Testing Engineers & Consultants, Inc.

Van Buren Public Schools
555 W. Columbia Avenue
Belleville, Michigan 48111

REVISED
GEOTECHNICAL INVESTIGATION

FOR

Van Buren Schools Operations Building
13770 Haggerty Road
Van Buren Township, Michigan

TEC Report: 65655 Rev1

By:

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May 6, 2026

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TEC Report: 65655 Rev1
Date Issued: April 27, 2026
Date Revised: May 6, 2026

Mr. James Williams
Van Buren Public Schools
555 W. Columbia Avenue
Belleville, Michigan 48111

Re: Revised Geotechnical Investigation For
Van Buren Schools Operations Building
13770 Haggerty Road
Van Buren Township, Michigan

Dear Mr. Williams:

Please find enclosed the results of a geotechnical investigation performed at the above referenced site. This revised geotechnical report presents our field and laboratory results; engineering analysis; and our recommendations for design of foundation and slabs, as well as important construction considerations.

As you may know, Testing Engineers & Consultants, Inc. (TEC) has sixty years of experience in Quality Control Testing and Construction Inspection. We would be pleased to provide any of these services on this project.

Should you have any questions regarding this report, please let us know. It has been a pleasure to be of service to you.

Respectfully submitted,

TESTING ENGINEERS & CONSULTANTS, INC.

Carey J. Suhan, P.E.,
Vice President & Principal

CJS
Enclosure

cc: Plante Moran Realpoint, Mr. Rob Kakoczki

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Testing Engineers & Consultants, Inc.

Mr. James Williams
Van Buren Public Schools
April 27, 2026 Revised May 6, 2026

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Mr. James Williams
Van Buren Public Schools
April 27, 2026 Revised May 6, 2026

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1.0 INTRODUCTION

This report presents the results of a geotechnical investigation for the proposed Van Buren School District Operations Building and grounds. Authorization to perform this investigation was given by P.O. 96100 provided by Van Buren School District on March 10, 2026, per the TEC Proposal No. 060-26-060.

The purpose of this investigation was to obtain information necessary to determine basic engineering properties of soils at the site through a series of test borings and laboratory tests performed on the soil samples obtained during the field investigation. This information has been evaluated to provide the general recommendations for site development preparations, foundation requirements, floor slab designs and other geotechnical information.

2.0 FIELD INVESTIGATION

Seventeen test borings were drilled on the site at the locations shown on the Test Boring Location Plan. The locations are accurate to within a short distance of the locations shown on the location plan included in the appendix. The test borings were drilled on March 31, April 1, 2, and 3, 2026 with truck and all-terrain vehicle (ATV) mounted auger equipment to depths of 15 to 25 feet below the existing grade. Boring No. 13 was not drilled due to an error with the boring numbering scheme.

Drilling methods and standard penetration tests were performed in general accordance with the current ASTM D1452 and D1586 procedures, respectively. These procedures specify that a standard 2-inch O.D. split-barrel sampler be driven by a 140-pound hammer with a free fall of 30 inches. The number of hammer blows required to drive the split-barrel sampler through three successive 6-inch increments is recorded on the Test Boring Log. The first 6-inch increment is used for setting the sampler firmly in the soil and the sum of the hammer blows for the second and third increments is referred to as the “Standard Penetration Index” (N). N values were obtained with an automatic trip hammer.

From the standard penetration test a soil sample is recovered in the liner sampler tubes that are located inside the split-barrel sampler. Upon recovery of a soil sample, the liner tubes are removed from the split-barrel sampler and placed in a container which is sealed to minimize moisture losses during transportation to the laboratory. Standard penetration tests are usually made at depths of 2 ½, 5, 7 ½ and 10 feet and at 5-foot depth intervals thereafter. These parameters may vary for a given project depending on the nature of the subsoils and the geotechnical information required.

Six double ring infiltration tests in test pits were also conducted. The results are included in Section 6.0 of the report.

3.0 LABORATORY TESTING

The laboratory testing consisted of determining the unconfined compressive strength, the natural bulk density and the natural moisture content of the soil samples recovered in the liner sampler tubes. In the unconfined compression tests, the compressive strength of the soil is determined by axially loading a soil sample until failure is observed or 15% strain, whichever occurs first. The above referenced test data are recorded on the boring logs. Some test results may deviate from the norm because of variations in texture, imperfect samples, presence of pebbles and/or sand streaks, etc. The results are still reported although they may not be relevant.

The particle size distribution of five granular soil samples was also determined. The distribution provides estimates of the permeability and permeability-related behavior of the granular soils. The results are included in the appendix.

Six additional particle size distribution of granular soil samples were also performed at infiltration depths as referenced in Section 6.0 of the report. The results are included in the appendix.

In addition to the above tests, the Atterberg Limits of one fine-grained soil sample were determined. The Atterberg Limits are water contents at which cohesive fine-grained soils change behavior. They are used for soil classification, and they have been correlated to several important engineering properties of a soil. As such, they can be used to obtain inexpensive estimates of fine-grained soil behavior. The Atterberg Limits are included in the corresponding boring logs shown in the appendix.

Samples taken in the field are retained in our laboratory for 60 days and are then destroyed unless special disposition is requested by the client. Samples retained over a long period of time are subject to moisture loss and are then no longer representative of the conditions initially encountered.

4.0 GENERAL SUBSURFACE CONDITIONS

4.1 Subsoil Conditions

The soil conditions encountered in the borings are presented on the individual boring logs. Each log presents the soil types encountered at that location as well as laboratory test data, ground water data, and other pertinent information. Descriptions of the various soil consistencies, relative densities and particle sizes are given in the Appendix. Definitions of the terms and symbols utilized in this report may be found in ASTM D653.

4.1 Subsoil Conditions (Cont'd)

Asphalt Pavement

Asphalt pavement was encountered at Boring Nos. 7, 9, and 18 at thicknesses ranging from 0.1 to 0.2 feet (1 to 2.5 inches). Aggregate base was found below the pavement at Boring Nos. 7 and 18 to depths extending to 0.8 and 0.3 feet (9.6 to 3.6 inches), respectively.

Topsoil and Fill

Topsoil was encountered at the remaining boring locations and infiltration test pit locations at thicknesses ranging from 0.3 to 2 feet (3.6 to 24 inches). Fill materials were encountered immediately below the pavement aggregate base section or immediately below the topsoil at Boring Nos. 7, 11, and 18 extending to depths ranging from 4 to 5.5 feet. Buried topsoil was encountered immediately below the fill at those boring locations extending to depths ranging from 5.5 to 6 feet. The fill materials were generally described as sand with varying amounts of silt and gravel and were loose to medium compact in relative density.

Native Silt, Sand, and Clay

Immediately below the surficial materials described above, we encountered native sand soils over silt soils. Boring Nos. 2, 10, 11, and 18 terminated in clay. The sand soils extended to depths ranging from 8 to 25 feet and to the termination depth of each infiltration test pit. The sand ranged from very loose to compact in density. The silt soils below the sand ranged in density from medium compact to dense. Boring Nos. 2, 10, 11, and 18 terminated in clay, which ranged in consistency from firm to stiff. The remaining soil boring locations terminated in silt, while Boring Nos. 1, 3, 8, and 12 terminated in sand.

Standard penetration values range from 4 to 73 blows per foot with unconfined compressive strength of 910 to 9,810 pounds per square foot (psf). Bulk densities range from 102 to 148 pounds per cubic foot with moisture contents of 4.7 to 25.4 percent of the dry weight of the soil.

4.2 Ground Water Observations

Water level readings were taken in the bore holes during and after the completion of drilling. These observations are noted on the respective Test Boring Logs.

Ground water was present at all of the boring locations. Ground water depth during drilling ranged from 3 to 6.5 feet below the ground surface. Immediately after drilling and the augers

4.2 Ground Water Observations (Cont'd)

were removed, ground water was measured at each boring location at depths ranging from 2 to 8.17 feet below the ground surface. Boring Nos. 3, 15, and 16 were reported to cave at depths ranging from 3.25 to 7 feet below the ground surface.

5.0 ANALYSIS AND RECOMMENDATIONS

5.1 Proposed Development

The proposed development is to consist of a pre-engineered metal building (PEMB) for school district operations with small, conventionally-framed mezzanine spaces. Wall loads are expected to be 3.8 kips per linear foot (klf), with exterior column loads of 35 kips (down) and 21 kips (uplift) and interior column loads of 85 kips (down) and 36 kips (uplift). A bus canopy will be constructed west of the operations building with column loads of 35 kips (down) and 20 kips (uplift). Adjacent parking lot pavement, drive lanes, and storm water infiltration areas will be constructed as part of this project.

5.2 Ground Water Conditions

The position of water levels found in test borings may vary somewhat depending on seasonal precipitation. At the level encountered in the borings, it may present some problems for design or construction of foundations and utilities.

Ground water should be controllable by pumping from properly constructed sumps. We do not have a grading plan but expect that it will need to be lowered prior to final excavation to foundation grade where ground water was encountered relatively shallow in relation to current grades. The table below describes the ground water and fill or buried topsoil depth encountered at each boring location.

Boring No.	Depth of Topsoil (ft.)	Depth of Fill (ft.)	Ground Water Depth (ft.)	
			During Drilling	After Completion
1	1.3	N/A	3	3.83
2	0.5	N/A	4.5	4.5 cave
3	1.6	N/A	4	3.75
4	0.8	N/A	6	6.83
5	1.0	N/A	4	2

5.2 Ground Water Conditions (Cont'd)

Boring No.	Depth of Topsoil (ft.)	Depth of Fill (ft.)	Ground Water Depth (ft.)	
			During Drilling	After Completion
6	2.0	N/A	4.5	4.9
7	N/A	4 (5.5 buried topsoil)	5.5	6.17
8	0.8	N/A	6	6.67
9	N/A	N/A	3.25	2.58
10	0.8	N/A	6	7.75
11	0.9	4.5 (6 buried topsoil)	6	7.5
12	0.3	N/A	6.5	7.83
14	0.5	N/A	6.5	4
15	1.2	N/A	6.5	7 cave
16	1.1	N/A	5	3.25 cave
17	1.2	N/A	4	4.58
18	N/A	5.5 (with buried topsoil seam)	6.5	8.17
IT-1	0.7	N/A	4	3.8 cave
IT-2	1.0	N/A	4	3.75 cave
IT-3	1.0	N/A	4.5	3.25
IT-4	1.0	N/A	4	4 cave
IT-5	0.7	N/A	4	4 cave
IT-6	0.7	N/A	5.75	4.25 cave

5.3 Recommended Earthwork Operations

Within the limits of areas to be developed, the surface pavement, vegetation, and topsoil should be removed prior to the site being graded. The site should then be rolled with a vibrating roller to consolidate the loose sand. This should be followed by a proofroll to identify soft or yielding areas. It may be possible to stabilize soft areas with crushed stone or concrete. Soft spots that cannot be stabilized should be removed and replaced with compacted engineered fill. We recommend that the site preparation extend 10 feet beyond the building limits and 5 feet beyond pavement limits.

Engineered backfill required for construction excavations or fill required to achieve desired grades should preferably consist of clean and well graded granular soils. On-site material should be satisfactory for use, particularly for balancing and grading the site. Test pits are recommended to determine the extent and depth of the existing undocumented fill and buried topsoil we encountered in several borings. Proposed engineered fill from removal of the existing building or removal and replacement of existing fill and organic soils will need to be

5.3 Recommended Earthwork Operations (Cont'd)

fully tested for moisture and density in order to support proposed building foundations. Fill should be placed in uniform layers not more than 9 inches in thickness with the soils in each layer compacted to a minimum of 95% of the maximum density as determined by ASTM D1557. Fill should be at approximately the optimum moisture content during placement and compaction. Furthermore, frozen material must not be used as fill and fill should not be placed on frozen ground.

Since the soils are primarily sand, lateral support structure or side sloping with a minimum 1H:1V ratio will be required for anticipated excavations. Trenching is not likely to be feasible in the granular soils. Soils exposed in the bases of all satisfactory foundation excavations should be protected against any detrimental change in conditions such as from disturbances, rain or freezing. Surface run-off water should be drained away from the excavations and not be allowed to pond. If possible, all footing concrete should be placed the same day the excavation is made. If this is not possible, the footing excavations should be adequately protected.

5.4 Foundation Recommendations

Foundations should bear on soil deposits that have adequate strength to develop bearing capacity and sufficient stiffness to limit settlement for reasonably-sized footings with the anticipated loads. Local building codes and climatic conditions require that exterior foundations be placed at a minimum depth of 3.5 feet below finished grade to provide for adequate frost protection. Interior foundations may be below the floor at a lesser depth if not exposed to frost penetration. Regardless of the loads, the foundations must be larger than the superstructure they support along with construction tolerances.

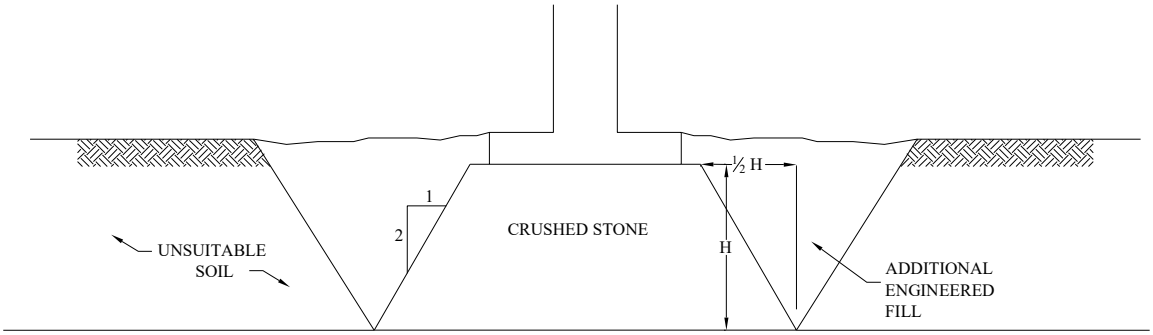
The native site soils are acceptable for support of the proposed structures on shallow foundations. At minimum depths, foundations can be designed for a net allowable bearing pressure of 1,500 psf on native soils or engineered fill. We recommend that the bottom of all foundation excavations be compacted with a vibratory plate compactor prior to placing concrete. Ground water will need to be adequately controlled to minimize disturbance to the bearing soils and to allow compaction. The recommended design bearing pressure should provide a factor of safety of about 2.5 to 3 against shear failure and limit differential settlements between adjacent columns to less than ¾ inch. The existing fill must be removed from below the foundation bearing surfaces.

Foundation excavations will need to extend through the existing fill to the native soils to bear directly on suitable native soils or the existing fill removed and backfilled with compacted

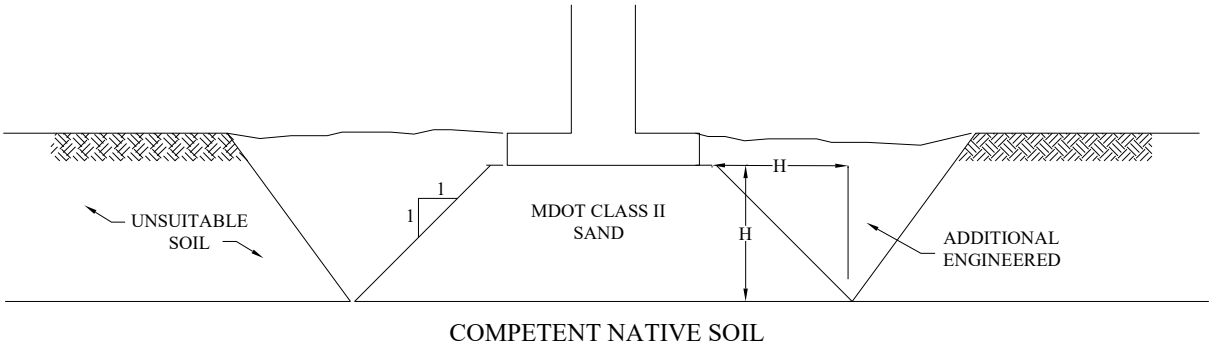
5.4 Foundation Recommendations (Cont'd)

engineered fill. The foundations can then bear on the engineered fill at the original design elevation. See the sketches below to determine the width of the engineered fill below the foundations.

ENGINEERED STONE FILL UNDER FOUNDATIONS



ENGINEERED SAND FILL UNDER FOUNDATIONS



From a review of the borings and assumptions made about the lower lying soils a seismic site class of D is recommended for design. It is assumed that the lower lying soils below the bottom of the borings have an average N value between 15 and 50 and shear strengths between 1,000 psf and 2,000 psf. This appears to be a reasonable assumption from general geology of the area. This is based off of the Michigan Building Code, which incorporates the International Building Code.

5.4 Foundation Recommendations (Cont'd)

Lateral Earth Pressure

The movement required to develop a particular earth pressure varies considerably. Earth pressure in granular soil ranges from a low active pressure generated by backfill pressing against a wall to a much higher passive pressure/resistance generated by the backfill when the wall is moved into the backfill. The earth pressure at rest is somewhere in between. If H is the height of the wall, a movement of the top of the wall away from the backfill of 0.001 × H or more will allow the lower active pressure to develop. However, the movement of the top of the wall towards the backfill required to fully develop the much higher passive pressure is as much as 0.1 × H. Where passive resistance is important, the movement required to develop it may be limited by the application of a suitable factor of safety, which should also be applied for other reasons.

Presumably, any building retaining walls could be laterally supported by adjacent slabs and framing when the walls are backfilled. Accordingly, they will not be able to move sufficiently to develop the lower active pressure; in terms of lateral earth pressure the walls will be unyielding. The lateral earth pressure for this condition is the earth pressure at-rest. Unyielding walls exposed to lateral earth pressure from a properly compacted granular backfill should be designed to resist the pressure from a liquid with an equivalent fluid weight of 60 pounds per cubic foot (pcf). This value assumes a properly installed and maintained perimeter drain will eliminate any water pressure on the wall. Furthermore, a 12-inch impervious layer should be placed on top of the granular backfill to minimize infiltration of surface water into the backfill.

On the other hand, if the walls are not laterally restrained at the time the backfill is placed, the un-restrained walls as well as any low, free-standing retaining wall (less than 10 feet in height) that is free to rotate about its base should be designed to resist the active earth pressure from the granular backfill. The active earth pressure also applies to typical proprietary segmental retaining walls. Yielding walls exposed to lateral earth pressure from a moderately compacted granular backfill should be designed to resist the pressure from a liquid with an equivalent fluid weight of 40 pcf. This value also assumes a properly installed and maintained longitudinal drain and weep-holes will eliminate any water pressure on the wall. And again, a 12-inch impervious layer should be placed on top of the granular backfill to minimize infiltration of surface water into the backfill.

Passive earth resistance can be developed against basement walls, grade beams, drilled piers supporting grade beams and similar below-grade structures if they are designed to carry the pressure.

5.4 Foundation Recommendations (Cont'd)

Footings can be used to develop some lateral passive resistance of a structure, especially footings that are cast in neat trenches with intimate contact between concrete and adjacent native silty clay soils. For such footings, like the retaining wall footings in this project, we expect that the native wet sand soils can provide an allowable passive resistance of 1000 psf against the footing while limiting the lateral deflection to ¼ inch. The allowable passive resistance in sand increases from the top of the footing to the bottom of the footing. The corresponding horizontal subgrade modulus is 20 pci.

On the other hand, shallow footings which bear at minimum depth close to ground surface are not likely to extend appreciably into the native silty sand or clay but rather be backfilled with engineered fill. In general, it is not uncommon to discount lateral resistance against such shallow footings since depth and quality of engineered fill may vary, the fill may loosen due to frost action and resistance may be lost temporarily any time the fill is removed for a while. However, undisturbed engineered fill that consists of well-controlled medium compact granular fill can provide some allowable passive lateral resistance.

Canopy Foundations

Uplift loads for the new canopy should be considered. The dead weight of the concrete foundation and the weight of the soil above it can be used to resist the uplift. A soil unit weight of 110 pcf is recommended for clean granular backfill. A minimum factor of safety should be applied. No uplift friction should be applied to the relatively short piers.

Relatively shallow drilled pier foundations developing their capacity a short distance into the sand and silt deposits would be suitable for support of column loads in the 35 kip range. They could also be used for support of lesser as well as greater column loads. The silt or sand deposit encountered within 10 to 20 feet of the ground surface might lend itself to end bearing support of small drilled shafts supporting the canopy. The allowable bearing pressure depends on the size (diameter) of the straight shaft. To develop the higher capacity of a deep foundation, a pier should extend at least four times the diameter of the shaft below the ground surface.

Groundwater was encountered in the shallow native sand soils throughout the site. Accordingly, groundwater can be expected to present problems during pier construction. Each pier excavation must be kept dry or stable until the concrete is placed. Casing and/or slurry mixes are likely required if piers are selected for support of the bus canopy to keep the excavations open and dry or stable long enough to place the concrete. Wet sand and silt may present a problem for the construction of drilled piers.

5.4 Foundation Recommendations (Cont'd)

A net allowable soil bearing pressure of 8 kips per square foot (ksf) is recommended for piers extending at least four times the diameter of the shaft below the final grade. No (positive) side-friction should be assumed in the design of the downward capacity of the relatively short piers. For uplift capacity we recommend using an allowable frictional capacity of 0.4 ksf. We recommend that the upper one shaft diameter of the pier be neglected for uplift capacity. A two foot diameter pier can support a lateral load at the top of 10 kips with deflection less than ¼ inch.

Auger cast piles should be considered as an alternative to drilled piers for support of the canopy foundations. First, the construction methods for auger cast piles include a hollow stem auger acting as a casing and internal pumping of the grout as the auger is removed. This is ideal for the wet sand and silt present at this site. It will keep the wet soils in place and allow the grout to be placed from the bottom of the auger, tremie style, so that additional drilling slurry is not necessary to keep the foundation open. Unlike our recommendations for drilled piers, auger cast pile capacity will be developed by side friction as well as end-bearing. Based on the observed soil conditions, we estimate 12-inch to 18-inch nominal diameter auger cast piles extending 15 feet below the ground surface can achieve the provided load capacities. The capacities are shown below.

ACIP Diameter, Inches	Allowable Downward Capacity, kips	Allowable Uplift Capacity, kips	Free Head Lateral Deflection With 10 kip Lateral Load, Inches
12	45	30	0.8
16	65	40	0.4
18	75	45	0.3

The pile installation should be carefully monitored for construction quality control. A load test may be completed to reduce the required factor of safety or to verify the pile capacities.

For both the drilled piers and ACIP outlined the allowable capacities are based upon a factor of safety of 2.5 to 3. Total settlements are estimated to be less than 1 inch with differential settlement between adjacent columns less than ½ inch.

5.5 Floor Slabs and Pavements

The subgrade resulting from the site preparation, as outlined in the recommended earthwork operations section, will provide a fair subgrade for support of pavements and floor slabs. Key concerns for the design and construction of floor slabs are structural support of the slab, stability of the subgrade during construction, and drainage of the cross-section in service.

5.5 Floor Slabs and Pavements (Cont'd)

Please note that the existing fill should be removed from below the floor slab to reduce the potential for more than normal settlement. However, if it is possible to tolerate the settlement due to the nature of the building, the floor slab could be supported on the uncontrolled fill. It may be necessary to increase the slab section or help bridge the fill with a geogrid layer.

The Modulus of Subgrade Reaction (30-inch diameter plate) is used in the design of concrete floor slabs. This modulus is for temporary loading and small strains. Based upon the encountered subgrade soils and the stipulated subgrade preparation procedures, an estimated standard Modulus of Subgrade Reaction of 150 pounds per cubic inch (pci) may be used for design of floor slabs on compacted granular soil.

Floor slabs and other concrete pavements should be placed on a minimum of 4 inches of clean compacted sand meeting MDOT Class II specifications or MDOT 21AA which will remain more stable during concrete placement. Based on the soil and ground water conditions and use of the structure, a vapor retarder is recommended. The vapor retarder should be placed in accordance with ACI 360R. A vapor retarder should not be used in vehicle maintenance areas where water may be generated above the floor slab.

For automobile drives and minimal truck traffic the following section is recommended if the existing fill soils are removed and replaced with engineered fill:

1 ½ inch hot mix asphalt (HMA) topping course (MDOT 5EML or 4EML)
2 ½ inch topping leveling course (MDOT 4EML)
10 inches untreated aggregate base (MDOT 21AA)

The aggregate base may be reduced to 8 inches in automobile parking areas.

In areas of regular bus or truck traffic, the pavement cross section should be increased as follows:

1 ½ inch bituminous concrete wearing course (MDOT 5EML or 4EML)
4 ½ inch bituminous concrete leveling course (MDOT 4EML) (2 lifts)
10 inches untreated aggregate base (MDOT 21AA)

For Portland cement concrete, the following section is recommended:

8 inches PCC
8 inches of untreated aggregate base (MDOT 21AA)

5.5 Floor Slabs and Pavements (Cont'd)

Air entrained MDOT P1 grade concrete with partial slag cement replacement is recommended for new curb and gutter, mainline pavement at intersections and drive approaches or miscellaneous flatwork. If a high-performance concrete pavement is desired, MDOT P1M concrete is recommended. TEC recommends that the proposed concrete mixes effectively mitigate the potential for ASR reactivity utilizing a combination of methods such as partial slag cement substitution, use of low alkali Portland cement, and verification testing of the ASR expansion potential of the proposed fine aggregates and/or combinations of cementitious materials.

The pavement should be properly crowned and shaped in order to provide effective surface drainage and prevent water ponding. A 1.5 percent minimum slope is recommended. Edge drains along the perimeter of the pavement and finger drains around catch basins are recommended to prevent water from infiltrating the subgrade. All drains should be connected to storm sewer or other outlets.

The pavement recommendations presented above are intended to provide a serviceable pavement for an extended period of time. However, all pavements show deterioration with time and require regular maintenance such as occasional repairs of cracks and pot holes. The need for such maintenance efforts is not necessarily indicative of premature pavement failure. The serviceable life of the pavement can be substantially reduced if maintenance and minor repair is not performed in a timely manner.

6.0 DOUBLE RING INFILTRATION TESTING

Six double ring infiltrometer tests were performed at locations shown on the boring location diagram in the appendix. The double ring infiltrometer test consists of installing two concentric rings in a test pit. The rings are set in the soil to minimize lateral water flow and filled with water. In this case, the tests were completed at various depths below existing ground surface based on the ground water findings at nearby borehole locations. The testing was performed in accordance with the Low Impact Design Manual for Michigan and Wayne County guidelines.

The table below outlines the encountered soil, the depth at which the test was performed, and the design infiltration rate in inches per hour. Test results are also provided in the appendix.

6.0 DOUBLE RING INFILTRATION TESTING (Cont'd)

Infiltration Test No.	Soil Description	Test Depth, Feet (A)	Infiltration Rate, Inches Per Hour	Design Infiltration Rate, Inches Per Hour (B)
1	Moist Brown Fine Sand with Trace of Clay and Gravel	3.25	0.5	0.25
2	Moist Brown Fine Sand with Trace of Clay and Gravel	2	0.75	0.38
3	Moist Brown Fine Sand with Trace of Clay and Gravel	3	0.88	0.44
4	Moist Brown Fine Clayey Sand with Trace Gravel	2	9.75	4.9
5	Moist Brown Fine Sand with Trace of Clay and Gravel	2	24	12
6	Moist Brown Fine Sand with Trace of Clay and Gravel	3.25	6	3

A. Below existing ground surface
B. Based on a safety factor of 2

7.0 DESIGN REVIEW AND FIELD MONITORING

The evaluations and recommendations presented in this report relative to site preparation and building foundations have been formulated on the basis of assumed and provided data relating to the location, type and finished grades for the proposed structure and adjacent areas. Any significant change in this data should be brought to our attention for review and evaluation with respect to the prevailing subsoil conditions.

When the building and foundation plans are finalized, a consultation should be arranged with us for a review to verify that the evaluations and recommendations have been properly interpreted.

Soil conditions at the site could vary from those generalized on the basis of test borings made at specific locations. It is therefore recommended that Testing Engineers & Consultants, Inc.

7.0 DESIGN REVIEW AND FIELD MONITORING (Cont'd)

be retained to provide soil engineering services during the site preparation, excavation and foundation phases of the proposed project. This is to observe compliance with the design concepts, specifications and recommendations. Also, this provides opportunity for design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction.

Kara M. Grisamer, P.E.
Senior Project Engineer

Carey J. Suhan, P.E.
Vice President & Principal

KMG/CJS

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Testing Engineers & Consultants, Inc.

Mr. James Williams
Van Buren Public Schools
April 27, 2026 Revised May 6, 2026

TEC Report: 65655 Rev1

APPENDIX

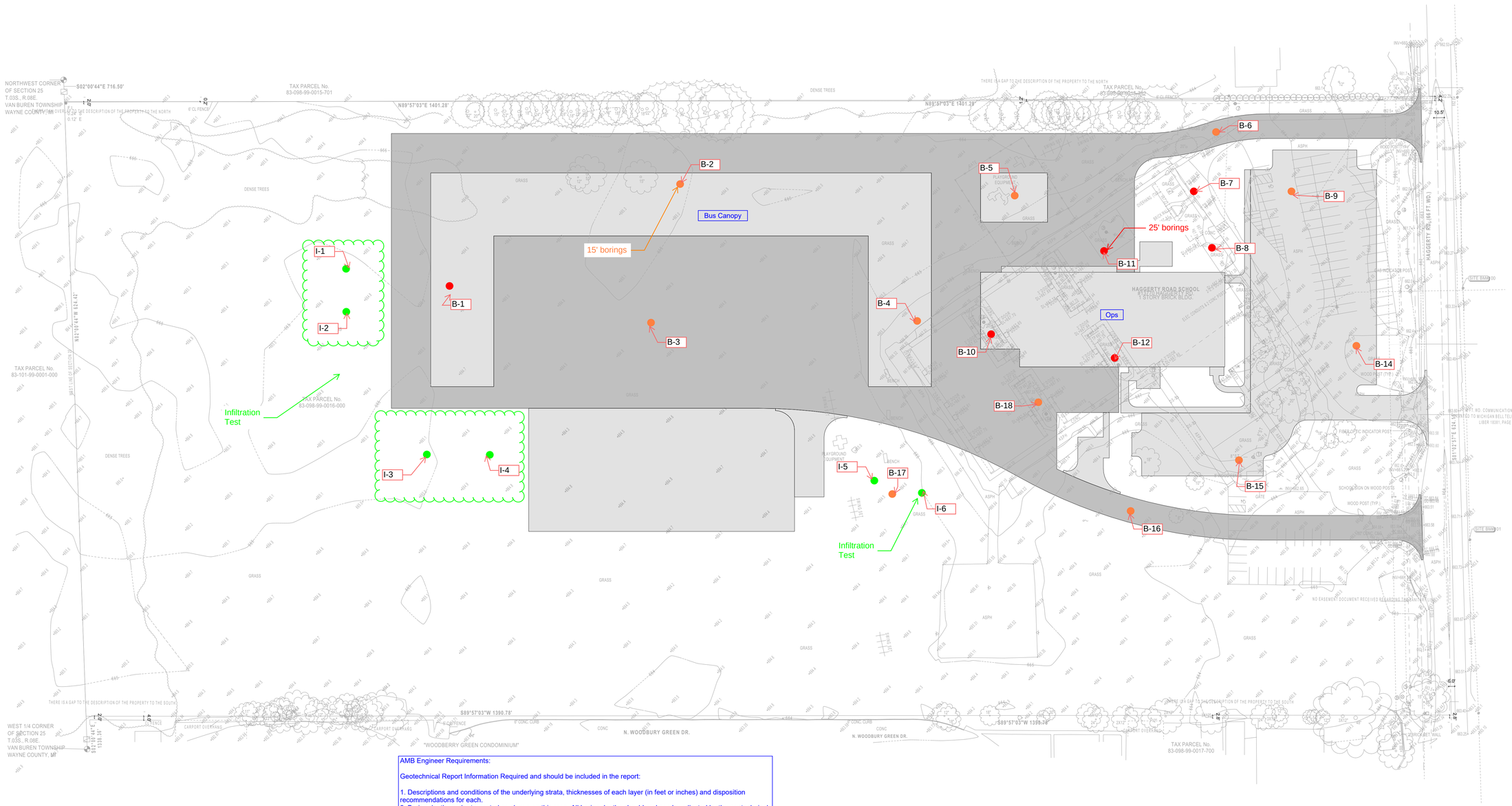
Test Boring Location Plan

Logs Of Test Borings and Test Pits

Sieve Analysis Results

Double Ring Infiltration Test Results

General Notes For Soil Classification



1 SITE OVERLAY FOR SOIL BORINGS
SCALE: 1" = 50'

AMB Engineer Requirements:

Geotechnical Report Information Required and should be included in the report:

1. Descriptions and conditions of the underlying strata, thicknesses of each layer (in feet or inches) and disposition recommendations for each.
2. Boring depth can be truncated as shown on this map. All boring depths should and can be adjusted by the geotechnical engineer based on their local experience with the soils and their need to understand soil composition to provide recommendations.
3. Provide frost depth based on soil conditions.
4. Provide water table depth encountered and expected.
5. Provide allowable net bearing capacity in pounds per square foot for shallow frost-depth foundations. Provide allowable net bearing capacity for continuous wall foundations.
6. Subgrade modulus of reaction for floor slab design (in pci, k-value)
7. Provide subgrade modulus for exterior pavement (CBR) or provide exterior asphalt and concrete pavement section design recommendations (thickness of aggregate, concrete, sub-base, etc.) per MDOT recommendations.
8. Site seismic classification per ASCE 7-16
9. Expected settlement, differential and global.
10. Expected undercut, if any, for foundation bearing.
11. Lateral pressures for design of retaining walls and sub-surface foundation elements, included friction coefficient, at-rest, passive, and active. Seismic wall (Mononobe-Okabe) not required for this project.
12. Recommendations for foundation and subsurface wall drainage (footer tiles, drains, etc.)
13. Excavation considerations based on OSHA and soil type(s) encountered.
14. Considerations for dewatering, if recommended or required.
15. Provide allowable net skin friction and end-bearing capacities for drilled shaft style foundations for the bus canopy columns. We will need skin friction in pounds per square foot for uplift resistance calculations and end-bearing for gravity / down calculations. Note if we can use combined skin friction and end-bearing for gravity foundations only.

Foundation description and loading:
At this time, we expect this to be a pre-engineered metal building with small conventionally-framed mezzanine spaces. The operations PEMB will utilize isolated frost-depth spread foundations for exterior columns. Some areas may utilize bearing walls.
Wall Foundation Load: 3.8 kips / linear foot down
Exterior PEMB Foundations: 35 kips down / 21 kips uplift
Interior PEMB Foundations: 85 kips down / 36 kips uplift

Bus Canopy PEMB:
Column Load: 35 kips down / 20 kips uplift

THE COLLAB ORATIVE

Operations Building / Van Buren Public Schools

Testing Engineers & Consultants, Inc.

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(248) 588-6200 or (313) T-E-S-T-I-N-G
Fax (248) 588-6232

Boring No.: 1 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/2/2026

Completed: 4/2/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
	LS	2 2 3	1.33	Moist Dark Brown Sandy TOPSOIL	12.8	112	
2.5			3	Loose Moist Brown Fine SAND			
	LS	3 3 5		Loose Wet Brown Fine SAND & Trace Of Clay	21.1	128	
5.0							
	LS	3 8 13	6.5		21.5		
7.5			8	Medium Compact Wet Gray Fine Silty SAND			
	LS	5 8 11		Medium Compact Wet Gray Very Fine SAND With Some Silt	15.9	108	6510
10.0							
12.5			13				
	LS	3 4 5	15	Loose Wet Gray Coarse SAND With Trace Of Gravel	10.2		
15.0				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 3'0"

At Completion: 3'10"

Boring No. 1

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Boring No.: 2 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: T. Nahas

Started: 4/2/2026

Completed: 4/2/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.5	Moist Dark Brown & Gray Sandy TOPSOIL With Some Roots (6")			
	LS	2 4 7	2		12.3	106	
2.5				Moist Dark Brown & Gray SAND With Trace Of Roots			
	LS	2 3 4	4.5	Medium Compact Moist Brown Fine SAND With Trace Of Roots	18.5	129	
5.0							
	LS	2 4 7	7.25	Loose Wet Brown Fine SAND	20.5	124	1650
7.5							
			8.5	Medium Compact Wet Brown Fine SAND			
	LS	5 14 11	9.5		18.3	125	3460
10.0				Medium Compact Wet Gray Fine SAND			
				Firm Wet Gray CLAY With Some Silt & Sand LL=18 PL=27 PI=11			
12.5							
	LS	8 10 9	15		16.8		6920
15.0							
				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'6"

At Completion: Caved In 4'6"

Boring No. 2

Testing Engineers & Consultants, Inc.

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Fax (248) 588-6232

Boring No.: 3 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/2/2026

Completed: 4/2/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
	LS	2 3 2	1.58	Loose Moist Dark Brown Sandy TOPSOIL	10.9	118	
2.5				Loose Moist Brown Fine SAND			
	LS	2 2 2	4		21.7		
5.0			5.5	Loose Wet Brown Fine SAND			
	LS	4 7 12	6.5	Loose Wet Brown Medium SAND	24.9		
7.5				Medium Compact Wet Gray Very Fine Silty SAND			
	LS	6 8 8			15.0	141	
10.0							
12.5							
	LS	4 13 12	14		4.9		
15.0			15	Medium Compact Wet Gray Coarse SAND With Trace Of Gravel & Clayey At 14' - 14'7"			
				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'0"

At Completion: 3'9"

Boring No. 3

Testing Engineers & Consultants, Inc.

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Fax (248) 588-6232

Boring No.: 4 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/2/2026

Completed: 4/2/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.75	Moist Dark Brown Sandy TOPSOIL (9")			
	LS	3			7.2	122	
		4					
2.5		5		Loose Moist Brown Fine Sand With Some Clay & Trace Of Gravel-FILL			
	LS	2	4		23.2		
		3	4.83				
5.0		4		Loose Moist Dark Brown Sandy TOPSOIL			
	LS	2		Loose Moist To Wet Fine To Medium SAND With Clayey Seam	16.7		
		2					
7.5		2					
	LS	3	9		25.4	137	
		8					
10.0		10		Medium Compact Wet Gray Fine SAND			
			12				
12.5				Medium Compact Wet Gray Very Fine Sandy SILT			
	LS	4			14.0		8080
		9					
15.0		10	15				
				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'0"

At Completion: 6'10"

Boring No. 4

Testing Engineers & Consultants, Inc.

1343 Rochester Road - PO Box 249 - Troy, Michigan - 48099-0249
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Fax (248) 588-6232

Boring No.: 5 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: T. Nahas

Started: 4/2/2026

Completed: 4/2/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			1	Dark Brown Sandy TOPSOIL With Roots			
	LS	2 3 5	2		10.6		
2.5				Moist Dark Brown SAND			
	LS	2 3 3	4.5	Loose Moist Brown Fine SAND With Some Silt	20.7		
5.0				Loose Wet Brown Fine SAND			
	LS	1 2 4			19.9		
7.5							
	LS	3 5 8	9 9.58		18.4	133	
10.0				Medium Compact Wet Gray Fine SAND			
				Medium Compact Moist Gray Very Fine Sandy SILT			
12.5							
	LS	2 4 9	15		14.7	144	6350
15.0				Sand Seam At 15'0"			
				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'0"

At Completion: 2'0"

Boring No. 5

Testing Engineers & Consultants, Inc.

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Fax (248) 588-6232

Boring No.: 6 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/1/2026

Completed: 4/1/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
	LS	4 9 11	2	Medium Compact Moist Dark Brown Sandy TOPSOIL	12.2		
2.5				Medium Compact Moist Brown Fine SAND			
	LS	5 7 7	4.5		10.0	120	
5.0			6	Medium Compact Wet Brown Fine SAND			
	LS	3 6 9		Medium Compact Wet Gray Medium To Fine SAND	17.4	103	
7.5							
	LS	5 8 12			20.5	137	
10.0							
12.5			12.5				
	LS	6 13 17	15	Compact Moist Gray SILT With Clay Layers At 12'6"	15.3	141	2800
15.0				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'6"

At Completion: 4'11"

Boring No. 6

Testing Engineers & Consultants, Inc.

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Boring No.: 7 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/1/2026

Completed: 4/1/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.21				
			.83	ASPHALT (2 1/2")			
	LS	5			4.7		
		9					
2.5		9		Crushed ASPHALT (7 1/2")			
	LS	4	4	Medium Compact Moist Brown Fine Sand With Some Gravel & Trace Of Clay-FILL	14.4		
		5					
5.0		6					
			5.5	Medium Compact Moist Dark Brown Sandy TOPSOIL			
	LS	2			19.0	125	
		4		Loose Wet Brown Fine SAND With Some Silt			
7.5		5					
	LS	3			16.5	117	
		4	9.5				
10.0		7		Medium Compact Wet Brown Medium SAND			
			12				
12.5				Medium Compact Wet Gray SILT			
	LS	4			17.8	146	
		9					
15.0		14					
			17				
17.5				Compact Wet Gray Very Fine SILT			
	LS	10			17.8	106	5360
		19					
20.0		14					
			22				
22.5				Compact Wet Gray Medium SAND			
	LS	11			10.8		
		16					
		19					
			25	Bottom of Boring at 25'			

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 5'6"

At Completion: 6'2"

Boring No. 7

Testing Engineers & Consultants, Inc.

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Fax (248) 588-6232

Boring No.: 8 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/1/2026

Completed: 4/1/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.83	Moist Dark Brown Sandy TOPSOIL (10")			
	LS	3 6 8			5.8	102	
2.5				Medium Compact Moist Brown Fine SAND			
	LS	4 7 9			7.4	120	
5.0			6				
	LS	2 3 3		Loose Wet Brown Fine SAND	15.1	119	
7.5							
	LS	3 5 7	9		17.6		
10.0				Medium Compact Wet Brown Medium SAND			
12.5			12.5				
	LS	2 4 8		Medium Compact Wet Gray Fine SAND	24.7	110	910
15.0			14.83				
				Compact Moist Gray Very Fine SAND With Silt Seams & Occasional Clay Seams			
17.5							
	LS	18 21 15			13.4	128	5270
20.0							
			22				
22.5				Compact Wet Gray Medium SAND			
	LS	10 14 20			9.5	144	
			25	Bottom of Boring at 25'			

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'0"

At Completion: 6'8"

Boring No. 8

Testing Engineers & Consultants, Inc.

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Boring No.: 9 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: T. Nahas

Started: 3/31/2026

Completed: 3/31/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.17				
			1	ASPHALT (2")			
	LS	3			14.7		
		5					
2.5		6		Medium Compact Moist Brown Silty SAND			
	LS	2		Very Loose Wet Brown Silty SAND	18.1	123	
		2					
5.0		2					
			6.25				
	LS	5			18.5	121	
		6		Medium Compact Wet Dark Brown Fine SAND With Trace Of Clay			
7.5		7					
	LS	6	9		17.5	113	
		16					
10.0		28		Compact Wet Brown Medium To Fine Silty SAND			
12.5			13				
	LS	8		Medium Compact Wet Gray SILT With Some Sand	17.9	141	
		11					
15.0		12	15				
				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 3'3"

At Completion: 2'7"

Boring No. 9

Testing Engineers & Consultants, Inc.

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Boring No.: 10 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/2/2026

Completed: 4/2/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.75	Moist Dark Brown Sandy TOPSOIL (9")			
	SS	7 7 8			7.2		
2.5				Medium Compact Moist Brown Fine SAND With Trace Of Clay & Gravel			
	SS	3 4 6			13.3		
5.0			6				
	SS	5 8 7		Medium Compact Wet Brown Fine SAND	20.2		
7.5							
	SS	3 6 10	9 9.83		20.6		
10.0				Medium Compact Wet Brown Medium SAND			
				Medium Compact Wet Gray SILT With Clayey Seams			
12.5							
	SS	5 7 11			17.0		
15.0							
17.5			18				
	SS	3 7 10		Medium Compact Wet Medium To Coarse SAND With Trace Of Gravel	11.0		
20.0							
22.5							
	SS	9 10 15	24 25		9.1	109	

"N" - Standard Penetration Resistance
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ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'0"

At Completion: 7'9"

Boring No. 10

Testing Engineers & Consultants, Inc.

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Boring No.: 10 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/2/2026

Completed: 4/2/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
				Stiff Moist Gray CLAY With Some Silt			
27.5				Bottom of Boring at 25'			
30.0							
32.5							
35.0							
37.5							
40.0							
42.5							
45.0							
47.5							

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ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'0"

At Completion: 7'9"

Boring No. 10

Testing Engineers & Consultants, Inc.

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Boring No.: 11 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/3/2026

Completed: 4/3/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.92	Moist Dark Brown Sandy TOPSOIL (11")			
	SS	3	1.5		5.6		
		12		Loose Moist Brown Fine Sand With Trace Of Clay-FILL			
2.5		12					
	SS	5		Medium Compact Moist Brown Fine Sand-FILL	11.8		
		5	4.5				
5.0		4					
			6	Loose Moist Dark Brown Sandy TOPSOIL			
	SS	3		Medium Compact Wet Brown Fine SAND	15.1		
		6					
7.5		8					
	SS	4			24.5		
		6					
10.0		8					
			12				
12.5				Medium Compact Wet Gray Fine SAND			
	SS	4	14.25		17.0		
		9					
15.0		36		Dense Wet Gray SILT			
			17				
17.5				Medium Compact Wet Gray Sandy SILT			
	SS	6			16.4	147	3810
		9					
20.0		16					
			22				
22.5				Medium Compact Wet Gray Medium To Coarse SAND			
	SS	10			13.4	111	7570
		9					
		9	24.5				
			25				

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'0"

At Completion: 7'5"

Boring No. 11

Testing Engineers & Consultants, Inc.

1343 Rochester Road - PO Box 249 - Troy, Michigan - 48099-0249
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Boring No.: 11 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/3/2026

Completed: 4/3/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
				Stiff Moist Gray CLAY With Some Silt Bottom of Boring at 25'			
27.5							
30.0							
32.5							
35.0							
37.5							
40.0							
42.5							
45.0							
47.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'0"

At Completion: 7'5"

Boring No. 11

Testing Engineers & Consultants, Inc.

1343 Rochester Road - PO Box 249 - Troy, Michigan - 48099-0249
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Fax (248) 588-6232

Boring No.: 12 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/1/2026

Completed: 4/1/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.33	Moist Dark Brown Sandy TOPSOIL (4")			
	LS	7			7.1	114	
		7					
2.5		6		Medium Compact Moist Brown Fine SAND			
	LS	4			6.7	119	
		5					
5.0		6					
	LS	4	6.5		15.6		
		4					
7.5		3		Loose Wet Brown Fine SAND With Trace Of Clay & Gravel			
	LS	3	9		17.2	138	
		6					
10.0		11		Medium Compact Wet Brown Medium SAND			
			12.5				
12.5							
			14	Medium Compact Wet Gray SILT With Clayey Seams			
	LS	4			15.6	136	8080
		8					
15.0		9		Medium Compact Wet Gray SILT			
17.5			18				
	LS	5		Medium Compact Wet Gray Medium To Coarse SAND	5.8	148	
		7					
20.0		9					
22.5							
	LS	5			8.5		
		8					
		12	25				

Bottom of Boring at 25'

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'6"

At Completion: 7'10"

Boring No. 12

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Fax (248) 588-6232

Boring No.: 14 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: T. Nahas

Started: 3/31/2026

Completed: 3/31/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.5	Brown Medium Sandy TOPSOIL (6")			
	LS	6 7 8			10.0		
2.5				Medium Compact Moist Brown Medium To Fine Silty SAND			
	LS	1 2 2	5		17.5		
5.0							
	LS	1 3 3		Very Loose Wet Brown Medium To Fine Silty SAND	18.3		
7.5							
	LS	8 10 13	9		22.1		
10.0				Medium Compact Wet Gray SILT With Some Sand			
12.5							
	LS	7 10 13	15		13.7	142	3960
15.0							
				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'6"

At Completion: 4'0"

Boring No. 14

Testing Engineers & Consultants, Inc.

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Boring No.: 15 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: All-Terrain Vehicle

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: T. Nahas

Started: 4/1/2026

Completed: 4/1/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
	LS	6 10	1.17	Moist Dark Brown Sandy TOPSOIL	8.2		
2.5		5		Medium Compact Moist Brown Fine SAND With Some Clay & Trace Of Gravel			
	LS	8 12			15.7		
5.0		8					
	LS	8 12	6.5		17.0		
7.5		15		Medium Compact Wet Brown Silty SAND			
	LS	9 17	8.5	Compact Wet Brown SAND With Trace Of Silt	18.7		
10.0		24					
			12				
12.5				Dense Wet Gray Sandy SILT			
	LS	37 73/6"			16.7		
15.0			15				
				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'6"

At Completion: Caved In 7'0"

Boring No. 15

Testing Engineers & Consultants, Inc.

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(248) 588-6200 or (313) T-E-S-T-I-N-G
Fax (248) 588-6232

Boring No.: 16 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: All-Terrain Vehicle

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: T. Nahas

Started: 4/1/2026

Completed: 4/1/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
	SS	5 15 14	1.08	Moist Dark Brown Sandy TOPSOIL	18.7		
2.5			3.5	Medium Compact Moist Brown Fine Silty SAND			
	SS	2 3 3	5	Loose Wet Brown Silty SAND	21.0		
5.0				Medium Compact Brown Silty SAND			
	SS	7 11 14			19.5		
7.5			8.5				
	SS	9 17 32		Compact Wet Gray Sandy SILT With Clayey Seams & Gravel Seam At 14'0"	21.9		
10.0							
12.5							
	SS	5 7 31	15		15.4		
15.0				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 5'0"

At Completion: Caved In 3'3"

Boring No. 16

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Boring No.: 17 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/1/2026

Completed: 4/1/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			1.17	Moist Dark Brown Sandy TOPSOIL			
	LS	3 3 3			14.4	106	
2.5				Loose Moist Brown Fine SAND			
	LS	2 3 4	4		16.9	123	
5.0				Loose Wet Brown Fine SAND With Trace Of Clay & Gravel			
	LS	3 4 5			17.7	115	
7.5			8				
	LS	6 11 11		Medium Compact Wet Gray SILT With Clayey Seams	19.1	124	
10.0							
			12				
12.5				Medium Compact Wet Gray Sandy SILT			
	LS	9 11 10			15.2		
15.0			15				
				Bottom of Boring at 15'			
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'0"

At Completion: 4'7"

Boring No. 17

Testing Engineers & Consultants, Inc.

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Fax (248) 588-6232

Boring No.: 18 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Truck

Drilling Method: Solid Stem Augers

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: I. Mickle

Started: 4/1/2026

Completed: 4/1/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.08				
			.33	ASPHALT (1")			
	LS	4			5.1	109	
		6		Crushed STONE (3")			
2.5		7					
	LS	4		Medium Compact Moist Brown Fine Sand With Topsoil Seams At 5'6"-FILL	13.5	106	
		5					
5.0		6					
			5.5				
	LS	5		Medium Compact Moist To Wet Brown Fine SAND	14.2	137	
		6					
7.5		6					
	LS	3			17.6		
		6					
10.0		10					
			12				
12.5				Medium Compact Wet Gray Fine SAND			
	LS	6	14		14.8		9810
		8					
15.0		10		Medium Compact Wet Gray SILT With Occasional Clay Layer			
17.5			18				
	LS	3		Medium Compact Wet Gray Medium SAND	14.4		
		4					
20.0		9					
22.5			23				
	LS	7			15.4		6100
		10		Stiff Moist Gray CLAY With Some Silt & Trace Of Gravel			
		14	25				
				Bottom of Boring at 25'			

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 6'6"

At Completion: 8'2"

Boring No. 18

Testing Engineers & Consultants, Inc.

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Boring No.: IT-1 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Backhoe

Drilling Method: Test Pit

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: S. Litvin

Started: 4/14/2026

Completed: 4/14/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.67	Moist Dark Brown Sandy TOPSOIL (8")			
2.5				Moist Brown Fine SAND With Trace Of Clay & Gravel			
			3.75				
5.0				Moist Gray Fine SAND			
			6				
7.5				Bottom of Boring at 6'			
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'0"

At Completion: Caved In 3.8'

Boring No. IT-1

Testing Engineers & Consultants, Inc.

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Boring No.: IT-2 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Backhoe

Drilling Method: Test Pit

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: S. Litvin

Started: 4/14/2026

Completed: 4/14/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			1	Moist Dark Brown Sandy TOPSOIL			
2.5				Moist Brown Fine SAND With Trace Of Clay & Gravel			
			3.75				
5.0			4.5	Moist Gray Fine SAND Bottom of Boring at 4.5'			
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'0"

At Completion: Caved In 3.75'

Boring No. IT-2

Testing Engineers & Consultants, Inc.

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Boring No.: IT-3 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Backhoe

Drilling Method: Test Pit

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: S. Litvin

Started: 4/14/2026

Completed: 4/14/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			1	Moist Dark Brown Sandy TOPSOIL			
2.5				Moist Brown Fine SAND With Trace Of Clay & Gravel			
			4.25				
5.0			5.5	Moist Gray Fine SAND			
				Bottom of Boring at 5.5'			
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'6"

At Completion: 3.25'

Boring No. IT-3

Testing Engineers & Consultants, Inc.

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Boring No.: IT-4 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Backhoe

Drilling Method: Test Pit

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: S. Litvin

Started: 4/13/2026

Completed: 4/13/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			1	Moist Dark Brown Sandy TOPSOIL			
2.5			3.5	Moist Brown Fine Clayey SAND With Trace Of Gravel			
5.0			5.25	Moist Gray Fine SAND			
7.5				Bottom of Boring at 5.25'			
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'0"

At Completion: Caved In 4'0"

Boring No. IT-4

Testing Engineers & Consultants, Inc.

1343 Rochester Road - PO Box 249 - Troy, Michigan - 48099-0249
(248) 588-6200 or (313) T-E-S-T-I-N-G
Fax (248) 588-6232

Boring No.: IT-5 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Backhoe

Drilling Method: Test Pit

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: S. Litvin

Started: 4/13/2026

Completed: 4/13/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.67	Moist Dark Brown Sandy TOPSOIL With Some Pea Gravel (8")			
2.5				Moist Brown Fine SAND With Trace Of Clay & Gravel			
5.0			5.5				
				Bottom of Boring at 5.5'			
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 4'0"

At Completion: Caved In 4'0"

Boring No. IT-5

Testing Engineers & Consultants, Inc.

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Fax (248) 588-6232

Boring No.: IT-6 **Job No.:** 65655

Client: Van Buren Public Schools

Type of Rig: Backhoe

Drilling Method: Test Pit

Ground Surface Elevation:

Project: Operations Building, 13770 Haggerty Road

Location: Belleville, Michigan

Drilled By: S. Litvin

Started: 4/13/2026

Completed: 4/13/2026

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.67	Moist Dark Brown Sandy TOPSOIL (8")			
2.5				Moist Brown Fine SAND With Trace Of Clay & Gravel			
5.0			5.75				
7.5				Bottom of Boring at 5.75'			
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Liner Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H2O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 5.75'

At Completion: Caved In 4.25'

Boring No. IT-6

Testing Engineers and Consultants, Inc.

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Fax 248-588-6232

SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/16/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay
Date Sampled: 4/2/26

Sample Source / Depth: Boring No. 1 @ 5'
Sampled By: Ian Mickle

Sample Location:
TEC Lab Sample Number: 10602

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"		0.0	100.0	
#4	0.2	0.1	99.9	
#10	2.5	1.1	98.9	
#20	13.4	6.1	93.9	
#30	27.6	12.6	87.4	
#40	70.9	32.4	67.6	
#100	198.7	90.8	9.2	
#200	205.5	93.9	6.1	
Total Sample	218.9	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	218.9
Weight After Wash (g)	205.5
Loss in Weight (g)	13.4
Loss by Wash (%)	6.1%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 _____ MTM 108/109 _____

Remarks:

Respectfully Submitted:
Testing Engineers and Consultants, Inc.

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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/14/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with some clay & trace of gravel - FILL
Date Sampled: 4/2/26

Sample Source / Depth: Boring No. 4 @ 2.5'
Sampled By: Tim Nahas

Sample Location:
TEC Lab Sample Number: 10601

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"		0.0	100.0	
3/8"	1.4	0.6	99.4	
#4	2.5	1.1	98.9	
#10	6.6	2.8	97.2	
#20	12.2	5.2	94.8	
#30	16.8	7.2	92.8	
#40	27.8	11.9	88.1	
#100	176.1	75.3	24.7	
#200	196.4	84.0	16.0	
Total Sample	233.8	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	233.8
Weight After Wash (g)	196.4
Loss in Weight (g)	37.4
Loss by Wash (%)	16.0%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
Testing Engineers and Consultants, Inc.

Testing Engineers and Consultants, Inc.

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Fax 248-588-6232

SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/14/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with some gravel & trace of clay - FILL
Date Sampled: 4/1/26

Sample Source / Depth: Boring No. 7 @ 2.5'
Sampled By: Tim Nahas

Sample Location:
TEC Lab Sample Number: 10609

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"		0.0	100.0	
1/2"	22.3	9.7	90.3	
3/8"	22.3	9.7	90.3	
#4	37.0	16.1	83.9	
#10	60.8	26.4	73.6	
#20	85.2	37.0	63.0	
#30	98.6	42.9	57.1	
#40	116.5	50.6	49.4	
#100	193.9	84.3	15.7	
#200	210.0	91.3	8.7	
Total Sample	230.1	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	230.1
Weight After Wash (g)	210.0
Loss in Weight (g)	20.1
Loss by Wash (%)	8.7%

Tested By: Jesse Johnson
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
Testing Engineers and Consultants, Inc.

Testing Engineers and Consultants, Inc.

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Fax 248-588-6232

SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/16/2026
CLIENT: Van Buren Public Schools

Material Description: Dark brown fine SAND trace of clay
Date Sampled: 3/31/26

Sample Source / Depth: Boring No. 9 @ 7.5'
Sampled By: Ian Mickle

Sample Location:
TEC Lab Sample Number: 10604

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"				
#4		0.0	100.0	
#10	0.5	0.2	99.8	
#20	2.3	1.0	99.0	
#30	3.9	1.7	98.3	
#40	8.3	3.6	96.4	
#100	152.4	65.9	34.1	
#200	212.1	91.7	8.3	
Total Sample	231.2	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	231.2
Weight After Wash (g)	212.1
Loss in Weight (g)	19.1
Loss by Wash (%)	8.3%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
Testing Engineers and Consultants, Inc.

Testing Engineers and Consultants, Inc.

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248-588-6200 or 313 T-E-S-T-I-N-G
Fax 248-588-6232

SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/17/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay & gravel
Date Sampled: 4/2/26

Sample Source / Depth: Boring No. 10 @ 5'
Sampled By: Ian Mickle

Sample Location:
TEC Lab Sample Number: 10635

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"		0.0	100.0	
#4	1.1	0.6	99.4	
#10	1.6	0.9	99.1	
#20	2.9	1.7	98.3	
#30	4.9	2.8	97.2	
#40	8.7	5.0	95.0	
#100	113.4	65.4	34.6	
#200	163.2	94.1	5.9	
Total Sample	173.5	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	173.5
Weight After Wash (g)	163.2
Loss in Weight (g)	10.3
Loss by Wash (%)	5.9%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
Testing Engineers and Consultants, Inc.

Testing Engineers and Consultants, Inc.

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Fax 248-588-6232

SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/17/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay - FILL
Date Sampled: 4/3/26

Sample Source / Depth: Boring No. 11 @ 2.5'
Sampled By: Ian Mickle

Sample Location:
TEC Lab Sample Number: 10636

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"				
#4		0.0	100.0	
#10	0.4	0.2	99.8	
#20	1.7	1.0	99.0	
#30	3.1	1.9	98.1	
#40	7.6	4.6	95.4	
#100	136.0	82.6	17.4	
#200	159.7	97.0	3.0	
Total Sample	164.7	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	164.7
Weight After Wash (g)	159.7
Loss in Weight (g)	5.0
Loss by Wash (%)	3.0%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/14/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay & gravel
Date Sampled: 4/1/26

Sample Source / Depth: Boring No. 12 @ 7.5'
Sampled By: Tim Nahas

Sample Location:
TEC Lab Sample Number: 10610

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"		0.0	100.0	
#4	0.8	0.4	99.6	
#10	1.9	0.8	99.2	
#20	6.5	2.9	97.1	
#30	13.2	5.8	94.2	
#40	35.4	15.6	84.4	
#100	195.0	85.7	14.3	
#200	208.0	91.4	8.6	
Total Sample	227.5	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	227.5
Weight After Wash (g)	208.0
Loss in Weight (g)	19.5
Loss by Wash (%)	8.6%

Tested By: Jesse Johnson
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/14/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with some clay & trace of gravel
Date Sampled: 4/1/26

Sample Source / Depth: Boring No. 15 @ 5'
Sampled By: Tim Nahas

Sample Location:
TEC Lab Sample Number: 10603

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"		0.0	100.0	
3/8"	1.4	0.6	99.4	
#4	3.0	1.3	98.7	
#10	6.7	3.0	97.0	
#20	14.0	6.3	93.7	
#30	24.3	10.9	89.1	
#40	44.4	19.8	80.2	
#100	167.9	75.0	25.0	
#200	195.7	87.4	12.6	
Total Sample	223.8	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	223.8
Weight After Wash (g)	195.7
Loss in Weight (g)	28.1
Loss by Wash (%)	12.6%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/14/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay & gravel
Date Sampled: 4/1/26

Sample Source / Depth: Boring No. 17 @ 5'
Sampled By: Tim Nahas

Sample Location:
TEC Lab Sample Number: 10611

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"		0.0	100.0	
#4	0.8	0.4	99.6	
#10	1.8	0.8	99.2	
#20	6.9	3.2	96.8	
#30	13.5	6.3	93.7	
#40	35.0	16.3	83.7	
#100	186.0	86.8	13.2	
#200	194.0	90.6	9.4	
Total Sample	214.2	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	214.2
Weight After Wash (g)	194.0
Loss in Weight (g)	20.2
Loss by Wash (%)	9.4%

Tested By: Jesse Johnson
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/17/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay & gravel
Date Sampled: 4/14/26

Sample Source / Depth: Boring No. IT-1 @ 3.25'
Sampled By: Spencer Litvin

Sample Location:
TEC Lab Sample Number: 10643

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"		0.0	100.0	
#4	0.4	0.1	99.9	
#10	1.2	0.2	99.8	
#20	4.9	0.8	99.2	
#30	14.1	2.3	97.7	
#40	63.7	10.4	89.6	
#100	527.8	85.8	14.2	
#200	560.6	91.1	8.9	
Total Sample	615.1	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	615.1
Weight After Wash (g)	560.6
Loss in Weight (g)	54.5
Loss by Wash (%)	8.9%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/17/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay & gravel
Date Sampled: 4/14/26

Sample Source / Depth: Boring No. IT-2 @ 2'
Sampled By: Spencer Litvin

Sample Location:
TEC Lab Sample Number: 10644

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"		0.0	100.0	
3/8"	0.5	0.1	99.9	
#4	8.2	1.4	98.6	
#10	14.9	2.6	97.4	
#20	51.4	8.9	91.1	
#30	86.6	15.0	85.0	
#40	157.1	27.2	72.8	
#100	507.5	87.7	12.3	
#200	546.6	94.5	5.5	
Total Sample	578.6	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	578.6
Weight After Wash (g)	546.6
Loss in Weight (g)	32.0
Loss by Wash (%)	5.5%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/17/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay & gravel
Date Sampled: 4/14/26

Sample Source / Depth: Boring No. IT-3 @ 3'
Sampled By: Spencer Litvin

Sample Location:
TEC Lab Sample Number: 10645

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"		0.0	100.0	
#4	0.5	0.1	99.9	
#10	1.7	0.3	99.7	
#20	7.0	1.2	98.8	
#30	14.8	2.5	97.5	
#40	42.3	7.1	92.9	
#100	517.5	87.1	12.9	
#200	551.6	92.8	7.2	
Total Sample	594.1	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	594.1
Weight After Wash (g)	551.6
Loss in Weight (g)	42.5
Loss by Wash (%)	7.2%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/15/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine clayey SAND with trace of gravel
Date Sampled: 4/13/26

Sample Source / Depth: Boring No. IT-4 @ 2'
Sampled By: Spencer Litvin

Sample Location:
TEC Lab Sample Number: 10623

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"		0.0	100.0	
#4	5.4	0.7	99.3	
#10	17.6	2.4	97.6	
#20	44.4	6.0	94.0	
#30	69.8	9.4	90.6	
#40	132.9	17.9	82.1	
#100	524.5	70.6	29.4	
#200	579.6	78.0	22.0	
Total Sample	742.9	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	742.9
Weight After Wash (g)	579.6
Loss in Weight (g)	163.3
Loss by Wash (%)	22.0%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/16/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay & gravel
Date Sampled: 4/13/26

Sample Source / Depth: Boring No. IT-5 @ 2'
Sampled By: Spencer Litvin

Sample Location:
TEC Lab Sample Number: 10624

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"				
3/8"		0.0	100.0	
#4	2.9	0.5	99.5	
#10	8.2	1.5	98.5	
#20	21.6	4.1	95.9	
#30	40.2	7.6	92.4	
#40	100.0	18.9	81.1	
#100	447.3	84.5	15.5	
#200	491.8	92.9	7.1	
Total Sample	529.2	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	529.2
Weight After Wash (g)	491.8
Loss in Weight (g)	37.4
Loss by Wash (%)	7.1%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 _____ MTM 108/109 _____

Remarks:

Respectfully Submitted:
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SIEVE ANALYSIS RESULTS

PROJECT: Operations Building **TEC REPORT NUMBER:** 65655

LOCATION: 13770 Haggerty Rd, Belleville, Michigan **DATE:** 4/16/2026
CLIENT: Van Buren Public Schools

Material Description: Brown fine SAND with trace of clay & gravel
Date Sampled: 4/13/26

Sample Source / Depth: Boring No. IT-6 @ 3.25'
Sampled By: Spencer Litvin

Sample Location:
TEC Lab Sample Number: 10625

Intended Use:
Remarks:

AGGREGATE ANALYSIS

Sieve No.	Total Weight Retained	Total Percent Retained	Total Percent Passing	Specification Range
3"				
2-1/2"				
1-1/2"				
1"				
3/4"				
1/2"		0.0	100.0	
3/8"	1.4	0.3	99.7	
#4	6.5	1.4	98.6	
#10	15.0	3.2	96.8	
#20	35.4	7.6	92.4	
#30	59.3	12.7	87.3	
#40	124.8	26.6	73.4	
#100	433.6	92.5	7.5	
#200	449.5	95.9	4.1	
Total Sample	468.7	100.0	0.0	

SAMPLE DATA

Initial Sample Weight (g)	468.7
Weight After Wash (g)	449.5
Loss in Weight (g)	19.2
Loss by Wash (%)	4.1%

Tested By: Kyle Tobin
Reviewed By: Tousif S

Test Method: ASTM C117/C136 X AASHTO T11/T27 MTM 108/109

Remarks:

Respectfully Submitted:
Testing Engineers and Consultants, Inc.

Testing Engineers Consultants, Inc.

DOUBLE RING INFILTROMETER TEST

TEC Project No.: 65655

Client: Van Buren Public Schools

Project: Operations Building

Test Location: IT-1

Date: 4/14/2026

Soil Description: Moist Brown Fine Sand with Trace of Clay and Gravel

Presoak

Time Interval (min)	Water Level (in)
30	3/8
60	3/8

Test

Time Interval (min)	Water Level (in)
30	1/4
60	1/4
90	1/4
120	1/4

Test Depth: 3.25 feet

Infiltration Rate: 0.5 in/hr

Design Infiltration Rate: 0.25 in/hr

Testing Engineers Consultants, Inc.

DOUBLE RING INFILTROMETER TEST

TEC Project No.: 65655

Client: Van Buren Public Schools

Project: Operations Building

Test Location: IT-2

Date: 4/14/2026

Soil Description: Moist Brown Fine Sand with Trace of Clay and Gravel

Presoak

Time Interval (min)	Water Level (in)
30	3/4
60	1/2

Test

Time Interval (min)	Water Level (in)
30	3/8
60	3/8
90	3/8
120	3/8

Test Depth: 2 feet

Infiltration Rate: 0.75 in/hr

Design Infiltration Rate: 0.38 in/hr

Testing Engineers Consultants, Inc.

DOUBLE RING INFILTROMETER TEST

TEC Project No.: 65655

Client: Van Buren Public Schools

Project: Operations Building

Test Location: IT-3

Date: 4/14/2026

Soil Description: Moist Brown Fine Sand with Trace of Clay and Gravel

Presoak

Time Interval (min)	Water Level (in)
30	1/2
60	3/8

Test

Time Interval (min)	Water Level (in)
30	3/8
60	1/2
90	1/2
120	3/8

Test Depth: 3 feet

Infiltration Rate: 0.88 in/hr

Design Infiltration Rate: 0.44 in/hr

Testing Engineers Consultants, Inc.

DOUBLE RING INFILTROMETER TEST

TEC Project No.: 65655

Client: Van Buren Public Schools

Project: Operations Building

Test Location: IT-4

Date: 4/13/2026

Soil Description: Moist Brown Fine Clayey Sand with Trace Gravel

Presoak

Time Interval (min)	Water Level (in)
30	4
60	4

Test

Time Interval (min)	Water Level (in)
10	1 1/2
20	1 3/4
30	1 1/2
40	1 3/4

Test Depth: 2 feet

Infiltration Rate: 9.75 in/hr

Design Infiltration Rate: 4.88 in/hr

Testing Engineers Consultants, Inc.

DOUBLE RING INFILTROMETER TEST

TEC Project No.: 65655

Client: Van Buren Public Schools

Project: Operations Building

Test Location: IT-5

Date: 4/13/2026

Soil Description: Moist Brown Fine Sand with Trace of Clay and Gravel

Presoak

Time Interval (min)	Water Level (in)
30	8 3/4
60	9 1/4

Test

Time Interval (min)	Water Level (in)
10	4 1/4
20	4
30	4
40	4

Test Depth: 2 feet

Infiltration Rate: 24 in/hr

Design Infiltration Rate: 12 in/hr

Testing Engineers Consultants, Inc.

DOUBLE RING INFILTROMETER TEST

TEC Project No.: 65655

Client: Van Buren Public Schools

Project: Operations Building

Test Location: IT-6

Date: 4/13/2026

Soil Description: Moist Brown Fine Sand with Trace of Clay and Gravel

Presoak

Time Interval (min)	Water Level (in)
30	2 1/4
60	2 1/4

Test

Time Interval (min)	Water Level (in)
10	1
20	1
30	1 1/4
40	1

Test Depth: 3.25 feet

Infiltration Rate: 6 in/hr

Design Infiltration Rate: 3 in/hr

Testing Engineers & Consultants, Inc.

Mr. James Williams
Van Buren Public Schools
April 27, 2026 Revised May 6, 2026

TEC Report: 65655 Rev1

SOIL DESCRIPTIONS

In order to provide uniformity throughout our projects, the following nomenclature has been adopted to describe soil characteristics:

CONSISTENCY AND RELATIVE DENSITY

COHESIVE SOILS			GRANULAR SOILS	
UNCONFINED COMPRESSIVE STRENGTH, PSF	**"N" VALUES**	**CONSISTENCY**	**"N" VALUES**	**RELATIVE DENSITY**
Below 500	0 – 2	Very Soft	0 – 4	Very Loose
500 – 1,000	3 – 4	Soft	5 – 10	Loose
1,000 – 2,000	5 – 8	Plastic	11 – 30	Medium Compact
2,000 – 4,000	9 – 15	Firm	31 – 50	Compact
4,000 – 8,000	16 – 30	Stiff	50+	Dense
8,000 – 16,000	31 – 50	Ex. Stiff		
Over 16,000	51+	Hard		

Material Types By Particle Size	**ASTM D2487**
BOULDERS	Stones Over 12" In Diameter
COBBLES	Stones 3" To 12" In Diameter
GRAVEL	#4 To 3" Diameter
COARSE SAND	#10 To #4 Sieves
MEDIUM SAND	#40 To #10 Sieves

Mr. James Williams
Van Buren Public Schools
April 27, 2026 Revised May 6, 2026

TEC Report: 65655 Rev1

SOIL DESCRIPTIONS (Cont'd)

Material Types By Particle Size	**ASTM D2487**
FINE SAND	#200 To #40 Sieves
SILT	Minus #200 Sieve Material, Fairly Non-Plastic, Falls Below "A"-Line
CLAY	Minus #200 Sieve Material Plastic Material That Has A Tendency To Stick Together, Can Be Rolled Into Fine Rods When Moistened; Falls Above "A"-Line
PEAT	Black Organic Material Containing Partially Decayed Vegetable Matter
MARL	Fresh Water Deposits Of Calcium Carbonate, Often Containing Percentages Of Peat, Clay & Fine Sand
SWAMP BOTTOM DEPOSITS	Mixtures Of Peat, Marl, Vegetation & Fine Sand Containing Large Amounts Of Decayable Organic Material