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GEOTECHNICAL EVALUATION
RYE NECK UNION FREE SCHOOL DISTRICT SITE IMPROVEMENTS
310 HORNIDGE ROAD, VILLAGE OF MAMARONECK
TOWN OF RYE, WESTCHESTER COUNTY, NEW YORK

Submitted To:

Rye Neck Union Free School District

310 Hornidge Road
Mamaroneck, New York 10543

October 1, 2025

W.O. 13211.01

Submitted By:

Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C.

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Rye Neck Union Free School District
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Attention: C\O: LAN Associates - Danielle Farrell, AIA, Assistant Vice President
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The LA Group - Bob Kernan, RLA, Associate Principal
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October 1, 2025

RE: W.O. 13211.01
GEOTECHNICAL EVALUATION
RYE NECK UNION FREE SCHOOL DISTRICT SITE IMPROVEMENTS
310 HORNIDGE ROAD, VILLAGE OF MAMARONECK
TOWN OF RYE, WESTCHESTER COUNTY, NEW YORK

Dear Mr. Gateau;

Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C. is pleased to submit this subsurface investigation and geotechnical engineering evaluation for the proposed site improvements to Rye Neck Middle and High school, located at the above-referenced address. The purpose of the investigation was to evaluate the subsurface conditions within the areas of improvements and to provide geotechnical recommendations for design and construction. This report presents detailed information about the investigations, our findings, and recommendations.

We appreciate this opportunity to assist you with this project. If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C.

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GEOTECHNICAL EVALUATION
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TOWN OF RYE, WESTCHESTER COUNTY, NEW YORK

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1.0 INTRODUCTION

In accordance with your request and authorization, Tectonic Engineering Consultants, Geologists, and Land Surveyors D.P.C. (Tectonic) has completed a subsurface investigation and geotechnical engineering evaluation for the proposed site improvements to Rye Neck Middle and High school, located at the above-referenced address. The purpose of the investigation was to evaluate the subsurface conditions within the areas of improvements and to provide geotechnical recommendations for design and construction. This report presents detailed information about the investigations, our findings, and recommendations.

2.0 SCOPE OF SERVICES

The geotechnical investigation was performed for the Rye Neck Union Free School District, hereafter referred to as the Client, and coordinated through LAN Associates and The LA Group, hereafter referred to as the Client Agents. The scope of the geotechnical investigation consisted of the following:

- Reviewing geological information publicly available through the United States Geological Survey (USGS), the New York State Museum (NYSM), and the National Resources Conservation Service (NRCS).
- Reviewing a topographic survey provided by the Client Agents and prepared by Mattthew M. Webb, entitled 'Boundary & Partial Topographic Survey," latest revision dated January 11, 2023.
- Reviewing a preliminary site plan provided by LAN Associates.
- Performing a ground penetrating radar (GPR) survey of the boring locations prior to starting the investigation to help to ensure that the borings and infiltration tests did not encounter any buried utilities.
- Drilling, sampling, and logging of test borings within the areas of the proposed site improvements as follows:
    - Five (5) borings, designated as borings B-1 through B-5, advanced at various locations throughout the site to gather subsurface information for site improvements such as new fields, the new running track, and new pavement.
    - One (1) boring, designated boring B-6, for the proposed concession building.
    - Eight (8) borings, designated as L-1 through L-8, advanced at new light tower locations.
    - One (1) boring, designated as T-1, for the potential reconstructed tennis courts.

- Performing eight (8) infiltration tests, designated INF-1 through INF-8, within several feet of the locations of borings B-1 to B-5, L-2, L-6, and L-7, respectively.

- Field inspection by a Tectonic representative, working under the purview of a New York State licensed Professional Engineer, to locate the borings and infiltration tests and to log and classify all soil samples.

- Laboratory testing of soil samples selected to verify the field classifications of the soils and to evaluate the engineering characteristics of the soil.

- Performing geotechnical engineering analyses of the subsurface conditions and laboratory test results as they relate to the proposed site improvements.

- Preparing this report presenting the results of the subsurface investigation, engineering analyses, and our geotechnical recommendations for the design and construction for the geotechnical aspects of the proposed site improvements.

3.0 SITE AND PROJECT DESCRIPTIONS

The project site is located on the campus of the Rye Neck Middle and High School at 310 Hornidge Road, in the Village of Mamaroneck, Town of Rye, Westchester County, New York. The Town of Mamaroneck is composed of two villages, Larchmont and Mamaroneck, as well as unincorporated areas. A portion of the Village of Mamaroneck lies in the Town of Rye, and this portion is known as Rye Neck. The Town of Rye is composed of two noncontiguous parcels, Rye Neck to the south and the villages of Port Chester and Rye Brook to the north. In between lies the city of Rye to the south and the Town of Harrison to the north. The site straddles the boundary between Rye Neck and the City of Rye, with only a small portion in the southeastern corner of the site lying in Rye Neck. This portion of the site has Westchester County Tax ID Number 155-29-1-36. The remainder of the site lies in the City of Rye and has Tax ID Number 152-8-1-1. This latter lot abuts the boundary line between the City of Rye and the Town of Harrison to the northwest. The school serves students from both Rye Neck and the City of Rye.

The area where the site improvements will be constructed, hereafter known as the Work Site, will be in the northeastern corner of the campus. The Work Site is a roughly diamond-shaped clearing bound by residential homes on the northeast, wooded areas to the southeast and southwest, and a tree line and Beaver Swamp Brook to the northwest. An athletic field and running track are in the eastern portion of the diamond, with the athletic field oriented in a northwest to southeast direction. A baseball field is located at the northern corner of the diamond, and a softball field is located near the western corner of the diamond. A one-story building lies

north of the softball field, and tennis courts lie north of the one-story building. The athletic facility complex and school buildings generally lie to the west of the tennis courts and softball field.

Based on the survey, elevations on the site range from approximately +31 to +36 feet. Several sanitary, stormwater, and water lines cross the Work Site. As indicated in a USGS topographical map, the area to the southwest of the Work Site is a wetland area designated as the Marshlands Conservancy, which abuts Milton Harbor and the Long Island Sound further to the east. All elevations referenced herein reference the North American Vertical Datum of 1988 (NAVD88).

The site improvements proposed for the Work Site are numerous and varied. The main improvement will be constructing a new athletic field that is located close to and parallel with the site property line along the northeastern leg of the diamond. This field will have a 4 to 6-foot-high retaining wall along the outside of the northwestern arc of the running track. The relocated athletic field will also have a new grandstand, press box, and score board. Two (2) new multipurpose athletic fields will also be constructed; one oriented perpendicular and located south of the main athletic field and another located parallel to and west of the main field. All new athletic fields will have artificial surfaces. A new concession stand will be constructed south of the main field between the two multipurpose fields. The existing one-story building located south of the tennis courts will be demolished, and a new parking lot will be constructed in its place. In addition to the new parking lot, the existing access path to the athletic field will be extended to the new athletic field, and an access path will be constructed to the easternmost multipurpose field. New light poles will also be constructed throughout the Work Site, and a new stormwater detention pond will be constructed in the southern corner of the diamond. Lastly, the existing tennis courts may be reconstructed in the same location as the existing courts.

As of the preparation of this report, our office had only received a preliminary site plan. Our office also has not been provided with grading plans, so we do not know the extent of cutting and filling operations involved in the proposed construction. This report assumes that none of the structures discussed will have basements or cellars.

4.0 SUBSURFACE INVESTIGATION

Prior to performing the investigation, a technician was mobilized to the site to survey the proposed boring and infiltration test locations for underground utilities using ground penetrating radar (GPR). The GPR survey was conducted by Blood Hound, LLC on August 22, 2025. A representative of Tectonic was present to verify locations and the findings of the GPR survey. A copy of the GPR report is included in Appendix III of this report.

The subsurface investigation consisted of the drilling, sampling, and logging of fifteen (15) borings, designated as B-1 through B-6, L-1 through L-8, and T-1, and performing eight (8) infiltration tests, designated INF-1 through INF-8. The naming convention of the borings was provided by the Client Agent.

The infiltration tests were performed close to the locations of borings B-1 through B-5, L-2, L-6, and L-7, respectively. The borings and infiltration tests were generally performed at the Client Agents' requested locations. The boring and infiltration test locations are shown on the attached Boring and Infiltration Test Location Plan, Figure 1.

The borings and boreholes were drilled by Core Down Drilling, LLC using a Geoprobe 6712DT, a track-mounted drill rig equipped with an automatic hammer. The borings were drilled between August 22 and August 26, 2025, and were advanced using 3-¼-inch inside diameter hollow-stem augers. Standard Penetration Testing (SPT) was conducted with a split-spoon sampler continuously to depths of approximately 10 to 12 feet, and at a maximum of 5-foot intervals thereafter. SPT sampling was performed in general accordance with the requirements of ASTM Standard D1586 *Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils.* SPT N-values were recorded for each soil sample taken. Samples of the soil obtained during the investigation were retained in glass jars and are currently stored at our material testing laboratory. The boreholes and infiltration tests were backfilled with drill cuttings to match the existing conditions.

The infiltration tests were performed on August 26 and 27, 2025. The tests were performed within 4-inch diameter PVC casing at depths ranging from approximately 2 to 4 feet bgs. The locations of the infiltration tests are shown on Figure 1. The infiltration tests were performed in general accordance with Appendix D of New York State Department of Environmental Conservation's *Stormwater Management Design Manual* (SMDM). Each infiltration test included a pre-soak and measurement over four (4) one-hour intervals.

All drilling, sampling, and logging of the borings were observed on a full-time basis by a Tectonic representative, working under the supervision of a Professional Engineer licensed in New York State. The representative observed the subsurface investigation, classified soil samples as they were recovered, collected representative soil samples for laboratory testing, prepared logs of the soil and groundwater conditions encountered, and performed the infiltration tests. Soil samples were classified in accordance with the latest edition of the New York State Building Code (Code), the modified Burmister Soil Classification System, and the Unified Soil Classification System as defined by ASTM D2488 (USCS). Copies of the boring and infiltration test logs are included in Appendix I.

5.0 LABORATORY TESTING

Laboratory testing was performed on selected soil samples to assist in evaluating the engineering properties of the encountered soils and to help in field identifications of the soils. Testing included the performance of six (6) grain-size distribution tests, performed in general accordance with ASTM Standard D6913. The results of the laboratory testing are included in Appendix II.

6.0 SUBSURFACE CONDITIONS

The subsurface conditions generally consisted, in turn, of layers of topsoil-like material, granular fill, and native soils described as glacial till per NYSM surficial geology maps. The following subsections provide generalized descriptions of the soil and groundwater conditions.

An automatic hammer was used in the SPT sampling of the borings. Given that an automatic hammer imparts more energy into the split spoon sampler than a safety hammer (N_{60}), the standard hammer used for most geotechnical engineering calculations, an energy correction factor of 1.3 has been applied to the field N-values to obtain the N_{60}-values.

6.1 Fill Soils

Underlying approximately 3 to 10 inches of topsoil-like material, the fill layer ranged from approximately 2 to 6 feet in thickness. The fill almost always consisted of brown coarse to fine sand containing up to approximately 25 percent gravel and up to approximately 15 percent silt. It should be noted that one sample contained up to approximately 40 percent silt, and one sample was composed predominately of silt. Field SPT N-values within the fill ranged from 3 to 18 blows per foot (bpf), corresponding to N_{60}

values of approximately 4 to 23 bpf. The relative density of the fill layer ranged from loose to medium dense, with most of the samples being medium dense. The fill layers had USCS classifications of SP and SM, and to a lesser extent ML.

6.2 Native Soils

Native soil was encountered beneath the fill. The native soil generally consisted of brown to gray coarse to fine sand containing up to approximately 25 percent gravel and approximately 40 percent silt, though the great majority of the samples obtained in the native soil layer contained less than approximately 10 percent silt. Field SPT N-values within the native soil ranged from weight of hammer (WOH), corresponding to the advancement of the split-spoon beneath the weight of the automatic hammer, to 19 bpf, corresponding to N_{60} values ranging from approximately 0 to 25 bpf. The relative density of the native soil ranged from very loose to medium dense, with most of the samples being very loose or loose, and the relative density generally decreased with increasing depth. The native soils had USCS classifications of SP and SM, and occasionally SP-SM.

6.3 Groundwater

While no direct measurements of the groundwater table were obtained, based on the moisture content of the samples, groundwater was recorded in the boring logs as having been encountered at depths ranging from approximately 4.5 to 14 bgs. It should be noted that groundwater levels fluctuate seasonally and with changing weather conditions.

6.4 Infiltration Tests

Eight (8) infiltration tests, designated INF-1 to INF-8, were performed throughout the Work Site to the general guidelines set forth in the SWDM. Observed infiltration rates ranged from approximately 1 to greater than 24 inches per hour. The results of the infiltration tests are attached to this report in Appendix I, and the infiltration test locations are shown on Figure 1.

7.0 SEISMIC DESIGN AND LIQUEFACTION POTENTIAL

The borings were advanced up to a depth of approximately 27 feet bgs. Per ASCE 7-16, site classification is based on the upper 100 feet of the soil profile. When site specific data is not available to 100 feet, as is the case with this site, appropriate soil properties are permitted to be estimated based on known geologic

conditions. Based on the results of the subsurface investigations and the criteria outlined in the Code and ASCE 7-16, the subsurface conditions underlying the site should be considered Class E, with maximum spectral response accelerations at short periods (S_{MS}) equal to 0.655g and at a 1-second period (S_{M1}) equal to 0.252g. Based on the procedures outlined in the Code, the corresponding five-percent damped design spectral response acceleration at short periods, S_{DS}, is equal to 0.437g, and at a 1-second period, S_{D1}, is equal to 0.168g.

An analysis was conducted to further assess the liquefaction potential of the site soils. The evaluation followed the procedure recommended by Youd et al. (2001), which is widely accepted methodology for estimating liquefaction susceptibility. This method estimates the stresses likely to be induced by an earthquake and the stresses likely to initiate liquefaction using the SPT N-values, the effective overburden pressure, and the peak horizontal ground acceleration caused by the design seismic event. The factors of safety against liquefaction were computed by the ratio of cyclic shear strength of the soil to the cyclic shear stress induced by the seismic event. The earthquake moment magnitude was taken as 5.49, which is the mean value for the site's location, calculated on the USGS Unified Hazard Tool using the edition "Dynamic: Conterminous U.S. 2014", and a 2 percent probability of exceedance in 50 years (a 2475-year return period). In accordance with the Code and ASCE 7-16, the resulting design acceleration is 0.354g, based on a site classification of E. The liquefaction analysis indicates that layers of the encountered soils have a factor of safety against liquefaction that are lower than the minimum of 1.0, indicating that liquefaction may occur, if the site is subjected to the design earthquake.

When analyses show that the site soils may liquefy during an earthquake event, the Code requires that the site classification be designated Class F and when a site is found to have a classification of F, the Code requires a site-specific seismic evaluation. However, it allows an exception for buildings with a fundamental period of vibration (Ta) that is less than 0.5 second, when the site classification of F is the result of potentially liquefiable soils, which is the case for this site. ASCE 7-16 also allows for estimating Ta by the equation Ta = 0.1N, where N is the number of stories, for a building less than 12-stories tall, which is the case for this project. Using this equation, we estimate that the fundamental period for the proposed grandstand and concession building, will be less than 0.5 second. This should be verified by the Structural Engineer of Record (SEOR), but based on this estimate, a more-detailed site-specific seismic evaluation is not warranted or required. Subsequently the site classification of E, based on the limited depth of exploration at the site, may be used for preliminary design of the building. A final building site classification, and potential need for a site-specific seismic evaluation, can be evaluated (if requested) after submission of the final Ta from the SEOR.

8.0 DISCUSSION AND CONCLUSIONS

As part of the proposed project, structures requiring foundations are a new press box, grandstand, score board, light towers, retaining wall, and a concession building. Other aspects of the project include constructing a new running track, three (3) new artificial turf athletic fields, a stormwater detention pond, and possibly new tennis courts. The project will also involve constructing new pavement. Based on the conditions encountered during the subsurface investigation, construction of the site improvements are feasible from a geotechnical standpoint.

Soil conditions at the site generally consisted of a thin layer of coarse to fine sand overlaying native coarse to fine sand, with both the fill and the native sand generally containing only small amounts of fines. The relative density of the fill ranged from loose to medium dense, with most of the samples being medium dense. The relative density of the native sand ranged from very loose to medium dense, with most of the samples being very loose or loose, and it was not uncommon to record weight of hammer readings for the blow counts in the native sand. Based on the moisture content of the samples, groundwater level readings in the borings ranged from approximately 4.5 to 14 feet bgs, but our office has conservatively assumed that the groundwater table may be as shallow as 5 feet bgs.

While shallow foundations are feasible for the new structures, the presence of very loose to loose soil on the Work Site will likely limit the allowable bearing pressure. The floor slab in the new concession building may be constructed as a slab-on-grade. The retaining wall may also be supported on a spread footing at the same maximum net allowable bearing pressure as for the footings. The new scoreboard and light towers may be supported on drilled shafts. Given the high groundwater table and cohesionless nature of the soils on the Work Site, it is very likely that the drilled shafts will have to installed using drilling fluid and/or casing to help stabilize the drilled shaft during construction.

The following are other general conclusions that can be made regarding the proposed construction:

- Excavation should be feasible with conventional construction equipment. While unlikely, cobbles and boulders may be encountered. The contractors and others involved should be made aware of these conditions so that proper equipment can be mobilized.

- Given the relatively shallow groundwater table encountered at the site, it is likely that at least some localized dewatering may be needed to construct some of the foundations. Since none of the footings are anticipated to be deep, dewatering using sump pits and pumps should be sufficient.

- The existing fill and native soil found on the site will generally be suitable for use as fill, both as structural and general fill.

- It may be advisable to perform monitoring to document that the construction does not adversely affect the existing structures and utilities adjacent to the proposed construction. Monitoring may include surveying to identify both horizontal and vertical movement of existing structures and measuring vibration levels during construction to document that they are within an acceptable limit.

9.0 RECOMMENDATIONS

The following sections provide our geotechnical recommendations for design and construction of the proposed new structures and asphalt paving sections. The recommendations are based on our understanding of the proposed construction as described in Section 3, the results of our subsurface investigation, and our experience in the general vicinity of the project site.

9.1 Shallow Foundations

The proposed press box, bleachers, and concession building can be supported on conventional shallow spread footings that bear on the native soil or on structural fill. If encountered during excavation, any soft and unsuitable soils encountered within the zone of influence of new foundations should be undercut and replaced with properly compacted, structural fill as discussed in Section 10. Spread and continuous wall footings for the new structures can be designed for a maximum net allowable soil bearing pressure of 2,000 pounds per square foot. Section 10 of this report provides the subgrade preparation procedures necessary to achieve the recommended bearing capacity.

Continuous wall footings should have a minimum width of 2 feet, and isolated spread footings should have a minimum width of 3 feet. All exterior footings should bear at least 4 feet below the outside grade or at the depth required by the local building code to provide frost protection. It should be noted that no structural loading was provided by the design team as of the writing of this report. Without structural loading information, settlement estimates cannot definitively be provided. Our office can provide settlement estimates if provided with the structural loading.

9.2 Slab-On-Grade Floors

The floor slab of the new concession building may be constructed as a slab-on-grade. The new floor should be supported on a minimum 6-inch-thick layer of free draining ½ to ¾ inch crushed stone placed over the existing in-place soils or structural fill subgrades. Any loose fill encountered below the slab-on-grade should be removed and replaced with compacted structural fill prior to placement of

crushed stone. If the floor slab is moisture-sensitive, the floor slab should be constructed above a vapor barrier consisting of a polyethylene membrane with a minimum thickness of twenty (20) mils. A coefficient of friction of 0.4 should be used between the slab and the vapor barrier.

A subgrade modulus of 100 pounds per cubic inch (pci) is recommended for design of slab-on-grade floors bearing on 6 inches of crushed stone base placed above the existing fill. The design should be in accordance with the latest edition of the American Concrete Institute (ACI 360). The subgrade modulus is suitable for estimating distributions of bearing pressure beneath the slab and for estimating bending moments and shears within the slab. It is not intended for calculating total or differential settlements.

9.3 Scoreboard and Field Lighting Foundations

It is anticipated that the foundations of the new scoreboard and light towers will be subject to relatively high overturning loads, whereas axial loads will be modest in comparison. These structures may be economically supported on drilled shafts. The drilled shafts should bear at a minimum depth of 15 feet bgs or at least 3 times the shaft diameter, whichever is greater. This recommended minimum bearing depth is based on the soil conditions encountered within the borings. The actual depth of embedment and the diameter of the drilled shaft should be determined by the design engineer based on the actual loads and the geotechnical design criteria presented in this report. Drilled shafts should have a minimum diameter of 30 inches.

The following allowable end bearing pressures and side resistance values are provided for design of the drilled shaft based on a factor of safety of 2. The appropriate reduction factors (to be determined by others) should be applied to these ultimate values to obtain the allowable values.

Depth Below Existing Grade (Feet)	Allowable End Bearing Pressure, q_b [3] (Pounds per Sq. Ft.)	Allowable Side Resistance [1,2] (Pounds per Sq. Ft.)
0 to 5	NA	0 to 200
5 to 27	5,000	200 to 500

(1) The lower and higher values correspond to the lower and higher depth values, respectively, cited in the left column. The values are estimated based on casting concrete directly against the sidewall of the excavation on the same day that the excavation starts.
(2) Side resistance should be reduced by half within the upper 4 feet of soil due to frost action.
(3) The provided ultimate end bearing pressures only apply to depths below approximately 15 feet bgs.
(4) The above assumes a groundwater table at 5 feet bgs.

The following soil parameters are provided for designing to resist lateral movement and tilting and for analyzing lateral deflection and lateral stability. Lateral deflection at the top of the drilled shaft should be checked using a computer program such as LPILE. Maximum deflection should not exceed that recommended by the manufacturer of the structure.

Depth (feet)	γ (pcf)	ϕ (degrees)	c (psf)	K_l (pci)	ε_{50}	K_p
0 to 5	120	30	NA	75	NA	3.00
5 to 27	58	28	NA	20	NA	2.77

γ = Effective unit weight of soil (pounds per cubic foot)
ϕ = angle of internal friction (degrees)
c = cohesion (pounds per square foot)
K_l = coefficient of lateral subgrade reaction (pounds per cubic inch) required for p-y curve methods of analysis
ε_{50} = axial strain at 50% of the maximum principal stress difference

The above parameters assume that groundwater table is at 5 feet bgs; the actual depth of the groundwater table may change some of the above parameters. Based on the expected shallow groundwater depth, significant groundwater will probably be encountered during installation of the drilled shafts.

9.4 Design for Lateral Loading of Walls

The retaining wall at the northern end of the running track should be designed in accordance with the following criteria:

Table 9.4.1 – Lateral Load Parameters		
Soil Parameter	Existing Soil	Structural Fill
Angle of Internal Friction	30°	34°
Active Earth Pressure Coefficient (K_a)[1]	0.33	0.28
Passive Earth Pressure Coefficient (K_p)[2]	3.00	3.54
At-Rest Earth Pressure Coefficient (K_o)[3]	0.50	0.44
Unit Weight of Soil (pounds per cubic foot)	120	130

1) Use for freestanding walls, such as retaining walls, where movement of up to 0.0015 X height of wall is both possible and tolerable. Otherwise, use at-rest coefficient.
2) Reduce passive pressure by half above a depth of 4 feet below exterior grade to account for disturbance caused by frost action.
3) Use for walls restrained against outward lateral movement, such as foundation walls.

Additional loading due to temporary and permanent surcharges should be added to the lateral loading exerted by the retained soil. Loads due to supported structures should be applied in appropriate combinations with the lateral loads. Walls should be backfilled in accordance with Section 10 of this report. Placement and compaction of backfill should be observed and tested by a Tectonic geotechnical engineer to monitor that proper compaction is being achieved.

9.5 Foundation Drainage for Retaining Wall

Foundation drains should be installed to prevent collection of infiltrating rainwater behind the retaining wall. Drainage measures should consist of a minimum 12-inch-wide drainage layer of crushed stone placed against the full-height of the retaining wall with a collector pipe at the footing bottom to allow groundwater to be collected. All drains should be drained to a positive outlet or tied into an existing drainage system. Alternatively, a geocomposite drainage board can be utilized instead of a crushed stone drainage layer. The gradation specification for the drainage material is provided in Section 10. The crushed stone should be completely separated from the soil backfill by a permeable geotextile having an apparent

opening size the equivalent of a No. 70 to 100 U.S. Sieve. Grading of the surface of the backfill and the surrounding topography and pavements should provide positive drainage away from the walls.

9.6 Pavements

Traffic data was not provided to Tectonic at the time this report was prepared, and therefore, preliminary pavement design parameters were developed by Tectonic. Light-duty pavement sections may be used for asphalt paved sidewalks, where vehicle traffic is not anticipated, and are designed for foot traffic only. The heavy-duty section is also based on 300 vehicles per day, but with 18 percent heavy truck traffic (buses, tractor trailer, garbage, and delivery trucks), and should be used for paved areas used by vehicles.

Along with the traffic estimations above, an assumed twenty (20) year design life was used for each pavement section. A design California Bearing Ratio (CBR) value of 3 was selected for design purposes, based on the subsurface soils encountered and the anticipated performance of compacted existing soils supporting the pavement structures. We recommend that new and full-depth replacement pavement sections consist of the following:

Table 9.6 - Asphalt Concrete Pavement Sections	
Light Duty [(1)]	1 inch Top Course HMA (Items 402.0973 or 402.1273) 2 inches Binder Course HMA (Items 402.1273 or 402.1973) 4 inches Type 2 Aggregate Subbase (Item 304.12)
Heavy Duty [(1)]	1½ inches Top Course HMA (Items 402.0973 or 402.1273) 4 inches Binder Course HMA (Items 402.1273 or 402.1973) 9 inches Type 2 Aggregate Subbase (Item 304.12)

Notes:

1) All Item Numbers are indicated in New York State Department of Transportation Standard Specifications.
2) Light-duty pavement should be placed in areas subjected to pedestrian traffic only, such as pedestrian walks.
3) Heavy-Duty pavement should be used for vehicles.
4) The above pavement sections are based on the estimations described at the beginning of this section. If the actual traffic loading is significantly different, then a new pavement design should be based on that data.
5) The pavement sections given above are based in part on the minimum and maximum lift thicknesses recommended by NYSDOT for the various pavement item numbers. Other thicknesses may be appropriate for different pavement materials.

10.0 EARTHWORK CONSTRUCTION CRITERIA

The following sections present our recommendations regarding earthwork and construction monitoring.

10.1 General Site Preparation

Initially, the footprint of all proposed improvement areas should be cleared and grubbed, then stripped of all existing fill, pavement, topsoil, and debris. The clearing and grubbing should extend at least 5 feet beyond the planned structures to be constructed. All existing asphalt pavements should be stripped and removed. Debris and vegetation from the clearing operations should be removed from the site and disposed of at a legal disposal facility. All soft or unsuitable materials and subsurface obstructions should be removed from the improvement area and the zone of influence of the slab-on-grade or foundation as appropriate. The zone of influence is defined by 1:1 (horizontal to vertical) planes sloping downward and outward from the bottom edges of the slab or footing.

Any existing utilities within the Work Site should be re-routed around the foundations or removed. The resulting excavations should be backfilled with structural fill in accordance with the procedures outlined in Section10. Trench excavations should be properly benched to allow for adequate compaction.

10.2 Soil Subgrade Preparation

All subgrades should be inspected by the Tectonic geotechnical engineer prior to the placement of structural fill, concrete, or pavement subbase material. Any cut areas of the Work Site should be lowered to the planned subgrade depth, and the exposed native soils should be proofrolled to observe for potentially yielding soils. In any proposed fill areas, the surface should be cleared and grubbed, and the resulting subgrade prior to fill placement should also be proofrolled. Areas to receive structural fill should also be proofrolled before placing any backfill materials.

If dewatering is required, the groundwater table should be lowered to a minimum of 1 foot below the proposed bearing elevation before excavation proceeds. If the bottom of a footing is located within 1 foot of the groundwater table, the footing should be over-excavated to allow a minimum of 6 inches of crushed stone conforming with the requirements Section 10 to be placed to help stabilize the subgrade. In lieu of placing crushed stone, a mud mat may also be used to help stabilize the subgrade.

The foundation and pavement subgrades and any surfaces to receive structural fill or concrete should be proofrolled under the observation of the Tectonic geotechnical engineer. Proofrolling should be accomplished by making a minimum of four (4) passes in perpendicular directions with a 10-ton roller in open areas or a 1.5-ton trench roller in areas where access is confined. Proofrolling should not be performed on saturated soils or in areas having freestanding surface water, until they are dewatered and allowed to dry. Proofrolling soils that exceed the optimum moisture content may disturb the soils, resulting in more unfavorable conditions. Unsuitable materials or areas identified to be soft by the Tectonic geotechnical engineer, based on visual inspection and observation of proofrolling operations, should be removed and replaced with compacted structural fill.

10.3 Fill and Backfill Materials

Structural fill, placed as backfill around and below foundations, and behind retaining walls, should be a well-graded durable granular material, and should consist of clean sand, gravel, crushed stone, crushed gravel, recycled concrete aggregate (RCA), or a mixture of these, and should contain no organic matter. The structural fill materials should meet the following gradation requirements.

Sieve Size	Percent Finer by Weight
2 Inch	100
¼ Inch	25 to 60
No. 40	5 to 40
No. 200	0 to 10

Note, the above gradation is like the New York State Department of Transportation (NYSDOT) gradation for Type 2 Subbase (TABLE 733-04A, Subbase Gradation).

Based on the results of our subsurface investigation and laboratory testing, the existing fill and native soils on the site will generally be acceptable to be used as structural fill. Any soils that are to be used as structural fill should be tested and approved by the Tectonic geotechnical engineer prior to use. Non-conforming existing fill and native soil may be suitable for use as general fill in landscaped areas, provided they are free of trash, debris, roots, vegetation, or other deleterious materials. It should be noted that use of soils containing moderately high fines contents will likely cause construction delays during the winter months, following periods of wet weather, or if the material is wet when excavated.

All general fill and structural fill should be compacted to at least 95 percent of the maximum dry density, at near optimum moisture contents, as determined by the modified Proctor test (ASTM D1557). The degree of compaction should be tested and documented by the Tectonic geotechnical engineer for each lift of fill. Structural fill should generally be placed in uniform horizontal lifts not exceeding 12 inches in loose thickness when using a 10-ton roller. In confined areas, the loose lift thickness should be 9 inches or less and each lift should be compacted with sufficient passes of hand operated vibratory or impact compaction equipment. Backfill in landscaped area should be compacted to at least 90 percent of the maximum dry density, at near optimum moisture contents, as determined by ASTM D1557. A Tectonic geotechnical engineer with appropriate field and laboratory support should inspect all subgrades, approve materials for use as fill, and test backfill materials for compliance with the recommended compaction.

Free draining crushed stone placed below floor slabs and as drainage materials behind foundation walls should be Underdrain Filter Type I materials (TABLE 733-20A) as specified in the NYSDOT Standard Specifications and as follows:

Sieve Size	Percent Finer by Weight
1 inch	100
1/2 inch	30 - 100
1/4 inch	0 - 30
No. 10	0 - 10
No. 20	0 – 5

Material meeting the specifications for ASTM C33, No. 57 stone may also be used as free draining stone.

10.4 Deep Foundation Construction Considerations

Drilled shafts should be constructed under the full-time observation of the Tectonic geotechnical engineer and in accordance with the most recent standards of the International Association of Foundation Drilling (ADSC), American Concrete Institute 336, and the Code. Although not encountered within the borings, plans and specifications should indicate that variable soil conditions may be encountered including cobble/boulder obstructions since some of the soils are glacial in nature. This will allow the contractor to employ the appropriate equipment and construction methodologies. Drilling slurry may be required to maintain the stability of the drilled shaft, and a temporary steel casing may

be needed to prevent collapse of the soils into the drilled shaft. If a casing is used, removal of the casing should be performed so that the level of the concrete within the casing is always at least 1-foot above the bottom of the casing. If casing is used, concrete placement should be done in a manner to prevent "necking" of the drilled shaft.

10.5 Protection of Subgrades and Construction Dewatering

Approved soil subgrades should be protected from the effects of frost, construction traffic, perched groundwater, surface water and precipitation. The necessary protection should be provided as soon after approval by the Tectonic geotechnical engineer as is practicable and should be maintained until coverage with compacted fill or gravel. It is recommended that temporary surface drainage measures be installed to divert runoff away from the proposed construction limits.

As stated previously, it is expected that the groundwater table will be close to the existing ground surface. Any required dewatering should be performed before excavating to the subgrade elevation. If necessary, dewatering should be performed in a manner that will prevent loosening or migration of the subgrade soils and performed to maintain the water level at least 1-foot below the deepest excavation. Given the fact that deep excavations are not anticipated for this project, our office anticipates that sump pits and pumps will be suitable for dewatering. Sump pits should be placed at least 1-foot outside of excavations for every foot below the subgrade elevation that they are excavated. The dewatering system should be designed by a New York State Licensed Professional Engineer, and it should be designed to ensure that dewatering does not result in any loss of soil.

10.6 Excavations and Shoring

Any new fill slopes should be constructed on a slope inclination no steeper than 3 horizontal to 1 vertical unless a detailed slope stability evaluation is performed. Temporary excavation slopes, if required, should conform to the latest Occupational Safety and Health Administration (OSHA) standards, including slopes permitted for specified heights and soil conditions encountered. Based on the soils encountered during the subsurface investigation, the existing fill and native soil layers should be considered Type C soil. The presence of the groundwater table or other deleterious materials could require flatter slopes or temporary excavation support (e.g., shoring and bracing). OSHA and other applicable agency requirements pertaining to worker safety should be met during the excavation activities. Excavations

into the native soil should be feasible utilizing standard construction equipment (i.e., hydraulic excavator). Design of excavation support, if required, should conform to the latest OSHA and other applicable agency requirements and should be performed by a Professional Engineer licensed in New York State.

11.0 CONSTRUCION MONITORING

A Tectonic geotechnical engineer familiar with the existing subsurface conditions and having the appropriate laboratory and field-testing support should be engaged by the Client to observe that all earthwork is performed in accordance with the specifications, the Code, and the criteria provided in this report. As a minimum, the following work should be performed under the observation of the Tectonic geotechnical engineer:

- Foundation, slab, and pavement subgrade preparation
- Proofrolling
- Remedial removal of unsuitable soils
- Construction of asphalt pavement sections
- Placement and compaction of fill and backfill materials
- Construction of drilled shafts for lighting structures
- Monitoring of vibration and deformation for existing foundations and adjacent buildings, particularly during demolition activities
- Dewatering, if necessary

All materials proposed for use as soil fill should be tested and approved prior to delivery to the site. Additionally, all fill materials should be tested as they are being placed to verify that the required compaction is achieved. We further recommend that Tectonic be retained to review the project plans and specifications prior to completion of the bid documents.

12.0 LIMITATIONS

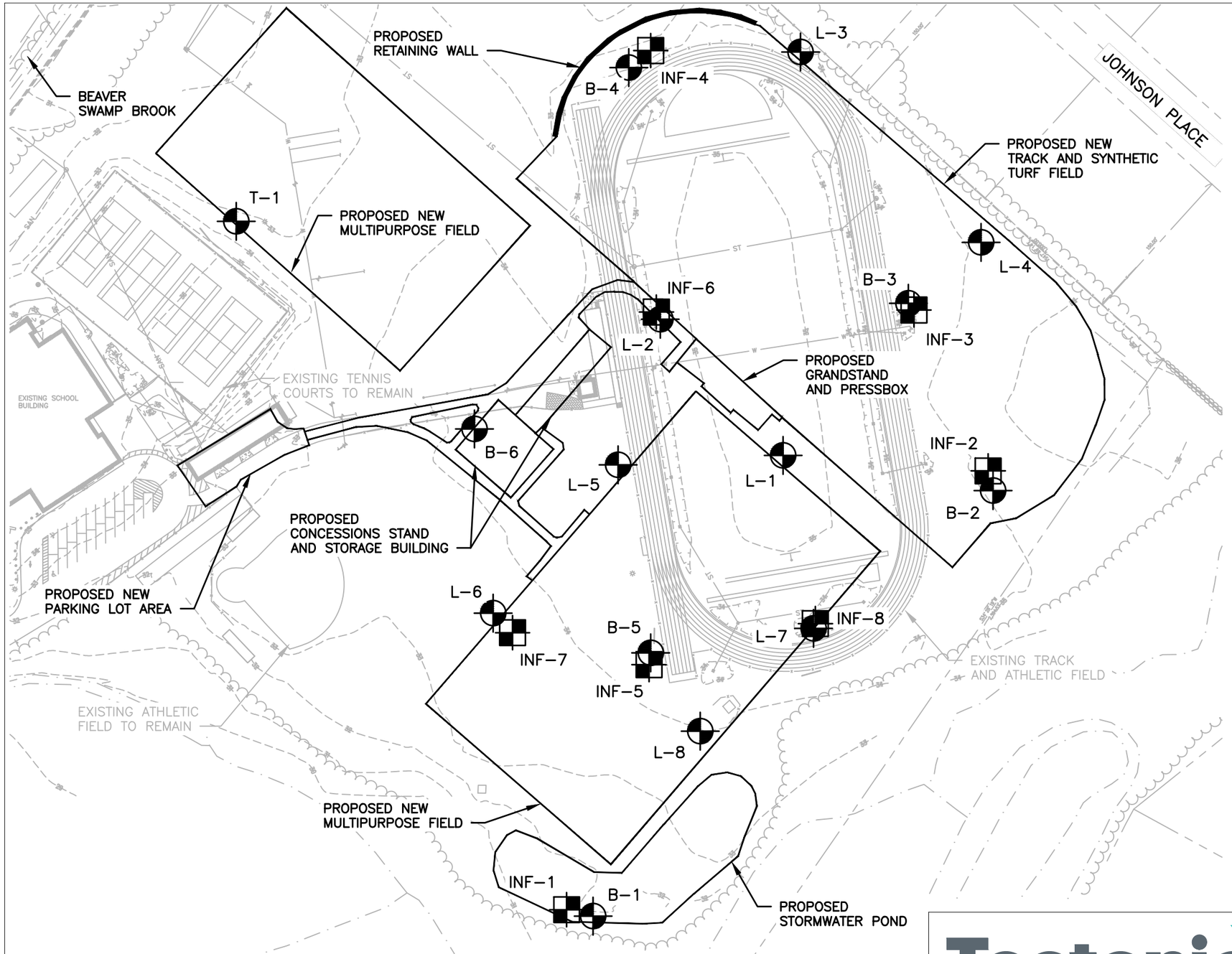
Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by reputable geotechnical engineers and geologists practicing in this or similar situations. The interpretation of the field data is based on good judgment and experience. However, no matter how qualified the geotechnical engineer or detailed the investigation, subsurface conditions cannot always be predicted beyond the points of actual sampling and testing. No other warranty, expressed or implied, is made as to the professional advice included in this report. The recommendations contained in this report are intended for design purposes only. Contractors and others involved in the construction of this project are advised to make

an independent assessment of the soil and groundwater conditions for the purpose of establishing quantities, schedules, and construction techniques.

This report has been prepared for the exclusive use of the Client and Client Agents, for the specific application to the proposed construction detailed in this report. We recommend that prior to construction, Tectonic Engineering Consultants, Geologists, and Land Surveyors D.P.C. reviews the project plans and specifications. It should be noted that upon review of those documents, some recommendations presented herein might be revised or modified. If any changes in the design or location of the proposed structures are planned, Tectonic shall not consider the conclusions and recommendations contained in this report valid unless reviewed and verified in writing. It is further recommended that Tectonic be retained to provide construction monitoring and inspection services to ensure proper implementation of the recommendations contained herein, which would otherwise limit our professional liability.

EK\CDF\CBB: G:\Newburgh\Geotechnical\13200\13211.01 Rye Neck UFSD\Report\13211.01 Rye Neck UFSD georpt.docx

FIGURE **1**



LEGEND

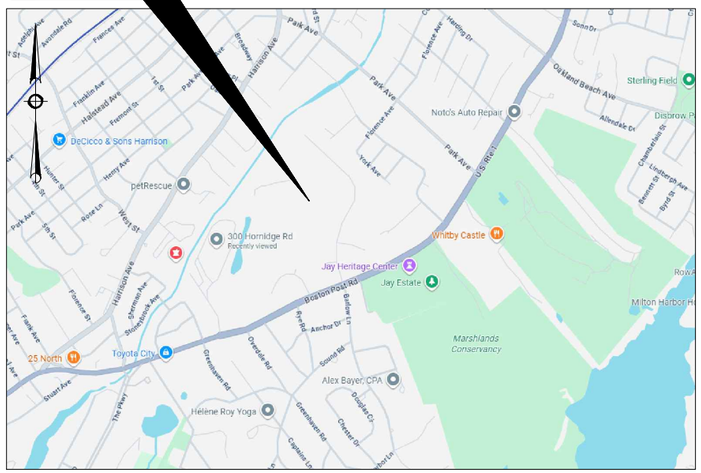
APPROXIMATE BORING LOCATION
B-6, L-7, & T-1

APPROXIMATE INFILTRATION TEST LOCATION
INF-8

NOTES

1. PLAN BASED ON A TOPOGRAPHIC SURVEY PROVIDED BY THE CLIENT AGENT, ENTITLED "RYE NECK UNION FREE SCHOOL DISTRICT – BORING LOCATION MAP", DATED 03/31/2025, AND A PROPOSED SITE PLAN PROVIDED BY THE CLIENT, DATED 04/22/2025.
2. THE BORING AND INFILTRATION TEST LOCATIONS WERE FIELD LOCATED BY TECTONIC, NEAR CLIENT DESIGNATED LOCATIONS, AND SHOULD BE CONSIDERED APPROXIMATE.

SITE



0 1 2 3
ORIGINAL SIZE IN INCHES

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C.
Project Contact Info
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656
(800) 829-6531
www.tectonicengineering.com

BORING AND INFILTRATION TEST LOCATION PLAN

PROPOSED SITE IMPROVEMENTS
RYE NECK UNION FREE SCHOOL DISTRICT
310 HORNIDGE ROAD, VILLAGE OF MAMARONECK,
TOWN OF RYE, WESTCHESTER COUNTY, NEW YORK

Date	Work Order	Drawing No.	Rev
10/01/2025	13211.01	FIGURE 1	0
Scale 1" = 100'			

APPENDIX I

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. B-1

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **10'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER | DATE | TIME | DEPTH
8/22/25 | **2:00 pm** | **9'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **80° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **32.0**
DATUM: **See Remarks**
DATE START: **8/22/25**
DATE FINISH: **8/22/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % ✕ ⊗ △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLE NUMBER	RECOV. LENGTH (IN.)	RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
0								8" Topsoil-like material		
1	4	1 2 2 4	S-1	10		M	SM	Bwn m-f SAND, little f Gravel, little Silt (FILL)		
2										
3	7	1 2 5 4	S-2	18		M	ML	Gy SILT, little f Sand (FILL)		
4										
5	7	2 4 3 6	S-3	5		M	ML	Bwn-blk SILT, little f Sand (FILL)		27.0
6				15			SP	Gy m-f SAND, little f Gravel, trace Silt		
7	13	5 6 7 6	S-4	17		M	SP	Same		
8										
9	7	4 3 4 4	S-5	16		W	SP	Bwn c-f SAND, some c-f Gravel, trace Silt ▼		22.0
10								End of Boring at 10'		
11										
12										
13										
14										
15										17.0
16										
17										
18										
19										
20										12.0
21										
22										
23										
24										
25										7.0

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

BORING No. B-2

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**
SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **10'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER: DATE **8/26/25** | TIME **8:20 am** | DEPTH **6'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **35.1**
DATUM: **See Remarks**
DATE START: **8/26/25**
DATE FINISH: **8/26/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % ✕ ⊗ △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV. LENGTH (IN.)	RECOV. RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	8	1 1 7 7	S-1	18		M	SM	10" Topsoil-like material Bwn c-f SAND, some c-f Gravel, little Silt (FILL)		
3	16	6 7 9 8	S-2	20		M	SM	Same (FILL)		
5	6	3 2 4 4	S-3	16		M	SM	Bwn f SAND, and Silt		30.1
6				4			SP	Bwn m-f SAND, little f Gravel, trace Silt ▼		
7	4	4 2 2 9	S-4	16		W	SP	Bwn-gy m-f SAND, trace f Gravel, trace Silt		
9	11	4 4 7 7	S-5	2		W	SM	Bwn f SAND, and Silt		
10				8			SP	Gy c-f SAND, some c-f Gravel, trace Silt		25.1
11								End of Boring at 10'		
15										20.1
20										15.1
25										10.1

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. B-3

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **12'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER | DATE | TIME | DEPTH
| **8/26/25** | **9:15 am** | **5'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **34.0**
DATUM: **See Remarks**
DATE START: **8/26/25**
DATE FINISH: **8/26/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % ✕ ⊗ △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV.: LENGTH (IN.)	RECOV.: RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1–2	7	1 3 4 5	S-1	20		M	SP	7" Topsoil-like material Bwn c-f SAND, some c-f Gravel, trace Silt (FILL)		
3–4	14	5 7 7 5	S-2	17		M	SP	Same (FILL)		
5–6	7	5 3 4 3	S-3	22		W	SP	Bwn m-f SAND, trace Silt ▼		29.0
7–8	6	2 3 3 3	S-4	17		W	SP	Same		
9–10	0	WOH WOH WOH WOH	S-5	20		W	SP	Same		24.0
11–12	0	WOH WOH WOH WOH	S-6	24		W	SP	Same		
13								End of Boring at 12'		
15										19.0
20										14.0
25										9.0

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. B-4

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **10'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER | DATE | TIME | DEPTH
8/22/25 | **8:30 am** | **5.5'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **65° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **34.0**
DATUM: **See Remarks**
DATE START: **8/22/25**
DATE FINISH: **8/22/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT %
10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV. LENGTH (IN.)	RECOV. RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	9	2 4 5 5	S-1	15		M	SP	4" Topsoil-like material Bwn c-f SAND, some c-f Gravel, trace Silt (FILL)		
3	17	5 8 9 9	S-2	10		M	SP	Same (FILL)		
5	3	4 2 1 5	S-3	8		W	SM	Gy f SAND, and Silt		29.0
7	6	1 2 4 3	S-4	20		W	SP	Bwn-gy m-f SAND, little f Gravel, trace Silt		
9	9	4 4 5 6	S-5	17		W	SP	Same		24.0
10								End of Boring at 10'		
14										19.0
19										14.0
24										9.0

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. B-5

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **10'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER | DATE | TIME | DEPTH
8/22/25 | **11:30 am** | **9'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **34.4**
DATUM: **See Remarks**
DATE START: **8/22/25**
DATE FINISH: **8/22/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % ✕ ⊗ △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLE NUMBER	RECOV. LENGTH (IN.)	RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	5	1 2 3 5	S-1	10		M	SM	8" Topsoil-like material Bwn c-f SAND, some c-f Gravel, little Silt (FILL)		
2										
3	12	5 7 5 7	S-2	8		M	SM	Same (FILL)		
4				8			SM	Gy f SAND, and Silt		
5	18	4 10 8 9	S-3	8		M	SM	Same		29.4
6				8			SP	Bwn c-f SAND, some c-f Gravel, trace Silt		
7	18	7 9 9 7	S-4	16		M	SP	Same		
8										
9	6	2 3 3 4	S-5	15		W	SP	Same ▼		
10										24.4
11								End of Boring at 10'		
12										
13										
14										
15										19.4
16										
17										
18										
19										
20										14.4
21										
22										
23										
24										
25										9.4

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. B-6

SHEET No. 1 of 2

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **27'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER | DATE | TIME | DEPTH
8/22/25 | **10:00 am** | **10'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **65° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **34.1**
DATUM: **See Remarks**
DATE START: **8/22/25**
DATE FINISH: **8/22/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT %
10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLE NUMBER	RECOV. LENGTH (IN.)	RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	5	3 2 3 8	S-1	16		M	SP	3" Topsoil-like material Bwn c-f SAND, some c-f Gravel, trace Silt (FILL)		
3	11	3 5 6 8	S-2	17		M	SP	Bwn m-f SAND, little f Gravel, trace Silt (FILL)		
5	8	7 6 2 3	S-3	12		M	SM	Bwn m-f SAND, little f Gravel, little Silt (FILL)		29.1
7	19	2 8 11 10	S-4	9 9		M	SM SP	Bwn f SAND, and Silt Bwn m-f SAND, little f Gravel, trace Silt		
9	12	6 6 6 6	S-5	16		W	SP	Same		
10								▼		24.1
11	7	2 3 4 4	S-6	24		W	SP	Same		
13										
15										19.1
16	4	1 1 3 4	S-7	24		W	SM	Bwn m-f SAND, little Silt, trace f Gravel		
19										
20										14.1
21	2	1 1 1 2	S-8	24		W	SP	Bwn m-f SAND, trace Silt		
23										
25										9.1

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**

PROJECT: **Rye Neck UFSD**

LOCATION: **Mamaroneck, NY**

BORING No. B-6

SHEET No. 2 of 2

CLIENT: **Rye Neck Union Free School District**

CONTRACTOR: **Core Down Drilling LLC**

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOV. LENGTH (IN.)	SAMPLES: RECOV. RQD (%)	SAMPLES: MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
26	6	2 3 3 4	S-9	16		W	SP	Same		
27										
28								End of Boring at 27'		
29										
30										4.1
31										
32										
33										
34										
35										-0.9
36										
37										
38										
39										
40										-5.9
41										
42										
43										
44										
45										-10.9
46										
47										
48										
49										
50										-15.9
51										
52										
53										
54										
55										-20.9

UNCONFINED COMPRESS. STRENGTH (TONS/FT)
1 2 3 4 5

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %
10 20 30 40 50

STANDARD PENETRATION (BLOWS/FT.)
10 20 30 40 50

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. L-1

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **22'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER: DATE **8/25/25** | TIME **12:30 pm** | DEPTH **4.5'**

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **35.3**
MON. WELL ☐ YES ☒ NO
DATUM: **See Remarks**
SCREEN DEPTH: **---** TO **---**
DATE START: **8/25/25**
WEATHER: **Overcast** TEMP: **75° F**
DATE FINISH: **8/25/25**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % ✕ ⊗ △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLE NUMBER	RECOV. LENGTH (IN.)	RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1–2	6	2 3 3 3	S-1	16		M	SM	8" Topsoil-like material Bwn c-f SAND, some c-f Gravel, little Silt (FILL)		
3–4	14	5 7 7 8	S-2	17		M	SP	Bwn m-f SAND, trace f Gravel, trace Silt		
5–6	9	4 4 5 5	S-3	18		W	SP	Same		30.3
7–8	6	4 3 3 3	S-4	16		W	SP	Same		
9–10	7	2 3 4 3	S-5	19		W	SP	Same		25.3
11–12	5	3 2 3 2	S-6	20		W	SP	Same		
13–14										
15–16	2	1 1 1 1	S-7	20		W	SP	Bwn m-f SAND, little f Gravel, trace Silt		20.3
17–18										
19–20										15.3
21–22	4	2 2 2 2	S-8	24		W	SP	Bwn m-f SAND, trace f Gravel, trace Silt		
23–24								End of Boring at 22'		10.3
25										

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. L-2

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **22'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER: DATE **8/25/25** | TIME **1:40 pm** | DEPTH **4.5'**

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **34.2**
MON. WELL ☐ YES ☒ NO
DATUM: **See Remarks**
SCREEN DEPTH: **---** TO **---**
DATE START: **8/25/25**
WEATHER: **Overcast** TEMP: **80° F**
DATE FINISH: **8/25/25**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT %
10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV. LENGTH (IN.)	RECOV. RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
0								8" Topsoil-like material		
1–2	3	2, 1, 2, 2	S-1	16		M	SP	Bwn c-f SAND, some c-f Gravel, trace Silt (FILL)		
3–4	10	3, 5, 5, 6	S-2	16		M	SP	Bwn m-f SAND, trace f Gravel, trace Silt (FILL)		
5–6	7	4, 3, 4, 4	S-3	16		M	SP	Bwn m-f SAND, little f Gravel, trace Silt (FILL)		29.2
7–8	6	3, 2, 4, 3	S-4	16		W	SP	Bwn m-f SAND, trace f Gravel, trace Silt		
9–10	3	3, 2, 1, 1	S-5	20		W	SP	Same		24.2
11–12	4	2, 2, 2, 4	S-6	20		W	SP	Same		
13–15										19.2
16–17	5	1, 2, 3, 3	S-7	24		W	SP	Bwn m-f SAND, trace f Gravel, trace Silt		
18–20										14.2
21–22	3	1, 1, 2, 2	S-8	22		W	SP	Same		
23–25								End of Boring at 22'		9.2

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. L-3

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **22'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER

DATE	TIME	DEPTH
8/26/25	**11:30 am**	**6.5'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **34.5**
DATUM: **See Remarks**
DATE START: **8/26/25**
DATE FINISH: **8/26/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % × — WATER CONTENT % ⊗ — LIQUID LIMIT % △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLE NUMBER	RECOV. LENGTH (IN.)	RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1-2	16	4 8 8 6	S-1	15		M	SM	5" Topsoil-like material Bwn-gy c-f SAND, some c-f Gravel, little Silt (FILL)		
3-4	18	6 9 9 6	S-2	18		M	SM	Same (FILL)		
5-6	13	6 6 7 5	S-3	16		M	SP	Bwn m-f SAND, trace f Gravel, trace Silt		29.5
7-8	10	5 5 5 4	S-4	20		W	SP	Same		
9-10	4	3 2 2 2	S-5	15		W	SP	Same		24.5
11-12	2	2 1 1 2	S-6	24		W	SP	Same		
13-14	0	2 WOH WOH 1	S-7	9		W	SP	Bwn m-f SAND, little f Gravel, trace Silt		
15										19.5
16-17	4	1 2 2 3	S-8	16		W	SP	Same		
18-19	5	3 3 2 3	S-9	12		W	SP	Same		
20										14.5
21-22	4	1 2 2 3	S-10	22		W	SP	Bwn m-f SAND, trace f Gravel, trace Silt		
23-24								End of Boring at 22'		9.5
25										

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. L-4

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **20'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER | DATE | TIME | DEPTH
8/26/25 | **10:30 am** | **5.5'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **35.0**
DATUM: **See Remarks**
DATE START: **8/26/25**
DATE FINISH: **8/26/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % ✕ ⊗ △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV.: LENGTH (IN.)	RECOV.: RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	5	2 2 3 5	S-1	17		M	SM	6" Topsoil-like material Bwn m-f SAND, little f Gravel, little Silt (FILL)		
3	15	6 8 7 8	S-2	10		M	SM	Same (FILL)		
5	13	6 7 6 5	S-3	16		W	SP	Bwn m-f SAND, little f Gravel, trace Silt ▼		30.0
7	8	3 4 4 6	S-4	19		W	SM	Bwn-blk m-f SAND, little f Gravel, little Silt		
9	3	2 1 2 2	S-5	17		W	SP	Bwn m-f SAND, little f Gravel, trace Silt		25.0
11	0	1 WOH WOH 1	S-6	14 10		W	SP SM	Same Bwn f SAND, and Silt		
13	2	WOH 1 1 4	S-7	17		W	SM	Bwn-gy f SAND, and Silt		20.0
16	5	2 2 3 3	S-8	10 10		W	SP SP	Bwn m-f SAND, trace f Gravel, trace Silt Bwn c-f SAND, some c-f Gravel, trace Silt		
20								Auger to 20'		15.0
								End of Boring at 20'		
25										10.0

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. L-5

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **22'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER

DATE	TIME	DEPTH
8/22/25	**1:00 pm**	**12'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **34.8**
DATUM: **See Remarks**
DATE START: **8/22/25**
DATE FINISH: **8/22/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % ✕ ⊗ △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV.: LENGTH (IN.)	RECOV.: RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	4	1 1 3 5	S-1	16		M	SM	4" Topsoil-like material Bwn m-f SAND, little f Gravel, little Silt (FILL)		
3	15	2 6 9 10	S-2	20		M	SP	Bwn m-f SAND, trace Silt		
5	12	6 7 5 6	S-3	15		M	SP	Same		29.8
7	7	4 4 3 3	S-4	17		M	SP	Same		
9	6	2 3 3 2	S-5	20		M	SP	Same		
10										24.8
11	5	2 2 3 3	S-6	10		M	SP	Same		
12								▼		
15										19.8
16	8	2 3 5 5	S-7	24		W	SP	Bwn c-f SAND		
20										14.8
21	7	4 3 4 4	S-8	10		W	SP	Same		
22								End of Boring at 22'		
25										9.8

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. L-6

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **22'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER

DATE	TIME	DEPTH
8/22/25	**11:00 am**	**14'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: --- TO ---
WEATHER: **Clear** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **33.8**
DATUM: **See Remarks**
DATE START: **8/22/25**
DATE FINISH: **8/22/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV. LENGTH (IN.)	RECOV. RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	6	1, 2, 4, 4	S-1	20		M	SM	6" Topsoil-like material Bwn c-f SAND, some c-f Gravel, little Silt (FILL)		
3	10	3, 5, 5, 8	S-2	16		M	SM	Gy-bwn c-f SAND, some c-f Gravel, little Silt (FILL)		
5	13	8, 7, 6, 6	S-3	16		M	SP	Bwn m-f SAND, trace Silt		28.8
7	8	4, 4, 4, 4	S-4	16		M	SP	Same		
9	7	3, 3, 4, 4	S-5	15		M	SP	Same		
11	13	3, 7, 6, 5	S-6	24		M	SP	Same		23.8
13										
14									▼	
15										18.8
16	5	2, 2, 3, 2	S-7	10		W	SM	Gy m-f SAND, little Silt		
18										
19										
20										13.8
21	6	4, 3, 3, 3	S-8	8		W	SM	Same		
23								End of Boring at 22'		
24										
25										8.8

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. L-7

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **22'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER

DATE	TIME	DEPTH
8/25/25	**11:25 am**	**4.5'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Overcast** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **33.8**
DATUM: **See Remarks**
DATE START: **8/25/25**
DATE FINISH: **8/25/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % ✕ ⊗ △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV. LENGTH (IN.)	RECOV. RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	4	1 1 3 2	S-1	15		M	SP	7" Topsoil-like material Bwn c-f SAND, some c-f Gravel, trace Silt (FILL)		
3	10	3 6 4 5	S-2	16		M	SP	Same (FILL)		
5	6	4 3 3 3	S-3	16		W	SP-SM	Bwn f SAND, trace Silt		28.8
7	5	4 2 3 2	S-4	20		W	SP-SM	Same		
9	3	2 2 1 2	S-5	19		W	SP-SM	Same		
11	7	2 3 4 2	S-6	24		M	SP-SM	Same		23.8
13										
15										18.8
16	4	2 1 3 1	S-7	17		W	SP	Bwn m-f SAND, trace f Gravel, trace Silt		
18										
20										13.8
21	2	1 1 1 1	S-8	9 8		W	SP SM	Bwn m-f SAND, trace Silt Gy f SAND, and Silt		
23								End of Boring at 22'		
25										8.8

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. L-8

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **22'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER: DATE **8/25/25** | TIME **9:45 am** | DEPTH **5.5'**

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **34.0**
MON. WELL ☐ YES ☒ NO
DATUM: **See Remarks**
SCREEN DEPTH: **---** TO **---**
DATE START: **8/25/25**
WEATHER: **Overcast** TEMP: **75° F**
DATE FINISH: **8/25/25**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

UNCONFINED COMPRESS. STRENGTH (TONS/FT) ● 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % ✕ ⊗ △ 10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) ● 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLE NUMBER	RECOV. LENGTH (IN.)	RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1–2	16	2 6 10 10	S-1	18		M	SM	8" Topsoil-like material Bwn-blk c-f SAND, some c-f Gravel, little Silt (FILL)		
3–4	11	7 7 4 6	S-2	8 10		M	SM SM	Same (FILL) Gy f SAND, and Silt (FILL)		
5–6	9	5 3 6 7	S-3	10 5		M	SM SP	Same (FILL) Gy c-f SAND, some c-f Gravel, trace Silt ▼		29.0
7–8	13	6 6 7 7	S-4	18		W	SP	Same		
9–10	9	5 5 4 4	S-5	16		W	SP	Bwn m-f SAND, little f Gravel, trace Silt		24.0
11–12	6	4 3 3 4	S-6	17		W	SP	Bwn m-f SAND, trace f Gravel, trace Silt		
13–15										19.0
16–17	6	4 3 3 3	S-7	24		W	SP	Bwn m-f SAND, trace f Gravel, trace Silt		
18–20										14.0
21–22	11	4 6 5 6	S-8	24		W	SP	Bwn-gy m-f SAND, trace f Gravel, trace Silt		
23–25								End of Boring at 22'		9.0

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

Tectonic

PROJECT No. **13211.01**
PROJECT: **Rye Neck UFSD**
LOCATION: **Mamaroneck, NY**

BORING No. T-1

SHEET No. 1 of 1

CLIENT: **Rye Neck Union Free School District**
CONTRACTOR: **Core Down Drilling LLC**
METHOD OF ADVANCING BORING | DIA. | DEPTH
POWER AUGER: | **3 1/4"** | **0** TO **22'**
ROT. DRILL: | | TO
CASING: | | TO
DIAMOND CORE: | | TO
Geoprobe 6712DT with Automatic Hammer

GROUND WATER | DATE | TIME | DEPTH
8/26/25 | **1:00 pm** | **6.5'**

MON. WELL ☐ YES ☒ NO
SCREEN DEPTH: **---** TO **---**
WEATHER: **Clear** TEMP: **75° F**
DEPTH TO ROCK: **Not Encountered'**
*CHANGES IN STRATA ARE INFERRED

INSPECTOR: **Carly Chardavoyne**
DRILLER: **Kevin Nash**
SURFACE ELEVATION: **33.4**
DATUM: **See Remarks**
DATE START: **8/26/25**
DATE FINISH: **8/26/25**

UNCONFINED COMPRESS. STRENGTH (TONS/FT) 1 2 3 4 5
PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT %
10 20 30 40 50
STANDARD PENETRATION (BLOWS/FT.) 10 20 30 40 50

DEPTH (FT.)	N OR MIN./FT.	PENETRATION RESISTANCE (BL/6 IN.)	SAMPLES: SAMPLE NUMBER	RECOV. LENGTH (IN.)	RECOV. RQD (%)	MOISTURE	UNIFIED SOIL CLASS.	DESCRIPTION OF MATERIAL	LITHOLOGY*	ELEVATION (FT.)
1	14	3 7 7 8	S-1	20		M	SM	5" Topsoil-like material Bwn c-f SAND, some c-f Gravel, little Silt (FILL)		
3	18	7 9 9 8	S-2	16		M	SM	Bwn f SAND, and Silt (FILL)		
5	12	6 6 6 5	S-3	16		M	SP	Bwn m-f SAND, trace f Gravel, trace Silt		28.4
7	5	4 2 3 3	S-4	22		W	SP	Same		
9	2	1 1 1 1	S-5	16		W	SP	Same		23.4
11	0	1 1 WOH 1	S-6	16		W	SM	Bwn m-f SAND, little Silt, trace f Gravel		
13								End of Boring at 12'		
15										18.4
20										13.4
25										8.4

REMARKS: Surface elevations are based on the Rye Neck Union Free School District - Boring Location Plan drawing provided by LAN Associates dated March 31, 2025. Elevations reference the NAVD 88 Datum.

BORING LOG 13211.01.GPJ TECTONIC ENG.GDT 9/25/25

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LEGEND FOR SOIL DESCRIPTION

COARSE GRAINED SOIL (Coarser then No. 200 Sieve)

DESCRIPTIVE TERM & GRAIN SIZE

TERM	SAND					GRAVEL
coarse - c	No.	4	Sieve to No.	10	Sieve	3" to 3/4"
medium - m	No.	10	Sieve to No.	40	Sieve	3/4" to 3/16"
fine - f	No,	40	Sieve to No.	200	Sieve	

COBBLES 3" to 10"

BOULDERS 10" +

GRADATION DESIGNATIONS	PROPORTIONS OF COMPONENT
fine, f	Less than 10% coarse to medium
medium to fine, m-f	Less than 10% coarse
medium, m	Less than 10% coarse and fine
coarse to medium, c-m	Less than 10% fine
coarse, c	Less than 10% medium and fine
coarse to fine, c-f	All greater than 10%

FINE GRAINED SOIL (Finer than No. 200 Sieve)

DESCRIPTION	PLASTICITY INDEX	PLASTICITY
Silt	0 - 1	none
Clayey Silt	2 - 5	slight
Silt & Clay	6 - 10	low
Clay & Silt	11 - 20	medium
Silty Clay	21 - 40	high
Clay	greater than 40	very high

PROPORTION

DESCRIPTIVE TERM	PERCENT OF SAMPLE WEIGHT
trace	1 - 10
little	10 - 20
some	20 - 35
and	35 - 50

The primary component is fully capitalized if >50% of sample

COLOR

Blue - blue	Gy - gray	Wh - white
Blk - black	Or - orange	Yl - yellow
Bwn - brown	Rd - red	Lgt - light
Gn - green	Tn - tan	Dk - dark

SAMPLE NOTATION

S - Split Spoon Soil Sample
U - Undisturbed Tube Sample
C - Core Sample
B - Bulk Soil Sample
NR - No Recovery of Sample

WOC - Weight of Casing
WOR - Weight of Rods
WOH - Weight of Hammer
PPR - Compressive Strength based on Pocket Penetrometer
TV - Shear Strength (tsf) based on Torvane

ADDITIONAL CLASSIFICATIONS

New York City Building Code soil classifications are given in parentheses at the end of each description of material, if applicable. See sections 1804.2 of the 2008 Building Code for further details.

Tectonic

1279 Route 300
Newburgh, NY 12550
(845) 567-6656

INFILTRATION TEST DATA

W.O. No.: 13211.01 Lot No.: Date: 8/27/2025

Client: Rye Neck Union Free School District

Project: Rye Neck UFSD Site Improvements

Project Engineer: Christopher Ferri / Ryan Villa

Inspector: Carly Chardavoyne

Infiltration Test Location: (see reverse) See Boring Location Plan, Figure 1

Weather Conditions: Clear Temperature: 65

TEST HOLE No.	TEST HOLE DEPTH	TEST HOLE DIA.		INFILTRATION TEST RUNS Drop in water levels (inches) at 1-hour intervals						STABLE RATE (in/hr.)
INF-1	2'	4"	8:00 AM	6.0	4.0	3.0	4.0			3.5
			TIME	9:00 AM	10:00 AM	11:00 AM	12:00 PM			
COMMENTS: Performed near boring B-1. Stable rate is taken as the average of the last two readings.										
INF-2	4'	4"	8:05 AM	1.0	1.0	1.0	2.0			1.0
			TIME	9:05 AM	10:05 AM	11:05 AM	12:05 PM			
COMMENTS: Performed near boring B-2										

Sketch Requirements

(To Be Completed On Back of Sheet)

Indicate North

Indicate Nearest Roadway

Indicate Property Lines

Indicate Off-Sets from 2 Adjacent Property Lines

Tectonic

1279 Route 300
Newburgh, NY 12550
(845) 567-6656

INFILTRATION TEST DATA

W.O. No.: 13211.01 Lot No.: Date: 8/27/2025

Client: Rye Neck Union Free School District

Project: Rye Neck UFSD Site Improvements

Project Engineer: Christopher Ferri / Ryan Villa

Inspector: Carly Chardavoyne

Infiltration Test Location: (see reverse) See Boring Location Plan, Figure 1

Weather Conditions: Clear Temperature: 65

TEST HOLE No.	TEST HOLE DEPTH	TEST HOLE DIA.		INFILTRATION TEST RUNS Drop in water levels (inches) at 1-hour intervals						STABLE RATE (in/hr.)
INF-3	3'	4"	8:10 AM	10.0	10.0	9.0	10.0			10.0
			TIME	9:10 AM	10:10 AM	11:10 AM	12:10 PM			
COMMENTS: Performed near boring B-3										
INF-4	2'	4"	8:15 AM	> 24	> 24	> 24	> 24			> 24
			TIME	9:15 AM	10:15 AM	11:15 AM	12:15 PM			
COMMENTS: Performed near boring B-4										

Sketch Requirements

(To Be Completed On Back of Sheet)

Indicate North

Indicate Nearest Roadway

Indicate Property Lines

Indicate Off-Sets from 2 Adjacent Property Lines

Tectonic

1279 Route 300
Newburgh, NY 12550
(845) 567-6656

INFILTRATION TEST DATA

W.O. No.: 13211.01 Lot No.: Date: B-5: 8/26/2025 L-2: 8/27/2025

Client: Rye Neck Union Free School District

Project: Rye Neck UFSD Site Improvements

Project Engineer: Christopher Ferri / Ryan Villa

Inspector: Carly Chardavoyne

Infiltration Test Location: (see reverse) See Boring Location Plan, Figure 1

Weather Conditions: Clear Temperature: 65

TEST HOLE No.	TEST HOLE DEPTH	TEST HOLE DIA.		INFILTRATION TEST RUNS Drop in water levels (inches) at 1-hour intervals						STABLE RATE (in/hr.)
INF-5	3'-6"	4"	7:45 AM	12.0	13.0	13.0	11.0			13.0
			TIME	8:45 AM	9:45 AM	10:45 AM	11:45 AM			
COMMENTS: Performed near boring B-5										
INF-6	2'-6"	4"	7:50 AM	> 24	> 24	> 24	> 24			> 24
			TIME	8:50 AM	9:50 AM	10:50 AM	11:50 AM			
COMMENTS: Performed near boring L-2										

Sketch Requirements

(To Be Completed On Back of Sheet)

Indicate North

Indicate Nearest Roadway

Indicate Property Lines

Indicate Off-Sets from 2 Adjacent Property Lines

Tectonic

1279 Route 300
Newburgh, NY 12550
(845) 567-6656

INFILTRATION TEST DATA

W.O. No.: 13211.01 Lot No.: _____ Date: L-6: 8/27/2025 L-7: 8/26/2025

Client: Rye Neck Union Free School District

Project: Rye Neck UFSD Site Improvements

Project Engineer: Christopher Ferri / Ryan Villa

Inspector: Carly Chardavoyne

Infiltration Test Location: (see reverse) See Boring Location Plan, Figure 1

Weather Conditions: Clear Temperature: 65

TEST HOLE No.	TEST HOLE DEPTH	TEST HOLE DIA.		INFILTRATION TEST RUNS Drop in water levels (inches) at 1-hour intervals						STABLE RATE (in/hr.)
INF-7	3'	4"	7:55 AM	7.0	6.0	6.0	6.0			6.0
			TIME	8:55 AM	9:55 AM	10:55 AM	11:55 AM			
COMMENTS: Performed near boring L-6										
INF-8	2'-6"	4"	7:50 AM	> 24	20.0	16.0	16.0			16.0
			TIME	8:50 AM	9:50 AM	10:50 AM	11:50 AM			
COMMENTS: Performed near boring L-7										

Sketch Requirements

(To Be Completed On Back of Sheet)

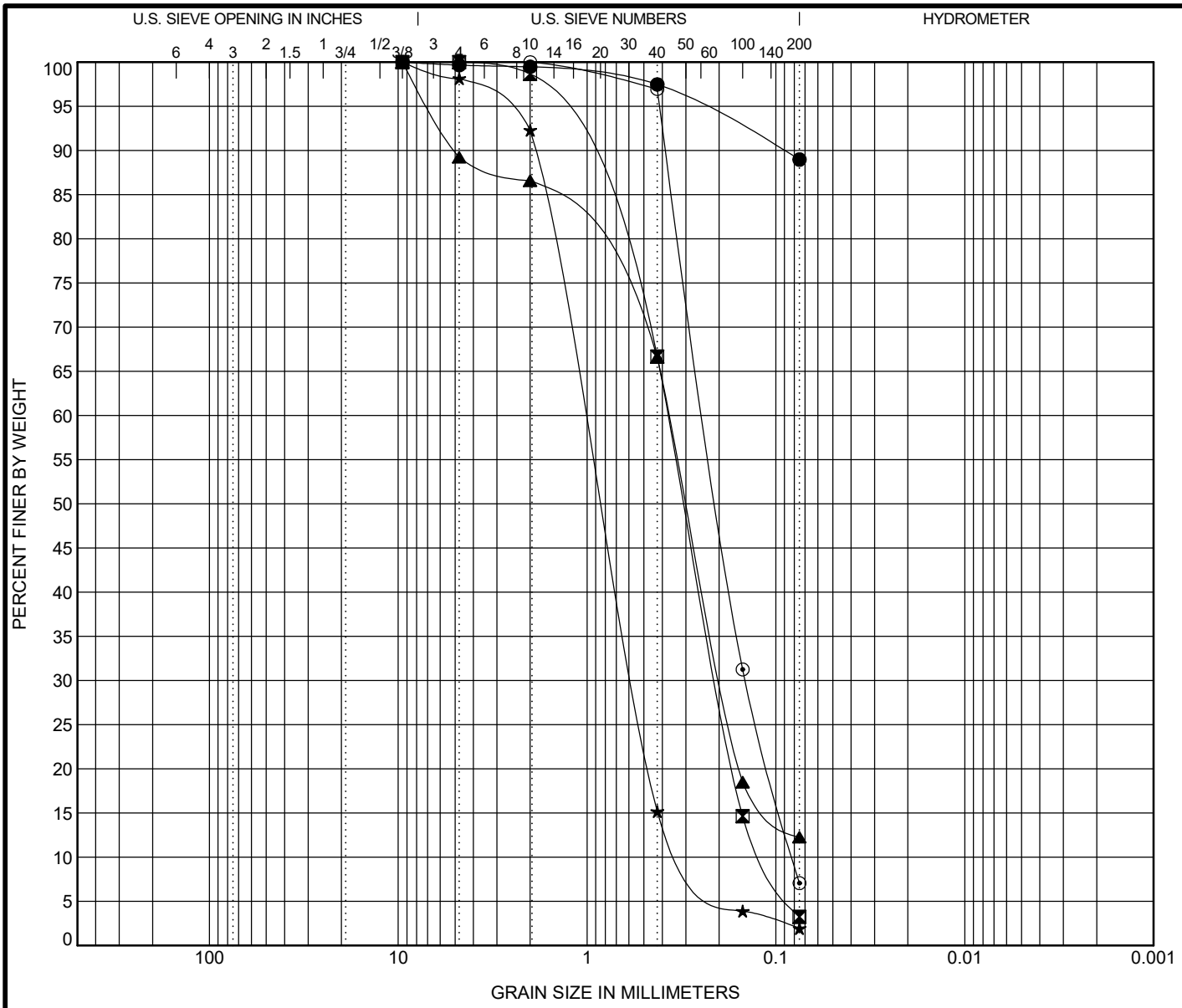
Indicate North

Indicate Nearest Roadway

Indicate Property Lines

Indicate Off-Sets from 2 Adjacent Property Lines

APPENDIX II



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Identification			Classification	WC%	LL	PL	PI	Cc	Cu
●	B-1	2.0	S-2	Gy-Bwn SILT, little f Sand	36.0					
⊠	B-3	4.0	S-3	Bwm m-f SAND, trace Silt	25.3				0.99	3.29
▲	B-6	4.0	S-3	Gy-Bwn m-f SAND, little Silt, little f Gravel	14.9				1.72	6.32
★	L-3	10.0	S-6	Bwn m-f SAND, trace f Gravel, trace Silt	22.0				1.19	3.97
⊙	L-7	6.0	S-4	Bwn f SAND, trace Silt	32.0				1.09	2.90

	Sample Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	Source of Material
●	B-1	2.0	S-2	9.5				0.3	10.7	89.0		Boring
⊠	B-3	4.0	S-3	9.5	0.372	0.204	0.113	0.0	96.7	3.3		Boring
▲	B-6	4.0	S-3	9.5	0.369	0.192		10.8	77.0	12.3		Boring
★	L-3	10.0	S-6	9.5	1.046	0.572	0.264	1.9	96.2	1.9		Boring
⊙	L-7	6.0	S-4	4.75	0.237	0.145	0.082	0.0	92.9	7.1		Boring

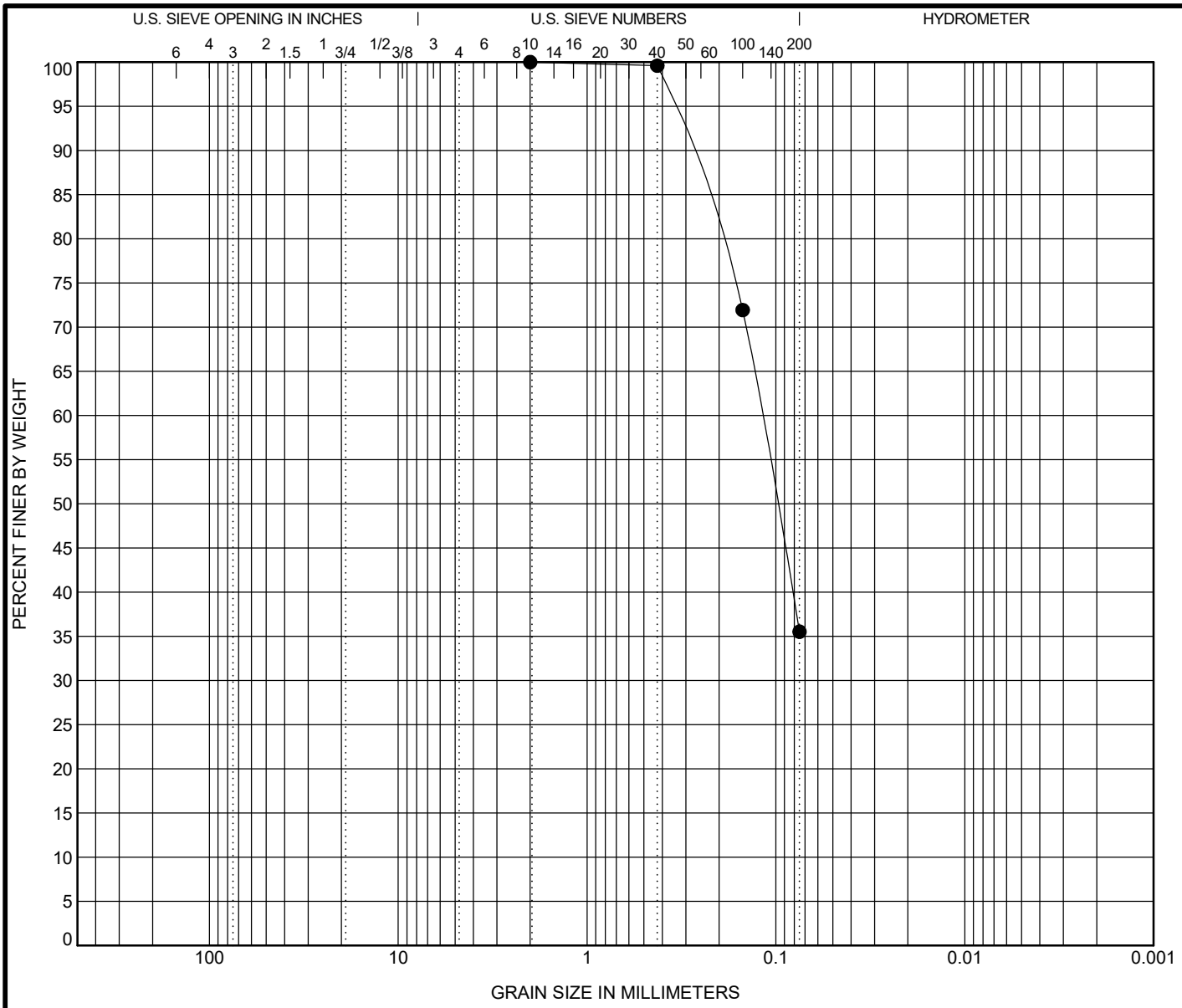
Tectonic
280 Little Britain Road, Bldg. 2
Newburgh, NY 12550
Telephone: (845) 563-9081 Fax: (845) 563-9085

GRAIN SIZE DISTRIBUTION

Project No: **13211.01** Date: **9/23/25**

Project: **Rye Neck UFSD Site Improvements**

Location: **Mamaroneck, NY**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Identification			Classification	WC%	LL	PL	PI	Cc	Cu
●	**T-1**	**2.0**	**S-2**	**Bwn f SAND, and Silt**	**24.5**					

	Sample Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	**%Clay**	Source of Material
●	**T-1**	**2.0**	**S-2**	**2**	**0.12**			**0.0**	**64.5**	**35.5**		**Boring**

Tectonic

280 Little Britain Road, Bldg. 2
Newburgh, NY 12550
Telephone: (845) 563-9081 Fax: (845) 563-9085

GRAIN SIZE DISTRIBUTION

Project No: **13211.01** Date: **9/23/25**

Project: **Rye Neck UFSD Site Improvements**

Location: **Mamaroneck, NY**

APPENDIX III



Work order#: **00286479**
Work type: **Locating**

Client: **Tectonic Engineering - Newburgh**
Project Manager: **Odolfo Chavez**

Address **300 Hornidge Rd, Mamaroneck, NY, 10543**

Scale: **NTS**
Date: **8/22/2025 12:36:46 PM**

Legend

- Elec. Line
- Water Line
- Reclaimed Water Line
- Soil Boring
- Storm Inlet/Outlet
- Storm Line
- Unknown Line

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6500 Technology Center Drive Suite 200
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1-888-858-9830

You should always have public utilities located by 811 before digging.

1. Utility Information

The subsurface utilities depicted are for informational purposes only. Blood Hound is not a licensed surveying or engineering firm. Independent verification is required for any official use, including design or construction.

2. Utility Detection Limitations

Subsurface utility detection was conducted using methods that may include electromagnetic (EM) locating and/or ground-penetrating radar (GPR). The accuracy of these methods can be affected by electromagnetic interference, soil composition, and groundwater conditions.

3. Depth Accuracy

Unless confirmed through test holes (potholing), any subsurface utility depths shown were estimated using EM or GPR technologies and are approximate.

4. GNSS Equipment and Accuracy

Utility locations were designated using a vLoc3 RTK-Pro GNSS receiver unless otherwise noted. GNSS data accuracy is subject to limitations based on signal quality, environmental factors, and equipment tolerances.

Web Map Viewer Terms

5. Utility Data in Viewer

The web map viewer provides access to utility data collected during fieldwork. This data is for informational purposes only and should not be used for design or construction without independent verification.

6. Basemap Alignment

Google Satellite imagery has varying levels of positional accuracy. As a result, collected features will be accurately placed in their real-world locations but may not align precisely with the basemap.

7. Data Validity

Utility data reflects site conditions at the time of collection. Changes to site conditions may occur, and the data may no longer be accurate over time.

8. Access Duration

The web map viewer link will remain active for 6 months and will be deactivated afterward. For extended access, please contact our team at bhugcad@bhug.com

9. Agreement to Terms

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https://bhug.geolantis.com

Use Edge or Chrome to open the map link.



Work order#: **00286479**
Work type: **Locating**

Client: **Tectonic Engineering - Newburgh**
Project Manager: **Odolfo Chavez**

Address **300 Hornidge Rd, Mamaroneck, NY, 10543**

Scale: **NTS**
Date: **8/22/2025 12:38:04 PM**

Legend

- Elec. Line
- Reclaimed Water Line
- Soil Boring
- Unknown Line
- Water Line

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Work order#: **00286479**
Work type: **Locating**

Client: **Tectonic Engineering - Newburgh**
Project Manager: **Odolfo Chavez**

Address **300 Hornidge Rd, Mamaroneck, NY, 10543**

Scale: **NTS**
Date: **8/22/2025 12:39:00 PM**

Legend

- Elec. Line
- Reclaimed Water Line
- Soil Boring
- Storm Inlet/Outlet
- Storm Line

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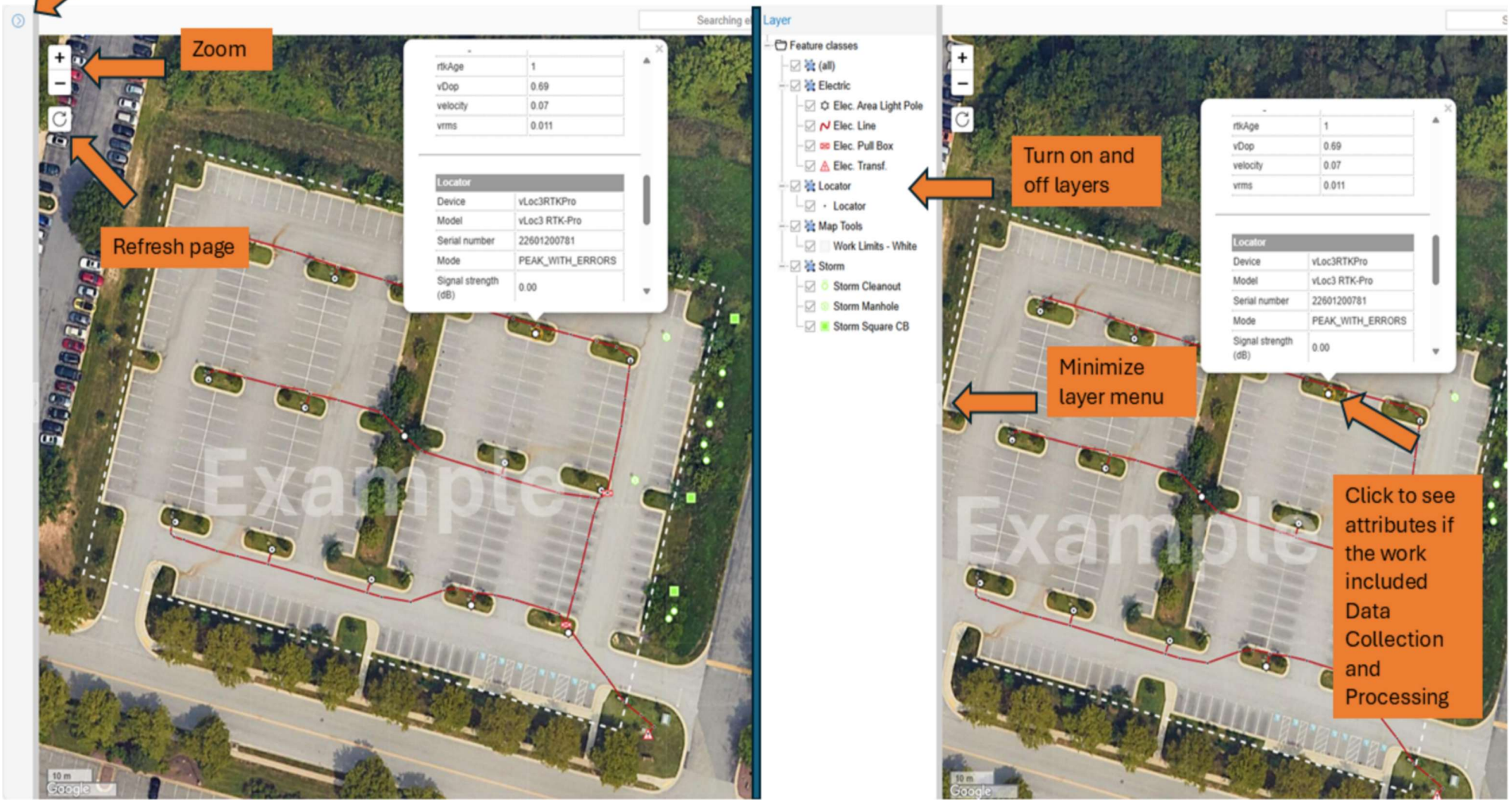
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How to navigate Blood Hound map links



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Tectonic

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