



# UNIVERSAL ENGINEERING SCIENCES

Consultants in: Geotechnical Engineering • Environmental Sciences  
Construction Materials Testing • Threshold Inspection

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March 05, 2004

[REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]

Attention: [REDACTED]

Reference: Preliminary Geotechnical Exploration  
 Proposed Auto Repair Buildings  
 S.R. 426 - Aloma Avenue  
 Oviedo, Seminole County, Florida  
 UES Project No. 13391-001-01  
 UES Report No. 335187

Dear [REDACTED]

Universal Engineering Sciences, Inc. (UES) has completed a preliminary geotechnical exploration at the project site. This Project is located on the west side of State Road 426 (Aloma Avenue) to the south of the Oviedo Commerce Center Business Park, in Oviedo, Seminole County, Florida. Our findings, conclusions, and recommendations are presented in this letter.

### PROJECT DESCRIPTION

The purpose of our exploration was to determine if we encountered any buried muck, debris, or a high groundwater table which could adversely affect the cost of development. At the time of our visit, the site was partially wooded with scattered saw palmettoe and pine trees throughout the subject site.

### EXPLORATION AND FINDINGS

The subsurface conditions of the subject site were explored with a total of ten (10) hand auger borings, (according to the procedures of ASTM D-1452), advanced to depths ranging from 3.5 to 5.0 feet below the existing ground surface. We performed the auger borings by manually advancing a bucket auger into the soil. We evaluated the soil type by visually inspecting the soil cuttings recovered from the auger bucket. We also performed manual probes at each boring location to determine if there were any buried organics below the termination depth of the borings. These probes were performed by advancing a 3/8 inch steel rod into the soil to "feel" the consistency of the underlying soils.

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The subject site is approximately .91 acres. Locations of the ten soil borings were randomly selected within the project site based on the site plan provided to us concentrating on the areas of the two proposed buildings to be located on the subject site ( see the attached Site Plan for approximate boring locations). Generally, our borings encountered gray to brown fine sand extending to depths of 13 to 22 inches below the existing ground surface. This material was underlain by light brown to gray fine sand extending to depths of 21 to 38 inches below the ground surface. Beneath this material, we encountered a dark brown to brown sand with silt extending to the boring termination depths of 42 to 66 inches below the existing ground surface. At three of our boring locations (AB-7, AB-9, and AB-10), we encountered a surficial layer of organic sand extending from the ground surface to 6 to 9 inches below grade. The organic content of this material was found to range between 4.7% and 5.1% and the moisture content of the material is 36%. The groundwater table was encountered at depths ranging from 24 to 37 inches below the existing ground surface at our boring locations. We estimate the seasonal high groundwater table to be approximately 12 inches below the existing ground surface at our boring locations.

### **CONCLUSIONS AND RECOMMENDATIONS**

During our field exploration, we encountered a surficial layer of organic sand in borings AB-7, AB-9 and AB-10, located in the western most third of the subject site. It is our professional opinion that the organic sand be removed prior to construction of the proposed buildings. Due to the surficial depth, approximately 6 to 9 inches below the existing ground surface, and the low organic content of the material, the normal site preparation and clearing process should be sufficient to remove all this unsuitable material.

### **LIMITATIONS**

Please note that our exploration is preliminary in nature, and has been designed to provide you information on the general subsurface conditions and identify potential subsurface constraints that may affect the cost of construction. ***The information obtained from this exploration is not sufficient for final design of foundation systems of the proposed buildings***

Please note, this report is a preliminary report only, based upon limited exploration to answer specific questions posed by you. This report has not been prepared to meet the needs of design professionals, contractors, or any other parties, and the use of this report by them without the guidance of Universal Engineering Sciences may lead to erroneous assumptions, faulty conclusions and other problems.

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We strongly recommend that the information obtained from this preliminary exploration be supplemented with a more comprehensive subsurface exploration once the final site plan has been finalized. Deeper borings are also required if you wish to evaluate the presence of deeper buried muck pockets or unsuitable soil deposits. The foundations for the building should be designed based on the information obtained from a more comprehensive geotechnical exploration program.

### ADDITIONAL SERVICES

Universal Engineering Sciences also provides environmental sciences consulting services, complete septic system design services, construction materials testing and inspection services including but not limited to: private provider inspection services, compaction testing (Proctor tests & density tests), concrete strength testing, structural inspections, forensic investigations and in-door air quality evaluations.

We will be pleased to discuss the services we offer and their significance to your project, as well as provide a fee schedule. We look forward to further assisting you on this and future projects.

### CLOSURE

We trust this report meets your needs and addresses all the current issues: however, if you have any questions, please do not hesitate to contact us. It has been a pleasure serving you on this project.

Respectfully submitted,

**UNIVERSAL ENGINEERING SCIENCES, INC**

*Edward B. Clifford for AMS*

Edward B. Clifford  
Geotechnical and Septic Design Services

*Bon Lien*  
Bon Lien, P.E., Ph.D.

P.E. No. 60483

Geotechnical Department Manager

3/5/04

Client (4)

Attachments: Log of Borings  
Site Plan

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**LOG OF BORINGS  
 PROPOSED AUTO REPAIR BUILDINGS  
 OVIEDO, SEMINOLE COUNTY, FLORIDA**

<b>AUGER BORING # 1</b>	
<b>DEPTH (INCHES)</b>	<b>SOIL / MATERIAL ENCOUNTERED</b>
0 - 18	Gray to brown sand
18 - 38	Light brown to gray sand
38 - 44	Dark brown sand with silt
44 - 60*	Brown sand with silt
* Boring Terminated @ 60 Inches	
Groundwater table encountered at 37 Inches	

<b>AUGER BORING # 2</b>	
<b>DEPTH (INCHES)</b>	<b>SOIL / MATERIAL ENCOUNTERED</b>
0 - 16	Gray to brown sand
16 - 22	Light brown to gray sand
22 - 50	Dark brown sand with silt
50 - 60*	Brown sand with silt
* Boring Terminated @ 60 Inches	
Groundwater table encountered at 35 Inches	

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AUGER BORING # 3	
DEPTH (INCHES)	SOIL / MATERIAL ENCOUNTERED
0 - 13	Gray to brown sand
13 - 21	Light brown to gray sand
21 - 60*	Dark brown sand with silt
* Boring Terminated @ 60 Inches	
Groundwater table encountered at 35 Inches	

AUGER BORING # 4	
DEPTH (INCHES)	SOIL / MATERIAL ENCOUNTERED
0 - 16	Gray to brown sand
16 - 24	Light brown to gray sand
24 - 32	Dark brown sand with silt
32 - 60*	Brown sand with silt
* Boring Terminated @ 60 Inches	
Groundwater table encountered at 34 Inches	

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AUGER BORING # 5	
DEPTH (INCHES)	SOIL / MATERIAL ENCOUNTERED
0 - 14	Gray to brown sand
16 - 21	Light brown to gray sand
21 - 41	Dark brown sand with silt
41 - 60*	Brown sand with silt and partially cemented sand
* Boring Terminated @ 60 Inches	
Groundwater table encountered at 33 Inches	

AUGER BORING # 6	
DEPTH (INCHES)	SOIL / MATERIAL ENCOUNTERED
0 - 6	Dark gray to brown sand
6 - 17	Gray to brown sand
17 - 50*	Dark brown sand with silt
* Boring Terminated @ 50 Inches	
Groundwater table encountered at 30 Inches	

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<b>AUGER BORING # 7</b>	
<b>DEPTH (INCHES)</b>	<b>SOIL / MATERIAL ENCOUNTERED</b>
0 - 9	Organic sand
9 - 16	Gray to brown sand
16 - 50*	Dark brown sand with silt
* Boring Terminated @ 50 Inches	
Groundwater table encountered at 26 Inches	

<b>AUGER BORING # 8</b>	
<b>DEPTH (INCHES)</b>	<b>SOIL / MATERIAL ENCOUNTERED</b>
0 - 9	Dark gray to brown sand
9 - 16	Gray to brown sand
16 - 48*	Dark brown sand with silt
* Boring Terminated @ 48 Inches	
Groundwater table encountered at 26 Inches	

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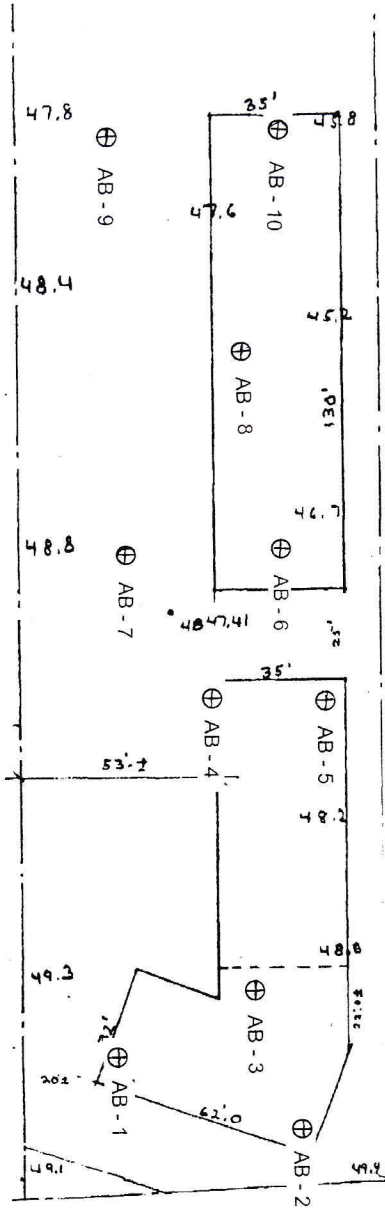


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<b>AUGER BORING # 9</b>	
<b>DEPTH (INCHES)</b>	<b>SOIL / MATERIAL ENCOUNTERED</b>
0 - 6	Organic sand
6 - 19	Gray to brown sand
19 - 23	Dark brown sand with silt
23 - 42*	Brown sand with silt
* Boring Terminated @ 42 Inches	
Groundwater table encountered at 26 Inches	

<b>AUGER BORING # 10</b>	
<b>DEPTH (INCHES)</b>	<b>SOIL / MATERIAL ENCOUNTERED</b>
0 - 7	Organic sand
7 - 22	Gray to brown sand
16 - 42*	Dark brown sand with silt
* Boring Terminated @ 42 Inches	
Groundwater table encountered at 24 Inches	





⊕ APPROXIMATE HAND AUGER BORING LOCATION  
 BORINGS PERFORMED 2/29/04  
 THIS PLAN BASED ON DRAWING PROVIDED BY CLIENT

LEGEND



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 GEORGE W. WILSON, P.E.  
 LICENSE NO. 13391-001-01  
 PAGE NO.:  
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PRELIMINARY GEOTECHNICAL EXPLORATION  
 PROPOSED AUTO REPAIR BUILDINGS  
 OVIEDO, SEMINOLE COUNTY, FLORIDA

BORING LOCATION PLAN

FOR:	[REDACTED]		
DRAWN BY:	E.B.C.	DATE:	3/1/04
CHECKED BY:	BL	DATE:	3/5/04
REPORT NO:	335187	SCALE:	NOT TO SCALE
PROJECT NO:	13391-001-01		