a minimum subgrade modulus (k) of 150 psi/in.

A minimum four inch layer of coarse aggregate, such as AASHTO #57 stone, dense graded aggregate, or equal, should be installed below ground-supported floor slabs to provide a capillary break. An impervious membrane also should be provided as a moisture vapor barrier beneath all floor slabs.

5.7 PAVEMENT DESIGN CRITERIA

General: Whitestone anticipates that improved and approved existing fill materials, natural soils and/or compacted structural fill and/or backfill placed to raise or restore design elevations are expected to be suitable for support of the proposed pavements provided these materials are properly evaluated, compacted, and proofrolled in accordance with Sections 5.2, 5.3, and 5.11 of this report during favorable weather conditions. Areas of in-place compaction and/or overexcavation and replacement/recompaction of the existing fill materials and natural site soils should be anticipated prior to structural support due to the relatively loose existing density of portions of the site natural soils.

Design Criteria: A California Bearing Ratio value of five has been assigned to the properly prepared subgrade soils for pavement design purposes. This value was correlated with pertinent soil support values and assumed traffic loads to prepare flexible and rigid pavement designs per the AASHTO *Guide for the Design of Pavement Structures*.

Design traffic loads were assumed based on typical volumes for similar facilities and correlated with 18-kip equivalent single axle loads (ESAL) for a 20 year life. An estimated maximum load of 25,000 ESAL was for standard pavement areas and 60,000 ESALs was used for heavy duty pavement areas. Actual pavement loads should be less than this value.

Pavement Sections: The recommended flexible pavement sections are presented below in tabular format:

FLEXIBLE PAVEMENT SECTIONS			
Layer	**Material**	**Standard Duty Thickness (Inches)**	**Heavy Duty Thickness (Inches)**
Asphalt Surface	NJDOT I-5 Surface	1.5	1.5
Asphalt Base	NJDOT I-2 Base	2.5	3.0
Granular Subbase	NJDOT DGA Base Course	6.0	6.0

A rigid concrete pavement should be used to provide suitable support at areas of high traffic or severe turns (such as at loading areas and garbage dumpster aprons). The recommended rigid pavement is presented below in tabular format:

RIGID PAVEMENT SECTIONS			
Layer	**Material**	**Standard Duty Thickness (Inches)**	**Heavy Duty Thickness (Inches)**
Surface	4000 psi air-entrained concrete	6.0	7.0
Base	NJDOT DGA Base Course	6.0	8.0

Additional Design Considerations: The pavement section thickness designs presented in this report are based on the design parameters detailed herein and are contingent on proper construction, inspection, and maintenance. Additional thickness may be required by local code. The designs are contingent on achieving the minimum soil support value in the field. To accomplish this requirement, all subgrade soil and supporting fill or backfill must be placed, compacted, and evaluated in accordance with Sections 5.2, 5.3, and 5.11 of this report.

The performance of the pavement also will depend on the quality of materials and workmanship. Whitestone recommends that NJDOT standards for materials, workmanship, and maintenance be applied to this site. Project specifications should include verifying that the installed asphaltic concrete material composition is within tolerance for the specified materials and that the percentage of air voids of the installed pavement is within specified ranges for the respective materials. All rigid concrete pavements should be suitably air-entrained, jointed, and reinforced.

5.8 RETAINING WALLS/LATERAL EARTH PRESSURES

General: Based on project information, a proposed retaining wall is anticipated to be constructed along the eastern portion of the subject site. While the design of the retaining structures are beyond Whitestone's current scope of work, Whitestone would be pleased to assist with the calculation of lateral earth pressures based on the soil parameters presented herein during the structural design phase when final grading and wall geometries are available.

Lateral Earth Pressures: Permanent below grade walls may be required to resist lateral earth pressures. The following soil parameters apply to the encountered subsurface strata and may be used for design of the proposed temporary and permanent retaining structures:

LATERAL EARTH PRESSURE PARAMETERS		
Parameter	**On-Site Natural Soils**	**Structural Granular Backfill**
Moist Density (γ_{moist})	140 pcf	140 pcf
Internal Friction Angle (φ)	28°	30°
Active Earth Pressure Coefficient (K_a)	0.36	0.33
Passive Earth Pressure Coefficient (K_p)	2.77	3.00
At-Rest Earth Pressure Coefficient (K_o)	0.53	0.50

Retaining/below grade walls free to rotate generally can be designed to resist active earth pressures. Retaining/below grade walls corners and restrained walls need to be designed to resist at-rest earth pressures. Retaining/below grade walls situated below static groundwater levels should also be designed to resist hydrostatic pressure.

Lateral earth pressure will depend on the backfill slope angle and the wall batter angle. A sloped backfill will add surcharge load and affect the angle of the resultant force. The effect of other surcharges will also need to be included in earth pressure calculations, including the loads imposed by adjacent structures and traffic. The effects of proposed sloped backfill surface grades, and proposed slopes beyond the toe of the retaining structure, if applicable, must be considered when calculating resultant forces to be resisted by the retaining structure. A coefficient of friction of 0.35 against sliding can be used for concrete on the existing site soils. Retaining/below-grade wall footings should be designed so that the combined effect of vertical and horizontal resultants and overturning moment does not exceed the maximum soil bearing capacity provided in Section 5.5.

Adequate drainage of water that may collect on the backfill side of the retaining wall should be incorporated into the design and/or hydrostatic pressures should be added to the pressure calculations.

Depending on the wall type, drainage along the backside and in front of the wall may be provided by a free draining, clean stone layer separated from surrounding soils by a filtration fabric. Numerous commercially fabricated drainage systems also are available. A system of perforated drain pipes and/or weep holes may be used at the base of the backfill side of the retaining wall in order to collect and remove the water and relieve hydrostatic pressure.

Backfill Criteria: Whitestone recommends that granular soils be used to backfill behind the proposed below-grade walls. The granular backfill materials should consist of clean, relatively well graded sand or gravel with a maximum particle size of three inches and five percent to 15 percent of material finer than a #200 sieve. The material should be free of clay lumps, organics, and deleterious material. Rock fragments and cobbles/boulders greater than three inches should not be used as backfill. Additionally, imported granular soils may be required. Maximum density as provided in the above table should not be exceeded to avoid creating excessive lateral pressure on the walls during compaction operations.
Whitestone recommends that backfill directly behind the wall be compacted with light, hand-held compactors. Heavy compactors and grading equipment should not be allowed to operate within a zone measured at a 45-degree angle from the base of the wall during backfilling to avoid developing excessive temporary or long-term lateral soil pressures.

5.9 SEISMIC AND LIQUEFACTION CONSIDERATIONS

The soils encountered during this investigation are most consistent with a Site Class D defined by the *International Building Code 2018, New Jersey Edition.* Based on the seismic zone and soil profile, liquefaction considerations are not expected to have a substantial impact on design.

5.10 EXCAVATIONS

The soils encountered during this investigation within anticipated excavation depths are, at least, consistent with Type C Soil Conditions as defined by 29 CFR Part 1926 (OSHA) which require a maximum unbraced excavation angle of 1.5:1 (horizontal:vertical). Actual conditions encountered during construction should be evaluated by a competent person (as defined by OSHA) to ensure that safe excavation methods and/or shoring and bracing requirements are implemented.

5.11 SUPPLEMENTAL POST INVESTIGATION SERVICES

Construction Inspection and Monitoring: The owner's geotechnical engineer should perform inspection, testing, and consultation during construction as described in previous sections of this report. Monitoring and testing should also be performed to verify that the existing surface cover materials are properly removed, and suitable materials are used for controlled fill and that they are properly placed and compacted over suitable subgrade soils. The owner's geotechnical engineer should also witness and

document the proofrolling and improvement by compaction efforts of all subgrades prior to foundation, floor slab, and pavement support.

5.12 PRELIMINARY STORMWATER MANAGEMENT AREA EVALUATION

General: Soil profile pits SPP-1 through SPP-10 were performed within accessible areas of the SWM facility location as provided by InSite. The soil profile pits performed within the SWM area were terminated at depths ranging from 10 fbgs to 12 fbgs.

Estimated Seasonal High Groundwater Levels: The methods used in determining the seasonal high groundwater level include evaluating the soil morphology within a test excavation and identifying irregular spots or blotches of different colors or minerals unlike that of the surrounding soil (mottles). A summary of the estimated seasonal high groundwater observations as well as infiltration and permeability test results are included in the following table.

INFILTRATION/PERMEABILITY TEST SUMMARY					
Profile Pit #	**Surface Elevation (feet above msl)**	**ESHGW (fbgs)**	**USDA Classification @ Test**	**Infiltration/Permeability Test**	
				Depth (fbgs)	**Rate (in/hour)**
SPP-1	85.0	NE	Sand	4.0	> 20.0
SPP-2	90.0	NE	Sandy Loam	4.0	2.0
SPP-3	95.0	NE	Sand	4.5	> 20.0
SPP-4	105.0	NE	Sand	4.0	> 20.0
SPP-5	100.0	NE	Sand	4.5	> 20.0
SPP-6	95.0	NE	Sand	4.0	> 20.0
SPP-7	100.0	NE	Loamy Sand	4.0	6.0
SPP-8	90.0	NE	Loamy Sand	4.0	6.0
SPP-9	90.0	NE	Sand	4.0	> 20.0
SPP-10	88.0	10.0	Loamy Sand	4.0	4.0

NE – Not Encountered, NS – Not Surveyed

Soil Infiltration Rates: Falling head infiltration tests were performed within the proposed SWM areas provided by InSite. The test resulted in an infiltration rates ranging from two inches per hour to greater than 20.0 inches per hour. Infiltration test results are provided in Appendix C and soil profile pit logs are included in Appendix A.

SECTION 6.0
General Comments

Supplemental recommendations may be required upon finalization of construction plans or if significant changes are made in the characteristics or location of the proposed structures. Soil bearing conditions should be checked at the appropriate time for consistency with those conditions encountered during Whitestone's geotechnical investigation.

The possibility exists that conditions between borings may differ from those at specific boring locations, and conditions may not be as anticipated by the designers or contractors. In addition, the construction process may alter soil and rock conditions. Therefore, experienced geotechnical personnel should observe and document the construction procedures used and the conditions encountered.

The recommendations presented herein should be utilized by a qualified engineer in preparing the project plans and specifications. The engineer should consider these recommendations as minimum physical standards which may be superseded by local and regional building codes and structural considerations. These recommendations are prepared for the sole use of 3 Ronson, LLC. for the specific project detailed and should not be used by any third party. These recommendations are relevant to the design phase and should not be substituted for construction specifications.

Whitestone assumes that a qualified contractor will be employed to perform the construction work, and that the contractor will be required to exercise care to ensure all excavations are performed in accordance with applicable regulations and good practice. Particular attention should be paid to avoiding damaging or undermining adjacent properties and maintaining slope stability.

Whitestone recommends that the services of the geotechnical engineer be engaged to test and evaluate the soils in the footing excavations prior to concreting in order to determine that the soils will support the bearing capacities. Monitoring and testing also should be performed to verify that suitable materials are used for controlled fills and that they are properly placed and compacted over suitable subgrade soils.

The exploration and analysis of the foundation conditions reported herein are considered sufficient in detail and scope to form a reasonable basis for the foundation design. The recommendations submitted for the proposed construction are based on the available soil information and the preliminary design details furnished by 3 Ronson, LLC. If deviations from the noted subsurface conditions are encountered during construction, they should be brought to the attention of the geotechnical engineer.

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.

FIGURE 1
Test Location Plan

TEXAS ROAD

MACKEYS LANE

B-1
B-1
B-3
B-4
B-5
B-6
B-7
B-8
B-9
B-10
B-11
B-12
B-13
B-14
B-15
B-16
B-17
B-18
B-19
B-20
B-21
B-22
B-23
B-24
B-25
B-26
TP-1
TP-2
TP-3
TP-4
TP-5
TP-6
TP-7
TP-8
TP-9
TP-10

0 120

1 inch = 120 ft.

LEGEND

TP-1 — TEST PIT LOCATION (APPROX.)

B-1 — BORING LOCATION (APPROX.)

SUBJECT PROPERTY BOUNDARY (APPROX.)

REFERENCE

THIS PLAN IS BASED ON A SEPTEMBER 18, 2020 GRADING PLAN PREPARED BY INSITE ENGINEERING, LLC.

WHITESTONE ASSOCIATES, INC.
Environmental & Geotechnical Engineers & Consultants
2430 HIGHWAY 34 BUILDING B, SUITE 101 MANASQUAN, NJ 08736
908.668.7777 WHITESTONEASSOC.COM

DRAWING TITLE: **TEST LOCATION PLAN**

CLIENT: **3 RONSON, LLC**

PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
TEXAS ROAD & GREENWOOD ROAD
TOWNSHIP OF MARLBORO, MONMOUTH COUNTY, NJ

PROJECT #: GS2017348.000	
DESIGNED BY: GR	PROJ. MGR.: KK
DATE: 10/20/20	FIGURE: 1
SCALE: 1" = 120'	

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WHITESTONE ASSOCIATES, INC.

APPENDIX A
Records of Subsurface Exploration

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-1

Page 1 of 1

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 97.84 feet	**Date Started:**	9/2/2020		**Water Depth (feet bgs) | Elevation (feet)**		**Cave-In Depth (feet bgs) | Elevation (feet)**
Termination Depth:	20.0 feet bgs	**Date Completed:**	9/2/2020				
Proposed Location:	Building	**Logged By:**	MH	**During:**	13.0 | 84.84		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	16.0 | 81.84	**At Completion:**	8.0 | 89.84
		Equipment:	CME 45	**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	TOPSOIL		2" Topsoil	
0 - 2	S-1		1 - 3 - 6 - 5	20	9		COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Loose (SM)	
						2.0				
2 - 4	S-2		3 - 4 - 5 - 6	22	9				As Above (SM)	
						4.0				
4 - 6	S-3		9 - 9 - 11 - 12	20	20	5.0			As Above, Medium Dense (SM)	
6 - 8	S-4		9 - 10 - 14 - 14	22	24				As Above (SM)	Clay Lenses
8 - 10	S-5		8 - 8 - 12 - 11	20	20				As Above (SM)	Gray Clay Lenses
						10.0				
						13.0				
13 - 15	S-6		18 - 11 - 17 - 15	22	28				Brown Poorly Graded Sand, Wet, Medium Dense (SP)	
						15.0				
18 - 20	S-7		12 - 11 - 19 - 20	22	30				As Above, Dense (SP)	Gray Clay Lenses
						20.0			Boring Log B-1 Terminated at a Depth of 20.0 Feet Below Ground Surface	Running Sands in Auger @ 20.0 fbgs
						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 Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± 95.20 feet	**Date Started:**	9/3/2020		
Termination Depth:	23.3 feet bgs	**Date Completed:**	9/3/2020		
Proposed Location:	Building	**Logged By:**	MH	**During:** 8.0 | 87.20	
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:** --- | ---	**At Completion:** --- | ---
		Equipment:	CME 45	**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	TOPSOIL		2" Topsoil	
0 - 2	S-1	X	4 - 12 - 11 - 10	20	23		COASTAL PLAIN DEPOSITS		Gray Silty Sand, Moist, Medium Dense (SM)	
2 - 4	S-2	X	10 - 10 - 11 - 11	22	21				As Above, Brown to Gray (SM)	
4 - 6	S-3	X	8 - 9 - 15 - 15	22	24	5.0			As Above (SM)	
6 - 8	S-4	X	11 - 12 - 17 - 16	22	29				As Above (SM)	Clay Lenses
8 - 10	S-5	X	6 - 10 - 8 - 10	22	18				As Above, Wet (SM)	
						10.0				
						13.0				
13 - 15	S-6	X	20 - 35 - 37 - 33	20	72				Brown to Gray Poorly Graded Sand with Silt, Wet, Very Dense (SP-SM)	
						15.0				
						18.0				
18 - 18.4	S-7	X	20 - 50/5"	4	50/5"				Gray Poorly Graded Sand, Wet, Medium Dense (SP)	Running Sands @ 18.0 fbgs
						20.0				Flushing with Water @ 18.0 fbgs to 20.0 fbgs
23 - 23.3	S-8	X	21 - 50/3"	NR	50/3"				No Recovery, Presumed As Above (SP)	
						23.3			Boring Log B-2 Terminated at a Depth of 23.3 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-3

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 111.77 feet	**Date Started:**	9/2/2020		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	9/2/2020				
Proposed Location:	Building	**Logged By:**	MH	**During:**	NE | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	--- | ---	**At Completion:**	20.0 | 91.77
	CAT Head	**Equipment:**	CME 45	**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		3" Topsoil	
0 - 2	S-1	X	1 - 2 - 2 - 3	20	4		COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Loose (SM)	
2 - 4	S-2	X	2 - 3 - 3 - 4	22	6				As Above (SM)	
4 - 6	S-3	X	3 - 4 - 4 - 7	22	8	5.0			As Above, Brown to Gray (SM)	Gray Clay Lenses
6 - 8	S-4	X	5 - 5 - 7 - 9	22	12	6.0			Brown Lean Clay, Moist, Medium Dense (CL)	
8 - 10	S-5	X	7 - 8 - 7 - 4	22	15	8.0			Brown to Gray Silty Sand, Moist, Medium Dense (SM)	Gray Clay Lenses
						10.0				
13 - 15	S-6	X	8 - 10 - 14 - 11	22	24				As Above (SM)	Gray Clay Lenses
						15.0				
						18.0				
18 - 20	S-7	X	11 - 9 - 11 - 9	22	20				Brown to Light Brown Clayey Sand, Moist, Medium Dense (SC)	
						20.0				
						23.0				
23 - 25	S-8	X	16 - 16 - 13 - 13	22	29				Brown to Gray Poorly Graded Sand with Silt, Very Moist, Medium Dense (SP-SM)	Clay Lenses
						25.0				
									Boring Log B-3 Terminated at a Depth of 25.0 Feet Below Ground Surface	

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

Page 1 of 1

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 128.16 feet	**Date Started:**	9/2/2020		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	23.3 feet bgs	**Date Completed:**	9/2/2020				
Proposed Location:	Building	**Logged By:**	MH	**During:**	NE | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	--- | ---	**At Completion:**	17.0 | 111.16
	CAT Head	**Equipment:**	CME 45	**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	PAVEMENT		0.5" Asphalt	
0 - 2	S-1		2 - 2 - 3 - 3	20	5	0.1	COASTAL PLAIN DEPOSITS		Brown Clayey Sand, Moist, Loose (SC)	
2 - 4	S-2		2 - 2 - 4 - 5	20	6	2.0			Brown Poorly Graded Sand with Silt, Moist, Loose (SP-SM)	
4 - 6	S-3		5 - 6 - 7 - 8	22	13	4.0			Brown Poorly Graded Sand, Moist, Medium Dense (SP)	
6 - 8	S-4		6 - 6 - 5 - 5	22	11	5.0			Brown Poorly Graded Sand with Silt, Moist, Medium Dense (SP-SM)	
8 - 10	S-5		3 - 2 - 3 - 4	22	5	6.0			As Above, Loose (SP-SM)	
						10.0				
						13.0				
13 - 15	S-6		24 - 20 - 13 - 30	22	33	15.0			Gray to Brown Silty Sand, Moist, Dense (SM)	
18 - 20	S-7		20 - 16 - 22 - 21	22	38	20.0			As Above, Orangish-Brown (SM)	
23 - 23.3	S-8		50/3"	3	50/3"	23.3			As Above, Gray, Very Dense (SM)	
									Boring Log B-4 Terminated at a Depth of 23.3 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-5

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC
Surface Elevation:	± 129.01 feet	**Date Started:**	9/2/2020
Termination Depth:	25.0 feet bgs	**Date Completed:**	9/2/2020
Proposed Location:	Building	**Logged By:**	MH
Drill / Test Method:	HSA / SPT	**Contractor:**	AD
		Equipment:	CME 45

	Water Depth (feet bgs)	Elevation (feet)	Cave-In Depth (feet bgs)	Elevation (feet)
During:	NE	---		
At Completion:	---	---	**At Completion:**	16.0 / 113.01
24 Hours:	---	---	**24 Hours:**	--- / ---

Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	DEPTH (feet)	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
						0.0			
						0.3	TOPSOIL	3" Topsoil	
0 - 2	S-1		3 - 7 - 13 - 16	20	20		COASTAL PLAIN DEPOSITS	Brown to Orangish-Brown Silty Sand with Gravel, Moist (SM)	
2 - 4	S-2		30 - 31 - 21 - 25	NR	52			No Recovery, Presumed As Above, Very Dense (SM)	
4 - 6	S-3		25 - 21 - 30 - 29	20	51	5.0		As Above (SM)	More Gravel Content
6 - 8	S-4		32 - 19 - 14 - 14	20	33			As Above, Brown to Gray, Dense (SM)	Fine Sand, Less Gravel
8 - 8.3	S-5		50/3"	2	50/3"			Low Recovery, Presumed As Above, Very Dense (SM)	Gravel in Spoon Tip
						10.0			
13 - 13.3	S-6		50/3"	3	50/3"			As Above (SM)	
						15.0			
18 - 18.3	S-7		50/3"		50/3"			No Recovery, Presumed As Above (SM)	
						20.0			
23 - 25	S-8		16 - 23 - 30 - 31		53			As Above (SM)	
						25.0		Boring Log B-5 Terminated at a Depth of 25.0 Feet Below Ground Surface	

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

Page 1 of 1

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 102.6 feet	**Date Started:**	9/8/2020		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	9/8/2020				
Proposed Location:	Building Pad	**Logged By:**	RL	**During:**	NE | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	--- | ---	**At Completion:**	14.0 | ---
		Equipment:	CME 45	**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		3 - 3 - 3 - 3	12	6		COASTAL PLAIN DEPOSITS		Light Brown Poorly Graded Sand, Moist, Loose (SP)	
2 - 4	S-2		3 - 3 - 3 - 3	12	6				As Above (SP)	
4 - 6	S-3		3 - 3 - 4 - 4	18	7	5.0			As Above, Dark Gray (SP)	
6 - 8	S-4		3 - 4 - 3 - 3	24	7				As Above, Gray (SP)	
8 - 10	S-5		3 - 4 - 5 - 5	24	9				As Above, Light Brown (SP)	
						10.0				
13 - 15	S-6		20 - 8 - 14 - 14	24	22				As Above (SP)	
						15.0				
18 - 20	S-7		7 - 10 - 14 - 14	24	24				As Above (SP)	
						20.0				
23 - 25	S-8		12 - 12 - 18 - 21	24	30				As Above, Wet, Dense (SP)	
						25.0				
									Boring Log B-6 Terminated at a Depth of 25.0 Feet Below Ground Surface	

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 Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC
Surface Elevation:	± 85.5 feet	**Date Started:**	9/8/2020
Termination Depth:	18.3 feet bgs	**Date Completed:**	9/8/2020
Proposed Location:	Building Pad	**Logged By:**	RL
Drill / Test Method:	HSA / SPT	**Contractor:**	AD
		Equipment:	CME 45

	Water Depth (feet bgs)	Elevation (feet)	Cave-In Depth (feet bgs)	Elevation (feet)
During:	10.0	---		
At Completion:	---	---	**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				No Topsoil
0 - 2	S-1		2 - 5 - 6 - 7	18	11		COASTAL PLAIN DEPOSITS		Orangish-Brown Poorly Graded Sand, Moist, Medium Dense (SP)	
2 - 4	S-2		3 - 5 - 9 - 6	12	14				As Above with Gravel (SP)	
4 - 6	S-3		3 - 4 - 4 - 7	12	8	5.0			As Above, Loose (SP)	No Gravel After 4.0 fbgs
6 - 8	S-4		4 - 4 - 7 - 8	24	11				As Above, Medium Dense (SP)	
8 - 10	S-5		5 - 5 - 5 - 4	18	10				As Above, Wet (SP)	
						10.0				
13 - 15	S-6		23 - 16 - 20 - 17	18	36				As Above, Dark Gray to Brown (SP)	2' Running Sands
						15.0				
18 - 18.3	S-7		50/2"	2	50/2"	18.3			As Above, Very Dense (SP)	
									Boring Log B-7 Terminated at a Depth of 18.3 Feet Below Ground Surface Due to Running Sands	Running Sands @ 18.0 fbgs to 23.0 fbgs
						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-8

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± 101.9 feet	**Date Started:**	9/8/2020		
Termination Depth:	25.0 feet bgs	**Date Completed:**	9/8/2020		
Proposed Location:	Building Pad	**Logged By:**	RL	**During:** NE | ---	
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:** --- | ---	**At Completion:** 9.0 | ---
		Equipment:	CME 45	**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		2 - 1 - 3 - 3	12	4		COASTAL PLAIN DEPOSITS	Brown Poorly Graded Sand, Moist, Loose (SP)	
2 - 4	S-2		3 - 3 - 5 - 5	12	8			Brown Silty Sand, Moist, Loose (SM)	
4 - 6	S-3		4 - 4 - 4 - 5	12	8	5.0		As Above (SM)	
6 - 8	S-4		6 - 7 - 7 - 9	18	14			As Above, Medium Dense (SM)	
8 - 10	S-5		7 - 11 - 11 - 9	18	22	8.0		Light Brown Poorly Graded Sand, Moist, Medium Dense (SP)	
						10.0			
13 - 15	S-6		6 - 9 - 12 - 16	18	21			As Above (SP)	
						15.0			
18 - 20	S-7		18 - 15 - 50/3"	12	65/9"			As Above (SP)	
						20.0			
23 - 25	S-8		20 - 10 - 15 - 20	18	25			As Above, Wet (SP)	
						25.0		Boring Log B-8 Terminated at a Depth of 25.0 Feet Below Ground Surface	

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

Page 1 of 1

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 100.7 feet	**Date Started:**	9/8/2020		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	9/8/2020				
Proposed Location:	Building Pad	**Logged By:**	RL	**During:**	NE | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	--- | ---	**At Completion:**	7.0 | ---
		Equipment:	CME 45	**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		2 - 1 - 4 - 4	24	5		COASTAL PLAIN DEPOSITS		Brown Poorly Graded Sand, Moist, Loose (SP)	
2 - 4	S-2		3 - 4 - 5 - 5	24	9				As Above (SP)	
4 - 6	S-3		4 - 5 - 6 - 7	12	11	5.0			As Above, Medium Dense (SP)	
6 - 8	S-4		5 - 8 - 11 - 10	12	19				As Above (SP)	
8 - 10	S-5		5 - 11 - 13 - 20	24	24	8.0			Dark Brown Lean Clay, Moist, Very Stiff (CL)	Qu = 2.5 tsf
						10.0				
						13.0				
13 - 15	S-6		5 - 5 - 10 - 6	24	15				Orangish-Brown Poorly Graded Sand, Moist, Medium Dense (SP)	
						15.0				
18 - 20	S-7		5 - 3 - 5 - 3	24	8				As Above, Wet (SP)	
						20.0				
23 - 25	S-8		4 - 7 - 8 - 13	24	15				As Above (SP)	
						25.0			Boring Log B-9 Terminated at a Depth of 25.0 Feet Below Ground Surface	

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 Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC
Surface Elevation:	± 124.15 feet	**Date Started:**	9/3/2020
Termination Depth:	24.4 feet bgs	**Date Completed:**	9/3/2020
Proposed Location:	Building	**Logged By:**	MH
Drill / Test Method:	HSA / SPT	**Contractor:**	AD
	CAT Head	**Equipment:**	CME 45

Water Depth | Elevation (feet bgs) | (feet)			Cave-In Depth | Elevation (feet bgs) | (feet)	
During:	NE	---		
At Completion:	---	---	**At Completion:**	18.0 | 106.15
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	TOPSOIL		2" Topsoil	
0 - 2	S-1	X	3 - 4 - 6 - 5	22	10		COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Medium Dense (SM)	
2 - 4	S-2	X	7 - 6 - 6 - 7	22	12				As Above (SM)	
4 - 6	S-3	X	6 - 6 - 6 - 8	22	12	5.0			As Above, Brown to Orangish-Brown (SM)	
6 - 8	S-4	X	6 - 11 - 12 - 17	22	23	6.0			Brown to Light Brown Poorly Graded Sand with Silt, Moist, Medium Dense (SP-SM)	
8 - 10	S-5	X	10 - 10 - 10 - 21	22	20	8.0			Brown to Gray Silty Sand, Moist, Medium Dense (SM)	
13 - 13.3	S-6	X	50/4"	4	50/4"	10.0			As Above, Very Dense (SM)	
						15.0				
						18.0				
18 - 20	S-7	X	13 - 9 - 13 - 16	20	22	20.0			Gray Sandy Lean Clay, Moist, Very Stiff (CL)	Qu = 2.0 tsf
						23.0				
23 - 24.4	S-8	X	21 - 45 - 50/5"	16	95/11"	24.4			Brown to Gray Silty Sand, Moist, Very Dense (SM)	
						25.0			Boring Log B-10 Terminated at a Depth of 24.4 Feet Below Ground Surface	

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 Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC
Surface Elevation:	± 120.48 feet	**Date Started:**	9/3/2020
Termination Depth:	23.2 feet bgs	**Date Completed:**	9/3/2020
Proposed Location:	Building	**Logged By:**	MH
Drill / Test Method:	HSA / SPT	**Contractor:**	AD
	CAT Head	**Equipment:**	CME 45

Water Depth | Elevation (feet bgs) | (feet)		Cave-In Depth | Elevation (feet bgs) | (feet)	
During:	NE | ---		
At Completion:	--- | ---	**At Completion:**	20.0 | 100.48
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	TOPSOIL		2" Topsoil	
0 - 2	S-1	X	4 - 13 - 12 - 12	20	25		COASTAL PLAIN DEPOSITS		Brown Sandy Lean Clay, Moist, Very Stiff (CL)	Qu = 2.5 tsf
						2.0				
2 - 4	S-2	X	6 - 9 - 13 - 20	16	22				Brown Silty Sand with Gravel, Moist, Medium Dense (SM)	
4 - 4.4	S-3	X	50/5"	4	50/5"				Low Recovery, Presumed As Above (SM)	Gravel in Spoon Tip
						5.0				
6 - 6.3	S-4	X	50/3"	4	50/3"				No Recovery, Presumed As Above (SM)	Silty Sand in Cuttings
						8.0				
8 - 9.4	S-5	X	40 - 21 - 50/5"	14	71/11"				Brown to Orangish-Brown Poorly Graded Sand with Silt, Moist, Very Dense (SP-SM)	Clay Lenses
						10.0				
13 - 15	S-6	X	15 - 14 - 21 - 49	20	35				As Above, Dense (SP-SM)	Clay Lenses
						15.0				
						18.0				
18 - 19.7	S-7	X	13 - 25 - 35 - 50/3"	18	60				Brown to Gray Silty Sand, Moist, Very Dense (SM)	
						20.0				
									As Above (SM)	
23 - 23.2	S-8	X	50/2"	2	50/2"	23.2			Boring Log B-11 Terminated at a Depth of 23.2 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-12

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC
Surface Elevation:	± 106.33 feet	**Date Started:**	9/2/2020
Termination Depth:	25.0 feet bgs	**Date Completed:**	9/2/2020
Proposed Location:	Building	**Logged By:**	MH
Drill / Test Method:	HSA / SPT	**Contractor:**	AD
	CAT Head	**Equipment:**	CME 45

	Water Depth (feet bgs)	Elevation (feet)	Cave-In Depth (feet bgs)	Elevation (feet)
During:	NE	---		
At Completion:	NE	---	15.0	91.33
24 Hours:	---	---	---	---

Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	DEPTH (feet)	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
						0.0			
						0.2	TOPSOIL	2" Topsoil	
0 - 2	S-1		2 - 3 - 5 - 4	2	8		COASTAL PLAIN DEPOSITS	Low Recovery, Presumed As Below, Loose (SM)	Root in Spoon Tip
2 - 4	S-2		4 - 6 - 5 - 8	16	11			Brown Silty Sand, Moist, Medium Dense (SM)	
4 - 6	S-3		2 - 6 - 5 - 8	22	11	5.0		As Above (SM)	Gray Clay Lenses
6 - 8	S-4		7 - 7 - 6 - 10	22	13			As Above, Light Brown to Gray (SM)	More Gray Clay Lenses
8 - 10	S-5		7 - 9 - 12 - 16	22	21			As Above (SM)	
						10.0			
13 - 13.7	S-6		40 - 50/3"	8	50/3"			As Above, Gray, Very Dense (SM)	
						15.0			
						18.0			
18 - 20	S-7		16 - 12 - 13 - 14	22	25			Brown to Light Brown Poorly Graded Sand with Silt, Moist, Medium Dense (SP-SM)	Gray Clay Lenses
						20.0			
						23.0			
23 - 25	S-8		10 - 10 - 13 - 17		23			Brown to Gray Poorly Graded Sand, Wet, Medium Dense (SP)	
						25.0			
								Boring Log B-12 Terminated at a Depth of 25.0 Feet Below Ground Surface	

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-13

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 100.26 feet	**Date Started:**	9/4/2020		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	20.0 feet bgs	**Date Completed:**	9/4/2020				
Proposed Location:	Building	**Logged By:**	MH	**During:**	NE | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	--- | ---	**At Completion:**	15.0 | 85.26
	CAT Head	**Equipment:**	CME 45	**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		3" Topsoil	
0 - 2	S-1	X	1 - 2 - 2 - 2	20	4		COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Loose (SM)	
2 - 4	S-2	X	4 - 4 - 4 - 4	20	8				As Above, Brown to Gray (SM)	
4 - 6	S-3	X	4 - 5 - 7 - 8	22	12	5.0			As Above, Light Brown, Medium Dense (SM)	
6 - 8	S-4	X	6 - 9 - 7 - 8	22	16				As Above (SM)	Coarser Sand Clay Lenses
						8.0				
8 - 10	S-5	X	6 - 5 - 7 - 8	22	12				Gray to Brown Poorly Graded Sand with Silt, Moist, Medium Dense (SP-SM)	
						10.0				
						13.0				
13 - 15	S-6	X	39 - 20 - 17 - 23	22	37				Brown to Gray Silty Sand, Moist, Dense (SM)	
						15.0				
						18.0				
18 - 20	S-7	X	5 - 10 - 18 - 19	22	28				Brown Poorly Graded Sand, Wet, Dense (SP)	Running Sands @ 18.0 fbgs to 23.0 fbgs
						20.0			Boring Log B-13 Terminated at a Depth of 20.0 Feet Below Ground Surface Due to Running Sands	
						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-14

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC
Surface Elevation:	± 92.97 feet	**Date Started:**	9/4/2020
Termination Depth:	20.0 feet bgs	**Date Completed:**	9/4/2020
Proposed Location:	Building	**Logged By:**	MH
Drill / Test Method:	HSA / SPT	**Contractor:**	AD
		Equipment:	CME 45

	Water Depth (feet bgs)	Elevation (feet)	Cave-In Depth (feet bgs)	Elevation (feet)
During:	13.0	79.97		
At Completion:	15.0	77.97	**At Completion:**	---	---
24 Hours:	---	---	**24 Hours:**	---	---

Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	DEPTH (feet)	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
						0.0	TOPSOIL	1" Topsoil	
0 - 2	S-1		1 - 2 - 2 - 2	12	4	0.1	COASTAL PLAIN DEPOSITS	Brown Silty Sand, Moist, Loose (SM)	
2 - 4	S-2		2 - 2 - 3 - 2	18	5			As Above, Light Brown (SM)	
4 - 6	S-3		3 - 4 - 5 - 3	12	9	5.0		As Above, Gravel (SM)	Gravel in Spoon Tip
6 - 8	S-4		2 - 2 - 3 - 4	20	5			As Above (SM)	No Gravel
8 - 10	S-5		3 - 3 - 3 - 4	22	6	8.0		Brown to Gray Poorly Graded Sand with Silt, Moist, Loose (SP-SM)	
						10.0			
13 - 15	S-6		22 - 13 - 17 - 14	22	30	15.0		As Above, Wet, Dense (SP-SM)	
						18.0			
18 - 20	S-7		10 - 19 - 21 - 34	22	40	20.0		Gray Poorly Graded Sand, Wet, Dense (SP)	Running Sands @ 18.0 fbgs to 23.0 fbgs
						25.0		Boring Log B-14 Terminated at a Depth of 20.0 Feet Below Ground Surface Due to Running Sands	

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-15

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± 99.37 feet	**Date Started:**	9/4/2020		
Termination Depth:	23.3 feet bgs	**Date Completed:**	9/4/2020		
Proposed Location:	Building	**Logged By:**	MH	**During:** 18.0 | 81.37	
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:** 19.0 | 80.37	**At Completion:** 19.0 | 80.37
	CAT Head	**Equipment:**	CME 45	**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		1" Topsoil	
0 - 2	S-1		1 - 2 - 1 - 2	18	3	0.1	COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Loose (SM)	
2 - 4	S-2		1 - 2 - 3 - 3	20	5				As Above (SM)	
4 - 6	S-3		3 - 2 - 4 - 5	20	6	5.0			As Above (SM)	
6 - 8	S-4		3 - 4 - 5 - 5	22	9				As Above, Light Brown (SM)	
8 - 10	S-5		4 - 5 - 9 - 9	22	14	8.0			Brown to Light Gray Poorly Graded Sand with Silt, Moist, Medium Dense (SP-SM)	
						10.0				
						13.0				
13 - 15	S-6		20 - 21 - 34 - 35	20	55				Brown to Gray Silty Sand, Moist, Very Dense (SM)	
						15.0				
						18.0				
18 - 20	S-7		31 - 20 - 30 - 47	20	50				Brown to Gray Poorly Graded Sand, Wet, Dense (SP)	
						20.0				
23 - 23.3	S-8		50/3"	3	50/3"				As Above (SP)	
						23.3			Boring Log B-15 Terminated at a Depth of 23.3 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-16

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 93.31 feet	**Date Started:**	9/4/2020		**Water Depth (feet bgs) | Elevation (feet)**		**Cave-In Depth (feet bgs) | Elevation (feet)**
Termination Depth:	19.7 feet bgs	**Date Completed:**	9/4/2020				
Proposed Location:	Building	**Logged By:**	MH	**During:**	13.0 | 80.31		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	--- | ---	**At Completion:**	--- | ---
		Equipment:	CME 45	**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	2" Topsoil	
0 - 2	S-1	X	1 - 2 - 2 - 3	18	4	0.2	COASTAL PLAIN DEPOSITS	Brown Silty Sand, Moist, Loose (SM)	
2 - 4	S-2	X	2 - 2 - 2 - 3	20	4			As Above (SM)	
4 - 6	S-3	X	3 - 4 - 4 - 7	20	8	5.0		As Above, Light Brown (SM)	
6 - 8	S-4	X	3 - 4 - 6 - 10	22	10			As Above, Medium Dense (SM)	
8 - 10	S-5	X	5 - 6 - 9 - 13	22	15	8.0		Brown to Gray Poorly Graded Sand with Silt, Moist, Medium Dense (SP-SM)	
						10.0			
13 - 13.9	S-6	X	21 - 50/5"	8	50/5"			As Above, Wet, Very Dense (SP-SM)	
						15.0			
						18.0			
18 - 19.7	S-7	X	13 - 28 - 40 - 50/3"	20	68			Gray Poorly Graded Sand, Wet (SP)	Running Sands @ 18.0 fbgs to 23.0 fbgs
						19.7		Boring Log B-16 Terminated at a Depth of 19.7 Feet Below Ground Surface Due to Running Sands	
						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-17

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 97.50 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs) | Elevation (feet)**		**Cave-In Depth (feet bgs) | Elevation (feet)**
Termination Depth:	23.3 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	Building	**Logged By:**	MH	**During:**	13.0 | 84.50		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	14.0 | 83.50	**At Completion:**	10.0 | 87.50
	CAT Head	**Equipment:**	CME 45	**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	TOPSOIL		2" Topsoil	
0 - 2	S-1	X	1 - 2 - 2 - 3	20	4		COASTAL PLAIN DEPOSITS		Brown to Gray Silty Sand, Moist, Loose (SM)	
2 - 4	S-2	X	2 - 2 - 4 - 5	22	6				As Above (SM)	
4 - 6	S-3	X	5 - 3 - 4 - 8	22	7	5.0			As Above (SM)	Silt Lenses
						6.0				
6 - 8	S-4	X	7 - 8 - 10 - 13	22	18				Brown to Light Brown Poorly Graded Sand with Silt, Moist, Medium Dense (SP-SM)	
8 - 10	S-5	X	10 - 7 - 7 - 11	22	14				As Above (SP-SM)	Clay Lenses
						10.0				
13 - 15	S-6	X	13 - 15 - 17 - 13	22	32				As Above, Orangish-Brown to Gray, Wet (SP-SM)	
						15.0				
						18.0				
18 - 20	S-7	X	10 - 12 - 10 - 19	20	22				Orangish-Brown Poorly Graded Sand, Wet, Medium Dense (SP)	
						20.0				Running Sands @ 20.0 fbgs to 23.0 fbgs
23 - 23.3	S-8	X	50/3"	3	50/3"				As Above, Very Dense (SP)	
						23.3			Boring Log B-17 Terminated at a Depth of 23.3 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-18

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± 107.19 feet	**Date Started:**	9/1/2020		
Termination Depth:	23.7 feet bgs	**Date Completed:**	9/1/2020		
Proposed Location:	Building	**Logged By:**	MH	**During:** NE | ---	
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:** NE | ---	**At Completion:** --- | ---
	CAT Head	**Equipment:**	CME 45	**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	PAVEMENT		5" Gravel Subbase	
0 - 2	S-1		6 - 8 - 10 - 16	20	18	1.0	FILL		Dark Brown to Black Silty Sand, Debris, Moist (FILL)	Debris: Trace Brick Slight Odor
2 - 4	S-2		13 - 15 - 12 - 11	20	27		COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Medium Dense (SM)	
4 - 6	S-3		11 - 11 - 10 - 8	NR	21	5.0			As Above, Light Brown (SM)	
6 - 8	S-4		8 - 10 - 9 - 8	14	19				No Recovery, Presumed As Above (SM)	
8 - 10	S-5		13 - 13 - 14 - 20	22	27	8.0			As Above, Gravel (SM)	
						10.0			Gray Poorly Graded Sand with Silt, Moist, Medium Dense (SP-SM)	
13 - 15	S-6		21 - 23 - 30 - 43	22	53	15.0			As Above, Very Dense (SP-SM)	
						18.0				
18 - 20	S-7		27 - 23 - 21 - 20	22	44	20.0			Light Brown to Gray Poorly Graded Sand, Moist, Dense (SP)	
23 - 23.7	S-8		35 - 50/3"	8	50/3"	23.7			As Above, Wet, Very Dense (SP)	
						25.0			Boring Log B-18 Terminated at a Depth of 23.7 Feet Below Ground Surface	

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-19

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 99.00 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs) | Elevation (feet)**		**Cave-In Depth (feet bgs) | Elevation (feet)**
Termination Depth:	19.3 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	Building	**Logged By:**	MH	**During:**	13.0 | 86.00		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	13.0 | 86.00	**At Completion:**	8.0 | 91.00
		Equipment:	CME 45	**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	PAVEMENT		6" Gravel Subbase	
0 - 2	S-1	X	2 - 3 - 5 - 5	18	8	1.0	FILL			
							COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Loose (SM)	
2 - 4	S-2	X	4 - 5 - 7 - 9	20	12				As Above, Light Brown, Medium Dense (SM)	
4 - 6	S-3	X	5 - 5 - 7 - 9	20	12	5.0			As Above (SM)	
						6.0				
6 - 8	S-4	X	8 - 12 - 19 - 24	22	31				Brown to Gray Poorly Graded Sand with Silt, Moist, Dense (SP-SM)	
8 - 10	S-5	X	13 - 15 - 15 - 20	22	30				As Above (SP-SM)	
						10.0				
						13.0				
13 - 15	S-6	X	4 - 7 - 20 - 39	20	27				Brown to Gray Poorly Graded Sand, Wet, Medium Dense (SP)	
						15.0				
18 - 19.3	S-7	X	10 - 20 - 50/3"	12	70/9"				As Above, Very Dense (SP)	
						19.3				
						20.0			Boring Log B-19 Terminated at a Depth of 19.3 Feet Below Ground Surface Due to Running Sands	Running Sands 3' Into Augers
						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-20

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC
Surface Elevation:	± 88.34 feet	**Date Started:**	9/3/2020
Termination Depth:	24.3 feet bgs	**Date Completed:**	9/3/2020
Proposed Location:	Building	**Logged By:**	MH
Drill / Test Method:	HSA / SPT	**Contractor:**	AD
	CAT Head	**Equipment:**	CME 45

Water Depth | Elevation (feet bgs) | (feet)		Cave-In Depth | Elevation (feet bgs) | (feet)	
During:	4.0P | 84.34		
At Completion:	--- | ---	**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				
0 - 2	S-1		4 - 17 - 16 - 13	20	33	1.0	FILL		Brown Sand, Debris, Moist (FILL)	Debris: Trace Concrete
						2.0	COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Dense (SM)	
2 - 4	S-2		16 - 15 - 19 - 20	20	34				Gray Poorly Graded Sand, Moist, Dense (SP)	
4 - 6	S-3		14 - 30 - 31 - 50/5"	20	61	5.0			As Above, Wet, Very Dense (SP)	Running Sands @ 4.0 fbgs to 8.0 fbgs
6 - 6.3	S-4		50/3"	3	50/3"				As Above (SP)	Pumping Water Into Augers Remainder of Boring
						8.0				
8 - 10	S-5		6 - 15 - 17 - 31	20	32				Black Lean Clay, Moist, Very Stiff (CL)	Qu = 2.5 tsf
						10.0				
						13.0				
13 - 15	S-6		5 - 12 - 16 - 21	22	28				Dark Gray Silty, Sand, Wet, Medium Dense (SM)	
						15.0				
18 - 20	S-7		17 - 21 - 29 - 37	20	50	20.0			As Above, Very Dense (SM)	
						23.0				
23 - 24.3	S-8		10 - 35 - 50/3"	12	85/9"				Gray Poorly Graded Sand, Wet, Very Dense (SP)	
						24.3				
						25.0			Boring Log B-20 Terminated at a Depth of 24.3 Feet Below Ground Surface	

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-21

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± 93.62 feet	**Date Started:**	9/3/2020		
Termination Depth:	25.0 feet bgs	**Date Completed:**	9/3/2020		
Proposed Location:	Building	**Logged By:**	MH	**During:** 10.0 | 83.62	
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:** --- | ---	**At Completion:** --- | ---
	CAT Head	**Equipment:**	CME 45	**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		8 - 9 - 8 - 9	20	17		COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Medium Dense (SM)	
2 - 4	S-2		6 - 8 - 9 - 10	22	17				As Above, Light Brown (SM)	
4 - 6	S-3		4 - 7 - 11 - 13	22	18	5.0			As Above (SM)	
6 - 8	S-4		9 - 22 - 32 - 49	22	54	6.0			Brown to Gray Poorly Graded Sand, Very Moist, Very Dense (SP)	
8 - 8.4	S-5		50/5"	4	50/5"				As Above, Wet (SP)	
						10.0				
13 - 15	S-6		5 - 10 - 20 - 25	20	30				As Above, Dense (SP)	Pumping Water Into Boring
						15.0				
18 - 20	S-7		4 - 7 - 11 - 14	NR	18				No Recovery, Presumed As Above, Medium Dense (SP)	
						20.0				
						23.0				
23 - 25	S-8		4 - 10 - 22 - 29	18	32				Dark Gray to Black Sandy Lean Clay, Wet, Hard (CL)	Qu = 4.0 tsf
						25.0			Boring Log B-21 Terminated at a Depth of 25.0 Feet Below Ground Surface	

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-22

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± 101.43 feet	**Date Started:**	9/1/2020		
Termination Depth:	19.4 feet bgs	**Date Completed:**	9/1/2020		
Proposed Location:	Building	**Logged By:**	MH	**During:** 18.0 | 83.43	
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:** 13.0 | 88.43	**At Completion:** 10.0 | 91.43
	CAT Head	**Equipment:**	CME 45	**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	PAVEMENT		6" Gravel Subbase	Debris: Wood, Brick, Trace Cinders Hard Augering @ 1.0 fbgs to 3.0 fbgs Through Fill Material
0 - 2	S-1	X	12 - 25 - 31 - 25	18	56		FILL		Dark Brown to Black Sand, Debris, Moist (FILL)	
2 - 4	S-2	X	22 - 29 - 40 - 40	16	69	3.0			As Above (FILL)	
							COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Very Dense (SM)	
4 - 6	S-3	X	18 - 14 - 14 - 12	20	28	5.0			As Above, Medium Dense (SM)	
6 - 8	S-4	X	8 - 9 - 12 - 14	22	21				As Above (SM)	
8 - 10	S-5	X	10 - 21 - 28 - 41	22	49				As Above, Dense (SM)	
						10.0				
						13.0				
13 - 15	S-6	X	30 - 23 - 29 - 27	22	52				Gray Poorly Graded Sand with Silt, Moist, Very Dense (SP-SM)	
						15.0				
						18.0				
18 - 19.4	S-7	X	11 - 13 - 50/5"	15	73/11"				Brown Poorly Graded Sand with Gravel, Wet, Very Dense (SP)	
						19.4				
						20.0			Boring Log B-22 Terminated at a Depth of 19.4 Feet Below Ground Surface Due to Running Sands	Running Sands @ 20.0 fbgs to 23.0 fbgs
						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-23

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± 100.00 feet	**Date Started:**	9/1/2020		
Termination Depth:	10.0 feet bgs	**Date Completed:**	9/1/2020		
Proposed Location:	Parking	**Logged By:**	MH	**During:** 2.0P | 98.00	
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:** NE | ---	**At Completion:** --- | ---
	CAT Head	**Equipment:**	CME 45	**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	PAVEMENT		6" Gravel Subbase	
0 - 2	S-1		6 - 10 - 15 - 16	20	25		FILL		Black Silty Sand, Debris, Moist (FILL)	Debris: Concrete, Glass Strong Odor
2 - 4	S-2		6 - 11 - 16 - 20	18	27	4.0			As Above, Wet (FILL)	Debris: Glass, Trace Brick
4 - 6	S-3		6 - 5 - 6 - 8	20	11	5.0	COASTAL PLAIN DEPOSITS		Brown to Gray Silty Sand, Moist, Medium Dense (SM)	
6 - 8	S-4		6 - 6 - 6 - 9	20	12				As Above (SM)	
8 - 10	S-5		8 - 12 - 14 - 16	22	26				As Above (SM)	Silt Lenses
						10.0			Boring Log B-23 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-24

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC
Surface Elevation:	± 92.00 feet	**Date Started:**	9/4/2020
Termination Depth:	9.40 feet bgs	**Date Completed:**	9/4/2020
Proposed Location:	Parking	**Logged By:**	MH
Drill / Test Method:	HSA / SPT	**Contractor:**	AD
		Equipment:	CME 45

	Water Depth (feet bgs)	Elevation (feet)	Cave-In Depth (feet bgs)	Elevation (feet)
During:	8.0	84.00		
At Completion:	8.0	84.00	**At Completion:**	--- / ---
24 Hours:	---	---	**24 Hours:**	--- / ---

Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	DEPTH (feet)	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
						0.0			
0 - 2	S-1	X	4 - 7 - 10 - 9	20	17		COASTAL PLAIN DEPOSITS	Brown Silty Sand, Moist, Medium Dense (SM)	Trace Gravel
2 - 4	S-2	X	9 - 10 - 13 - 12	22	23			As Above, Light Brown (SM)	
						4.0			
4 - 6	S-3	X	6 - 11 - 10 - 12	22	21	5.0		Brown to Gray Poorly Graded Sand with Silt, Very Moist, Medium Dense (SP-SM)	
6 - 8	S-4	X	4 - 3 - 5 - 7	22	8			As Above, Wet, Loose (SP-SM)	
						8.0 ▼▽			
8 - 9.4	S-5	X	8 - 9 - 50/5"		59/11"			Brown Poorly Graded Sand, Wet, Very Dense (SP)	
						9.4			
						10.0		Boring Log B-24 Terminated at a Depth of 9.4 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-25

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± NS feet	**Date Started:**	9/8/2020	**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**	
Termination Depth:	10.0 feet bgs	**Date Completed:**	9/8/2020				
Proposed Location:	Pavement	**Logged By:**	MH	**During:**	NE | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:**	NE | ---	**At Completion:**	8.0 | ---
		Equipment:	CME 45	**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		3 - 3 - 3 - 3	12	6		COASTAL PLAIN DEPOSITS		Brown Poorly Graded Sand, Moist, Loose (SP)	
2 - 4	S-2		3 - 4 - 5 - 5	12	9				As Above (SP)	
4 - 6	S-3		6 - 6 - 9 - 5	18	15	5.0			As Above, Medium Dense (SP)	
6 - 8	S-4		11 - 15 - 29 - 30	18	44				As Above, Dense (SP)	
8 - 10	S-5		19 - 26 - 36 - 33	18	62	10.0			As Above, Very Dense (SP)	
									Boring Log B-25 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-26

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± NS feet	**Date Started:**	9/8/2020		
Termination Depth:	10.0 feet bgs	**Date Completed:**	9/8/2020		
Proposed Location:	Pavement	**Logged By:**	MH	**During:** NE | ---	
Drill / Test Method:	HSA / SPT	**Contractor:**	AD	**At Completion:** NE | ---	**At Completion:** 8.0 | ---
		Equipment:	CME 45	**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		2 - 3 - 4 - 5		7		COASTAL PLAIN DEPOSITS		Brown Poorly Graded Sand, Moist, Loose (SP)	
2 - 4	S-2		5 - 5 - 6 - 5		11				As Above (SP)	
4 - 6	S-3		4 - 4 - 5 - 6		9	5.0			As Above (SP)	
6 - 8	S-4		6 - 6 - 10 - 13		16				As Above (SP)	
8 - 10	S-5		8 - 11 - 11 - 13		22	10.0			As Above (SP)	
									Boring Log B-26 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

Soil Pit No.: SPP-1

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 85.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	12.0 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	NE	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:** NE / ---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				TOPSOIL		6" Topsoil	
			0.5				
				COASTAL PLAIN DEPOSITS		Yellowish-Brown (10YR 5/6) LOAMY SAND; 5% to 10% Gravel; Single Grain Structure; Moist; Firm; Few Roots; No Mottling; Clear Boundary	
			4.0				
						Pale Brown (7.5YR 7/3) and Brownish-Yellow (10YR 6/8) SAND; 5% Gravel; Single Grain Structure; Moist; Firm; No Roots; No Mottling	
			5.0				
			10.0				
			12.0				
						Test Pit Log TP-1 Terminated at a Depth of 12.0 Feet Below Ground Surface	
			15.0				

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

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Soil Pit No.: SPP-2

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 90.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	12.0 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	NE	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:** NE / ---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				TOPSOIL		6" Topsoil	
			0.5				
				COASTAL PLAIN DEPOSITS		Pale Brown (2.5YR 7/4) SANDY LOAM; 5% Gravel; Single Grain Structure; Moist; Firm; No Roots; No Mottling; Clear Boundary	
			2.0				
			5.0			Pale Brown (2.5Y 7/3) SAND; No Coarse Fragments; Single Grain Structure; Moist; Firm; No Roots; No Mottling; Clear Boundary	
			10.0				
			12.0				
						Test Pit Log TP-2 Terminated at a Depth of 12.0 Feet Below Ground Surface	
			15.0				

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

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Soil Pit No.: SPP-3

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 95.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	12.0 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	NE	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:** NE / ---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				TOPSOIL		6" Topsoil	
			0.5	COASTAL PLAIN DEPOSITS		Pale Brown (2.5Y 7/3) SAND; 5% Gravel; Single Grain Structure; Moist; Firm; Few Roots; No Mottling; Clear Boundary	
			3.0			Light Brownish-Gray (2.5Y 6/2) CLAY LOAM; No Coarse Fragments; Subangular Blocky Structure; Moist; Firm/Dense; No Roots; No Mottling; Clear Boundary	
			4.5			Pale Brown (2.5Y 7/3) SAND; No Coarse Fragments; Single Grain Structure; Moist; Firm; No Roots; No Mottling; Clear Boundary	
			5.0				
			10.0				
			12.0				
						Test Pit Log TP-3 Terminated at a Depth of 12.0 Feet Below Ground Surface	
			15.0				

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

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Soil Pit No.: SPP-4

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 105.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	12.0 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	NE	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:** NE / ---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				TOPSOIL		6" Topsoil	
			0.5	COASTAL PLAIN DEPOSITS		Pale Brown (2.5Y 7/3) SAND; 5% Gravel; Single Grain Structure; Moist; Firm; Few Roots; No Mottling; Clear Boundary	
			2.0			As Above, Brownish-Yellow (10YR 5/6); No Coarse Fragments	
			4.0			Pale Brown (2.5Y 7/3) and Brownish-Yellow (10YR 6/8) SAND; No Coarse Fragments; Single Grain Structure; Moist; Firm; No Roots; No Mottling; Clear Boundary	
			5.0				
			10.0				
			12.0				
						Test Pit Log TP-4 Terminated at a Depth of 12.0 Feet Below Ground Surface	
			15.0				

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

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Soil Pit No.: SPP-5

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 100.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	12.0 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	NE	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:** NE / ---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				TOPSOIL		6" Topsoil	
			0.5	COASTAL PLAIN DEPOSITS		Pale Brown (2.5Y 7/3) SAND; 5% Gravel; Single Grain Structure; Moist; Firm; Few Roots; No Mottling; Clear Boundary	
			2.5			Light Brownish-Gray (2.5Yr 6/2) CLAY LOAM; No Coarse Fragments; Subangular Blocky Structure; Moist; Firm; No Roots; No Mottling; Clear Boundary	
			4.5			Pale Brown (2.5Y 7/3) SAND; No Coarse Fragments; Single Grain Structure; Moist; Firm; No Roots; No Mottling; Clear Boundary	
			5.0				
			10.0				
			12.0				
						Test Pit Log TP-5 Terminated at a Depth of 12.0 Feet Below Ground Surface	
			15.0				

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

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Soil Pit No.: SPP-6

Page 1 of 1

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 95.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	12.0 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	NE	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:** NE / ---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				TOPSOIL		3" Topsoil	
			0.3	COASTAL PLAIN DEPOSITS		Very Pale Brown (10YR 7/4) SAND; No Coarse Fragments; Single Grain Structure; Few Roots; No Mottling; Clear Boundary	
			2.0			As Above, Yellowish-Brown (10YR 5/6)	
			4.0			As Above Black (7.5YR 2.5/1) to Very Pale Brown (10YR 7/4)	
			5.0				
			10.0				
			12.0				
						Test Pit Log TP-6 Terminated at a Depth of 12.0 Feet Below Ground Surface	
			15.0				

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

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Soil Pit No.: SPP-7

Page 1 of 1

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 100.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)**	**Elevation (feet)**
Termination Depth:	10.0 feet bgs	**Date Completed:**	9/1/2020					
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	NE	---		
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:**	NE	---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---		

SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				FILL		Black (7.5Yr 2.5/1) LOAMY SAND; 10% Gravel; Debris; Granular Structure; Slightly Moist; No Roots; No Mottling; Clear Boundary	Debris: Metal, Plastic, Brick
			2.0				
2 - 10	S-1	BAG		COASTAL PLAIN DEPOSITS		Light Brownish-Gray (2.5Y 6/2) Loamy SAND; No Coarse Fragments; Granular Structure; Moist; Firm; No Roots; No Mottling; Clear Boundary	
			5.0				
			10.0				
						Test Pit Log TP-7 Terminated at a Depth of 10.0 Feet Below Ground Surface	
			15.0				

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

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Soil Pit No.: SPP-8

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Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 90.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	10.0 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	NE	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:** NE / ---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				COASTAL PLAIN DEPOSITS		Pale Brown (2.5Y 7/3) Loamy Sand; No Coarse Fragments; Granular Structure; Moist; Firm; No Roots; No Mottling; Clear Boundary	
			5.0				Infiltration Test @ 4.0 fbgs
						As Above	
			10.0				
						Test Pit Log TP-8 Terminated at a Depth of 10.0 Feet Below Ground Surface	
			15.0				

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

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Soil Pit No.: SPP-9

Page 1 of 1

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 90.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	10.0 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	NE	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:** NE / ---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				FILL		Black (5YR 2.5/1) SAND; No Coarse Fragments; Granular/Single Grain Structure; Slightly Moist; Loose; Few Roots; No Mottling; Clear Boundary	
			2.0				
				COASTAL PLAIN DEPOSITS		Pale Brown (2.5Y 7/3) SAND: No Coarse Fragments; Granular/Single Grain Structure; Moist; Firm; No Roots; No Mottling; Clear Boundary	
			5.0				
5 - 8	S-1	BAG				Brownish-Yellow (10YR 6/8) SAND; No Coarse Fragments; Single Grain Structure; Moist; Firm/Dense; Clear Boundary	
			8.0				
						Dark Gray (2.5Y 4/1) SAND; Saturated; Firm; No Roots; Clear Boundary	
			10.0				
						Test Pit Log TP-9 Terminated at a Depth of 10.0 Feet Below Ground Surface	
			15.0				

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

WHITESTONE ASSOCIATES, INC.

RECORD OF SUBSURFACE EXPLORATION

Soil Pit No.: SPP-10

Page 1 of 1

Project:	Proposed Residential Development	**WAI Project No.:**	GS2017348.000
Location:	Texas Road & Greenwood Road; Township of Marlboro, Monmouth County, NJ	**Client:**	3 Ronson, LLC

Surface Elevation:	± 88.0 feet	**Date Started:**	9/1/2020		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	10.0 feet bgs	**Date Completed:**	9/1/2020				
Proposed Location:	SWM	**Logged By:**	KRP	**During:**	10.0	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	Traditional	**At Completion:**	---	---	**At Completion:** 10.0 / ---
Test Method:	Visual Observation	**Rig Type:**	45 MR	**24 Hours:**	---	---	

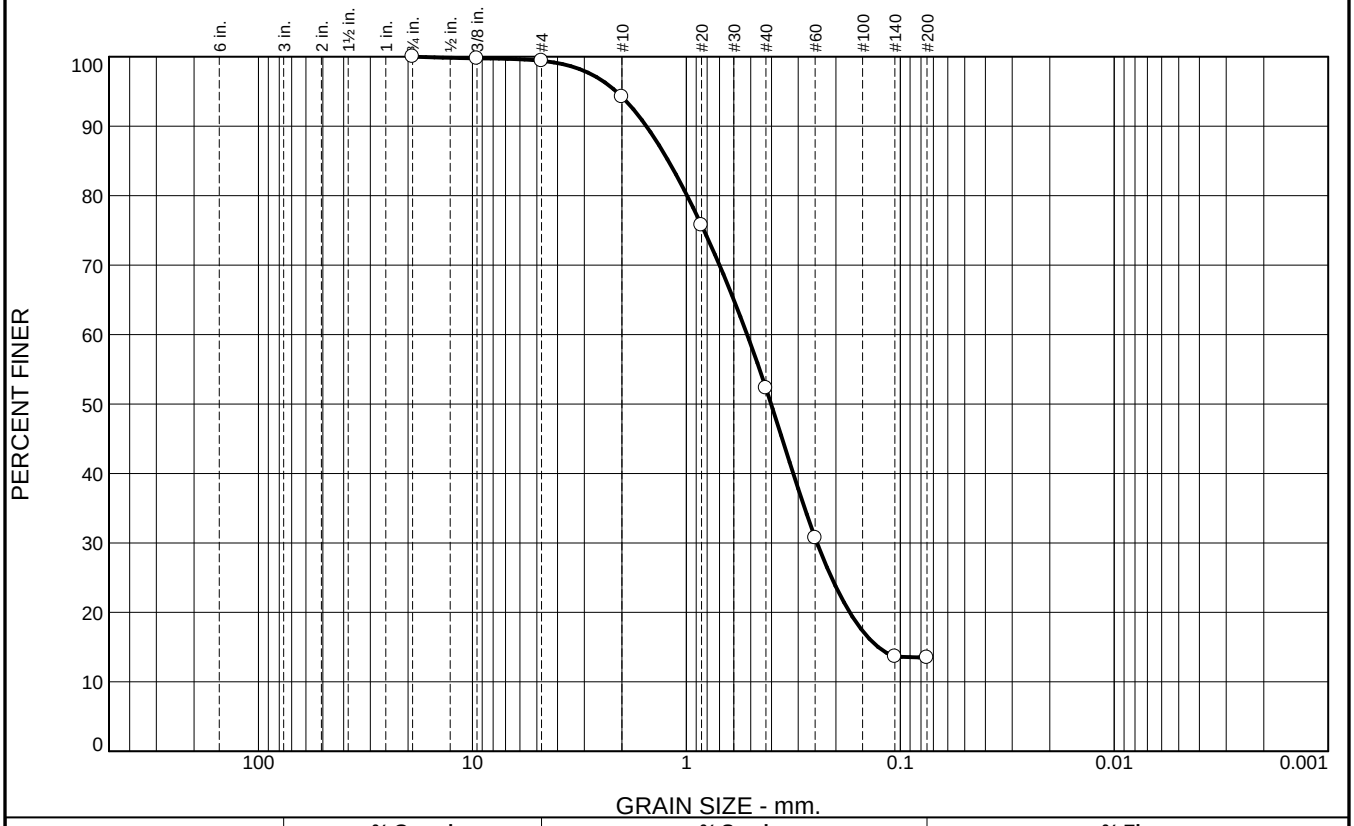
SAMPLE INFORMATION			DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (ft.)	Number	Type	(feet)				
			0.0				
				FILL		Dark Brown (7.5YR 3/2) LOAMY SAND; Debris; Moist; Firm; No Roots; No Mottling; Clear Boundary	Debris: Wood, Metal, Tires
			3.0				
				COASTAL PLAIN DEPOSITS		Gray (10YR 5/1) LOAMY SAND; No Coarse Fragments; Single Grain/Subangular Blocky Structure; Moist; Firm; No Roots; No Mottling	
			5.0				
			10.0				
						Test Pit Log TP-10 Terminated at a Depth of 10.0 Feet Below Ground Surface	
			15.0				

NOTES: bgs = below ground surface, DNC = Did Not Cave, 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	0.6	5.2	41.9	38.8	13.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.375	99.8		
#4	99.4		
#10	94.2		
#20	75.8		
#40	52.3		
#60	30.7		
#140	13.6		
#200	13.5		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 1.5381 D_{85}= 1.2134 D_{60}= 0.5200
D_{50}= 0.4017 D_{30}= 0.2449 D_{15}= 0.1269
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

W_n = 11.4%

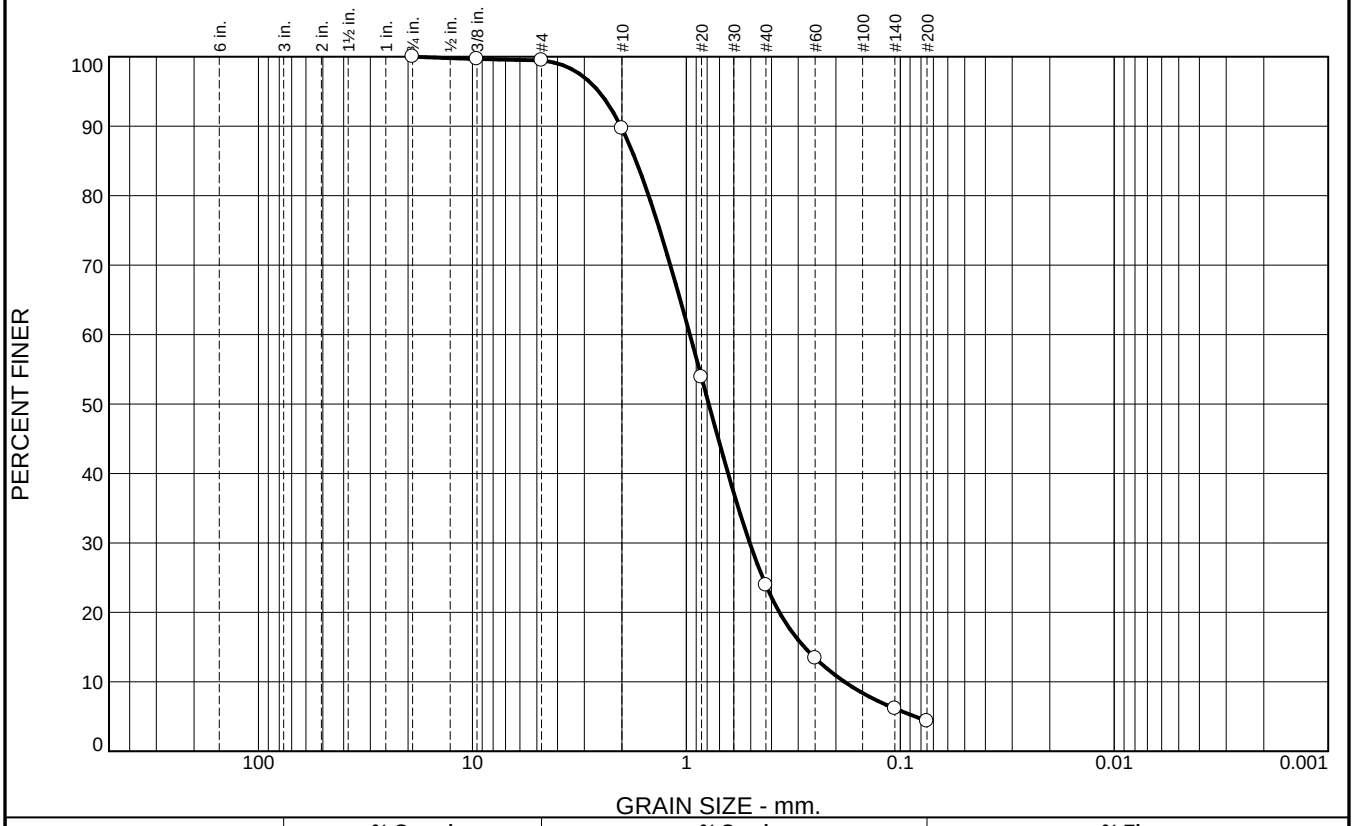
Source of Sample: B-1 **Depth:** 4.0' - 6.0'
Sample Number: S-3

Date: 9/15/20

WHITESTONE ASSOCIATES, INC.
Warren, New Jersey

Client: 3 Ronson, LLC
Project: Proposed Residential Development
Texas Road & Greenwood Road, Marlboro, New Jersey
Project No: GS2017348.000 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	9.8	65.8	19.5	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.375	99.7		
#4	99.5		
#10	89.7		
#20	53.9		
#40	23.9		
#60	13.4		
#140	6.2		
#200	4.4		

* (no specification provided)

Material Description

poorly graded sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 2.0248 D_{85}= 1.7188 D_{60}= 0.9631
D_{50}= 0.7859 D_{30}= 0.5056 D_{15}= 0.2809
D_{10}= 0.1822 C_u= 5.28 C_c= 1.46

Classification

USCS= SP AASHTO= A-1-b

Remarks

W_n = 8.4%

Source of Sample: B-6 **Depth:** 2.0' - 4.0'
Sample Number: S-2

Date: 9/15/20

WHITESTONE ASSOCIATES, INC.
Warren, New Jersey

Client: 3 Ronson, LLC
Project: Proposed Residential Development
Texas Road & Greenwood Road, Marlboro, New Jersey
Project No: GS2017348.000 **Figure**

WHITESTONE ASSOCIATES, INC.

APPENDIX C
Infiltration Test Results

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-1
Project:	Proposed Residential Development	**Date:**	9/1/2020
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	85.00	**Test Depth Ft. | Elev.:**	4.00 | 81.00

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	8:00 A.M.	8:15 A.M.	12.0	0.0	12.0	0.25	> 20.0
1	8:15 A.M.	8:30 A.M.	7.0	0.0	7.0	0.25	> 20.0
2	8:30 A.M.	8:45 A.M.	7.0	0.0	7.0	0.25	> 20.0
3	8:45 A.M.	9:00 A.M.	7.0	0.0	7.0	0.25	> 20.0

Field i = > 20.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-2
Project:	Proposed Residential Development	**Date:**	9/1/20 & 9/2/20
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	90.00	**Test Depth Ft. | Elev.:**	4.00 | 86.00

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	8:30 A.M.	12:30 P.M.	12.0	0.0	12.0	N/A	N/A
PS	12:30 P.M.	8:15 A.M.	12.0	0.0	12.0	N/A	N/A
1	8:15 A.M.	9:15 A.M.	7.0	5.0	2.0	1.0	2.0
2	9:15 A.M.	10:15 A.M.	7.0	5.0	2.0	1.0	2.0
3	10:15 A.M.	11:15 A.M.	7.0	5.0	2.0	1.0	2.0

Field *i* = 2.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-3
Project:	Proposed Residential Development	**Date:**	9/1/2020
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	95.00	**Test Depth Ft. | Elev.:**	4.50 | 90.50

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	8:15 A.M.	8:30 A.M.	12.0	0.0	12.0	0.25	> 20.0
1	8:30 A.M.	8:45 A.M.	7.0	0.0	7.0	0.25	> 20.0
2	8:45 A.M.	9:00 A.M.	7.0	0.0	7.0	0.25	> 20.0
3	9:00 A.M.	9:15 A.M.	7.0	0.0	7.0	0.25	> 20.0

Field i = > 20.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-4
Project:	Proposed Residential Development	**Date:**	9/1/2020
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	105.00	**Test Depth Ft. | Elev.:**	4.00 | 101.00

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	10:30 A.M.	10:45 A.M.	12.0	0.0	12.0	0.25	> 20.0
1	10:45 A.M.	11:00 A.M.	7.0	0.0	7.0	0.25	> 20.0
2	11:00 A.M.	11:15 A.M.	7.0	0.0	7.0	0.25	> 20.0
3	11:15 A.M.	11:30 A.M.	7.0	0.0	7.0	0.25	> 20.0

Field i = > 20.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-5
Project:	Proposed Residential Development	**Date:**	9/1/2020
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	100.00	**Test Depth Ft. | Elev.:**	4.00 | 96.00

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	12:15 P.M.	12:30 P.M.	12.0	0.0	12.0	0.25	> 20.0
1	12:30 P.M.	1:00 P.M.	7.0	0.0	7.0	0.25	> 20.0
2	1:00 P.M.	1:15 P.M.	7.0	0.0	7.0	0.25	> 20.0
3	1:15 P.M.	1:30 P.M.	7.0	0.0	7.0	0.25	> 20.0

Field i = > 20.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-6
Project:	Proposed Residential Development	**Date:**	9/2/2020
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	95.00	**Test Depth Ft. | Elev.:**	4.00 | 91.00

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	8:00 A.M.	8:15 A.M.	12.0	0.0	12.0	0.25	> 20.0
1	8:15 A.M.	8:30 A.M.	7.0	0.0	7.0	0.25	> 20.0
2	8:30 A.M.	8:45 A.M.	7.0	0.0	7.0	0.25	> 20.0
3	8:45 A.M.	9:00 A.M.	7.0	0.0	7.0	0.25	> 20.0

Field i = > 20.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-7
Project:	Proposed Residential Development	**Date:**	9/1/20 & 9/2/20
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	100.00	**Test Depth Ft. | Elev.:**	4.00 | 96.00

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	8:30 A.M.	12:30 P.M.	12.0	0.0	12.0	N/A	N/A
PS	12:30 P.M.	8:30 A.M.	12.0	0.0	12.0	N/A	N/A
1	8:30 A.M.	9:00 A.M.	7.0	4.0	3.0	0.5	6.0
2	9:00 A.M.	9:30 A.M.	7.0	4.0	3.0	0.5	6.0
3	9:30 A.M.	10:00 A.M.	7.0	4.0	3.0	0.5	6.0

Field i = 6.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-8
Project:	Proposed Residential Development	**Date:**	9/1/20 & 9/2/20
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	90.00	**Test Depth Ft. | Elev.:**	4.00 | 86.00

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	8:30 A.M.	12:30 P.M.	12.0	0.0	12.0	N/A	N/A
PS	12:30 P.M.	9:00 A.M.	12.0	0.0	12.0	N/A	N/A
1	9:00 A.M.	9:30 A.M.	7.0	4.0	3.0	0.5	6.0
2	9:30 A.M.	10:00 A.M.	7.0	4.0	3.0	0.5	6.0
3	10:00 A.M.	10:30 A.M.	7.0	4.0	3.0	0.5	6.0

Field *i* = 6.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-9
Project:	Proposed Residential Development	**Date:**	9/2/2020
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	90.00	**Test Depth Ft. | Elev.:**	4.00 | 86.00

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	10:00 A.M.	10:15 A.M.	12.0	0.0	12.0	0.25	> 20.0
1	10:15 A.M.	10:30 A.M.	7.0	0.0	7.0	0.25	> 20.0
2	10:30 A.M.	10:45 A.M.	7.0	0.0	7.0	0.25	> 20.0
3	10:45 A.M.	11:00 A.M.	7.0	0.0	7.0	0.25	> 20.0

Field i = > 20.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

INFILTRATION TEST

Client:	3 Ronson, LLC	**Test Hole No.:**	SPP-10
Project:	Proposed Residential Development	**Date:**	9/1/20 & 9/2/20
Location:	Marlboro, NJ	**Weather:**	Sunny
File No.	GJ2017348.000	**Field Engineer:**	KRP
Surf. Elev.	88.00	**Test Depth Ft. | Elev.:**	4.00 | 84.00

Reading No.	Time		Water Level Reading (inches)		Water Level Fall (Inches)	Time Interval (Hours)	Rate of Flow (Inches/Hour)
	Start	Finish	Start	Finish			
PS	8:30 A.M.	12:30 P.M.	12.0	0.0	12.0	N/A	N/A
PS	12:30 P.M.	9:30 A.M.	12.0	0.0	12.0	N/A	N/A
1	9:30 A.M.	10:30 A.M.	7.0	3.0	4.0	1.0	4.0
2	10:30 A.M.	11:30 A.M.	7.0	3.0	4.0	1.0	4.0
3	11:30 A.M.	12:30 P.M.	7.0	3.0	4.0	1.0	4.0

Field i = 4.0 in/hr

NOTES: PS = Pre Soak; NS = Not Surveyed

WHITESTONE ASSOCIATES, INC.

APPENDIX D
Supplemental Information (USCS, Terms & Symbols)

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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.*

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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		

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