

BR WARD

CONFIDENTIAL

ENVIRONMENTAL PROTECTION DEPARTMENT – Biological Resources Division
Mailing Address: 115 South Andrews Avenue, Room A-240 • Fort Lauderdale, Florida 33301
954-519-1230 • FAX 954-519-1412

Via U.S. Mail

October 12, 2007

Joseph Vitolo
4577 Nob Hill Road #105
Sunrise, Florida 33351

**Re: Jurisdictional Determination – University Medical Campus
7700 N. University Drive, Tamarac, Florida
Folio No. 494103150240 & 50
Section: 03 Township: 49 S Range: 41 E
EPD File No. WD0709-005**

Dear Applicant:

The referenced site, outlined in black on the attached aerial photograph, was visited by the Broward County Environmental Protection Department (Department) on October 12, 2007. During that visit, it was determined that, at this time, there are no County jurisdictional wetlands on the site.

Based upon present conditions within the site, filling within the existing uplands will not require an Environmental Resource License. However, other activities such as excavation of a lake or canal, regulated under Article XI of the Natural Resource Protection Code, may require a license. The applicant is encouraged to contact the Department at the earliest convenient time to determine if, and what type of a license may be required prior to undertaking activities which may affect the existing surface water system. Additionally, this letter does not constitute a waiver of review by the Development Management Division of the Urban Planning and Redevelopment Department prior to clearing and grubbing.

This determination was made according to the Natural Resource Protection Code definition of *Regulated Aquatic and Wetland Resources* and Section 27-334(e), which incorporates the wetland delineation methodology ratified by the Florida Department of Environmental Protection or the South Florida Water Management District pursuant to 62-340 F.A.C. In the event of a conflict with a formal delineation conducted by the Florida Department of Environmental Protection or the South Florida Water Management District pursuant to 62-340 F.A.C. the determination of said Agency will be the controlling delineation. This County determination is valid for a period of no more than two (2) years from the date of this letter.

Please be advised that you may have wetlands and/or waters of the United States on your property, which would require receipt of a Department of Army (DA) permit prior to any dredging or filling activities. Please also be aware the receipt of state or local government permit does not obviate the need to obtain a DA permit prior to commencing work. For more information about the DA Regulatory Program, you may access the Corp's website at: <http://www.saj.usace.army.mil/permit/index.html>. You may also contact local Corps regulatory office for additional information at one of the following numbers: (561) 472-3508, (561) 472-3506 and (561) 472-3517.

Please contact me by phone at (954) 519-1228 or by e-mail at rstgeorge@broward.org if you have any questions.

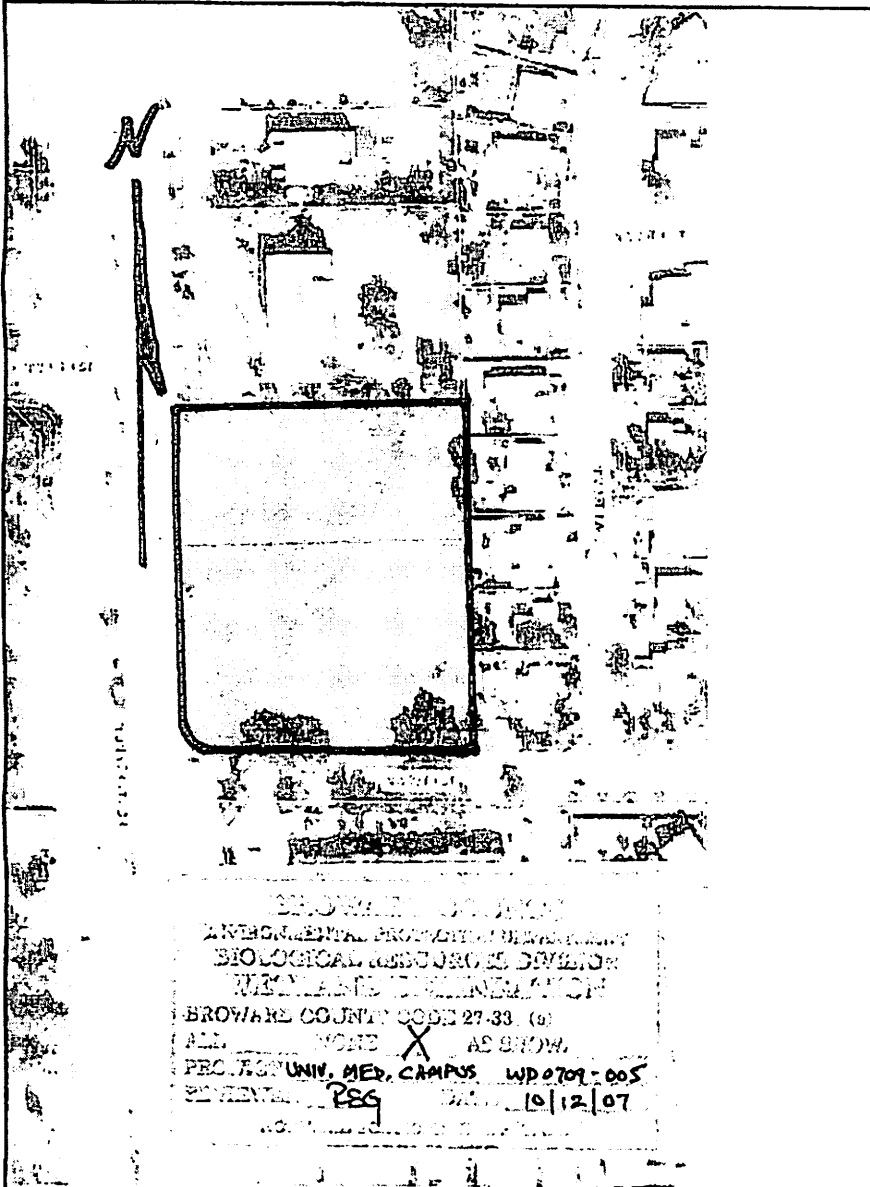
Sincerely,



Ryan St. George
Natural Resource Specialist II

Enc: Wetland Map
cc: John Cain, Courtyard Properties
Barb Conmy, SFWMD (via e-mail)

BR WARD
COUNTY
PROPERTY
APPRAISER

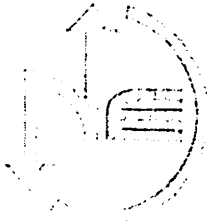


Scale
Date
Title

BROWARD COUNTY
ENVIRONMENTAL PROTECTION DEPARTMENT
BIOLOGICAL RESOURCES DIVISION
WETLAND DETERMINATION
BROWARD COUNTY CODE 27-33 (6)
ALL WETLANDS AS SHOWN.
PEC FOR UNIV. MED. CAMPUS WD0709-005
REVIEWED BY PEG DATE 10/12/07

University Medical Campus

0 61 ft



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St. Lucie 772-408-1050
Miami-Dade 305-557-3083
www.nuttingengineers.com

Geotechnical and Construction Materials | Engineering, Testing and Inspections | Environmental Services

March 25, 2009

Courtyard Construction, Inc.
Attn: Ms. Stacy Tufts
4577 Nob Hill Road/ Suite #105
Sunrise, FL 33351

Re: The Palms Medical Campus/ PO #3375CP
Bldg. #1/ 7770-7780 University Drive
Tamarac, FL

Gentlemen:

Based on field observations and randomly located density tests, results attached, it is our opinion that the foundation soils for the proposed building pad checked by us at the referenced test locations have been properly compacted to a minimum of 98 percent of the modified Proctor maximum dry density.

Further, based upon our review of the geotechnical engineering report prepared for the project by Nutting Engineers of Florida, Inc., it is our opinion that the soils beneath the building pad will support an allowable soil bearing pressure of 2500 psf as per the Florida Building Code, section 1818.2, 2004 edition, and ASTM standards.

The test results pertain to the specific test locations. Interpretation of these test results was accomplished in accordance with accepted standards of practice.

We appreciate this opportunity to work with you. Should you have any questions or require further service, please do not hesitate to contact the writer at your convenience.

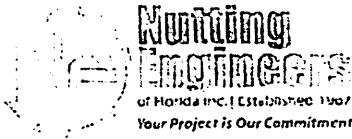
Respectfully submitted,
NUTTING ENGINEERS OF FLORIDA, INC.

RCW 3/26/09

Richard C. Wohlfarth, P.E #50858
Director of Engineering

Courtyard Palms Medical Campus #1 Pad RCW bb

OFFICES
Palm Beach
Miami-Dade
St. Lucie



**MOISTURE - DENSITY
RELATIONSHIP REPORT**

PROJECT NO. Boynton-2708
 CLIENT Courtyard Construction, Inc.
 CC.

TO
 Courtyard Construction, Inc.
 4577 Nob Hill Road/ Ste 105
 Sunrise, FL
 33351

ATTN: Stacy Tufts

PROJECT The Palms Medical Campus
 Building #1/PO #3375CP
 CONTRACTOR

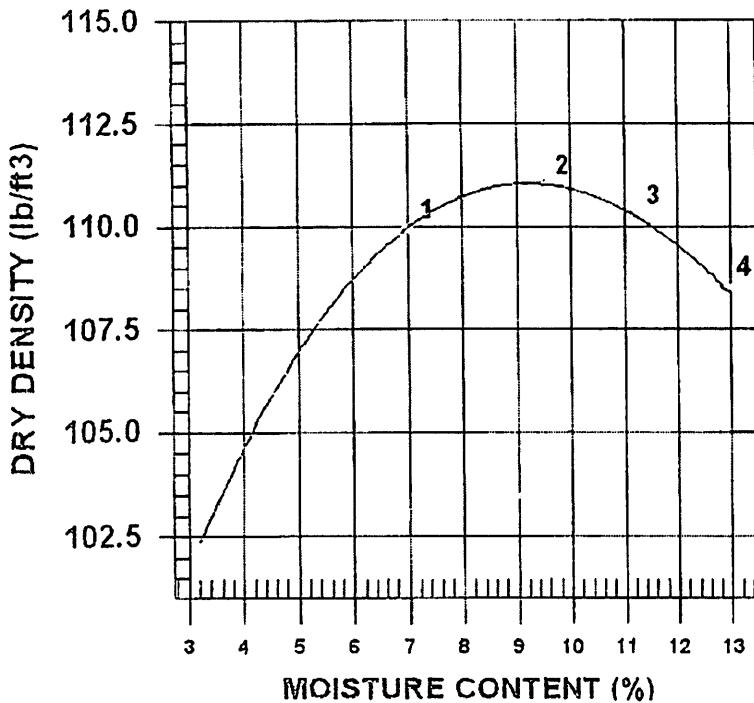
7770-7780 University Drive
 Tamarac

PROCTOR NO. 1 DATE TESTED Mar 24, 2009 DATE RECEIVED Mar 24, 2009 DATE SAMPLED Mar 23, 2009

INSITU MOISTURE	N/A %	COMPACTION STANDARD	Modified Proctor,
SAMPLED BY	J. Molina		ASTM D1557
TESTED BY	C. Costantino	COMPACTION PROCEDURE	C: 6" Mold,
SUPPLIER	On-site Material		Passing 3/4"
SOURCE	Building Pad	RAMMER TYPE	Automatic

MATERIAL IDENTIFICATION
 MAJOR COMPONENT Brown Sand
 MINOR COMPONENT
 ROCK TYPE

TOTAL NUMBER OF TRIALS 4



TRIAL NUMBER	WET DENSITY (lb/ft3)	DRY DENSITY (lb/ft3)	MOISTURE CONTENT (%)
1	117.6	109.9	7.0
2	121.5	111.0	9.5
3	122.5	110.2	11.2
4	122.5	108.5	12.9

	MAXIMUM DRY DENSITY (lb/ft3)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	111.0	9.0

COMMENTS

PER. Richard C. Wohlfarth 3/26/09
 Richard C. Wohlfarth, P.E. #50858

PROJECT NO. Boynton-2708
CLIENT Courtyard Construction, Inc.
C.C.

TO
Courtyard Construction, Inc.
4577 Nob Hill Road/ Ste 105
Sunrise, FL
33351

ATTN: Stacy Tufts

PROJECT The Palms Medical Campus
Building #1/PO #3375CP

LOCATION 7770-7780 University Drive
Tamarac

REPORT NO. 1 NO. OF DENSITIES 5 TESTED BY J. Molina DATE TESTED Mar 23, 2009

CONTRACTOR AREA CONSTRUCTION TYPE			See Supporting Lab Testing Reports for Detailed Material Descriptions				
DENSITY NUMBER	LOCATION	Laboratory Soil Identifier	MOISTURE		DRY DENSITY		COMPACTION %
			FIELD	LAB	FIELD	LAB	
1	NE area of pad	Brown Sand	8.7	9.0	112.0	111.0	101
2	NW area of pad	Brown Sand	8.5	9.0	110.5	111.0	100
3	SE area of pad	Brown Sand	8.2	9.0	111.7	111.0	101
4	SE area of pad	Brown Sand	8.1	9.0	112.1	111.0	101
5	Approx. center of pad	Brown Sand	9.1	9.0	111.8	111.0	101

FIELD METHOD Nuclear ASTM D6938
LABORATORY METHOD Modified Proctor ASTM D1557
COMMENTS

SPECIFIED COMPACTION 98
LOW DENSITIES INDICATED *

Page 1 of 1 Mar 25, 2009 Nutting Engineers of Florida, Inc.

PER Richard C. Wohlfarth 3/26/09
Richard C. Wohlfarth, P.E. #50858

These test results only represent compaction measured at the location reported to a maximum depth of 12 inches below the surface tested. This report does not reflect bearing capacity or deeper soil conditions.



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March 25, 2009

Courtyard Construction, Inc.
Attn: Ms. Stacy Tufts
4577 Nob Hill Road/ Suite #105
Sunrise, FL 33351

Re: The Palms Medical Campus/ PO #3375CP
Bldg. #2/ 7710-7720 University Drive
Tamarac, FL

Gentlemen:

Based on field observations and randomly located density tests, results attached, it is our opinion that the foundation soils for the proposed building pad checked by us at the referenced test locations have been properly compacted to a minimum of 98 percent of the modified Proctor maximum dry density.

Further, based upon our review of the geotechnical engineering report prepared for the project by Nutting Engineers of Florida, Inc., it is our opinion that the soils beneath the building pad will support an allowable soil bearing pressure of 2500 psf as per the Florida Building Code, section 1818.2, 2004 edition, and ASTM standards.

The test results pertain to the specific test locations. Interpretation of these test results was accomplished in accordance with accepted standards of practice.

We appreciate this opportunity to work with you. Should you have any questions or require further service, please do not hesitate to contact the writer at your convenience.

Respectfully submitted,
NUTTING ENGINEERS OF FLORIDA, INC.

Richard C. Wohlfarth, P.E #50858
Director of Engineering

Courtyard Palms Medical Campus #2 Pad.RCW bb

OFFICES
Palm Beach
Miami-Dade
St. Lucie



MOISTURE - DENSITY RELATIONSHIP REPORT

PROJECT NO. Boynton-2709
 CLIENT Courtyard Construction, Inc.
 C.C

TO
 Courtyard Construction, Inc.
 4577 Nob Hill Road/ Ste 105
 Sunrise, FL
 33351
 ATTN: Stacy Tufts

PROJECT The Palms Medical Campus
 Building #2/ PO #3375CP
 CONTRACTOR

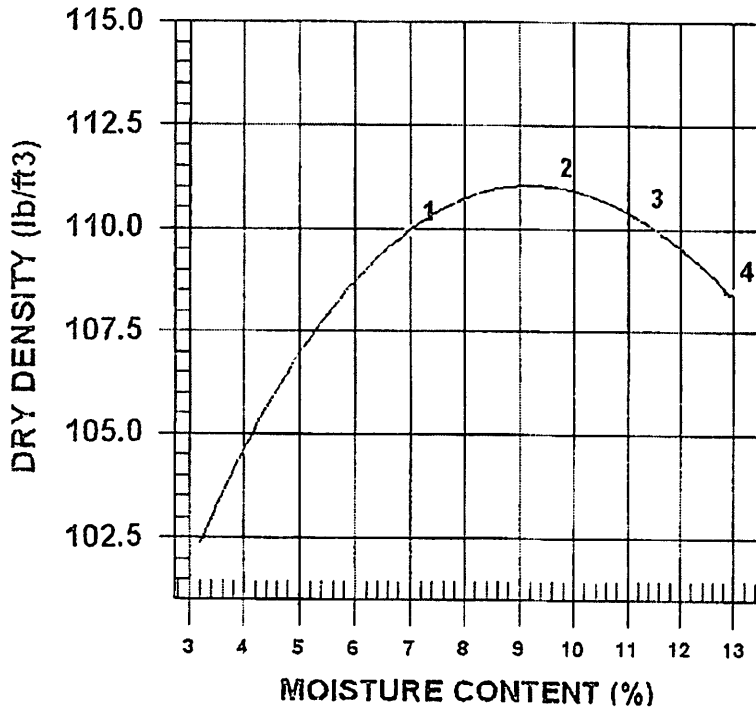
7710-7720 University Drive
 Tamarac

PROCTOR NO. 1 DATE TESTED Mar 24, 2009 DATE RECEIVED Mar 24, 2009 DATE SAMPLED Mar 23, 2009

INSITU MOISTURE	N/A %	COMPACTION STANDARD	Modified Proctor,
SAMPLED BY	J. Molina		ASTM D1557
TESTED BY	C. Costantino	COMPACTION PROCEDURE	C: 6" Mold,
SUPPLIER	On-site Material		Passing 3/4"
SOURCE	Building Pad	RAMMER TYPE	Automatic

MATERIAL IDENTIFICATION
 MAJOR COMPONENT Brown Sand
 MINOR COMPONENT
 ROCK TYPE

TOTAL NUMBER OF TRIALS 4



TRIAL NUMBER	WET DENSITY (lb/ft3)	DRY DENSITY (lb/ft3)	MOISTURE CONTENT (%)
1	117.6	109.9	7.0
2	121.5	111.0	9.5
3	122.5	110.2	11.2
4	122.5	108.5	12.9

	MAXIMUM DRY DENSITY (lb/ft3)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	111.0	9.0

COMMENTS

PER. Richard C. Wohlfarth 3/24/09
 Richard C. Wohlfarth, P.E. #50858

PROJECT NO. Boynton-2709
CLIENT Courtyard Construction, Inc.
C.C.

TO
Courtyard Construction, Inc.
4577 Nob Hill Road/ Ste 105
Sunrise, FL
33351

ATTN: Stacy Tufts

PROJECT The Palms Medical Campus
Building #2/ PO #3375CP

LOCATION 7710-7720 University Drive
Tamarac

REPORT NO. 1 NO. OF DENSITIES 5 TESTED BY J. Molina DATE TESTED Mar 23, 2009

CONTRACTOR AREA CONSTRUCTION TYPE	Medical Building Pad (0-12")	See Supporting Lab Testing Reports for Detailed Material Descriptions
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DENSITY NUMBER	LOCATION	Laboratory Soil Identifier	MOISTURE		DRY DENSITY		COMPACTION %
			FIELD	LAB	FIELD	LAB	
1	NE area of pad	Brown Sand	9.1	9.0	111.7	111.0	101
2	NW area of pad	Brown Sand	9.2	9.0	110.7	111.0	100
3	SE area of pad	Brown Sand	8.5	9.0	110.8	111.0	100
4	SW area of pad	Brown Sand	8.3	9.0	112.1	111.0	101
5	Approx. center of pad	Brown Sand	8.1	9.0	111.5	111.0	101

FIELD METHOD	Nuclear ASTM D6938	SPECIFIED COMPACTION	98
LABORATORY METHOD	Modified Proctor ASTM D1557	LOW DENSITIES INDICATED	*
COMMENTS			

Page 1 of 1 Mar 25, 2009 Nutting Engineers of Florida, Inc.

PER. Richard C. Wohlfarth 3/26/09
Richard C. Wohlfarth, P.E. #50858

These test results only represent compaction measured at the location reported to a maximum depth of 12 inches below the surface tested. This report does not reflect bearing capacity or deeper soil conditions.



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March 25, 2009

Courtyard Construction, Inc.
Attn: Ms. Stacy Tufts
4577 Nob Hill Road/ Suite #105
Sunrise, FL 33351

Re: The Palms Medical Campus/ PO #3375CP
Bldg. #3/ 7750-7760 University Drive
Tamarac, FL

Gentlemen:

Based on field observations and randomly located density tests, results attached, it is our opinion that the foundation soils for the proposed building pad checked by us at the referenced test locations have been properly compacted to a minimum of 98 percent of the modified Proctor maximum dry density.

Further, based upon our review of the geotechnical engineering report prepared for the project by Nutting Engineers of Florida, Inc., it is our opinion that the soils beneath the building pad will support an allowable soil bearing pressure of 2500 psf as per the Florida Building Code, section 1818.2, 2004 edition, and ASTM standards.

The test results pertain to the specific test locations. Interpretation of these test results was accomplished in accordance with accepted standards of practice.

We appreciate this opportunity to work with you. Should you have any questions or require further service, please do not hesitate to contact the writer at your convenience.

Respectfully submitted,
NUTTING ENGINEERS OF FLORIDA, INC.

Richard C. Wohlfarth, P.E #50858
Director of Engineering

Courtyard Palms Medical Campus #3 Pad.RCW bb

OFFICES

Palm Beach

Miami-Dade

St. Lucie

**MOISTURE - DENSITY
 RELATIONSHIP REPORT**

PROJECT NO. Boynton-2710
 CLIENT Courtyard Construction, Inc.
 C.C.

TO
 Courtyard Construction, Inc.
 4577 Nob Hill Road/ Ste 105
 Sunrise, FL
 33351

ATTN: Stacy Tufts

PROJECT The Palms Medical Campus
 Building #3/ PO #3375CP

7750-7760 University Drive
 Tamarac

CONTRACTOR

PROCTOR NO. 1 DATE TESTED Mar 24, 2009 DATE RECEIVED Mar 24, 2009 DATE SAMPLED Mar 23, 2009

INSITU MOISTURE	N/A %	COMPACTION STANDARD	Modified Proctor,
SAMPLED BY	J. Molina		ASTM D1557
TESTED BY	C. Costantino	COMPACTION PROCEDURE	C: 6" Mold,
SUPPLIER	On-site Material		Passing 3/4"
SOURCE	Building Pad	RAMMER TYPE	Automatic

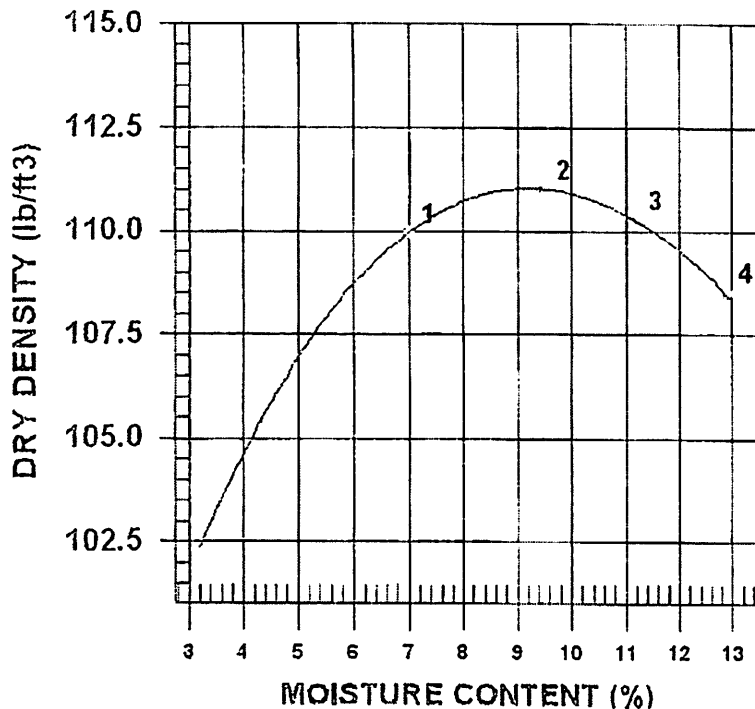
MATERIAL IDENTIFICATION

MAJOR COMPONENT Brown Sand

MINOR COMPONENT

ROCK TYPE

TOTAL NUMBER OF TRIALS 4



TRIAL NUMBER	WET DENSITY (lb/ft3)	DRY DENSITY (lb/ft3)	MOISTURE CONTENT (%)
1	117.6	109.9	7.0
2	121.5	111.0	9.5
3	122.5	110.2	11.2
4	122.5	108.5	12.9

	MAXIMUM DRY DENSITY (lb/ft3)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	111.0	9.0

COMMENTS

PER Richard C. Wohlfarth 3/26/09
 Richard C. Wohlfarth, P.E. #50858

PROJECT NO. Boynton-2710
CLIENT Courtyard Construction, Inc.
C.C.

TO
[
Courtyard Construction, Inc.
4577 Nob Hill Road/ Ste 105
Sunrise, FL
33351
]

ATTN: Stacy Tufts

PROJECT The Palms Medical Campus
Building #3/ PO #3375CP

LOCATION 7750-7760 University Drive
Tamarac

REPORT NO 1 NO. OF DENSITIES 5 TESTED BY J. Molina DATE TESTED Mar 23, 2009

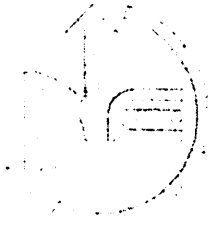
CONTRACTOR AREA CONSTRUCTION TYPE			See Supporting Lab Testing Reports for Detailed Material Descriptions				
DENSITY NUMBER	LOCATION	Laboratory Soil Identifier	MOISTURE		DRY DENSITY		COMPACTION %
			FIELD	LAB	FIELD	LAB	
1	NE area of pad	Brown Sand	7.8	9.0	110.3	111.0	99
2	NW area of pad	Brown Sand	9.1	9.0	110.8	111.0	100
3	SE area of pad	Brown Sand	8.2	9.0	110.0	111.0	99
4	SW area of pad	Brown Sand	8.5	9.0	111.0	111.0	100
5	Approx. center of pad	Brown Sand	8.0	9.0	110.7	111.0	100

FIELD METHOD Nuclear ASTM D6938 SPECIFIED COMPACTION 98
LABORATORY METHOD Modified Proctor ASTM D1557 LOW DENSITIES INDICATED *

Page 1 of 1 Mar 25, 2009 Nutting Engineers of Florida, Inc

PER. Ray 3/26/09
Richard C. Wohlforth, P.E. #50858

These test results only represent compaction measured at the location reported to a maximum depth of 12 inches below the surface tested. This report does not reflect bearing capacity or deeper soil conditions.



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Miami-Dade 305-557-3083
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March 25, 2009

Courtyard Construction, Inc.
Attn: Ms. Stacy Tufts
4577 Nob Hill Road/ Suite #105
Sunrise, FL 33351

Re: The Palms Medical Campus/ PO #3375CP
Bldg. #4/ 7730-7740 University Drive
Tamarac, FL

Gentlemen:

Based on field observations and randomly located density tests, results attached, it is our opinion that the foundation soils for the proposed building pad checked by us at the referenced test locations have been properly compacted to a minimum of 98 percent of the modified Proctor maximum dry density.

Further, based upon our review of the geotechnical engineering report prepared for the project by Nutting Engineers of Florida, Inc., it is our opinion that the soils beneath the building pad will support an allowable soil bearing pressure of 2500 psf as per the Florida Building Code, section 1818.2, 2004 edition, and ASTM standards.

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Respectfully submitted,
NUTTING ENGINEERS OF FLORIDA, INC.

Richard C. Wohlfarth, P.E #50858
Director of Engineering

Courtyard Palms Medical Campus #4 Pad.RCW bb

OFFICES
Palm Beach
Miami-Dade



MOISTURE - DENSITY RELATIONSHIP REPORT

TO
 Courtyard Construction, Inc.
 4577 Nob Hill Road/ Ste 105
 Sunrise, FL
 33351

PROJECT NO. Boynton-2711
 CLIENT Courtyard Construction, Inc.
 CC.

ATTN: Stacy Tufts

PROJECT The Palms Medical Campus
 Building #4/ PO #3375CP
 CONTRACTOR

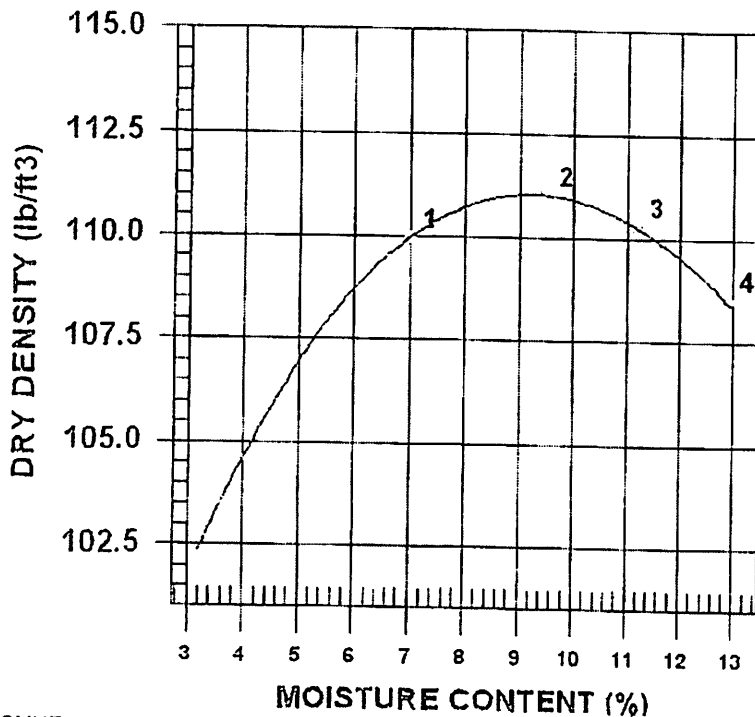
7730-7740 University Drive
 Tamarac

PROCTOR NO. 1 DATE TESTED Mar 24, 2009 DATE RECEIVED Mar 24, 2009 DATE SAMPLED Mar 23, 2009

INSITU MOISTURE	N/A %	COMPACTION STANDARD	Modified Proctor,
SAMPLED BY	J. Molina		ASTM D1557
TESTED BY	C. Costantino	COMPACTION PROCEDURE	C: 6" Mold,
SUPPLIER	On-site Material		Passing 3/4"
SOURCE	Building Pad	RAMMER TYPE	Automatic

MATERIAL IDENTIFICATION
 MAJOR COMPONENT Brown Sand
 MINOR COMPONENT
 ROCK TYPE

TOTAL NUMBER OF TRIALS 4



TRIAL NUMBER	WET DENSITY (lb/ft3)	DRY DENSITY (lb/ft3)	MOISTURE CONTENT (%)
1	117.6	109.9	7.0
2	121.5	111.0	9.5
3	122.5	110.2	11.2
4	122.5	108.5	12.9

	MAXIMUM DRY DENSITY (lb/ft3)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	111.0	9.0

COMMENTS

PER. Richard C. Wohlfarth 3/26/09
 Richard C. Wohlfarth, P.E. #50858

TO
 Courtyard Construction, Inc.
 4577 Nob Hill Road/ Ste 105
 Sunrise, FL
 33351

PROJECT NO. Boynton-2711
 CLIENT Courtyard Construction, Inc.
 CC.

ATTN: Stacy Tufts

PROJECT The Palms Medical Campus
 Building #4/ PO #3375CP

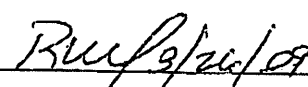
LOCATION 7730-7740 University Drive
 Tamarac

REPORT NO. 1 NO. OF DENSITIES 5 TESTED BY J. Molina DATE TESTED Mar 23, 2009

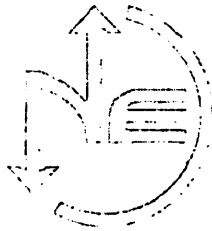
CONTRACTOR AREA CONSTRUCTION TYPE			Medical Building Pad (0-12")				See Supporting Lab Testing Reports for Detailed Material Descriptions	
DENSITY NUMBER	LOCATION	Laboratory Soil Identifier	MOISTURE		DRY DENSITY		COMPACTION %	
			FIELD	LAB	FIELD	LAB		
1	NE area of pad	Brown Sand	8.8	9.0	112.0	111.0	101	
2	NW area of pad	Brown Sand	7.2	9.0	111.0	111.0	100	
3	SE area of pad	Brown Sand	8.3	9.0	111.8	111.0	101	
4	SW area of pad	Brown Sand	8.7	9.0	110.0	111.0	99	
5	Approx. center of pad	Brown Sand	8.1	9.0	111.7	111.0	101	

FIELD METHOD Nuclear ASTM D6938 SPECIFIED COMPACTION 98
 LABORATORY METHOD Modified Proctor ASTM D1557 LOW DENSITIES INDICATED *
 COMMENTS

Page 1 of 1 Mar 25, 2009 Nutting Engineers of Florida, Inc.

PER. 
 Richard C. Wohlfarth, P.E. #50858

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St. Lucie 772-408-1050
Miami-Dade 305-557-3083
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March 27, 2008

Mr. John Cain
Courtyard Construction
4577 Nob Hill Road, Suite 105
Sunrise, Florida 33351 Phone: 954-572-5451 Fax: 954-572-2678

Subject: Addendum to the Report of Geotechnical Exploration
 The Palms Medical Campus
 NE Corner of University Drive & NW 77th Street
 Tamarac, Florida

Dear Mr. Cain:

Nutting Engineers of Florida, Inc. has performed a geotechnical exploration for the proposed buildings to be located at the above referenced site in Tamarac, Florida. This letter is an addendum to the Report of Geotechnical Exploration dated July 11, 2007.

The soil survey maps for Broward County revealed that at the time the survey was conducted, the soils at the site were described as Plantation Muck. However, the project site was located along the border with the Hallandale-Urban land complex soil series. Based on the soil boring test results performed for this project, it is our opinion that this site more closely resembles the Hallandale-Urban land complex.

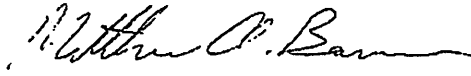
Hallandale-Urban land complex consists of nearly level, poorly drained, Hallandale sand that has been graded and leveled in many places for urban development. Approximately 40 percent of the complex is open land, such as lawns, vacant lots, and undeveloped areas. Sidewalks, streets, parking lots, and buildings cover the remaining 60 percent of the complex. The Hallandale series is underlain by limestone at depths ranging from 7 to 20 inches, but has solution holes as deep as 50 inches or more.

Surface organics to a depth of two feet was encountered in test boring B-1 only. All other test borings did not encounter surface organics. All surface organics in the area of test boring B-1 should be removed and replaced with clean structural fill as described in the Report of Geotechnical Exploration. We recommend that this removal process be performed in the presence of a Nutting Geotechnical Engineer.

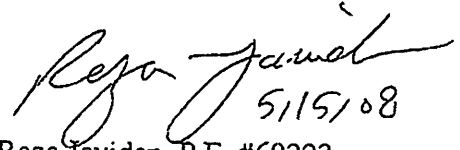
OFFICES
Palm Beach
Miami-Dade
St. Lucie

We appreciate the opportunity to provide these services for you. If we can be of any further assistance, or if you need additional information, please feel free to contact us.

Sincerely,
NUTTING ENGINEERS OF FLORIDA, INC.

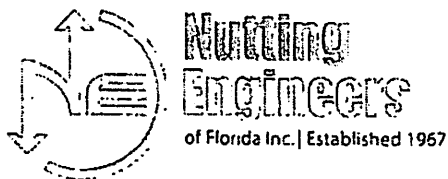


Matthew A. Barnes, E.I.
Project Engineer



Reza Javidan, P.E. #60223
Sr. Geotechnical Engineer

LTR COURTYARD CONST UNIV MED CAMPUS 10757 14 MAB



COPY

**REPORT OF
GEOTECHNICAL EXPLORATION**

**THE PALMS MEDICAL CAMPUS
NE CORNER OF UNIVERSITY DRIVE & NW 77TH STREET
TAMARAC, FLORIDA**

FOR

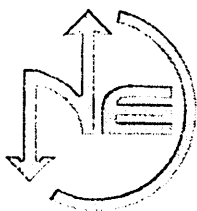
**COURTYARD CONSTRUCTION
10260 NW 47TH STREET
SUNRISE, FLORIDA 33351**

PREPARED BY

**NUTTING ENGINEERS OF FLORIDA, INC.
1310 NEPTUNE DRIVE
BOYNTON BEACH, FLORIDA 33426**

ORDER NO: 10757.14

JULY 2007

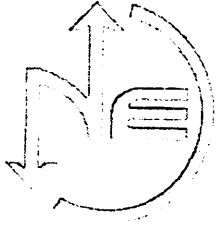


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Broward 954-941-8700
St. Lucie 772-408-1050
Miami-Dade 305-557-3083
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Geotechnical and Construction Materials | Engineering, Testing and Inspections | Environmental Services

July 11, 2007

Mr. Stacey Tufts
Courtyard Construction
10260 NW 47th Street
Sunrise, Florida 33351

Phone: 954-572-5451

Fax: 954-572-2678

Subject: Report of Geotechnical Exploration
The Palms Medical Campus
NE Corner of University Drive & NW 77th Street
Tamarac, Florida

Dear Mr. Tufts:

Nutting Engineers of Florida, Inc. has performed a geotechnical exploration for the proposed buildings to be located at the above referenced site in Tamarac, Florida. The purpose of this exploration was to obtain information concerning the site and subsurface conditions in order to provide site preparation and foundation design recommendations for support of the proposed construction. This report presents our findings and recommendations.

PROJECT INFORMATION

We understand that plans include the construction of medical buildings consisting of four individual units two in the front and two at the back of the subject site, as located on the attached test boring location plan. Based on discussions with Mr. John Cain we understand that all buildings are one story in height, the front two units of each approximately 4625 square feet in area and the rear units of each 4300 square feet in area. Additional improvements for the subject site will also contain asphalt paved parking and roadways. We were provided a sketch of the site showing the proposed location of the building and the asphalt paved parking lots and roadways. We also understand that the proposed construction will be of reinforced concrete block masonry with #5 rebars at 4 feet center to center vertically spaced.

Based on existing elevations approximately one to two feet of fill may be required to bring the site up to construction grade, however final elevations should be determined by a Professional Architect.

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Any changes in the above-discussed details and any information not discussed and found relevant to this project should be brought to our attention in order to potentially amend our analysis and recommendations with in this report.

GENERAL SUBSURFACE CONDITIONS

Soil Survey Maps

The soil survey maps for Broward County revealed that at the time the survey was conducted, the soils at the site were described as Plantation Muck. This is a nearly level, very poorly drained soil that has a muck surface layer over sandy mineral material. It is in broad flats along the eastern edge of the Everglades. The organic surface layer is subject to oxidation, which decreases its amount of organic material each year. We note that the maximum depth of the survey is approximately 6 feet.

In order to explore the subsurface conditions at the site, three Standard Penetration Test (SPT) borings were performed to a depth of 15 feet below ground surface in the area of the proposed building.

The drill technician maintained a field boring report, which indicates depth of each stratum, material type, blow counts, groundwater levels and other pertinent information. All samples were inspected in our laboratory and final test boring reports prepared. A copy of this report is included in the appendix.

Test Boring Results

In general the borings revealed a surface layer of loose to medium dense brown to light tan quartz fine sand and limestone fragments to depths in the range of 2 to 5 feet underlain by soft to hard tan limestone and some light tan quartz fine sand to a depth of 15 feet, the maximum depth explored. Boring B-1 indicated Organic silt and sand material from the surface to a depth of 2 feet.

Ground Water Information

The immediate depth to water referenced to adjoining surface grade at the time the soil borings were performed was approximately 3.5 feet. Groundwater elevations may vary substantially over time due to many area specific parameters such as rainfall, droughts, storm events, flood control activities, nearby surface water bodies, tidal activity, construction dewatering, wellfield activity, pumping and other factors. Given these factors and other considerations, the groundwater depth information provided in this report should be considered approximate with substantial variations from those values possible. For these reasons, this immediate depth to water data **should not** be relied upon alone for project design considerations. If more accurate static groundwater elevation data is needed, piezometers should be installed, survey of the project area for evidence of current groundwater elevation influences such as wellfields, and depth to water measurements performed over time to develop additional groundwater elevational data.

ANALYSIS AND RECOMMENDATIONS

Prior to any construction test pits must be performed utilizing a backhoe within the area of the boring B-1 in the presence of a Nutting Geotechnical Engineer to delineate the organic area.

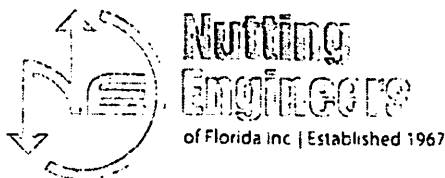
The borings performed for this project revealed that once the site has been prepared in accordance with our site preparation recommendations presented in this report, the proposed building may be supported on a shallow foundation system using an allowable bearing pressure of 2,500 pounds per square foot. Once plans are more finalized for the proposed construction, we should review the plans to determine whether additional details or changes to our recommendations are warranted.

We recommend a minimum width of 18 inches for continuous footings and 30 inches for individual footings, even though the soil bearing pressure may not be fully developed in all cases. We recommend that the bottom of footings be at least 18 inches below the lowest adjacent finished grade.

It is our opinion that the floor slab system may be constructed as a slab on grade. We recommend that a vapor barrier be placed between the soil and concrete. We also recommend that the reinforcing steel mesh be placed at the approximate center of the slab for tensile support.

Settlement Analysis

Settlement analysis was performed using the Schmertmann method. It was determined that upon completion, long-term total settlements should be on the order of less than approximately one inch. Differential settlements should be approximately one-half of the total settlement. Distortions that occur along wall footings should not be more than 1 in 500. Most of this settlement should occur upon the application of the dead load during construction.



Existing Pavements

Where the proposed building will be located over the existing pavement areas, the asphalt, base course, and subbase course will need to be removed beneath the building footprint and to a lateral distance of five feet outside the construction limits. The purpose is to provide a uniform base beneath the building.

Site Preparation

All grass, weeds, and root zones should be stripped and removed from the construction area to a lateral distance of at least 5 feet beyond the proposed construction limits where practical. **Prior to any construction test pits must be performed utilizing a backhoe within the area of the boring B-1 in the presence of a Nutting Geotechnical Engineer to delineate the organic area.**

Upon approval by the geotechnical engineer, the stripped surface should be wetted, and then compacted with at least ten passes of a vibratory roller having a minimum dynamic force of 10 tons. Also, the surface should be compacted until a density equivalent to at least 95 percent of the modified Proctor maximum dry density (ASTM D-1557) is achieved to a depth of at least 12 inches below the compacted surface.

Structural fill placed above the proof rolled surface may then consist of clean granular soils, free of debris and organics, and shall have no more than 10 percent passing the No. 200 sieve, with a maximum particle size of 3 inches. Fill be placed in lifts not exceeding 6 inches in loose thickness when using the vibratory compaction equipment described previously. Each lift should be thoroughly compacted until densities equivalent to at least 98 percent of the modified Proctor maximum dry density are uniformly obtained.

Following site and building pad construction as discussed above, the foundation area should be excavated and the footings formed.

The bottom of foundation excavations should be compacted after excavation to develop a minimum density requirement of 98 percent of the maximum modified Proctor dry density, for a minimum depth of one (1) foot below the bottom of the footing depth, as determined by field density compaction tests. The floor slab area should also be compacted in the same manner.

Pavements

Pavement areas should be compacted to a minimum of 98 percent of the modified Proctor maximum dry density to a depth of at least 12 inches below the subgrade level. We recommend that stabilized subgrade having a minimum Limerock Bearing Ratio (LBR) of 40 be placed to a depth of approximately one foot below the base course. The base course will range from approximately 6 to 8 inches, and should have a minimum LBR of 100. We can provide more detailed pavement design recommendations including material types and thickness. However, it would be necessary to provide us with the anticipated traffic loading characteristics and pavement design life.

General

Our client for this geotechnical evaluation was:

Courtyard Construction
10260 NW 47th Street
Sunrise, Florida 33351

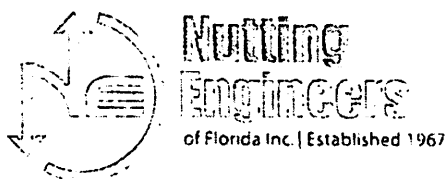
The contents of this report are for the exclusive use of the client, the client's design & construction team and governmental authorities for this specific project exclusively. Information conveyed in this report shall not be used or relied upon by other parties or for other projects without the expressed written consent of NUTTING ENGINEERS OF FLORIDA, INC.

This report discusses geotechnical considerations for this site based upon observed conditions and our understanding of proposed construction for foundation support. Environmental issues including (but not limited to), soil and/or groundwater contamination are beyond our scope of service for this project.

Prior to initiating compaction operations, we recommend that representative samples of the structural fill material to be used and acceptable in-place soils be collected and tested to determine their compaction and classification characteristics. The maximum dry density, optimum moisture content, gradation and plasticity characteristics should be determined. These tests are needed for compaction quality control of the structural fill and existing soils, and to determine if the fill material is acceptable.

A representative number of in-place field density tests should be performed in the compacted existing soils and in each lift of structural fill or backfill to confirm that the required degree of compaction has been obtained.

If conditions are encountered which are not consistent with the findings presented in this report, or if proposed construction is moved from the location studied, this office shall be notified immediately so that the condition or change can be evaluated and appropriate action taken.



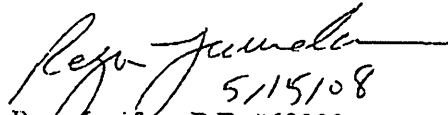
The vibratory compaction equipment could cause vibrations that could be felt by persons within adjacent buildings. The contractor should exercise due care during the performance of the vibratory compaction work. If such vibrations are not considered tolerable, then alternate foundation modification techniques should be considered.

We appreciate the opportunity to provide these services for you. If we can be of any further assistance, or if you need additional information, please feel free to contact us.

Sincerely,
NUTTING ENGINEERS OF FLORIDA, INC.

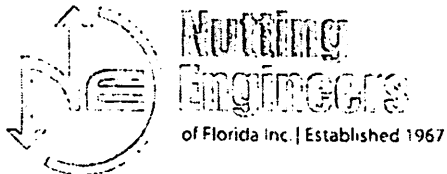
for 

Divakar R. Reddy
Project Manager

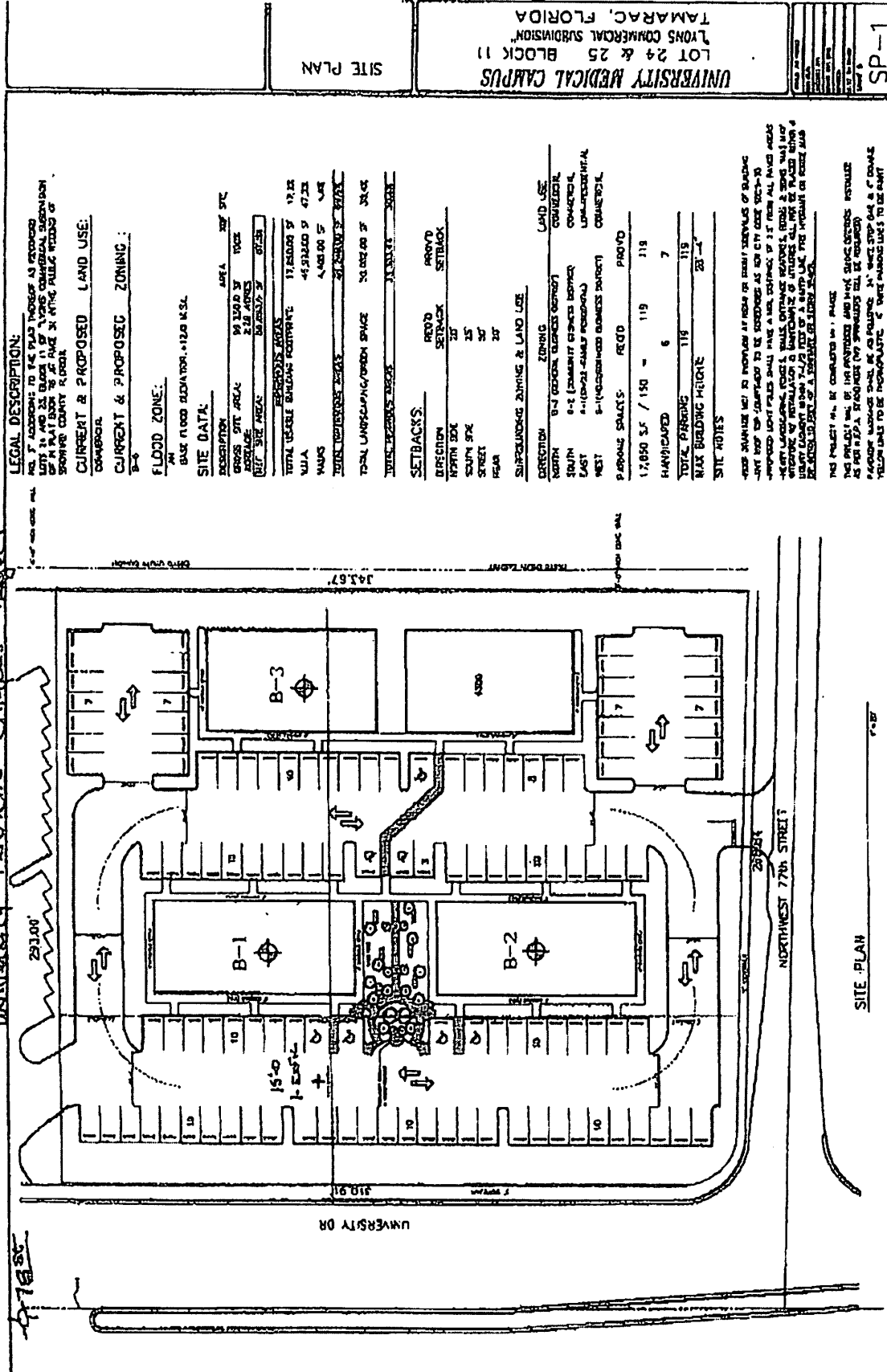

5/15/08
Reza Javidan, P.E. #60223
Sr. Geotechnical Engineer

Attachments: Test Boring Site Plan
Test Boring Reports (1-3)
Limitations of Liability
Soil Classification Criteria

REP COURTYARD CONST UNIV MED CAMPUS 10757.14 DRED



UNIVERSITY MEDICAL CAMPUS PROJECT



LEGAL DESCRIPTION:
 LOT 24 AND 25, BLOCK 11 OF LYONS COMMERCIAL SUBDIVISION OF TAMARAC, FLORIDA

CURRENT & PROPOSED ZONING:
 B-3

FLOOD ZONE:
 X1

SITE DATA:
 BASE FLOOD ELEVATION: 11.00 M.S.L.

DESCRIPTION:
 AREA: 307,574 SQ FT
 GROSS SITE AREA: 94,100 SQ FT
 NET SITE AREA: 67,450 SQ FT

PERMITTED USES:
 TOTAL USABLE BUILDING FOOTPRINT: 17,850 SQ FT
 W.U.A.: 45,120 SQ FT
 W.A.S.: 4,481,000 SQ FT

TOTAL UNRECOVERABLE/OPEN SPACE: 30,000 SQ FT

SETBACKS:

DIRECTION	RECD SETBACK	PROVD SETBACK
NORTH	25'	25'
SOUTH	25'	25'
EAST	25'	25'
WEST	25'	25'

SURROUNDING ZONING & LAND USE:

DIRECTION	ZONING	LAND USE
NORTH	B-3 (COMMERCIAL BUSINESS DISTRICT)	COMMERCIAL
EAST	B-3 (COMMERCIAL BUSINESS DISTRICT)	COMMERCIAL
WEST	B-3 (COMMERCIAL BUSINESS DISTRICT)	COMMERCIAL

PARKING SPACES: RECD: 119, PROVD: 218

MAX BUILDING HEIGHT: 6

SITE NOTES:
 THIS PROJECT IS TO PROVIDE A PARKING AREA FOR THE UNIVERSITY MEDICAL CAMPUS PROJECT. THE PROJECT WILL BE CONSTRUCTED IN PHASES. THE PROJECT WILL BE CONSTRUCTED IN PHASES. THE PROJECT WILL BE CONSTRUCTED IN PHASES.

SITE PLAN

UNIVERSITY MEDICAL CAMPUS
 LOT 24 & 25 BLOCK 11
 LYONS COMMERCIAL SUBDIVISION
 TAMARAC, FLORIDA

SP-1

SITE PLAN



1310 Neptune Drive
 Boynton Beach, 33426
 Telephone: 561-738-4900
 Fax: 561-737-9975

PROJECT NUMBER 10757.14

CLIENT Courtyard Construction

PROJECT NAME University Medical Campus

PROJECT LOCATION NE Corner of University Drive & NW 77th Street, Tamarac, Florida

DATE STARTED 7/5/07

COMPLETED 7/6/07

SURFACE ELEVATION REFERENCE @ Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY L. Capanna

CHECKED BY Reddy

AT TIME OF DRILLING 3.5 ft

APPROXIMATE LOCATION OF BORING Approx. 116' E. and 80' S. of the NW Property Corner

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blown	N-Value	A SPT N VALUE A					
						10	20	30	40		
						PL — MC — LL 20 — 40 — 60 — 80					
						<input type="checkbox"/> FINES CONTENT (%) <input type="checkbox"/>					
						20	40	60	80		
0		Brown organic SILT, little sand	SS 1	2-3-2-3	5						
		Brown quartz fine SAND									
		Light tan quartz fine SAND	SS 2	5-4-4-5	8						
		Light tan clayey SAND									
5		Light tan LIMESTONE, some sand	SS 3	8-8-8-6	16						
			SS 4	8-5-5-5	10						
			SS 5	10-7-11-11	18						
10											
			SS 6	26-30-39	56						>>>
15		Bottom of hole at 15.0 feet.									

TEST NUTTING BOREHOLE 10757.14 COURTYARD CONSTRUCTION- UNIVERSITY MEDICAL CAMPUS GP. J. GINT. US. GDT. 7/6/07

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.



1310 Neptune Drive
 Boynton Beach, 33426
 Telephone: 561-736-4900
 Fax: 561-737-9975

PROJECT NUMBER 10757.14
 CLIENT Courtyard Construction PROJECT NAME University Medical Campus
 PROJECT LOCATION NE Corner of University Drive & NW 77th Street, Tamarac, Florida

DATE STARTED 7/5/07 COMPLETED 7/5/07 SURFACE ELEVATION REFERENCE @ Road Crown
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:
 LOGGED BY L. Capanna CHECKED BY Reddy ∇ AT TIME OF DRILLING 3.6 ft
 APPROXIMATE LOCATION OF BORING Approx. 115' E. and 220' S. of the NW Property Corner

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	Δ SPT N VALUE Δ					
						10	20	30	40		
						PL MC LL					
						□ FINES CONTENT (%) □					
						20	40	60	80		
0		Brown to light tan quartz fine SAND and limestone fragments	SS 1	2-6-7-6	13						
		LIMESTONE, trace of tan quartz fine sand	SS 2	2-3-5-5	8						
5		Tan LIMESTONE, some light tan quartz fine sand	SS 3	7-7-8-7	15						
			SS 4	8-7-7-6	14						
			SS 5	9-6-7-10	13						
10											
			SS 6	36-41-37	77						>>Δ
15		Bottom of hole at 15.0 feet.									

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.



1310 Neptune Drive
 Boynton Beach, 33426
 Telephone: 561-736-4900
 Fax: 561-737-9975

PROJECT NUMBER 10757.14

CLIENT Courtyard Construction

PROJECT NAME University Medical Campus

PROJECT LOCATION NE Corner of University Drive & NW 77th Street, Tamarac, Florida

DATE STARTED 7/5/07 COMPLETED 7/5/07 SURFACE ELEVATION REFERENCE @ Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY L. Capanna CHECKED BY Reddy ∇ AT TIME OF DRILLING 3.5 ft

APPROXIMATE LOCATION OF BORING Approx. 110' S. and 50' W. of the NE Property Corner

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	Δ SPT N VALUE Δ			
						10	20	30	40
						PL — MC — LL — — — 20 40 60 80			
						□ FINES CONTENT (%) □			
						20	40	60	80
0		Brown to tan quartz fine SAND and limestone fragments	SS 1	1-5-8-8	18	Δ			
		Brown quartz fine SAND and limestone fragments	SS 2	10-8-7-5	15	Δ			
5		Light tan LIMESTONE, some sand	SS 3	4-6-16-18	22			Δ	
			SS 4	14-14-17-19	31				Δ
			SS 5	20-16-14-18	30				Δ
10									
			SS 6	14-10-11	24				Δ
15		Bottom of hole at 15.0 feet.							

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.

RELATIVE DENSITY SAND

SPT N-VALUE (blows/ft.)	RELATIVE DENSITY
0 - 4	Very loose
5 - 10	Loose
11 - 29	Medium
30 - 49	Dense
> 50	Very Dense

PRACTICE SIZE

Boulder	> 12 in.
Cobble	3 to 12 in.
Gravel	4.75 mm to 3 in.
Sand	0.074 mm to 4.76 mm
Silt	0.005 mm to 0.07 mm
Clay	< 0.005 mm

SHEAR STRENGTH CLAY

SPT N-Value (blows/ft.)	UNCONFINED COMP. STRENGTH (tons/ft ²)	CONSISTENCY
< 2	< 0.25	Very soft
2 - 4	0.25-0.50	Soft
5 - 8	0.50-1.00	Medium
9 - 13	1.00-2.00	Stiff
16 - 30	2.00-4.00	Very Stiff
> 30	> 4.00	Hard

DISCUSSION MODIFIERS

0 - 5%	Slight trace
6 - 10%	Trace
11 - 20%	Little
21 - 35%	Some
> 35%	And

Moisture Content	Group Symbols (%)	Typical Names	Laboratory Classification Criteria		
Coarse-grained soils More than 75% of material is larger than No. 200 sieve (75 μm sieve size)	Gravels More than 85% of coarse particles are larger than No. 40 sieve (4.75 mm)	GW	Well graded gravel, gravel sand mixtures, little or no fines		
		GP	Poorly graded gravel, gravel sand mixtures, little or no fines		
		GM	Silty gravel, gravel sand mixtures		
		GC	Clayey gravel, gravel sand mixtures		
		Sands More than 85% of coarse particles are smaller than No. 40 sieve (4.75 mm)	SW	Well graded sand, gravel sand, little or no fines	
			SP	Poorly graded sand, gravel sand, little or no fines	
	SM		Silty sand and silty sand mixtures		
	SC		Clayey sand and clay mixtures		
	Fine-grained soils More than 75% of material is smaller than No. 200 sieve (75 μm sieve size)	Silts and Clays Liquid limit less than 50	ML	Inorganic silts and silty fine-grained soils having liquid limit less than 50 and plasticity index less than 7	
			CL	Inorganic clays of low plasticity, silty clay, clayey silty clay	
OL			Organic silts and organic silty clays of low plasticity		
Silts and Clays Liquid limit greater than 50			MH	Inorganic silts - medium or high plasticity, silty clay, clayey silty clay	
		CH	Inorganic clays of high plasticity, silty clay		
		OH	Organic clays of medium to high plasticity, organic silty clay		
		PT	Peat and other highly organic soils		
		The data in this table are for use in determining the classification of soils under field conditions.			Determine the weight of liquid and liquid limit from a plasticity chart. Determine the weight of fines (No. 200 sieve) and fines content. The 75 μm sieve size (No. 200 sieve) is used for determining the classification of soils.
		Laboratory Classification Criteria			6 $C_u = \frac{D_{60}}{D_{10}}$ greater than 4 $C_c = \frac{(D_{30})^2}{D_{10} \cdot D_{60}}$ between 1 and 3 (SM, SW, 2, 5) Not missing or gradation requirements for GW Atterberg limits below A line or P_L less than 4 Atterberg limits above A line with P_L greater than 4 Atterberg limits above A line with P_L greater than 7 Add A line with P_L between 4 and 7 and P_U less than 10 Cases requiring use of dual symbols
Plasticity Chart For laboratory classification of fine-grained soils			7 $C_u = \frac{D_{60}}{D_{10}}$ greater than 6 $C_c = \frac{(D_{30})^2}{D_{10} \cdot D_{60}}$ between 1 and 3 (SM, SW, 7, 5) Not missing or gradation requirements for SW Atterberg limits below A line or P_L less than 4 Atterberg limits above A line with P_L greater than 7 Limit of plotting or plotting same with P_L between 4 and 7 and gradation cases requiring use of dual symbols		
Plasticity Chart For laboratory classification of fine-grained soils			8 Compacting soils at equal void ratios, toughness and dry strength increase with increasing plasticity index. 		

LIMITATIONS OF LIABILITY

WARRANTY

We warrant that the services performed by Nutting Engineers of Florida, Inc. are conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. **No other warranties, expressed or implied, are made.** While the services of Nutting Engineers of Florida, Inc. are a valuable and integral part of the design and construction teams, we do not warrant, guarantee or insure the quality, completeness, or satisfactory performance of construction plans and specifications which we have not prepared, nor the ultimate performance of building site materials.

SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings; test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report. This information is represented on a drawing or on the boring log. The location and elevation of the borings should be considered accurate only to the degree inherent with the method used.

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata and groundwater data. The log represents conditions specifically at the location where the boring was made. The boundaries between different soil strata are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling. The transition between soil strata is often gradual. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors.

LABORATORY AND FIELD TESTS

Tests are performed in accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test report indicates the measurement and determination actually made.

ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it is not intended to determine the cost of construction or to stand alone as a construction specification.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations may exist between borings and may not become evident until construction. If variations are then noted, the geotechnical engineer should be contacted so that field conditions can be examined and recommendations revised if necessary.

The geotechnical report states our understanding as to the location, dimensions and structural features proposed for the site. **Any significant changes in the nature, design, or location of the site improvements must be communicated to the geotechnical engineer** so that the geotechnical analysis, conclusions, and recommendations can be appropriately adjusted.

CONSTRUCTION OBSERVATION

Construction observation and testing is an important element of geotechnical services. The geotechnical engineer's field representative (G.E.F.R.) is the "owner's representative" observing the work of the contractor, performing tests and reporting data from such tests and observations. **The geotechnical engineer's field representative does not direct the contractor's construction means, methods, operations or personnel.** The G.E.F.R. does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The G.E.F.R. is responsible for his/her safety, but has no responsibility for the safety of other personnel at the site. The G.E.F.R. is an important member of a team whose responsibility is to observe and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications.

