



ECS Mid-Atlantic, LLC

Geotechnical Engineering Report

Mavis Store #2296

460 Prospect Avenue
West Orange, New Jersey

ECS Project No. 44:2100

December 10, 2024





ECS MID-ATLANTIC, LLC

Geotechnical • Construction Materials • Environmental • Facilities

December 10, 2024

Ms. Rachael Dickinson
Pre-Construction Project Manager
Mavis Tire Supply, LLC
200 Summit Lake Drive, Suite 350
Valhalla, NY 10595

ECS Project No. 44:2100

Reference: Geotechnical Engineering Report
Mavis Store #2296
460 Prospect Avenue,
West Orange, New Jersey

Dear Ms. Dickinson:

ECS Mid-Atlantic, LLC (ECS) has completed the subsurface exploration, soils laboratory testing, and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with the scope provided by Mavis Tire Supply, LLC in email correspondence dated October 31, 2024. This report presents our understanding of the geotechnical aspects of the project along with the results from the field exploration and laboratory testing conducted and our design and construction recommendations.

It has been our pleasure to be of service to Mavis Tire Supply, LLC during this phase of the project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations as well to document subsurface conditions assumed for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Mid-Atlantic, LLC

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EXECUTIVE SUMMARY

The following summarizes the main findings of the exploration, particularly those that may have a cost impact on the planned project. Further, our principal foundation recommendations are summarized. Information gleaned from the Executive Summary should not be utilized in lieu of reading the entire geotechnical engineering report.

Based on the planned construction and subsurface conditions encountered, we believe it is technically feasible to support the new store building on conventional shallow foundations including column footings and continuous wall footings.

- Project grading plans including the building's proposed finished floor elevation (FFE) were not provided, therefore, we have assumed the finished floor is within 1 to 2 feet of existing grades. Once a grading plan is provided, it should be provided to ECS so we can review and confirm the recommendations included herein need to be changed/updated.
- Considering the FFE assumption above, foundations may be proportioned assuming a net allowable bearing capacity of 3,000 pounds per square foot if the recommendations herein are followed.
- Existing fill/Possible fill materials were observed within several of the borings. Existing fills (without documentation of proper placement) are not suitable for foundation support and will require removal under foundation elements, therefore, some undercutting during construction may be necessary.
- Following proper site preparation techniques, we believe the foundations will be capable of supporting the indicated loading with the potential for total post-construction settlement of less than 1-inch and a differential settlement of less than 0.5-inch.
- The floor slab can be designed as a ground-supported slab assuming a modulus of subgrade reaction, k_1 , of 85 pounds per cubic inch and our subgrade recommendations.
- The recommended seismic Site Class for the project site location is "C."
- A Seasonally High Groundwater Table (SHWT) determination at the site was not included in the scope at this time.
- We anticipate stormwater management (SWM) infiltration testing will be required at some point in the project lifecycle. During the exploration/testing for the SWM features, we believe it will be beneficial to perform additional test pits within the building footprint to further evaluate the existing fill materials and provide a better determination if these materials will be suitable for support of the foundations and/or if full or partial undercuts will be necessary.

Please refer to the body of the report for further details on subsurface conditions encountered within the completed borings and for our specific geotechnical engineering recommendations for the project.

1.0 INTRODUCTION

The purpose of this study was to provide geotechnical information for the design and construction of a new Mavis Discount Tire® location, Store #2296, in West Orange, New Jersey. The project includes the construction of a new, standalone retail store and parking lot at the currently developed project site. The recommendations developed for this report are based on the limited project information supplied by Mavis Tire Supply, LLC (Mavis) for the West Orange Location, which consisted of the plan sheet CP-1 entitled, "Concept Plan" prepared by BL Companies and dated March 6, 2024. This information was provided to ECS via email on October 30, 2024.

Our services were performed in general accordance with the scope provided by Mavis in email correspondence dated October 31, 2024, which was authorized by Ms. Rachael Dickinson of Mavis on October 31, 2024, and includes the agreed upon Terms and Conditions of Service between ECS and Mavis executed on June 11, 2019.

This report contains the procedures and results of our subsurface exploration and laboratory testing programs, review of existing site conditions, engineering analyses, and recommendations for the design and construction of the project.

The report includes the following items:

- A review of surface topographical features and site conditions;
- A brief review and description of our field and laboratory test procedures and the results of testing conducted;
- A review of subsurface soil stratigraphy with pertinent physical properties;
- Final exploration logs;
- Recommended foundation type, bearing capacity, and estimated settlement;
- Recommendations for slab on grade construction;
- Recommendations for seismic site classification in accordance with the 2021 International Building Code – New Jersey edition;
- Groundwater observations and recommendations for consideration in engineering design and construction;
- Recommended minimum flexible and rigid pavement sections; and,
- Recommendations for site preparation and construction of compacted fills, including an evaluation of on-site soils for use as compacted fills and identification of potentially unsuitable soils.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION

The project site is located at 460 Prospect Avenue, West Orange, Essex County, New Jersey and lies north of the intersection of Prospect Avenue with Rooney Circle as shown in Figure 2.1.1 below. The project site is bound by an office building and its associated parking to the north, Prospect Avenue to the west, Blueberry Bend to the south, and residential properties to the east.



Figure 2.1.1 - Site Location (outlined)

The project site is the location of an existing realtor office building equipped with paved parking, drive through lanes, and driveways. The current topography slopes generally from south to north with an estimated variation in ground surface elevation of about ± 5 feet. No standing water was observed at the time of our field exploration.

2.2 PROPOSED CONSTRUCTION

Based upon the Concept Plan provided to ECS, we understand the proposed project will consist of the demolition of the existing building and construction of a new, one-story, $\pm 7,700$ square-foot retail auto service building with 8 vehicle service bays, sales and customer waiting areas, and offices. ECS understands no below-grade levels or service pits are planned. A new paved parking area for 21 passenger vehicles will be constructed to the east and south of the building with a point of ingress/egress each from Prospect Avenue and Blueberry Bend. A dumpster enclosure will be located southeast of the building. Information regarding stormwater management (SWM) facilities were not provided, nor were they requested; therefore, evaluation of SWM facilities is not included in this scope. The following information summarizes our understanding of the structure and assumed loads:

SUBJECT	DESIGN INFORMATION / EXPECTATIONS
Building Footprint	7,700 square foot in plan view
# of Stories	1-story above grade (no below grade levels)
Usage	Tire Service Facility
Column Loads	50 kips
Wall Loads	3 kips/linear foot
Floor Elevation (FFE)	Assumed within 1 to 2 feet of existing grade

We understand an allowable soil bearing pressure of 3,000 pounds per square foot (psf) is desired for shallow foundations as preferred by Mavis for its typical single-story, masonry block and steel-framed building. No specific details regarding the anticipated structural loads to be supported by foundations, or proposed ground-level finished floor elevation (FFE) were provided to ECS. However, we anticipate the ground-level FFE for the new store building will be similar to current ground surface elevation and minimal cuts or fills, on the order of 1-foot or less, will be required for site development.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

Our exploration procedures are explained in greater detail in Appendix B in the inserts titled Subsurface Exploration Procedures. Our overall scope of work, completed with one (1) authorized mobilization, consisted of drilling eight (8) soil test borings. Each exploration location was located using a hand-held Global Positioning System device, and their approximate, as-completed locations are shown on the Boring Location Diagram in Appendix A.

Prior to mobilizing to the site to conduct the soil borings, each of the boring locations were scanned for the presence of buried private utilities via non-intrusive detection methods prior to exploration. Soil test borings were completed with a track-mounted, hollow-stem auger drill rig equipped with an automatic drop hammer for conducting Standard Penetration Testing (SPT). SPT testing is utilized to measure N-values and obtain samples of the encountered subsurface materials.

3.1 SUBSURFACE CHARACTERIZATIONS

Generally, the subsurface conditions encountered were consistent with the published geologic mapping available from the New Jersey Geological and Water Survey via NJ-GeoWeb and the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) via Web Soil Survey for the general site vicinity. Refer to Appendix A for geologic maps for the general vicinity of the project site.

Generalized characterizations of the materials encountered within the completed explorations are tabulated below. Refer to the Generalized Subsurface Soil Profiles in Appendix A and the Geotechnical Borehole Logs and Test Pit Logs in Appendix B for more complete soil descriptions.

STRATUM	APPROXIMATE DEPTH ENCOUNTERED (feet-bgs)	DESCRIPTIONS	RANGES OF SPT ⁽¹⁾ N-VALUES (bpf) ⁽²⁾
N/A (Surface Cover)	0.0 – 0.5	6 inches of asphalt (B-01 through B-03, and B-08) 6 inches of topsoil (B-04 through B-07)	N/A
STRATUM I (Probable Fill)	0.5 – 4.0	- USCS: SM, ML - Varying amounts of gravel and fine-grained soils - Loose to very dense granular materials - Moist - Encountered below surface cover in each boring except B-04 and B-05	4 – 71/7"
STRATUM II (Natural Soils)	0.25 – 15.0	- USCS: ML, ML/CL, CL/ML, SM, GC-GM - Varying amounts of gravel and fine-grained soils - Medium dense to very dense granular materials - Stiff to very hard fine-grained materials - Moist - Encountered below surface cover and/or Stratum I in each boring	12 – 82/9"
STRATUM III (Weathered Rock)	13.0 – 15.0	- USCS: Sampled as SM - Very dense granular material - Encountered below Stratum II in Boring B-02	50/3"

Notes:

(1) Standard Penetration Testing

(2) Blows per foot

Soils encountered were visually classified during borehole logging on the basis of texture and plasticity in general accordance with ASTM D2488 – *Standard Practice for Description and Identification of Soils (Visual-Manual Procedures)* and use of Unified Soil Classification System (USCS) symbols. After classification, the samples were grouped in the major zones noted on the Generalized Subsurface Cross-Sections A-A' through B-B' in Appendix A and the exploration logs in Appendix B. The group symbols for each soil type are indicated in parentheses along with the soil descriptions. Divisions between strata on the exploration logs are approximate; in-situ, the transitions may be gradual.

3.2 GROUNDWATER OBSERVATIONS

Water levels were measured in our boring logs in Appendix B. Groundwater was not observed within the borings at the time of drilling and backfilling. However, it must be noted that variations in perched water levels and long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, construction activities, and other factors.

3.3 LABORATORY TESTING

The laboratory testing consisted of index property tests performed on selected samples obtained during our field exploration operations. Each laboratory test was completed in accordance with the applicable ASTM Standard Test Method as indicated below and on the laboratory testing sheets included in Appendix C.

- ASTM D2216: *Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock Mass*
- ASTM D4318: *Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils*
- ASTM D6913: *Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis*
- ASTM D1557: *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))*
- ASTM D1883: *Standard Test Methods for California Bearing Ratio (CBR) of Laboratory-Compacted Soils*

Soil samples from this exploration program will be retained in our laboratory for a period of sixty (60) calendar days from date of collection, corresponding to the date of completion indicated on the exploration logs. After this time, the samples will be discarded unless other instructions are received from Mavis regarding their disposition in advance.

4.0 DESIGN RECOMMENDATIONS

4.1 SHALLOW FOUNDATIONS

A site grading plan including the proposed FFE was not provided and should be provided to ECS to confirm the recommendations included herein; however, we have assumed the FFE will be within 1 to 2 feet of existing grades. Provided subgrades and Structural Fills are prepared as recommended in this report, the proposed building can be supported by shallow foundations including column footings and continuous wall footings. We recommend the foundation design use the following parameters.

DESIGN PARAMETER	COLUMN FOOTING	WALL FOOTING
Net Allowable Bearing Pressure ⁽¹⁾	3,000 psf	3,000 psf
Acceptable Bearing Soil Material	Stratum II with SPT N-value ≥ 5 bpf or new Structural Fill	Stratum II with SPT N-value ≥ 5 bpf or new Structural Fill
Minimum Width	24 inches	24 Inches
Minimum Footing Embedment Depth (below slab or finished grade) ⁽²⁾	36 inches	36 inches
Estimated Total Settlement ⁽³⁾	Less than 1-inch	Less than 1-inch
Estimated Differential Settlement ⁽³⁾	Less than 0.5-inch between columns	Less than 0.5-inch over 50 feet
Notes: (1) Net allowable bearing pressure is the applied pressure in excess of the surrounding overburden soils above the base of the foundation. (2) Minimum footing depth recommended for frost protection. Interior foundations located within permanently heated portions of the structure may be established at conventional depths below the floor slab, provided that they are established within the intended bearing stratum. (3) Based on an assumed maximum column load of 50 kips and wall load of 3 kips per foot. When final design loads are determined, ECS must be contacted to update foundation recommendations and settlement calculations. bpf = blows per foot		

Potential Undercuts: As indicated in the above table, shallow foundations may be supported by Stratum II materials provided the material at bearing depth is homogeneous with at least an SPT N-Value of ≥ 5 or newly placed Structural Fill. It is important to have ECS observe and test footing subgrade prior to placing foundation concrete to confirm soil conditions are as anticipated (granular soil with SPT N-value ≥ 5 bpf) and consistent with our recommended foundation design parameters.

The existing fill materials on the site do not appear to be suitable for support of the building foundations as they appear to be variable in both composition and strength (based on SPT N-values), therefore we recommend these materials be removed below foundation elements. As stated in the Executive Summary, it may be beneficial to perform test pitting within the building footprint to further evaluate the existing fill materials. Generally, existing fills are not suitable for support of foundations as the method of their placement and compaction effort (or lack thereof) is unknown, therefore, they may be prone to settlements which are unpredictable.

If existing fills, soft or unsuitable soils are observed at the footing bearing elevations, the unsuitable soils should be undercut and removed. Any undercut should be backfilled with lean concrete ($f'_c \geq 1,000$ psi at 28 days) up to the original design bottom of footing elevation; the original footing shall be constructed on top of the hardened lean concrete.

4.2 FLOOR SLAB

Provided subgrades and Structural Fills are prepared as discussed herein, proposed floor slabs can be constructed as ground-supported slabs (slab-on-grade). The floor slab can bear on Stratum I or Stratum II soils provided that the entire footprint of the slab is proofrolled (see Section 5.1.3) and compacted (see Section 5.1.4) prior to placing the Granular Capillary Break/Drainage Layer. It is important to have ECS observe the subgrade and proofrolling to confirm the soil conditions are as anticipated. Soft or yielding soils, or otherwise unsuitable materials may be encountered in some areas and should be removed and replaced with compacted Structural Fill in accordance with the recommendations included in this report. The following graphic depicts our ground-supported slab recommendations.

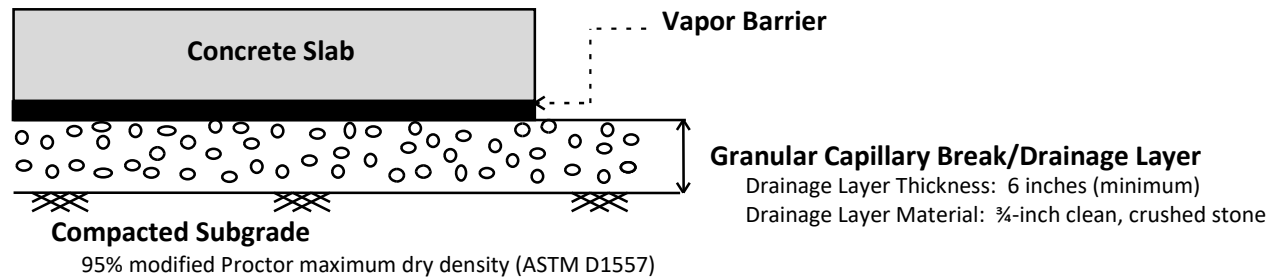


Figure 4.2.1 – Ground-supported Concrete Slab

Subgrade Modulus: Provided the Structural Fill and Granular Capillary Break/Drainage Layer are constructed in accordance with our recommendations, floor slabs may be designed assuming a modulus of subgrade reaction, k_1 , of 85 pounds per cubic inch (pci). The modulus of subgrade reaction value is based on a 1-foot by 1-foot plate load test.

Vapor Barrier: Before the placement of concrete, a vapor barrier may be placed on top of the Granular Capillary Break/Drainage Layer to provide additional protection against moisture penetration through the floor slab. When a vapor barrier is used, special attention should be given to surface curing of the slab to reduce the potential for uneven drying, curling and/or cracking of the slab. Depending on proposed flooring material types, the structural engineer and/or the architect may choose to eliminate the vapor barrier.

Slab Isolation: Floor slabs should be isolated from the foundations and foundation-supported elements of the structure so that differential movement between the foundations and slab will not induce excessive shear and bending stresses in the floor slab. Where the structural configuration prevents the use of a free-floating slab such as in a drop-down footing/monolithic slab configuration, the slab should be designed with suitable reinforcement and load transfer devices to preclude overstressing of the slab.

4.3 SEISMIC DESIGN CONSIDERATIONS

Seismic Site Classification: The 2021 International Building Code – New Jersey edition (2021 IBC-NJ), which references ASCE/SEI 7-16 – *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, requires site classification for seismic design based on the upper 100 feet of a soil profile. Our authorized scope of services for the project did not include a site-specific seismic Site Class determination (e.g., 100 -foot soil profile). Therefore, to determine the seismic Site Class using Section 4.5 of the 2024 New Jersey State Hazard Mitigation Plan was referenced. The statewide seismic Site Class map contained in Section 4.5 (Figure 4.5-3), indicates the appropriate seismic Site Class is "C." The Site Class definition should not be confused with the Seismic Design Category designation, which the Structural Engineer typically assesses.

Ground Motion Parameters: In addition to the seismic Site Class noted above, ECS has determined the design spectral response acceleration parameters consistent with the methodology of the 2021 IBC-NJ, which references ASCE/SEI 7-16. We have assumed a structure Risk Category of II. If the structural designer determines a different Risk Category is more appropriate, ECS should be contacted so that we can review our recommendations and provide alternate recommendations. The spectral responses were estimated with the collaborative website tool from the ASCE Hazard Tool (<https://ascehazardtool.org>). The design responses for the short (0.2 sec, S_{D5}) and 1-second period (S_{D1}) are noted in bold at the far-right end of the following table.

GROUND MOTION PARAMETERS [2021 IBC] – STRUCTURE RISK CATEGORY II								
Period (sec)	Mapped Spectral Response Accelerations (g)		Values of Site Coefficient for Site Class		Maximum Spectral Response Acceleration Adjusted for Site Class (g)		Design Spectral Response Acceleration (g)	
Reference	Figures 1613.2.1 (1) & (2)		Tables 1613.2.3 (1) & (2)		Eqs. 16-36 & 16-37		Eqs. 16-38 & 16-39	
0.2	S_s	0.284	F_a	1.3	$S_{MS}=F_a S_s$	0.370	$S_{D5}=2/3 S_{MS}$	0.246
1.0	S_1	0.060	F_v	1.5	$S_{M1}=F_v S_1$	0.089	$S_{D1}=2/3 S_{M1}$	0.060

4.4 PAVEMENTS

Subgrade Characteristics: Based on the results of our soil test borings, it appears any pavement subgrades in cuts will generally consist of the loose to very dense SILTY SAND (USCS:SM) and SILT (USCS: ML) or firm CLAYEY SILT (USCS: CL-ML) of Stratum I. These soils provide a range of pavement support from moderate to poor with support diminishing as the content of fine-grained soil (silt and/or clay) increases. With increasing fine-grained soil content, soil drainage is reduced and susceptibility to frost increases. Additionally, increasing moisture sensitivity, meaning the soils can soften and decrease in strength with increasing moisture content, also results from increased content of fine-grained soil. Therefore, we recommend pavements to be constructed at the project site be underlain with a graded aggregate subbase placed and compacted over previously proofrolled and compacted subgrade soil. Our pavement recommendations below are predicated on use of a graded aggregate subbase.

California Bearing Ratio (CBR) testing was performed as part of this study and results are included in Appendix C. CBR testing was performed in our lab. The soils tested demonstrated CBR values ranging from 3.7 to 17.7, with an average of 9.6. Maximum swell was 1.55%. For preliminary design purposes, we recommend a CBR value of 6.4.

Design Assumptions and Criteria: We understand pavements for the project will consist of standard-duty flexible pavement section for parking areas and drive lanes as well as a light-duty rigid pavement section for the dumpster pad. We were not provided traffic loading information, so we have assumed loadings typical for this type of project. The anticipated use of the pavement areas associated with the planned project will be primarily by passenger vehicles with occasional truck traffic associated with deliveries, snow and trash removal, and maintenance. Therefore, we have assumed a maximum daily traffic volume of 300 passenger vehicles and 2 trucks for flexible pavement areas, a 15-year design life, and no year-over-year growth. If the actual traffic volumes will exceed these assumptions, ECS should be contacted

for revised pavement recommendations; otherwise, increased pavement maintenance and a shortened pavement life should be expected.

Minimum Recommended Pavement Sections: The recommended minimum pavement sections as listed in the following table are based upon the anticipated usage and design life discussed, considering a composite CBR of 6.4-percent (i.e., compacted subgrade with compacted graded aggregate subbase), and also consideration for minimum lift thickness dictated by the nominal maximum size of the aggregate in the design mix. Further, the recommended minimum pavement sections are predicated upon proofrolling and compaction of the existing subgrade soils in accordance with Sections 5.1.3 and 5.1.4 of this report.

MINIMUM RECOMMENDED PAVEMENT SECTIONS		
MATERIAL	FLEXIBLE	RIGID
Superpave 9.5 mm Asphaltic Concrete Surface Course	1.5 in	-
Superpave 19.0 mm Asphaltic Concrete Base Course	2.5 in	-
Portland Cement Concrete ($f'_c = 4,000$ psi)	-	6.0 in
Dense Graded Aggregate (DGA) Subbase	6.0 in	6.0 in

Notes:

- (1) Material and installation shall conform to New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, 2019, unless otherwise indicated.
- (2) Thicknesses indicated represent compacted material thicknesses.

We also recommend the light-duty rigid pavement be reinforced with appropriate fibers or welded wire fabric. All reinforcement as well as spacing of control joints to be designed/specified by others. We recommend American Concrete Institute (ACI) guidelines for joint spacing be followed, and the minimum recommended joint spacing be considered to reduce the potential for shrinkage cracks within the rigid pavement sections.

The pavement sections provided above are guidelines that may or may not comply with local jurisdictional minimums. It is the responsibility of the civil/site engineer to confirm compliance with jurisdictional requirements.

5.0 SITE CONSTRUCTION RECOMMENDATIONS

5.1 SUBGRADE PREPARATION

5.1.1 Demolition

Prior to general earthwork and construction, demolition and off-site disposal any remaining below-grade foundation elements from past site development within the construction footprint is required. Existing below-grade foundation elements must be removed to a depth of at least 3 feet below the proposed subgrade elevation for the new construction, and in their entirety where they conflict with planned foundations and slabs. Hoe-rams or specialized demolition equipment may be required to dislodge and remove such buried obstructions. Existing utilities should be removed from, and relocated around, new structures. Excavations associated with removal of these items extending below the level of proposed subgrade should be backfilled with Structural Fill as specified herein. Demolition debris must be disposed of off-site in accordance with local, State, and Federal regulations.

5.1.2 Stripping and Grubbing

Subgrade preparation should consist of removing all vegetation, trees, stumps, roots, topsoil, existing fill, pavements, debris and any soft or unsuitable materials within the limits of planned construction. Based upon the observations within the completed explorations, removal of topsoil should be anticipated within some areas. Deeper topsoil or organic-rich soils may be present in wet, low-lying, poorly drained areas and densely wooded areas. ECS should be retained to document that topsoil and other unsuitable near-surface materials have been stripped prior to excavation to construct subgrade elevations, placement of Structural Fill, and construction of new earthworks and structures.

5.1.3 Proofrolling

Prior to subgrade compaction, fill placement or other construction on subgrades, the subgrades should be evaluated by ECS. Unless otherwise recommended herein, the exposed subgrade should be thoroughly proofrolled with construction equipment having a minimum axle load of 10 tons (e.g., fully loaded tandem-axle, on-road dump truck) travelling at a maximum of 1.5 feet per second (approximately 1 mile per hour). Proofrolling should be traversed in two perpendicular directions with overlapping passes of the vehicle under the observation of ECS. This procedure is intended to assist in identifying any localized yielding materials.

Where proofrolling identifies areas that are unstable or “pumping” subgrade or has experienced permanent deformation more than 1/2-inch, those areas should be remediated prior to the subsequent compaction and placement of engineered fill or other construction materials. Remediate by undercutting and replacing the unstable/unsuitable soils in these area with compacted Structural Fill as described herein. Test pits may be excavated to explore the shallow subsurface materials to help in determining the cause of potentially unstable materials and delineate the extent of undercutting needed.

5.1.4 Potential Undercuts

Where observed or otherwise identified (e.g., proofrolling, subsurface exploration logs, dynamic cone penetrometer testing), unsuitable soils must be undercut and removed. It is important to have ECS observe, probe, and test subgrade conditions prior to placing foundation concrete to document the bearing soils are what was anticipated and the extent of undercutting necessary, if any.

Undercuts should be backfilled with Structural Fill up to the original design subgrade elevation required. Open-graded gravel (e.g., AASHTO No. 57) should not be used to backfill foundation undercuts as this

could result in a reservoir condition, allowing the accumulation of water and potential softening of the bearing soils. It is important to have ECS observe subgrade conditions prior to placing foundation concrete or Granular Capillary Break/Drainage Layer for ground-supported slabs to document the bearing soils are what was anticipated and the extent of undercutting necessary, if any. Some undercutting and replacement should be anticipated within the new building footprint.

5.1.5 Site Temporary Dewatering

The contractor must make its own assessment of temporary dewatering needs based upon the limited subsurface groundwater information presented in this report. Soil sampling is not continuous, and thus soil and groundwater conditions may vary between sampling intervals. If the contractor believes additional subsurface information is needed to assess dewatering needs, they should obtain such information at their own expense. ECS makes no warranties or guarantees regarding the adequacy of the provided information to determine dewatering requirements; such recommendations are beyond our scope of services.

Dewatering systems are a critical component of many construction projects. Dewatering systems must be selected, designed, and maintained by a qualified and experienced (specialty or other) contractor familiar with the succinct geotechnical and other aspects of the project. The failure to properly design and maintain a dewatering system for a given project can result in delayed construction, unnecessary foundation subgrade undercuts, detrimental phenomena such as 'running sand' conditions, internal erosion (i.e., 'piping'), the migration of 'fines' down-gradient towards the dewatering system, localized settlement of nearby infrastructure, foundations, slabs-on-grade and pavements, etc. Water discharged from any site dewatering system must be discharged in accordance with all local, State, and Federal requirements.

We anticipate that effective, short-term dewatering operations can be managed by using trash pumps or conventional submersible pumps directly in open excavations for the construction of the shallow foundations.

5.2 EARTHWORK OPERATIONS

5.2.1 Existing Man-Placed Fill

Existing fill materials were encountered in each of the borings. Other localized areas of undocumented fill may still be present at the site. If during construction deeper undocumented fill materials are encountered, the Geotechnical Engineer should be contacted to evaluate and provide recommendations.

Considering the homogenous nature of the materials, the existing fill can remain in place below proposed pavements and the pad provided it is stable during proofrolling operations. However, if construction debris and/or previous remanence of previous development are encountered, ECS should be contacted to further evaluate the site conditions.

In parking areas, if undercutting does not resolve localized areas of instability, the undercut should be stopped at a depth of 2 feet below subgrade and the exposed subgrade should then be covered with bi-axial or tri-axial geogrid (BX-1200, TX-160 or equivalent) or reinforcing geotextile fabric (Amoco 2006 or equivalent) prior to placement of new fill. In undercut areas, the new fill should consist of select granular fill, such as crushed stone or highway base stone.

5.2.2 Structural Fill

Prior to placement of Structural Fill, representative bulk samples (about 50 pounds) of the off-site borrow should be submitted to ECS for laboratory testing, which will typically include Atterberg limits, natural moisture content, grain-size distribution, and moisture-density relationships (i.e., Proctors) for compaction. Import materials should be tested prior to being hauled to the site to determine if they meet project specifications. Alternatively, Proctor data from other accredited laboratories can be submitted if the test results are dated within 90 days of the submission date.

Satisfactory Structural Fill Materials: Materials satisfactory for use as Structural Fill must be free of deleterious materials such as construction debris, wood, glass, ash, trash, refuse, roots and other organic matter; and, conform to the following engineering properties and compaction requirements. Additionally, imported materials for use as Structural Fill must also meet the New Jersey Department of Environmental Protection's Requirements for Soil and Fill Materials.

STRUCTURAL FILL INDEX PROPERTIES	
Subject	Property
Liquid Limit	< 40
Plasticity Index	< 20
Maximum Particle Size	3 inches
Fines Content (percent passing the No. 200)	15% maximum
Maximum Organic Content	5% by dry weight

STRUCTURAL FILL COMPACTION REQUIREMENTS	
Subject	Requirement
Compaction Standard	Modified Proctor, ASTM D1557
Required Compaction	95% of Maximum Dry Density
Moisture Content	within -2 to +3 percentage points of optimum
Loose Lift Thickness	8 inches

Fill Placement: Fill materials should not be placed on frozen soils, on frost-heaved soils, and/or on excessively wet soils. Borrow fill materials should not contain frozen materials at the time of placement, and all frozen or frost-heaved soils should be removed prior to placement of fill soils and aggregates. Excessively wet soils or aggregates should be scarified, aerated, and moisture conditioned. Field testing in accordance with ASTM D6938 using the representative results from ASTM D1557 is recommended at a per lift frequency of not less than one (1) test per 1,500 square feet or a minimum of two (2) tests per lift, whichever more frequent, within the planned building footprint and not less than one (1) test per 2,500 square feet in pavement areas.

5.2.3 On-site Soil Re-use

Existing on-site, granular soils consisting of inorganic soils classified as USCS: SM, SC, SW, SP, GW, GP, GM and GC, or a combination of these group symbols, per ASTM D2487, resulting from excavations for foundations may be re-used. The materials should be suitably dry; free of organic matter, debris, and other deleterious material; and should contain no particle sizes greater than 4 inches in the largest dimension.

Prior to re-use of on-site soils, representative bulk samples (about 50 pounds) of the material should be submitted to ECS for laboratory testing, which will typically include Atterberg limits, natural moisture content, particle-size distribution, and moisture-density relationships (i.e., Proctors) for compaction. Compaction requirements for on-site soil re-use will be the same as Structural Fill compaction requirements stated above.

5.2.4 Excavation Considerations

All excavations and slopes should be constructed and maintained in accordance with OSHA excavation safety standards. The contractor is solely responsible for designing, constructing, and maintaining stable temporary excavations (both sides and bottom of the excavations) and slopes. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, State, and Federal safety regulations. ECS is providing this information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

5.3 EARTHWORK AND FOUNDATION OBSERVATIONS

Subgrade and Engineered Fill: Due to the presence of very loose and loose subgrade, some of the soils at the project site are anticipated to be unsuitable. As such, it is important to have ECS observe proofrolling and test subgrade compaction prior to engineered fill placement to document the soil conditions and the extent of any undercutting necessary. Additionally, it is important to have ECS observe, test, and document the as-placed moisture content and density of engineered fill on a full-time, lift-by-lift basis for conformance with our recommendations.

Footing Subgrade: To ensure the soils at or below footing bearing elevations are to be suitable for support of the new building, it is important to have ECS observe, probe, and test the footing subgrade prior to placing foundation concrete to document the bearing soils are what was anticipated and the extent of undercutting necessary. As previously noted, the existing fills are most likely not suitable for support of foundation elements, therefore, the bearing materials will need to be carefully evaluated prior to concrete placement to confirm the bearing materials meet the requirements provided herein.

Protection of Foundation Excavations: Exposure to the environment may weaken the soils at design subgrade elevation if the excavations remain open for too long a time. Therefore, foundation concrete should be placed the same day that excavations are made. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete. If the excavation must remain open overnight, or if rainfall becomes imminent while the subgrade is exposed, a 1 to 3-inch thick "mud mat" of "lean" concrete should be placed on the subgrade soils before the placement of reinforcing steel.

5.4 UTILITY INSTALLATIONS

Utility Subgrades: The soils encountered in our exploration are expected to be generally suitable for support of utility pipes and conduits. The subgrade for utility excavations should be observed and probed for stability by ECS. Any soft/loose or unsuitable materials encountered at the subgrade elevation should be removed and replaced with suitable compacted Structural Fill or bedding material.

Utility Backfilling: We recommend granular bedding material (e.g., AASHTO No. 57) be at least 4 inches thick, but not less than that specified by the civil/site engineer's project drawings and specifications.

Bedding material should be placed up to at least the springline of the pipe unless otherwise required by civil/site engineer, pipe manufacturer, or documented industry standard. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the requirements for Structural Fill.

Utility Excavation Dewatering: It is possible that water may be encountered within utility excavations which extend below existing grades. It is anticipated that removal of water which seeps into utility excavations can be accomplished by pumping from sumps excavated into the trench bottom. Should water conditions beyond the capability of sump pumping be encountered, the contractor should prepare and submit a Dewatering Plan.

6.0 CLOSING

ECS has prepared this report to guide the geotechnical-related design and construction aspects of the project. We performed these services in accordance with the standard of care expected of professionals in the industry performing similar services on projects of like size and complexity at this time in the region. No other representation, expressed or implied, and no warranty or guarantee is included or intended in this report.

The description of the proposed project is based on information provided to ECS by Mavis. If any of this information is inaccurate or changes, either because of our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted so we can review our recommendations and provide additional or alternate recommendations that reflect the proposed construction.

We recommend that ECS review the project plans and specifications so we can confirm that those plans/specifications are in accordance with the recommendations of this geotechnical report.

Field observations, and quality assurance testing during earthwork and foundation installation are an extension of, and integral to, the geotechnical design. We recommend that ECS be retained to apply our expertise throughout the geotechnical phases of construction, and to provide consultation and recommendation should issues arise.

ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

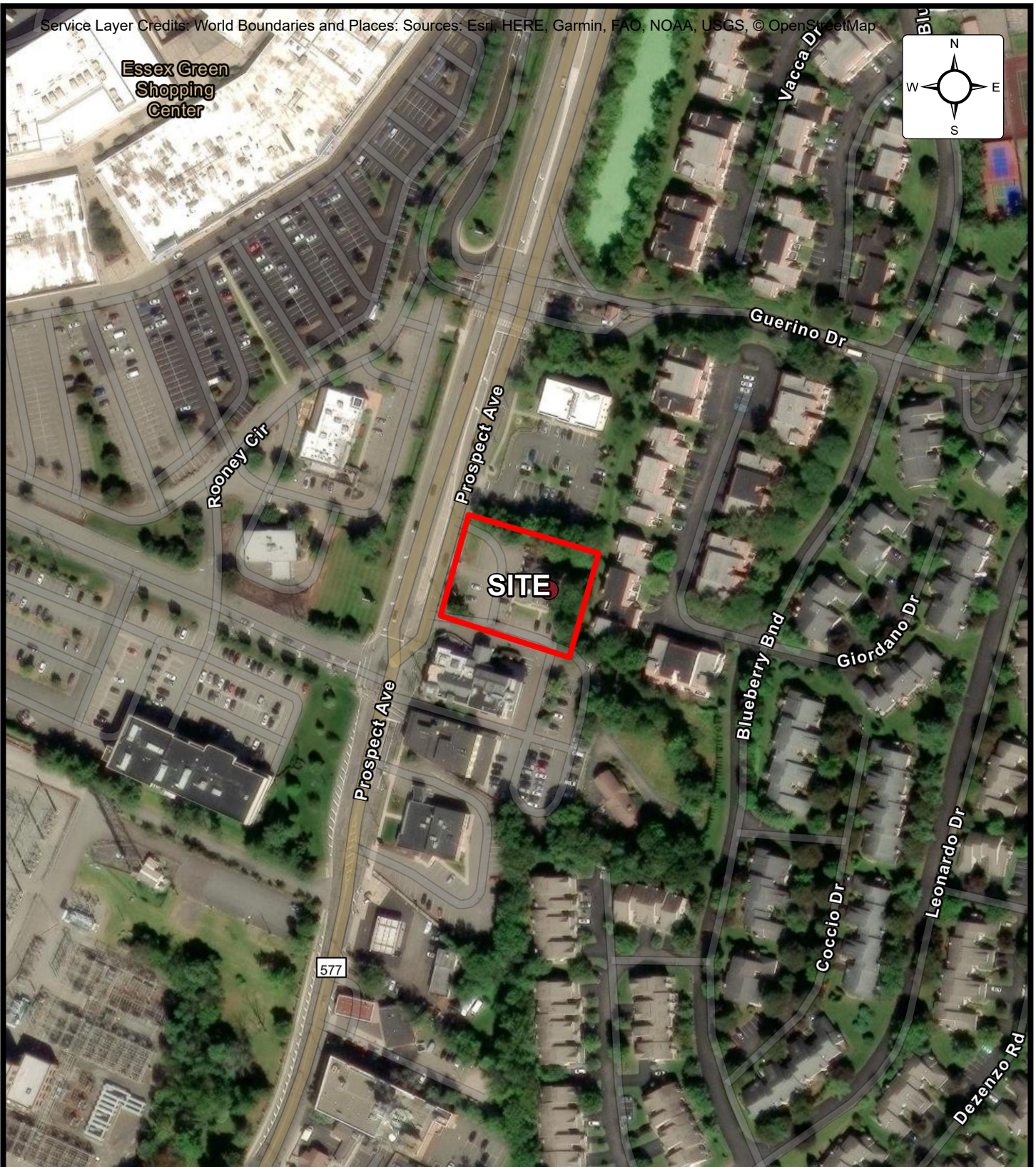
Appendix A - Drawings and Reports

Site Location Diagram

Boring Location Diagram(s)

Subsurface Cross-Section(s)

Geologic/Soil Survey Maps



SITE LOCATION DIAGRAM Mavis #2296 - West Orange, NJ

460 Prospect Avenue
West Orange, New Jersey

Mavis Tire Supply, LLC

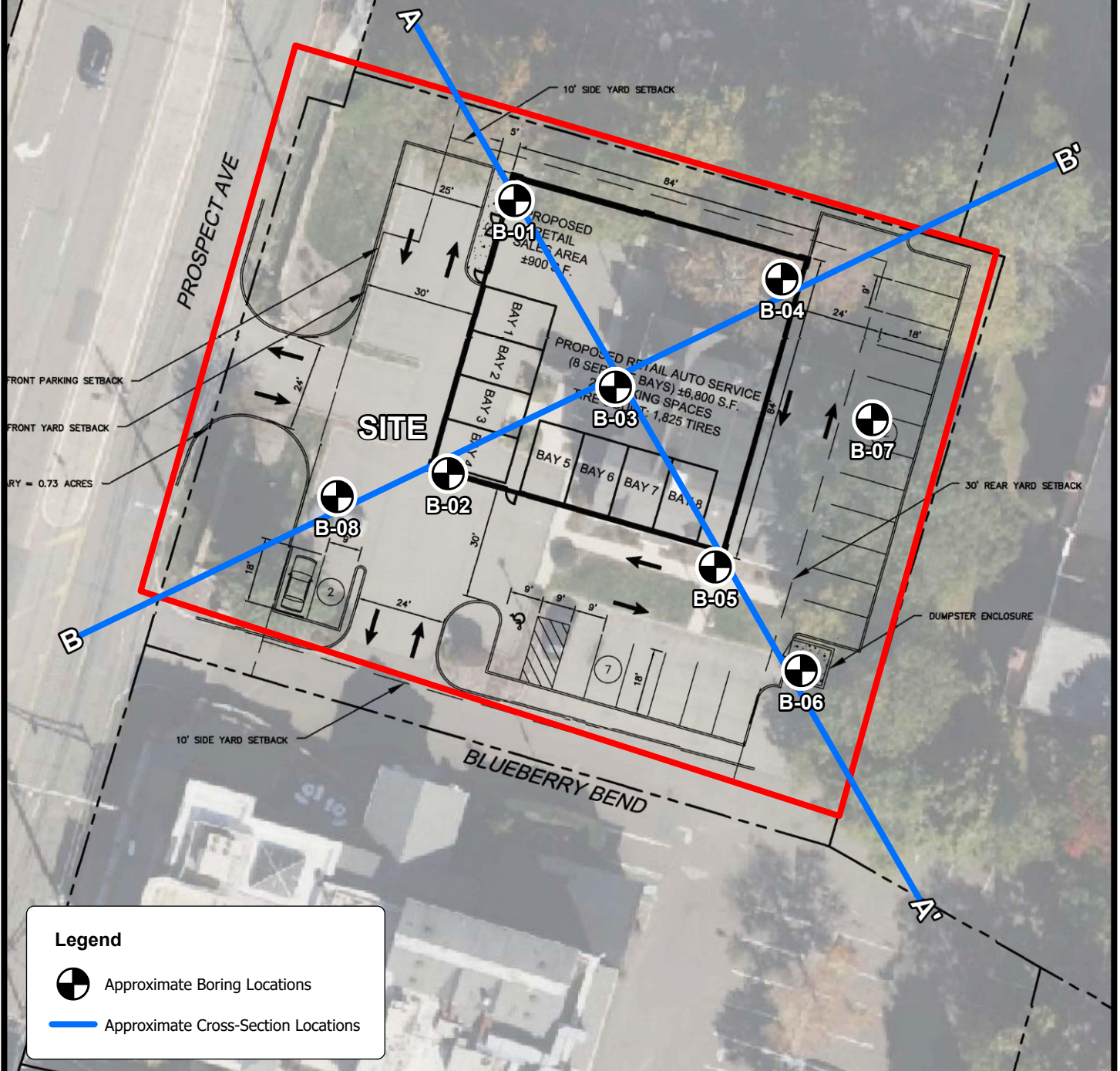
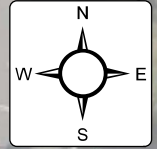
ENGINEER
JCY

SCALE
1" = 200'

PROJECT NO.
44:2100

SHEET
1

DATE
12/10/2024



Legend



Approximate Boring Locations



Approximate Cross-Section Locations



BORING LOCATION DIAGRAM
Mavis #2296 - West Orange, NJ

460 Prospect Avenue
West Orange, New Jersey

Mavis Tire Supply, LLC

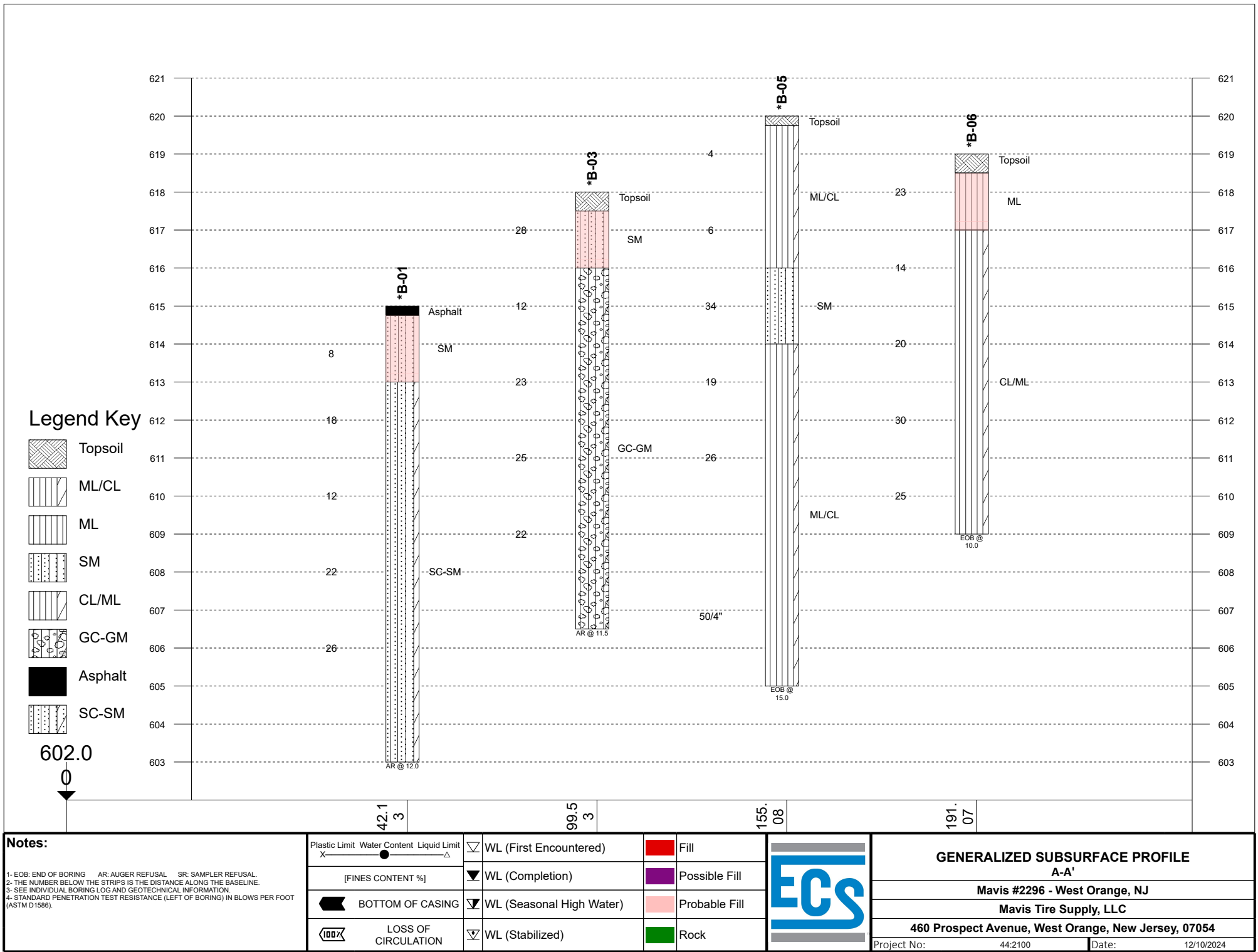
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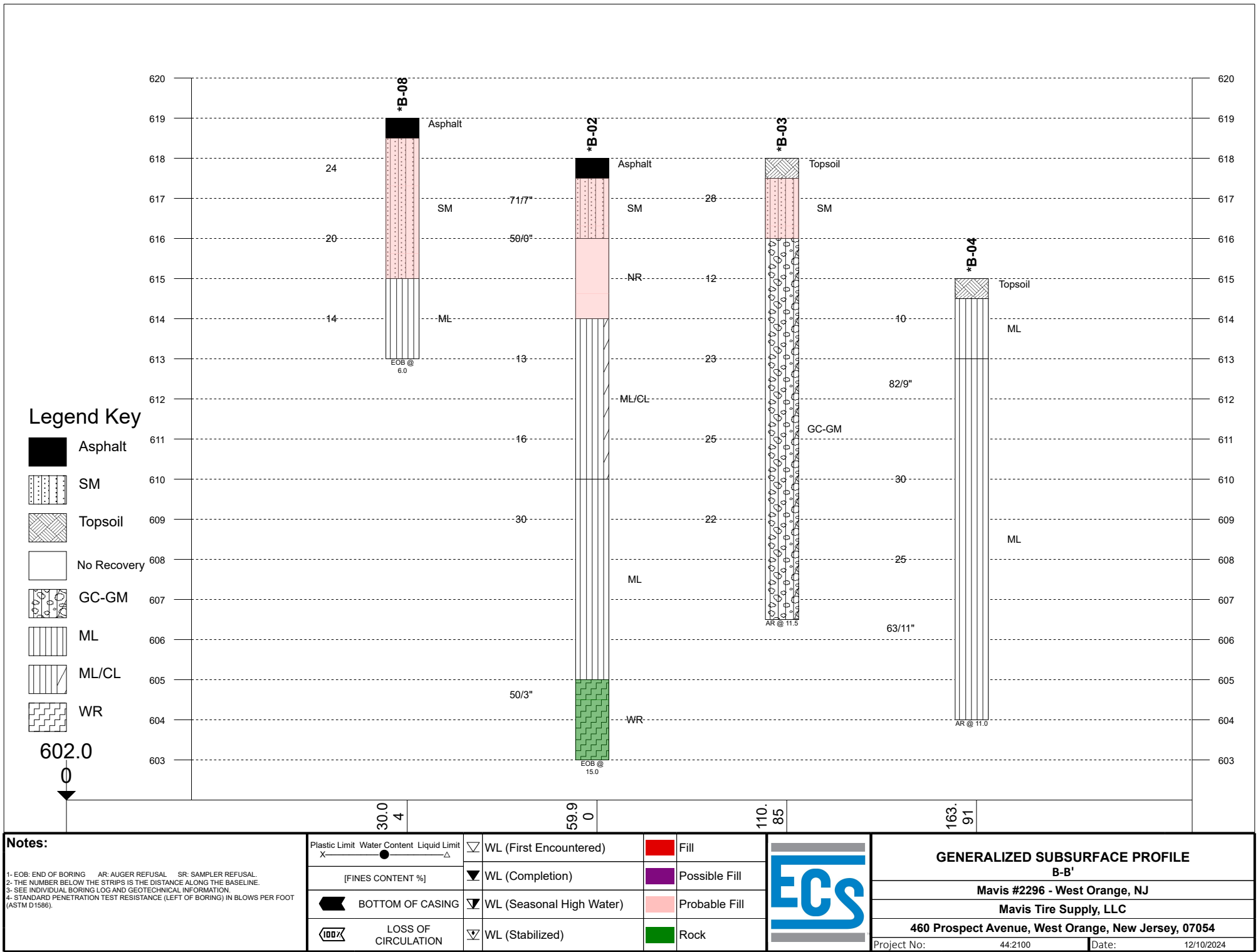
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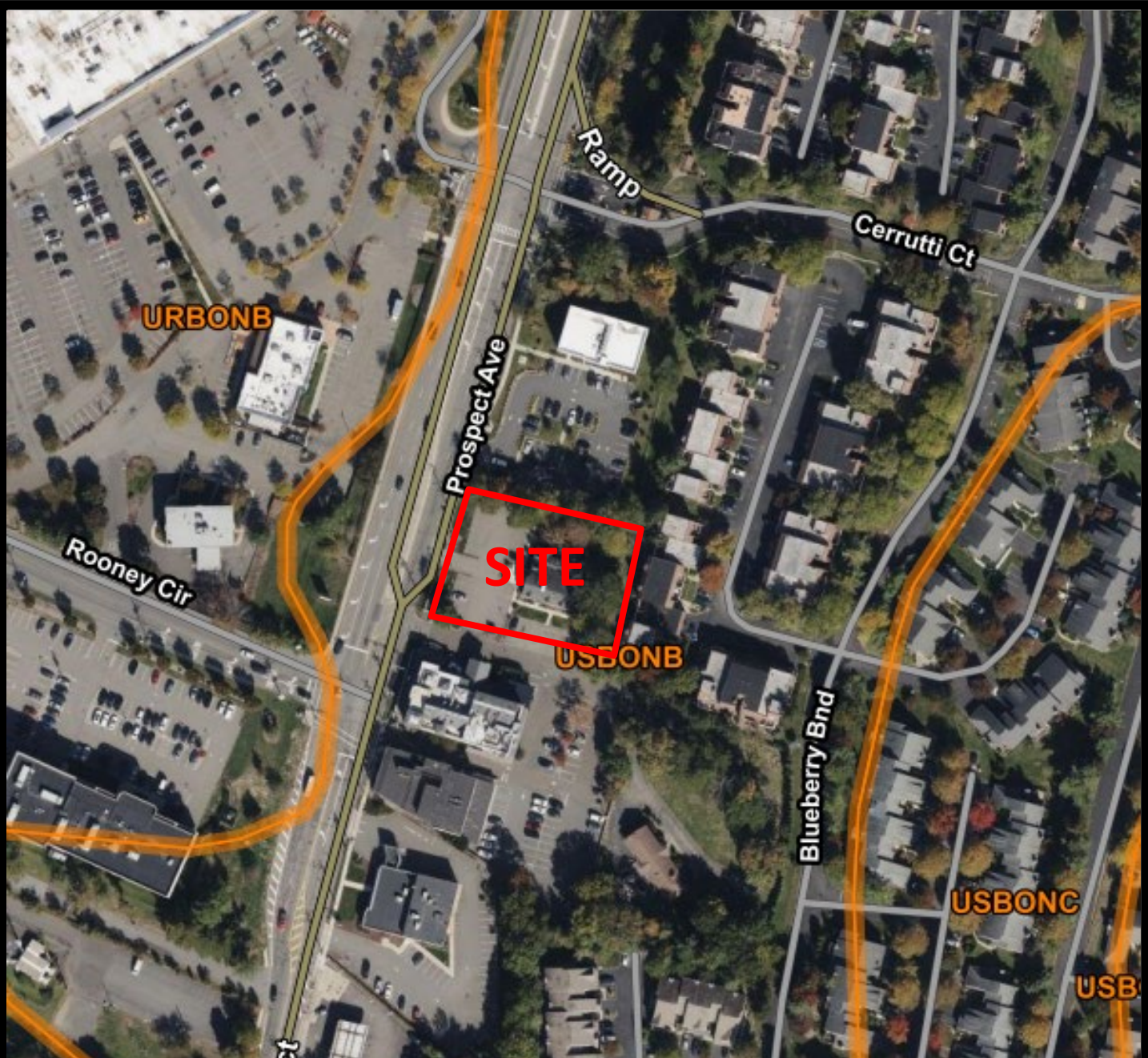
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DATE
12/10/2024







Map Unit Symbol	Map Unit Name
USBONB	Urban land, Boonton substratum - Boonton complex, 0 to 8 percent slopes
URBONB	Urban land, Boonton substratum - Boonton complex, 0 to 8 percent slopes
USBONC	Urban land, Boonton substratum - Boonton complex, 8 to 15 percent slopes

Source: Web Soil Survey



Mavis Store #2296

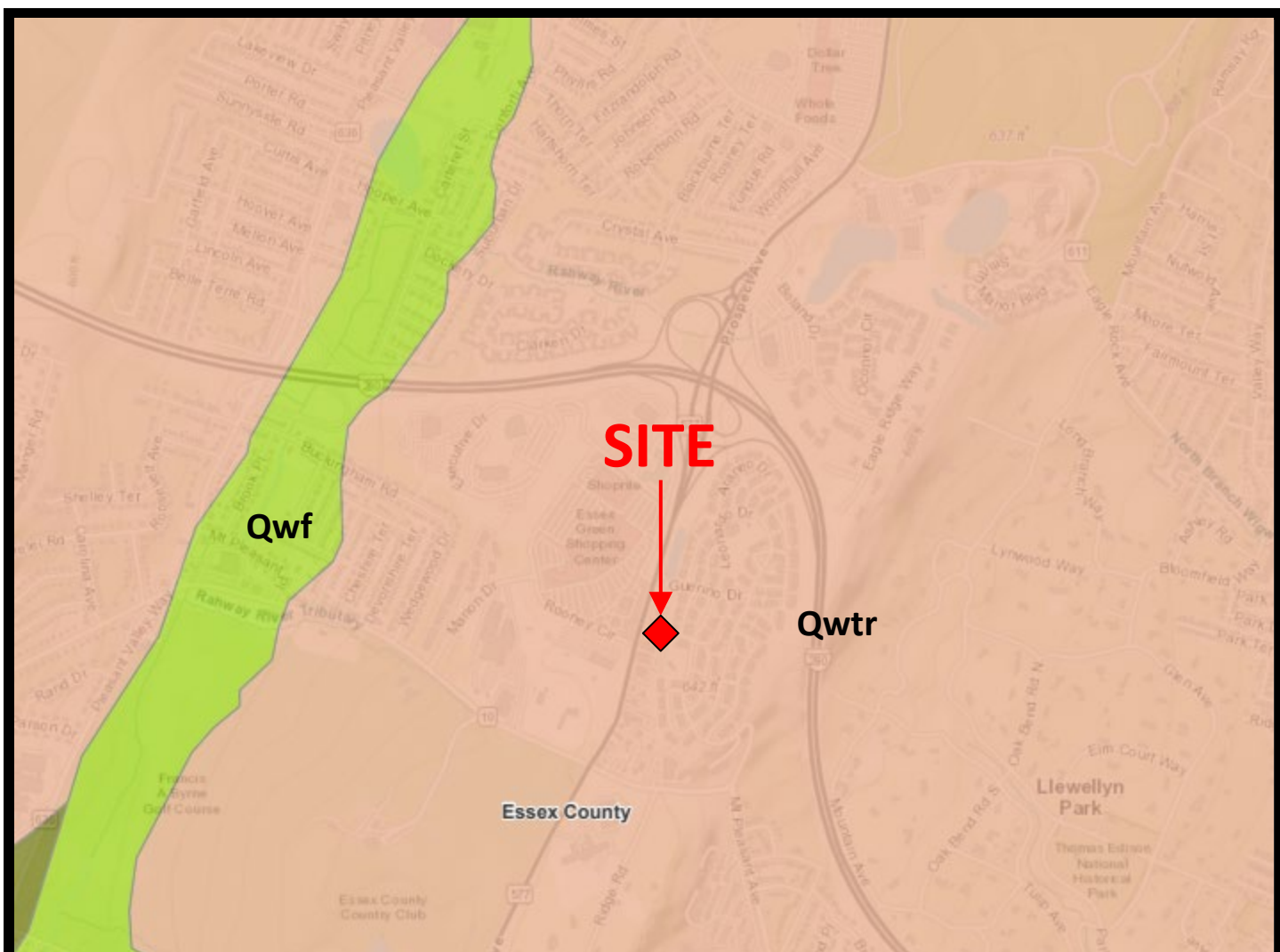
460 Prospect Avenue
West Orange, NJ

Mavis Tire Supply



SOIL SURVEY MAP

ECS Project 44:2100
December 10, 2024



Geologic Formation Name (Abbreviation)	Lithology	Notes
Rahway Till (Qwtr)	Clayey silt to sandy silt with some to many pebbles and cobbles and few boulders; reddish brown, reddish yellow, yellowish brown, brown. As much as 100 feet thick, generally less than 40 feet thick.	Deposited directly from glacial ice during the late Wisconsinan glaciation.
Late Wisconsinan Glaciofluvial Deposits (Qwf)	Sand and pebble-to-cobble gravel, minor silt; yellowish brown to reddish brown. As much as 50 feet thick.	Form plain and terraces (undifferentiated) deposited by glacial streams during the late Wisconsinan glaciation. Where plains and terraces are differentiated they are mapped separately as units Qwfv and Qwft, respectively

Source: NJ-Geoweb (Surficial Geology)



Mavis Store #2296

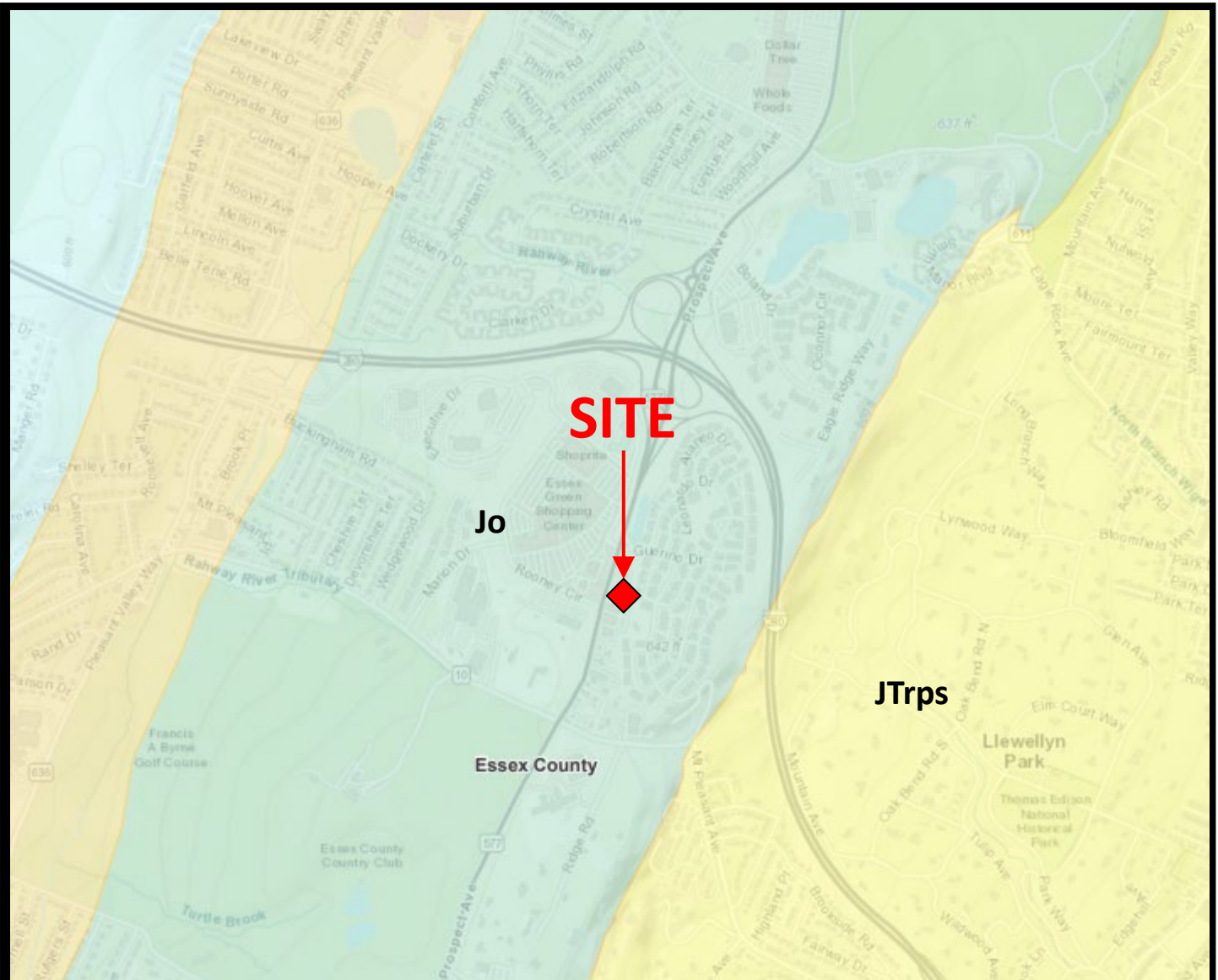
460 Prospect Avenue
West Orange, NJ

Mavis Tire Supply



SURFICIAL GEOLOGY MAP

ECS Project 44:2100
December 10 2024



Stratigraphic Unit Name (Abbreviation)	Stratigraphic Unit Number	Lithology
Orange Mountain Basalt (Jo)	3,700	Basalt, fine-to-medium-grained
Passaic Formation Sandstone and Siltstone Facies (JTprs)	4,500	Sandstone and siltstone

Source: NJ-Geoweb (Regional Geology)



Mavis Store #2296

460 Prospect Avenue
West Orange, NJ

Mavis Tire Supply



REGIONAL GEOLOGY MAP

ECS Project 44:2100
December 10, 2024

Appendix B – Field Operations

Reference Notes

Exploration Procedures

Boring Logs



REFERENCE NOTES FOR BORING LOGS

MATERIAL^{1,2}

	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	GW WELL-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GP POORLY-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GM SILTY GRAVEL gravel-sand-silt mixtures
	GC CLAYEY GRAVEL gravel-sand-clay mixtures
	SW WELL-GRADED SAND gravelly sand, little or no fines
	SP POORLY-GRADED SAND gravelly sand, little or no fines
	SM SILTY SAND sand-silt mixtures
	SC CLAYEY SAND sand-clay mixtures
	ML SILT non-plastic to medium plasticity
	MH ELASTIC SILT high plasticity
	CL LEAN CLAY low to medium plasticity
	CH FAT CLAY high plasticity
	OL ORGANIC SILT or CLAY non-plastic to low plasticity
	OH ORGANIC SILT or CLAY high plasticity
	PT PEAT highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS

SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION

DESIGNATION	PARTICLE SIZES
Boulders	12 inches (300 mm) or larger
Cobbles	3 inches to 12 inches (75 mm to 300 mm)
Gravel: Coarse	¾ inch to 3 inches (19 mm to 75 mm)
Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand: Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")	<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS

UNCONFINED COMPRESSIVE STRENGTH, QP ⁴	SPT ⁵ (BPF)	CONSISTENCY ⁷ (COHESIVE)
<0.25	<2	Very Soft
0.25 - <0.50	2 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

RELATIVE AMOUNT ⁷	COARSE GRAINED (%) ⁸	FINE GRAINED (%) ⁸
Trace	≤5	≤5
With	10 - 20	10 - 25
Adjective (ex: "Silty")	25 - 45	30 - 45

GRAVELS, SANDS & NON-COHESIVE SILTS

SPT ⁵	DENSITY
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

WATER LEVELS⁶

	WL (First Encountered)
	WL (Completion)
	WL (Seasonal High Water)
	WL (Stabilized)

FILL AND ROCK

FILL	POSSIBLE FILL	PROBABLE FILL	ROCK

¹Classifications and symbols per ASTM D 2488-17 (Visual-Manual Procedure) unless noted otherwise.

²To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

³Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

⁴Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

⁵Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf). SPT correlations per 7.4.2 Method B and need to be corrected if using an auto hammer.

⁶The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

⁷Minor deviation from ASTM D 2488-17 Note 14.

⁸Percentages are estimated to the nearest 5% per ASTM D 2488-17.



SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586 Split-Barrel Sampling

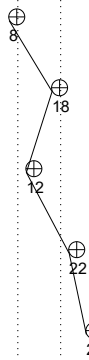
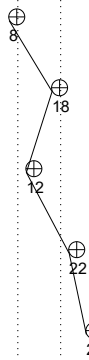
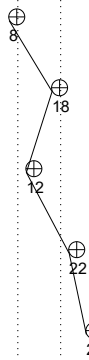
Standard Penetration Testing, or **SPT**, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

SPT Procedure:

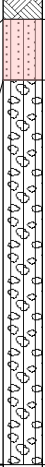
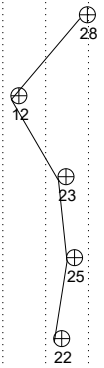
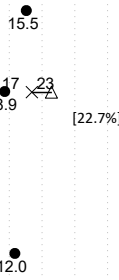
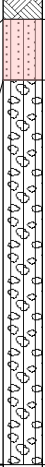
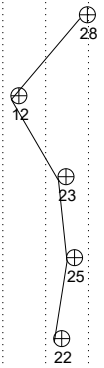
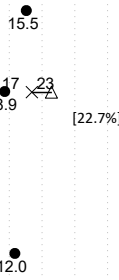
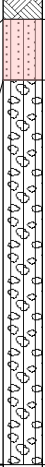
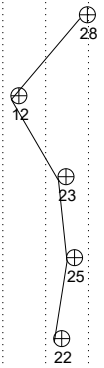
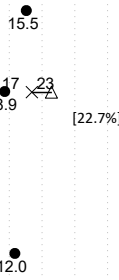
- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 18-24 inches (in 3 or 4 Increments of 6 inches each)
- Auger is advanced* and an additional SPT is performed
- One SPT typically performed for every two to five feet. An approximate 1.5 inch diameter soil sample is recovered.

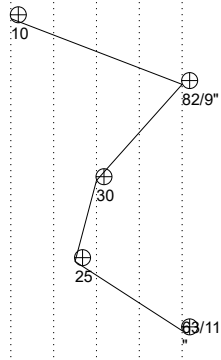
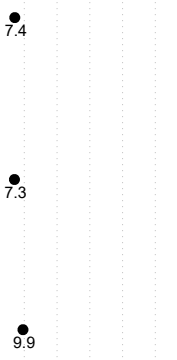
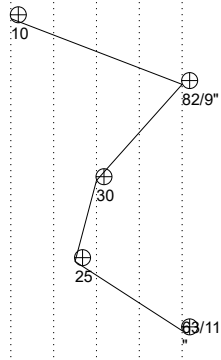
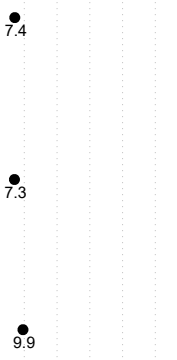
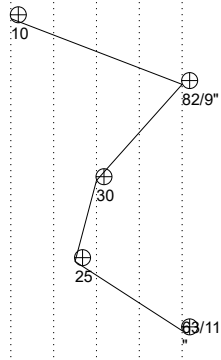
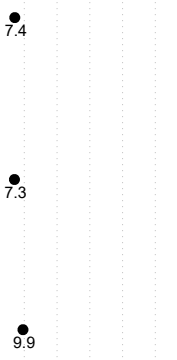


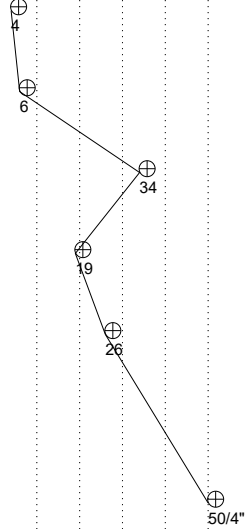
**Drilling Methods May Vary—* The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.

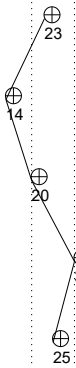
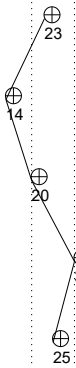
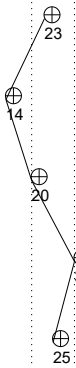
CLIENT: Mavis Tire Supply, LLC				PROJECT NO.: 44:2100		BORING NO.: B-01		SHEET: 1 of 1																																																																																																																																																																																																																				
PROJECT NAME: Mavis #2296 - West Orange, NJ				DRILLER/CONTRACTOR: Sano Drilling																																																																																																																																																																																																																								
SITE LOCATION: 460 Prospect Avenue, West Orange, New Jersey, 07054								LOSS OF CIRCULATION 																																																																																																																																																																																																																				
LATITUDE: 40.791718		LONGITUDE: -74.254222		STATION:		SURFACE ELEVATION: 615.0		BOTTOM OF CASING 																																																																																																																																																																																																																				
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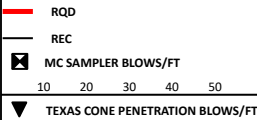
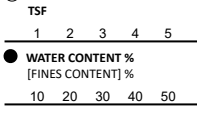
CLIENT: Mavis Tire Supply, LLC				PROJECT NO.: 44:2100		BORING NO.: B-02		SHEET: 1 of 1				
PROJECT NAME: Mavis #2296 - West Orange, NJ				DRILLER/CONTRACTOR: Sano Drilling								
SITE LOCATION: 460 Prospect Avenue, West Orange, New Jersey, 07054								LOSS OF CIRCULATION 				
LATITUDE: 40.791515		LONGITUDE: -74.254288		STATION:		SURFACE ELEVATION: 618.0		BOTTOM OF CASING 				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		LIQUID LIMIT X PLASTIC LIMIT	
									ROCK QUALITY DESIGNATION & RECOVERY		CALIBRATED PENETROMETER TSF	
								10 20 30 40 50		1 2 3 4 5		
								RQD		O		
								REC		X		
								MC SAMPLER BLOWS/FT		WATER CONTENT % [FINES CONTENT] %		
								10 20 30 40 50		10 20 30 40 50		
								TEXAS CONE PENETRATION BLOWS/FT				
5	S-1	SS	13	8	Asphalt Thickness[6.00"]			49-21-50/1" (71/7")				
	S-2	SS	0	0	(SM PROBABLE FILL) PROBABLE FILL, SILTY SAND WITH GRAVEL, gray, moist, very dense (NO RECOVERY), PROBABLE FILL			50/0" (50/0")				
	S-3	SS	24	14	(ML/CL) CLAYEY SILT, reddish brown, moist, stiff to very stiff		613	4-6-7-6 (13)			12.5	
	S-4	SS	24	14				5-6-10-10 (16)			12.1	
	S-5	SS	24	12	(ML) SILT, reddish brown, moist, medium dense		608	10-16-14-16 (30)				
	S-6	SS	9	6	(WR) WEATHERED ROCK SAMPLED AS SILTY SAND WITH GRAVEL, dark brown [Weathered ROCK]		603	8-50/3" (50/3")			10.3	
					END OF BORING AT 15.0 FT							
15												
20												
25												
30												
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL												
WL (First Encountered) Dry				BORING STARTED: Nov 22 2024				CAVE IN DEPTH:				
WL (Completion) Dry				BORING COMPLETED: Nov 22 2024				HAMMER TYPE: Auto				
WL (Seasonal High Water)				EQUIPMENT: Diedrich D-50		LOGGED BY: LJK1		DRILLING METHOD: Hollow Stem Auger				
WL (Stabilized)												
GEOTECHNICAL BOREHOLE LOG												

CLIENT: Mavis Tire Supply, LLC				PROJECT NO.: 44:2100		BORING NO.: B-03		SHEET: 1 of 1																																																																																																																																																																						
PROJECT NAME: Mavis #2296 - West Orange, NJ				DRILLER/CONTRACTOR: Sano Drilling																																																																																																																																																																										
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SITE LOCATION: 460 Prospect Avenue, West Orange, New Jersey, 07054								LOSS OF CIRCULATION 																																																																																																																			
LATITUDE: 40.791659		LONGITUDE: -74.253961		STATION:		SURFACE ELEVATION: 615.0		BOTTOM OF CASING 																																																																																																																			
<table><thead><tr><th>DEPTH (FT)</th><th>SAMPLE NUMBER</th><th>SAMPLE TYPE</th><th>SAMPLE DIST. (IN)</th><th>RECOVERY (IN)</th><th>DESCRIPTION OF MATERIAL</th><th>WATER LEVELS</th><th>ELEVATION (FT)</th><th>BLOWS/6" (TCP/MC/SPT-N value)*</th><th>STANDARD PENETRATION BLOWS/FT 10 20 30 40 50 20 40 60 80 100 ROCK QUALITY DESIGNATION & RECOVERY RQD REC MC SAMPLER BLOWS/FT 10 20 30 40 50 TEXAS CONE PENETRATION BLOWS/FT</th><th>LIQUID LIMIT X PLASTIC LIMIT CALIBRATED PENETROMETER TSF 1 2 3 4 5 WATER CONTENT % [FINES CONTENT] % 10 20 30 40 50</th></tr></thead><tbody><tr><td rowspan="5">5</td><td>S-1</td><td>SS</td><td>24</td><td>16</td><td>Topsoil Thickness[6.00"] (ML) SILT, trace gravel, light brown, tan, moist, loose</td><td rowspan="5"></td><td rowspan="5">610</td><td>2-3-7-12 (10)</td><td rowspan="5"></td><td rowspan="5"></td></tr><tr><td>S-2</td><td>SS</td><td>15</td><td>13</td><td>(ML) SILT, reddish brown, moist, medium dense to very dense</td><td>11-32-50/3" (82/9")</td></tr><tr><td>S-3</td><td>SS</td><td>24</td><td>19</td><td></td><td>11-15-15-15 (30)</td></tr><tr><td>S-4</td><td>SS</td><td>24</td><td>17</td><td></td><td>11-12-13-10 (25)</td></tr><tr><td>S-5</td><td>SS</td><td>17</td><td>11</td><td></td><td>13-13-50/5" (63/11")</td></tr><tr><td>10</td><td colspan="5"></td><td></td><td>605</td><td></td><td></td><td></td></tr><tr><td colspan="5"></td><td>AUGER REFUSAL AT 11.0 FT</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>15</td><td colspan="5"></td><td></td><td>600</td><td></td><td></td><td></td></tr><tr><td>20</td><td colspan="5"></td><td></td><td>595</td><td></td><td></td><td></td></tr><tr><td>25</td><td colspan="5"></td><td></td><td>590</td><td></td><td></td><td></td></tr><tr><td>30</td><td colspan="5"></td><td></td><td>585</td><td></td><td></td><td></td></tr></tbody></table>												DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value)*	STANDARD PENETRATION BLOWS/FT 10 20 30 40 50 20 40 60 80 100 ROCK QUALITY DESIGNATION & RECOVERY RQD REC MC SAMPLER BLOWS/FT 10 20 30 40 50 TEXAS CONE PENETRATION BLOWS/FT	LIQUID LIMIT X PLASTIC LIMIT CALIBRATED PENETROMETER TSF 1 2 3 4 5 WATER CONTENT % [FINES CONTENT] % 10 20 30 40 50	5	S-1	SS	24	16	Topsoil Thickness[6.00"] (ML) SILT, trace gravel, light brown, tan, moist, loose		610	2-3-7-12 (10)			S-2	SS	15	13	(ML) SILT, reddish brown, moist, medium dense to very dense	11-32-50/3" (82/9")	S-3	SS	24	19		11-15-15-15 (30)	S-4	SS	24	17		11-12-13-10 (25)	S-5	SS	17	11		13-13-50/5" (63/11")	10							605									AUGER REFUSAL AT 11.0 FT						15							600				20							595				25							590				30							585			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value)*	STANDARD PENETRATION BLOWS/FT 10 20 30 40 50 20 40 60 80 100 ROCK QUALITY DESIGNATION & RECOVERY RQD REC MC SAMPLER BLOWS/FT 10 20 30 40 50 TEXAS CONE PENETRATION BLOWS/FT	LIQUID LIMIT X PLASTIC LIMIT CALIBRATED PENETROMETER TSF 1 2 3 4 5 WATER CONTENT % [FINES CONTENT] % 10 20 30 40 50																																																																																																																	
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CLIENT: Mavis Tire Supply, LLC				PROJECT NO.: 44:2100		BORING NO.: B-05		SHEET: 1 of 1				
PROJECT NAME: Mavis #2296 - West Orange, NJ				DRILLER/CONTRACTOR: Sano Drilling								
SITE LOCATION: 460 Prospect Avenue, West Orange, New Jersey, 07054								LOSS OF CIRCULATION 				
LATITUDE: 40.791445		LONGITUDE: -74.254028		STATION:		SURFACE ELEVATION: 620.0		BOTTOM OF CASING 				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		LIQUID LIMIT X PLASTIC LIMIT	
									ROCK QUALITY DESIGNATION & RECOVERY		CALIBRATED PENETROMETER TSF	
	S-1	SS	24	12	Topsoil Thickness[3.00"] (ML/CL) CLAYEY SILT, brown to dark brown, reddish brown, moist, firm			2-1-3-4 (4)			12.5	
	S-2	SS	24	13				2-3-3-5 (6)				
5	S-3	SS	24	16	(SM) SILTY SAND, reddish brown, moist, dense		615	7-12-22-24 (34)				
	S-4	SS	24	17	(ML/CL) CLAYEY SILT, reddish brown, brown, moist, very stiff to very hard			10-9-10-12 (19)			13.2	
10	S-5	SS	24	12				12-12-14-11 (26)				
	S-6	SS	4	4				50/4" (50/4")				
15					END OF BORING AT 15.0 FT		605					
20							600					
25							595					
30							590					
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL												
☒ WL (First Encountered) Dry				BORING STARTED: Nov 22 2024				CAVE IN DEPTH:				
☒ WL (Completion) Dry				BORING COMPLETED: Nov 22 2024				HAMMER TYPE: Auto				
☒ WL (Seasonal High Water)				EQUIPMENT: Diedrich D-50		LOGGED BY: LJK1		DRILLING METHOD: Hollow Stem Auger				
☒ WL (Stabilized)												
GEOTECHNICAL BOREHOLE LOG												

CLIENT: Mavis Tire Supply, LLC				PROJECT NO.: 44:2100		BORING NO.: B-06		SHEET: 1 of 1																																																																																																															
PROJECT NAME: Mavis #2296 - West Orange, NJ				DRILLER/CONTRACTOR: Sano Drilling																																																																																																																			
SITE LOCATION: 460 Prospect Avenue, West Orange, New Jersey, 07054								LOSS OF CIRCULATION 																																																																																																															
LATITUDE: 40.791368		LONGITUDE: -74.253944		STATION:		SURFACE ELEVATION: 619.0		BOTTOM OF CASING																																																																																																															
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CLIENT: Mavis Tire Supply, LLC				PROJECT NO.: 44:2100		BORING NO.: B-07		SHEET: 1 of 1				
PROJECT NAME: Mavis #2296 - West Orange, NJ				DRILLER/CONTRACTOR: Sano Drilling								
SITE LOCATION: 460 Prospect Avenue, West Orange, New Jersey, 07054								LOSS OF CIRCULATION 				
LATITUDE: 40.791554		LONGITUDE: -74.253873		STATION:		SURFACE ELEVATION: 616.0		BOTTOM OF CASING 				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N value) *	STANDARD PENETRATION BLOWS/FT		LIQUID LIMIT X PLASTIC LIMIT	
									ROCK QUALITY DESIGNATION & RECOVERY		CALIBRATED PENETROMETER TSF	
												
	S-1	SS	24	14	Topsoil Thickness[6.00"]			2-4-6-11 (10)				
	S-2	SS	16	13	(ML PROBABLE FILL) PROBABLE FILL, SILT, trace gravel, light brown, tan, moist, loose			10-25-50/4" (75/10")				
5	S-3	SS	24	17	(ML) SILT, reddish brown, moist, medium dense to very dense		611	10-13-14-13 (27)				
					END OF BORING AT 6.0 FT							
10							606					
15							601					
20							596					
25							591					
30							586					
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL												
 WL (First Encountered)		Dry		BORING STARTED: Nov 22 2024		CAVE IN DEPTH:						
 WL (Completion)		Dry		BORING COMPLETED: Nov 22 2024		HAMMER TYPE: Auto						
 WL (Seasonal High Water)				EQUIPMENT: Diedrich D-50		LOGGED BY: LJK1		DRILLING METHOD: Hollow Stem Auger				
 WL (Stabilized)												
GEOTECHNICAL BOREHOLE LOG												

CLIENT: Mavis Tire Supply, LLC						PROJECT NO.: 44:2100		BORING NO.: B-08		SHEET: 1 of 1																																																																																																																																																																					
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									10	20	30	40	50	10	20	30	40	50	TSF	1	2	3	4	5																																																																																																																																																							
5	S-1	SS	18	11	Asphalt Thickness[6.00"] (SM PROBABLE FILL) PROBABLE FILL, SILTY SAND WITH GRAVEL, brown, moist, medium dense			17-12-12 (24)																																																																																																																																																																							
	S-2	SS	24	7			17-10-10-10 (20)																																																																																																																																																																								
	S-3	SS	24	5	(ML) SILT WITH GRAVEL, light brown, moist, medium dense		614	6-6-8-9 (14)																																																																																																																																																																							
					END OF BORING AT 6.0 FT																																																																																																																																																																										
10								609																																																																																																																																																																							
15								604																																																																																																																																																																							
20								599																																																																																																																																																																							
25								594																																																																																																																																																																							
30								589																																																																																																																																																																							
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL																																																																																																																																																																															
☒ WL (First Encountered) Dry						BORING STARTED: Nov 22 2024				CAVE IN DEPTH:																																																																																																																																																																					
☒ WL (Completion) Dry						BORING COMPLETED: Nov 22 2024				HAMMER TYPE: Auto																																																																																																																																																																					
☒ WL (Seasonal High Water)						EQUIPMENT: Diedrich D-50		LOGGED BY: LJK1		DRILLING METHOD: Hollow Stem Auger																																																																																																																																																																					
☒ WL (Stabilized)																																																																																																																																																																															
GEOTECHNICAL BOREHOLE LOG																																																																																																																																																																															

Appendix C – Laboratory Testing

Laboratory Testing Summary

Grain Size Analysis/Analyses

Plasticity Chart(s)

Moisture-Density Relationship Curve(s)

CBR Test Results

Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
B-01	S-2	2.0-4.0	15.7										
B-01	S-3	4.0-6.0	12.4	SC-SM	21	16	5	40.7					
B-01	S-5	8.0-10.0	14.2										
B-02	S-3	4.0-6.0	12.5										
B-02	S-4	6.0-8.0	12.1										
B-02	S-6	13.0-13.8	10.3										
B-03	S-2	2.0-4.0	15.5										
B-03	S-3	4.0-6.0	8.9	GC-GM	23	17	6	22.7					
B-03	S-5	8.0-10.0	12.0										
B-04	S-1	0.0-2.0	7.4										

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Mavis #2296 - West Orange, NJ
Client: Mavis Tire Supply, LLC

Project No.: 44:2100
Date Reported: 12/6/2024



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Tested by	Checked by	Approved by	Date Received
J Gross	S Hansson	J Yates	11/27/2024

Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
B-04	S-3	4.0-6.0	7.3										
B-04	S-5	8.0-9.4	9.9										
B-05	S-2	2.0-4.0	12.5										
B-05	S-4	6.0-8.0	13.2										
B-06	S-3	4.0-6.0	10.7	CL-ML	23	16	7	50.3					

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

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Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
B-07, B-08	D3S-39	1.0-6.0	12.0	SC	23	15	8	37.0	131.8	7.8	12.2	12.6	

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Mavis #2296 - West Orange, NJ
Client: Mavis Tire Supply, LLC

Project No.: 44:2100
Date Reported: 12/9/2024



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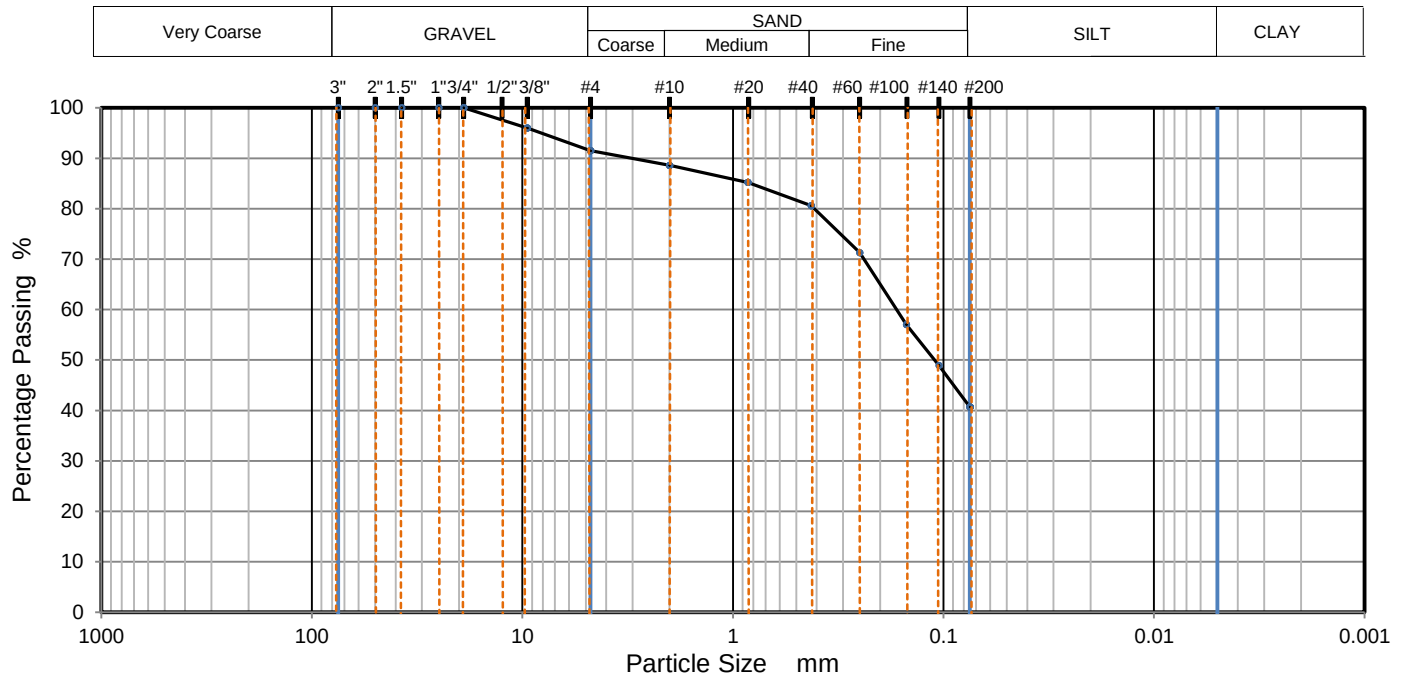
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0		
2"	100.0		
1 1/2"	100.0		
1"	100.0		
3/4"	100.0		
3/8"	96.0		
#4	91.5		
#10	88.6		
#20	85.2		
#40	80.6		
#60	71.3		
#100	57.0		
#140	48.9		
#200	40.7		

Dry Mass of sample, g

96.4

Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	8.5
Coarse Sand, #4 to #10 sieve	2.9
Medium Sand, #10 to #40	8.0
Fine Sand, #40 to #200	39.9
Fines <#200	40.7

USCS	SC-SM	Liquid Limit	21	D90	3.037	D50	0.110	D10	
AASHTO	A-4	Plastic Limit	16	D85	0.825	D30		Cu	
USCS Group Name	Silty, clayey sand	Plasticity Index	5	D60	0.167	D15		Cc	

Project: Mavis #2296 - West Orange, NJ
 Client: Mavis Tire Supply, LLC
 Sample Description: Reddish Brown Silty Clayey Sand
 Sample Source: B-01

Project No.: 44:2100
 Depth (ft): 4.0 - 6.0
 Sample No.: S-3
 Date Reported: 12/6/2024



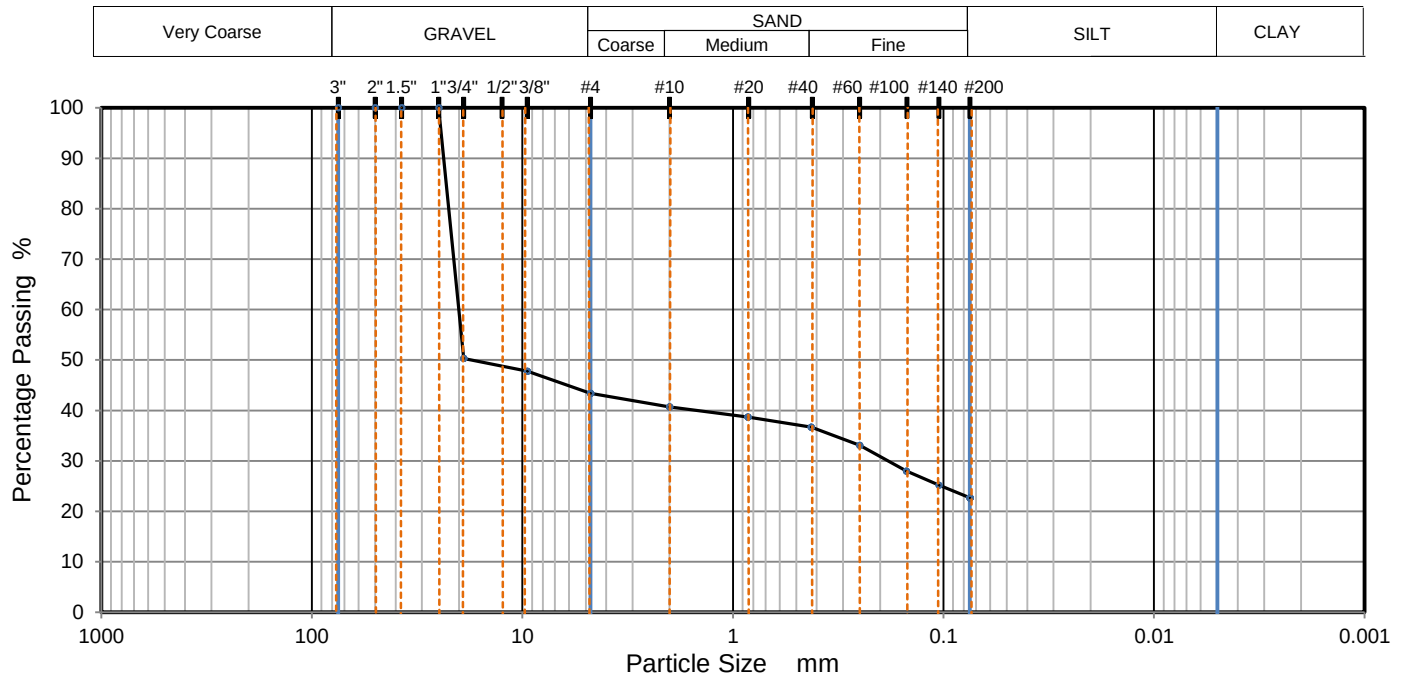
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0		
2"	100.0		
1 1/2"	100.0		
1"	100.0		
3/4"	50.3		
3/8"	47.8		
#4	43.4		
#10	40.7		
#20	38.7		
#40	36.7		
#60	33.1		
#100	28.0		
#140	25.2		
#200	22.7		

Dry Mass of sample, g

221.2

Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	56.6
Coarse Sand, #4 to #10 sieve	2.7
Medium Sand, #10 to #40	4.0
Fine Sand, #40 to #200	14.0
Fines <#200	22.7

USCS	GC-GM	Liquid Limit	23	D90	23.660	D50	17.480	D10	
AASHTO	A-1-b	Plastic Limit	17	D85	23.010	D30	0.183	Cu	
USCS Group Name	Silty, clayey gravel with sand	Plasticity Index	6	D60	20.050	D15		Cc	

Project: Mavis #2296 - West Orange, NJ
 Client: Mavis Tire Supply, LLC
 Sample Description: Reddish Brown Silty Clayey Gravel with Sand
 Sample Source: B-03

Project No.: 44:2100
 Depth (ft): 4.0 - 6.0
 Sample No.: S-3
 Date Reported: 12/6/2024



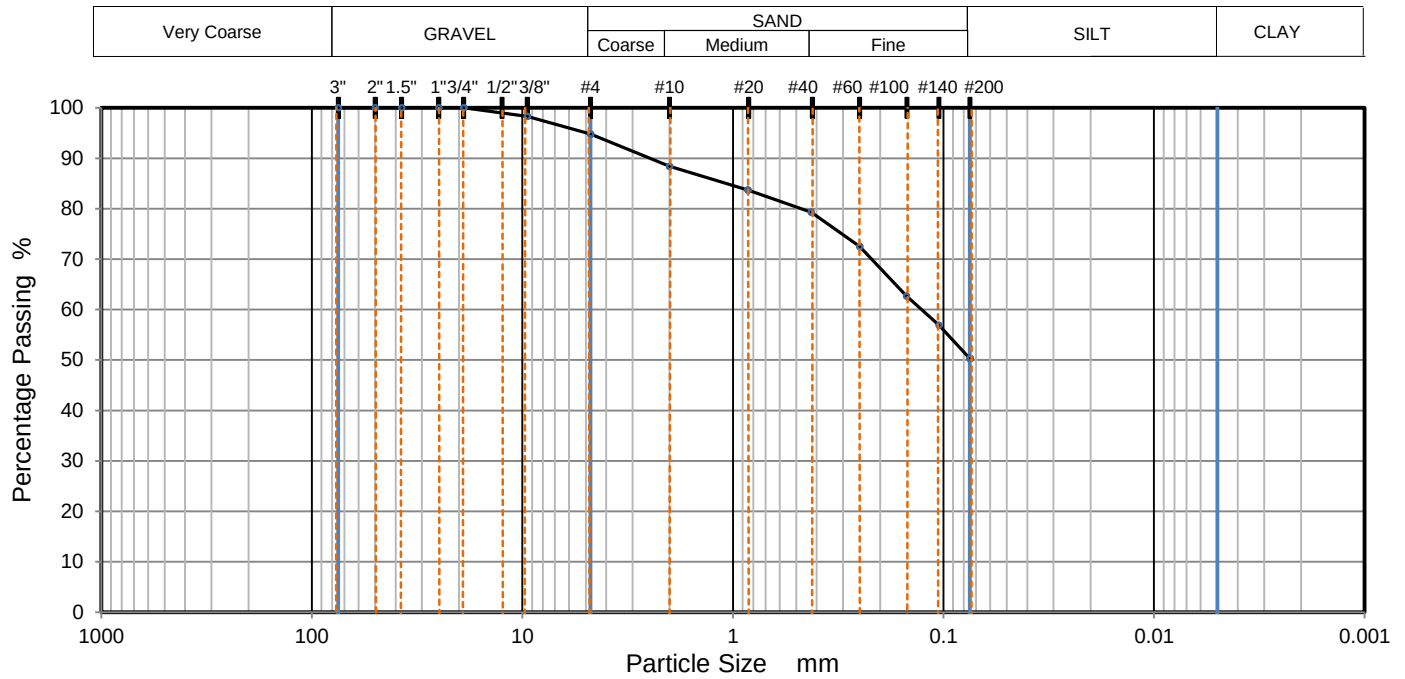
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0		
2"	100.0		
1 1/2"	100.0		
1"	100.0		
3/4"	100.0		
3/8"	98.3		
#4	94.8		
#10	88.4		
#20	83.7		
#40	79.3		
#60	72.5		
#100	62.7		
#140	56.9		
#200	50.3		

Dry Mass of sample, g

107.3

Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	5.2
Coarse Sand, #4 to #10 sieve	6.4
Medium Sand, #10 to #40	9.1
Fine Sand, #40 to #200	29.0
Fines <#200	50.3

USCS	CL-ML	Liquid Limit	23	D90	2.483	D50		D10	
AASHTO	A-4	Plastic Limit	16	D85	1.077	D30		Cu	
USCS Group Name	Sandy silty clay	Plasticity Index	7	D60	0.127	D15		Cc	

Project: Mavis #2296 - West Orange, NJ
 Client: Mavis Tire Supply, LLC
 Sample Description: Reddish Brown Sandy Silty Clay
 Sample Source: B-06

Project No.: 44:2100
 Depth (ft): 4.0 - 6.0
 Sample No.: S-3
 Date Reported: 12/6/2024



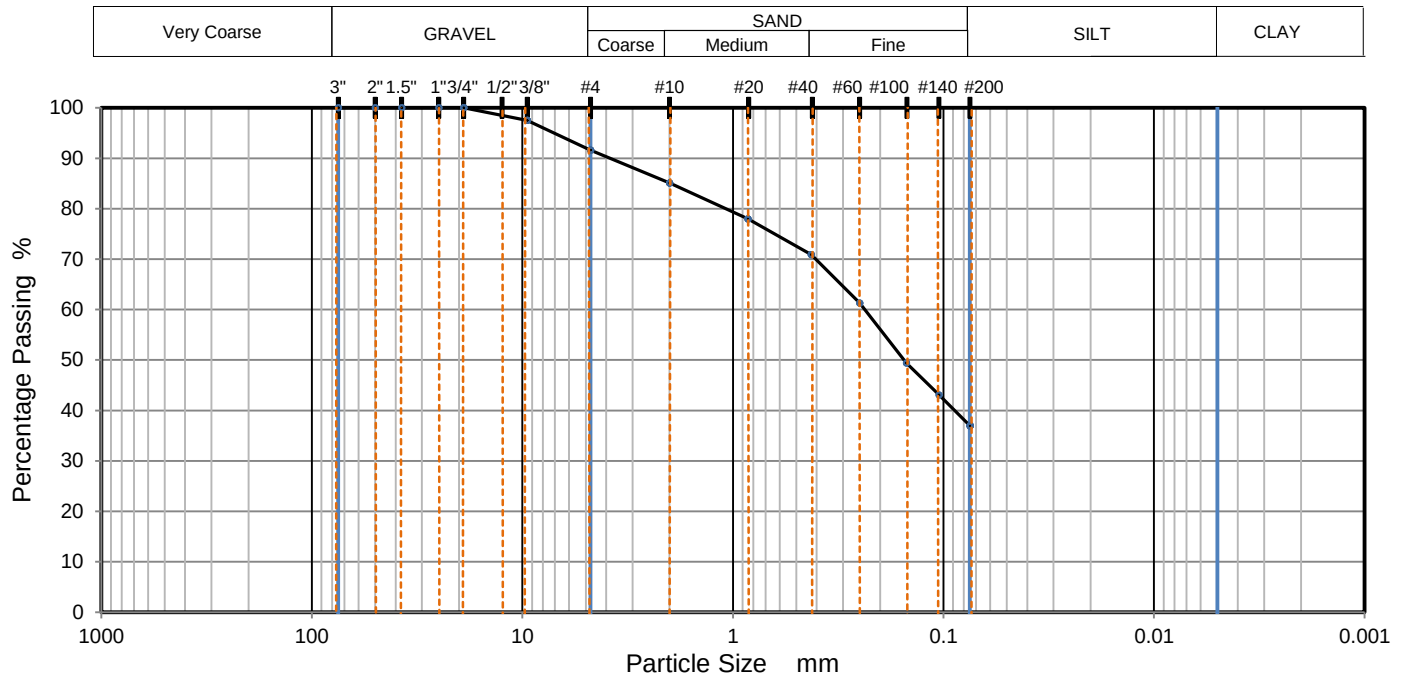
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0		
2"	100.0		
1 1/2"	100.0		
1"	100.0		
3/4"	100.0		
3/8"	97.5		
#4	91.6		
#10	85.1		
#20	78.0		
#40	70.9		
#60	61.3		
#100	49.4		
#140	43.1		
#200	37.0		

Dry Mass of sample, g

270.3

Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	8.4
Coarse Sand, #4 to #10 sieve	6.5
Medium Sand, #10 to #40	14.2
Fine Sand, #40 to #200	33.9
Fines <#200	37.0

USCS	SC	Liquid Limit	23	D90	3.839	D50	0.154	D10	
AASHTO	A-4	Plastic Limit	15	D85	1.976	D30		Cu	
USCS Group Name	Clayey sand	Plasticity Index	8	D60	0.236	D15		Cc	

Project: Mavis #2296 - West Orange, NJ
 Client: Mavis Tire Supply, LLC
 Sample Description: Reddish Brown Clayey Sand
 Sample Source: B-07, B-08

Project No.: 44:2100
 Depth (ft): 1.0 - 6.0
 Sample No.: D3S-39
 Date Reported: 12/9/2024



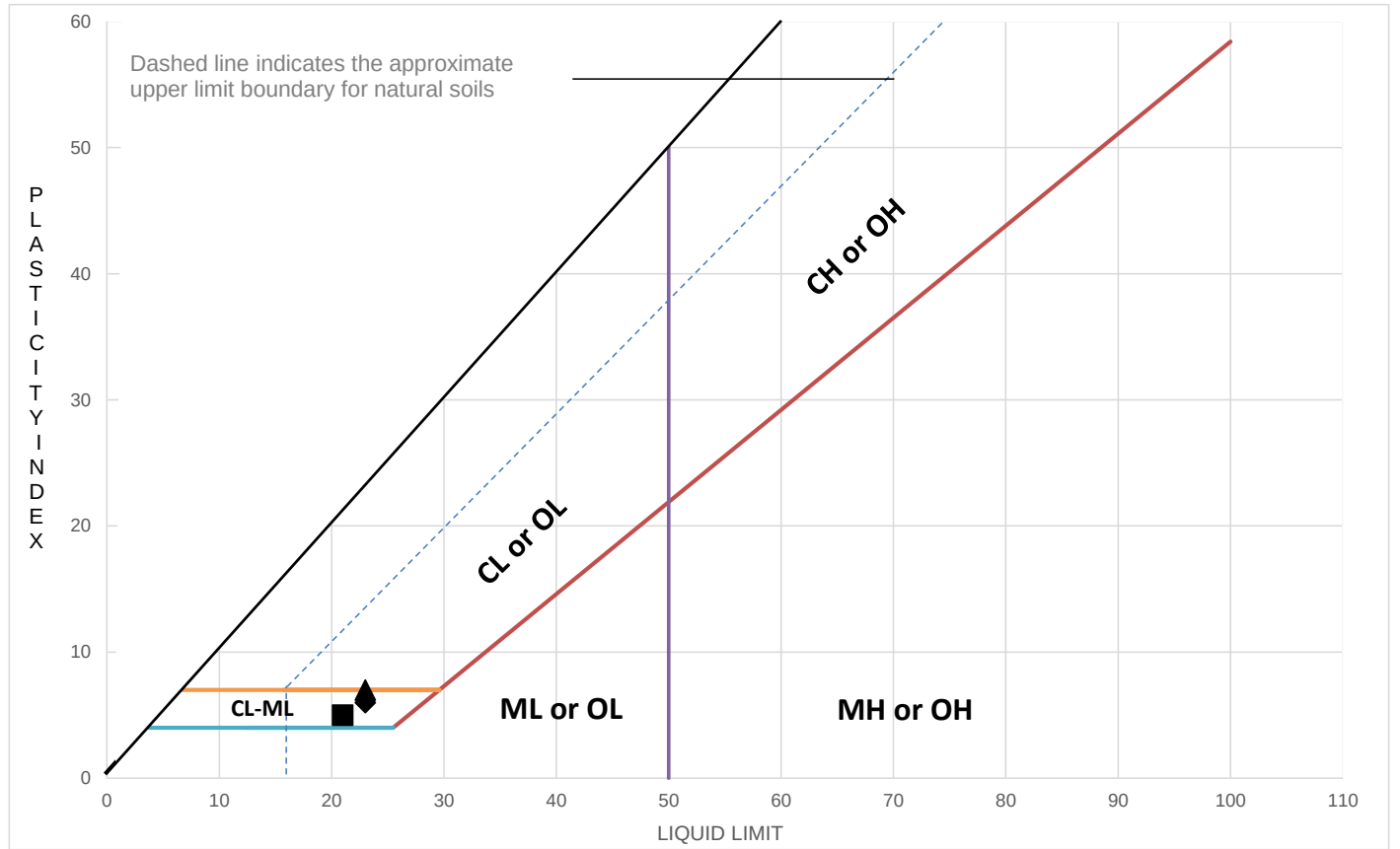
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LIQUID AND PLASTIC LIMITS TEST REPORT



TEST RESULTS (ASTM D4318-10 (MULTIPOINT TEST))

	Sample Location	Sample Number	Sample Depth (ft)	LL	PL	PI	%<#40	%<#200	AASHTO	USCS	Material Description
■	B-01	S-3	4.00-6.00	21	16	5	80.6	40.7	A-4	SC-SM	Reddish Brown Silty Clayey Sand
◆	B-03	S-3	4.00-6.00	23	17	6	36.7	22.7	A-1-b	GC-GM	Reddish Brown Silty Clayey Gravel with Sand
▲	B-06	S-3	4.00-6.00	23	16	7	79.3	50.3	A-4	CL-ML	Reddish Brown Sandy Silty Clay

Project: Mavis #2296 - West Orange, NJ
Client: Mavis Tire Supply, LLC

Project No.: 44:2100
Date Reported: 12/6/2024



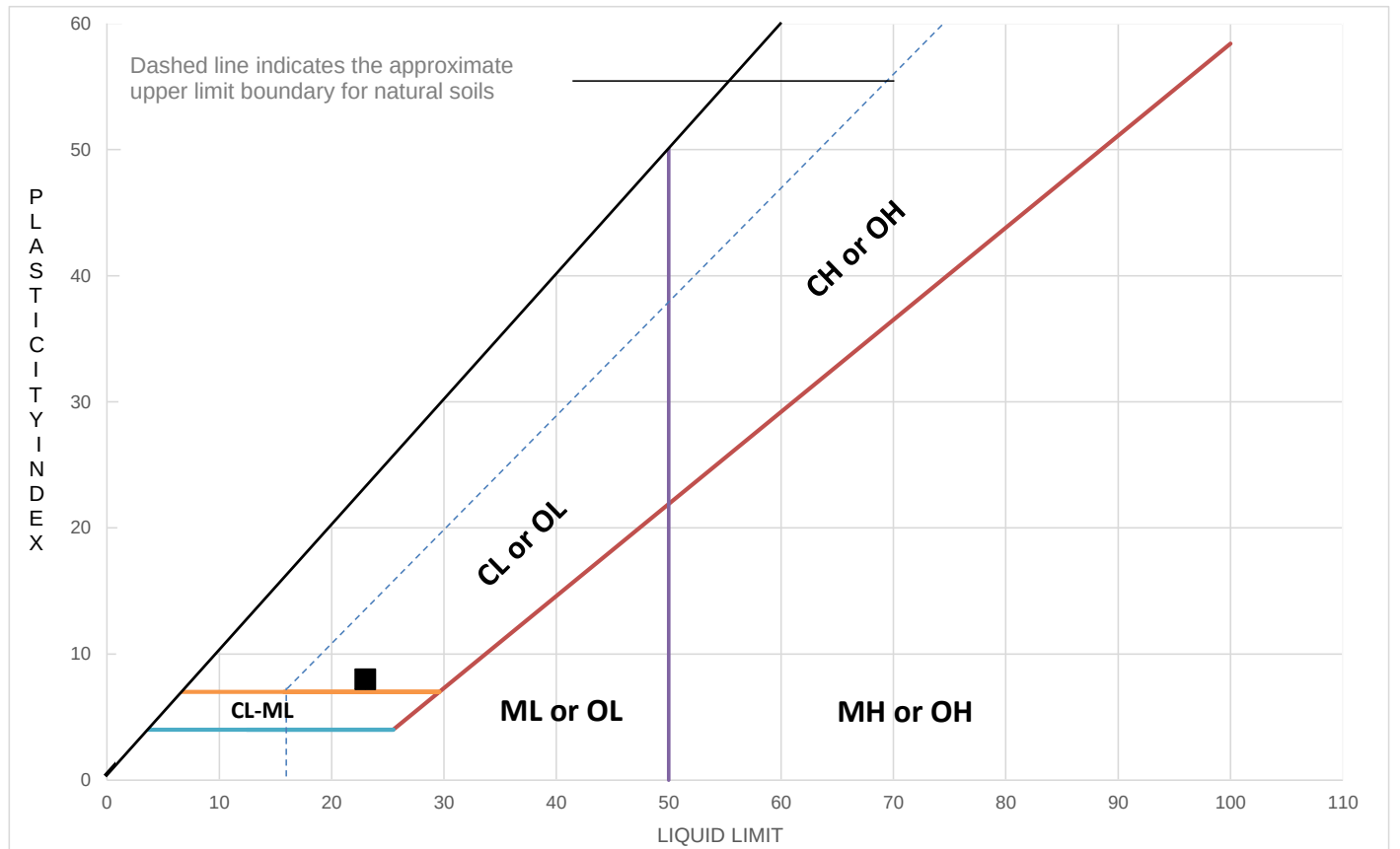
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LIQUID AND PLASTIC LIMITS TEST REPORT



TEST RESULTS (ASTM D4318-10 (MULTIPOINT TEST))

	Sample Location	Sample Number	Sample Depth (ft)	LL	PL	PI	%<#40	%<#200	AASHTO	USCS	Material Description
■	B-07, B-08	D3S-39	1.00-6.00	23	15	8	70.9	37.0	A-4	SC	Reddish Brown Clayey Sand

Project: Mavis #2296 - West Orange, NJ
Client: Mavis Tire Supply, LLC

Project No.: 44:2100
Date Reported: 12/9/2024



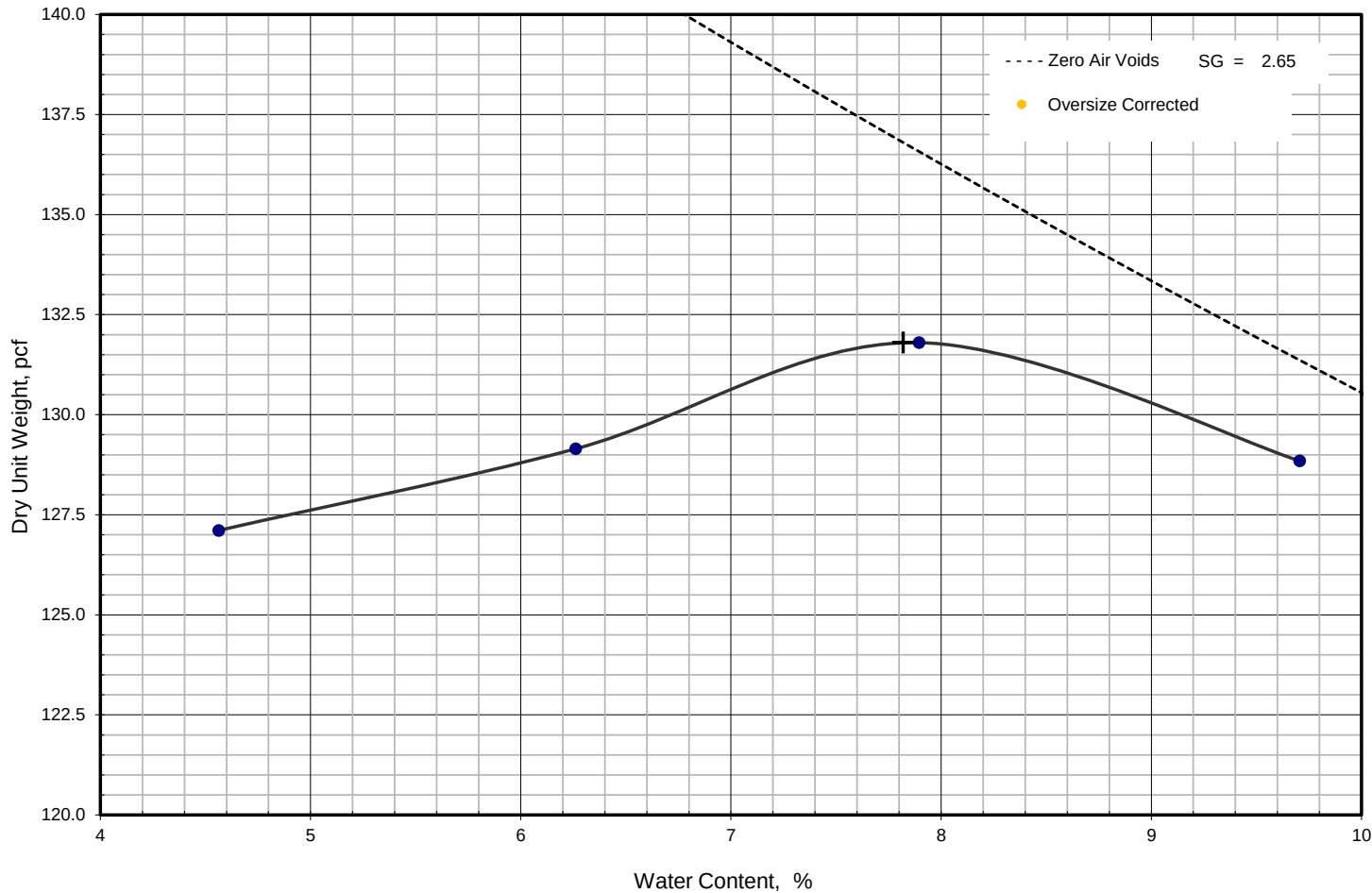
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Laboratory Compaction Characteristics of Soil
Using Modified Effort



Optimum Moisture Content			7.8	%	Preparation		ASTM dry preparation method	
Maximum Dry Unit Weight			131.8	pcf	Type of rammer		Manual - 10lbf (44.5N)	
					Test Specification / Method		ASTM D1557-12e1-method C	
					Specific gravity - D854 water pycnometer		2.65	Historical
Cumulative material retained on:			3/4 in. sieve	0.4	%	Coarse Aggregate Specific Gravity -		
			3/8 in. sieve		%			
			#4 sieve		%			

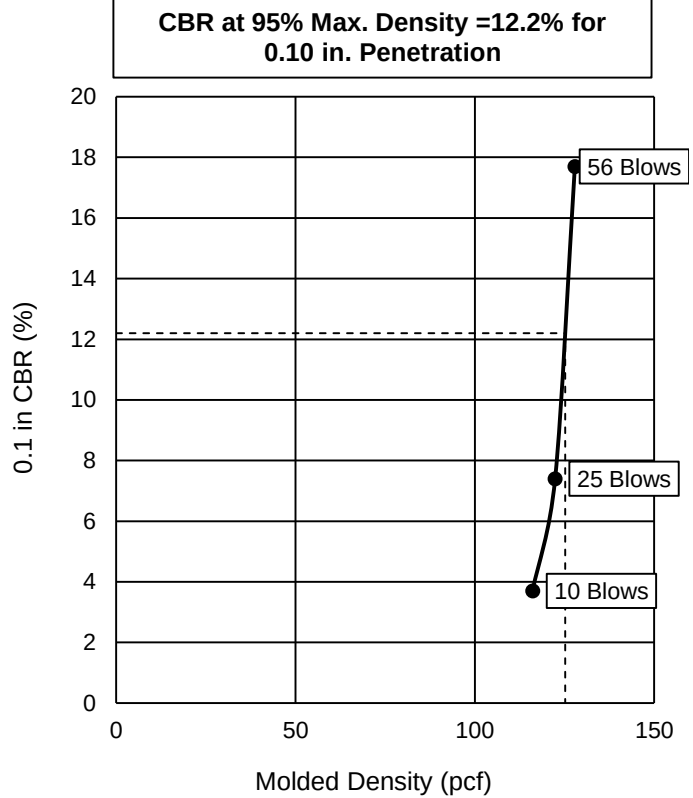
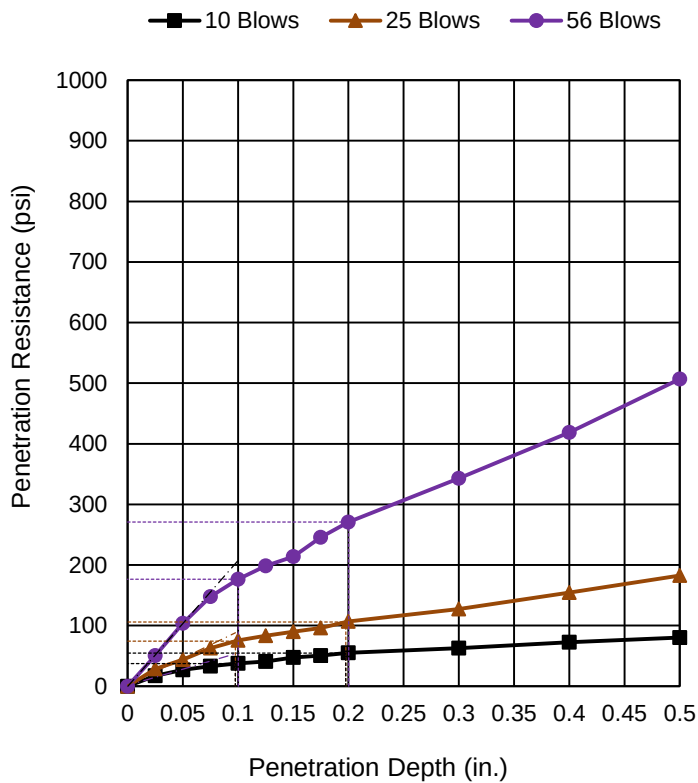
Soil Description	Nat. Moist. %	Liquid Limit	Plasticity Index	%< #200	USCS	AASHTO
Reddish Brown Clayey Sand	12.0	23	8	37.0	SC	A-4

Project: Mavis #2296 - West Orange, NJ			Project No.: 44:2100		
Client: Mavis Tire Supply, LLC			Depth (ft.): 1 - 6		
Sample / Source: B-07, B-08			Sample No.: D3S-39		
Test Reference/No.:			Date Reported: 12/9/2024		

	Office / Lab	Address	Office Number / Fax
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Tested by	Checked by	Approved by	Date Received	Remarks
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California Bearing Ratios (CBR) of Laboratory-Compacted Soils



TEST RESULTS (ASTM D-1883)

	Molded			Soaked			CBR (%)		Linearty Correction (in.)	Surcharge (lbs.)	Max Swell (%)		
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.1 in.	0.2 in.					
1	116.1	88.1	7.0	104.6	79.4	17.2	3.7	3.6	0.00	10	1.35		
2	122.4	92.9	6.8	110.3	83.7	16.7	7.4	7.1	0.00	10	1.55		
3	127.9	97.0	7.1	117.7	89.3	14.9	17.7	18.1	0.00	10	1.31		
	Material Description					AASHTO	USCS	MAX. Dens. (pcf)	Optimum Moisture (%)	LL	PI	% Fines	% Gravel
	Reddish Brown Clayey Sand												
						A-4	SC	131.8	7.8	23	8	37.0	8.4

Project: Mavis #2296 - West Orange, NJ
 Client: Mavis Tire Supply, LLC
 Sample / Source B-07, B-08
 Test Reference/No.: 1

Project No.: 44:2100
 Depth (ft.): 1 - 6
 Sample No.: D3S-39
 Date Reported: 12/9/2024



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