Colliers
Engineering
& Design

GEOTECHNICAL EXPLORATION REPORT

January 13, 2026

33 Petrova Avenue
Village of Saranac Lake
Franklin County, New York

Prepared for:

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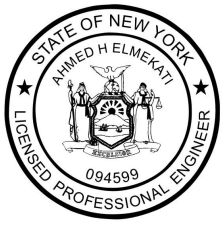

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Revisions

Revision	Date	Description	Prepared by	Checked by
0	02/03/26	Initial release (signed)	DP	AHE

Colliers Engineering & Design

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Introduction

In accordance with our proposal dated August 13, 2025, Colliers Engineering & Design, Architecture, Landscape Architecture, Surveying, CT, PC, (CED), completed a geotechnical exploration program for the proposed single-story building addition and renovations to the existing building located at 33 Petrova Avenue, Saranac Lake, New York. The program was undertaken to explore the subsurface conditions below the proposed addition and develop related geotechnical design recommendations and construction considerations.

This report summarizes our geotechnical design recommendations and construction considerations for this project.

Available Information

The following information was available for our review in preparation of this report:

1. Drawing titled, "Site Survey," by Geomatics Land Surveying, PC, dated May 25, 2023.
2. Drawing titled, "First Floor Plans," by Wendell, dated April 22, 2025.
3. Drawing titled, "Site Plan & Details," by Sargent-Webster-Crenshaw & Folley, May 19, 1958.

Site Description

The overall project site is located at 33 Petrova Avenue, Saranac Lake, New York, as shown in Figure 1. The site is identified as Tax Lot 457.27-1-27.200 on the corresponding tax map and is bound by George H. Lapan Memorial Highway towards North and partially bound by Petrova Avenue towards South. Existing developments and wooded areas are located along the east and west sides of the site. The site is currently occupied by an existing single-story building and associated paved parking lots within the west portion of the site. Wooded areas occupy the remaining portion of the site.

The area of interest is located within the southwest portion of the site, as indicated on Figure 1. A single-story commercial building with associated basement is currently located in the area of interest. The existing building is supported on shallow foundations consisting of strip footing and isolated spread footings.

CED conducted a site visit on September 9, 2025 to observe general site conditions. During our visit, we observed groundwater seepage within the basement level extending from underneath the exterior strip foundations towards the center of the basement directly on subgrade soils.

Site History

Available information from historical aerial photography suggests the existing building has occupied the site since at least 1994. Appendix A presents the corresponding historical aerial photography.

Project Description

We understand the project comprises the construction of a new single-story building addition and renovations to the existing building. The addition is anticipated to be a conventional steel framing structure supported on shallow footings. The lateral system will consist of ordinary reinforced CMU

shear walls. We understand the proposed renovations may impose additional loads to the existing foundations.

Subsurface Exploration

Basis of Exploration Program

The 2020 New York State Building Code (2020 NYSBC) requires the scope of soil explorations to be determined by a registered design professional based on the anticipated conditions on the site and the nature of the proposed construction. CED developed an exploration program consisting of advancing four test borings, installing one groundwater piezometer, and performing one infiltration test.

Subsurface Exploration

CED performed a geotechnical exploration program consisting of advancing four test borings, TB-01 through TB-04, performing one infiltration test, IT-01, and installing one groundwater piezometer, OW-01, to explore the subsurface conditions below the new single-story building addition. Test Borings TB-01 through TB-03 were performed along the exterior of the existing building and extended up to 30 ft below existing grades. Test Boring TB-04 was performed within the basement of the existing building and extended 8 ft below existing basement grades. Infiltration Test IT-01 was performed within the footprint of the proposed stormwater facility and extended 7 ft below existing grades. Groundwater Piezometer OW-01 was installed south of the existing building and extended to 12 ft below existing grades. The test boring, groundwater piezometer, and infiltration test locations are presented on Drawing No. B-01-ELP.

The test borings and groundwater piezometer installation were performed by Soil Testing, Inc of Oxford, CT, from September 22, 2025, through September 24, 2025, using a CME 550X drill rig and hand auger equipment under the continuous observation of CED representative Fariah Sultana. Our field representative located the explorations based on existing site features and handheld GPS technology. The explorations were backfilled and restored with cold-patch asphalt upon completion.

The test borings were advanced using hollow-stem auger drilling techniques utilizing track-mounted equipment and hand auger equipment. Split spoon sampling was performed in accordance with ASTM D1586 (Standard Method for Penetration Test and Split-Barrel Sampling of Soils) by means of a 2-inch OD split barrel sampler. The number of blows required to drive the split spoon every 6 inches into the soil were recorded and are shown on the logs. The sum of blows for the 6 to 18-inch interval is the SPT N-value expressed in terms of blows per foot (bpf). The SPT N-value indicates the soil resistance encountered at that respective layer. Blow counts exceeding 50 blows per 6 inches of penetration were considered split spoon refusal. Sampling was performed continuously from the ground surface to a depth of 12 ft, then at 5-ft intervals to their termination depths.

Soils encountered in the field were classified in accordance with the Burmister Soil Classification System, a summary of which is included in Appendix B. Details pertaining to the subsurface conditions encountered are presented on the Test Boring Logs (Appendix B).

Rock coring was performed within Test Boring TB-03 in accordance with ASTM D-2113 (Standard Practice for Rock Core Drilling and Sampling of Rock for Site Exploration). Rock Quality Designation (RQD) values were determined in accordance with U.S. Army Corps of Engineers recommendations presented in EM-1110-1-2908 where RQD is defined as the ratio (in percent) of the total length of sound core pieces 4 inches in length or longer to the length of the core run. Recovery Ratio (RR) defines the degree of sample disturbance and is the ratio (in percent) of length of recovered sample to the length of the core run. Rock classification was performed in accordance with CED Rock Classification Standard presented in Appendix B. Details pertaining to the rock cores are presented in Appendix B and Appendix C.

Recovered soil samples and rock cores were transported to our in-house laboratory facility in Totowa, New Jersey, where the samples were re-evaluated and select soil samples were chosen for laboratory testing.

Subsurface Conditions

Geologic Setting

A review of the geologic information (Figure 2) indicates that bedrock underlying the site mainly consists of metamorphic, undifferentiated rock. Bedrock is overlain by glacial till sediments (Figure 3), described as mostly sandy, thin.

NRCS Web Survey

The NRCS Web Soil Survey suggests the near surface soils are defined as Skerry fine sandy loam, 0 to 3 percent slopes, consisting of varying quantities of silt/sand/gravel. Appendix D presents the NRCS report for this area.

Subsurface Description

Test Borings TB-01 through TB-03 were first advanced through surface materials consisting of up to 5 inches of asphalt. Descriptions of the subsurface soil strata encountered below the surface materials are summarized below in order of their general occurrence with depth.

Stratum S – Sand

A stratum of granular soil was encountered below surface materials within Test Borings TB-01 through TB-03 and at the ground surface within Test Boring TB-04. This stratum extends up to 30 ft in thickness. Test Borings TB-01, TB-02, and TB-04 were terminated within this stratum. Stratum S consists of brown/gray loose to very dense, coarse to fine sand, varying amounts of silt/gravel. The SPT-N values for this stratum range between 8 bpf and split spoon refusal.

Stratum R – Bedrock

Bedrock was encountered at a depth of 25.5 ft as determined by the rock core extracted within Test Boring TB-03 and inferred from auger refusal within Test Borings TB-01 and TB-02. Stratum R consists of intermediate slightly weathered gray anorthosite, closely jointed weathered clean joints. The Recovery Ratio was 73 percent, and the Rock Quality Designation (RQD) was 45 percent.

Groundwater Monitoring Program

As discussed previously in this report, groundwater seepage was observed within the basement level during our September 9, 2025 site visit. As such, CED installed one groundwater piezometer, OW-01, to confirm the groundwater conditions below the site. The piezometer was installed to a depth of 12 ft below existing surface grades. The piezometer cap was installed at existing surface grade (approximately El. 1560 ±). Related details are included on the piezometer well logs presented in Appendix E.

Upon installation, the groundwater table was measured at a depth of 8 ft below corresponding surface grade. CED conducted additional site visits between November 21, 2025 and December 29, 2025. During the site visits, the groundwater within piezometer OW-01 was measured at a depth of 2 ft below existing grade which confirms observations during our September 9, 2025 site visit.

Groundwater levels can fluctuate with locations, seasonal changes, precipitation, nearby construction activities, leakage into and out of utilities, and other factors.

Groundwater Monitoring Measurements

We obtained a total of four measurements since initial piezometer installation. Readings were obtained using conventional taping methods. Table 1 provides a summary of the groundwater monitoring measurements. Appendix E presents the groundwater table measurements over time.

Table 1. Summary of Groundwater Readings.

Date	Groundwater Table Elevation
	OW-01
9/24/25	El. 1552±
11/21/25	El. 1558±
12/22/25	El. 1558±
12/29/25	El. 1558±

In-situ Infiltration Testing

One in-situ infiltration test, IT-01, was performed at a depth of 7 ft below existing grades.

The infiltration test was conducted in accordance with Appendix D of the New York State Stormwater Design Manual. The test was conducted after an initial presoaking period of 24 hours. Thereafter, a total of four trials were performed. During each trial, our field representative obtained readings after a total duration of one hour (per trial).

Measured Infiltration Rates

Appendix F presents the details of the infiltration test and the corresponding results. Table 1 presents a summary of these results.

Table 2. Summary of Infiltration Test Results.

Location ID	Test Depth (ft)	Measured Infiltration Rate (in/hr)*				
		Trial 1	Trial 2	Trial 3	Trial 4	Average
IT-01	7.0	5	3.5	2	1.5	3

*The infiltration rate measured at the conclusion of each trial. No correction factors applied.

In-situ Seismic Refraction Testing

Seismic Refraction testing was performed using Multichannel Analysis of Surface Waves (MASW) techniques utilizing a 24- geophone system. Geophones were spaced 5 ft on center, and a mobile energy source was applied at the mid-point between geophones. Four profiles were surveyed throughout the site to an approximate depth of 75 ft below existing grades. Drawing No. B-01-ELP presents the corresponding locations.

The collected data from the MASW survey was processed and modeled using Geometrics Seisimager 2D software to evaluate the shear wave velocities of the subsurface soils. Appendix G presents the survey results and Table 2 presents a summary of the range of shear wave velocities for each survey profile.

Table 3. Summary of Shear Wave Velocities.

Survey Location	Shear Wave Velocity (ft/s)	
	Minimum	Maximum
SR-01	600	1500
SR-02	500	1500
SR-03	450	1300
SR-04	400	1300

Soil Laboratory Testing

Soil laboratory testing was performed on select soil samples at our in-house Testing Laboratory in Totowa, NJ. The corresponding test results are presented in Appendix H.

- **Grainsize Analysis**: Four grain size analysis tests are being conducted in accordance with ASTM D-6913.

Seismicity and Flood Map Review

Based on the subsurface conditions encountered at the site, and the average of the shear wave velocities measured using In-Situ Seismic Refraction Testing, the seismic site class is Site Class D.

FEMA Flood Map Service Center suggests that the site is located within “Other Areas – Zone X” which is defined as “Areas determined to be outside the 500 year flood plain”. Appendix I presents the FEMA Flood Hazard Map for the site and surrounding areas.

Foundation Design Recommendations

General

Proposed Addition

Specific information pertaining to the building loads was not available at the time of this report. As such, we have assumed column loads will be on the order of 150 kips. We can refine our recommendations once column loads are available and further engineering evaluations can be performed.

Basement Improvements

The existing basement has experienced groundwater seepage. We recommend that a new basement slab and walls be constructed in this space to further mitigate water migration. These new foundations should be casted monolithically as a U-shaped structure designed to resist uplift forces, as it is anticipated to extend below the shallow groundwater table. The design should consider the condition of the existing basement.

Building Foundations

Foundation Type and Depths

We recommend a system of shallow foundations consisting of isolated footings to support the building columns, and strip footings to support exterior and/or interior walls. Foundations shall bear at a minimum foundation depth of 48 inches below the surrounding finished grades to provide protection from frost action. The minimum horizontal foundation dimensions of the footings should be 36 inches for column footings and 24 inches for wall footings regardless of the actual applied bearing pressure to limit the risk of a punching-type shear failure.

Foundations should be supported on undisturbed granular soil of Stratum S.

Allowable Bearing Pressure

The allowable net bearing pressure is 2 TSF (4 KSF) provided that the foundations bear on undisturbed granular soils of Stratum S as described above.

Protection of Subsurface Utilities

We recommend that shallow foundations be established below a zone bounded by a plane that extends outward and upward at a 1 horizontal to 1 vertical slope from the bottom of any proposed or existing adjacent utilities.

Settlement

We estimate settlement for the proposed building with column loads on the order of 150 kips to be on the order of 1-inch total, with differential settlements between adjacent columns on the order of 0.5 inches. We recommend information pertaining to column loads be provided to us to further refine our settlement estimates.

Design Groundwater Level

Based on observations encountered within Piezometer OW-01, foundation design should consider a groundwater depth of 2 ft or shallower.

Groundwater levels can fluctuate with locations, seasonal changes, precipitation, nearby construction activities, leakage into and out of utilities, and other factors. As such, groundwater encountered during construction may vary from those observed at the time taking piezometer readings.

Floor Slabs

The new basement floor slab should be designed as a structural slab supported on grade. The floor slab for the proposed building addition should be designed as a conventional slab on grade.

The design of the proposed floor slabs should be designed using a subgrade modulus approach. The modulus of subgrade reaction for a 1-square foot plate (k_{v1}) should be 150 tons per cubic foot (TCF). This value represents the initial value to be adopted in the design of the floor slab and should be further refined based on the actual load distribution and corresponding subsurface conditions.

For mats up to 20 ft wide, this modulus should be adjusted for the width of the slab in accordance with the following expression:

$$k_{slab} = k_{v1} \frac{(B+1)^2}{(2B)^2}$$

A minimum of 6 inches of ¾-inch clean crushed stone or a 12-inch-thick layer (minimum) of well-graded sand and gravel with no more than 12% non-plastic fines, is recommended below the slab to provide uniform curing conditions. A minimum 15-mil vapor retarder may be placed between the slab and base course, as directed by the Architect, to minimize moisture migration to the surface. All structural fill supporting the floor slab should be compacted to 95% of its maximum dry density (ASTM D 1557).

Uplift Resistance

During construction, the new basement floor slab should be designed to have sufficient weight to counteract buoyancy. During this period, only the dead weight of the structure will counteract the buoyancy. A factor of safety of 1.2 must be maintained against buoyancy during construction.

After construction, the new basement floor slab should be designed to counteract hydrostatic uplift pressure. These pressures shall be calculated based on the difference in elevation between the bottom face of the floor slab and the groundwater table recommended for foundation design. Soil anchors may be used to reduce the thickness of this slab. The soil anchors shall be designed by a qualified specialty contractor familiar with the subsurface conditions within the area and submitted for review by the geotechnical engineer. The design submittal shall be signed and sealed by a Professional Engineer registered in the State of New York.

Foundation Drains and Under-Slab Drainage

Groundwater within the piezometer OW-01 was encountered at 2 ft below existing grades. As such, we recommend that the proposed foundations be provided with a perimeter footing drain system to collect free water if moisture inside the building is considered a problem. Footing drains should be provided with clean-outs, and consist of at least a 4-inch diameter, perforated, PVC pipe surrounded with gravel or washed rock and be placed at the footing subgrade elevation around the outside perimeter of the foundation. The pea gravel should be fully wrapped with a non-woven geotextile fabric to prevent the migration of fine-grained soils. If possible, all utility lines and bedding materials should enter the building footprint at or above the invert elevation of the foundation drain. All drainage systems should be slopes to drain by gravity to a storm sewer or other suitable discharge location.

Water from downspouts and surface water should be independently collected and routed to a storm sewer. This water must not be allowed to enter the footing drain system. Additionally, it is recommended that finished grades around the building be designed to route surface water away from the building.

Under-slab drainage systems may help collect free water below the slab and mitigate moisture in the basement. The under-slab drainage system should consist of a minimum of 12 inches of ¾ inch stone, with 4-inch diameter perforated PVC drain pipe lined with filter fabric looped within the stone at 15 ft to 20 ft intervals. Water collected in the under-slab drainage system should be directed into sump pump pits and discharged into approved facilities.

Waterproofing

The foundation walls and basement slab should be waterproofed to protect against groundwater intrusion.

Seismic Design

Based on the subsurface conditions encountered at the site and considering foundations will be bearing within Stratum S, the seismic design shall consider Site Class D. The following represents the seismic design parameters (see also Appendix I):

Seismic Site Class: D
Mapped Spectral Acceleration S_s (period =0.2 S): 0.475
Mapped Spectral Acceleration S_1 (period =1.0 S): 0.1
Site Coefficient F_a: 1.42
Site Coefficient F_v: 2.399
Spectral Response Accelerations:
S_{MS} (g): 0.675
S_{M1} (g): 0.241
Design Spectral Accelerations:
S_{DS} (g): 0.0.45
S_{D1} (g): 0.16

Peak Ground Accelerations:
PGA: 0.31
PGA_M: 0.4

Based on the encountered SPT N-values encountered during sampling and the nature of the underlying soils, the site soils are not susceptible to liquefaction.

Lateral Earth Pressures

Lateral earth pressures acting on exterior walls should be designed considering the following:

- Compute lateral earth pressures using a total unit weight for soils of 120 pounds per cubic foot and drained internal friction angle of 30 degrees.
- Foundation elements restrained from movement should be designed considering at-rest earth pressures. Consider the buoyant unit weight for zones below the groundwater table.
- Surcharge loads from streets, construction equipment, and nearby structures should be added to the lateral earth pressures. We recommend using a coefficient of 0.5 times the vertical surcharge loads to determine the horizontal surcharge load.
- Basement walls below the groundwater table shall consider hydrostatic water pressure.

Lateral Resistance

Lateral loads on shallow foundations will be resisted by passive pressures on the vertical sides of the foundations, and by frictional sliding resistance on the bases of foundations:

- *Passive Resistance to Lateral Loads:*
    - Compute ultimate passive resistance using a total unit weight for soils of 120 pounds per cubic foot and an internal friction angle of 30 degrees. Consider the buoyant unit weight for zones below the groundwater table.
    - Use a factor of safety of 1.5 on the ultimate passive resistance when working loads are used.
    - Spacing between adjacent footings needs to be considered to verify that a full passive "wedge" can be developed.

- *Frictional Resistance to Lateral Loads:*
    - Compute ultimate frictional resistance using a coefficient of friction of 0.50 on the horizontal base of foundations.
    - Use a factor of safety of 1.5 on the ultimate frictional resistance when working loads are used.

Site Preparation

Demolition

Demolition and off-site disposal of existing structures and utilities occupying the site will be required prior to construction. Remnants of existing foundations may not be buried beneath the surface of the

site and shall be removed. Disposal of removed structures shall be performed in accordance with local, state, and federal guidelines for the types of material encountered.

Stripping of Topsoil

If encountered within the footprints of the proposed building, existing topsoil plus a 5-foot perimeter zone, should be stripped and stockpiled for re-use. Topsoil is not suitable for re-use as controlled compacted fill or backfill. The topsoil can be stockpiled on-site for future re-use as general fill within landscaped areas or can be legally disposed of off-site. If the topsoil is to be re-used, it should be screened to eliminate oversize particles and deleterious material. An agronomist should examine the material for its ability to support new vegetation.

Existing Utilities

We recommend that a subsurface utility exploration be performed to locate subsurface utilities prior to commencement of construction. The contractor should be prepared to relocate utilities prior to construction if needed.

Underground utilities that are to be reused should be evaluated by the Civil Engineer, and utility trench backfill should be evaluated by the geotechnical engineer, to determine their suitability for support of the planned construction. If any existing utilities are to be preserved, grading operations must be carefully performed so as not to disturb or damage the existing utility.

Construction Considerations

Excavation

We anticipate excavations for the proposed development to extend up to 12 ft below existing grades for the construction of shallow foundations. If encountered, loose soil should be over-excavated and replaced with structural fill prior to placement of reinforcing steel, or concrete in a manner described within the Structural Fill section of this report.

The subsurface conditions encountered within the test boring suggest conventional dozers and excavators appear practical to remove these materials. However, the contractor should be prepared to handle zones of hard excavation if they are encountered.

A minimum of 12 inches of Structural Fill should be placed beneath all foundations and utilities founded over potential masses of boulders and cobbles to limit hard points and provide a uniform support to the bottom of the foundations.

Excavation Support

Construction excavations should be sloped and/or shored in accordance with OSHA excavation regulations or stricter local governing safety codes. Our opinion is that the existing site soils and new structural fill will generally be classified as “Type C” soils under OSHA excavation regulations.

All excavation support systems and earth slopes must be designed by a qualified engineer, licensed in the State of New York. Lateral pressures presented in the Lateral Earth Pressures section of this report shall be employed in the design of such systems. Appropriate live loads, building loads, and

surcharges for sidewalk, vehicular and construction loads, impacts of groundwater seepage, if encountered, shall also be considered in the design.

Structural Fill/Backfill

All fill/backfill proposed to support building and site features that will be adversely affected by settlement is considered structural fill. Materials used as structural fill should consist of visually stable, inorganic, readily compactable materials that are free of trash, debris, organic inclusions, frozen material, or excess moisture. On-site materials with an organic content of less than 5 percent may be included in structural fill, provided they are well blended with other inorganic fill materials.

Structural fill should be placed in essentially horizontal lifts with a maximum loose thickness of 8 inches. The optimum loose lift thickness of the structural fill material shall be established by the contractor in the field via an earthwork test pad. In addition to meeting the compaction criteria, the compacted material shall maintain visual stability beneath the compaction equipment and be observed and documented by the Geotechnical Engineer.

Each lift should be compacted to at least 95 percent of the maximum dry density for building or floor slab support, and utility trench backfill, as determined by the modified Proctor test (ASTM D 1557). Compaction of granular materials can be achieved using as large a vibratory compactor as practical. Moisture contents shall be maintained within 2 to 3 percent of the optimum moisture content during compaction procedures.

The existing on-site granular materials within Stratum S may be deemed suitable for use as structural fill so long as the material meets the requirements discussed above. The cut material is expected to be generally granular, indicating it may be usable. Testing should be performed to determine the presence of organic materials, and the soil should be screened for oversized particles prior to placement and use as backfill.

Backfill Outside Basement Walls

Backfill outside basement walls shall consist of a well-graded sand or sand and gravel having less than 10 percent passing the No. 200 sieve. The backfill should be placed in lifts having a maximum loose-lift thickness of 12 inches. Backfill should be compacted with vibratory plate compactors or small walk-behind or remote-control vibratory rollers to at least 95% of the standard proctor maximum dry density.

Existing site soils may be re-used provided they are not environmentally contaminated, have been scalped to remove oversize particles and meet the technical specifications for earthwork.

Subgrade Preparation

Shallow Foundations

Shallow foundations should be constructed on natural soils within Stratum S. Loose soil should be over-excavated and replaced with structural fill. This will require careful excavation during construction such that subgrade is not disturbed. Any over-excavation below the foundations shall be backfilled to the bearing elevation with Structural Fill.

Subgrade soils exposed in foundation excavations should be evaluated by a Geotechnical Engineer prior to placement of structural fill, reinforcing steel, or concrete, to confirm stability of the subgrade soils. The evaluation should consist of proof-rolling and compacting the subgrade soils with the largest practical equipment and observation or testing as deemed necessary by the Geotechnical Engineer.

Floor Slabs

The floor slab subgrade soils should be compacted and proof-rolled under the direction of the Geotechnical Engineer to evaluate stability.

Subsurface Utilities

The natural soils and new structural fill materials will be suitable for support of subsurface utilities. However, should cobbles, boulders, loose and/or unstable soils be encountered at the utility invert levels, the subgrade should be over-excavated a minimum depth of 6 inches and backfilled with granular material, such as AASHTO No. 57 aggregate, to provide uniform support. Utility excavations should be backfilled using structural fill in accordance with the *Structural Fill* section of this report.

General Subgrade Considerations

Any natural subgrade soils that are determined to be soft, loose, wet, or otherwise unstable should be selectively excavated and replaced with structural fill, placed, and compacted in accordance with the recommendations mentioned above.

Unless foundation construction proceeds within 24 hours of foundation subgrade preparation, including approval by the Geotechnical Engineer, subgrades should be protected from the elements to reduce exposure and potential weakening of the subgrade materials, particularly if precipitation or freezing temperatures are expected prior to foundation construction. Preventative measures such as placing a minimum 2-inch-thick lean concrete “mud mat” on the subgrade, or providing suitable cover for the excavations, may be considered appropriate, depending on the prevailing weather conditions. Foundation excavations should be protected from frost and water infiltration until the foundations have been constructed and backfilled.

Soil Anchors

Should soil anchors be utilized to resist uplift forces, the soil anchors shall be designed by a qualified specialty contractor familiar with the subsurface conditions within the area and submitted for review by the geotechnical engineer. The design submittal shall be signed and sealed by a Professional Engineer registered in the State of New York.

The soil anchors shall be tested in accordance with Post Tensioning Institute (PTI) requirements for ground anchors.

Surface Water Control

The contractor should be prepared to address ponding of water that may accumulate due to seasonal variations. Surface water should be controlled using gravity drainage and local sump pumping to

prevent ponding of water following periods of precipitation or snowmelt. Surface grading should be maintained on a continual basis during construction to direct surface water runoff away from open excavations and prevent water from pooling on subgrade soils. The sump pits should be filled with minimum ¾-inch clean stone and lined with geotextile filter fabric to prevent soil migration. Pumped water should be discharged away from the open excavations.

Construction Dewatering

The proposed construction will extend below the groundwater table. Consequently, dewatering to depress the groundwater level during construction should be anticipated. The dewatering system shall consider that groundwater levels can fluctuate with locations, seasonal changes, precipitation, nearby construction activities, leakage into and out of utilities, and other factors. The design of the dewatering system should consider the presence of adjacent structures. As such, cutoff walls may be required to limit the impact of dewatering on existing structures.

Any significant inflows of water into the excavation during construction could seriously disturb the supporting capacity of the subgrade soils. As a result, it is recommended that the water level at the location of the proposed addition be maintained approximately 2 ft below the proposed subgrade elevations. In addition, the contractor should be prepared to pump-out standing water that may accumulate due to storm events or other conditions.

It may be necessary to provide a 12-inch-thick layer of clean 3/4-inch crushed stone (AASHTO size # 57) beneath the proposed foundation subgrades to minimize disturbance to the exposed subgrade soils, provide a uniform bed of support, and assist in collecting surface water infiltration.

Special Inspections

Special Inspections shall be required for the following construction:

- Subgrade Inspection – Inspection is required periodically and immediately prior to placement of footings and foundations.
- Soil Anchors - Continuous inspection is required.
- Backfill – Continuous inspection is required.
- Evaluation of in-place density – In accordance with technical specifications for earthwork.

Closing

The conclusions and recommendations presented in this report are based, in part, on the explorations accomplished for this evaluation. The number, location, and depth of the explorations were completed within the constraints of budget and site access to yield the information to formulate the recommendations. We recommend that CED be provided the opportunity for general review of the project plans and specifications when they become available, to confirm that the recommendations and design considerations presented in this report have been properly interpreted and implemented into the project design package.

The design recommendations and construction considerations presented in this report were developed based on the subsurface information interpreted from the referenced explorations. Should the information not be adequate for the Contractor's purposes, the Contractor may make, prior to bidding, their own explorations, tests, and analyses.

Limitations

This report and all supporting documentation have been prepared exclusively for the use of **Wendel Companies** pursuant to the Agreement between Colliers Engineering & Design CT, PC and **Wendel Companies** All provisions set forth in the Agreement and the General Terms and Conditions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein.

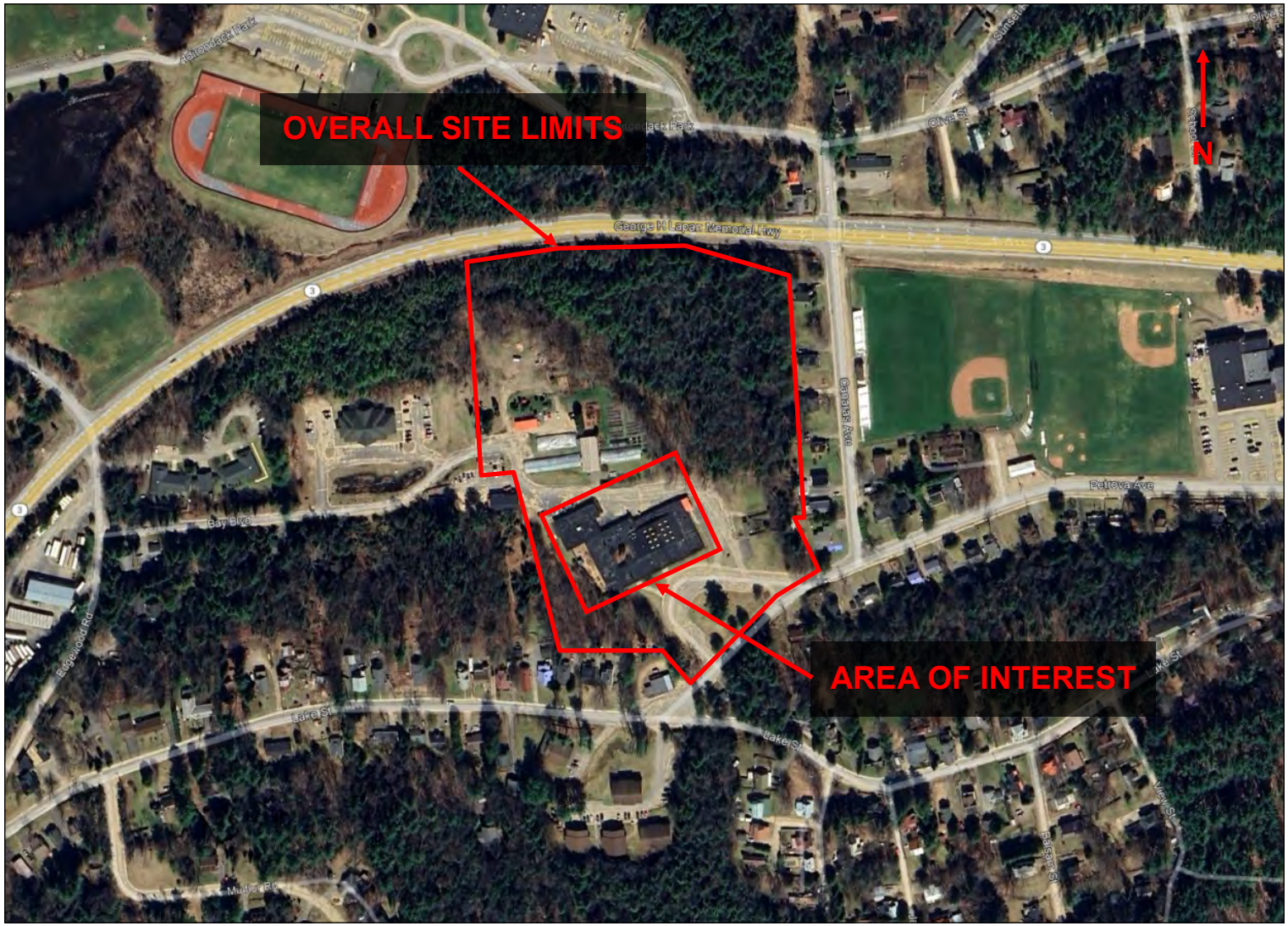
The findings, conclusions, and recommendations contained in this report are based on limited exploration and testing of the subsurface at the referenced project site. The explorations indicate subsurface conditions at the specific locations, depths, and times explored. Should deviations from the described subsurface conditions be encountered at any time prior to or during construction, CED should be notified to determine whether the findings necessitate modification of our recommendations.

This report is applicable only to the contemplated site design described herein; any changes in the design should be brought to our attention so that we may evaluate whether our recommendations will be affected. CED is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of Colliers. As such, the conclusions and recommendations contained in this report are pending our review of final plans and specifications, and verification of subsurface conditions by direct observation at the time of construction.

This report and supporting documentation are instruments of service. The subject matter of this report is limited to the facts and matters stated herein.

The scope of this geotechnical exploration program did not include investigation or evaluation of any environmental issues, such as wetlands, or hazardous or toxic materials on, below, or in the vicinity of the subject site. Any statements in this report or supporting documentation regarding odors or unusual or suspicious items or conditions observed are strictly for the information of our Client.

Figures



Colliers Engineering & Design

Figure 1

Overall Site Location

PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G

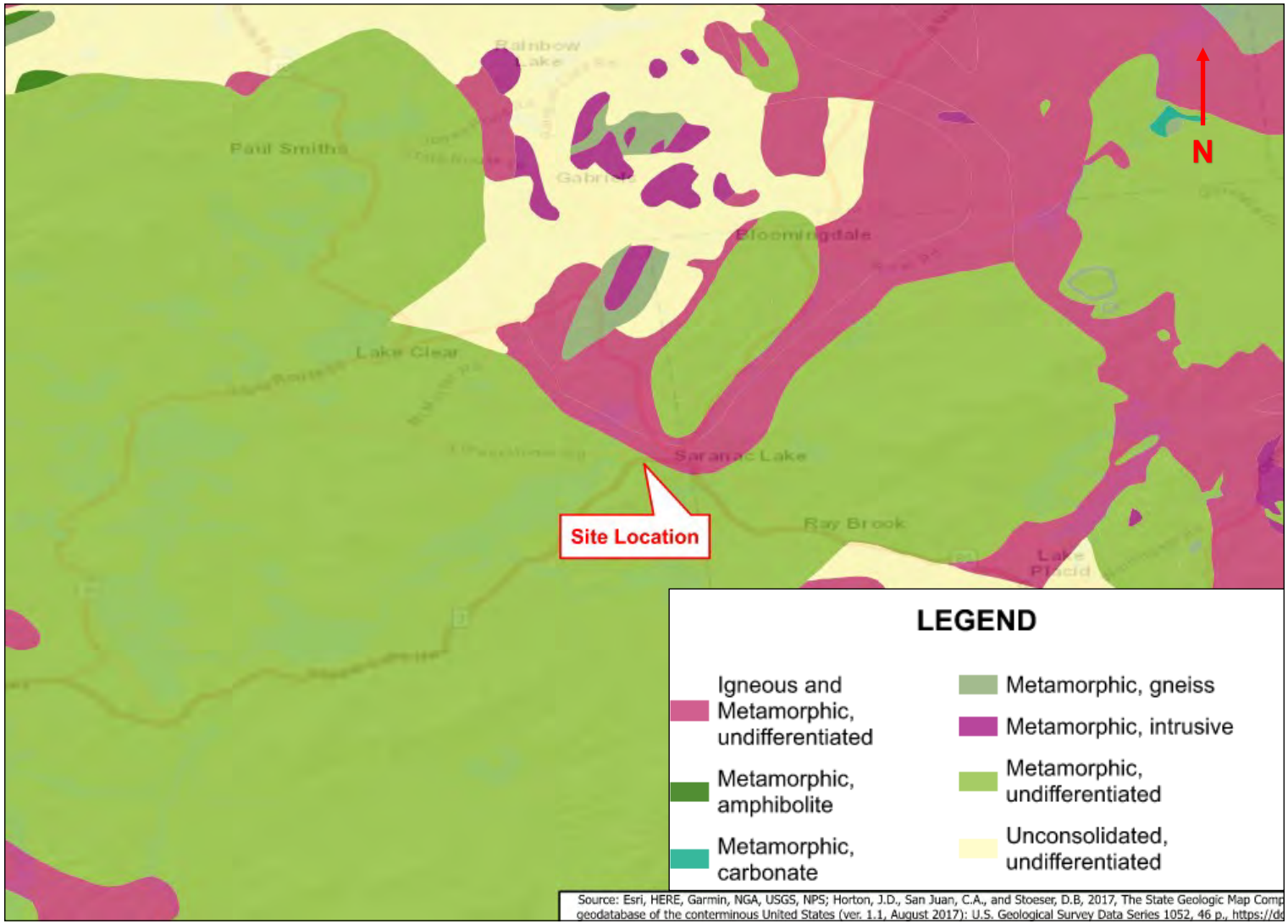


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Figure 2

Bedrock Geology

PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G

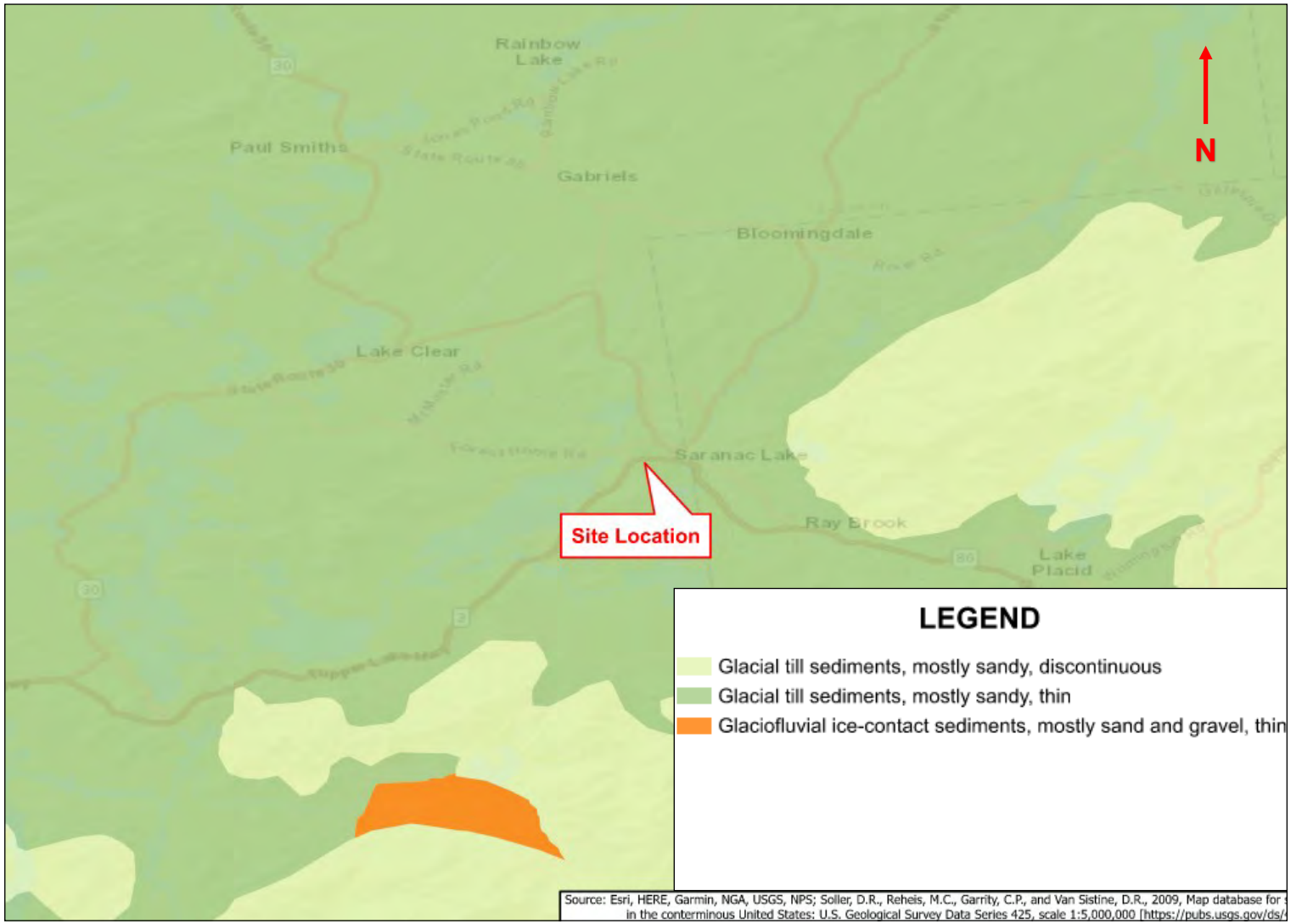

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Figure 3

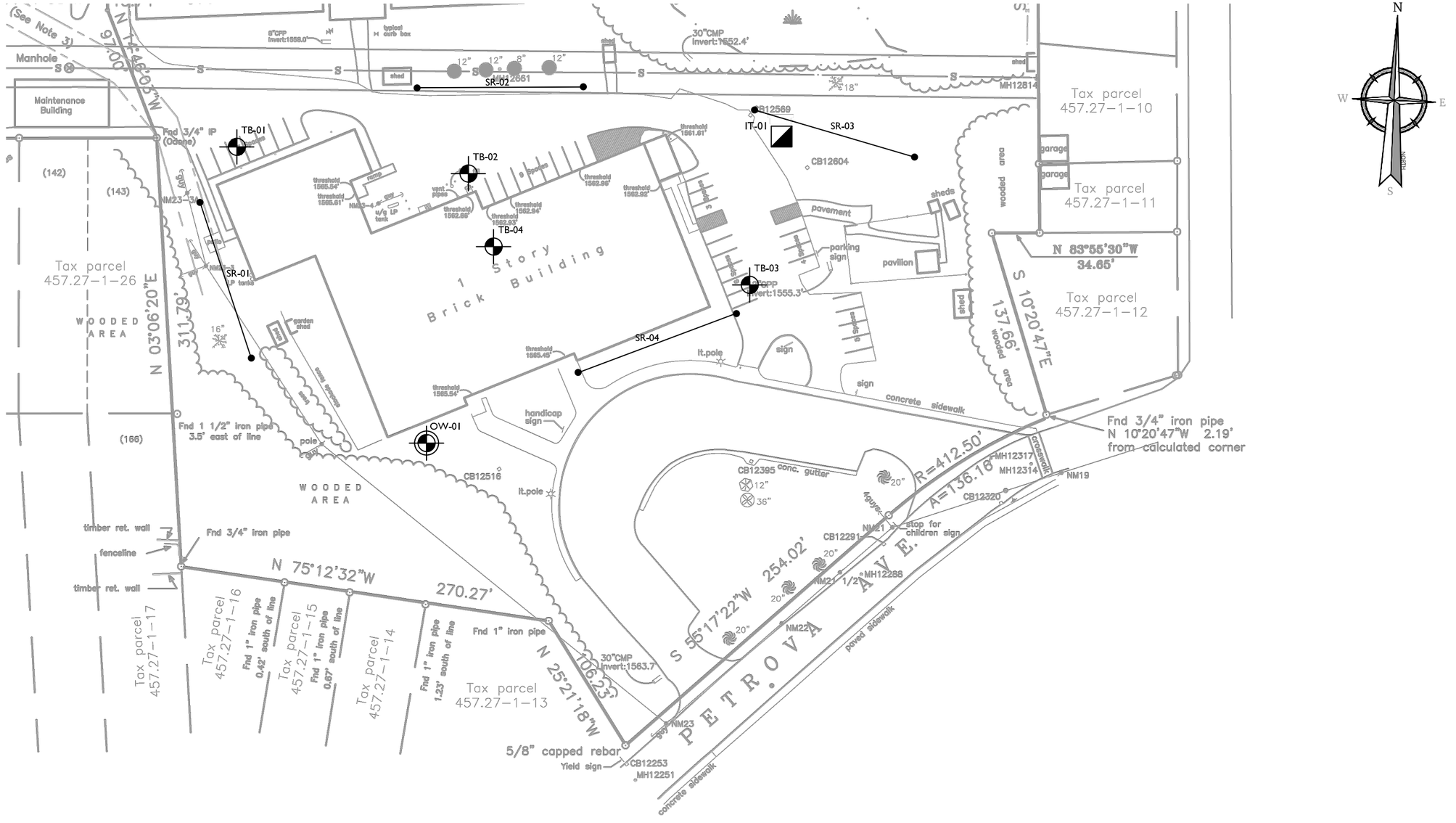
Surficial Geology

PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G

Colliers Engineering & Design

Drawings



GENERAL NOTES:

1. DRAWING BASED ON DRAWING TITLED "SITE SURVEY," BY GEOMATICS LAND SURVEYING, PC, DATED MAY 25, 2023.
2. THIS DRAWING IS PART OF COLLIERS ENGINEERING & DESIGN REPORT (PROJECT NO. 25011129G) AND SHOULD ONLY BE USED IN CONJUNCTION WITH THE REPORT.
3. SOIL EXPLORATION LOCATIONS ARE APPROXIMATE BASED ON EXISTING SITE FEATURES AND INFORMATION AVAILABLE AT THE TIME OF OUR FIELD EXPLORATION.
4. SOIL EXPLORATIONS PERFORMED BY SOIL TESTING, INC. FROM SEPTEMBER 22, 2025 THROUGH SEPTEMBER 24, 2025 UNDER CONTINUOUS OBSERVATION OF CED.
5. EXPLORATIONS BACKFILLED AND RESTORED WITH COLD-PATCH ASPHALT.

LEGEND:

- TB-XX — TEST BORING LOCATION
- SR-XX — SHEAR WAVE VELOCITY TEST LOCATION
- IT-XX — INFILTRATION TEST LOCATION
- OW-XX — PIEZOMETER LOCATION

80 0 80

SCALE : 1" = 80'

Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

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REV	DATE	DESCRIPTION

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

WENDEL COMPANIES

EXPLORATION LOCATION PLAN

SARANAC LAKE

33 PETROVA AVENUE
VILLAGE OF LAKE SARANAC
FRANKLIN COUNTY
NEW YORK

Colliers Engineering & Design
ALBANY
18 Corporate Woods Blvd.
Suite 400
Albany, NY 12211
Phone:518.459.3252
COLLIERS ENGINEERING & DESIGN, ARCHITECTURE, LANDSCAPE ARCHITECTURE, SURVEYING CT, P.C.

SCALE:	DRAWN BY:
AS SHOWN	FS
DESIGNED BY:	REVIEWED BY:
-	DP
DATE ISSUED:	PROJECT NUMBER:
09/25/25	25011129G

SHEET NAME:
EXPLORATION LOCATION PLAN

DRAWING NUMBER:
B-01-ELP

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

C:\Civil 3D Projects\2025\25011129G\Geotechnical\Exploration\B-EXPL.dwg\B-01-EXPLORATION By: FARIAH.SULTANA on 2025-12-05 -- 03:55pm

Appendix A

Historical Aerial Photography

Colliers Engineering & Design

PLATE A-1

HISTORICAL AERIAL PHOTOGRAPHY
CIRCA 1994
(Source: Google Earth Satellite Imagery)

PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G

Colliers Engineering & Design

PLATE A-2

HISTORICAL AERIAL PHOTOGRAPHY
CIRCA 2025
(Source: Google Earth Satellite Imagery)

PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G

Appendix B

Test Boring Logs

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Burmister Soil Classification System

I. Soil and Fraction Definitions

Material	Symbol	Fraction	Sieve Size	Definition
Boulders	Bldr	-----	9" +	Material retained on 9" sieve.
Cobbles	Cbl	-----	3" to 9"	Material passing 9" sieve and retained on the 3" sieve.
Gravel	G	Coarse (c) Medium (m) Fine (f)	1" to 3" 3/8" to 1" No. 10 to 3/8"	Material passing the 3" sieve and retained on the No. 10 sieve.
Sand	S	Coarse (c) Medium (m) Fine (f)	No. 30 to No. 10 No. 60 to No. 30 No. 200 to No. 60	Material passing No. 10 sieve and retained on the No. 200 sieve.

Material	Symbol	Plasticity	Plasticity Index	Definition
Silt	$	-----	Passing No. 200 (0.075 mm) PI<1	Material passing the No. 200 sieve that is non-plastic in character and exhibits little or no strength when air-dried.
Clayey Silt	c$	Slight (SL)	1 to 5	Clay – Soil. Material passing the No. 200 sieve which can be made to exhibit plasticity and clay qualities within a certain range of moisture content, and which exhibits considerable strength when air-dried.
Silt & Clay	$ & C	Low (L)	5 to 10	
Clay & Silt	C & $	Medium (M)	10 to 20	
Silty Clay	$C	High (H)	20 to 40	
Clay	C	Very High (VH)	40 Plus	
Organic Silt	(O$)	-----	-----	Material passing the No. 200 sieve which exhibits plastic properties within a certain range of moisture content and exhibits fine granular and organic characteristics.

II. Proportion Definition

Component	Written	Proportions	Symbol	Percentage by Weight*
Principal	CAPITALS	---	---	50 or more
Minor	Lower Case	And	a.	35 to 50
		Some	s.	20 to 35
		Little	l.	10 to 20
		Trace	t.	0 to 10

*Minus sign (-) lower limit, plus sign (+) upper limit, no sign middle range.

III. Terminology for Stratified Soils

Terminology	Definition
Parting	0 to 1/16" thickness
Seam	1/16" to ½" thickness
Layer	½" to 12" thickness
Occasional	One or less per foot of thickness
Frequent	More than one per foot of thickness
Alternating	Stratification descriptor (non-varved)

Colliers Engineering & Design

Rock Classification Standard

[Soundness][Fabric Weathering] [Color] [Type], [Jointing Degree] [Joint Weathering] [Joint Appearance] Joints

I. Rock Mass

Soundness	REC	RQD	Characteristics
Hard	85 – 100%	85 – 100%	• Rings when struck with pick/bar. • Does not disintegrate after exposure to air or water. • Breaks with sharp fresh fracture. • Cracks are unweathered.
Medium	50 – 85%	50 – 85%	• Rings when struck with pick/bar. • Does not disintegrate after exposure to air or water. • Breaks with sharp fresh fracture. • Cracks between 1/8-in and 1/4-in wide.
Intermediate	35 – 50/%	35 – 50%	• Gives dull sound when struck with pick/bar. • Does not disintegrate after exposure to air or water. • Broken pieces may show moderately weathered zones between 1/4-in to 1-in. • Weathered zones space ~1-ft apart.
Weathered (Soft)	0 – 35%	0 – 35%	• May soften after exposure to air or water. • May contain highly weathered zones up to 3-in.

Fabric Weathering	Characteristic
Unweathered (Fresh)	No decomposition or discoloration
Slightly Weathered	Slight Discoloration (iron Stained)
Moderately Weathered	Deteriorated Fabric
Highly Weathered	Friable. Can be broken by hand
Completely Weathered	Mineral decomposed but fabric preserved
Decomposed	Soil-like

II. Joints

Degree of Jointing	Frequency	Joint Weathering	Appearance
Massive	<1 Joint in 4-ft	Weathered	Clean
Blocky	1 Joint every 2 – 4-ft		
Moderate	1 Joint every 1 – 2-ft		
Jointed	1-2 Joints every 1-ft	Iron-stained	Brown/Yellow
Closely Jointed	2-4 Joints every 1-ft		
Broken	>4 Joints every 1-ft		

Notes:

1 – Recovery (REC): The total length of recovered rock as a percentage of total length of core run.

2 – Rock Quality Designation (RQD): the total length of rock pieces greater than or equal to 4-in as a percentage of total length of core run.

3 – Decomposed Rock (Residual Soils) follows soil classification standards.

Colliers Engineering & Design

PROJECT: Saranac Lake

LOCATION: 33 Petrova Avenue
Saranac Lake, NY

PROJECT NO. 25011129G

TEST BORING: TB-01

GROUND ELEVATION (ft): 1562±
ELEV. FROM: Survey

GROUNDWATER ELEV. (ft): 1554.0±

CONTRACTOR: Soil Testing, Inc.
DRILLER: Andy Koval
DRILLING EQUIPMENT: CME 550X
METHOD: HSA X Mud Rotary ____ Other ____
HAMMER: CH ____ Safety ____ Automatic X
RODS: AW X NW ____ Other ____

GROUNDWATER:	DEPTH (ft)	DATE
FIRST ENCOUNTERED ▽	8	09/22/25
END OF DRILLING (0 hrs.) ▽	____	____

DATE STARTED 09/22/25
DATE FINISHED 09/24/25

FIELD OBSERVER: FS
CHECKED BY: DP

ASTM D-1586

DEPTH BELOW SURFACE (ft.)	SAMPLE NUMBER / DEPTH (ft.)	BLOWS PER 6 INCHES 0-6"	6-12"	12-18"	18-24"	RECOVERY (in)	POCKET PENETROM. (tsf)	MOISTURE (%)	WATER SYMBOL	PROFILE DEPTH / ELEV.	IDENTIFICATION OF SOILS / REMARKS
	S-1	-	2	6	4	12					Surface Cover: 5" Asphalt S-1: Brown cmf SAND, some Silt, trace f Gravel. (dry)
	0.4'-2.0'										
	S-2	4	14	14	14	20					S-2: Brown SILT, some f Sand. (dry)
	2.0'-4.0'										
5	S-3	5	11	11	13	10					S-3: Brown cmf SAND, some Silt, trace f Gravel. (moist)
	4.0'-6.0'										
	S-4	18	13	12	17	24					S-4: Brown SILT, some f Sand. (moist)
	6.0'-8.0'								▽		
	S-5	6	8	9	8	16					S-5: Brown cmf SAND, little Silt. (wet)
10	8.0'-10.0'										
	S-6	4	5	5	6	24					S-6: Brown cmf SAND, little Silt. (wet)
	10.0'-12.0'										
15											
	S-7	3	5	6	7	18				Stratum S	S-7: Brown SILT, some f Sand. (wet)
	15.0'-17.0'										
20											
	S-8	2	4	6	8	22					S-8: Brown cmf SAND, some Silt, trace f Gravel. (wet)
	20.0'-22.0'										
25											
	S-9	24	50	50/4"		16					S-9: Brown cmf SAND, some Silt, trace f Gravel. (wet)
	25.0'-26.3'										
30											
	S-10	50/3"				3				30.3 1531.7	S-10: Gray mf GRAVEL, little cmf Sand, little Silt. (wet)
	30.0'-30.3'										END OF TEST BORING AT 30.3 FEET
35											
40											

NOTES: Backfilled and restored with cold patch asphalt.

TEST BORING: TB-01
PAGE 1 OF 1

Colliers Engineering & Design

PROJECT: Saranac Lake

LOCATION: 33 Petrova Avenue
Saranac Lake, NY

PROJECT NO. 25011129G

TEST BORING: TB-02

GROUND ELEVATION (ft): 1561±
ELEV. FROM: Survey

GROUNDWATER ELEV. (ft): 1553.0±

CONTRACTOR: Soil Testing, Inc.
DRILLER: Andy Koval
DRILLING EQUIPMENT: CME 550X
METHOD: HSA X Mud Rotary ____ Other ____
HAMMER: CH ____ Safety ____ Automatic X
RODS: AW X NW ____ Other ____

GROUNDWATER:	DEPTH (ft)	DATE
FIRST ENCOUNTERED	8	09/23/25
END OF DRILLING (0 hrs.)		

DATE STARTED 09/23/25
DATE FINISHED 09/24/25
FIELD OBSERVER: FS
CHECKED BY: DP

ASTM D-1586

DEPTH BELOW SURFACE (ft.)	SAMPLE NUMBER / DEPTH (ft.)	BLOWS PER 6 INCHES 0-6"	6-12"	12-18"	18-24"	RECOVERY (in)	POCKET PENETROM. (tsf)	MOISTURE (%)	WATER SYMBOL	PROFILE DEPTH / ELEV.	IDENTIFICATION OF SOILS / REMARKS
	S-1	-	8	9	8	10					Surface Cover: 4.5" Asphalt S-1: Brown cmf SAND, some Silt, little cmf Gravel. (dry)
	0.4'-2.0'										
	S-2	5	9	10	13	10					S-2: Brown cmf SAND, some Silt, little cmf Gravel. (moist)
	2.0'-4.0'										
5	S-3	13	20	20	19	20					S-3: Brown f SAND, little Silt. (moist)
	4.0'-6.0'										
	S-4	18	22	20	16	20					S-4: Brown f SAND, little Silt. (moist)
	6.0'-8.0'										
	S-5	2	5	5	5	24			▽		S-5: Brown cmf SAND, little Silt, trace f Gravel. (wet)
10	8.0'-10.0'										
	S-6	4	15	11	11	24				Stratum S	S-6: Top 20": Brown cmf SAND, little Silt, trace f Gravel. (wet) Bottom 4": Gray cmf GRAVEL, some cmf Sand, little Silt. (wet)
	10.0'-12.0'										
15											
	S-7	26	41	39	50/3"	21					S-7: Brown cmf SAND, some cmf Gravel, little Silt. (wet)
	15.0'-16.8'										
20											
	S-8	50/2"				2					S-8: Brown cmf SAND, little mf Gravel, little Silt. (wet)
	20.0'-20.2'									22.1	
	S-9	50/0"				0				1538.9	S-9: No recovery.
	22.0'-22.0'										END OF TEST BORING AT 22.1 FEET
25											
30											
35											
40											

NOTES: Auger refusal at 17.5 ft, cored and found boulder at 17.5 ft.
Sample S-8 and S-9 likely wash material, spoon was bouncing.
Hard drilling at 21 ft.
Backfilled and restored with cold patch asphalt.

TEST BORING: TB-02
PAGE 1 OF 1

Colliers Engineering & Design

PROJECT: Saranac Lake

LOCATION: 33 Petrova Avenue
Saranac Lake, NY

PROJECT NO. 25011129G

TEST BORING: TB-03

GROUND ELEVATION (ft): 1560±
ELEV. FROM: Survey

GROUNDWATER ELEV. (ft): 1552.0±

CONTRACTOR: Soil Testing, Inc.
DRILLER: Andy Koval
DRILLING EQUIPMENT: CME 550X
METHOD: HSA X Mud Rotary ____ Other ____
HAMMER: CH ____ Safety ____ Automatic X
RODS: AW X NW ____ Other ____

GROUNDWATER:	DEPTH (ft)	DATE
FIRST ENCOUNTERED ▽	8	09/23/25
END OF DRILLING (0 hrs.) ▽	____	____

DATE STARTED 09/23/25
DATE FINISHED 09/24/25

FIELD OBSERVER: FS
CHECKED BY: DP

ASTM D-1586

DEPTH BELOW SURFACE (ft.)	SAMPLE NUMBER / DEPTH (ft.)	BLOWS PER 6 INCHES 0-6"	6-12"	12-18"	18-24"	RECOVERY (in)	POCKET PENETROM. (tsf)	MOISTURE (%)	WATER SYMBOL	PROFILE DEPTH / ELEV.	IDENTIFICATION OF SOILS / REMARKS
	S-1	-	7	9	11	10					Surface Cover: 5" Asphalt S-1: Brown cmf SAND, little Silt, trace f Gravel. (moist)
	0.4'-2.0'										
	S-2	9	12	15	14	14					S-2: Brown cmf SAND, little Silt, trace f Gravel. (wet)
	2.0'-4.0'										
5	S-3	8	8	10	10	10					S-3: Brown cmf SAND, little Silt, trace f Gravel. (wet)
	4.0'-6.0'										
	S-4	6	6	8	11	16					S-4: Brown cmf SAND, little Silt, trace f Gravel. (wet)
	6.0'-8.0'								▽		
	S-5	4	4	5	6	20					S-5: Brown mf SAND, little Silt. (wet)
10	8.0'-10.0'										
	S-6	6	8	6	5	24				Stratum S	S-6: Brown cmf SAND, little Silt. (wet)
	10.0'-12.0'										
15											
	S-7	15	23	50/5"		17					S-7: Brown cmf SAND, some mf Gravel, little Silt. (wet)
	15.0'-16.4'										
20											
	S-8	70	50/2"			8					S-8: Brown cmf SAND, some mf Gravel, little Silt. (wet)
	20.0'-20.7'										
25											
	S-9	36	50/1"			7				25.6 1534.4	S-9: Gray mf GRAVEL, some cmf Sand, little Silt. (wet)
	25.0'-25.6'										
	RC-1		RQD = 45%			35				Stratum R	RC-1: 25.6'-26.6': 3 min, 15 sec 26.6'-27.6': 2 min, 57 sec 27.6'-28.6': 4 min, 01 sec 28.6'-29.6': 3 min, 51 sec Intermediate slightly weathered gray Anorthosite, closely jointed weathered clean joints.
	25.6'-29.6'		REC = 73%								
30	S-10	50/0"				0				29.6 1530.4	S-10: No recovery.
	29.6'-29.6'										END OF TEST BORING AT 29.6 FEET
35											
40											

NOTES: Hard drilling at 25 ft.
Auger refusal at 25.5 ft.
Backfilled and restored with cold patch asphalt.

TEST BORING: TB-03
PAGE 1 OF 1

Colliers Engineering & Design

PROJECT: Saranac Lake

LOCATION: 33 Petrova Avenue
Saranac Lake, NY

PROJECT NO. 25011129G

TEST BORING: TB-04

GROUND ELEVATION (ft): N/A
ELEV. FROM: Not Surveyed

DEPTH TO GROUNDWATER (ft) = 0.5

CONTRACTOR: Soil Testing, Inc.
DRILLER: Andy Koval
DRILLING EQUIPMENT: Hand Auger
METHOD: HSA _____ Mud Rotary _____ Other X
HAMMER: CH _____ Safety _____ Automatic _____
RODS: AW _____ NW _____ Other X

GROUNDWATER:	DEPTH (ft)	DATE
FIRST ENCOUNTERED	0.5	09/22/25
END OF DRILLING (0 hrs.)		

DATE STARTED 09/22/25
DATE FINISHED 09/22/25
FIELD OBSERVER: FS
CHECKED BY: DP

ASTM D-1586

DEPTH BELOW SURFACE (ft.)	SAMPLE NUMBER / DEPTH (ft.)	BLOWS PER 6 INCHES 0-6"	6-12"	12-18"	18-24"	RECOVERY (in)	POCKET PENETROM. (tsf)	MOISTURE (%)	WATER SYMBOL	PROFILE DEPTH / ELEV.	IDENTIFICATION OF SOILS / REMARKS
	S-1	6	7	7	8	14					Surface Cover: Stripped Soil.
	0.0'-2.0'										S-1: Brown cmf SAND, some Silt. (wet)
	S-2	14	19	21	24	18					S-2: Brown cmf SAND, some Silt. (wet)
	2.0'-4.0'										
5	S-3	14	19	26	30	22				Stratum S	S-3: Brown cmf SAND, some Silt. (wet)
	4.0'-6.0'										
	S-4	49	39	50	43	24					S-4: Brown cmf SAND, some Silt. (wet)
	6.0'-8.0'										
										8.0	
10										-8.0	END OF TEST BORING AT 8.0 FEET
15											
20											
25											
30											
35											
40											

NOTES: Backfilled upon completion.

TEST BORING: TB-04
PAGE 1 OF 1

Colliers Engineering & Design

PROJECT: Saranac Lake

LOCATION: 33 Petrova Avenue
Saranac Lake, NY

PROJECT NO. 25011129G

TEST BORING: IT-01

GROUND ELEVATION (ft): 1560±
ELEV. FROM: Survey

CONTRACTOR: Soil Testing, Inc.
DRILLER: Andy Koval
DRILLING EQUIPMENT: CME 550X
METHOD: HSA X Mud Rotary _____ Other _____
HAMMER: CH _____ Safety _____ Automatic X
RODS: AW X NW _____ Other _____

GROUNDWATER:	DEPTH (ft)	DATE
FIRST ENCOUNTERED ▽	N.E.	09/24/25
END OF DRILLING (0 hrs.) ▽		

ASTM D-1586

DATE STARTED 09/24/25
DATE FINISHED 09/24/25
FIELD OBSERVER: FS
CHECKED BY: DP

DEPTH BELOW SURFACE (ft.)	SAMPLE NUMBER / DEPTH (ft.)	BLOWS PER 6 INCHES 0-6"	6-12"	12-18"	18-24"	RECOVERY (in)	POCKET PENETROM. (tsf)	MOISTURE (%)	WATER SYMBOL	PROFILE DEPTH / ELEV.	IDENTIFICATION OF SOILS / REMARKS
	S-1	4	6	9	7	11					S-1: Brown cmf SAND, some Silt, trace cmf Gravel. (dry)
	0.0'-2.0'										
	S-2	10	9	13	13	14				Stratum S	S-2: Brown cmf SAND, little Silt, trace f Gravel. (moist)
	2.0'-4.0'										
5	S-3	11	11	10	9	18					S-3: Brown cmf SAND, some Silt. (moist)
	4.0'-6.0'									6.0	
										-6.0	END OF TEST BORING AT 6.0 FEET
10											
15											
20											
25											
30											
35											
40											

NOTES: Backfilled upon completion.

TEST BORING: IT-01
PAGE 1 OF 1

Appendix C

Rock Core Log

ALBANY OFFICE
18 Corporate Woods Blvd,
Suite 400
Albany, NY 12212
Phone: 518.459.3252

Project No: 25011129G
Test Boring No.: TB-03
Date: 9/23/2025

REF. DFR: 02

ROCK CORE DISCONTINUITY LOG

Project: Saranac Lake
Location: Saranac Lake, NY **Owner:** Wendel Companies
Special Inspector: FS

Core No: TB- 03 RC-1
Core Length: 5' **Core Size:** 2" OD

Top of Core

Bottom of Core

Core Run (ft)	General Orientation	Joint Description			
		Type	Weathering	Apperance	Rel. Direction
	Vertical	Joint	Unweathered	Clean	Non-Foliated
	Horiz.	Joint	Unweathered	Clean	Non-Foliated
1	Horiz.	Joint	Unweathered	Clean	Non-Foliated
	Horiz.	Joint	Unweathered	Clean	Non-Foliated
	Horiz.	Joint	Unweathered	Clean	Non-Foliated
2	Horiz.	Joint	Unweathered	Clean	Non-Foliated
	Vertical	Joint	Unweathered	Clean	Non-Foliated
	Vertical	Joint	Unweathered	Clean	Non-Foliated
3					
	Horiz.	Joint	Unweathered	Clean	Non-Foliated
4					
5					

Notes:

Core No: RC-1
Test Boring No. TB-03

Appendix D

NRCS Web Soil Survey Map

Map Scale: 1:3,960 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, New York
Survey Area Data: Version 8, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 13, 2023—May 31, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AgB	Adirondack mucky fine sandy loam, 3 to 8 percent slopes	0.3	1.9%
MtB	Monadnock fine sandy loam, 3 to 8 percent slopes	0.0	0.1%
SrA	Skerry fine sandy loam, 0 to 3 percent slopes	15.0	97.8%
SsB	Skerry fine sandy loam, 0 to 8 percent slopes, very bouldery	0.0	0.2%
Totals for Area of Interest		**15.4**	**100.0%**

Appendix E

Piezometer Well Log and Monitoring Data

PIEZOMETER WELL LOG OW-01

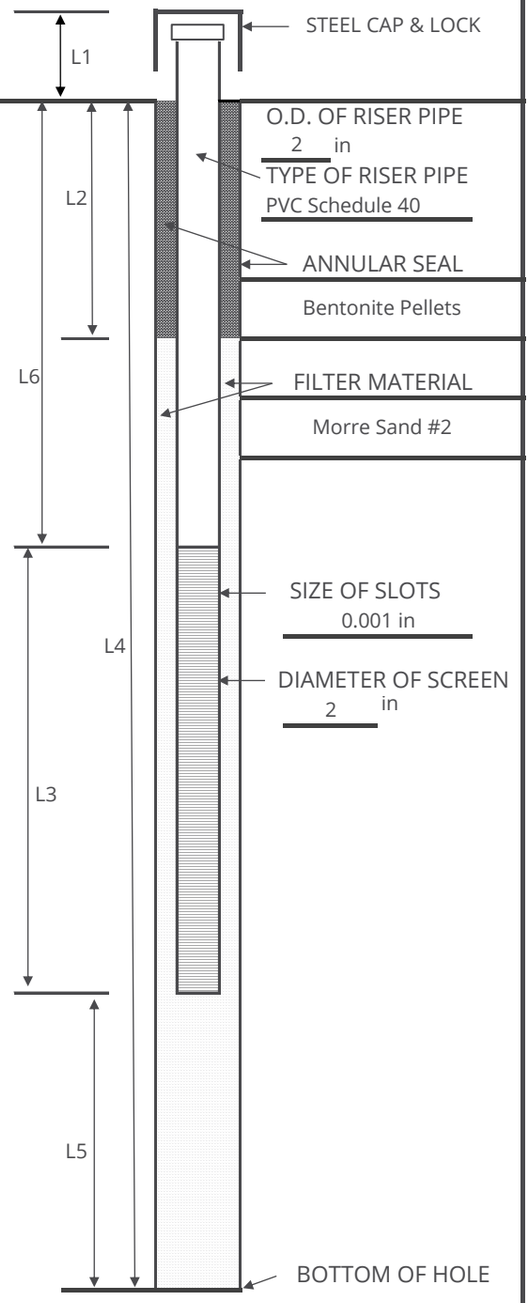
Project Information

Project Name: Saranac Lake
Project Location: Saranac Lake, NY
Project Number: 25011129G

ALBANY OFFICE
18 Corporate Woods
Blvd, Suite 400
Albany, NY 11221
Phone: 518-459-3252

Depth (ft)	Generalized Soil Description					
0						
	0'-2' S-1: Brown cmf SAND, trace f Gravel, trace Silt. (moist)	5	4	3	32	**Rec: 10"**
2.0 ft						
	2'-4' S-2: Brown cmf SAND, some mf Gravel, trace Silt. (moist)	18	19	35	10	**Rec: 12"**
4.0 ft						
	4'-6' S-3: Brown cmf SAND, some mf Gravel, trace Silt. (moist)	10	12	16	17	**Rec: 16"**
6.0 ft						
	6'-8' S-4: Brown cmf GRAVEL, some cmf Sand, little Silt. (moist)	14	13	14	10	**Rec: 14"**
8.0 ft						
	8'-10' S-5: Brown cmf SAND, little Silt, trace f Gravel. (wet)	6	7	10	18	**Rec: 18"**
10.0 ft						
	10'-12' S-6: Brown cmf SAND, trace f Gravel, trace Silt. (wet)	29	39	53	50/3"	**Rec: 10"**

L1	Stick-Up Length	0.00 ft
L2	Anuular Seal Length	1.00 ft
L3	Slotted Pipe Length	10.00 ft
L4	Borehole Depth	12.00 ft
L5	Depth Below Well	0.00 ft
L6	Length of Riser Pipe	2.00 ft



Location Information

Elevation (ft):	1560±

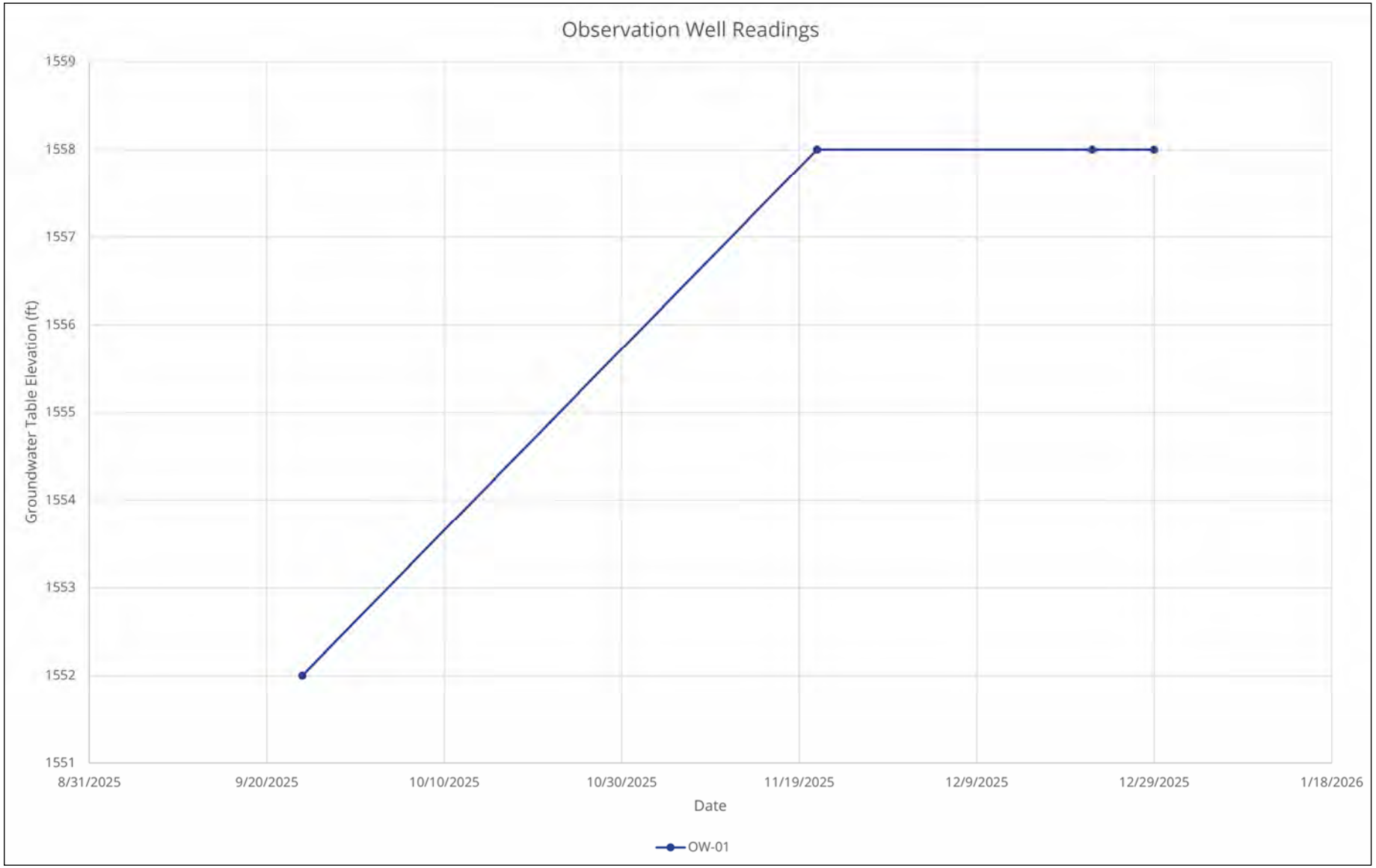
Groundwater Data (ft)

Encountered (ft):	8
Elevation (ft):	1552±
At Completion (ft):	1552±

General Information

CED Representative:	FS
Project Manager:	DP
Contractor:	Soil Testing, Inc.
Driller:	Andy Koval
Drilling Equipment:	CME 550X
Drilling Method:	HSA
Sampling Method:	2-inch O.D. Split Spoon
Date Started:	September 24, 2025
Date Completed:	September 24, 2025

Comments: Comments.....



Colliers Engineering & Design

Plate E-1

Observation Well Readings

PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G

Appendix F

Infiltration Test Log

Colliers Engineering & Design

50 Chestnut Ridge Road, Suite 101
Montvale, New Jersey 07645
Phone: 845.352.0411
Fax: 845.352.2611

Infiltration Test

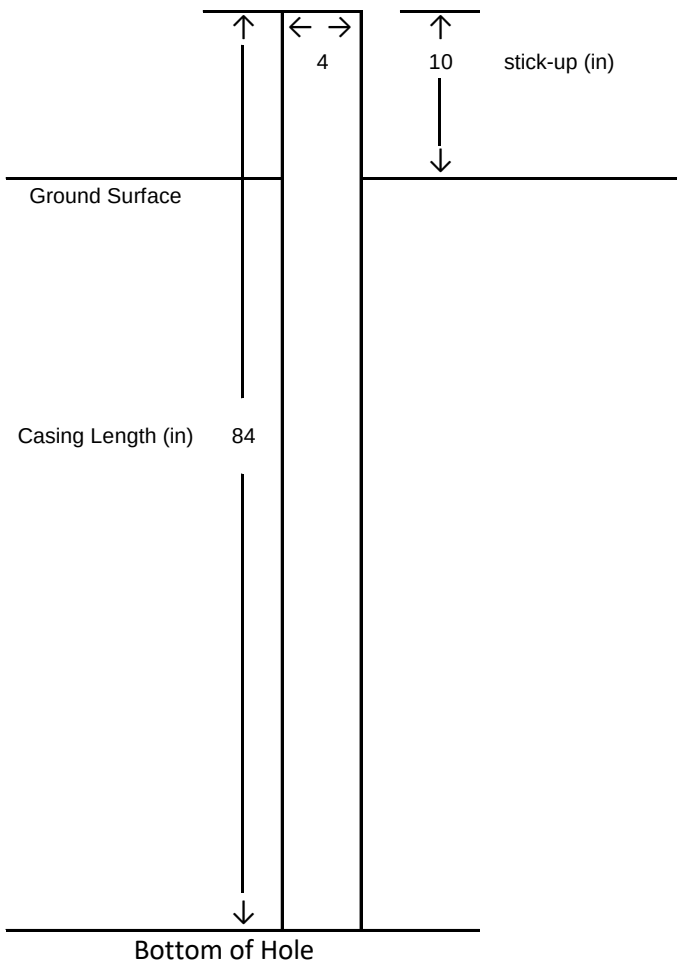
Project: Saranac Lake
Job Number: 25011129G

Date: 9/24/2025
Exploration No: IT-01

Field Rep.: FS
Subcontractor: Soil Testing, Inc.

Well Information		
Standing Groundwater	NA	in
Casing Diameter	4	in
Casing Length	84	in
Stick-Up	10	in
Depth from Bottom of Hole to Top of Casing	84	in
Water Level from Top of Casing	0	in

Well Diagram



Test Data (Trial 1)

Time (sec)	Water Level Drop		Water Level Drop		ΔH
0	0.00	(ft)	0.00	(in)	-
3600	0.00	(ft)	5.00	(in)	5.00

Test Data (Trial 2)

Time (sec)	Water Level Drop		Water Level Drop		ΔH
0	0.00	(ft)	0.00	(in)	-
3600	0.00	(ft)	3.50	(in)	3.50

Test Data (Trial 3)

Time (sec)	Water Level Drop		Water Level Drop		ΔH
0	0.00	(ft)	0.00	(in)	-
3600	0.00	(ft)	2.00	(in)	2.00

Test Data (Trial 4)

Time (sec)	Water Level Drop		Water Level Drop		ΔH
0	0.00	(ft)	0.00	(in)	-
3600	0.00	(ft)	1.50	(in)	1.50

Measurements:

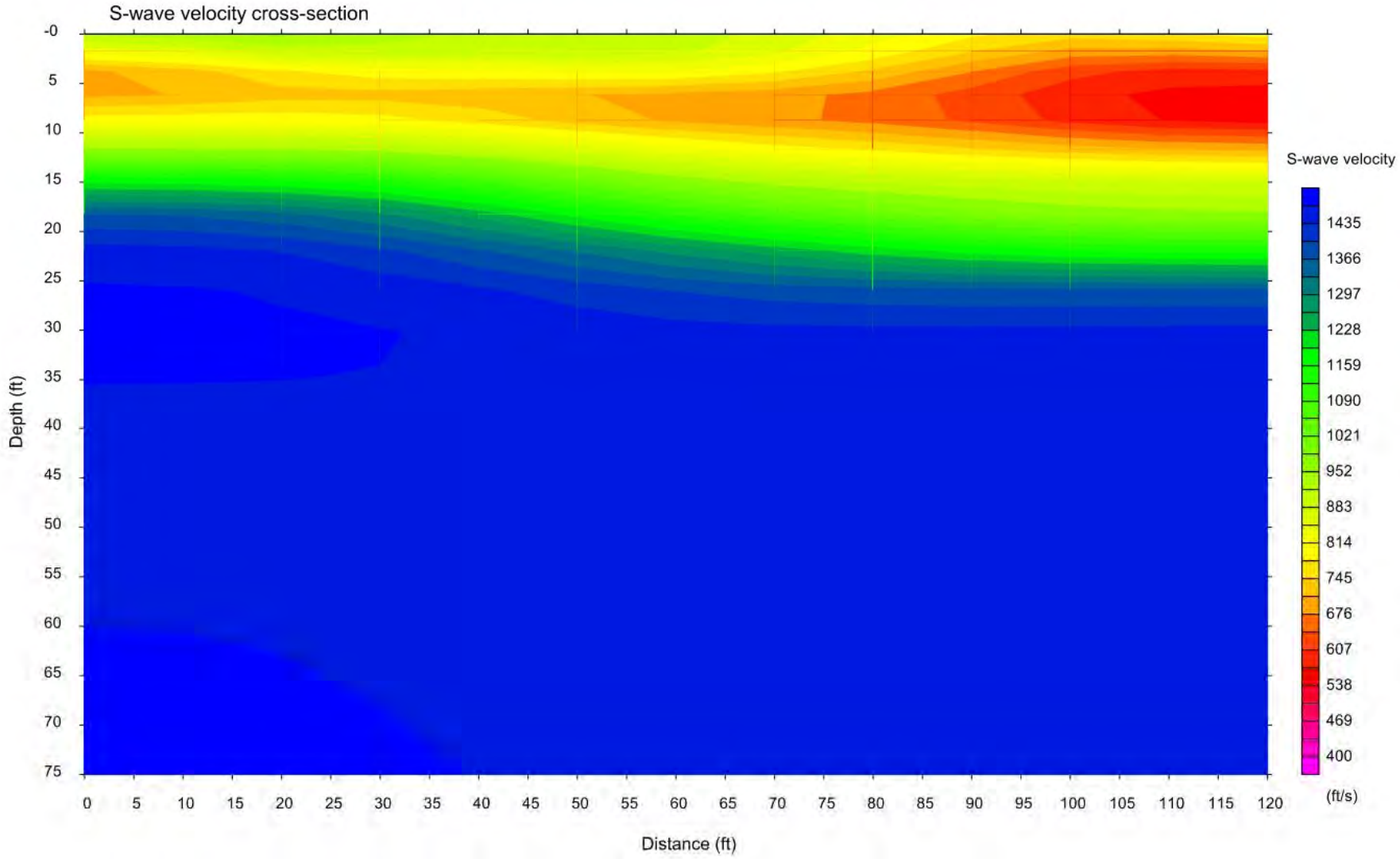
Average Infiltration Rate:
= 3.00 (in/hr)
Minimum Infiltration Rate:
= 1.50 (in/hr)
Maximum Infiltration Rate:
= 5.00 (in/hr)

Notes:

1. **Infiltration rates shown are a direct measurement from conducted field test. No correction factors are applied.**
2. **24 Hour Pre-soak period performed prior to testing.**

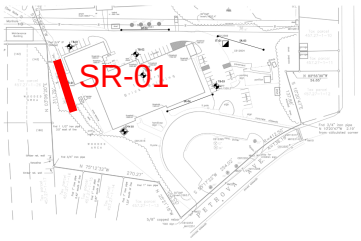
Appendix G

In-Situ Seismic Refraction



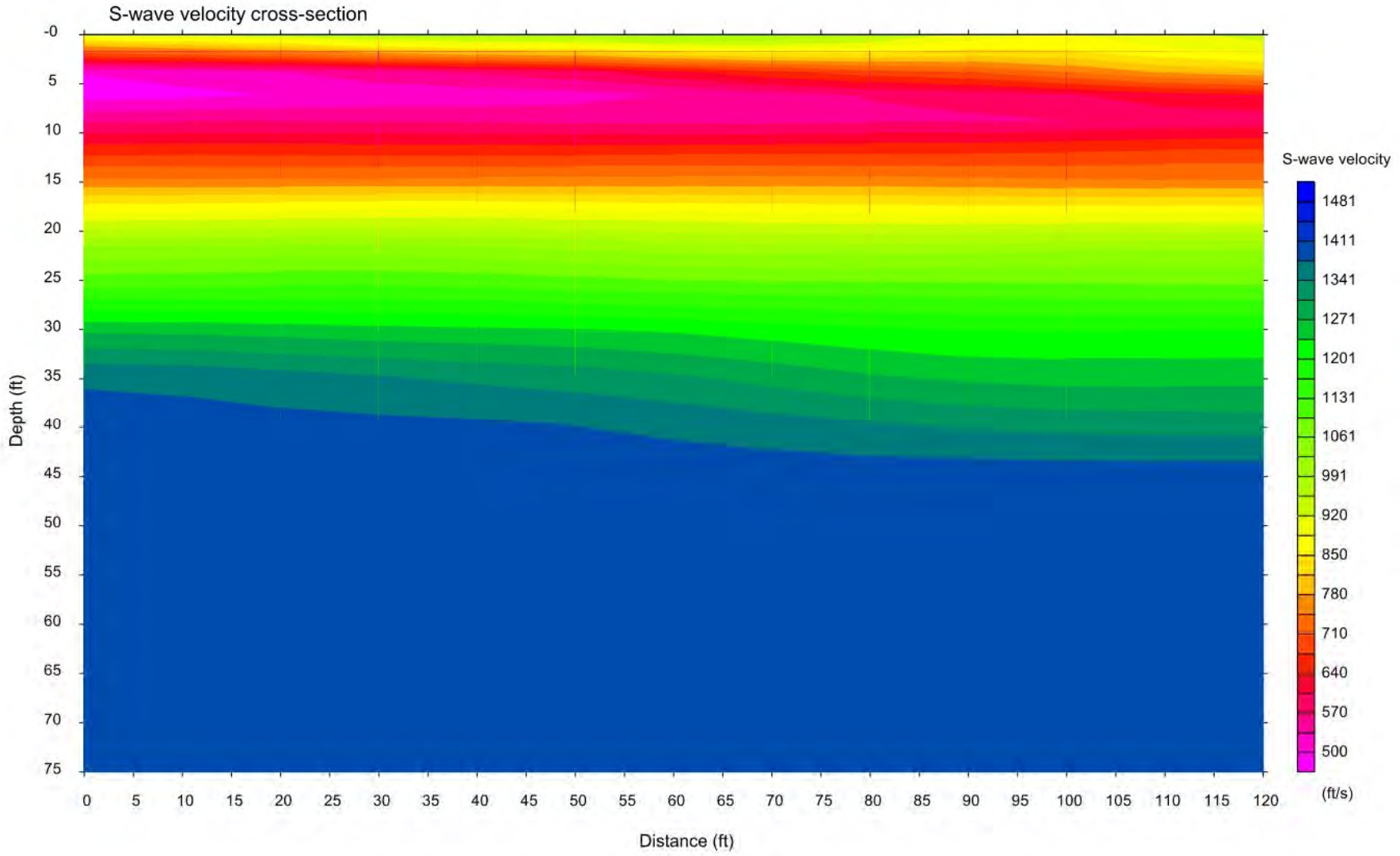
Colliers Engineering & Design

PLATE G-1
Shear Wave Velocity Profile
SR-01



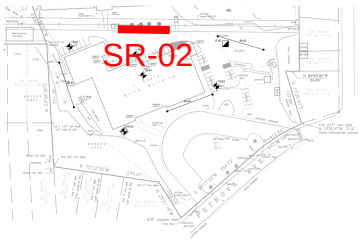
PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G



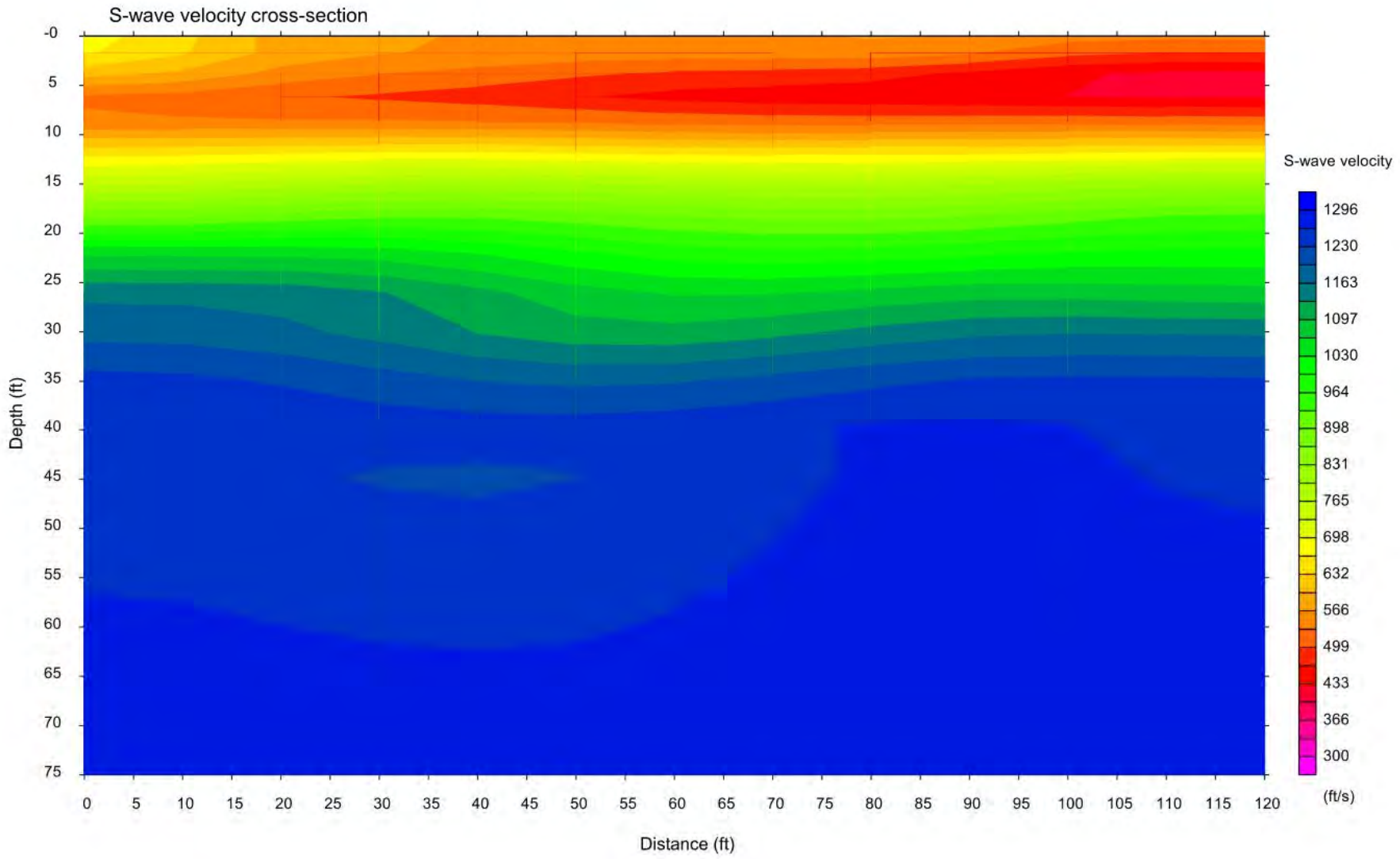
Colliers Engineering & Design

PLATE G-2
Shear Wave Velocity Profile
SR-02



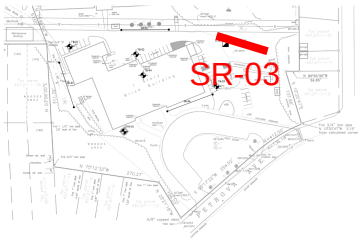
PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G



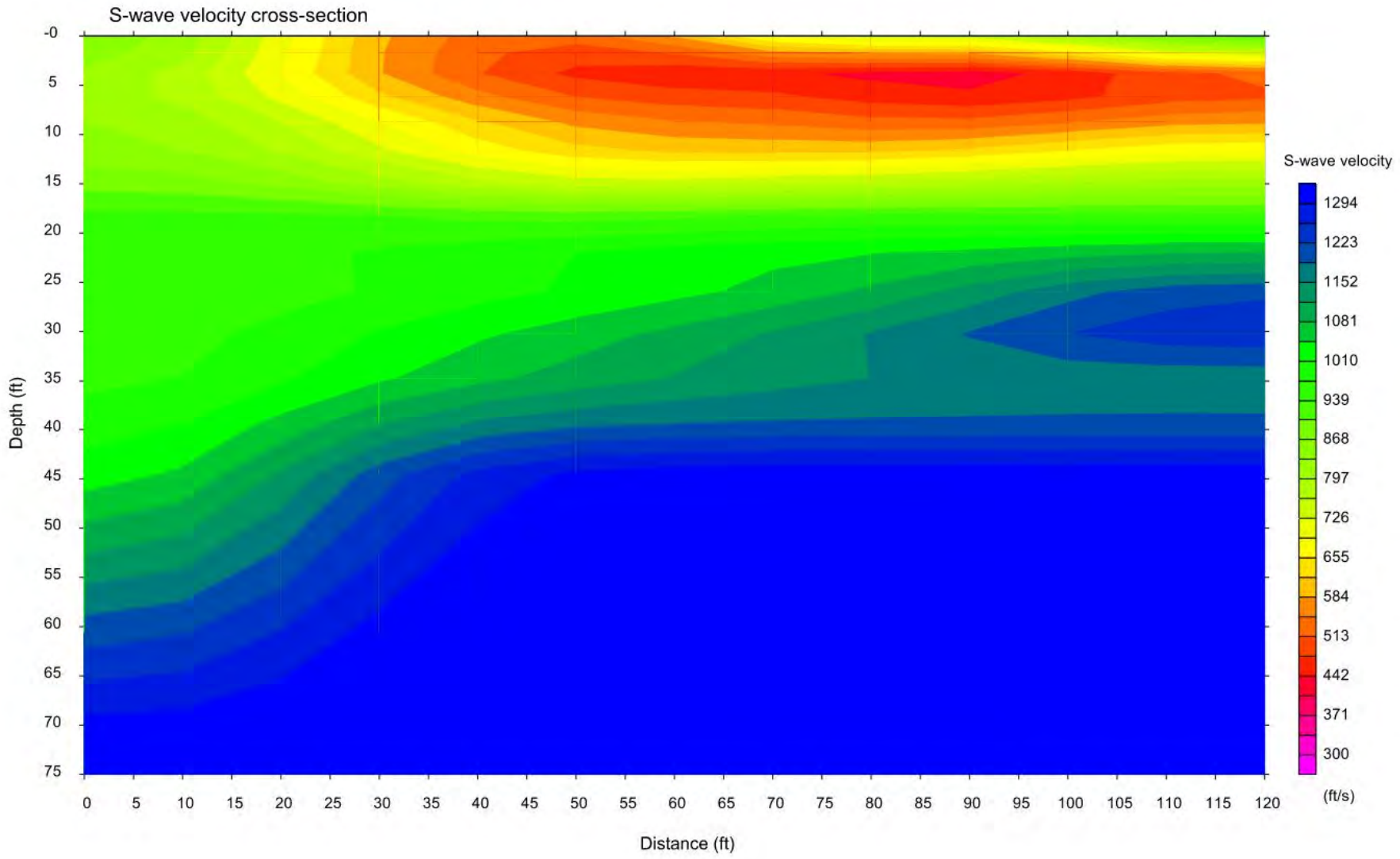
Colliers Engineering & Design

PLATE G-3
Shear Wave Velocity Profile
SR-03



PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G



Colliers Engineering & Design

PLATE G-4
Shear Wave Velocity Profile
SR-04

PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

Project No.: 25011129G

Appendix H

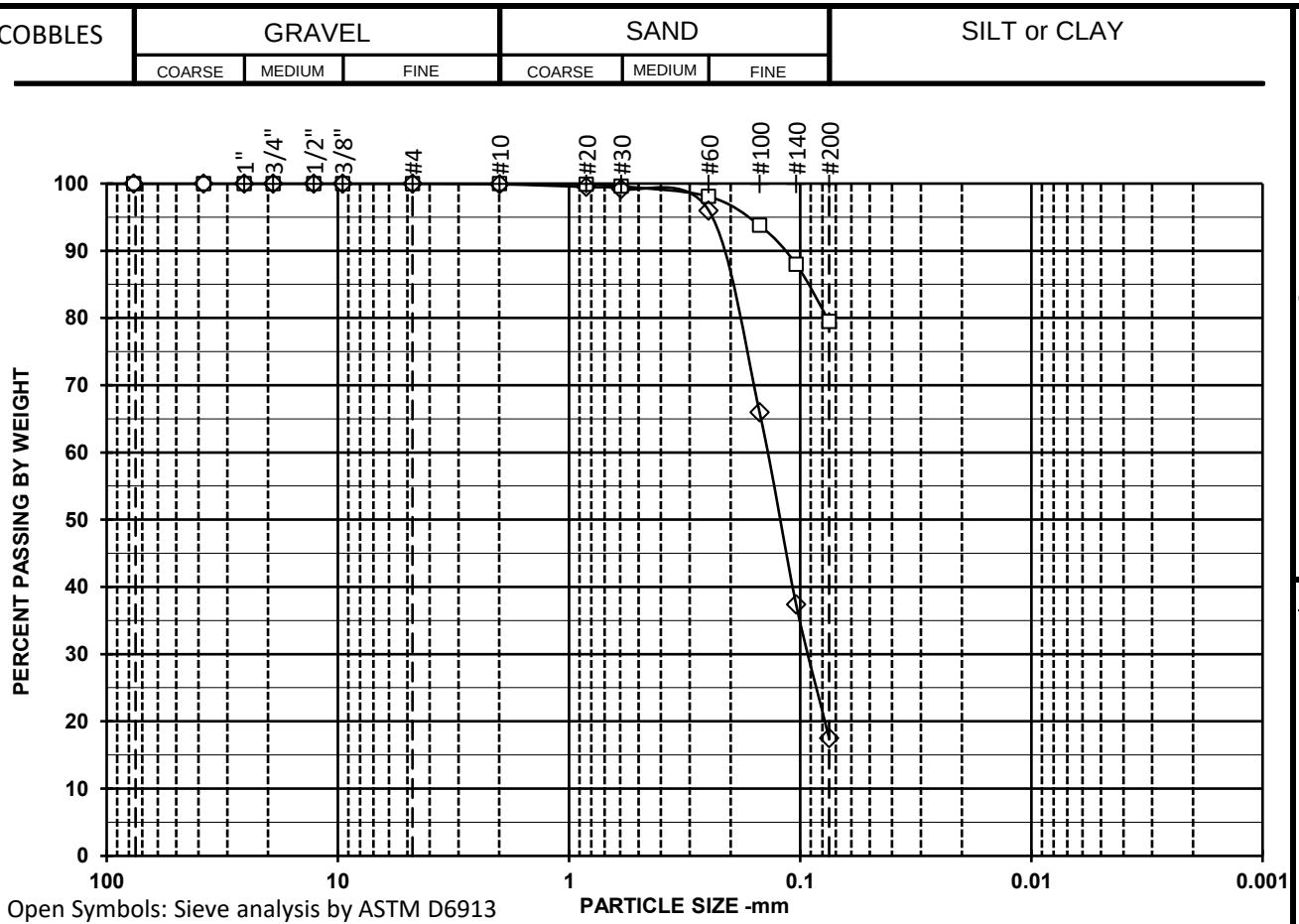
Soil Laboratory Testing

Colliers Engineering & Design #25011129G
Saranac Lake

LABORATORY TESTING DATA SUMMARY

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS			REMARKS
			WATER CONTENT (%)	USCS SYMB. (1)	SIEVE MINUS NO. 200 (%)	
TB-01	S-4	6-8		ML	79.5	
TB-02	S-3	4-6		SM	17.5	
TB-03	S-5	8-10		SM	15.7	
TB-03	S-7	15-16.5		SM	14	

Note: (1) USCS symbol based on visual observation and Sieve reported.



Open Symbols: Sieve analysis by ASTM D6913

Filled symbols: Hydrometer analysis by ASTM D7928 corrected for complete sample

Symbol	□	◇	○
Boring	TB-01	TB-02	
Sample	S-4	S-3	
Depth	6-8	4-6	
% +3"	0	0	
% Gravel	0	0.1	
% SAND	20.5	82.4	
%C SAND	0.4	0.7	
%M SAND	1.5	3.2	
%F SAND	18.6	78.5	
% FINES	79.5	17.5	
D_{100} (mm)	2	4.75	
D_{60} (mm)		0.139	
D_{30} (mm)		0.092	
D_{10} (mm)			
Cc			
Cu			

Size/ID #	Percent Finer Data		
6"	100.0	100.0	
4"	100.0	100.0	
3"	100.0	100.0	
1 1/2"	100.0	100.0	
1"	100.0	100.0	
3/4"	100.0	100.0	
1/2"	100.0	100.0	
3/8"	100.0	100.0	
#4	100.0	100.0	
#10	100.0	99.9	
#20	99.9	99.5	
#30	99.6	99.2	
#60	98.1	96.0	
#100	93.8	66.0	
#140	88.0	37.4	
#200	79.5	17.5	
5μ m			
2μ m			
1μ m			

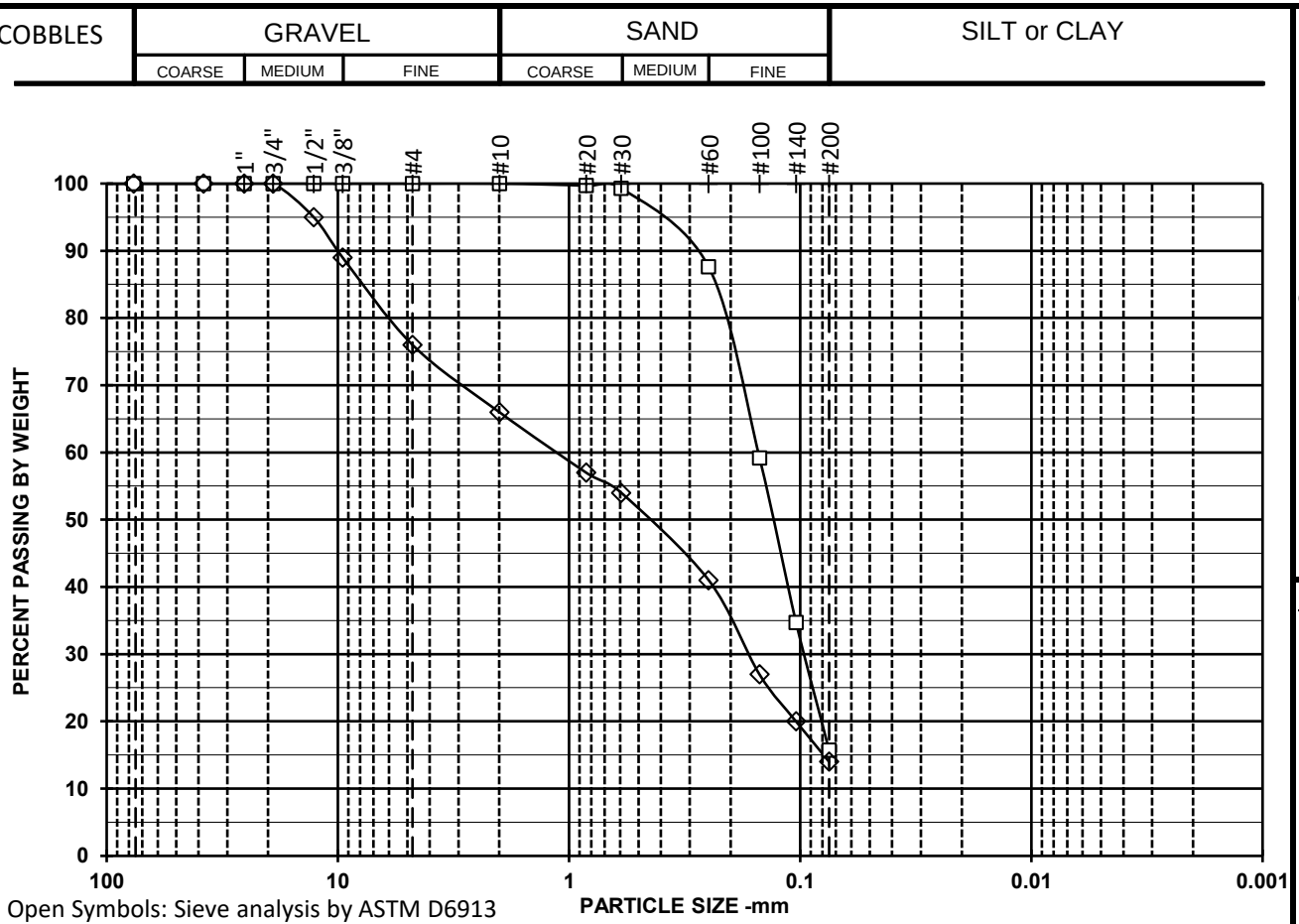
SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	MODIFIED BURMISTER DESCRIPTION AND REMARKS	DATE
□					ML		Brown SILT, some fine Sand.	10/02/25
◇					SM		Brown fine SAND, little Silt.	10/02/25
○								

Colliers Engineering & Design #25011129G

TERRASENSE Geotechnical Laboratory #25011129G

Saranac Lake

PARTICLE SIZE DISTRIBUTION



Open Symbols: Sieve analysis by ASTM D6913

Filled symbols: Hydrometer analysis by ASTM D7928 corrected for complete sample

Symbol	□	◇	○
Boring	TB-03	TB-03	
Sample	S-5	S-7	
Depth	8-10	15-16.5	
% +3"	0	0	
% Gravel	0	34	
% SAND	84.3	52	
%C SAND	0.7	12	
%M SAND	11.7	13	
%F SAND	71.9	27	
% FINES	15.7	14	
D_{100} (mm)	4.75	19.1	
D_{60} (mm)	0.152	1.12	
D_{30} (mm)	0.096	0.17	
D_{10} (mm)			
Cc			
Cu			

Size/ID #	Percent Finer Data		
6"	100.0	100	
4"	100.0	100	
3"	100.0	100	
1 1/2"	100.0	100	
1"	100.0	100	
3/4"	100.0	100	
1/2"	100.0	95	
3/8"	100.0	89	
#4	100.0	76	
#10	100.0	66	
#20	99.7	57	
#30	99.3	54	
#60	87.6	41	
#100	59.2	27	
#140	34.7	20	
#200	15.7	14	
5μ m			
2μ m			
1μ m			

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	MODIFIED BURMISTER DESCRIPTION AND REMARKS	DATE
□					SM		Brown medium to fine SAND, little Silt.	10/02/25
◇					SM		Brown coarse medium to fine SAND, some medium to fine Gravel, little Silt. Insufficient sample size	10/02/25
○								

Colliers Engineering & Design #25011129G

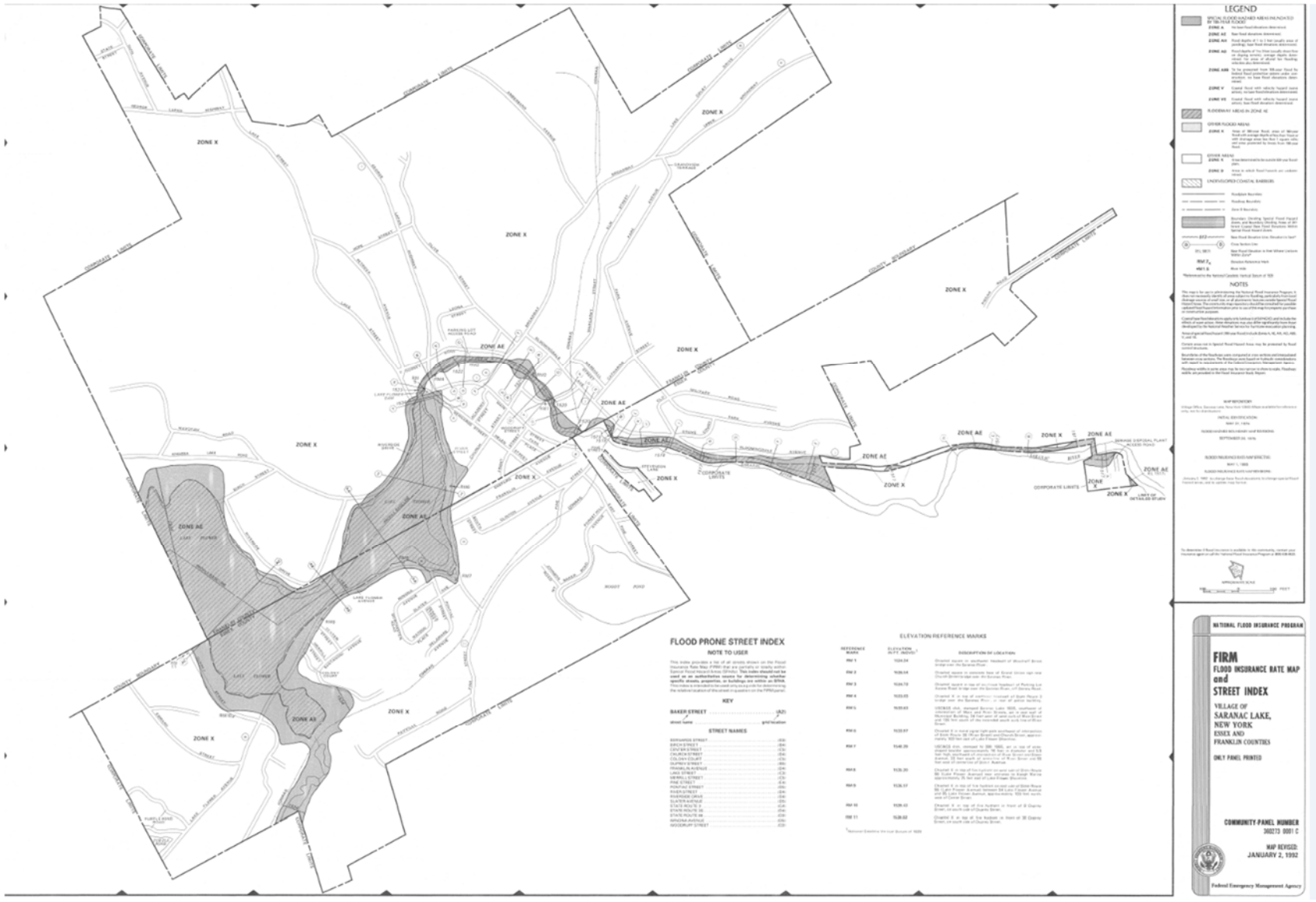
TERRASENSE Geotechnical Laboratory #25011129G

Saranac Lake

PARTICLE SIZE DISTRIBUTION

Appendix I

Seismic Design Report and FEMA Flood Hazard Map



Colliers Engineering & Design

Plate I-1

FEMA Flood Hazard Map

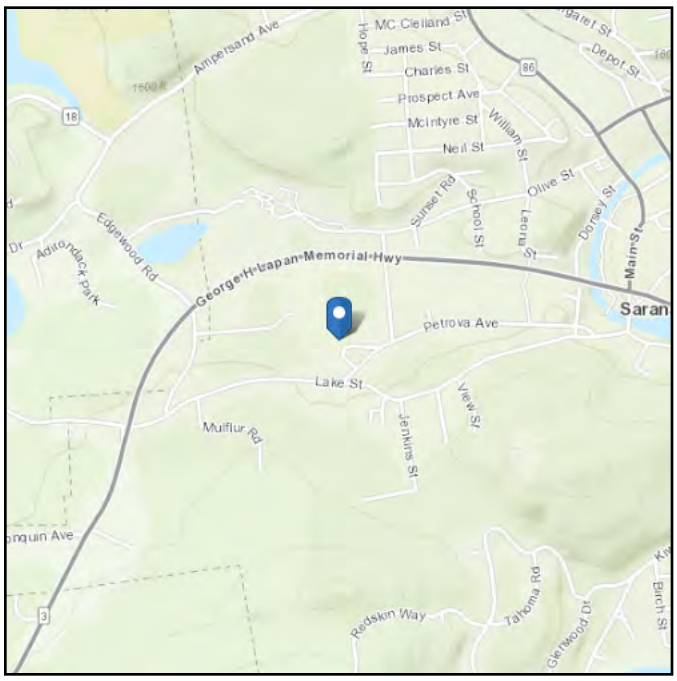
PROJECT:
33 PETROVA AVENUE
VILLAGE OF SARANAC LAKE
FRANKLIN COUNTY, NEW YORK

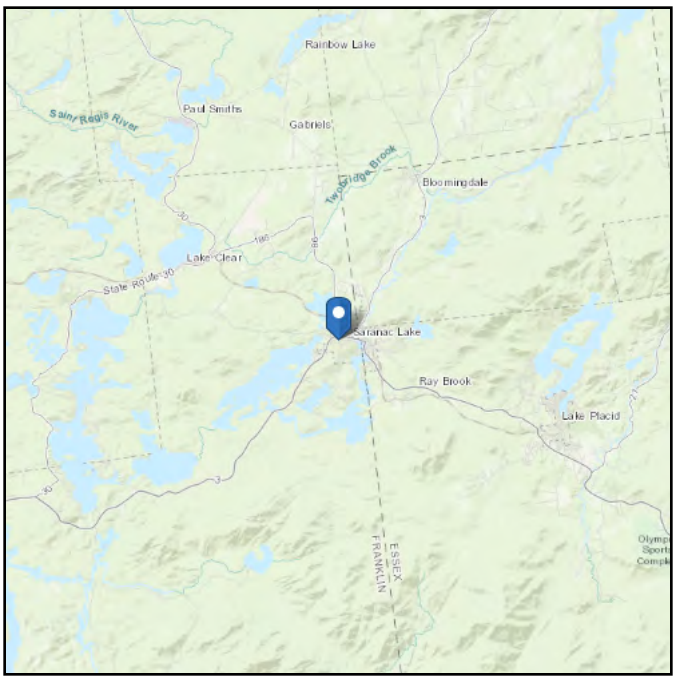
Project No.: 25011129G

ASCE Hazards Report

Address:
33 Petrova Ave
Saranac Lake, New York
12983

Standard:	ASCE/SEI 7-16	**Latitude:**	44.323785
Risk Category:	II	**Longitude:**	-74.142143
Soil Class:	D - Stiff Soil	**Elevation:**	1564.4696753812696 ft (NAVD 88)





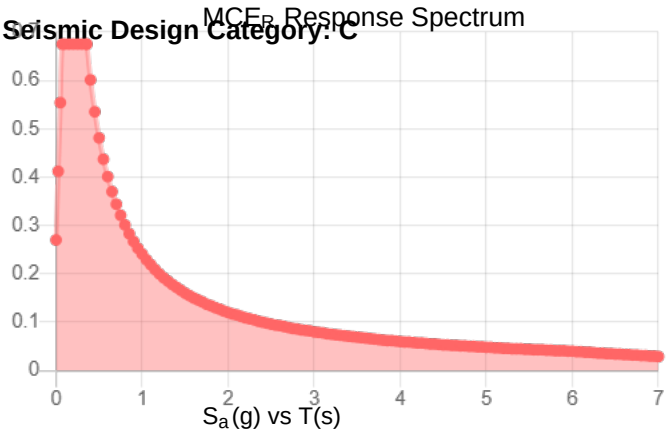
Seismic

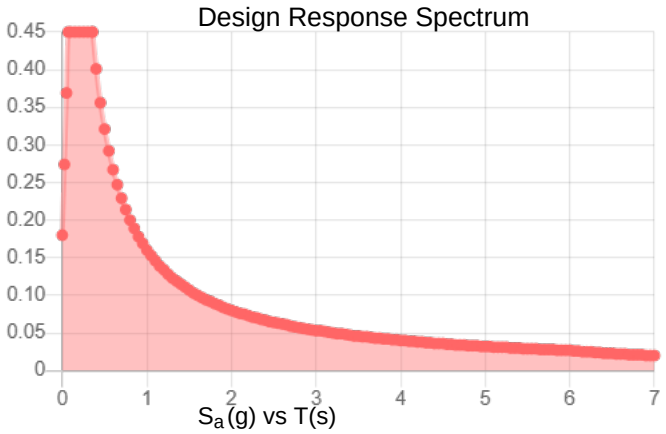
Site Soil Class: D - Stiff Soil

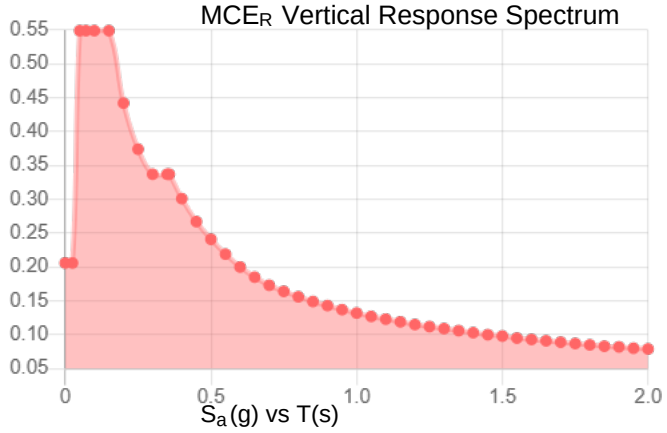
Results:

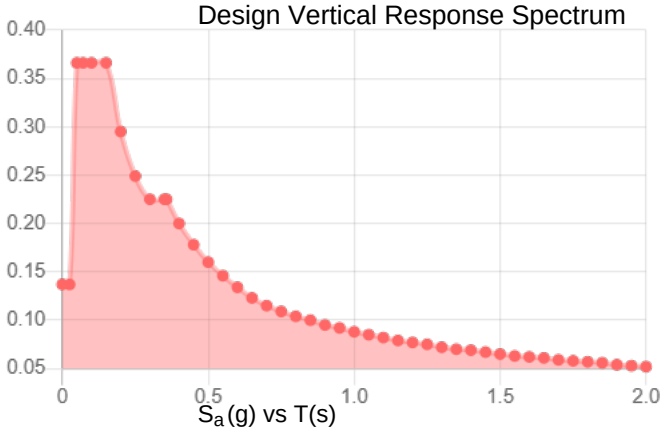
S_S :	0.475	S_{D1} :	0.16
S_1 :	0.1	T_L :	6
F_a :	1.42	PGA :	0.31
F_v :	2.399	PGA_M :	0.4
S_{MS} :	0.675	F_{PGA} :	1.29
S_{M1} :	0.241	I_e :	1
S_{DS} :	0.45	C_v :	1.017

Seismic Design Category: C









Data Accessed: **Fri Sep 26 2025**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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