



Report of
Geotechnical Investigation

**Lawton Elementary School
2250 S. 7th Street
City of Ann Arbor
Washtenaw County,
Michigan 48103**

Latitude : 42.253545 ° N
Longitude : -83.764840 ° W

Prepared for:

Ann Arbor Public Schools
2555 South State Street
Ann Arbor, Michigan 48104

G2 Project No. 243116
August 16, 2024



CONSULTING
GROUP

August 16, 2024

Mr. Jason Bing, RA, LEED AP
Director, Capital Programs
Ann Arbor Public Schools
2555 South State Street
Ann Arbor, Michigan 48104

RE: Report of Geotechnical Investigation
Ann Arbor Public Schools
Lawton Elementary School
2250 S. 7th Street
City of Ann Arbor, Washtenaw County, Michigan 48103
G2 Project No. 243116

Dear Mr. Bing:

We have completed the geotechnical investigation related to the proposed site improvements at the Lawton Elementary Campus located at the above address in Ann Arbor, Michigan. This report presents the results of our observations, analysis, and recommendations for the earthwork operations, foundation design, pavement design, and construction considerations as they relate to the geotechnical conditions at the site.

We appreciate the opportunity to be of service to Ann Arbor Public Schools on this project and look forward to discussing the recommendations presented herein. In the meantime, if you have any questions regarding this report or any other matter pertaining to the project, please call us.

Sincerely,

G2 Consulting Group, LLC

Tyler S. Hesse, P.E.
Project Engineer

TSH/JBS/jbs

Jason B. Stoops, P.E.
Office Manager / Associate



g2consultinggroup.com

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EXECUTIVE SUMMARY

The proposed project includes the construction of a new building located northwest of the existing Lawton Elementary School building. Furthermore, G2 Consulting Group, LLC (G2) understands that associated utilities, site concrete, and bituminous/Portland cement concrete (PCC) pavements will be constructed in conjunction with this project.

Approximately 4 to 4-1/2 inches of bituminous pavement supported by 8 inches of gravelly sand aggregate base is present at the ground surface within borings B-02 and P-09. Approximately 4 to 14 inches of sandy clay topsoil is present at the ground surface within borings B-01, B-03 through B-22, and P-01 through P-08. Loose silty sand and soft to hard sandy clay fill underlie the topsoil within borings B-01, B-03, B-11, B-17, B-22, and P-03, and the aggregate base soils within borings B-02 and P-09 extending to approximate depths ranging from 2 to 7-1/2 feet. The fill has organic matter contents ranging from 3 to 3.8 percent. Native soft to stiff organic silt and marl, with organic matter contents ranging from 5.4 to 6.3 percent, underlie the fill within boring B-03 and B-22 extending to approximate depths ranging from 5 to 5-1/2 feet. In general, native medium to hard cohesive soils consisting of sandy clay and clayey silt underlie the fill soils within borings B-01, B-02, B-11, B-17, and P-09, the organic silt within borings B-03 and B-22, and the topsoil within borings B-04 through B-10, B-12 through B-16, B-18 through B-21, P-01, P-02, and P-04 through P-08, extending to depths ranging from 10 feet to the explored depth of 20 feet below existing grades. However, layers of native loose to medium compact granular soils consisting of clayey sand, gravelly sand, silty sand, silt, and sandy silt are present within borings B-01, B-03, B-04, B-10, B-13, B-16 through B-19, B-21, P-01, P-03, P-08 at depths ranging from 6 to 20 feet. Groundwater observations were performed during and upon completion of drilling operations. During drilling operations, groundwater was encountered at depths ranging from 5-1/2 to 19 feet below existing grades (Elevation 900 to 914-1/2 feet) within borings B-03, B-08 through B-10, B-12 through B-14, B-16, B-17, B-18, B-21, P-01, P-03, and P-04. No groundwater was encountered during drilling operations within the remaining borings. Upon completion of drilling operations, groundwater was measured at depths ranging from 6-1/2 to 15 feet below existing grades (Elevation 900-1/2 to 913 feet) within borings B-03, B-08, B-10, B-12 through B-14, B-16, B-17, B-19, B-21, P-01, P-03, and P-04. No groundwater was observed upon completion of drilling operations within the remaining borings.

Based on the provided topographical survey within the vicinity of the proposed school building, ground surface elevation ranges from approximately elevation 915 to 921 feet. At the time of this report, a grading plan indicating the proposed building finished floor elevation (FFE) was unavailable. There is a large oak tree northwest of the existing school building that is to remain with an adjacent ground surface elevation of 917 feet. It was reported to G2 that the proposed building will have a FFE approximately one (1) foot above the ground surface elevation at the oak tree location, corresponding to an approximate elevation of 918 feet. As such, we anticipate grades will be raised as much as 3 feet within the proposed building footprint.

Silty sand and sandy clay fill are present within borings B-01 through B-03, B-11, B-17, and B-22 extending to depths ranging from 2 to 7-1/2 feet. The fill soils have organic matter contents ranging from 2 to 3.8 percent. The fill soils do not appear to have been placed in an engineered manner. Furthermore, organic silt soils, with organic matter contents ranging from 5.4 to 6.3 percent, underlie the fill within borings B-03 and B-22 extending to depths ranging from 5 to 5-1/2 feet.

G2 recommends the fill soils and organic silt soils within the vicinity of borings B-03 and B-22 be completely removed and replaced with engineered fill. We anticipate building foundations within the vicinity of B-01, B-02, B-11, and B-17 extend through the fill and bear within the underlying native soils. We anticipate the proposed school building will be supported by conventional shallow spread and/or strip footings designed to bear within the native stiff to hard sandy clay soils at depths ranging from 3-1/2 to 7-1/2 feet below finished grades. Foundations bearing within the aforementioned soils can be designed based on a net allowable bearing capacity of 3,000 psf.

In general, we anticipate the foundation contractor will be able to maintain earth formed excavations with straight and vertical sidewalls. However, caving and/or sloughing of the sandy clay fill may occur during excavation operations within the vicinity of borings B-01 through B-03, B-11, B-17, and B-22. As such, the foundation contractor should come prepared to over-excavate and form foundations within the vicinity of those borings.

Do not consider this summary separate from the entire text of this report and all the conclusions and qualifications mentioned herein. Details of our analysis and recommendations are discussed in the following sections and in the Appendix of this report.



PROJECT DESCRIPTION

The proposed project includes the construction of a new building located northwest of the existing Lawton Elementary School building. Furthermore, we understand that associated utilities, site concrete, and bituminous/Portland cement concrete (PCC) pavements will be constructed in conjunction with this project.

It is our understanding that the proposed building will be a two-story, slab-on-grade structure, with an approximate footprint of 121,000 square feet. Information related to structural loading conditions was unavailable at the time of this report. It is assumed that the proposed school building will have a maximum column load of 350 kips and a maximum wall load of 10 kips per lineal foot.

Based on the topographical survey provided to G2, existing surface grades throughout the campus range from elevation 913 to 925 feet. More specifically, existing surface grade within the vicinity of the proposed school building and pavement areas range from elevation 915 to 921 feet. At the time of this report, a grading plan indicating the proposed building finished floor elevation (FFE), pavement grades, and finished surface grades was unavailable. There is a large oak tree northwest of the existing school building that is to remain with an adjacent ground surface elevation of 917 feet. It was reported to us that the proposed building will have a FFE approximately one (1) foot above the ground surface elevation at the oak tree location, corresponding to an approximate elevation of 918 feet. As such, we anticipate grades will be raised as much as 3 feet within the proposed building footprint. It is assumed that finished pavement grades will be within one (1) foot of existing surface grades.

Based on the provided preliminary site plan, bituminous pavement access/service drives, parking areas, and bus loop will be constructed southeast of the proposed school building. It was reported to G2 that approximately 8 school buses visit the campus twice a day during the school year. It is assumed that the remainder of traffic will consist of passenger-car vehicles (PCVs) with occasional delivery, waste management, and emergency response vehicles. We anticipate that both standard- and heavy-duty bituminous pavements will be required to support the anticipated traffic conditions.

If information related to existing and final site grades, structural loading conditions, finished floor elevation, or anticipated traffic frequencies becomes available or changes, G2 should be notified to re-evaluate the recommendations provided herein. The purpose of our exploration is to determine and evaluate the general subsurface soil and groundwater conditions throughout the campus and to develop recommendations for earthwork, subgrade preparation, foundation design, and bituminous and PCC pavement design, as well as construction considerations as they relate to the geotechnical conditions at the site.

SCOPE OF SERVICES

The field operations, laboratory testing, and engineering report preparation were performed under the direction and supervision of a licensed professional engineer in the State of Michigan. G2's services were performed according to generally accepted standards and procedures in the practice of geotechnical engineering in this area. G2's scope of services for this project is as follows:

1. We drilled a total of thirty-one (31) soil borings throughout the proposed development areas. Soil borings B-01 through B-22 were performed within the footprint of the proposed school building extending to a depth of 20 feet each. Soil borings P-01 through P-09 were performed within the vicinity of the proposed pavement/utility areas extending to a depth of 10 feet each.
2. We performed laboratory testing on representative soil samples obtained from the soil borings. Laboratory testing included visual engineering classification, natural moisture content, Atterberg limits, dry-density, and unconfined compressive strength determinations.
3. We prepared this engineering report which includes our recommendations for earthwork, subgrade



preparation, foundation design, and bituminous/PCC pavement design, as well as construction considerations as they relate to the geotechnical conditions at the site.

The recommendations we present in this report are based on our understanding of the project and the results of our field exploration, laboratory testing, engineering analyses, and our experience with similar subsurface soil conditions for similar projects. The recommendations contained in this report apply to the site-specific soil and groundwater conditions as they relate to the specific project discussed in this report. Therefore, any changes to the site layout, loading conditions, or proposed site grades should be provided to G2 so that we may review and, if necessary, revise our recommendations presented in this report.

Our professional services have been performed with a degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has been prepared for Ann Arbor Public Schools and its approved design engineers, construction personnel, bidders, and contractors. The report has not been prepared for use by other parties or for other uses and may not contain sufficient information for purposes of other parties or other uses.

FIELD OPERATIONS

Ann Arbor Public Schools, in conjunction with G2, selected the number, depth, and location of the soil borings. The soil boring locations were determined in the field by a G2 representative using GPS-assisted mobile technology and conventional taping methods by measuring from known surface features prior to the soil boring operations. The approximate soil boring locations are shown on the Soil Boring Location Plan, Plate No. 1. Existing ground surface elevations were estimated using the spot elevations and by interpolating between the elevation contours on the provided topographical survey.

The soil borings were performed by Strata Drilling, Inc. using an all-terrain vehicle (ATV) mounted rotary drilling rig. The driller used 3-1/4-inch inside-diameter hollow-stem augers to advance the soil borings to the desired depths. We obtained samples at regular 2-1/2-foot intervals within the upper 10 feet and at intervals of 5 feet thereafter extending to the explored depths. The soil samples were obtained by the driller in general accordance with the Standard Penetration Test (SPT) which involves driving a 2-inch diameter split-spoon sampler into the ground with a 140-pound weight falling 30-inches. The sampler is generally driven in three successive 6-inch increments, with the number of blows for each increment recorded. The number of blows required to advance the sampler the last 12-inches is termed the Standard Penetration Resistance (N or N-value). The blow counts for each 6-inch increment and resulting N-values are presented on the individual soil boring logs at the depths they were determined.

The soil samples were placed in sealed containers in the field and brought to the laboratory for testing and classification. During the drilling operations, a G2 field representative maintained a log of the encountered subsurface soil and groundwater conditions to be used in conjunction with our analysis of the subsurface conditions. The final soil boring logs are based on the field logs and laboratory soil classification and testing. Upon completion of the drilling operations, the soil borings were backfilled with the excavated spoils and topped with cold-patch asphalt where necessary. We hired a subcontractor to restore the surface grade at the soil boring locations, which included backfilling remaining boring excavations with Class II sand, and placing topsoil, grass seed, and hay over the disturbed areas.

LABORATORY TESTING

We subjected representative soil samples to laboratory testing to determine soil parameters pertinent to site preparation, foundation design, and pavement construction. An experienced geotechnical engineer classified the samples in accordance with the G2 General Note Terminology and applications of the

Unified Soil Classification System (Visual-Manual). Laboratory testing on representative samples included:

- “Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass” (ASTM D2216);
- “Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils” (ASTM D4318);
- “Standard Test Method for Unconfined Compressive Strength of Cohesive Soil” (ASTM D2166).

The site soil unconfined compressive strengths were estimated using ASTM Test Method D2166, using a spring-loaded hand penetrometer, and using a Torvane shear device. Per ASTM Test Method D2166, the unconfined compressive strength is determined by axially loading a small cylindrical soil sample under a slow rate of strain. The unconfined compressive strength is defined as the maximum stress applied to the soil sample before shear failure. If shear failure does not occur prior to a total strain of fifteen percent, the unconfined compressive strength is defined as the stress at a strain of fifteen percent. The hand penetrometer estimates the unconfined compressive strength to a maximum of 4-1/2 tons per square foot (tsf) by measuring the resistance of the soil sample to the penetration of a calibrated spring-loaded cylinder. The hand-held Torvane estimates the shear strength to a maximum of 1 tsf by measuring the resistance of the soil sample to the applied torque of a vane seated in the soil sample.

The results of the moisture content, dry-density, and unconfined compressive strength testing are shown on the individual soil boring logs at the depths the samples were obtained. The results of the Atterberg limits determined in accordance with ASTM Test Method D4318 and the unconfined compressive strengths determined in accordance with ASTM Test Method D2166 are presented graphically in the Appendix as Figure Nos. 32 and 33, respectively.

We will retain the soil samples for a period of 60 days following the issuance of this report after which they will be discarded. If you would like to have the soil samples, please let us know.

SITE SURFACE CONDITIONS

The Lawton Elementary School campus is located at 2250 S. 7th Street in Ann Arbor, Michigan. The campus is bounded by residential parcels to the north and south, by S. 7th Street to the east, and by a City of Ann Arbor Park to the west. The campus consists of a single-story, slab-on-grade school building with associated bituminous pavement access/service drives, parking areas, athletic courts, PCC sidewalks, and several playground areas. The remainder of the campus is grass covered and includes numerous mature trees.

Based on historical aerial imagery, the initial school building was constructed sometime around 1966. Furthermore, it appears that the northern and western building additions were constructed sometime around 1979 and 1997, respectively.



Historical Aerial Imagery (1960)



Historical Aerial Imagery (1966)



Historical Aerial Imagery (1979)



Historical Aerial Imagery (1993)



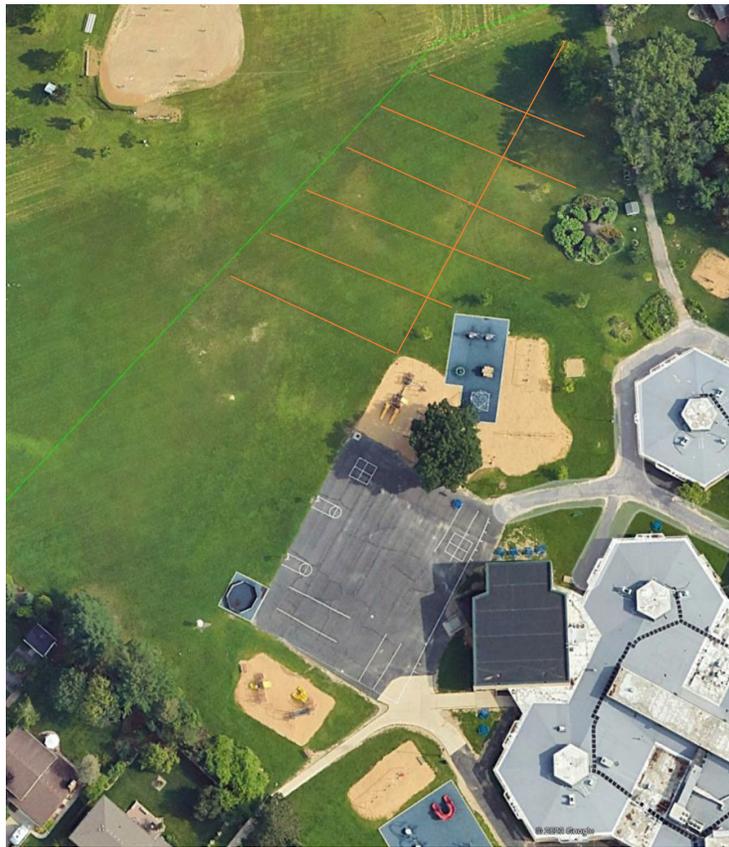
Historical Aerial Imagery (1997)



Historical Aerial Imagery (2024)

Based on historical aerial imagery, it appears that the bituminous pavements were constructed sometime around 1966 and were rehabilitated around 1993 and 2010. The existing pavements appear to be in poor condition. During our field investigation, pavement distresses consisting of medium severity fatigue (alligator) cracking, as well as low-severity longitudinal and transverse cracking, were observed.

Based on the provided topographical survey, existing surface grades throughout the campus range from elevation 913 to 925 feet. More specifically, existing surface grade within the vicinity of the proposed school building and pavement areas range from elevation 913 to 921 feet. In general, existing surface grades appear to be sloping downward from north to south.



Approximate French Drain Layout

We understand that there is an existing French drain system northwest of the existing school building as shown in the above image.

SOIL AND GROUNDWATER CONDITIONS

Soil Borings

Approximately 4 to 4-1/2 inches of bituminous pavement supported by 8 inches of gravelly sand aggregate base is present at the ground surface within borings B-02 and P-09. Approximately 4 to 14 inches of sandy clay topsoil is present at the ground surface within borings B-01, B-03 through B-22, and P-01 through P-08. Silty sand and sandy clay fill underlie the topsoil within boring B-01, B-03, B-11, B-17, B-22, and P-03, and the aggregate base soils within borings B-02 and P-09 extending to approximate depths ranging from 2 to 7-1/2 feet. The fill has organic matter contents ranging from 3 to 3.8 percent. Native organic silt and marl, with organic matter contents ranging from 5.4 to 6.3 percent, underlie the fill within boring B-03 and B-22 extending to approximate depths ranging from 5 to 5-1/2 feet. In general, native cohesive soils consisting of sandy clay and clayey silt underlie the fill soils within borings B-01, B-02, B-11, B-17, and P-09, the organic silt within borings B-03 and B-22, and the topsoil within borings B-04 through B-10, B-12 through B-16, B-18 through B-21, P-01, P-02, and P-04 through P-08, extending to depths ranging from 10 feet to the explored depth of 20 feet below existing grades. However, layers of native granular soils consisting of clayey sand, gravelly sand, silty sand, silt, and sandy silt are present within borings B-01, B-03, B-04, B-10, B-13, B-16 through B-19, B-21, P-01, P-03, P-08 at depths ranging from 6 to 20 feet.

The cohesive fill soils are generally stiff to hard in consistency, with moisture contents ranging from 14



to 36 percent, and unconfined compressive strengths ranging from 2,500 psf to over 9,000 psf. However, the soft to medium cohesive fill is present within borings B-03 and P-03, with moisture contents ranging from 23 to 30 percent, and unconfined compressive strength of 800 to 1,600 psf. The granular fill is loose in relative density, with a standard penetration test (SPT) N-value of 7 blows per foot (bpf). The native organic silt soils are soft to stiff in consistency, with natural moisture contents ranging from 22 to 45 percent, and unconfined compressive strengths ranging from 800 to 1,200 psf. The native cohesive soils are generally stiff to hard in consistency, with natural moisture contents ranging from 9 to 34 percent, a dry density of 117 pounds per cubic foot (pcf), and unconfined compressive strengths ranging from 2,000 psf to 9,200 psf. However, medium native sandy clay, with a natural moisture content of 26 percent, a dry density of 108 pcf, and an unconfined compressive strength of 1,290, is present within boring B-15 at depths ranging from 3-1/2 to 5 feet. The native granular soils are loose to medium compact in relative density, with SPT N-values ranging from 5 to 25 bp).

The stratification depths shown on the soil boring logs represent the soil conditions at the boring locations. Variations will occur away from the boring locations. Additionally, the stratigraphic lines represent the approximate boundary between soil types. The transition may be more gradual than what is shown. We have prepared the soil boring logs based on the field logs of encountered soil conditions supplemented by laboratory classification and testing.

The Soil Boring Location Plan, Plate No. 1, and the Soil Boring Logs, Figure Nos. 1 through 31, are presented in the Appendix. We present General Notes Terminology, defining the nomenclature used on the soil boring logs and elsewhere in this report, as Figure No. 34 in the Appendix.

Groundwater Observations

Groundwater observations were performed during and upon completion of each boring. During drilling operations, groundwater was encountered at depths ranging from 5-1/2 to 19 feet below existing grades (Elevation 900 to 914-1/2 feet) within borings B-03, B-08 through B-10, B-12 through B-14, B-16, B-17, B-18, B-21, P-01, P-03, and P-04. No groundwater was encountered during drilling operations within the remaining borings. Upon completion of drilling operations, groundwater was measured at depths ranging from 6-1/2 to 15 feet below existing grades (Elevation 900-1/2 to 913 feet) within borings B-03, B-08, B-10, B-12 through B-14, B-16, B-17, B-19, B-21, P-01, P-03, and P-04. No groundwater was observed upon completion of drilling operations within the remaining borings. Upon removal of the augers, a collapse of the borehole was observed within borings B-01 through B-16, B-18 through B-22, and P-01 through P-08, at depths ranging from 5-1/2 to 14 feet below existing grades.

Fluctuations in perched and long-term groundwater levels should be anticipated due to seasonal variations and following periods of prolonged precipitation. It should also be noted that groundwater observations made during drilling operations in cohesive soils are not necessarily indicative of the static groundwater level. This is due to the low permeability of such soils and the tendency of drilling operations to seal off the natural paths of groundwater flow.

SITE SEISMICITY

The geology in Washtenaw County can be separated into two major groups; unconsolidated glacial deposits and bedrock. The bedrock is composed of sedimentary rocks ranging in thickness from 4,000 to 7,000 feet underlain by Precambrian igneous rocks. According to quaternary geology maps, the native overburden soils near the site consist of end moraine deposits comprised of medium-textured till composed of clay, silt, sand, and gravel mixtures. Based on the publication titled "Geology and Hydrology for Environmental Planning in Washtenaw County, Michigan" dated 1980 by the United States Department of the Interior Geological Survey and our experience in Ann Arbor, we estimate the depth to bedrock at between 250 to 300 feet below existing site grades.

Washtenaw County, Michigan lies in a stable tectonic region of the country, characterized by a relatively low expected magnitude of ground accelerations in the event of an earthquake. Based on the



information obtained from the borings and associated laboratory testing, the observed soils beneath the project site generally consist of stiff to hard cohesive soils and isolated layers of loose granular soils. Based on the subsurface soil conditions, we recommend a seismic site classification of D be used in design.

Spectral Response Category	Response Acceleration at Short Periods	Response Acceleration at One-Second Period
Maximum Considered Earthquake	$S_s = 0.095 \text{ g}$	$S_1 = 0.048 \text{ g}$
Adjusted Maximum Considered Earthquake	$S_{MS} = 0.152 \text{ g}$	$S_{M1} = 0.115 \text{ g}$
Five Percent Damped Design	$S_{DS} = 0.101 \text{ g}$	$S_{D1} = 0.077 \text{ g}$

- Notes:
1. Source: ATC Hazards Council (<https://hazards.atcouncil.org/>)
 2. Based on “Minimum Design Loads and Associated Criteria for Buildings and Other Structures” (ASCE 7-10).

Given the site is in an area with a low probability for seismic activity, we believe the risk for liquefaction at this site is also low.

SITE PREPARATION RECOMMENDATIONS

We anticipate earthwork operations will consist of demolition of existing pavements within the influence of the proposed improvements, complete removal of topsoil, trees, and vegetation within the footprint of the proposed building and pavements, removal and backfill of the French drain system, demolition and backfill of relocated/former utilities, removing and replacing unsuitable organic soils, proof-rolling/proof-compacting the exposed subgrade, excavating for utilities and foundations, and preparing subgrade for floor slab and pavement support. We recommend the earthwork operations be monitored in the field by qualified personnel under the direction and supervision of a licensed professional geotechnical engineer.

At the start of earthwork operations, any existing topsoil, trees, or vegetation should be removed in their entirety within the footprint of the proposed building. As previously mentioned, there is an existing French drain system within the vicinity of the proposed improvements. The French drain system should be completely removed and backfilled with engineered fill prior to construction of the proposed school building. Any existing utilities and associated backfill within the proposed building footprint should be completely removed and backfilled with engineered fill. Utilities that are planned to be abandoned and lie outside the proposed structure zone of influence can be filled with grout and left in-place.

After site stripping, the exposed subgrade is expected to consist of native sandy clay and/or granular and cohesive fill. Where cohesive soils are encountered, soils should be proof-rolled with a fully loaded tandem-axle dump truck and evaluated for stability. Unsuitable soils exhibiting excessive instability, such as sever rutting, should be improved with additional compaction or undercut to expose stable soils. Where granular soils are encountered, soils should be proof-compacted with a heavy smooth-drum vibratory roller and should be visually evaluated for instability and/or unsuitable soil conditions by a qualified geotechnical engineer or technician. We recommend 10 passes in two perpendicular directions during the proof-compaction operations. Any resulting undercut excavations should be backfilled with engineered fill. We recommend the vibratory setting be turned off within 25 feet of any existing structures.

Based on the provided topographical survey, existing surface grades throughout the campus range from elevation 913 to 925 feet. More specifically, existing surface grade within the vicinity of the proposed school building and pavement areas range from elevation 915 to 921 feet. At the time of this report, a grading plan indicating the proposed building finished floor elevation (FFE), pavement grades, and



finished surface grades was unavailable. There is a large oak tree northwest of the existing school building that is to remain with an adjacent ground surface elevation of 917 feet. It was reported to us that the proposed building will have a FFE approximately one (1) foot above the oak tree surface grade, corresponding to an approximate elevation of 918 feet. As such, we anticipate grades will be raised as much as 3 feet within the proposed building footprint. It is assumed that finished pavement grades will be within one (1) foot of existing surface grades.

Silty sand and sandy clay fill are present within borings B-01 through B-03, B-11, B-17, B-22, and P-09 extending to depths ranging from 2 to 7-1/2 feet. The fill soils have organic matter contents ranging from 2 to 3.8 percent. The fill soils do not appear to have been placed in an engineered manner. Furthermore, organic silt soils, with organic matter contents ranging from 5.4 to 6.3 percent, underlie the fill within borings B-03 and B-22 extending to depths ranging from 5 to 5-1/2 feet. The fill and organic silt soils are not suitable for support of foundations; however, they are marginally suitable for support of floor slabs following satisfactory completion of a proof-roll evaluation and if excessive floor slab settlement can be tolerated. We anticipate that the existing fill and organic silt soils will be removed and replaced with engineered fill within the northern portion of the building and the foundations will extend through the existing fill within the southern portion of the school building.

Based on the laboratory testing results, the near-surface cohesive soils within several borings SB-07 have relatively high moisture contents and are approaching or have exceeded their respective plastic limit. Therefore, these soils may become unstable under repeated loading from construction equipment. The subgrade should not be exposed to prolonged periods of precipitation to prevent the subgrade from becoming unstable. We recommend earthwork operations be performed during the predominately drier summer months.

Engineered fill should be free of organic matter, frozen soil, clods, or other harmful material. The fill should be placed in uniform horizontal layers that are not more than 9-inches in loose thickness. The engineered fill should be compacted to achieve a density of at least 95 percent of the maximum dry density as determined by the Modified Proctor compaction test (ASTM D1557). All engineered fill should be placed and compacted at approximately the optimum moisture content. Frozen material should not be used as fill, nor should fill be placed on a frozen subgrade. To economically conduct earthwork operations at the site, imported fill adhering to the aforementioned requirements should consist of low plasticity clays or well-graded aggregates. Low-plasticity clays having a plasticity index less than 20 percent should be placed and compacted within +3 or -1 percent of the optimum moisture content as determined by the Modified Proctor Compaction Test (ASTM D1557). For well graded aggregates, such as MDOT Class II Sand, we recommend the engineered fill be placed at ± 2 percent of the optimum moisture content as determined by ASTM D1557.

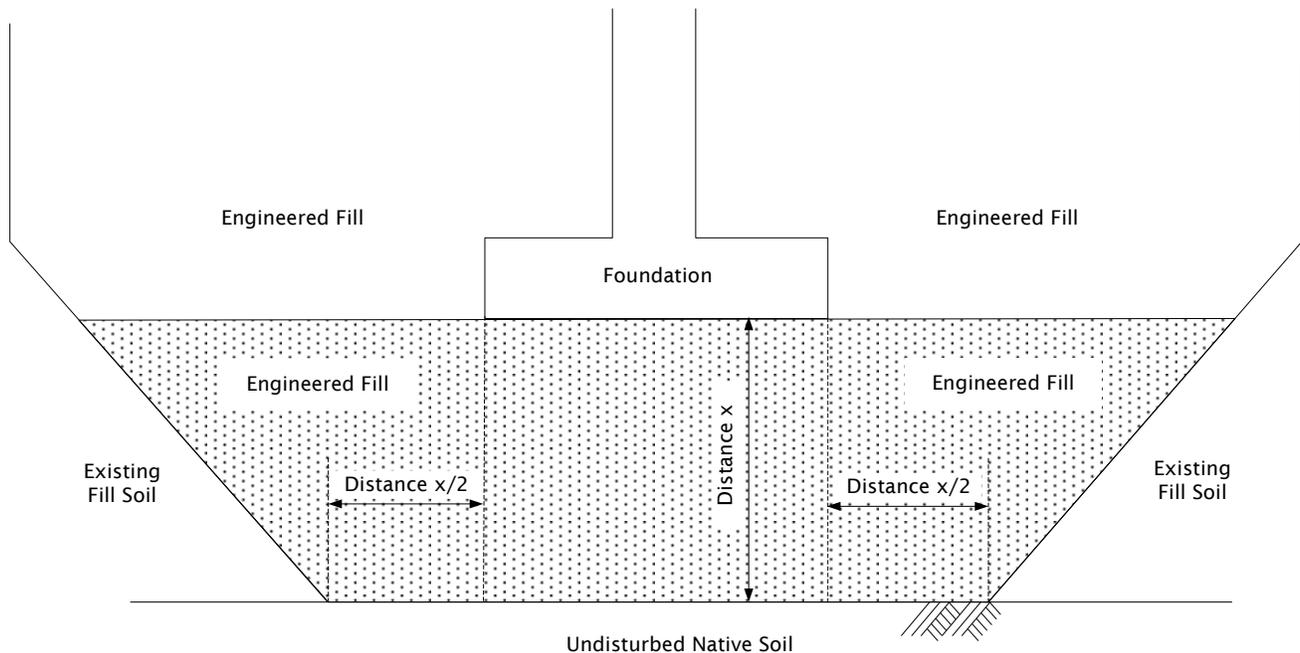
We recommend the use of free-draining granular soils, such as MDOT Class II sand, within utility trenches and during earthwork operations conducted during wet or freezing weather conditions. We recommend the use of engineered fill with a sufficient amount of fines (material passing the No. 200 sieve) in order to facilitate trenching and excavation techniques for strip and spread footing foundations.

FOUNDATION RECOMMENDATIONS

Information related to structural loading conditions was unavailable at the time of this report. It is assumed that the proposed school building will have a maximum column load of 350 kips and a maximum wall load of 10 kips per lineal foot. If information related to structural loading conditions becomes available, G2 should be notified to re-evaluate the recommendations provided herein.

Silty sand and sandy clay fill are present within borings B-01 through B-03, B-11, B-17, and B-22 extending to depths ranging from 2 to 7-1/2 feet. The fill soils have organic matter contents ranging from 2 to 3.8 percent. The fill soils do not appear to have been placed in an engineered manner. Furthermore, organic silt soils, with organic matter contents ranging from 5.4 to 6.3 percent, underlie the fill within borings B-03 and B-22 extending to depths ranging from 5 to 5-1/2 feet.

We recommend the fill soils and organic silt soils within the vicinity of borings B-03 and B-22 be completely removed and replaced with engineered fill. We anticipate building foundations within the vicinity of B-01, B-02, B-11, and B-17 extend through the fill and bear within the underlying native soils.



We anticipate the proposed school building will be supported by conventional shallow spread and/or strip footings designed to bear within the native stiff to hard sandy clay soils at depths ranging from 3-1/2 to 7-1/2 feet below finished grades. Foundations bearing within the aforementioned soils can be designed based on a net allowable bearing capacity of 3,000 psf.

Continuous wall or strip footings should be at least 12 inches in width and isolated spread footing should be at least 30 inches in their least dimension. Exterior footings must bear at a minimum depth of 3-1/2 feet below finished grade for protection against frost heave. Interior footings may bear at shallower depths provided they extend through the fill soils, suitable bearing materials are available for support, and the foundations are continuously protected from frost penetration during construction. We recommend G2 be on site during construction to observe the foundation excavations and verify the adequacy of the bearing soils.

To achieve a change in the level of a strip footing, the footing should be gradually stepped at a grade no steeper than two units horizontal to one unit vertical. If required to construct foundations at different levels, adjacent spread footing foundations should be designed and constructed so the least lateral distance between the foundations is equivalent to or more than the difference in their bearing levels. We recommend all foundations be suitably reinforced to minimize the effects of differential settlements associated with local variations in soil conditions.

If the recommendations outlined in this report are adhered to, total and differential settlements for the completed structures support on shallow spread footings should be within 1 inch and 1/2 inch, respectively. We expect settlements of these magnitudes are within tolerable limits for the type of building proposed.

FLOOR SLAB RECOMMENDATIONS

We anticipate the proposed school building will have a FFE of 918 feet and will be supported by native cohesive soils and/or engineered fill soils. As previously stated, we recommend that the organic silt soils



within the bearing stress influence of the proposed school building foundations be completely removed and replaced with engineered fill.

However, if the risk of excessive differential floor slab settlement can be tolerated, the organic silt soils may be left in place, following satisfactory completion of the subgrade preparation recommendations as described within the *SITE PREPARATION RECOMMENDATIONS* section of this report. A subgrade modulus (k) of 90 pounds per cubic inch (pci) may be used in the design of floor slab supported by the organic silt soils. If the risk for excessive floor slab settlement cannot be tolerated, the organic silt soils should be completely removed and replaced with engineered fill. A subgrade modulus (k) of 125 pci may be used for the design of floor slabs supported by the native sandy clay soils and/or engineered fill.

We recommend at least 4 inches of clean coarse sand or pea gravel be placed between the subgrade and the bottom of the floor slab for use as a capillary break to reduce moisture transmission through the concrete floors and to reduce the potential for concrete curling. If moisture sensitive floor coverings are planned or if greater protection against vapor transmission is desired, a vapor barrier consisting of 10-mil plastic sheeting, or equivalent, may be placed on the sand or pea gravel layer beneath floor slabs. However, additional floor slab curing techniques will be required especially if floor slab placement occurs in the winter months to prevent floor slab curling. The floor slab should be isolated from the foundation system to allow for independent movement.

PAVEMENT RECOMMENDATIONS

We understand that bituminous pavement access/service drives, bus loop, and parking areas will be constructed to the east of the proposed school building. It was reported to us that approximately 8 school buses visit the campus twice a day during the school year. It is assumed that the remainder of traffic will consist of passenger-car vehicles (PCVs) with occasional delivery, waste management, and emergency response vehicles. Once information related to anticipated traffic frequencies becomes available, G2 should be notified to re-evaluate the recommendations provided herein.

Based on the anticipated traffic conditions, we anticipate that both standard- and heavy-duty pavement sections will be required. Based on the anticipated subgrade soils, we have assigned an effective subgrade resilient modulus of 7,000 pounds per square inch (psi).

The standard- and heavy-duty pavement sections are based on an estimated 50,000 and 250,000 equivalent single axle loads (ESALs), respectively, over a 20-year design life. For evaluation purposes, we estimated a serviceability loss of 2.0, a standard deviation of 0.49, and a reliability of 90 percent.

Based on the results of our analyses, we recommend a minimum standard-duty pavement section consisting of 2 inches of MDOT 5EML bituminous concrete wearing course and 2 inches of MDOT 4EML bituminous concrete leveling course supported on a minimum of 8 inches of compacted MDOT 21AA dense-graded aggregate base material. We recommend a minimum heavy-duty pavement section consisting of 2 inches of MDOT 5EML bituminous concrete wearing course and 3 inches of MDOT 4EML bituminous pavement leveling course supported by 10 inches of MDOT 21AA dense-graded aggregate base material. All pavement materials noted above are specified within the 2020 Standard Specifications for Construction from the Michigan Department of Transportation (MDOT). The bituminous pavement materials are described within Section 501 and can be assigned a layer coefficient of 0.42. Any new imported aggregate base material can be assigned a layer coefficient of 0.14.



Standard Duty Bituminous Concrete Pavement Section			
Material Type	Material Thickness (in)	Layer Coefficient	Structural Number
MDOT 5EML	2	0.42	0.84
MDOT 3C	2	0.42	0.84
MDOT 21AA Limestone	8	0.14	1.12
Total SN →			2.80

Heavy Duty Bituminous Concrete Pavement Section			
Material Type	Material Thickness (in)	Layer Coefficient	Structural Number
MDOT 5EML	2	0.42	0.84
MDOT 3C	3	0.42	1.26
MDOT 21AA Limestone	10	0.14	1.40
Total SN →			3.50

Large front-loading refuse trucks can impose significant concentrated wheel loads within trash dumpster pick-up areas. This type of loading can result in rutting of asphalt pavements and ultimately in failure. Therefore, we recommend non-reinforced concrete pavement at least 8 inches in thickness be used in these areas. The concrete pad should be large enough to support the entire refuse truck during pick-up operations.

Proper pavement drainage is essential given the predominately cohesive soils at the project site. We recommend “stub” or “finger” drains be provided around catch basins to minimize the accumulation of water above and within any frost-susceptible subgrade soils. The pavement and subgrade should be properly sloped to promote effective surface and subsurface drainage and prevent water from ponding. We also recommend pavement subbase materials consist of non-frost-susceptible aggregates where possible.

We recommend regular timely maintenance be performed on the bituminous pavements to reduce the potential deterioration associated with moisture infiltration through surface cracks. The owner should be prepared to seal the cracks with a hot-applied elastic crack filler as soon as possible after cracking develops and as often as necessary to block the passage of water to the subgrade soils.

We anticipate some subgrade instability will be encountered throughout the pavement areas depending on the time of year of construction. We recommend limiting undercuts to a depth of 12 inches below the aggregate base, compacting the exposed subgrade, and backfilling with compacted MDOT 21AA dense-graded aggregate. If a stable subgrade cannot be achieved at a maximum depth of 12 inches below the proposed subgrade, we recommend placing a geogrid reinforcement, such as TENSAR Tri-Ax geogrid (Type III) or equivalent, at a depth of 12 inches below proposed subgrade and backfilling with MDOT 21AA aggregate. The geogrid should extend to a minimum of 5 feet beyond the edges of the unstable area. Any undercut areas within predominantly clayey soils should be connected with finger drains to the closest catch basins to drain water from within the granular undercut backfill material.

CONSTRUCTION CONSIDERATIONS

At the time of this report, information related to proposed utility inverts was not available; however, it is assumed that approximate utility inverts will range from 5 to 6 feet below finished grades. As described within this report, we anticipate foundation excavations will extend approximately 3-1/2 to 7-1/2 feet below finished grades.

In general, we anticipate the foundation contractor will be able to maintain earth formed excavations with straight and vertical sidewalls. However, caving and/or sloughing of the sandy clay fill may occur



during excavation operations in the area of borings B-01 through B-03, B-11, B-17, and B-22. As such, the foundation contractor should be prepared to over-excavate and form foundations in those areas. Within areas of earth-formed foundation excavations, we recommend foundation excavation and concrete placement operations be conducted on the same day to minimize potential for cave-ins or stormwater run-off into the open excavations.

We do not anticipate significant accumulations of groundwater within construction excavations at the depths anticipated for this project. We anticipate surface water runoff and groundwater intrusion can generally be controlled with sumps and pumps.

We recommend maximum excavation side slope inclinations of 2H:1V (2 horizontal units to 1 vertical unit) within the loose granular and soft cohesive soils, 1-1/2H:1V within the medium compact granular and medium cohesive soils, 1H:1V within the stiff cohesive soils, and 3/4H:1V within the very stiff to hard cohesive soils for excavations extending below a depth of 5 feet. Where seepage from excavation cuts is observed, the slopes will need to be flattened sufficiently to achieve stability, but in no case left steeper than 3H:1V at and below the seepage level.

All excavations should be safely sheeted, shored, sloped, or braced in accordance with MI-OSHA requirements. If material is stored or equipment is operated near an excavation, lower angle slopes or stronger shoring must be used to resist the surcharge pressure due to the superimposed loads.

GENERAL COMMENTS

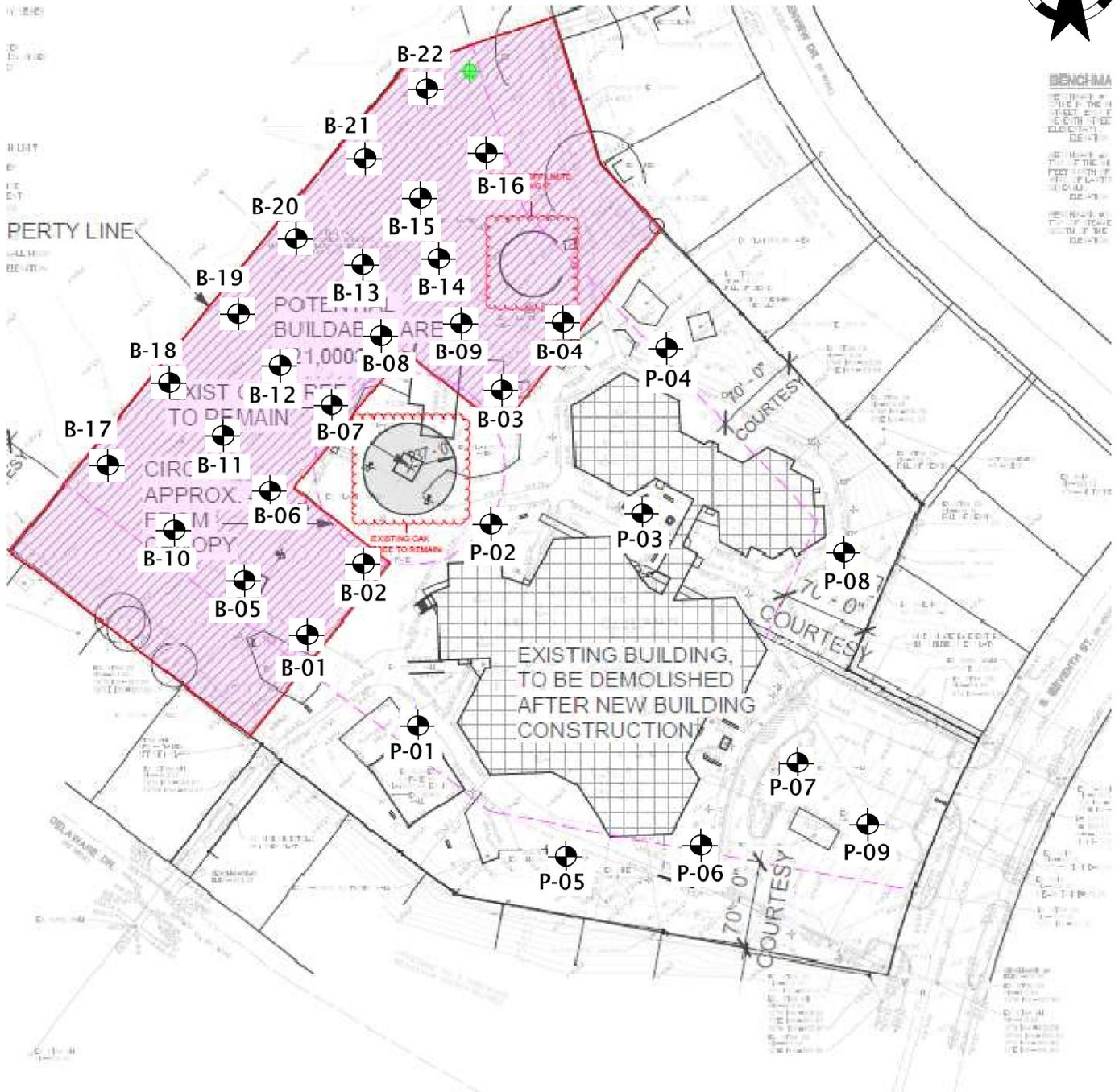
We have formulated the evaluations and recommendations presented in this report relative to site preparation and foundations based on data provided to us relating to the location, type, and grade for the proposed site. Any significant change in this data should be brought to our attention for review and evaluation with respect to the prevailing subsurface conditions. Furthermore, if changes occur in the design, location, or concept of the project, the conclusions and recommendations contained in this report are not valid unless G2 Consulting Group, LLC reviews the changes. G2 Consulting Group, LLC will then confirm the recommendations presented herein or make changes in writing.

The scope of the present investigation was limited to evaluation of subsurface conditions for the support of proposed structure and other related aspects of the development. No chemical, environmental or hydrogeological testing or analyses were included in the scope of this investigation.

We base the analyses and recommendations submitted in this report upon the data from the soil borings at the approximate locations depicted on the Soil Boring Location Plan, Plate No. 1, in the Appendix. This report does not reflect variations that may occur away from the actual boring locations. The nature and extent of any such variations may not become clear until the time of construction. If significant variations then become evident, it may be necessary for us to re-evaluate our report recommendations. Accordingly, we recommend G2 Consulting Group, LLC observe all geotechnical related work, including foundation construction, subgrade preparation, and engineered fill placement. G2 Consulting Group, LLC will perform the appropriate testing to confirm the geotechnical conditions given in the report are found during construction.

APPENDIX

Soil Boring Location Plan	Plate No. 1
Soil Boring Logs	Figure Nos. 1 through 31
Atterberg Limits Test Results	Figure No. 32
Unconfined Compressive Strength Test Results	Figure No. 33
General Notes Terminology	Figure No. 34



BENCHMARK
 BENCHMARK IS THE POINT OF REFERENCE FOR THE LOCATION OF ALL POINTS SHOWN ON THIS PLAN.
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Legend

Soil borings performed by Strata Drilling, Inc. from 6/24/24 through 7/1/24

Notes

1. Soil borings B-01 through B-22 drilled to a depth of 20 feet each.
2. Soil borings P-01 through P-09 drilled to a depth of 10 feet each.

Soil Boring Location Plan	
Lawton Elementary School 2250 S. 7 th Street Ann Arbor, Michigan 48103	
	Project No. 243116
	Drawn by: TSH
	Date: 7/31/24
	Scale: NTS
	Plate No. 1

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253545° Longitude: -83.764840°



Soil Boring No. B-01

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 916.3 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt (11 inches)	0.9						
		Fill: Very Stiff Grayish Brown Sandy Clay with trace silt	2.5	S-01	1 2 1	3	22.4		4000*
911.3		Fill: Very Stiff Mottled Brown and Gray Sandy Clay with trace silt and gravel; intermixed organic matter (Organic Matter Content = 3.0%)	5.0	S-02	3 4 4	8	25.6		5000*
		Fill: Very Stiff Gray Sandy Clay with trace silt; intermixed organic matter	7.5	S-03	3 3 4	7	35.5		5500*
906.3		Hard Grayish Brown Sandy Clay with trace silt and gravel	10.0	S-04	6 12 17	29	14.5		9000*
901.3		Medium Compact Gray Sandy Silt with trace clay and gravel	15	S-05	4 6 7	13			
896.3			20.0	S-06	5 9 11	20			
891.3		End of Boring @ 20 ft	25						

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: July 1, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 11-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 1

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253777° Longitude: -83.764602°



Soil Boring No. B-02

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 917.0 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Bituminous Pavement (4-1/2 inches)	0.4						
		Aggregate Base: Gray Gravelly Sand with trace silt (8 inches)	0.8						
		Fill: Loose Brown Silty Sand	2.0	S-01	4 3 4	7	22.3		9000*
912.0		Hard Brown Sandy Clay with trace silt and gravel; occasional gray silt seams	5	S-02	5 9 11	20	14.0		9000*
				S-03	5 9 11	20	14.8		9000*
907.0			10.0	10	S-04	5 7 10	17	12.6	9000*
902.0		Very Stiff Gray Sandy Clay with trace silt and gravel	15	S-05	4 6 7	13	12.7		7500*
897.0		(Occasional Gray Silt Seams)	20.0	20	S-06	2 5 6	11	15.9	5000*
		End of Boring @ 20 ft							
892.0			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: July 1, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 10 ft after auger removal
 * Calibrated Hand Penetrometer

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings; topped with cold-patch asphalt

Figure No. 2

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254070° Longitude: -83.764162°



Soil Boring No. B-03

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 915.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt (12 inches)	1.0						
		Fill: Stiff Brown Sandy Clay with trace silt	2.0		2				
		Stiff Dark Brown Organic Silt (Organic Matter Content = 5.4%)		S-01	1 2	3	21.9		2000*
910.5		Medium Light Gray Sandy Silt with trace clay; intermixed organic matter (Marl)	4.5		2				
		Stiff Brown Sandy Clay with trace silt; occasional brown sand seams	5.5	S-02	2 2 2	4	45.3		1200**
		Stiff Brown Sandy Clay with trace silt; occasional brown sand seams	7.5	S-03	2 4 6	10	34.1		2000*
905.5		(Wet Gray Sand Seam @ 8-1/2 feet) Loose Gray Silt with trace clay and sand	10.0	S-04	2 2 3	5			
900.5		Very Stiff to Hard Gray Sandy Clay with trace silt and gravel	15	S-05	2 7 13	20	17.6		9000*
895.5			20.0	S-06	4 7 8	15	19.1		7500*
890.5		End of Boring @ 20 ft	25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 24, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Water Level Observation:
 8-1/2 feet during drilling operations; 15 feet upon completion

Notes:
 Borehole collapsed at 15 ft after auger removal
 * Calibrated Hand Penetrometer
 ** Torvane

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 3

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254201° Longitude: -83.764008°



Soil Boring No. B-04

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 919.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt (11 inches)	0.9						
		Hard Brown Sandy Clay with trace silt	2.5	S-01	4 5 6	11	16.6		8000*
914.5		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	5	S-02	4 5 8	13	12.7		8000*
		Brown Silty Sand with trace gravel	6.0						
		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	6.4						
		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	7.5	S-03	7 9 13	22	15.9		9000*
909.5		Hard Brown Sandy Clay with trace silt and gravel	10.0	S-04	7 10 15	25	17.4		9000*
		Very Stiff Grayish Brown Sandy Clay with trace silt and gravel							
904.5		Very Stiff Gray Sandy Clay with trace silt and gravel	15.0	S-05	5 6 7	13	13.2		7000*
		Very Stiff Gray Sandy Clay with trace silt and gravel							
899.5		(Wet Brown Sand Seam @ 19-1/2 feet)	20.0	S-06	4 8 8	16	11.5		5000*
		End of Boring @ 20 ft							
894.5			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 24, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 10 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 4

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253679° Longitude: -83.764993°



Soil Boring No. B-05

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 915.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (14 inches)	1.2						
		Stiff Brown Sandy Clay with trace silt	2.5	S-01	2 2 2	4	22.2		2000**
910.5		Very Stiff Mottled Brown and Gray Sandy Clay with trace silt and gravel	5.0	S-02	2 4 4	8	21.6		7500*
		Hard Brown Sandy Clay with trace silt; occasional brown sand seams	7.5	S-03	1 4 6	10	18.2		9000*
905.5		Hard Gray Sandy Clay with trace silt and gravel	10	S-04	5 9 10	19	14.6		9000*
900.5		Hard Gray Sandy Clay with trace silt and gravel	15	S-05	3 6 8	14	11.0		9000*
895.5		Hard Gray Sandy Clay with trace silt and gravel	20.0	S-06	5 9 8	17	10.5		9000*
		End of Boring @ 20 ft							
890.5			25						

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: July 1, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 12-1/2 ft after auger removal
 * Calibrated Hand Penetrometer
 ** Torvane

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 5

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253887° Longitude: -83.764860°



Soil Boring No. B-06

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 917.3 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (10 inches)	0.8						
		Stiff Mottled Brown and Gray Sandy Clay with trace silt and gravel	3.5	S-01	2 2 2	4	19.4		3000*
912.3		(Poor Recovery) (Possible Cobbles) Hard Brown Sandy Clay with trace silt and gravel	5	S-02	2 3 4	7	18.4	117	9200
			7.5	S-03	5 5 7	12	13.4		8000*
907.3			10	S-04	7 11 11	22	10.1		9000*
		Hard Gray Sandy Clay with trace silt and gravel	15	S-05	7 8 10	18	11.7		9000*
902.3			20	S-06	5 9 11	20	12.2		9000*
897.3		End of Boring @ 20 ft	20.0						
892.3			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: July 1, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 12 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 6

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254065° Longitude: -83.764666°



Soil Boring No. B-07

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 915.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (12 inches)	1.0						
		Hard Brown Sandy Clay with trace silt and gravel	2.5	S-01	3 5 7	12	14.3		9000*
910.5		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	5.0	S-02	6 8 12	20	14.2		9000*
		Hard Brown Sandy Clay with trace silt and gravel	7.5	S-03	5 7 8	15	11.4		8000*
905.5		Hard Brown Sandy Clay with trace silt and gravel	10	S-04	6 7 8	15	9.8		9000*
		Very Stiff to Hard Gray Sandy Clay with trace silt and gravel; occasional silt seams	15	S-05	3 5 5	10	12.1		7000*
900.5		(Silt Seam @ 19.75 feet)	20.0	S-06	3 5 6	11	14.2		5000*
895.5		End of Boring @ 20 ft							
890.5			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: July 1, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 11-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 7

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254189° Longitude: -83.764488°



Soil Boring No. B-08

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 917.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (6 inches)	0.5		3 4 6	10			
		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	5	S-01	6	21	18.5		8000*
912.5				S-02	6 9 12	28	16.8		9000*
		Hard Grayish Brown Sandy Clay with trace silt and gravel (Poor Recovery) (Possible Cobbles)	7.5	S-03	9 12 16	25	16.9		9000*
907.5			10.0	S-04	6 12 13	10	12.8		9000*
		(Occasional Sand Seams)							
902.5		Very Stiff to Hard Gray Sandy Clay with trace silt and gravel	15	S-05	3 4 6	19	11.7		6000*
897.5			20.0	S-06	5 8 11	19	11.9		8000*
		End of Boring @ 20 ft							
892.5			25						

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 26, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 12-1/2 feet during drilling operations; 14 feet upon completion

Notes:
 Borehole collapsed at 9-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 8

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254252° Longitude: -83.764264°



Soil Boring No. B-09

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 918.0 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (10 inches)	0.8						
		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel		S-01	3 3 5	8	13.8		9000*
913.0			5.0	S-02	5 8 10	18	15.6		9000*
		Hard Grayish Dark Brown Sandy Clay with trace silt and gravel		S-03	5 10 12	22	16.4		9000*
908.0			10.0	S-04	6 11 12	23	15.7		9000*
		Very Stiff to Hard Gray Sandy Clay with trace silt and gravel; occasional wet gray silty sand seams		S-05	11 15 10	25	9.5		9000*
903.0			15						
		End of Boring @ 20 ft		S-06	4 6 7	13	13.5		6000*
898.0			20.0						
893.0			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 24, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 14 feet during drilling operations; dry upon completion

Notes:
 Borehole collapsed at 10 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 9

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253799° Longitude: -83.765226°



Soil Boring No. B-10

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 917.8 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (8 inches)	0.7		3				
		Hard Brown Sandy Clay with trace silt and gravel		S-01	4 5	9	12.2		9000*
912.8		(Poor Recovery) (Possible Cobbles)	5.0	S-02	6 7 10	17	15.9		
		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	7.5	S-03	6 12 13	25	15.4		9000*
907.8		Hard Brown Sandy Clay with trace silt and gravel; occasional brown sandy silt seams	10.0	S-04	6 15 13	28	10.4		9000*
		(Occasional Sand Seams) Very Stiff Gray Sandy Clay with trace silt and gravel							
902.8			15.0	S-05	3 3 6	9	13.3		5000*
		Brown Silty Sand							
			19.0	S-06A	4		12.6		6000*
897.8		Very Stiff Gray Sandy Clay with trace silt	19.8	S-06B	11	24			
		Medium Compact Gray Silt with trace sand and clay	20.0		13				
		End of Boring @ 20 ft							
892.8			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
Drilling Date: June 27, 2024
Inspector: J. Anton
Contractor: Strata Drilling, Inc
Driller: B. Sienkiewicz

Water Level Observation:
11-1/2 feet during drilling operations; 11 feet upon completion

Notes:
Borehole collapsed at 15 ft after auger removal
* Calibrated Hand Penetrometer

Drilling Method:
3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
Borehole backfilled with auger cuttings

Figure No. 10

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253998° Longitude: -83.765020°



Soil Boring No. B-11

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 918.3 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace gravel (7 inches)	0.6						
		Fill: Hard Grayish Brown Sandy Clay with trace gravel	2.5	S-01	5 6 8	14	14.1		9000*
913.3		Hard Brown Sandy Clay with trace silt and gravel	5	S-02	6 12 13	25	16.1		9000*
			10	S-03	6 13 16	29	16.2		9000*
908.3			15	S-04	4 10 13	23	13.4		9000*
			20	S-05	9 10 11	21	12.9		9000*
903.3			20.0	S-06	4 5 8	13	12.7		5000*
898.3		End of Boring @ 20 ft							
893.3			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 27, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Offset 5 feet southwest due to shallow auger refusal
 Borehole collapsed at 13 ft after auger removal
 * Calibrated Hand Penetrometer

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 11

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254194° Longitude: -83.764806°



Soil Boring No. B-12

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 917.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (10 inches)	0.8						
		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	2.5	S-01	11 10 10	20	15.5		9000*
912.5		Hard Brown Sandy Clay with trace silt and gravel	5	S-02	4 9 14	23	15.3		9000*
		Hard Brown Sandy Clay with trace silt; occasional clayey sand seams	7.5	S-03	6 10 14	24	12.8		9000*
907.5		Hard Gray Sandy Clay with trace silt and gravel	10.0	S-04	9 11 12	23	13.3		9000*
902.5		Hard Gray Sandy Clay with trace silt and gravel	15	S-05	6 7 9	16	10.0		9000*
897.5		End of Boring @ 20 ft	20.0	S-06	5 8 12	20	10.4		9000*
892.5			25						

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 27, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: B. Sienkiewicz

Water Level Observation:
 9-1/2 feet during drilling operations; 11-1/2 feet upon completion

Notes:
 Borehole collapsed at 12-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 12

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254334° Longitude: -83.764618°



Soil Boring No. B-13

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 917.8 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (9 inches)	0.8		3 4 5				
		Very Stiff to Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel		S-01		9	17.8		8000*
912.8			5.0	S-02	2 3 4	7	16.2		7500*
		Hard Brown Sandy Clay with trace silt and gravel		S-03	5 13 20	33	15.6		9000*
		Hard Gray Sandy Clay with trace silt and gravel		S-04	7 10 12	22	14.5		9000*
907.8			10.0						
		Medium Compact Gray Sandy Silt with trace gravel							
		(Gray Gravelly Sand Seam @ 14.75 feet)	15.0	S-05	8 9 10	19			
902.8									
		Very Stiff Gray Sandy Clay with trace silt and gravel		S-06	5 6 10	16	10.9		7000*
897.8			20.0						
		End of Boring @ 20 ft							
892.8			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 26, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 13-1/2 feet during drilling operations; 15-1/2 feet during completion

Notes:
 Borehole collapsed at 12 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 13

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254349° Longitude: -83.764356°



Soil Boring No. B-14

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 918.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (7 inches)	0.6						
		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	2.5	S-01	4 6 8	14	15.4		9000*
913.5		Hard Brown Sandy Clay with trace silt and gravel	5.0	S-02	5 9 13	22	17.5		9000*
		Hard Brown Sandy Clay with trace silt and gravel		S-03	6 10 13	23	15.8		9000*
908.5		Hard Brown Sandy Clay with trace silt and gravel	10.0	S-04	5 11 12	23	13.5		9000*
903.5		Very Stiff Gray Sandy Clay with trace silt and gravel; occasional gray silty sand seams	15	S-05	4 4 6	10	12.7		5000*
898.5		End of Boring @ 20 ft	20.0	S-06	4 6 8	14	12.7		5000*
893.5			25						

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
Drilling Date: June 24, 2024
Inspector: J. Anton
Contractor: Strata Drilling, Inc
Driller: J. Haynor

Water Level Observation:
14 feet during and upon completion of drilling operations

Notes:
Borehole collapsed at 14 ft after auger removal
* Calibrated Hand Penetrometer

Drilling Method:
3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
Borehole backfilled with auger cuttings

Figure No. 14

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254483° Longitude: -83.764424°



Soil Boring No. B-15

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 918.8 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (5 inches)	0.4						
		Very Stiff Mottled Brown and Gray Sandy Clay with trace silt and gravel		S-01	3 4 5	9	17.5		7500*
913.8		Medium Mottled Brown and Gray Sandy Clay with trace silt and gravel	3.5	S-02	2 2 3	5	26.1	108	1290
		Hard Brown Sandy Clay with trace silt	7.5	S-03	5 9 14	23	17.1		9000*
908.8		Hard Brownish Gray Sandy Clay with trace silt and gravel	10.0	S-04	4 13 16	29	12.2		9000*
903.8		Very Stiff Gray Sandy Clay with trace silt and gravel; occasional gray silt seams	15	S-05	4 6 5	11	11.6		6000*
898.8		End of Boring @ 20 ft	20.0	S-06	4 5 7	12	10.7		7000*
893.8			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
Drilling Date: June 26, 2024
Inspector: J. Anton
Contractor: Strata Drilling, Inc
Driller: J. Haynor

Water Level Observation:
Dry during and upon completion of drilling operations

Notes:
Borehole collapsed at 11-1/2 ft after auger removal
* Calibrated Hand Penetrometer

Drilling Method:
3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
Borehole backfilled with auger cuttings

Figure No. 15

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254589° Longitude: -83.764228°



Soil Boring No. B-16

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 919.0 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (8 inches)	0.7						
		Very Stiff Brown Sandy Clay with trace silt and gravel	2.5	S-01	3 4 4	8	14.1		6000*
914.0		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	5.0	S-02	5 9 10	19	12.6		9000*
		Hard Brownish Gray Sandy Clay with trace silt	7.5	S-03	4 9 15	24	18.7		9000*
909.0		Very Stiff to Hard Gray Sandy Clay with trace silt	10	S-04	6 13 17	30	16.2		9000*
904.0		Very Stiff to Hard Gray Sandy Clay with trace silt	15.0	S-05	4 7 11	18	16.4		7000*
		Medium Compact Gray Sandy Silt with trace clay and gravel	19.0						
899.0		Medium Compact Gray Silty Sand with trace clay	20.0	S-06	3 7 9	16	13.9		
		End of Boring @ 20 ft							
894.0			25						

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 26, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 19 feet during drilling operations; 18-1/2 feet upon completion

Notes:
 Borehole collapsed at 9-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 16

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253958° Longitude: -83.765436°



Soil Boring No. B-17

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 917.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (9 inches)	0.8						
		Fill: Very Stiff Brown Sandy Clay with trace silt and gravel	2.5	S-01	2 3 2	5	19.4		4000*
912.5		Fill: Stiff Dark Brown Sandy Clay with trace silt; intermixed organic matter (Organic Matter Content = 3.8%)	5.0	S-02	1 2 3	5	24.4		2500*
		Very Stiff to Hard Brown Sandy Clay with trace silt and gravel		S-03	1 5 6	11	20.7		5500*
907.5			10.0	S-04	5 9 11	20	13.8		9000*
		Loose Gray Silt with trace clay and sand; occasional wet sandy silt seams							
902.5			15.0	S-05	3 4 4	8			
		Very Stiff Gray Sandy Clay with trace silt							
897.5			20.0	S-06	3 7 9	16	13.2		7000*
		End of Boring @ 20 ft							
892.5			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 27, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: B. Sienkiewicz

Water Level Observation:
 12-1/2 feet during drilling operations; 8 feet upon completion

Notes:
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 17

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254130° Longitude: -83.765210°



Soil Boring No. B-18

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 918.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (4 inches)	0.3		3 4 7	11			
913.5		Hard Brown Sandy Clay with trace silt and gravel	5	S-01	4 9 11	20	15.0		9000*
					6 11 16	27	15.5		9000*
908.5			10.0	S-02	5 11 16	27	13.0		9000*
		Very Stiff Brown Sandy Clay with trace silt and gravel							
		Brown Sandy Silt	13.8						
903.5		Hard Grayish Brown Sandy Clay with trace silt and gravel	15.0	S-03	5 7 9	16	15.7		8000*
		Hard Gray Sandy Clay with trace silt							
898.5			20.0	S-04	3 4 6	10	13.1		8000*
		End of Boring @ 20 ft							
893.5			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
Drilling Date: June 27, 2024
Inspector: J. Anton
Contractor: Strata Drilling, Inc
Driller: B. Sienkiewicz

Water Level Observation:
Dry during and upon completion of drilling operations

Notes:
Borehole collapsed at 11-1/2 ft after auger removal
* Calibrated Hand Penetrometer

Drilling Method:
3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
Borehole backfilled with auger cuttings

Figure No. 18

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254305° Longitude: -83.764974°



Soil Boring No. B-19

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 919.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (5 inches)	0.4		5 7 10	17			
		Hard Brown Sandy Clay with trace silt and gravel		S-01			13.2		9000*
914.5			5	S-02	6 8 10	18	13.1		9000*
		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	6.0		9 13 17	30	16.0		9000*
		Hard Gray Sandy Clay with trace silt and gravel	7.5	S-03					
909.5			10.0	S-04	4 10 11	21	14.4		9000*
		Medium Compact Brownish Gray Gravelly Sand with trace			6 9 11	20			
904.5			15.0	S-05					
		Very Stiff Gray Sandy Clay with trace silt and gravel			3 6 8	14	11.4		5000*
899.5			20.0	S-06					
		End of Boring @ 20 ft							
894.5			25						

Total Depth: 20 ft
 Drilling Date: June 27, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: B. Sienkiewicz

Water Level Observation:
 13-1/2 feet during drilling operations; 6-1/2 feet upon completion

Notes:
 Borehole collapsed at 10 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Figure No. 19

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254437° Longitude: -83.764802°



Soil Boring No. B-20

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 918.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (8 inches)	0.7		5				
				S-01	8 10	18	15.5		9000*
913.5		Hard Brown Sandy Clay with trace silt and gravel	5	S-02	5 9 13	22	14.3		9000*
				S-03	6 13 16	29	13.3		9000*
908.5		Hard Brown Sandy Clay with trace silt and gravel	10.0	S-04	8 15 14	29	10.7		8000*
903.5		Very Stiff to Hard Gray Clayey Silt with trace sand and gravel	15	S-05	3 6 6	12	10.9		6000*
898.5			20.0	S-06	6 9 10	19	10.7		9000*
893.5		End of Boring @ 20 ft	25						

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 27, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: B. Sienkiewicz

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 12-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 20

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254593° Longitude: -83.764598°



Soil Boring No. B-21

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 919.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (5 inches)	0.4						
		Very Stiff Brown Sandy Clay with trace silt and gravel	2.5	S-01	3 3 4	7	16.7		6000*
914.5		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	5.0	S-02	3 5 6	11	14.9		8000*
		Very Stiff Brown Sandy Clay with trace silt and gravel (Poor Recovery) (Possible Cobbles)	7.5	S-03	7 10 12	22			
909.5		Hard Grayish Dark Brown Sandy Clay with trace silt and gravel	10.0	S-04	10 16 23	39	14.0		9000*
		Medium Compact Gray Silty Sand with trace clay and gravel							
		Gray Sandy Clay with trace gravel	13.8		6				
904.5		Medium Compact Gray Silty Sand with trace clay and gravel	15.0	S-05	11 14	25			
		Very Stiff Gray Sandy Clay with trace silt and gravel							
899.5			20.0	S-06	5 6 9	15	10.9		7500*
		End of Boring @ 20 ft							
894.5			25						

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
 Drilling Date: June 26, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 14 feet during drilling operations; 16 feet upon completion

Notes:
 Borehole collapsed at 13-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 21

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254727° Longitude: -83.764424°



Soil Boring No. B-22

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 919.8 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (9 inches)	0.8						
		Fill: Very Stiff Brown Sandy Clay with trace silt and gravel	2.5	S-01	3 4 4	8	19.2		7500*
914.8		Soft Dark Gray Organic Silt with trace clay (Organic Matter Content = 6.3%)	5.0	S-02	3 2 4	6	41.6		800**
		Hard Grayish Brown Sandy Clay with trace silt	7.5	S-03	5 7 9	16	18.0		8000*
909.8			10	S-04	4 5 9	14	16.9		8000*
		Hard Gray Sandy Clay with trace silt	15	S-05	5 9 15	24	16.2		9000*
904.8			20.0	S-06	5 11 14	25	15.0		9000*
899.8		End of Boring @ 20 ft	20						
894.8			25						

SOIL / PAVEMENT BORING 243116.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Total Depth: 20 ft
Drilling Date: June 26, 2024
Inspector: J. Anton
Contractor: Strata Drilling, Inc
Driller: J. Haynor

Water Level Observation:
Dry during and upon completion operations

Notes:
Borehole collapsed at 11 ft after auger removal
* Calibrated Hand Penetrometer
** Torvane

Drilling Method:
3-1/4 inch inside diameter hollow-stem auger

Excavation Backfilling Procedure:
Borehole backfilled with auger cuttings

Figure No. 22

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253351° Longitude: -83.764438°



Soil Boring No. P-01

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 919.3 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (3 inches)	0.3		6 7 9	16			
		Hard Brown Sandy Clay with trace silt and gravel	5	S-01			14.3		8000*
914.3				S-02	6 9 12	21			9000*
		(Occasional Cobbles)	7.5		7 11 14	25			9000*
		Medium Compact Brown Sandy Silt with trace clay and sand; occasional brown gravelly sand seams	10.0	S-03			14.0		
909.3				S-04	5 6 7	13			
		End of Boring @ 10 ft							
904.3			15						
899.3			20						
894.3			25						

Total Depth: 10 ft
 Drilling Date: July 1, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 7-1/2 feet during drilling operations; 7 feet upon completion

Notes:
 Borehole collapsed at 8 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 4 inch outside diameter flight auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Figure No. 23

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253775° Longitude: -83.764232°



Soil Boring No. P-02

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 919.0 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (4 inches)	0.3						
		Hard Brown Sandy Clay with trace silt and gravel (Liquid Limit = 34, Plastic Limit = 16)	2.5	S-01	6 6 7	13	12.9		9000*
914.0		Very Stiff Brown Sandy Clay with trace silt and gravel (Brown Sand Seam @ 7 feet)	5	S-02	2 3 3	6	23.5		4000*
				S-03	2 4 5	9	14.2		5500*
909.0			10	S-04	4 4 5	9	12.9		5000*
		End of Boring @ 10 ft							
904.0			15						
899.0			20						
894.0			25						

Total Depth: 10 ft
 Drilling Date: June 24, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Drilling Method:
 4 inch outside diameter flight auger

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 5-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Figure No. 24

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253804° Longitude: -83.763755°



Soil Boring No. P-03

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 920.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace with trace silt and gravel (5 inches)	0.4 0.8						
		Fill: Brown Silty Sand with trace gravel			4				
		Fill: Hard Brown Sandy Clay with trace silt and gravel	2.5	S-01	5	10	13.9		9000*
		Fill: Very Stiff Grayish Brown Sandy Clay with trace silt and gravel			4				
915.5			5.0	S-02	4	10	14.2		6000*
		Fill: Medium Brownish Gray Sandy Clay with trace silt; intermixed organic matter (Organic Matter Content = 3.5%)	6.3	S-03A	2		29.7		1600**
		Fill: Soft Mottled Gray and Brown Sandy Clay with trace silt	7.5	S-03B	3	7	23.1		800**
		Loose Brownish Gray Silty Sand with trace clay and gravel; occasional silt seams			2				
910.5			10.0	S-04	5	10			
		End of Boring @ 10 ft							
905.5			15						
900.5			20						
895.5			25						

Total Depth: 10 ft
 Drilling Date: June 24, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 8-1/2 feet during drilling operations; 9 feet upon completion

Notes:
 Borehole collapsed at 9 ft after auger removal
 * Calibrated Hand Penetrometer
 ** Torvane

Drilling Method:
 4 inch outside diameter flight auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

Figure No. 25

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.254164° Longitude: -83.763689°



Soil Boring No. P-04

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 920.0 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (1 inch)	0.1		4				
		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel		S-01	8 10	18	13.3		9000*
915.0		(Wet Brown Sand Seam @ 5-1/2 feet) Hard Brown Clayey Silt with trace sand	5.0	S-02	5 7 10	17	15.0		9000*
		Very Stiff Brown Sandy Clay with trace silt		S-03	5 6 8	14	24.6		9000*
910.0		End of Boring @ 10 ft	10.0	S-04	4 5 8	13	21.2		7500*
905.0			15						
900.0			20						
895.0			25						

Total Depth: 10 ft
 Drilling Date: June 24, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 5-1/2 feet during drilling operations; 9-1/2 feet upon completion

Notes:
 Borehole collapsed at 9-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 4 inch outside diameter flight auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Figure No. 26

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253041° Longitude: -83.763965°



Soil Boring No. P-05

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA						
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 919.8 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)	
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (13 inches)	1.1		2 4 4	8				
914.8		Very Stiff to Hard Brown Sandy Clay with trace silt and gravel	5	S-01	4 7 8	15	21.6		5000*	
				S-02	4 10 15	25	18.0		7000*	
					S-03	5 9 12	21	14.3		9000*
909.8				10	S-04			14.6		9000*
		End of Boring @ 10 ft								
904.8			15							
899.8			20							
894.8			25							

Total Depth: 10 ft
 Drilling Date: July 1, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Drilling Method:
 4 inch outside diameter flight auger

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 9 ft after auger removal
 * Calibrated Hand Penetrometer

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Figure No. 27

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253078° Longitude: -83.763582°



Soil Boring No. P-06

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 919.8 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (12 inches)	1.0						
		Hard Brown Sandy Clay with trace silt and gravel	2.5	S-01	5 6	12	9.5		8000*
914.8		Hard Grayish Brown Sandy Clay with trace silt and gravel	5	S-02	6 10 13	23	14.4		9000*
		Hard Brown Sandy Clay with trace silt and gravel	7.5	S-03	7 13 16	29	13.0		9000*
909.8		Hard Brown Sandy Clay with trace silt and gravel	10.0	S-04	9 13 16	29	15.7		9000*
		End of Boring @ 10 ft							
904.8			15						
899.8			20						
894.8			25						

Total Depth: 10 ft
 Drilling Date: July 1, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 8-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 4 inch outside diameter flight auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Figure No. 28

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253235° Longitude: -83.763324°



Soil Boring No. P-07

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 918.5 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace silt and gravel (5 inches)	0.4						
		Hard Brown Sandy Clay with trace silt and gravel	2.5	S-01	6 7 8	15	9.0		9000*
913.5		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	5.0	S-02	7 11 16	27	14.8		9000*
		Hard Brown Sandy Clay with trace silt and gravel		S-03	6 11 17	28	15.2		9000*
908.5			10.0	S-04	5 10 14	24	15.5		9000*
		End of Boring @ 10 ft							
903.5			15						
898.5			20						
893.5			25						

Total Depth: 10 ft
 Drilling Date: June 24, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 8-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 4 inch outside diameter flight auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Figure No. 29

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253703° Longitude: -83.763100°



Soil Boring No. P-08

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 920.0 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Topsoil: Dark Brown Sandy Clay with trace gravel (3 inches)	0-3						
		Hard Mottled Brown and Gray Sandy Clay with trace gravel (Poor Recovery) (Possible Cobbles)	2.5	S-01	4 7 9	16	13.2		9000*
915.0		Hard Brown Sandy Clay with trace silt and gravel	5	S-02	5 9 13	22	12.6		9000*
		(Brown Sand Seam @ 7 feet)	7.5	S-03	6 13 15	28	12.0		9000*
910.0		Medium Compact Brown Clayey Sand with trace silt and gravel	10.0	S-04	6 9 10	19			
		End of Boring @ 10 ft							
905.0			15						
900.0			20						
895.0			25						

Total Depth: 10 ft
 Drilling Date: June 24, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 Dry during and upon completion of drilling operations

Notes:
 Borehole collapsed at 8-1/2 ft after auger removal
 * Calibrated Hand Penetrometer

Drilling Method:
 4 inch outside diameter flight auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Figure No. 30

Project Name: Lawton Elementary School

Project Location: 2250 S. 7th Street
Ann Arbor, MI

G2 Project No. 243116

Latitude: 42.253103° Longitude: -83.763107°



Soil Boring No. P-09

CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO-FILE	GROUND SURFACE ELEVATION: 917.3 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Bituminous Pavement (4 inches)	0.3						
		Aggregate Base: Gray Gravelly Sand with trace silt (8 inches)	1.0		4				
		Fill: Hard Grayish Brown Sandy Clay with trace gravel (Liquid Limit = 29, Plastic Limit = 17)	2.5	S-01	5	9	15.4		8000*
912.3		Hard Mottled Brown and Gray Sandy Clay with trace silt and gravel	5	S-02	3 6 8	14	14.4		9000*
				S-03	5 10 11	21	16.6		9000*
907.3				S-04	6 13 15	28	13.3		9000*
			End of Boring @ 10 ft	10.0					
902.3			15						
897.3			20						
892.3			25						

Total Depth: 10 ft
 Drilling Date: June 24, 2024
 Inspector: J. Anton
 Contractor: Strata Drilling, Inc
 Driller: J. Haynor

Water Level Observation:
 Dry during and upon completion of drilling operations

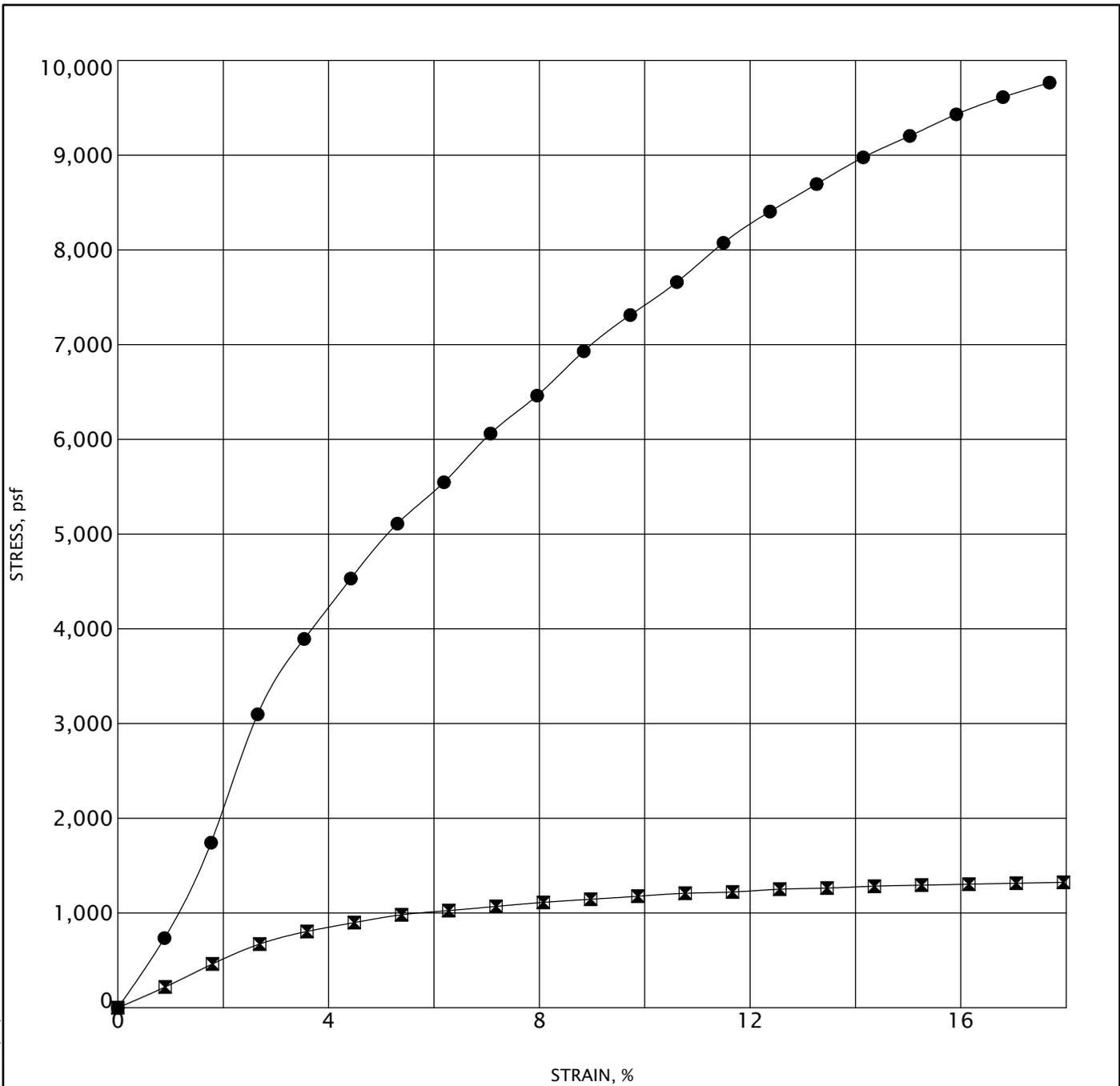
Notes:
 * Calibrated Hand Penetrometer

Drilling Method:
 4 inch outside diameter flight auger

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings; topped with cold-patch asphalt

SOIL / PAVEMENT BORING 243116.CPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 8/12/24

Figure No. 31



Specimen	Classification	MC%	γ_d	UC
● B-06 S-02	Hard Brown Sandy Clay	18	117	9200
⊠ B-15 S-02	Medium Mottled Brown and Gray Sandy Clay	12	108	1290



UNCONFINED COMPRESSIVE STRENGTH TEST

Project Name: Lawton Elementary School
 Project Location: 2250 S. 7th Street
 Ann Arbor, MI
 G2 Project No.: 243116

Figure No. 33

GENERAL NOTES TERMINOLOGY

Unless otherwise noted, all terms herein refer to the Standard Definitions presented in ASTM 653.

PARTICLE SIZE

Boulders	- greater than 12 inches
Cobbles	- 3 inches to 12 inches
Gravel - Coarse	- 3/4 inches to 3 inches
- Fine	- No. 4 to 3/4 inches
Sand - Coarse	- No. 10 to No. 4
- Medium	- No. 40 to No. 10
- Fine	- No. 200 to No. 40
Silt	- 0.005mm to 0.074mm
Clay	- Less than 0.005mm

CLASSIFICATION

The major soil constituent is the principal noun, i.e. clay, silt, sand, gravel. The second major soil constituent and other minor constituents are reported as follows:

Second Major Constituent (percent by weight)	Minor Constituent (percent by weight)
Trace - 1 to 12%	Trace - 1 to 12%
Adjective - 12 to 35%	Little - 12 to 23%
And - over 35%	Some - 23 to 33%

COHESIVE SOILS

If clay content is sufficient so that clay dominates soil properties, clay becomes the principal noun with the other major soil constituent as modifier, i.e. sandy clay. Other minor soil constituents may be included in accordance with the classification breakdown for cohesionless soils, i.e. silty clay, trace sand, little gravel.

Consistency	Unconfined Compressive Strength (psf)	Approximate Range of (N)
Very Soft	Below 500	0 - 2
Soft	500 - 1,000	3 - 4
Medium	1,000 - 2,000	5 - 8
Stiff	2,000 - 4,000	9 - 15
Very Stiff	4,000 - 8,000	16 - 30
Hard	8,000 - 16,000	31 - 50
Very Hard	Over 16,000	Over 50

Consistency of cohesive soils is based upon an evaluation of the observed resistance to deformation under load and not upon the Standard Penetration Resistance (N).

COHESIONLESS SOILS		
Density Classification	Relative Density %	Approximate Range of (N)
Very Loose	0 - 15	0 - 4
Loose	16 - 35	5 - 10
Medium Compact	36 - 65	11 - 30
Compact	66 - 85	31 - 50
Very Compact	86 - 100	Over 50

Relative Density of cohesionless soils is based upon the evaluation of the Standard Penetration Resistance (N), modified as required for depth effects, sampling effects, etc.

SAMPLE DESIGNATIONS

- AS - Auger Sample - Cuttings directly from auger flight
- BS - Bottle or Bag Samples
- S - Split Spoon Sample - ASTM D 1586
- LS - Liner Sample with liner insert 3 inches in length
- ST - Shelby Tube sample - 3 inch diameter unless otherwise noted
- PS - Piston Sample - 3 inch diameter unless otherwise noted
- RC - Rock Core - NX core unless otherwise noted

STANDARD PENETRATION TEST (ASTM D 1586) - A 2.0 inch outside-diameter, 1-3/8 inch inside-diameter split barrel sampler is driven into undisturbed soil by means of a 140-pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven three successive 6-inch increments. The total number of blows required for the final 12 inches of penetration is the Standard Penetration Resistance (N).