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REPORT OF GEOTECHNICAL CONSULTING SERVICES

Geophysical Surveys - Sinkhole Studies at Proposed Building and SMA Sites
Proposed Wal★Mart SuperCenter Store No. 3873-00
SEC Interstate Highway 75 and U.S. Highway 441
City of Alachua, Alachua County, Florida

UES Project No. 70080-077-06
UES Report No. 385573.1

Prepared for:

CPH Engineers, Inc.
500 West Fulton Street
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February 16, 2006

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February 16, 2006

CPH Engineers, Inc.
500 West Fulton Street
Sanford, FL 32771

Attention: Larry Wray, P.E., Project Manager

Reference: **Report of Geotechnical Consulting Services**
Geophysical Surveys - Sinkhole Studies at Proposed Building and SMA Sites
Proposed Wal★Mart SuperCenter Store No. 3873-00
SEC Interstate Highway 75 and U.S. Highway 441
City of Alachua, Alachua County, Florida
UES Project No. 70080-077-06 UES Report No. 385573.1

Dear Mr. Wray:

The Report of Geotechnical Consulting Services for this project was prepared on April 30, 2005. That report summarizes the results of the subsurface exploration program performed in anticipation of the proposed on-site construction.

Per contract scope of services, our previous geotechnical exploration was confined to the zone of soil likely to be stressed by the proposed low-rise construction. That report did not address the potential for surface expression of deep geological conditions, such as sinkhole development related to karst activity. At your request, our office proceeded with the performance of geophysical surveys or sinkhole studies at the project site. The results of those surveys are presented herein.

We appreciate the opportunity to have assisted the design team on this project. Please do not hesitate to contact our office if you should have any questions, or if we may provide further assistance with the remaining design and construction phases of the project.

Respectfully submitted,

UNIVERSAL ENGINEERING SCIENCES, INC.
Certificate of Authorization 549

David Barreiro, P.E., CFEA
Manager - Geotechnical Engineering
Florida P.E. No. 31901
Date: 2-17-2006

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Florida P.E. 50775

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Project No. 70080-077-06
Report No. 385573.1
Date: February 16, 2006

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1.0 BACKGROUND

The proposed project parcel is located within a region in the State of Florida that is characterized by karst topography, where the surface of the land has been shaped by faulting, fracturing and dissolution within the underlying limestone bedrock.

The Mill Creel Sink Property consists of 8.8 acres of land lying on the north side of U.S. 441. Mill Creek Sink (previously known as the Alachua Sink) is located behinds Sonny's BBQ on U.S. 441 east of I-75 and directly to the north of the proposed parcel. The Mill Creek Sink Property does not include any land on the high ground west of the sinkhole. The property is managed for diving, research, and educational purposes.

The surface stream, Mill Creek and Townsend Branch, drains over 70 square miles north of Mill Creek Sink and is dissected by over ten sinkholes. Mill Creek goes completely underground north of the proposed project parcel. Mill Creek Sink is the only known window (or sinkhole) that allows access to the mapped underwater cave system. This general area has been documented with small short caves, solution pipes, and water-filled limestone sinkholes.

A review of the United States Department of the Interior Geological Survey, High Springs Quadrangle sheet reveals the existence of a series of water filled sinkholes directly to the south and southwest of the proposed project parcel.

Based on current technology, there is no consistent method to predict sinkhole activity or to positively identify incipient sinkholes. Since the prediction is uncertain, the exploration programs attempt to locate and identify subsurface discontinuities, abnormalities, and other features in the bedrock and overlying sediments, as well as terrain, topographic, geologic, and hydrological research. Knowledge of the general geology of the area, coupled with geophysical techniques, physical site and structural features, and direct subsurface exploration, generally in the form of soil test borings, can provide a basis for assessment of "sinkhole activity".

2.0 PREVIOUS GEOTECHNICAL STUDY FINDINGS

2.1 Building Footprint

Twenty soil test borings were initially performed within the proposed building footprint to maximum depths of 60 feet below ground surface. The soil test borings encountered slightly clayey to very clayey sands (SM to SC) and sandy clays to clays (CL to CH) in the upper 27 to 57 feet of the subsurface profile.

On average, the upper 2 feet of the subsurface soil profile was identified to consist of clean sands, underlain by clayey to very clayey sands with an average thickness of about 6 feet. Directly below these upper sandy soils all the soil test borings encountered a sandy clay and clay zone with an average thickness of about 17 feet.

2.2 Stormwater Retention Pond

Forty-one soil test borings were initially performed within the proposed stormwater retention pond area to maximum depths of 40 feet below ground surface. The soil test borings generally encountered a sand profile which varies from relatively clean sand (SP), to slightly clayey to clayey (SM to SC).

On average, the upper 6 feet of the subsurface soil profile was identified to consist of clean sands, underlain by clayey to slightly clayey sands with an average thickness of about 24 feet. These lower sands are characterized with laterally discontinuous clay lenses or seams found at various depths in the subsurface profile.

3.0 REGIONAL GEOLOGY

The general geology of Alachua County is characterized by 30 to 50 feet of undifferentiated fine to medium grained sands and clayey sands of Holocene age (the last 10,000 years) overlying the Miocene age (circa 10 million years old) Hawthorn Formation.

The Hawthorn is approximately 100 feet thick and is comprised of interbedded layers of clay, clayey sand, sandy clay and phosphate carbonates. The underlying Tertiary age (circa 50 million years old) carbonates gently dip east under an increasing thickness of younger sediments.

The general area of the proposed project parcel is characterized with unconsolidated and undifferentiated quartz sands near the surface, and karst (sinkhole) features such as collapse depressions, sinkholes, disappearing streams, springs, and mapped underground caves.

4.0 TOPOGRAPHY

The natural topography of the proposed project parcel is best described as hilly. Current ground surface elevations in the southern one-third portion of the subject parcel range from about +140 feet MSL (southwest end) to about +110 feet MSL (northeast end), with a fairly uniform downward slope to the north and northeast.

Current ground surface elevations in the central one-third portion of the subject parcel range from about +122 feet MSL (southwest end) to about +92 feet MSL (northeast end), with a fairly uniform downward slope to the north-northeast.

Current ground surface elevations in the northern one-third portion of the subject parcel range from about +97 feet MSL (southwest end) to about +79 feet MSL (north end), with a fairly uniform downward slope to the north.

4.1 Building Site

The proposed building finished floor elevation has been set at +118 feet MSL. Current ground surface elevations in this general area of the project parcel range from about +140 feet MSL (southwest end) to about +110 feet MSL (northeast end), with a fairly uniform downward slope to the north and northeast.

The above information suggests both cut and fill earthwork operations will be required for geotechnical site preparation and building pad construction. Based on the finished floor elevation and grading plan information provided to our office, it is anticipated that on the order of 2 to 20 feet of cut will be needed for building pad construction, as reflected by 13 out of 17 soil test borings, which suggests approximately 75% of the building footprint will require some degree of cut operations. The remaining building footprint will require on the order of 4 to 6 feet of fill placement.

4.2 Stormwater Retention Pond Site

The proposed stormwater retention pond will have a bottom elevation of +77 feet MSL, with top of north bank elevation set at +88 feet MSL and a top of south bank elevation of +83 feet MSL. An earth retaining wall is proposed along the south side of the retention pond adjacent to the parking lot. Current ground surface elevations in this general area of the project parcel range from about +97 feet MSL (southwest end) to about +79 feet MSL (north end), with a fairly uniform downward slope to the north.

The above information suggests both cut and fill earthwork operations will be required for pond construction. Based on the finished pond elevation and grading plan information provided to our office, it is anticipated that on the order of 2 to 18 feet of cut will be needed for the retention pond construction, as reflected by 35 out of 37 soil test borings, which suggests approximately 95% of the retention pond will require some degree of cut operations during construction. The remaining portions of the retention pond will require on the order of 5 to 6 feet of fill placement.

5.0 GROUND PENETRATING RADAR (GPR) SURVEY

GPR is an electromagnetic geophysical method that detects interfaces between subsurface materials with differing dielectric constants. The GPR system consists of an antenna, which houses the transmitter and receiver, and a profiling recorder that processes the received signal and produces a graphic display of the data. The radar survey is conducted in general accordance with ASTM Procedure D6432.

Depth of penetration of the GPR signal is highly site-specific and is limited by signal attenuation (absorption) in the subsurface materials. Signal attenuation is dependent upon the electrical conductivity of the subsurface materials. Signal attenuation is greatest in materials with relatively high electrical conductivities, such as clays and brackish groundwater, and lowest in relatively low-conductivity materials, such as dry sand or rock.

To summarize, the depth of signal penetration in the subject study areas would have been limited by the presence of the clayey soils encountered from as shallow as 2 feet below ground surface. It was concluded that the effectiveness of the GPR method on the subject study areas would be low, and so it was decided not to include this protocol in the geophysical survey for this project parcel.

6.0 ELECTRICAL RESISTIVITY (ER) SURVEY

ER is a useful tool in geotechnical explorations in karst areas. ER is used to locate subsurface depressions in the limestone/soil interface which can indicate the existence of enlarged channels in the bedrock. Enlarged fractures and conduits provide pathways for the preferential movement of groundwater and contaminants. If the channels draining a depression in the limestone surface are capable of transmitting water and soil particles into the underlying karst aquifer, there is also a potential for the development of a sinkhole collapse.

ER has also been used to locate subsurface voids (caves), which can play a significant role in the development of sinkhole collapses. The ER survey is conducted in general accordance with ASTM Procedures G57-95A and D6431-99.

Subsurface geologic conditions can be interpreted by measuring their electrical resistivities. Such surveys are most applicable at sites with large resistivity contrasts among the various geologic materials. Because the resistivity values of limestone and the clay soil commonly associated with it are generally very different, the ER method is often successfully used for subsurface explorations in karst areas. Application of ER to karst explorations is more likely successful when the overburden (mantle materials) is clay-rich.

Measurement of the earth's electrical resistivity is a relatively simple process. Basically, an electric current is introduced into the ground through electrodes. An apparent resistivity value is calculated using a measurement of the potential difference (voltage) between other electrodes. The value of the apparent resistivity is dependent on the composition and structure of the rock and soil beneath the measuring electrodes. As the current electrodes are spread farther apart, more of the current penetrates deeper into the earth. Therefore, as the measuring electrodes are also spread farther apart, the apparent resistivity values represent geologic conditions deeper beneath the ground surface.

The measured value is termed apparent resistivity because it is a product of all the geologic materials through which the electric current flows. Thus, it is not characteristic of any one layer within the ground. However, multiple apparent resistivity values can be mathematically processed to yield the thicknesses of individual layers and their resistivity values, which can be related to the type of soil or rock within each layer. Electrode configurations which are commonly used in hydrogeologic explorations include the Wenner, Schlumberger, pole-dipole, and dipole-dipole arrays.

ER applications include:

- Define irregular bedrock surface and depth to bedrock
- Detect water-filled or clay-filled conduits or solution-enlarged fractures
- Delineate areas with high sinkhole risk
- Detect cavities at shallow depth
- Delineate groundwater pollution plumes
- Map salt water intrusion

Geohazards, Inc. was commissioned to perform the ER survey for the subject site. The following documents were prepared by Geohazards, Inc. at the request of UES:

1. Report of Geophysical Investigation of the Geologic Subsurface at the Proposed Wal-Mart Construction Site, Alachua, Florida, Report No. 2004516, dated November 2004.

2. Report of Geophysical Investigation of the Geologic Subsurface at the Proposed Wal-Mart Supercenter Site, Alachua, Florida, Report No. 2004516A, dated December 2005.

3. Report of Geophysical Investigation of the Geological Subsurface at the Proposed Wal-Mart Supercenter Retention Pond Site, Alachua, Florida, Report No. 2004516B, dated January 2006.

The Geohazards, Inc. reports are attached to this Geotechnical Report, and the conclusions and findings are summarized as follows.

The November 2004 ER survey included twelve ER traverse lines configured on a relatively wide spacing within the proposed building footprint. The maximum depth of penetration for the traverses was 100 feet.

No electrical data were interpreted as indicative of well-developed cavities, but electrical evidence of a possible raveled zone was detected beneath one traverse line at the clay-limestone boundary at a depth of approximately 30 feet below ground surface. A ground proofing soil test boring was recommended.

The December 2005 ER survey included an additional fourteen ER traverse lines configured so as to provide representative coverage of the proposed building footprint, and complement the traverses conducted in 2004. The maximum depth of penetration for the traverses was 100 feet. No electrical data were interpreted as indicative of well-developed cavities. Porous limestone conditions were interpreted beneath two traverse lines at depths of approximately 70 and 100 feet below ground surface. Ground proofing soil test borings were recommended.

The January 2006 ER survey included twenty-one ER traverse lines configured so as to provide representative coverage over the proposed stormwater retention pond area. The maximum depth of penetration for the traverses was 100 feet. Electrical evidence of a possible air-filled cavity was detected beneath one of the traverses at a depth of approximately 30 feet below ground surface. Porous limestone conditions were interpreted beneath one traverse line at a depth of approximately 50 feet below ground surface. Ground proofing soil test borings were recommended.

7.0 GROUND PROOFING SOIL TEST BORING EXPLORATION

Ground proofing field geotechnical testing activities were started on January 3, 2006 and completed on January 20, 2006. Field tests for the geotechnical study included twenty-two standard penetration soil test borings (GB-1 to GB-22) performed within the limits of the proposed building footprint and proposed stormwater management facility.

Ground proofing soil test borings were performed following review of the geophysical survey findings and recommendations from Geohazards, Inc. Soil test borings GB-1 to GB-12 were performed within the limits of the proposed building footprint. Soil test borings GB-13 to GB-22 were performed within the limits of the proposed stormwater management facility.

The soil test boring locations are shown in the attached Boring Location Plan drawing. The test quantities and locations were selected by Geohazards and UES engineering personnel. The actual test locations shown are approximate and were staked in the field by UES engineering personnel using existing landmarks and site features. All boreholes were backfilled upon field work completion, and boreholes were grouted whenever the limestone formation was penetrated during the exploration.

The standard penetration test borings were advanced to maximum depths of 100 feet below existing site grades. Penetration tests were performed in accordance with ASTM Procedure D-1586, 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.

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. The results of the classification and stratification are shown on the attached Boring Logs and summarized below.

7.1 Subsurface Findings at Building Footprint

The subsurface findings at the twelve ground proofing soil test boring locations are summarized as follows. Loose to medium slightly clayey sand [SM], very loose to medium clayey to very clayey sand [SC], and soft to very stiff clay [CH] to sandy clay [CL] overburden soils were encountered from ground surface to the top of the limestone formation at all the test sites. The clay and sandy clay zones were measured with an average thickness of 20 feet at the twelve soil test boring sites. The clay zone was encountered in all the soil test borings.

The top of the limestone was encountered at depths ranging from 25 to 48 feet below ground surface, with an average depth of 35 feet. The limestone matrix encountered at the soil test boring sites can be generally described as moderately to well-cemented based on the standard penetration test N-values and the geotechnical engineer's examination of the recovered samples. Once encountered the limestone zone was continuous to the soil test boring termination depths.

Loss of drilling fluid circulation was noted in some of the soil test borings at various depths within the limestone matrix. This soil drilling condition is generally indicative of porous to very porous zones in the cemented limestone structure, and may also indicate the presence of solution channels or cavities or fissures within the limestone matrix. The vertical and horizontal extent of such channels, cavities or fissures can not be determined from the fluid loss condition.

The groundwater level was only apparent at four soil test boring sites, and was measured at depths of 49, 70, 73 and 80 feet below the existing site grades.

The ground proofing soil test borings identified conditions that were interpreted as possible soil-filled solution cavities in 5 out of 22 soil test boring sites; two of these were in the building area at GB-8 and GB-12. The vertical extent of these conditions was typically in the range of 1 to 3 feet. These conditions were interpreted from the reduction in drilling effort while advancing between standard penetration test sampling intervals. Soil filling material is a mixture of sand and clay.

7.2 Subsurface Findings at Stormwater Retention Pond Area

The subsurface findings at the ten ground proofing soil test boring locations are summarized as follows. Very loose to loose slightly clayey sand [SM], very loose to medium clayey sand [SC], and very soft to stiff clay [CH] to sandy clay [CL] overburden soils were encountered from ground surface to the top of the limestone formation at all the test sites. The clay and sandy clay zones were measured with an average thickness of 7 feet at the soil test boring sites. The clay zone was encountered in seven out of ten soil test borings.

The top of the limestone was encountered at depths ranging from 15 to 52 feet below ground surface, with an average depth of 30 feet. The top of the limestone formation was not encountered in one of the soil test borings (GB-17) in the upper 50 feet of the subsurface profile. The limestone matrix encountered at the soil test boring sites can be generally described as moderately to well-cemented based on the standard penetration test N-values and the geotechnical engineer's examination of the recovered samples. Once encountered the limestone zone was continuous to the soil test boring termination depths.

Loss of drilling fluid circulation was noted in some of the soil test borings at various depths within the limestone matrix. This soil drilling condition is generally indicative of porous to very porous zones in the cemented limestone structure, and may also indicate the presence of solution channels or cavities or fissures within the limestone matrix. The vertical and horizontal extent of such channels, cavities or fissures can not be determined from the fluid loss condition.

The groundwater level was only apparent at one soil test boring site, and was measured at a depth of 48 feet below the existing site grade.

The ground proofing soil test borings identified conditions that were interpreted as possible soil-filled solution cavities in 5 out of 22 soil test boring sites; three of these were in the stormwater retention pond area at GB-13, GB-16 and GB-21. The vertical extent of these conditions was typically in the range of 1.5 to 3.5 feet. These conditions were interpreted from the reduction in drilling effort while advancing between standard penetration test sampling intervals. Soil filling material is a mixture of sand and clay. The sandy clay zone encountered from 42 to 50 feet in GB-16 is also interpreted as a possible soil-filled solution cavity; this interpretation relies on the available data base that suggests the limestone formation extends to deeper depths in the profile.

8.0 SINKHOLE POTENTIAL

The proposed project parcel is located within a region in the State of Florida that is characterized by karst geology, where the surface of the land has been shaped by faulting, fracturing and dissolution within the underlying limestone bedrock.

Based on current technology, there is no consistent method to predict sinkhole activity or to positively identify incipient sinkholes. Since the prediction is uncertain, the exploration programs attempt to locate and identify subsurface discontinuities, abnormalities, and other features in the bedrock and overlying sediments, as well as terrain, topographic, geologic, and hydrological research. Knowledge of the general geology of the area, coupled with geophysical techniques, physical site and structural features, and direct subsurface exploration, generally in the form of soil test borings, can provide a basis for assessment of "sinkhole activity".

8.1 General Sinkhole Mechanisms and Indicators

A sinkhole is defined as "a depression caused by the soil and other materials subsiding into an open hole or void below the ground surface." This phenomenon is common in karst geology, where soils are underlain by limestone material, which is partially dissolved by the groundwater. The resulting voids in the limestone formation provide paths through which water can travel, taking erodible soils from above with it.

Natural sinkholes in a karst region may occur in two primary varieties. The first is an irregular or circular opening in the ground surface due to the collapse of a limestone roof above a cavern in the limestone created by dissolution. Although a popular conception, this mechanism probably accounts for less than 10 percent of all *active* sinkholes in the State of Florida.

The second, more common event is overburden collapse from raveling. In geologic terms, a ravel-type sinkhole in a karst region can be defined as "a conical- or bowl-shaped depression in the land surface formed by water-related erosion of soils through subsurface passages developed by solution within the underlying limestone." Regionally in the State of Florida, the term "sinkhole" has grown to include both the physical description (above) and the processes directly related to the formation of the karst feature.

Raveled sinkholes occur where primarily sandy soil conditions, above weak, fissured, discontinuous or absent clay "confining" strata, and a surficial groundwater table are present. The percolation of the surficial groundwater table recharging the Floridan Aquifer can cause the slow erosion (raveling) of soil into cavities within the limestone, resulting in ground subsidence. The Winter Park sinkhole that developed in the early 1980's is likely the most well known raveled sinkhole in the State of Florida. Raveled sinkholes can be as small as 10 to 20 feet in diameter at ground surface, or as large as several hundred feet in diameter. The sidewalls are typically funnel-shaped when the sinkhole matures.

The most common form of cover collapse/cover subsidence sinkhole is referred to as chimney sinkholes. Larger, less frequent types are the Millhopper Sink, for example. Chimney sinkholes typically develop on sites where a surficial groundwater table is not present.

The sinkholes develop from the collapse of soil into cavities in the limestone formation. This collapse results in a void in the soil above the limestone. As the roof of the void continues to collapse, the void progresses upward toward the ground surface. At some depth, the ground can no longer span over the void, and a sudden collapse or subsidence occurs. The percolation of stormwater through sand layers in the clayey soils can accelerate the collapse of chimney sinkholes. Chimney sinkholes are typically less than 10 to 20 feet in diameter. The sidewalls are typically near vertical at the time of collapse and remain so over time.

Sinkhole-activity is not uncommon to karst landscape, where overburden soils (generally less than 50 to 100 feet) are underlain by carbonate material (e.g., limestone or dolostone) which has been partially dissolved by contact with slightly acidic ground water. Often however, sinkhole activity initially lacks any surface expression and the process remains hidden until the subsurface is explored, the possible effects are seen when the process affects man-made improvements located over the solution activity, or a visually significant ground subsidence has occurred.

When viewed three-dimensionally, an idealized sinkhole feature is somewhat funnel-shaped with the upper cone connected to a vertical erosional passage. Where the overburden thickness is shallow (usually less than 20 feet) the usual surface expression is a bowl-shaped depression. Where overburden thickness is greater, the raveling process may continue until the underlying void becomes completely filled (creating a dormant condition), or the soil shear strength of the overlying soils can no longer support the arch, or bridge of overburden; causing a more vertically-sided collapse.

Perhaps the most important factor in sinkhole formation is the influence of ground water on the subsidence and sinkhole formation regime. Under normal circumstances, infiltrating waters are essentially limited to unconfined, surficial aquifers. Such waters generally slowly percolate through low permeability confining units into underlying highly permeable carbonate rocks.

However, where joints, fractures, and solution features provide direct flow into the underlying limestone, dissolution and removal of the rock is more effective and, by geologic standards, rapid. Then, more extensive void development within the existing joints and faults occurs by dissolution and ground water velocity increases, further accelerating the creation of subsurface cavern systems.

8.2 Typical Indicators of Sinkhole Activity

The following is a summary of geologic, hydrologic, physiographic, and environmental observations, features, or indicators that are associated or found in areas with high potential of sinkhole activity. No one feature is mandatory, but generally, the greater the number present, the greater the risk of sinkhole activity susceptibility. This summary, by no means, is intended to be exhaustive.

- A zone of loose or raveled sandy soils.
- The presence or an opening in the confining layer.
- The presence of voids or fissures within the confining layer.

- Depression or collapse at the top of the limestone bedrock.
- The presence of any soft, deep buried deposit of organic soils consisting of fibrous or non fibrous peat.
- Observation of karst activity/sinkholes within the local geologic setting and/or subject site.
- Soluble limestone at or near the ground surface that may be jointed or faulted.
- High fluctuation in water levels, either seasonally or caused by drought cycles, in both the upper, unconfined and lower, confined aquifer.
- High fluctuation in water levels due to man-made occurrences, such as well pumping, construction dewatering activities, and diversion of precipitation into retention areas.
- Clay inter-bedding within the overburden soils is significant, or clayey layers are absent all together from the overburden soils.
- Well-developed cavern zones within the underlying limestones are common.
- The overburden soil is less than 100 feet in thickness.
- The potentiometric surface of the underlying confined limestone aquifer lies well below the water table, creating a large downward gradient.
- Depth to top of limestone highly variable, depressed, pinnacled or dipping over relatively short distances.
- Soil consistency in terms of "N" values may vary considerably, particularly in the overburden/clay layer that overlies or soils that directly overlie the limestone.
- Extensive loss of drilling fluid during exploratory boring operations.

8.3 Site Specific Sinkhole Activity Conclusions

Our interpretation of the available soil test boring data, and of the results of the geophysical studies performed for this project, as summarized above, does not suggest subsurface conditions beneath the proposed building footprint and beneath the proposed stormwater retention pond area that may be associated with imminent sinkhole activity. Therefore, we do not recommend subsurface remedial measures for these areas nor modifications to normal conventional foundation construction for this project.

No air-filled cavities of significant size were encountered in the ground proofing soil test borings that followed the ER survey work. The ground proofing soil test borings identified conditions that were interpreted as possible soil-filled solution cavities in 5 out of 22 soil test boring sites; two in the building area and three in the retention pond area. The vertical extent of these conditions was typically in the range of 1 to 3 feet. Porous to very porous limestone zones were identified in both the ground proofing soil test borings and ER survey work. The limestone formation at this project site, in the upper 100 feet of the subsurface profile, is generally characterized as moderately to well-cemented.

Locally, a relationship has been noted between sinkhole occurrence and significant rainfall events. This fact leads to the conclusion that new construction on the project site should mitigate future sinkhole occurrence beneath proposed building and pavement areas, by directing stormwater runoff away from those same areas to the stormwater retention pond. In Alachua County sinkhole occurrence has been documented both inside and outside the limits of stormwater retention ponds.

Relying on the available project data and information summarized above, we conclude that the post-development scenario on the subject site will be associated with a low to moderate potential, on a relative scale of low-moderate-high, of future sinkhole activity.

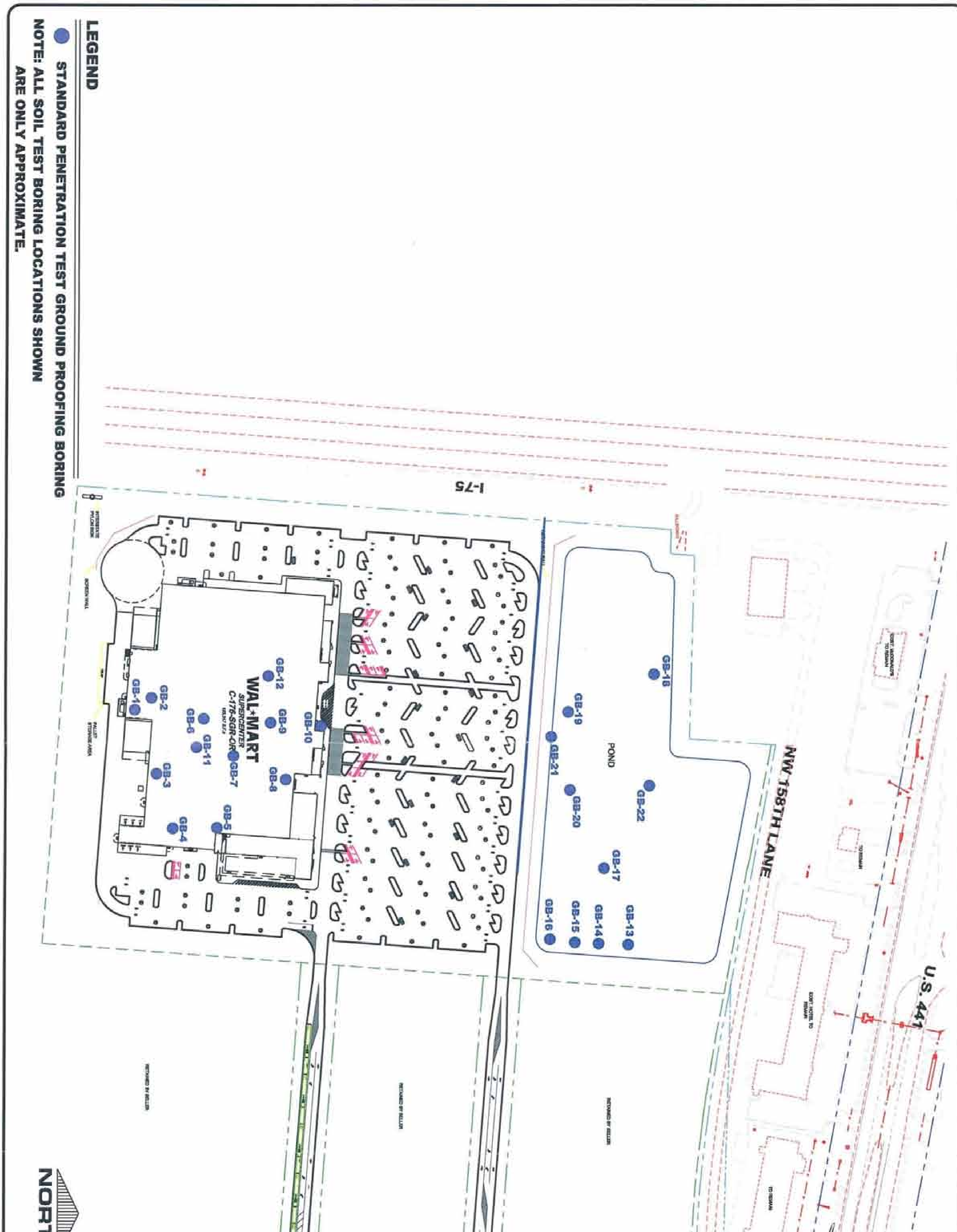
It should be noted that project sites characterized with moderate to high potential for sinkhole activity, specially such activity as it might occur within the useful life of the project (imminent sinkhole potential), and might have a significant impact to the business use of the developed parcel, are often considered for pre-development preventive measures, such as subsurface soil grouting.

The general objective of subsurface grouting programs is to partially cement and compact the overburden soil mass, so as to effectively reduce the potential for groundwater percolation and soil raveling in those site areas, thus reducing the potential for sinkhole occurrence in those same areas. Grouting programs are often designed to provide a grouted "mass or blanket" above the limestone surface. The thickness of the grouted zone varies along with variations in the top of the limestone, and final foundation and grade slab finished elevations of the individual project elements. Post-grouting soil test boring (ASTM D-1586) verification programs are typically implemented along with the subsurface soil improvement program.

The anticipated geotechnical site preparation (earthwork) activities on this project parcel for the construction of the proposed Wal★Mart SuperCenter Store may reveal subsurface conditions that were not apparent or identified in the geotechnical and geophysical studies as summarized herein and in previous report submittals for this project. We recommend the continuous involvement of the Geotechnical Engineer through these early phases of project site construction.

9.0 REPORT LIMITATIONS

This Report was prepared for the exclusive use of Wal-Mart Stores, Inc., CPH Engineers, Inc., and other 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.



UNIVERSAL ENGINEERING SCIENCES PAGE NO: A - 1	PROPSOED WAL★MART SUPERCENTER STORE NO. 3873-00 US HIGHWAY 441 ALACHUA, ALACHUA COUNTY, FLORIDA **BORING LOCATION PLAN**	CLIENT: CPH ENGINEERS, INC.	
		DRAWN BY: K.D.	DATE: 02/03/06
		CHECKED BY: D.B.	DATE: 02/03/-6
		SCALE: 1"=200'	ACADFILE: 70080-C
		PROJECT NO: 70080-077	REPORT NO: 385573

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
REPORT NO.: 385573
PAGE: A-2

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-1 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +130(EST)
WATER TABLE (ft): NE
DATE OF READING: NA
EST. WSWT (ft): NA
DATE STARTED: 1/17/06
DATE FINISHED: 1/17/06
DRILLED BY: D.B/T.S.
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	PI	K (FT./DAY)	ORG. CONT. (%)
0						Very loose brown clayey SAND [SC]						
	X	0-1-2	3			Soft green-gray and red-brown CLAY, with trace of sand and limestone fragments in upper 18 inches [CH]						
	X	2-3-4	7									
5	X	4-4-6	10			Stiff...						
	X	2-4-3	7			Medium...						
	X	2-2-3	5			Medium...						
10	X	2-1-2	3			Soft, with trace of limestone fragments...						
15	X	1-2-2	4			Soft...						
20	X	2-3-4	7			Medium...						
						Medium greenish-gray sandy to very sandy CLAY [CL]						
25	X	2-3-5	8									
30	X	3-4-4	8			Medium...						
35	X	3-3-5	8			Medium...						
40	X	3-2-2	4			Soft...						
45	X	0-0-0	0			Very soft...						
						Tan LIMESTONE						
50	X	12-32-15	47			(100% Loss of drilling fluid circulation at 50' depth) (Moderately to well-cemented limestone matrix encountered from 48' to 100' depth)						
55	X	30-45-50/3"	50/3"									
60	X	13-23-19	42									

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UNIVERSAL ENGINEERING SCIENCES BORING LOG	
PROJECT NO.:	70080-077-06
REPORT NO.:	385573
PAGE:	A-3

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

SHEET: 2 of 2

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./DAY)	ORG. CONT. (%)
60												
65	X	19-17-18	35									
70	X	14-15-16	31									
75	X	9-10-12	22									
80	X	20-27-26	53									
85	X	27-34-43	77									
90	X	18-16-11	27									
95	X	11-11-8	19									
100	X	5-10-6	16			Boring terminated at 100'						

BL2I

	UNIVERSAL ENGINEERING SCIENCES BORING LOG	PROJECT NO.: 70080-077-06 REPORT NO.: 385573 PAGE: A-4

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-2 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.

LOCATION: SEE BORING LOCATION PLAN

REMARKS:

GS ELEVATION(ft): +132(EST) DATE STARTED: 1/16/06
WATER TABLE (ft): NE DATE FINISHED: 1/16/06
DATE OF READING: NA DRILLED BY: D.B./T.S.
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose brown SAND [SP], with trace of limestone fragments						
	X	2-1-2	3			Soft brown and red-brown CLAY, with trace of limestone fragments and sand [CH]						
	X	2-3-5	8									
5	X	2-2-3	5			Medium...						
	X	2-2-3	5			Medium...						
	X	2-2-3	5			Medium...						
10	X	2-2-2	4			Soft...						
15	X	1-2-2	4			Soft...						
20	X	2-2-3	5			Medium light green-gray, with trace of limestone fragments...						
						Medium light green-gray sandy CLAY [CL]						
25	X	2-3-4	7									
						Loose light green-gray clayey SAND [SC]						
30	X	2-3-4	7									
35	X	3-3-2	5			Loose...						
40	X	0-0-0	0			Very loose...						
45	X	1/12"	1/12"			Very loose...						
						Tan LIMESTONE						
50	X	50/6"	50/6"			(100% Loss of drilling fluid circulation at 50' depth) (Moderately to well-cemented limestone matrix encountered from 46' to 100' depth)						
55	X	50/5"	50/5"									
60	X	10-14-16	30									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	70080-077-06
REPORT NO.:	385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-2 SHEET: 2 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	1-13-26	39									
70	X	15-15-14	29									
75	X	13-14-14	28									
80	X	18-18-24	42									
85	X	20-28-40	68									
90	X	22-13-13	26									
95	X	16-16-12	28									
100	X	13-19-17	36			Boring terminated at 100'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
REPORT NO.: 385573
PAGE: A-6

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-3 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +121(EST) DATE STARTED: 1/10/06
WATER TABLE (ft): NE DATE FINISHED: 1/11/06
DATE OF READING: NA DRILLED BY: R. WOODARD
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose gray silty SAND [SM]						
	X	0-0-1	1									
						Loose brown and orange very clayey SAND [SC]						
	X	1-3-4	7			Medium gray and orange sandy CLAY [CL]						
5	X	3-4-4	8									
	X	7-6-8	14			Stiff...						
	X	9-9-8	17			Very stiff green, orange and gray CLAY [CH]						
10	X	8-8-8	16			Very stiff...						
						Medium tan clayey SAND [SC]						
15	X	2-4-7	11									
20	X	4-5-7	12			Medium...						
25	X	3-4-5	9			Loose...						
30	X	7-5-4	9			Loose...						
35	X	6-50/½"	50/½"			Tan LIMESTONE (100% Loss of drilling fluid circulation at 35', 41.5' and 50' depths)						
40	X	5-3-9	12			(Porous to very porous limestone matrix from 34' to 53' depth)						
45	X	11-43-8	51									
50	X	16-29-3	32									
						Boring terminated at 53' due to very hard limestone, 2 hours to drill 2 feet						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-4 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +120(EST) DATE STARTED: 1/3/06
WATER TABLE (ft): 49 DATE FINISHED: 1/4/06
DATE OF READING: 1/4/06 DRILLED BY: R. WOODARD
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose brown and orange clayey SAND [SC]						
	X	1-2-2	4									
	X	2-3-4	7			Loose...						
5	X	3-4-5	9			Loose gray, orange and tan...						
	X	5-5-5	10			Loose...						
	X	6-7-7	14			Stiff light green and orange CLAY, with trace of sand [CH]						
10	X	8-9-9	18			Very stiff...						
15	X	1-2-3	5			Medium...						
20	X	1-2-3	5			Medium...						
						Loose light tan to white clayey SAND [SC]						
25	X	4-5-6	11			Medium...						
30	X	3-4-5	9			Loose...						
35	X	1-2-2	4			Soft light brown sandy CLAY [CL]						
						Very loose tan and orange very clayey SAND [SC], with trace of limestone fragments						
40	X	0-0-0	0			(100 Loss of drilling fluid circulation at 36.5' depth)						
45	X	0-0-8	8			Tan LIMESTONE						
50	X	12-28-36	64	▼								
55	X	22-38-14	42			(100 Loss of drilling fluid circulation at 45' and 53' depths)						
60	X	12-19-12	31									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-4
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E
SHEET: 2 of 2

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	14-16-19	35									
70	X	12-18-28	46			(Moderately to well-cemented limestone matrix encountered from 44' to 100' depth)						
75	X	21-22-29	51									
80	X	31-45-30	95									
85	X	20-15-19	34									
90	X	22-21-31	52									
95	X	14-17-17	34									
100	X	12-14-16	30									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-5 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +118(EST)
WATER TABLE (ft): NE
DATE OF READING: NA
EST. WSWT (ft): NA
DATE STARTED: 1/4/06
DATE FINISHED: 1/5/06
DRILLED BY: R. WOODARD
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Loose brown clayey SAND [SC]						
	X	1-2-3	5									
	X	3-4-5	9			Loose...						
5	X	3-3-5	8			Loose brown and gray...						
	X	5-4-4	8									
	X	6-6-5	11			Medium gray and orange slightly clayey SAND [SM]						
10	X	5-7-8	15			Medium orange and gray clayey SAND [SC]						
						Medium green and orange CLAY [CH]						
15	X	2-2-3	5									
20	X	1-3-5	8			Loose light tan to white slightly clayey SAND [SM]						
						Medium green and orange CLAY, with lenses of sand [CH]						
25	X	2-2-4	6									
						Loose light tan to white and brown slightly clayey SAND [SM]						
30	X	2-3-4	7			Loose...						
35	X	4-5-6	11			Medium...						
						Tan LIMESTONE (100 Loss of drilling fluid circulation at 36.5' depth)						
40	X	50/4"	50/4"									
						(Moderately to well-cemented limestone matrix encountered from 36' to 100' depth)						
45	X	18-17-23	40									
50	X	9-10-23	33									
55	X	4-8-6	14									
60	X	11-16-10	26									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-5 SHEET: 2 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	10-14-14	28									
70	X	21-23-10	33									
75	X	15-14-16	30									
80	X	11-22-19	41									
85	X	5-5-11	16									
90	X	6-9-18	27									
95	X	14-15-11	26									
100	X	18-19-21	40									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	70080-077-06
REPORT NO.:	385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-6 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.

LOCATION: SEE BORING LOCATION PLAN

REMARKS:

GS ELEVATION(ft): +127(EST) DATE STARTED: 1/18/06
WATER TABLE (ft): NE DATE FINISHED: 1/18/06
DATE OF READING: NA DRILLED BY: D.B./T.S.
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Loose brown clayey SAND [SC]						
	X	4-4-3	7			Medium green-gray and red-brown CLAY [CH], with limestone fragments in upper 12 inches						
	X	3-4-3	7									
5	X	2-2-2	4									
	X	2-2-2	4			Soft...						
	X	2-2-2	4			Soft...						
10	X	2-2-2	4			Soft gray and orange sandy to very sandy CLAY [CL]						
15	X	2-2-3	5			Medium...						
						Medium light green-gray CLAY [CH]						
20	X	2-2-2	4			Soft...						
25	X	18-50/6"	50/6"			Tan LIMESTONE						
30	X	15-43-15	58									
35	X	9-13-21	34									
40	X	50/6"	50/6"			(Moderately to well-cemented limestone matrix encountered from 25' to 100' depth)						
45	X	50/6"	50/6"									
50	X	26-13-16	29									
55	X	50/5½"	50/5½"									
60	X	16-12-20	32									

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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-6 SHEET: 2 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	20-21-29	50									
70	X	9-27-27	54									
75	X	23-45-33	78									
80	X	30-40-25	65									
85	X	22-20-32	52									
90	X	12-7-6	13									
95	X	5-10-18	28									
100	X	8-10-9	19			Boring terminated at 100'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-7 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +120(EST) DATE STARTED: 1/12/06
WATER TABLE (ft): 73 DATE FINISHED: 1/13/06
DATE OF READING: 1/13/06 DRILLED BY: R. WOODARD
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Loose brown clayey SAND [SC]						
	X	1-2-3	5									
	X	5-6-7	13			Medium brown and orange...						
5	X	5-6-4	10			Loose...						
	X	5-3-5	8			Stiff green and orange CLAY [CH]						
	X	5-6-6	12			Stiff...						
10	X	5-6-6	12			Stiff...						
15	X	2-4-4	8			Loose tan clayey SAND [SC]						
20	X	2-4-5	9			Loose...						
25	X	3-5-6	11			Medium...						
						Tan LIMESTONE						
30	X	17-40-50/5½"	50/5½"									
						(100% Loss of drilling fluid circulation at 32', 46.5', 50' and 55' depths)						
35	X	50/½"	50/½"									
40	X	21-27-31	58									
45	X	18-19-27	46									
						(Moderately to well-cemented limestone matrix encountered from 27' to 100' depth)						
50	X	3-2-3	5									
55	X	9-10-15	25									
60	X	16-20-15	35									

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UNIVERSAL ENGINEERING SCIENCES
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-7 SHEET: 2 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	17-18-16	34									
70	X	20-32-21	53									
75	X	12-11-9	20	▼								
80	X	8-10-10	20									
85	X	11-9-10	19									
90	X	13-14-12	26									
95	X	16-21-10	31									
100	X	15-24-14	38			Boring terminated at 100'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

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REPORT NO.: 385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-8 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +113(EST)
DATE STARTED: 1/11/06
WATER TABLE (ft): 70
DATE FINISHED: 1/12/06
DATE OF READING: 1/12/06
DRILLED BY: R. WOODARD
EST. WSWT (ft): NA
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Loose brown, gray and orange clayey SAND [SC]						
	X	2-2-3	5									
	X	2-3-3	6			Medium green, gray and orange CLAY [CH]						
5	X	3-4-5	9			Stiff...						
	X	6-5-6	11			Stiff...						
	X	7-7-5	12									
						Medium tan clayey SAND [SC]						
10	X	5-5-6	11									
15	X	2-3-4	7			Loose...						
20	X	3-4-6	10			Loose...						
25	X	4-6-7	13			Medium, with trace of limestone fragments...						
						Tan LIMESTONE						
30	X	21-29-44	73									
35	X	10-25-27	52			(100% Loss of drilling fluid circulation at 27' depth)						
40	X	11-8-27	35			(Possible soil-filled solution cavity from 27' to 28.5' and 49' to 50' depths)						
45	X	18-21-20	41									
50	X											
55	X	28-29-34	63									
						(Moderately to well-cemented limestone matrix encountered from 26' to 100' depth)						
60	X	33-23-27	50									

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UNIVERSAL ENGINEERING SCIENCES BORING LOG	
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-8 SHEET: 2 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	18-21-20	41									
70	X	8-9-2	11	▼								
75	X	6-7-7	14									
80	X	10-9-8	17									
85	X	14-12-15	27									
90	X	12-20-12	32									
95	X	15-17-20	37									
100	X	17-25-21	46			Boring terminated at 100'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-9 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +122(EST) DATE STARTED: 1/13/06
WATER TABLE (ft): NE DATE FINISHED: 1/13/06
DATE OF READING: NA DRILLED BY: D.B./T.S.
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0	X	1-1-2	3			Soft light brown and red-brown CLAY [CH]						
	X	3-4-5	9			Stiff...						
	X	4-4-5	9			Stiff gray...						
5	X	3-3-2	5			Medium green-gray and red-brown...						
	X	2-2-2	4			Soft...						
	X	1-2-2	4			Soft...						
10	X	2-2-2	4			Soft...						
15	X	2-2-2	4			Soft...						
20	X	2-2-2	4			Soft...						
25	X	4-4-3	7			Loose green-gray clayey SAND [SC]						
30	X	2-5-4	9			Loose green-gray slightly clayey SAND [SM]						
35	X	32-50/½"	50/½"			Tan LIMESTONE (100% Loss of drilling fluid circulation at 36' depth)						
40	X	14-15-18	33									
45	X	23-18-21	39			(Moderately to well-cemented limestone matrix encountered from 34' to 100' depth)						
50	X	14-15-7	22									
55	X	5-11-13	24									
60	X	15-21-23	44									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	70080-077-06
REPORT NO.:	385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-9 SHEET: 2 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	20-23-22	45									
70	X	30-29-34	63									
75	X	17-26-22	48									
80	X	12-14-21	35									
85	X	7-5-4	9									
90	X	5-13-13	26									
95	X	7-12-7	19									
100	X	10-16-13	29			Boring terminated at 100'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
REPORT NO.: 385573
PAGE: A-19

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-10 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +118(EST)
WATER TABLE (ft): NE
DATE OF READING: NA
EST. WSWT (ft): NA

DATE STARTED: 1/13/06
DATE FINISHED: 1/17/06
DRILLED BY: R. WOODARD
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose brown and orange clayey SAND [SC]						
	X	1-1-3	4									
	X	3-3-4	7			Loose...						
5	X	5-6-6	12			Medium...						
	X	7-6-7	13			Stiff orange and gray sandy CLAY [CL]						
	X	8-9-7	16			Very stiff green and orange CLAY [CH]						
10	X	8-8-9	17									
15	X	2-2-3	5			Medium...						
						Very loose tan and brown clayey SAND [SC]						
20	X	1-1-1	2									
						Loose tan clayey SAND [SC]						
25	X	3-3-4	7									
30	X	3-4-5	9									
35	X	4-7-8	15			Stiff gray and orange CLAY [CH], with limestone fragments						
						Tan LIMESTONE						
40	X	2-1-1	2									
						(Porous to very porous limestone matrix from 37' to 49' depth)						
45	X	4-7-3	10									
50	X	0-11-14	25									
						(100% Loss of drilling fluid circulation at 36.5' and 51.5' depths)						
55	X	11-13-14	27									
60	X	12-27-18	45									

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UNIVERSAL ENGINEERING SCIENCES BORING LOG	
PROJECT NO.:	70080-077-06
REPORT NO.:	385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-10 SHEET: 2 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	9-12-21	33			(Moderately to well-cemented limestone matrix encountered from 50' to 100' depth)						
70	X	12-18-24	42									
75	X	9-11-15	26									
80	X	9-7-18	25									
85	X	10-15-17	32									
90	X	12-8-11	19									
95	X	7-8-11	19									
100	X	8-9-9	17									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
REPORT NO.: 385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-11 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +123(EST) DATE STARTED: 1/6/06
WATER TABLE (ft): 80 DATE FINISHED: 1/10/06
DATE OF READING: 1/6/06 DRILLED BY: R. WOODARD
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose light brown SAND [SP]						
	X	1-1-1	2									
	X	1-3-5	8			Loose gray and brown clayey SAND [SC]						
5	X	5-8-10	18			Medium...						
	X	10-10-12	22			Medium...						
	X	12-12-11	23			Very stiff green and orange CLAY [CH]						
10	X	9-10-12	22			Medium tan and gray clayey SAND [SC]						
15	X	3-8-9	17			Medium brown and tan...						
20	X	4-5-6	11			Medium tan...						
25	X	4-5-6	11			Medium...						
30	X	2-2-2	4			Tan LIMESTONE						
35	X	12-14-50	64			(100% Loss of drilling fluid circulation at 29' and 36.5' depths)						
40	X	50/1½"	50/1½"									
45	X	33-49-50/5"	50/5"			(Moderately to well-cemented limestone matrix encountered from 35' to 100' depth)						
50	X	34-50-38	88									
55	X	20-28-36	64									
60	X	22-25-43	68									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	70080-077-06
REPORT NO.:	385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-11 SHEET: 2 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	24-40-48	88									
70	X	33-50-55	105									
75	X	30-38-42	80									
80	X	19-33-19	52	▼								
85	X	12-20-18	38									
90	X	19-11-9	20									
95	X	10-12-10	22									
100	X	12-6-13	19			Boring terminated at 100'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
REPORT NO.: 385573
PAGE: A-23

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-12 SHEET: 1 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +127(EST) DATE STARTED: 1/12/06
WATER TABLE (ft): NE DATE FINISHED: 1/12/06
DATE OF READING: NA DRILLED BY: D.B./T.S.
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	PI	K (FT./ DAY)	ORG. CONT. (%)
0	X	1-2-1	3			Very loose brown SAND [SP]						
	X	2-2-2	4			Soft brown to red-brown slightly sandy CLAY [CL]						
	X	3-3-5	8									
5	X	4-5-5	10			Stiff brown to red-brown and light green-gray CLAY [CH]						
	X	2-2-3	5			Medium...						
	X	2-2-3	5			Medium...						
10	X	2-3-3	6			Medium...						
15	X	1-2-2	4			Soft...						
20	X	3-4-4	8			Medium...						
						Loose green-gray clayey SAND [SC]						
25	X	4-4-5	9									
						Medium light gray CLAY [CH]						
30	X	3-4-3	7			Medium...						
35	X	2-2-2	4			Soft...						
						Tan LIMESTONE						
40	X	50/3"	50/3"									
45	X	22-31-9	40									
						(Moderately to well-cemented limestone matrix encountered from 38' to 100' depth)						
50	X	10-14-22	36									
55	X	13-15-10	25									
60	X	12-13-20	33									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	70080-077-06
REPORT NO.:	385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-12 SHEET: 2 of 2
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
60												
65	X	9-14-12	26									
70	X	13-18-11	29									
75	X	2-1-0	1			(Possible soil-filled solution cavity from 72' to 75' depth)						
80	X	4-15-16	31									
85	X	13-16-16	32									
90	X	8-11-10	21									
95	X	11-15-10	25									
100	X	9-7-9	16									

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

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REPORT NO.: 385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-13 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +83(EST)
WATER TABLE (ft): NE
DATE OF READING: NA
EST. WSWT (ft): NA

DATE STARTED: 1/15/06
DATE FINISHED: 1/15/06
DRILLED BY: G. DAVIS
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Loose brown slightly clayey SAND [SP-SM]						
	X	2-3-3	6									
	X	4-3-2	5			Loose...						
5	X	2-1-1	2			Very loose...						
	X	1-1-1	2			Very loose tan clayey SAND [SC], with limestone fragments						
	X	1-1-2	3									
10	X	2-3-3	6			Loose...						
						Medium gray and orange CLAY [CH], with limestone fragments						
15	X	2-19-24	43			Tan LIMESTONE						
20	X	14-28-30	58									
25	X	15-17-18	35			(Moderately to well-cemented limestone matrix encountered from 15' to 50' depth)						
30	X	15-15-16	31									
35	X	13-15-17	32									
40	X	11-17-18	35			(Possible soil-filled solution cavity from 41.5' to 44' depth, 100% loss of drilling fluid circulation)						
45	X	0-3-14	17									
50	X	7-14-15	19			Boring terminated at 50'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	70080-077-06
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-14 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +86(EST) DATE STARTED: 1/12/06
WATER TABLE (ft): NE DATE FINISHED: 1/12/06
DATE OF READING: NA DRILLED BY: J. STILLSON
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Loose brown SAND [SP]						
	X	2-3-3	6			Loose brown clayey SAND [SC], with roots						
	X	2-3-4	7									
5	X	3-4-4	8			Loose...						
	X	3-4-5	9			Loose...						
	X	3-4-4	8			Loose tan and orange...						
10	X	3-4-4	8			Loose...						
15	X	4-4-4	8			Loose orange and gray slightly clayey SAND [SM], with trace of limestone fragments						
20	X	3-4-5	9			Loose...						
25	X	5-6-7	13			Tan LIMESTONE						
						(Rotary washed from 25' to 30')						
30						Boring terminated at 30'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

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REPORT NO.: 385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-15 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +87(EST)
WATER TABLE (ft): 48
DATE OF READING: 1/12/06
EST. WSWT (ft): NA

DATE STARTED: 1/12/06
DATE FINISHED: 1/12/06
DRILLED BY: J. STILLSON
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./DAY)	ORG. CONT. (%)
0						Very loose dark brown SAND [SP]						
	X	1-2-2	4			Very loose orange clayey SAND [SC]						
	X	2-2-2	4			Very loose...						
5	X	2-2-2	4			Very loose...						
	X	2-2-2	4			Very loose...						
	X	2-3-6	9			Loose orange and gray...						
10	X	4-6-9	15			Stiff orange and gray sandy CLAY [CL]						
						Loose gray and orange slightly clayey SAND [SM]						
15	X	4-5-5	10									
20	X	3-4-5	9			Loose...						
						Tan LIMESTONE						
25	X	5-7-9	16									
30	X	7-8-8	16									
35	X	30-20-23	43			(Moderately to well-cemented limestone matrix encountered from 32' to 50' depth)						
40	X	21-27-33	60									
45	X	32-36-46	82									
				▼								
50	X	41-47-50/5"	50/5"			Boring terminated at 50'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
REPORT NO.: 385573
PAGE: A-28

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-16 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.

LOCATION: SEE BORING LOCATION PLAN

REMARKS:

GS ELEVATION(ft): +89(EST) DATE STARTED: 1/19/06
WATER TABLE (ft): NE DATE FINISHED: 1/19/06
DATE OF READING: NA DRILLED BY: G. DAVIS
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	DESCRIPTION
0			Very loose brown clayey SAND [SC]
	1-1-1	2	
	1-0-1	1	Very loose...
5	0-1-0	1	Very loose...
	1-1-3	4	Very loose gray and orange...
	4-5-5	10	Stiff green and orange CLAY [CH]
10	7-7-8	15	Stiff...
15	3-3-4	7	Medium green, gray and orange sandy CLAY [CL]
			Loose green and orange clayey SAND [SC]
20	2-2-3	5	
25	2-3-4	7	Loose brown and orange...
30	3-4-6	10	Loose gray and orange...
35	2-1-0	1	Tan LIMESTONE (100% Loss of drilling fluid circulation at 33') (Possible solution cavity from 34.5' to 36' depth)
40	1-4-6	10	
			Soft gray and orange sandy CLAY [CL], with limestone fragments
45	1-2-2	4	(Possible soil-filled solution channel or cavity within limestone matrix from 42' to 50' depth)
50	1-2-2	4	Soft...
			Boring terminated at 50'

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	70080-077-06
REPORT NO.:	385573
PAGE:	A-29

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-17 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.

LOCATION: SEE BORING LOCATION PLAN

REMARKS:

GS ELEVATION(ft): +88(EST) DATE STARTED: 1/12/06
WATER TABLE (ft): NE DATE FINISHED: 1/12/06
DATE OF READING: NA DRILLED BY: J. STILLSON
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose brown SAND [SP]						
	X	1-1-1	2			Loose brown clayey SAND [SC]						
	X	2-3-4	7									
5	X	3-4-5	9			Loose...						
	X	3-4-5	9			Loose brown slightly clayey SAND [SM]						
	X	3-4-4	8			Loose...						
10	X	3-4-5	9			Loose...						
						Medium brown clayey SAND [SC]						
15	X	3-5-6	11									
20	X	3-4-5	9			Loose...						
25	X	5-6-6	12			Medium...						
						Stiff gray and orange sandy CLAY [CL]						
30	X	5-6-6	12									
35	X	3-4-5	9			Stiff green and orange...						
						Loose orange and gray clayey SAND [SC]						
40	X	3-4-5	9									
						Medium gray and orange slightly clayey SAND [SM]						
45	X	5-6-7	13									
50	X	6-7-8	15			Medium gray...						
						Boring terminated at 50'						

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UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
REPORT NO.: 385573
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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-18 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +86(EST)
WATER TABLE (ft): NE
DATE OF READING: NA
EST. WSWT (ft): NA

DATE STARTED: 1/17/06
DATE FINISHED: 1/17/06
DRILLED BY: G. DAVIS
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose brown SAND [SP]						
	X	1-1-1	2			Very loose brown slightly clayey SAND [SM]						
	X	1-0-1	1									
5	X	1-0-1	1			Very loose brown clayey SAND [SC]						
	X	0-1-1	2									
	X	1-2-2	4			Very loose...						
10	X	3-5-7	12			Medium...						
15	X	2-3-5	8			Loose gray and orange...						
20	X	2-3-3	6			Loose...						
25	X	2-2-2	4			Tan LIMESTONE						
30	X	0-0-1	1			(Very weathered limestone matrix, mostly clay and sand from 25' to 33' depth)						
35	X	11-18-24	42			(100% Loss of drilling fluid circulation at 25' depth)						
40	X	18-21-25	46									
45	X	9-13-17	30									
50	X	3-4-4	8			Boring terminated at 50'						

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BORING LOG

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PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-19 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +93(EST)
WATER TABLE (ft): NE
DATE OF READING: NA
EST. WSWT (ft): NA
DATE STARTED: 1/18/06
DATE FINISHED: 1/18/06
DRILLED BY: D.B./T.S.
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose brown clayey SAND [SC]						
	X	1-1-1	2									
	X	2-1-1	2			Very loose...						
5	X	2-1-1	2			Very loose...						
	X	1-1-1	2			Very loose...						
	X	1-2-2	4			Very loose...						
10	X	1-2-2	4			Very loose...						
15	X	2-2-2	4			Very loose...						
						Stiff gray-brown and red-brown slightly sandy CLAY [CL], with trace of limestone fragments						
20	X	3-5-5	10									
						Medium green-gray and reddish-brown CLAY, with trace of sand and limestone fragments [CH]						
25	X	3-3-4	7									
30	X	2-2-3	5			Medium...						
						Medium light green-gray sandy CLAY [CL]						
35	X	3-2-4	6									
40	X	3-3-3	6			Medium...						
45	X	1-1-1	2			Very soft...						
50	X	0-0-1	1			Very soft...						
						Tan LIMESTONE						
55	X	2-7-7	14									
						Boring terminated at 55'						

BL21

UNIVERSAL ENGINEERING SCIENCES BORING LOG	PROJECT NO.: 70080-077-06 REPORT NO.: 385573 PAGE: A-32

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-20 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.

LOCATION: SEE BORING LOCATION PLAN

REMARKS:

GS ELEVATION(ft): +91(EST) DATE STARTED: 1/20/06
WATER TABLE (ft): NE DATE FINISHED: 1/20/06
DATE OF READING: NA DRILLED BY: G. DAVIS
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose brown-orange clayey SAND [SC]						
	X	1-1-0	1			Very loose...						
	X	1-0-0	0			Very loose...						
5	X	1-1-1	2			Very loose...						
	X	1-1-2	3			Very loose...						
	X	2-3-3	6			Loose...						
10	X	5-7-8	15			Medium...						
						Medium green, gray and orange CLAY, with sand lenses[CH]						
15	X	3-3-4	7									
						Medium gray and orange sandy CLAY [CL], with trace of limestone fragments						
20	X	1-2-3	5			Medium...						
						Loose light gray and orange clayey SAND [SC]						
25	X	3-3-5	8									
30	X	4-5-7	12			Medium...						
35	X	4-6-7	13			Medium... (100% Loss of drilling fluid circulation at 35' depth)						
						Tan LIMESTONE						
40	X	4-6-5	11									
45	X	5-8-11	19			(Rotary washed from 45' to 50' depth)						
50						Boring terminated at 50'						

BL2I

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
REPORT NO.: 385573
PAGE: A-33

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-21 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +96(EST)
WATER TABLE (ft): NE
DATE OF READING: NA
EST. WSWT (ft): NA

DATE STARTED: 1/20/06
DATE FINISHED: 1/20/06
DRILLED BY: G. DAVIS
TYPE OF SAMPLING: ASTM D-1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./DAY)	ORG. CONT. (%)
0						Very loose brown-orange clayey SAND [SC]						
	X	1-1-2	3									
	X	1-1-1	2			Very loose...						
5	X	1-1-1	2			Very loose...						
	X	2-2-7	9			Loose...						
	X	7-9-6	15			Medium...						
10	X	6-9-9	18			Medium gray and orange...						
						Medium gray and orange CLAY [CH]						
15	X	3-4-4	8			Medium...						
						Loose gray and orange clayey SAND [SC]						
20	X	2-3-3	6									
25	X	3-4-4	8			Loose green and orange...						
30	X	3-3-3	6			Loose...						
35	X	2-2-3	5			Loose... (100% Loss of drilling fluid circulation at 35' depth)						
						Tan LIMESTONE						
40	X	4-7-13	20			(Possible solution cavity from 41.5' to 43' depth)						
45	X	13-15-15	30									
50	X	15-23-26	49			Boring terminated at 50'						

BL2I

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.: 70080-077-06
REPORT NO.: 385573
PAGE: A-34

PROJECT: PROPOSED WAL★MART SUPERCENTER STORE NO. 3873-00
US HIGHWAY 441 AND I-75
ALACHUA, ALACHUA COUNTY, FLORIDA

BORING DESIGNATION: GB-22 SHEET: 1 of 1
SECTION: 15,16 TOWNSHIP: 8S RANGE: 18E

CLIENT: CPH ENGINEERS, INC.
LOCATION: SEE BORING LOCATION PLAN
REMARKS:

GS ELEVATION(ft): +87(EST) DATE STARTED: 1/21/06
WATER TABLE (ft): NE DATE FINISHED: 1/21/06
DATE OF READING: NA DRILLED BY: G. DAVIS
EST. WSWT (ft): NA TYPE OF SAMPLING: ASTM D-1586

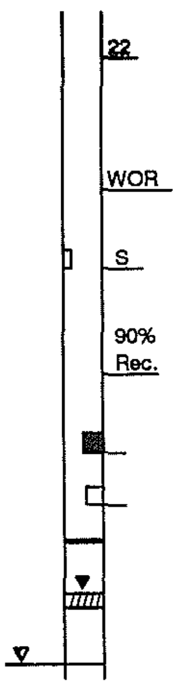
DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	PI	K (FT./ DAY)	ORG. CONT. (%)
0						Very loose brown clayey SAND [SC]						
	X	2-1-1	2									
	X	0-0-0	0			Very loose...						
5	X	0-0-0	0			Very loose...						
	X	1-0-1	1			Very loose...						
	X	1-1-1	2			Very loose...						
10	X	1-2-1	3			Very loose gray and orange...						
15	X	1-2-3	5			Loose...						
20	X	2-3-5	8			Loose...						
25	X	3-3-5	8			Loose tan...						
30	X	3-9-11	20			Medium gray and tan...						
						Tan LIMESTONE						
35	X	4-5-5	10			(100% Loss of drilling fluid circulation at 35')						
40	X	19-20-20	40									
45	X	22-27-22	49									
50	X	18-19-31	50			Boring terminated at 50'						

BL2I

UNIVERSAL ENGINEERING SCIENCES

KEY TO BORING LOGS

SYMBOLS



- 22 — **Number of Blows of a 140-lb Weight Falling 30 in. Required to Drive Standard Spoon One Foot**
- WOR — Weight of Drill Rods
- S — Thin-Wall Shelby Tube Undisturbed Sampler Used
- 90% Rec. — Percent Core Recovery from Rock Core-Drilling Operations
- Sample Taken at this Level
- Sample Not Taken at this Level
- Change in Soil Strata
- Free Ground Water Level
- Seasonal High Ground Water Level

RELATIVE DENSITY (sand-silt)

Very Loose - Less Than 4 Blows/Ft.
Loose - 4 - 10 Blows/Ft.
Medium - 10 to 30 Blows/Ft.
Dense - 30 to 50 Blows/Ft.
Very Dense - More Than 50 Blows/Ft.

CONSISTENCY (clay)

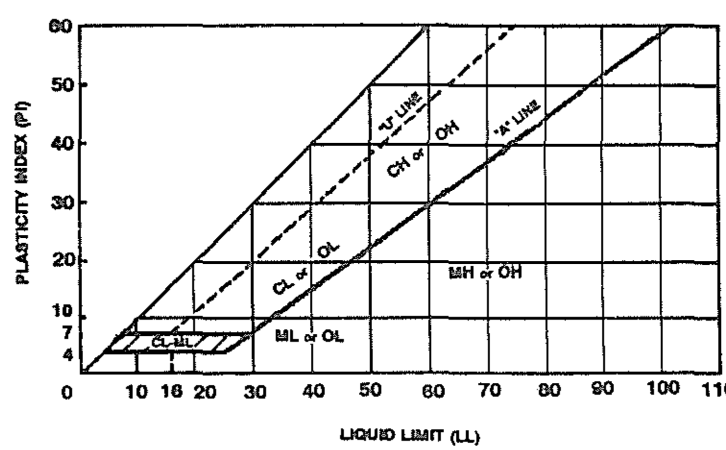
Very Soft - Less Than 2 Blows/Ft.
Soft - 2 to 4 Blows/Ft.
Medium - 4 to 8 Blows/Ft.
Stiff - 8 to 15 Blows/Ft.
Very Stiff - 15 to 30 Blows/Ft.
Hard - More Than 30 Blows/Ft.

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. 4 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 or 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 pasing the 3-in. (75-mm) sieve.

PLASTICITY CHART



GEOHAZARDS, INC.

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November 22, 2004

Geohazards, Inc., Investigation No. 2004516

REPORT OF THE GEOPHYSICAL INVESTIGATION OF THE GEOLOGICAL SUBSURFACE AT THE PROPOSED WAL-MART SUPERCENTER SITE, ALACHUA, FLORIDA

INTRODUCTION

Purpose

Geohazards, Inc. was tasked by Universal Engineering Sciences, Inc., to conduct a geophysical investigation at the above referenced locality.

This investigation was conducted to provide a geophysical characterization of the geological subsurface. In particular, efforts were designed to determine the presence of subsurface cavities and subsurface zones of disruption that might contribute to subsidence. Any of these conditions could be responsible for existing or potential subsidence at the site.

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Web page: www.sinkholes.com Email: geohazards@bellsouth.net

Scope

The investigation conducted and reported herein included the following:

- A review of available geologic maps and other published data to establish the general probable lithology for the site of investigation.

- A reconnaissance of the site of investigation to recognize and identify surface conditions pertinent to the purpose of the investigation.

- An Electrical Resistivity (ER) investigation of the site to assist in the recognition of site-specific geological conditions at the subject property and to determine evidence for the presence of anomalous subsurface features or conditions.

- A final report summarizing results and conveying professional opinions.

Site Information

The initial reconnaissance and geophysical field investigation was conducted on November 15, 2004. The site is located in the southeast portion of the intersection of US Highway 441 and Interstate 75 in Alachua, Florida. Universal Engineering Sciences, Inc. has performed three 50-foot Standard Penetration Test Borings in the proposed building area.

The site of investigation is an open grassy field with a creek and tree cover located in the south and east portions of the proposed building area. The creek flows to the north. In general, the land surface also slopes downward towards the north and northeast. There is an approximate 30-foot elevation difference over the survey area. While a few noticeable surface depressions were observed in the area, none were located in the survey area.

REGIONAL GEOLOGY

Based on map consultations and personal inspection, the surficial geologic material at the study site is the Hawthorn Group of geological formations overlain by a cover of very young unconsolidated sands and sandy clays. These consist of fine to medium grained, unconsolidated quartz sand, silt, and clay in varying proportions and thickness. Shrink/swell clays of significant size, continuity and nearness to the surface are a particularly troublesome characteristic of the Hawthorn where they occur in significant thickness and lateral continuity. Concrete slabs and foundations can be severely damaged where such a geologic condition occurs.

The Ocala Limestone underlies the Hawthorn. This limestone has experienced significant dissolution and the creation of an intricate cavernous system. Problems in the development of sinkholes are related to the size and nearness to the surface of the Ocala limestone and these underground cavities. The upper surface of this limestone is highly irregular.

FIELD TEST METHODS

Electrical Resistivity

Electrical resistivity (ER) is a geophysical procedure to investigate the presence of geological conditions or features characterized by contrasts in electrical resistivity. The measurements were conducted using the Wenner electrode configuration, and were performed in general accordance with the appropriate portions of ASTM standards G57-95a entitled "Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method," and standard D6431-99 entitled "Standard Guide for Using Direct Current Resistivity Method for Subsurface Investigation."

Electrical resistivity measurements involve the passing of an electric current underground and measuring its resistance to flow. Different earth materials (e.g. clay, sand, limestone) and subsurface cavities will resist the flow of electrical current differently. Substantially greater contrasts in the degree of resistance (anomalies) are used to identify and locate boundaries among different materials as well as the presence of cavities.

The types of ER measurements used in this investigation were Soundings and Lee-directional. Sounding measurements reveal two-dimensional detail below the surface at progressively greater depths. Lee-directional measurements determine the direction of higher or lower resistivity along a traverse line. In the field, electrodes are placed in the ground at equal distances from one another.

After a measurement, this distance is increased in an orderly fashion to sequentially allow a greater depth of penetration.

Measurements of ER were made with an L & R Instruments, Inc. MiniRes Earth Resistivity Meter. Four current/potential electrodes and one Lee electrode are employed. Depending on the surface space available for deployment of electrodes, a maximum depth capability of 100 feet can be achieved.

ER traverse lines were oriented to provide representative coverage of the site of investigation (see ER location map). Twelve traverses were conducted, configured as shown on the location map. The maximum depth of penetration for all twelve traverses was 100 feet.

RESULTS

Electrical Resistivity

1. In general, near-surface resistivity values and sounding patterns displayed similar trends for the depths and areas surveyed. Sounding profiles are included in the appendix.

2. The general configuration of the sounding values and patterns is interpreted as indicative of near-surface clayey sand and sandy clay, approximately 20 feet thick, overlying sand. Electrical evidence for the underlying limestone surface was detected at approximately 20 feet depth beneath traverses #s 4-5 and 9-12. Limestone was detected at approximately 30 feet depth beneath traverses #s 1-3 and 6-8. Clay was detected above the limestone from approximately 20 to 30 feet depth beneath ER traverse #s 3 and 8.

3. The configuration of the sounding values and patterns for traverse #5 is interpreted as indicative of surface sand, approximately 10 feet thick overlying clayey sand and sandy clay.

4. Electrical resistivity values consistent with a possible raveled zone were detected at approximately 30 feet depth beneath traverse #8, at the clay-limestone boundary. Raveling is the lateral and downward migration of sediments within groundwater into more distance places within limestone. It is

a mechanism for sinkhole activity. No electrical evidence of well-developed cavities or porous limestone was detected in the areas and depths surveyed.

5. Lee-directional measurements (not plotted) yielded anomalies on four of the twelve ER traverses. The locations of the Lee-directional anomalies are shown in yellow on the ER location map. The Lee-directional anomalies were within the upper 20 feet and were not corroborated with sounding anomalies. The Lee-directional anomalies are attributed to lateral variations in soil moisture or composition.

CONCLUSIONS

Electrical resistivity was conducted in the proposed building area of a Wal-Mart Supercenter in Alachua, Florida. No surface depressions were observed in the survey area.

Electrical resistivity sounding profiles indicate that clayey sand and sandy clay, approximately 20 feet thick overlies sand and limestone. Electrical evidence interpreted as indicative of the upper limestone surface was detected at approximately 20 to 30 feet depth throughout the site of investigation. No electrical data were interpreted as indicative of well-developed cavities, but electrical evidence of a possible raveled zone was detected beneath traverse #8 at the clay-limestone boundary at approximately 30 feet depth. Four near-surface (upper 20 feet depth) ER Lee-directional anomalies were detected and were not corroborated with sounding anomalies. These Lee-directional anomalies are attributed to lateral variations in soil moisture or composition.

Based on the results of this investigation, Geohazards, Inc. recommends that at least one deep (approximately 70 feet or more) standard penetration test boring be conducted near the midpoint of ER traverse #8 to further investigate the possible raveling conditions detected.

LIMITATIONS

While due care has been exercised in the performance of these measurements and their interpretation, Geohazards, Inc. can make no representations, warranties, or guarantees with respect to latent or concealed conditions which may exist that may be beyond the limits of detection with the methodologies used.

Douglas L. Smith, Ph.D., P.G.
Geophysicist 11/22/04

Anthony F. Randazzo, Ph.D., P.G.
Geologist 11/22/04

Gerald O. Black, P.G.
Geologist 11/22/04

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SITE PLAN OF GEOPHYSICAL INVESTIGATION

ELECTRICAL RESISTIVITY SURVEY MAP

Proposed Wal-Mart Supercenter
Alachua, Florida

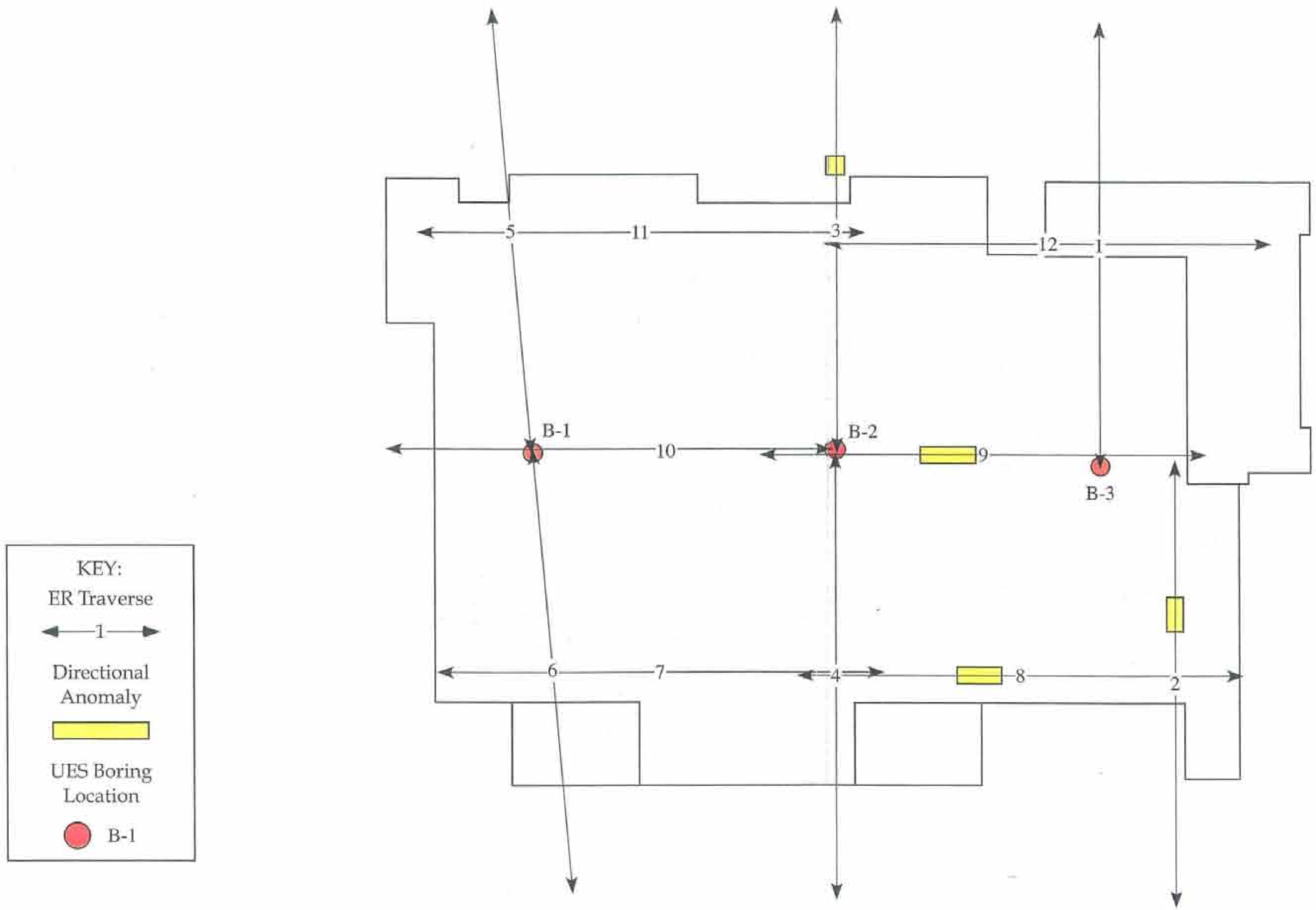
Scale in Feet
0 40 80
1"=80'

NORTH

BY: G.O. Black, P.G.
Investigation #2004516

FOR: David Barreiro
UES

DATE: 11-19-04



GEOHAZARDS INC.
Electrical Resistivity Survey
Investigation#:2004516
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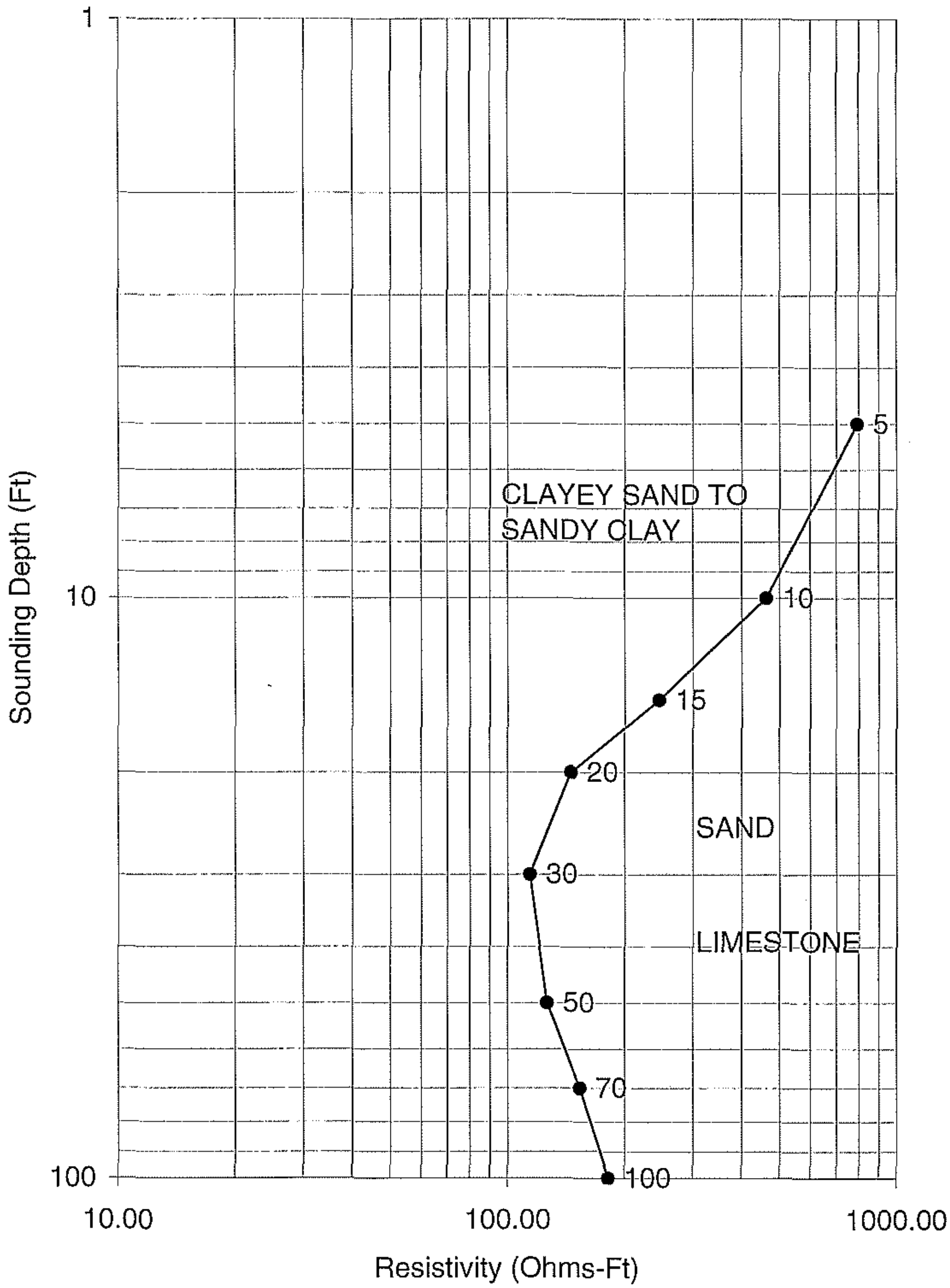
Station Number: 1



GEOHAZARDS INC.
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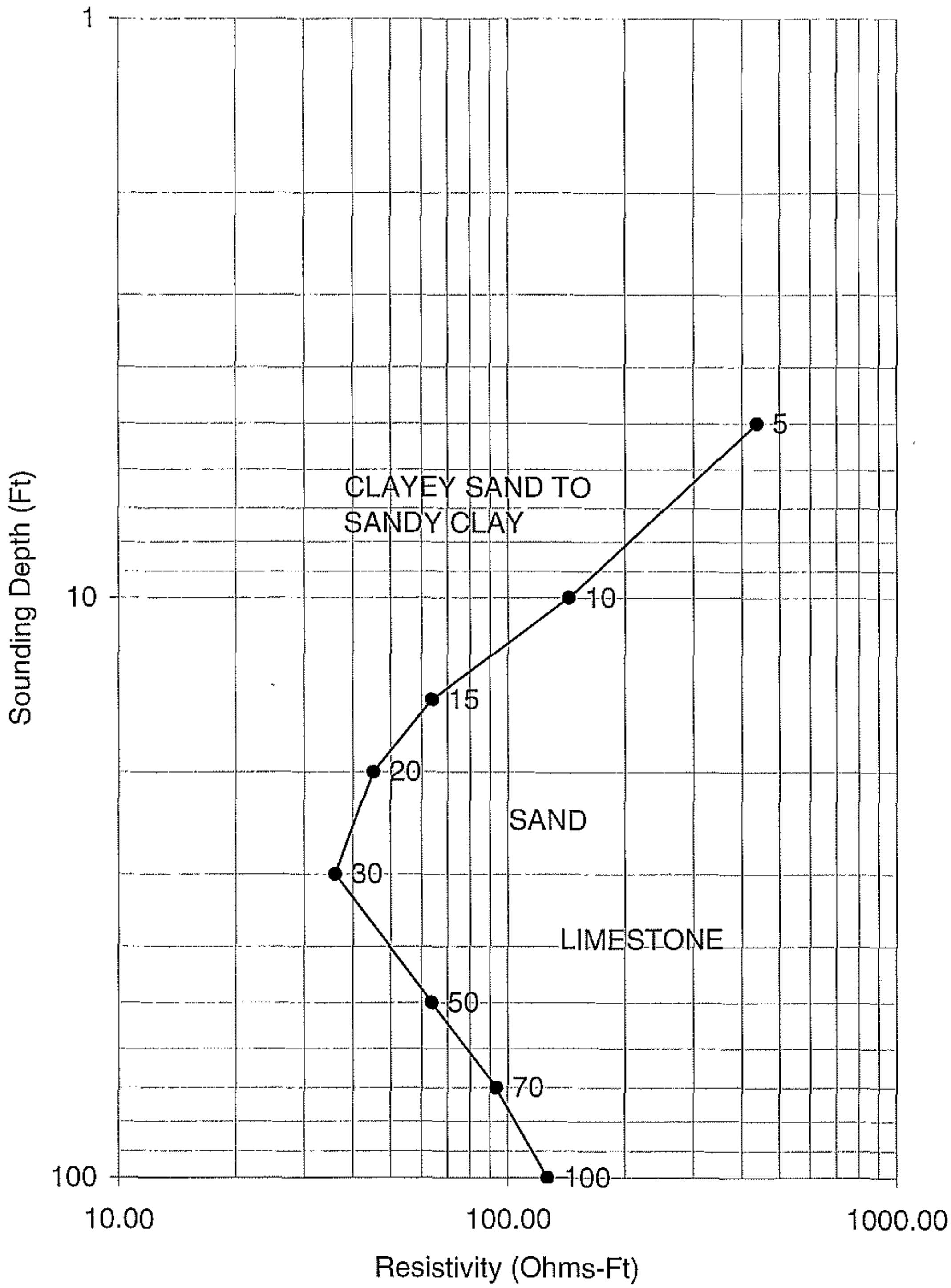

GEOHAZARDS INC.
Electrical Resistivity Survey
Investigation#:2004516
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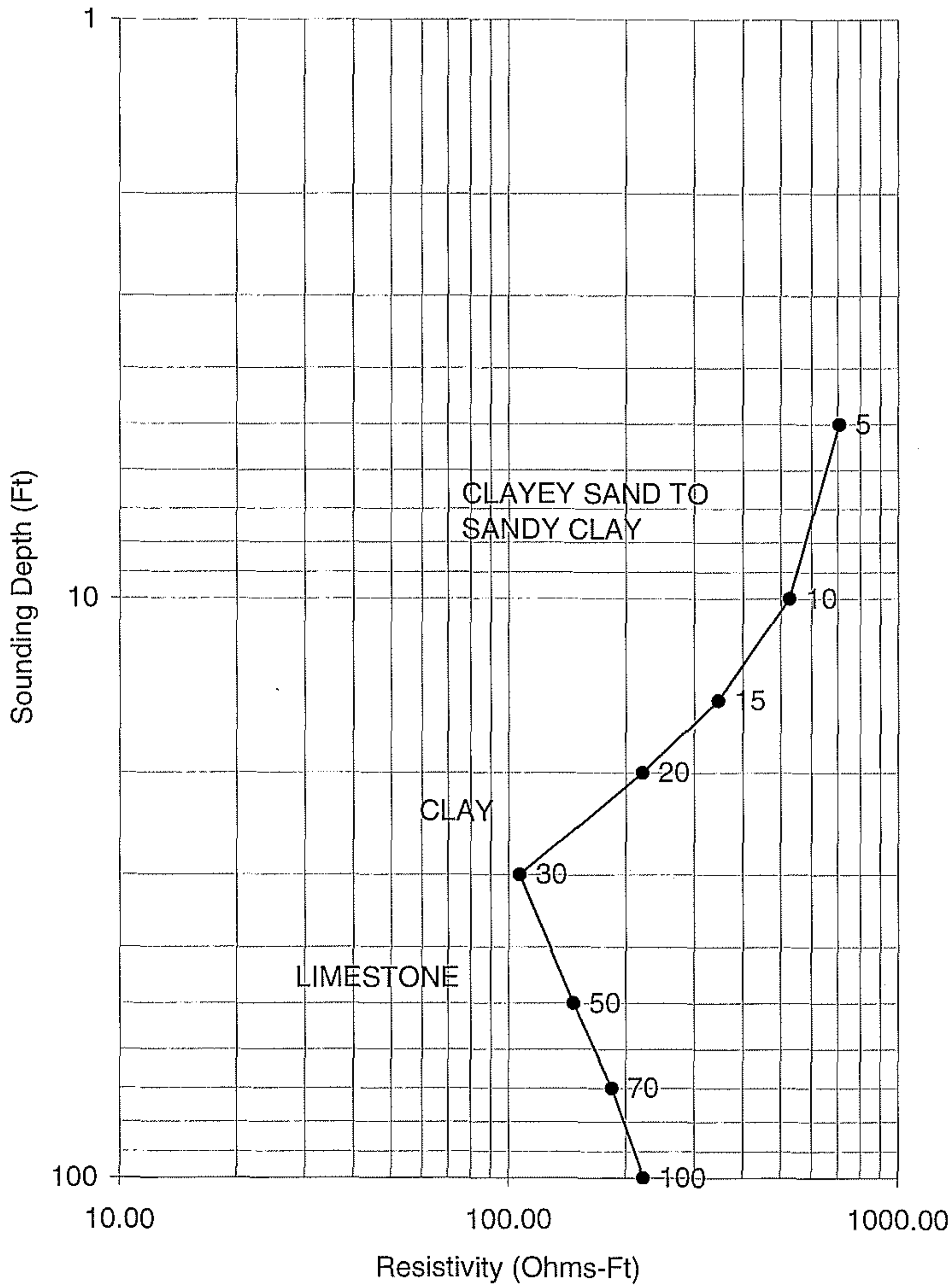

GEOHAZARDS INC.
Electrical Resistivity Survey
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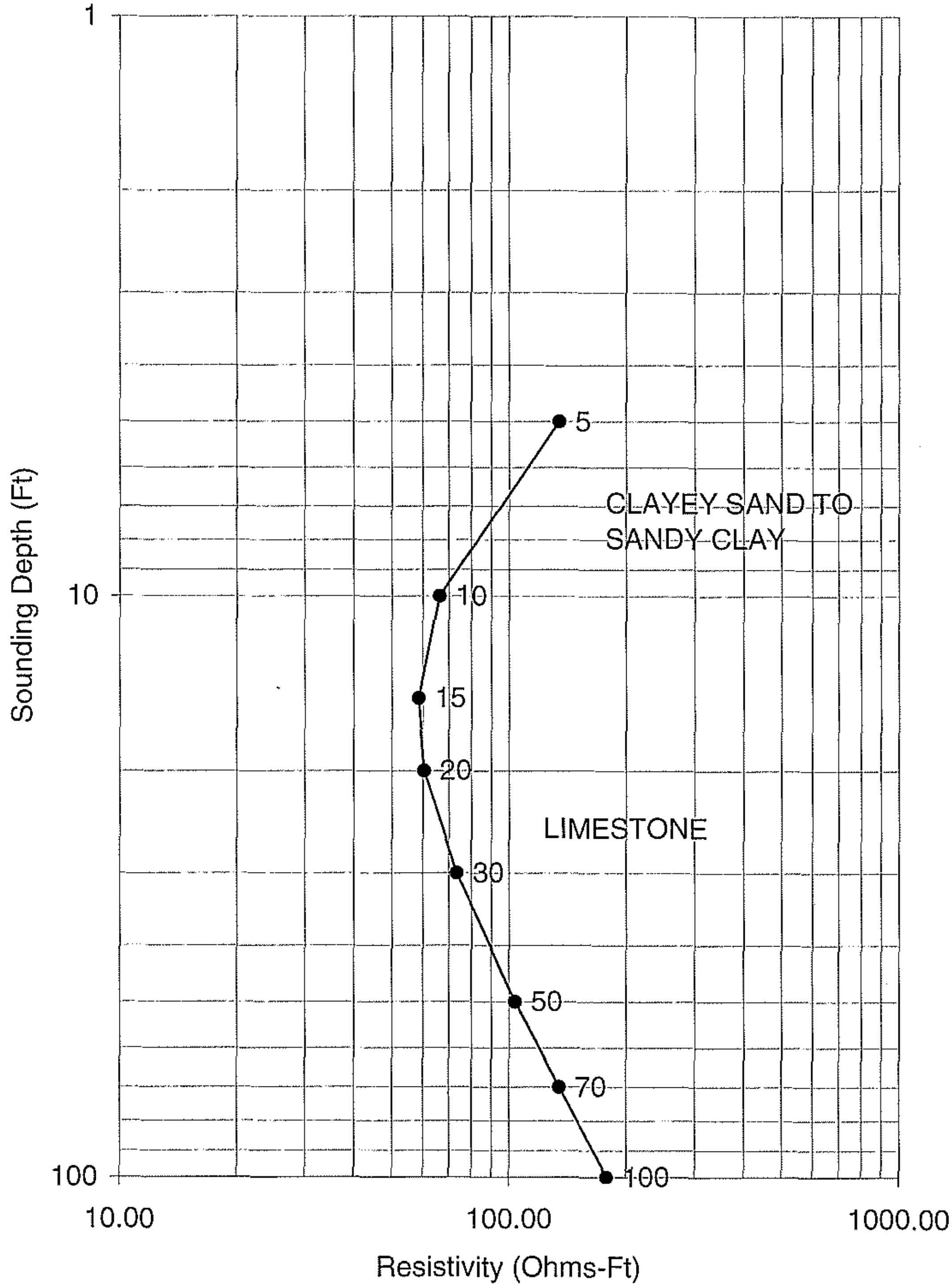

GEOHAZARDS INC.
Electrical Resistivity Survey
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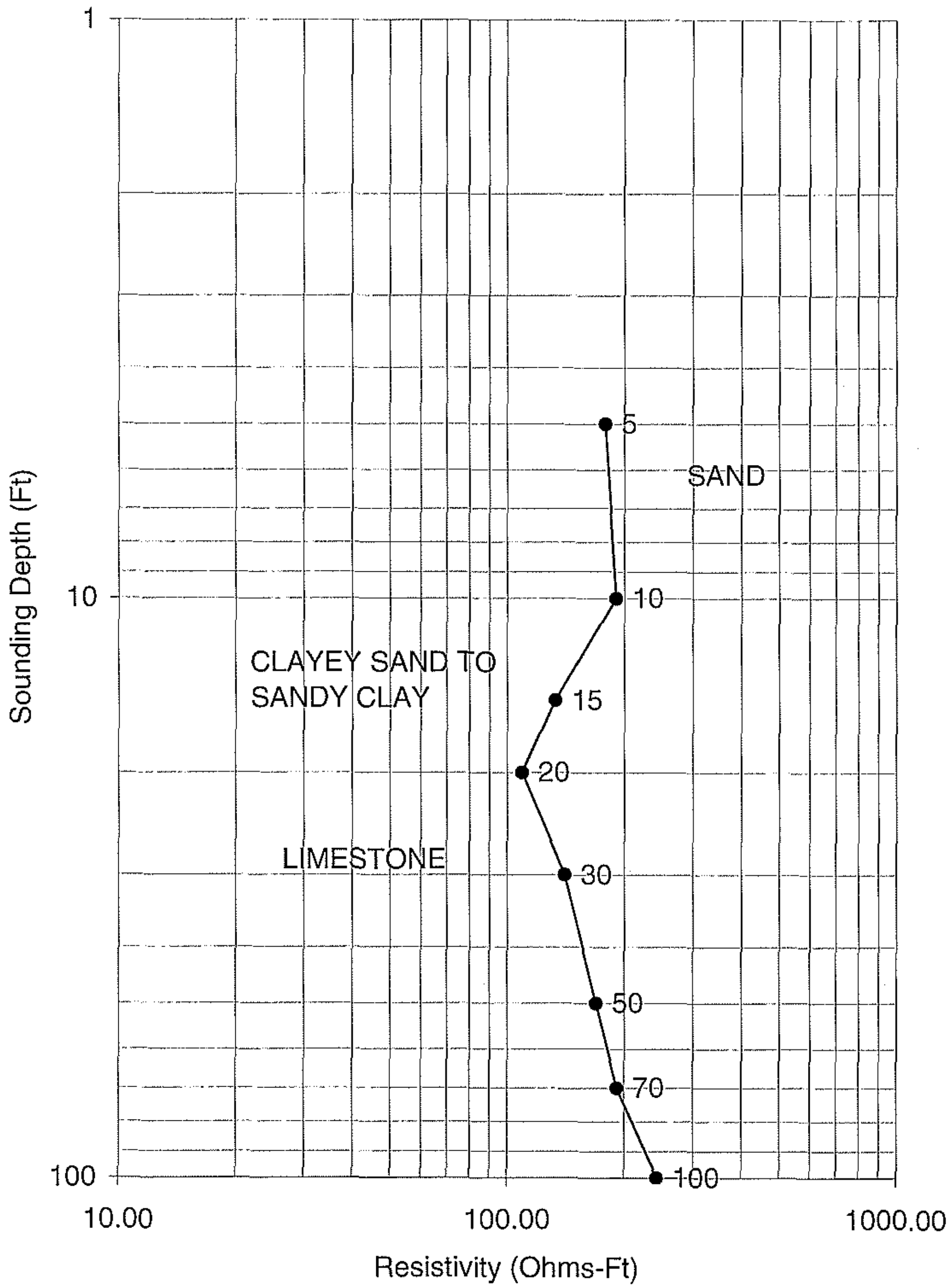

GEOHAZARDS INC.
Electrical Resistivity Survey
Investigation#:2004516
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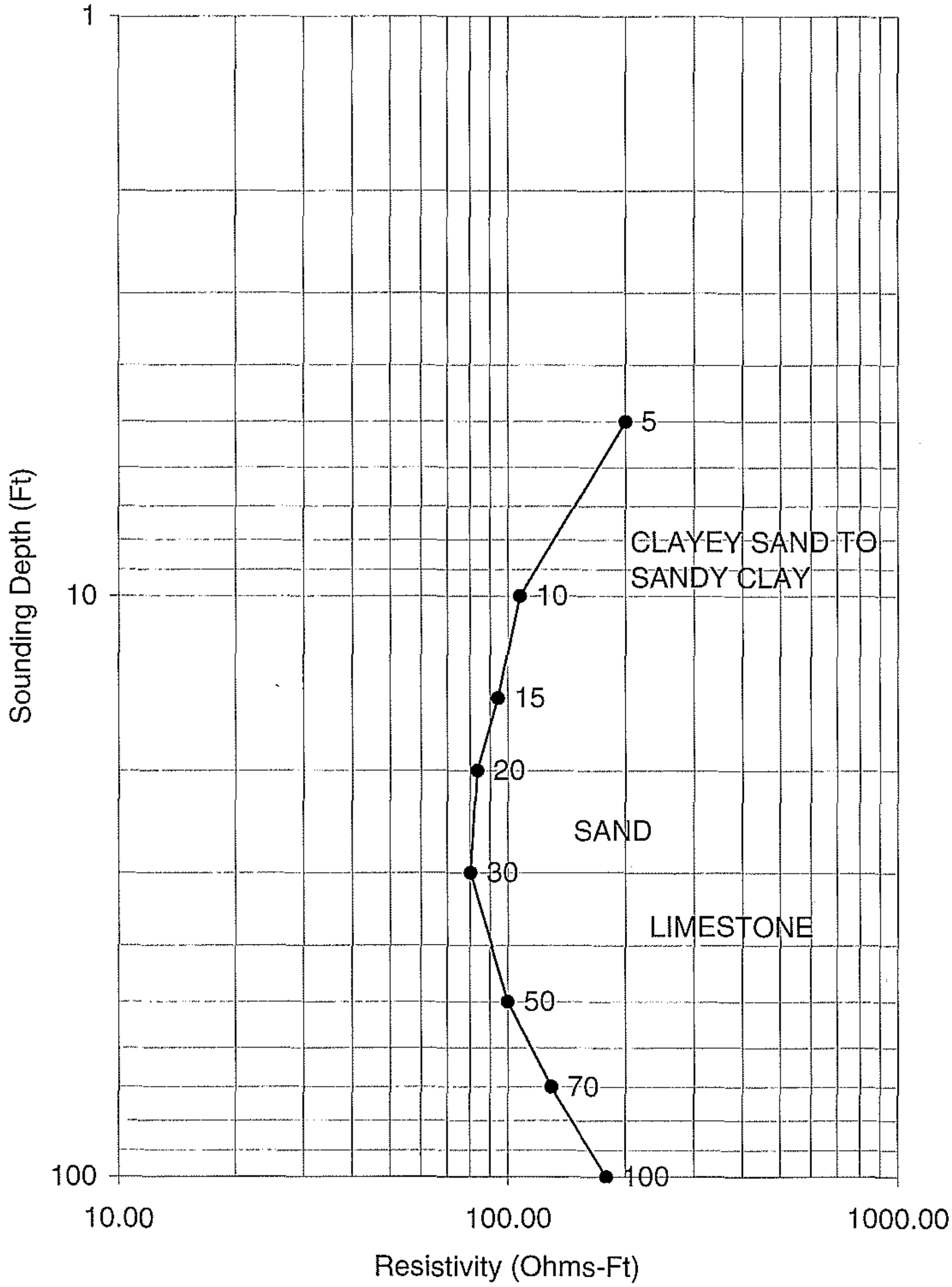

GEOHAZARDS INC.
Electrical Resistivity Survey
Investigation#:2004516
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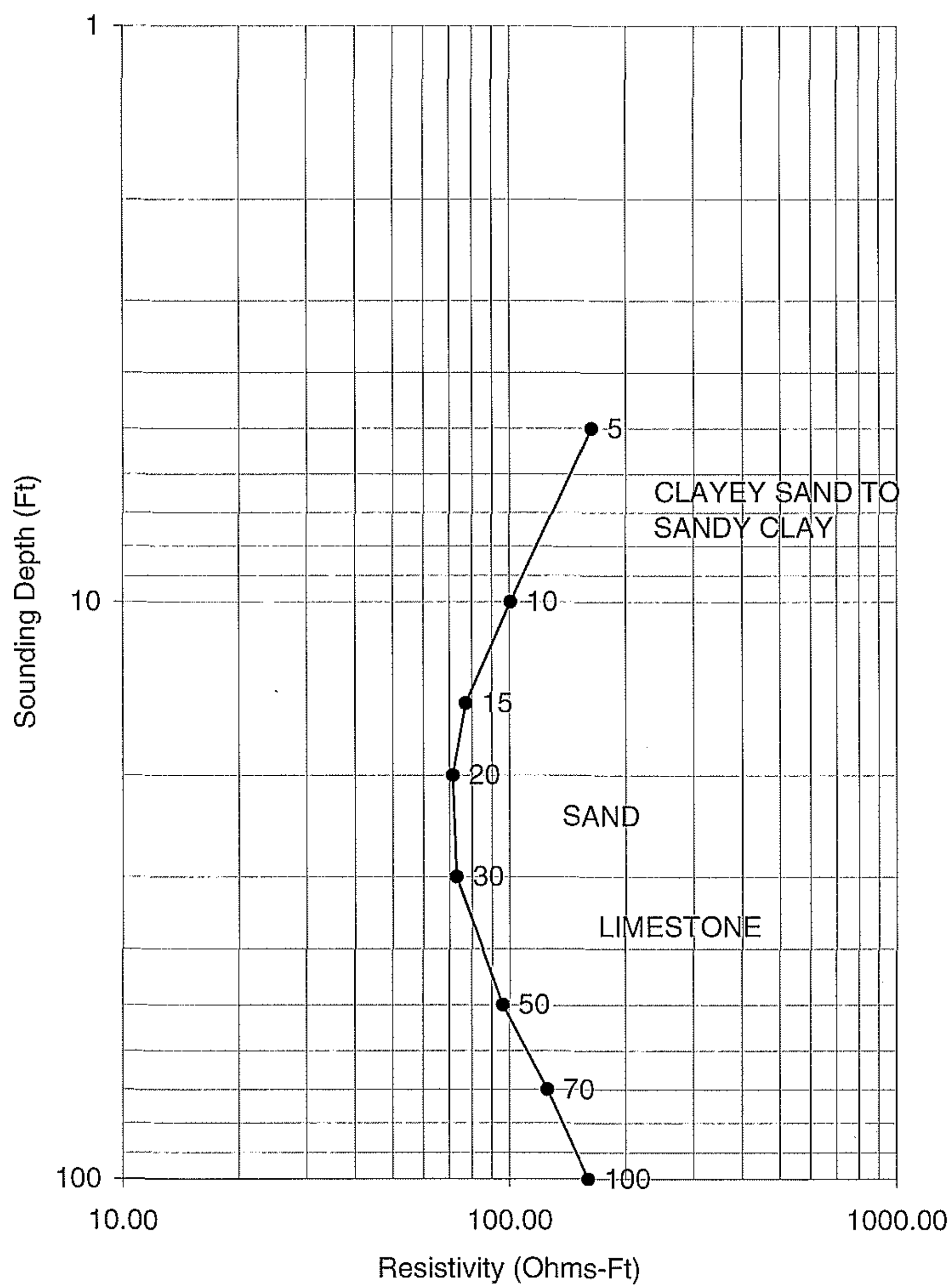

GEOHAZARDS INC.
Electrical Resistivity Survey
Investigation#:2004516
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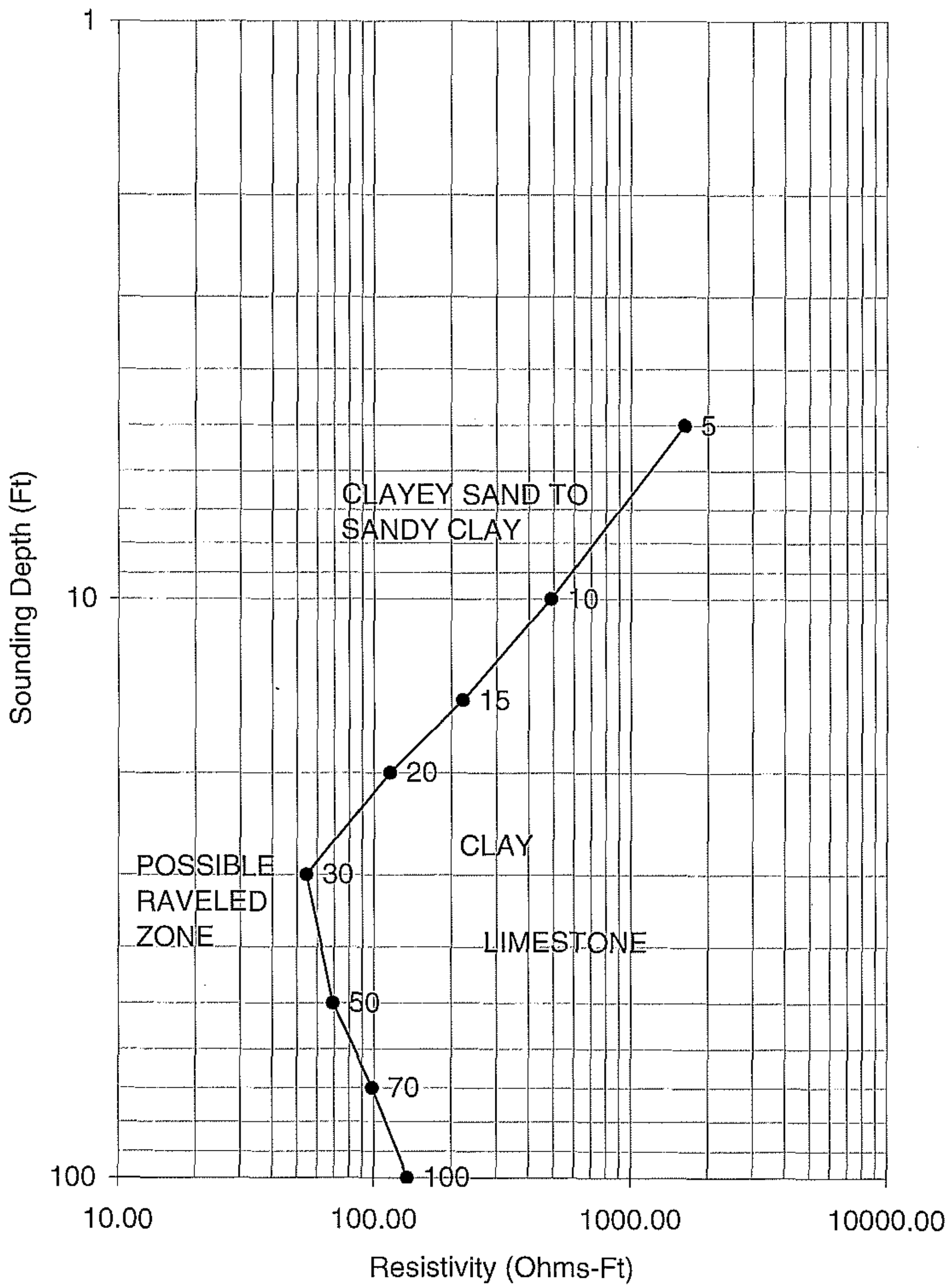
Station Number: 8



GEOHAZARDS INC.
Electrical Resistivity Survey
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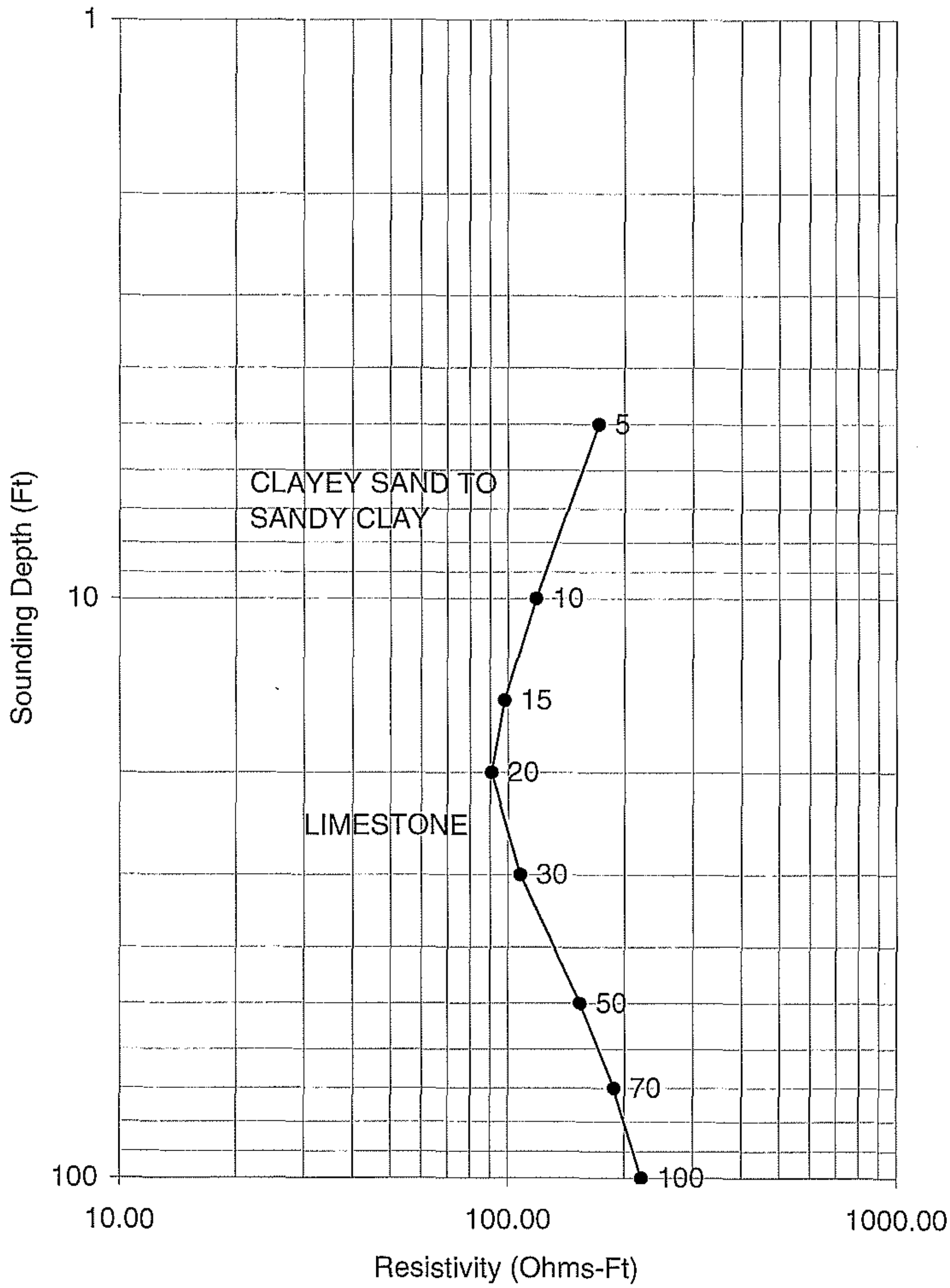

GEOHAZARDS INC.
Electrical Resistivity Survey
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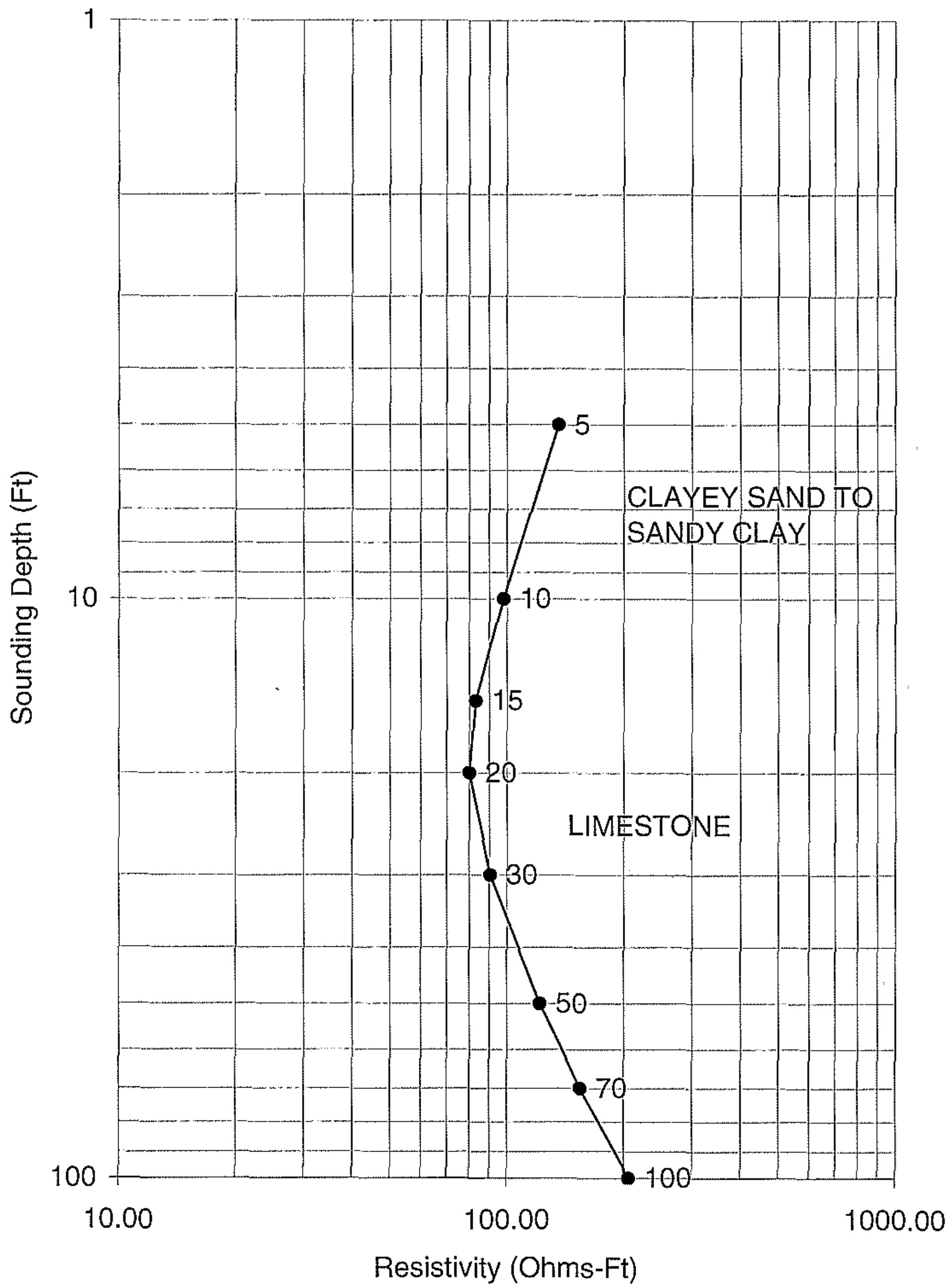

GEOHAZARDS INC.
Electrical Resistivity Survey
Investigation#:2004516
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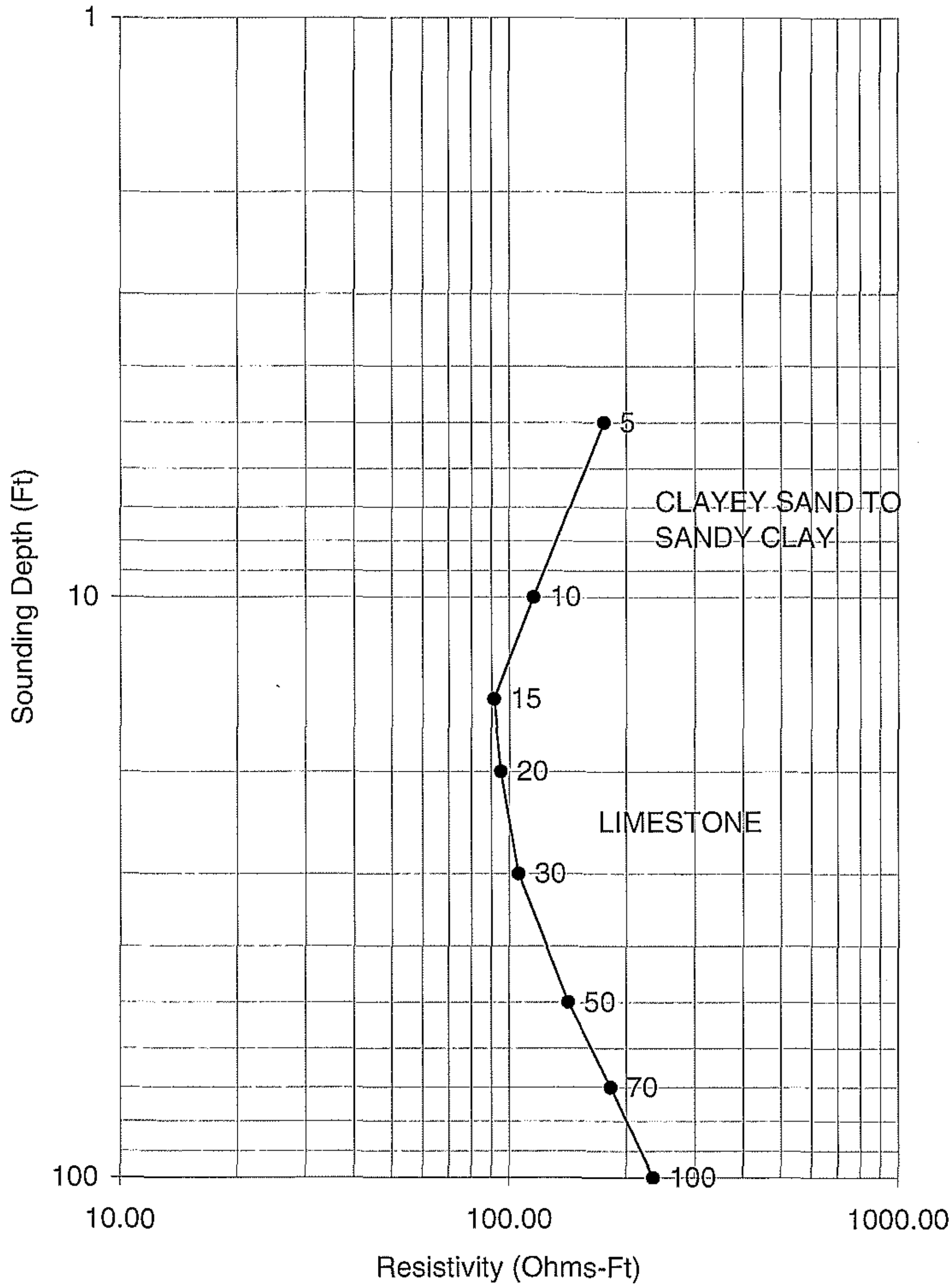

GEOHAZARDS INC.
Electrical Resistivity Survey
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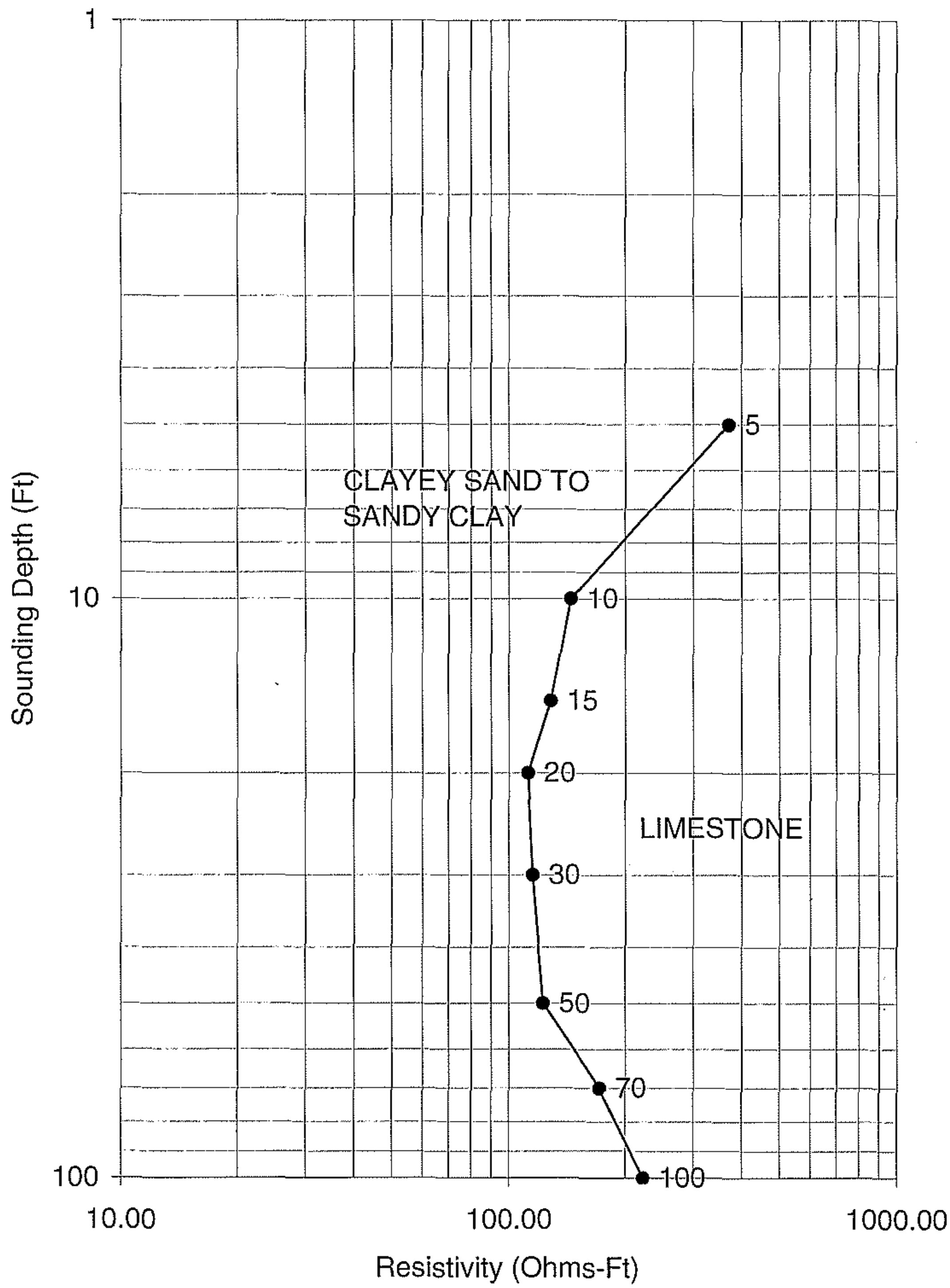

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December 7, 2005

Geohazards, Inc., Investigation No. 2004516A

REPORT OF THE GEOPHYSICAL INVESTIGATION OF THE GEOLOGICAL SUBSURFACE AT THE PROPOSED WAL-MART SUPERCENTER SITE, ALACHUA, FLORIDA

INTRODUCTION

Purpose

Geohazards, Inc. was tasked by Universal Engineering Sciences, Inc., to conduct a geophysical investigation at the above referenced locality.

This investigation was conducted to provide a geophysical characterization of the geological subsurface. In particular, efforts were designed to determine the presence of subsurface cavities and subsurface zones of disruption that might contribute to subsidence. Any of these conditions could be responsible for existing or potential subsidence at the site.

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Scope

The investigation conducted and reported herein included the following:

- A review of available geologic maps and other published data to establish the general probable lithology for the site of investigation.
- A reconnaissance of the site of investigation to recognize and identify surface conditions pertinent to the purpose of the investigation.
- An Electrical Resistivity (ER) investigation of the site to assist in the recognition of site-specific geological conditions at the subject property and to determine evidence for the presence of anomalous subsurface features or conditions.
- A final report summarizing results and conveying professional opinions.

Site Information

The geophysical field investigation was conducted on November 21 and 23, 2005. The site is located in the southeast portion of the intersection of US Highway 441 and Interstate 75 in Alachua, Florida. The site of investigation is an open grassy field with a creek and tree cover located in the south and east portions of the proposed building area. The creek flows to the north. At the time of the field investigation, the creek bed was dry. In general, the land surface also slopes downward towards the north and northeast. The elevation difference over the survey area is approximately 30 feet. While a few noticeable surface depressions were observed in the area, none were located in the survey area. Universal Engineering Sciences, Inc. has performed nineteen 50-foot Standard Penetration Test Borings in the proposed building pad.

The data collected was combined with a previous geophysical field investigation conduced by Geohazards, Inc. on November 15, 2004. The investigation included ER traverse #s 1 through 12. Electrical resistivity sounding profiles indicated that clayey sand and sandy clay, approximately 20 feet thick overlies sand and limestone. Electrical evidence of a possible raveled zone was detected beneath traverse #8 at the clay-limestone boundary at approximately 30 feet depth. Geohazards, Inc. recommended that at least one deep (approximately

70 feet or more) standard penetration test boring be conducted near the midpoint of ER traverse #8 to further investigate the possible raveling conditions detected.

REGIONAL GEOLOGY

Based on map consultations and personal inspection, the surficial geologic material at the study site is the Hawthorn Group of geological formations overlain by a cover of very young unconsolidated sands and sandy clays. These consist of fine to medium grained, unconsolidated quartz sand, silt, and clay in varying proportions and thickness. Shrink/swell clays of significant size, continuity and nearness to the surface are a particularly troublesome characteristic of the Hawthorn where they occur in significant thickness and lateral continuity. Concrete slabs and foundations can be severely damaged where such a geologic condition occurs.

The Ocala Limestone underlies the Hawthorn. This limestone has experienced significant dissolution and the creation of an intricate cavernous system. Problems in the development of sinkholes are related to the size and nearness to the surface of the Ocala limestone and these underground cavities. The upper surface of this limestone is highly irregular.

FIELD TEST METHODS

Electrical Resistivity

Electrical resistivity (ER) is a geophysical procedure to investigate the presence of geological conditions or features characterized by contrasts in electrical resistivity. The measurements were conducted using the Wenner electrode configuration, and were performed in general accordance with the appropriate portions of ASTM standards G57-95a entitled "Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method," and standard D6431-99 entitled "Standard Guide for Using Direct Current Resistivity Method for Subsurface Investigation."

Electrical resistivity measurements involve the passing of an electric current underground and measuring its resistance to flow. Different earth materials (e.g. clay, sand, limestone) and subsurface cavities will resist the flow of electrical current differently. Substantially greater contrasts in the degree of resistance (anomalies) are used to identify and locate boundaries among different materials as well as the presence of cavities.

The types of ER measurements used in this investigation were Soundings and Lee-directional. Sounding measurements reveal two-dimensional detail below the surface at progressively greater depths. Lee-directional measurements determine the direction of higher or lower resistivity along a traverse line. In the field, electrodes are placed in the ground at equal distances from one another. After a measurement, this distance is increased in an orderly fashion to sequentially allow a greater depth of penetration.

Measurements of ER were made with an L & R Instruments, Inc. MiniRes Earth Resistivity Meter. Four current/potential electrodes and one Lee electrode are employed. Depending on the surface space available for deployment of electrodes, a maximum depth capability of 100 feet can be achieved.

ER traverse lines were oriented to provide representative coverage of the site of investigation (see ER location map) and to add to data previously collected in November of 2004. Fourteen traverses (traverse #s 13-26) were conducted and added to the traverses conducted in 2004 (traverse #s 1-12), configured as shown on the location map. The maximum depth of penetration for all traverses was 100 feet.

RESULTS

Electrical Resistivity

1. In general, electrical resistivity values and sounding trends were relatively variable among the various traverses. Sounding profiles are included in the appendix. Four stratigraphic profiles were constructed using interpretations of the sounding profiles and the boring log data provided by Universal Engineering Sciences, Inc. (See included stratigraphic profiles and sounding profiles). An "Elevation of Top of Limestone" contour map and an "Elevation of Top of Limestone" 3-D tomographic projection were also constructed from this investigation and also incorporate the data from nineteen borings performed in the survey area.

2. The general configuration of the sounding values and patterns is interpreted as indicative of near-surface clayey sand and sandy clay, approximately 20 feet thick, overlying sand. Electrical evidence for the underlying limestone surface was detected at approximately 20 feet depth beneath traverse #s 11, 16, and 26. Limestone was detected at approximately 25 feet depth beneath traverse #s 4, 9-10, and 21, at approximately 27 feet depth beneath traverse # 5, at approximately 30 feet depth beneath traverse #s 2-3, 17, 23, and 25, at approximately 35 feet depth beneath traverse #s 13, 15, and 24, at approximately 40 feet depth beneath traverse #s 6-8, 12, 19-20, and 22, at approximately 45 feet depth beneath traverse # 1, and at approximately 50 feet depth beneath traverse #s 14 and 18. Clay was interpreted above the limestone at approximately 15-20 feet depth beneath ER traverse #s 2-3, 8, 18, 20 and 26. Sandy clay and clay was interpreted above the limestone from approximately 20-50 depth on traverse # 14.

3. The configuration of the sounding values and patterns for traverse #s 5, 20, and 24 is interpreted as indicative of surface sand, approximately 10-15 feet thick overlying clayey sand and sandy clay and/or clay.

4. The configuration of the sounding values and patterns for traverse #s 13 and 17 is interpreted as indicative of near-surface clayey sand and sandy clay grading into clay and overlying sand at approximately 20 feet depth.

5. Electrical resistivity values consistent with a possible raveled zone were detected at approximately 30 feet depth beneath traverse #8, at the clay-limestone boundary. Raveling is the lateral and downward migration of sediments within groundwater into more distance places within limestone. It is a mechanism for sinkhole activity.

6. Electrical resistivity values consistent with porous limestone were detected below 70 feet depth on traverse #s 22 and 26 and at approximately 100 feet depth on traverse # 21. No electrical evidence of well-developed cavities was detected in the areas and depths surveyed.

7. Lee-directional measurements (not plotted) yielded disparities on eleven of the twenty-six ER traverses. The locations of the Lee-directional disparities are shown in yellow on the ER location map. Ten of the Lee-directional anomalies were within the upper 30 feet and one was at approximately 70 feet depth on traverse # 14. The disparities were not corroborated with sounding

anomalies and are attributed to lateral variations in soil moisture or composition.

8. The stratigraphic profile A-A' shows that the surface elevation decreases from the western end to the eastern end of the profile, with a total elevation change of approximately 16 feet. The overburden (sand and clay mixtures) thickness at the west end of the profile measures approximately 27 feet and increases to a thickness of approximately 45 feet at the east end of the profile.

9. The stratigraphic profile B-B' shows a decrease in the surface elevation, approximately 15 feet, from the west to the east. The upper limestone surface generally follows the slope of the land surface. Low areas in the upper limestone surface are located at B-1, B-7, and near the center of ER traverse # 18.

10. The stratigraphic profile C-C' shows a decrease in the surface elevation from the western end to the eastern end of the profile, with a total elevation change of approximately 19 feet. The upper limestone surface was shallowest, approximately 25 feet below land surface, at the center of ER traverse # 4 and deepest, approximately 40 feet below land surface, at the center of ER traverse # 8.

11. The stratigraphic profile D-D' shows a decrease in the surface elevation from the southern end to the northern end of the profile, with a total elevation change of approximately 11 feet. Boring B-10 and ER traverse # 14 indicate that the upper limestone surface dips to 50-57 feet below land surface on the south side of the profile.

12. A two dimensional contour map and a three dimensional tomographic projection of the elevation of the top of the limestone were prepared. A pattern of a variable depths to the upper limestone surface was recognized.

CONCLUSIONS

Electrical resistivity was conducted in the proposed building area of a Wal-Mart Supercenter in Alachua, Florida, and the data was added to a previous electrical resistivity survey preformed by Geohazards, Inc. in 2004. No surface depressions were observed in the survey area.

The interpretations of the electrical resistivity data indicate that clay and sand mixtures overlie the upper limestone surface at depths of approximately 20 to 50 feet depth. The nineteen borings conducted within the survey area by Universal Engineering Sciences encountered the upper limestone surface at depths of 27 to 57 feet. No electrical data were interpreted as indicative of well-developed cavities, but electrical evidence of a possible raveled zone was detected beneath traverse #8 at the clay-limestone boundary at approximately 30 feet depth. Porous limestone was interpreted at approximately 70 feet depth on traverse #s 22, and 26, and at approximately 100 feet depth on traverse # 21. Ten near-surface (upper 30 feet depth) ER Lee-directional disparities were detected and one deep (approximately 70 feet depth) ER Lee-directional disparity was detected. The disparities were not corroborated with sounding anomalies and are attributed to lateral variations in soil moisture or composition.

Based on the results of this investigation, Geohazards, Inc. recommends that deep (at least 70 feet) standard penetration test borings be conducted between the midpoints of ER traverses # 22 and 26 and near the midpoint of ER traverse #s 8, 18, and 24 to investigate the possible porous limestone detected at 70 to 100 feet depth. We recommend a deep boring to the northeast of the center of ER traverse # 20 to further investigate the possible raveling conditions detected. We also recommend a boring in the area of the depressed limestone surface located in the southern portion of the building area, approximately 50 feet north of boring B-10.

LIMITATIONS

While due care has been exercised in the performance of these measurements and their interpretation, Geohazards, Inc. can make no representations, warranties, or guarantees with respect to latent or concealed conditions which may exist that may be beyond the limits of detection with the methodologies used.

Douglas L. Smith, Ph.D., P.G.
Geophysicist

Anthony F. Randazzo, Ph.D., P.G.
Geologist 12/7/0

Gerald O. Black, P.G.
Geologist 12/7/0

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SITE PLAN OF GEOPHYSICAL INVESTIGATION

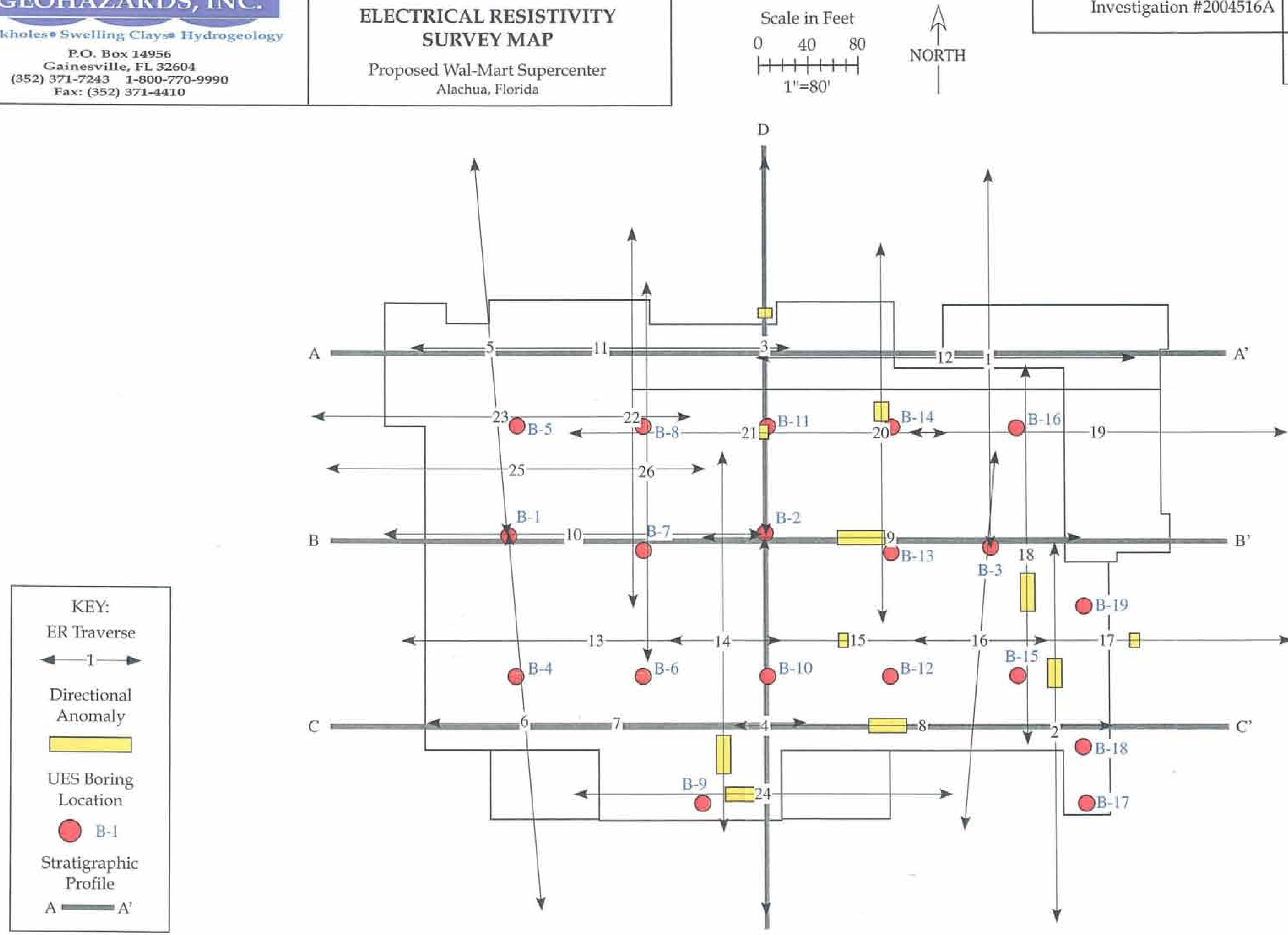
ELECTRICAL RESISTIVITY SURVEY MAP

Proposed Wal-Mart Supercenter
Alachua, Florida

BY: M. Hays
Investigation #2004516A

FOR: David Barreiro
UES

DATE: 11-28-05



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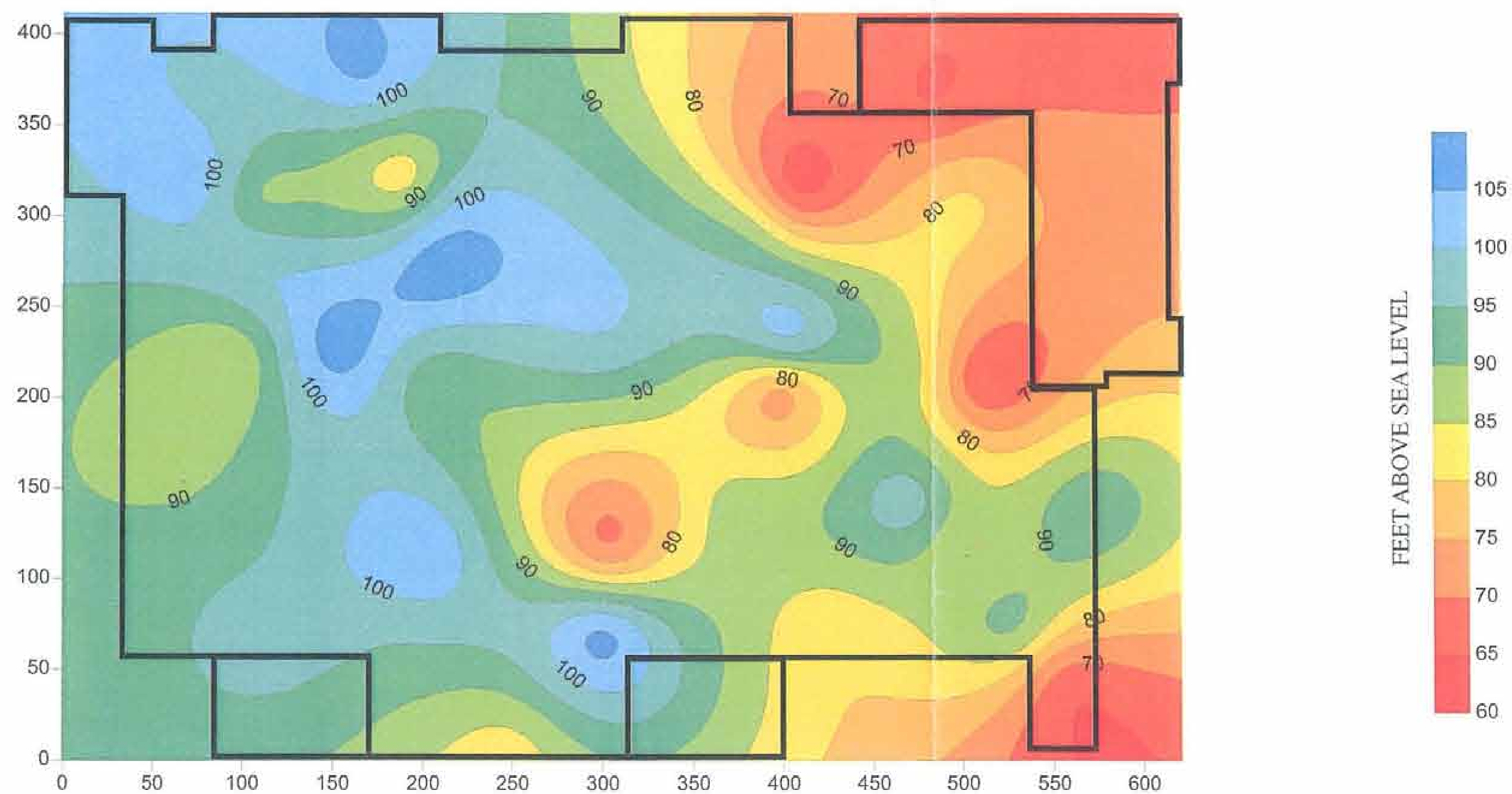
CONTOUR MAP

ELEVATION OF TOP OF LIMESTONE

Proposed Wal-Mart Supercenter
Alachua, FL



NORTH

SCALE 1 IN. = 80 FT.

DATE: 12-1-05

BY: M. Hays
Investigation #2004516A

FOR: David Barreiro
UES

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3-D TOMOGRAPHIC PROJECTION

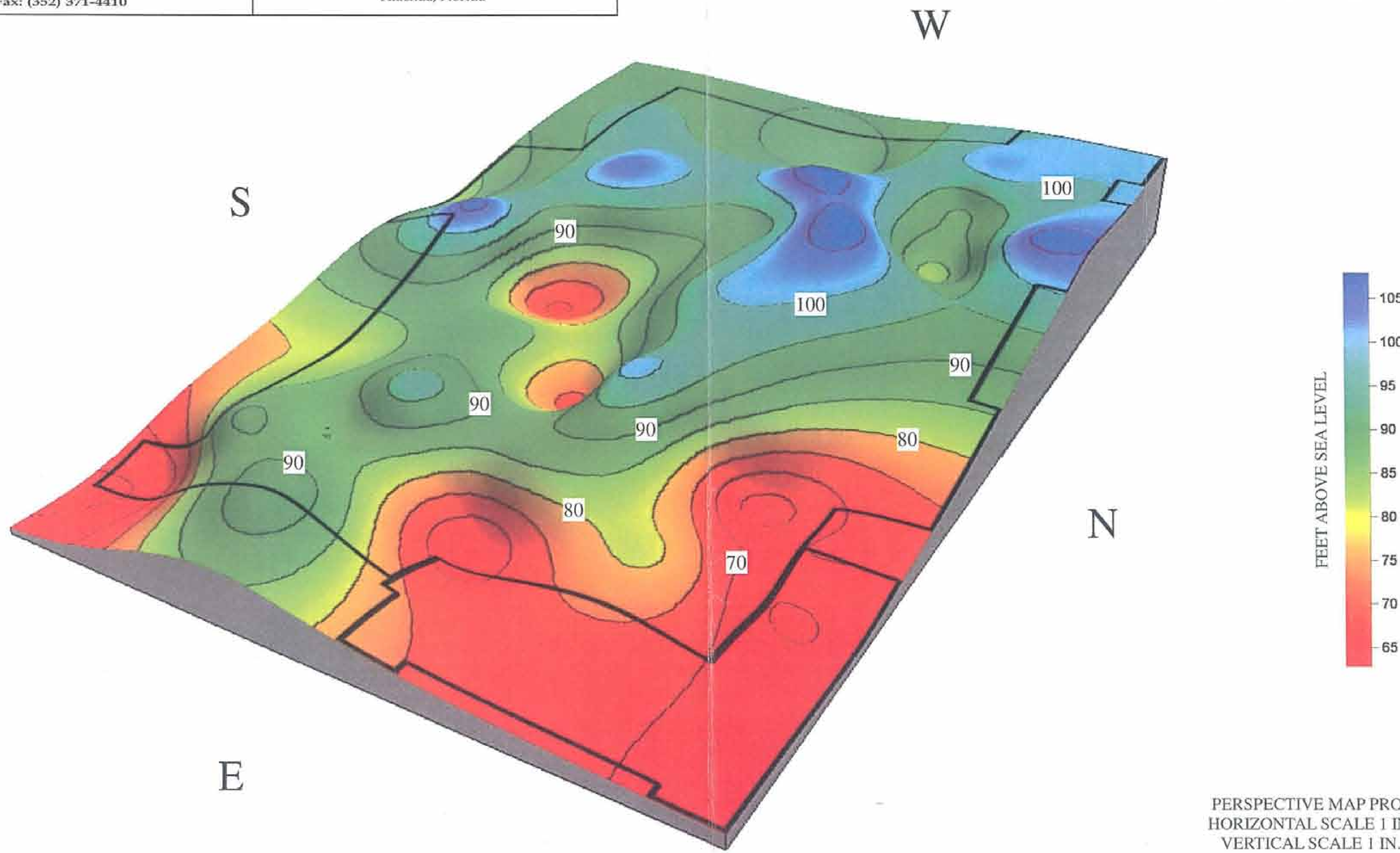
ELEVATION OF TOP OF LIMESTONE

Proposed Wal-Mart Supercenter
Alachua, Florida

BY: M. Hays, Geologist
Investigation #2004516A

FOR: David Barreiro, UES

DATE: 12-1-05



PERSPECTIVE MAP PROJECTION
HORIZONTAL SCALE 1 IN. = 60 FT.
VERTICAL SCALE 1 IN. = 40 FT.

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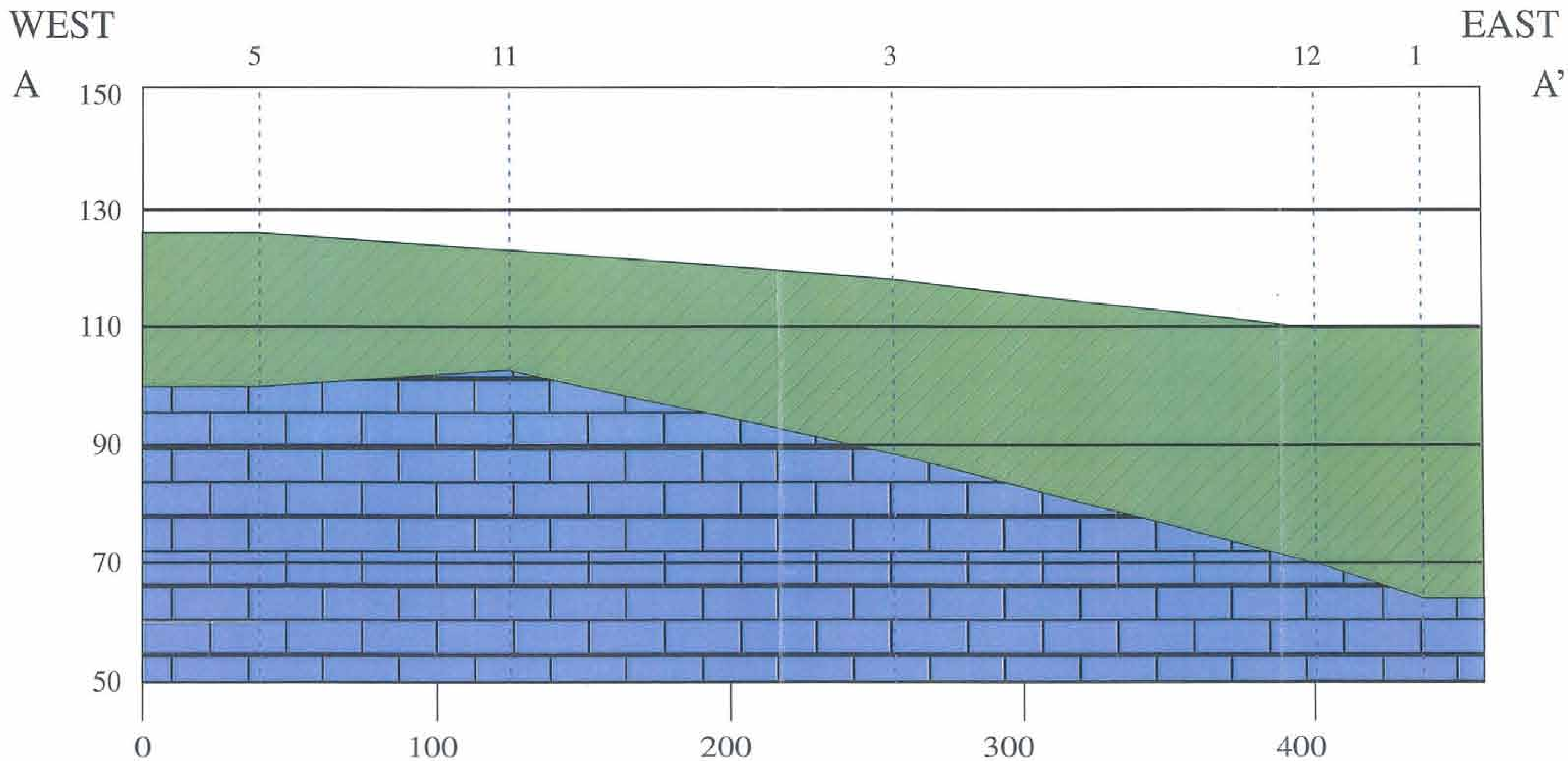
STRATIGRAPHIC PROFILE
A - A'

Proposed Wal-Mart Supercenter
Alachua, Florida

BY: M. Hays, Geologist
Investigation #2004516A

FOR: David Barreiro,
UES

DATE: 12-1-05



KEY:

Overburden (sand, clay mixtures)

Limestone

Center of ER Traverse or Boring Location

HORIZONTAL SCALE APPROXIMATELY 1 IN. = 40 FT.
VERTICAL SCALE APPROXIMATELY 1 IN. = 20 FT.
2X VERTICAL EXAGGERATION

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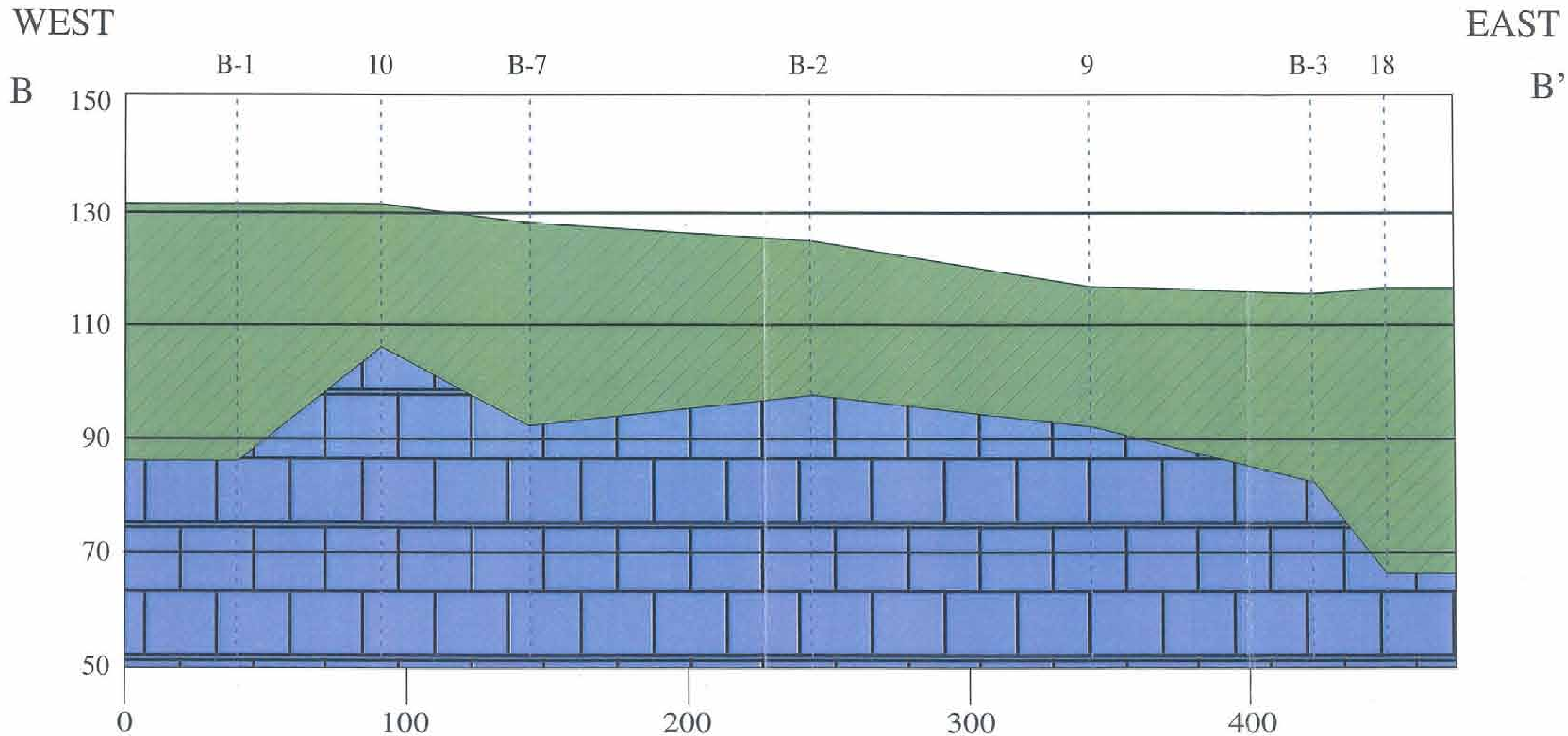
STRATIGRAPHIC PROFILE
B - B′

Proposed Wal-Mart Supercenter
Alachua, Florida

BY: M. Hays, Geologist
Investigation #2004516A

FOR: David Barreiro,
UES

DATE: 12-1-05



KEY:

Overburden (sand, clay mixtures)

Limestone

Center of ER Traverse or Boring Location

HORIZONTAL SCALE APPROXIMATELY 1 IN. = 40 FT.
VERTICAL SCALE APPROXIMATELY 1 IN. = 20 FT.
2X VERTICAL EXAGGERATION

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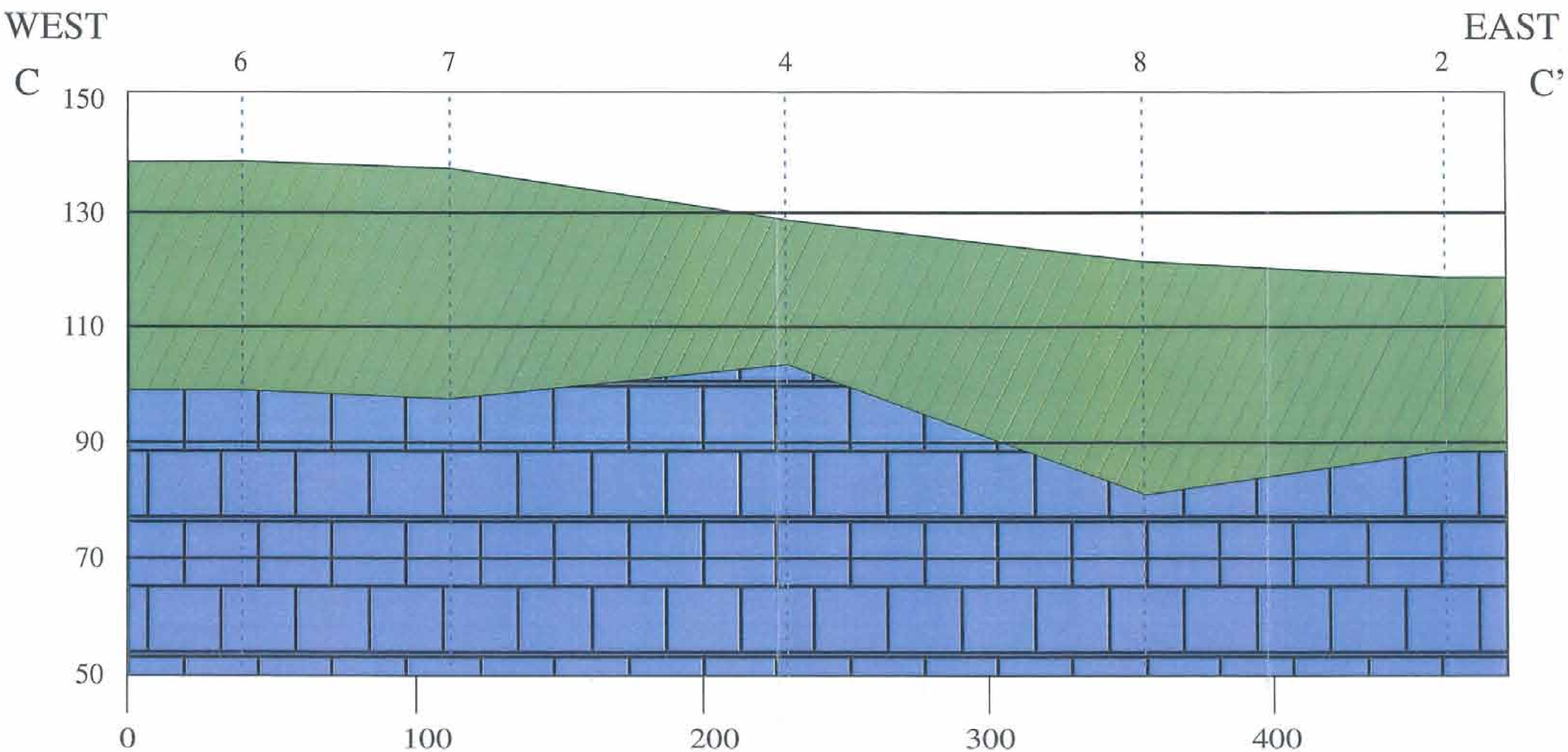
STRATIGRAPHIC PROFILE
C - C′

Proposed Wal-Mart Supercenter
Alachua, Florida

BY: M. Hays, Geologist
Investigation #2004516A

FOR: David Barreiro,
UES

DATE: 12-1-05



KEY:

Overburden (sand, clay mixtures)

Limestone

Center of ER Traverse or Boring Location

HORIZONTAL SCALE APPROXIMATELY 1 IN. = 40 FT.
VERTICAL SCALE APPROXIMATELY 1 IN. = 20 FT.
2X VERTICAL EXAGGERATION

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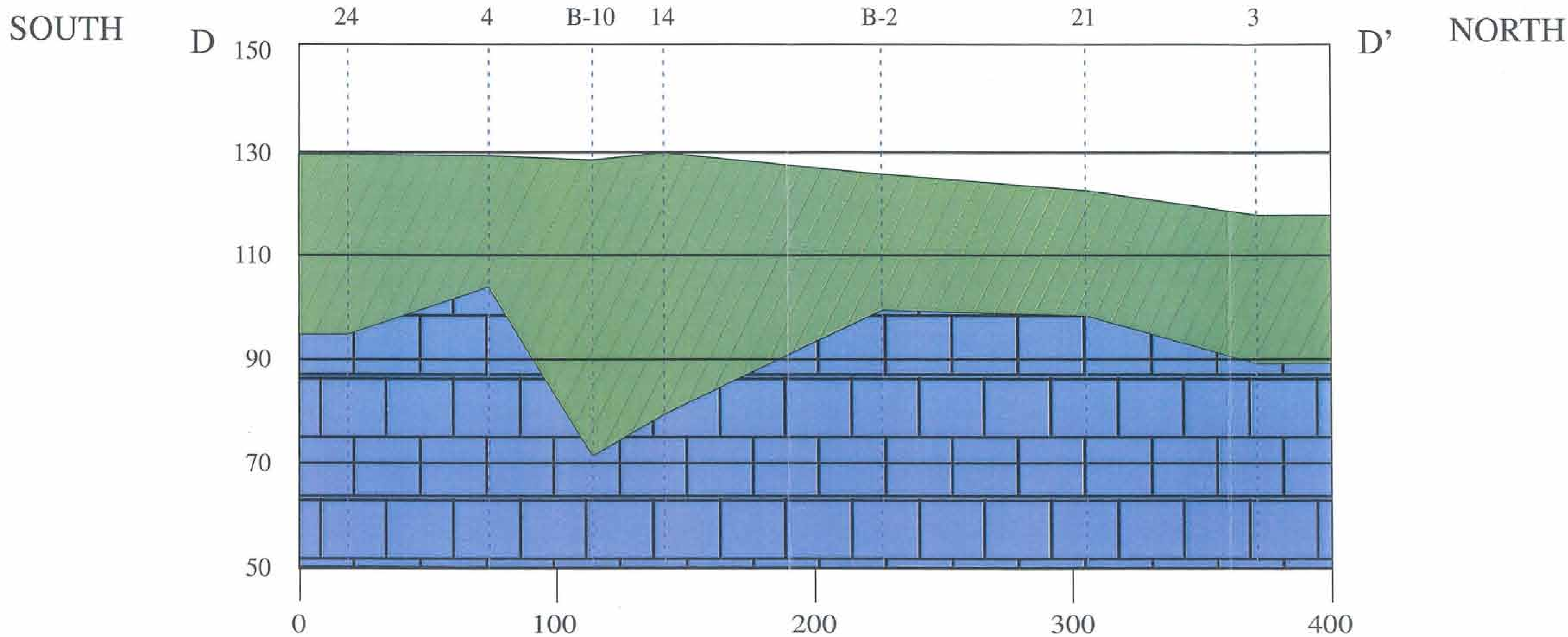
STRATIGRAPHIC PROFILE
D - D'

Proposed Wal-Mart Supercenter
Alachua, Florida

BY: M. Hays, Geologist
Investigation #2004516A

FOR: David Barreiro, UES

DATE: 12-1-05



KEY:

Overburden (sand, clay mixtures)

Limestone

Center of ER Traverse or Boring Location

HORIZONTAL SCALE APPROXIMATELY 1 IN. = 40 FT.
VERTICAL SCALE APPROXIMATELY 1 IN. = 20 FT.
2X VERTICAL EXAGGERATION

GEOHAZARDS, INC.

Professional Geological, Geophysical and Geotechnical Engineering Services

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January 24, 2006

Geohazards, Inc., Investigation No. 2004516B

REPORT OF THE GEOPHYSICAL INVESTIGATION OF THE GEOLOGICAL SUBSURFACE AT THE PROPOSED WAL-MART SUPERCENTER RETENTION POND SITE, ALACHUA, FLORIDA

INTRODUCTION

Purpose

Geohazards, Inc. was tasked by Universal Engineering Sciences, Inc., to conduct a geophysical investigation at the above referenced locality.

This investigation was conducted to provide a geophysical characterization of the geological subsurface. In particular, efforts were designed to determine the presence of subsurface cavities and subsurface zones of disruption that might contribute to subsidence. Any of these conditions could be responsible for existing or potential subsidence at the site.

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Scope

The investigation conducted and reported herein included the following:

- A review of available geologic maps and other published data to establish the general probable lithology for the site of investigation.
- A reconnaissance of the site of investigation to recognize and identify surface conditions pertinent to the purpose of the investigation.
- An Electrical Resistivity (ER) investigation of the site to assist in the recognition of site-specific geological conditions at the subject property and to determine evidence for the presence of anomalous subsurface features or conditions.
- A final report summarizing results and conveying professional opinions.

Site Information

The geophysical field investigation was conducted on January 7, 2006. The site is located in the southeast portion of the intersection of US Highway 441 and Interstate 75 in Alachua, Florida, and consists of a proposed retention pond located in an open grassy field. The northeast corner of the site is tree covered and a fence prevented access to that area. In general, the land surface slopes slightly downward towards the north and northeast. The elevation difference over the survey area is approximately 15 feet. The building pad of the proposed Wal-Mart Supercenter site is located uphill and south of the proposed pond. Previous Geohazards reports numbered 2004516 and 2004516A detail resistivity investigations within the area of the proposed building pad. A surface depression approximately 50 feet in diameter and approximately 4 feet deep was observed on the east side of the proposed pond. Two small depressions approximately 4 feet in diameter and 6 inches to 1 foot deep were observed on the west side of the proposed pond. Universal Engineering Sciences, Inc. has performed thirty-seven 40-foot Standard Penetration Test Borings in the proposed retention pond.

REGIONAL GEOLOGY

Based on map consultations and personal inspection, the surficial geologic material at the study site is the Hawthorn Group of geological formations overlain by a cover of very young unconsolidated sands and sandy clays. These consist of fine to medium grained, unconsolidated quartz sand, silt, and clay in varying proportions and thickness. Shrink/swell clays of significant size, continuity and nearness to the surface are a particularly troublesome characteristic of the Hawthorn where they occur in significant thickness and lateral continuity. Concrete slabs and foundations can be severely damaged where such a geologic condition occurs.

The Ocala Limestone underlies the Hawthorn. This limestone has experienced significant dissolution and the creation of an intricate cavernous system. Problems in the development of sinkholes are related to the size and nearness to the surface of the Ocala limestone and these underground cavities. The upper surface of this limestone is highly irregular.

FIELD TEST METHODS

Electrical Resistivity

Electrical resistivity (ER) is a geophysical procedure to investigate the presence of geological conditions or features characterized by contrasts in electrical resistivity. The measurements were conducted using the Wenner electrode configuration, and were performed in general accordance with the appropriate portions of ASTM standards G57-95a entitled "Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method," and standard D6431-99 entitled "Standard Guide for Using Direct Current Resistivity Method for Subsurface Investigation."

Electrical resistivity measurements involve the passing of an electric current underground and measuring its resistance to flow. Different earth materials (e.g. clay, sand, limestone) and subsurface cavities will resist the flow of electrical current differently. Substantially greater contrasts in the degree of resistance (anomalies) are used to identify and locate boundaries among different materials as well as the presence of cavities.

The types of ER measurements used in this investigation were Soundings and Lee-directional. Sounding measurements reveal two-dimensional detail below the surface at progressively greater depths. Lee-directional measurements determine the direction of higher or lower resistivity along a traverse line. In the field, electrodes are placed in the ground at equal distances from one another. After a measurement, this distance is increased in an orderly fashion to sequentially allow a greater depth of penetration.

Measurements of ER were made with an L & R Instruments, Inc. MiniRes Earth Resistivity Meter. Four current/potential electrodes and one Lee electrode are employed. Depending on the surface space available for deployment of electrodes, a maximum depth capability of 100 feet can be achieved.

ER traverse lines were oriented to provide representative coverage of the site of investigation (see ER location map). Twenty-one traverses (traverse #s 1-21) were conducted and configured as shown on the location map. The maximum depth of penetration for all traverses was 100 feet.

RESULTS

Electrical Resistivity

1. In general, electrical resistivity values and sounding trends were variable among the twenty-one traverses. Sounding profiles are included in the appendix. Two stratigraphic profiles were constructed using interpretations of the sounding profiles and the boring log data provided by Universal Engineering Sciences, Inc. (See included stratigraphic profiles and sounding profiles). An "Elevation of Top of Limestone" contour map and an "Elevation of Top of Limestone" 3-D tomographic projection were also constructed from this investigation and also incorporate the data from thirty-seven borings performed in the survey area.

2. The general configuration of the sounding values and patterns is interpreted as indicative of clayey sand and/or sandy clay extending to 15 to 60 feet depth. Electrical evidence for the underlying limestone surface was detected at approximately 15 feet depth beneath traverse #s 4 and 17. Limestone was

detected at approximately 20 feet depth beneath traverse # 1, at approximately 25 feet depth beneath traverses # 6 and 10, at approximately 30 feet depth beneath traverse #s 2-3, and 18, at approximately 40 feet depth beneath traverse #s 8, 11, and 15, at approximately 50 feet depth beneath traverse #s 5, 7, 9, 14, 16 and 20-21, at approximately 60 feet depth beneath traverse #s 12-13, and 19.

3. Electrical evidence of the limestone surface was detected at the following approximate depths:

TRAVERSE NUMBER	DEPTH (feet)
4, 17	15
1	20
6, 10	25
2, 3, 18	30
8, 11, 15	40
5, 7, 9, 14, 16, 20, 21	50
12, 13, 19	60

4. The configuration of the sounding values and patterns for traverses #s 3, 8, and 12, 13, 14, 15, 16, 18, 19 is interpreted as indicative of surface sand, approximately 10-30 feet thick overlying clayey sand and sandy clay.

5. The configuration of the sounding values and patterns for traverse # 7 is interpreted as indicative of near-surface clayey sand grading into sandy clay and clay approximately 20 feet depth.

6. The configuration of the sounding values and patterns for traverse # 20 is interpreted as indicative of near-surface clayey sand overlying sand at approximately 20 feet depth.

7. Electrical resistivity values consistent with an air-filled cavity were detected at approximately 30 feet depth on traverse # 5.

8. Electrical resistivity values consistent with porous limestone were detected below approximately 50 feet depth on traverse # 4.

9. Lee-directional measurements (not plotted) yielded disparities on three of the twenty-one ER traverses. The locations of the Lee-directional disparities are

shown in yellow on the ER location map. The Lee-directional disparity on traverse # 5 may be associated with the possible air-filled cavity detected at approximately 30 feet depth. The other disparities were not corroborated with sounding anomalies and are attributed to lateral variations in soil moisture or composition.

10. The stratigraphic profile A-A' shows that the surface elevation slopes gently from the western end to the eastern end of the profile, with a total elevation change of approximately 10 feet. The overburden (sand and clay mixtures) thickness at the west end of the profile measures approximately 24 feet and increases to a thickness of approximately 30 feet at the east end of the profile. The upper limestone surface is highly irregular across the profile. The limestone surface dips steeply near the center of ER traverse #s 12 and 9.

11. The stratigraphic profile B-B' shows a decrease in the surface elevation, approximately 10-15 feet, from the south to the north. The upper limestone surface is highly irregular over the profile. Low areas in the upper limestone surface are located at near the centers of ER traverse #s 2 and 9 and near P-31.

12. A two dimensional contour map and a three dimensional tomographic projection of the elevation of the top of the limestone was prepared. A pattern of variable depths to the upper limestone surface was recognized. Depressions in the upper limestone surface were detected near the southeast corner, the center, and the southwest corner of the proposed retention pond.

CONCLUSIONS

An electrical resistivity investigation was conducted in the proposed site of a Wal-Mart Supercenter retention pond in Alachua, Florida. A surface depression approximately 50 feet in diameter and approximately 4 feet deep was observed on the east side of the proposed pond and two small depressions approximately 4 feet in diameter and 6 inches to 1 foot deep were observed on the west side of the proposed pond.

The interpretations of the electrical resistivity data indicate that clay and sand mixtures overlie the upper limestone surface at depths of approximately 15 to 60 feet depth. The thirty-seven borings conducted within the survey area by

Universal Engineering Sciences encountered the upper limestone surface at depths of 18 to 39 feet. Electrical evidence of a possible air-filled cavity was detected near the center of traverse # 5. Porous limestone was interpreted at below 50 feet depth on traverse # 4. Three near-surface (upper 30 feet depth) ER Lee-directional disparities were detected. The disparity on the east side of traverse # 5 may be associated with the air-filled cavity detected at 30 feet depth. The other disparities were not corroborated with sounding anomalies and are attributed to lateral variations in soil moisture or composition.

The two dimensional contour map and a three dimensional tomographic projection of the elevation of the top of the limestone indicate depressions in the upper limestone surface near the southeast corner, the center, and the southwest corner of the proposed retention pond.

Based on the results of this investigation, Geohazards, Inc. recommends that deep (at least 70 feet) standard penetration test borings be conducted near the disparities detected on traverses #s 5 and 6, near the small surface depression observed near the midpoint of traverse # 17, near the midpoint of traverse # 15, and in the depressions observed in the upper limestone surface located on the northwest side of traverse 21, northwest of the midpoint of traverse # 9, and on the west side of traverse # 13 (see two dimensional contour map and three dimensional tomographic projection).

LIMITATIONS

While due care has been exercised in the performance of these measurements and their interpretation, Geohazards, Inc. can make no representations, warranties, or guarantees with respect to latent or concealed conditions which may exist that may be beyond the limits of detection with the methodologies used.

Gerald O. Black, P.G.
Geologist

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SITE PLAN OF GEOPHYSICAL INVESTIGATION

ELECTRICAL RESISTIVITY SURVEY MAP

Proposed Wal-Mart Supercenter
Retention Pond
Alachua, Florida

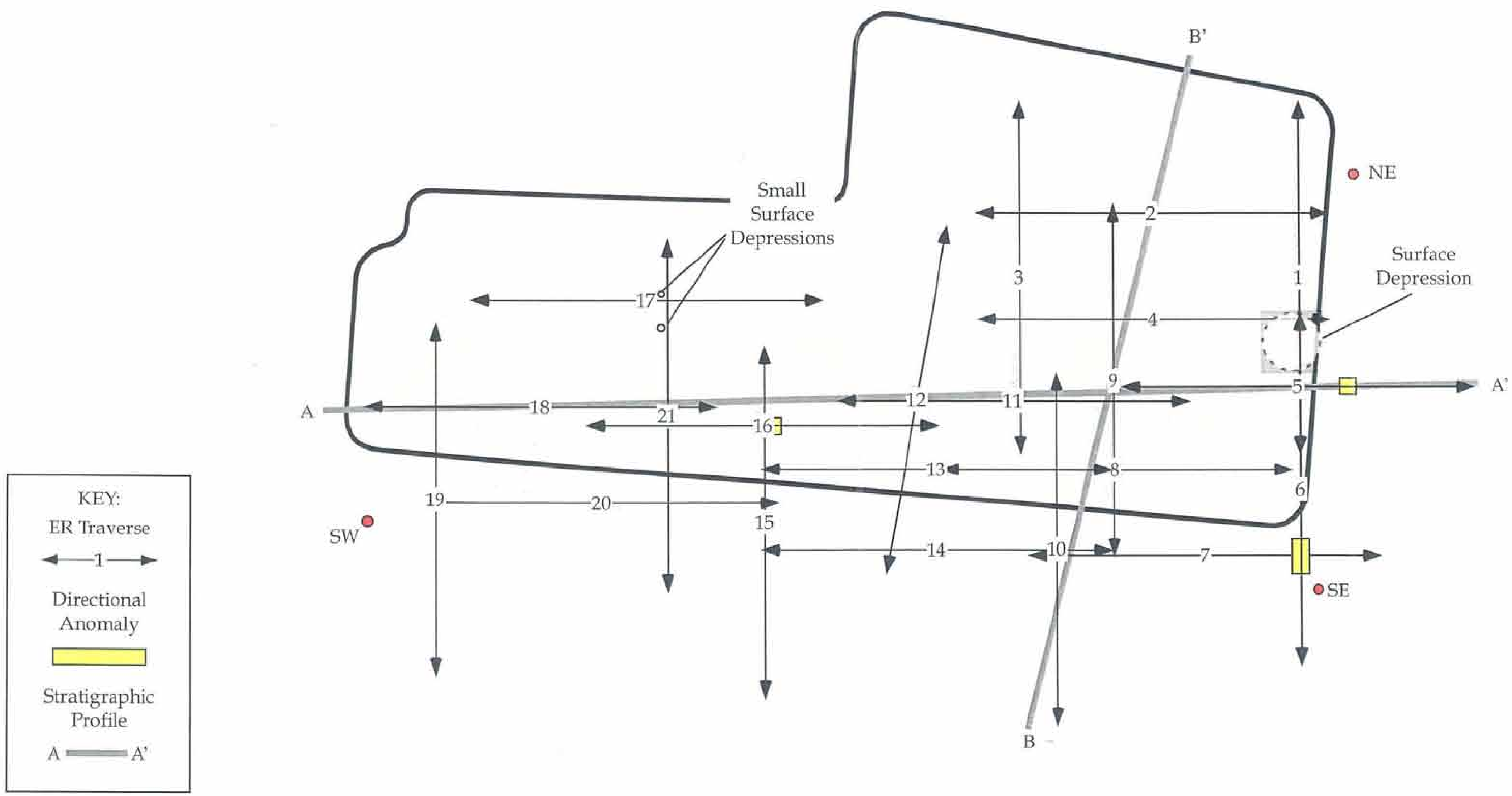
Scale in Feet
0 50 100
1"=100'

NORTH

BY: M. Hays
Investigation #2004516B

FOR: UES

DATE: 1-17-06



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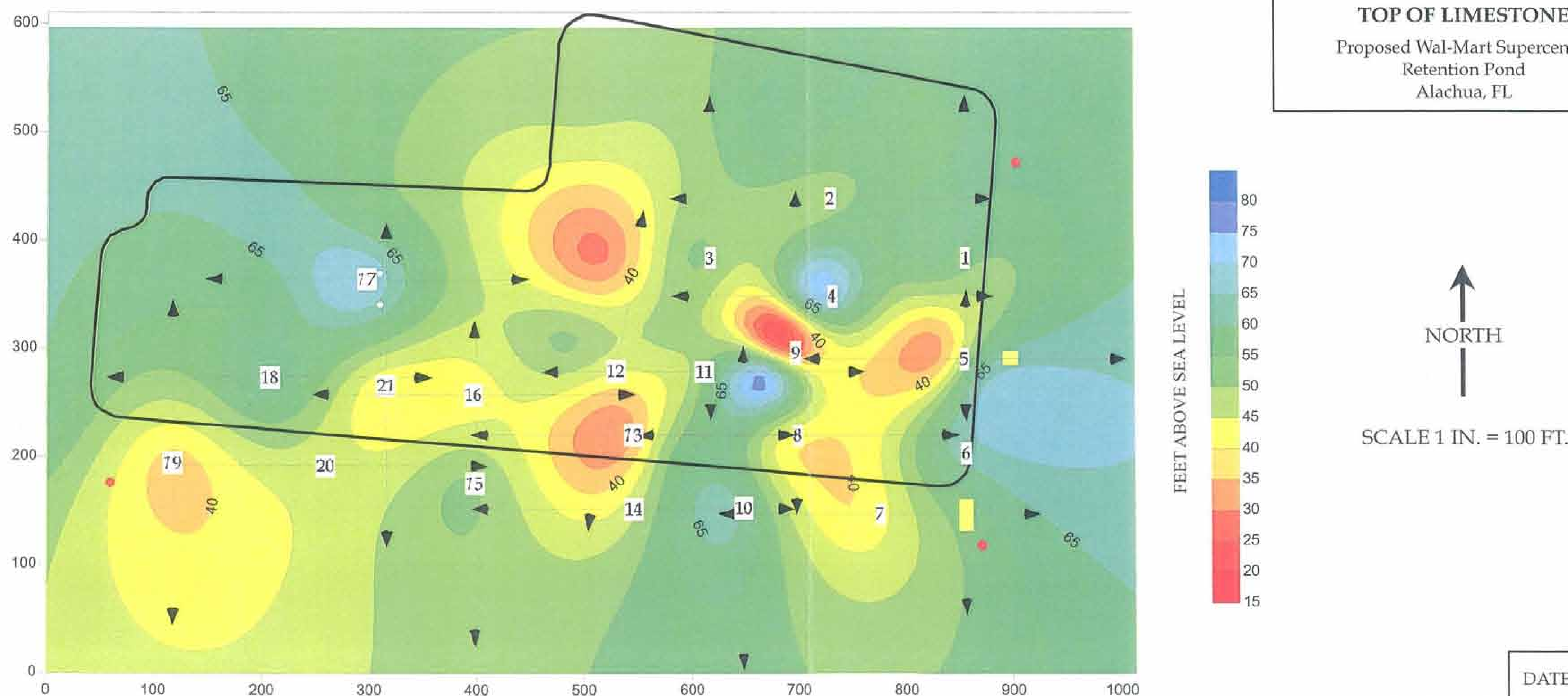
CONTOUR MAP

ELEVATION OF TOP OF LIMESTONE

Proposed Wal-Mart Supercenter
Retention Pond
Alachua, FL



DATE: 1-17-06

BY: M. Hays
Investigation #2004516B

FOR: UES

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3-D TOMOGRAPHIC PROJECTION

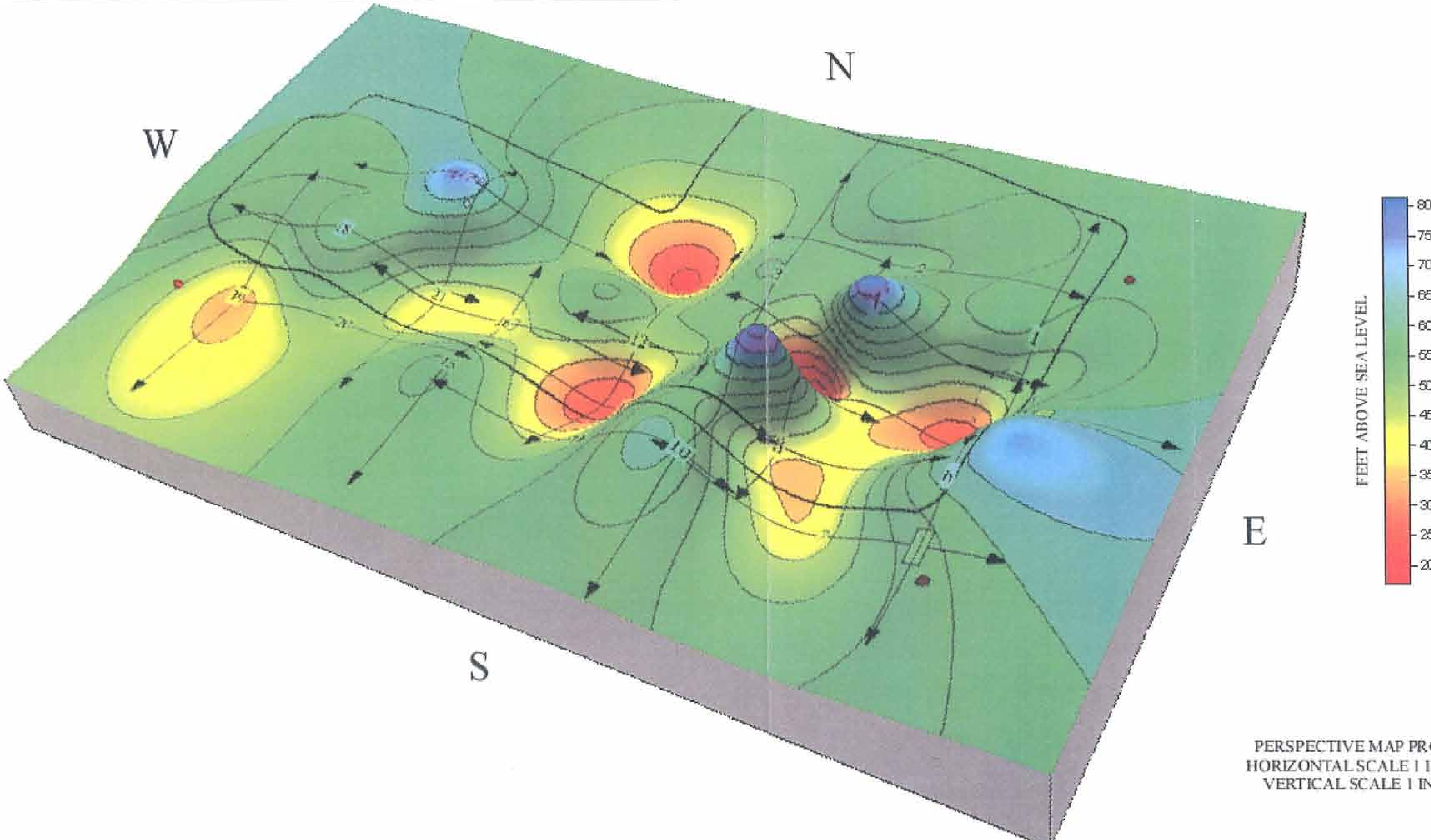
ELEVATION OF TOP OF LIMESTONE

Proposed Wal-Mart Supercenter
Retention Pond
Alachua, Florida

BY: M. Hays, Geologist
Investigation #2004516B

FOR: UES

DATE: 1-17-06



PERSPECTIVE MAP PROJECTION
HORIZONTAL SCALE 1 IN. = 100 FT.
VERTICAL SCALE 1 IN. = 50 FT.

GEOHAZARDS, INC.
Sinkholes• Swelling Clays• Hydrogeology
P.O. Box 14956
Gainesville, FL 32604
(352) 371-7243 1-800-770-9990
Fax: (352) 371-4410

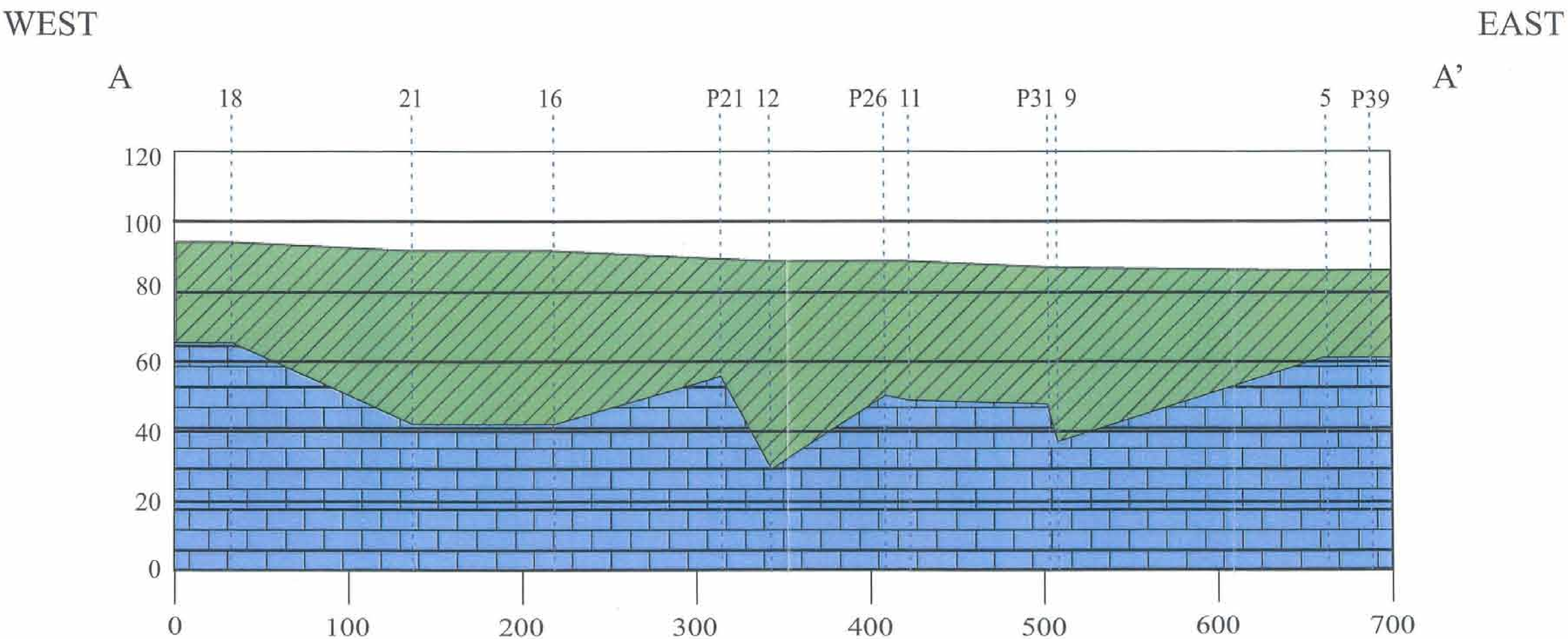
STRATIGRAPHIC PROFILE A - A′

Proposed Wal-Mart Supercenter
Retention Pond
Alachua, Florida

BY: M. Hays, Geologist
Investigation #2004516B

FOR: UES

DATE: 1-19-06



KEY:

Overburden (sand, clay mixtures)

Limestone

Center of ER Traverse or Boring Location

HORIZONTAL SCALE APPROXIMATELY 1 IN. = 60FT.
VERTICAL SCALE APPROXIMATELY 1 IN. = 30 FT.
2X VERTICAL EXAGGERATION

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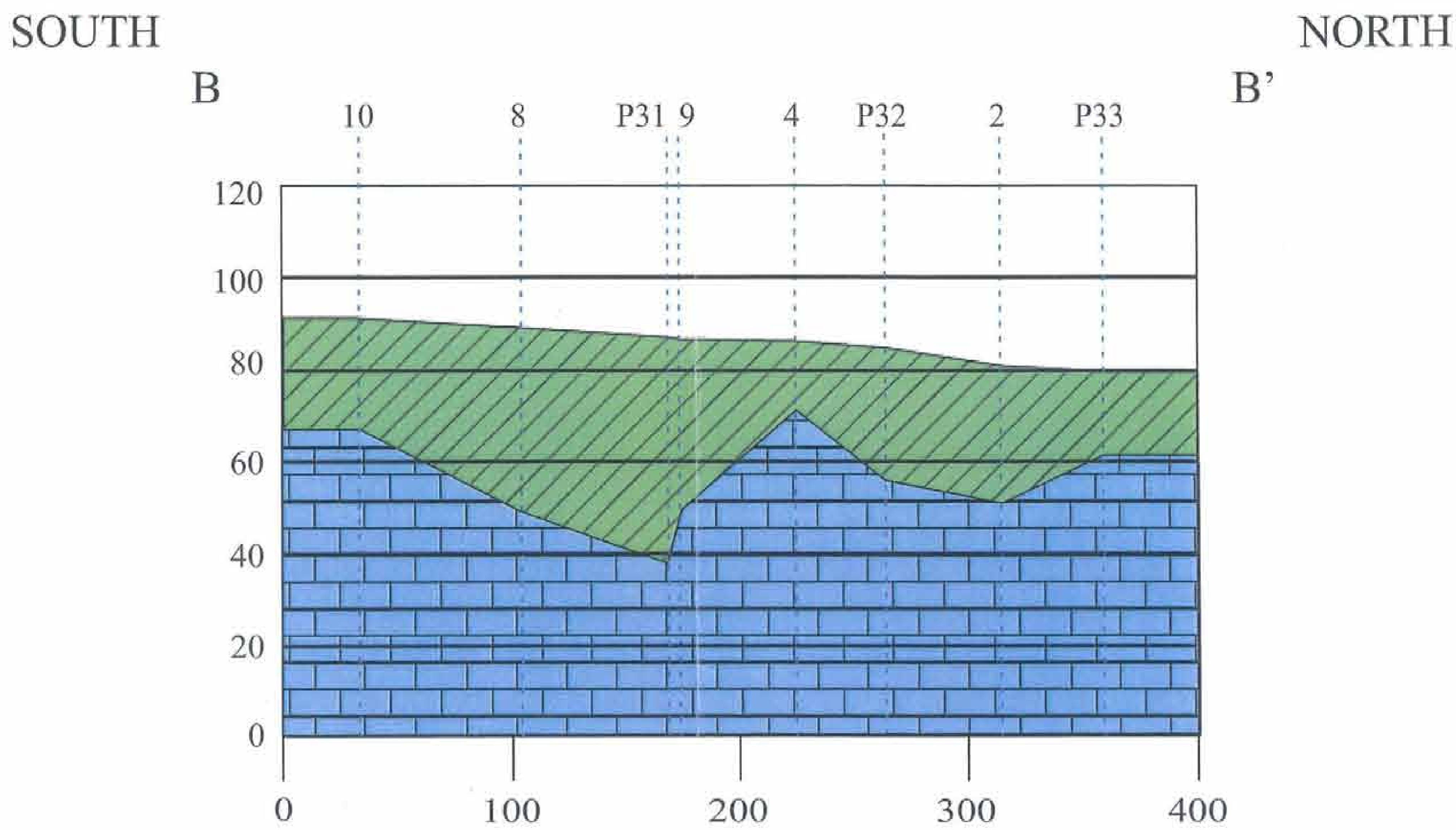
STRATIGRAPHIC PROFILE B - B′

Proposed Wal-Mart Supercenter
Retention Pond
Alachua, Florida

BY: M. Hays, Geologist
Investigation #2004516B

FOR: UES

DATE: 1-19-06



KEY:

Overburden (sand, clay mixtures)

Limestone

Center of ER Traverse or Boring Location

HORIZONTAL SCALE APPROXIMATELY 1 IN. = 60 FT.
VERTICAL SCALE APPROXIMATELY 1 IN. = 30 FT.
2X VERTICAL EXAGGERATION

Important Information About Your

Geotechnical Engineering Report

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

The following information is provided to help you manage your risks.

Geotechnical 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 civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- 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,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- 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. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of 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 equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.

ASFE
The Best People on Earth

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

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CONSTRAINTS AND RESTRICTIONS

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 variation 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 conclusion 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 readings. 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 requirements 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 investigation. 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.