ATTACHMENT 1

UNIVERSAL ENGINEERING SCIENCES
TRANSFER STATION LEACHATE TANK
GEOTECHNICAL REPORT
JANUARY 19, 2021

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Transfer Station Leachate Tank
5121 NE 63rd Avenue
Gainesville, Alachua County, Florida

UES Project No. 0230.2000158
UES Report No. 1831771

Prepared for:

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January 19, 2021

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January 19, 2021

Jones Edmunds
730 NE Waldo Road
Gainesville, FL 32641

Attention: Mr. Mark D. Hadlock, P.E.
Senior Engineer

Reference: **Report of Geotechnical Consulting Services**
Transfer Station Leachate Tank
5121 NE 63rd Avenue
Gainesville, Alachua County, Florida
UES Project No.: 0230.2000158 UES Report No.: 1831771

Dear Mr. Hadlock:

Universal Engineering Sciences, LLC (UES) has completed the geotechnical engineering services for the subject project in Gainesville, Alachua County, Florida. This geotechnical Report is submitted in satisfaction of the contracted scope of services as summarized in UES Proposal No. 1787769v2, dated December 4, 2020.

This Report presents the results of our field subsurface exploration and laboratory soil testing programs, and recommendations for geotechnical site preparation, foundation design and construction, and fill suitability.

We appreciate the opportunity to have assisted you on this project and look forward to a continued association. Please do not hesitate to contact us if you should have any questions, or if we may further assist you as your plans proceed.

Respectfully submitted,

UNIVERSAL ENGINEERING SCIENCES, LLC
Certificate of Authorization 549

Timothy E. Kwiatkowski, P.E.
Project Geotechnical Engineer
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This item has been electronically signed and sealed by Eduardo Suarez, PE on the date adjacent to the seal using Digital Signature.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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EXECUTIVE SUMMARY

We have prepared this executive summary solely to provide a general overview. Do not rely on this executive summary for any purpose except that for which it was prepared. Rely on the full report for information about findings, recommendations, and other concerns.

Project Location and Description

The subject property is located at 5121 NE 63rd Avenue in Gainesville, Alachua County, Florida. The project parcel is developed, and located within the Leveda Brown Environmental Park facility. Our office was provided with documents titled "Section 22 1314 – Solid Waste Leachate Pumping and Storage;" and "Section 20 0520 – Excavation and Backfill," prepared by Affiliated Engineers, Inc. Current site development plans include the construction of an approximately 6,500 gallon leachate tank. Our office was also provided with Piping Plans, which outline the proposed tank and associated piping. We have assumed that less than 2 feet of fill will be required within the proposed structure areas.

Soil and Groundwater Considerations

Generally, the soil test borings encountered interbedded layers of sand with silt or clay [SP-SM/SP-SC] and clayey sands [SC] to boring termination depths of 25 feet. The groundwater level was generally encountered at a depth of 4 feet in the soil borings at the time of our subsurface exploration. It should be noted that the groundwater levels may not have been fully stabilized in the boreholes when the readings were taken upon boring work completion. Fluctuations of groundwater level conditions on this project parcel should be expected to occur seasonally as a result of rainfall, surface runoff, nearby construction activities, and other factors.

Recommendations:

Assuming a subgrade improvement program is implemented, and the total and differential settlement are within acceptable limits, we consider the subsurface conditions at the site adaptable for support of the proposed tank structure when constructed on a properly designed mat foundation system.

Following completion of the recommended geotechnical site preparation and building pad preparation activities, the proposed structure may be supported on a shallow foundation system designed with a maximum average soil bearing pressure of 2,000 pounds per square foot (psf). We recommend utilizing a modulus of subgrade reaction of 100 pci beneath the proposed mat foundation.

1.0 INTRODUCTION

1.1 GENERAL

In this report, we present the results of the subsurface exploration of the site for the proposed leachate tank in Gainesville, Alachua County, Florida. We have divided this report into the following sections:

- SCOPE OF SERVICES - Defines what we did
- FINDINGS - Describes what we found
- RECOMMENDATIONS - Describes what we encourage you to do
- LIMITATIONS - Describes the restrictions inherent in this report
- APPENDICES - Presents support materials referenced in this report

2.0 SCOPE OF SERVICES

2.1 PROJECT INFORMATION

The subject property is located at 5121 NE 63rd Avenue in Gainesville, Alachua County, Florida. The project parcel is developed, and located within the Leveda Brown Environmental Park facility. Our office was provided with documents titled "Section 22 1314 – Solid Waste Leachate Pumping and Storage;" and "Section 20 0520 – Excavation and Backfill," prepared by Affiliated Engineers, Inc. Current site development plans include the construction of an approximately 6,500 gallon leachate tank. Our office was also provided with Piping Plans, which outline the proposed tank and associated piping. We have assumed that less than 2 feet of fill will be required within the proposed structure areas.

Our office was not provided with Foundation Plans or any other construction-related information other than that discussed herein. If our understandings and assumptions of project issues are incorrect our conclusions and recommendations will not be considered valid until we have had the opportunity to review all pertinent issues. If our assumptions are incorrect we should be advised so that we may review our engineering evaluations, conclusions and recommendations. The above constitutes all of the project information provided to our office at the time of this Report preparation.

We note that since the applicability of geotechnical recommendations is very dependent upon project characteristics, most specifically: improvement locations, grade alterations, and actual structural loads applied, UES must review the preliminary and final foundation and grading plans, including structural design loads to validate all recommendations rendered herein. Without such review our recommendations should not be relied upon for final design or construction of the structures.

Lastly, our authorized scope of services and this report do not address any other project elements, such as slope stability issues that may be part of the overall project site plan. Since other site improvements could have detrimental effects on the performance of a foundation system at this site, UES, or other qualified geotechnical consultants, should be consulted to review the entire site development plan and conduct additional services as required to minimize any impact of associated improvements on foundation performance.

Additionally, no site or project/improvements, other than those described herein, should be designed using the soil information presented in this report. Moreover, UES will not be responsible for the performance of any site improvement so designed and constructed.

2.2 PURPOSE

- To explore the prevailing site subsurface conditions within the proposed leachate tank area,
- To perform a series of laboratory tests on selected subsurface soil specimens, recovered from the field exploration program to assist with engineering soil classifications,
- To classify and stratify the various soil strata encountered in the soil test borings,
- To evaluate the groundwater level in the area of exploration and make appropriate recommendations,
- To prepare geotechnical engineering recommendations for foundation design and site preparation in regards to the new 6,500 gallon leachate tank,
- To discuss technical suitability of the subgrade soils for fill suitability.

This report presents an evaluation of site conditions on the basis of traditional geotechnical procedures for site characterization. The recovered samples were not examined, either visually or analytically, for chemical composition or environmental hazards. Universal Engineering Sciences would be pleased to perform these services, if you desire.

2.3 FIELD EXPLORATION

The field geotechnical testing activities were started and completed on December 30, 2020. Field test for the geotechnical study included two (2) soil test borings to a depth of 25 feet below the ground surface within the limits of the proposed structures. The test quantities and locations for the proposed structures were selected by the design team. The test locations were staked in the field by UES personnel. All boreholes were backfilled upon field work completion. The soil test boring locations are shown in the attached Boring Location Plan drawing.

Representative portions of the subsurface soil samples recovered were transported to our Gainesville soils laboratory. The soil samples were visually classified by an experienced Geotechnical Engineer. It should be noted that soil conditions might vary between soil test boring locations, and between the subsurface soil strata interfaces which have been shown on the Boring Logs. The soil test boring data reflect information from the specific test locations only.

2.3.1 Standard Penetration Test (SPT) Borings

Penetration tests were performed in accordance with ASTM Procedure D-1586, *Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils*. This test procedure generally involves driving a 1.4-inch I.D. split-tube sampler into the soil profile in six inch increments for a minimum distance of 18 inches using a 140-pound hammer free-falling 30 inches. The total number of blows required to drive the sampler the second and third 6-inch increments is designated as the N-value, and provides an indication of in-place soil strength, density, and consistency.

2.4 LABORATORY TESTING

2.4.1 Visual Classification

The soil samples recovered from the soil test borings were returned to our laboratory where an engineer visually reviewed the field descriptions in accordance with ASTM D-2488. Using the results of the laboratory tests, our visual observation, and our review of the field boring logs we classified the soil borings in accordance with the current Unified Soil Classification System (USCS). We then selected representative soil samples for laboratory testing.

2.4.2 Index Testing

Laboratory testing was performed on selected samples of the soils encountered in the field exploration to evaluate soil composition and properties. Testing was performed in accordance to ASTM procedures and included Percent passing No. 200 Sieve (ASTM D-1140), natural moisture content (ASTM D-2216), and Atterberg Limits (ASTM D-4318). The test results have been presented on the attached Boring Logs.

3.0 FINDINGS

3.1 REGIONAL GEOLOGY

The general geology of central Alachua County is characterized by a surface veneer of Pleistocene and Pliocene sands and sandy clays overlying the Miocene age Hawthorn Group, a highly variable mixture of interbedded quartz sands, clays, carbonates, pebbles and grains occurring in thickness of up to 150 feet. Underlying the Hawthorn Group is the upper Eocene age Ocala Formation, occurring as a uniform limestone, which is approximately 200 feet thick and overlies the Eocene age Avon Park Formation, which can be up to 500 feet thick. Both the Ocala and Hawthorn Formations dip to the northeast by approximately one degree.

The general hydrogeology of Alachua County consists of three aquifer systems: a surficial aquifer, an intermediate aquifer, and the Floridan aquifer system. The surficial aquifer exists as an unconfined water table situated over the impermeable Hawthorn Group and is usually a subdued reflection of surface topography. The intermediate aquifer system includes all rocks that collectively retard the exchange of water between the overlying surficial aquifer system and the underlying Floridan aquifer system. Water in this system is contained under confined conditions. The Floridan aquifer system is a thick carbonate sequence that functions regionally as a water-yielding hydraulic unit. The direction of shallow groundwater flow is generally toward surface water bodies. The surface of the upper Floridan Aquifer in the general project site area is estimated in the elevation range of +50 to +60 feet, NGVD.

3.2 KARST TOPOGRAPHY

About 10% of the earths land (and 15% of the United States) crust is composed of, or underlain by, soluble limestone. When limestone interacts with underground water, over time, the water dissolves the limestone to form karst topography, a mix of caves, underground channels, and rough and undulating ground surfaces. The underground water of karst topography carves channels and caves that become susceptible to collapse from the surface. When enough limestone is eroded from underground, a sinkhole may develop. Sinkholes can range in size and depth from a few feet to over 300 feet. The topography of North Central Florida is characteristic of karst terrain, with sinkholes caused by natural climatic variability, as well as, man-made activities, such as, the drop in groundwater levels from well pumping.

Per contract scope of services, our exploration was confined to the zone of soil likely to be stressed by the proposed construction. Our work did not address the potential for surface expression of deep geological conditions, such as sinkhole development related to karst activity. This evaluation requires a more extensive range of field services than performed in this study.

3.3 GENERAL AREA SOILS INFORMATION

The United Sates Department of Agriculture (USDA) *Soil Survey of Alachua County, Florida* describes the near-surface native soil profile in the general project area as Pomona soils. The Pomona sand soils are characterized as nearly level, and poorly drained with a water level at a depth within 10 inches of the surface for 1 to 3 months during most years, and recedes to a depth of more than 40 inches during dry seasons. Relevant engineering index properties for Pomona soils have been summarized in Table 1.

Table 1 – Relevant Engineering Index Properties of Pomona Sand Soils

Depth, Inches	Texture	Classification	% Passing #200 Sieve	Plasticity Index	Shrink-swell Potential	Permeability
0 – 5	Sand	SP, SP-SM	2 – 12	NP	Low	6.0 – 20 in/hr
5 – 16	Sand, fine sand	SP, SP-SM	2 – 12	NP	Low	6.0 – 20 in/hr
16 – 24	Sand, fine sand	SP-SM, SM	5 – 15	NP	Low	0.6 – 20 in/hr
24 – 43	Sand, fine sand	SP, SP-SM	2 – 12	NP	Low	2.0 – 20 in/hr
43 – 84	Sandy clay loam, sandy loam, sandy clay	SM, SM-SC, SC	25 – 50	NP – 16	Low	0.2 – 2.0 in/hr

3.4 SURFACE CONDITIONS

UES engineering personnel visited the project site prior to and during the performance of the field portion of this geotechnical study. At the time of our exploration site has been developed with existing waste treatment facilities. Surface debris, unusual ground depressions, or rock outcroppings were not observed on the project site.

3.5 SUBSURFACE CONDITIONS

The field exploration performed for this project disclosed subsurface conditions that were generally consistent with the local geology and general area soils information described above. The soil test borings performed beneath the proposed structures were reviewed to evaluate the subsurface soil strata lateral continuity and uniformity, both parameters that would have an impact in foundation system selection and performance. Soil classifications and descriptions for this geotechnical study are based both on the results of the laboratory soil testing programs and on visual examinations of soil specimens by the Geotechnical Engineer. The subsurface soil conditions encountered in the soil test borings have been summarized in the attached Boring Logs and described below.

Generally, the soil test borings encountered interbedded layers of sand with silt or clay [SP-SM/SP-SC] and clayey sands [SC] to boring termination depths of 25 feet.

3.6 GROUNDWATER DEPTH

The groundwater level was generally encountered at a depth of 4 feet in the soil borings at the time of our subsurface exploration. It should be noted that the groundwater levels may not have

been fully stabilized in the boreholes when the readings were taken upon boring work completion. Fluctuations of groundwater level conditions on this project parcel should be expected to occur seasonally as a result of rainfall, surface runoff, nearby construction activities, and other factors.

3.7 LABORATORY TESTING

The soil samples recovered from the field exploration program were placed in containers and returned to our soils laboratory, where the Geotechnical Engineer visually examined and classified the samples. Laboratory soil tests are performed to aid in the classification of the soils, and to help in the evaluation of engineering characteristics of the soils. Representative soil samples were selected for Atterberg Limits, percent fines determination and moisture content testing. The test results have been presented on the attached Boring Logs and summarized in Table 2.

3.7.1 Percent Passing No. 200 Sieve

Certain recovered soil samples were selected to determine the percentage of fines. In these tests the soil sample was dried and washed over a U.S. No. 200 mesh sieve. The percent of soil by weight passing the sieve was the percentage of fines or portion of the sample in the silt and clay size range. This test was conducted in accordance with ASTM Procedure D-1140, *Standard Test Methods for Amount of Material in Soils Finer than the No. 200 Sieve*.

3.7.2 Moisture Content

Certain recovered soil samples were selected to determine their moisture content. The moisture content was the ratio expressed as a percentage of the weight of water in a given mass of soil to the weight of the solid particles. These tests were conducted in accordance with ASTM Procedure D-2216, Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock.

3.7.3 Atterberg Limits

Certain recovered soil samples were selected for Atterberg Limits testing to evaluate the soil plasticity characteristics. The soil's Plasticity Index (PI) is the range of moisture content over which the soil deforms as a plastic material. It is bracketed by the Liquid Limit (LL) and the Plastic Limit (PL). The LL is the moisture content at which the soil will flow as a heavy viscous fluid. The PL is the lowest moisture content at which the soil is sufficiently plastic so as to be manually rolled into a 1/8-inch diameter thread. The test was conducted in general accordance with ASTM Procedure D-4318, Standard Test Methods for LL, PL and Plasticity Index of Soils.

Table 2 – Laboratory Soil Test Results

Soil Test Boring	Sample Depth	Type of Test	Results	Soil Description
B-1	5 feet	% Finer #200	26 %	Clayey Sand
		Moisture Content	15 %	
B-2	7 feet	% Finer #200	37 %	Very Clayey Sand
		Moisture Content	24 %	
		Atterberg Limits	LL = 40 % , PI = 21 %	

4.0 RECOMMENDATIONS

4.1 GENERAL

In this section of the report, we present our recommendations for groundwater control, structures foundation, site preparation, and construction related services. The following recommendations are made based upon a review of the attached soil test data, our understanding of the proposed construction, and experience with similar projects and subsurface conditions.

Recommendations for foundation design are dependent on the amount of total settlement and more importantly, differential settlement between various structural elements, that can be safely tolerated by the individual structures. Total and/or differential settlements beyond specified tolerable limits often dictate the use of deep foundation systems, or appropriate deep subsurface improvement techniques in order to support the structures on a shallow foundation system.

It should be noted that differential settlement is a function of the uniformity or variability of the subsurface conditions within the zone of influence of the tank footprint. The more uniform the subsurface conditions, the less the differential settlement will be. We recommend that the connections and joints of various pipes, and utility lines selected must be flexible enough to allow for anticipated vertical settlement of the tank.

It should further be noted that the estimated magnitudes of total and differential settlements are dependent on foundation loading conditions among other factors, and that we have made certain assumptions regarding those loading conditions in this Report. If unusually heavy foundation loading conditions are expected for some of the proposed project elements, or if our estimates vary significantly from actual anticipated conditions, we should be so advised so that we may revisit our engineering evaluations and foundation settlement estimates.

Based on our exploration, the primary geotechnical considerations for the design and construction of the proposed structure are the presence of loose sandy soils in the shallow subsurface profile, and shallow water table.

We recommend that we be provided the opportunity to review the project plans and specifications to confirm that our recommendations have been properly interpreted and implemented. If the structural loadings or the structures locations change significantly from those discussed previously, we request the opportunity to review and possibly amend our recommendations with respect to those changes. The discovery of any subsurface conditions during construction which deviate from those encountered in the borings should be reported to us immediately for observation, evaluation, and recommendations. In this section of the report, we present our detailed recommendations for tank foundations, site preparation, and construction related services.

The clayey sand soils may require stringent moisture control during compaction, particularly during rainy periods. Footings that are excavated through the upper layer of compacted sand fill soils into the native clayey sands, should be visually inspected and tested to verify the in-place density and condition of the subgrade bearing soils.

Our local experience has found that clay layers are often laterally discontinuous, which makes it more difficult to ascertain their presence and extent on a given project parcel with a few soil test borings. If at the time of construction the builder encounters or suspects that clay soils may be near the grade slab or foundation bearing elevations, UES should be contacted to prepare

appropriate recommendations. Where encountered, shallow deposits of clay soils must be addressed through site grading, over-excavation and replacement, site drainage and stiffened foundation.

We are recommending the use of shallow foundation systems on this project as a sound, practical and cost effective solution for support of the proposed tank structure. We believe this to be a cost effective approach in light of the alternative solutions. However, we will address alternative foundation design options and provide appropriate recommendations if in fact the estimated total and differential settlements exceed design tolerances set forth by the project's Structural Engineer and/or the tank manufacturer.

4.2 FOUNDATION DESIGN RECOMMENDATIONS

Based on the results of our exploration, we consider the subsurface conditions at the site adaptable for support of the proposed structure when constructed on a properly designed mat foundation system. Assuming a subgrade improvement program is implemented, and the total and differential settlement are within acceptable limits, we consider the subsurface conditions at the site adaptable for support of the proposed tank structure when constructed on a properly designed mat foundation system. Provided the site preparation and earthwork construction recommendations outlined in Section 4.4 of this report are performed, the following parameters may be used for foundation design.

4.2.1 Bearing Pressure

The net maximum allowable soil bearing pressure for use in shallow foundation design should not exceed 2,000 psf. Net bearing pressure is defined as the soil bearing pressure at the foundation bearing level in excess of the natural overburden pressure at that level. The foundations should be designed based on the maximum load which could be imposed by all loading conditions. The mat foundation system should be designed to provide adequate uplift resistance, stability against overturning, and eccentricity. We recommend utilizing a modulus of subgrade reaction of 100 pci beneath the proposed mat foundation.

4.4.2 Bearing Depth

The exterior foundations should bear at a depth of at least 12 inches below the finish floor elevation to provide confinement to the bearing level soils. It is recommended that stormwater be diverted away from the building exteriors to reduce the possibility of erosion beneath the exterior footings.

4.2.3 Bearing Material

The foundations should bear in either the compacted suitable native soils or compacted structural fill. The bearing level soils should be compacted to at least 95 percent of the Modified Proctor maximum dry density (ASTM D 1557) to a depth of at least **one foot** below the foundation bearing level.

4.2.4 Settlement Estimates

Post-construction settlement of the structures will be influenced by several interrelated factors, such as (1) subsurface stratification and strength/compressibility characteristics; (2) footing size, bearing level, applied loads, and resulting bearing pressures beneath the foundations; and (3) site preparation and earthwork construction techniques used by the Contractor. Our settlement estimates for the structures are based on the use of site preparation/earthwork construction

techniques as recommended in Section 4.4 of this report. Any deviation from these recommendations could result in an increase in the estimated post-construction settlement of the structures.

Using the recommended allowable bearing pressure, the assumed maximum structural loads and the limited field/laboratory data which we have correlated to geotechnical strength and compressibility characteristics of the subsurface soils, we estimate that total elastic settlements of the structure could be on the order of 1 inch or less. Differential settlement result from differences in applied bearing pressures and variations in the compressibility characteristics of the subsurface soils. Because of the subsurface conditions, we anticipate that differential settlement of the structures could be on the order of ½ inch to or less.

4.2.5 Soil Design Parameters

The soil design parameters presented in Table 3 are provided to aid the foundation design process, and are representative of the subsurface soil conditions encountered in the two soil test borings performed for this project.

Table 3 – Design Parameters Recommended [1]

Typical Depth (ft)		Soil Description	Saturated/ Submerged Unit Weight (pcf)	Friction Angle (degrees)[3]	Shear Strength (psf)[3]	Earth Pressure Coefficients	
From	To					Active K_A	Passive K_P
0	4	Sand, with silt [SP-SM]	110/47.6	30	0	0.33	3.00
4	5.5	Clayey Sand [SC]	105/42.6	29	0	0.35	2.88
5.5	11	Very Clayey Sand [SC]	115/52.6	0	2,000	1.00	1.00
11	25[2]	Sand, with clay [SP-SC]	115/52.6	32	0	0.31	3.25

[1] It should be noted that the soil parameters presented above in Table 3 are ultimate values and that appropriate factor of safety should be applied.
[2] Indicates strata encountered at boring termination, total thickness undetermined.
[3] It should be noted that the zero values represent marginal/residual values.

4.3 GROUNDWATER CONDITIONS

4.3.1 Existing Groundwater Level

The groundwater level was encountered at a depth of 4 feet in the soil borings at the time of our subsurface exploration. It should be noted that the groundwater levels may not have been fully stabilized in the boreholes when the readings were taken upon boring work completion. Fluctuations of groundwater level conditions on this project parcel should be expected to occur seasonally as a result of rainfall, surface runoff, nearby construction activities, and other factors.

4.3.2 Typical Wet Season Groundwater Level

The typical wet season groundwater level is defined as the highest groundwater level sustained for a period of 2 to 4 weeks during the "wet" season of the year, for existing site conditions, in a year with average normal rainfall amounts. Based on historical data, the rainy season in

Alachua County, Florida typically occurs between June and September. To estimate the wet season groundwater level at the soil test boring locations, many factors may be considered.

Based on site-specific information and factors listed above, we estimate that the typical wet season groundwater levels in the project areas will be at depths of 2 to 4 feet below the ground surface at the boring locations; however, water can perch on top of clayey soils during periods of intense rainfall or irrigation. It should be noted however that peak stage elevations immediately following various intense storm events, may be somewhat higher than the estimated typical wet season levels. Further, it should be understood that changes in the surface hydrology and subsurface drainage from on-site or off-site improvements could have significant effects on the normal and seasonal high groundwater levels.

4.4 SITE PREPARATION

The structure building pad preparation recommendations are based upon use of the shallow structural integrated foundation system previously described. These procedures include: demolition/stripping of the project site of concrete and other debris, existing vegetation and topsoil, compacting the subgrade and placing necessary fill or backfill to grade with engineered fill. A more detailed synopsis of this work is as follows:

1. Prior to construction, the location of any existing underground utility lines within the construction area should be established. Provisions should then be made to relocate interfering utilities to appropriate locations. It should be noted that if underground pipes are not properly removed or plugged, they may serve as conduits for subsurface erosion which may subsequently lead to excessive settlement of overlying structures.

2. If required, perform remedial dewatering prior to any earthwork operations. Dewatering operations scheduled immediately adjacent to existing structure footings should be carefully evaluated for possible impacts to the existing foundation systems. Dewatering system should not be decommissioned until the excavation is backfilled two feet above the groundwater level at the time of construction. Further, the site should always be graded to minimize ponding of stormwater runoff.

3. We recommend that existing structures in close proximity (within 50 feet) to the proposed building should be monitored for cracks or signs of distress during adjacent new excavation and building construction operations.

4. Strip/demolish the proposed construction limits of all grass, roots, topsoil, concrete and other deleterious materials within 5 feet beyond the perimeter of the proposed structure. Demolition should include complete removal of all above and below grade foundations and other improvements. Deeper removal of debris should be anticipated to remove footings and utilities from the demolition of the existing structure. All debris and deleterious material should be removed and replaced with suitable structural fill. Fill material should be placed and compacted in accordance with the sections of the specifications applicable to the construction. Excavated areas should be set back to a stable configuration or shored, in either case in accordance with OSHA requirements. Adequate bracing should be provided if necessary to prevent side slope failures

5. Following site clearing, grubbing and rough grading, the same project areas should be proof-rolled using a large, fully loaded rubber-tired vehicle (dump truck) or similar equipment. Proof-rolling will help locate any surficial zones of especially loose or soft or unsuitable soils not encountered in the soil test borings, and should help provide more uniformity in the sandy subsurface soil profile. Unusual or unanticipated conditions

identified during this process must be immediately brought to the attention of the UES Geotechnical Engineer. Field density testing is not required during proof-rolling operations.

6. Weak subgrade soils identified during proof-rolling operations should be excavated and removed from the site, and replaced with granular fill soils. We recommend that the bottom of all footings be probed as to confirm the suitability of the bearing soils. Granular soils used for this purpose should meet the material and placement specifications outlined below.

7. Proof-rolling operations should be followed by subgrade compaction operation. Subgrade compaction operations should be run until an in-place soil density of 95 percent of the Modified Proctor maximum dry density (ASTM D-1557) is achieved to a depth of 1 foot below the final subgrade, or foundation bearing elevations, whichever is greater. A static cone penetrometer should be used to verify the depth of the improvement. If necessary to achieve the recommended soil compaction at depth, the entire project area may be undercut, the exposed subgrade soils compacted, and then the areas backfilled using 6-inch lifts to final subgrade elevation. The subgrade beneath slabs should be compacted to a depth of 1 foot below the foundation/slab or 1 foot below the beginning grade prior to placing fill.

8. Compaction operations should extend to the limits of the cleared/grubbed project areas. Compaction of the existing, near-surface sandy soils will provide for uniformity of foundation/slab settlements and improve the soils' bearing capacity conditions. Typically, the soils should exhibit moisture contents within ± 2 percent of the modified Proctor optimum moisture content during compaction. A minimum of eight (8) complete coverages (in perpendicular directions) should be made in the tank area with the roller to improve the uniformity and increase the density of the underlying sandy soils. It should be anticipated that moisture will need to be added to the subgrade in order to achieve the required compaction.

9. Should the bearing level soils experience pumping and soil strength loss during the compaction operations, compaction work should be immediately terminated and (1) the disturbed soils removed and backfilled with dry structural fill soils which are then compacted, or (2) the excess pore pressures within the disturbed soils allowed to dissipate before recompacting.

10. To avoid pumping of the underlying clayey soils, we recommend self propelled vibrating equipment remain a minimum of 2 feet above the clayey soils. The sandy soils within 2 feet of the clayey soils could be compacted with a vibratory roller operating in the static mode or with a track-mounted dozer to avoid disturbing the clayey soils. We further recommend a minimum of 18 inches of sand overlying the clayey soils prior to operation of construction equipment. Excess disturbance of the clayey soils will degrade the strength characteristics of the soil and may result in an unsuitable soil which will require over-excavation and subsequent backfilling with clean fine sand fill material.

11. Care should be exercised to avoid damaging any nearby structures while the compaction operation is underway. Prior to commencing compaction, occupants of adjacent structures should be notified and the existing conditions of the structures be documented with photographs and survey (if deemed necessary). Compaction should cease if deemed detrimental to adjacent structures. Universal Engineering Sciences can provide vibration monitoring services to help document and evaluate the effects of the surface compaction operation on existing structures. In the absence of vibration

monitoring it is recommended the vibratory roller remain a minimum of 50 feet from existing structures. Within this zone, use of a vibratory roller operating in the static mode is recommended.

12. Test the subgrade for compaction at a frequency of not less than one test per 2,500 square feet in the tank areas, or a minimum of three test locations per structure, whichever is greater.

13. Place fill material, as required. The fill material can consist of material as illustrated in the "Fill Suitability" section of this report. Offsite fill material should contain less than 10 percent passing the No. 200 sieve. Place backfill and fill in uniform 10- to 12-inch loose lifts and compact each lift to a minimum density of 95 percent of the modified Proctor maximum dry density.

4.5 BELOW GRADE PIPING AND UTILITY LINES

4.5.1 General Recommendations

We assume that proposed piping and utility lines at the site may have invert elevations several feet below existing grades. We recommend that all excavation, backfilling, and verification procedures conform to the most current Florida Department of Transportation (FDOT) and local jurisdictional standards.

4.5.2 Trench Excavation and Backfill Recommendations

The following are our recommendations for construction of the proposed utility lines.

1. If deemed necessary by the Contractor, install a dewatering system capable of maintaining a groundwater level at least 2 feet below bottom of pipe level.

2. After excavation to design invert elevations, the in-situ bedding soils should be compacted to at least 95 percent of the modified Proctor test maximum dry density (ASTM D 1557) to a depth of 12 inches below the bedding level. Compaction in confined areas can probably be achieved using jumping jacks or light weight walk-behind vibratory sleds and/or rollers.

3. After constructing the utility lines, backfill with suitable sand fill placed in 4 to 6 inch thick loose lifts. Each lift of backfill should be compacted to at least 95 percent of the modified Proctor test maximum dry density (ASTM D 1557). Beneath pavement areas, the top 12 inches of backfill should be compacted to at least 98 percent. Additionally, local jurisdictional compaction requirements should be followed when stricter than the recommendations herein.

4. The subgrade after excavation in some areas may include silty/clayey soils, which will be difficult to compact. If difficult compaction operations are encountered beneath the utilities due to excessive fines and/or wet conditions, a qualified representative of the owner's testing agency should be consulted for recommendations. It may be an option to over-excavate and replace the saturated soils with FDOT No. 57 stone to stabilize the subgrade soils and obtain a stable workable platform. The undercut area should be covered with a geotextile (separation) fabric and then backfilled with compacted granular fill.

5. All excavation work must meet OSHA Excavation Standard Subpart P regulations, Type C Soils. Either a trench box, braced sheet pile structure, or an excavation with temporary side slopes cut back at 1.5 horizontal to 1.0 vertical can be implemented. The side slope of 1.5 horizontal to 1.0 vertical is contingent upon the dewatering system adequately controlling slope seepage. Sheet piling should be designed according to OSHA sheeting and bracing requirements. We recommend a Florida registered Professional Engineer design any required sheeting/bracing system. Provisions for maintaining workman safety within excavations is the sole responsibility of the contractor.

Backfill above and around thrust blocks should consist of clean fine sands (SP) compacted at least 98 percent of Modified Proctor maximum dry density (ASTM D 1557). For a design criteria, we recommend using an allowable passive earth pressure coefficient of Kp=3.0.

4.6 FILL SUITABILITY

The recovered soil samples were classified using visual and textural means, and limited laboratory testing. We offer below ***preliminary guidelines*** for the use of on-site soils, such as those excavated from the proposed structures, as fill material for the project.

Soil materials excavated and classified as fine sands to sand with silt and sand with clay (SP, SP-SM, SP-SC), with typically 12% fines or less (silt/clay fraction), may be considered suitable for use as utility trench backfill, as well as structural fill, provided the materials are properly dried, placed, and compacted.

Soil materials excavated and classified as silty fine sands [SM], with typically 12% to 25% fines, may also be considered suitable for use as utility trench backfill, as well as structural fill, after significant drying and some mixing with the fine sand material described above. Proper placement, proof-rolling, and compaction must also be performed.

Soil materials excavated and classified as clayey sand, silt or clay (SC, ML, MH, CL, and CH) and any organic-laden soils (5% or greater organics by weight) should not be reused as fill beneath structures or pavement sections. These materials could be used in green areas, if applicable and in non-structural applications where excessive ground subsidence will not create functional or aesthetic problems. It should be noted that silt and clay materials will retain water and if used near the final grade may become saturated and soft for a significant period of time following a rain event.

Soil borings for a typical geotechnical report are widely spaced and generally not sufficient for reliably detecting the presence of isolated, anomalous surface or subsurface conditions, or reliably estimating unsuitable or suitable material quantities. Accordingly, UES does not recommend relying on our boring information to negate presence of anomalous materials or for estimation of material quantities unless our contracted services ***specifically*** include sufficient exploration for such purpose(s) and within the report we so state that the level of exploration provided should be sufficient to detect such anomalous conditions or estimate such quantities. Therefore, UES will not be responsible for any extrapolation or use of our data by others beyond the purpose(s) for which it is applicable or intended.

4.7 DEWATERING

Based on the groundwater level conditions encountered and expected on this project site, dewatering may be required to achieve the necessary excavation, construction, backfilling and compaction requirements presented in the preceding report sections.

Dewatering should be accomplished with the knowledge that the permeability of soils decreases with an increasing silt and clay content. The sand to sand with silt soil types [A-3]/[SP/SP-SM] can usually be dewatered by well pointing. Alternative means of dewatering may be necessary for the silty/clayey fine sands. Dewatering means and methods are the sole responsibility of the contractor.

It should be noted that lowering the groundwater table usually results in an increase in the effective stresses on the bearing soils of the nearby utilities and structures and hence may cause unfavorable settlements of these utilities and structures. We recommend the project specifications call for monitoring existing utilities and structures for any potential settlement due to dewatering.

Dewatering will require the implementation of concurrent activities. The dewatering system should be installed with sufficient time prior to excavation activities to allow for adequate water drainage from soils. Dewatering discharge shall comply with water management regulations. Turbidity control measures may be implemented as necessary. The dewatering system should be flexible with respect to discharge capacities and take into account unexpected large rate flow. Because of the variability of layers of sand and soil permeability, appropriate factor of safety should be used in the design of the dewatering system.

We recommend the contract documents provide for determining the depth to the groundwater level just prior to construction, and for any required dewatering. Regardless of the method(s) used, we suggest drawing down the water level at least 2 feet below the bottom of the excavations to preclude "pumping" and/or compaction-related problems with the foundation and/or subgrade soils. We recommend that the dewatering system remain in place until all temporary shoring is removed and sufficient structural dead load is in place to counteract hydrostatic forces.

5.0 REPORT LIMITATIONS

This Report has been prepared for the exclusive use of Jones Edmunds, and Members of the Design/Construction Team for the specific project discussed in this Report. This Report has been prepared in accordance with generally accepted local geotechnical engineering practices; no other warranty is expressed or implied.

Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. A GBA publication, "Important Information About Your Geotechnical Engineering Report" appears in Appendix B, and will help explain the nature of geotechnical issues. Additional limitations are presented in General Conditions also included in Appendix B.

Further, we present documents in Appendix B: Constraints and Restrictions, to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

APPENDIX A

Boring Location Plan

Boring Logs

Key to Boring Logs


B-2
B-1
Google Earth
300 ft
N
N
LEGEND
STANDARD PENETRATION TEST BORING LOCATION
NOTE: ALL BORING LOCATIONS SHOWN ARE APPROXIMATE.
JONES EDMUNDS
DRAWN BY: TF
DATE: 1/18/22
CHECKED BY: SS
DATE: 1/18/22
SCALE: NTS
ACAD FILE: 0280.2200159.4000
PROJECT NO: 0280.2200159.4000
REPORT NO: 1831771
TRANSFER STATION LEACHATE TANK
5121 NE 63RD AVENUE
GAINESVILLE, ALACHUA COUNTY, FLORIDA
BORING LOCATION PLAN
UNIVERSAL
ENGINEERING SCIENCES
PAGE NO:
A - 1

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0230.2000158.0000
REPORT NO.:	1831771
PAGE:	A-2

PROJECT: TRANSFER STATION LEACHATE TANK
5121 NE 63RD AVENUE
GAINESVILLE, FLORIDA

BORING NO: **B-1** SHEET: 1 of 1

SECTION: TOWNSHIP: RANGE:

CLIENT: JONES-EDMUNDS

LOCATION: SEE BORING LOCATION PLAN

REMARKS:

GS ELEVATION(ft):

WATER TABLE (ft): 4

DATE OF READING: 12/30/20

EST. WSWT (ft):

DATE STARTED: 12/30/20

DATE FINISHED: 12/30/20

DRILLED BY: R. PEREZ

TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N VALUE	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/DAY)	DENSITY (%)
0						Dark brown Topsoil						
1						Medium dense light tan SAND, with clay [SP-SC]						
2		4-5-5	10									
3						Loose dark brown SAND, with silt [SP-SM]						
4		4-4-4	8	▼								
5		5-4-4	8			Loose light gray clayey SAND [SC]	26	15				
6						Medium dense gray very clayey SAND [SC]						
7		2-4-7	11									
8		10-11-14	25									
9						Medium dense light tan SAND, with clay [SP-SC]						
10		10-6-7	13									
11												
12												
13												
14												
15		5-5-6	11									
16												
17												
18												
19												
20		7-7-11	18									
21												
22												
23												
24												
25		9-10-14	24			Boring Terminated at 25'						

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0230.2000158.0000
REPORT NO.:	1831771
PAGE:	A-3

PROJECT: TRANSFER STATION LEACHATE TANK
5121 NE 63RD AVENUE
GAINESVILLE, FLORIDA

BORING NO: **B-2** SHEET: 1 of 1

SECTION: TOWNSHIP: RANGE:

CLIENT: JONES-EDMUNDS

LOCATION: SEE BORING LOCATION PLAN

REMARKS:

GS ELEVATION(ft):

WATER TABLE (ft): 4

DATE OF READING: 12/30/20

EST. WSWT (ft):

DATE STARTED: 12/30/20

DATE FINISHED: 12/30/20

DRILLED BY: R. PEREZ

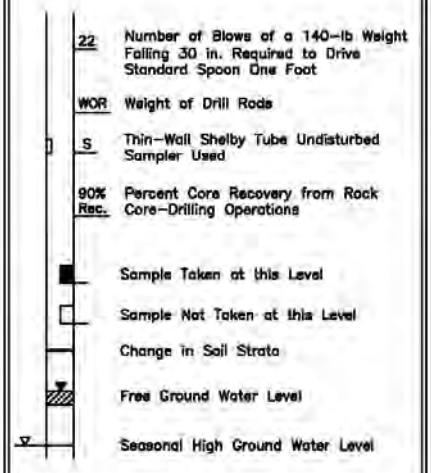
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N VALUE	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT/DAY)	DENSITY (%)
0						Topsoil						
1						Loose dark brown SAND, with silt [SP-SM] and trace of wood						
2	X	3-4-5	9									
3						Loose dark brown SAND, with silt [SP-SM]						
4	X	4-4-5	9	▼								
5						Loose light gray clayey SAND [SC], with roots						
6	X	2-2-2	4			Medium dense gray very clayey SAND [SC]						
7		5-8-10	18				37	24	40	21		
8	X	8-10-11	21									
9						Medium dense light gray clayey SAND [SC]						
10	X	7-9-10	19									
11												
12												
13												
14	X					Medium dense light tan SAND, with clay [SP-SC]						
15		8-8-12	20									
16												
17												
18												
19	X											
20		8-10-13	23									
21												
22												
23												
24	X											
25		10-11-14	25									
						Boring Terminated at 25'						

UNIVERSAL
ENGINEERING SCIENCES

KEY TO BORING LOGS

SYMBOLS



GRANULAR MATERIALS

Relative Density	Safety Hammer SPT N (Blows/Ft.)	Automatic Hammer SPT N (Blows/Ft.)
Very Loose	Less than 4	Less than 3
Loose	4–10	3–8
Medium Dense	10–30	8–24
Dense	30–50	24–40
Very Dense	>50	>40

COHESIVE MATERIALS

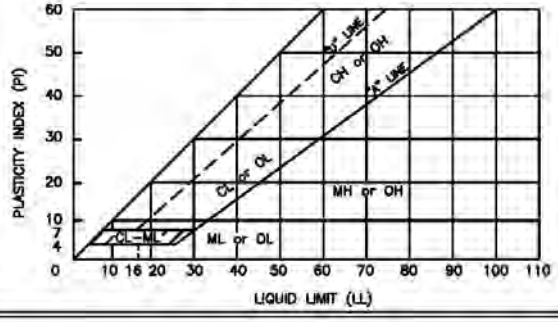
Consistency	Safety Hammer SPT N (Blows/Ft.)	Automatic Hammer SPT N (Blows/Ft.)
Very Soft	Less than 2	Less than 1
Soft	2–4	1–3
Firm	4–8	3–6
Stiff	8–15	6–12
Very Stiff	15–30	12–24
Hard	>30	>24

UNIFIED CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS More than 50% retained on No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 200 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS	SW	Well-graded sands and gravelly sands, little or no fines
			SP	Poorly graded sands and gravelly sands, little or no fines
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS 50% or more passes No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly organic Soils			PT	Peat, muck and other highly organic soils

* Based on the material passing the 3-in. (75mm) sieve.

PLASTICITY CHART



APPENDIX B

Important Information About Your Geotechnical Engineering Report
Constraint and Restrictions

Important Information about This

Geotechnical-Engineering Report

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

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

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

Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled.* No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

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

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

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be*, and, in general, *if you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying it. A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

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

This Report's Recommendations Are Confirmation-Dependent

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

This Report Could Be Misinterpreted

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

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

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

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old.*

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration.*** Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

CONSTRAINTS & RESTRICTIONS

The intent of this document is to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

WARRANTY

Universal Engineering Sciences has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

UNANTICIPATED SOIL CONDITIONS

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

CHANGED CONDITIONS

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and Universal Engineering Sciences of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of Universal Engineering Sciences to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

MISINTERPRETATION OF SOIL ENGINEERING REPORT

Universal Engineering Sciences is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of Universal Engineering Sciences.

CHANGED STRUCTURE OR LOCATION

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by Universal Engineering Sciences.

USE OF REPORT BY BIDDERS

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations.

Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. Universal Engineering Sciences cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

STRATA CHANGES

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

OBSERVATIONS DURING DRILLING

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

WATER LEVELS

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

LOCATION OF BURIED OBJECTS

All users of this report are cautioned that there was no requirement for Universal Engineering Sciences to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by Universal Engineering Sciences to locate any such buried objects. Universal Engineering Sciences cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

TIME

This report reflects the soil conditions at the time of exploration. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.

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Universal Engineering Sciences, LLC
GENERAL CONDITIONS

SECTION 1: RESPONSIBILITIES **1.1** *Universal Engineering Sciences, LLC*, and its subsidiaries and affiliated companies ("UES"), is responsible for providing the services described under the Scope of Services. The term "UES" as used herein includes all of UES's agents, employees, professional staff, and subcontractors. **1.2** The Client or a duly authorized representative is responsible for providing UES with a clear understanding of the project nature and scope. The Client shall supply UES with sufficient and adequate information, including, but not limited to, maps, site plans, reports, surveys, plans and specifications, and designs, to allow UES to properly complete the specified services. The Client shall also communicate changes in the nature and scope of the project as soon as possible during performance of the work so that the changes can be incorporated into the work product. **1.3** The Client acknowledges that UES's responsibilities in providing the services described under the Scope of Services section is limited to those services described therein, and the Client hereby assumes any collateral or affiliated duties necessitated by or for those services. Such duties may include, but are not limited to, reporting requirements imposed by any third party such as federal, state, or local entities, the provision of any required notices to any third party, or the securing of necessary permits or permissions from any third parties required for UES's provision of the services so described, unless otherwise agreed upon by both parties in writing.

SECTION 2: STANDARD OF CARE **2.1** Services performed by UES under this Agreement will be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of UES's profession practicing contemporaneously under similar conditions in the locality of the project. No other warranty, express or implied, is made. **2.2** Execution of this document by UES is not a representation that UES has visited the site, become generally familiar with local conditions under which the work is to be performed, or correlated personal observations with the requirements of the Scope of Services. It is the Client's responsibility to provide UES with all information necessary for UES to provide the services described under the Scope of Services, and the Client assumes all liability for information not provided to UES that may affect the quality or sufficiency of the services so described.

SECTION 3: SITE ACCESS AND SITE CONDITIONS **3.1** Client will grant or obtain free access to the site for all equipment and personnel necessary for UES to perform the work set forth in this Agreement. The Client will notify any possessors of the project site that Client has granted UES free access to the site. UES will take reasonable precautions to minimize damage to the site, but it is understood by Client that, in the normal course of work, some damage may occur, and the correction of such damage is not part of this Agreement unless so specified in the Scope of Services. **3.2** The Client is responsible for the accuracy of locations for all subterranean structures and utilities. UES will take reasonable precautions to avoid known subterranean structures, and the Client waives any claim against UES, and agrees to defend, indemnify, and hold UES harmless from any claim or liability for injury or loss, including costs of defense, arising from damage done to subterranean structures and utilities not identified or accurately located. In addition, Client agrees to compensate UES for any time spent or expenses incurred by UES in defense of any such claim with compensation to be based upon UES's prevailing fee schedule and expense reimbursement policy.

SECTION 4: BILLING AND PAYMENT **4.1** UES will submit invoices to Client monthly or upon completion of services. Invoices will show charges for different personnel and expense classifications. **4.2** Payment is due 30 days after presentation of invoice and is past due 31 days from invoice date. Client agrees to pay a finance charge of one and one-half percent (1 ½ %) per month, or the maximum rate allowed by law, on past due accounts. **4.3** If UES incurs any expenses to collect overdue billings on invoices, the sums paid by UES for reasonable attorneys' fees, court costs, UES's time, UES's expenses, and interest will be due and owing by the Client.

SECTION 5: OWNERSHIP AND USE OF DOCUMENTS **5.1** All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, as instruments of service, shall remain the property of UES. Neither Client nor any other entity shall change or modify UES's instruments of service. **5.2** Client agrees that all reports and other work furnished to the Client or his agents, which are not paid for, will be returned upon demand and will not be used by the Client for any purpose. **5.3** UES will retain all pertinent records relating to the services performed for a period of five years following submission of the report or completion of the Scope of Services, during which period the records will be made available to the Client in a reasonable time and manner. **5.4** All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, are prepared for the sole and exclusive use of Client, and may not be given to any other entity, or used or relied upon by any other entity, without the express written consent of UES. Client is the only entity to which UES owes any duty or duties, in contract or tort, pursuant to or under this Agreement.

SECTION 6: DISCOVERY OF UNANTICIPATED HAZARDOUS MATERIALS **6.1** Client represents that a reasonable effort has been made to inform UES of known or suspected hazardous materials on or near the project site. **6.2** Under this agreement, the term hazardous materials include hazardous materials, hazardous wastes, hazardous substances (40 CFR 261.31, 261.32, 261.33), petroleum products, polychlorinated biphenyls, asbestos, and any other material defined by the U.S. EPA as a hazardous material. **6.3** Hazardous materials may exist at a site where there is no reason to believe they are present. The discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work. The discovery of unanticipated hazardous materials may make it necessary for UES to take immediate measures to protect health and safety. Client agrees to compensate UES for any equipment decontamination or other costs incident to the discovery of unanticipated hazardous materials. **6.4** UES will notify Client when unanticipated hazardous materials or suspected hazardous materials are encountered. Client will make any disclosures required by law to the appropriate governing agencies. Client will hold UES harmless for all consequences of disclosures made by UES which are required by governing law. In the event the project site is not owned by Client, Client it is the Client's responsibility to inform the property owner of the discovery of unanticipated hazardous materials or suspected hazardous materials. **6.5** Notwithstanding any other provision of the Agreement, Client waives any claim against UES, and to the maximum extent permitted by law, agrees to defend, indemnify, and save UES harmless from any claim, liability, and/or defense costs for injury or loss arising from UES's discovery of unanticipated hazardous materials or suspected hazardous materials including any costs created by delay of the project and any cost associated with possible reduction of the property's value. Client will be responsible for ultimate disposal of any samples secured by UES which are found to be contaminated.

SECTION 7: RISK ALLOCATION **7.1** Client agrees that UES's liability for any damage on account of any breach of contract, error, omission, or professional negligence will be limited to a sum not to exceed $50,000 or UES's fee, whichever is greater. If Client prefers to have higher limits on contractual or professional liability, UES agrees to increase the limits up to a maximum of $1,000,000.00 upon Client's written request at the time of accepting UES's proposal provided that Client agrees to pay an additional consideration of four percent of the total fee, or $400.00, whichever is greater. If Client prefers a $2,000,000.00 limit on contractual or professional liability, UES agrees to increase the limits up to a maximum of $2,000,000.00 upon Client's written request at the time of accepting UES's proposal provided that Client agrees to pay an additional consideration of four percent of the total fee, or $800.00, whichever is greater. The additional charge for the higher liability limits is because of the greater risk assumed and is not strictly a charge for additional professional liability insurance. **7.2** Client shall not be liable to UES and UES shall not be liable to Client for any incidental, special, or consequential damages (including lost profits, loss of use, and lost savings) incurred by either party due to the fault of the other, regardless of the nature of the fault, or whether it was committed by Client or UES, their employees, agents, or subcontractors; or whether such liability arises in breach of contract or warranty, tort (including negligence), statutory, or any other cause of action. **7.3** As used in this Agreement, the terms "claim" or "claims" mean any claim in contract, tort, or statute alleging negligence, errors, omissions, strict liability, statutory liability, breach of contract, breach of warranty, negligent misrepresentation, or any other act giving rise to liability.

SECTION 8: INSURANCE **8.1** UES represents it and its agents, staff and consultants employed by UES, is and are protected by worker's compensation insurance and that UES has such coverage under public liability and property damage insurance policies which UES deems to be adequate. Certificates for all such policies of insurance shall be provided to Client upon request in writing. Within the limits and conditions of such insurance, UES agrees to indemnify and save Client harmless from and against loss, damage, or liability arising from negligent acts by UES, its agents, staff, and consultants employed by it. UES shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance or the limits described in Section 7, whichever is less. The Client agrees to defend, indemnify, and save UES harmless for loss, damage or liability arising from acts by Client, Client's agents, staff, and others employed by Client. **8.2** Under no circumstances will UES indemnify Client from or for Client's own actions, negligence, or breaches of contract. **8.3**

To the extent damages are covered by property insurance, Client and UES waive all rights against each other and against the contractors, consultants, agents, and employees of the other for damages, except such rights as they may have to the proceeds of such insurance.

SECTION 9: DISPUTE RESOLUTION **9.1** All claims, disputes, and other matters in controversy between UES and Client arising out of or in any way related to this Agreement will be submitted to mediation or non-binding arbitration, before and as a condition precedent to other remedies provided by law. **9.2** If a dispute arises and that dispute is not resolved by mediation or non-binding arbitration, then: (a) the claim will be brought in the state or federal courts having jurisdiction where the UES office which provided the service is located; and (b) the prevailing party will be entitled to recovery of all reasonable costs incurred, including staff time, court costs, attorneys' fees, expert witness fees, and other claim related expenses.

SECTION 10: TERMINATION **10.1** This agreement may be terminated by either party upon seven (7) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof, or in the case of a force majeure event such as terrorism, act of war, public health or other emergency. Such termination shall not be effective if such substantial failure or force majeure has been remedied before expiration of the period specified in the written notice. In the event of termination, UES shall be paid for services performed to the termination notice date plus reasonable termination expenses. **10.2** In the event of termination, or suspension for more than three (3) months, prior to completion of all reports contemplated by the Agreement, UES may complete such analyses and records as are necessary to complete its files and may also complete a report on the services performed to the date of notice of termination or suspension. The expense of termination or suspension shall include all direct costs of UES in completing such analyses, records, and reports.

SECTION 11: REVIEWS, INSPECTIONS, TESTING, AND OBSERVATIONS **11.1** Plan review, private provider inspections, and building inspections are performed for the purpose of observing compliance with applicable building codes. Threshold inspections are performed for the purpose of observing compliance with an approved threshold inspection plan. Construction materials testing ("CMT") is performed to document compliance of certain materials or components with applicable testing standards. UES's performance of plan reviews, private provider inspections, building inspections, threshold inspections, or CMT, or UES's presence on the site of Client's project while performing any of the foregoing activities, is not a representation or warranty by UES that Client's project is free of errors in either design or construction. **11.2** If UES is retained to provide construction monitoring or observation, UES will report to Client any observed work which, in UES's opinion, does not conform to the plans and specifications provided to UES. UES shall have no authority to reject or terminate the work of any agent or contractor of Client. No action, statements, or communications of UES, or UES's site representative, can be construed as modifying any agreement between Client and others. UES's performance of construction monitoring or observation is not a representation or warranty by UES that Client's project is free of errors in either design or construction. **11.3** Neither the activities of UES pursuant to this Agreement, nor the presence of UES or its employees, representatives, or subcontractors on the project site, shall be construed to impose upon UES any responsibility for means or methods of work performance, superintendence, sequencing of construction, or safety conditions at the project site. Client acknowledges that Client or its contractor is solely responsible for project jobsite safety. **11.4** Client is responsible for scheduling all inspections and CMT activities of UES. All testing and inspection services will be performed on a will-call basis. UES will not be responsible for tests and inspections that are not performed due to Client's failure to schedule UES's services on the project, or for any claims or damages arising from tests and inspections that are not scheduled or performed.

SECTION 12: ENVIRONMENTAL ASSESSMENTS Client acknowledges that an Environmental Site Assessment ("ESA") is conducted solely to permit UES to render a professional opinion about the likelihood or extent of regulated contaminants being present on, in, or beneath the site in question at the time services were conducted. No matter how thorough an ESA study may be, findings derived from the study are limited and UES cannot know or state for a fact that a site is unaffected by reportable quantities of regulated contaminants as a result of conducting the ESA study. Even if UES states that reportable quantities of regulated contaminants are not present, Client still bears the risk that such contaminants may be present or may migrate to the site after the ESA study is complete.

SECTION 13: SUBSURFACE EXPLORATIONS **13.1** Client acknowledges that subsurface conditions may vary from those observed at locations where borings, surveys, samples, or other explorations are made, and that site conditions may change with time. Data, interpretations, and recommendations by UES will be based solely on information available to UES at the time of service. UES is responsible for those data, interpretations, and recommendations, but will not be responsible for other parties' interpretations or use of the information developed or provided by UES. **13.2** Subsurface explorations may result in unavoidable cross-contamination of certain subsurface areas, as when a probe or boring device moves through a contaminated zone and links it to an aquifer, underground stream, or other hydrous body not previously contaminated. UES is unable to eliminate totally cross-contamination risk despite use of due care. Since subsurface explorations may be an essential element of UES's services indicated herein, Client shall, to the fullest extent permitted by law, waive any claim against UES, and indemnify, defend, and hold UES harmless from any claim or liability for injury or loss arising from cross-contamination allegedly caused by UES's subsurface explorations. In addition, Client agrees to compensate UES for any time spent or expenses incurred by UES in defense of any such claim with compensation to be based upon UES's prevailing fee schedule and expense reimbursement policy.

SECTION 14: SOLICITATION OF EMPLOYEES Client agrees not to hire UES's employees except through UES. In the event Client hires a UES employee within one year following any project through which Client had contact with said employee, Client shall pay UES an amount equal to one-half of the employee's annualized salary, as liquidated damages, without UES waiving other remedies it may have.

SECTION 15: ASSIGNS Neither Client nor UES may delegate, assign, sublet, or transfer its duties or interest in this Agreement without the written consent of the other party.

SECTION 16: GOVERNING LAW AND SURVIVAL **16.1** This Agreement shall be governed by and construed in accordance with the laws of the jurisdiction in which the UES office performing the services hereunder is located. **16.2** In any of the provisions of this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired and will survive. Limitations of liability and indemnities will survive termination of this agreement for any cause.

SECTION 17: INTEGRATION CLAUSE **17.1** This Agreement represents and contains the entire and only agreement and understanding among the parties with respect to the subject matter of this Agreement, and supersedes any and all prior and contemporaneous oral and written agreements, understandings, representations, inducements, promises, warranties, and conditions among the parties. No agreement, understanding, representation, inducement, promise, warranty, or condition of any kind with respect to the subject matter of this Agreement shall be relied upon by the parties unless expressly incorporated herein. **17.2** This Agreement may not be amended or modified except by an agreement in writing signed by the party against whom the enforcement of any modification or amendment is sought.

SECTION 18: WAIVER OF JURY TRIAL Both Client and UES waive trial by jury in any action arising out of or related to this Agreement.

SECTION 19: INDIVIDUAL LIABILTY PURSUANT TO FLORIDA STAT. 558.0035, AN INDIVIDUAL EMPLOYEE OR AGENT OF UES MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.

UES DOCS No. 1823094 Revised 12/04/2020

ATTACHMENT 2

VOLKERT, INC.

TOPOGRAPHIC SURVEY
AND
AS-BUILT FLOOR ELEVATION
COMPARISON TO PLANS

Surveyor's Report

Alachua County Transfer Station
Alachua County, Florida

As-Built Floor Elevation Comparison to Plans

Prepared for:
Jones Edmunds
730 NE Waldo Road
Gainesville, Florida 32641

Prepared by:
Volkert, Inc.
Certificate of Authorization Number LB4641
3501 S. Main St.
Suite 2
Gainesville, FL
352-372-9594

SURVEY REPORT
This report is not valid without the attached Survey Files

SURVEY REPORT

1. PROJECT INFORMATION

Firm: Volkert, Inc.

Project Number: 1004154.43

Project Location: Alachua County Transfer Station, 5115 NE 63rd Ave, Gainesville, Florida, 32609

Units of Measure: US Survey Feet

Horizontal Datum: North American Datum of 1983, 2011 Adjustment, Epoch 2010 per survey by Volkert, Inc. performed 02/24/2018

Vertical Datum: N/A

2. PURPOSE

The purpose of this survey is to compare the transfer station floor elevations from a previous survey to the elevations shown on the construction plans.

3. METHODOLOGY

A "delta surface" and "delta contour map" was produced showing the differences between the as-built survey, performed by Volkert, Inc. on 02/24/2018 for Alachua County, in relation to the construction plans, provided by Jones Edmunds and produced by CH2M Hill, dated 10/20/1997.

A triangular irregular network model (TIN model) was created from the construction plans using Sheets A-1, S-4 and S-5.

The elevation of the TIN model of the as-built survey was lowered by -329.98 feet due to the difference in the vertical datum between the construction plans and the as-built survey. The difference was computed by comparing the elevation of the top of pedestals on sheet S-5 of the construction plans (elevation of 187.72') to the average elevation of the same top of pedestals, as measured in the original LiDAR data of the as-built survey (elevation 517.70')

The construction plan data was translated horizontally to the as-built survey using column lines shown in the plans and the columns located using the original LiDAR data of the as-built survey.

The resulting "delta surface" and "delta contour map" depicts the difference of the as-built survey elevation relative to the construction plan model.

4. GENERAL NOTES

This survey is not valid without the signature and original raised seal of a Florida licensed surveyor and mapper

This map is intended to be displayed at a scale of 1/20 or smaller.

5. FILES LIST

1004154.43_Alachua_County_Transfer_Station-Comparison.xml

1004154.43_Alachua_County_Transfer_Station-Comparison.dwg

6. CERTIFICATION

I hereby certify that this survey and all files herein are a true and accurate representation of a survey made under my responsible charge, and that to the best of my knowledge, meets the Standards of Practice as set forth by the Board of Professional Surveyors and Mappers in Rule Chapter 5J-17 of the Florida Administrative Code.

09/03/2020

Joseph C. Stukey, PSM
Florida Professional Surveyor and
Mapper License Number 6514

Date

ATTACHMENT 3

GENERIC WARRANTY

SAMPLE WARRANTY

October, 2021

TO: Alachua County Solid Waste

PROJECT: Alachua County Transfer Station – Tipping Floor

RE: High Performance Tipping Floor Topping –

Performance Warranty

INSTALLATION DATE: to be determined

INSTALLED BY: to be determined.

Contractor warrants the use of the High Performance Tipping Floor Topping used as a high strength, wear-resistant surface for the above transfer station application. The Warranty is valid for Topping thickness of a minimum of 2.0 inches, except as noted below. Specific details of the Warranty are provided below:

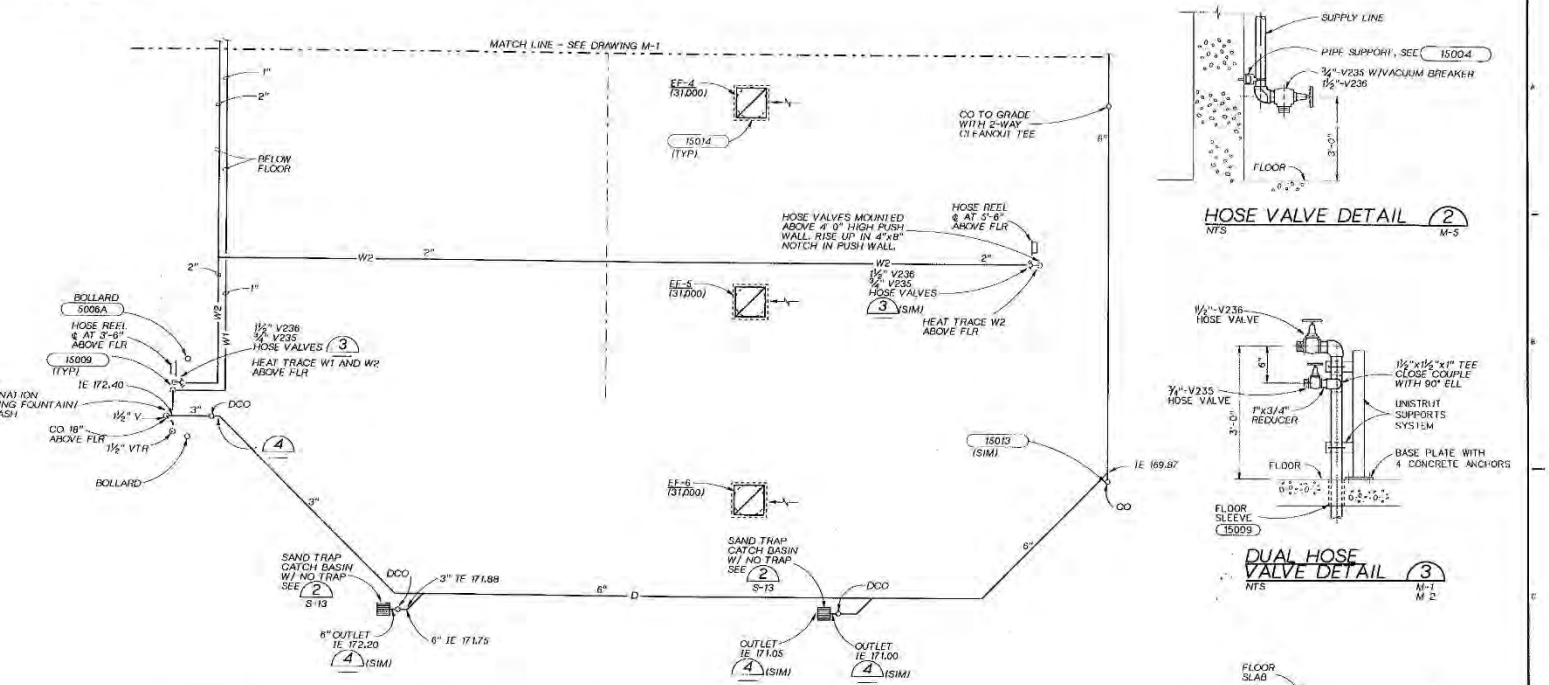
Warranty Qualifications

- This warranty covers the wear of the [material name and manufacturer] topping and that it will not wear through or delamination from the substrate for a total of 5 years from the date of substantial completion of the installation.
- Limits of the usage areas is shown on the Drawings and will be adjusted upon completion of construction to match the final installation of the topping
- The first 2 years of the warranty is comprehensive and includes labor and material to replace the portions of the floor with damage as described above.
- After 2 years, the warranty is for the material only.
- Tonnage per day at the transfer station shall not exceed 950 tons on an annual average.
- The warranty requires that a rubber bumper is present on front loader bucket.
- For areas covered with a minimum of 1.5 inches of topping, the warranty period shall be as follows:
    - The warranty covers the wear of the topping and that it will not wear through or delaminate from the substrate for a total of 3 years from the date of substantial completion.
    - The first 1.5 years of the warranty is comprehensive and includes labor and material to replace the portions of the floor with damage as noted above.
    - After 1.5 years, the warranty is for the material only.

Final warranty letter to be issued after installation date and applicator are determined.

ATTACHMENT 4

SELECTIVE AS-BUILT DRAWINGS



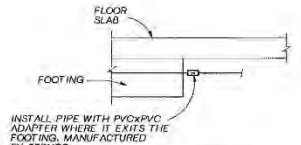
NOTES:

1. FOR OUTSIDE MAKE UP AIR LOUVER LOCATIONS SEE DRAWING A-2 AND A-3 ELEVATIONS.

PLAN
1/8"=1'-0"

HOSE VALVE DETAIL 2
NTS M-5

DUAL HOSE VALVE DETAIL 3
NTS M-1 M-2



DETAIL 4
NTS M-1

RECORD DRAWINGS

Revisions Drawn By TML Date 3/31/99

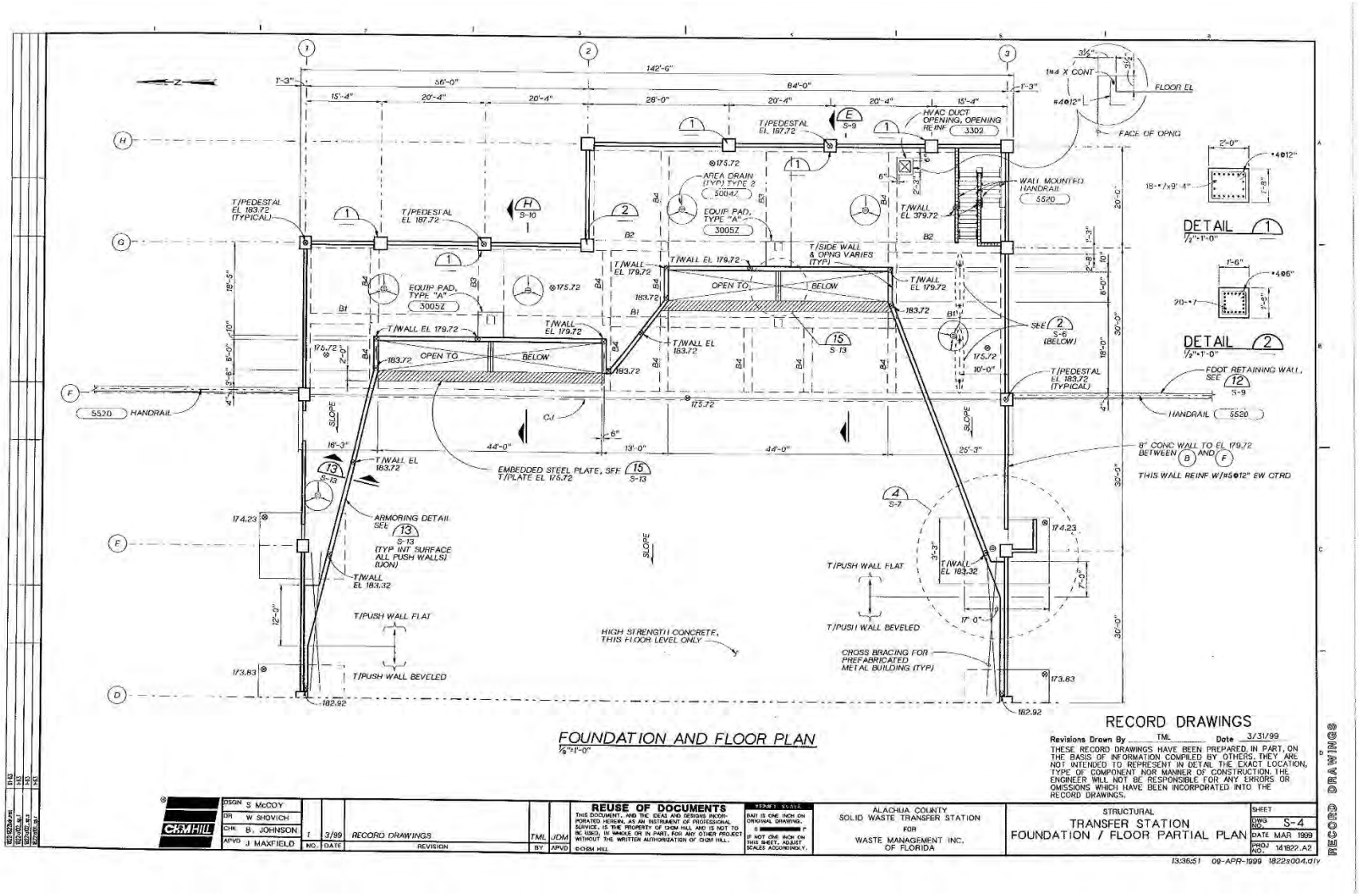
THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

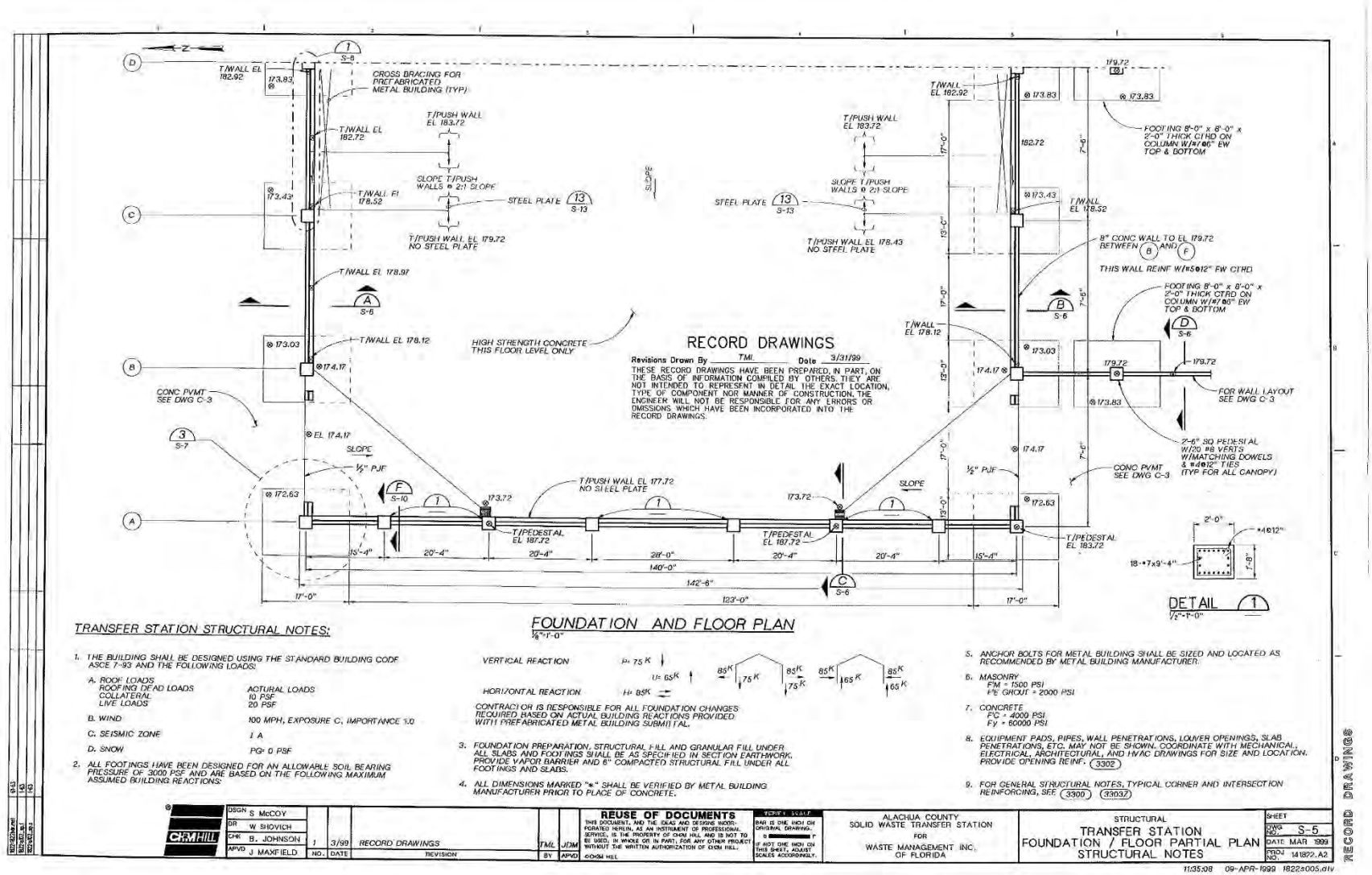
RECORD DRAWINGS

CH2M HILL	DSGN R. BURNS									
	DR R. BURNS									
	CHK J. BUSTILLOS	1	3/99	RECORD DRAWINGS	TML	JDM	REUSE OF DOCUMENTS	BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	ALACHUA COUNTY SOLID WASTE TRANSFER STATION FOR WASTE MANAGEMENT INC. OF FLORIDA	BUILDING SERVICES
	APVD J. MAXFIELD	NO.	DATE	REVISION	BY	APVD	THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. ©CH2M HILL		TRANSFER STATION BUILDING SERVICES PLAN (WEST)	SHEET DWG NO. M-2; DATE MAR 1999; PROJ NO. 141822.A2

17:42:13 05-JAN-1998 1822m007.dlv

RECORD DRAWINGS


FOUNDATION AND FLOOR PLAN
1/8"=1'-0"
RECORD DRAWINGS
Revisions Drawn By TML Date 3/31/99
THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.
REUSE OF DOCUMENTS
THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.
ALACHUA COUNTY SOLID WASTE TRANSFER STATION FOR WASTE MANAGEMENT INC. OF FLORIDA
STRUCTURAL
TRANSFER STATION
FOUNDATION / FLOOR PARTIAL PLAN
DWG NO. S-4
DATE MAR 1999
PROJ NO. 141822.A2
RECORD DRAWINGS


RECORD DRAWINGS
Revisions Drawn By TML Date 3/31/99
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FOUNDATION AND FLOOR PLAN
1/8"=1'-0"
DETAIL 1
1/2"=1'-0"
TRANSFER STATION STRUCTURAL NOTES:
1. THE BUILDING SHALL BE DESIGNED USING THE STANDARD BUILDING CODE ASCE 7-93 AND THE FOLLOWING LOADS:
A. ROOF LOADS
ROOFING DEAD LOADS 10 PSF
COLLATERAL 20 PSF
LIVE LOADS
B. WIND 100 MPH; EXPOSURE C; IMPORTANCE 1.0
C. SEISMIC ZONE 1 A
D. SNOW PG= 0 PSF
2. ALL FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 3000 PSF AND ARE BASED ON THE FOLLOWING MAXIMUM ASSUMED BUILDING REACTIONS:
VERTICAL REACTION P= 75 K U= 65 K
HORIZONTAL REACTION H= 85 K
CONTRACTOR IS RESPONSIBLE FOR ALL FOUNDATION CHANGES REQUIRED BASED ON ACTUAL BUILDING REACTIONS PROVIDED WITH PREFABRICATED METAL BUILDING SUBMITTAL.
3. FOUNDATION PREPARATION, STRUCTURAL FILL AND GRANULAR FILL UNDER ALL SLABS AND FOOTINGS SHALL BE AS SPECIFIED IN SECTION EARTHWORK. PROVIDE VAPOR BARRIER AND 6" COMPACTED STRUCTURAL FILL UNDER ALL FOOTINGS AND SLABS.
4. ALL DIMENSIONS MARKED "±" SHALL BE VERIFIED BY METAL BUILDING MANUFACTURER PRIOR TO PLACE OF CONCRETE.
5. ANCHOR BOLTS FOR METAL BUILDING SHALL BE SIZED AND LOCATED AS RECOMMENDED BY METAL BUILDING MANUFACTURER.
6. MASONRY f'M = 1500 PSI f'c GROUT = 2000 PSI
7. CONCRETE f'C = 4000 PSI Fy = 60000 PSI
8. EQUIPMENT PADS, PIPES, WALL PENETRATIONS, LOUVER OPENINGS, SLAB PENETRATIONS, ETC. MAY NOT BE SHOWN. COORDINATE WITH MECHANICAL, ELECTRICAL, ARCHITECTURAL, AND HVAC DRAWINGS FOR SIZE AND LOCATION. PROVIDE OPENING REINF. (3302)
9. FOR GENERAL STRUCTURAL NOTES, TYPICAL CORNER AND INTERSECTION REINFORCING, SEE (3300) (33037)
CHM HILL
DSGN S McCOY
DR W SHOVICH
CHK B. JOHNSON
APVD J MAXFIELD
1 3/99 RECORD DRAWINGS TML JDM
NO. DATE REVISION BY APVD
REUSE OF DOCUMENTS
VERIFY SCALE
ALACHUA COUNTY SOLID WASTE TRANSFER STATION FOR WASTE MANAGEMENT INC. OF FLORIDA
STRUCTURAL
TRANSFER STATION FOUNDATION / FLOOR PARTIAL PLAN STRUCTURAL NOTES
SHEET NO. S-5
DATE MAR 1999
PROJ NO. 141822.A2
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RECORD DRAWINGS