



Foundation Design, P.C.

SOIL • BEDROCK • GROUNDWATER

January 31, 2024

Chrisantha, Inc.
PO Box 214
Gorham, New York 14461

Attention: Chris Iversen

Reference: North Road Townhouses
156 Stewart Place, Canandaigua, New York
Geotechnical Evaluation, 5552.0

Dear Mr. Iversen:

This report summarizes our Geotechnical Evaluation for the referenced project. We understand that the project consists of developing a 27.5-acre parcel into a residential townhouse subdivision. A total of 164 residential units will be constructed, contained in two, four and six unit buildings. The buildings will consist of two to three story, wood framed structures, possibly with basements. New roadways, parking areas, underground utility lines, and stormwater infrastructure will be developed. We base this evaluation on a review of U.S.G.S. topographic and geologic mapping, conceptual site plans, test pit/macro core exploration, laboratory test results, and consultation with the design team. Chrisantha, Inc. retained Foundation Design, P.C. to provide the services outlined in our November 22, 2023, *Geotechnical Services Proposal, P5538.0*. We intend the conclusions and recommendations outlined in this report exclusively for use in the design and construction of this project.

The new project will be located south of North Road in Canandaigua, New York. Woodlands are to the southeast. Residential homes lie to the north, west and east of the parcel. A stream traverses the site south to north along steep sided drainage swales run from north to south. A large field with overgrown grass and brush is located in the northeast corner of the site. Fills have been dumped sporadically across the site, noted as mounds in the southwest area. On the north side of the property, numerous mounds of fill (indicative of truck-hauled loads) are noticeable. Site grades are currently relatively flat, slightly rising in the northeast corner of the parcel (excluding the fill mounds). A *General Location Plan*, depicting the site on 2023 U.S.G.S. topographic mapping, is attached.

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Our field exploration program consisted of twenty-two macro cores, twenty-three test pits and three infiltration tests. TP23-39 through TP23-45 and IT23-1 were deleted in the field due to the inability to access these locations due to the concrete-bottom swales. Test pits were completed on January 12 and 15, 2024. Rusty Miller Excavating provided a Case CX170E excavator for the test pit work. The test pits ranged from 7.0 to 11.0 feet deep. The macro cores were completed on January 15 and January 16, 2024. Nothnagle Drilling provided a Geoprobe 6712DT for the work. The macro cores ranged from 5.0 to 16.0 feet deep, terminating in dense glacial till. Our staff observed the soil boring/test pit operations on a full-time basis; logging the subsurface profiles, collecting representative soil samples, and adjusting the program based on the field conditions encountered. The test pit/macro core logs and *Test Pit Location Plan* are attached.

We reviewed the soil samples and selected representative samples for laboratory analysis. Our office performed two sieve analyses, five moisture content determinations, two organic content determinations, and three Atterberg liquid limit and plastic limit determinations. We discuss the test results below. The laboratory report is enclosed.

The following interpretations of the soil, bedrock, and groundwater conditions are based on the widely spaced macro cores/test pits and our site observations. See the attached logs for soil descriptions at the test locations. Variations from the inferred profile are possible. Contact us immediately if variations are found during construction so we may evaluate the impact on our recommendations.

Three NYS DEC Stormwater Infiltration tests were performed as part of our field exploration. The testing consisted of installing a 4-inch diameter PVC pipe at a four-foot depth at locations IT23-2, IT23-3, and IT23-4. The excavator operator dug to a 3.5-foot depth, then we hand excavated the remaining six inches, removing as much of the disturbed soil as possible prior to running the test. The exterior of the pipe bottom was sealed using bentonite pellets, then backfilled with excavation spoils. The hole was pre-soaked with water 24-hours prior to running the test. We returned the following day to observe that the water levels had not decreased overnight, indicating that the holes did not infiltrate.

We observed a general subsurface profile consisting of topsoil/fill over lake laid silt and clay, then glacial till across the site. The topsoil ranged from 1 to 18 inches thick, averaging 11 inches thick. We noted variable

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amounts of fill and mounds of asphalt/brick debris mainly in the southwest quadrant. Below grade fill layers were encountered at TP23-48, TP23-51, TP23-53, and TP23-54 and ranged from 1 foot to 4 feet thick, averaging 2.4 feet thick. A buried topsoil layer was present at TP23-53 and TP23-54, at a depth of 2 to 2.5 feet deep. The area around TP23-10 contained cat tails and significantly more organic soils than the rest of the site. Moisture and organic content tests were taken from TP23-53 and TP23-10. This showed an organic content of 18.5 and 7.4 percent, which is a very high amount.

The underlying lake laid silt and clay layer was noted as soft to stiff and moist to saturated. Moisture contents of this layer were between 21.4 and 32.8 percent, well above optimum. This layer was encountered at depths ranging from 2.7 to 15.5 feet below grade. To classify the soils, we performed an Atterberg liquid limit and plastic limit determination tests on three widely spaced locations. TP23-30 and TP23-58 showed fairly similar results of a Plastic Limit (PL) of 21 percent, a Liquid Limit (LL) of 44 and 45, and a Plasticity Index (PI) of 23 and 24 percent, respectfully. Both locations classified as lean clay (CL) in the Unified Soils Classification System. Alternatively, TP23-49 had a PL of 24 percent, a LL of 59 and a PI of 35, classifying this soil as a fatty clay (CH) in the Unified Soils Classification System. Based on PI's above 15, the soils classify as potentially expansive. The potential is even higher based on the PI of 35 at TP23-49. Beneath the clay is a glacial till layer consisting of silt, and clay with sand and gravel. The glacial till rated as firm to very dense and moist to saturated. Testing results showed moisture content ranging from 7.1 to 10.2 percent, near optimum. The soil classified as a CL/ML (sandy silt/clay with gravel) and GM (silty gravel with sand) in the Unified Soils Classification System.

Bedrock was not encountered during exploration. Geologic mapping indicates the bedrock is of the Skaneateles formation. This formation consists of shale and limestone. Bedrock should not impact this project.

Groundwater was encountered during exploration at locations TP23-7, TP23-10, TP23-11, and TP23-12. A fair amount of 'seepage' was seen at depths ranging from three to eight feet. This was localized in the southwest 'fill' area. Standing surface water was also consistent in this area. We expect water will tend to 'perch' above the clay/dense glacial till. Recognize that the water table will vary seasonally and will be higher during/after the winter thaws and heavy rains.

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We conclude that the site can be designed and constructed utilizing typical spread footings. We foresee two main issues of the site. First is the fill piles/buried topsoil will have to be removed from the building areas and potentially, pavement areas. The test pits show the material is not suitable to remain in place, consisting of debris, organics, and fill soils. The second issue is the clay soils being potentially expansive. Soils will require significant moisture conditioning for reuse and will have to be moisture maintained to reduce the chance of expansion. Detailed review of the grading plans may allow for refining of the special constraints and potentially pavement areas. We discuss these issues further below.

Based on this background, we offer the following specific recommendations:

1. Clear and grub the building areas, roadways, and parking lot areas and remove the surface topsoil prior to starting the grading operations. If topsoil removal is conducted during the wetter time of year (October-April), plan on an additional six inches of topsoil removal due to the wet topsoil mixing with the subgrade. We point out that the topsoil depths were highly variable and while the measured average of the exploration was 11 inches, expect the average to change up to three inches plus or minus during mass earthwork. When removing the observed fill piles, plan to not be able to reuse the material for structural fill, only for reuse in green areas. If fill piles are observed to consist of clean material, have the Geotechnical Engineer onsite to assess the potential for reuse.

Remove underlying unsuitable fill material (observed near TP23-48, TP23-51, TP23-53, and TP23-54) from the building footprints. Extend the undercuts to at least five feet beyond the edge of the new footings. Expect unsuitable fills to be about 3 feet deep in the general area of the noted test pits, with potential fills in other locations. Adjust actual removal limits during construction to reflect in-place conditions and include provisions in the contract for these. Excavate some supplemental test pits in these areas early in the construction sequence to allow for review of the field conditions.

Proof-roll the building footprint surfaces with a loaded ten-wheeler or other heavy construction equipment. The Geotechnical Engineer of Record should observe proof-rolling of subgrades prior to mass backfill placement to verify that the unsuitable material has been adequately removed. The contractor should provide a loaded ten-wheel truck for proof rolling. Rework or replace areas that rut, weave, quake or are otherwise deemed to be unsuitable or unstable.

2. The native soil, free of organic matter, frost and/or debris can be used as the structural fill material. The upper clay soils are potentially to moderately expansive and will be difficult to work with as structural fill. They likely need to be dried out from their current state. Maintaining consistent moisture content will be the key to their stability. Consider using them for grading in green spaces. The silty and gravelly glacial till soil (typically below a depth of seven feet) can also become wet of optimum moisture for compaction and require drying in order to achieve proper compaction. Both soil types are frost susceptible; this will result in the need to protect exposed areas from frost penetration during cold weather and from changes in moisture. We recommend a construction schedule that would allow for

the mass earthwork to be performed during the drier summer months, typically May to September, and that the contractor take whatever steps are needed to maintain a consistent level of moisture in the clay soils. Alternatively, and if needed to balance the site, use an imported granular material similar in gradation to N.Y.S.D.O.T. Item 203.07 (select granular fill) or N.Y.S.D.O.T. Item 304.12 (crusher-run stone) for the structural fill. Submit imported material sources to the Geotechnical Engineer for review on a case-by-case basis. Maintain good surface drainage.

Pay attention to the interface between granular fill and the native soil as surface runoff will tend to perch herein. Provide for drainage as appropriate.

We define structural fill as the new fill placed under and around footings, floor slabs, sidewalks, and pavements. Place structural fill in lifts of 12 inches or less in loose thickness and within two percent of the optimum moisture content. Compact structural fill to at least 95 percent of maximum dry density as determined by the Modified Proctor test (ASTM D-1557). Compact other fill as otherwise determined by the engineer.

3. Support the building on spread footings bearing on the undisturbed natural soil. Size the footings based on a net new allowable bearing pressure of 2,000 psf. Design exterior footings at a frost free depth of 48 inches. Design footings based on a minimum size of 24 inches (square or wide). Hand clean loose soil from the bearing surface. Use a shovel equipped with a ditching bucket for foundation excavations. The intent is to limit disturbance of the bearing surface during excavation. We estimate settlement based on these sizes, depths, and pressures at less than one inch. This is within the 'normal' tolerance for this type of structure.

To address the potential for expansion/shrinkage of the clay we recommend the following additional measures. (These are not 'standard construction practice' for construction so be sure they are clearly called for in the construction documents):

- a. Require that the footings be excavated and then concrete placed within the same day. If basements are utilized, excavate the entire building's foundations down to one foot above footing grade the day prior to pouring the footings. On the day of the concrete pour, form and excavate the remaining foot to protect the soils as much as possible from moisture fluctuations. If the bearing surface becomes overly dry or wet require that the affected soil be removed, and the footing thickened to account for the lower bearing elevation.
- b. Our preference would be for unformed footings, to place the concrete from one bank of the excavation to the other. If forms are used, strip them, and backfill up to the top of the footing the following day. The intent is to protect the soil next to the bearing grade from shrink/swell.
- c. Backfill up to the slab subbase with the on-site soil to provide a consistent layer of slab support and a long-term impermeable layer above the footing bearing grade.

- d. Install a foundation drain both inside and outside the perimeter footings. This will help prevent the water from saturating the expansive soils and causing shrink/swell action under the slab during construction/shortly thereafter.
 - e. On a similar theme, our preference would be to backfill sub-slab utilities with the native soil. Where clean stone (bedding) or imported granular materials are used, incorporate a way to drain these backfill media.
4. Place twelve inches of granular material under the slabs-on-grade. Use N.Y.S.D.O.T. Item 304.12 (crusher-run stone) for this application. The Geotechnical Engineer or their representative should observe proof-rolling of the floor subgrade prior to placing the base course. Remove and/or recompact areas that rut, weave, quake or are otherwise deemed unsuitable.

Design the slab using a Modulus of Subgrade Reaction (K_{vi}) of 150 psi/in over the subbase and then the prepared/approved subgrade. The architect and/or structural engineer should review the proposed interior finishes and humidity control requirements to determine whether a vapor barrier is appropriate under the slab and if so, where it should be installed. See the American Concrete Institute Document 302.1R, *Concrete Floor and Slab Construction*, for more information.

5. For retaining/basement walls the pressure distribution may be taken as triangular and equivalent to a fluid with a specified weight. Design walls based on at-rest earth pressures tabulated below for the on-site sandy silt soil and imported crusher-run stone materials. Provide positive drainage from behind the retaining walls. Use a sliding coefficient of 0.35 between the concrete and the silty clay soil.

Table No. 1 – Lateral Earth Pressures							
Backfill Material	Internal Friction	K_a	K_p	K_o	Active Pressure	Passive Pressure	At Rest Pressure
Silty Clay	20	0.49	2.04	0.66	54	224	72
NYSDOT Item 304.12	34	0.28	3.54	0.44	41	513	64

6. The NYS Building Code identifies various seismic design criteria for this project. We identify the site as having a Site Classification of C (Very Dense Soil). Based on the ASCE 7-16 guidelines, we recommend using the following parameters.

Table No. 2 – Seismic Design Parameters (ASCE 7-16)					
Spectral Response Acceleration		Soil Factors		Design Spectral Response Acceleration	
S_s	S_1	S_{MS}	S_{M1}	S_{DS}	S_{D1}
0.151g	0.047g	0.196g	0.071g	0.131g	0.047g

7. Perform trenching and excavating in accordance with the Occupational Safety and Health Administration (OSHA) and New York State Building Code Standards. The contractor is responsible for determining measures required to meet these standards. Cut unsupported temporary excavations to a stable slope, but in no case steeper than 1 horizontal on 1 vertical. Remove groundwater and stormwater that accumulates using open sumps and pumps to keep the exposed subgrade from deteriorating.

8. The pavement subgrade will primarily be the in-place silty/clayey native soil. We recommend that the new pavement areas be cut/filled to grade, the top eight-inches re-compacted to the structural standards and the subgrade proof-rolled under the observation of the Geotechnical Engineer. Re-compact or replace areas that rut, weave, quake, or are otherwise deemed unstable under proof-rolling traffic.

Slope both the pavement surface and subgrade at slopes of at least 2.0 percent to facilitate water flow toward the stormwater system and to prolong the pavement life. Install weeps to allow water out of the subbase and into the drainage system (or to daylight).

Install the Standard and Heavy Duty pavement sections tabulated below. Use the Standard Duty Section in car parking spaces and the Heavy Duty Section in the access driveway and drive lanes that receive delivery truck traffic. These have been modestly thickened to provide more cover over the clayey subgrade soil.

Table No. 3 - Standard Asphalt Section		
1.5"	Asphalt Topcoat	NYSDOT Item 403.178902
2.5"	Asphalt Binder	NYSDOT Item 403.138902
12.0"	Crusher Run Gravel	NYSDOT Item 304.12
	Subgrade	Approved Proof Roll

Table No. 4 – Heavy Duty Asphalt Section		
1.5"	Asphalt Topcoat	NYSDOT Item 403.178902
3.0"	Asphalt Binder	NYSDOT Item 403.138902
15.0"	Crusher Run Gravel	NYSDOT Item 304.12
	Subgrade	Approved Proof Roll

It is our experience that flexible pavements do not perform well in locations where repetitive traffic occurs (i.e., loading docks, dumpster locations, etc.). We recommend installing rigid concrete pavement in these areas.

9. The NYS Building Code requires special inspection services. We recommend the following inspections and ask that you include them on the List of Special Inspections developed as part of the Building Permitting Process:
- We recommend that Foundation Design, P.C. make periodic site visits to confirm that the actual soil conditions are as expected and provide recommendations to address areas where conditions differ.

Specifically, we should perform the following activities:

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- A. Once access is provided to the southwest section of the site, we would like to perform the planned test pits to confirm soil conditions in the area.
 - B. IBC Table 1705.6 – 2: Spot-check the contractor’s means and methods during the proof rolling operations. Confirm fill removal limits. Review and approve of structural fill materials. Review the soils-related test results and consult on compaction-related issues as they arise.
 - C. Review cut/fill and grading operations to help work through the impacts of the clay soil.
 - D. IBC Table 1705.6 – 1: Observe/verify that the materials below the shallow spread footings are adequate to achieve the design bearing pressure. Review moisture management operations relative to the clay soil.
 - E. IBC Table 1705.6 – 5: Observe/approve proof-rolling of building/pavement subgrades prior to new fill placement.
- We recommend that an independent test agency perform observation/confirmation of mass fill placement and backfilling operations. Specific testing requirements follow:
 - A. IBC Table 1705.6 – 3 and 4: Conduct at least one field density test per 2,500 square feet of mass fill placed, per lift.
 - B. IBC Table 1705.6 – 3 and 4: Conduct at least one density test per 50 lineal feet of foundation backfill on alternating lifts.
 - C. IBC Table 1705.6 – 3 and 4: Witness/confirm that structural fill was placed in lifts not to exceed 12-inches in loose thickness.
 - D. IBC Table 1705.6 – 3 and 4: Witness/confirm that structural fill was compacted to at least 95 percent of the maximum dry density as determined by the Modified Proctor Test (ASTM D-1557).

Attached is a Geoprofessional Business Association paper entitled *Important Information about This Geotechnical Engineering Report*. This paper describes many of the risks inherent in Geotechnical Engineering and how, in light of those risks, we intend this evaluation to be used. We will continue to work cooperatively with the project principals and interested parties to achieve win/win solutions that benefit all.

This concludes our design phase services. Forward a copy of the near final plans, anticipated loads, and specifications for our review and comment so that we can confirm the applicability of these recommendations.

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It has been a pleasure working with you on this project and we look forward to working with you and the rest of the design/construction team as the project proceeds.

Sincerely,

FOUNDATION DESIGN, P.C.



Ryan J. Radford, P.E.
Vice President
Enc.



Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

conspicuously that you’ve included the material for information purposes only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

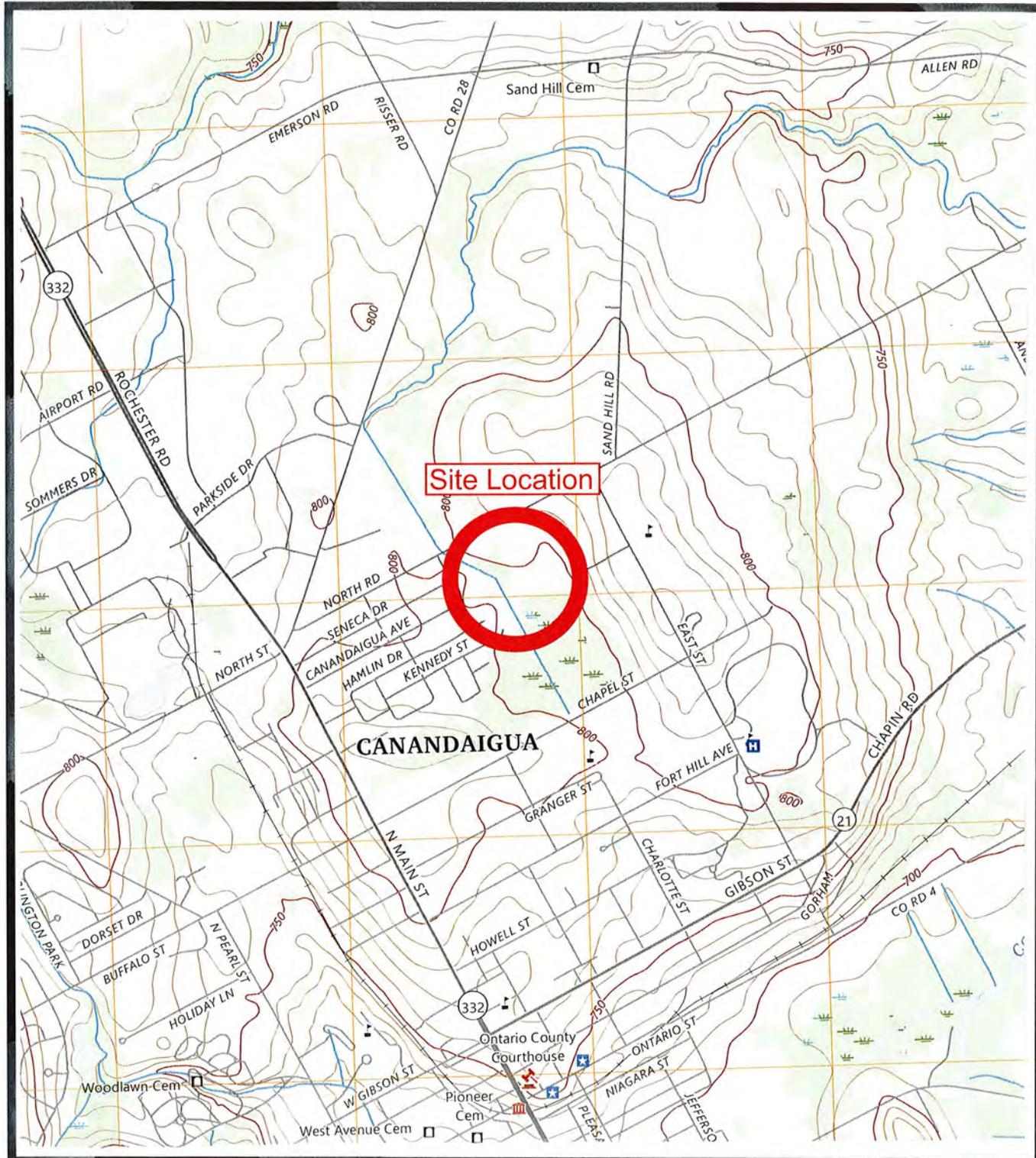
While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* **Confront the risk of moisture infiltration** by including building-envelope or mold specialists on the design team. **Geotechnical engineers are not building-envelope or mold specialists.**



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**Foundation
Design, P.C.**

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Rochester, New York 14607
Phone (585) 458-0824
FAX (585) 458-3323**

North Road Townhouses

156 Stewart Place, Canandaigua, New York

General Location Plan

Adapted from: USGS Topographic Mapping
2023 Canandaigua Quadrangle

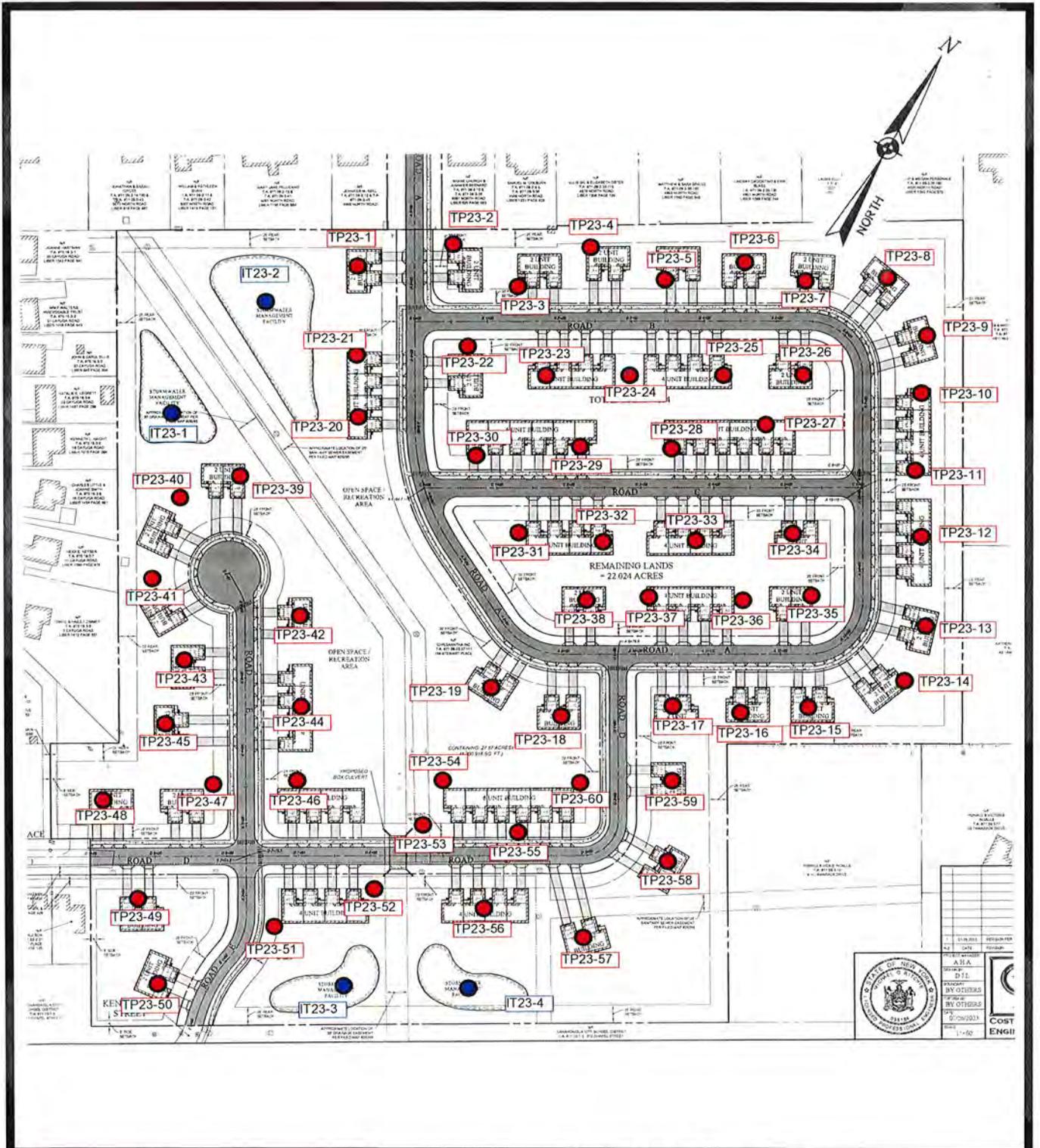
CHECKED BY: **RJR**

DRAWN BY: **LMB**

Scale 1" = 2000'

DATE: **1/19/24**

JOB NO.: **5552.0**



Foundation Design, P.C.

46A Sager Drive
 Rochester, New York 14607
 Phone (585) 458-0824
 FAX (585) 458-3323

North Road Townhouses
 156 Stewart Place, Canandaigua, New York
Test Pit Location Plan

Adapted from: Costich Engineering, Land Surveying & Landscape Architecture D.P.C
Site Plan, CA 100

CHECKED BY: **RJR**
 DRAWN BY: **LMB**

Scale: NTS

DATE: **1/19/24**
 JOB NO.: **5552.0**



SOIL DESCRIPTIONS

COHESIVE SOIL

Very fine grained soil. Plastic soil that can be rolled into a thin thread if moist. Clays and silty clays show cohesion.

DESCRIPTION

Very Soft	Extrude between fingers when squeezed
Soft	Molded by light finger pressure
Medium	Molded by strong finger pressure
Stiff	Indented by thumb with effort
Hard	Indented by thumb nail with difficulty

NON-COHESIVE SOIL

Soil composed of silt, sand and gravel, showing no cohesion or very slight cohesion.

DESCRIPTION

Loose
Firm
Compact
Dense
Very Dense

SOIL COMPOSITION

DESCRIPTION

ESTIMATED PERCENTAGE

and	50
some	30-49
little	11-29
trace	0-10

MOISTURE CONDITIONS

dry, damp, moist, wet, saturated
Groundwater measured in the boring or test pit may not have reached equilibrium

SOIL STRATA

TERM

DESCRIPTION

layer	Soil deposit more than 6" thick
seam	Soil deposit less than 6" thick
parting	Soil deposit less than 1/8" thick
varved	Horizontal uniform layers or seams of soil

GRAIN SIZE

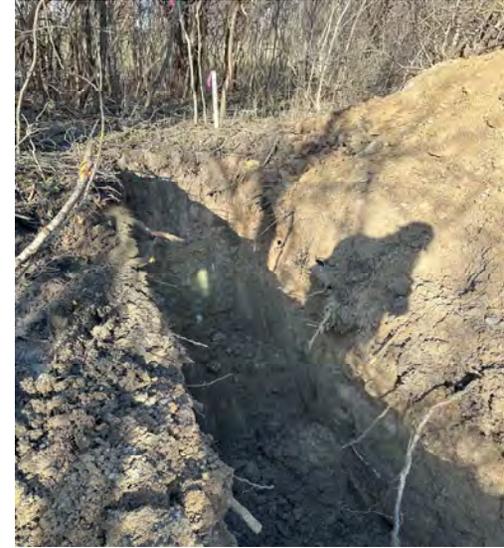
MATERIAL	SIEVE SIZE
Boulder	Larger than 12"
Cobble	3" to 12"
Gravel - coarse	1" to 3"
- medium	3/8" to 1"
- fine	No. 4 to 3/8"
Sand - coarse	No. 10 to No. 4
- medium	No. 40 to No. 10
- fine	No. 200 to No. 40
Silt and Clay	Less than No. 200



Test Pit Log

Project No.	<u>5552.0</u>	Page	<u>1</u>	of	<u>1</u>	Test Pit No.	<u>TP23-1</u>
Project Name	<u>North Road Townhouses, 156 Stewart Place, Canandaigua, NY</u>						
Client	<u>Chrisantha, Inc., PO Box 214, Gorham, NY</u>						
Elevation	<u>800.8</u>	Weather	<u>Sunny 40s</u>			Technician	<u>L. Becker</u>
Date Started	<u>1/12/24</u>	Completed	<u>1/12/24</u>			Operator	<u>R. Miller</u>
Backhoe Subcontractor	<u>Rusty Miller Excavating</u>			Equipment	<u>Case CX170E</u>		

Site Pictures



Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
			TOPSOIL
2			1'6" Soft brown saturated CLAY
4			2'9" Dense gray-brown wet SILT, some gravel, some sand, trace clay, numerous cobbles
6			(Boulders at 4'5") (Very dense at 5'2")
8			7'0" Test Pit Terminated at 7'0" (On Boulder)
10			
12			

Notes:

1. Sides vertical upon completion.
2. Standing water around test pit at grade.
3. Staked location and elevation provided by Costich Engineering.



Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-2
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation _____ **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** _____
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Deleted in the field
4			
6			
8			
10			
12			



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-3
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 804.5 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/12/2024 **Completed** 1/12/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL
			1'0"
4			Firm red-brown moist-wet silt, trace gravel
			2'0"
6			Dense tan-brown wet to saturated SILT, some sand, some gravel, trace to little clay, rootlets noted
			Numerous cobbles noted at 2' to 4'
8			Few boulders at 4'4"
			Very dense
10			Very dense grey wet SILT, some gravel, little to some sand, little clay
			5'0"
12			Medium red-brown moist CLAY, little sand, little gravel
			6'0"
12			Very dense grey wet SILT, some gravel, some sand, little clay
			7'0"
12			Test Pit Terminated at 9'4"
			9'4"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-4 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 807.9 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2	S-1	1'-2'6"	TOPSOIL Firm brown moist to wet SILT, some clay, trace gravel 1'0" 2'6"
4			Very dense gray-brown moist SILT, little to some gravel, little sand, trace to little clay
6	S-2	3'-5'	Terminated at 5'2" (On Possible Cobble/Boulder) 5'2"
8			
10			
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-5 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 801.4 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
			TOPSOIL
2	S-1	1'-2'	1'0" Compact brown wet SILT, some clay, trace gravel
4			2'4" Very dense gray-brown moist to wet SILT, little to some gravel, little sand, trace to little clay
6	S-2	3'-5'	
8			6'7" Terminated at 6'7" (On Possible Cobble/Boulder)
10			
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-6 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 801.3 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL 0'6" Firm brown wet SILT, little to some clay, trace gravel 1'0" Dense brown wet SILT, little to some gravel, little clay, trace sand 2'0"
4			Very dense gray-brown moist to wet SILT, some gravel, little to some sand, trace to little clay
6			
8			
10	S-1	10'	
12			Terminated at 11'7" (On Possible Cobble/Boulder) 11'7"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-7 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 801.7 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL 1'0" Medium brown-red moist to wet CLAY, little to some silt, little gravel, rootlets noted
4	S-1	3'	PP: 3.0 tons/f ² 3'0" Dense brown wet SILT, little to some gravel, little sand, trace to little clay
6			5'0" Very dense brown-gray saturated SILT, some gravel, little to some sand, trace to little clay
8			
10			8'9" Terminated at 8'9" (On Possible Cobble/Boulder)
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Water encountered at 6'6".
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

4.

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-8 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisanntha, Inc., PO Box 214, Gorham, NY
Elevation 802.4 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
			TOPSOIL
2			1'0" Compact brown wet SILT, some clay, little gravel
4			3'0" Very dense brown-gray moist to wet SILT, some gravel, little to some sand, trace to little clay
6			
8			
10			
12			11'7" Terminated at 11'7" (On Possible Cobble/Boulder)

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-9 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 802.6 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures



Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
2			TOPSOIL <hr/> Compact brown moist to wet SILT, some gravel, little to some sand 0'6"
4			
6	S-1	4'-5'	Medium brown moist to wet CLAY, some silt, little gravel PP: 3.0 tons/f ² 5'0"
8			Very dense gray-brown wet SILT, some gravel, little to some sand, trace to little clay 6'9"
10			
12			Terminated at 11'8" (On Possible Cobble/Boulder) 11'8"

Notes:

1. Sides vertical upon completion.
2. Dry upon completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 of 2 **Test Pit No.** TP23-10 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 801.0 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL Firm brown wet SILT Firm brown wet SILT, little to some organics, trace to little gravel 1'0" 1'6"
4	S-1	1'-3'	Dense brown saturated SILT, little to some gravel, trace to little sand, trace to little clay 3'0"
6			
8			Very dense gray saturated SILT, some gravel, little to some sand, trace to little clay Very dense gray saturated GRAVEL, some sand, some silt 7'0" 7'6" 8'0"
10			Very dense grey-brown saturated SILT, some gravel, little to some sand, little clay
12			



Notes:

- Sides vertical upon completion.
- Water noted at 1'.
- Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Test Pit Log

Site Pictures

Project No. 5552.0 **Page** 2 **of** 2 **Test Pit No.** TP23-10 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 801.0 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
14			
16			15'0" Test Pit Terminated at 15'0"
18			
20			
22			
24			



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-11 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 799.9 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures



- Notes:
1. Sides vertical upon completion.
 2. Water noted at 6'.
 3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL Stiff brown-red wet CLAY, little silt 0'5"
4			
6			6'0"
8			Dense brown wet to saturated SILT, some gravel, some sand, trace clay 7'6"
10			Very dense gray damp to moist SILT, some gravel, little to some sand, trace clay
12			12'0" Test Pit Terminated at 12'0"



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-12 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 799.4 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Water noted at 5'.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	
			Remarks	
2			TOPSOIL	0'5"
			Stiff brown-red-green wet CLAY, little silt	
4	S-1	3'-4'		
6			PP: 3.25 tons/f ²	
8				7'6"
			Dense brown-gray saturated SILT, little to some sand, little to some gravel, trace clay	8'0"
10			Terminated at 8'0"	
12				



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-13 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 798.4 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	
				Remarks
2	S-1	1'	TOPSOIL	0'7"
			Medium brown wet CLAY, little silt	1'6"
			Stiff brown-red-gray moist to wet CLAY, little silt	
4				
6				
8			Medium gray wet CLAY, some silt	6'6"
10	S-2	9'-10'		
12			Dense gray moist to wet SILT, some gravel, little to some sand, trace clay	11'6"
			Terminated at 12'0"	12'0"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 2 **Test Pit No.** TP23-14 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 798.6 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL <hr/> Firm brown-gray saturated SILT, some clay, organics noted 1'0" 2'0"
4			Stiff brown-gray-red-wet CLAY, little silt <hr/> 5'0"
6			Stiff brown-gray wet CLAY, trace silt <hr/> PP: 4.0 tons/f ²
8			PP: 1.25 tons/f ²
10	S-1	9'-10'	Soft brown-gray wet CLAY, trace to little silt 9'0"
12			



Test Pit Log

Site Pictures

Project No. 5552.0 **Page** 2 **of** 2 **Test Pit No.** TP23-14 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 798.6 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Switzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
14	S-2	13'-14'	
16			<div style="text-align: right;">15'6"</div> Very dense gray-brown wet SILT, some gravel, little sand, little clay <div style="text-align: right;">16'0"</div>
18			Terminated at 16'0"
20			
22			
24			



Test Pit Log

Site Pictures

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-15
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation _____ **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** _____
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Deleted in the field.
4			
6			
8			
10			
12			

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-16 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 797.8 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Switzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL Stiff brown-gray-pale red moist to wet CLAY, little to some silt, trace gravel PP: 3.25 tons/f ² 0'6"
4			4'0"
6			Stiff brown-gray moist to wet CLAY, trace to little silt
8	S-1	7'-8'	PP: 4.25 tons/f ² 8'0"
10			Compact brown-gray wet SILT, some clay, little to some gravel 10'0"
12			Very dense brown-gray moist SILT, some gravel, little sand, trace to little clay 12'0" Terminated at 12'0"



Test Pit Log

Site Pictures

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-17
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation _____ **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** _____
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
2			Deleted in the field.
4			
6			
8			
10			
12			

Test Pit Log

Project No.	<u>5552.0</u>	Page	<u>1</u>	of	<u>1</u>	Test Pit No.	<u>TP23-19</u>
Project Name	<u>North Road Townhouses, 156 Stewart Place, Canandaigua, NY</u>						
Client	<u>Chrisantha, Inc., PO Box 214, Gorham, NY</u>						
Elevation	<u>797.6</u>	Weather	<u>Sunny 40s</u>		Technician	<u>T. Beyer</u>	
Date Started	<u>1/15/2024</u>	Completed	<u>1/15/2024</u>		Operator	<u>R. Miller</u>	
Backhoe Subcontractor	<u>Rusty Miller Excavating</u>		Equipment	<u>Case CX170E</u>			

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL (standing water at surface)
2			Soft tan-brown moist CLAY, some silt, trace sand, trace gravel 1'2"
4			
6			(Wet at 6'0")
8			
10			Firm brown wet SILT, some sand, little gravel, trace clay 9'6"
12			Test Pit Terminated at 11'0" 11'0"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-21
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 799.3 **Weather** Sunny 40s **Technician** L. Becker
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
			TOPSOIL (standing water at surface)
2			1'0" Very dense brown saturated SAND, some silt, little to some gravel, trace clay
4			4'2" (Boulder noted) Very dense gray-brown wet SILT, some sand, some gravel, trace clay, numerous cobbles, numerous boulders
6			
8			7'3" Test Pit Terminated at 7'3"
10			
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion (standing water at surface)
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-22 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.0 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures

No photo

Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL Stiff brown-gray-pale red moist to wet CLAY, little to some silt 0'6"
4			Compact tan-brown wet to saturated SILT, some gravel, little to some sand, trace clay 2'6"
6			Very dense brown-gray wet SILT, some gravel, some sand, trace clay 4'0"
8			8'0"
10			Test Pit Terminated at 8'0"
12			

Test Pit Log

Project No.	<u>5552.0</u>	Page	<u>1</u>	of	<u>1</u>	Test Pit No.	<u>TP23-23</u>
Project Name	<u>North Road Townhouses, 156 Stewart Place, Canandaigua, NY</u>						
Client	<u>Chrisantha, Inc., PO Box 214, Gorham, NY</u>						
Elevation	<u>801.1</u>	Weather	<u>Sunny 40s</u>		Technician	<u>L. Becker</u>	
Date Started	<u>1/15/2024</u>	Completed	<u>1/15/2024</u>		Operator	<u>R. Miller</u>	
Backhoe Subcontractor	<u>Rusty Miller Excavating</u>		Equipment	<u>Case CX170E</u>			

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	
			Remarks	
			TOPSOIL	
2				1'0" Medium brown-gray wet CLAY, little silt, rootlets noted
4				2'10" Very dense gray moist to wet SILT, some sand, some gravel, trace clay, numerous cobbles, boulders noted at 2'10"
6				
8				7'8" Test Pit Terminated at 7'8"
10				
12				

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-24 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.7 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures

No photo

Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL 1'0" Stiff to hard brown-red wet CLAY, little to some silt, trace to little gravel
4			4'0"
6			Dense brown wet SILT, some gravel, little to some sand, trace clay 6'0"
8			Very dense gray moist to wet SILT, some gravel, little sand, little clay
10			
12			10'8" Test Pit Terminated at 10'8"



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-25 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.3 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
2			TOPSOIL <hr/> 1'0" Stiff to hard brown-red wet CLAY, little to some silt, trace to little gravel
4	S-1	3'-4'	<hr/> 4'0" Compact brown wet SILT, some gravel, little to some sand, trace to little clay
6			
8			<hr/> 7'6" Very dense gray moist to wet SILT, some gravel, little to some clay, little sand
10			<hr/> 9'0" Terminated at 9'0"
12			



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-26 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.7 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	
			Remarks	
2			TOPSOIL	0'5"
			Medium brown wet CLAY, little silt, trace gravel	
			PP: 3.0 tons/f ²	
4				3'0"
			Dense brown-tan wet SILT, some gravel, little to some sand, little clay	
6				6'0"
			Dense brown saturated SAND, little gravel layer	
8	S-1	7'6"		6'6"
			Very dense gray moist SILT, some gravel, little to some sand, little clay	
10				
12				11'5"
			Terminated at 11'5"	

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-27 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.0 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
			TOPSOIL
2			Medium to stiff brown-pale red moist to wet CLAY, little silt 1'0"
4			
6			PP: 4.0 tons/f ² 6'8"
8			Very dense brown-gray wet SILT, some gravel, little to some sand, trace clay 7'8"
10			Terminated at 7'8" (Refusal)
12			



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-28 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.7 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	
			Remarks	
2			TOPSOIL	0'11"
			Medium brown-red moist to wet CLAY, some silt, trace gravel	
4				
6				
8	S-1	6'-7'	PP: 2.25 tons/f ²	7'2"
			Very dense brown-gray wet SILT, some gravel, little to some sand, trace clay	8'0"
10			Terminated at 8'0"	
12				

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-29 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 799.9 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	
				Remarks
2			TOPSOIL	0'8"
				Medium to stiff brown-gray moist to wet CLAY, some silt, trace gravel
4			PP: 3.75 tons/f ²	3'6"
				Compact brown wet SILT, some gravel, little to some sand, trace to little clay
6				
8				7'0"
				Very dense gray moist to wet SILT, some gravel, little sand, little clay
10				8'0"
				Terminated at 8'0"
12				

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-30
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.9 **Weather** Sunny 40s **Technician** L. Becker
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Site Pictures

No photo

Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2	S-1	1'6"	TOPSOIL (water at surface) <hr/> Medium brown wet CLAY, little sand, little gravel 1'0"
4	S-2	2'4"	Stiff gray-light wet red CLAY, some silt, little gravel, trace sand <hr/> 2'4"
6	S-3	5'4"	Dense brown wet SILT, some sand, some gravel, trace clay <hr/> 5'0"
8	S-4	6'8"	(Boulders at 6'2") Dense to very dense gray moist to wet SILT, some sand, some gravel, trace clay, numerous cobbles <hr/> 6'8" <hr/> 7'0" Terminated at 7'0"
10			
12			



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-31
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 798.4 **Weather** Sunny 40s **Technician** L. Becker
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
			TOPSOIL
2			1'0" Medium brown-gray wet CLAY, little gravel, trace to little silt, rootlets noted
4			2'8" Very dense gray wet SILT, some sand, some gravel, numerous cobbles, trace to little clay
6			(Boulders at 3')
8			
10			8'2" Test Pit Terminated at 8'2" (Refusal on Boulders)
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Test Pit Log

Site Pictures

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-32
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation _____ **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
2			Deleted in the field.
4			
6			
8			
10			
12			



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Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-33 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 799.2 **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL Stiff brown-gray-pale red moist to wet CLAY, little silt 0'6"
4			PP: 4.0 tons/f ² 4'0"
6	S-1	5'0"	Compact to dense brown-gray wet SILT, some gravel, little to some sand, trace clay
8			8'0"
10			Terminated at 8'0" (Refusal on Cobbles)
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-34-35
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation _____ **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** _____
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Deleted in the field.
4			
6			
8			
10			
12			



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Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-36 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 797.8 **Weather** Snow 20s **Technician** L. Becker
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures



Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
2			TOPSOIL 1'0" Firm brown-gray moist to wet SILT, little to some clay, trace gravel, rootlets noted
4			4'0" Stiff gray-brown wet CLAY, little to some silt
6			8'0" Compact gray-brown moist to wet SILT, some gravel, little to some sand, trace to little clay 6" grey saturated SILT layer noted at 10'6" to 11'
10			12'0" Terminated at 12'0"

Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-37
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation _____ **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** _____
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Deleted in the field.
4			
6			
8			
10			
12			



Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-38 (Macro Core)
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 796.9 **Weather** Snow 20s **Technician** L. Becker
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** J. Schweitzer
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures

No photo

Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL Stiff gray-brown moist to wet CLAY, little silt 0'5"
4			4'0"
6	S-1	5'-6'	Stiff brown wet CLAY, trace silt
8			7'10"
10			Dense gray-brown wet SILT, some gravel, some sand, trace clay
12			12'0" Terminated at 12'0"



Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-39-45
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation _____ **Weather** Snow 20s **Technician** J. Herrera
Date Started 1/16/2024 **Completed** 1/16/2024 **Operator** _____
Backhoe Subcontractor Nothnagle Drilling **Equipment** Geoprobe 6712DT

Site Pictures

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Deleted in the field.
4			
6			
8			
10			
12			

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-46
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.3 **Weather** Sunny 40s **Technician** L. Becker
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL
2			1'0" Medium gray-pale red moist to wet CLAY, some silt, little gravel, rootlets noted
4			2'8" Dense brown wet SILT, little to some sand, some gravel, numerous cobbles
6			5'5" Hard gray wet CLAY, some silt, some gravel, rootlets noted
8			(Few boulders at 6'6") 7'6" Very dense gray-brown wet SILT, some gravel, some sand, trace clay, numerous cobbles
10			9'2" Test Pit Terminated at 9'2"
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-47
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 802.3 **Weather** Sunny 40s **Technician** L. Becker
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
			TOPSOIL
2			1'0" Dense brown moist to wet SAND, some silt, little to some gravel, trace clay
4			
6			4'2" Hard gray-brown wet CLAY, little silt, trace sand, rootlets/organics noted
8			(Boulder at 6'7")
10			8'0" Very dense gray-brown wet SILT, some gravel, some sand, trace clay
12			9'6" Test Pit Terminated at 9'6"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Water seepage at 2'6".
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-48
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 801.7 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL 0'1" FILL: Compact brown wet SILT, little to some gravel, little to trace clay
4			3'2" Medium gray-pale red-brown moist to wet CLAY, some silt, little gravel, trace sand PP: 4.0 tons/f ² TV: 1.55 kg/cm ² (Clay drainage pipe noted at 4'6")
6			
8			6'8" Very dense gray wet SILT, some gravel, little to some sand, trace clay
10	S-1	8'4"	
12			9'6" Test Pit Terminated at 9'6"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Water seepage at 4'6".
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No.	<u>5552.0</u>	Page	<u>1</u>	of	<u>1</u>	Test Pit No.	<u>TP23-49</u>
Project Name	<u>North Road Townhouses, 156 Stewart Place, Canandaigua, NY</u>						
Client	<u>Chrisantha, Inc., PO Box 214, Gorham, NY</u>						
Elevation	<u>802.4</u>	Weather	<u>Sunny 40s</u>				
Date Started	<u>1/12/2024</u>	Completed	<u>1/12/2024</u>				
Backhoe Subcontractor	<u>Rusty Miller Excavating</u>	Technician	<u>L. Becker</u>				
		Operator	<u>R. Miller</u>				
		Equipment	<u>Case CX170E</u>				

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL (standing water at surface)
2			1'0" Firm gray-brown wet SILT, some sand, some gravel, numerous cobbles
4	S-1	4'0"	3'6" Medium brown moist to wet CLAY with some gravel, trace organics PP: 3.5 tons/f ² TV: 1.5 kg/cm ² (Clay pipe at 4'6")
6			
8			
10	S-2	8'6"	8'6" Dense wet SILT, some sand, some gravel, few boulders
12			10'9" Test Pit Terminated at 10'9"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Water seepage at 8'0".
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-50
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.3 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/12/2024 **Completed** 1/12/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL <hr/> 1'0" Medium gray-brown moist to wet CLAY, some silt, trace sand, organics noted PP: 3.0 tons/f ²
4	S-1	4'0"	
6			
8	S-2	8'0"	Very hard, trace gravel at 8'
10			<hr/> 9'4" Test Pit Terminated at 9'4"
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Water seepage at 3'0".
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-51
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 804.1 **Weather** Sunny 40s **Technician** L. Becker
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL 1'0"
4			FILL: Dense gray-brown wet SILT, some sand, some gravel, trace to little clay, numerous cobbles, plastic piping, concrete block
6			5'0" Very dense gray saturated SILT, some sand, some gravel, trace to little clay
8			(Boulders at 5'2")
10			8'3" Test Pit Terminated at 8'3"
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Water seepage at 5'0".
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-52
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 797.8 **Weather** Sunny 40s **Technician** L. Becker
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
2			TOPSOIL <hr/> 1'0" Medium brown-gray wet CLAY, little to some silt, rootlets noted
4	S-1 S-2	3'2" 4'0"	<hr/> 3'10" Dense to very dense gray-brown wet SILT, some sand, some gravel, trace to little clay, little cobbles, boulders noted
6			
8			
10			<hr/> 8'10" Test Pit Terminated at 8'10"
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No.	5552.0	Page	1	of	1	Test Pit No.	TP23-53
Project Name	North Road Townhouses, 156 Stewart Place, Canandaigua, NY						
Client	Chrisantha, Inc., PO Box 214, Gorham, NY						
Elevation	798.5	Weather	Sunny 40s				
Date Started	1/15/2024	Completed	1/15/2024				
Backhoe Subcontractor	Rusty Miller Excavating		Technician	L. Becker			
			Operator	R. Miller			
			Equipment	Case CX170E			

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			FILL: Loose brown wet SILT, some sand, some gravel, rootlets noted 1'6"
4	S-1	2'4"	TOPSOIL, rootlets noted 2'6" Medium gray-brown wet CLAY, little to some silt
6			
8			
10			9'5" Dense gray-brown wet SILT, some sand, some gravel, boulder noted 9'10"
12			Test Pit Terminated at 9'10"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-54
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 799.0 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			FILL: Loose brown-gray moist to wet SILT, some sand, some gravel, rootlets noted 1'0"
4			TOPSOIL, rootlets noted 2'0"
6			Medium gray-brown wet CLAY, little to trace silt
8			
10			Dense to very dense gray wet SILT, some sand, some gravel, trace to little clay, numerous cobbles, boulder noted 9'5" 9'8"
12			Test Pit Terminated at 9'8"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-55
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation _____ **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Site Pictures

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Deleted in the field.
4			
6			
8			
10			
12			



SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No.	<u>5552.0</u>	Page	<u>1</u>	of	<u>1</u>	Test Pit No.	<u>TP23-56</u>
Project Name	<u>North Road Townhouses, 156 Stewart Place, Canandaigua, NY</u>						
Client	<u>Chrisantha, Inc., PO Box 214, Gorham, NY</u>						
Elevation	<u>797.2</u>	Weather	<u>Sunny 40s</u>				
Date Started	<u>1/15/2024</u>	Completed	<u>1/15/2024</u>				
Backhoe Subcontractor	<u>Rusty Miller Excavating</u>		Technician	<u>L, Becker</u>			
			Operator	<u>R. Miller</u>			
			Equipment	<u>Case CX170E</u>			

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL
2			Firm brown wet SILT, some clay, little gravel PP: 1.5 tons/f ²
4	S-1	4'0"	Medium gray-brown moist to wet CLAY, some silt, rootlets noted PP: 4.0 tons/f ²
6			Medium pale red wet CLAY, rootlets noted
8			Very dense brown wet SILT, some sand, some gravel, trace to little clay, few cobbles noted
10			Very dense gray wet SILT, some gravel, some sand, trace to little clay, numerous cobbles, few boulders
12			Test Pit Terminated at 9'0"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Water seepage at 5'6".
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No.	5552.0	Page	1	of	1	Test Pit No.	TP23-57
Project Name	North Road Townhouses, 156 Stewart Place, Canandaigua, NY						
Client	Chrisantha, Inc., PO Box 214, Gorham, NY						
Elevation	797.7	Weather	Sunny 40s				
Date Started	1/15/2024	Completed	1/15/2024				
Backhoe Subcontractor	Rusty Miller Excavating		Technician	L. Becker			
			Operator	R. Miller			
			Equipment	Case CX170E			

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL 1'0"
			Medium gray wet CLAY, little to some silt, little gravel
4	S-1	3'7"	PP: 2.0 tons/f ² 3'0" Dense tan wet SILT, some clay, some gravel, rootlets noted
			PP: 4.0 tons/f ² 3'6"
6	S-2	5'2"	Medium pale red wet CLAY, rootlets noted 5'0"
			Very dense gray wet SILT, some clay, some gravel, trace sand, numerous cobbles
8			(Gray at 7'8") 8'0"
10			Test Pit Terminated at 8'0"
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** TP23-58
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 797.7 **Weather** Sunny 40s **Technician** T. Beyer
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL Soft tan-brown moist to wet CLAY, some silt, trace sand 0'9"
4			
6			
8	S-1	6'-8'	
10			10'0"
12			Compact brown moist SILT, some sand, trace gravel, trace cobbles, trace clay 11'0" Test Pit Terminated at 11'0"

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Test Pit Log

Site Pictures

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** TP23-59-60
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 797.2 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Deleted in the field.
4			
6			
8			
10			
12			



Test Pit Log

Site Pictures

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** IT23-1
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 797.2 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Deleted in the field.
4			
6			
8			
10			
12			

Test Pit Log

Project No. 5552.0 **Page** 1 **of** 1 **Test Pit No.** IT23-2
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 800.8 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/12/24 **Completed** 1/12/24 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL
2			Medium red wet CLAY, some gravel, trace sand, trace silt, rootlets noted
4			(Boulders at 3'6")
6			Very dense gray-brown wet SILT, some gravel, little to some sand, trace clay
8	S-1	8'0"	
10			Test Pit Terminated at 9'1"
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.

Test Pit Log

Project No.	5552.0	Page	1	of	1	Test Pit No.	IT23-3
Project Name	North Road Townhouses, 156 Stewart Place, Canandaigua, NY						
Client	Chrisantha, Inc., PO Box 214, Gorham, NY						
Elevation	796.9	Weather	Sunny 40s		Technician	L. Becker	
Date Started	1/15/2024	Completed	1/15/2024		Operator	R. Miller	
Backhoe Subcontractor	Rusty Miller Excavating		Equipment	Case CX170E			

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL
2			1'0" Dense wet brown-grey SILT, some sand, some gravel, trace to little clay, rootlets noted
4			4'0" Clay drainage pipe noted at 1'6"
6			5'8" Medium gray-brown wet CLAY, some silt, little to some gravel
8			Dense grey-brown wet SILT, some sand, some gravel, trace to little clay, numerous boulders
10			9'6" Test Pit Terminated at 9'6"
12			

Site Pictures



Notes:

1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



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Test Pit Log

Project No. 5552.0 **Page** 1 of 1 **Test Pit No.** IT23-4
Project Name North Road Townhouses, 156 Stewart Place, Canandaigua, NY
Client Chrisantha, Inc., PO Box 214, Gorham, NY
Elevation 797.2 **Weather** Sunny 40s **Technician** J. Herrera
Date Started 1/15/2024 **Completed** 1/15/2024 **Operator** R. Miller
Backhoe Subcontractor Rusty Miller Excavating **Equipment** Case CX170E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL 1'0" Loose to firm brown moist SILT, some sand, some gravel, little clay
4			
6			5'0" Medium gray-brown wet CLAY, little silt, rootlets noted
8			6'6" Very dense gray-brown saturated SILT, some sand, some gravel, trace clay, numerous cobbles (boulder at 7'2")
10			9'6" Test Pit Terminated at 9'6"
12			

Site Pictures



Notes:

- Sides vertical upon completion.
- Dry on completion.
- Staked location and elevation provided by Costich Engineering, Land Surveying & Landscape Architecture, D.P.C.



Foundation Design, P.C.

SOIL • BEDROCK • GROUNDWATER

January 25, 2024

Chrisantha, Inc.
PO Box 214
Gorham, NY 14461

Attention: Chris Iverson

Reference: North Street Townhouses
156 Stewart Place, Canandaigua, New York
Laboratory Test Results, 5552.0

Dear Mr. Iverson:

Foundation Design, P.C. is pleased to present the following results of the laboratory testing performed on the referenced project. The testing was performed in accordance with the following ASTM test methods:

2	Sieve Analysis	ASTM D-1140
5	Moisture Content Test	ASTM D-2216
3	Plastic Limits/Liquid Limits/Plasticity Index	ASTM D-4318
2	Organic Content Determination	ASTM D-2974

We appreciate the opportunity to provide these testing services and look forward to hearing from you again in the near future.

Sincerely,

FOUNDATION DESIGN, P.C.

Ryan Radford, P.E.
Vice President



**Foundation
Design, P.C.**

**North Road Townhouses
156 Stewart Place, Canandaigua, New York
5552.0**

1-25-2025

**Moisture Content Test Report
(ASTM D-2216)**

Moisture Content Test Results					
Boring Number	TP23-26	TP23-30	TP23-49	TP2352	TP23-58
Sample Number	S-1	S-2	S-1	S-2	S-1
Depth	7'6"	2'-4"	4'	4'	6'-8"
Moisture Content (%)	10.2	21.4	30.0	7.1	32.8



**Foundation
Design, P.C.**

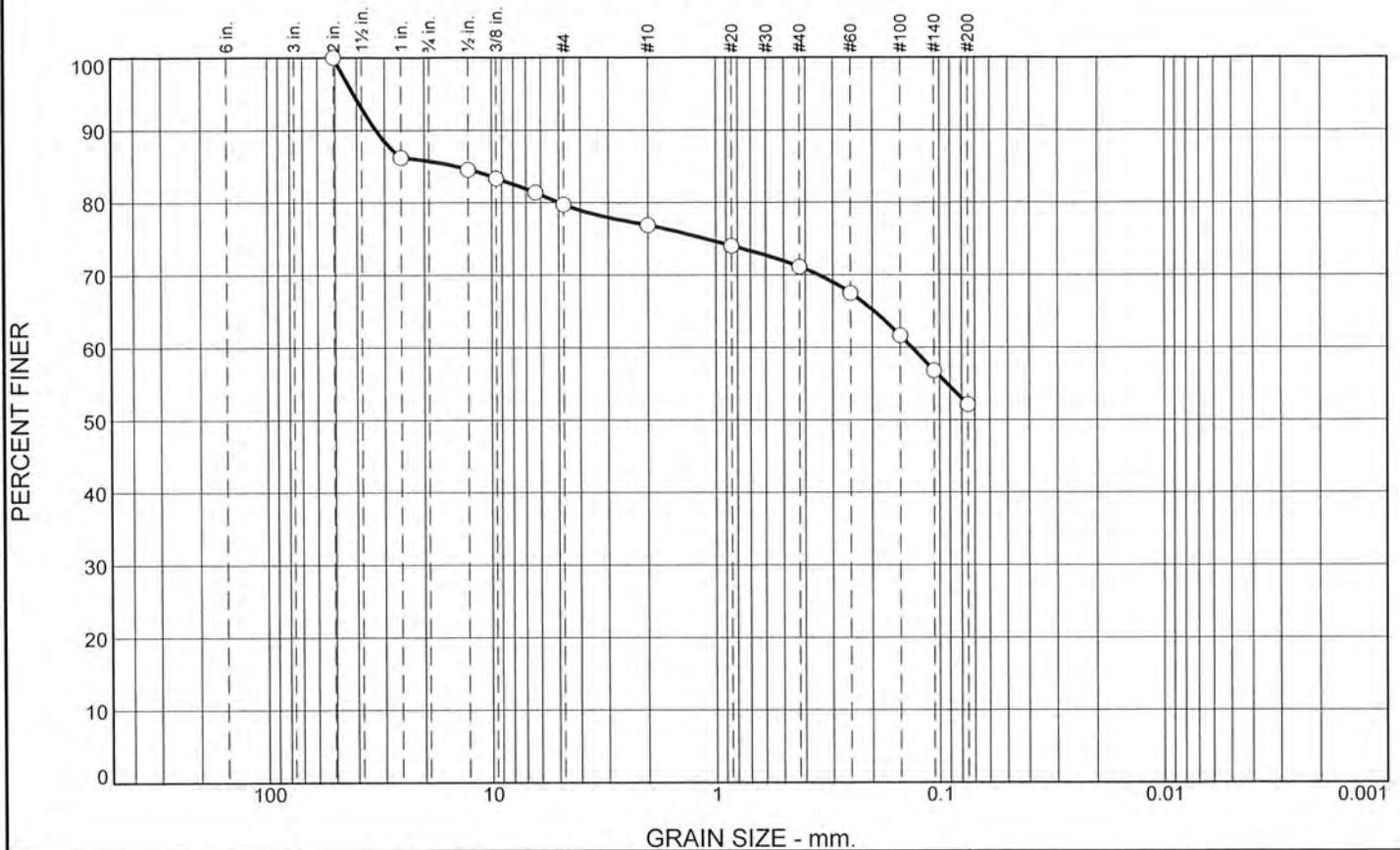
**North Road Townhouses
156 Stewart Place, Canandaigua, New York
5552.0**

1-25-2025

**Moisture and Organic Content Test Report
(ASTM D-2216 and ASTM D-2974)**

Moisture and Organic Content Test Results		
Boring Number	TP23-10	TP23-53
Sample Number	S-1	S-1
Depth	1'-3'	2'4"
Moisture Content (%)	48.4	53.1
Ash Content (%)	92.6	81.5
Organic Content (%)	7.4	18.5

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	14	6	3	6	19	52	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100		
1"	86		
1/2"	85		
3/8"	83		
1/4"	81		
#4	80		
#10	77		
#20	74		
#40	71		
#60	67		
#100	62		
#140	57		
#200	52		

Material Description

CL/ML: Gray sandy silt/clay with gravel per ASTM D- 2488

Atterberg Limits

PL= LL= NV PI=

Coefficients

D₉₀= 32.8086 D₈₅= 14.5208 D₆₀= 0.1332

D₅₀= D₃₀= D₁₅=

D₁₀= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Test performed on 297.56 grams of oven dried sample

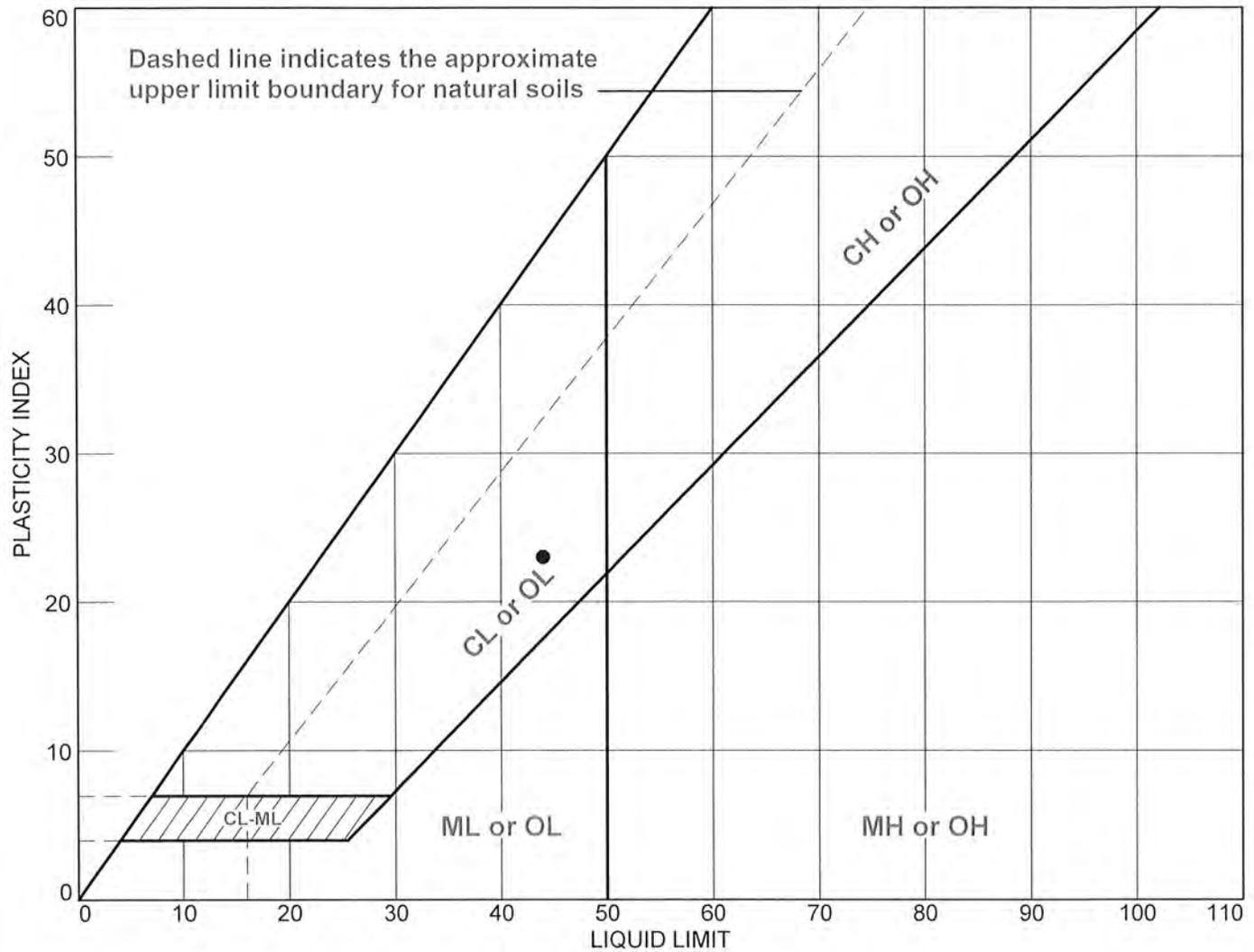
* (no specification provided)

Source of Sample: TP23-26 Depth: 7'6" Date: 1-25-2023
 Sample Number: S-1

 <p>Foundation Design, P.C.</p>	<p>Client: Chrisantha, Inc., PO Box 214, Gorham, NY</p> <p>Project: North Road Townhouses 156 Stewart Place, Canandaigua, New York</p> <p>Project No: 5552.0 Figure</p>
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Tested By: RLS Checked By: JAG

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	TP23-30	S-2	2'4"	21.4	21	44	23	CL



Foundation Design, P.C.

Client: Chrisantha, Inc., PO Box 214, Gorham, NY

Project: North Road Townhouses 156 Stewart Place, Canandaigua, New York

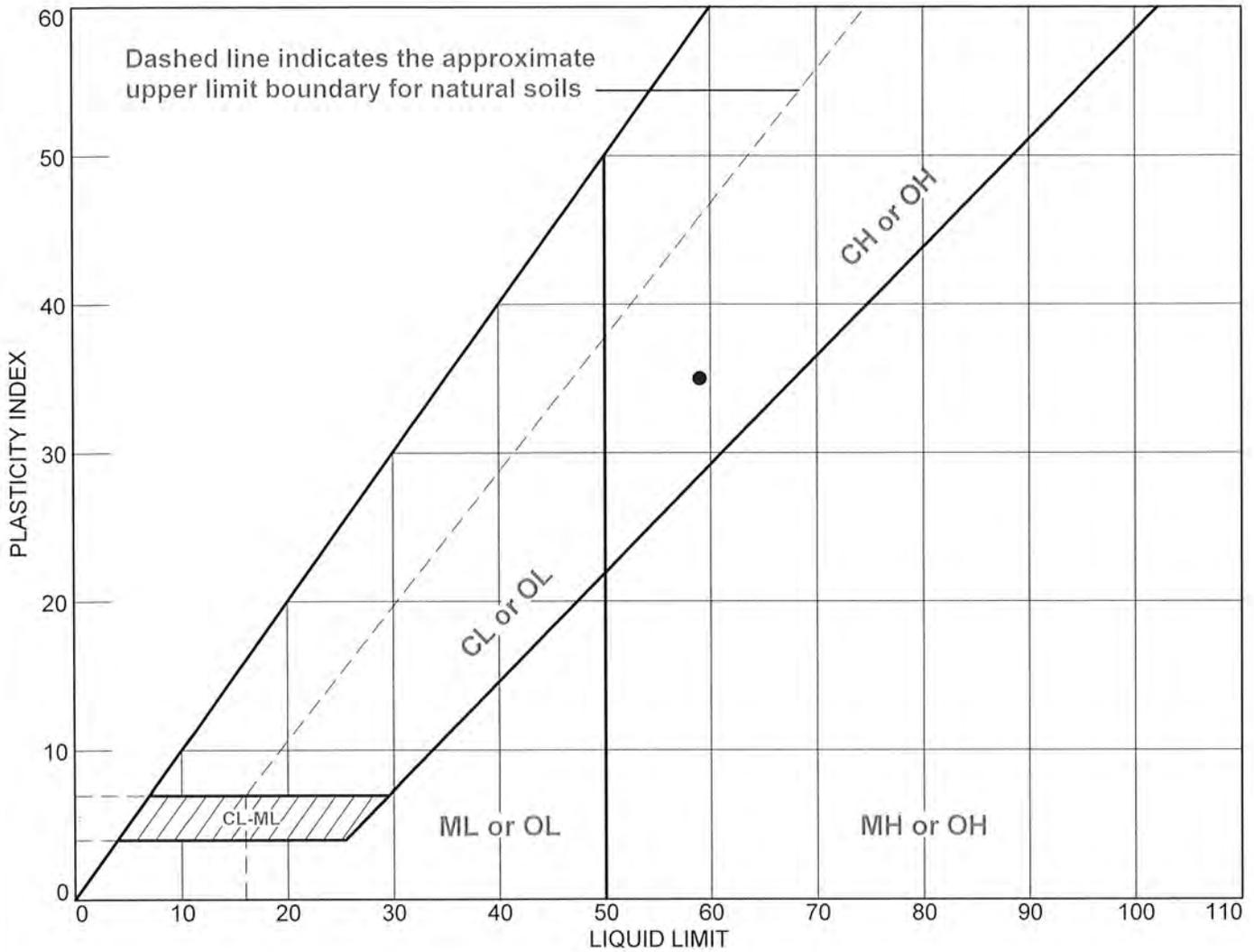
Project No.: 5552.0

Figure

Tested By: TJB

Checked By: JAG

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	TP23-49	S-1	4'	30.0	24	59	35	CH



Foundation Design, P.C.

Client: Chrisantha, Inc., PO Box 214, Gorham, NY

Project: North Road Townhouses 156 Stewart Place, Canandaigua, New York

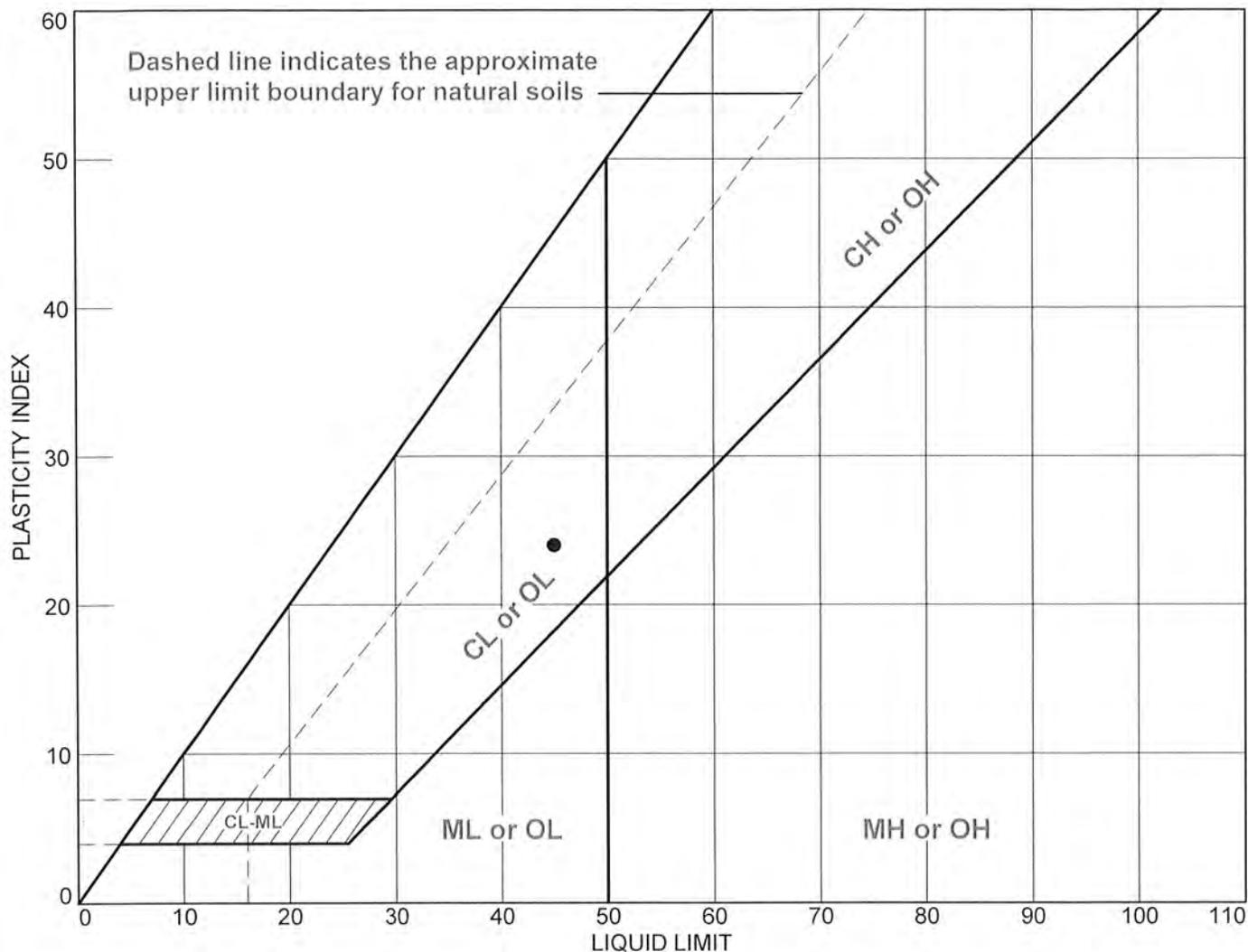
Project No.: 5552.0

Figure

Tested By: TJB/JAG

Checked By: JAG

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	TP23-58	S-1	6'8"	32.8	21	45	24	CL



Foundation Design, P.C.

Client: Chrisantha, Inc., PO Box 214, Gorham, NY

Project: North Road Townhouses 156 Stewart Place, Canandaigua, New York

Project No.: 5552.0

Figure

Tested By: TJB

Checked By: JAG