

APPENDIX B-3E

RFP # 2025-12

**BEACON ISLAND PHASE 3
Packaged Wastewater Treatment Plant
and
Fire Pump House and Marine Inlet**

REFERENCE DOCUMENTS (5 of 5)

Reference Documents

Beacon Island Phase 3 Program

- NYSDEC Article 11 and 15 Permits. Dated 11/10/22 - Page 1
- State Pollutant Discharge Elimination System (SPDES) Permit. Dated 10/1/23 - Page 21
- Stormwater Pollution Protection Plan (SWPPP). Dated 6/20/22 - Page 59
- Soil Management Plan. Dated 10/23/22 - Page 564
- Landfill Closure Certification Report. Dated 10/21/24 - Page 634
- Geotechnical Engineering Report. Dated 2/2/2023 - Page 659
- Army Corps of Engineers Permit. Date 4/10/23 - Page 779
- Community Air Monitoring Plan (CAMP). Dated 10/23/22 – Page 806

Proposed Grades

Finish floor elevation at each of the proposed buildings is 21.0 feet, which in general is several feet or more above existing site grades within the proposed building footprints. The approximate difference in elevation between existing site grades and proposed finished floor level at each building is summarized as follows:

Building	Approx. Existing Grade Elev. (ft)	Finished Floor Elev. (ft)	Difference Between Exist. Grade and Finished Floor (ft)
A	13 to 19	21.0	2 to 8 overall (but generally in the range of 6 to 8)
B	11 to 17	21.0	4 to 10 overall (but generally in the range of 8 to 10)
C	7 to 13	21.0	8 to 14 overall (but generally in the range of 10 to 12)
D	7 to 19	21.0	2 to 14 overall (but generally in the range of 2 to 4)

From the buildings and progressing eastward across the yard area, proposed grades slope gently toward the river at an inclination of about 3 percent or flatter, to elevations between about 13 and 16 feet. Both cuts and fills will be required in the yard area to establish finish grades, which are as much as 6 feet lower than existing grade in places, and in general up to about 8 feet higher than existing grade. New fill approaching 14 feet in thickness will be required in a limited area about Building D.

As previously noted, curbs will in general define the limits of the yard area, beyond which grades will slope down to the river (or creek as applicable), at inclinations typically between 1V:3H and 1V:4H. Additionally, a retaining wall is planned on the west side of Building C. The wall will be approximately 780 feet in total length, with retained height upwards of about 13 feet.

It is also our understanding that disturbance to the existing shoreline(s) is to be minimized so as to preserve existing trees and whatever visual screening from the waterways they provide.

Retaining Walls

Plans call for a retaining wall on the west side of Building C. The wall will be approximately 780 feet in total length, with retained height upwards of about 13 feet. As currently envisioned this will be a mechanically stabilized earth (MSE) type wall.

Exclusions

Finally, we note that incoming raw materials will initially be received at another site, this located at 700 Smith Boulevard in the currently developed portion of the Port. Plans at that location call for a 20,000 sq.ft. receiving and pre-assembly building (Building E), along with temporary storage of steel plates, flanges and miscellaneous items in an accompanying yard area. We have addressed Building E and the proposed bridge at the north end of Beacon Island in separate reports issued in January 2022.

This report does not address the proposed access road linking the subject site to River Road/NYS Route 144 or the proposed automobile parking areas west of the buildings at the subject site. We are currently awaiting authorization from National Grid to complete test borings in their right-of-way as a basis for evaluating the potential impacts of these features from a geotechnical standpoint and providing earthwork recommendations as appropriate.

If any of the above information is incorrect, please let us know so we can review the conclusions and recommendations provided in this report for applicability to the actual design and update the report as appropriate.

As the design of the project progresses and site grading plans and structural loads are fully developed, we should be retained to assess such additional information relative to the recommendations contained herein.

SUBSURFACE CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration results (from this and previous studies), geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical analysis and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual subsurface logs. The logs can be found in the **Exploration Results** and the GeoModel in the **Figures** sections of this report.

Subsurface Profile

The following model layers were identified within the subsurface profile. For a more detailed view of the model layers with depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	Fill	In general coal ash on the west side and south end of the site. Elsewhere sand, silt, gravel and/or clay in varying proportion, along with occasional organics and/or foreign material such as cinders, slag, brick, metal, wood.

2	Alluvium	Sand with lesser amounts of gravel, frequently intermixed or interbedded with silts and/or clays. Relatively minor amounts of organics common.
3	Silt and Clay	Glaciolacustrine silt and clay deposit.
4	Glacial Till	Fine sand and silt with embedded coarser sands, gravel, rock fragments. Some cobbles and boulders. Sometimes clayey.
5	Bedrock	Shale bedrock. Upper few feet relatively weathered.

Surface Materials and Fill Soils

Although generally somewhat brushy and/or wooded, topsoil was generally scarce in the coal ash disposal areas. Elsewhere, topsoil or forest mat was present at the ground surface at thicknesses between about 0.3 and 1.0 feet as indicated on the test pit logs. We note the indicated topsoil thicknesses should be regarded as a rough approximation only and should not be relied upon for construction quantity estimates; contractors are advised to make their own estimates or determination of topsoil thickness and quality for bidding purposes.

Beneath whatever surface organic materials were present, fill and/or suspected fill soils were found at most locations, extending to depths between about 3 to as much as 29 feet below existing grade. Coal ash was the most prevalent fill material as outlined below. Otherwise, the fills generally consisted of sand, silt, gravel and/or clay in varying proportion, along with occasional organics and/or foreign material such as cinders, slag, brick, metal and wood. Some of these materials likely represent river sediments, reworked native soils or dredge spoil. The relative density of the non-coal ash fill as indicated by measured SPT N-values was most often in the loose to medium dense range.

As has been described in the previously referenced reports, much of the filling on the site has occurred through the bulk placement of waste coal ash from the south adjoining power generating station. The plant was coal fired upon its construction in the early 1950s until about 1970, when its boilers were converted to use other fuels. Waste coal ash during the plant's coal burning years was disposed of on the project site, primarily along the site's west side and at its south end. The method of placement of the coal ash is unknown but is believed to have been transported in bulk and pushed/tracked into place as opposed to hydraulically placed. Relative density of the coal ash indicated by measured SPT N-values was typically very loose, and it was noted that some vibration of the ground was evident underfoot as a large tracked excavator traversed the ground surface in the coal ash area while moving from location to location in the course of excavating the test pits.

Laboratory testing of coal ash samples recovered from the site indicates it is comprised primarily of silt (66 to 76 percent by weight) and fine sand (19 to 27 percent) sized particles and classifies among the ML group using the Unified Soil Classification System (USCS). Coarser sand and clay size particles are present in trace amounts. Maximum dry density of the coal ash as determined by ASTM D1557 (modified Proctor) was between 61.8 and 64.2 pounds per cubic foot (pcf) with

optimum moisture content between 38.2 and 42.1 percent. These results are in keeping with what would be expected based on published accounts concerning the engineering properties of coal ash. Relatively minor amounts of organics were commonly noted in the ash fill as well, but overall the material was found to be rather consistent in composition.

It should be noted here that beneficial reuse of coal ash as a building material is not uncommon in the construction industry. In addition to its use as an additive in concrete, coal ash is generally regarded as suitable for construction of engineered structural fills for building sites, foundations and embankments, among other applications. Its usefulness as such is outlined in ASTM E2277, which cites low unit weight and relatively high shear strength, along with ease of handling and compaction as positive attributes of coal ash.

That said, the uncontrolled manner in which the material was placed is a concern as it relates to site development, and what follows herein should be viewed in this context. We regard the other miscellaneous fills and river sediments similarly (in the absence of gross debris, organics, or whatever otherwise unsuitable materials may be found). And despite the overall potential usefulness of coal ash as a fill material, the Ductile Iron Pipe Research Association (DIPRA) considers coal ash a known corrosive environment. Accordingly, the ash should be considered potentially aggressive to ductile iron piping systems and possibly other buried metallic pipes/elements placed within it.

Finally, while not found to be prevalent across the site, it should be understood that localized pockets of coarse, unsuitable debris may be present in places, as evidenced by buried railroad ties identified by Bergmann in the course of their 2017 study. The railroad ties were found at test pit TP-8 (located along the access road in southeast portion of site) between the depths of 8 and 12 feet below grade. Also note that fill materials and native soils were found to be similar in composition in places, rendering distinction between them difficult; the depth of fill as indicated on the logs should be considered approximate.

Alluvial Soils

Native soils beneath the existing fill materials were found to consist of alluvium, typically composed of sands with lesser amounts of gravel, frequently intermixed or interbedded with silt and/or clay. Relatively minor amounts of organics were commonly noted in these soils also. The alluvial soils extended to depths of about 25 to 55 feet (or as little as 20 feet at B-21-11) and exhibited a typically loose relative density. In the instances where the recovered soils were primarily fine-grained, their relative consistency was most often very soft.

Silt and Clay

Underlying the alluvium was a lacustrine silt and clay deposit which extended to depths of about 40 to 155 feet, generally increasing in depth to the east and more markedly to the south across the site. The silts and clays in this deposit were characteristically gray in color and very soft in relative consistency. Layers consisting primarily of silt were occasionally found therein. An

exception to this is noted at borehole B-21-11, where no lacustrine soils were found between the alluvium and an unusually shallow glacial till deposit at a depth of 20 feet.

Laboratory testing performed on selected soil samples indicates that the gray silt and clay soils at this site are typically low to medium plasticity silts/clays categorized as CL or CL-ML in the USCS. A tabular summary of the most recent laboratory test results on these cohesive soils is provided below.

Boring/Test Pit ID	Depth (ft)	Natural Water Content (%)	Liquid Limit	Plasticity Index
B-21-7	60-62	26.4	NP	NP
B-21-17	40-42	30.5	31	12
B-21-18	35-37	35.5	33	11
B-21-20	40-42	33.2	31	11
B-21-23	110-112	20.6	23	6
TP-21-3	6-6.5	19.6	33	14
TP-21-7	3-3.5	18.9	33	12

As indicated in the table above, measured liquid limits ranged from 23 to 33 percent, and corresponding plasticity indices ranged from 6 to 14 percent. The natural moisture content of these soils ranged from 20.6 to 35.5 percent and was typically nearer the liquid limit in the deeper deposits. Laboratory testing results on the silt and clay deposit from previous studies have been similar. UU triaxial shear testing from previous studies also indicates its undrained shear strength is between about 580 and 640 psf.

Previous consolidation testing on the silt and clay deposit at the Beacon Island site and our experience with these Glacial Lake Albany lacustrine soils in the region indicate these deposits have been preconsolidated; that is, they have been subjected to stresses greater than current overburden pressures and have consolidated under these excess pressures. The preconsolidation is believed to be the result of a combination of stresses induced through desiccation, or drying, caused by the regional lowering of the water table during the geologic past and by loading from overburden soils which existed previously in the area but have since been eroded.

The available information indicates a net preconsolidation pressure of 4,000 psf or greater in the upper silt and clay; the net preconsolidation pressure and over-consolidation ratio (OCR) typically diminish with increasing depth. Previous cone penetrometer testing performed across the Beacon Island site indicates the OCR ranges from upwards of about 6 in the upper overburden soils to about 1.2 or less at depths greater than 100 feet. Undrained shear strengths of 500 to 750 psf are

typical for the gray Glacial Lake Albany silts and clays in the region, this consistent with the results of UU triaxial testing previously completed at the site as noted above.

Glacial Till

Glacial till soils were found beneath the lacustrine silts and clays at most locations, although no till was encountered atop the underlying bedrock at boreholes B-21-10 and B-21-15. The till typically consisted of fine sand and silt (occasionally clayey) with embedded coarser sands, gravel and rock fragments, and was generally between about 3 and 12 feet in thickness (or as much as 22 feet thick at borehole B-21-17). Its relative density was most often in the dense to very dense range.

Cobbles and boulders are common in glacial till soils in the region and were frequently encountered in the till at this site as well. Note that the split spoon sampler employed in the SPT testing has an inside diameter of 1.375 inches which thereby limits recovery of coarser material and the extent to which coarser materials are represented in laboratory gradation testing. We also note that granular seams or layers within the till soils and at the till/bedrock interface may be more permeable than the surrounding soils and rock and may be under a slight artesian pressure.

Bedrock

Bedrock was encountered at depths between 45 and 159 feet below the existing ground surface, generally increasing in depth to the east and more markedly to the south across the site. This correlates with a bedrock surface elevation in the range of about -34 to -143 feet (below MSL). Note that rock may also have been encountered (or nearly so) upon refusal of the drill tooling at a depth of 30.1 feet (approx. elevation -19 feet) in borehole B-21-11, although this was not confirmed through rock coring at this location.

The upper few feet of rock were typically relatively weathered. Confirmatory rock core sampling of the less weathered underlying rock in general revealed weak shale with very close to moderate joint, fracture and/or bedding spacing at a relatively high angle. Bands or layers of medium strong sandstone or graywacke were occasionally encountered, as were occasional siltstone seams and quartz veins. Rock quality designation (RQD) ranged from 8 (very poor) to 58 (fair) and averaged about 38 percent overall.

For information purposes, the Geologic Map of New York (New York State Education Department, 1970) maps bedrock underlying the project area as Normanskill shale with minor constituents of mudstone and sandstone, along with shale and graywacke of the Austin Glen Formation.

Groundwater Conditions

Based on the recovery of wet soil samples and groundwater level measurements from this and previous investigations, groundwater in general appears to about 3 to 14 feet below the existing ground surface, this corresponding to groundwater elevations in the range of approximately 3 to 14 feet.

Mean high water in the Hudson River/Normanskill Creek is at an elevation of about 4 feet, and groundwater is in general expected at or near this level. A number of observation wells from previous investigations were observed on the site, and water level readings taken in these wells during this investigation tend to support this conclusion. Note however that these waters are tidal, normally within a range of about four to five feet, and tides are therefore expected to routinely affect water levels in and around the site. Information provided for our use indicates that extreme floodwaters may rise to about elevation 18 feet or more.

Additionally, as evidenced by some of the shallower observed water levels, locally perched or trapped groundwater may be present at times within the upper soils, particularly during seasonally wet periods and following heavy or extended periods of precipitation.

Groundwater elevations at the site should be expected to vary with seasonal fluctuations in precipitation and runoff, and with rising and falling water levels in the Hudson River. Tidal changes in the Hudson River are also expected to influence groundwater levels within a few hundred feet of shore to some degree daily. Additionally, grade adjustments on and around the site, surrounding drainage improvements and/or periodic flooding may also affect the water table.

GEOTECHNICAL OVERVIEW

General Discussion

In our opinion, the investigation completed at the project site revealed subsurface conditions that, with the exception of the coal ash fill, are typical along the Hudson River in the Albany area. The conditions are also generally consistent with those revealed through previous investigations at the site. The upper soils are composed of coal ash, miscellaneous fill and river sediments which are underlain by, in sequence with depth, alluvium, soft silt and clay, glacial till and ultimately shale bedrock. Groundwater is expected at or near the level of the river, or roughly 3 to 14 feet below existing site grades.

From a geotechnical standpoint, the site presents some challenges in the context of the proposed construction and planned heavy industrial loading. There are a number of factors which will impact on site development including:

- The bulk uncontrolled coal ash fill, along with other miscellaneous fills and river sediments
- Extensive cut and fill requirements
- Soft clays at depth which are subject to time-dependent consolidation settlement
- Weak subgrades relative to vehicular and material loading in yard area

Some key points for each of these factors are discussed in the following paragraphs, together with our recommended development approach.

It should be understood that the performance of the planned buildings and site features will ultimately be dependent upon successful implementation of the earthworks recommended herein. Retaining Terracon for construction period geotechnical observation, testing and consulting services will maintain continuity between the design and construction phases which can minimize risks and provide cost saving benefits to the Owner.

In general, the footprints of Buildings A, B and C are situated over the coal ash fill in their entirety, while miscellaneous fills consisting of sand, silt and clay with lesser amounts of foreign matter are present in the area of Building D. The uncontrolled coal ash fill, together with the other miscellaneous fills and river sediments, are not considered suitable for direct support of conventional shallow spread foundations and slab-on-grade construction. These materials offer marginal or unreliable bearing capacity and are subject to excessive post-construction settlement in the absence of some means to improve them.

To this end, we have evaluated a number of ground improvement methods in terms of their potential to enhance the bearing capacity and settlement characteristics of the existing fills and native deposits in-place, considering likely cost, impact to schedule and so on. These include deep dynamic compaction (DDC), rammed aggregate piers and soil mixing, along with full or partial undercuts and replacement. Each of these options was ultimately dismissed, either on the basis of technical feasibility or perceived benefit relative to time and expense. Additionally, note that none of these options would relieve the necessity to preload the building pads and allow time sufficient for consolidation settlement of the deep soft clays to occur, as outlined subsequently herein.

Taking into account that several feet of new fill is required to raise site grades beneath the buildings, and to the extent the proposed buildings and rail embedded slabs are not highly sensitive to settlement, consideration may be given to their support on unit mat type foundations, provided the mats are made sufficiently stiff to resist discrete concentrated loads beneath columns, rails, etc. and distribute these over broader areas of the mat. While all fills required to raise site grades should consist of suitable soils, we recommend the mats rest on no less than three feet of imported select structural fill to ensure the quality, uniformity and integrity of materials directly beneath the foundations.

The use of mat foundations will require preloading the building pads and exterior rail areas with the subgrade fill required to establish proposed grades, together with a surcharge approximating the average building live and dead loads the foundation subgrades will support. Doing so as a means of improvement will allow the underlying fills, river sediments and deep clays to consolidate under the weight of these loads and limit post-construction settlement. Plans should include a sufficient waiting period for the time-dependent settlement to occur, estimated at upwards of three to four months. To the extent possible, whatever filling is required in the yard area should also occur early in the construction schedule so as to limit post-construction settlements there.

It should be understood the mat foundation option is offered as a relatively cost-effective and expedient means of developing the site considering the rather poor soil conditions and proposed

usage. Assuming the recommendations herein are adhered to, we expect that post-construction settlements will remain within tolerable levels and overall performance of the foundations and buildings will be satisfactory. That said, a good deal of uncertainty remains concerning what is or may be buried in the bulk uncontrolled fills across the site, and the owner and/or end user must be willing to accept some accompanying risk of excessive settlement in exchange for the benefit to cost and schedule represented by the mat option. If this uncertainty cannot be accepted, the buildings and slabs should be supported on end bearing steel piles driven to refusal on bedrock.

Similarly, to the extent existing fills are left in place beneath new pavements in the storage/staging yard area, the owner and/or end user must accept some degree of risk that excessive long-term settlements may occur. As previously indicated, buried railroad ties were disclosed in a test pit during a previous investigation, and this test pit was located in the currently proposed yard area. Heavy proof rolling of exposed subgrades as described herein will help to identify unsuitable subgrades and mitigate, but not eliminate, the risk of long-term settlement. An exceptionally heavy reinforced aggregate pavement section has been developed in consideration of the appreciable reach stacker, SPMT and material storage area loads, together with the marginal subgrade conditions which now exist.

Selective reuse of suitable onsite cut materials will be possible beneath building pads and yard areas, with some limitations as discussed in the **Earthwork** section herein. Whatever environmental considerations are involved with the handling and/or reuse of coal ash and/or other materials on the site are beyond the scope of this report and have been addressed in the Soil Management Plan by ATL (October 2020). Additionally, as previously indicated, the Ductile Iron Pipe Research Association (DIPRA) considers coal ash a known corrosive environment, and the ash should therefore be considered potentially aggressive to ductile iron piping systems and possibly other buried metallic pipes/elements placed within it.

Finally, limited vibration resulting from heavy equipment tracking across the ground surface was felt underfoot in the coal ash areas during the course of the investigation. It is possible a tendency for this to occur in association with heavy or reciprocating equipment will remain post-construction, in spite of the additional filling required to establish proposed grades. If the potential for such nuisance vibrations is perceived as a problem, this should be further studied by the end user and design team.

The following sections of this report provide more detailed recommendations to assist in planning for the geotechnical aspects of the project. We should be provided with the opportunity to review plans and specifications prior to their release for bidding to confirm that our recommendations were properly understood and implemented, and to allow us to refine our recommendations, if warranted, based upon the final design. The **General Comments** section provides an understanding of the report limitations.

SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Assignment of seismic Site Class is required to determine the Seismic Design Category for a structure. The Site Class is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance or undrained shear strength pursuant to Section 20.4 of ASCE 7 and the International Building Code (IBC).

Seismic Site Classification

In our estimation, assignment of seismic Site Class D (stiff soil profile) for the project is justifiable. This determination is made based upon the results of shear wave velocity testing in seismic cone penetrometer tests previously completed at the site. Additional cone tests or geophysical testing may be performed to confirm this determination if desired.

Liquefaction

An evaluation of the potential for soil liquefaction to occur was made using the computer software program Liquefy Pro by CivilTech Corporation. An earthquake magnitude of 6.0 was assumed, and a peak ground acceleration (PGA) of 0.09g for the project area was used, this representing a two percent probability of exceedance in 50 years (2,500 year return period, as obtained from USGS earthquake hazards mapping). Based on these parameters and site specific conditions determined through the subsurface investigation, the calculated factor of safety against liquefaction is greater than 1.2. As such, liquefaction potential at the project site is considered low. However, seismically induced ground surface settlements may occur over the general area, with those at the project site estimated to not exceed 0.5 inch.

EARTHWORK

Earthwork is anticipated to include clearing and grubbing, stabilization of subgrade surfaces as necessary, bulk cuts and fills, preloading/surcharging the buildings pads, excavation for foundation construction and associated backfill. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria as necessary to render the site in the state considered suitable in our geotechnical engineering evaluation for new foundations and aggregate-surfaced pavement sections.

Construction site safety is the sole responsibility of the contractor, who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety or the contractor's activities; such responsibility is neither implied nor shall it be inferred.

Site Preparation

Site preparation should begin with stripping of existing topsoil and surficial organic matter as applicable from the new building and yard areas. Any remains of former structures or obviously unsuitable materials that may be found should also be removed.

Prior to placing fills to raise grades and/or after cuts are made to the plan subgrade elevations, the exposed grades should be heavily and thoroughly proof-rolled using a steel drum roller with a static weight of at least 10 tons. The roller should operate in its vibratory mode, unless requested otherwise by the Geotechnical Engineer observing the work, and travel at a speed not exceeding three feet per second (two miles per hour). The roller should complete at least eight passes over all subgrade surfaces (four each in opposing directions). The method of proof-rolling may be modified by the Geotechnical Engineer based upon the conditions revealed at the time of construction.

Soft areas identified by the proof-rolling should be investigated to determine the cause and stabilized accordingly. These investigations may include the excavation of test pits. If existing fills are found and determined by to be unsuitable by the Geotechnical Engineer, they should be removed and replaced as deemed necessary.

Settlement and Preloading

Plans indicate about 2 to 14 feet of new fills are required to raise site grades in the building areas, this representing a net increase in load intensity of roughly 200 to 1800 psf on the underlying subgrades. Added to this will be the building and operational loads which we understand will be no greater than 600 psf when aggregated across a given building (or slab) footprint. In our estimation, new loads of this magnitude will result in stresses at depth which approach but do not exceed preconsolidation pressures in the deep clay deposit, limiting settlements in the clay deposit to those in the recompression range.

Settlements will occur throughout the existing fills and overburden soils in response these loads. In general, the degree of settlement is expected to vary with the height of fill required to establish proposed grades, but we estimate that maximum settlements will be between roughly 4 and 6 inches beneath the building pads. As these estimated settlements are beyond that which are considered typical and tolerable, a preloading and settlement monitoring plan targeted at limiting post-construction settlements should be implemented.

Development of a detailed preloading and settlement monitoring program is beyond the scope of this report. However, the basic elements of preloading include placement of new fill material to proposed grade levels, together with a surcharge fill which approximates (or exceeds, within limits) anticipated overall post construction loading. Instrumentation is installed to track the settlement that occurs over time. The plan should be implemented early in the construction schedule and sufficient time allowed such that these settlements are essentially complete prior to building construction and final grading.

In doing so, it is important the preload/surcharge load intensity matches or exceeds total post-construction grading, building and operational loads without exceeding preconsolidation pressures in the clay deposit. We expect this can be accomplished by placing a surcharge fill 6 to 7 feet in height across the building pads once the site is filled to the proposed finish floor elevation of 21.0 feet (i.e., top of surcharge elevation 27 to 28 feet). The surcharge should extend to this height, but no higher; if the preconsolidation pressure in the clays is exceeded (either through surcharging or operationally post-construction) both the magnitude of overall settlement and the time required for consolidation to occur will be greater than that estimated herein.

For preliminary planning purposes, we recommend that the full height of the temporary surcharge extend at least 10 feet outside the planned building footprints; the embankment side slopes of the temporary surcharge should be inclined no steeper than 1V:2H.

Material composition and compaction of fills placed to nominal finish floor elevation should be as described elsewhere herein. The temporary surcharge fill above finished floor level may consist of whatever material is most expedient, and may be simply tracked into place provided its in-place density is 100 pounds per cubic foot (pcf) or greater.

The required waiting period for settlement to occur will depend on the consolidation rate of the soils but we estimate the process will be substantially complete within a period between say 6 weeks and 3 to 4 months once the full height of fill and surcharge is in place. This should be understood and accommodated in developing the project schedule. Settlement in the fills and upper soils is expected to occur relatively quickly and in a semi-elastic manner as new loads are applied, whereas recompression settlement of the deep clays is expected to occur more slowly over the course of weeks and months.

Instrumentation in the form of conventional settlement plates and settlement systems with pressure transducers should be provided as part of the preloading and settlement monitoring program to allow the rate and total amount of settlement that occurs to be measured. Other instruments such as piezometers and inclinometers may be included in the preloading program as determined appropriate during its design.

For preliminary planning purposes, it should be assumed that a combination of at least 12 settlement plate and pressure transducer type settlement systems will be required across the building pads, their locations to be selected by this Geotechnical Engineer. The preloading and settlement monitoring program should be reviewed with the contractor and the settlement plates installed prior to any fill placement (but after the site has been stripped and proof-rolled).

Immediately upon installation of each settlement system, the top of plate elevation and any readout device panels should be determined and recorded as the starting grade or initial reference point, along with the elevation at the top of the first extension pipe for conventional systems. Following this, approximately 12 inches of fill should be placed and compacted over the plate to properly seat and secure the platform, and the instruments resurveyed. The instruments and panels should be clearly

marked and/or protected as necessary to prevent any disturbance or damage during construction activities.

When adding any subsequent extensions, the top of pipe elevation of the existing extension should first be obtained and recorded, and the top of pipe elevation of the new extension should be recorded immediately after being installed. Elevation data should be recorded and maintained such that the actual plate elevation can be referenced and determined at all times. Elevations should be obtained at each device at least twice weekly as the fill is being placed, and on a weekly basis thereafter during the hold period.

All survey monitoring should be performed under the supervision of a professional land surveyor, with elevations obtained to the nearest 0.01 foot and referenced to a consistent offsite benchmark(s) that is not susceptible to movement or damage over the monitoring period. Additionally, the elevation of the subgrade fill immediately adjacent to the instrument should also be obtained to the nearest 0.1 foot with each set of measurements.

The settlement system elevation should be determined for each measurement interval based on the survey data. The elevation of the subgrade fill at each monitoring interval should also be collected. Terracon should prepare a plot of relative movement (i.e., settlement) of the plate/system vs. time on an ongoing basis in order to allow interim evaluation of settlement conditions.

Careful monitoring of the instruments and whatever data is collected over the preload period will be necessary to determine the point at which recompression/consolidation settlement has essentially ended and building construction can begin. There is uncertainty in predicting both the magnitude of anticipated settlement and the time required for recompression settlement to occur, and this should be understood by all parties, thus the range in time planned for the holding period should be flexible. The preload and settlement monitoring program should be designed and monitored by this Geotechnical Engineer, who will determine the required duration and make interim evaluations of the results obtained therefrom.

Bulk Cut and Fill Considerations

As a considerable amount of cut and fill will be required to establish proposed grades, economic site development will likely be dependent on the reuse of cut soils as new subgrade fill to raise site grades as necessary. Accordingly, the challenges and limitations associated with their reuse should be understood.

The onsite soils, in some cases, contain appreciable quantities of fine-grained silt and/or clay and will therefore require control of their as-compacted moisture content within narrow limits to achieve requisite in-place density as the material is placed. It may be necessary to either dry the soil in windrows or add water prior to placement and compaction depending on the prevailing weather conditions at the time of construction or the in-situ moisture content of the soils as they are excavated. Should site development proceed during seasonally wet or cold periods, it will likely be difficult to

adequately dry the siltier cut soils and it may be necessary to stabilize these soils with lime, fly ash or kiln dust, or to use an imported granular fill.

Topsoil, vegetation and other surface materials should be stripped from all cut/fill areas prior to earth moving operations. The subgrade fill should be firm and stable after it is placed and compacted, and should not “pump”, “weave” or otherwise exhibit instability during construction; soils should be undercut and replaced where unsatisfactory. The fill subgrades should also be properly graded, drained, sealed and/or protected from moisture and frost as necessary. Placement of fill over wet, soft, snow covered, or frozen subgrades should not be permitted. All bulk fill placement and compaction should be monitored and tested by a representative of the Geotechnical Engineer on a full-time basis.

Where new fills are required to raise site grades, some difficulty may be experienced in achieving proper compaction of the fill soils considering the existing unimproved subgrades. This may be of particular difficulty in lower, wetter portions of the site, or where the filling is attempted with cut soils of lesser quality. It may therefore be necessary to begin the new fills using better quality imported granular material for the initial one or two lifts. Consideration may also be given to placing an initial layer of oversize stone (e.g., surge stone or shot rock, with a maximum 8 inch particle size) to displace excessively loose or wet soils and establish a firm base from which to continue. Other methods of subgrade improvement which may be considered include the use of reinforcement with dry granular material and geogrids or soil modification with admixtures as noted above.

Based on the findings of the subsurface investigation, bulk cuts across the site are not expected to encounter a generalized groundwater condition. However, perched groundwater may be intercepted in places, possibly necessitating the construction of fabric lined and stone filled drainage trenches to relieve, collect and dispose of such waters.

Fill Material Types

As indicated above, it may be assumed that excavated onsite soils will in general be suitable for reuse in fill areas once cleansed of any oversized particles, unsuitable debris or organics, subject to the approval of the Geotechnical Engineer and based upon the conditions encountered at the time of construction. Cut soils essentially free of organics, debris or particles >6 inches in size may be considered suitable fill and placed in common fill areas throughout the site, but no closer than three feet from the bottom of any mat foundation. Excessively silty or clayey materials should not be used as a source of fill within yard areas, though may be considered for placement under mat foundation areas if spread in thin (say less than 8 inch) lifts. Unsuitable materials should be wasted offsite or in landscaped areas.

Material imported for general use should consist of well-graded sand or sand and gravel which meets the requirements stipulated for Select Granular Fill in section 733-11 of the NYSDOT Standard Specifications for Construction and Materials.

We recommend that mat foundations be supported on no less than three feet of imported select structural fill to ensure the quality, uniformity and integrity of materials directly beneath the buildings and exterior rails. Designated select structural fill should consist of an imported processed sand and gravel or crusher-run stone which meets the requirements stipulated for Type 2 or 4 Subbase material in section 304 of the NYSDOT Standard Specifications.

Fill Compaction Requirements

Fills beneath the building pads and pavements should be placed in uniform loose layers no more than about one-foot thick where heavy vibratory compaction equipment is used. Thinner lifts should be used as necessary where hand operated equipment is required for compaction. Each lift should be compacted to no less than 95 percent of its maximum dry density as determined by the Modified Proctor Compaction Test – ASTM D1557, and moisture content of the material being placed should be maintained within +/- 3 percent of its optimum moisture content. In landscape areas, the compaction requirement may be relaxed to 90 percent of maximum dry density.

Grading and Drainage

All grades should provide effective drainage away from the buildings during and after construction, with such drainage maintained throughout the life of the structures. Water retained next to buildings can result in soil movements greater than those outlined in this report, which may in turn lead to unsatisfactory differential floor slab and/or foundation displacements, cracked slabs and walls, or roof leaks.

Temporary Excavations

Excavations must be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P and its appendices, along with any state and local codes, as applicable. The contractor should be aware that slope height, slope inclination, and excavation depth should in no instance exceed OSHA regulations. Flatter slopes than those stipulated by the regulations or temporary shoring may be required depending upon the soil/groundwater conditions encountered and other external factors. OSHA regulations are strictly enforced and if they are not followed, the owner, contractor, and/or earthwork and utility subcontractor could be liable and subject to substantial penalties.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of this Geotechnical Engineer. Monitoring should include documentation of adequate removal of topsoil and unsuitable fills, proof-rolling, and evaluation of foundation and yard area subgrades. If unanticipated conditions are encountered, this Geotechnical Engineer should prescribe mitigation options. Each lift of new compacted fill should be tested, evaluated, and reworked, as necessary, until approved by this Geotechnical Engineer prior to placement of additional lifts.

Foundation bearing grades and subgrades for floor slabs, pavements and concrete pads should also be evaluated under the direction of this Geotechnical Engineer. If unanticipated conditions are encountered, this Geotechnical Engineer should prescribe mitigation options.

It should be understood that subsurface conditions will be more fully known when the site is excavated. The continuation of this Geotechnical Engineer's services into the construction phase of the project and their continuous observations during earthwork and foundation construction will allow for validation of the subsurface conditions assumed to exist for this study and in the development of the design recommendations in this report, along with assessing any variations, providing interim recommendations as necessary and reviewing any associated design changes.

MAT FOUNDATIONS

Foundation Design Parameters

Over the course of this study, we were furnished with load distribution diagrams quantifying contact pressure beneath the mat foundations at selected column locations considering both building and operational loads. These diagrams indicate that load intensity may range upwards of about 2,500 to 3,500 psf over limited areas no greater than about 10 x 20 feet with the mat configured as currently planned. The diagrams further indicate that load intensity dissipates from the loaded areas such that contact pressure at the limits of a mat area measuring about 40 x 80 feet in plan dimension does not exceed about 1,500 psf. As previously noted, we understand that gross loading on the mats aggregated across the total floor area does not exceed 600 psf.

In view of the above, we expect the limiting pre-consolidation pressure within the deep lacustrine soils will not be exceeded and thus settlements will be controlled by recompression. Under these parameters, we estimate that post-construction mat settlements across the site will not exceed 1 to 2 inches. As mat design progresses, and other load cases are developed, they should be provided to us for review to determine whether these other loadings cause imposed stresses to exceed the pre-consolidation stress within the deep lacustrine soils.

The mat foundations should be constructed on a minimum three feet of select structural fill, over subgrades which have been prepared, preloaded and surcharged as described herein. Provided this is so, an effective modulus of subgrade reaction of 50 pounds per cubic inch (pci or psi/in) may be assumed at the top of the select structural fill layer.

Differential settlement across the mats will depend, in part, on their rigidity. We caution that differential settlements may occur due to non-uniform loading conditions both during and after the completion of construction. The mats must be designed, as needed, to accommodate the varying loading conditions and settlements. Preferably, construction should proceed such that differential loading is not created across the mats. When available, we should review the construction sequence

and actual load distributions expected across the mats to refine the settlement estimates and evaluate differential settlement concerns.

Utilities, where they connect with the buildings, should be designed to accommodate the expected settlements. Within the buildings, the utilities should be placed within chaseways built into the mats for access. The utilities should not be planned or constructed either within or below the mats.

Frost protection at the perimeter of buildings or in unheated portions thereof should be provided by seating foundations four feet or greater below surrounding grades, or through the use of an appropriate frost protected shallow foundation (FPSF) detail.

Mat Foundation Construction Considerations

The foundations should be seated directly on at least three feet of imported select structural fill, which is itself placed over subgrades prepared as described herein. All final bearing grades should be firm, stable, and free of loose soil, mud, water and frost. This Geotechnical Engineer should approve the condition of the foundation bearing grades immediately prior to placement of reinforcing steel and concrete.

SERVICE PITS

As previously indicated, one or more service pits up to 8 feet in depth (this corresponding with approximately elevation 13 feet) will be included in Buildings A and C. With floodwaters expected to rise upwards of elevation 18 feet, elevated groundwater may subject the pits to uplift pressures (buoyancy). Some means should therefore be incorporated to resist uplift, whether this be through self-weight of the pits, base extensions or some other method. Adequate waterproofing measures should also be provided.

Otherwise, the pits should be equipped with an open sump and pump system, with the pumps designed to dewater a specified volume that would be dependent upon the flood elevation, soil medium surrounding the pits, and the actual plan dimensions and depths of the pits.

Note that the pit walls should be designed to resist lateral earth pressures as outlined below.

RETAINING WALLS

The parameters given below are provided to analyze internal and external stability of the wall system and should be suitable for preliminary design purposes. We note however that the MSE retaining wall planned west of Building C will apparently be situated on the loose coal ash fills and will therefore be subject to settlement concerns similar to the buildings. While we expect the wall foundation subgrades can be improved through preloading as described elsewhere herein, it should be understood that the full height of the preload must in this case extend laterally to at

least 5 feet beyond the planned wall face, with the preload embankment side slope temporarily extending beyond the wall. The preload materials would then need to be removed from the retaining wall area and the wall system and its reinforcing constructed following the preload program. If this is not feasible or possible, consideration should be given to a different type of wall system more tolerant to settlement that can be built in conjunction with the site fills (as noted below).

The wall reinforcement system should also be considered in conjunction with overall site design. Based on the anticipated coal ash subgrades upon which the wall will be situated, we expect that satisfying global stability concerns will ultimately be a controlling factor in design. Reinforcement geogrid lengths upwards of 20 to 30 feet or more may be necessary depending on the wall system chosen, and the sequencing of geogrid installation with fills required to raise site grades should be coordinated as appropriate. In our estimation, a Geosynthetic Reinforced Soil System (GRSS) type wall is better suited to the expected site conditions as compared with the MSE type wall currently under consideration. GRSS walls are more tolerant to settlement and thus could be built in conjunction with the fills to raise site grades. Wall design would be a subsequent service that we should provide.

All earth-retaining walls should be designed to resist the lateral pressures generated by earth backfill and any temporary or permanent surcharge loads. The following design parameters are provided to assist in calculating lateral earth pressures and analyze wall stability as applicable:

- Soil angle of internal friction - 30 degrees
- Coefficient of At-Rest earth pressure (k_o) - 0.50
- Coefficient of Active earth pressure (k_a) - 0.33
- Coefficient of Passive earth pressure (k_p) - 3.00
- Total unit weight of compacted soil - 130 pcf

The recommended design parameters assume that the backfill consists of imported select granular or structural fill as outlined in the **Earthwork** section herein and that the backfill remains permanently well-drained. Water must not be allowed to collect against the wall unless the wall is designed to accommodate the added hydrostatic pressure. Use of excavated site soils for wall backfill should be avoided. The parameters are also based on idealized non-sloping conditions on each side of the wall and should be considered preliminary subject to review when grades are finalized. Where slopes are present either in front of or behind the walls, the coefficients of lateral earth pressure must be adjusted accordingly.

SHORELINE AND SLOPE STABILITY

An evaluation of global shoreline stability was made at several selected sections along the banks of the Hudson River and Normanskill in consideration of the proposed grading and loading

conditions, including the heavy transport vehicles. A total of five sections were evaluated, three along the river and two along the creek.

In developing each section, existing and proposed topography was taken from the site plans furnished to us, and the subsurface profile was compiled from information as revealed by the test borings and test pits. A uniform surcharge load for the material staging and/or equipment loadings was assumed based on the loading information provided, and was applied on the inside of the curb line indicated on the plans.

The slope and foundation geometries were analyzed by inputting data from the inferred subsurface profiles into the global stability evaluation software, SLOPE/W by Geo-Slope International, Ltd. Typical engineering properties for the soils were selected based upon the laboratory testing completed for this and previous studies together with our local experience. Groundwater conditions were modeled two ways: one considering the nominal static conditions encountered during our subsurface investigations, and another emulating rapid drawdown conditions as may occur after a flood event.

Under these parameters, the factor of safety against global failure of the shoreline was generally determined to be satisfactory (1.3 or greater). Typical industry standard targets a minimum factor of safety of 1.3, or 1.5 for critical structures.

However, a vulnerability to rotational slope failure was identified where concentrated loads are applied in close proximity to descending slopes. We therefore recommend that a minimum distance of 25 feet be maintained between concentrated loads (staged materials, reach stackers and SPMTs, etc.) and the crest of descending slopes.

Additionally, it was found that slopes along the shoreline are in general marginally stable against shallow, surficial type failures in the event of rapid water level drawdown as may occur following a flooding event. If armoring of the shoreline slopes to enhance their surficial stability is not a regulatory preferable solution, the prompt repair of any shallow failures will be required should a triggering flood event occur. Failure to address these surficial sloughs could result in propagation of the failures, potentially impacting greater portions of the slope and eventually upland yard areas.

It should be understood that stability of the soil slope, approach embankment and foundation geometries were modeled under the conditions outlined herein. Changes in feature location, geometry or grading, along with erosion or natural events can impact global stability. We should be retained to perform additional analyses and consulting as the final plans are developed.

Finally, we note that in general, any permanent cuts or embankment fills along the waterways should be sloped no steeper than one vertical on three horizontal (1V:3H). Steeper slopes may be considered on a case-by-case basis. All slopes should be vegetated, armored with riprap or otherwise protected against erosion as appropriate.

YARD AREA PAVEMENTS

Our design parameters assume the existing fills will be left in place and stabilized as detailed in the **Earthwork** section of this report. The owner must accept some degree of risk for excessive pavement settlement or failure if the existing fills are left in place. As previously indicated, whatever filling is required in the yard area should occur early in the construction schedule so as to limit post-construction settlements.

Reach Stacker and SPMT Use

The gravel-surface pavement section presented below was developed in conjunction with Tensar, primarily in consideration of the outsize reach stacker and SPMT loads that will traverse the site. PCASE software and assumed parameters based on the findings of our investigation were used in its development. We understand the end user acknowledges some rutting, aggregate kick-out and/or settlement of the aggregate surface will occur over time, and that they will periodically re-dress and re-level the yard area surface as needed in the course of their operations.

Except where noted and as applicable, all materials should meet the requirements specified in the latest edition of the New York State Department of Transportation (NYSDOT) Standard Specifications for Construction and Materials.

Reinforced Aggregate-Surface Pavement Design			
Layer	Description	NYSDOT Reference	Thickness (inches)
1	Surface Aggregate	Section 733-04, Type 2	12
2	Base Aggregate	Section 733-04, Type 2 (or AASHTO #57 blend)	18
3	Geogrid	Section 737-07 (Tensar NX850 or equal)	Single ply
4	Base Aggregate	Section 733-04, Type 2 (or AASHTO #57 blend)	18
5	Geogrid	Section 737-07 (Tensar NX850 or equal)	Single ply
6	Non-woven Separation/ Drainage Geotextile	Table 737-01C	Single ply

Construction of the yard area pavement section and the reinforced approach embankment section at the bridge should be coordinated to ensure proper overlap and to ensure that placed geogrids/geotextiles are not damaged in the course of utility installation. The geogrid should be

installed per the manufacturer's specifications, with prescribed overlap at seams, unless detailed otherwise.

Tower Section and Transition Piece Storage

The pavement section listed above should be provided throughout the storage yard area and anywhere that reach stackers or SPMTs will move about.

As outlined previously herein, plans call for the tower sections to be stored/staged horizontally on moveable storage fixtures, one on each end. Each fixture is to have two bearing plates which will bear on the storage yard's gravel surface. With each plate 20 sq.ft. in plan area, this results in a unit contact pressure upwards of 22,000 psf as currently planned.

While it is understood that settlement beneath the tower section storage fixtures need only be limited such that the tower sections remain off the ground, such settlements should be maintained within practical limits to avoid excessive tensile stresses in the geogrid reinforcement, which may result in damage to or failure of the grid and pavement system. To this end, we recommend the bearing plates be proportioned such that their contact pressure is limited to about 10,000 psf or less when bearing on the gravel pavement surface.

It is understood the transition pieces are to be staged in a vertical position, on modular jersey barrier-like units approximately 4.1 feet wide at their base and 32.8 to 45.9 feet in length. Each transition piece is to be supported on three of these units, and based on the information provided, we estimate that contact pressures at the base of the units bearing on the yard's gravel surface will be between 3,300 psf and 4,700 psf. We expect that differential settlement beneath these units will be maintained within the reported tolerable limit of 3 inches provided that loads do not exceed those indicated and are applied uniformly as shown. Nevertheless, we recommend that settlement beneath the transition pieces stored vertically be carefully monitored upon initial loading due to the uncertainty associated with the underlying previously filled subgrades.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

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February 4, 2022 ■ Terracon Project No. JB215020



Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements and design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

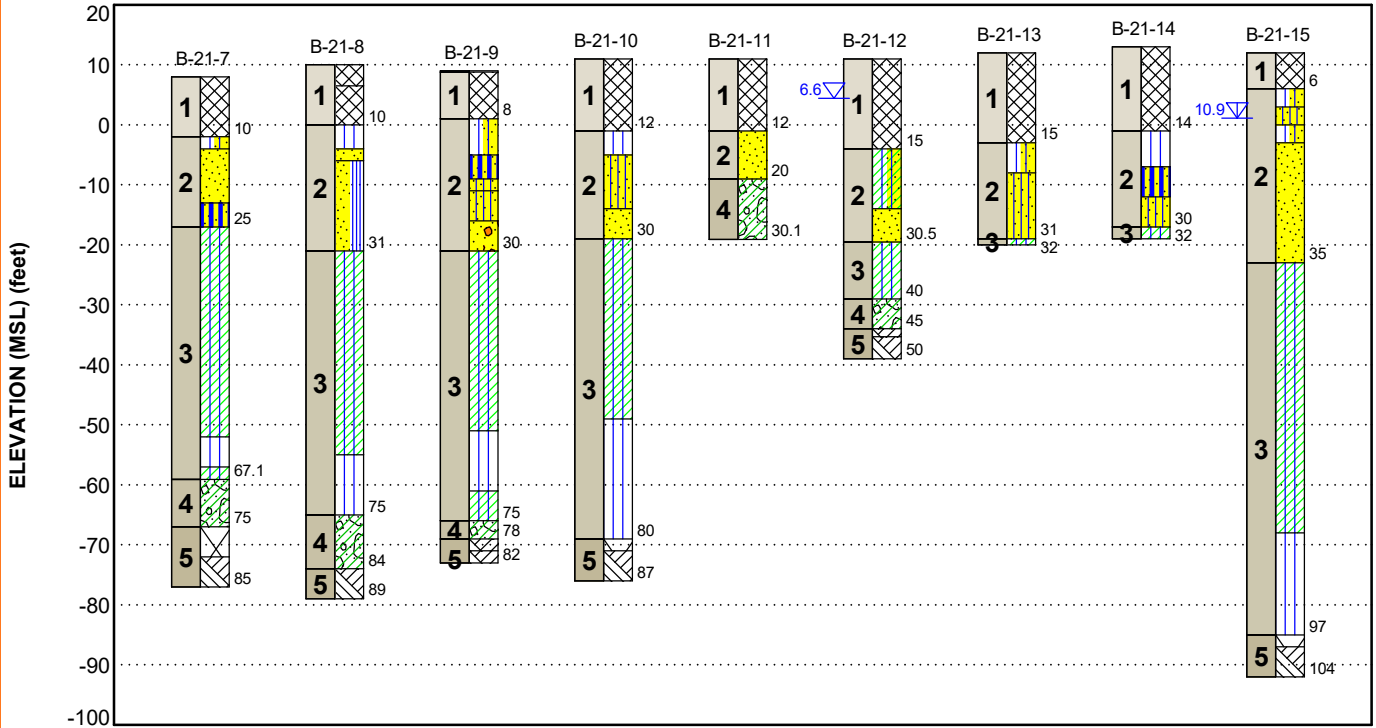
FIGURES

Contents:

GeoModel (4 pages)

GEOMODEL

Proposed Marmen Manufacturing Facility ■ Glenmont, NY
Terracon Project No. JB215020



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Fill	In general coal ash on the west side and south end of the site. Elsewhere sand, silt, gravel and/or clay in varying proportion, along with occasional org. and/or foreign matter.
2	Alluvium	Sand with lesser amounts of gravel, frequently intermixed or interbedded with silts and/or clays. Relatively minor amounts of organics common.
3	Silt and Clay	Glaciolacustrine silt and clay deposit.
4	Glacial Till	Fine sand and silt with embedded coarser sands, gravel, rock fragments. Some cobbles and boulders. Sometimes clayey.
5	Bedrock	Shale bedrock. Upper few feet relatively weathered.

LEGEND

Fill	Sandy Silt	Glacial Till	Poorly-graded Sand with Silt	Poorly-graded Sand with Gravel
Silt with Sand	Silty Clay	Weathered Rock	Topsoil	Silty Clay with Sand
Poorly-graded Sand	Silt	Bedrock	Silty Sand	

- ▽ First Water Observation
▽ Second Water Observation

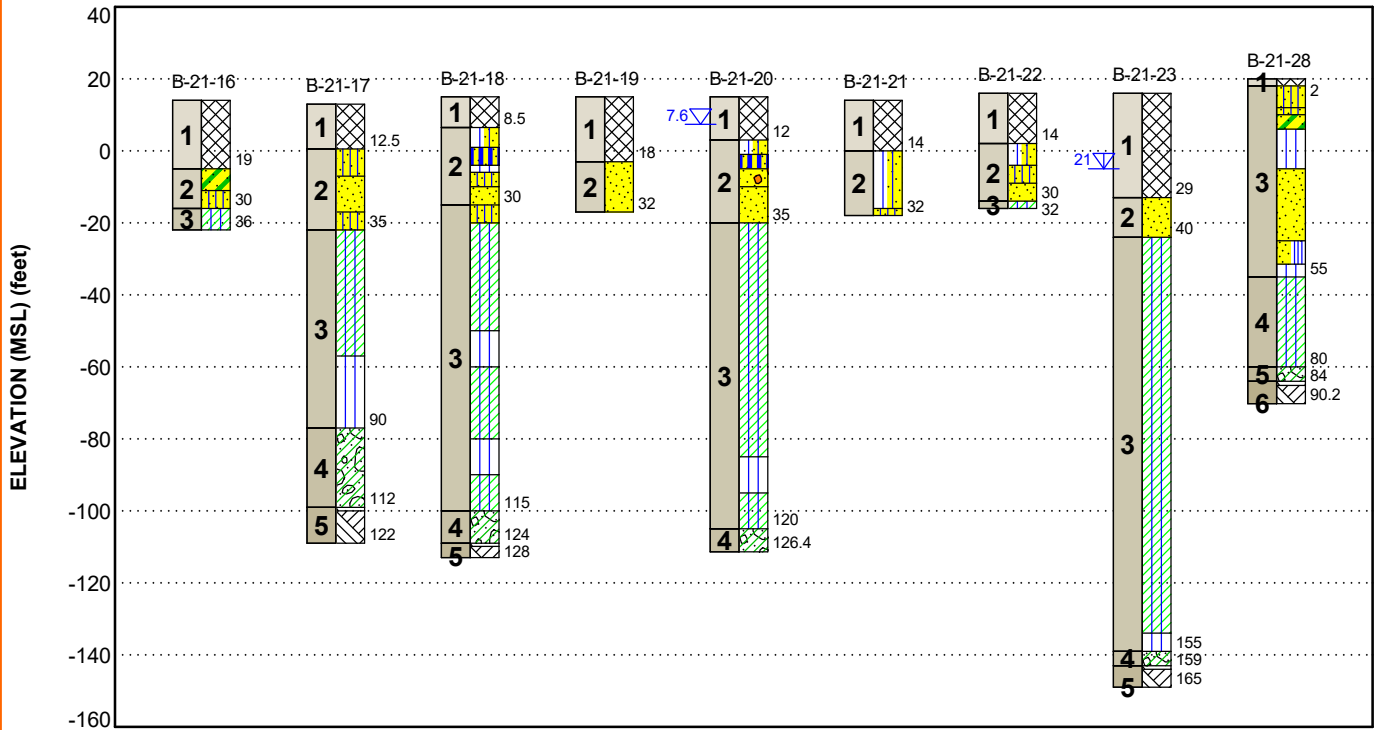
Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

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LEGEND

Fill	Silty Clay	Glacial Till	Silty Sand	Poorly-graded Sand with Silt
Clayey Sand	Poorly-graded Sand	Weathered Rock	Sandy Silt	
Silty Sand	Silt	Bedrock	Poorly-graded Sand with Gravel	

▽ First Water Observation
▽ Second Water Observation

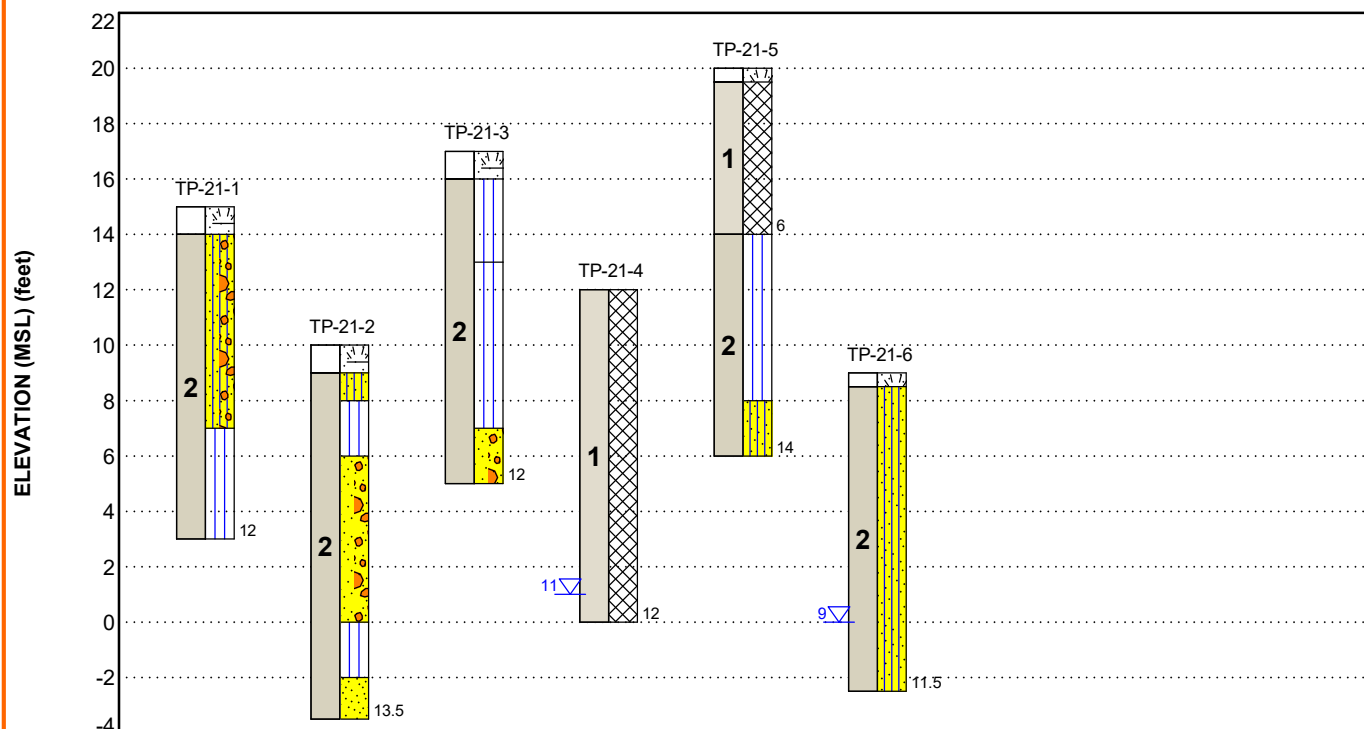
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LEGEND

Topsoil	Silty Sand	Fill
Silty Sand with Gravel	Poorly-graded Sand with Gravel	
Silt	Poorly-graded Sand	

▽ First Water Observation
▽ Second Water Observation

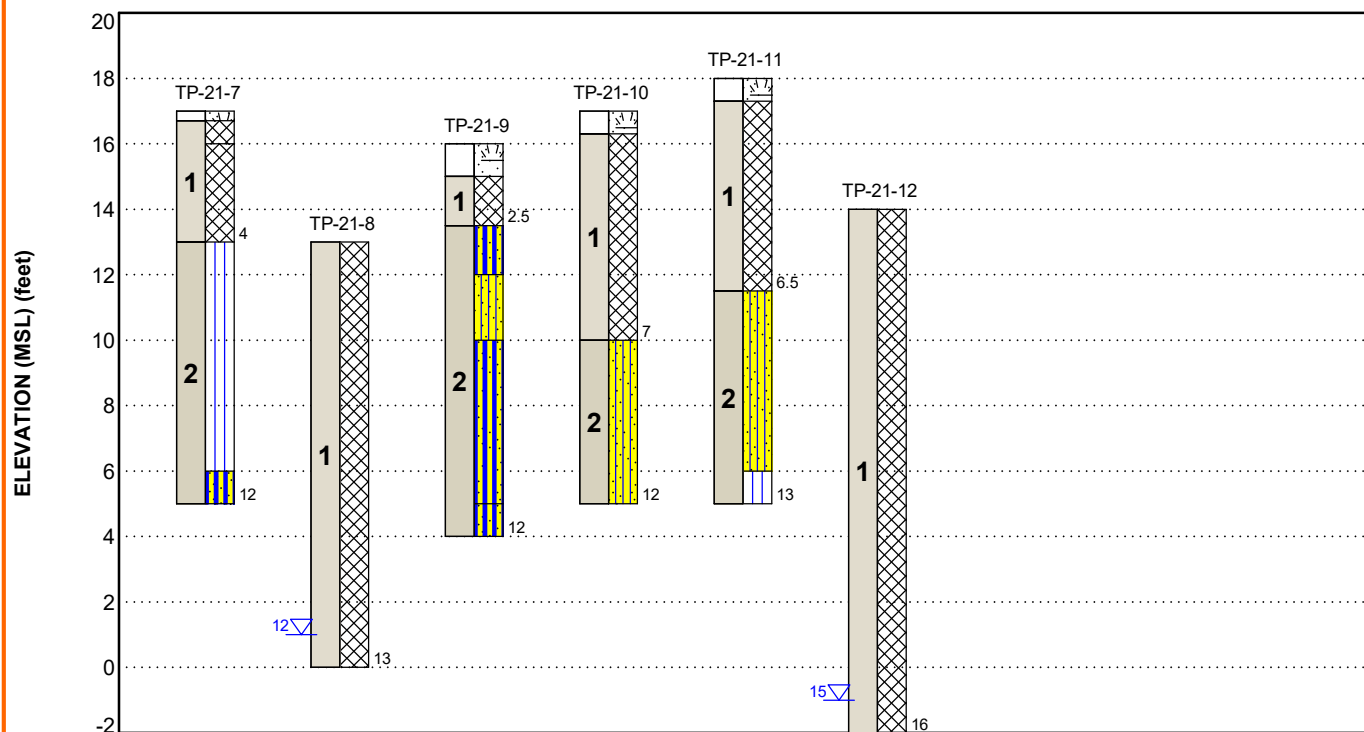
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LEGEND

	Topsoil		Sandy Silt
	Fill		Silty Sand
	Silt		

- First Water Observation
- Second Water Observation

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ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Boring Nos.	Boring Depth (feet)	Location
B-21-7 thru B-21-23, B-21-28	30.1 to 165.0	Proposed building footprints

Test Pit Nos.	Test Pit Depth (feet)	Location
TP-1 thru TP-12	11.5 to 16	Proposed building footprints and yard area

Test Location Layout and Elevations: The test boring and test pit locations were selected on the basis of the preliminary plant layout provided to us and were established in the field by Terracon using a hand-held GPS unit, taped measurements and/or visual reference from existing site features. The boreholes and test pits were located as planned, within the limitations of access, existing structures and/or utilities.

Ground surface elevation at each borehole/test pit location was estimated based upon our interpolation between topographic contours shown on the site plans provided to us. If more precise locations and/or elevations are desired, the as-completed test locations should be surveyed.

Subsurface Exploration Procedures: The test borings were made using a standard rotary drill rig equipped with hollow-stem augers, flush-joint casing and rock core tooling. As the borehole was advanced, the soils were generally sampled at intervals of five feet or less in accordance with the Standard Method for Penetration Test and Split-Barrel Sampling of Soils, ASTM D1586. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon is driven into the ground by a 140-pound automatic hammer falling 30-inches. The number of blows required to advance the sampling spoon the middle 12-inches of a normal 24-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the subsurface logs at the corresponding test depths.

A total of three undisturbed Shelby tube samples were taken (or attempted) in the silt and clay (or otherwise soft subgrade soils) as indicated on the boring logs.

Upon meeting refusal, the refusal material was typically cored to allow its characterization. The coring was completed in general accordance with ASTM D2113 – Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation using an NQ-size double tube core barrel.

The boreholes were backfilled with auger cuttings and/or sand upon their completion.

Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. The sampling depths, penetration distances, and other sampling information were recorded on the field boring logs.

The soil and rock core samples were placed in appropriate containers and taken to our soils laboratory for visual classification by a geologist or geotechnical engineer. The soils were described based on the material's color, texture and plasticity in general accord with the Unified Soil Classification System (USCS) as summarized herein. Rock classification was conducted using locally accepted practices for engineering purposes; petrographic analysis may reveal other rock types. Final individual boring logs were prepared, and they represent the Geotechnical Engineer's interpretation of the field logs and include modifications as appropriate based on observations and/or testing of the samples in our laboratory.

The test pits were excavated using a track excavator and observed by a geotechnical engineer from our office. The soils at the test pit locations were classified as the excavations were made and were logged as described above. Upon the completion of each test pit, the excavation was methodically backfilled in lifts, with each lift tamped with the excavator bucket.

The subsurface logs for the test borings and test pits are presented herein, along with a summary sheet and key which explains the terms and symbols used in their preparation.

Laboratory Testing

Selected recovered samples from the test borings were submitted for laboratory testing as part of the subsurface investigation, to confirm the visual classifications and to provide quantitative index properties for use in the geotechnical evaluation. This testing was performed in general accordance with the following standard methods:

- ASTM D2216 - Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil - and Rock by Mass (35 samples tested)
- ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils (w/o hydrometer) (16 samples tested)
- ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils (w/ hydrometer) (8 samples tested)
- ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils (7 samples tested)
- ASTM D2974 - Standard Test Methods for Determining the Water (Moisture) Content, Ash Content, and Organic Material of Peat and Other Organic Soils (4 samples tested)

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- ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (4 samples tested)

SITE LOCATION AND EXPLORATION PLANS

Contents:

Site Location Plan

Exploration Plan

Note: All attachments are one page unless noted above

SITE LOCATION

Proposed Marmen Manufacturing Facility ■ Glenmont, NY
February 2022 ■ Terracon Project No. JB215020

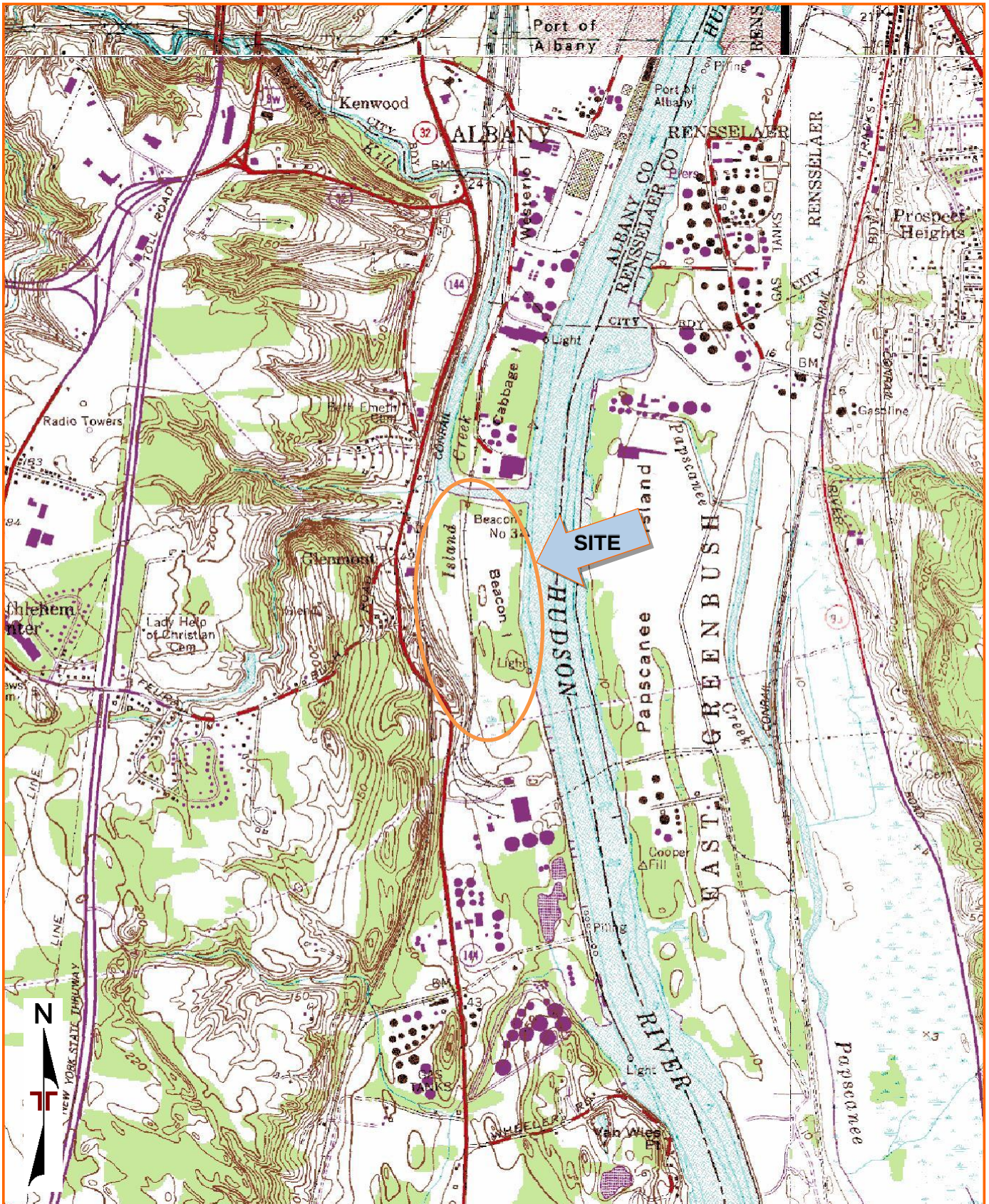
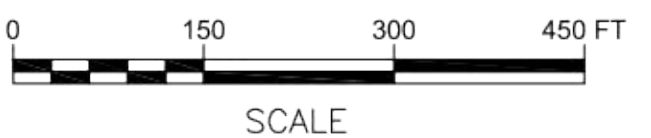


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS
NOT INTENDED FOR CONSTRUCTION PURPOSES

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: ALBANY, NY (1/1/1994), TROY SOUTH, NY (1/1/1980),
DELMAR, NY (1/1/1980) and EAST GREENBUSH, NY (1/1/1980).



ADA SPACES REQUIRED:
PER 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

REQUIRED (331 SPACE LOT): 9 SPACES
PROVIDED (331 SPACE LOT): 9 SPACES

<u>LEGEND</u>			
PROPERTY LINE	---	PROPOSED BUILDING FOOTPRINT	
BUILDING SETBACK	- - - - -	MATERIAL STORAGE AREAS	
EXISTING RAIL LINE		WETLAND IMPACT AREAS	
EXISTING TREE LINE	~~~~~	WHARF DREDGING AREA	

EXPLORATION RESULTS

Contents:

Test Boring and Test Pit Logs (47 pages)

Laboratory Test Results (26 pages)

Note: All attachments are one page unless noted above

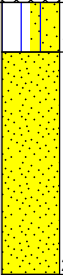
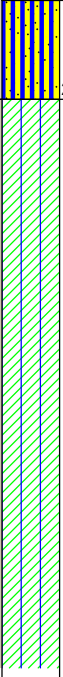
BORING LOG NO. B-21-7

Page 1 of 2

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6070° Longitude: -73.7673° Approximate Surface Elev.: 8 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		FILL - COAL ASH , dark gray, moist to wet, very loose 10.0 -2+/-	5		X	18	1-1-1-1 N=2		
					X	22	1-1/12"-1 N=1		
					X	21	WH/24"		
					X	24	WH/24"		99.4
					X	24	WH/24"		
2		SILT WITH SAND (ML) , seams of organics and fine to medium sand, gray to brown, wet, very soft 12.0 -4+/- POORLY GRADED SAND (SP) , occasional gray silty sand seams, fine to coarse grained, brown, wet, very loose to loose Grades with trace gravel 21.0 -13+/-	10		X	22	WH/24"		
					X	22	WH/12"-2-4 N=2		
					X	19	2-3-2-3 N=5		
					X	19	WH/12"-3-2 N=3		
					X	22	WH/12"-4-3 N=4		
3		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft to soft Grades to varved silt and clay from about 30-35' 25.0 -17+/-	25		X	24	WH/24"		
					X	22	WH/24"		
					X	24	WH/24"		
					X	24	WH/24"		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 80', NQ core barrel to 85'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Logged by: JCH
WH = Weight of Hammer
WR = Weight of Rods

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201

Albany, NY

Page 702 of 831

Boring Started: 06-28-2021

Boring Completed: 06-28-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

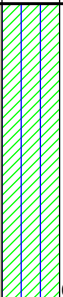
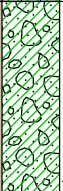
BORING LOG NO. B-21-7

Page 2 of 2

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6070° Longitude: -73.7673° Approximate Surface Elev.: 8 (Ft.) +/-	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
3		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft to soft (continued)	60.0	-52+/-	50		X	24	WR/24"		
					55		X	22	WR/18"-WH		
		SILT (ML) , trace clay, gray, wet, soft	65.0	-57+/-	60		X	6	3-2-2-2 N=4		26.4
		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft	67.1	-59+/-	65		X	24	WR/12"-WH/12"		
4		SILTY GRAVEL (GM) , frequent cobbles and boulders, gray, wet, dense, (GLACIAL TILL) Difficult rollerbit advancement noted at about 67.1'	75.0	-67+/-	70		X	5	47-17-16-17 N=33		
		WEATHERED SHALE	80.0	-72+/-	75			1	50/2"		
5		SHALE , gray, moderately weathered with occasional 1-2" thick completely weathered bands, very close to close fracture spacing with high angle joints and bedding, very poor RQD Graywacke layer from about 83-83.5' Frequent siltstone lenses from 83.5-85' Boring Terminated at 85 Feet	85.0	-77+/-	80			37	REC=62% RQD=8%		
					85						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 80', NQ core barrel to 85'

See [Exploration and Testing Procedures](#) for a
description of field and laboratory procedures
used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of
symbols and abbreviations.

Elevation interpolated from topographic site
plan

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as
water was used for borehole advancement

Terracon
30 Corporate Cir Ste 201
Albany, NY

Boring Started: 06-28-2021

Boring Completed: 06-28-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

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THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

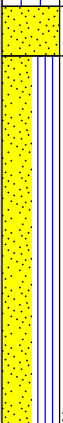
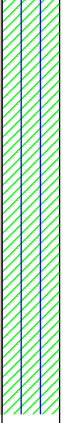
BORING LOG NO. B-21-8

Page 1 of 2

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6070° Longitude: -73.7667° Approximate Surface Elev.: 10 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		FILL - SILT WITH SAND (ML) , occasional clay seams, trace roots and organic seams, gray, moist, medium stiff 3.5 6.5+/-	5		X	20	2-4-4-4 N=8		22.8
					X	19	4-4-5-6 N=9		
		FILL - COAL ASH , fine to medium grained, dark gray, moist to wet, very loose to loose 10.0 0+/-			X	17	2-2-1-1 N=3		
					X	18	WH/12"-2-2 N=2		
			10		X	24	WH/24"		
		SILT (ML) , little organics, gray, wet, very soft Grades to pieces of wood, gray to brown at 10.5' Grades to occasional fine to medium sand and clay seams 14.0 -4+/-			X	24	WH/24"	13.5	53.4
		POORLY GRADED SAND (SP) , trace silt, fine to medium grained, brown, wet, very loose 16.0 -6+/-	15		X	18	WH/12"-2-2 N=2		
		POORLY GRADED SAND WITH SILT (SP-SM) , fine to medium grained, brown, wet, loose			X	24	2-2-2-2 N=4		
2			20		X	24	WH-2-2-2 N=4		
			25		X	22	2-3-4-5 N=7		26.8
		31.0 Grades to trace gravel -21+/-	30		X	20	2-3-6-4 N=9		
		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft to stiff	35		X	24	WH/24"		
3			40		X	24	WH/24"		
			45		X	24	WH/24"		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 84', NQ core barrel to 89'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

Logged by: JCH
WH = Weight of Hammer
WR = Weight of Rods

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon
30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 07-07-2021

Boring Completed: 07-09-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

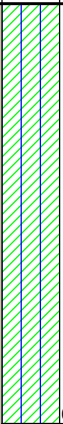
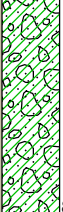
BORING LOG NO. B-21-8

Page 2 of 2

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6070° Longitude: -73.7667° Approximate Surface Elev.: 10 (Ft.) +/-	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
3		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft to stiff (continued) Grades to banded silt and clay	65.0	-55+/-	50		X 24		WH/24"		
					55		X 24		WR/12"-WH/12"		
					60		X 24		WR/24"		
					65		X 24		WR/12"-5-5 N=5		
					70		X 7		5-5-7-7 N=12		
					75		X 22		WH-7-16-17 N=23		
4		CLAYEY GRAVEL WITH SAND (GC) , gray, wet, medium dense to dense, (GLACIAL TILL)	84.0	-74+/-	80		X 19		6-11-22-26 N=33		
5		SHALE , gray, occasional quartz veins, slightly weathered, weak, close to moderate fracture spacing with high angle joints and fractures, poor RQD	89.0	-79+/-	85			58	REC=97% RQD= 47%		
		Boring Terminated at 89 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 84', NQ core barrel to 89'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 07-07-2021

Boring Completed: 07-09-2021

Drill Rig: Diedrich D-50

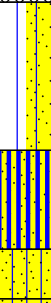
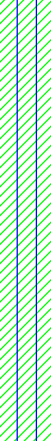
Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

Page 1 of 2

**CLIENT: McFarland Johnson
Saratoga Springs, NY**

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6064° Longitude: -73.7671° Approximate Surface Elev.: 9 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.2 TOPSOIL 9+/-				4	WH/24"		
		FILL - COAL ASH , dark gray, moist to wet, very loose			22	WH/24"			
		Little organics noted	5		1	WH/24"			
		8.0 1+/-			19	WH/24"			
2		SILT WITH SAND (ML) , little organics, gray to brown, wet, very soft				24	WH/24"		
		Fine to medium grained sand lenses from about 10 to 14'	10		22	WH/24"			
		14.0 -5+/-			24	WH/24"			
		SANDY SILT (ML) , with clay, trace organics, gray to brown, wet, very soft	15		19	WH/24"			
		Grades to trace gravel			24	WH/24"			
		18.0 -9+/-							
2		SILTY SAND (SM) , trace gravel, fine to medium grained, gray to brown, wet, very loose	20			18	WH/18"-2		
		SILTY SAND (SM) , with clay partings (approx. 1/8" thick), fine grained, brown, wet, very loose			21	2-1-1/12" N=1			
		25.0 -16+/-							
		POORLY GRADED SAND WITH GRAVEL (SP) , trace silt, fine to coarse grained, brown, wet, loose	25		21	4-5-4-5 N=9			
3		30.0 -21+/-							
		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft	30			24	WH/24"		
			35			24	WH/24"		
			40			22	WH/24"		
			45			24	WH/24"		

Hammer Type: Automatic

Project No.: JB215020

BORING LOG NO. B-21-9

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PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6064° Longitude: -73.7671° Approximate Surface Elev.: 9 (Ft.) +/-	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft (<i>continued</i>)			50		X	24	WR/12"-WH/12"		
					55		X	24	WR/18"-WH		
3		SILT (ML) , occasional clay bands, gray, wet, very soft to medium stiff	60.0	-51+/-	60		X	24	6-4-3-1 N=7		
					65		X	24	WH/12"-1-1 N=1		
		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft	70.0	-61+/-	70		X	24	WH/24"		
4		CLAYEY GRAVEL WITH SAND (GC) , occasional cobbles and boulders, gray, wet, very dense, (GLACIAL TILL)	75.0	-66+/-	75		X	4	50/4"		
5		SANDSTONE , gray, slightly weathered, medium strong, moderate fracture spacing with high angle joints and fractures, fair RQD	80.0	-71+/-	80			42	REC=88% RQD=58%		
		SHALE , with quartz veins, gray, slightly weathered, weak rock, very close to close fracture spacing with high angle joints and fractures, fair RQD	82.0	-73+/-							
		Boring Terminated at 82 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 78', NQ core barrel to 82'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 07-29-2021

Boring Completed: 07-29-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

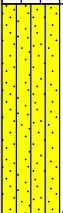
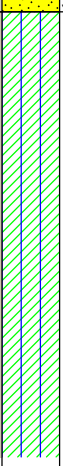
BORING LOG NO. B-21-10

Page 1 of 2

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6057° Longitude: -73.7668° Approximate Surface Elev.: 11 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist to wet, very loose Trace rootlets noted Little organics noted 12.0 -1+/-	5		X	18	1-1-2-1 N=3		
					X	12	1/12"-1/12" N=1		
					X	5	WH/24"		31.7
					X	2	WH/24"		
			10		X	22	WH/24"		
					X	24	WH/24"	8.2	46.7
		SILT (ML) , little organics, occasional sand lenses, brown, wet, very soft Aquatic shells encountered at about 13' 16.0 -5+/-	15		X	24	WH/24"		
					X	18	WH/18"-1		
		SILTY SAND (SM) , trace organics, fine to medium grained, gray to brown, wet, loose 25.0 -14+/-	20		X	24	1-2-2-3 N=4		34.9
2					X	21	2-2-2-2 N=4		
		POORLY GRADED SAND (SP) , trace gravel, fine to medium grained, brown, loose 30.0 -19+/-	25		X	18	3-4-4-3 N=8		
		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft	30		X	24	WH/24"		
3			35						
			40		X	24	WH/24"		
			45						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 82", NQ core barrel to 87"

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

Logged by: JCH
WH = Weight of Hammer
WR = Weight of Rods

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 08-25-2021

Drill Rig: Diedrich D-50

Project No.: JB215020

Boring Completed: 08-25-2021

Driller: S. Morey

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-10

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PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6057° Longitude: -73.7668° Approximate Surface Elev.: 11 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft (<i>continued</i>) Grades to banded silt and clay	50						
			55						
		60.0 -49+/-	60						
		SILT (ML) , occasional clay bands, gray, wet, very soft to medium stiff	65						
			70						
			75						
		80.0 -69+/-	80						
		PROBABLE WEATHERED ROCK	82.0 -71+/-						
		SHALE , frequent siltstone lenses and occasional quartz veins, slightly weathered (highly weathered 82 to 82.4' and 85.2 to 85.8'), weak rock, close to moderate fracture spacing with high angle joints, fair RQD	85						
		87.0 -76+/-							
		Boring Terminated at 87 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 82', NQ core barrel to 87'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

Page 709 of 831

Boring Started: 08-25-2021

Boring Completed: 08-25-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

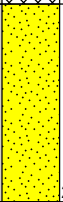
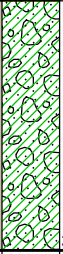
BORING LOG NO. B-21-11

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6052° Longitude: -73.7676° Approximate Surface Elev.: 11 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist to wet, very loose Little organics noted 12.0 -1+/-	5		X	1	WH/24"		
					X	1	WH/24"		
					X	22	WH/24"		
					X	24	WH/24"		
					X	24	WH/24"		
			10		X	22	WH/24"		
					X	21	WH/12"-2-2 N=2		
					X	17	WH-2-1-1 N=3		
					X	19	2-2-1-2 N=3		
2		POORLY GRADED SAND (SP) , trace silt seams and trace organics, fine to medium grained, gray to brown, wet, very loose 20.0 -9+/-	15						
			20		X	7	29-50/2"		
4		SILTY SAND WITH GRAVEL (SM) , occasional cobbles and boulders, gray, wet, very dense, (GLACIAL TILL) 30.1 -19+/-	25			1	50/1"		
			30			1	50/1"		
		Sampler Refusal at 30.1 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 30'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Logged by: JCH
WH = Weight of Hammer

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon
30 Corporate Cir Ste 201
Albany, NY

Boring Started: 09-01-2021

Boring Completed: 09-01-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

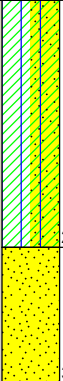
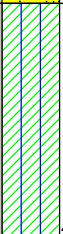
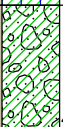
BORING LOG NO. B-21-12

Page 1 of 2

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6047° Longitude: -73.7670° Approximate Surface Elev.: 11 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist to wet, very loose Trace rootlets noted Little organics noted	5		X	18	1-1-2-1 N=3		
					X	21	1-1-1-1 N=2		
					X	24	1-1/12"-1 N=1		
					X	12	1/24"		
			10		X	19	WH/24"		
					X	19	WH/18"-2		
					X	10	WH/24"		
		15.0 -4+/-	15		X	24	WH/24"		
2		SILTY CLAY WITH SAND (CL-ML) , trace to little organics, gray to brown, wet, very soft	20		X	22	WH/24"		
		25.0 -14+/-	25		X	13	3-3-2-2 N=5		
		POORLY GRADED SAND (SP) , trace silt and gravel, fine to coarse grained, gray to brown, wet, loose	30		X	21	4-2-2-2 N=4		
3		BANDED SILT AND CLAY (CL-ML) , gray, wet, soft	35		X	24	4-2-1-1 N=3		
		40.0 -29+/-	40		X	2	50/2"		
4		CLAYEY SAND WITH GRAVEL (SC) , frequent cobbles and boulders, gray, wet, very dense, (GLACIAL TILL)	45						
5		SHALE , with frequent siltstone lenses and quartz veins, gray to black, slightly weathered, weak rock, very close fracture spacing with high angle joints/fractures, poor RQD	46.3 -35.5+/-			50	REC=83%		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 45', NQ core barrel to 50'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:
Logged by: JCH
WH = Weight of Hammer

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

 6.6' after 8-10' sample

Boring Started: 08-31-2021

Boring Completed: 08-31-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

Terracon

30 Corporate Cir Ste 201
Albany, NY

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THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-12

Page 2 of 2

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6047° Longitude: -73.7670° Approximate Surface Elev.: 11 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
5		DEPTH 50.0 GRAYWACKE , fine-grained, gray to black, slightly weathered, medium strong, moderate fracture spacing with high angle joints/fractures, poor RQD (<i>continued</i>) Boring Terminated at 50 Feet ELEVATION (Ft.) -39+/-	50				RQD=38%		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 45', NQ core barrel to 50'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

 6.6' after 8-10' sample

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 08-31-2021

Boring Completed: 08-31-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

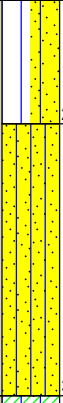
BORING LOG NO. B-21-13

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6039° Longitude: -73.7666° Approximate Surface Elev.: 12 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , trace rootlets, dark gray, moist to wet, very loose Little wood/organics noted 15.0	5		X	4	WH-1-2-1 N=3		
					X	22	1-1-1-1 N=2		
					X	21	WH/24"		
					X	24	WH/24"		
			10		X	24	WH/24"		
					X	21	1-1/12"-1 N=1		
			15		X	19	WH/24"		
2		SILT WITH SAND (ML) , little organics, gray to brown, wet, very soft 20.0 SILTY SAND (SM) , trace organics, fine to medium grained, gray, wet, very loose to loose Grades to trace gravel at about 25' 31.0	20		X	18	1-1/12"-1 N=1		
			25		X	17	WH-3-2-2 N=5		
3		BANDED SILT AND CLAY (CL-ML) , gray, wet, soft Boring Terminated at 32 Feet 32.0	30		X	21	4-3-2-2 N=5		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 30'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Logged by: JCH
WH = Weight of Hammer

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

Page 713 of 831

Boring Started: 09-07-2021

Boring Completed: 09-07-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. JB215020 PORT OF ALBANY MA.GPJ TERRACON.DATATEMPLATE.GDT 10/11/21

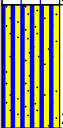
BORING LOG NO. B-21-14

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6035° Longitude: -73.7675° Approximate Surface Elev.: 13 (Ft.) +/-	DEPTH (Ft.)	ELEVATION (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , trace rootlets, dark gray, moist to wet, very loose	14.0	-1+/-		X	1	WH/18"-1		
						X	2	1-1-1-1 N=2		
			5			X	0	WH/18"-1		
						X	17	WH/24"		
			10			X	24	WH/24"		
						X	7	WH-1-1/12" N=1		
						X	18	WH/24"		
		SILT (ML) , with clay, trace sand, little organics, gray, wet, very soft	15			X	22	WH/24"		
2		SANDY SILT (ML) , trace organics, brown to gray, wet, very soft	20.0	-7+/-						
		SILTY SAND (SM) , fine to medium grained, gray, wet, loose	25.0	-12+/-		X	14	WH/18"-2		
			25							
						X	19	2-2-2-3 N=4		
3		BANDED SILT AND CLAY (CL-ML) , gray, wet, soft	30.0	-17+/-		X	24	3-2-2-3 N=4		
		Boring Terminated at 32 Feet	32.0	-19+/-						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 30'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:
Logged by: JCH
WH = Weight of Hammer

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

Page 714 of 831

Boring Started: 09-07-2021

Boring Completed: 09-07-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

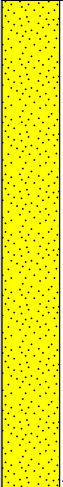
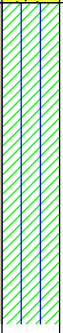
BORING LOG NO. B-21-15

Page 1 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6034° Longitude: -73.7660° Approximate Surface Elev.: 12 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist to wet, very loose 6.0 6+/-	5		X	10	WH/24"		
					X	14	WH/24"		
					X	13	WH-1-1/12" N=1		
		SILT WITH SAND (ML) , some organics, gray to brown, moist, very soft to soft 9.0 3+/-			X	22	1-2-2-2 N=4		
		SILTY SAND (SM) , some roots and organics, gray to brown, wet, very loose 12.0 0+/-	10	▽	X	24	WH/24"		
		SILT WITH SAND (ML) , some organics, dark brown, moist, very soft 15.0 -3+/-			X	18	WH/24"		
					X	22	WH/24"		
		POORLY GRADED SAND (SP) , trace silt bands, fine to medium grained, brown, wet, loose to medium dense Grades to grayish brown Grades to trace gravel 35.0 -23+/-	15		X	21	3-3-3-3 N=6		
2			20		X	18	2-3-2-2 N=5		
			25		X	19	4-4-6-8 N=10		
			30		X	19	4-3-4-6 N=7		
			35		X	24	WH/24"		
3		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft	40		X	24	WH/24"		
			45						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 99', NQ core barrel to 104'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

Logged by: JCH
WH = Weight of Hammer
WR = Weight of Rods

WATER LEVEL OBSERVATIONS

▽ 10.9' after weekend with drillhead at 35'

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 08-18-2021

Drill Rig: Diedrich D-50

Project No.: JB215020

Boring Completed: 08-18-2021

Driller: S. Morey

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-15

Page 2 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6034° Longitude: -73.7660° Approximate Surface Elev.: 12 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft (<i>continued</i>)	50		X	24	WR/12"-WH/12"		
			55						
		Grades to varved	60		X	24	WR/24"		
			65						
		Grades to banded	70		X	6	WR/24"		
			75						
		80.0	80		X	24	7-7-5-7 N=12		
		SILT (ML) , trace rootlets, occasional clay bands, gray, wet, soft to stiff	85						
			90		X	24	WH/12"-1-1 N=1		
			95						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 99', NQ core barrel to 104'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

WATER LEVEL OBSERVATIONS

10.9' after weekend with drillhead at 35'

Boring Started: 08-18-2021

Boring Completed: 08-18-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

Terracon

30 Corporate Cir Ste 201
Albany, NY

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THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-15

Page 3 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6034° Longitude: -73.7660° Approximate Surface Elev.: 12 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
3		DEPTH 97.0 ELEVATION (Ft.) -85+/-							
		WEATHERED ROCK 99.0 -87+/-							
5		SHALE and GRAYWACKE , alternating bands (approx. 6-12" thick) of shale and graywacke, gray, slightly weathered, weak to medium-strong, very close to moderate fracture spacing with high angle joints, poor RQD 104.0 -92+/-	100			0 48	50/0" REC=80% RQD=47%		
		Boring Terminated at 104 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 99', NQ core barrel to 104'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

10.9' after weekend with drillhead at 35'

Terracon

30 Corporate Cir Ste 201
Albany, NY

Page 717 of 831

Boring Started: 08-18-2021

Boring Completed: 08-18-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

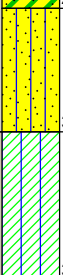
BORING LOG NO. B-21-16

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6021° Longitude: -73.7666° Approximate Surface Elev.: 14 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , trace rootlets, dark gray, moist to wet, very loose Little organics noted 19.0 -5+/-	5		X	19	1-1-2-1 N=3		
					X	18	1-1-1-1 N=2		
					X	22	1-1-1-1 N=2		
					X	24	WH/12"-1-1 N=1		
			10		X	24	WH/24"		
					X	18	1-1/18"		
					X	13	WH/24"		
			15		X	22	WH/24"		
2		CLAYEY SAND (SC) , fine to coarse grained sand with clay bands, brown, wet, very loose 25.0 -11+/-	20		X	18	2-2-1-1 N=3		
		SILTY SAND (SM) , trace gravel, fine to medium grained, gray, wet, loose 30.0 -16+/-	25		X	19	2-3-3-4 N=6		
3		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft 36.0 -22+/-	30		X	24	WH/24"		
			35			0			
						15			
		Boring Terminated at 36 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 32'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Logged by: JCH
WH = Weight of Hammer

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 09-08-2021

Boring Completed: 09-08-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

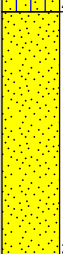
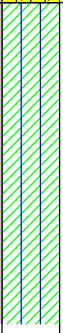
BORING LOG NO. B-21-17

Page 1 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6024° Longitude: -73.7657° Approximate Surface Elev.: 13 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist to wet, very loose to loose 12.5 0.5+/-	5		X	0	2-3-3-5 N=6		
					X	10	2-1-2-2 N=3		
					X	13	2-1-1-1 N=2		
					X	21	WH/24"		
			10		X	18	WR-WH/18"		
					X	22	WH/24"		34.6
		SILTY SAND (SM) , little organics, gray to brown, wet, very loose to medium dense Grades to trace gravel 20.0 -7+/-	15		X	22	WH/24"		
					X	24	WH/12"-4-2 N=4		48.3
					X	24	4-4-6-6 N=10		
2		POORLY GRADED SAND (SP) , fine to medium grained, brown, wet, loose Grades to fine to coarse, trace gravel 30.0 -17+/-	20		X	21	3-3-3-3 N=6		
			25		X	19	3-4-5-7 N=9		20.3
			30		X	19	4-4-4-4 N=8		
		SILTY SAND (SM) , gray to brown, wet, loose 35.0 -22+/-	35		X	24	WH/24"		
3		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft	40		X	24	WH/24"		30.5
			45						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 112', NQ core barrel thru boulder seam 90' to 105'. NQ core barrel to 122'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

Logged by: JCH
WH = Weight of Hammer
WR = Weight of Rods

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 08-11-2021

Drill Rig: Diedrich D-50

Project No.: JB215020

Boring Completed: 08-11-2021

Driller: S. Morey

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-17

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PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6024° Longitude: -73.7657° Approximate Surface Elev.: 13 (Ft.) +/-	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft (<i>continued</i>) Grades to banded			50		X	24	WR/12"-WH/12"		
					55						
					60		X	24	WH/24"		
					65						
3		70.0		-57+/-	70		X	24	WR/18"-WH		
		SILT (ML) , occasional clay bands, gray, wet, very soft to soft			75						
					80		X	24	4-1-1-12 N=2		17.5
					85						
		90.0		-77+/-	90			0	50/0"		
4		CLAYEY SAND WITH GRAVEL (SC) , occasional to frequent cobbles and boulders, gray Hard sampler refusal at about 90', cored through frequent cobble and boulder seams in the glacial till from about 90 to 105'			95			60	REC=100%		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 112', NQ core barrel thru boulder seam 90' to 105'. NQ core barrel to 122'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 08-11-2021

Drill Rig: Diedrich D-50

Project No.: JB215020

Boring Completed: 08-11-2021

Driller: S. Morey

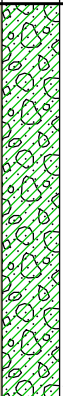
BORING LOG NO. B-21-17

Page 3 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6024° Longitude: -73.7657° Approximate Surface Elev.: 13 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
4		CLAYEY SAND WITH GRAVEL (SC) , occasional to frequent cobbles and boulders, gray (<i>continued</i>) 112.0 -99+/-	100			24	REC=40%		
			105			46	REC=76%		
5		HIGHLY WEATHERED SHALE SHALE , frequent siltstone lenses and graywacke bands, occasional quartz veins, gray, slightly to moderately weathered, weak rock to medium-strong, close to moderate fracture spacing with high angle joints, very poor to poor RQD Core Run #1: Very Poor RQD Core Run #2: Poor RQD, highly weathered from 117 to 117.5', graywacke with quartz seams from 117.5 to 119.5' 122.0 -109+/-	115			30	REC=50% RQD=13%		
			120			42	REC=70% RQD=32%		
		Boring Terminated at 122 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 112', NQ core barrel thru boulder seam 90' to 105'. NQ core barrel to 122'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon
30 Corporate Cir Ste 201
Albany, NY

Boring Started: 08-11-2021

Boring Completed: 08-11-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

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THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

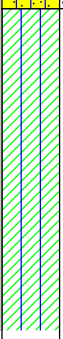
BORING LOG NO. B-21-18

Page 1 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6015° Longitude: -73.7657° Approximate Surface Elev.: 15 (Ft.) +/-	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist, very loose	8.5	6.5+/-	5		X	12	1-1-1-1 N=2		
							X	2	WH/24"		
							X	1	WH/24"		
							X	2	WH/24"		
		SILT WITH SAND (ML) , little organics, gray to brown, wet, very soft			10		X	22	WH/24"		
							X	22	WH/24"		44.8
		Pieces of wood observed from 12-14'					X	24	WH/24"	11.2	59.1
		SANDY SILT (ML) , little organics, occasional clay and sand lenses, brown, wet, very soft to soft	14.0	1+/-	15		X	6	1/12"-1/12" N=1		
							X	24	WH/12"-3-3 N=3		
2		SILT (ML) , little organics, brown, wet, very soft	19.0	-4+/-	20		X	24	WH/24"		
		SILTY SAND (SM) , little organics, gray, wet, very loose	21.0	-6+/-							
			25.0	-10+/-	25		X	17	3-3-4-3 N=7		
		POORLY GRADED SAND (SP) , trace silt and gravel, fine to medium grained, gray, wet, loose									
			30.0	-15+/-	30		X	21	3-3-4-4 N=7		
		SILTY SAND (SM) , fine to medium grained, brown, wet, loose									
			35.0	-20+/-	35		X	24	WR-WH/18"		35.5
3		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft			40						
					45		X	24	WR/18"-WH		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 123', NQ core barrel to 128'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:
Logged by: JCH
WH = Weight of Hammer
WR = Weight of Rods

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 08-04-2021

Boring Completed: 08-04-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-18

Page 2 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6015° Longitude: -73.7657° Approximate Surface Elev.: 15 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		<u>VARVED SILT AND CLAY (CL-ML)</u> , gray, wet, very soft (<i>continued</i>)	50						
		Grades to banded	55		X	24	WR/18"-WH		89.9
			60						
		65.0 -50+/-	65		X	24	WR/18"-WH		
		<u>SILT (ML)</u> , gray, wet, very soft	70						
			75		X	22	WR-WH/18"		
		<u>BANDED SILT AND CLAY (CL-ML)</u> , gray, wet, very soft	80						
			85		X	24	WH/24"		
			90						
		95.0 -80+/-	95		X		7-3-5-8		
		<u>SILT (ML)</u> , occasional clay bands, gray, wet, medium stiff							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 123', NQ core barrel to 128'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 08-04-2021

Boring Completed: 08-04-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-18

Page 3 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6015° Longitude: -73.7657° Approximate Surface Elev.: 15 (Ft.) +/-	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		SILT (ML) , occasional clay bands, gray, wet, medium stiff (<i>continued</i>)					X	24	N=8		
					100						
3		105.0 BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft - seam primarily silt noted		-90+/-	105		X	24	WR/24"		20.1
					110						
		115.0 CLAYEY SAND WITH GRAVEL (SC) , occasional cobbles and boulders, gray, moist, very dense		-100+/-	115		X	7	28-50/5"		
4					120						
		124.0 WEATHERED SHALE		-109+/-	125						
5		124.9 GRAYWACKE , occasional shale lenses, gray, slightly weathered, weak to medium strong, very close to moderate fracture spacing with high angle joints, poor RQD		-110+/-							
		128.0 Boring Terminated at 128 Feet		-113+/-							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 123', NQ core barrel to 128'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 08-04-2021

Boring Completed: 08-04-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-19

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6010° Longitude: -73.7649° Approximate Surface Elev.: 15 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist to wet, very loose Little organics noted Poor recovery 15-17', grades to occasional clayey seams 18.0 -3+/-	5 10 15		X	12	WH/12"-1/12"		
					X	14	WH/12"-1/12"		
					X	13	WH-1-1-1 N=2		
					X	14	1-1-1-1 N=2		
					X	14	1/12"-1/12" N=1		
					X	9	1-1/18"		
					X	10	WH-1/12"-1 N=1		
					X	1	WH/24"		
2		POORLY GRADED SAND (SP) , trace silt and gravel, fine to medium grained, gray to brown, wet, loose Grades to trace organics 32.0 -17+/-	20 25 30		X	12	3-2-2-2 N=4		
					X	12	2-2-4-4 N=6		
					X	12	3-3-4-3 N=7		
		Boring Terminated at 32 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 30'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Logged by: JCH
WH = Weight of Hammer

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon
30 Corporate Cir Ste 201
Albany, NY

Boring Started: 09-03-2021

Boring Completed: 09-03-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

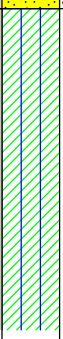
BORING LOG NO. B-21-20

Page 1 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6008° Longitude: -73.7658° Approximate Surface Elev.: 15 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist to wet, very loose Pieces of wood, trace organics from about 4 to 7'	5		X	4	1-1/12"-1 N=1		
					X	18	1/12"-1/12" N=1		
					X	7	WH/12"-1-2 N=1		
				▽	X	24	WH/24"		106.4
			10		X	0	WH/24"		
					X	22	WH/24"		
		12.0	3+/-		X	22	WH/24"		39.5
		SILT WITH SAND (ML) , little organics, gray to brown, wet, very soft to soft			X	24	WH/12"-3-2 N=3		
		16.0	-1+/-		X	24	WH/24"	3.7	44.7
		SANDY SILT (ML) , trace organics and roots, fine grained, brown, wet, very soft							
		20.0	-5+/-		X	21	3-4-3-4 N=7		
2		POORLY GRADED SAND WITH GRAVEL (SP) , trace silt, fine to medium grained, brown, wet, loose	20						
		25.0	-10+/-		X	21	WH-3-4-4 N=7		
		POORLY GRADED SAND (SP) , trace silt, fine to medium grained, brown, wet, loose to medium dense	25						
		Grades to fine to coarse grained, trace gravel	30		X	19	3-5-5-3 N=10		
		35.0	-20+/-		X	24	WH/24"		
3		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft	35						
		Fine sand seam, trace roots at about 41'	40		X	24	WH/24"		33.2
			45						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 120', NQ core barrel thru boulders to 123', roller bit to 125'.

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

Logged by: JCH
WH = Weight of Hammer
WR = Weight of Rods

WATER LEVEL OBSERVATIONS

▽ 7.6' after 6-8' sample

Boring Started: 07-20-2021

Boring Completed: 07-20-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

Terracon

30 Corporate Cir Ste 201

Albany, NY

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THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-20

Page 2 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6008° Longitude: -73.7658° Approximate Surface Elev.: 15 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft (<i>continued</i>)							
		Grades to varved silt and clay	50		X	24	WR/12"-WH/12"		
			55						
			60		X	24	WR/24"		
			65						
			70		X	24	WR/18"-WH		
			75						
		Grades to banded silt and clay	80		X	24	WR/12"-WH/12"		31.1
			85						
		Grades to varved silt and clay	90		X	24	WR/18"-WH		
			95						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 120', NQ core barrel thru boulders to 123', roller bit to 125'.

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

WATER LEVEL OBSERVATIONS

7.6' after 6-8' sample

Boring Started: 07-20-2021

Boring Completed: 07-20-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

Terracon

30 Corporate Cir Ste 201
Albany, NY

Page 727 of 831

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-20

Page 3 of 3

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6008° Longitude: -73.7658° Approximate Surface Elev.: 15 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft (<i>continued</i>)							
		100.0 -85+/-	100						
		SILT (ML) , occasional clay bands, gray, wet, very soft							
		110.0 -95+/-	110						
		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft							
		120.0 -105+/-	120						
		CLAYEY GRAVEL WITH SAND (SC) , occasional to frequent cobbles and boulders, gray, moist to wet, very dense, (GLACIAL TILL) Cored through frequent cobbles and boulders from 120 to 123'							
		126.4 -111.5+/-	125						
		Sampler Refusal at 126.4 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 120', NQ core barrel thru boulders to 123', roller bit to 125'.

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

WATER LEVEL OBSERVATIONS

7.6' after 6-8' sample

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 07-20-2021

Boring Completed: 07-20-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

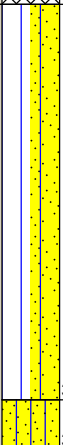
BORING LOG NO. B-21-21

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6002° Longitude: -73.7650° Approximate Surface Elev.: 14 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist to wet, very loose Frequent roots from about 4 to 6', occasional to trace roots 6 to 8' 14.0 0+/-	5 10		X	14	WH/24"		
					X	15	WH/24"		
					X	7	1/12"-1/12" N=1		
					X	24	1-1-1-1 N=2		
					X	24	2-1-2-1 N=3		
					X	12	1-1/12"-1 N=1		
					X	14	WH/24"		
2		SILT WITH SAND (ML) , trace clay seams, occasional to trace organics, brown to black, wet, very soft Little organics from 14-18' 30.0 -16+/- Few 0.5" thick organic bands noted 32.0 -18+/- SILTY SAND (SM) , trace organics, gray to brown, wet, very loose Boring Terminated at 32 Feet	15 20 25 30		X	24	WH/24"		
					X	18	WH/24"		
					X	24	WH/24"		
					X	22	WH/24"		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 30'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Logged by: JCH
WH = Weight of Hammer

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon
30 Corporate Cir Ste 201
Albany, NY

Boring Started: 09-02-2021

Boring Completed: 09-02-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

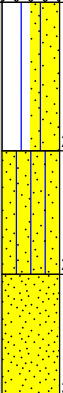
BORING LOG NO. B-21-22

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PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.5994° Longitude: -73.7650° Approximate Surface Elev.: 16 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, moist, very loose to loose Becomes wet Little organics noted Reed-like stalk noted 14.0 2+/-	5 10		X	12 18 14 24 18 6 10	WH/24" WH-2-2-3 N=4 2-2-2-3 N=4 2-2-2-2 N=4 1-1-1-1 N=2 1-1-1/12" N=1 WH/18"-1		
2		SILT WITH SAND (ML) , some organics and rootlets/roots, brown to gray, wet, very soft Trace aquatic shell fragments from 16 to 18' 20.0 -4+/- SILTY SAND (SM) , occasional organic silty seams, fine to medium grained, gray, wet, loose 25.0 -9+/- POORLY GRADED SAND (SP) , fine to medium grained, brown, wet, medium dense 30.0 -14+/-	15 20 25		X	10 24 14 12	WH/24" WH/24" WH-5-4-6 N=9 2-2-11-14 N=13		
3		VARVED SILT AND CLAY (CL-ML) , gray grading to brown, wet, stiff 32.0 -16+/- Boring Terminated at 32 Feet	30		X	24	4-6-5-7 N=11		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 30'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:
Logged by: JCH
WH = Weight of Hammer

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon
30 Corporate Cir Ste 201
Albany, NY

Boring Started: 09-03-2021

Boring Completed: 09-03-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

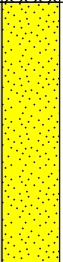
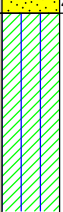
BORING LOG NO. B-21-23

Page 1 of 4

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.5997° Longitude: -73.7641° Approximate Surface Elev.: 16 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , trace roots, dark gray, moist, loose to medium dense Becomes wet Trace organics noted Trace pieces of wood 29.0 -13+/-	5 10 15 20 25 30 35 40 45		X	1 12 12 19 21 24 22 22 19 24 24 24	4-4-2-1 N=6 2-2-2-2 N=4 1-2-2-3 N=4 6-5-6-5 N=11 WH/24" WH/24" WH/24" WH/24" WR/24" WH/18"-1 3-5-5-4 N=10 3-3-3-4 N=6 WR/12"-WH/12" WR-WH/18"		89.2 22.1 30.0
2		POORLY GRADED SAND (SP) , fine to medium grained, brown, wet, loose to medium dense Piece of wood encountered at about 32' 40.0 -24+/-			X	21 19			
3		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft			X	24			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 160', NQ core barrel to 165'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

Logged by: JCH
WH = Weight of Hammer
WR = Weight of Rods

WATER LEVEL OBSERVATIONS

 21' after overnight with drillhead at ~90'

Boring Started: 07-10-2021

Boring Completed: 07-13-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

Terracon

30 Corporate Cir Ste 201
Albany, NY
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THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-23

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PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.5997° Longitude: -73.7641° Approximate Surface Elev.: 16 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
3		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft (<i>continued</i>)	50		X	24	WH/24"		
		Grades to banded silt and clay							
			55		X	24	WR/12"-WH/12"		
		Grades to varved silt and clay							
			60		X	24	WR-WH/18"		
		Grades to banded silt and clay							
			65		X	24	WR-WH/18"		
			70		X	24	WR/12"-WH/12"		
			75						
			80		X	24	WR/12"-WH/12"		
			85						
			90		X	24	WR-WH/18"		
			95						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 160', NQ core barrel to 165'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

WATER LEVEL OBSERVATIONS

21' after overnight with drillhead at ~90'

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 07-10-2021

Boring Completed: 07-13-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-23

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PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.5997° Longitude: -73.7641° Approximate Surface Elev.: 16 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft (<i>continued</i>)							
		Grades to varved silt and clay	100		X	24	WR/18"-WH		
			105						
		Grades to occasional fine sand partings, medium-stiff at 110-112' sample	110		X	24	5-3-3-7 N=6		20.6
			115						
		Grades to banded silt and clay	120		X	24	WR/24"		
			125						
		Grades to varved silt and clay	130		X	24	WH/24"		
			135						
			140		X	24	WR/24"		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 160', NQ core barrel to 165'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

WATER LEVEL OBSERVATIONS

 21' after overnight with drillhead at ~90'

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 07-10-2021

Boring Completed: 07-13-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

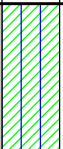
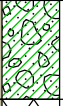
BORING LOG NO. B-21-23

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PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.5997° Longitude: -73.7641° Approximate Surface Elev.: 16 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		VARVED SILT AND CLAY (CL-ML) , gray, wet, very soft (<i>continued</i>)	145						
3		150.0 -134+/-	150		X	24	WR/24"		
		SILT (ML) , with occasional clay seams, gray, wet, very soft							
		155.0 -139+/-	155		X	15	40-50/5"		
4		SILTY SAND (SM) , trace gravel, fine grained, gray, wet, very dense, (GLACIAL TILL)							
		159.0 -143+/-							
		160.0 WEATHERED SHALE -144+/-	160			0	50/0"		
5		SHALE , with quartz veins, slightly weathered, weak rock, very close to close fracture spacing with high angle fractures, poor RQD				58	REC=96% RQD=45%		
		165.0 Sandstone and siltstone lenses from 164 to 165' -149+/-	165						
		Boring Terminated at 165 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 160', NQ core barrel to 165'

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

Notes:

WATER LEVEL OBSERVATIONS

 21' after overnight with drillhead at ~90'

Boring Started: 07-10-2021

Boring Completed: 07-13-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

Terracon

30 Corporate Cir Ste 201
Albany, NY

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THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON.DATATEMPLATE.GDT 10/11/21

BORING LOG NO. B-21-28

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PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6069° Longitude: -73.7649° Approximate Surface Elev.: 20 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		POSSIBLE FILL - SILT WITH SAND (ML) , some mottling, trace rootlets and gravel, occasional clayey seams, brown, moist, stiff 2.0 18+/-			X	12	2-4-5-7 N=9		
		SILTY SAND (SM) , trace rootlets and gravel, brown, moist, medium dense Grades to very moist 8.0 12+/-	5		X	14	5-6-7-10 N=13		
					X	19	21-10-9-9 N=19		
					X	19	6-5-5-7 N=10		
		SILTY SAND (SM) , occasional fine to medium grained sand seams, trace organics, gray, wet, very loose 10.0 10+/-	10		X	21	WH/18"-1		
		CLAYEY SAND (SC) , with wet, gray clay seams, fine to coarse grained, gray, wet, medium dense 14.0 6+/-			X	22	8-10-11-12 N=21		
					X	24	8-8-10-10 N=18		
		SILT (ML) , trace organics and clay, gray to brown, wet, very soft Brown clay seams from 16-25'	15		X	24	WH/24"		
					X	24	WH/24"		
			20		X	24	WH/24"		
3		POORLY GRADED SAND (SP) , trace silt, fine to medium grained, brown, wet, loose to medium dense Grades to fine to coarse sand 25.0 -5+/-	25		X	21	3-2-4-3 N=6		
			30		X	19	7-5-4-5 N=9		
			35		X	19	4-4-6-6 N=10		
		Grades to gray, trace gravel	40		X	24	4-6-5-5 N=11		
			45		X	18	6-7-7-4 N=14		
		POORLY GRADED SAND WITH SILT (SP-SM) , trace gravel, fine to medium grained, gray, wet, medium dense 45.0 -25+/-							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Tricone rollerbit to 85.2', NQ core barrel to 90.2'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Logged by: JCH
WH = Weight of Hammer
WR = Weight of Rods

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan.

WATER LEVEL OBSERVATIONS

Groundwater measurements not obtained as water was used for borehole advancement

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Boring Started: 07-01-2021

Boring Completed: 07-01-2021

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

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**CLIENT: McFarland Johnson
Saratoga Springs, NY**

MODEL LAYER	GRAPHIC LOG	LOCATION	See Exploration Plan	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		Latitude: 42.6069° Longitude: -73.7649°								
		Approximate Surface Elev.: 20 (Ft.) +/-								
		DEPTH	ELEVATION (Ft.)							
3		POORLY GRADED SAND WITH SILT (SP-SM) , trace gravel, fine to medium grained, gray, wet, medium dense (<i>continued</i>)		50						
		51.5	-31.5+/-		X		19	7-7-7-3 N=14		
		SILT (ML) , occasional fine to medium sand seams, trace gravel, gray, wet, stiff								
		55.0	-35+/-	55	X		24	WR-WH/18"		
		BANDED SILT AND CLAY (CL-ML) , gray, wet, very soft								
4				60	X		24	WR-WH/18"		
				65	X		24	WR/18"-WH		
				70	X		24	2-1/12"-1 N=1		
		Trace organics noted 75-77'		75	X		24	WR/18"-WH		
		80.0	-60+/-	80	X		22	21-16-14-24 N=30		
5		SILTY GRAVEL WITH SAND (GM) , gray, wet, dense, (GLACIAL TILL)								
		84.0	-64+/-							
		85.2	-65+/-	85			1	50/2"		
6		WEATHERED SHALE								
		SHALE , gray, occasional quartz veins, slightly weathered, weak rock, close fracture spacing with high angle joints and bedding, poor RQD Frequent siltstone seams from about 87-89'					56	REC=96% RQD=45%		
		90.2	-70+/-	90						
		Boring Terminated at 90.2 Feet								

Hammer Type: Automatic

Project No.: JB215020

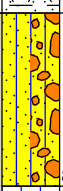
TEST PIT LOG NO. TP-21-1

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6070° Longitude: -73.7643° Approximate Surface Elev.: 15 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		1.0 TOPSOIL , dark brown, approx. 1' topsoil at ground surface 14+/-							
		SILTY SAND WITH GRAVEL (SM) , brown, moist							
2		8.0 CLAYEY SILT (ML) , gray, moist, (operator notes greater excavation resistance) 7+/-	5						
		12.0 Test Pit Terminated at 12 Feet 3+/-	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:
- logged by JSH

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

No measurable groundwater in test pit upon completion of excavation

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Test Pit Started: 09-16-2021

Test Pit Completed: 09-16-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

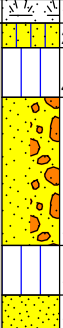
TEST PIT LOG NO. TP-21-2

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6062° Longitude: -73.7662° Approximate Surface Elev.: 10 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		1.0 TOPSOIL , dark brown, approx. 1' topsoil w/ roots at ground surface	9+/-						
		2.0 SILTY SAND (SM) , brown, moist	8+/-						
		4.0 CLAYEY SILT (ML) , mottled, gray, moist	6+/-						
2		POORLY GRADED SAND WITH GRAVEL (SP) , trace silt, brown, moist, occasional clay nodules noted	5						
		10.0 SILT (SM) , with organics, gray, wet, some roots, water seeps in from this layer, hole caves below this depth	0+/-						
		12.0 trace silt, fine to coarse grained, brown, very moist	-2+/-						
		13.5 Test Pit Terminated at 13.5 Feet	-3.5+/-						

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:
- logged by JSH

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

No measurable groundwater in test pit upon completion of excavation

Terracon
30 Corporate Cir Ste 201
Albany, NY

Test Pit Started: 09-17-2021

Test Pit Completed: 09-17-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

Project No.: JB215020

TEST PIT LOG NO. TP-21-3

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6057° Longitude: -73.7644° Approximate Surface Elev.: 17 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		1.0 TOPSOIL , dark brown, approx. 1' topsoil at ground surface 16+/-							
		CLAYEY SILT (ML) , with sand, mottled, brown, moist							
		4.0 - water seeps in at brown/gray interface 13+/-	5						
2		CLAYEY SILT (ML) , with sand, trace gravel, organics, gray, moist, (operator notes greater excavation resistance) - grades lean clay							19.6
		10.0 7+/-	10						
		12.0 POORLY GRADED SAND WITH GRAVEL (SP) , trace silt, fine to medium grained, brown, very moist, occasional clay nodules noted up to 3-4 inches in size 5+/-							
		Test Pit Terminated at 12 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:
- logged by JSH

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

No measurable groundwater in test pit upon completion of excavation

Terracon
30 Corporate Cir Ste 201
Albany, NY

Test Pit Started: 09-16-2021

Test Pit Completed: 09-16-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

Project No.: JB215020

Page 1 of 1

**CLIENT: McFarland Johnson
Saratoga Springs, NY**

[illegible]

Project No.: JB215020

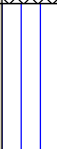
TEST PIT LOG NO. TP-21-5

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6045° Longitude: -73.7646° Approximate Surface Elev.: 20 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.5' TOPSOIL , dark brown, approx. 6" topsoil at ground surface FILL - SILTY SAND WITH GRAVEL (SM) , little organics, gray, moist, (fuel oil odor noted) - grades poorly graded sand with gravel	19.5+/- 5 14+/-						
2		CLAYEY SILT (ML) , with sand, trace gravel, organics, gray, moist, (operator notes greater excavation resistance)	12.0 8+/-						
		SILTY SAND (SM) , gray-brown, very moist	14.0 6+/-						
Test Pit Terminated at 14 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:
- logged by JSH

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

No measurable groundwater in test pit upon completion of excavation

Terracon
30 Corporate Cir Ste 201
Albany, NY

Test Pit Started: 09-16-2021

Test Pit Completed: 09-16-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

Project No.: JB215020

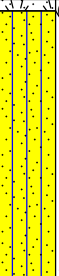
TEST PIT LOG NO. TP-21-6

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6040° Longitude: -73.7636° Approximate Surface Elev.: 9 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH 0.5 ELEVATION (Ft.) 8.5+/-							
2		TOPSOIL, dark brown, approx. 6" topsoil at ground surface SILTY SAND (SM), brown, moist, some roots in upper 3' - grades poorly grades sand with silt (SP-SM) - becomes wet, caves excessively below this depth - some rootlets, little woody organics noted 6' - 7' 11.5 -2.5+/-	5 10						
		Test Pit Terminated at 11.5 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:
- logged by JSH

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

 At completion of test pit

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Test Pit Started: 09-16-2021

Test Pit Completed: 09-16-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

TEST PIT LOG NO. TP-21-7

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6035° Longitude: -73.7648° Approximate Surface Elev.: 17 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
1		0.3' TOPSOIL , dark brown, approx. 3" topsoil at ground surface 16.5+/-	0.3						
		FILL - COAL ASH 16+/-	1.0						
		FILL - LEAN CLAY , with rootlets, blocky texture, gray, moist 13+/-	4.0						18.9
		CLAYEY SILT (ML) , with sand, trace gravel, organics, gray, moist							
2		11.0 12.0 SANDY SILT (ML) , brown, moist 5+/-	11.0 12.0						
		Test Pit Terminated at 12 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

Notes:
- logged by JSH

WATER LEVEL OBSERVATIONS

No measurable groundwater in test pit upon completion of excavation

Terracon

30 Corporate Cir Ste 201
Albany, NY

Page 743 of 831

Test Pit Started: 09-16-2021

Test Pit Completed: 09-16-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

Page 1 of 1

**CLIENT: McFarland Johnson
Saratoga Springs, NY**

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6028° Longitude: -73.7669° Approximate Surface Elev.: 13 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, very moist, nil topsoil at ground surface, some roots in upper 1' - hole caves below 2' - becomes wet - hole caves excessively below 11', ash becomes saturated w/ pudding-like consistency 13.0 0+/-							63.9
		Test Pit Terminated at 13 Feet							

Project No.: JB215020

TEST PIT LOG NO. TP-21-9

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6025° Longitude: -73.7642° Approximate Surface Elev.: 16 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH ELEVATION (Ft.)							
		1.0 TOPSOIL , dark brown, approx. 1' topsoil at ground surface	15+/-						
1		2.5 FILL - SILTY SAND WITH GRAVEL , brown-gray, moist, piece concrete noted	13.5+/-						
		4.0 SANDY SILT (ML) , with clay, mottled, gray, moist	12+/-						
		6.0 SILTY SAND (SM) , gray, moist	10+/-						
2		SANDY SILT (ML) , with clay, rootlets, brown-gray, moist - operator notes easier excavtion effort below 8'							
		11.0	5+/-						
		12.0 SANDY SILT (ML) , trace organics, brown, very moist	4+/-						
		Test Pit Terminated at 12 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:
- logged by JSH

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

No measurable groundwater in test pit upon completion of excavation

Terracon
30 Corporate Cir Ste 201
Albany, NY

Test Pit Started: 09-16-2021

Test Pit Completed: 09-16-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

Project No.: JB215020

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THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

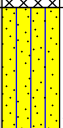
TEST PIT LOG NO. TP-21-10

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6016° Longitude: -73.7636° Approximate Surface Elev.: 17 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH 0.7 ELEVATION (Ft.) 16.5+/-							
1		TOPSOIL , dark brown, approx. 8" topsoil at ground surface FILL - SILTY SAND WITH GRAVEL , brown-gray, moist, occasional angular cobbles, clayey lumps, little brick, slag, wood noted	5						
2		SILTY SAND (SM) , brown, moist	10						
		12.0 Test Pit Terminated at 12 Feet	5+/-						

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:
- logged by JSH

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

No measurable groundwater in test pit upon completion of excavation

Terracon

30 Corporate Cir Ste 201
Albany, NY

Page 746 of 831

Test Pit Started: 09-16-2021

Test Pit Completed: 09-16-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

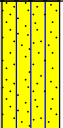
TEST PIT LOG NO. TP-21-11

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.6005° Longitude: -73.7634° Approximate Surface Elev.: 18 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
		DEPTH 0.7 TOPSOIL , dark brown, approx. 8" topsoil at ground surface ELEVATION (Ft.) 17.5+/-							
1		FILL - SILTY SAND WITH GRAVEL , brown, moist, trace plastic, metal, cinders - becomes gray, w/ little wood, stalky organics, cobbles 6.5 11.5+/-	5						
2		SILTY SAND (SM) , trace organics, gray, moist, occasional clayey lumps noted 12.0 6+/-	10						
		SILT (ML) , with sand, bown-gray, moist 13.0 5+/- Test Pit Terminated at 13 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:
- logged by JSH

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

WATER LEVEL OBSERVATIONS

No measurable groundwater in test pit upon completion of excavation

Terracon
30 Corporate Cir Ste 201
Albany, NY

Test Pit Started: 09-16-2021

Test Pit Completed: 09-16-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

Project No.: JB215020

TEST PIT LOG NO. TP-21-12

Page 1 of 1

PROJECT: Proposed Marmen Manufacturing Facility

CLIENT: McFarland Johnson
Saratoga Springs, NY

SITE: River Road
Glenmont, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 42.5999° Longitude: -73.7648° Approximate Surface Elev.: 14 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)
1		FILL - COAL ASH , dark gray, very moist, nil topsoil at ground surface, some reedy vegetation in upper few feet - becomes wet, hole caves below 10' - some reedy vegetation, swampy odor noted - ash becomes saturated w/ pudding-like consistency 16.0 -2+/-	5 10 15						70.8
		Test Pit Terminated at 16 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
3' wide excavator bucket

Abandonment Method:
Test pit backfilled in lifts, tamped with excavator bucket

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevation interpolated from topographic site plan

Notes:

- logged by JSH

WATER LEVEL OBSERVATIONS

 At completion of test pit (and rising)

Terracon

30 Corporate Cir Ste 201
Albany, NY

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Test Pit Started: 09-17-2021

Test Pit Completed: 09-17-2021

Excavator: Kobelco SK270SR

Operator: Peter K. Frueh Excavating

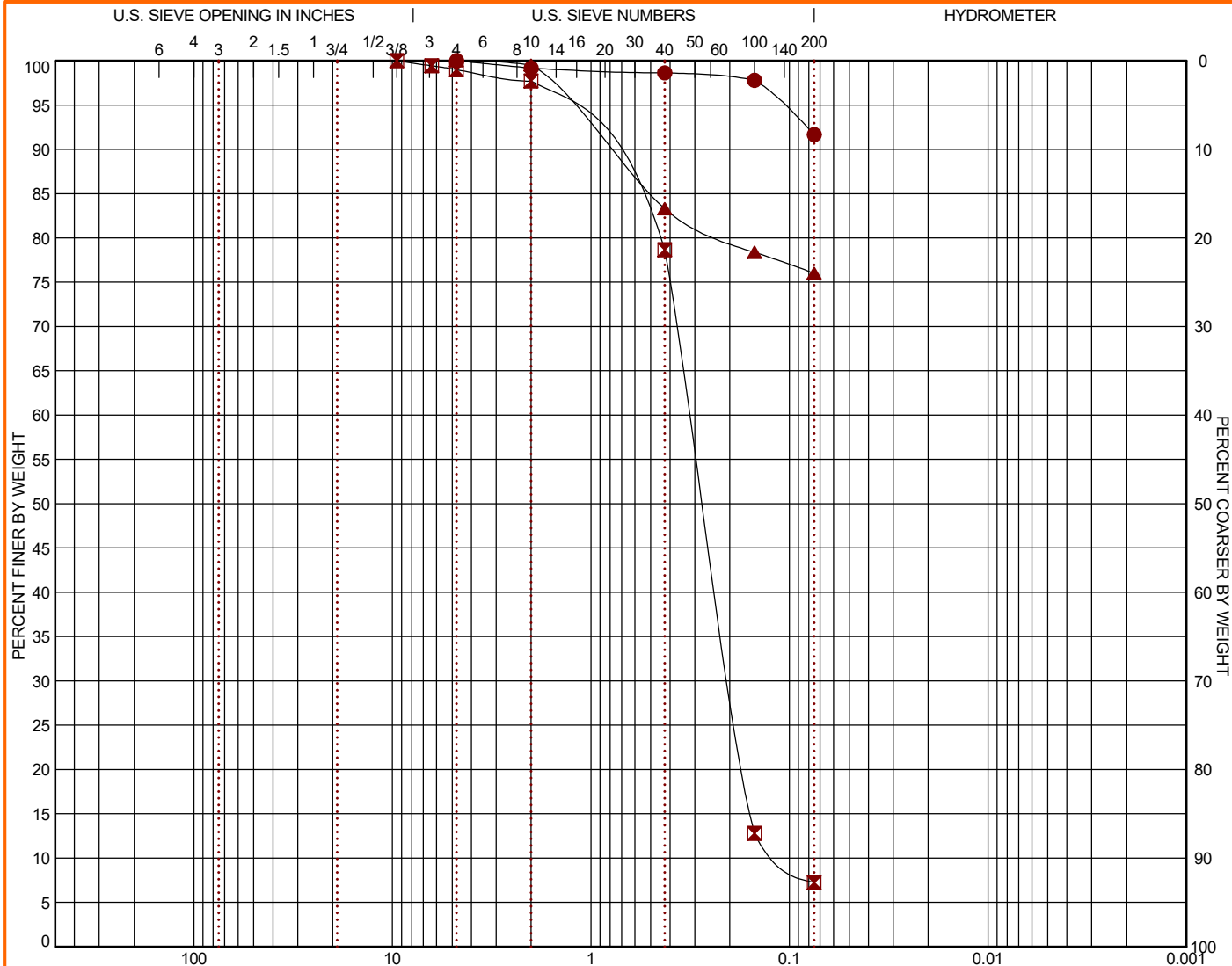
Project No.: JB215020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/11/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 9/16/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-21-7	6 - 8	0.0	0.0	8.4		91.6		ML
☒ B-21-8	25 - 27	0.0	1.0	91.7		7.3		SP-SM
▲ B-21-10	4 - 6	0.0	0.0	24.0		76.0		ML

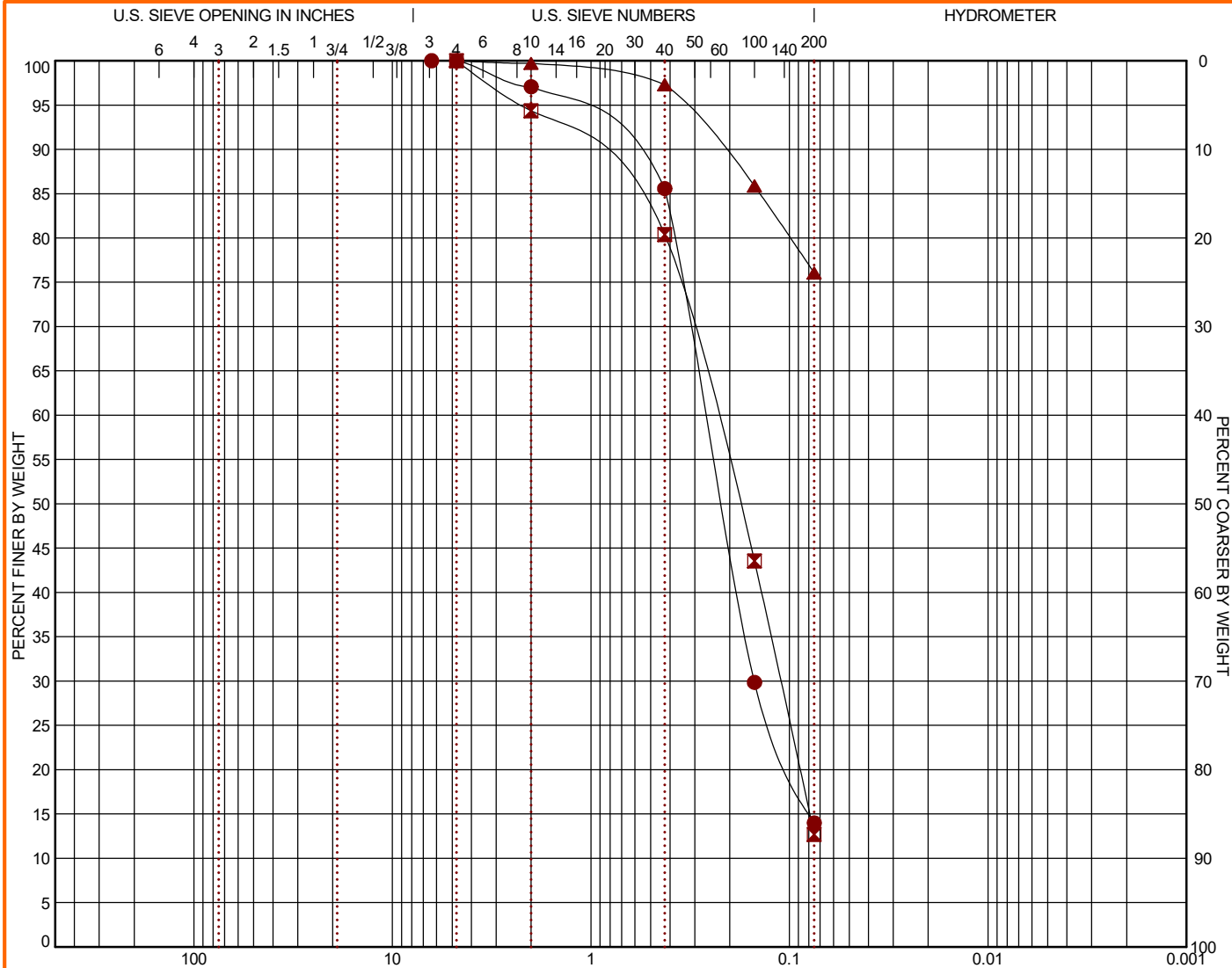
GRAIN SIZE				SOIL DESCRIPTION					
	●	☒	▲	Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
D ₆₀		0.316		#4	100.0	3/8"	100.0	#4	100.0
D ₃₀		0.197		#10	99.15	#4	99.43	#10	99.51
D ₁₀		0.106		#40	98.63	#10	98.98	#40	83.3
				#100	97.78	#40	97.7	#100	78.37
				#200	91.65	#100	78.68	#200	76.01
						#200	12.78		
							7.25		
COEFFICIENTS				REMARKS					
	●	☒	▲						
C _c		1.16							
C _u		2.99							

PROJECT: Proposed Marmen Manufacturing Facility	30 Corporate Cir Ste 201 Albany, NY 12242 Page 749 of 831	PROJECT NUMBER: JB215020
SITE: River Road Glenmont, NY		CLIENT: McFarland Johnson Saratoga Springs, NY

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 9/16/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-21-10	16 - 18	0.0	0.0	86.0		14.0		SM
☒ B-21-17	14 - 16	0.0	0.0	87.3		12.7		SM
▲ B-21-20	6 - 8	0.0	0.0	23.9		76.1		ML

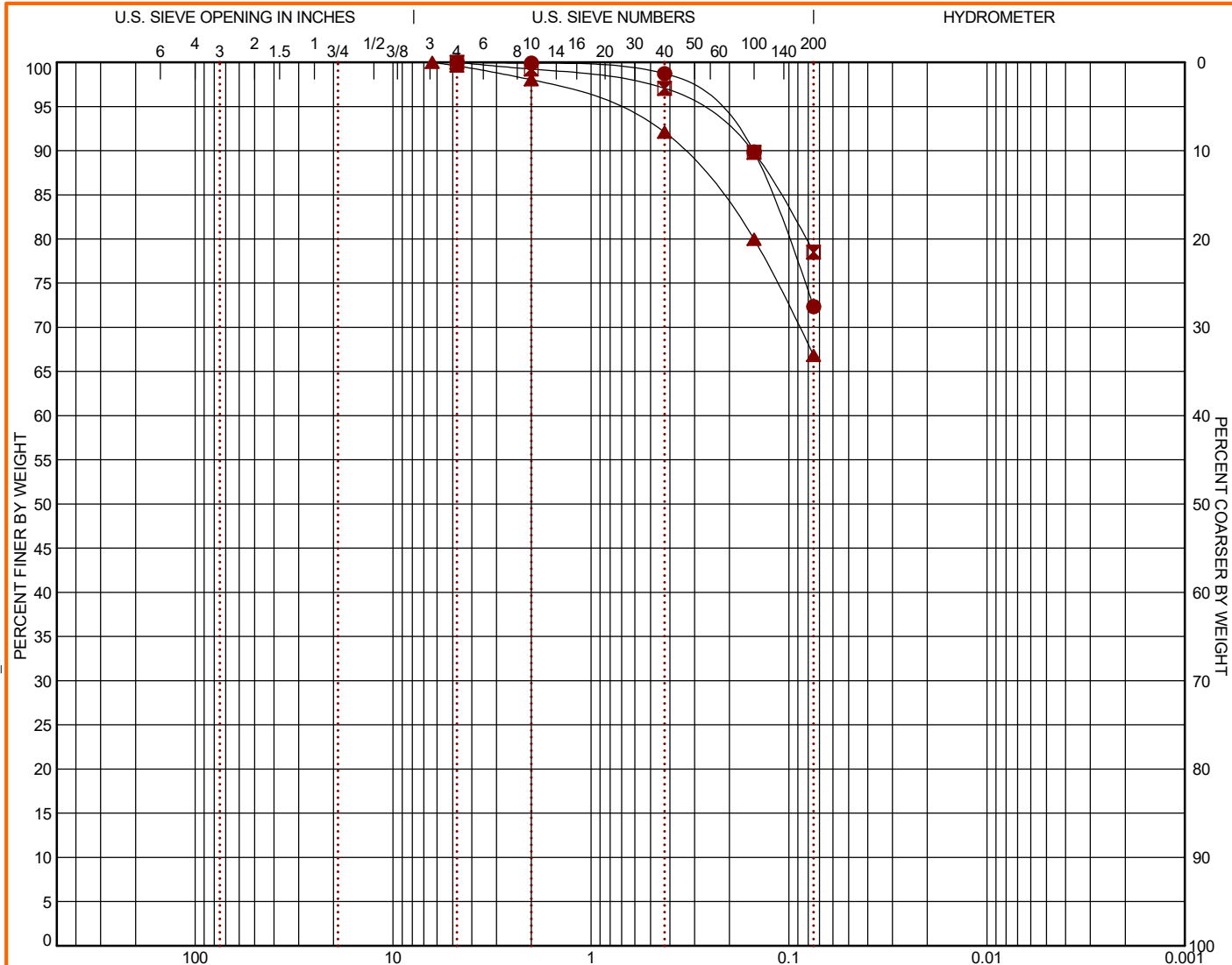
GRAIN SIZE				SOIL DESCRIPTION					
	●	☒	▲	Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
D ₆₀	0.264	0.239		#4	100.0	#4	100.0	#4	100.0
D ₃₀	0.15	0.111		#10	99.99	#10	94.35	#10	99.7
D ₁₀				#40	97.06	#40	80.38	#40	97.29
				#100	85.57	#100	43.57	#100	85.87
				#200	29.86	#200	12.69	#200	76.05
					13.99				
COEFFICIENTS				REMARKS					
C _c	●	☒	▲						
C _u									

PROJECT: Proposed Marmen Manufacturing Facility	30 Corporate Cir Ste 201 Albany, NY 12205 Page 750 of 831	PROJECT NUMBER: JB215020
SITE: River Road Glenmont, NY		CLIENT: McFarland Johnson Saratoga Springs, NY

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 9/16/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
S-1	1 - 1.1	0.0	0.0	27.7		72.3		ML
S-2	1 - 3	0.0	0.0	21.5		78.5		ML
S-3	1 - 3	0.0	0.4	32.8		66.8		ML

GRAIN SIZE				SOIL DESCRIPTION			
	●	■	▲	Sieve	% Finer	Sieve	% Finer
D ₆₀				#4	100.0	#4	100.0
D ₃₀				#10	99.9	#10	99.23
D ₁₀				#40	98.72	#40	97.06
				#100	89.86	#100	89.8
				#200	72.34	#200	78.52
						#4	100.0
						#10	99.59
						#40	98.02
						#100	92.1
						#200	79.97
							66.83
COEFFICIENTS				REMARKS			
	●	■	▲				
C _c							
C _u							

● SILT with SAND (ML)
 ■ SILT with SAND (ML) (coal ash)
 ▲ SANDY SILT (ML)

PROJECT: Proposed Marmen Manufacturing Facility

SITE: River Road
Glenmont, NY

Terracon
 30 Corporate Cir Ste 201
 Albany, NY 12242
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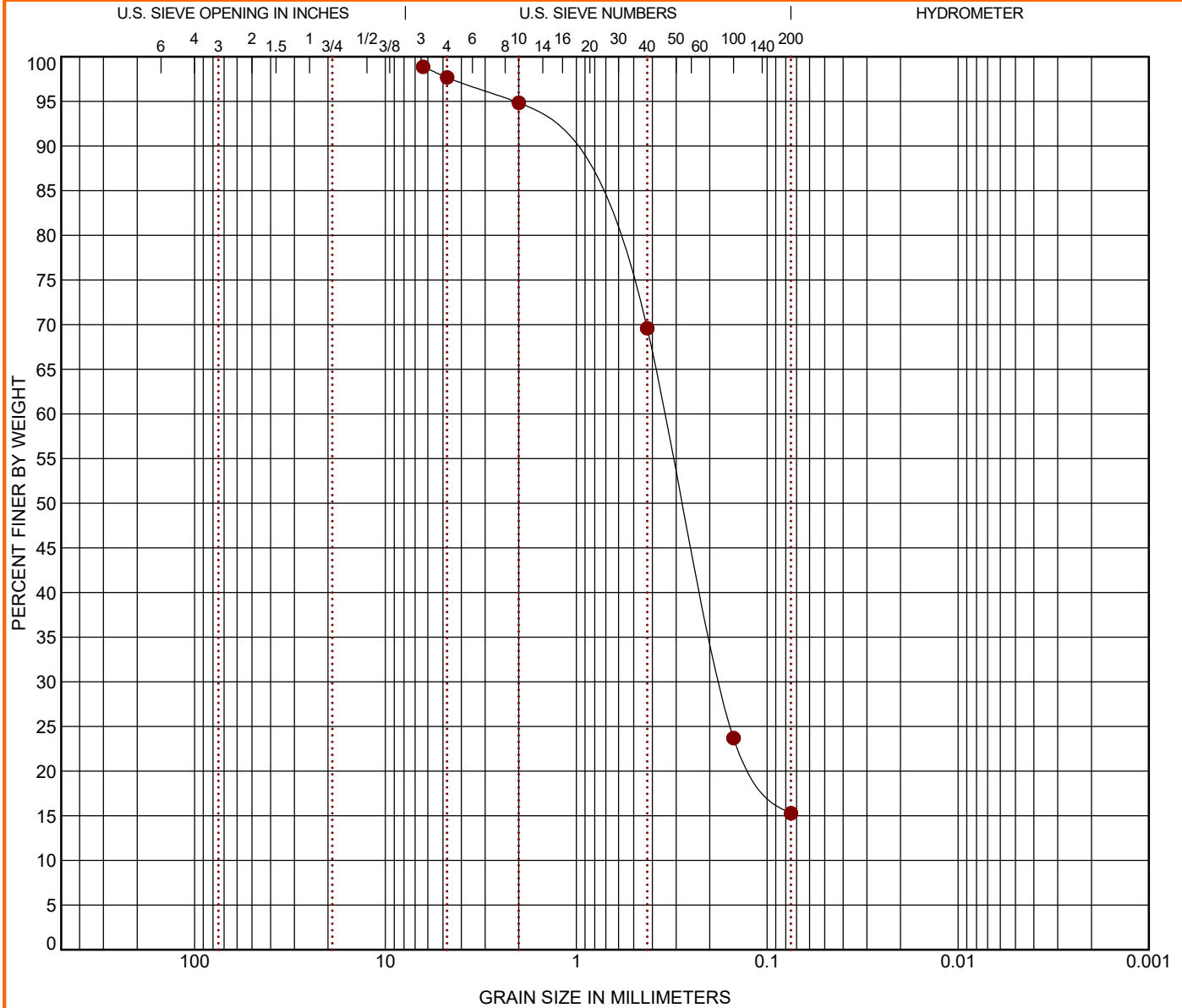
PROJECT NUMBER: JB215020

CLIENT: McFarland Johnson
Saratoga Springs, NY

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/4/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID	Depth	USCS Classification				WC (%)	LL	PL	PI	Cc	Cu
TP-21-1	4 - 4.5	SILTY SAND (SM)					NP	NP	NP		

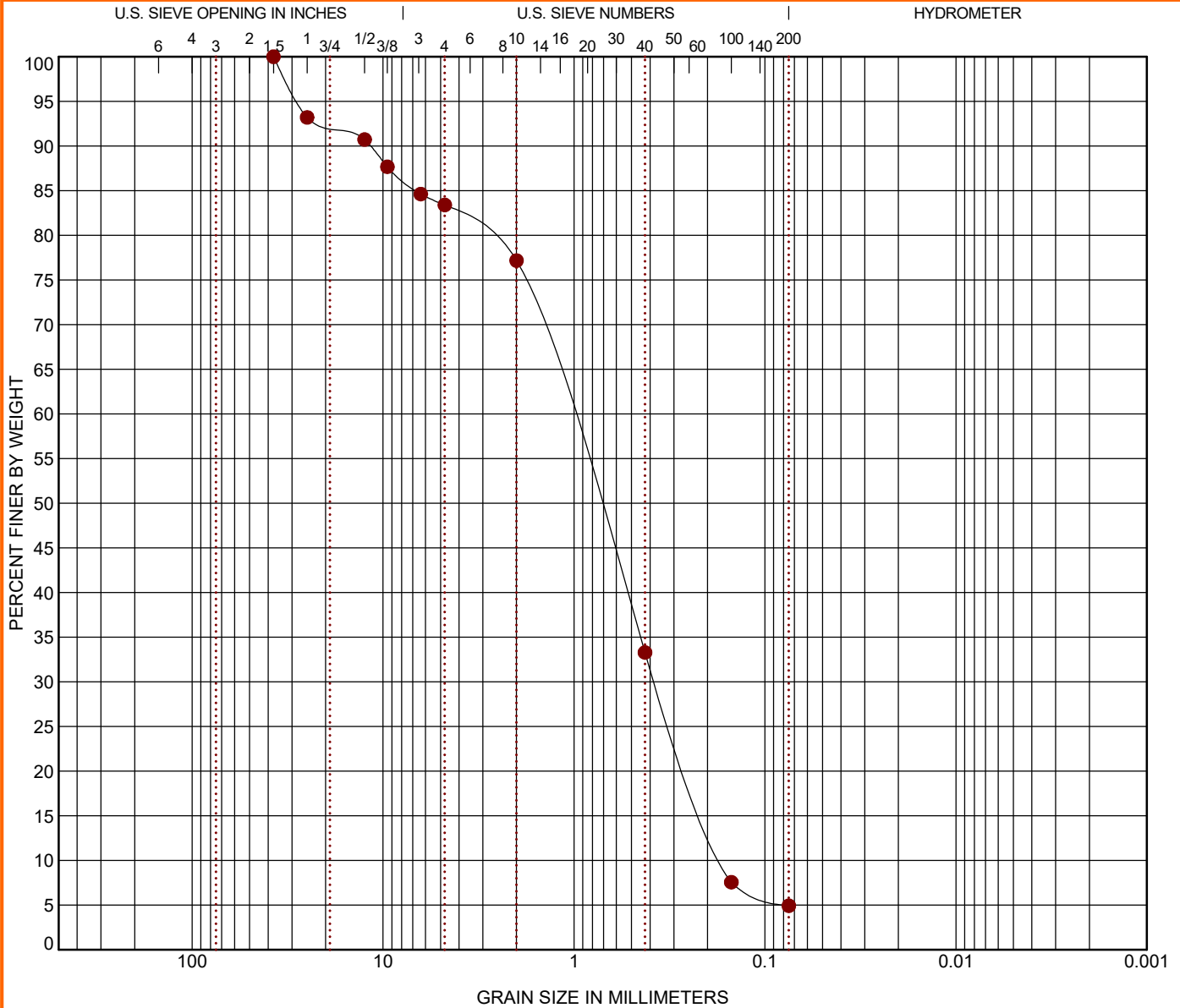
Boring ID	Depth	D ₁₀₀	D ₆₀	D ₃₀	D ₁₀	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
TP-21-1	4 - 4.5	6.35	0.342	0.173			1.2	82.4		15.3	

PROJECT: Proposed Marmen Manufacturing Facility		Terracon 30 Corporate Cir Ste 201 Albany, NY Page 752 of 831	PROJECT NUMBER: JB215020	
SITE: River Road Glenmont, NY			CLIENT: McFarland Johnson Saratoga Springs, NY	

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/4/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
TP-21-2	5 - 5.5	POORLY GRADED SAND with GRAVEL (SP)		NP	NP	NP	0.77	6.59

Boring ID	Depth	D ₁₀₀	D ₆₀	D ₃₀	D ₁₀	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
TP-21-2	5 - 5.5	37.5	1.091	0.372	0.166	0.0	16.6	78.5		4.9	

PROJECT: Proposed Marmen Manufacturing Facility

SITE: River Road
Glenmont, NY

Terracon
30 Corporate Cir Ste 201
Albany, NY
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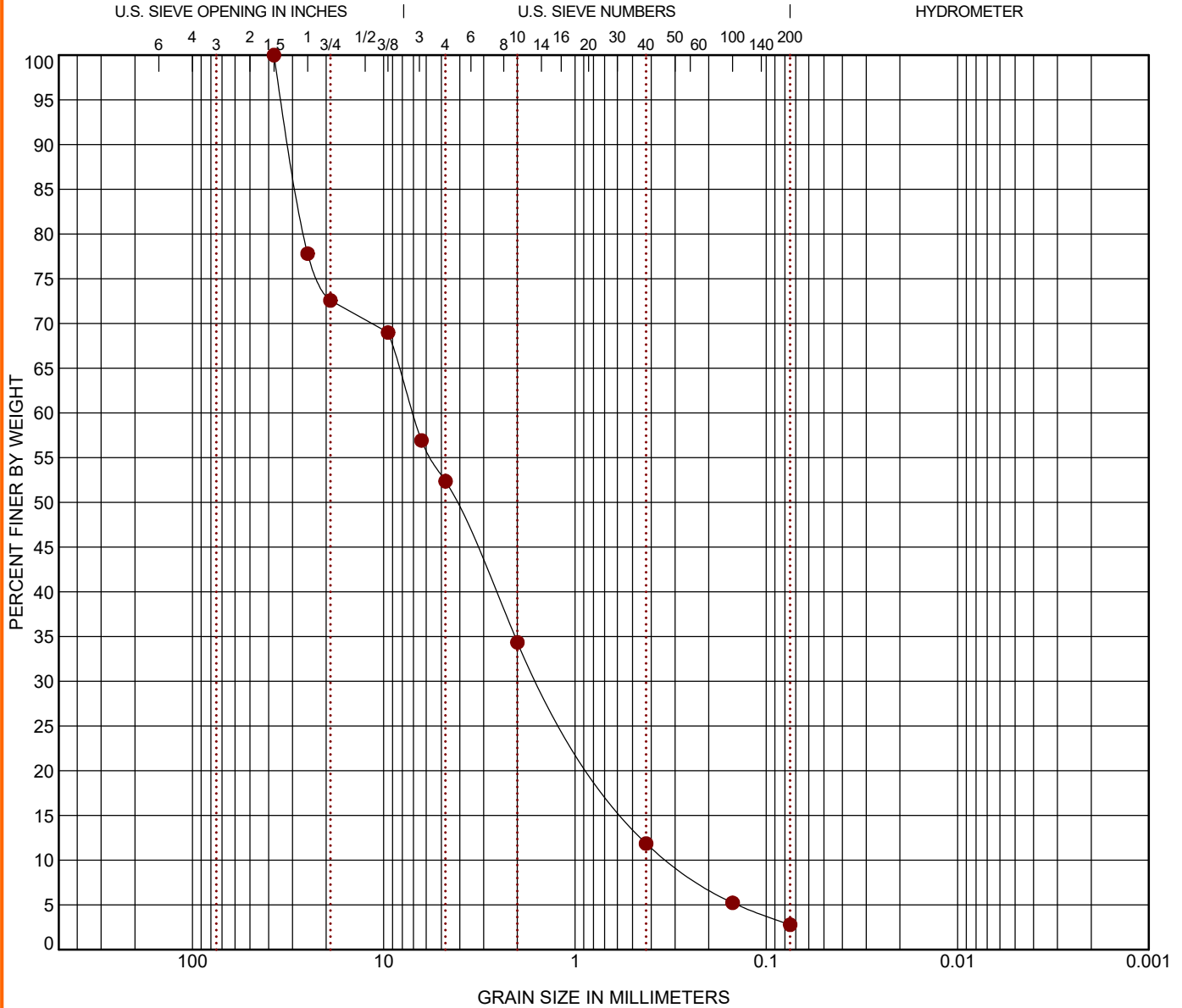
PROJECT NUMBER: JB215020

CLIENT: McFarland Johnson
Saratoga Springs, NY

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/4/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
● TP-21-5	4 - 4.5	POORLY GRADED SAND with GRAVEL (SP)		NP	NP	NP	0.98	22.17

Boring ID	Depth	D ₁₀₀	D ₆₀	D ₃₀	D ₁₀	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
● TP-21-5	4 - 4.5	37.5	7.038	1.483	0.317	0.0	47.6	49.6		2.8	

PROJECT: Proposed Marmen Manufacturing Facility

SITE: River Road
Glenmont, NY

Terracon

30 Corporate Cir Ste 201
Albany, NY 12204
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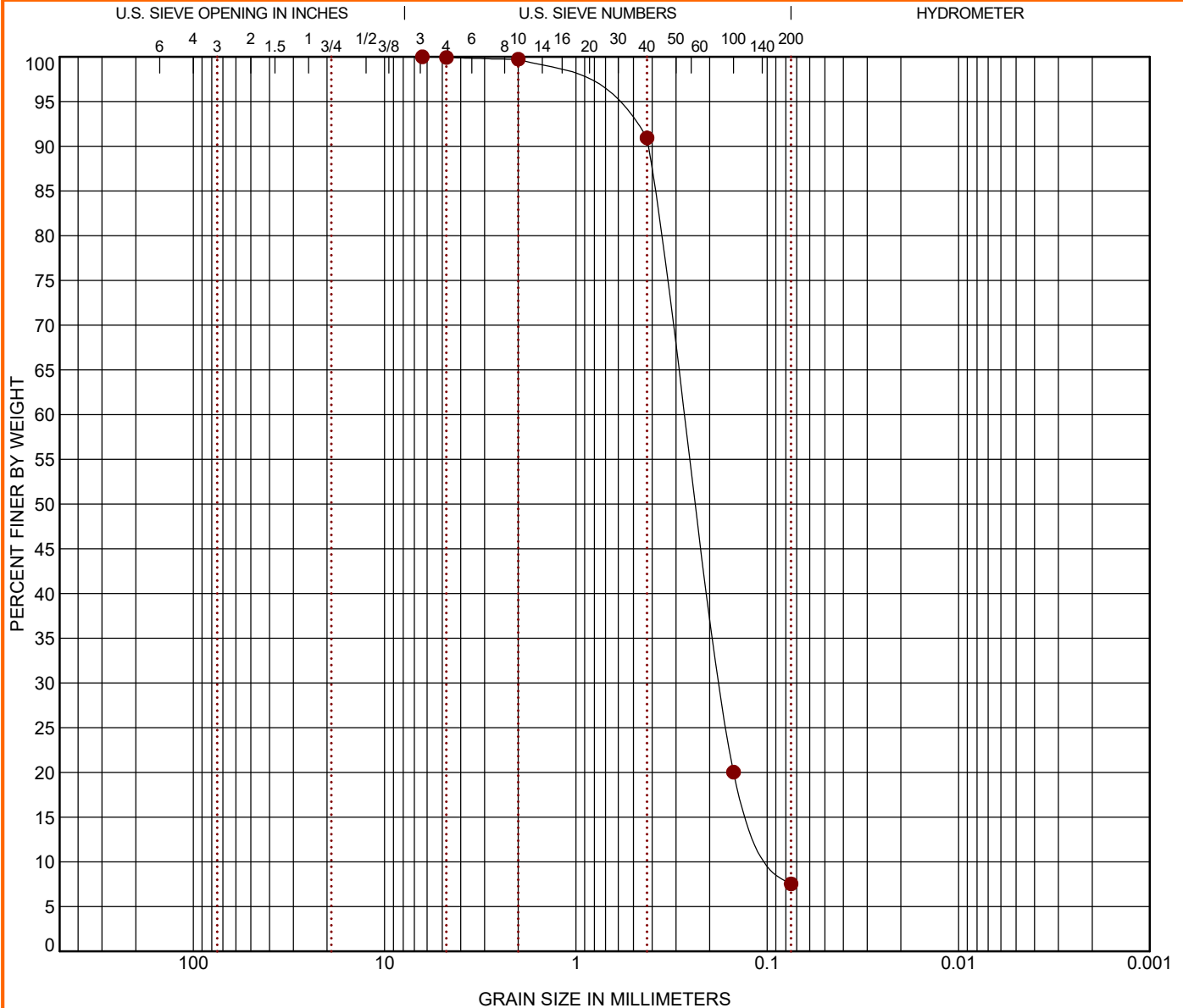
PROJECT NUMBER: JB215020

CLIENT: McFarland Johnson
Saratoga Springs, NY

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/4/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
TP-21-6	6 - 6.5	POORLY GRADED SAND with SILT (SP-SM)		NP	NP	NP	1.30	3.14

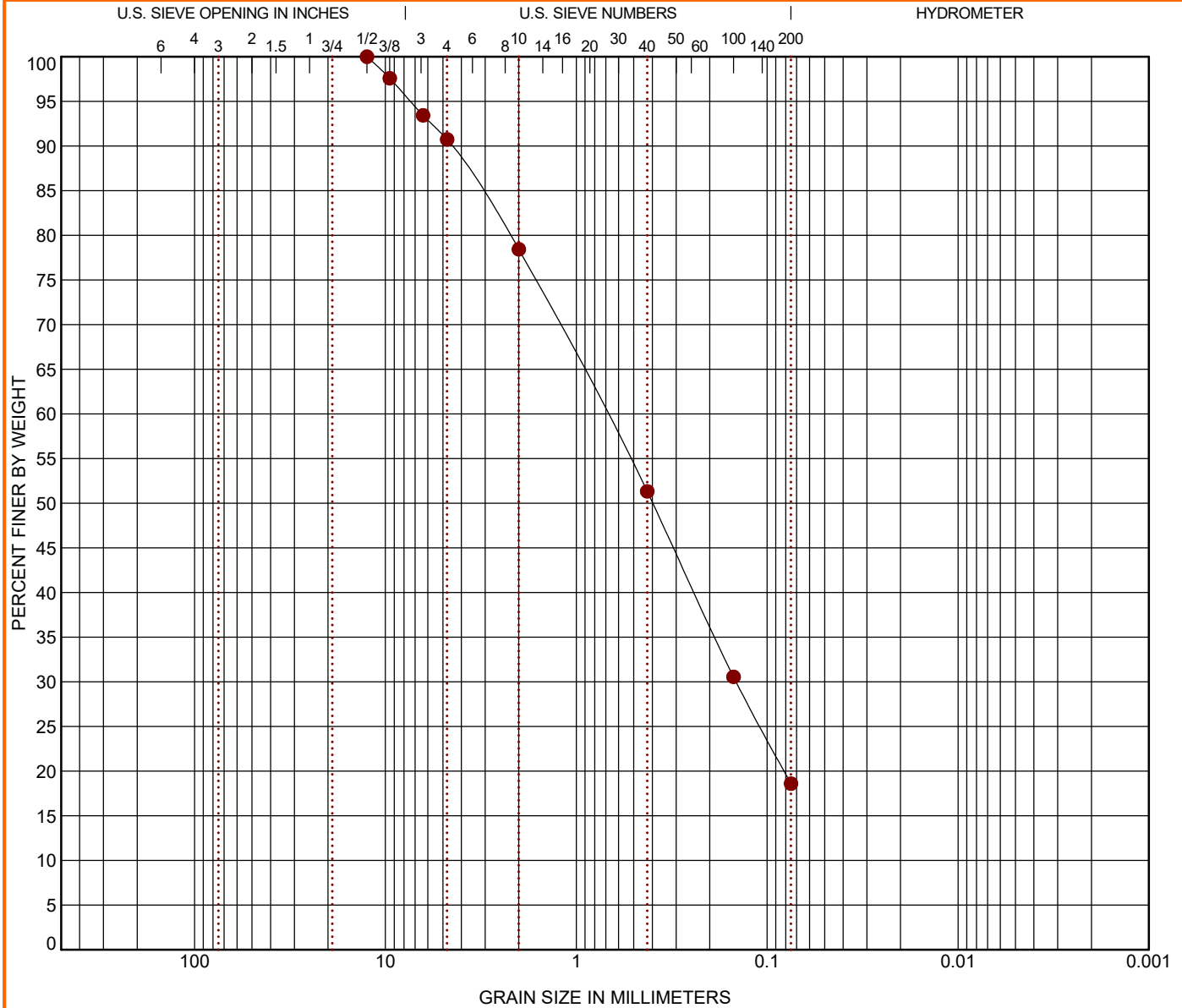
Boring ID	Depth	D ₁₀₀	D ₆₀	D ₃₀	D ₁₀	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
TP-21-6	6 - 6.5	6.35	0.27	0.174	0.086	0.0	0.1	92.4		7.5	

PROJECT: Proposed Marmen Manufacturing Facility	 30 Corporate Cir Ste 201 Albany, NY 12205 Page 755 of 831	PROJECT NUMBER: JB215020
SITE: River Road Glenmont, NY		CLIENT: McFarland Johnson Saratoga Springs, NY

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/4/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

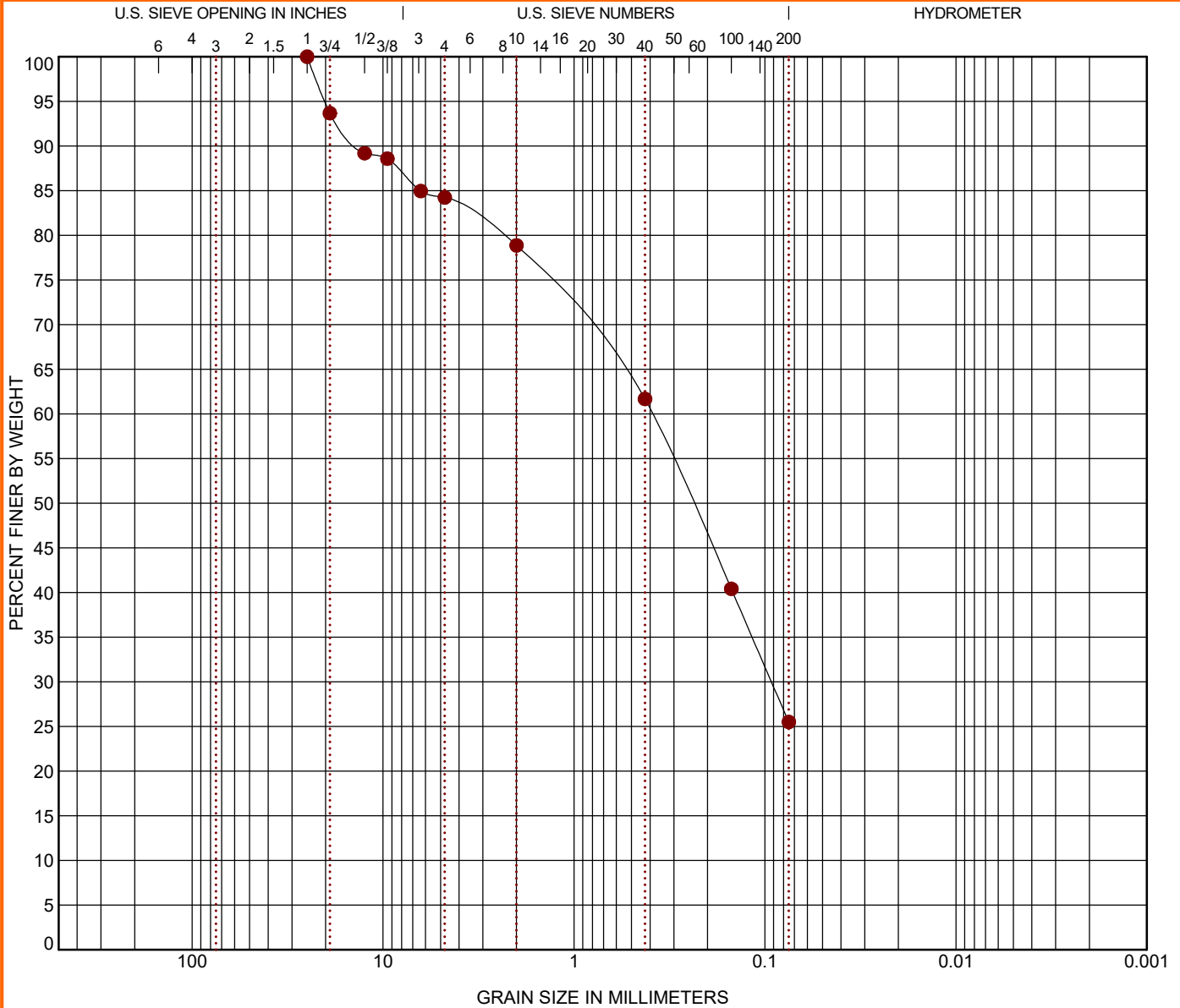
Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
TP-21-9	5 - 5.5	SILTY SAND (SM)		NP	NP	NP		

Boring ID	Depth	D ₁₀₀	D ₆₀	D ₃₀	D ₁₀	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
TP-21-9	5 - 5.5	12.5	0.698	0.145		0.0	9.3	72.1		18.6	

PROJECT: Proposed Marmen Manufacturing Facility	 30 Corporate Cir Ste 201 Albany, NY 12205 Page 756 of 831	PROJECT NUMBER: JB215020
SITE: River Road Glenmont, NY		CLIENT: McFarland Johnson Saratoga Springs, NY

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
TP-21-10	4 - 4.5	SILTY SAND with GRAVEL (SM)		NP	NP	NP		

Boring ID	Depth	D ₁₀₀	D ₆₀	D ₃₀	D ₁₀	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
TP-21-10	4 - 4.5	25	0.392	0.092		0.0	15.8	58.7		25.5	

PROJECT: Proposed Marmen Manufacturing Facility

SITE: River Road
Glenmont, NY

Terracon

30 Corporate Cir Ste 201
Albany, NY
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PROJECT NUMBER: JB215020

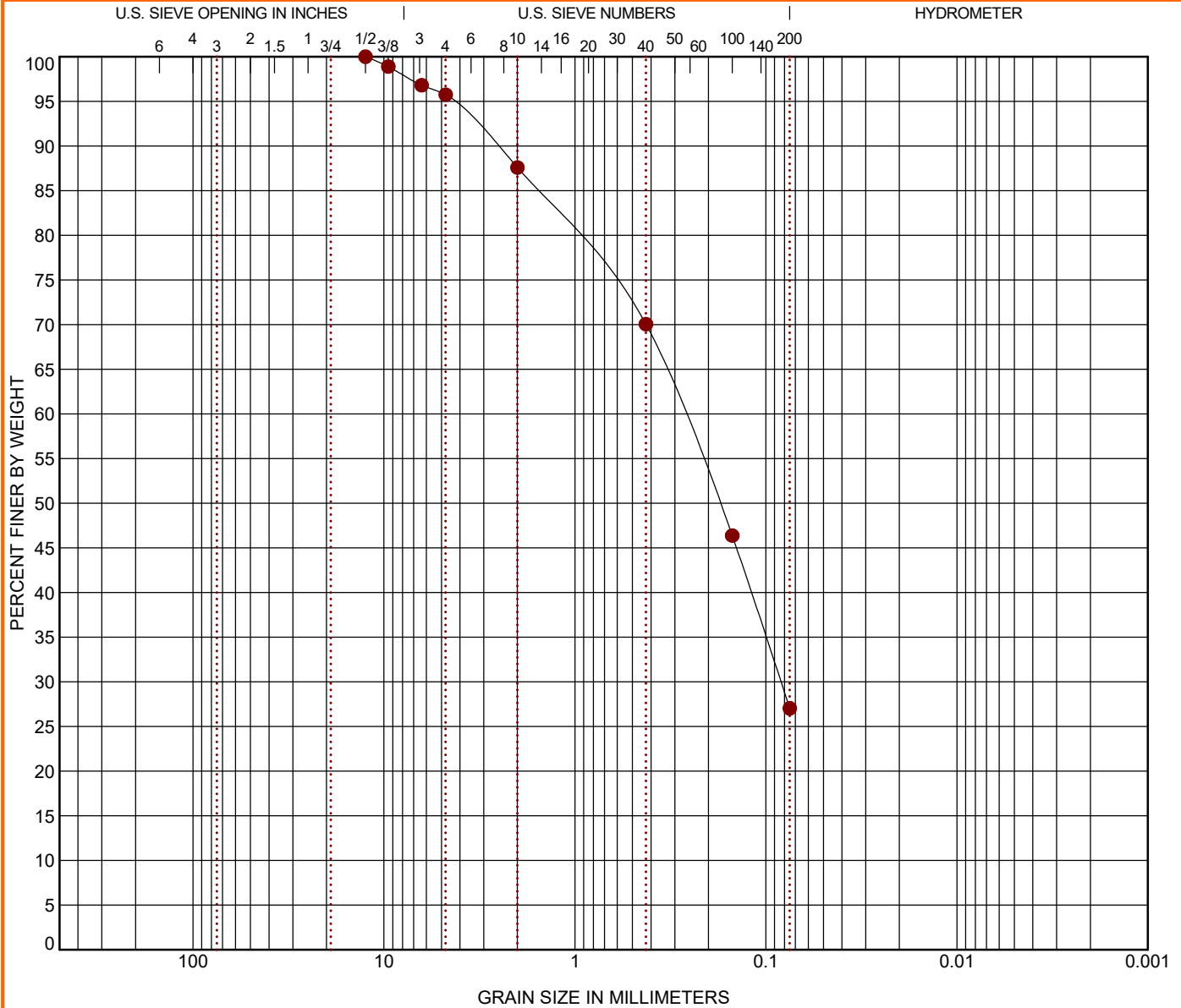
CLIENT: McFarland Johnson
Saratoga Springs, NY

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/4/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/4/21



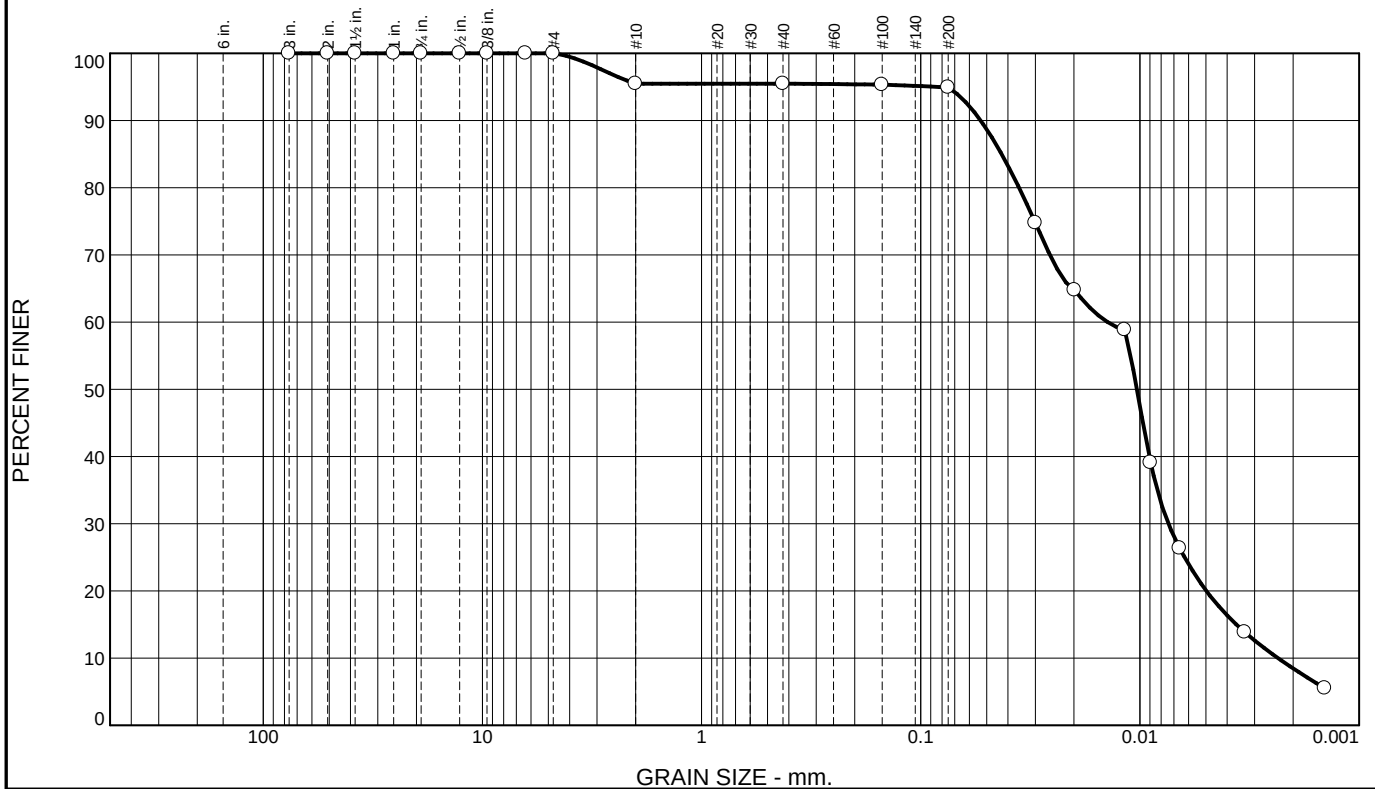
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID	Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
● TP-21-11	4 - 4.5	SILTY SAND (SM)		NP	NP	NP		

Boring ID	Depth	D ₁₀₀	D ₆₀	D ₃₀	D ₁₀	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
● TP-21-11	4 - 4.5	12.5	0.273	0.083		0.0	4.3	68.7		27.0	

PROJECT: Proposed Marmen Manufacturing Facility	 30 Corporate Cir Ste 201 Albany, NY 12205 Page 758 of 831	PROJECT NUMBER: JB215020
SITE: River Road Glenmont, NY		CLIENT: McFarland Johnson Saratoga Springs, NY

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	4.5	0.0	0.6	74.8	20.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
0.75"	100.0		
0.5"	100.0		
0.375"	100.0		
0.25"	100.0		
#4	100.0		
#10	95.5		
#40	95.5		
#100	95.3		
#200	94.9		

* (no specification provided)

<u>Material Description</u>		
SILT		
<u>Atterberg Limits</u>		
PL= NP	LL= NP	PI= NP
<u>Coefficients</u>		
D ₉₀ = 0.0533	D ₈₅ = 0.0428	D ₆₀ = 0.0140
D ₅₀ = 0.0103	D ₃₀ = 0.0074	D ₁₅ = 0.0036
D ₁₀ = 0.0023	C _u = 5.99	C _c = 1.67
<u>Classification</u>		
USCS= ML	AASHTO= A-4(0)	
<u>Remarks</u>		
Per ASTM D422		

Source of Sample: B-21-17 80'-82'

Date: 9-9-21

Terracon Consultants-NY, Inc.

Albany, NY

Client: McFarland Johnson

Project: Proposed Marmen Manufacturing Facility
Albany, NY

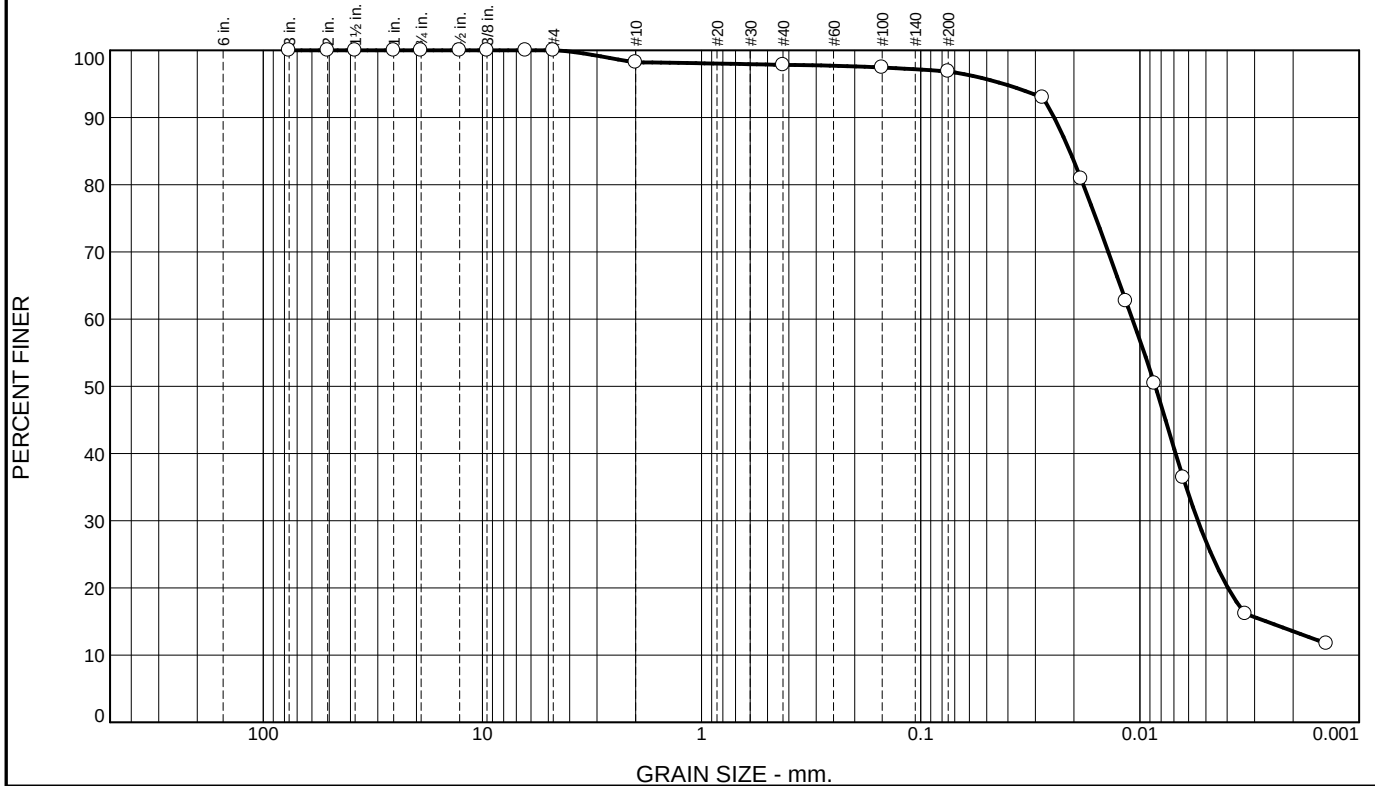
Project No: JB215020

Figure B-21-17 80'-82'

Tested By: AB

Checked By: JH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.8	0.4	1.0	69.9	26.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
0.75"	100.0		
0.5"	100.0		
0.375"	100.0		
0.25"	100.0		
#4	100.0		
#10	98.2		
#40	97.8		
#100	97.4		
#200	96.8		

* (no specification provided)

Source of Sample: B-21-18 105'-107'

Date: 9-9-21

Terracon Consultants-NY, Inc.

Albany, NY

Client: McFarland Johnson

Project: Proposed Marmen Manufacturing Facility
Albany, NY

Project No: JB215020

Material Description

SILT

PL= NP

Atterberg Limits

LL= NP

PI= NP

Coefficients

D₉₀= 0.0246

D₈₅= 0.0209

D₆₀= 0.0108

D₅₀= 0.0085

D₃₀= 0.0054

D₁₅= 0.0026

D₁₀=

C_u=

C_c=

Classification

USCS= ML

AASHTO= A-4(0)

Remarks

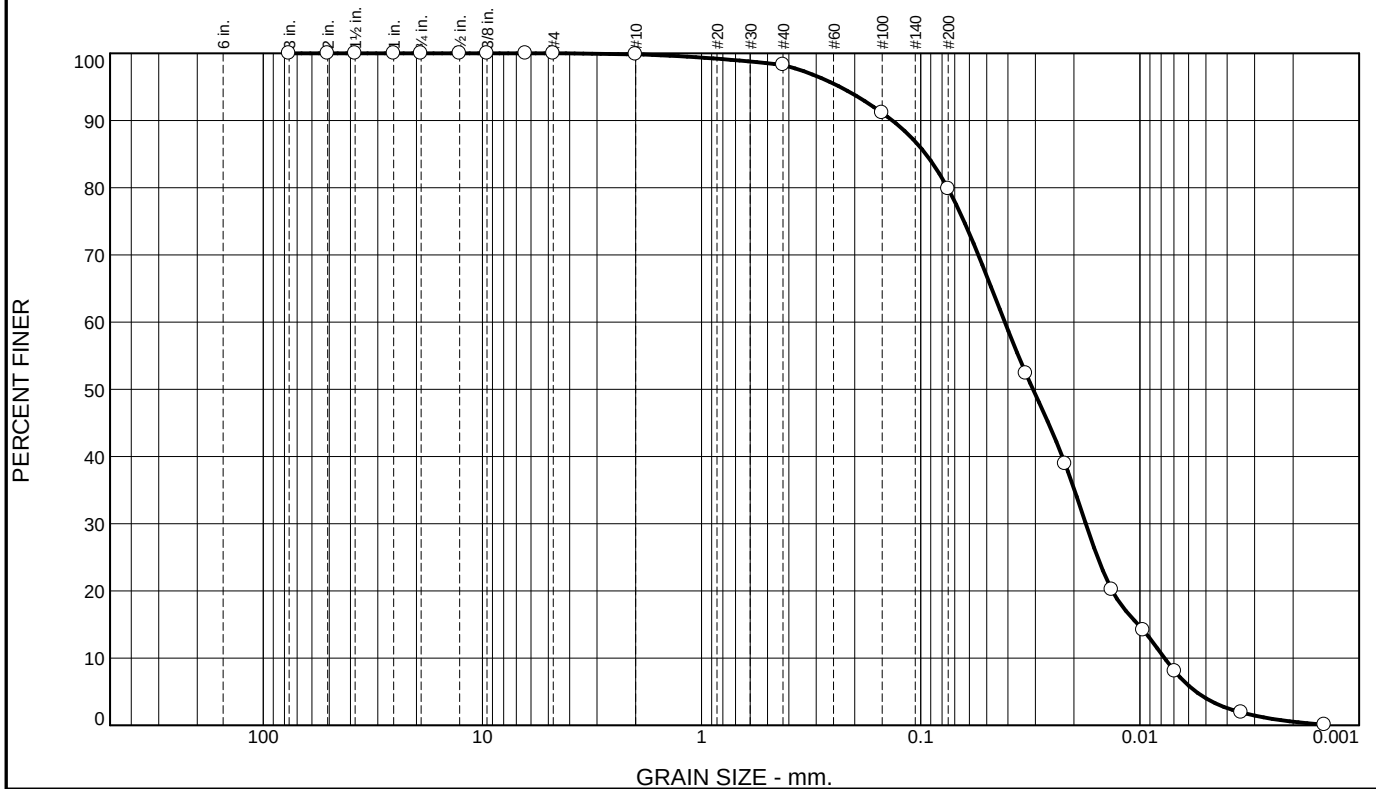
Per ASTM D422

Tested By: AB

Checked By: JH

Figure B-21-18 105'-107'

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.6	18.5	75.8	4.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
0.75"	100.0		
0.5"	100.0		
0.375"	100.0		
0.25"	100.0		
#4	100.0		
#10	99.9		
#40	98.3		
#100	91.1		
#200	79.8		

* (no specification provided)

Material Description

SILT

PL= NP

Atterberg Limits

LL= NP

PI= NP

Coefficients

D₉₀= 0.1348

D₈₅= 0.0948

D₆₀= 0.0414

D₅₀= 0.0308

D₃₀= 0.0177

D₁₅= 0.0102

D₁₀= 0.0077

C_u= 5.35

C_c= 0.98

Classification

USCS= ML

AASHTO= A-4(0)

Remarks

Per ASTM D422

Source of Sample: B-21-23 12'-14'

Date: 9-9-21

Terracon Consultants-NY, Inc.

Client: McFarland Johnson

Project: Proposed Marmen Manufacturing Facility
Albany, NY

Albany, NY

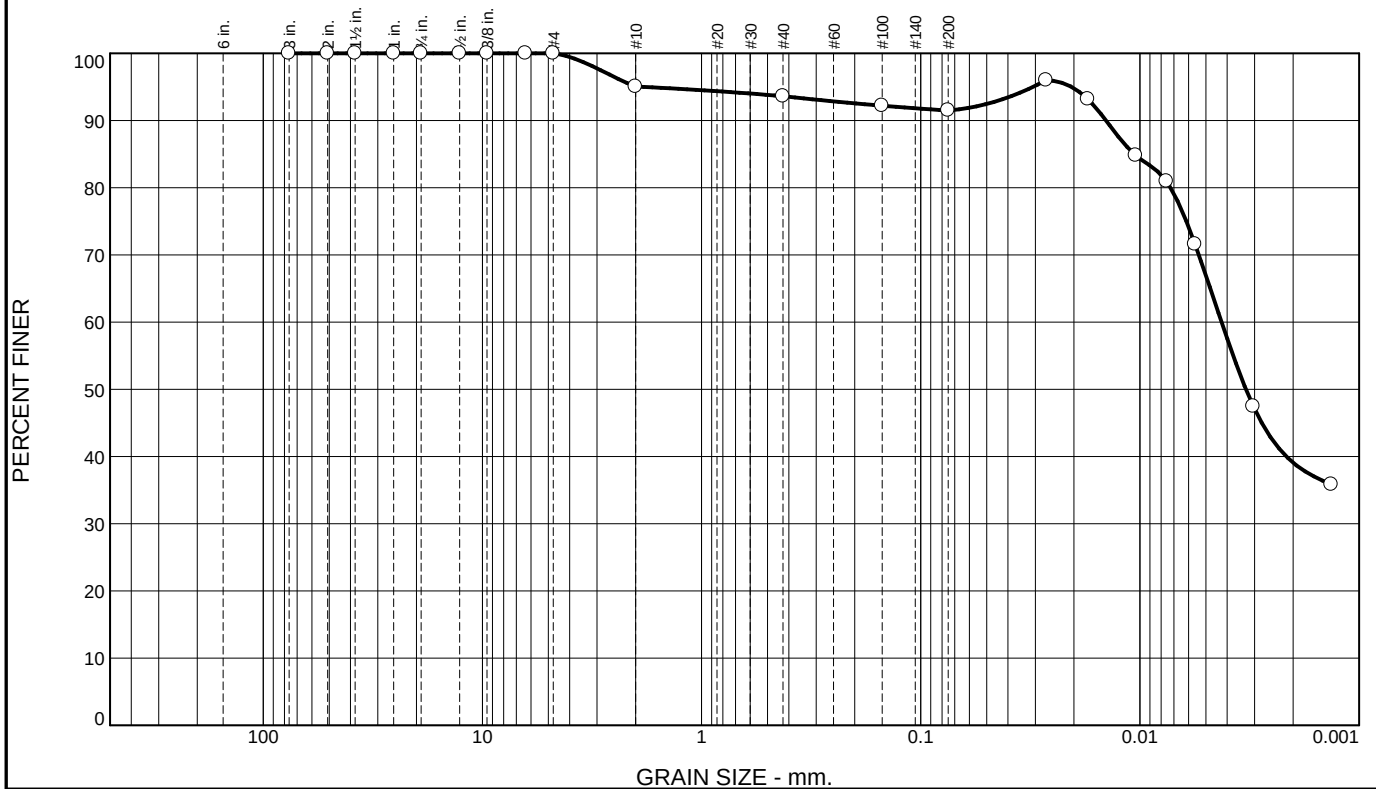
Project No: JB215020

Figure B-21-23 12'-14'

Tested By: AB

Checked By: JH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	5.0	1.4	2.1	24.6	66.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
0.75"	100.0		
0.5"	100.0		
0.375"	100.0		
0.25"	100.0		
#4	100.0		
#10	95.0		
#40	93.6		
#100	92.2		
#200	91.5		

* (no specification provided)

Source of Sample: TP-21-3 6'-6.5'

Date: 9-29-21

Terracon Consultants-NY, Inc.

Albany, NY

Client: McFarland Johnson

Project: Proposed Marmen Manufacturing Facility
Albany, NY

Project No: JB215020

Material Description

Lean Clay

Atterberg Limits

PL= 19

LL= 33

PI= 14

Coefficients

D₉₀= 0.0143

D₈₅= 0.0106

D₆₀= 0.0042

D₅₀= 0.0033

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= CL

AASHTO= A-6(12)

Remarks

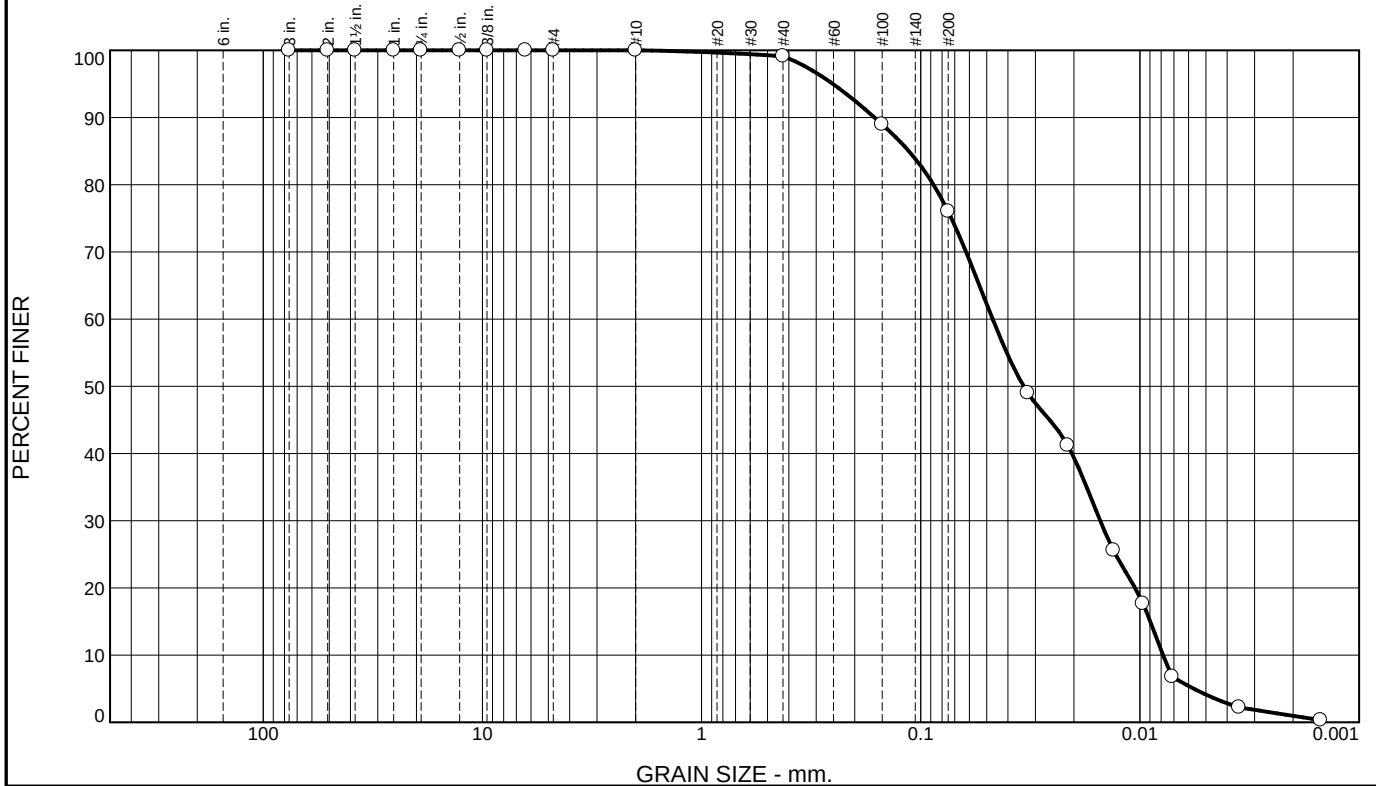
Per ASTM D422

Tested By: AB

Checked By: JH

Figure TP-21-3 6'-6.5'

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	23.1	71.9	4.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
0.75"	100.0		
0.5"	100.0		
0.375"	100.0		
0.25"	100.0		
#4	100.0		
#10	100.0		
#40	99.1		
#100	89.0		
#200	76.0		

* (no specification provided)

Source of Sample: TP-21-4 4'-4.5'

Date: 9-29-21

Terracon Consultants-NY, Inc.

Albany, NY

Client: McFarland Johnson

Project: Proposed Marmen Manufacturing Facility
Albany, NY

Project No: JB215020

Material Description

Silt with sand

Atterberg Limits

PL= NP

LL= NP

PI= NP

Coefficients

D₉₀= 0.1626

D₈₅= 0.1134

D₆₀= 0.0470

D₅₀= 0.0339

D₃₀= 0.0152

D₁₅= 0.0090

D₁₀= 0.0078

C_u= 5.99

C_c= 0.63

Classification

USCS= ML

AASHTO= A-4(0)

Remarks

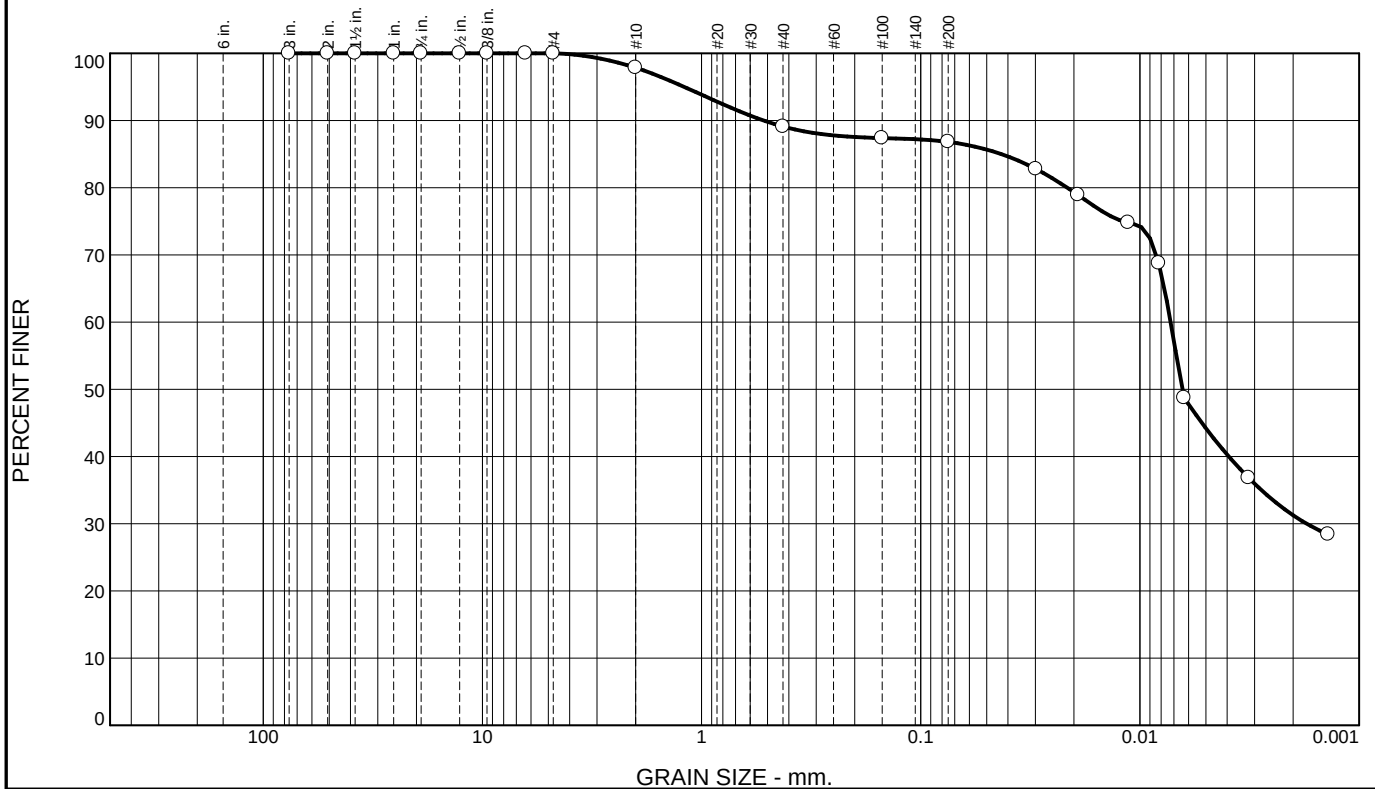
Per ASTM D422

Tested By: AB

Checked By: JH

Figure TP-21-4 4'-4.5'

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	2.1	8.8	2.3	42.6	44.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
0.75"	100.0		
0.5"	100.0		
0.375"	100.0		
0.25"	100.0		
#4	100.0		
#10	97.9		
#40	89.1		
#100	87.4		
#200	86.8		

* (no specification provided)

Source of Sample: TP-21-7 3'-3.5'

Date: 9-29-21

Terracon Consultants-NY, Inc.

Albany, NY

Client: McFarland Johnson

Project: Proposed Marmen Manufacturing Facility
Albany, NY

Project No: JB215020

Material Description

Lean Clay

Atterberg Limits

PL= 21

LL= 33

PI= 12

Coefficients

D₉₀= 0.5219

D₈₅= 0.0429

D₆₀= 0.0072

D₅₀= 0.0064

D₃₀= 0.0017

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= CL

AASHTO= A-6(10)

Remarks

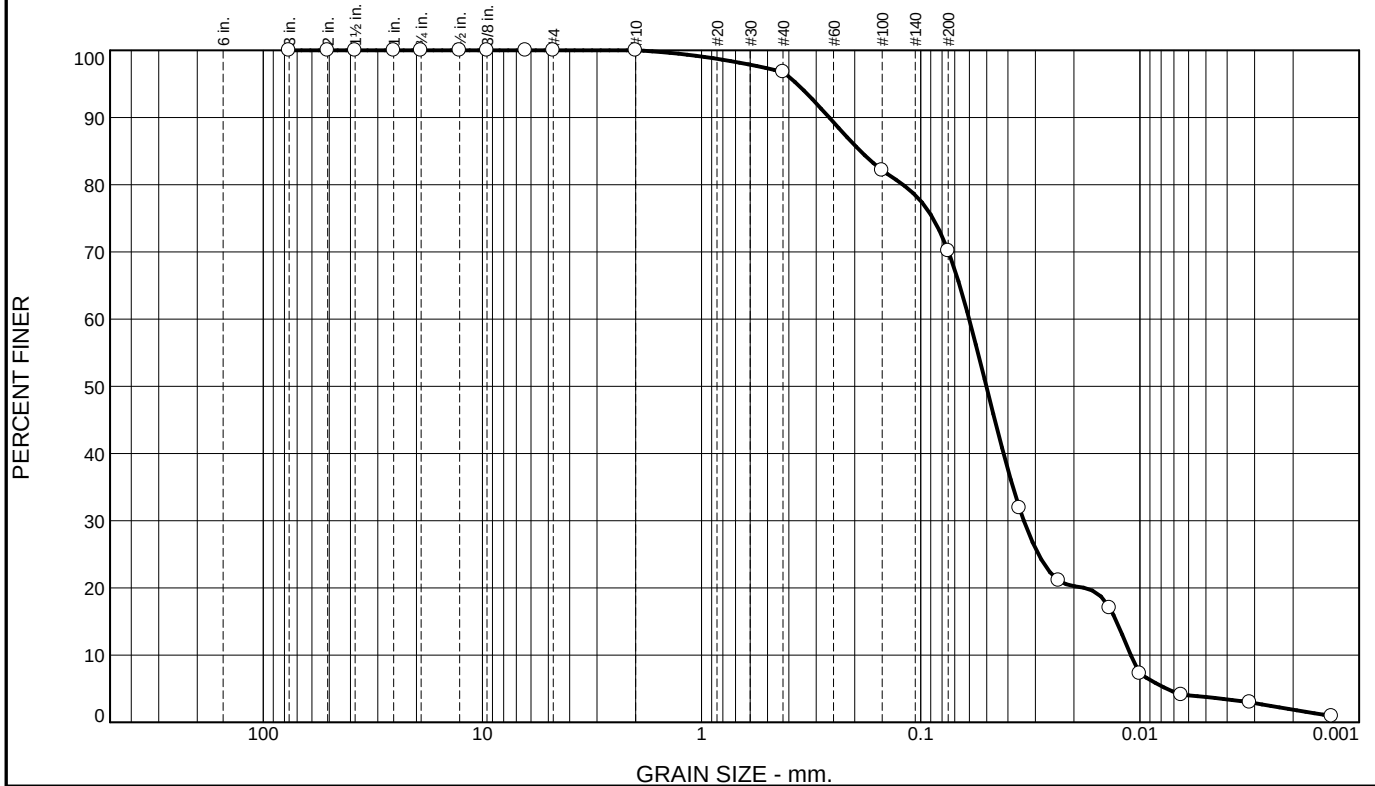
Per ASTM D422

Tested By: AB

Checked By: JH

Figure TP-21-7 3'-3.5'

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.2	26.6	66.4	3.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
0.75"	100.0		
0.5"	100.0		
0.375"	100.0		
0.25"	100.0		
#4	100.0		
#10	100.0		
#40	96.8		
#100	82.2		
#200	70.2		

* (no specification provided)

Source of Sample: TP-21-8 3'-3.5'

Date: 9-29-21

Terracon Consultants-NY, Inc.

Albany, NY

Client: McFarland Johnson

Project: Proposed Marmen Manufacturing Facility
Albany, NY

Project No: JB215020

Material Description

Silt with sand

Atterberg Limits

PL= NP

LL= NP

PI= NP

Coefficients

D₉₀= 0.2617

D₈₅= 0.1883

D₆₀= 0.0601

D₅₀= 0.0502

D₃₀= 0.0338

D₁₅= 0.0128

D₁₀= 0.0110

C_u= 5.46

C_c= 1.73

Classification

USCS= ML

AASHTO= A-4(0)

Remarks

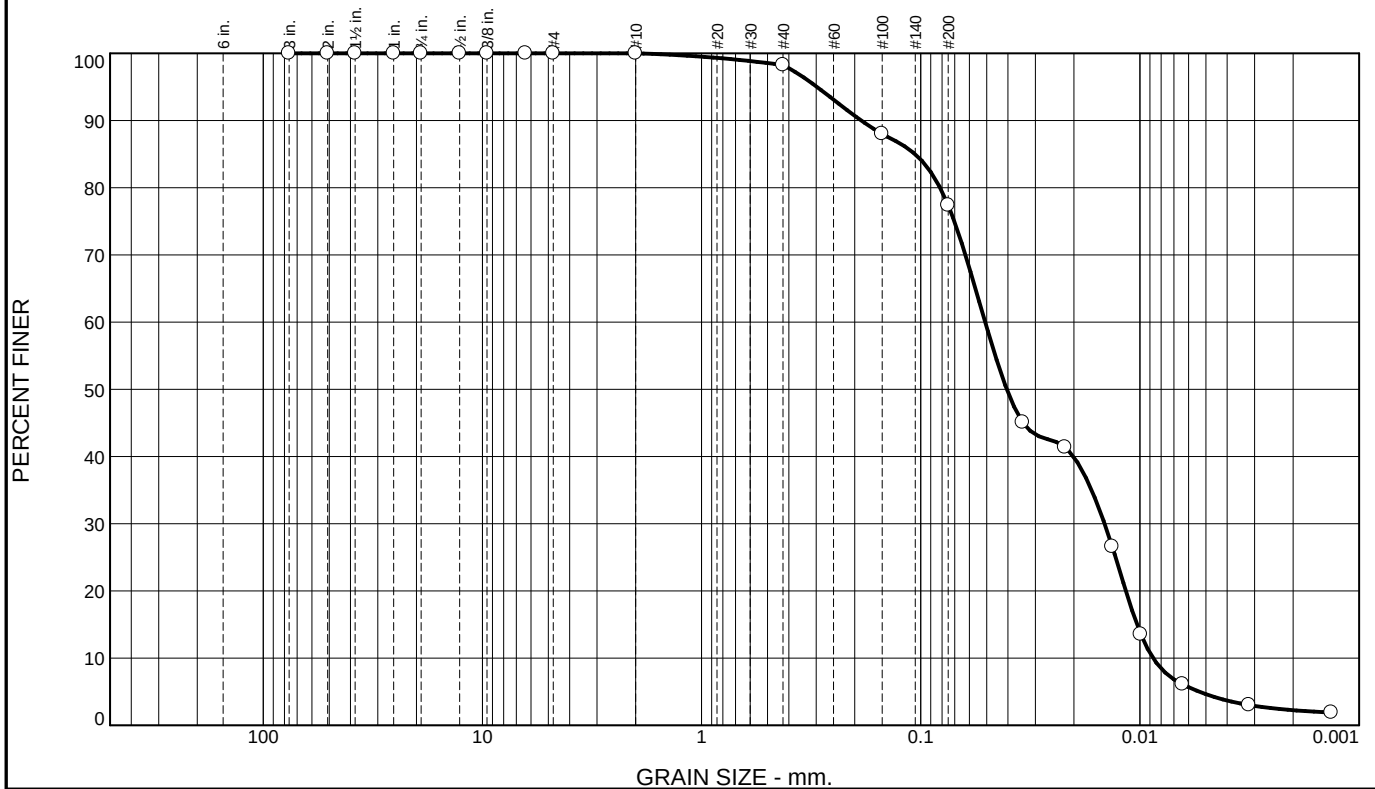
Per ASTM D422

Tested By: AB

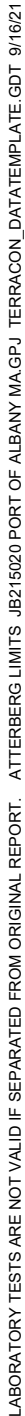
Checked By: JH

Figure TP-21-8 3'-3.5'

Particle Size Distribution Report

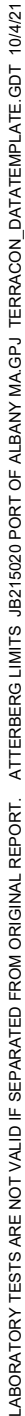


ASTM D4318



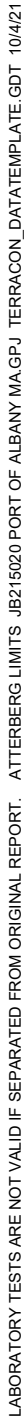
CLIENT: McFarland Johnson
Saratoga Springs, NY

ASTM D4318



CLIENT: McFarland Johnson
Saratoga Springs, NY

ASTM D4318



CLIENT: McFarland Johnson
Saratoga Springs, NY

Summary of Laboratory Results

Sheet 1 of 1

BORING ID	Depth (Ft.)	Water Content (%)	Organic Content (%)
B-21-7	6-8	99.4	
B-21-7	60-62	26.4	
B-21-8	0-2	22.8	
B-21-8	6-8		13.5
B-21-8	10-12	53.4	
B-21-8	25-27	26.8	
B-21-10	4-6	31.7	
B-21-10	10-12	46.7	8.2
B-21-10	16-18	34.9	
B-21-17	10-12	34.6	
B-21-17	14-16	48.3	
B-21-17	25-27	20.3	
B-21-17	40-42	30.5	
B-21-17	80-82	17.5	
B-21-18	10-12	44.8	
B-21-18	12-14	59.1	11.2
B-21-18	35-37	35.5	
B-21-18	55-57	89.9	
B-21-18	105-107	20.1	
B-21-20	6-8	106.4	
B-21-20	12-13.4	39.5	
B-21-20	16-18	44.7	3.7
B-21-20	40-42	33.2	
B-21-20	80-82	31.1	
B-21-23	12-14	89.2	
B-21-23	30-32	22.1	
B-21-23	45-47	30.0	
B-21-23	110-112	20.6	
S-1	1-1.1	41.1	
S-2	1-3	54.9	
S-3	1-3	67.7	
TP-21-3	6-6.5	19.6	
TP-21-4	4-4.5	67.3	
TP-21-7	3-3.5	18.9	
TP-21-8	3-3.5	63.9	
TP-21-12	5-5.5	70.8	

PROJECT: Proposed Marmen Manufacturing Facility

SITE: River Road
Glenmont, NY

Terracon
30 Corporate Cir Ste 201
Albany, NY

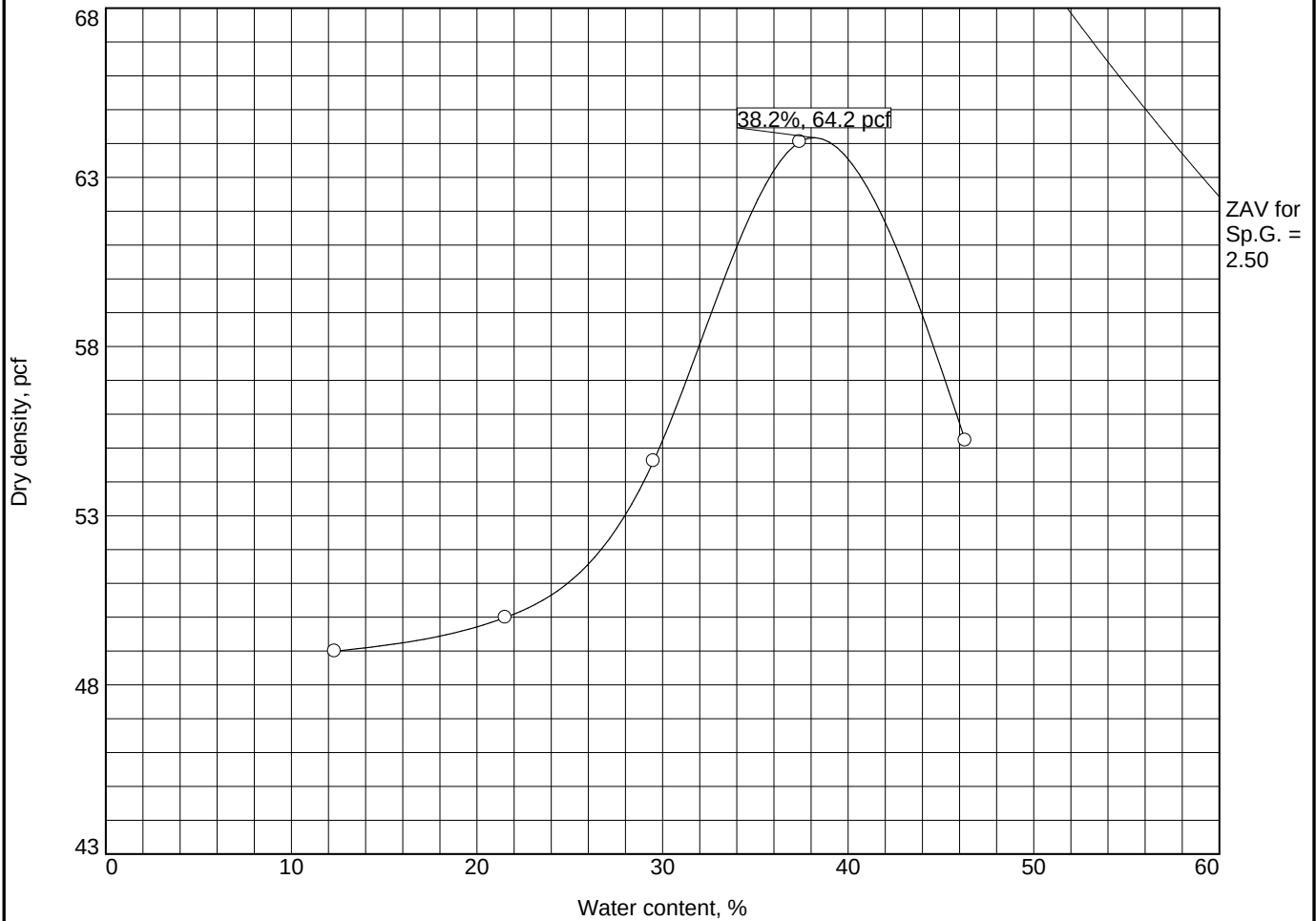
Page 770 of 831

PROJECT NUMBER: JB215020

CLIENT: McFarland Johnson
Saratoga Springs, NY

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART LAB SUMMARY-PORTRAIT JB215020 PORT OF ALBANY MA.GPJ TERRACON_DATATEMPLATE.GDT 10/4/21

COMPACTION TEST REPORT



Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
1'-3'	ML			2.5				

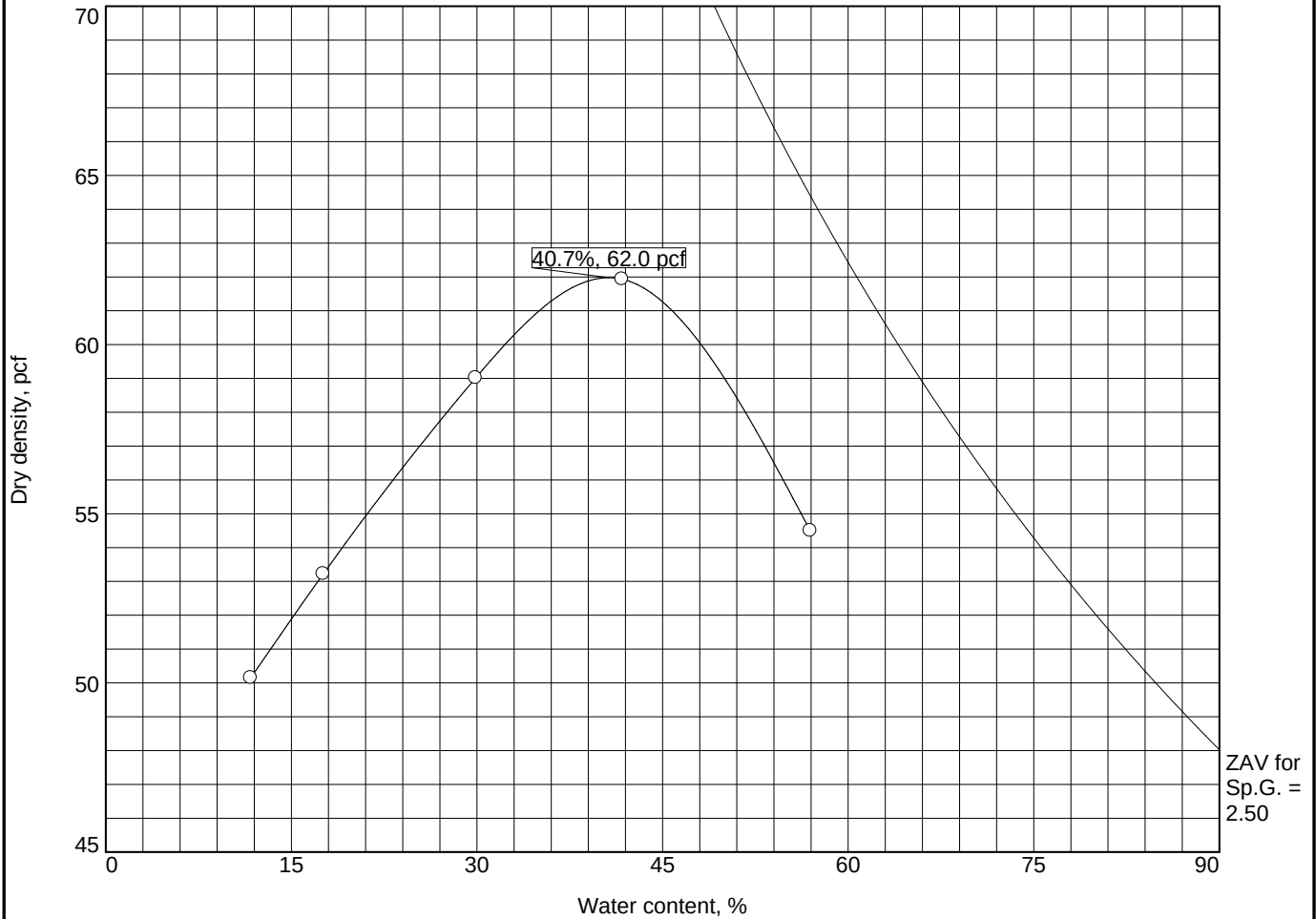
TEST RESULTS		MATERIAL DESCRIPTION	
Maximum dry density = 64.2 pcf Optimum moisture = 38.2 %		SILT with SAND (Coal ash)	
Project No. JB215020 Client: McFarland Johnson Project: Proposed Marmen Manufacturing Facility Albany, NY Source of Sample: S-2 1'-3'		Remarks: Per ASTM D1557	
Terracon Consultants-NY, Inc. Albany, NY			

Figure	S-2 1'-3'
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Figure S-2 1'-3'

Tested By: AB Checked By: JH

COMPACTION TEST REPORT



Test specification: ASTM D 1557-00 Method A Modified

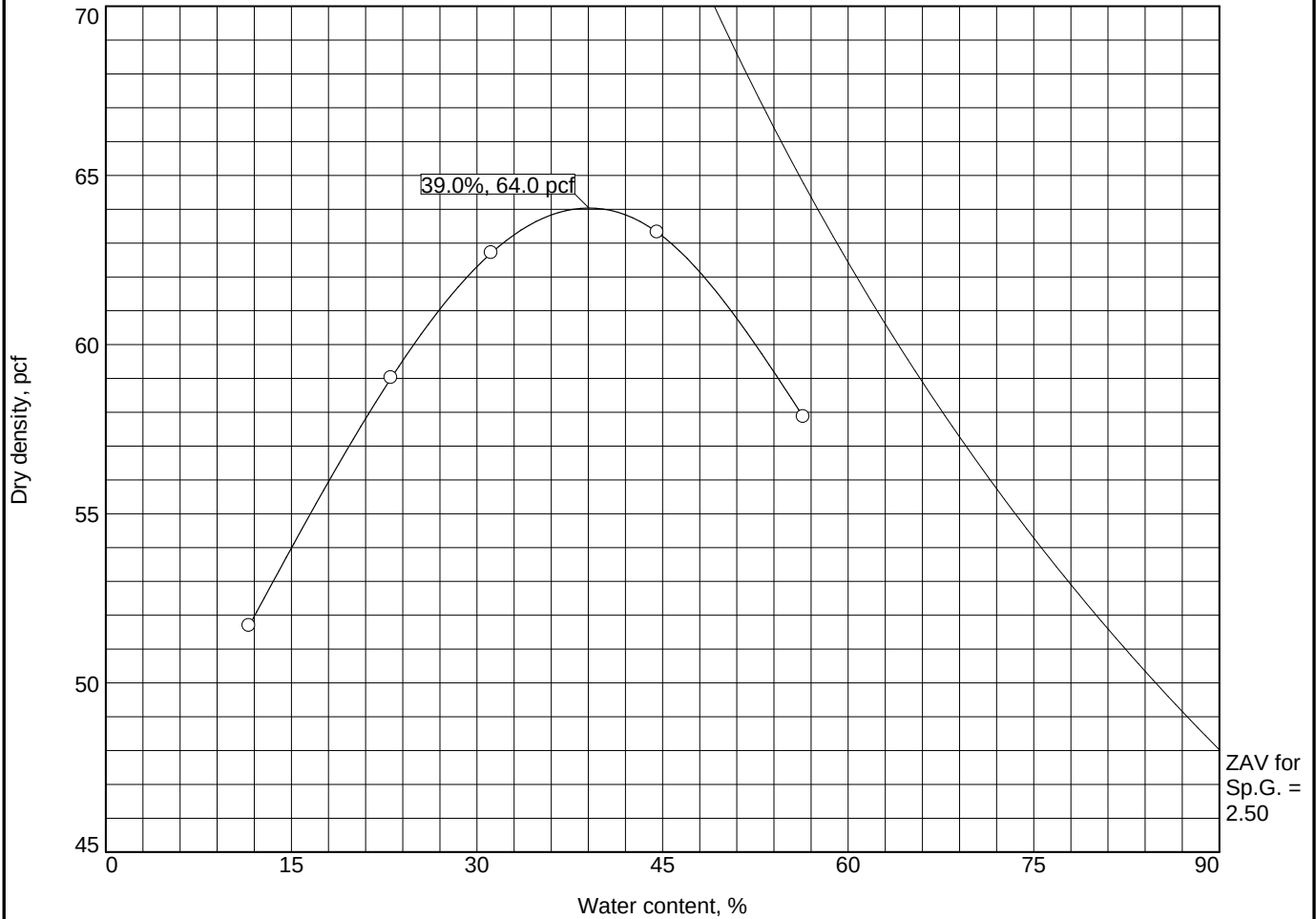
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	ML	A-4(0)		2.5	NP	NP	0.0	76.0

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 62.0 pcf Optimum moisture = 40.7 %	Silt with sand (Coal ash)
Project No. JB215020 Client: McFarland Johnson Project: Proposed Marmen Manufacturing Facility Albany, NY Source of Sample: TP-21-4 4'-4.5' Terracon Consultants-NY, Inc. Albany, NY	Remarks: Per ASTM D1557

Figure TP-21-4 4'-4.5'

Tested By: AB Checked By: JH

COMPACTION TEST REPORT



Test specification: ASTM D 1557-00 Method A Modified

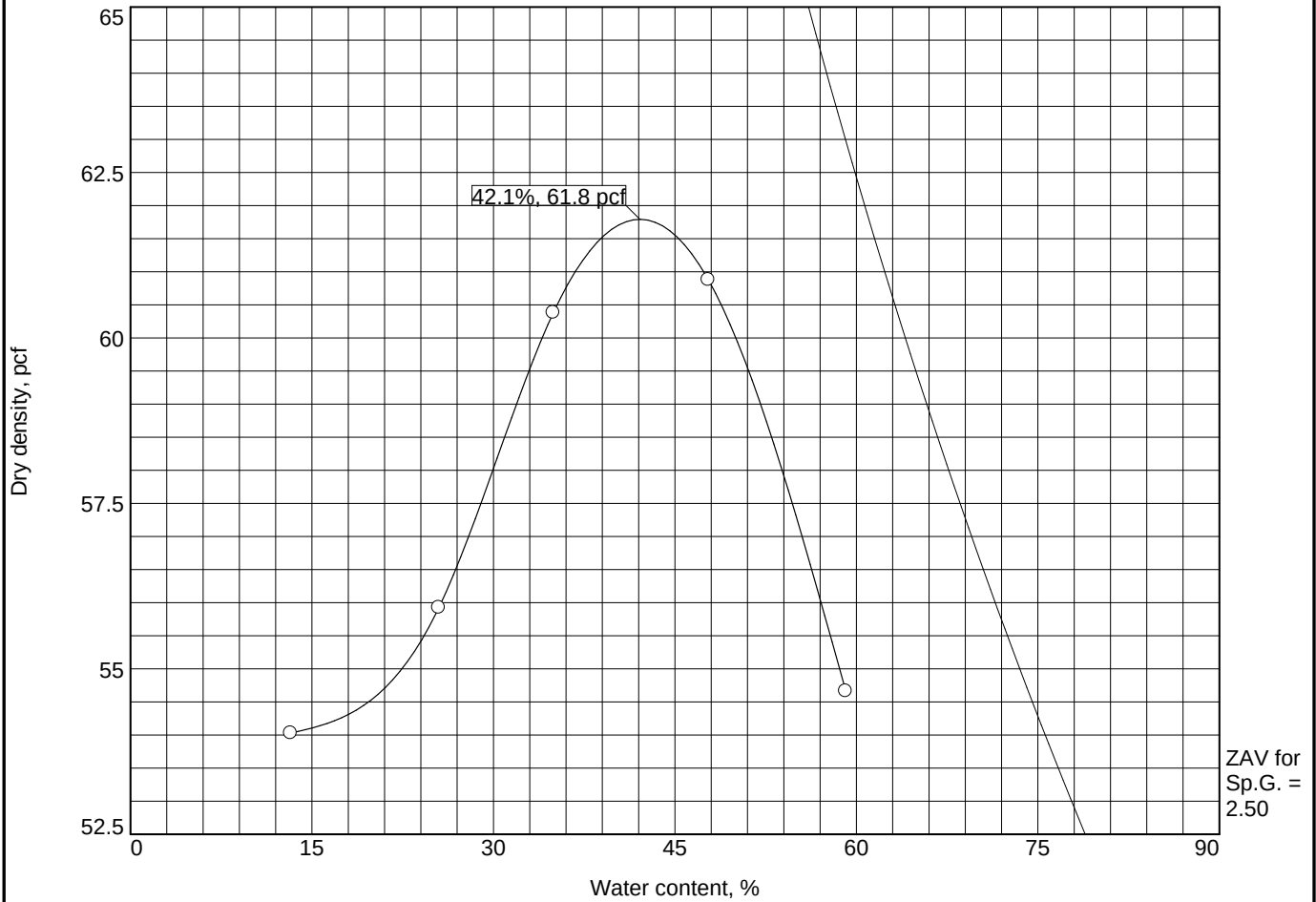
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	ML	A-4(0)		2.5	NP	NP	0.0	70.2

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 64.0 pcf Optimum moisture = 39.0 %	Silt with sand (Coal ash)
Project No. JB215020 Client: McFarland Johnson Project: Proposed Marmen Manufacturing Facility Albany, NY Source of Sample: TP-21-8 3'-3.5' Terracon Consultants-NY, Inc. Albany, NY	Remarks: Per ASTM D1557

Figure TP-21-8 3'-3.5'

Tested By: AB Checked By: JH

COMPACTION TEST REPORT



Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	ML	A-4(0)		2.5	NP	NP	0.0	77.4
TEST RESULTS					MATERIAL DESCRIPTION			
Maximum dry density = 61.8 pcf Optimum moisture = 42.1 %					Silt with sand (Coal ash)			
Project No. JB215020 Client: McFarland Johnson Project: Proposed Marmen Manufacturing Facility Albany, NY ○ Source of Sample: TP-21-12 5'-5.5'					Remarks: Per ASTM D1557 			

Figure TP-21-12 5'-5.5'

Tested By: AB Checked By: JH

SUPPORTING INFORMATION

Contents:

General Notes

Unified Soil Classification System

Description of Rock Properties

Note: All attachments are one page unless noted above

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

Proposed Marmen Manufacturing Facility ■ Glenmont, NY
Terracon Project No. JB215020

SAMPLING	WATER LEVEL	FIELD TESTS
 Rock Core  Grab Sample  Shelby Tube  Split Spoon	 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time  Cave In Encountered Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	N Standard Penetration Test Resistance (Blows/Ft.) (HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer UC Unconfined Compressive Strength (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

LOCATION AND ELEVATION NOTES

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See [Exploration and Testing Procedures](#) in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength Qu, (tsf)	Standard Penetration or N-Value Blows/Ft.
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

RELEVANCE OF SOIL BORING LOG

The soil boring logs contained within this document are intended for application to the project as described in this document. Use of these soil boring logs for any other purpose may not be appropriate.

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A					Soil Classification	
					Group Symbol	Group Name ^B
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	Cu ≥ 4 and 1 ≤ Cc ≤ 3 ^E		GW	Well-graded gravel ^F
			Cu < 4 and/or [Cc<1 or Cc>3.0] ^E		GP	Poorly graded gravel ^F
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH		GM	Silty gravel ^{F, G, H}
			Fines classify as CL or CH		GC	Clayey gravel ^{F, G, H}
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	Cu ≥ 6 and 1 ≤ Cc ≤ 3 ^E		SW	Well-graded sand ^I
			Cu < 6 and/or [Cc<1 or Cc>3.0] ^E		SP	Poorly graded sand ^I
		Sands with Fines: More than 12% fines ^D	Fines classify as ML or MH		SM	Silty sand ^{G, H, I}
			Fines classify as CL or CH		SC	Clayey sand ^{G, H, I}
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots on or above “A”		CL	Lean clay ^{K, L, M}
			PI < 4 or plots below “A” line ^J		ML	Silt ^{K, L, M}
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay ^{K, L, M, N}
			Liquid limit - not dried			Organic silt ^{K, L, M, O}
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above “A” line		CH	Fat clay ^{K, L, M}
			PI plots below “A” line		MH	Elastic Silt ^{K, L, M}
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay ^{K, L, M, P}
			Liquid limit - not dried			Organic silt ^{K, L, M, Q}
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

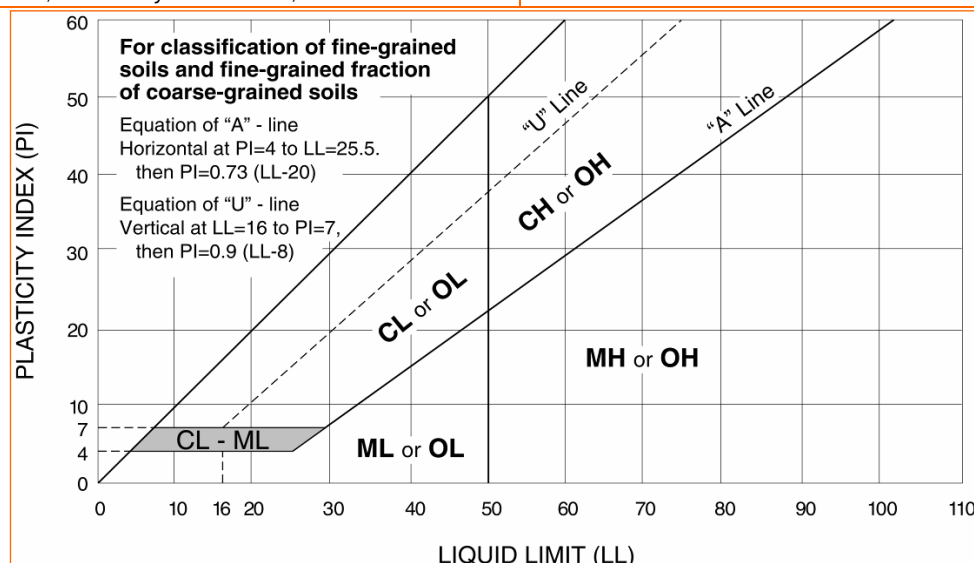
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N PI ≥ 4 and plots on or above "A" line.

^O PI < 4 or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



WEATHERING	
Term	Description
Unweathered	No visible sign of rock material weathering, perhaps slight discoloration on major discontinuity surfaces.
Slightly weathered	Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker externally than in its fresh condition.
Moderately weathered	Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a continuous framework or as corestones.
Highly weathered	More than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a discontinuous framework or as corestones.
Completely weathered	All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact.
Residual soil	All rock material is converted to soil. The mass structure and material fabric are destroyed. There is a large change in volume, but the soil has not been significantly transported.

STRENGTH OR HARDNESS		
Description	Field Identification	Uniaxial Compressive Strength, psi (MPa)
Extremely weak	Indented by thumbnail	40-150 (0.3-1)
Very weak	Crumbles under firm blows with point of geological hammer, can be peeled by a pocket knife	150-700 (1-5)
Weak rock	Can be peeled by a pocket knife with difficulty, shallow indentations made by firm blow with point of geological hammer	700-4,000 (5-30)
Medium strong	Cannot be scraped or peeled with a pocket knife, specimen can be fractured with single firm blow of geological hammer	4,000-7,000 (30-50)
Strong rock	Specimen requires more than one blow of geological hammer to fracture it	7,000-15,000 (50-100)
Very strong	Specimen requires many blows of geological hammer to fracture it	15,000-36,000 (100-250)
Extremely strong	Specimen can only be chipped with geological hammer	>36,000 (>250)

DISCONTINUITY DESCRIPTION			
Fracture Spacing (Joints, Faults, Other Fractures)		Bedding Spacing (May Include Foliation or Banding)	
Description	Spacing	Description	Spacing
Extremely close	< ¾ in (<19 mm)	Laminated	< ½ in (<12 mm)
Very close	¾ in – 2-1/2 in (19 - 60 mm)	Very thin	½ in – 2 in (12 – 50 mm)
Close	2-1/2 in – 8 in (60 – 200 mm)	Thin	2 in – 1 ft. (50 – 300 mm)
Moderate	8 in – 2 ft. (200 – 600 mm)	Medium	1 ft. – 3 ft. (300 – 900 mm)
Wide	2 ft. – 6 ft. (600 mm – 2.0 m)	Thick	3 ft. – 10 ft. (900 mm – 3 m)
Very Wide	6 ft. – 20 ft. (2.0 – 6 m)	Massive	> 10 ft. (3 m)

Discontinuity Orientation (Angle): Measure the angle of discontinuity relative to a plane perpendicular to the longitudinal axis of the core. (For most cases, the core axis is vertical; therefore, the plane perpendicular to the core axis is horizontal.) For example, a horizontal bedding plane would have a 0-degree angle.

ROCK QUALITY DESIGNATION (RQD) ¹	
Description	RQD Value (%)
Very Poor	0 - 25
Poor	25 – 50
Fair	50 – 75
Good	75 – 90
Excellent	90 - 100

1. The combined length of all sound and intact core segments equal to or greater than 4 inches in length, expressed as a percentage of the total core run length.

Reference: U.S. Department of Transportation, Federal Highway Administration, Publication No FHWA-NHI-10-034, December 2009
Technical Manual for Design and Construction of Road Tunnels – Civil Elements

DEPARTMENT OF THE ARMY PERMIT

Permittee: Albany Port District Commission
Attention: Mr. Richard Hendrick, Chief Executive Officer
106 Smith Boulevard
Albany, New York 12202
(518) 463-2164

Permit Number: NAN-2021-00948-UDA

Date Issued: APR 10 2023

Issuing Office: U.S. Army Corps of Engineers, New York District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: Dredging, with 10-years maintenance, of approximately 80,000 cubic yards (cy) of material via a barge-mounted crane with a closed clamshell bucket, from a 2.62-acre area of riverbed to a depth of 32 feet (ft) below the plane of the mean low water (MLW) with 2 ft over dredge to 34 ft. MLW. Double-walled silt curtains will be installed during the entire dredging operation. The dredged material will be placed into scows and will be allowed to settle in the scows before the water is decanted and discharged back into the Hudson River. Once the material has been decanted, the scows will be shipped via tug to the Clean Earth Clermont Dredged Processing Facility (Facility I.D. 215.734.1400), located at One Linden Avenue East, Jersey City, New Jersey for amendment and trucking to an upland disposal site.

A new wharf, 500 ft long by 93 ft wide, will be constructed along the west bank of the Hudson River. The wharf will consist of a heavy stone slope revetment, a high-modulus steel sheet pile cutoff wall, and a drilled shaft supported open wharf and relieving platform. Structures and fill installed below mean high high water elevation include 136, 48-inch diameter drilled shaft foundations with permanent steel casing, and approximately 1,162 CY of rip rap. Approximately 263 CY of the rip rap would be placed below mean high water elevation. The permanent steel casing for the drilled shaft foundations and the sheet pile wall components will be vibrated in, rather than utilizing an impact hammer. An impact hammer will only be used to seat the steel casing within the first few inches in the top of rock.

A new, 3-span bridge will be constructed over the Normans Kill channel. The bridge will be constructed on two (2) reinforced concrete drilled shafts. The construction of the northern shaft will require the discharge of fill material into 0.04-acre of wetland.

PERMITTEE: Albany Port District Commission
PERMIT NO.: NAN-2021-00948-UDA

Five new warehouse and manufacturing buildings totaling approximately 626,014 (SF) and associated attendant features including roadways, parking areas, utilities, an approximately 822 linear foot retaining wall, a wastewater treatment facility, stormwater management features and associated treated runoff outfalls to the Hudson River will be constructed. The construction of the warehouse and manufacturing buildings and attendant features will require the discharge of fill material into total of 0.81-acre of wetlands, comprised of approximately 0.30-acre of palustrine emergent wetland and 0.51-acre of palustrine forested wetland, respectively. In addition, a maximum of 0.33-acre of palustrine forested wetland will be permanently converted to an emergent cover type to facilitate the construction of the new buildings and attendant features. An 18-inch diameter water intake pipe and associated screening will be installed within the Hudson River.

To mitigate for unavoidable impacts to waters of the United States, the applicant shall purchase a total of 2.57 credits from the Middle Hudson Service Area of the Ducks Unlimited New York In-Lieu Fee Program, secure a restrictive covenant over 1,700 liner feet of on-site riparian buffer along the Hudson River, and implement a submerged aquatic vegetation transplantation and monitoring effort.

All work shall be performed in accordance with the attached drawings and Special Conditions (A) through (R) listed below, all which are hereby made a part of this permit.

Project Location: **IN: Hudson River**

AT: City of Albany and Town of Bethlehem, Albany County, New York

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on April 10, 2033. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have

found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

(A) The permittee shall submit to this office the dates of commencement and completion of the herein authorized activities on the attached forms.

(B) The permittee, and its agents, shall conduct all dredging activities from September 1st through December 31st of any calendar year in order to minimize adverse aquatic impacts to diadromous fish spawning migrations and their peak biological activity, and impacts to Shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*A. oxyrinchus*).

(C) The permittee shall install a weighted double-walled silt curtain during dredging operations.

(D) The permittee shall maintain a copy of this permit on all vessels engaged in dredging and transporting dredged materials.

(E) The permittee shall undertake all dredging activities in such a manner as to avoid large refuse piles, ridges across the bed of the waterway or deep holes, which have a tendency to cause injury to navigable channels or the banks of the waterway.

(F) If any portion of the Federal Navigation Channel affected by contractor operations, then it must be restored to its project depth (32' MLLW), with the side slope (1H3V) also restored. In addition, the permittee shall perform hydrographic surveys of the federal navigation channel adjacent to the worksite upon completion of work. The survey shall be submitted to the Regulatory Branch Upstate Regulatory Field Office within 30 days of the completion of the activity authorized by this permit verification.

PERMITTEE: Albany Port District Commission
PERMIT NO.: NAN-2021-00948-UDA

(G) The permittee shall, no less than fourteen (14) days prior to the commencement of any dredging, notify the United States Coast Guard office (USCG) of the commencement of any dredging and expected completion date, the hours of the day the work will be performed, the names of the vessels on-scene, the VHF radio channel(s) the vessels will monitor, and the project's 24/7 point(s) of contact. This information may be emailed to SECTORNYWWM@uscg.mil.

(H) No less than 14 days prior to the commencement of any in-water work, the permittee shall inform local waterway users of the commencement of the work, using the "Local Notice to Mariners." Information required to be provided in the Local Notice to Mariners can be found at <http://www.navcen.uscg.gov>. This information may be e-mailed to D01-SMB-LNM@uscg.mil.

(I) The permittee shall provide the National Oceanic and Atmospheric Administration National Ocean Service (NOAA-NOS) of the project's physical completion date and as-built specifications so that NOAA may initiate the appropriate navigation chart updates and corrections. This information must be submitted online at:

<http://ocsddata.ncd.noaa.gov/idrs/discrepancy.aspx>

(J) The permittee shall verify, in writing, compliance with all required notices to USCG and NOAA-NOS as called for above, within five (5) calendar days of each notice. Verifications shall include the permit number (NAN-2021-00948-UDA) and be delivered to the New York District by email at cenan.rfo@usace.army.mil (preferred) or to the following address:

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
ATTN: CENAN-OP-RU
Upstate New York Section
1 Buffington St., Bldg. 10, 3rd Fl. North
Watervliet, New York 12189-4000

(K) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

(L) Outdoor lighting shall be located or shielded so that it is not confused with any aids to navigation and does not interfere with navigation on the adjacent waterway.

(M) The permittee shall ensure The Federal Navigation Channel will remain clear of any barges, vessels, and/or floating equipment. Any equipment staged within the channel must be temporary, and their placement will be coordinated with the USACE Albany Field Office and USCG.

(N) Within sixty (60) days of the effective date of this permit, the permittee shall submit to the New York District, U.S Army Corps of Engineers and the National Oceanic and Atmospheric Administration National Marine Fisheries, a final version of the document entitled "Port of Albany Compensatory SAV Mitigation Plan - Draft", dated January 9, 2023, and prepared AKRF, Inc., for review and approval. The mitigation measures outline in the draft plan shall not be implemented until approved in writing by the U.S. Army Corps of Engineers. No dredging associated with the project shall be conducted until the mitigation plan has been approved in writing, and the 0.21-acre of SAV has been transplanted in accordance with the plan.

(O) The permittee shall accomplish compensatory mitigation through the purchase of 2.57 credits from the Middle Hudson Service Area of the Ducks Unlimited New York In-Lieu Fee Program (HUC 02020006 & ~35 square mile section of HUC 01100005). Within thirty (30) days of the effective date of this permit, the permittee shall supply this office with a copy of the signed Credit Sale Letter verifying acceptance of full payment by Ducks Unlimited New York In-Lieu Fee Program for the appropriate credits.

(P) The permittee shall secure restrictive covenants on the 2.87-acre riparian buffer to guarantee their preservation for wetland and wildlife resources. Within thirty (30) days from the effective date of this permit, the permittee shall accomplish the preservation of these areas by properly executing and filing the restrictive covenant, as described in the draft received by this office on July 5, 2022, with the Recorder of Deeds for Albany County and shall provide to this office a copy of the documents, as filed in County records, within thirty (30) days of its filing.

(Q) Within sixty (60) days of the effective date of this permit, the permittee shall submit the final dredge plan to this office for review and written approval.

(R) The permittee shall undertake the authorized filling activities in a manner aimed at reducing impacts upon the general environment. In addition, the permittee shall not stockpile fill or other materials in a manner conducive to erosion, or in areas likely to cause high turbidity runoff during storm events. All exposed soils shall be re-vegetated in a timely manner to further reduce potential effects. The permittee shall also fence off all wetlands and other sensitive ecological areas during construction periods to prevent equipment and personnel from entering these areas.

PERMITTEE: Albany Port District Commission
PERMIT NO.: NAN-2021-00948-UDA

(S) The permittee shall ensure that all synthetic erosion control features (e.g., silt fencing, netting, mats), which are intended for temporary use during construction, are completely removed and properly disposed of after their initial purpose has been served. Only natural fiber materials, which will degrade after time, may be used as permanent measures, or if used temporarily, may be abandoned in place.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code 403).

(X) Section 404 of the Clean Water Act (33 U.S. Code 1344).

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization:

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

PERMITTEE: Albany Port District Commission
PERMIT NO.: NAN-2021-00948-UDA

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Richard J. Hendricks
(PERMITTEE)

APRIL 6, 2023
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Stephen D. Ryan
(DISTRICT ENGINEER)

APR 10 2023
(DATE)

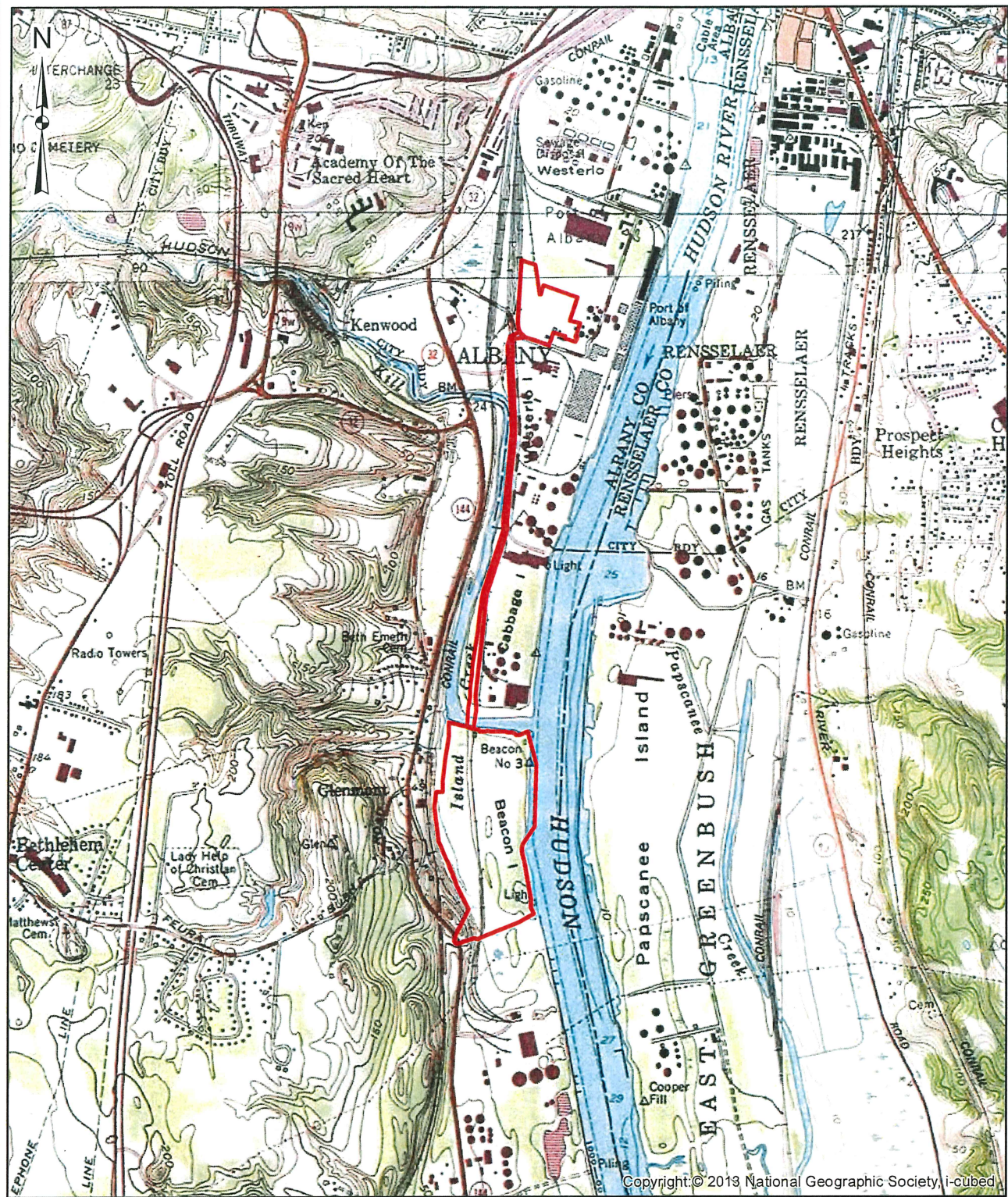
For and in behalf of

Matthew W. Luzzatto
Colonel, U.S. Army
Commander and District Engineer

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below. A copy of the permit signed by the transferee should be sent to this office.

(TRANSFEREE)

(DATE)



Legend

Project Site

Notes:

- 1) Project boundary is approximate
- 2) All areas are approximate

PORT OF ALBANY DEVELOPMENT
TOWN OF BETHLEHEM, ALBANY COUNTY, NEW YORK

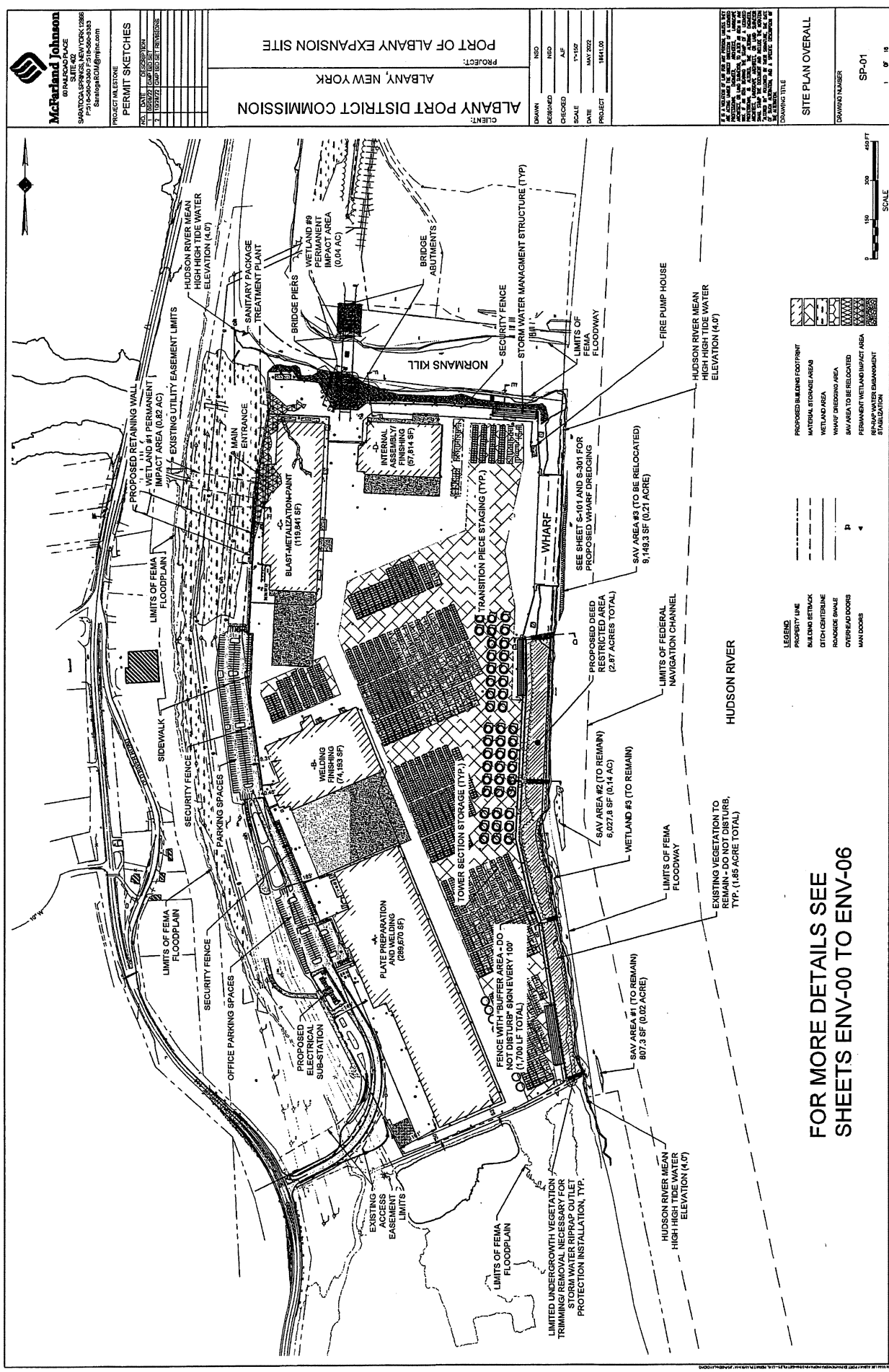
USGS TOPOGRAPHIC MAP

SCALE:
AS SHOWN

DATE:
JULY 2021

FIGURE:
2-1

 **McFarland Johnson**



FOR MORE DETAILS SEE
SHEETS ENV-00 TO ENV-06

Albany Port District Commission

NAN-2021-00948-UDA

2 of 19

McFarland Johnson
10 PARKLAND PLACE
SUITE 402
ALBANY, NEW YORK 12243-4486
P: 518-486-3300 F: 518-486-3333
SARATOGA@MCMJ.COM

PROJECT INFORMATION

NO.	DATE	DESCRIPTION
1	10/24/20	FOR PERMIT
2	11/10/20	FOR PERMIT
3	11/10/20	FOR PERMIT

PERMIT SKETCHES

NO.	DATE	DESCRIPTION
1	10/24/20	FOR PERMIT
2	11/10/20	FOR PERMIT
3	11/10/20	FOR PERMIT

CLIENT:
ALBANY PORT DISTRICT COMMISSION

PROJECT:
PORT OF ALBANY EXPANSION SITE

ALBANY, NEW YORK

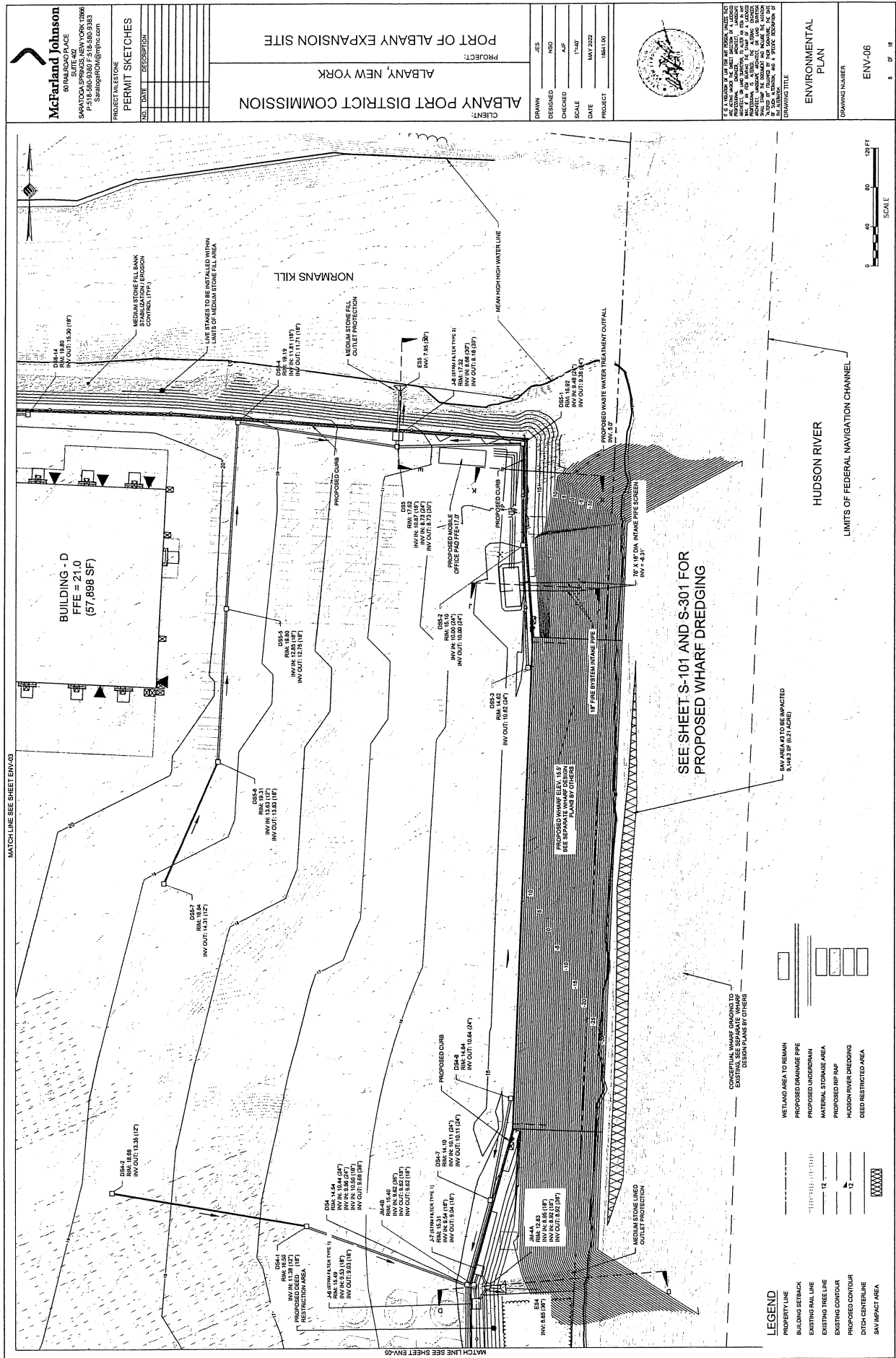
NO.	DATE	DESCRIPTION
1	10/24/20	FOR PERMIT
2	11/10/20	FOR PERMIT
3	11/10/20	FOR PERMIT

PROJECT INFORMATION

NO.	DATE	DESCRIPTION
1	10/24/20	FOR PERMIT
2	11/10/20	FOR PERMIT
3	11/10/20	FOR PERMIT

PERMIT SKETCHES

NO.	DATE	DESCRIPTION
1	10/24/20	FOR PERMIT
2	11/10/20	FOR PERMIT
3	11/10/20	FOR PERMIT



McFarland Johnson
69 RAULDOC PLACE
SAVANNAH, GEORGIA 31406
P: 912-580-9380 F: 912-580-9383
Savannah@mjinc.com

PROJECT TALESTONE

REV	DATE	DESCRIPTION

CLIENT: ALBANY PORT DISTRICT COMMISSION

PROJECT: PORT OF ALBANY EXPANSION SITE

ALBANY, NEW YORK

DESIGNED: JES

CHECKED: HSD

IN CHARGE: AJP

SCALE: 1"=40'

DATE: MAY 2022

PROJECT: 18641.00

ENVIRONMENTAL PLAN

DRAWING NUMBER: ENV-06

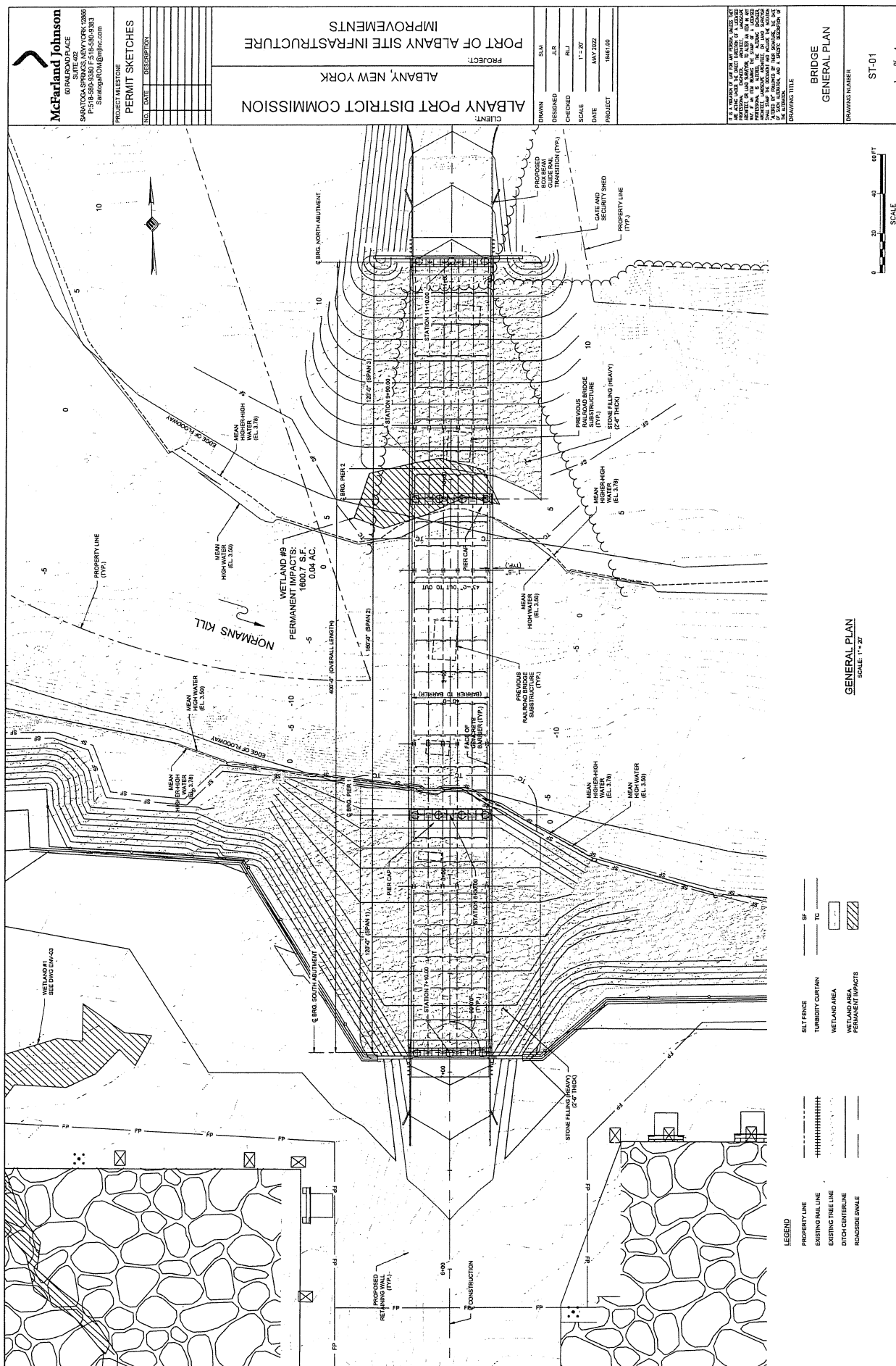
SCALE: 5 OF 18

PROJECT TALESTONE

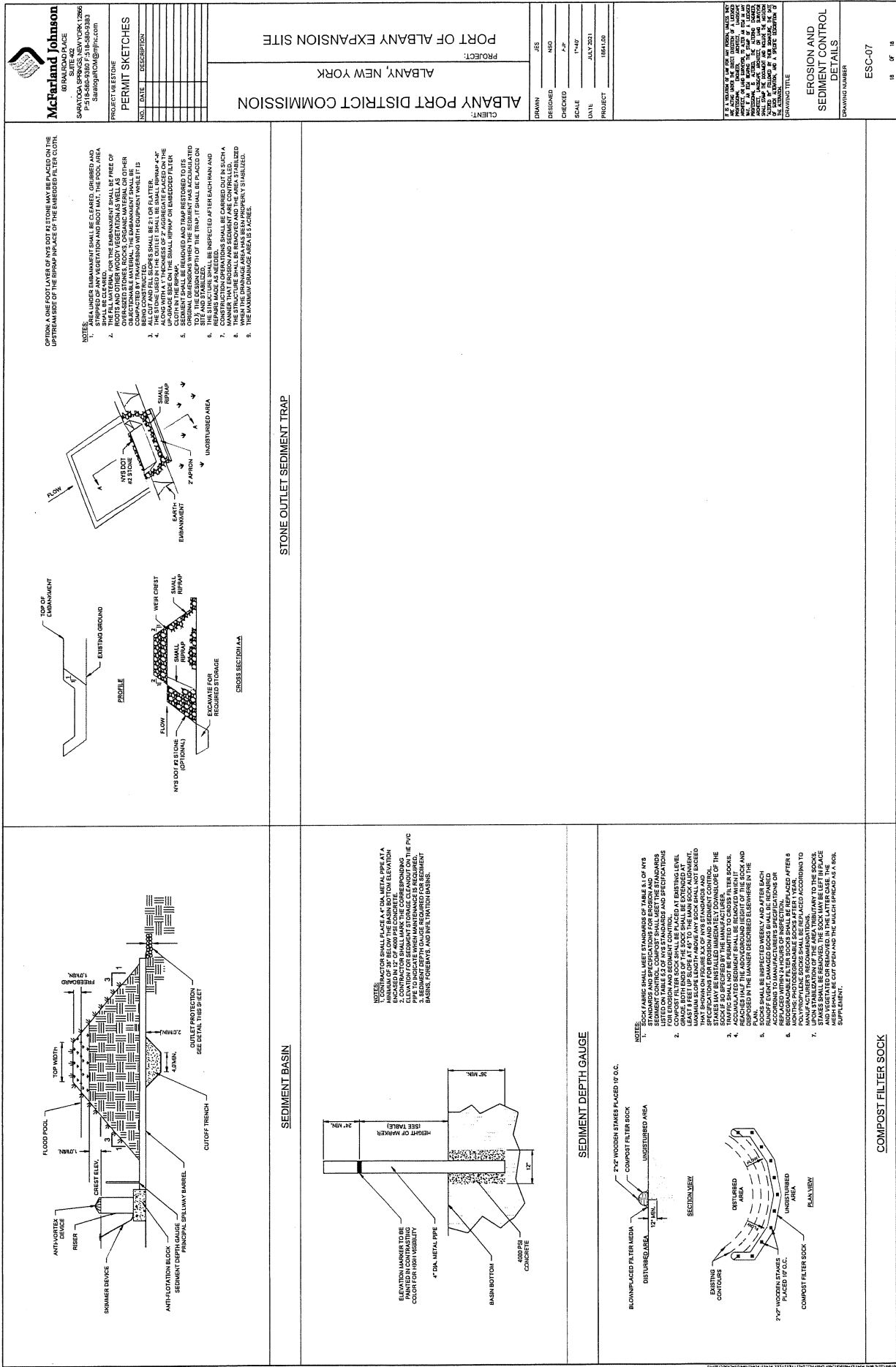
ENVIRONMENTAL PLAN

DRAWING NUMBER: ENV-06

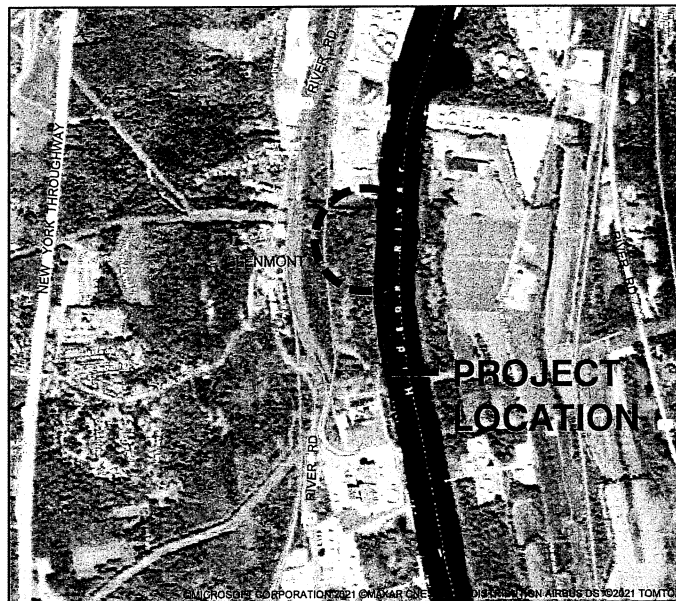
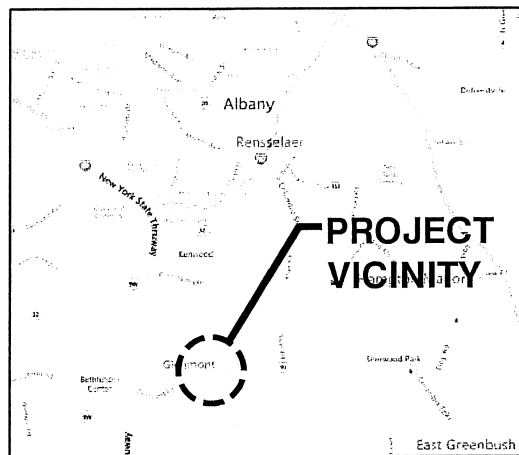
SCALE: 5 OF 18



Page 799 of 831



File: Q:\NY10949-01\20 CADD\Active_Permits\1094901P-01_Plot.dwg; Plotted: 7/15/2021 8:44 AM by WILKINSON, MELISSA; Saved: 7/14/2021 3:05 PM by MWILKINSON



VICINITY AND LOCATION MAP
SCALE: N.T.S.

NOTES:

1. HORIZONTAL CONTROL REFERENCED TO NORTH AMERICAN DATUM OF 1983, STATE PLANE COORDINATE SYSTEM, NEW YORK, EAST ZONE, IN FEET.
2. WATER LEVEL DATUM IS BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929, AS FOLLOWS:
 - MEAN HIGHER HIGH WATER LEVEL (MHHW) +4.56 FT (NGVD29)
 - MEAN HIGH WATER LEVEL (MHW) = +4.18 FT (NGVD29)
 - MEAN TIDE LEVEL (MTL) = +1.69 FT (NGVD29)
 - MEAN LOW WATER LEVEL (MLW) = -0.80 FT (NGVD29)

PURPOSE: WHARF CONSTRUCTION
PERMIT SUBMITTAL-NOT TO BE USED
FOR CONSTRUCTION
DATUM: NGVD29



m&n engineering, p.c.

OWNER/APPLICANT:
ALBANY PORT DISTRICT COMMISSION
PORT OF ALBANY

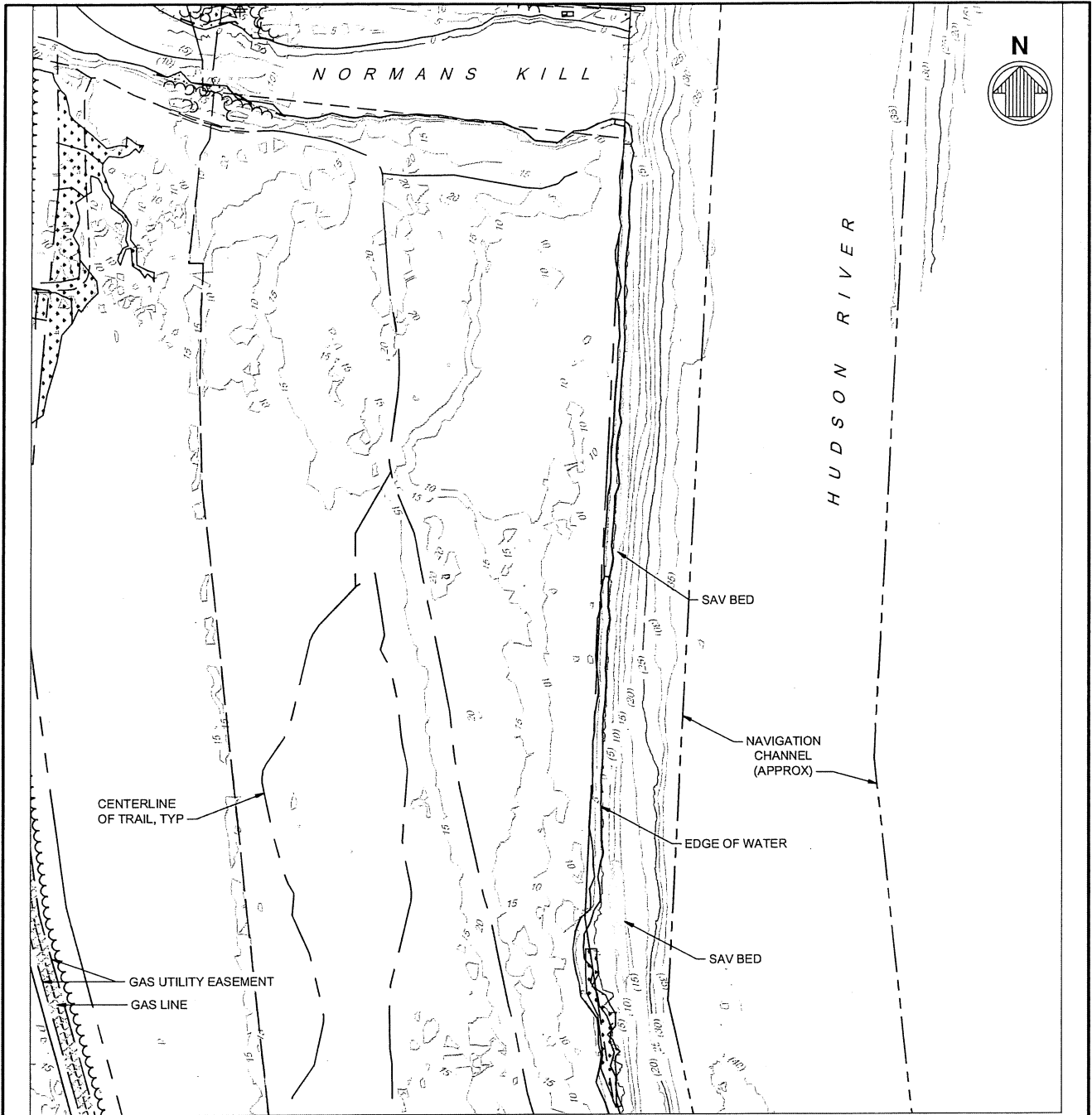
IN: HUDSON RIVER
NEAR: SOUTH OF ALBANY
LOCATION: PORT OF ALBANY
106 SMITH BOULEVARD
ALBANY, NEW YORK 12202

WHARF DREDGING AND CONSTRUCTION

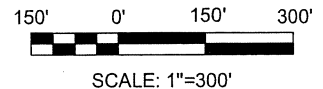
VICINITY AND LOCATION

DATE: 2021-07-15

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PLAN - EXISTING CONDITIONS



PURPOSE: WHARF CONSTRUCTION
PERMIT SUBMITTAL-NOT TO BE USED
FOR CONSTRUCTION
DATUM: NGVD29



m&n engineering, p.c.

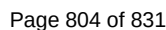
OWNER/APPLICANT:
ALBANY PORT DISTRICT COMMISSION
PORT OF ALBANY

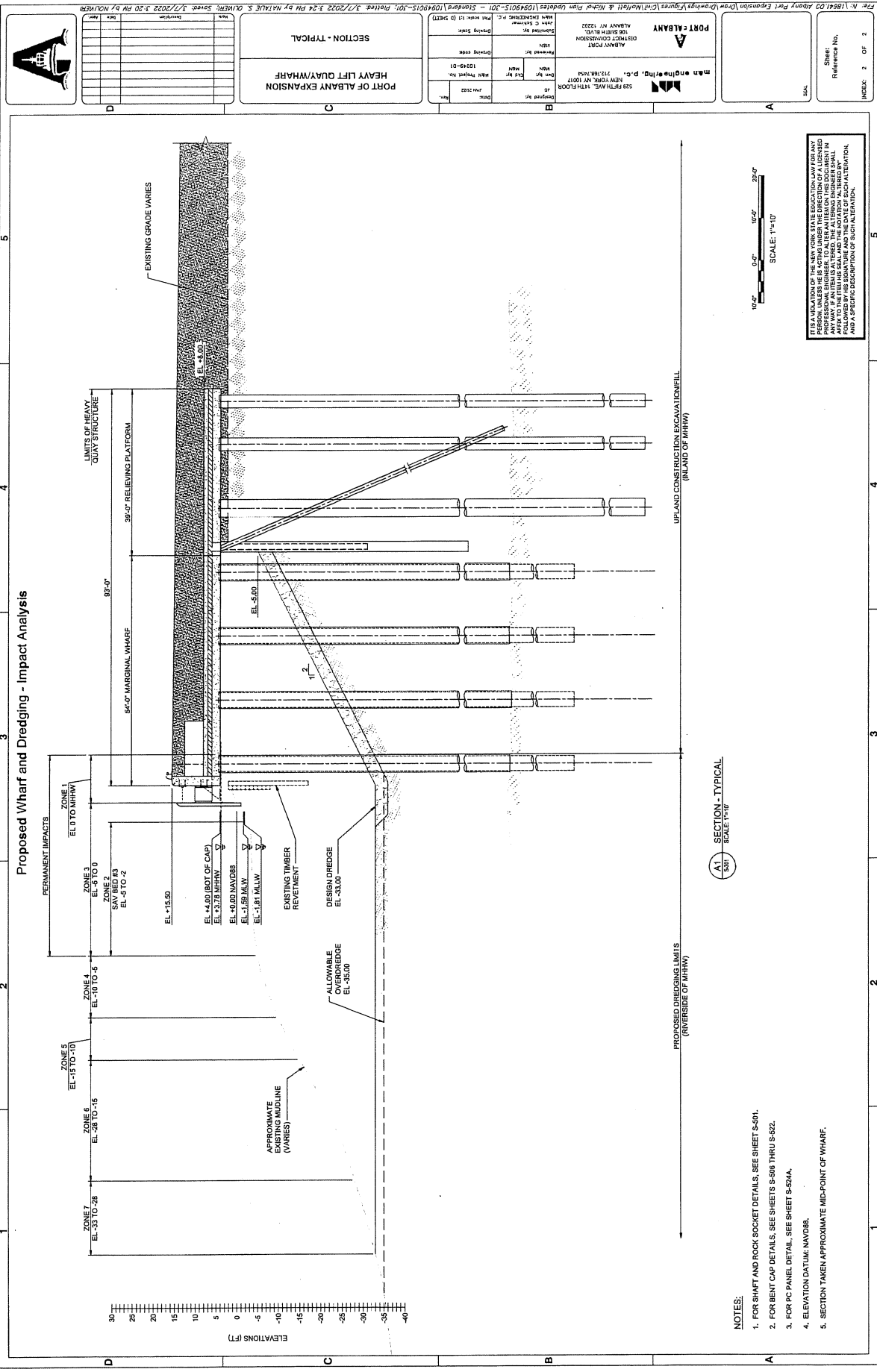
IN: HUDSON RIVER
NEAR: SOUTH OF ALBANY
LOCATION: PORT OF ALBANY
106 SMITH BOULEVARD
ALBANY, NEW YORK 12202

WHARF DREDGING AND CONSTRUCTION

PLAN - EXISTING CONDITIONS

DATE: 2021-07-15





Port of Albany Site Expansion,

Prepared for:



LaBella Associates
4 British American Blvd.
Latham, New York 12110

October 23, 2022

Revision 5

**Approved by NYSDOH
October 28, 2022**

Prepared by:

Watson & Associates, Occupational Hygiene and Safety, LLC
PO Box 31, Greenville, New York 12083
Project Number: 990214-002

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Community Air Monitoring Plan Port of Albany Site Expansion

Project Description

The Beacon Island site is located to the east of River Road (County Route 144) and along the west side of the Hudson River, in the Town of Bethlehem, Albany County, New York. The Beacon Island parcel consists of approximately eighty acres and is the site of a planned expansion for the Port of Albany. The site is to be developed for wind turbine manufacturing. Portions of the site were previously used as a fly ash landfill.

Scope

A Community Air Monitoring Plan (CAMP) is required to be implemented during excavation work for the Port of Albany Site Expansion. Various contractors will be performing ground intrusive activities to support the expansion infrastructure. This CAMP will apply **to all ground intrusive activities onsite**. The CAMP can be terminated once placement of two feet (2') of clean fill is completed in excavated areas.

This CAMP has been prepared in accordance with New York State Department of Environmental Conservation (NYSDEC) DER-10, TECHNICAL GUIDANCE FOR SITE INVESTIGATION AND REMEDIATION, dated May 2010 (DER-10).

DER-10 requires real-time monitoring for volatile organic compounds (VOCs) and/or particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. This will be the responsibility of each contractor. The intent of the CAMP is to provide a measure of protection for the downwind community, including residences and businesses and on-site workers not directly involved with the subject work activities. The action levels specified herein require air monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site.

Please note that reliance on air monitoring will not preclude simple, common-sense measures to keep dust and odors at a minimum around the work areas.

Community Air Monitoring Plan

Fly ash is the primary contaminant of concern. Continuous real time monitoring will be required for all ground intrusive activities and handling of soils.

Activities that are anticipated or known to include the disturbance of fly ash include:

- Cut and fill for the foundations (please see building site map Aggregate Grading Plan, provided in Appendix B);
- Areas to be developed with asphalt/concrete surfaces;
- Areas to be developed with lawn/landscaping.

Per the Atlantic Soil Management Plan, “Within 14 days, and no less than 3 days, prior to commencing work activities...” the NYSDEC shall be notified of the planned work. This notification should be performed by the Owner and/or Contractor performing the site work. The Design Professional and Environmental Consultant must also be similarly notified.” A 14-day notification will be sufficient time to obtain and ship all required air monitoring equipment.

Particulate Monitoring – PM 10.0

Particulate concentrations will be monitored continuously during intrusive work at four (4) perimeter locations. Locations will be identified by a description of the location and compass heading. These locations will be fixed at the north, south, east, and west perimeter locations of the site. Air monitoring locations will be placed outside the active work boundaries. Proposed air monitoring locations are identified on the site map located in Appendix A. Location 1 will be to the North, Location 2 will be to the East, location 3 will be to the south and location 4 will be to the west.

Wind direction will be identified by use of a metrological station. Wind direction will be noted daily at the beginning of the shift and monitored every two hours. Wind direction will be reported by the direction from which it originates. For example, a north or northerly wind will indicate that the wind blows from the north to the south. It is anticipated that wind direction will shift and, at times, constantly. In the event of an

alarm condition, the upwind monitor will be the monitor identified to be the unit upwind of the monitor with the current alarm condition. The appropriate response actions will then be implemented.

The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes for comparison to the airborne particulate action level. Four (4) TSI DustTrak II, Model 8530 direct reading instruments with environmental enclosures will be utilized with PM 10.0 cyclones. These units will be required to have an extra battery to ensure that data collection can be obtained over the contractor's shift. The units will be placed prior to the excavation contractor performing **any intrusive work** and will be removed after work is completed each day. One additional PM 10.0 monitor will be available on-site in case of equipment failure.

Response Levels and Actions – PM 10.0

If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \mu\text{g}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area. The work area will be defined as the perimeter bounded by the dust monitors. If particulate levels are detected in excess of $150 \mu\text{g}/\text{m}^3$, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than $100 \mu\text{g}/\text{m}^3$ above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to reduce the potential for contaminant migration. Corrective measures may include implementing additional dust suppression techniques. Should the action level of $150 \mu\text{g}/\text{m}^3$ continue to be exceeded work must stop and DEC and DOH must be notified the same day. The notification shall include a description of the control measures implemented to prevent further exceedances.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \mu\text{g}/\text{m}^3$ above the upwind level, work must be stopped, and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \mu\text{g}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

Particulate Monitoring – PM 2.5

PM 2.5 particulate concentrations will be monitored continuously during intrusive work at the four (4) perimeter locations identified above. The PM 2.5 monitors will be collocated with the PM 10.0 monitors.

The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 2.5 micrometers in size (PM-2.5) and capable of integrating over a period of 15 minutes for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. Two (2) TSI DustTrak II, Model 8530 direct reading instruments with environmental enclosures will be utilized with PM 2.5 cyclones. The units will be placed prior to the excavation contractor performing any intrusive work and will be removed after work is completed each day. One additional monitor will be available on-site in case of equipment failure.

Please note that Watson has verified that the rental agency has supplied “conductive tubing” with all Dust Trak II units.

Response Levels and Actions – PM 2.5

A PM -2.5 action level of 12.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) above the upwind perimeter PM -2.5 concentration on a fifteen minute average basis will trigger dust or smoke/exhaust control/s. A higher 15-minute average action level, such as the level of the daily National Ambient Air Quality Standard of $35 \mu\text{g}/\text{m}^3$ could be considered if an increase of $12.5 \mu\text{g}/\text{m}^3$ is demonstrated to be incompatible with responsible

construction activity. The combination of operation of off- and on-road diesel equipment and fine water misting for dust control in the work zone could and can produce elevated PM -2.5 readings.

Total Volatile Organics Air Monitoring

Total Volatile organic compounds (TVOCs) will be monitored with Rae Systems Photoionization detector with a 10.6 electron volt probe. Units will be collocated with the PM 10.0 Monitors at the site perimeter.

VOC Monitoring Response Levels, and Actions

Petroleum contamination has been identified on site. Perimeter VOC monitoring will be required to be performed as follows:

Upwind concentrations will be measured at the start of each workday as noted for the PM 10.0 monitors. Wind direction changes will be monitored as noted in the PM 10.0 section of this document.

The equipment should be calibrated prior to use per the manufacturer's directions.

The equipment will be set to calculate 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions

Community Air Monitoring Plan Port of Albany Site Expansion

taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.
4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded. Notifications of PID readings will be the same as for the dust monitoring.

Periodic Monitoring for Total VOCs

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location.

Periodic monitoring will be performed during the initiation of all excavations to determine the likelihood of potential petroleum contamination. Visual clues, odor and PID readings will all be utilized to determine if the area is potentially contaminated. In the event of the discovery of a potential historical petroleum release, all work will cease, and LaBella Associates must be notified immediately.

LaBella Associates will maintain one (1) photoionizing detector (PID) with a minimum lamp energy of a minimum of 10.6 electron volts throughout the project in order to respond to any discovered petroleum contamination. This unit will be used as handheld survey instrument and will not be placed in the environmental enclosures and will be used for the periodic monitoring.

Documentation Requirements

The air monitoring technician will maintain an electronic daily log, documenting the location of each unit by serial number, and the upwind and downwind locations. At the end of each shift the technician will provide a summary report to LaBella Associates.

The summary report will contain:

- any exceedances of action levels;
- any visual dust by location, date, and time;
- the name of the excavation contractor employee who was notified;
- the corrective actions taken by the excavation contractor;
- job or work task that generated the dust;
- location on site; and
- 15-minute averages.

The report will also include overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date of occurrence. All daily logs and data will be stored by date and transmitted to LaBella Associates electronically via email.

There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM-10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. The excavation contractor will be required to implement additional dust control measures if visual dust is observed.

Site Communications and Notification Requirements

The following site communications and notification requirements will be implemented on the project:

The air monitoring technician performing the CAMP monitoring shall notify the excavating contractor of a visual dust or alarm condition. This notification will be verbally or by cell phone.

Community Air Monitoring Plan Port of Albany Site Expansion

The air monitoring technician shall notify the LaBella site contact via email with a daily summary as noted in the Document Requirements section.

The air monitoring technician will notify LaBella for all off-site dust excursions by phone immediately upon notification by the excavating contractor, review of an alarm condition, or visual observation.

The excavating contractor will notify the air monitoring technician of any dust excursion, whether the dust excursion was an offsite event or not, in the event that the air monitoring technician is not aware of the event. This notification will be by cell phone.

A weekly report will be generated that outlines work conducted, CAMP data, any exceedances, corrective actions and anticipated next steps in the event of any exceedances that were not able to be corrected. Additionally, if there are any exceedances that require work stoppage, DOH shall be notified and provided CAMP data for the entire workday in case there are inquiries from the public. The NYS DOH, NYS DEC, Town of Bethlehem, and Albany County Department of Health will be provided the weekly report. Agency contacts are provided in Appendix C.

The following table lists the site contact phone numbers.

Table 1: Site Contact Cell Phone Numbers

Company	Name	Cell Phone Number
Port of Albany	Roddy Yagan	518-463-8763
Labella Associates	Chris LaPointe	973-513-5759
WM Keller	Jameson Phillips	518-732-1066

Dust Control Measures

All excavating contractors must implement a dust control program for all intrusive activities to be performed. The NYS DEC notes that the following techniques have been shown to be effective for controlling the generation and migration of dust during construction activities:

- Applying water on haul roads;
- Wetting equipment and excavation faces;
- Spraying water on buckets during excavation and dumping;
- Hauling materials in properly tarped or watertight containers;
- Restricting vehicle speeds to 10 miles per hour (mph);
- Covering excavated areas and material after excavation activity ceases; and
- Reducing the excavation size and/or number of excavations.

NYS DEC's experience has shown that the chance of exceeding the 150 $\mu\text{g}/\text{m}^3$ action level is remote when the above measures have been utilized. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing dust.

The evaluation of weather conditions is necessary for proper dust control. When extreme weather conditions make dust control ineffective, work may need to be suspended.

Quality Assurance/Quality Control (QA/QC)

In order to ensure the validity of the fugitive dust measurements performed, the following QA/QC procedures will be followed:

Dust Trak II

All used batteries for the Dust Trak II units shall be charged every evening. Charged batteries shall be placed in the units for use each day.

Community Air Monitoring Plan Port of Albany Site Expansion

Each DustTrak must be zeroed prior to use daily. Procedures are outlined on page 23 of the owner's manual.

The maintenance of the DustTrak will follow the requirements outlined on pages 45 through 52 of the owner's manual as required. These include:

Table 4–1. Recommended Maintenance Schedule

Item	Frequency
Perform zero check	Before each use.
Clean inlet	350 hr. at 1 mg/m ³ *
Clean 2.5 µm calibration impactor	Before every use.
Replace internal filters	350 hr. at 1 mg/m ³ * or when indicated by the main screen filter error indicator.
Return to factory for cleaning and calibration (For 8530EP, TSI recommends that both the DustTrak and the External Pump Module be	Annually

RAE Systems PID

The PID shall be charged every evening.

Each PID shall be calibrated prior to use. Calibration and bump testing will be performed per the manufacturer's directions.

Documentation Utilized

The following documents were utilized to develop this site-specific CAMP:

New York State Department of Environmental Conservation (NYSDEC) DER-10, TECHNICAL GUIDANCE FOR SITE INVESTIGATION AND REMEDIATION, dated May 2010;

Atlantic Testing Laboratories Limited, SOIL MANAGEMENT PLAN, PORT OF ALBANY EXPANSION PROJECT, BEACON ISLAND PARCEL, BETHLEHEM, ALBANY COUNTY, NEW YORK, dated August 13, 2021; and

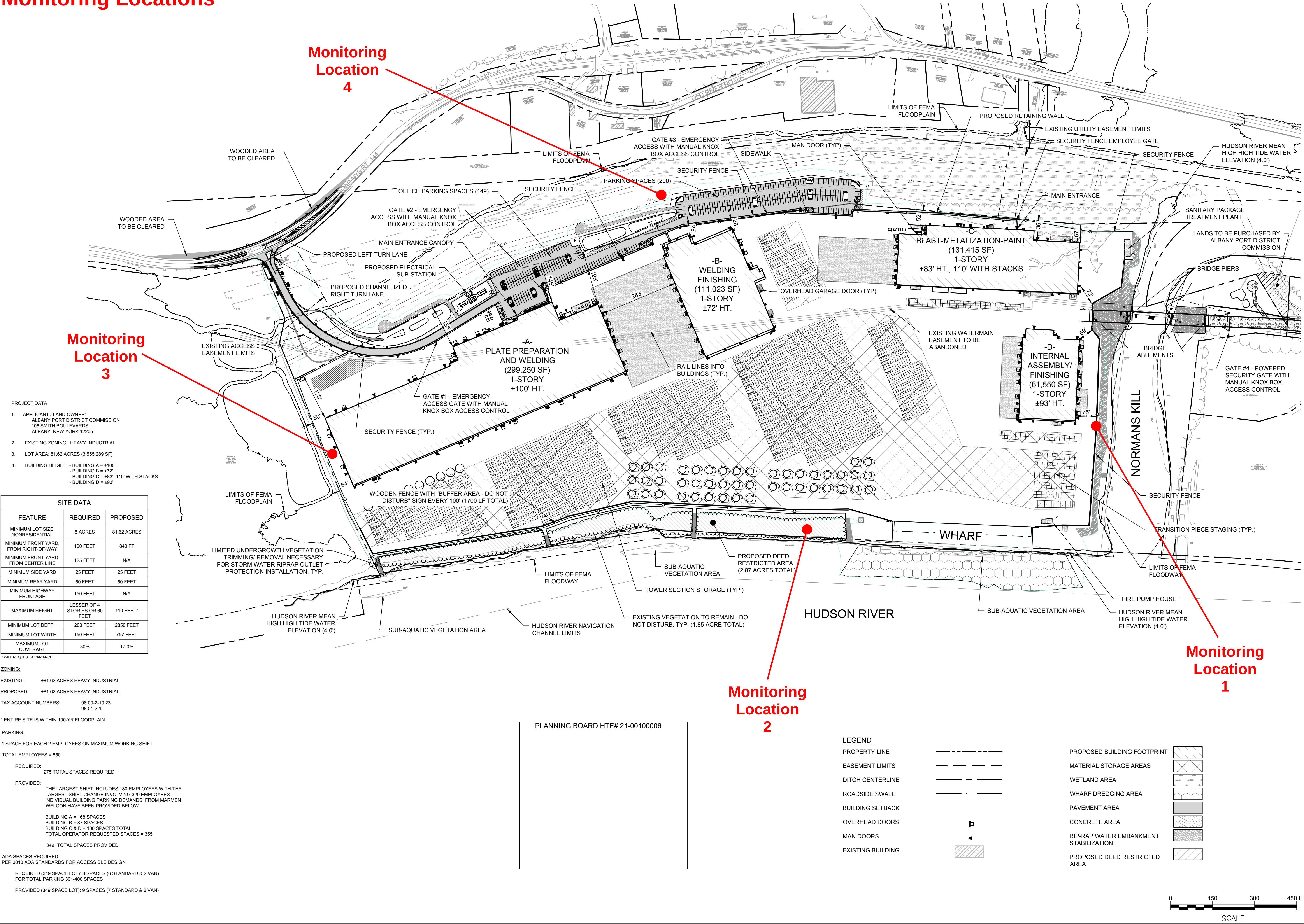
McFarland and Johnson, Aggregate Grading Plan, Drawing GR-02, Dated January 2022.

Appendix A

Figure 1 - Proposed Monitoring Locations

Figure 2 - Coal Ash Disturbance

Figure 1
Monitoring Locations



McFarland Johnson
60 RAILROAD PLACE
SUITE 402
SARATOGA SPRINGS, NEW YORK 12866
P: 518-580-9380 F: 518-580-9383
SaratogaROM@mjinc.com

PROJECT MILESTONE
FINAL DESIGN PLANS

NO.	DATE	DESCRIPTION
1	05/20/22	TOWN COMMENTS
2	06/06/22	TOWN COMMENTS
	06/08/22	GMP PLANS

CLIENT: **ALBANY PORT DISTRICT COMMISSION**
ALBANY, NEW YORK

PROJECT: **PORT OF ALBANY EXPANSION SITE**

DRAWN: JES
DESIGNED: NSO
CHECKED: AJF
SCALE: AS SHOWN
DATE: 05/10/2022
PROJECT: 18641.00

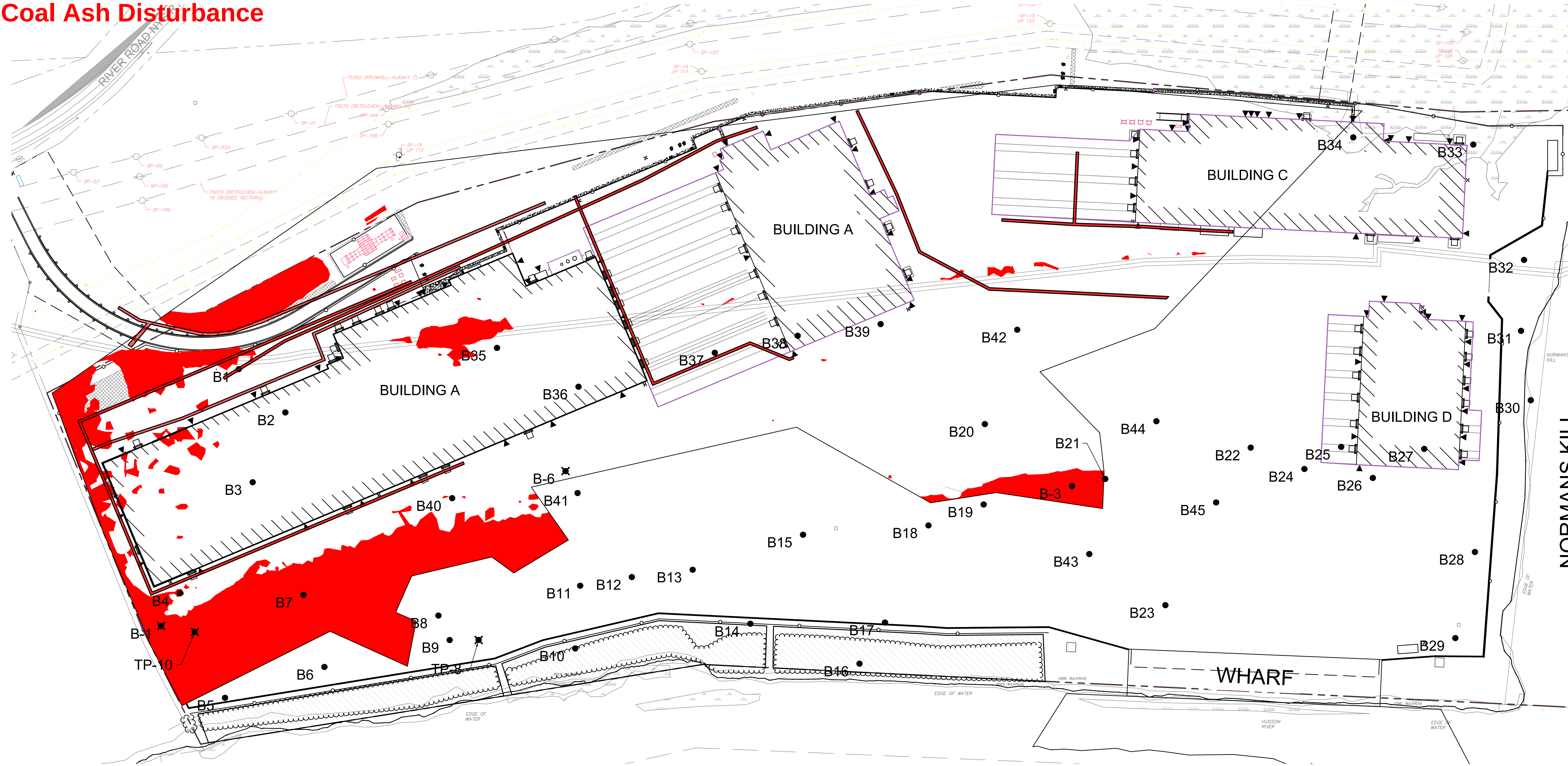
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECT DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DRAWING TITLE
SITE PLAN OVERALL

DRAWING NUMBER
SP-00

4 OF 68

Figure 2
Coal Ash Disturbance



GRADING NOTES:
1. THIS SHOWS THE COMPARISON OF THE FINISHED GRADE MINUS 48" TO THE EXISTING GRADE.

LEGEND

APPROXIMATE LIMITS OF IMPACTED COAL ASH. 4.86± AC (211,707± SF.) 15,660± CU. YD.

LEGEND

PROPERTY LINE
EASEMENT LIMITS
DITCH CENTERLINE
ROADSIDE SWALE
BUILDING SETBACK
OVERHEAD DOORS
MAN DOORS
EXISTING BUILDING

LEGEND

PROPOSED BUILDING FOOTPRINT
MATERIAL STORAGE AREAS
WETLAND AREA
WHARF DREDGING AREA
PAVEMENT AREA
CONCRETE AREA
RIP-RAP WATER EMBANKMENT STABILIZATION
PROPOSED DEED RESTRICTED AREA

McFarland Johnson
60 RAILROAD PLACE
SUITE 402
SARATOGA SPRINGS, NEW YORK 12866
P:518-580-9380 F:518-580-9383
SaratogaROM@mjinc.com

PROJECT MILESTONE
BID PLANS

NO.	DATE	DESCRIPTION

CLIENT: **ALBANY PORT DISTRICT COMMISSION**
ALBANY, NEW YORK

PROJECT: **PORT EXPANSION SITE - SITE PREPARATION**

DRAWN	JES
DESIGNED	NSO
CHECKED	AJF
SCALE	1"=40'
DATE	APRIL 2022
PROJECT	18641.00

CONCEPTUAL
FIGURE
NOT FOR
CONSTRUCTION

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECT DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DRAWING TITLE
APPROXIMATE LIMITS OF IMPACTED COAL ASH PLAN

DRAWING NUMBER
GR-01

OF

Appendix B

DUSTTRAK™ II AEROSOL MONITOR MODEL 8530/8531/8532/8530EP, OPERATION AND SERVICE MANUAL

DUSTTRAK™ II

AEROSOL MONITOR

MODEL 8530/8531/8532/8530EP

OPERATION AND SERVICE MANUAL

P/N 6001893, REVISION M
DECEMBER 2014



DustTrak II 8530/31 Desktop and 8532 Handheld



DustTrak II 8530EP Monitor

Appendix C
Project Contact List

Project Directory

Albany County Department of Heal

No people are associated with Albany County Department of Heal

Albany Port District Commission

Name	Address	Email / Phone / Fax
Criscone, Eileen Accounting Manager Albany Port District Commission	United States	ecriscone@portofalbany.us
Daly, Megan Chief Commerce Officer Albany Port District Commission	United States	mdaly@portofalbany.us
Hendrick, Richard Albany Port District Commission	United States	rhendrick@portofalbany.us
Jordan, Patrick Albany Port District Commission	United States	pjordan@portofalbany.us
Kosa, John Director of Operations Albany Port District Commission	United States	jkosa@portofalbany.us
Skubon, Josh Director Strategic Initiatives Albany Port District Commission	United States	jskubon@portofalbnay.com
Stock, Cheryl Office Manager Albany Port District Commission	United States	cstock@portofalbany.us
Stuto, Christine Chief Financial Officer Albany Port District Commission	United States	cstuto@portofalbany.us
Yagan, Roddy Senior Project Manager Albany Port District Commission	United States	(518) 463-8763 (business) (518) 844-0835 (mobile) ryagan@portofalbany.us

CDMG Building System

Name	Address	Email / Phone / Fax
Corry, Alex CDMG Building System	United States	acorry@cdmg.com
Corry, Thomas CDMG Building System	United States	tcorry@cdmg.com

Job #: 519800 Port of Albany
700 Smith Blvd
Albany, New York 12202
2126086600

CHA

Name	Address	Email / Phone / Fax
Fowler, Seth CHA	United States	sfowler@chacompanies.com

ECI Consulting

Name	Address	Email / Phone / Fax
Stokes, Patrick ECI Consulting	United States	(800) 919-9274 (business) pstokes@eci-consulting.com

Envision Architects

Name	Address	Email / Phone / Fax
Malin, Daria Principal Envision Architects	United States	dariam@envisionarchitects.com
Telberg, Devon Architect Envision Architects	United States	devont@envisionarchitects.com

Gilbane Building Company

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