Appendix D
Geotechnical Report

REPORT
SUBSURFACE INVESTIGATION

PROPOSED CONCORD RESORT DEVELOPMENT
TOWN OF THOMPSON, SULLIVAN COUNTY, NEW JERSEY
CONCORD RESORT DEVELOPMENT

May 1, 2012

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May 1, 2012

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Vice President

Report
Subsurface Investigation
Proposed Concord Resort Development
Town of Thompson, Sullivan County, New York
Concord Resort Development

Introduction

This report presents the results of a subsurface investigation performed by Melick-Tully and Associates, P.C. (MTA) for the proposed Concord Resort development to be constructed in the Town of Thompson, Sullivan County, New York. The portion of the resort currently slated for the first phase of development is primarily located south of and adjacent to Thompsonville Road, to the west of its intersection with Joyland Road, as shown on the Site Location Map, Plate 1. This report was prepared in general accordance with our proposal dated February 7, 2012.

Proposed Construction

We understand that the on-site Phase I portion of the proposed development would include the construction of approximately 4,500 linear feet of sanitary sewer line, a harness track, and paddock/maintenance buildings which will be located to the west of the harness track. The

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development would also include a nine-story hotel constructed as a part of a casino building with a total footprint of over 300,000 square feet in plan area, with up to three levels of below-grade parking and service facilities. A number of retail and commercial structures are proposed to be located north and east of the proposed casino structure. Automobile parking lots and access roadways would be situated to the north and east of the casino.

Structural loading information provided to us for the main casino structure indicates maximum interior column loads of up to 1,800 kips would be imposed where the parking levels will extend up to three levels below the main entry level, and column loads for the hotel tower would reportedly be up to approximately 1,200 kips. The entry level along the east side of the structure would be established at approximately Elevation +1,435 feet, requiring fills of up to 13 feet along the eastern edge of the structure to match the proposed exterior and slab-on-grade portion of the structure. Access to the lowest level parking area along the western side of the casino would be established at Elevation +1,399 feet, requiring fills of approximately 5 to 13 feet to reach the proposed lowest garage floor slab level. In addition, cuts of up to approximately 15 feet will be required to reach portions of the lowest floor slab levels. Although not provided to us at this time, we anticipate that the proposed paddock, maintenance building and retail structures would impose light to moderate column loads and light to moderate at-grade floor slab loads. At this time, grading plans for the surrounding parking, track and paddock areas were not provided to us.

Purpose and Scope of Work

The purpose of our services was to:

1) explore the subsurface soil, rock and groundwater conditions along the proposed alignment of the new sanitary sewer and within the proposed track, building and parking areas at accessible locations;

2) estimate the relevant geotechnical engineering properties of the encountered materials;

3) evaluate the site foundation requirements considering the anticipated structural loads and encountered subsurface conditions;

4) recommend an appropriate type of foundation for support of the proposed structures, and provide geotechnical-related foundation design and installation criteria, including an estimate of the Site Class as defined by the Building Code of New York State, 2010 Edition, for seismic design purposes;

5) provide recommendations for the support and the need for subdrainage of the lowest level floor slabs;

6) estimate the post-construction settlements of the recommended floor and foundation systems;

7) provide estimated lateral earth pressure and drainage criteria for use in the design of below-grade building walls;

8) provide geotechnical-related parameters for use in pavement design;

9) collect tube samples from test pits performed in the areas proposed for automobile parking where the stormwater management system may be constructed and subject the samples to laboratory permeability testing; and

10) discuss appropriate earthwork considerations consistent with the proposed construction and encountered subsurface conditions.

To accomplish these purposes, a subsurface exploration program consisting of 48 test borings and 41 test pit explorations was performed at the site. Thirty-two borings were performed in the casino/hotel area and 16 borings along the route of the proposed new sanitary sewer line. Seven test pit explorations were performed in the vicinity of the proposed track and paddock areas, 25 test pits in the proposed parking areas, and 9 test pits in the portion of the development where the retail structures are proposed. The borings were advanced utilizing all-terrain vehicle and truck-mounted drilling equipment and extended to depths varying from approximately 8-1/2 to 51 feet below the existing surface grades. Piezometers were installed in Borings C-1, C-7 and C-12 to depths of 34 to

50 feet to allow periodic measurement of the water levels. The test pits were advanced using a track-mounted excavator (Caterpillar Model 315) and extended to depths ranging from approximately 4 to 13 feet below the existing surface grades. The approximate locations of the explorations are shown on the Plot Plan, Plate 2.

All work was performed under the direct technical observation of engineers and geologists from MTA. Our representatives located the explorations in the field utilizing limited survey control provided by others and the topographic information and existing site features shown on plans provided to us. Our representatives maintained continuous logs of the explorations as the work proceeded, supervised the soil sampling operations during the drilling operations, and obtained bulk samples of the encountered materials from the test pits. Numerous closely spaced soil samples were obtained from the borings using the general procedures of the Standard Penetration Test. Rock core samples were obtained from the borings using an NQ size core barrel. Several bulk samples and numerous tube samples were collected from the test pits for laboratory Proctor and permeability testing.

All soil and rock samples obtained from the explorations were brought to our office where they were further examined in our soil mechanics laboratory. Detailed descriptions of the materials encountered in the borings are shown on the individual boring logs, Plates 3-C-1 through 3-C-32 (casino borings) and 3-S-1 through 3-S-16 (sanitary line borings). The results of the test pit explorations are shown on Plates 4-T-1 through 4-T-7 (track/paddock test pits), 4-P-1 through 4-P-25 (parking area test pits) and 4-R-1 through 4-R-9 (retail area test pits). The soils were visually classified in general accordance with the Unified Soil Classification System presented on Plate 5 and the Engineering Rock Classification and Core Description Chart, Plate 6.

Numerous soil samples were subjected to laboratory testing consisting of grain-size analyses, modified Proctor compaction testing, and moisture content determinations to aid in their engineering classification and evaluation. The results of the grain-size tests are presented on Plates 7A through 7K, Gradation Curves, and the results of the modified Proctor tests on Plates 7L through 7Q, Gradation Curves and Compaction Test Reports. The results of the moisture content tests are presented on the Gradation Curves and on the appropriate exploration logs. In addition, 18 tube samples collected from the test pits performed in the automobile parking areas where below-grade stormwater management facilities may be situated were subjected to falling head tube permeameter permeability tests. A summary of the results of the tube permeameter tests are presented on Plate 8. The construction details for the piezometers installed at Borings 3-C-1, 3-C-7 and 3-C-12 are shown on Plates 9A through 9C, Piezometer Construction Details.

The results of our subsurface exploration program, our visual examination of the soil and rock samples, and our review of the laboratory test results have provided the basis for our engineering analyses and design recommendations. The following discussions of our findings are subject to the limitations attached as an Appendix to this report.

Site Conditions

Published Geology: The proposed Concord Resort complex is located within the southern New York section of the Appalachian Plateau's Geomorphic Province. This province is characterized by a deeply dissected plateau underlain by Paleozoic Age clastic sedimentary rock.

According to the Geologic Map of New York, Map and Chart Series No. 15, published by the New York State Education Department, 1970, the site is underlain by rock of the Upper Walton Formation. This rock formation is Devonian in age and consists of greenish to reddish conglomerates, sandstones and shales.

The Soil Survey of Sullivan County, New York, USDA, 1989, maps the upper part of the site as containing Willsboro and Wurtsboro soils. The Willsboro and Wurtsboro Series are similar in nature, being gravelly loams to gravelly fine sand loams with a perched water table of approximately one and one-half to three feet. Bedrock is reported as being deeper than six feet. These soils consist of dense glacial till.

The lower portion of the site in the area of the track is mapped as containing Scriba loams, Navasink and Alden soils, Arnot-Oquaga Complex, Wayland silt loam and Wurtsboro loam. These materials are generally loamy soils and sandy loams formed from residual sandstone, shale or dense glacial till, with the exception of the Wayland soils which are silty loams formed from alluvial materials. These soils are mapped as having a perched water table of approximately 0.5 to 6 feet and bedrock deeper than 6 feet below grade.

Surface Features: The majority of the proposed casino/hotel and southern parking areas are currently moderately to heavily wooded with several areas identified as wetlands. The northeast portion of the property just west of Joyland Road is occupied by an abandoned summer camp with numerous one-story cottage structures and gravel access drives. The majority of the proposed track and paddock areas are currently occupied by portions of the Concord Golf Course with numerous fairways, water features, areas mapped as wetlands, and wooded areas scattered throughout.

Topographic information shown on plans provided to us indicates that the site generally slopes moderately to steeply downward from east to west from a high of approximately Elevation +1,456 feet in the eastern portion of the property adjacent to Joyland Road to a low of approximately Elevation +1,360 feet in the north central portion of the proposed track oval. Thompsonville Road slopes moderately to gently downward from its intersection with Joyland Road to the west from a high of approximately Elevation +1,434 feet at the intersection of Thompsville Road and Joyland

Road to a low of approximately Elevation +1,344 feet in the area of Boring S-16 where our study for the sanitary line terminated.

Subsurface Conditions: The following generalized strata were encountered in the explorations and are listed in order of increasing depth:

1) Topsoil: A surficial layer of topsoil was encountered in 84 of the 89 explorations performed for this study. In general, the topsoil was found to be approximately 4 to 12 inches thick in the majority of the explorations, but ranged up to approximately 18 to 24 inches in thickness in 16 of the test pits.

2) Pavement/Fill: A two-inch thick layer of asphalt pavement was encountered in Test Pit P-8 and gravel pavement and fill materials were encountered in nine of the explorations, primarily in the area of the abandoned camp and adjacent to Thompsonville Road. The borings performed for Thompsonville Road were advanced adjacent to the existing pavement surface in order to minimize disturbance to the existing roadway. However, our visual observations indicate that Thompsville Road and Joyland Roads are likely constructed by "chip seal" methods and do not consist of a true asphaltic concrete section. Although only shallow fill materials on the order of two feet or less were encountered in only about ten percent of the explorations, it should be anticipated that fill materials may be encountered once construction begins in previously developed areas such as the abandoned camp, along Thompsonville Road and in sections of the existing golf course.

3) Silty Sand: Below the surficial topsoil and fill materials, the natural soils typically consisted of sands and silty sands containing varying amounts of gravel, cobbles and boulders which were encountered in all of the explorations performed for this study. The sandy soils are believed to be glacial in nature and extended to the completion depths in the majority of the explorations performed. The upper one to two feet of the glacial sandy soils were found to be somewhat loose in relative density, probably the result of freeze-thaw cycles. Below the upper two feet, the glacial materials were observed to be dense to very dense in relative density for their full depth.

4) Silty/Gravelly Strata: The glacial sandy soils contained varying amounts of silts and gravels; however, in several samples subjected to laboratory grain-size testing, the silt and gravel percentages were high enough to classify the materials as silt and/or gravel, as indicated on the appropriate exploration logs.

5) Sandstone/Siltstone/Claystone Bedrock: In 11 of the 32 borings performed in the casino area, 4 of the 16 borings performed along the route of the proposed

> sanitary sewerline on Thompsonville Road, and in 13 of the 41 test pit explorations, sandstone /siltstone/claystone bedrock was encountered at depths varying from approximately 4 to 45 feet below grade. For discussion purposes, the sandstone/siltstone/claystone will be referred to as sedimentary rock for the remainder of this report. In several of the explorations, it could not be determined if refusal to further drilling or excavation was encountered atop sedimentary bedrock or relatively large boulders. In general, the sedimentary rock was found to grade sounder with depth, where encountered.

It should be noted that the soil classification from the borings are based on the materials recovered in a standard SPT sample spoon which is approximately two inches in outside diameter. Our logs note the presence of gravel, cobbles and boulders, but these larger particles are not reflected on the grain-size curves.

Groundwater seepage was encountered in 15 of the 41 test pits and 36 of the 48 test borings performed for this study upon their completion. Three piezometers were installed in Borings No. C-1, C-7 and C-12. The stabilized groundwater levels in the piezometers installed in the deeper borings were at levels of approximately 24 to 30 feet below grade. The groundwater levels observed in the remainder of the explorations were shallow, typically on the order of 1 to 21 feet at most locations and could represent true groundwater levels in the lower elevated portions of the site or perched groundwater levels atop less pervious zones of the in-place materials in the higher portions of the site. In addition, mottling which is indicative of seasonal groundwater conditions or seasonally saturated soils, was observed in a number of the test pit explorations. “True” groundwater levels could be present at depths of 24 feet or greater below grade; however, it is apparent due to the numerous ponds, lakes and wetlands present at varying elevations throughout the area, as well as the seepage observed at varying levels in the explorations, that groundwater seepage could be encountered at variable elevations and intensities throughout the site, at least on a seasonal basis.

Cross-sections showing the generalized subsurface conditions are presented on Plates 10A through 10E.

Findings and Recommendations

General: Based on the results of our study, it is our opinion that:

1) The proposed casino, paddock buildings and retail structures may derive their support from conventional shallow foundations established on the undisturbed natural soils, fractured or sound sedimentary bedrock, or controlled compacted fill placed to reach the desired levels. Pavements and floor slabs may also derive their support from these materials.

2) Relatively sound sedimentary bedrock was encountered at depths of approximately 20 to 46 feet below the existing surface grades in the casino, generally anticipated to be below the levels required to construct the planned lowest level of the casino structure. However, relatively large boulders were encountered in a number of the explorations and refusal to further excavation with the excavator atop sedimentary bedrock and/or large boulders was encountered at shallower levels throughout the site. Consequently, the use of relatively large excavation equipment and/or localized jackhammering with hydraulic hammers attached to large excavation equipment could be required for site excavations. Excavations which extend more than several feet below the surface of the refusal levels observed could require blasting.

3) The moisture levels observed in the majority of the materials subjected to laboratory testing indicate that the natural glacial soils appear to be at or close to moisture levels which would allow recompaction to 95 percent of their maximum dry density. Several samples contained high moisture contents. Due to the relatively high silt content of the materials, the soils are highly susceptible to disturbance due to slight changes in moisture content. Consequently, some aeration and drying of the shallower surficial materials and portions of the material which are wet or which are allowed to become wet should be anticipated to be required.

4) The relatively low permeability rates observed in the tube permeameter tests performed on the natural glacial soils, as well as the observation of perched groundwater at variable levels indicates that the existing site soils would provide very limited infiltration characteristics for stormwater recharge.

5) Stabilized groundwater levels in the three deep piezometers installed were observed at depths of approximately 24 to 30 feet below grade; however, slight to moderate groundwater seepage was encountered in a number of the explorations at variable levels across the site. Consequently, dewatering

during construction should be anticipated to be required, and drainage systems should be provided for below-grade portions of the structures.

Further discussion of these items and others considered relevant to the proposed development are presented in subsequent sections of this report.

Site Preparation and Earthwork: The development areas should be cleared and grubbed of all vegetation and any existing structures and existing subsurface elements such as foundations or utilities should be demolished and the resulting demolition rubble legally disposed of off-site. Any excavations resulting from demolition and utility removal should be backfilled with controlled compacted fill as described in subsequent sections of this report. After clearing, grubbing and demolition, the topsoil should be stripped for its full depth from within and at least 20 feet beyond the proposed casino building and track area. The topsoil should be stripped from within and up to ten feet beyond the limits of areas where minor cuts and fills may be required such as the limits of the proposed parking areas, paddock building and retail structures. We recommend that the site grades be identified and finalized prior to determining the limits of topsoil removal. The topsoil would not be suitable for reuse as controlled compacted fill or backfill in building or paved areas.

After clearing and stripping, any isolated pockets of fill and/or soft, wet soils should be located and removed. We believe that potentially compressible deposits could be encountered in wetland areas present where the new racetrack will be developed. However, due to the preliminary planning stages of the project, wetlands disturbance permits were not obtained at the time of our study and no explorations were completed in the wetlands. Consequently, pockets of soft, compressible organic soils and/or pockets of fill materials installed during the construction of the existing golf course would need to be located and removed prior to constructing the proposed track. Additional test pits should be performed when the site plans in this area are finalized.

After clearing and stripping and removal of any soft organic and/or uncontrolled fill materials, and prior to placement of controlled compacted fill in areas to be raised, the exposed subgrade materials should be proofrolled and compacted to a dense and unyielding consistency with several passes of a heavy, self-propelled, vibrating drum compactor with a minimum static drum weight of ten tons under the observation of a qualified geotechnical engineer. Any subgrade materials which appear to be soft or unstable should be further excavated to the surface of competent soils and backfilled with controlled compacted fill. We believe that the majority of the soils exposed after stripping of the topsoil will consist of glacial silty sand materials. For the most part, these materials are anticipated to be relatively dense; however, due to their high silt content and the relatively loose nature of the upper two feet of the materials encountered in the explorations and the presence of shallow perched groundwater, we anticipate that the surficial materials will be highly susceptible to softening and disturbance once subjected to construction equipment traffic.

In the lower elevated or poorly drained areas where the proposed racetrack will be constructed, it may be prudent to proofroll the exposed subgrade soils with the compactor in a "static" mode to help limit disturbance. This determination should be made at the time of construction by a qualified geotechnical engineer. Installation of an initial two foot thick lift of gravel, shot rock and/or similar free-draining material to bridge soft areas may help stabilize the subgrades prior to additional fill placement for the track.

The majority of the on-site soils in the cut areas of the casino building were observed to consist of silty sands with varying amounts of cobbles and boulders. Three bulk samples of the on-site soils which appear to be representative of materials anticipated to be generated from cut areas were subjected to laboratory modified Proctor (ASTM D-1557) compaction testing to estimate the moisture/density relationship of the soils. The moisture content tests performed on additional

samples obtained in the explorations indicated that the majority of the site materials were at moisture contents that would permit compaction to the required degree. However, several samples possibly impacted by freezing/thawing and inundation of surface water, were observed to be well above the levels required for compaction. Consequently, some aeration and drying should be anticipated. We recommend that the project be sequenced so that the majority of the earthwork operations are performed during periods of warm, dry weather in order to facilitate reuse of the on-site soils as structural fill. If the earthwork operations are performed during or following periods of wet or freezing weather, compaction of the on-site soils to the required degree may be difficult. We recommend that the earthwork contractor work in conjunction with a qualified geotechnical engineer familiar with the site conditions to selectively utilize the driest available materials from cut areas as fill in the building footprint and/or track area or other areas critical for completion of the project's construction schedule, and to utilize wetter soils over as large an area as possible in the parking areas where they could be allowed to dry prior to compaction, minimizing construction delays.

We recommend to the extent possible, that cobbles and boulders be utilized in areas requiring deeper fills where they would not interfere with future excavation for foundation and utility installation. Portions of the cobbles and boulders could be broken into smaller fragments where they may be reused to stabilize wetter areas prior to installation of granular controlled compacted fill. Care should be taken to provide sufficient soil to infill any voids between the cobbles and boulders to minimize the potential for migration of the upper fill soils into voids between the cobbles and boulders.

Any imported fill required to complete the site grading within the building and paved areas should consist of uncontaminated, relatively well-graded, granular soils containing less than 15 percent by weight of material passing a U.S. Standard No. 200 sieve and a maximum particle size of

six inches. The fill supplier should provide documentation of the environmental quality of all imported fill.

All materials placed in building or paved areas should be spread in layers on the order of twelve inches or less in loose thickness and uniformly compacted to at least 95 percent of its maximum dry density as determined by the ASTM D-1557 test procedure. Backfill placed in confined areas, such as foundation or utility trench excavations, should be spread in thinner layers and uniformly compacted to similar densities using manually operated compaction equipment.

All construction excavations should be performed in accordance with the most recent OSHA Excavation Guidelines and any state and local governing safety codes. Based on the results of our explorations, we believe that the existing site soils will be considered a Type "C" soil as defined by the latest OSHA Excavation Regulations. Excavation side slopes should be flattened as necessary to maintain safe excavations, or should be adequately braced.

Due to the high percentage of cobbles and boulders encountered in the glacial matrix soils, installation of driven sheeting for excavations which need sidewall support would be difficult or impossible. Consequently, excavation side slope support consisting of soldier piles and lagging could be required.

Bedrock consisting of fractured sedimentary bedrock was encountered in several of the borings at depths of approximately 19 to 45 feet below grade in the casino area, 15 to 20 feet in three of the borings performed along the route of the proposed sanitary line, and in a number of the test pits at depths as shallow as four feet below the existing surface grades. Rock cores utilizing an NQ size core barrel which extracts a rock core approximately two inches in diameter were advanced in nine of the casino borings and two of the borings performed along the route of the proposed sanitary line in Thompsonville Road. Approximately five to ten feet of rock was cored at each boring and

was observed to grade sounder with depth. We believe that excavations could extend a few feet below the surface of the highly weathered portions of the bedrock using rippers, or large excavators fitted with rock teeth. The transition between the highly weathered, fractured sedimentary rock and sounder, less jointed bedrock will vary across the site. Excavations below sounder portions of the bedrock could likely extend only a nominal depth below the sound rock using heavy construction equipment. In addition, large boulders could be encountered.

In confined areas such as foundation or utility trench excavations, it should be anticipated that some blasting or extensive hammering may be required to achieve the proposed construction subgrade levels. All we can really say is based on grades provided, we do not think rock will be encountered in the casino/hotel. No grades were provided in other areas.

Groundwater was encountered in the majority of the borings at depths of approximately 6 to 21 feet below grade upon their completion, and shallower perched water from runoff and snow melt was encountered in a number of the test pits at the time of our study. Groundwater levels were measured four to six times in Borings No. C-1, C-7 and C-12 where piezometers were installed to depths of 34 to 50 feet, and the stabilized groundwater levels were encountered at depths of approximately 24 to 30 feet below grade corresponding to elevations of +1,387 feet to 1,400 feet. The variable nature of the groundwater levels observed while the explorations were being performed indicates that groundwater seepage could be encountered in excavations at various levels due to seepage through more pervious zones of materials, and from surface water which percolates through the surficial soils. Surficial runoff through the topsoil into the test pit excavations was noted extensively at the time of our study, even when the lower strata in the test pits exhibited no infiltration. Consequently, controlling groundwater through drains and diversion trenches upgrade from the earthwork construction activities should be anticipated during construction. We believe

that perched water seepage will be variable in intensity, but that the majority of the site groundwater can be controlled by pumping from sumps and/or diversion and cutoff trenches. The contract documents should require the contractor to provide the equipment, labor and whatever means necessary to maintain relatively dry excavations at all times.

Groundwater seepage above the levels encountered in the explorations should be anticipated, at least on a seasonal basis. We recommend that the site stormwater utilities be installed as early as possible and be bedded in clean, three-quarter crushed stone in order to help intercept and divert groundwater seepage to the extent possible.

Foundation Design Criteria: Following the previously described site preparation procedures, the proposed casino, paddock area and retail structures could be supported by conventional shallow foundations which derive their support from the undisturbed, natural glacial soils, sedimentary bedrock, or controlled compacted fill installed to achieve the proposed floor slab subgrade levels. If the foundation excavations are allowed to remain open, it may be prudent to overexcavate the footings and place a four to six-inch thick layer of clean, three-quarter inch crushed stone, washed gravel, or flowable fill in the excavations to protect the exposed subgrade soils from the affects of moisture and/or foot traffic prior to the installation of concrete. We believe that foundations established a minimum of four feet below the existing surface grades on the dense glacial soils could be designed to impose allowable net bearing pressures of up to four tons per square foot. Foundations established on controlled compacted fill required to achieve the proposed lowest floor slab levels, which from our preliminary review of the existing topography appear to be required at the eastern upper entry level and along the west side of the casino structure for the proposed Level 3 entry to the below grade parking, could be designed to impose maximum allowable net bearing pressures of up to two tons per square foot. Bearing capacities of six tons per square foot or more

could be obtained from the fractured sedimentary bedrock. However, for ease of construction, it may be prudent to design all foundations for dense till or controlled compacted fill.

If higher bearing capacities are desired in the fill areas of the parking structure due to the relatively heavy column loads, the foundations could be constructed at deeper levels on the dense natural glacial till soils and the area backfilled to reach the proposed floor slab levels. Drilled piers or forms of ground improvement such as geopiers could also be considered to achieve higher bearing capacities. Further evaluation of these alternatives could be provided as the design progresses, if desired.

Although no structural loading or grading information was provided to us for the paddock area buildings or retail structures, we anticipate that relatively light to moderate foundation loads would be imposed. Consequently, for ease of construction, it may be prudent to design the paddock and retail buildings for maximum allowable bearing capacities of 4,000 pounds per square foot, which could be attained from the recompacted, in-place natural soils and/or controlled compacted fill required to achieve the proposed site grading.

Exterior foundations should be established at least four feet below the lowest adjacent exterior grades, or deeper if required by local building codes, to provide protection from frost penetration. Interior foundations located in permanently heated portions of the proposed buildings could be constructed at convenient depths below the ground floor slab, provided they reach the intended bearing stratum. Any foundations below unheated space should extend to four feet.

Foundation Settlement: Because of the wide variation in column loads and the footing sizes, as well as depths below existing grade, foundation settlements will be variable and additional analyses will be required when more detailed foundation plans and loading are available.

For preliminary purposes, we looked at a column load of 1,800 kips for a footing four feet below grade at a four ton per square foot bearing capacity which results in a footing size of 15 feet by 15 feet and total settlements estimated to be up to approximately one and one-half inches. Settlements will occur rapidly as the load is applied and post-construction settlements will be smaller.

Settlements for smaller size footings will be proportionally less, on the order of one-half of one inch, or less.

Seismic Design Criteria: Based on the subsurface conditions encountered in the explorations performed for this study, we estimate that the site would be a Site Class "C" as defined by the Building Code of the State of New York, 2010 Edition, for seismic design purposes. This estimate is based on the average Standard Penetration Test N-values obtained in the borings and the formula prescribed in the building code. To more accurately define the Site Class, shear wave velocity measurements could be made using geophysical methods.

Floor Slab Design Criteria: Following the previously described site preparation procedures, the ground floor slabs of the proposed structures may be supported at the indicated levels on the natural subgrade materials or properly placed controlled compacted fill. We recommend that the lowest level floor in the below-grade parking slab subgrades be underlain by a layer of coarse, free-draining material consisting of at least twelve inches of clean, three-quarter inch crushed stone or washed gravel. We recommend that subslab drains consisting of minimum four-inch diameter, perforated PVC pipes spaced 20 feet on center be installed below the proposed third level below grade parking area which would reportedly be established at Elevation +1,399 feet. The pipes should be surrounded by a minimum of four inches of clean, three-quarter inch crushed stone or

washed gravel and be connected to a manifold or header pipe where any water which accumulates in the stone may drain by gravity to daylight beyond the building limits or to the storm sewer system.

We recommend that floor slabs for the proposed paddock area and retail structures be underlain by a minimum of six inches of clean, three-quarter inch crushed stone or washed gravel to provide a capillary break between the floor slab and underlying subgrade soils. Depending upon the final elevations determined for the various retail and/or paddock area buildings, and especially if floor slabs are designed to step down to below grade levels, such as for a cinema, the final floor slab levels should be reviewed and recommendations be made to provide adequate drainage.

Immediately prior to at-grade slab construction, the exposed subgrade materials should be compacted to an unyielding condition under the observation of a qualified geotechnical engineer. Any subgrade materials which cannot be compacted as required should be excavated to the surface of suitable materials and replaced with controlled compacted fill or clean, three-quarter inch crushed stone.

We estimate that post-construction settlements of floor slabs supported by materials which are prepared in accordance with our recommendations would be less than one-quarter of one inch.

Below-Grade Walls: Significant retaining walls will be required to accommodate the difference in floor slab levels between the entrance level supported at-grade stepping down to the Parking Level 2 supported at-grade approximately 25 feet lower, and for the second step between the Lower Level 2 parking area and Lower Level 3 parking, an 11 foot change in elevation. Consequently, to accommodate the difference in floor slab levels, two retaining walls approximately 11 feet and 25 feet in height will be required along the entire length of the east-central portion of the structure where parking will be located. In addition, a single wall approximately 36 feet high will be required between the entry level in the area of the hotel and the office/training/service rooms west of

the hotel and north of the below-grade parking. We recommend that the below-grade walls be provided with a vertical drainage system to prevent the buildup of hydrostatic pressure behind the walls. The vertical drain should consist of a synthetic drainage material (Enkadrain, or equivalent) or a column of crushed stone which extends from the top of the wall foundation for the full height of the interior retaining walls. The vertical drainage layer should be connected to a foundation drain consisting of a minimum eight-inch diameter porous concrete or perforated ADS pipe surrounded on all sides by a minimum of six inches of free-draining crushed stone wrapped in filter fabric. The foundation drain should be sloped to drain by gravity to the storm sewer system or to daylight downslope.

All below-grade walls should be designed to resist lateral earth pressures imposed by the adjacent soils, as well as surcharge loads due to adjacent footings and surface improvements, as well as temporary construction traffic, material stockpiles, sloping backfills, etc. Walls which are free to rotate slightly during backfilling may be designed to resist lateral earth pressures assuming an active earth pressure condition. If the retaining walls are restrained, they should be designed assuming an at-rest earth pressure condition. If sandier portions of the on-site soils are used as backfill, a total unit weight of 145 to 150 pounds per cubic foot should be used, based on the Proctors obtained from the on-site soils compacted to 95 percent of their maximum dry density, and an approximate moisture content of 5 percent. A friction angle of 34 degrees may be used. We estimate that a friction factor between mass concrete and the on-site soils would be 0.40. If the footings are underlain by at least eight inches of crushed stone, the friction factor could be increased to 0.55.

Based on our previous experience with below-grade walls which accommodate interior steps between floor slabs greater than ten feet in height, such as those planned for the proposed casino, it is common practice for the structural engineer to require the framing of the upper level and upper floor

slab(s) to be in-place to brace the interior building wall before allowing backfilling. Significant construction delays could be encountered if backfilling of the proposed wall is delayed until the frame of the structure is complete and this would then dictate use of at-rest pressures for design of the walls.

Our conversations with the structural engineer indicated that due to the current plans requiring the decking for the proposed parking areas to be precast prior to installation, the below-grade walls would need to be tied back through the use of soil anchors. Based on our review of the Post Tensioning Institute (PTI) publication, "Recommendations for Pre-Stressed Rock and Soil Anchors" 2004 Edition, typical ultimate bond stresses between the soil and grouted portion of pressure grouted anchors for dense glacial till range from 43 to 75 psi. We suggest assuming 50 psi for preliminary design. However, since the actual anchor capacities will be dependent on the installation methods, we recommend a performance specification where an anchor capacity is specified and an experienced specialty contractor provides a design to achieve that capacity. All tie backs should be performance and proof tested in accordance with the PTI recommendations. In areas where fills are required for the walls, the use of tiebacks attached to deadmen installed before backfilling should be considered.

Pavement Design Criteria: We recommend that paved areas be prepared in general accordance with our prior discussions, including stripping of topsoil, proofrolling of subgrades, and placement and compaction of controlled compacted fill. Immediately prior to pavement construction, the exposed subgrade soils should be recompacted to a firm and unyielding consistency, and the upper two feet of the subgrade soils compacted to at least 95 percent of their maximum dry density as determined by the ASTM D-1557 test procedure. If the pavements are established on the natural soils consisting of silty sands, subgrade support conditions should be

considered “fair” with an estimated California Bearing Ratio (CBR) value of approximately five percent.

During the current study, detailed evaluation of the current condition of Joyland Road and Thompsonville Road which may need to be improved to access the proposed casino development was not performed. Our visual observations of the existing roadway surface indicate that the existing roads were constructed using a “chip-seal” method utilizing gravel and an asphalt emulsion which is reapplied and regraded every few years to restore the surface. Consequently, the existing pavement may not serve to be incorporated into a final pavement section.

We believe that the fill materials required to reach the proposed subgrade levels for the proposed track surface should be installed as described in previous sections of this report. The final site grades and the surface section required to accommodate horse racing has not been provided to us at this time. We recommend that the proposed section, once available, be provided for review to determine if materials generated on-site could provide the required support conditions if used within the racing surface section of the track.

Proposed Stormwater Management: Based on our ongoing discussions, you have indicated that it is currently desired to construct subsurface stormwater management systems below landscaped and/or parking areas as part of the overall site development. As part of our preliminary assessment of the permeability of the natural subgrade soils, tubes were driven into the test pit excavation sidewalls and the tube samples brought to our laboratory where they were saturated and subjected to falling head permeability tests. These results were transmitted to you in our correspondence of April 23, 2012. In general, the measured permeabilities were relatively low, likely due to the compactness and silty nature of the natural soils at the site. A summary of the tube permeameter results are included as Plate 8 to this report. As planning for the proposed stormwater

management systems on the site progress, we would be pleased to perform additional in-place permeability tests in accordance with NYDEC Appendix "D" in order to satisfy New York State requirements, or to discuss alternate groundwater management practices.

Proposed Sanitary Sewer Lines: Borings No. S-1 through S-16 were performed along a portion of the proposed new sanitary line route in the area of the proposed retail development between Joyland Road and Thompsville Road, and to the west along Thompsville Road for a total length of approximately 4,500 feet. Based on preliminary information provided to us, the borings performed along the proposed sanitary pipeline route were advanced to depths of between 15 and 20 feet below the existing surface grades. However, a boulder encountered in Boring S-8 terminated that exploration at a depth of eight and one-half feet below grade. In addition, bedrock was encountered at depths of approximately 15 to 20 feet below grade in Borings No. S-14 and S-16 located towards the eastern end of the proposed pipeline route included as part of this phase of the project. It should be anticipated that large boulders could be encountered in the excavations to install the proposed sanitary line which could require jackhammering and/or blasting for removal. Wider than anticipated excavations could be necessary in order to remove large boulders. In addition, any areas where the proposed sanitary line is anticipated to extend to depths of below 15 to 20 feet below grade could encounter sedimentary bedrock which would likely require blasting for removal.

Future Work

Proposed floor slab levels were provided to us for the casino/hotel/garage structure for preparation of this report. However, grading plans and proposed floor levels were not provided for the remainder of the site. Consequently, the findings and recommendations presented in this report

may need to be revised based on the final design levels. We recommend that as plans are developed, they be provided to us for review to confirm that the items discussed in this report remain valid.

Please feel free to contact us if you have any questions regarding this report.

The following Plates are attached and complete this report:

Plate 1 – Site Location Map
Plate 2 – Plot Plan
Plates 3-C-1 through 3-C-32 – Logs of Borings (Casino)
Plates 3-S-1 through 3-S-16 – Logs of Borings (Sanitary Line)
Plates 4-T-1 through 4-T-7 – Logs of Test Pits (Track/Paddock Area)
Plates 4-P-1 through 4-P-25 – Logs of Test Pits (Parking Area)
Plates 4-R-1 through 4-R-9 – Logs of Test Pits (Retail Area)
Plate 5 – Unified Soil Classification System
Plate 6 – Engineering Rock Classification and Core Description Chart
Plates 7A through 7K – Gradation Curves
Plates 7L through 7Q – Gradation Curves/Compaction Test Reports
Plate 8 – Summary of Tube Permeameter Test Results
Plates 9A through 9C – Monitoring Well Details
Plates 10A through 10E – Subsurface Profiles
Appendix – Limitations

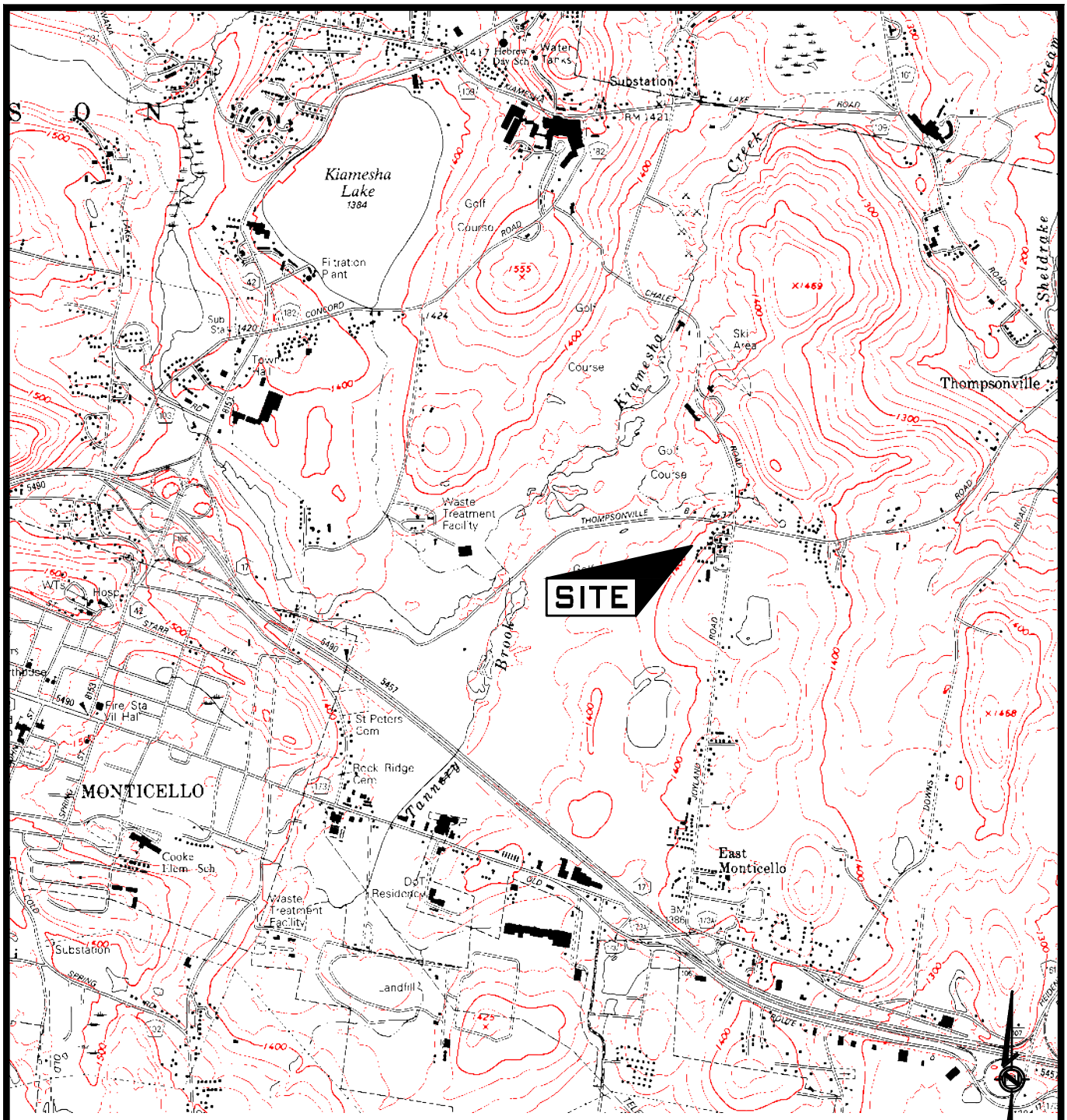
Respectfully submitted,

MELICK-TULLY and ASSOCIATES, P.C.

James H. Beattie, P.E.
Senior Associate

Todd E. Horowitz, P.E.
Vice President

JHB:TEH/mh
8979-001*1D
(3 copies submitted)



FROM: "Digital Raster Quadrangles" at 1:24,000 scale provided by New York State GIS Clearinghouse website (http://www.nysgis.state.ny.us/gisdata/quads/).

MELICK–TULLY AND ASSOCIATES, P.C.
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SITE LOCATION MAP

CONCORD RESORT DEVELOPMENT
TOWN OF THOMPSON, NEW YORK
CONCORD RESORT DEVELOPMENT

JOB NO.	FILE NO.	DR. BY	CHK. BY	DATE	SCALE	PLATE
8979–001*1D	25299	VJD	JHB	4–23–12	1"=2,000'	1

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)

1 inch =100 ft.

KEY:

- B-C-1 — NUMBER AND APPROXIMATE LOCATION OF BORINGS PERFORMED FOR THIS STUDY
- TP-1 — NUMBER AND APPROXIMATE LOCATION OF TEST PITS PERFORMED FOR THIS STUDY
- B-1 — SURVEY CONTROL POINTS PROVIDED BY OTHERS
- A A' — INDICATES NAME, APPROXIMATE LOCATION AND DIRECTION OF SUBSURFACE PROFILE

NOTES:

1. This drawing is part of Melick-Tully and Associates, P.C. Report No. 8979-001*1D and should be read together with the report for complete evaluation.
2. General layout was obtained from an unlabeled drawing provided by the client.

PLOT PLAN

CONCORD RESORT DEVELOPMENT
TOWN OF THOMPSON, NEW YORK
CONCORD RESORT DEVELOPMENT

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers
& Environmental Consultants
117 Canal Road
South Bound Brook, New Jersey 08880
(732) 356-3400

JOB NO.	FILE NO.			
8979-001*1D	25299			
DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	JHB	3-29-12	1"=100'	2

LOG OF BORING

BORING NO. C-1

COMPLETION DATE: 3/02/12 SURFACE ELEVATION: +1,421 ft (±) WATER LEVEL: *

JOB NUMBER: 8979-001*1D READING DATE: 3/02/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	6				Red-brown fine to coarse sand, some silt, little fine gravel (moist)(loose to very dense)	
	S2	55	7.0		SM		
5						- driller notes boulder @ 4'	5
	S3	50	9.3			Red-brown fine to coarse sand, and silt, little fine gravel (moist)(dense to very dense) - driller notes boulder @ 8'	
10	S4	46	8.3				10
15					SM	- grading with cobbles and boulders	15
	S5	50/5"					
20	S6	94					20
25	S7	68					25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 2 PLATE: 3-C-1

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-1

COMPLETION DATE: 3/02/12 | SURFACE ELEVATION: +1,421 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/02/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	62				Red-brown fine to coarse sand, some silt, little fine gravel (moist)(dense to very dense)	
35	S9	39					35
					SM		
40	S10	54					40
45	S11	40					45
50	S12	50/5"				- piezometer installed to 50'	50
						Boring completed @ 50'-11"	
55						Date / Water Level: 3/09/12 19'-0"; 3/23/12 24'-0"; 4/04/12 28'-7"; 4/13/12 24'-4"	55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

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LOG OF BORING

BORING NO. C-2

COMPLETION DATE: 3/01/12 | SURFACE ELEVATION: +1,425 ft (±) | WATER LEVEL: 9'

JOB NUMBER: 8979-001*1D | READING DATE: 3/01/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	4				Red-brown fine to coarse sand, and silt, trace fine gravel (wet)(loose to dense)	
	S2	32	9.2				
5					SM	- grading to little fine gravel	5
	S3	39	8.9				
						- driller notes boulder @ 9'	
10					SM	Light gray fine to coarse sand, little silt, some fine gravel (moist)(very dense)	10
	S4	52	3.1				
						Red-brown fine to coarse sand, and silt, some fine to coarse gravel (wet)(very dense)	
15	S5	81					15
					SM		
20	S6	64/9"					20
						- driller notes boulder @ 23'	
						Gray fine to medium sand, little silt, some fine to coarse gravel (moist)(very dense)	
25	S7	94/8"					25
					SM	- grading with frequent cobbles and boulders	
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-2

COMPLETION DATE: 3/01/12 | SURFACE ELEVATION: +1,425 ft (±) | WATER LEVEL: 9'

JOB NUMBER: 8979-001*1D | READING DATE: 3/01/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	67				Red-brown fine to medium sand, and silt, little fine to coarse gravel (moist)(very dense)	
35	S9	42			SM	- grading (wet)(dense)	35
40	S10	90/11"				- grading (very dense) with frequent cobbles and boulders	40
						- auger refusal @ 43' on boulder	
45	CORE RUN NO. 1			3 3 3 4 4 3 3	SM	Red-brown fine to coarse sand, and silt, little fine to coarse gravel, frequent cobbles and boulders (wet)(very dense) CORE RUN NO. 1: 43' to 48'	45
	NO. 2					CORE RUN NO. 2: 48' TO 50'	
50							50
55						Boring completed @ 50' Groundwater encountered @ 9'	55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

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LOG OF BORING

BORING NO. C-3

COMPLETION DATE: 2/29/12 | SURFACE ELEVATION: +1,424 ft (±) | WATER LEVEL: 2'

JOB NUMBER: 8979-001*1D | READING DATE: 2/29/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						6" Topsoil	
	S1	6	3.0		SM	Red-brown fine to coarse sand, and silt, trace fine gravel (moist)(loose to dense)	
	S2	43					
5						Gray fine to medium sand, little silt, little fine gravel, occasional cobbles and boulders (moist)(very dense)	5
	S3	92/9"			SM		
10							10
	S4	35				Red-brown fine to coarse sand, some silt, and fine to coarse gravel (wet)(dense)	
					SM		
15							15
	S5	76/11"				Red-brown fine to coarse sand, and silt, some fine to coarse gravel (wet)(very dense)	
20							20
	S6	50/5"			SM	- grading with frequent cobbles and boulders	
25							25
	S7	50/3"					
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-3

COMPLETION DATE: 2/29/12 | SURFACE ELEVATION: +1,424 ft (±) | WATER LEVEL: 2'

JOB NUMBER: 8979-001*1D | READING DATE: 2/29/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	70				Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (wet)(very dense)	
35	S9	50/3"			SM		35
40	S10	52					40
45	S11	50/3"		3			45
	CORE RUN NO. 1			4 4 5 5		Green-gray medium grained, poor quality, closely jointed sandstone bedrock ROCK CORE RUN NO. 1: 46' to 51' REC = 97% RQD = 28%	
50							50
55						Boring completed @ 51' Groundwater encountered @ 2'	55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 2 of 2 PLATE: 3-C-3

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Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-4

COMPLETION DATE: 2/27/12 | SURFACE ELEVATION: +1,424 ft (±) | WATER LEVEL: 10'

JOB NUMBER: 8979-001*1D | READING DATE: 2/27/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						6" Topsoil	
	S1	4			SM	Red-brown fine to medium sand, and silt, little fine to coarse gravel (moist)(loose)	
	S2	55	8.8			Red-brown fine to coarse sand, some to and silt, little fine gravel (moist)(very dense)	
5	S3	87	6.2		SM		5
10	CORE RUN 1	68		5 5 6 6 10 10	SM	Red-brown fine to medium sand, some silt, little fine gravel (wet)(very dense) NQ CORE RUN NO. 1: 10' to 12' NQ CORE RUN NO. 2: 12' to 15' - driller coring from 10' to 42' anticipating rock - no rock, glacial till with frequent cobbles and boulders	10
	CORE RUN 2						
15	CORE RUN NO. 3			4 4 5 5 5		NQ CORE RUN NO. 3: 15' to 20'	15
20	CORE RUN NO. 4			3 3 4 5		NQ CORE RUN NO. 4: 20' TO 25'	20
25	S5 CORE RUN NO. 5	82		5 3 4 4 4	SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(very dense) NQ CORE RUN NO. 5: 25' to 30'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-4

COMPLETION DATE: 2/27/12 | SURFACE ELEVATION: +1,424 ft (±) | WATER LEVEL: 10'

JOB NUMBER: 8979-001*1D | READING DATE: 2/27/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
35	S6 CORE RUN NO. 6	39		5 5 6 6 5	SM	NQ CORE RUN NO. 6: 30' to 35'	35
	S7 CORE RUN NO. 7	82		6 4 4 5 5		NQ CORE RUN NO. 7: 35' to 40'	
40	S8 CORE RUN NO. 8	53		6 4 4 5 6		NQ CORE RUN NO. 8: 40' to 45' - rock encountered @ 42' REC = 100% RQD = 63% Red-brown, fair quality, medium grained, closely jointed sandstone bedrock	40
45	CORE RUN NO. 9			6 5 6 7 6		NQ RUN NO. 9: 45 to 50' REC = 100% RQD = 90% - grading to green-gray sandstone rock, excellent quality	45
50				6			50
55						Boring completed @ 50' Groundwater encountered @ 10'	55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-5

COMPLETION DATE: 3/12/12 | SURFACE ELEVATION: +1,426 ft (±) | WATER LEVEL: 15'

JOB NUMBER: 8979-001*1D | READING DATE: 3/09/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	5			SM	Red-brown fine to coarse sand, and silt, little fine gravel (moist)(loose to dense)	
	S2	42	8.0				
5	S3	41	9.4				5
10	S4	73				Red-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(very dense to dense)	10
15	S5	50/1"			SM		15
20	S6	38					20
25	S7	63				- grading (very dense)	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-5

COMPLETION DATE: 3/12/12 | SURFACE ELEVATION: +1,426 ft (±) | WATER LEVEL: 15'

JOB NUMBER: 8979-001*1D | READING DATE: 3/09/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	68				Red-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(very dense)	
35	S9	92			SM		35
40	S10	50/4"					40
45	CORE RUN NO. 1			2 2 3 3 4		- auger refusal @ 45' atop sandstone bedrock Red-brown fair quality, fine grained, closely jointed sandstone bedrock NQ ROCK CORE RUN NO. 1: 45' to 50' REC = 70% RQD = 60%	45
50							50
55						Boring completed @ 50' Groundwater encountered @ 15'	55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-6

COMPLETION DATE: 3/02/12 | SURFACE ELEVATION: +1,428 ft (±) | WATER LEVEL: 18'

JOB NUMBER: 8979-001*1D | READING DATE: 3/02/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	8				Red-brown fine to coarse sand, and silt, little fine gravel (moist)(loose to very dense)	
	S2	68/11"					
5					SM		5
	S3	64		7.4			
10						Red-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(dense to very dense)	10
	S4	44		7.2			
15							15
	S5	50					
20					SM	- grading with frequent cobbles and boulders	20
	S6	86					
25							25
	S7	50/4"					
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 2 PLATE: 3-C-6

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-6

COMPLETION DATE: 3/02/12 | SURFACE ELEVATION: +1,428 ft (±) | WATER LEVEL: 18'

JOB NUMBER: 8979-001*1D | READING DATE: 3/02/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	100/6"			SM	Red-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(very dense)	
35	S9	50/4"					35
40						Green to red-brown medium to fine grained, good quality, closely jointed sandstone bedrock NQ ROCK CORE NO. 1: 39' to 44' REC = 97% RQD = 80%	40
45							45
50						Boring completed @ 44' Groundwater encountered @ 18'	50
55							55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-7

COMPLETION DATE: 3/14/12 | SURFACE ELEVATION: +1,430 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/14/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	8				Red-brown fine to coarse sand, some to and silt, some fine to coarse gravel (moist)(loose to very dense)	
	S2	44					
5	S3	74					5
10	S4	88					10
					SM		
15	S5	42				- grading (dense)	15
20	S6	50/1"				- grading (very dense)	20
25	S7	54					25
						Red-brown decomposed sandstone bedrock	
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-7

COMPLETION DATE: 3/14/12 | SURFACE ELEVATION: +1,430 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/14/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	50/1"				Red-brown decomposed sandstone bedrock	
35				3		Green-gray, good quality, medium grained, medium jointed, sandstone bedrock	35
	S9 CORE RUN NO. 1	50/1"		4 4 5 5		NQ CORE RUN NO. 1: 35' to 40' REC = 90% RQD = 75%	
40	CORE RUN NO. 2			4 5 7 5 5		NQ CORE RUN NO. 2: 40' to 45' REC = 92% RQD = 73% - grading to red-brown claystone bedrock from 44'-10" to 45' - piezometer installed to 40'	40
45							45
50						Boring completed @ 44'	50
55						Date / Water Level 3/14/12 — 18'-0" 3/15/12 — 26'-2" 3/19/12 — 27'-6" 3/23/12 — 30'-0" 4/04/12 — 29'-7" 4/13/12 — 29-9"	55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-8

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,410 ft (±) | WATER LEVEL: 7'-6"

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	32				Red-brown fine to coarse sand, some silt, little fine to coarse gravel (moist)(dense to very dense)	
	S2	45					
5					SM	- grading with occasional cobbles and boulders @ 5'	5
	S3	50/5"					
10							10
	S4	37				Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(dense)	
15							15
	S5	48					
					SM		
20						- grading to trace fine gravel (medium dense)	20
	S6	24					
25						- grading (very dense)	25
	S7	50/5"				- driller notes boulder from 26' to 27'-6"	
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-8

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,410 ft (±) | WATER LEVEL: 7'-6"

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	37			SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(dense to very dense)	
35	S9	50/1"					35
40							40
45						Boring completed @ 37' Groundwater encountered @ 7'-6"	45
50							50
55							55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-9

COMPLETION DATE: 3/01/12 | SURFACE ELEVATION: +1,414 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/01/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	5			SM	Red-brown fine to medium sand, some silt, little fine gravel (moist)(loose to dense)	
	S2	41					
5							5
	S3	47	7.8		SM	Red-brown fine to coarse sand, and silt, little fine gravel, occasional cobbles and boulders (moist)(dense)	
10	S4	50/4"			SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	10
15	S5	50					15
20	S6	71					20
25	S7	38	8.3		SM	Red-brown fine to coarse sand, and silt, little fine to coarse gravel (wet)(dense)	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-9

COMPLETION DATE: 3/01/12 | SURFACE ELEVATION: +1,414 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/01/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	41			SM	Red-brown fine to coarse sand, and silt, little fine to coarse gravel (wet)(dense)	
35	S9	40					35
40							40
45							45
50						Boring completed @ 37' * Perched groundwater seepage encountered @ 2'-6"	50
55							55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-10

COMPLETION DATE: 3/07/12 | SURFACE ELEVATION: +1,414 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/07/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	25			SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(medium dense to very dense)	
	S2	80					
5							5
	S3	36				Red-brown fine to coarse sand, and silt, little fine to coase gravel, occasional cobbles and boulders (moist)(dense to very dense)	
10	S4	40					10
15	S5	48			SM		15
20	S6	95					20
25	S7	50/1"				- driller notes boulder from 26' to 30'	25
30	S8	43					30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-10

COMPLETION DATE: 3/07/12 | SURFACE ELEVATION: +1,414 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/07/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
					SM	Red-brown fine to coarse sand, and silt, little fine to coarse gravel, occasional cobbles and boulders (moist)(dense to very dense)	
35	CORE NO. 1			2 3		NQ ROCK CORE RUN NO. 1: 33' to 35' REC = 92% RQD = 42% - green poor quality, medium grained, closely jointed, sandstone bedrock	35
40							40
45							45
50						Boring completed @ 35' *Groundwater not encountered	50
55							55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-11

COMPLETION DATE: 3/08/12 | SURFACE ELEVATION: +1,410 ft (±) | WATER LEVEL: 21'

JOB NUMBER: 8979-001*1D | READING DATE: 3/08/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	17			SM	Red-brown fine to coarse sand, some silt, and fine gravel (moist)(medium dense to very dense)	
	S2	47	5.4				
5	S3	89					5
10	S4	31	9.7		SM	Red-brown fine to coarse sand, and silt, little fine gravel (moist)(dense to very dense)	10
15	S5	70					15
20	S6	31				- grading with cobbles and boulders @ 20'	20
25	S7	70					25
30	S8	50/5"				Boring completed @ 30'-5" Groundwater encountered @ 21'	30
35							35

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-11

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-12

COMPLETION DATE: 3/12/12 | SURFACE ELEVATION: +1,416 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/12/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	4			SM	Red-brown fine to medium sand, little fine to coarse gravel (moist)(loose to dense)	
	S2	26					
5	S3	49					5
10	S4	62			SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(very dense)	10
15	S5	63					15
20	S6	45			SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(dense)	20
25	S7	23				- grading (medium dense)	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-12

COMPLETION DATE: 3/12/12 | SURFACE ELEVATION: +1,416 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/12/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	81			SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(dense)	
35	S9	50/0"				Decomposed sandstone bedrock - auger and sampler refusal encountered @ 35' - piezometer installed to 34'	35
40							40
45						Boring completed @ 35'	45
50						Date / Water Level 3/12/12 — 15'-0" 3/13/12 — 15'-0" 3/19/12 — 27'-0" 3/23/12 — 28'-8" 4/04/12 — 29'-2" 4/13/12 — 29'-2"	50
55							55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-13

COMPLETION DATE: 3/13/12 | SURFACE ELEVATION: +1,416 ft (±) | WATER LEVEL: 16'

JOB NUMBER: 8979-001*1D | READING DATE: 3/13/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	18				12" Topsoil	
					SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel (moist)(medium dense)	
	S2	65				Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(very dense)	
5	S3	57			SM		5
10	S4	52	7.7			Red-brown fine to coarse sand, some silt, little fine gravel, occasional cobbles and boulders (moist)(very dense)	10
15	S5	50			SM		15
20	S6	50/4"				Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(very dense to dense)	20
25	S7	38			SM		25
						Highly fractured sandstone bedrock	
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-13

COMPLETION DATE: 3/13/12 | SURFACE ELEVATION: +1,416 ft (±) | WATER LEVEL: 16'

JOB NUMBER: 8979-001*1D | READING DATE: 3/13/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
35	CORE RUN NO. 1			4 4 5 6 7		Red-brown, good quality, closely jointed, siltstone bedrock NQ CORE RUN NO. 1: 30' to 35' REC = 100% RQD = 75%	35
40							40
45							45
50						Boring completed @ 35' Groundwater encountered @ 16'	50
55							55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. 14

COMPLETION DATE: 3/14/12 | SURFACE ELEVATION: +1,416 ft (±) | WATER LEVEL: 18'

JOB NUMBER: 8979-001*1D | READING DATE: 3/14/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	3				8" Topsoil	
	S2	48				Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(loose to very dense)	
5	S3	71					5
10	S4	68					10
					SM		
15	S5	74					15
20	S6	50/1"				- driller notes boulder from 22' to 24'	20
25	S7						25
	CORE RUN NO. 1			3 2 3 4 4		NQ CORE RUN NO. 1: 27' to 32' Bedrock encountered @ 28': Red-brown poor quality, closely jointed claystone REC = 88% RQD = 35%	
30	S8						30
						Boring completed @ 32' Groundwater encountered @ 18'	
35							35

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C14

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-15

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,399 ft (±) | WATER LEVEL: 15'

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	3			SM	Red-brown fine to coarse sand, and silt, little fine gravel (moist)(loose to very dense)	
	S2	58					
5						Red-brown fine to medium sand, and silt, little fine gravel (moist)(dense)	5
	S3	38					
10						- grading to little fine to coarse gravel	10
	S4	44			SM		
15						- grading (very dense) with cobbles and boulders	15
	S5	50/5"	5.4				
20						- driller notes boulder from 20'-6" to 22'	20
	S6	50/5"					
25							25
	S7	27				- grading (medium dense)	
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-15

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,399 ft (±) | WATER LEVEL: 15'

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S8	75			SM	Red-brown fine to medium sand, and silt, little fine to coarse gravel (moist)(very dense)	
35							35
40							40
45						Boring completed @ 31'-11" *Groundwater encountered @ 15'	45
50							50
55							55
60							60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-16

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,404 ft (±) | WATER LEVEL: 8'

JOB NUMBER: 8979-001*1D | READING DATE: 3/06/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	13			SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(medium dense to very dense)	
	S2	50/5"					
5	S3	35				- grading (dense)	5
10	S4	62				- grading (very dense) with occasional cobbles and boulders @ 10'	10
15	S5	58			SM	Red-brown fine sand, and silt, some fine to coarse gravel (moist to wet)(very dense)	15
20	S6	85/8"					20
25	S7	50/3"				- grading to little fine to coarse gravel @ 25' - driller notes frequent cobbles and boulders @ 27'	25
30	S8	50/3"					30
35						Boring completed @ 30'-3" Groundwater encountered @ 8'	35

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-16

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LOG OF BORING

BORING NO. C-17

COMPLETION DATE: 3/07/12 | SURFACE ELEVATION: +1,404 ft (±) | WATER LEVEL: 17'

JOB NUMBER: 8979-001*1D | READING DATE: 3/07/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	11				12" Topsoil	
	S2	60			SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(medium dense to very dense)	
5	S3	29				- grading (medium dense)	5
10	S4	46				Red-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(dense to very dense)	10
15	S5	65					15
					SM		
20	S6	26				- grading (medium dense)	20
25	S7	50/4"				- grading (very dense) with frequent cobbles and boulders	25
30	S8	50/3"					30
						Boring completed @ 30'-3" Groundwater encountered @ 17'	
35							35

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-17

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-18

COMPLETION DATE: 3/08/12 | SURFACE ELEVATION: +1,401 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/08/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	6				12" Topsoil	
	S2	31				Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(loose to medium dense)	
5	S3	37					5
10	S4	61			SM	- grading (very dense) with frequent cobbles and boulders	10
15	S5	46				- grading (dense)	15
20	S6	25			SM	Red-brown fine to coarse sand, and clayey silt, little fine to coarse gravel (moist)(medium dense)	20
25	S7	83			SM	Brown fine to medium sand, and silt, little fine to coarse gravel (decomposed sandstone)(moist)(very dense)	25
30	S8	75/3"				Boring completed @ 30'-3" *Groundwater not encountered	30
35							35

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-18

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-19

COMPLETION DATE: 3/16/12 | SURFACE ELEVATION: +1,409 ft (±) | WATER LEVEL: 17'

JOB NUMBER: 8979-001*1D | READING DATE: 3/16/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
0	S1	7				12" Topsoil	0
	S2	44			SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(loose to very dense)	
5	S3	70					5
10	S4	79			SM	Red-brown fine to coarse sand, and silt, little fine gravel (moist)(very dense)	10
15	S5	56	8.1				15
20	S6	50/1"			SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(very dense)	20
25	S7	50/1"				- grading with increased sandstone fragments @ 25'	25
30	S8	50/1"				Boring completed @ 30' Groundwater encountered @ 17'	30
35							35

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-20

COMPLETION DATE: 3/13/12 | SURFACE ELEVATION: +1,409 ft (±) | WATER LEVEL: 17'

JOB NUMBER: 8979-001*1D | READING DATE: 3/13/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
0	S1	3				8" Topsoil	0
					SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(loose to dense)	
	S2	27					
5	S3	41					5
10	S4	34					10
15	S5	68			SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel (moist)(very dense)	15
20	S6	50/1"					20
	CORE RUN 1			3 2		Red-brown, good quality, medium jointed claystone - grading to siltstone NQ ROCK CORE RUN NO. 1: 22' to 25' REC = 89% RQD = 78%	
25	CORE RUN NO. 2			3 4 4 5 4		Red-brown, good quality, medium jointed siltstone - grading to sandstone NQ ROCK CORE RUN NO. 2: 25' to 30' REC = 97% RQD = 80%	25
30						Boring completed @ 30' Groundwater encountered @ 17'	30
35							35

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-20

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-21

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,388 ft (±) | WATER LEVEL: 11'

JOB NUMBER: 8979-001*1D | READING DATE: 3/06/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	6			SM	Red-brown fine to medium sand, some silt, little fine to coarse gravel (very moist)(loose to dense)	
	S2	49					
5							5
	S3	29				Red-brown fine to medium sand, and silt, little fine to coarse gravel (moist)(medium dense)	
10							10
	S4	30			SM		
15						- grading (dense) with occasional cobbles and boulders	15
	S5	32					
						- driller notes boulder @ 18' to 19'	
20							20
	S6	44					
25						Boring completed @ 22' Groundwater encountered @ 11'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-21

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-22

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,394 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/06/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	2				Red-brown fine to coarse sand, some clayey silt, little fine to coarse gravel (moist)(loose to very dense)	
	S2	50					
5	S3	36			SM	- grading (dense)	5
10	S4	67				Red-brown fine to medium sand, and silt, little fine to coarse gravel (moist)(very dense)	10
15	S5	50/2"			SM	- driller notes boulder from 14' to 15'	15
20	S6	74					20
25						Boring completed @ 22' *Groundwater not encountered	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-22

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-23

COMPLETION DATE: 3/07/12 | SURFACE ELEVATION: +1,393 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/07/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	2				Red-brown fine to coarse sand, some to and silt, some fine to coarse gravel (moist)(loose to dense)	
	S2	50					
5	S3	36					5
10	S4	67			SM	- grading (very dense) with frequent cobbles and boulders @ 10'	10
15	S5	50/2"				- driller notes boulder from 15' to 19'	15
20	S6	74				Highly decomposed sandstone bedrock	20
25						Boring completed @ 20'-3" *Groundwater not encountered	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-23

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-24

COMPLETION DATE: 3/08/12 | SURFACE ELEVATION: +1,386 ft (±) | WATER LEVEL: 12'

JOB NUMBER: 8979-001*1D | READING DATE: 3/08/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	5				Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(loose to dense)	
	S2	26					
5	S3	40			SM		5
10	S4	49					10
15	S5	53				Red-brown fine to coarse sand, and silt, little fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	15
					SM		
20	S6	50/1"					20
25						Boring completed @ 20'-7" Groundwater encountered @ 12'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-24

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LOG OF BORING

BORING NO. C-25

COMPLETION DATE: 3/16/12 | SURFACE ELEVATION: +1,397 ft (±) | WATER LEVEL: 17'

JOB NUMBER: 8979-001*1D | READING DATE: 3/16/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	8				Red-brown fine to coarse sand, some to and silt, some fine to coarse gravel (moist)(loose to very dense)	
	S2	75					
5	S3	88					5
10	S4	47			SM	- grading (dense)	10
						- driller notes boulder @ 13'	
15	S5	58				- grading (very dense)	15
						- driller notes boulder @ 19'	
20	S6	50/0"					20
25						Boring completed @ 20' Groundwater encountered @ 17'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-25

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-26

COMPLETION DATE: 3/14/12 | SURFACE ELEVATION: +1,398 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/14/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	15			SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(medium dense to dense)	
	S2	45					
5	S3	44					5
10	S4	36			SM	Red-brown fine to coarse sand, and silt, little fine gravel (moist)(dense)	10
15	S5	63			SM	Red-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(very dense)	15
20	S6	52					20
25						Boring completed @ 22' *Groundwater not encountered	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-26

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. C-27

COMPLETION DATE: 3/14/12 | SURFACE ELEVATION: +1,380 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/14/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	4			SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(loose to very dense)	
	S2	57					
5	S3	52				Red-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(very dense)	5
10	S4	50/5"			SM	- driller notes boulder @ 10'	10
15	S5	28				- grading (medium dense)	15
20	S6	22					20
25						Boring completed @ 22' *Groundwater not encountered	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-27

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-28

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,381 ft (±) | WATER LEVEL: 9'

JOB NUMBER: 8979-001*1D | READING DATE: 3/09/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	4			SM	Red-brown fine to coarse sand, some silt, little fine gravel (moist)(loose to medium dense)	
	S2	22					
5	S3	50			SM	Red-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(very dense)	5
10	S4	50/5"				- grading with cobbles and boulders	10
15	S5	22			SM	Red-brown fine to coarse sand, and silt, little fine gravel (moist)(medium dense)	15
						Decomposed sandstone bedrock	
20	S6	50/1"					20
25						Boring completed @ 20'-1" Groundwater encountered @ 9'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-28

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-29

COMPLETION DATE: 3/16/12 | SURFACE ELEVATION: +1,381 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/16/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	5				Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(loose to very dense)	
	S2	60					
5						- grading (dense)	5
	S3	38					
10						- grading (very dense) with frequent cobbles and boulders	10
	S4	50/3"					
15							15
	S5	50/3"					
20	S6	50/0"					20
25						Boring completed @ 20' *Groundwater not encountered	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-29

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-30

COMPLETION DATE: 3/19/12 | SURFACE ELEVATION: +1,376 ft (±) | WATER LEVEL: 13'

JOB NUMBER: 8979-001*1D | READING DATE: 3/19/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	9				Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(loose to very dense)	
	S2	57					
5						- grading (dense)	5
	S3	47					
10					SM		10
	S4	38					
15						- grading (very dense) with frequent cobbles and boulders	15
	S5	50					
20	S6	50/3"					20
25						Boring completed @ 20'-3" Groundwater encountered @ 13'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-30

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-31

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,374 ft (±) | WATER LEVEL: 7'

JOB NUMBER: 8979-001*1D | READING DATE: 3/09/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	15			SM	Red-brown fine to medium sand, and silt, little fine to coarse gravel (moist)(medium dense to dense)	
	S2	49					
5	S3	50					5
						Red-brown fine to medium sand, some clayey silt, little fine to coarse gravel, occasional cobbles and boulders (wet)(very dense to dense)	
10	S4	52			SM		10
15	S5	34					15
20	S6	50/1"				Decomposed sandstone bedrock	20
						Boring completed @ 20'-1"	
25						Groundwater encountered @ 9'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-31

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. C-32

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,371 ft (±) | WATER LEVEL: 7'

JOB NUMBER: 8979-001*1D | READING DATE: 3/09/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						12" Topsoil	
	S1	5			SM	Red-brown fine to medium sand, and silt, little fine to coarse gravel (moist)(loose to medium dense)	
	S2	35					
5	S3	56			SM	Red-brown fine to coarse sand, some to and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(very dense)	5
10	S4	45				- grading (dense)	10
15	S5	37					15
20	S6	65				- grading (very dense)	20
25						Boring completed @ 22' Groundwater encountered @ 7'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-C-32

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LOG OF BORING

BORING NO. S-1

COMPLETION DATE: 2/27/12 | SURFACE ELEVATION: +1,455 ft (±) | WATER LEVEL: 10'

JOB NUMBER: 8979-001*1D | READING DATE: 2/27/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	6				8" Topsoil	
					SM	Red-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(loose)	
	S2	60	5.3			Red-brown fine to coarse sand, some to and silt, little to some fine gravel (moist)(very dense to dense)	
5	S3	46	5.9				5
	S4	85/11"					
					SM		
10	S5	43					10
15	S6	68					15
20						Boring completed @ 17' Groundwater encountered @ 10'	20
25							25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-1

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. S-2

COMPLETION DATE: 2/19/12 | SURFACE ELEVATION: +1,455 ft (±) | WATER LEVEL: 15'

JOB NUMBER: 8979-001*1D | READING DATE: 2/19/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	9				8" Topsoil	
					SM	Red-brown fine to medium sand, and silt, little fine to coarse gravel (moist)(loose)	
5	S2	62				Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(very dense)	5
10	S3	50/0"			SM	- driller notes boulder @ 10'	10
15	S4	50/5"					15
20						Boring completed @ 15'-11" Groundwater encountered @ 15'	20
25							25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-2

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-3

COMPLETION DATE: 2/27/12 | SURFACE ELEVATION: +1,452 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 2/27/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	5			ML	Red-brown silt, and fine to coarse sand, trace fine gravel (moist)(medium to hard)	
	S2	32	8.7				
5	S3	52			SM	Red-brown fine to coarse sand, some to and silt, some fine to coarse gravel (moist)(very dense) - driller notes boulder @ 7'-6"	5
10	S4	52					10
15	S5	98/10"					15
20						Boring completed @ 16'-4" *Groundwater not encountered	20
25							25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-3

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-4

COMPLETION DATE: 3/19/12 | SURFACE ELEVATION: +1,445 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/19/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
0	S1	18	32.2		SM	Red-brown fine to coarse sand, some silt, little to some fine gravel, occasional cobbles and boulders (moist)(medium dense)	0
5	S2	24	8.8				5
10	S3	64	7.6		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(very dense)	10
15	S4	75					15
20						Boring completed @ 16'-10" *Groundwater not encountered	20
25							25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-4

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-5

COMPLETION DATE: 2/27/12 | SURFACE ELEVATION: +1,435 ft (±) | WATER LEVEL: 10'

JOB NUMBER: 8979-001*1D | READING DATE: 2/27/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						6" Topsoil	
	S1	8	24.4		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(loose to dense)	
	S2	36	7.9			Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(dense to very dense)	
5	S3	60	8.4				5
10	S4	35			SM		10
15	S5	66					15
20	S6	50/2"					20
25						Boring completed @ 20'-8" Perched groundwater encountered @ 10'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-5

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-6

COMPLETION DATE: 3/19/12 | SURFACE ELEVATION: +1,412 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/19/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						8" Topsoil	
	S1	5				Red-brown fine to coarse sand, and silt, little to some fine to coarse gravel, occasional cobbles and boulders (moist)(loose to very dense)	
5	S2	42					5
10	S3	65			SM		10
15	S4	50/1"				- driller notes numerous cobbles and boulders @ 15'	15
20	S5	50/1"					20
25						Boring completed @ 20'-1" *Groundwater not encountered	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-6

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-7

COMPLETION DATE: 2/27/12 | SURFACE ELEVATION: +1,383 ft (±) | WATER LEVEL: 10'

JOB NUMBER: 8979-001*1D | READING DATE: 2/27/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	4	22.8			6" Topsoil	
					SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (loose to very dense)	
	S2	17	12.6				
5	S3	43	7.3				5
10	S4	87/10"	4.8				10
						- driller notes boulder @ 14'	
15	S5	75/10"				- driller notes boulder @ 16'	15
20	S6	50/1"				Highly fractured sandstone bedrock	20
25						Boring completed @ 20'-7" Perched groundwater encountered at 10'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-7

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-8

COMPLETION DATE: 3/15/12 | SURFACE ELEVATION: +1,354 ft (±) | WATER LEVEL: 3'

JOB NUMBER: 8979-001*1D | READING DATE: 3/15/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	12				4" Topsoil	
						FILL - Fine to coarse sand, little silt, little fine to coarse gravel	
	S2	36				Red-brown fine to coarse sand, and silt, little fine to coarse gravel (wet)(dense)	
5	S3	45			SM	- grading with cobbles and boulders @ 6'	5
	S4	50/0"					
	S5	50/0"				- auger refusal atop boulder @ 8'-6"	
10							10
15							15
						Boring completed @ 8'-6"	
20						Perched groundwater encountered @ 3'	20
25							25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-8

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-9

COMPLETION DATE: 3/15/12 | SURFACE ELEVATION: +1,350 ft (±) | WATER LEVEL: 6'

JOB NUMBER: 8979-001*1D | READING DATE: 3/15/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	24				FILL - Red-brown fine to coarse sand, and silt, some fine to coarse gravel	
	S2	46			SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(medium dense to dense)	
5	S3	28					5
	S4	50/1"					
	S5	61			SM	Red-brown fine to coarse sand, some to and silt, some fine to coarse gravel, occasional cobbles and boulders (wet)(dense to very dense)	
10	S6	47					10
	S7	86					
	S8	50/2"					
15							15
20						Boring completed @ 14'-8" *Groundwater encountered @ 6'	20
25							25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-9

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-10

COMPLETION DATE: 3/15/12 | SURFACE ELEVATION: +1,357 ft (±) | WATER LEVEL: 5'-6"

JOB NUMBER: 8979-001*1D | READING DATE: 3/15/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	9				4" Topsoil	
						FILL - Brown fine to coarse sand, some silt, little fine gravel	
	S2	41				Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles and boulders (moist to wet)(dense to very dense)	
5	S3	86					5
	S4	59			SM		
	S5	81					
10	S6	86					10
	S7	122					
15	S8	80					15
						Boring completed @ 15'-10"	
						Groundwater encountered @ 5'-6"	
20							20
25							25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-10

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-11

COMPLETION DATE: 3/15/12 | SURFACE ELEVATION: +1,360 ft (±) | WATER LEVEL: 6'

JOB NUMBER: 8979-001*1D | READING DATE: 3/15/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						6" Topsoil	
	S1	10			SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist to wet)(medium dense to very dense)	
	S2	26					
5	S3	47					5
	S4	35			SM	Red-brown fine to coarse sand, little silt, little fine to coarse gravel (wet)(dense)	
	S5	90			SM	Red-brown fine to coarse sand, little to some silt, little fine to coarse gravel, occasional cobbles and boulders (wet)(very dense)	
10	S6	130					10
	S7	96					
15	S8	100/5"					15
20	S9	100/4"				- driller noted cobbles @ 21'-6"	20
25						Boring completed @ 22' Groundwater encountered @ 6'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-11

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-12

COMPLETION DATE: 3/15/12 | SURFACE ELEVATION: +1,352 ft (±) | WATER LEVEL: 6'

JOB NUMBER: 8979-001*1D | READING DATE: 3/15/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						2" Topsoil and pine needles	
	S1	4			SM	Brown to dark brown fine to coarse sand, little silt, trace fine to coarse gravel (moist)(loose to very dense)	
	S2	50/4"				- driller notes cobbles @ 3'	
5	S3	56	39.0		SM	Red-brown fine to coarse sand, and silt, trace fine gravel (wet)(very dense)	5
	S4	66					
	S5	158/10"			SM	Gray and red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional to frequent cobbles and boulders (moist)(very dense)	
10	S6	100/4"					10
	S7	100/4"					
15							15
20	S8	100/1"					20
25						Boring completed @ 20'-1" Groundwater encountered @ 6'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-13

COMPLETION DATE: 3/15/12 | SURFACE ELEVATION: +1,352 ft (±) | WATER LEVEL: 12'

JOB NUMBER: 8979-001*1D | READING DATE: 3/15/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
	S1	4			SM	4" Topsoil Red-brown fine to coarse sand, some silt, trace fine gravel (moist)(loose)	
	S2	70			ML	Red-brown clayey silt, and fine to medium sand, trace fine to coarse gravel (wet)(hard)	
5	S3	55				Red-brown fine to coarse sand, some to and silt, some fine to coarse gravel (moist to wet)(very dense)	5
	S4	56					
	S5	69					
10	S6	75			SM		10
	S7	104				- grading with frequent cobbles and boulders	
15	S8	100/3"					15
20							20
25						Boring completed @ 20' Groundwater encountered @ 12'	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-13

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-14

COMPLETION DATE: 3/16/12 | SURFACE ELEVATION: +1,352 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/16/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						3" Topsoil	
	S1	28				FILL - Fine to coarse gravel, and fine to coarse sand, trace silt	
	S2	66				Red-brown fine to coarse sand, some silt, little fine gravel (moist)(very dense)	
5	S3	59	25.7				5
	S4	159/11"			SM		
	S5	81					
10	S6	112					10
	S7	100/4"					
15	S8	50/0"		6		NQ ROCK CORE RUN NO. 1: 15' to 20'	15
	CORE RUN NO. 1			2 3 3 3		REC = 97% RQD = 77% Red-brown good quality, closely jointed siltstone, grading to sandstone @ 16'	
20							20
25						Boring completed @ 20' *Groundwater not encountered	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-14

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-15

COMPLETION DATE: 3/16/12 | SURFACE ELEVATION: +1,355 ft (±) | WATER LEVEL:

JOB NUMBER: 8979-001*1D | READING DATE: 3/16/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						3" Topsoil	
	S1	11				FILL - Brown-dark gray fine to coarse sand, some silt, little fine gravel	
	S2	59				Gray to red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(very dense)	
5	S3	83					5
	S4	100/5"			SM		
	S5	100/5"					
10	S6	75/2"				- driller notes cobbles @ 10'-6"	10
	S7	100/5"				- possible bedrock @ 14'-5"	
15							15
20						Boring completed @ 14'-5"	20
25							25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-15

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. S-16

COMPLETION DATE: 3/16/12 | SURFACE ELEVATION: +1,344 ft (±) | WATER LEVEL: 7'-6"

JOB NUMBER: 8979-001*1D | READING DATE: 3/16/12

DEPTH	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	CORING TIMES (MIN./FT.)	SYMBOL	DESCRIPTION	DEPTH
						3" Gravel pavement	
	S1	41				Red-brown fine to coarse sand, little to some silt, some fine to coarse gravel, occasional cobbles and boulders (moist to wet)(medium dense to very dense)	
	S2	78					
5	S3	37					5
	S4	32	10				
	S5	40					
10	S6	192/11"			SM		10
	S7	28					
15	S8	66					15
20	CORE RUN NO. 1			6 3 3 4 4		NQ ROCK CORE RUN NO. 1: 20' to 25' REC = 90% RQD = 83% Light green-gray good quality, medium jointed, coarse grained sandstone, and conglomerate	20
25						Boring completed @ 25' Groundwater encountered @ 7'-6"	25
30							30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 3-S-16

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: T-1

COMPLETION DATE: 2/28/12 | SURFACE ELEVATION: +1,373 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 2/28/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1	9.9	SM	Red-brown fine to coarse sand, some silt, little fine gravel (wet)(dense)	
5	S2		SM	Red-brown fine to coarse sand, little silt, little fine to coarse gravel (moist)(medium dense)	5
	S3	8.7	SM	Red-brown fine to medium sand, and silt, some fine to coarse gravel (moist)(very dense)	
				- grading with cobbles/boulders @ 9'	
10				- refusal @ 11' on dark green sandstone boulder, or bedrock	10
				Test pit completed @ 11' *Groundwater not encountered Mottling observed @ 3'	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-T-1

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: T-2

COMPLETION DATE: 2/28/12 | SURFACE ELEVATION: +1,366 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 2/28/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1		SM	Red-brown fine to coarse sand, little silt, some fine to coarse gravel (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense) - refusal @ 7' on sandstone bedrock	5
10				Test pit completed @ 7' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-T-2

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: T-3

COMPLETION DATE: 2/29/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,367 ft (±)

WATER LEVEL: *
READING DATE: 2/29/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				8" Topsoil	
	S1			FILL - Orange-brown fine to medium sand, some silt, trace fine gravel	
	S2		SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles and boulders (moist)(dense) - refusal @ 4' on dark gray/green sandstone bedrock	
5					5
10				Test pit completed @ 4' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-T-3

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: T-4

COMPLETION DATE: 2/28/12 | SURFACE ELEVATION: +1,368 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 2/29/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				8" Topsoil	
	S1		SM	Red-brown fine to coarse sand, little silt, some fine to coarse gravel (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(dense to very dense) - refusal @ 8' on green/gray sandstone bedrock	5
10				Test pit completed @ 8' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-T-4

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: T-5

COMPLETION DATE: 2/29/12 | SURFACE ELEVATION: +1,356 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 2/29/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				24" Topsoil	
	S1	11.5	SM	Light brown fine to coarse sand, and silt, little fine gravel (moist)(dense)	
5	S2	7.4	SM	Red-brown fine to coarse sand, and silt, little fine gravel, frequent cobbles (moist)(very dense) - refusal @ 7'-6" on green/gray sandstone bedrock	5
10				Test pit completed @ 7'-6" *Groundwater not encountered Mottling observed @ 3.5'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-T-5

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: T-6

COMPLETION DATE: 2/29/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,361 ft (±)

WATER LEVEL: *
READING DATE: 2/29/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Red-brown fine to medium sand, and silt (moist)(medium dense)	
	S2	16.6	ML	Red-brown silt, trace fine sand (moist)(hard)	
5				- refusal @ 7'-6" on sandstone bedrock	5
				Test pit completed @ 7'-6" *Groundwater not encountered Mottling observed @ 1'-6"	
10					10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-T-6

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: T-7

COMPLETION DATE: 2/29/12 | SURFACE ELEVATION: +1,367 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 2/29/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Red-brown fine to medium sand, and silt, trace fine gravel (very moist)(medium dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(dense to very dense)	5
				- refusal @ 8' on gray/green sandstone bedrock	
10				Test pit completed @ 8' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-T-7

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-1

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,385 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
				Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles (moist)(dense)	
	S1	11.3	SM		
5	S2			- grading with and fine to coarse gravel	5
				- backhoe refusal encountered @ 7'-6" on nested boulders	
10				Test pit completed @ 7'-6" *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-1

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-2

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,414 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel (moist)(dense)	
5	S2 S3		SM	Red-brown fine to coarse sand, some to and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(very dense)	5
			ML	Red-brown clayey silt, and fine to coarse sand, little fine to coarse gravel (moist)(hard) - backhoe refusal encountered at 10' on sandstone bedrock	
10				Test pit completed @ 10' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-2

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-3

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,442 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
	S1	21.5	SM	Red-brown fine to coarse sand, and silt, some fine gravel (moist)(medium dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(dense)	5
				- grading (very dense) with cobbles and boulders	
10	S3			Test pit completed @ 12' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-3

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-4

COMPLETION DATE: 3/02/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,448 ft (±)

WATER LEVEL: *
READING DATE: 3/02/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				8" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, trace fine to coarse gravel (moist)(medium dense)	
5	S2			- grading to some fine to coarse sand, some fine to coarse gravel (very dense)	5
				Red-brown highly fractured, weathered sandstone	
10	S3			- backhoe refusal encountered @ 11' atop sandstone bedrock	10
				Test pit completed @ 11' *Groundwater not encountered Mottling observed @ 4'-6"	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-4

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-5

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,440 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				8" Topsoil	
	S1	12.5	SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(dense)	5
	S3				
10	S4				10
				Test pit completed @ 12' *Groundwater not encountered	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-5

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-6

COMPLETION DATE: 3/02/12 | SURFACE ELEVATION: +1,448 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/02/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
	S1			Red-brown fine to coarse sand, and silt, little to some fine to coarse gravel, occasional to frequent cobbles and boulders (moist)(dense to very dense)	
5	S2		SM		5
	S3				
10					10
				Test pit completed @ 12' *Groundwater not encountered	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-6

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-7

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,446 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				8" Topsoil	
	S1	15.4	SM	Red-brown fine to coarse sand, some silt, some fine gravel (wet)(medium dense)	
	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(dense to very dense) - refusal @ 5' on red sandstone bedrock	
5					5
10				Test pit completed @ 5' *Groundwater not encountered Mottling observed @ 2'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-7

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-8

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,450 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				2" Asphalt over 8" of sandy fill	
	S1			Red-brown fine to coarse sand, some silt, little fine to coarse gravel, occasional to frequent cobbles and boulders (moist)(dense)	
5	S2		SM		5
	S3				
10					10
				Test pit completed @ 12' *Perched groundwater seepage encountered @ 10" Mottling observed from 4' to 6'	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-8

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-9

COMPLETION DATE: 3/02/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,448 ft (±)

WATER LEVEL: 12'
READING DATE: 3/02/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				8" Topsoil	
	S1			Red-brown fine to coarse sand,some silt, little fine to coarse gravel (moist)(medium dense)	
5	S2			- grading with some fine to coarse gravel, frequent cobbles and boulders (very dense)	5
			SM		
10	S3				10
	S4			- backhoe refusal encountered @ 13' on sandstone bedrock	
				Test pit completed @ 13' Groundwater encountered @ 12' Mottling observed from 2' to 3'	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-9

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-10

COMPLETION DATE: 3/05/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,450 ft (±)

WATER LEVEL: 7.5'
READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				8" Topsoil	
	S1		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles (moist)(dense to very dense)	
5	S2			- bulk sample taken from 5' to 6'	5
				- backhoe refusal encountered @ 9' on sandstone bedrock	
10				Test pit completed @ 9' Perched water encountered @ 7'-6"	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-10

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-11

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,368 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/06/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				24" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(dense)	
5	S2			- grading with cobbles/boulders @ 6'	5
10				Test pit completed @ 8' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-11

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-12

COMPLETION DATE: 3/06/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,365 ft (±)

WATER LEVEL: *
READING DATE: 3/06/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(dense)	
5	S2			- grading with frequent cobbles and boulders @ 6'	5
10				Test pit completed @ 7'-6" *Groundwater not encountered Mottling observed @ 3'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-12

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-13

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,375 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/06/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				24" Topsoil	
	S1	10.0	SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	
5	S2	10.5	SM	Red-brown fine to coarse sand, and silt, some fine gravel, frequent cobbles and boulders (moist)(very dense) - backhoe refusal encountered @ 8'-6" on nested boulders	5
10				Test pit completed @ 8'-6" *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-13

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-14

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,388 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/06/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Brown fine to coarse sand, some silt, little fine to coarse gravel (moist)(dense)	
5	S2	7.8	GM	Red-brown fine to coarse gravel, and fine to coarse sand, some silt (moist)(very dense) - bulk sample taken from 5'-6" to 6'-6"	5
				Green gray highly fractured weathered sandstone - backhoe refusal encountered @ 10' on sandstone bedrock	
10				Test pit completed @ 10' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-14

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-15

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,380 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/06/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, frequent cobbles (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	5
10				Test pit completed @ 8' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-15

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-16

COMPLETION DATE: 3/08/12 | SURFACE ELEVATION: +1,448 ft (±) | WATER LEVEL: 1'-6"

JOB NUMBER: 8979-001*1D | READING DATE: 3/08/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1	8.4	SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional to frequent cobbles and boulders (moist)(dense to very dense) - mottling observed from 3' to 5'	
5	S2				5
10	S3				10
15				Test pit completed @ 12' Slight perched groundwater seepage encountered @ 1'-6" Mottling observed from 3' to 5'	15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-16

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-17

COMPLETION DATE: 3/08/12 | SURFACE ELEVATION: +1,455 ft (±) | WATER LEVEL: 6"

JOB NUMBER: 8979-001*1D | READING DATE: 3/08/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1		SM	Red-brown fine to coarse sand, and clayey silt, little fine to coarse gravel, occasional cobbles and boulders (moist)(dense to very dense)	
5	S2	4.0	GM	Red-brown fine to coarse gravel, some fine to coarse sand, some silt (moist)(very dense)	5
10	S3				10
				Test pit completed @ 11' Slight perched groundwater seepage encountered from 6" to 12" Mottling observed from 3' to 4'	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-17

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-18

COMPLETION DATE: 3/07/12 | SURFACE ELEVATION: +1,434 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/07/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles and boulders (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	5
	S3			- backhoe refusal encountered @ 10' atop nested boulders	
10				Test pit completed @ 10' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-18

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-19

COMPLETION DATE: 3/08/12 | SURFACE ELEVATION: +1,447 ft (±) | WATER LEVEL: 1'

JOB NUMBER: 8979-001*1D | READING DATE: 3/08/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(dense)	
	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	
5	S3				5
10	S4				10
				Test pit completed @ 12' Slight perched groundwater seepage encountered @ 1'	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-19

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-20

COMPLETION DATE: 3/08/12 | SURFACE ELEVATION: +1,454 ft (±) | WATER LEVEL: 1'-6"

JOB NUMBER: 8979-001*1D | READING DATE: 3/08/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	5
10	S3				10
15				Test pit completed @ 13' Slight perched groundwater seepage encountered @ 1'-6" Mottling observed from 4' to 8'	15

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-20

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-21

COMPLETION DATE: 3/08/12 | SURFACE ELEVATION: +1,417 ft (±) | WATER LEVEL: 3'

JOB NUMBER: 8979-001*1D | READING DATE: 3/08/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1	8.8	SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(very dense)	
5					5
	S2		SM	Red-brown and gray fine to coarse sand, and silt, some fine to coarse gravel, few cobbles (moist)(very dense)	
	S3	8.3			
10					10
				Test pit completed @ 10' Slight perched groundwater seepage encountered @ 3' to 4'	
15					15

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-21

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-22

COMPLETION DATE: 3/07/12 | SURFACE ELEVATION: +1,428 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/07/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	5
10	S3				10
15				Test pit completed @ 12' *Groundwater not encountered Mottling observed from 4' to 6'	15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-22

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-23

COMPLETION DATE: 3/07/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,433 ft (±)

WATER LEVEL: 1'-6"
READING DATE: 3/07/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, little fine gravel (moist)(dense)	
5	S2 S3		SM	Brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	5
	S4				
10					10
				Test pit completed @ 11' Slight perched groundwater seepage encountered @ 1'-6" Mottling observed from 8' to 9'-6"	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-23

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-24

COMPLETION DATE: 3/07/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,442 ft (±)

WATER LEVEL: 1'-6"
READING DATE: 3/07/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	5
10	S3			Test pit completed @ 11' Slight perched groundwater seepage encountered @ 1'-6" Mottling observed from 5'-6" to 8'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-24

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: P-25

COMPLETION DATE: 3/07/12 | SURFACE ELEVATION: +1,410 ft (±) | WATER LEVEL: 2'

JOB NUMBER: 8979-001*1D | READING DATE: 3/07/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1			Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles (moist)(very dense)	
5	S2		SM	- grading with frequent cobbles and boulders	5
	S3				
10	S4				10
				Test pit completed @ 12'	
				Slight perched groundwater seepage encountered @ 2'	
15				Mottling observed from 8' to 10'	15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-P-25

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: R-1

COMPLETION DATE: 3/05/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,427 ft (±)

WATER LEVEL: 2'-3'
READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
	S1	9.4	SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles (moist)(dense)	
				- grading (wet)	
5	S2	4.7	GM	Red-brown fine to coarse gravel, and fine to coarse sand, some silt, frequent cobbles and boulders (moist)(very dense)	5
10				Test pit completed @ 10' Perched groundwater seepage encountered from 2' to 3'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-R-1

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: R-2

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,410 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles and boulders (moist)(dense)	
5					5
	S2		SM	Red-brown fine to coarse sand, and silt, trace fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	
10	S3			- backhoe refusal encountered @ 10'-6" on sandstone bedrock	10
				Test pit completed @ 10'-6" *Groundwater not encountered	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-R-2

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: R-3

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,439 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
				FILL - Light brown silt, little fine to coarse sand, trace fine gravel	
	S1		SM	Red-brown fine to coarse sand, some silt, little fine gravel (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	5
10				- backhoe refusal encountered @ 11' on nested boulders	10
15				Test pit completed @ 11' *Groundwater not encountered	15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-R-3

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: R-4

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,432 ft (±) | WATER LEVEL: 2'

JOB NUMBER: 8979-001*1D | READING DATE: 3/06/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				24" Topsoil	
	S1	7.8	SM	Red-brown fine to coarse sand, and silt, little fine to coarse gravel, occasional cobbles (moist)(dense)	
5					5
	S2	8.3	SM	Red-brown fine to coarse sand, and silt, little fine gravel, frequent cobbles and boulders (moist)(very dense)	
10	S3				10
				Test pit completed @ 12' Perched groundwater seepage encountered @ 2'	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-R-4

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: R-5

COMPLETION DATE: 3/06/12 | SURFACE ELEVATION: +1,442 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/06/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles (moist)(dense)	
5	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	5
10	S3				10
15				Test pit completed @ 12' Slight perched groundwater seepage encountered @ 18" Mottling observed @ 3'	15

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-R-5

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: R-6

COMPLETION DATE: 3/06/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,432 ft (±)

WATER LEVEL: *
READING DATE: 3/06/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				18" Topsoil	
	S1			Red-brown fine to coarse sand, some to and silt, little fine to coarse gravel, occasional cobbles (moist)(very dense)	
5	S2		SM		5
				- grading with frequent cobbles and boulders @ 7'	
	S3				
10					10
				Test pit completed @ 12'	
				*Groundwater not encountered	
				Mottling observed from 4' to 6'	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-R-6

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: R-7

COMPLETION DATE: 3/05/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,448 ft (±)

WATER LEVEL: *
READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1	8.9	ML	Red-brown silt, some fine to coarse sand (moist)(medium)	
	S2	6.8	SM	Red-brown fine to coarse sand, and silt, some fine gravel, frequent cobbles and boulders (moist)(very dense)	
5					5
	S3				
10				Test pit completed @ 10' *Groundwater not encountered	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-R-7

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: R-8

COMPLETION DATE: 3/05/12 | SURFACE ELEVATION: +1,453 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-001*1D | READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles (moist)(dense)	
	S2				
5			SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	5
				- backhoe refusal encountered @ 10' on nested boulders	
10	S3				10
				Test pit completed @ 10'	
				*Groundwater not encountered	
15					15

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-R-8

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: R-9

COMPLETION DATE: 3/05/12
JOB NUMBER: 8979-001*1D

SURFACE ELEVATION: +1,453 ft (±)

WATER LEVEL: 7'-8'
READING DATE: 3/05/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				8" Topsoil	
	S1		SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasionial cobbles and boulders (moist)(very dense)	
5					5
	S2		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense) - backhoe refusal encountered @ 9' on nested boulders	
10				Test pit completed @ 9' Slight perched groundwater seepage encountered from 7' to 8' Mottling observed @ 6'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: kt/mh 3/12

Sheet: 1 of 1 PLATE: 4-R-9

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS More than 50% of material is LARGER than No. 200 Sieve	GRAVEL & GRAVELLY SOILS More than 50% of coarse fraction RETAINED on No. 4 Sieve	CLEAN GRAVELS (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS More than 50% of coarse fraction PASSING a No. 4 Sieve	CLEAN SAND (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines.
			SP	Poorly-graded sands, gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS More than 50% of material is SMALLER than No. 200 Sieve.	SILTS AND CLAYS	Liquid limit LESS than 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS	Liquid limit GREATER than 50	MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			PT	Peat, humus, swamp soils with high organic contents

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

GRADATION*		COMPACTNESS* sand and/or gravel		CONSISTENCY* clay and/or silt	
% Finer by Weight		Relative Density		Range of Shearing Strength in Pounds per Square Foot	
Trace	0% to 10%	Loose	0% to 40%	Very Soft	less than 250
Little	10% to 20%	Medium Dense	40% to 70%	Soft	250 to 500
Some	20% to 35%	Dense	70% to 90%	Medium	500 to 1000
And	35% to 50%	Very Dense	90% to 100%	Stiff	1000 to 2000
				Very Stiff	2000 to 4000
				Hard	Greater than 4000

**Values are from laboratory or field test data, where applicable. When no testing was performed, values are estimated.*

UNIFIED SOIL CLASSIFICATION SYSTEM

SOIL CLASSIFICATION CHART

ENGINEERING ROCK CLASSIFICATION AND CORE DESCRIPTION CHART (1)

DESCRIPTIVE TERMINOLOGY FOR JOINT SPACING

Description Term	Spacing of Joints
Very Close	Less than 2 inches
Close	2 inches to 1 foot
Moderately Close	1 foot to 3 feet
Wide	3 feet to 10 feet
Very Wide	Greater than 10 feet

RELATIONSHIP OF RQD AND ROCK QUALITY

Rock Quality Designation (RQD) (2)	Description of Rock Quality
0 - 25%	Very Poor
25 - 50%	Poor
50 - 75%	Fair
75 - 90%	Good
90 - 100%	Excellent

(1) Core description system is based on a suggested system proposed in the ASCE Rock Mechanics Seminar in April and May of 1968 entitled "Geologic Considerations of Rock Mechanics" as presented by Don V. Deere.

(2) "Rock Quality Designation" is defined as a modified core recovery ratio which considers only pieces of core that are at least 4 inches long. Obvious fractures induced by drilling are ignored in this system.

Gradation Curve(s)

	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	18.0	14.7	16.3	22.8	28.2
□	0.0	0.0	10.8	13.6	13.1	21.7	40.8
△	0.0	0.0	12.1	13.6	13.7	20.7	39.9
◇	0.0	0.0	5.3	10.5	14.3	23.2	46.7
▽	0.0	0.0	11.6	17.7	11.0	19.5	40.2

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	C-1	S-2	2-4	Fine to coarse Sand, some Silt, little fine Gravel. (MC=7.0%)	SM
□	C-1	S-4	10-12	Fine to coarse Sand, and Silt, little fine Gravel. (MC=9.3%)	SM
△	C-1	S-7	25-27	Fine to coarse Sand, and Silt, little fine Gravel. (MC=8.3%)	SM
◇	C-2	S-2	2-4	Fine to coarse Sand, and Silt, trace fine Gravel. (MC=9.2%)	SM
▽	C-2	S-3	5-7	Fine to coarse Sand, and Silt, little fine Gravel. (MC=8.9%)	SM

Melick-Tully & Associates, P.C.

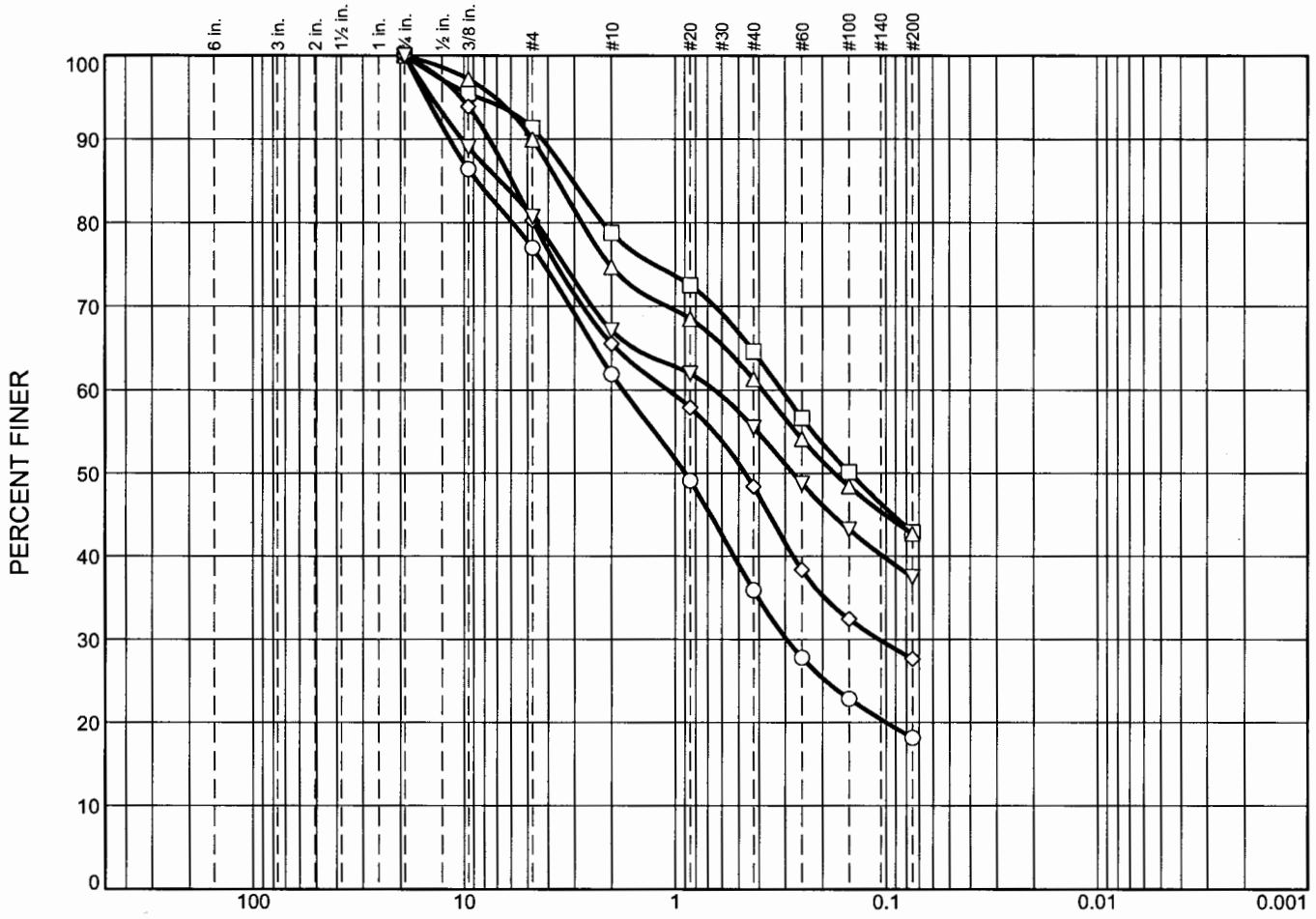
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7A

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	23.0	15.1	26.0	17.8	18.1
□	0.0	0.0	8.7	12.5	14.2	21.7	42.9
△	0.0	0.0	10.0	15.3	13.4	18.6	42.7
◇	0.0	0.0	19.7	14.7	17.2	20.8	27.6
▽	0.0	0.0	19.3	13.5	11.7	18.0	37.5

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	C-2	S-4	10-12	F-c Sand, some fine Gravel, little Silt. (MC=3.1%)	SM
□	C-3	S-1	0-2	Fine to coarse Sand, and Silt, trace fine Gravel. (MC=3.0%)	SM
△	C-4	S-2	2-4	Fine to coarse Sand, and Silt, little fine Gravel. (MC=8.8%)	SM
◇	C-4	S-3	5-7	Fine to coarse Sand, some Silt, little fine Gravel. (MC=6.2%)	SM
▽	C-5	S-2	2-4	Fine to coarse Sand, and Silt, little fine Gravel. (MC=8.0%)	SM

Melick-Tully & Associates, P.C.

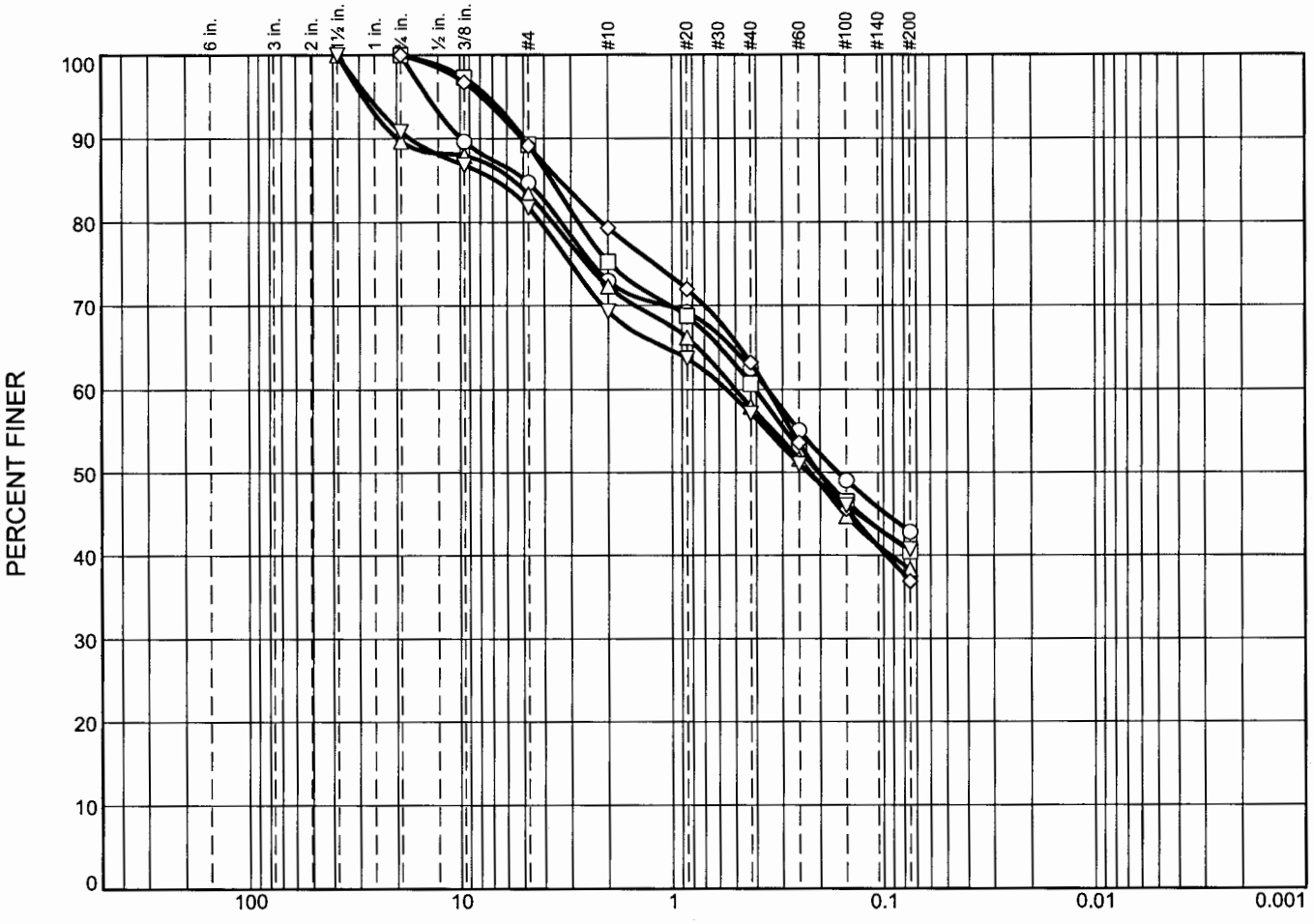
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7B

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	15.3	11.7	10.5	19.7	42.8
□	0.0	0.0	10.7	14.0	14.6	20.2	40.5
△	0.0	10.3	6.4	11.0	14.4	19.6	38.3
◇	0.0	0.0	10.9	9.8	16.1	26.3	36.9
▽	0.0	9.2	9.0	12.5	12.2	16.4	40.7

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	C-5	S-3	5-7	Fine to coarse Sand, and Silt, little fine Gravel. (MC=9.4%)	SM
□	C-6	S-3	5-7	Fine to coarse Sand, and Silt, little fine Gravel. (MC=7.4%)	SM
△	C-6	S-4	10-12	Fine to coarse Sand, and Silt, little f-c Gravel. (MC=7.2%)	SM
◇	C-9	S-3	5-7	Fine to coarse Sand, and Silt, little fine Gravel. (MC=7.8%)	SM
▽	C-9	S-7	25-27	Fine to coarse Sand, and Silt, little f-c Gravel. (MC=8.3%)	SM

Melick-Tully & Associates, P.C.

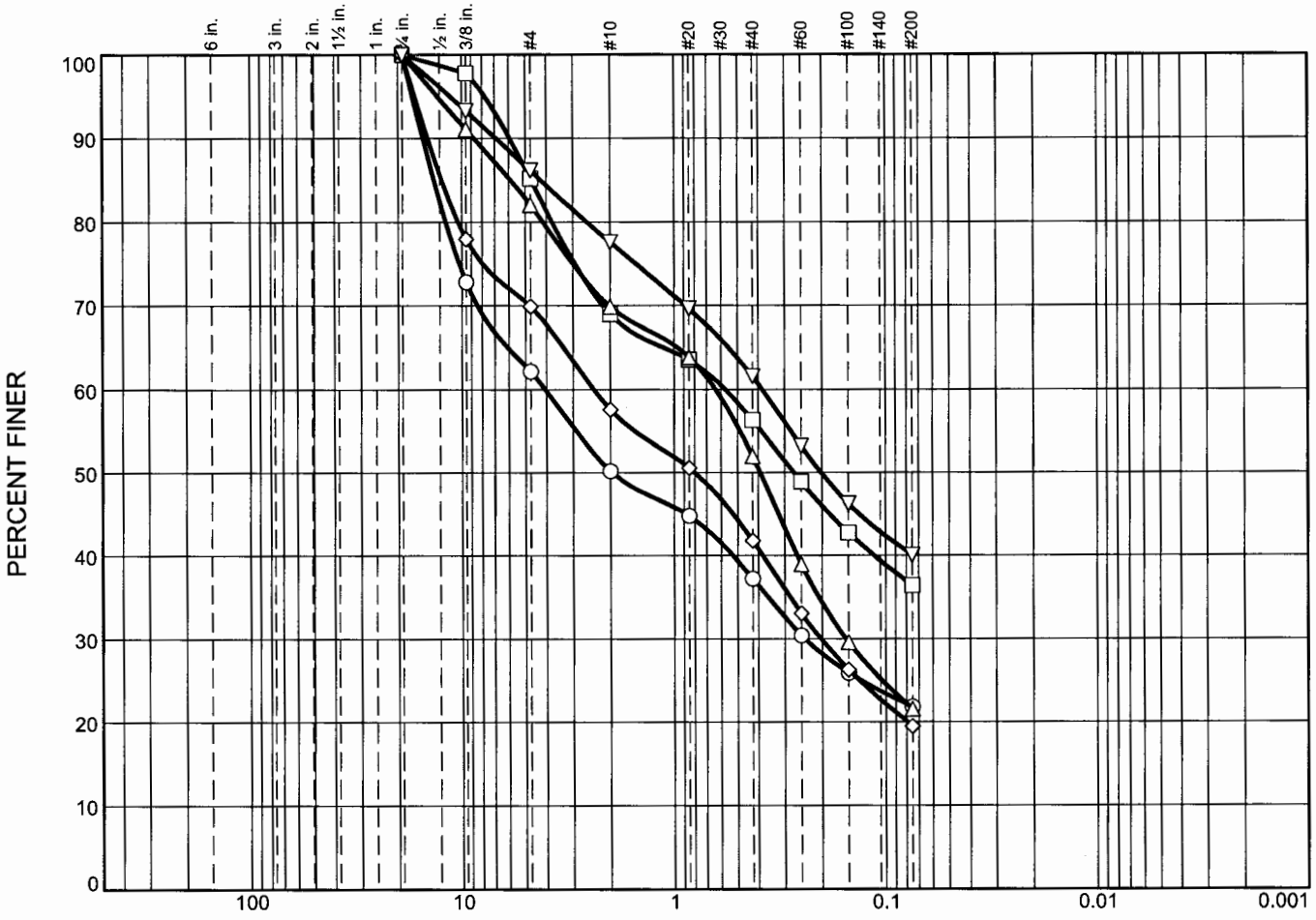
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7C

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	37.9	11.9	13.0	15.4	21.8
□	0.0	0.0	14.8	16.2	12.7	19.9	36.4
△	0.0	0.0	17.9	12.2	17.9	30.4	21.6
◇	0.0	0.0	30.1	12.3	15.8	22.3	19.5
▽	0.0	0.0	13.8	8.6	16.1	21.4	40.1

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	C-11	S-2	2-4	Fine to coarse Sand, and fine Gravel, some Silt. (MC=5.4%)	SM
□	C-11	S-4	10-12	Fine to coarse Sand, and Silt, little fine Gravel. (MC=9.7%)	SM
△	C-13	S-4	10-12	Fine to coarse Sand, some Silt, little fine Gravel. (MC=7.7%)	SM
◇	C-15	S-5	15-17	Fine to coarse Sand, some fine Gravel, little Silt. (MC=5.4%)	SM
▽	C-19	S-5	15-17	Fine to coarse Sand, and Silt, little fine Gravel. (MC=8.1%)	SM

Melick-Tully & Associates, P.C.

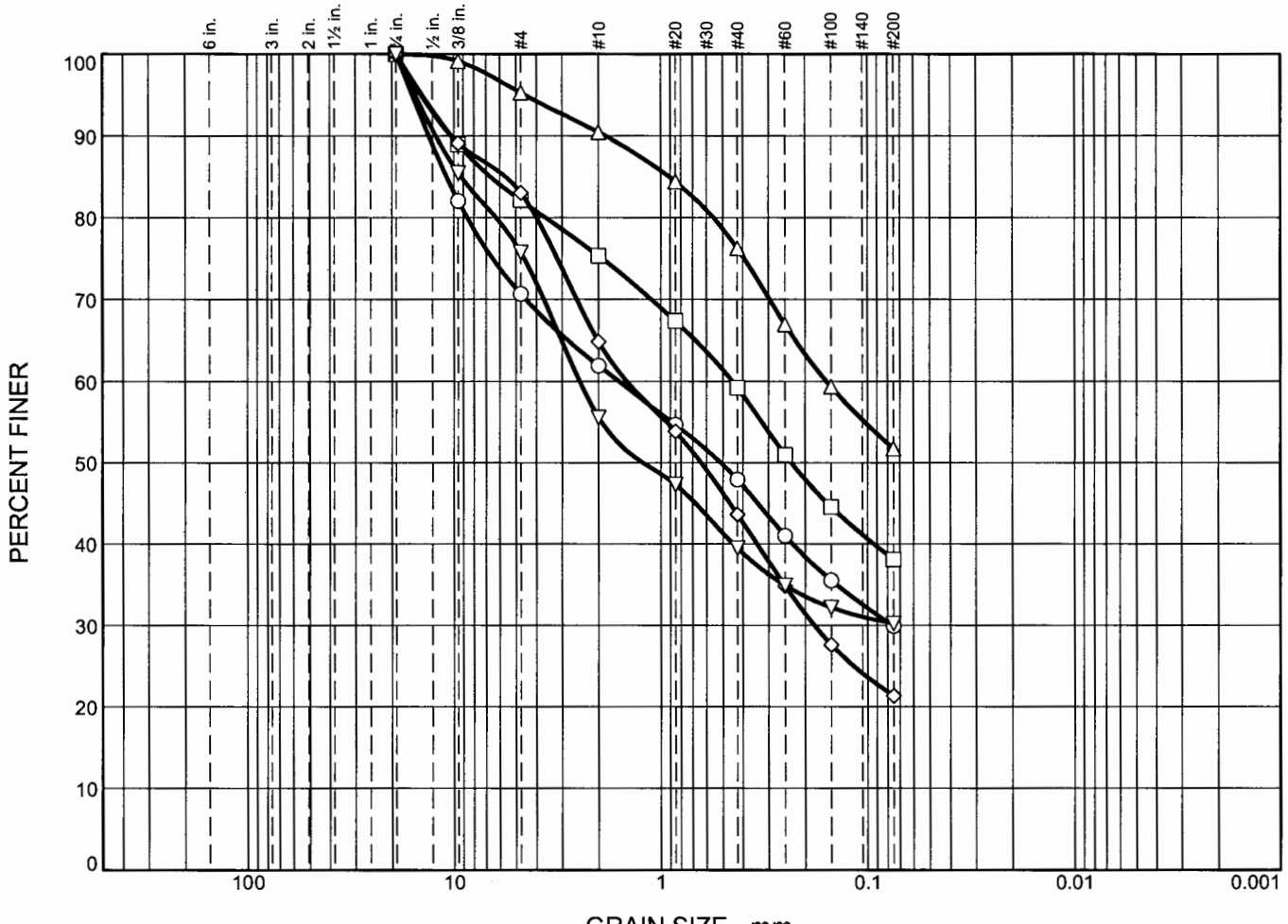
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7D

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	29.3	8.8	14.0	18.0	29.9
□	0.0	0.0	17.9	6.7	16.2	21.1	38.1
△	0.0	0.0	4.7	4.9	14.1	24.6	51.7
◇	0.0	0.0	16.9	18.2	21.3	22.3	21.3
▽	0.0	0.0	24.2	20.2	16.1	9.3	30.2

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	S-1	S-2	2-4	Fine to coarse Sand, some Silt, some fine Gravel. (MC=5.3%)	SM
□	S-1	S-3	4-6	Fine to coarse Sand, and Silt, little fine Gravel. (MC=5.9%)	SM
△	S-3	S-2	2-4	Silt, and fine to coarse Sand, trace fine Gravel. (MC=8.7%)	ML
◇	S-4	S-1	0-2	Fine to coarse Sand, some Silt, little fine Gravel. (MC=32.2%)	SM
▽	S-4	S-2	5-7	Fine to coarse Sand, some Silt, some fine Gravel. (MC=8.8%)	SM

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

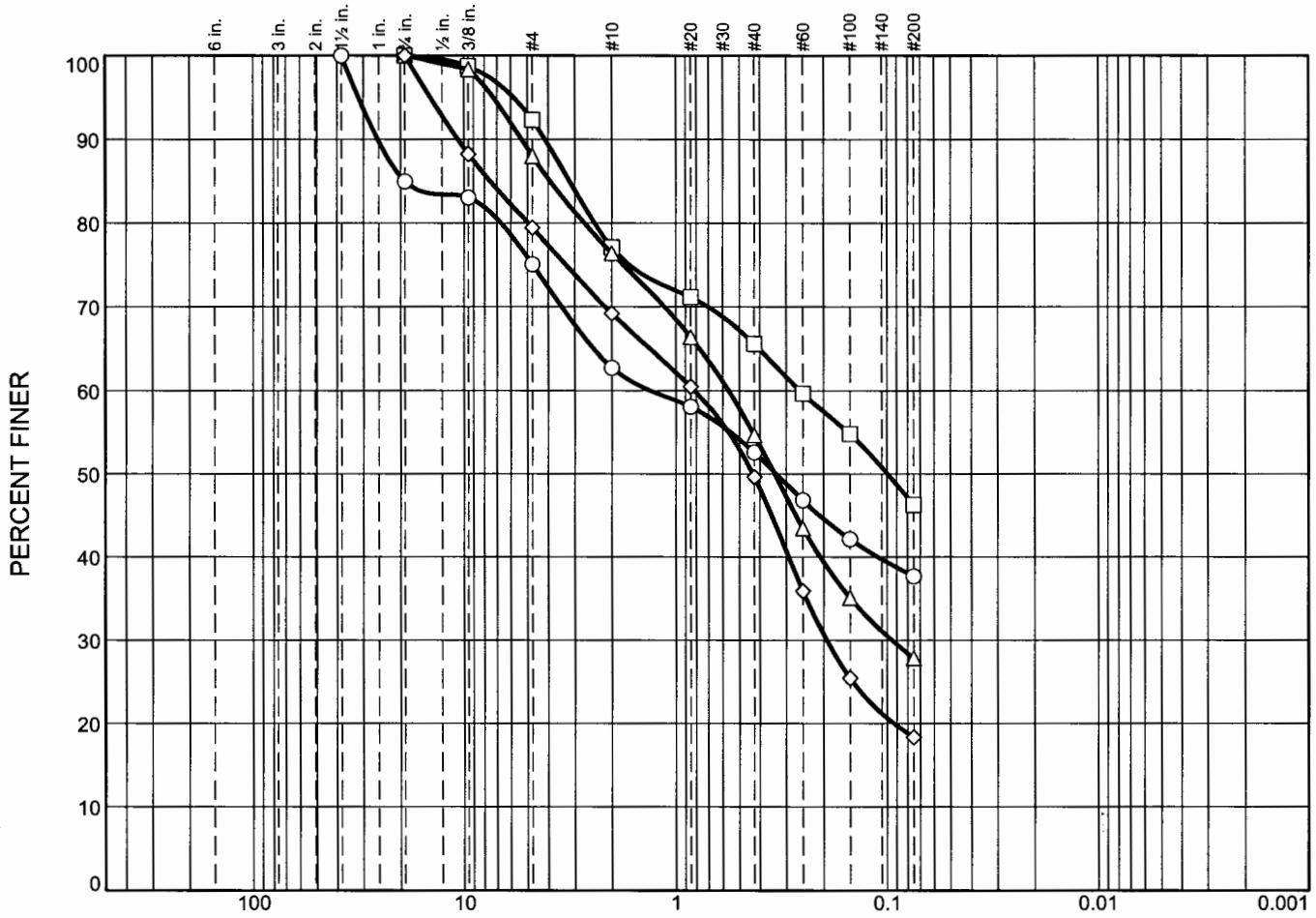
Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001

Plate 7E

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	15.0	9.9	12.4	10.1	14.9	37.7
□	0.0	0.0	7.7	15.2	11.5	19.3	46.3
△	0.0	0.0	12.0	11.6	21.7	26.9	27.8
◇	0.0	0.0	20.5	10.3	19.6	31.3	18.3

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	S-4	S-3	10-12	Fine to coarse Sand, and Silt, some f-c Gravel. (MC=7.6%)	SM
□	S-12	S-3	4-6	Fine to coarse Sand, and Silt, trace fine Gravel. (MC=39.0%)	SM
△	S-14	S-3	4-6	Fine to coarse Sand, some Silt, little fine Gravel. (MC=25.7%)	SM
◇	S-16	S-4	6-8	Fine to coarse Sand, some fine Gravel, little Silt. (MC=10.0%)	SM

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7F

Gradation Curve(s)

	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	19.6	15.7	16.7	19.2	28.8
□	0.0	7.8	13.2	1.4	12.7	18.8	46.1
△	0.0	0.0	15.3	8.5	10.5	22.3	43.4
◇	0.0	0.0	14.8	7.9	16.0	24.6	36.7
▽	0.0	0.0	0.0	0.0	0.1	3.0	96.9

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-T-1	S-1	3	Fine to coarse Sand, some Silt, little fine Gravel. (MC=9.9%)	SM
□	TP-T-1	S-3	6.5	Fine to medium Sand, and Silt, some f-c Gravel. (MC=8.7%)	SM
△	TP-T-5	S-1	3	Fine to coarse Sand, and Silt, little fine Gravel. (MC=11.5%)	SM
◇	TP-T-5	S-2	6	Fine to coarse Sand, and Silt, little fine Gravel. (MC=7.4%)	SM
▽	TP-T-6	S-2	4.5	Silt, trace fine Sand. (MC=16.6%)	ML

Melick-Tully & Associates, P.C.

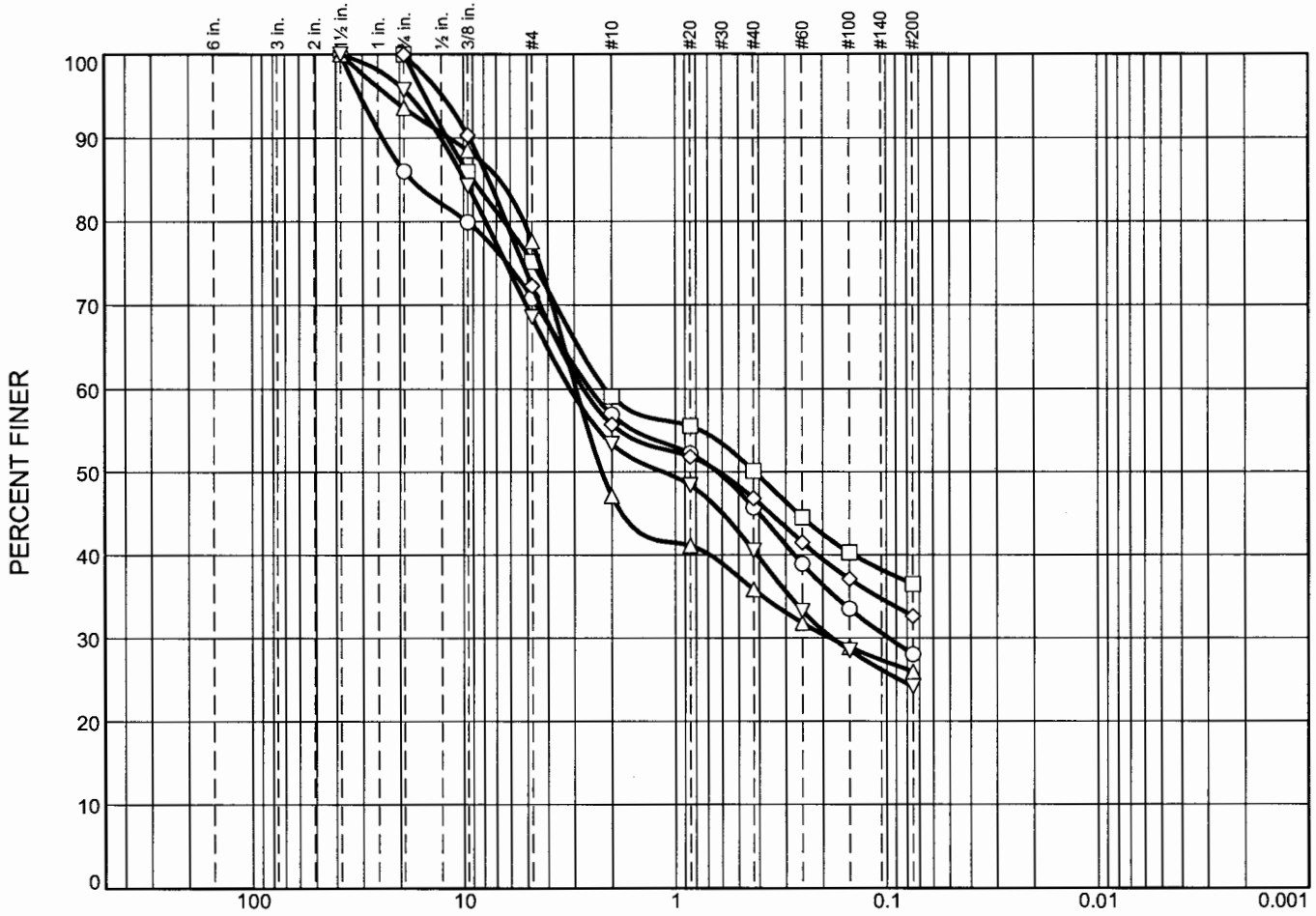
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7G

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	14.0	15.2	13.9	11.2	17.7	28.0
□	0.0	0.0	24.8	16.1	9.0	13.6	36.5
△	0.0	6.4	15.9	30.6	11.3	9.8	26.0
◇	0.0	0.0	27.7	16.6	8.9	14.2	32.6
▽	0.0	4.2	27.2	15.2	12.9	16.4	24.1

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-P-1	S-1	3.5	Fine to coarse Sand, some Silt, some f-c Gravel. (MC=11.3%)	SM
□	TP-P-3	S-1	2	Fine to coarse Sand, and Silt, some fine Gravel. (MC=21.5%)	SM
△	TP-P-5	S-1	2	Fine to coarse Sand, some Silt, some f-c Gravel. (MC=12.5%)	SM
◇	TP-P-7	S-1	1.5	Fine to coarse Sand, some Silt, some fine Gravel. (MC=15.4%)	SM
▽	TP-P-13	S-1	3.5	Fine to coarse Sand, some Silt, some f-c Gravel. (MC=10.0%)	SM

Melick-Tully & Associates, P.C.

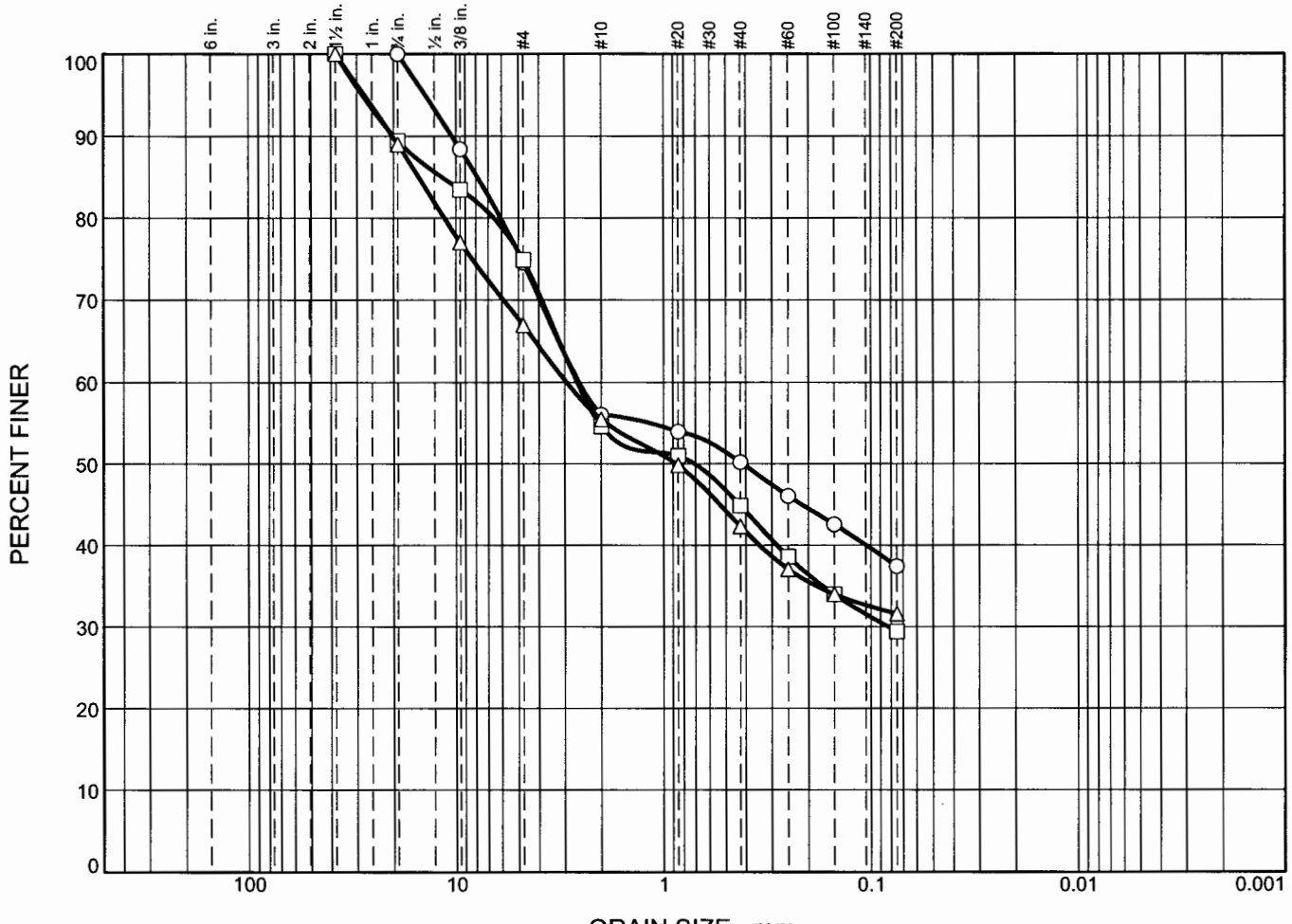
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7H

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	25.4	18.6	5.8	12.8	37.4
□	0.0	10.6	14.5	20.3	9.8	15.4	29.4
△	0.0	11.0	22.1	11.4	13.2	10.7	31.6

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-P-13	S-2	5	Fine to coarse Sand, and Silt, some fine Gravel. (MC=10.5%)	SM
□	TP-P-16	S-1	2	Fine to coarse Sand, some Silt, some f-c Gravel. (MC=8.4%)	SM
△	TP-P-21	S-1	3	Fine to coarse Sand, some Silt, some f-c Gravel. (MC=8.8%)	SM

Melick-Tully & Associates, P.C.

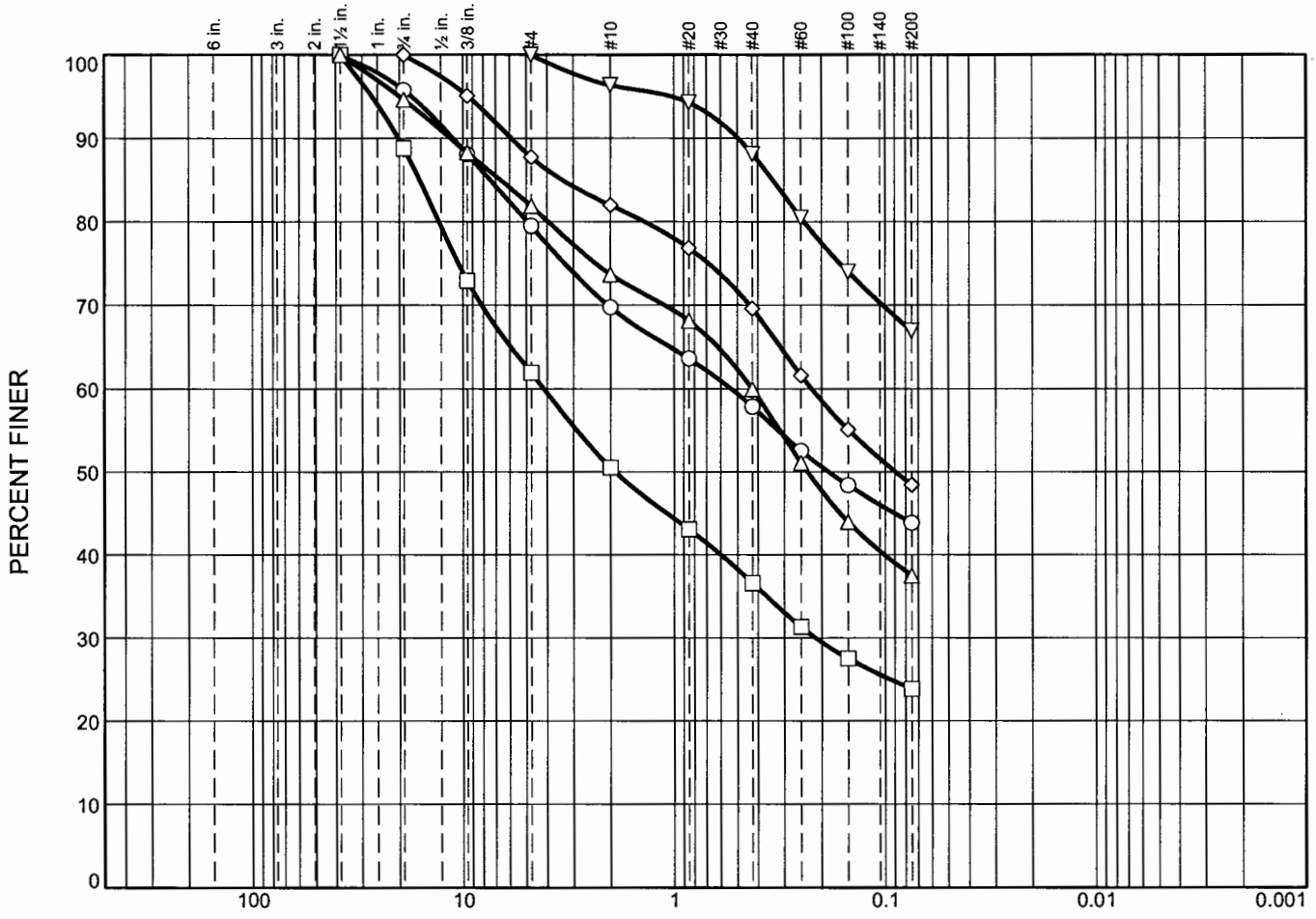
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7I

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	4.2	16.3	9.8	11.8	14.0	43.9
□	0.0	11.2	26.9	11.4	13.9	12.7	23.9
△	0.0	5.4	12.7	8.2	13.7	22.5	37.5
◇	0.0	0.0	12.2	5.8	12.4	21.2	48.4
▽	0.0	0.0	0.0	3.6	8.3	21.1	67.0

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-R-1	S-1	1.5	Fine to coarse Sand, and Silt, some f-c Gravel. (MC=9.4%)	SM
□	TP-R-1	S-2	5.0	Fine to coarse Gravel, and f-c Sand, some Silt. (MC=4.7%)	GM
△	TP-R-4	S-1	3.0	Fine to coarse Sand, and Silt, little f-c Gravel. (MC=7.8%)	SM
◇	TP-R-4	S-2	8.0	Fine to coarse Sand, and Silt, little fine Gravel. (MC=8.3%)	SM
▽	TP-R-7	S-1	2.0	Silt, some fine to coarse Sand. (MC=8.9%)	ML

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

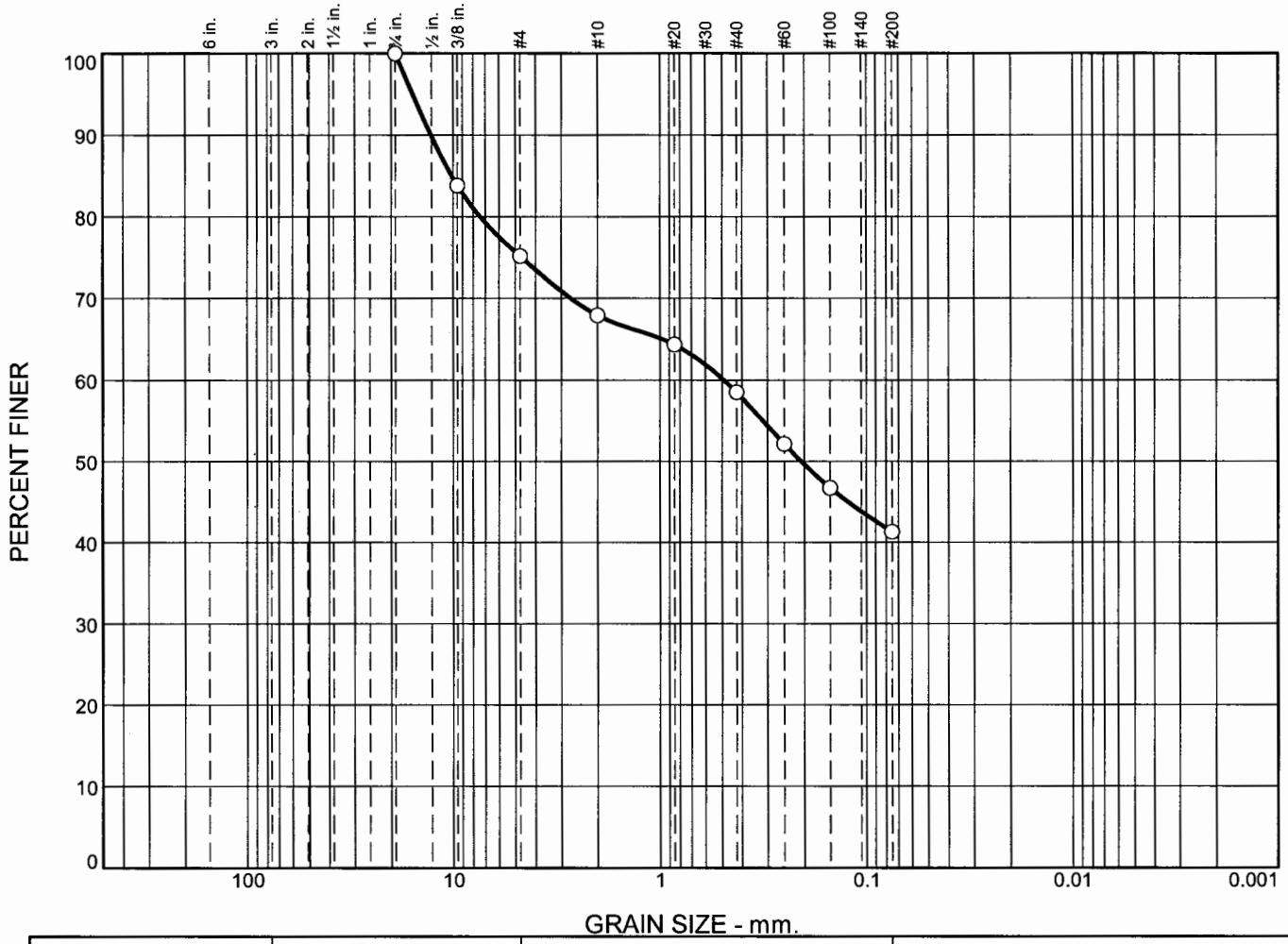
Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001

Plate 7J

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	24.8	7.3	9.4	17.2	41.3

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-R-7	S-2	4.0	Fine to coarse Sand, and Silt, some fine Gravel. (MC=6.8%)	SM

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001

Plate 7K

Gradation Curve(s)

	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	19.0	22.9	6.0	12.3	17.9	21.9

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-P-14		5.0-6.5	Fine to coarse Gravel, and f-c Sand, some Silt. (MC=7.8%)	GM

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

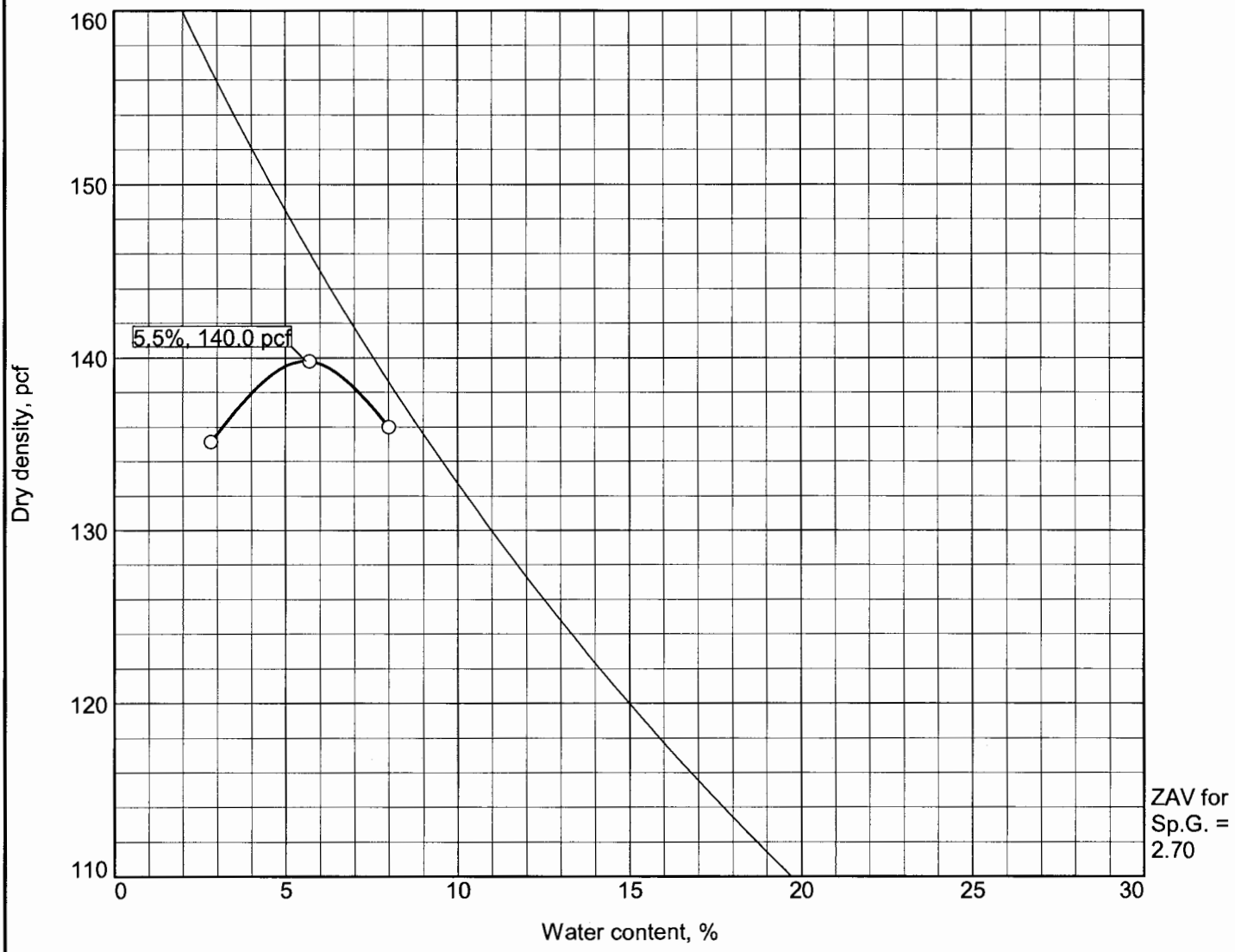
Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001

Plate 7L

COMPACTION TEST REPORT



Test specification: ASTM D 1557-07 Method C Modified
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
5.0-6.5	GM		7.8				19.0	21.9

ROCK CORRECTED TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 140.0 pcf Optimum moisture = 5.5 %	Fine to coarse Gravel, and f-c Sand, some Silt. (MC=7.8%)

Project No. 8979-001 **Client:** Concord Resort Development
Project: Concord Resort Development, Thompson, NY

○ **Source of Sample:** TP-P-14

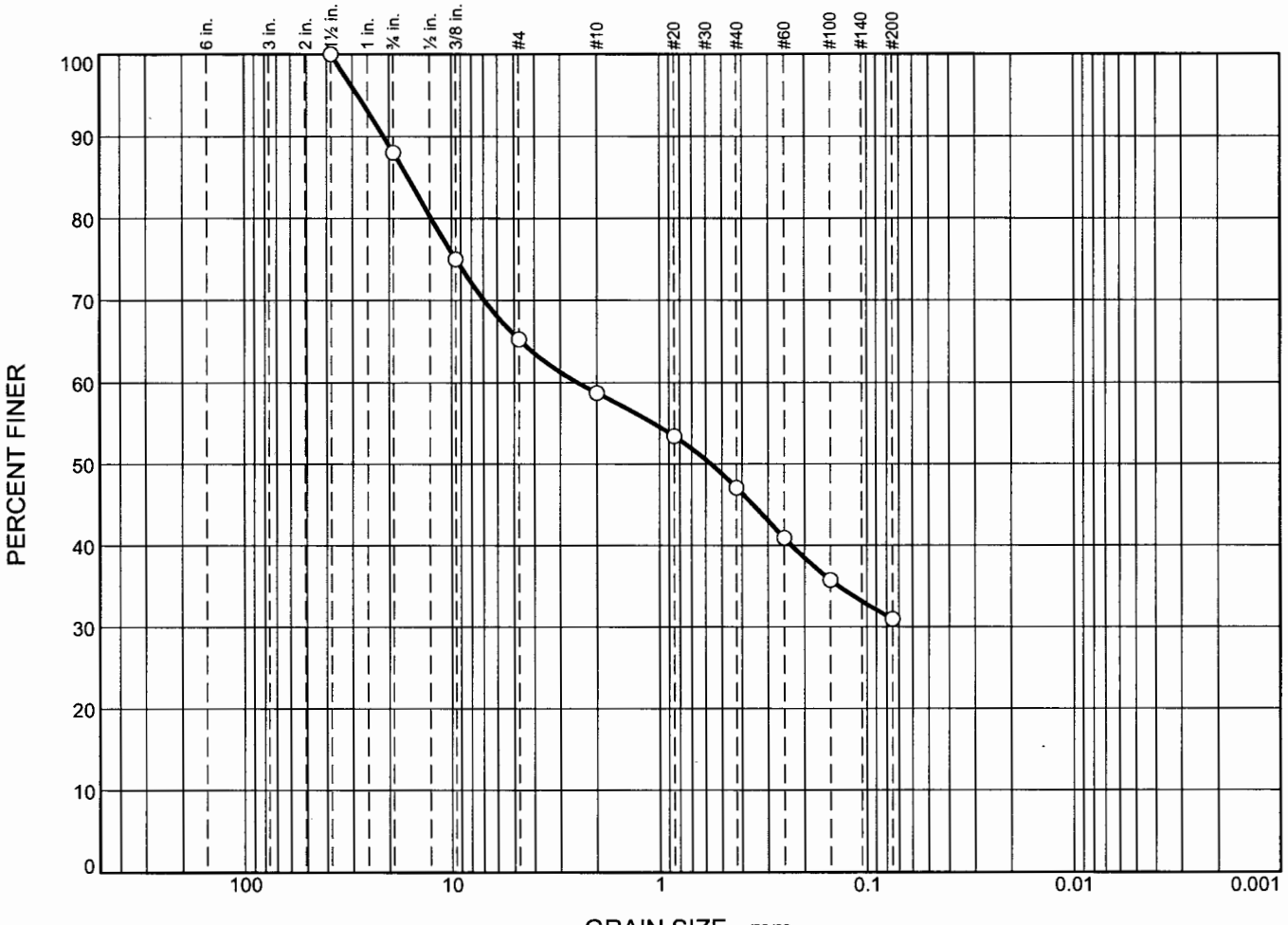
Remarks:

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

Plate 7M

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	12.0	22.7	6.6	11.6	16.1	31.0

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-P-17		6.5-7.5	Fine to coarse Gravel, some f-c Sand, some Silt. (MC=4.0%)	GM

Melick-Tully & Associates, P.C.

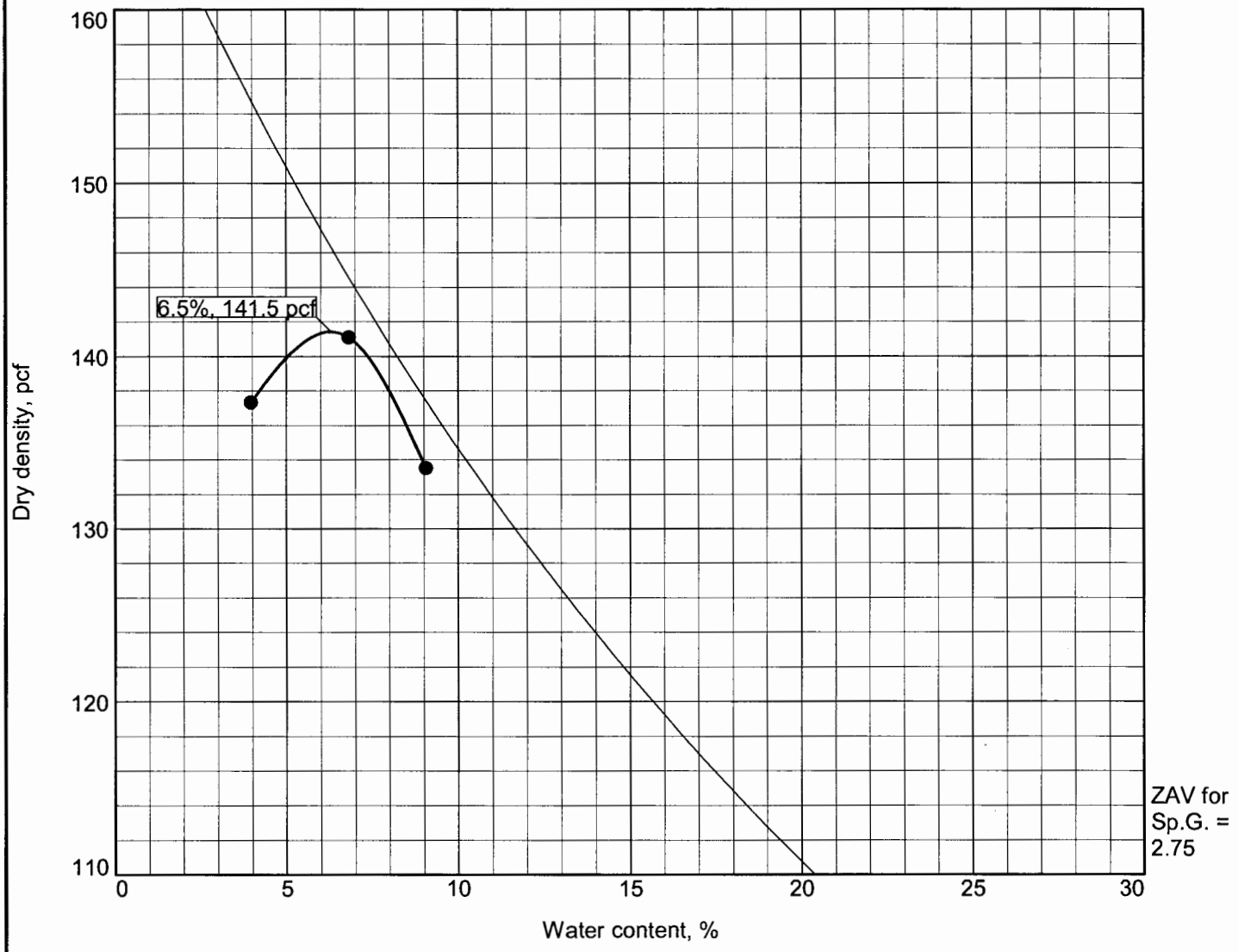
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7N

COMPACTION TEST REPORT



Test specification: ASTM D 1557-07 Method B Modified
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
6.5-7.5	GM		4.0				25.0	31.0

ROCK CORRECTED TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 141.5 pcf Optimum moisture = 6.5 %	Fine to coarse Gravel, some f-c Sand, some Silt. (MC=4.0%)

Project No. 8979-001 **Client:** Concord Resort Development
Project: Concord Resort Development, Thompson, NY

○ **Source of Sample:** TP-P-17

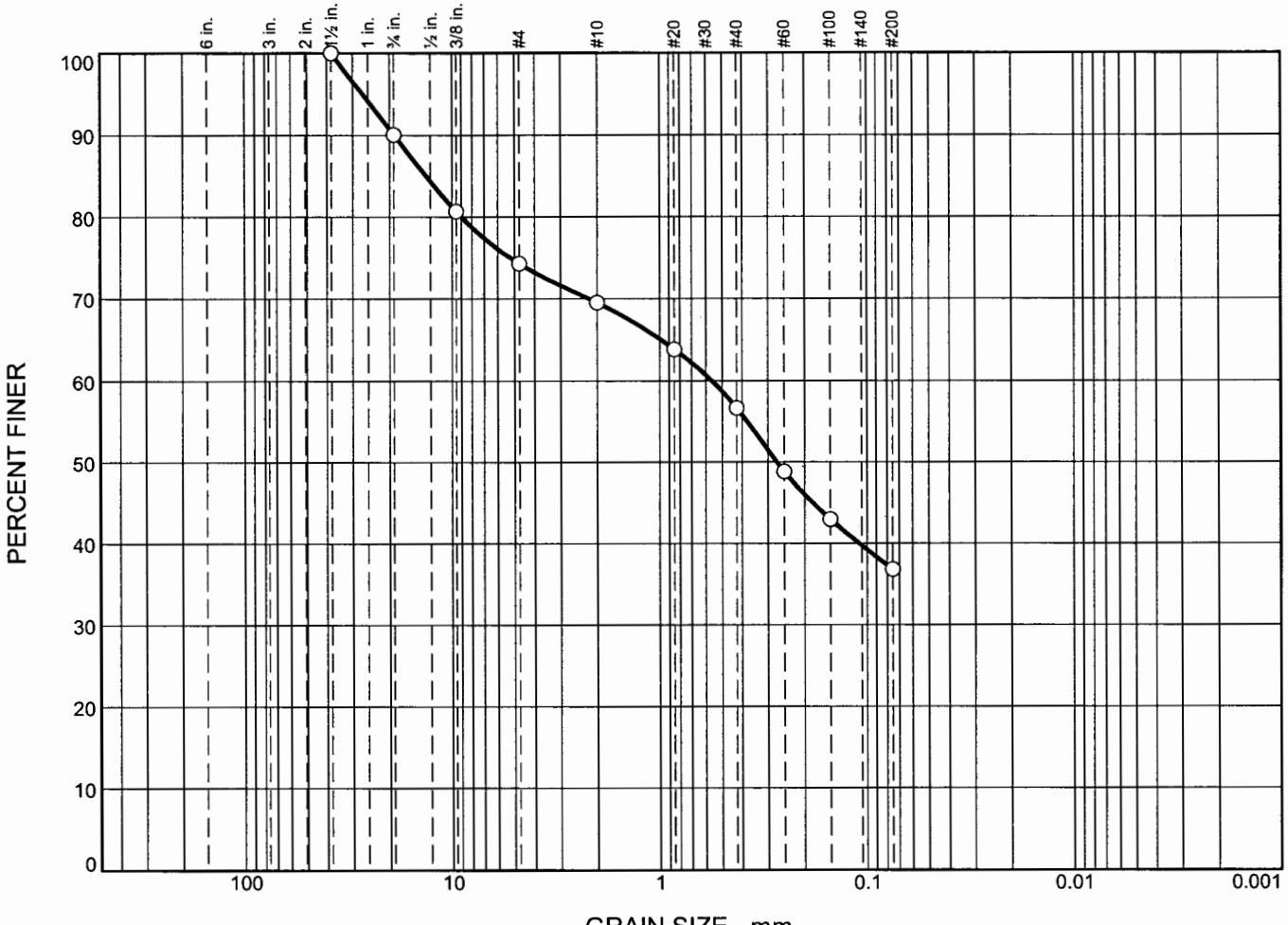
Remarks:

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

Plate 7O

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	9.9	15.8	4.8	12.9	19.8	36.8

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-P-21		8.0	Fine to coarse Sand, and Silt, some f-c Gravel. (MC=8.3%)	SM

Melick-Tully & Associates, P.C.

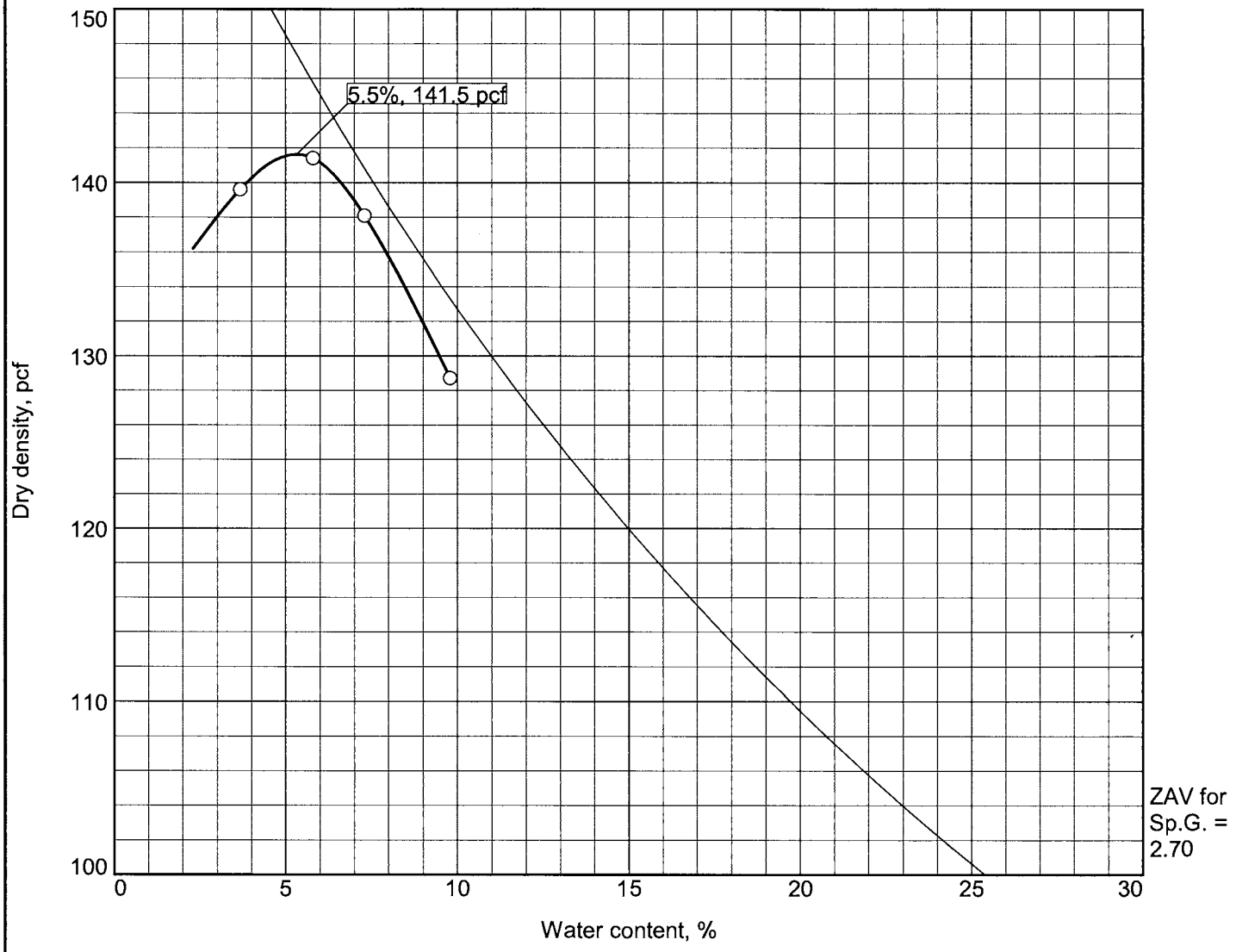
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-001 **Plate** 7P

COMPACTION TEST REPORT



Test specification: ASTM D 1557-07 Method B Modified
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
8.0	SM		8.3				19.3	36.8

ROCK CORRECTED TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 141.5 pcf Optimum moisture = 5.5 %	Fine to coarse Sand, and Silt, some f-c Gravel. (MC=8.3%)

Project No. 8979-001 **Client:** Concord Resort Development
Project: Concord Resort Development, Thompson, NY

○ **Source of Sample:** TP-P-21

Remarks:

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

Plate 7Q

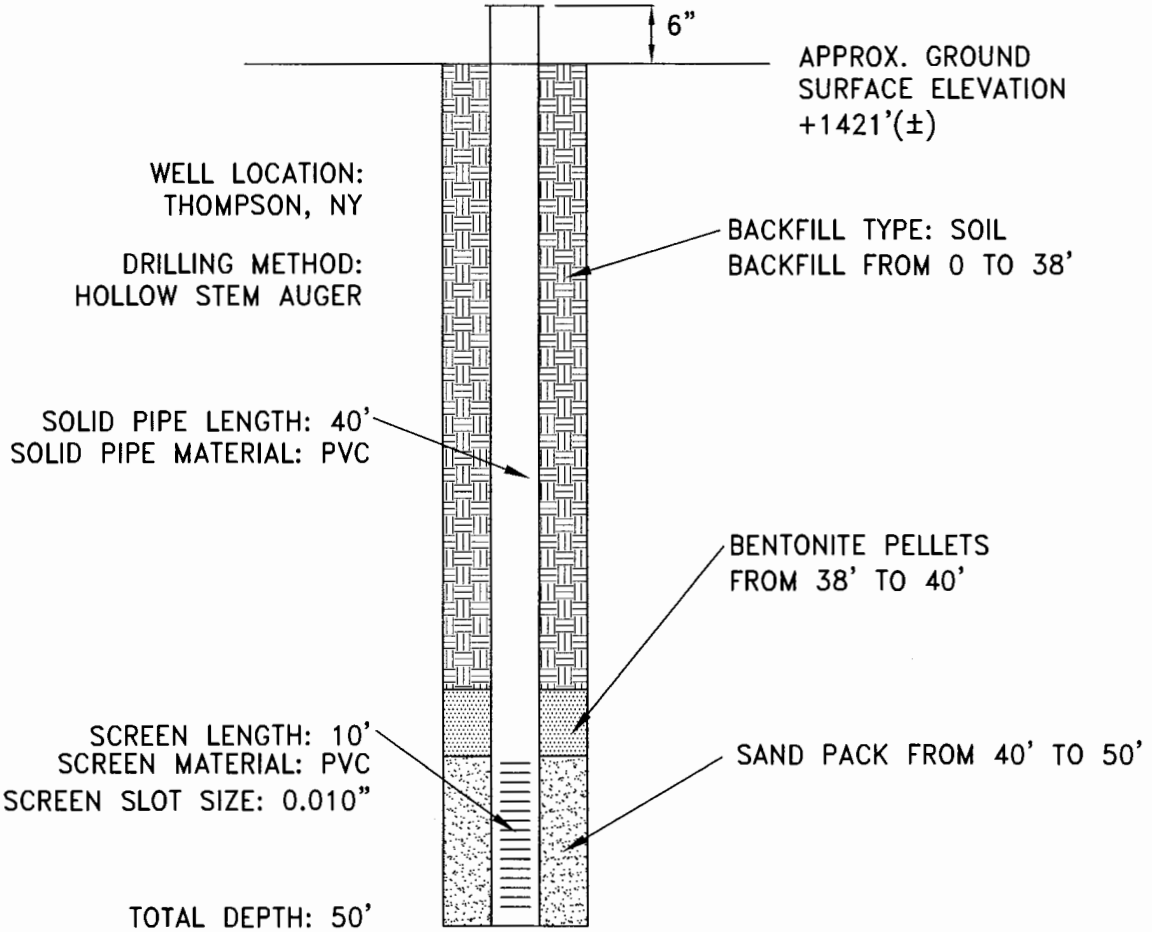
SUMMARY OF TUBE PERMEAMETER RESULTS
Thompson, New York
Concord Development

Exploration No.	Approximate Surface Elevation (ft)	Approximate Test Depth (ft)	Approximate Permeability (in/hr)
TP-P-1	1,385	2.0	1.3
TP-P-1	1,385	6.0	0.7
TP-P-2	1,414	2.0	0.06
TP-P-3	1,442	2.0	0.6
TP-P-4	1,448	2.0	0.5
TP-P-4	1,448	6.0	0.7
TP-P-5	1,440	1.5	1.9
TP-P-6	1,448	1.5	0.2
TP-P-7	1,446	1.5	0.4
TP-P-8	1,450	1.5	0.4
TP-P-9	1,448	2.0	0.05
TP-P-11	1,368	2.5	0.02
TP-P-12	1,365	2.0	0.1
TP-P-13	1,375	3.5	0.04
TP-P-14	1,388	2.0	0.04
TP-P-15	1,380	2.0	0.06
TP-P-18	1,434	2.0	0.02
TP-P-20	1,454	2.0	0.09

PIEZOMETER CONSTRUCTION DETAIL

PIEZOMETER C-1

DATE OF CONSTRUCTION 3/2/12



DATE	3/9/12	3/23/12	4/4/12	4/13/12
WATER LEVEL	19'0"	24'0"	28'7"	24'4"

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers
& Environmental Consultants
117 Canal Road
South Bound Brook, New Jersey 08880
(732) 356-3400

TEMPORARY PIEZOMETER DETAIL

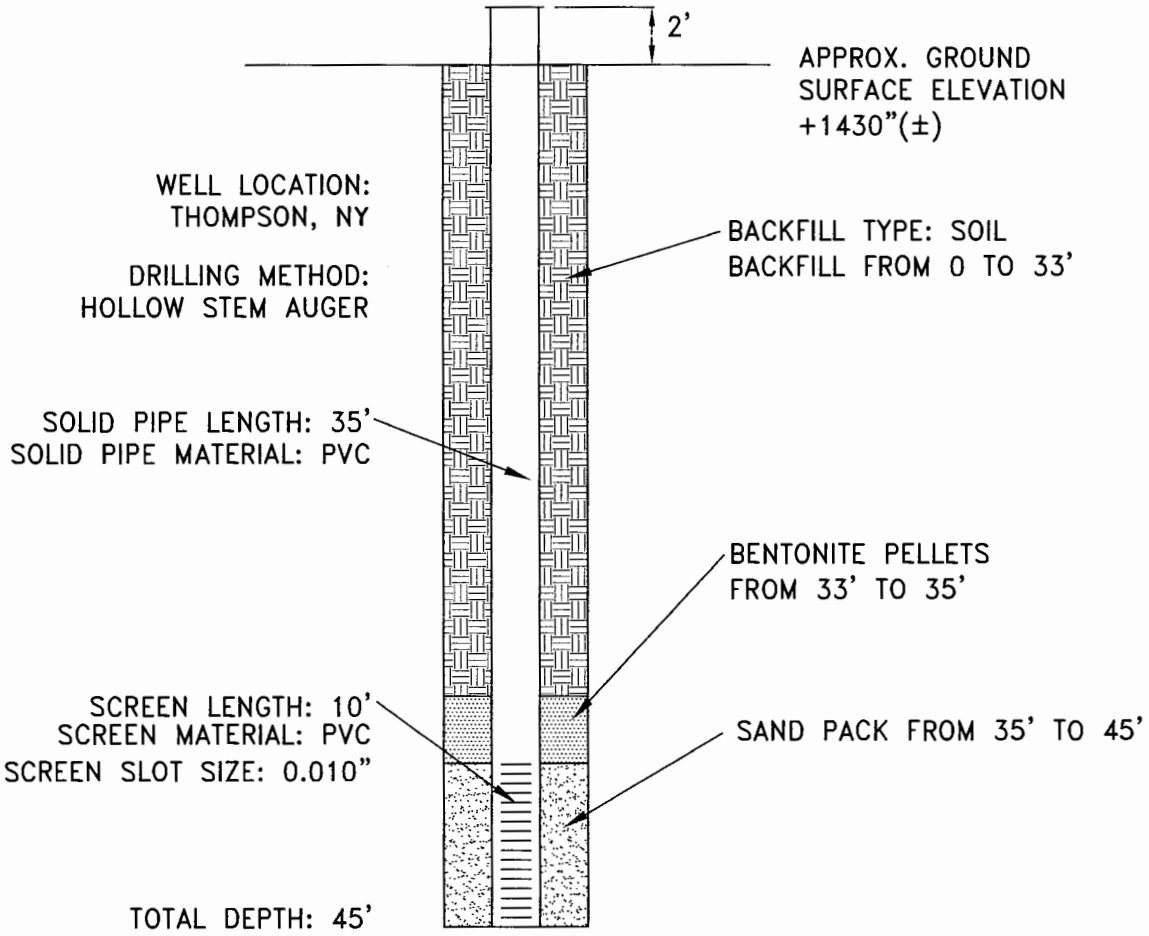
CONCORD RESORT DEVELOPMENT
TOWN OF THOMPSON, NEW YORK
CONCORD RESORT DEVELOPMENT

JOB NO.	FILE NO.	DR. BY	CHK. BY	DATE	SCALE	PLATE
8979-001*1D	25299	JCB	JHB	4-6-12	NTS	9A

PIEZOMETER CONSTRUCTION DETAIL

PIEZOMETER C-7

DATE OF CONSTRUCTION 3/1/12



DATE	3/14/12	3/15/12	3/19/12	3/23/12	4/4/12	4/13/12
WATER LEVEL	18'0"	26'2"	27'6"	30'0"	29'7"	29'9"

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers
& Environmental Consultants
117 Canal Road
South Bound Brook, New Jersey 08880
(732) 356-3400

TEMPORARY PIEZOMETER DETAIL

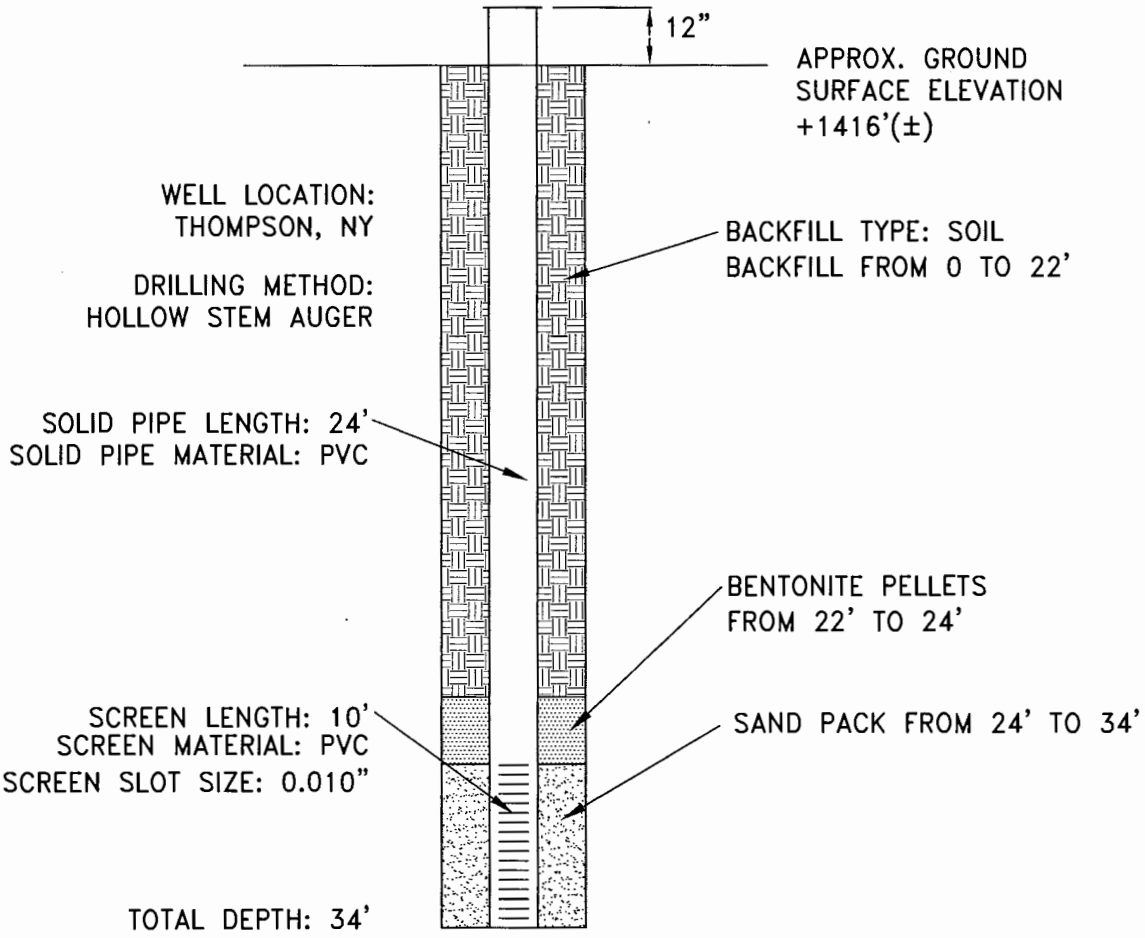
CONCORD RESORT DEVELOPMENT
TOWN OF THOMPSON, NEW YORK
CONCORD RESORT DEVELOPMENT

JOB NO.	FILE NO.	DR. BY	CHK. BY	DATE	SCALE	PLATE
8979-001*1D	25299	VJD	JHB	4-6-12	NTS	9B

PIEZOMETER CONSTRUCTION DETAIL

PIEZOMETER C-12

DATE OF CONSTRUCTION 3/12/12



DATE	3/12/12	3/13/12	3/19/12	3/23/12	4/4/12	4/13/12
WATER LEVEL	15'0"	15'0"	27'0"	28'8"	29'2"	29'2"

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers
& Environmental Consultants
117 Canal Road
South Bound Brook, New Jersey 08880
(732) 356-3400

TEMPORARY PIEZOMETER DETAIL

CONCORD RESORT DEVELOPMENT
TOWN OF THOMPSON, NEW YORK
CONCORD RESORT DEVELOPMENT

JOB NO.	FILE NO.	DR. BY	CHK. BY	DATE	SCALE	PLATE
8979-001*1D	25299	VJD	JHB	4-6-12	NTS	9C

KEY:

C-1 — BORING NUMBER AND LOCATION

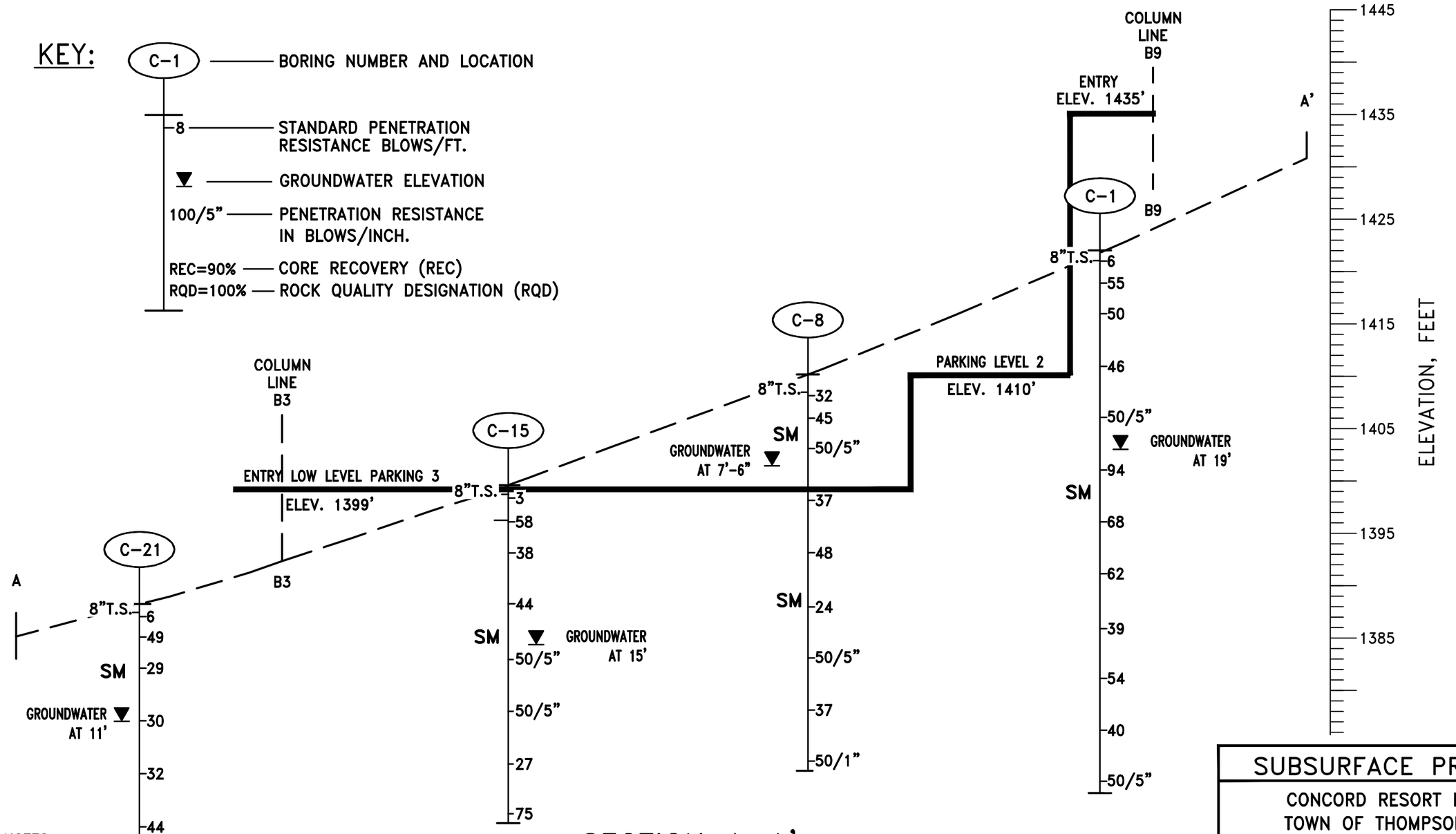
8 — STANDARD PENETRATION RESISTANCE BLOWS/FT.

▼ — GROUNDWATER ELEVATION

100/5" — PENETRATION RESISTANCE IN BLOWS/INCH.

REC=90% — CORE RECOVERY (REC)

RQD=100% — ROCK QUALITY DESIGNATION (RQD)



SECTION A-A'

NOTES:

1. This drawing is part of Melick-Tully and Associates, Inc. Report No. 8979-001*1D and should be read together with the report for complete evaluation.
2. The stratification lines are based upon interpolations between widely spaced test borings and thus represent the approximate boundaries between soil types. Actual transitions may vary from those shown.
3. Stratum designations are generalized. See report for descriptions of each stratum and the test boring logs for detailed descriptions at specific locations.

-VERTICAL-

10' 0' 5' 10'

40' 0' 20' 40'

-HORIZONTAL-

SUBSURFACE PROFILE A-A'

CONCORD RESORT DEVELOPMENT
TOWN OF THOMPSON, NEW YORK
CONCORD RESORT DEVELOPMENT

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers
& Environmental Consultants
117 Canal Road
South Bound Brook, New Jersey 08880
(732) 356-3400

JOB NO.	FILE NO.
8979-001*1D	25299

DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	JHB	4-6-12	AS NOTED	10A

KEY:

C-1 — BORING NUMBER AND LOCATION

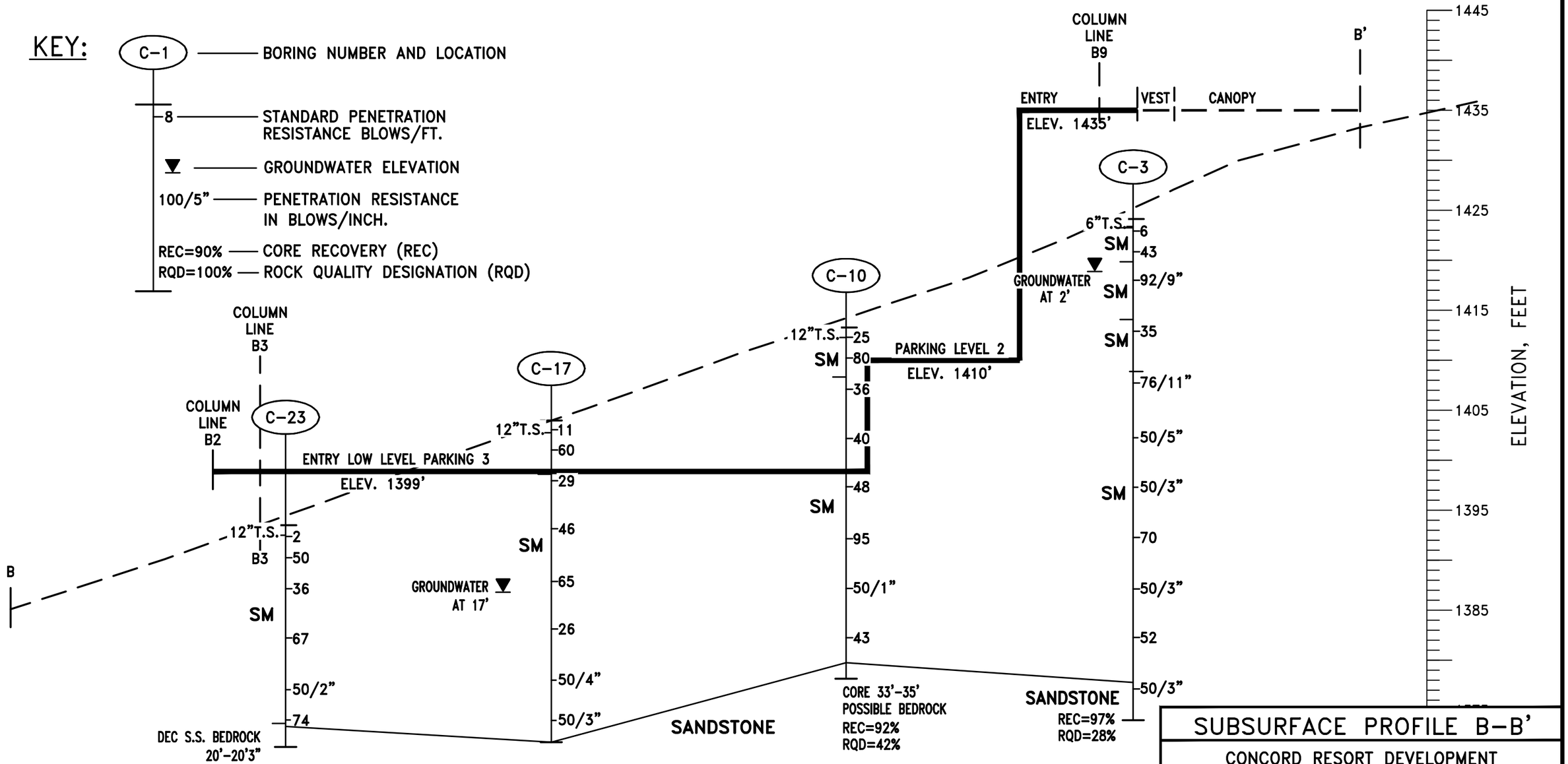
8 — STANDARD PENETRATION RESISTANCE BLOWS/FT.

▼ — GROUNDWATER ELEVATION

100/5" — PENETRATION RESISTANCE IN BLOWS/INCH.

REC=90% — CORE RECOVERY (REC)

RQD=100% — ROCK QUALITY DESIGNATION (RQD)



SECTION B-B'

NOTES:

1. This drawing is part of Melick-Tully and Associates, Inc. Report No. 8979-001*1D and should be read together with the report for complete evaluation.
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3. Stratum designations are generalized. See report for descriptions of each stratum and the test boring logs for detailed descriptions at specific locations.

-VERTICAL-

10' 0' 5' 10'

40' 0' 20' 40'

-HORIZONTAL-

SUBSURFACE PROFILE B-B'

CONCORD RESORT DEVELOPMENT
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CONCORD RESORT DEVELOPMENT

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JOB NO.	FILE NO.
8979-001*1D	25299

DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	JHB	4-6-12	AS NOTED	10B

KEY:

C-1 — BORING NUMBER AND LOCATION

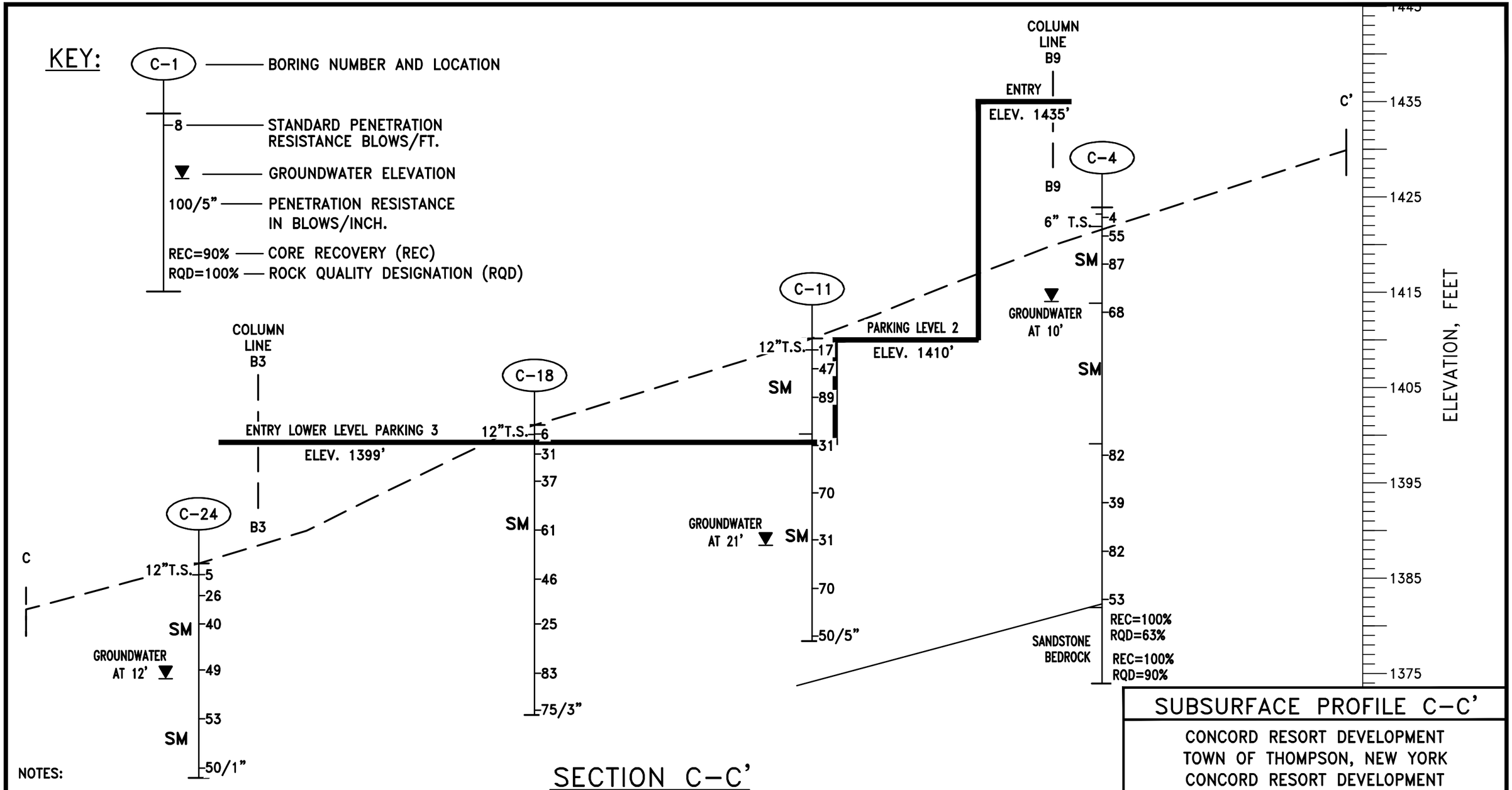
8 — STANDARD PENETRATION RESISTANCE BLOWS/FT.

▼ — GROUNDWATER ELEVATION

100/5" — PENETRATION RESISTANCE IN BLOWS/INCH.

REC=90% — CORE RECOVERY (REC)

RQD=100% — ROCK QUALITY DESIGNATION (RQD)



SECTION C-C'

NOTES:

1. This drawing is part of Melick-Tully and Associates, Inc. Report No. 8979-001*1D and should be read together with the report for complete evaluation.
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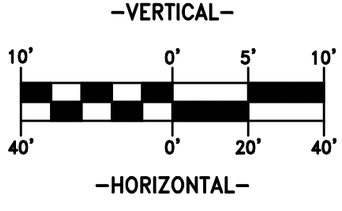

SUBSURFACE PROFILE C-C'

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CONCORD RESORT DEVELOPMENT

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DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	JHB	4-6-12	AS NOTED	10C

KEY:

C-1 — BORING NUMBER AND LOCATION

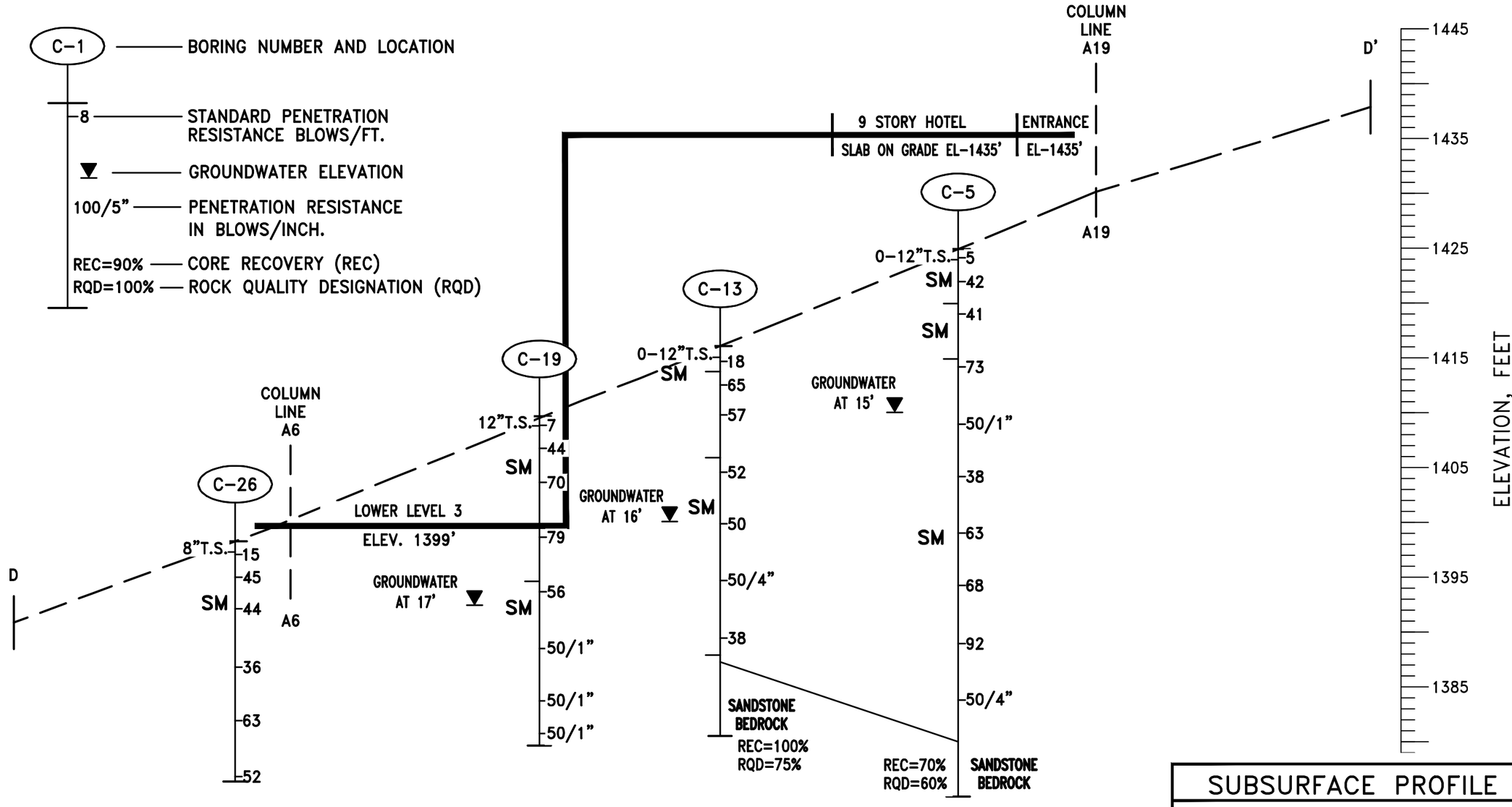
8 — STANDARD PENETRATION RESISTANCE BLOWS/FT.

▼ — GROUNDWATER ELEVATION

100/5" — PENETRATION RESISTANCE IN BLOWS/INCH.

REC=90% — CORE RECOVERY (REC)

RQD=100% — ROCK QUALITY DESIGNATION (RQD)



SECTION D-D'

NOTES:

1. This drawing is part of Melick-Tully and Associates, Inc. Report No. 8979-001*1D and should be read together with the report for complete evaluation.
2. The stratification lines are based upon interpolations between widely spaced test borings and thus represent the approximate boundaries between soil types. Actual transitions may vary from those shown.
3. Stratum designations are generalized. See report for descriptions of each stratum and the test boring logs for detailed descriptions at specific locations.

-VERTICAL-

10' 0' 5' 10'

40' 0' 20' 40'

-HORIZONTAL-

SUBSURFACE PROFILE D-D'

CONCORD RESORT DEVELOPMENT
TOWN OF THOMPSON, NEW YORK
CONCORD RESORT DEVELOPMENT

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JOB NO.	FILE NO.			
8979-001*1D	25299			
DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	JHB	4-6-12	AS NOTED	10D

KEY:

C-1 — BORING NUMBER AND LOCATION

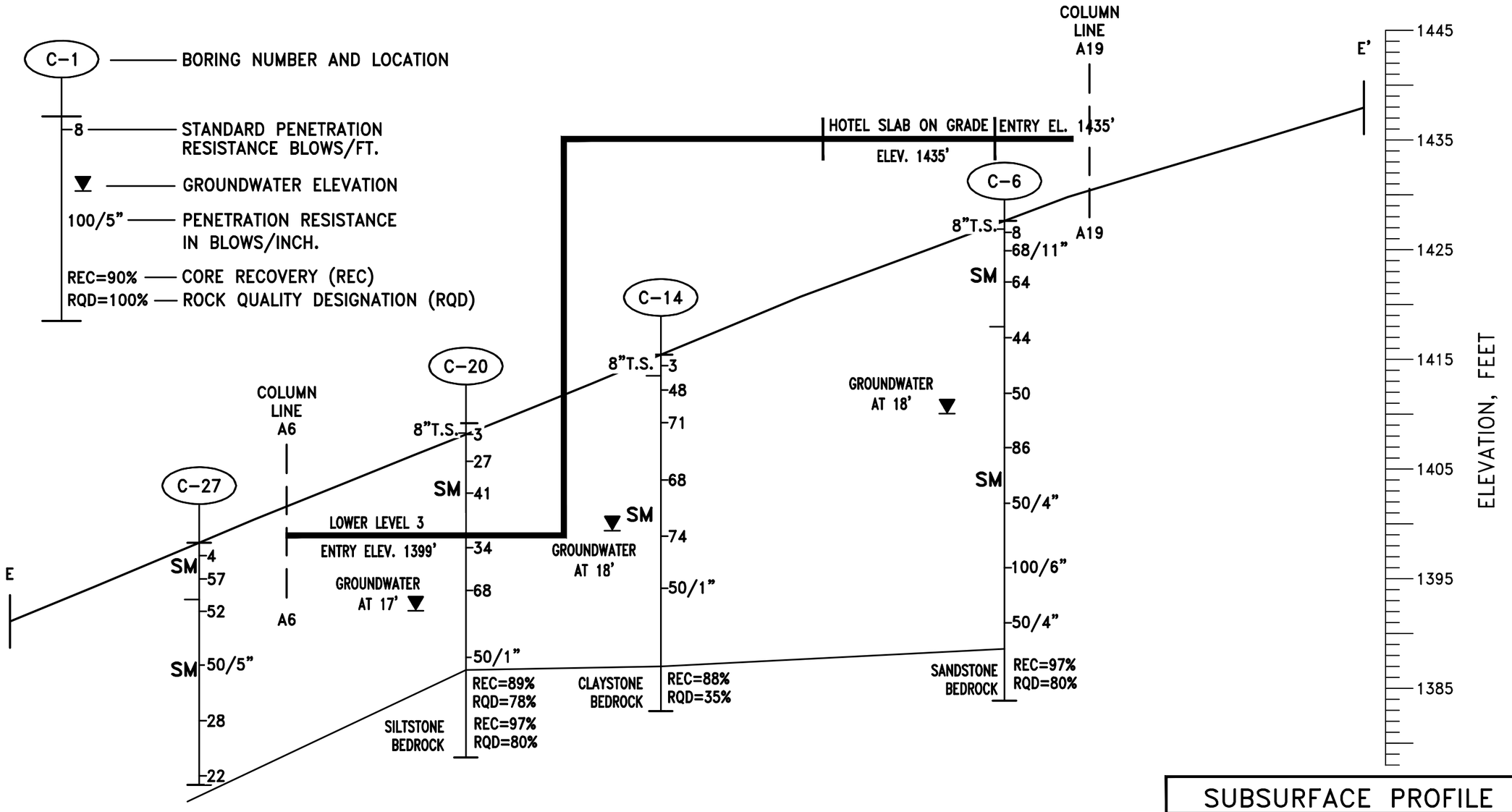
8 — STANDARD PENETRATION RESISTANCE BLOWS/FT.

▼ — GROUNDWATER ELEVATION

100/5" — PENETRATION RESISTANCE IN BLOWS/INCH.

REC=90% — CORE RECOVERY (REC)

RQD=100% — ROCK QUALITY DESIGNATION (RQD)



SECTION E-E'

NOTES:

1. This drawing is part of Melick-Tully and Associates, Inc. Report No. 8979-001*1D and should be read together with the report for complete evaluation.
2. The stratification lines are based upon interpolations between widely spaced test borings and thus represent the approximate boundaries between soil types. Actual transitions may vary from those shown.
3. Stratum designations are generalized. See report for descriptions of each stratum and the test boring logs for detailed descriptions at specific locations.

-VERTICAL-

10' 0' 5' 10'

40' 0' 20' 40'

-HORIZONTAL-

SUBSURFACE PROFILE E-E'

CONCORD RESORT DEVELOPMENT
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CONCORD RESORT DEVELOPMENT

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APPENDIX

APPENDIX

Limitations

A. Subsurface Information

Locations: The locations of the explorations were approximately determined by tape measurement from existing site features shown on an unlabeled plan provided to us by AKRF Engineers and survey control points provided by others in the area of the proposed casino. Elevations of the explorations were approximately determined by interpolation between contours shown on topographic plans provided to us by the site engineer. The locations and elevations of the explorations should be considered accurate only to the degree implied by the method used.

Interface of Strata: The stratification lines shown on the individual logs of the subsurface explorations represent the approximate boundaries between soil types, and the transitions may be gradual.

Field Logs/Final Logs: A field log was prepared for each exploration by a member of our staff. The field log contains factual information and interpretation of the soil conditions between samples. Our recommendations are based on the final logs as shown in this report and the information contained therein, and not on the field logs. The final logs represent our interpretation of the contents of the field logs, and the results of the laboratory observations and/or tests of the field samples.

Water Levels: Water level readings have been made in the explorations at times and under conditions stated on the individual logs. These data have been reviewed and interpretations made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater will occur due to variations in rainfall, temperature, and other factors.

Pollution/Contamination: Unless specifically indicated to the contrary in this report, the scope of our services was limited only to investigation and evaluation of the geotechnical engineering aspects of the site conditions, and did not include any consideration of potential site pollution or contamination resulting from the presence of chemicals, metals, radioactive elements, etc. This report offers no facts or opinions related to potential pollution/contamination of the site.

Environmental Considerations: Unless specifically indicated to the contrary in this report, this report does not address environmental considerations which may affect the site development, e.g., wetlands determinations, flora and fauna, wildlife, etc. The conclusions and recommendations of this report are not intended to supersede any environmental conditions which should be reflected in the site planning.

B. Applicability of Report

This report has been prepared in accordance with generally accepted soils and foundation engineering practices for the exclusive use of AKRF for specific application to the design of the proposed Concord Resort Development. No other warranty, expressed or implied, is made.

This report may be referred to in the project specifications for general information purposes only, but should not be used as the technical specifications for the work, as it was prepared for design purposes exclusively.

C. Reinterpretation of Recommendations

Change in Location or Nature of Facilities: In the event that any changes in the nature, design or location of the facilities are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

Changed Conditions During Construction: The analyses and recommendations submitted in this report are based in part upon the data obtained from 48 widely-spaced test borings and 41 test pit excavations performed for this study. The nature and extent of variations between the explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

Changes in State-of-the-Art: The conclusions and recommendations contained in this report are based upon the applicable standards of our profession at the time this report was prepared.

D. Use of Report by Prospective Bidders

This soil and foundation engineering report was prepared for the project by Melick-Tully and Associates, P.C. for design purposes and may not be sufficient to prepare an accurate bid. Contractors utilizing the information in the report should do so with the express understanding that its scope was developed to address design considerations. Prospective bidders should obtain the owner's permission to perform whatever additional explorations or data gathering they deem necessary to prepare their bid accurately.

E. Construction Observation

We recommend that Melick-Tully and Associates, P.C. be retained to provide on-site soils engineering services during the earthwork construction and foundation phases of the work. This is to observe compliance with the design concepts and to allow changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.