Troy Crews

From: Travis Medeiros [travis@trademarkcg com]
Sent: Tuesday, April 01, 2014 2.00 PM
To: Troy Crews
Subject: FW: Monsta Building Trademark Construction

See message from Chief Boozer below. Thanks.

Travis A. Medeiros
Trademark Construction Group, Inc.
P: 386-755-5254 F: 386-758-4290
www.TrademarkCG.com

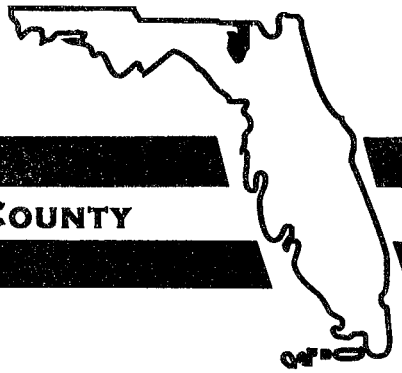
From: David Boozer [mailto:david_boozer@columbiacountyfla.com]
Sent: Tuesday, April 01, 2014 1:50 PM
To: Travis Medeiros
Subject: RE: Monsta Building Trademark Construction

Travis I am fine with these plans. You can go ahead and submit them to Troy.

From: Travis Medeiros [mailto:travis@trademarkcg.com]
Sent: Thursday, March 20, 2014 1:12 PM
To: David Boozer
Cc: Troy Crews
Subject: Monsta Building Trademark Construction

Chief Boozer,
I've attached a rack layout for the Monsta Building also showing how the mechanical platform is going to work. We've also revised the electrical plan to show emergency lighting lining up with the walkways created by the storage racks. Let me know if this works. Thank you for your help.

Travis A. Medeiros
Trademark Construction Group, Inc.
P: 386-755-5254 F: 386-758-4290
www.TrademarkCG.com



MEMORANDUM

Date: 2 April 2014

To: Building Permit File

From: Brian L. Kepner, Land Development Regulation Administrator

Re: Application # 1403-04 Monsta Clothing Co. Inc.

Columbia County Board of Adjustment approved SE 0529 with the condition that a six (6) foot opaque fence be placed around the dumpster pad and V 0292 allowing for 3 of the 10 required parking spaces to be gravel (site plan showing that they are providing 7 gravel spaces).

These conditions will need to be met prior to the issuance of a Certificate of Occupancy. Land Development Regulation Administrator may need to accompany inspectors at time of CO inspection for compliance.

City of Lake City

Customer Service
205 North Marion Avenue
Lake City, Florida 32055-3918
Telephone (386) 752-2031 / Fax (386)719-5837

April 9, 2014

The city's engineer Jason Sparks verified that potable water is available to 2370 SW State Road 47 located on parcel 18-4S-17-08467-021

If you have any questions, please don't hesitate to contact me at 386-719-5786. I am available to assist you from 8:00 a.m. through 5:00 p.m., Monday through Friday.

Thank you again for your assistance with this issue.

Sincerely,

Shasta M. Pelham

Shasta M. Pelham
Customer Service Representative III

COLUMBIA COUNTY FIRE RESCUE

Life Safety Services

P.O. BOX 1529 Lake City, Florida 32056
Office (386) 754-7071 Fax (386) 754-7064

Fire Chief
David L. Boozer

15 August 2015

TO: Troy Crews
Columbia County Building and Zoning

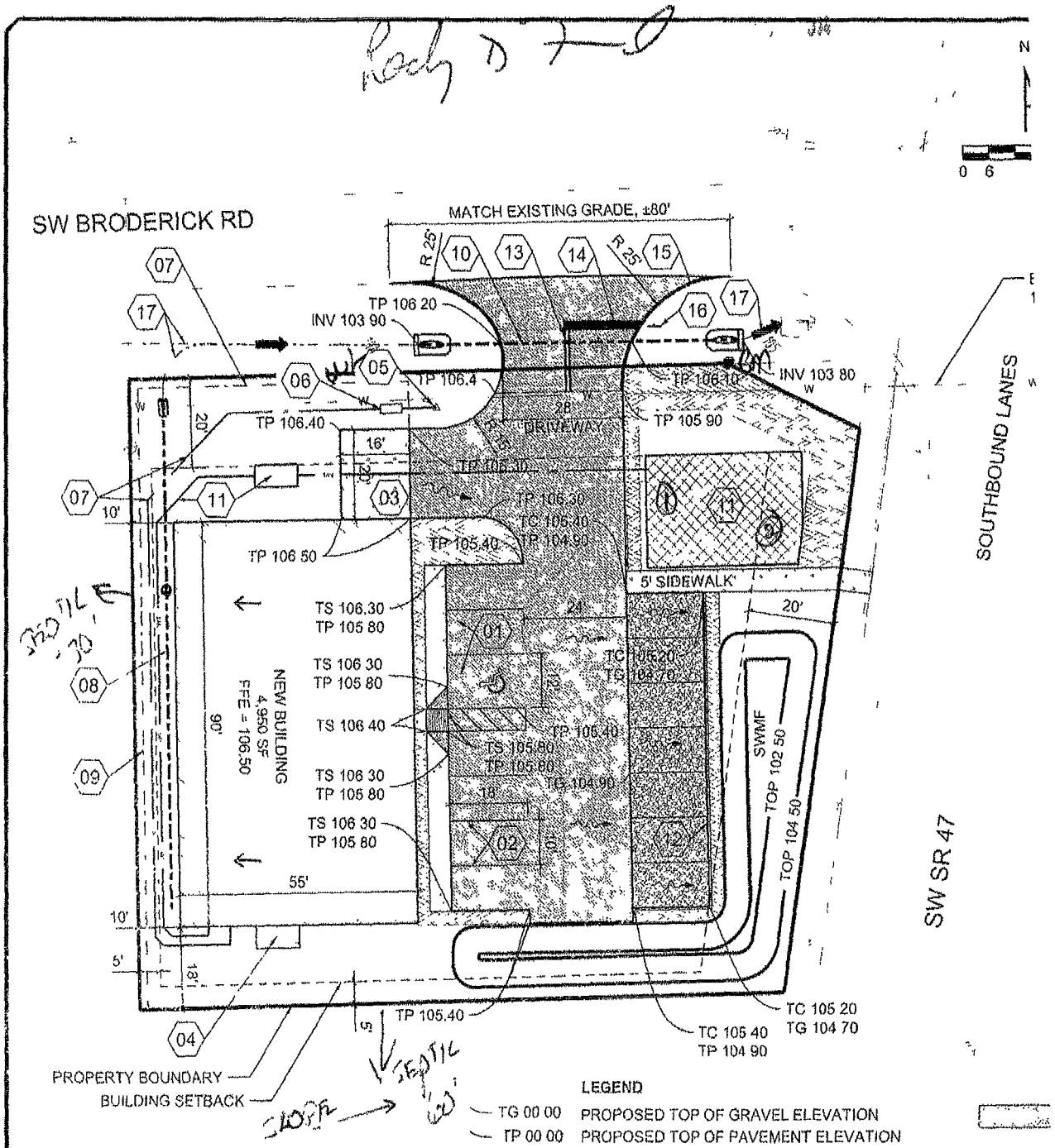
FROM: David L. Boozer
Fire Chief

RE: Permit# 31878
Monsta Clothing Company, Inc.
2370 SW SR 47
Lake City, Florida 32025

A Final Fire Safety Inspection was performed today of the above listed property. This building meets the requirements as set forth in Chapter 38, of the Florida Fire Prevention Code, 2009 Edition. I recommend approval.

Sincerely,

David L. Boozer



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CES
Crews Engineering Services, LLC

CES
Crews Engineering Services, LLC

Crews Engineering Services, LLC
PO Box 970
Lake City, FL 32056
(Phone) 386 754.4085
Certificate of Authorization #28022
brett@crewsengineeringservices com

SELF CERTIFICATION FOR A STORMWATER MANAGEMENT SYSTEM IN UPLANDS SERVING LESS THAN 10 ACRES OF TOTAL PROJECT AREA AND LESS THAN 2 ACRES OF IMPERVIOUS SURFACES

Owner(s)/Permittee(s):	Monsta Clothing Company, Inc.
Site Address:	Sw Corner of SW Broderick and S SR47 Lake City FL - 32025
County:	Columbia
Latitude:	30° 18' 17.6194"
Longitude:	-82° 39' 4.4414"
Total Project Area:	0.51
Total Impervious Surface Area:	0.22
Approximate Date of Commencement of Construction:	11/2/2013
Registered Florida Professional:	Brett Crews
License No.:	65592
Company:	Crews Engineering Services, LLC

Date: September 27, 2013

Brett Crews certifies that the project described above was designed by the above-named Florida registered professional to meet the following requirements:

1. The total project area involves less than 10 acres and less than 2 acres of impervious surface;
2. No activities will impact wetlands or other surface waters;
3. No activities are conducted in, on, or over wetlands or other surface waters;
4. Drainage facilities will not include pipes having diameters greater than 24 inches, or the hydraulic equivalent, and will not use pumps in any manner;
5. The project is not part of a larger common plan, development, or sale; and
6. The project does not:
    A. Cause adverse water quantity or flooding impacts to receiving water and adjacent lands;
    B. Cause adverse impacts to existing surface water storage and conveyance capabilities;
    C. Cause a violation of state water quality standards; or
    D. Cause an adverse impact to the maintenance of surface or ground water levels or surface water flows established pursuant to s. 373.042 or a work of the district established pursuant to s.373.086, F.S.

This certification was submitted within approximately 30 days after initiation of construction of the above project. As such, construction, alteration, and maintenance of the stormwater management system serving this project is authorized in accordance with s. 403.814(12), F.S., and that there is a rebuttable presumption that the discharge from such system will comply with state water quality

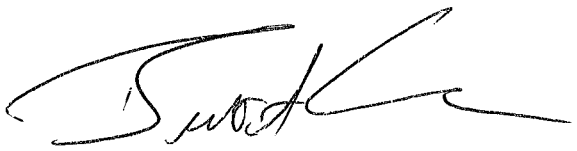
standards when the stormwater management system for this project is designed, operated, and maintained in accordance with applicable rules adopted pursuant to part IV of chapter 373, F.S.

Applicants are advised to contact the applicable water management district for requirements that must be followed to properly abandon any existing water wells that need to be removed because they are located where construction is occurring. In accordance with s. 373.416(2), F.S., if ownership of the property or the stormwater management system is sold or transferred to another party, continued operation of the system is authorized only if notice is provided to the Department within 30 days of the sale or transfer.

This certification is made to:
Columbia County Florida
Department of Building and Zoning
135 NE Hernando Ave.
Lake City, FL 32055

This certification is submitted along with the following documents:
Ownership Information
Drainage Calculations
Site Plans

I, Brett A. Crews, License No. 65592, do hereby certify that the above information is true and accurate, based upon my knowledge, information and belief.

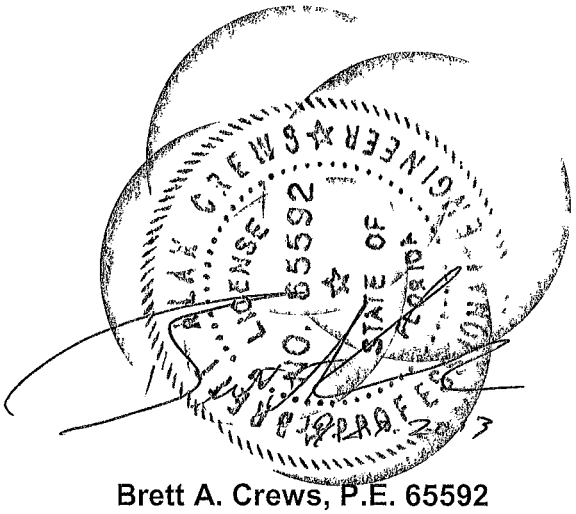


Crews Engineering Services, LLC
PO Box 970
Lake City, FL 32056
Certificate of Authorization #28022

CES
Crews Engineering Services, LLC

MONSTA CLOTHING CO.
WHOLESALE WAREHOUSE BUILDING

DRAINAGE DESIGN CALCULATIONS



Brett A. Crews, P.E. 65592
Crews Engineering Services, LLC
Certificate of Authorization No. 28022
PO Box 970
Lake City, FL 32056
Ph. 386.623.4303
brett@crewsengineeringservices.com

SUMMARY

Monsta Clothing Company, Inc. is proposing improvements to a 0.51 acre lot in Columbia County, FL.

The proposed improvements include a 4,950 sf wholesale and warehouse building, concrete sidewalks, associated asphalt and gravel parking and surface water management facility.

Under post development conditions, surface water runoff from the impervious areas is routed to the SWMF. The SWMF discharges runoff as it previously flowed under predevelopment conditions.

The SWMF has been designed to handle +/-2,554 cf of runoff from the improvements (3.1" over the impervious areas). This is more than the typical SRWMD requirement for a Notice General ERP of 2".

Below are calculations showing the requirement and capacity of SWMF:

Impervious Areas
Building: 4,950 sf
Concrete Pavement: 700 sf
Asphalt Pavement: 4,082
Total = 9,732 sf = 0.22 Acres = 43% of Site

Volume of Storage Provided by SWMF
Top Area = 2,128 sf
Bottom Area = 426 sf
Depth = 2'
Volume = (2,128 + 426)/2 *2 = 2,554 cf

Depth of Stormwater Treatment from Impervious Areas
Depth = 2,554 cf / 9,732 sf = 0.32' = **3.1"**

31878

CES
Crews Engineering Services, LLC

Crews Engineering Services, LLC
PO Box 970
Lake City, FL 32056
(Phone) 386.754.4085
brett@crewsengineeringservices com

May 1, 2014

Brian Kepner
Columbia County Building and Zoning
135 NE Hernando Ave.
Lake City, FL
32055

SUBJECT: Minor Field Changes – Monsta Clothing Company Inc. Commercial site

Mr. Kepner,

This is to inform you of minor field changes made to the above site plan. Below is a description of the changes:

- Finish floor elevation was raised from 106.5 to 107.0 in an effort to help with drainage.
- The steel building dimensions are slightly different than that shown on the site plan. Instead of 90' x 55' the building is actually 100' x 50'. The NW corner is in the same location. The location with respect to the west and north boundary line is the same. The new building location is 10' closer to the South boundary line and 5' further from the east boundary line. All setback requirements are still being met.

Please contact me if you have any questions or require additional information.

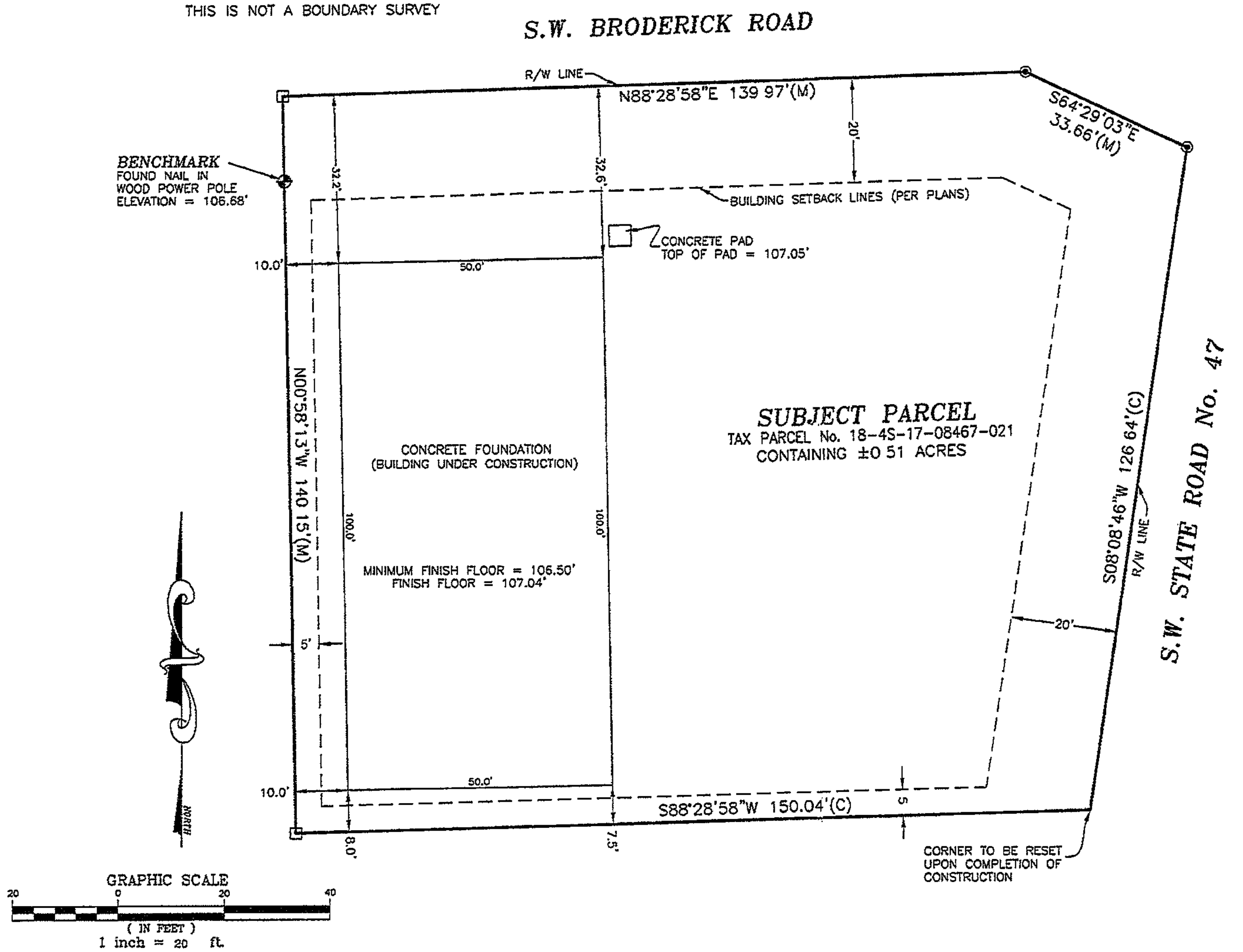
Sincerely,

Brett A. Crews, P.E.
Project Engineer

SPECIFIC PURPOSE SURVEY

LYING IN SECTION 18, TOWNSHIP 4 SOUTH,
RANGE 17 EAST, COLUMBIA COUNTY, FLORIDA

THIS IS NOT A BOUNDARY SURVEY



LEGEND

- □ = FOUND 4"x4" CONCRETE MONUMENT
- ◉ = FOUND 5/8" REBAR & CAP
- (M) = MEASURED
- (C) = CALCULATED FROM PLANS
- R/W = RIGHT OF WAY

SURVEYOR NOTES:

1 THE PURPOSE OF THIS SURVEY IS TO SHOW THE BUILDING FOUNDATION IN RELATION TO THE BOUNDARY LINES AS SHOWN ON THE CONSTRUTCTION PLANS FOR THE SUBJECT PARCEL. CONSTRUCTION PLANS WERE BY CREWS ENGINEERING SERVICES, LLC, PROJECT NUMBER 2013-015.

2. THE BEARINGS SHOWN HEREON ARE BASED ON FIELD MEASUREMENTS PROJECTED FROM AN ASSUMED BEARING OF N 88°28'58"E, ALONG THE NORTH LINE OF THE SUBJECT PARCEL.

3. ELEVATIONS SHOWN HEREON ARE BASED ON A FOUND NAIL & DISK IN A WOOD POWER POLE AT THE NORTHWEST CORNER OF THE SUBJECT PARCEL, HAVING A PUBLISHED ELEVATION OF 106.68 FEET (DATUM, IF ANY, UNKNOWN).

4. NO UNDERGROUND INSTALLATION OF UTILITIES OR IMPROVEMENTS HAVE BEEN LOCATED EXCEPT AS SHOWN.

5. THE SURVEYOR HAS NO KNOWLEDGE OF UNDERGROUND FOUNDATIONS WHICH MAY ENCROACH.

6. RECORDED EASEMENT AND/OR DEEDS NOT FURNISHED TO THE SURVEYOR ARE NOT SHOWN.

7 THIS IS NOT A BOUNDARY SURVEY

LEIGH ANN FLOWERS
PROFESSIONAL SURVEYOR & MAPPER
FLA LICENSE NO 6602

FLOWERS SURVEYING AND MAPPING INC
207 SE CONDOR GLEN
HIGH SPRINGS, FLORIDA 32643
(386) 454-8147

CERTIFIED TO:
MONSTA CLOTHING COMPANY INC.
PEOPLES STATE BANK
ABSTRACT TRUST TITLE, LLC
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

FIELD BOOK: SEE FOLDER
DRAFTED: LAF
CHECKED: LAF
SURVEY DATE: 03/07/14
JOB NUMBER: 14-051
SHEET 1 OF 1

FLOWERS SURVEYING
AND MAPPING INC
207 SE CONDOR GLEN
HIGH SPRINGS, FL 32643
(386) 454-8147

LAND SURVEYORS

OK
BLK
1 MAY 2014

April 29, 2014

Form Board Location Letter

Parcel Location: Monsta Warehouse – State Road 47 & S.W. Broderick Road
Columbia County, FL - Tax Parcel No 18-4S-17-08467-021

Horizontal Data
The NW corner of the form boards is at the proposed location
The NE corner of the form boards is 0.01'N & 4.97'W of the proposed location
The SE corner of the form boards is 10.01'S & 4.97'W of the proposed location
The SW corner of the form boards is 9.99'S & 0.02'E of the proposed location

The North line of form boards measure 50.03' (55.00' per plans)
The East line of form boards measure 100.02' (90.00' per plans)
The South line of form boards measure 50.01' (55.00' per plans)
The West line of form boards measure 99.99' (90.00' per plans)

Vertical Data
Finish Floor (per plans) = 106.50 feet
Finish Floor (measured) = 107.04 feet

I, Leigh Ann Flowers, PSM, hereby certify that the top of the form boards for the Monsta Warehouse located at the intersection of State Road 47 & S.W. Broderick Road, Columbia County, FL have an elevation of **107.04 feet** (Datum unknown, if any), based on a found nail in a wood power pole at the northwest corner of the subject parcel, having a published elevation of 106.68 feet per the furnished construction plans.

Leigh Ann Flowers

Professional Surveyor & Mapper
Florida License No. 6602

4/29/14
Date of Signature

31878

REPORT OF GEOTECHNICAL EXPLORATION

Monsta Warehouse
SR 47 & Broderick Road
Lake City, Columbia County, Florida
CTI Project No. 14-00120-01

- Prepared For -
Trademark Construction Group, Inc.
750-A SW Main Boulevard
Lake City, Florida 32025

- Prepared by -
Cal-Tech Testing, Inc.
P.O. Box 1625
Lake City, Florida 32056-1625

April 10, 2014

Cal-Tech Testing, Inc.
• Engineering
• Geotechnical
• Environmental
LABORATORIES

P O Box 1625 • Lake City FL 32056 | Tel (386) 755-3633 • Fax (386) 752-5456
450 SR 13N Suite 106-308, Jacksonville FL 32259 | Tel (904) 381-8901 • Fax (904) 381-8902

April 10, 2014

Trademark Construction Group, Inc.
750-A SW Main Boulevard
Lake City, Florida 32025

Attention: Mr. Travis A. Medeiros, President

Reference: Report of Geotechnical Exploration
Monsta Warehouse – SR 47 & Broderick Road
Lake City, Columbia County, Florida
Cal-Tech Project No. 14-00120-01

Dear Mr. Medeiros:

Cal-Tech Testing, Inc. (CTI) has completed the geotechnical exploration and engineering evaluation at the referenced site. This exploration was performed in general accordance with our proposal dated March 26, 2014. Acceptance to this proposal was provide by you on March 26, 2014. This report briefly outlines our understanding of the planned construction, describes the field exploration, presents the collected data, and provides our geotechnical engineering evaluation of the subsurface conditions with respect to the planned construction.

We have enjoyed assisting you on this project and look forward to serving as your geotechnical and construction materials testing consultant for the remainder of this and future projects. Should you have any questions concerning this report, please contact our office at 386-755-3633.

Sincerely,
Cal-Tech Testing, Inc.

NABIL O. HIMEIDI LICENSE No 57842 STATE OF FLORIDA PROFESSIONAL ENGINEER

a COPY 4/10/2014

Nabil O. Himeidi, P.E.
Senior Geotechnical Engineer
Licensed, Florida No. 57842

Distribution *File (1 copy)*
Addressee (2 copies)

TABLE OF CONTENTS

ATTACHMENTS

1.0 INTRODUCTION

1.1 Purpose and Scope of Service

The purpose of this geotechnical exploration was to develop information concerning the site and subsurface conditions, and to evaluate site preparation requirements and foundation support recommendations for the proposed construction. This report briefly describes our field activities and presents our findings. The services rendered by CTI during the course of this exploration can be summarized as follows:

1. Reviewed available data such as results of similar explorations and published data including the U.S.G.S. Quadrangle Map and the Geologic Map of Florida;
2. Planned and performed two (2) Standard Penetration Test (SPT) borings each extending 20 feet below the existing ground surface;
3. Reviewed and analyzed gathered data in order to evaluate the general subsurface conditions with respect to the proposed development, and
4. Prepared this report.

2.0 SITE CONDITIONS & PROJECT DESCRIPTIONS

2.1 Site Conditions

The existing site conditions were observed by our personnel during our field program. At the time of our visit, the subject site was being cleared of trees and topsoil by an earthwork contractor The existing ground surface appears to gently slope down towards the southwest. No ponded water was noted on the surface.

2.2 Project Descriptions

Based on a Site Plan prepared by Crews Engineering Services, LLC dated November 7, 2013, we understand the proposed development will consist of constructing a new one-story structural-steel warehouse building with a footprint of about 4,950 SF. The building will be located in the southwest quadrant of US Highway 47 and SW Broderick Road intersection in Lake City, Columbia County, Florida. We have not been provided with structural loading for the proposed structure, however, based on our experience with similar construction, we anticipate the structure will have maximum column and wall loads on the order of 50 kips and 3 to 4 kips per linear foot, respectively. We assume that nominal cuts and fills (less than 3 feet) will be required to achieve final site grades. We also assume that soil-supported concrete floor slab loads (dead load plus live load) will not exceed 150 psf.

3.0 FIELD & LABORATORY PROGRAMS

3.1 Field Program

Our field program consisted of performing two (2) SPT borings each extending 20 feet below the existing ground surface. The borings were performed at the approximate locations shown on the attached Boring Locations Map. These locations were determined in the field and measured by tape and approximating right angles from existing features. Therefore, the boring locations should be considered only as accurate as the means and methods by which they were obtained. The approximate Global Positioning System (GPS) coordinates of the borings were acquired using a handheld device manufactured by Garmin (model Dakota® 10), and are listed below:

- B-1 30.138387° N, 82.651459° W
- B-2 30.138113° N, 82.651310° W

The sampling and penetration procedures of the SPT borings were accomplished in general accordance with ASTM D-1586, "*Penetration Test and Split-Barrel Sampling of Soils*", using a power rotary drill rig. The standard penetration tests were performed by driving a standard 1-3/8" I.D. and 2" O.D. split spoon sampler with a 140 pound hammer falling 30 inches. The number of hammer blows required to drive the sampler a total of 18 inches, in 6 inch increments, were recorded. The penetration resistance or "*N*" value is the summation of the last two 6 inch increments and is illustrated on the attached boring logs adjacent to their corresponding sample depths. The penetration resistance is used as an index to derive soil parameters from various empirical correlations. The borings were performed using a CME-45 drill rig equipped with an automatic hammer.

The attached record of boring logs present the descriptions of the subsurface conditions encountered at the time of our field program, and also provide the penetration resistances recorded during the drilling and sampling process. The stratification lines and depth designations on the boring records represent approximate boundaries between the various soils encountered, as determined in the field by our personnel. In some cases, the transition between the various soils may be gradual.

4.0 SUBSURFACE CONDITIONS

4.1 Subsurface Conditions

In general, the soil profile as disclosed by the SPT borings initially consisted of about 4 to 6 inches of grayish brown sand with silt and organics (topsoil). This surface cover is underlain by alternating layers of grayish tan sand with silt (SP-SM), gray and reddish tan or yellowish tan with gray mottles clayey sand (SC), gray and reddish brown mottled sandy clay (CL), greenish gray with red mottles clay (CH). The standard penetration resistance or "*N*" values of the sandy soils ranged from 6 to exceeding 60 Blows Per Foot (BPF) indicating the relative density of these soils to vary from loose to very dense. The clayey soils have "*N*" values ranging from 27 to 30 BPF indicating these soils to be very stiff in consistency.

The standard penetration resistance indicates the relative density of the sandy soils vary from very loose to dense with "*N*" values ranging from 4 to 32 Blows Per Foot (BPF). The clayey soils have a stiff to hard consistency with "*N*" values ranging from 10 to 42 BPF.

4.2 Groundwater

At the time of completion of drilling, the groundwater was encountered in boring B-1 at a depth of 5 feet below the exiting ground surface. The groundwater was not encountered in borings B-2. We note that due to the relatively short time frame of the field exploration and clayey nature of the site soils, the groundwater may not have had sufficient time to stabilize. Therefore, fluctuation in groundwater levels should be expected due to seasonal climatic conditions, construction activities, rainfall variations, surface water runoff, and other site-specific factors.

4.3 General Area Geology

Published information[1] regarding the geology of Columbia County, Florida indicates the site is situated within the undifferentiated quaternary sediments (Qu) of the Pleistocene and Holocene periods. Typically, the undifferentiated sediments consist of siliciclastics, organics and freshwater carbonates. The siliciclastics are light gray, tan, brown to dark, unconsolidated to poorly consolidated, clean to clayey, silty, fossiliferous, variably organic-bearing sands to blue green to olive green, poorly to moderately consolidated, sandy, silty, clays.

4.4 Sinkhole Potential

The USGS Map Series No. 110, Sinkhole Type, Development, and Distribution in Florida dated 1985 identifies the site near the contact of Areas I & III. Area I consists of ground with bare or thinly covered limestone. Gradually developed solution sinkholes in this area are few, broad and shallow. Area III, refers to ground with 30 to 200 feet of cover to limestone. The overburden soils mainly consist of cohesive clayey sediments of low permeability. Cover-collapse sinkholes of varying size abruptly develop and are numerous.

The sinkhole Database issued by the Florida Geological Survey (last updated May 6, 2013) indicates a number of "*reported*" sinkhole occurrences within 5 miles of the subject site, with the nearest being about 10,000 feet to the south (see database reference No. 29-015 occurred on June 9, 2974). However, results of the test borings did not reveal presence of active sinkholes within the explored profile. Therefore, it is our opinion the proposed development on this site will have no greater risk of damage due to sinkhole activity than the development of structures in nearby areas. In any event, it must be understood that this geotechnical exploration was not intended to predict or preclude future sinkholes from occurring within the limits of the subject area.

---

1 Geologic Map of the State of Florida, Series MS 146, by the Florida Geological Survey (FGS), 2001, revised April 15, 2006 & Open-File Report 80, by FGS dated 2001

5.0 FOUNDATION DESIGN RECOMMENDATIONS

The recommendations presented in this report are based upon available project information, anticipated loading conditions, and data obtained during our field program. If the structural information is incorrect or the location of the structure changes, please contact this office so our recommendations may be reviewed and/or revised. Discovery of any site or subsurface condition during construction, which deviates from the data collected during this exploration, should be reported to us for evaluation.

5.1 General

Based on our evaluation of the encountered subsoils, anticipated loading conditions and our past experience with similar projects, it is our opinion the subject site can be made suitable for the support of the proposed building. The development should include the complete removal of root systems remaining from past site clearing. This should be followed by the densification of the upper soils.

5.2 Foundation Support

Provided the soils are prepared in accordance with the guidelines presented in this report, it is our opinion the proposed structure may be supported on a conventional shallow foundation system. The shallow foundation may be designed for an allowable bearing pressure of 2,500 pounds per square foot (psf) or less supported on recompacted structural fill. In using net pressures, the weight of the footing and backfill over the footing need not be considered. Only loads applied at or above final grade need to be used for dimensioning footings. Wall bearing footings should be designed with a minimum width of 18 inches, while the individual column footings should have minimum dimensions of 2 feet by 2 feet.

5.3 Floor Slab

All unsuitable material (buried root systems, construction debris, organics, etc.) located within the building and pavement areas (including 5 feet outside the perimeter of the building) should be overexcavated and removed. The exposed subgrade should then be recompacted and proofrolled with a fully-loaded, tandem-axle dump-truck or similar pneumatic-tired equipment (tracked equipment should not be used for this task). All new fill soils placed within this area should be placed in accordance with our recommendations presented herein (see Structural Fill/Backfill for more details).

Provided the proofrolling operations do not indicate significant deflection or pumping of the existing subgrade and that new fill is satisfactorily placed and compacted, the floor slab may be designed as a slab-on-grade Floor slabs should be supported on at least 4 inches of relatively clean granular material, such as sand, sand and gravel, or crushed stone. This is to help distribute concentrated loads and equalize moisture beneath the slab. This granular material should have 100 percent passing the 1½ -inch sieve and a maximum of 12 percent passing the No. 200 sieve.

5.4 Uplift Resistance

Under wind loading conditions, the structure will likely be subjected to uplift forces. To resist these forces, it may be necessary to increase the footing size (thus increasing the dead weight) or lower the footing to mobilize additional soil weight above the footing. Uplift resistance from the soil may be

evaluated as the weight of the soil directly above the footing, plus the shearing resistance along the vertical face of the soil prism. Alternately, the available soil uplift resistance may be calculated as the weight of the soil prism defined by the diagonal line drawn from the top of the footing to the ground surface at an angle of 30 degrees with the vertical. To calculate the uplift resistance, an average total unit weight of 115 pcf (or ±109 pcf when compacted to a minimum of 95% of the standard Proctor's maximum dry density) may be used for the on-site materials encountered within the upper 3 feet of the existing ground surface. Should the bottom of any structure bear at depths below the groundwater level, these structures must be properly designed to resist the resulting uplift forces due to hydrostatic pressures.

5.5 Lateral Resistance

Lateral loads created by wind may be resisted by the passive pressure of the soil acting against the side of the individual footings and/or the friction developed between the base of the foundation system and the underlying soils. For compacted backfill and/or in-situ material, the passive pressure may be taken as an equivalent to the pressure exerted by a fluid weighing 327 pcf for above the groundwater table and 140 pcf below the water level. A coefficient of friction equal to 0.40 may be used for calculating the frictional resistance at the base of the shallow footings. The resistance values discussed herein are based on the assumption the foundations can withstand horizontal movements on the order of ¼ inch.

5.6 Lateral Earth Pressures

Retaining walls (such as loading dock walls) will be subject to "at-rest" or "active" lateral earth pressures. Walls which are fixed or restrained at the top and bottom may be subject to "at-rest" earth pressure. The "at-rest" pressures may be calculated as the equivalent pressure exerted by a fluid density of 55 pcf. For walls which are not restrained at the top and thus allowed sufficient movement to mobilize "active" pressures, an equivalent fluid density of 36 pcf should be used in the design. These values may be used only for walls above the groundwater table. The presence of any groundwater due to surface water intrusion should be handled with the use of a drainage layer behind the walls with a collection pipe discharging accumulated water away from the walls. If this is not practical, then the hydrostatic pressure due to water should be included in the design of the walls. Refer to the attached Soil Properties table for additional parameters.

5.7 Drainage Considerations

Adequate drainage should be provided at the site to minimize increase in moisture content of the foundation soils. Excessive moisture can significantly reduce the soils bearing capacity and contribute to foundation settlement. For the protection of the foundation soils, we recommend the ground surface be sloped away from the proposed structure. In addition, and due to the presence of clayey soils within 5 feet of the anticipated finished grades, a shallow ground and/or perched water should be expected, particularly after periods of precipitation. To alleviate the adverse effects of water on the building foundations and pavement subgrade, an underdrain system may be installed so that the ground/perched water is controlled at 2 feet or below the lowest footing bearing levels.

6.0 GENERAL EARTHWORK RECOMMENDATIONS

6.1 Exposed Subgrade

All soils within the proposed building and paved areas (including a minimum of 5 feet outside the perimeter of any proposed structure) should be densified with overlapping passes of appropriate compaction equipment. The exposed surfaces should be compacted to a minimum of 95 percent of the modified Proctor maximum dry density (ASTM D-1557).

6.2 Structural Fill/Backfill

The soil borings indicated the presence of variable type soils within the upper 5 feet of the existing ground surface. These shallow soils consisted of fine sand with silt (SP-SM), clayey sand (SC) and sandy clay (CL) soils. Also, some of the upper soils exhibited a very loose relative density. To densify the upper loose soils, we recommend using the smallest compaction equipment necessary to achieve the compaction level required. The initial compaction operations should also consist of at least ten overlapping passes of the compaction roller in each direction. This compaction effort should help improve the overall uniformity and bearing conditions of the near-surface soils.

Soils with fines content greater than 12 percent and classified as clayey sand (SC), may be used as structural fill, however, these soils are difficult to compact due to their moisture sensitivity. These soils may be used provided their fines content does not exceed 30 percent, and their Plasticity Index (PI) does not exceed 20. We anticipate the majority of the site soils within the upper 3 feet of the existing ground surface will meet these requirements. Clayey sands soils used as structural fill should be moisture conditioned to within 2 percentage points of their optimum moisture content. These soils may require the use of a nonvibratory steel drum or rubber-tired roller for compaction.

New structural fill imported to the site should consist of an inorganic, non-plastic, granular soil containing less than 12 percent material passing the No. 200 mesh sieve (relatively clean sand with a Unified Soil Classification of SP or SP-SM). We note the SPT borings disclosed soils classified as sandy clay (CL) at shallow depths. These soils, if encountered within 2 feet of the finished subgrade or bottom of footing excavations should be overexcavated and discarded.

6.3 Construction Monitoring and Testing Guidelines

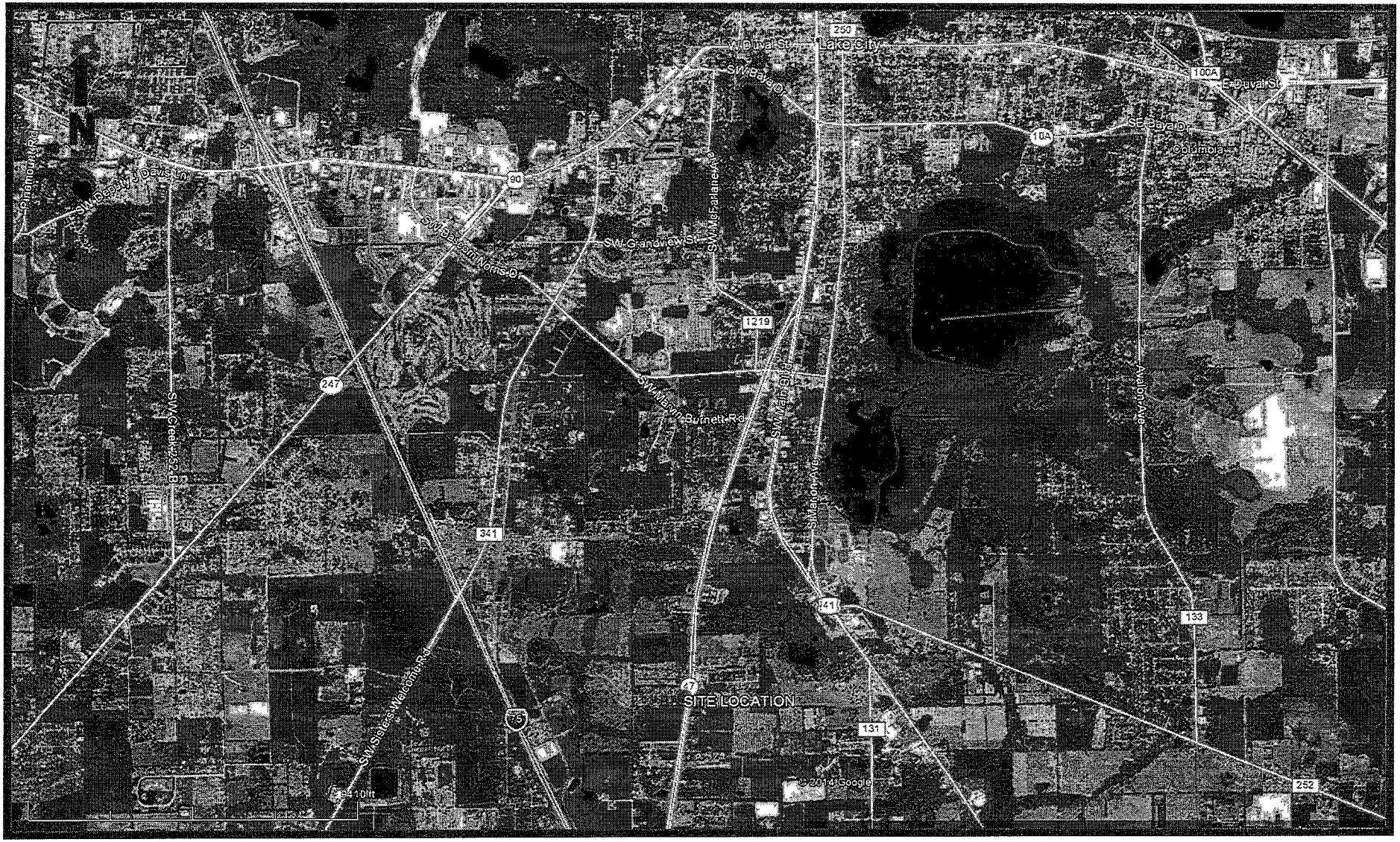
Prior to initiating compaction operations, we recommend that representative samples of the on-site and any off-site materials to be used as structural fill be tested to determine their compaction and classification characteristics A representative number of in-place field density tests should be performed in the compacted soils and in each lift of structural fill or backfill to confirm the required degree of compaction has been achieved. In-place density tests should also be performed at representative locations in the bearing level soils in the footing excavation bottoms. The following minimum density testing frequencies are recommended:

Area	Recommended Minimum Density Test Frequency
Concrete slab-on-grade	1 test per 2,000 ft^2 in compacted existing soils and in each lift of structural fill
Footing Bearing Level Soils -Spread Footings	1 test per 100 ft^2 of bearing surface (or one test for each isolated footing less than 100 ft^2)
-Continuous/Strip Footings	1 test per 50 lineal feet of bearing surface
Pavement Areas	1 test per 5,000 ft^2

7.0 REPORT LIMITATIONS

This report has been prepared for the exclusive use of Trademark Construction Group, Inc. of Lake City, Florida for the specific application to the project discussed herein. Our conclusions and recommendations have been rendered using generally accepted standards of geotechnical engineering practice in the State of Florida. No other warranty is expressed or implied. CTI is not responsible for the interpretations, conclusions, opinions, or recommendations of others based on the data contained herein. The assessment of environmental conditions at the site was beyond the scope of this exploration.

ATTACHMENTS



CAL-TECH TESTING, INC. P.O. Box 1625 Lake City, Florida 32056-1625 Phone: (386) 755-3633 Fax: (386) 752-5456	Vicinity Map Monsta Warehouse SR 47 & Broderick Road Lake City, Columbia County, Florida Cal-Tech Testing Project No. 14-00120-01

Exhibit 1

CAL-TECH TESTING, INC. P.O. Box 1625 Lake City, Florida 32056-1625 Phone: (386) 755-3633 Fax: (386) 752-5456	Boring Locations Map Monsta Warehouse SR 47 & Broderick Road Lake City, Columbia County, Florida Cal-Tech Testing Project No. 14-00120-01

Exhibit 2

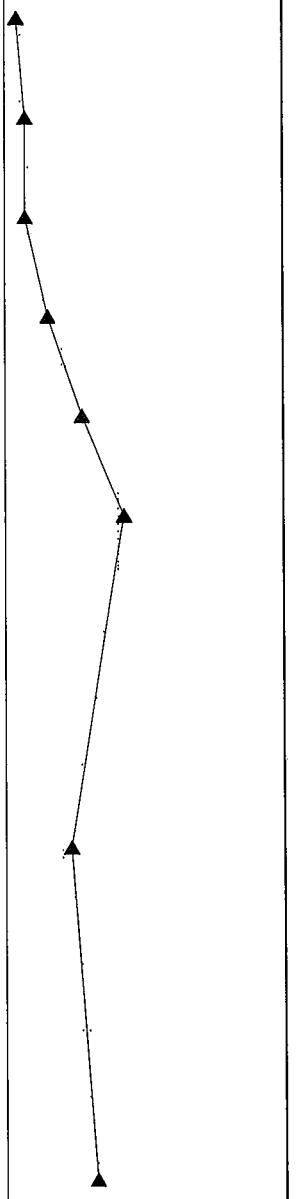
Cal-Tect Testing, Inc
3309 SR 247
Lake City, FL 32024
Telephone 386-755-3633
Fax: 386-755-3633

BORING NUMBER B-1

CLIENT Trademark Construction Group, Inc
PROJECT NAME Monsta Warehouse
PROJECT NUMBER 14-00120-01 (SR 47 & Broderick Road)
PROJECT LOCATION Lake City, Columbia County, Florida
DATE STARTED 4/4/14 **COMPLETED** 4/4/14
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR Cal-Tech Testing, Inc
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger/Split Spoon
AT TIME OF DRILLING ---
LOGGED BY N H **CHECKED BY** _____
AT END OF DRILLING 5 00 ft
NOTES CME-45 (Automatic Hammer)
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	DRY UNIT WT (pcf)
0		Grayish brown, sand with silt and organic (TOPSOIL)					
		VERY LOOSE, grayish tan, sand with silt (SP-SM)	SPT 1	100	2-2-2 (4)		
		LOOSE, gray and reddish tan, clayey sand (SC)	SPT 2	100	3-3-4 (7)		
5			SPT 3	100	3-3-4 (7)		
		FIRM to STIFF, gray and reddish brown, mottled, sandy clay (CL)	SPT 4	100	4-6-9 (15)		
		VERY STIFF to HARD, greenish gray with red mottles, clay (CH)	SPT 5	100	9-12-15 (27)		
10			SPT 6	100	11-14-28 (42)		
15			SPT 7	100	8-10-13 (23)		
		DENSE, yellowish tan with gray mottles, clayey sand (SC)					
20			SPT 8	100	7-14-18 (32)		

Bottom of borehole at 20.0 feet



Cal-Tect Testing, Inc
3309 SR 247
Lake City, FL 32024
Telephone 386-755-3633
Fax: 386-755-3633

BORING NUMBER B-2

CLIENT Trademark Construction Group, Inc
PROJECT NAME Monsta Warehouse
PROJECT NUMBER 14-00120-01 (SR 47 & Broderick Road)
PROJECT LOCATION Lake City, Columbia County, Florida
DATE STARTED 4/4/14 **COMPLETED** 4/4/14
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR Cal-Tech Testing, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger/Split Spoon
AT TIME OF DRILLING ---
LOGGED BY N H **CHECKED BY** _____
AT END OF DRILLING --- Not Encountered
NOTES CME-45 (Automatic Hammer)
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	DRY UNIT WT (pcf)
0		Grayish brown, sand with silt and organic (TOPSOIL)					
		VERY LOOSE, gray and reddish tan, clayey sand (SC)	SPT 1	100	3-3-1 (4)		
			SPT 2	100	2-2-5 (7)		
5		HARD, gray and reddish brown, mottled, sandy clay (CL)	SPT 3	100	8-11-21 (32)		
			SPT 4	100	16-18-16 (34)		
		STIFF to VERY STIFF, greenish gray with red mottles, clay (CH)	SPT 5	100	12-12-13 (25)		
10			SPT 6	100	3-4-6 (10)		
		MEDIUM DENSE, yellowish tan and gray, mottled, clayey sand (SC)	SPT 7	100	5-9-10 (19)		
15							
			SPT 8	100	4-5-6 (11)		
20		Bottom of borehole at 20.0 feet					

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80