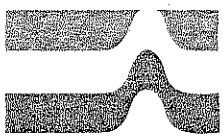
SUBSURFACE SOIL EXPLORATION, ANALYSIS AND RECOMMENDATIONS FOR PROPOSED "GRANDE BAY RESIDENTIAL DEVELOPMENT," U.S. 41, SARASOTA, FLORIDA



Ardaman & Associates, Inc.

OFFICES

Orlando, 8008 S. Orange Avenue, Orlando, Florida 32809, Phone (407) 855-3860
Bartow, 1525 Centennial Drive, Bartow, Florida 33830, Phone (863) 533-0858
Cocoa, 1300 N. Cocoa Boulevard, Cocoa, Florida 32922, Phone (321) 632-2503
Fort Lauderdale, 3665 Park Central Boulevard North, Pompano Beach, Florida 33064, Phone (954) 969-8788
Fort Myers, 9970 Bavaria Road, Fort Myers, Florida 33913, Phone (239) 768-6600
Miami, 2608 W. 84th Street, Hialeah, Florida 33016, Phone (305) 825-2683
Port Charlotte, 740 Tamiami Trail, Unit 3, Port Charlotte, Florida 33954, Phone (941) 624-3393
Port St. Lucie, 460 NW Concourse Place Unit #1, Port St. Lucie, Florida 34986-2248, Phone (772) 878-0072
Sarasota, 2500 Bee Ridge Road, Sarasota, Florida 34239, Phone (941) 922-3526
Tallahassee, 3175 West Tharpe Street, Tallahassee, Florida 32303, Phone (850) 576-6131
Tampa, 3925 Coconut Palm Drive, Suite 115, Tampa, Florida 33619, Phone (813) 620-3389
West Palm Beach, 2511 Westgate Avenue, Suite 10, West Palm Beach, Florida 33409, Phone (561) 687-8200

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Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

May 25, 2006
File No. 06-7352

TO: Bayonne Development, LLC
480 Blackburn Point Road
Osprey FL 34229

Attention: Karen Williams

SUBJECT: Subsurface Soil Exploration, Analysis and Recommendations for Proposed "Grande Bay Residential Development," U.S. 41, Sarasota, Florida

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Dear Ms. Williams:

As requested, our firm has completed a subsurface soil exploration program at the above-referenced site. The purpose of this program was to determine the nature and condition of the subsurface soils at the site and to make recommendations regarding foundation systems for the proposed structure.

This report documents our findings and conclusions. It has been prepared for the exclusive use of Bayonne Development and their consultants for specific application to the subject project, in accordance with generally-accepted geotechnical engineering practices. No other warranty, expressed or implied, is made.

SCOPE

The scope of our services has included the following items:

1. Reviewing the results of our earlier exploration at the site, as documented in our report dated May 6, 2005 (Ardaman File No. 05-7280).

2. Conducting eleven (11) Standard Penetration Test borings to determine the nature and condition of the subsurface soils.

3. Reviewing each soil sample obtained in our field testing program by a geotechnical engineer in the laboratory for further investigation and classification.

4. Performing laboratory test on selected samples.

5. Analyzing the existing soil conditions with respect to the proposed construction.

6. Preparing this report to document the results of our field testing program, engineering analysis and recommendations.

FIELD EXPLORATION PROGRAM

Our field exploration program consisted of conducting eleven (11) Standard Penetration Test borings at the locations shown on the attached Figure 1. These borings were performed to determine the nature and condition of the subsurface soils to a depth of 50 to 75 feet below the existing ground surface. The equipment and procedures used in the borings are described in greater detail in Appendix I of this report. The test boring locations and number were determined by Cubellis & Associates.

The test borings were located in the field utilizing the proposed test boring locations provided and an aerial photograph of the site. Some of the boring locations were moved due to the limited site clearing and the dense vegetation. The test boring locations should only be considered accurate to the degree implied by the method used. Should more accurate locations be required, a registered land surveyor should be retained.

GENERAL SUBSURFACE CONDITIONS

The general subsurface conditions encountered during the field exploration program are shown on the soil boring logs, included in Appendix I of this report. Soil stratification is based on examination of recovered soil samples and interpretation of field boring logs. The stratification lines represent the approximate boundaries between the soil types, while the actual transitions may be gradual.

On the date of our field exploration program, the water table was encountered at a depth of approximately 4 to 6 feet below existing grade. The water table level is anticipated to fluctuate due to seasonal rainfall variations, the tides and other factors.

It is noteworthy that organic soils (sandy muck) was encountered at a depth of 8.5 to 11 feet below the ground surface at Boring SPT-1 and at a depth of 8 to 9 feet below the ground surface at Boring SPT-7. Muck was also encountered at a depth of 5.5 to 9 feet below the ground surface at one (1) of our previous test boring locations (see our earlier report, referenced previously), which was performed near Boring SPT-1. Our original scope of work was also to include performing several auger borings in order to better define the area of this buried muck layer. This should be done once the site has been fully cleared. This will be discussed more later in this report.

LABORATORY TESTING PROGRAM

Representative soil samples obtained during our field sampling operation were packaged and transferred to our office and, thereafter, examined by a geotechnical engineer to obtain more accurate descriptions of the existing soil strata. Laboratory classification tests were performed on selected samples in order to better define their engineering properties. These tests included

determining the fines (silt and clay) content, water content and organic content of selected samples. The test results are listed at the respective sample depth on the soil boring logs in Appendix I. The soil descriptions shown on the soil boring logs are based on a visual classification procedure in general accordance with the Unified Soil Classification System (ASTM D-2488-84) and standard practice.

ANALYSIS AND RECOMMENDATIONS

We understand that the proposed structure is to consist of a five-story residential condominium, with four (4) residential floors over a parking level. For the purpose of our analyses, we have estimated that maximum column loads will likely be in the range of 500 to 600 kips.

Soils Analysis and Foundation Recommendations

The soils encountered at the site are not capable of supporting loads of this magnitude on surface (spread footing) foundation systems without excessive settlements. We, therefore, recommend that a pile foundation system be used to support the proposed structure. The piles will need to bear upon the dense to hard cemented soils and rock encountered below a depth of approximately 22 to 33 feet below the existing ground surface.

Foundations for the proposed structure may be designed utilizing either augered cast-in-place concrete or prestressed concrete piles. The following design criteria may be utilized:

PILE TYPE & SIZE	ESTIMATED PILE TOE EMBEDMENT (Below existing grade)	ESTIMATED ALLOWABLE COMPRES-SIVE CAPACITY	ESTIMATED ALLOW-ABLE TENSILE CAPACITY	ESTIMATED ALLOWABLE LATERAL CAPACITY
16" Diameter Augered Cast-In-Place Concrete	33 feet	55 tons	10 tons	8 tons
18" Diameter Augered Cast-In-Place Concrete	33 feet	60 tons	12 tons	12 tons
20" Diameter Augered Cast-in-Place Concrete	33 feet	75 tons	14 tons	15 tons
14" x 14" Prestressed Concrete	22 - 31 feet	45 tons	10 tons	8 tons
12" x 12" Prestressed Concrete	22- 31 feet	35 tons	8 tons	5 tons

The estimated allowable lateral capacity is calculated based upon the assumption of lateral load being applied at or near existing ground surface. Should the Department of Environmental Protection or design professionals require a pile toe embedment depth different from our recommendations, we must be given the opportunity to review their requirements, as they may substantially impact our recommendations. Should the Department of Environmental Protection or design professionals require a pile cap below existing ground surface, reduced pile capacities will occur as there will be less side area to develop frictional resistance. In this case, we must be given an opportunity to review the situation and estimate new pile capacities based on the reduced pile lengths.

Regardless of the pile type chosen, we recommend that a pile load test program be undertaken in order to verify the above capacities. A minimum of nine (9) test piles (or test probes) shall be installed at random locations distributed throughout the building area. A representative of Ardaman & Associates, Inc. should be present during test pile (or test probe) installation. We will then select two (2) pile locations for compression pile load testing and one (1) for tensile load testing, to verify the compressive and tensile capacities. If the required tensile capacities are less than 15 tons, however, the tensile load test will not be required.

In the case of augered cast-in-place concrete piles, the test pile program should consist of performing the minimum of nine (9) test probes. This consists of drilling holes with the same drilling equipment to be used for pile installation, but without cement grout injection. These shall be performed at non-production pile locations. Upon conclusion of the test probes, we will select three (3) locations for installation of actual piles for the compression and tensile load test.

The following sections provide additional information specific to each type of pile.

Augered Piles

The successful auger cast pile installation will depend upon the expertise of the contractor and the techniques used. While the installation of piles can be monitored to determine that the piles are installed in general accordance with specifications, it is not possible to make an absolute determination of actual pile capacity based upon installation activities as with driven piles.

A representative of Ardaman & Associates, Inc. should be present during pile installation to provide the necessary engineering documentation. Documentation would include information relative to pile penetration, condition of hole prior to concrete placement, the amount of concrete injected and the type of reinforcement used. Concrete quality control is also essential and should include field slump tests and compressive strength determinations. We have included a sample auger injected concrete pile specification as Appendix II of this report. This specification is made as a guide to the design professionals and we recommend that part of it be incorporated into the project specifications. In order to penetrate the dense soils and reach the recommended pile depths, it will be necessary for the auger pile contractor to provide equipment with sufficient torque and dead weight. We recommend a minimum torque of 25,000 ft-lbs and a minimum dead weight (including the drive motor and auger) or 5000 lbs plus another 1000 lbs if the auger flight exceeds 20 feet.

Driven Piles

In order to achieve the desired penetration, it may be necessary to pre-auger or pre-drill the soils to the partial pile depth. This will prevent over-stressing of the piles during the pile installation procedure and reduce vibrations resulting from the pile installation process. Jetting or washing should not be permitted as this may substantially reduce pile capacity. The piles should be driven at least the final 3.0 feet with a hammer capable of developing at least 20,000 ft-lbs of driving energy. The piles should be spaced so that they are no closer to each other than 3.0 feet on center. A driving resistance analysis, in accordance with Standard Building Code recommendations, should be conducted to confirm the capabilities of this report. A representative of Ardaman & Associates, Inc. should be present during pile installation to provide the necessary documentation.

Buried Organic Soils

As noted previously, buried organic soils (muck) were encountered at a depth of 8.5 to 11 feet at Boring SP-1 and at a depth of 8 to 9 feet at Boring SP-7. In addition, during our preliminary explorations at the site, muck was also encountered at a boring near SPT-1, at a depth of 5.5 to 9 feet below the existing ground surface.

Wether or not the materials need to be excavated beneath the structure depends upon several factors, including the thickness of the layer, its depth, the amount of fill materials that are to be placed the ability of the ground floor slab (parking garage floor) to tolerate some settlement. Once the site has been cleared, we recommend that either additional borings or backhoe test pits be performed in the vicinity of Borings SP-1 and SP-7 in order to better define the horizontal and vertical extent of the organic soils. We can then prepare more specific recommendations for their removal, if necessary.

GENERAL COMMENTS

The analysis and recommendations submitted in this report are based upon the data obtained from eleven (11) test borings performed at the locations indicated on the attached Figure 1. While the borings are representative of the subsurface conditions at their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and may be encountered. The nature and extent of variations may not become evident until during the course of pile installation. If variations then appear evident, it will be necessary for a reevaluation of the recommendations of this report to be made after performing on-site observations during the construction period and noting the characteristics of any variations. The boring logs and related information are based upon the driller's logs and visual examination of selected samples in the

laboratory. The delineation between soil types shown on the logs is approximate, and the description represents our interpretation of the subsurface conditions at the designated boring location on the particular date drilled.

It has been a pleasure to be of assistance to you with this project. Please contact us when we may be of further service to you, or should you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Jerry H. Kuehn, P.E.
Senior Project Engineer
Eng. Reg. No. 35557

Gary H. Schmidt, P.E.
Vice President
Eng. Reg. No. 12305

JHK/GHS:nh

cc: Tim Johnson, P.E. - Atwell-Hicks
Rich Rankin - Cubellis & Associates

APPENDIX I

SOIL BORING, SAMPLING & TEST METHODS
and
SOIL BORING LOGS