GEOTECHNICAL ENGINEERING SERVICES REPORT

Pine Island Corridor
SW 12th Avenue, Lee County, Florida

Allied Project No. 45-6214

Prepared for:

Mr. Charles Arena
Pine Island Corridor LLC
2101 Mt. Read Blvd.
Rochester, New York 14615

December 16, 2005

ALLIED ENGINEERING & TESTING, INC.
5850 Corporation Circle, Fort Myers, FL 33905
239.334.6833 / 239.334.6614 Fax

Allied Engineering & Testing, Inc.

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

5850 Corporation Circle
Fort Myers, Florida 33905
(239) 334-6833 / (239) 334-6614 FAX
www.Allied-Engineering.com

December 16, 2005

Mr. Charles Arena
Pine Island Corridor LLC
2101 Mt. Read Blvd.
Rochester, New York 14615
585-277-1680 / 585-277-1682 fax

Subject: **Geotechnical Engineering Services**
Pine Island Corridor
SW 12th Avenue, Lee County, Florida
Allied Project No. 45-6214

Dear Mr. Arena:

Allied Engineering & Testing, Inc. is pleased to submit our geotechnical engineering services report for the project referenced above. The scope of our services was outlined in our proposal No. 05-1594R dated November 18, 2005. The following report presents the project information made available to us, our observation of the existing site conditions, the subsurface geotechnical information obtained during this exploration, and our recommendations for foundation design and site preparation. Also included with this report is a boring location plan and the results of our field and laboratory testing. The assessment of the site environmental conditions for the presence of pollutants in the soil, rock, and groundwater at this site was not included as part of our services.

We appreciate the opportunity to provide these services to you. If you have any questions regarding this report or if we may be of further service to you, please do not hesitate to call.

Sincerely,

ALLIED ENGINEERING & TESTING, INC.

S. Reddy Chilakala
Project Engineer

Paul J D'huyvetter, P.E.
Vice President
Florida Registration No. 59716

Copies Submitted: (3) Addressee
(1) Mr. Robert Massengale, Alliance Design

C:/Allied Files/Geo Projects/ 2005 Reports/ 45-6214 Pine Island Corridor

TABLE OF CONTENTS

PROJECT INFORMATION

Pine Island Corridor LLC, retained Allied Engineering & Testing, Inc. (Allied) to perform a geotechnical engineering evaluation for the proposed Commercial building, located at SW 12th Avenue, Lee county, Florida. Refer to Figure 1 for a site vicinity map.

The purpose of this study is to evaluate subsurface soil and groundwater conditions and to develop foundation design recommendations. The results of our subsuface exploration of soils and groundwater conditions are presented herein along with a geotechnical engineering evaluation, foundation design, and site preparation recommendations.

SITE CONDITIONS

A site reconnaissance was conducted by members of our engineering staff prior to mobilization of drilling equipment and crews. Additional site visits have been conducted as field work progressed. The purpose of the site visits was to observe the existing site conditions in order to detect any conditions that may impact our studies.

The existing site is relatively level and easily accessible for drilling operations, no surface or standing water was present on site area.

SUBSURFACE EXPLORATION

The subsurface conditions were explored by drilling (3) Standard Penetration Test (SPT) borings. The SPT borings were drilled to depths of about 40 ft (Boring B-1) and to about 30 ft. (Borings B-2 and B-3) below the existing ground surface. The soil borings were performed in general accordance with the procedures described in Appendix A. The number, depth, and location of the soil borings were selected by the client in consultation with Allied. In addition to the SPT borings, Allied performed 4 percolation tests in the vicinity of each property corner. These percolation tests were performed in general accordance with South Florida Water Management District procedures. The borings were drilled in December, 2005.

A Boring Location Plan (Figure 2 & 3) illustrates the approximate location of the soil borings. If a more precise location is desired, we can provide a registered land surveyor to locate the boring.

The subsurface conditions encountered at the SPT Test Borings are illustrated on the Soil Boring profiles (Figure 5). The soil profile presents our interpretation of the subsurface soil conditions encountered based on the driller's field logs and visual examination of the obtained soil samples by a geotechnical engineer. The stratification lines representing the interface between various changes in soil conditions and types are approximate. The actual transition between strata may be gradual.

LABORATORY TESTS

All laboratory tests were conducted in general accordance with the ASTM Specifications. The Test Method Number for each test and the number of tests completed are presented in the following table.

Test Description	Number of Tests	Test Method, Number
Gradation Analysis	2	ASTM D-422
Percent passing the US No. 200 Sieve	2	ASTM D-4221
Visual Soil Classification	28	ASTM D-2488 and ASTM D-2487

Gradation Tests

Two (2) gradation tests and two (2) percent passing No. 200 sieve tests were performed on samples obtained during the field exploration program. Material passing the No. 200 sieve is considered "fines", and will be either silt or clay. The percent passing the No. 200 sieve for the tested samples ranges from 5.6 to 6.5 percent. The particle size distribution curves are presented in Table 1 and in Appendix B.

SUBSURFACE GEOTECHNICAL CONDITIONS

The subsurface soils have been grouped into 2 strata. The strata groupings are based on soil classifications and our evaluation of the engineering properties of the soil types encountered.

Stratum 1 soils consist of different shades of white, gray to light gray, and dark brown, clean to slightly silty, fine sand. These sands contain a trace of shell and gravel. These sands are differentiated by color but have similar geotechnical properties. These sands are very loose to loose, based on the SPT N-Values. They are encountered in all of the SPT borings. They are encountered from the existing ground level to a depth of about 20 ft. in B-1, to 25 ft in B-2 and B-3.

Stratum 2 soils consist of different shades of gray to olive green, slightly sandy clay. These soils are differentiated by color but have similar geotechnical properties. These soils are very soft to firm, based on the SPT N-Values. They are encountered in all of the SPT borings. These soils are encountered from a depth of about 20 ft to the bottom of the drilled hole in B-1(40 ft) and from about 25 ft to the bottom of the drilled hole in B-2 & B3 (30 ft).

Groundwater was encountered at depths that ranged from about 6.0 ft. below the ground surface in the soil borings at the time of drilling. Fluctuations in the groundwater level may occur due to rainfall patterns, surficial drainage features, and construction processes. Figure 5 will illustrate where groundwater was encountered in each boring.

PERCOLATION TESTS & RESULTS :

As requested, Allied Engineering & Testing, Inc. has performed four (4) subsoil permeability tests at the at this project site.

The location of the tests bore holes are presented in Figure 4.

The tests were performed after allowing the soils to saturate for 30 minutes. The tests were then initiated by filling the pipe again. For each inch of the water drop, the elapsed time was recorded. The calculated hydraulic conductivity (*k*) value for the performed tests are presented in the following table.

Test No.	*k* (cfs/ft ^{2} - Ft. Head)
PT-1	2.75×10^{-6}
PT-2	8.027×10^{-6}
PT-3	8.677×10^{-6}
PT-4	7.526×10^{-6}

The information provided above is based on the soil conditions encountered at the specific test locations. These (*k*) values apply only to the specific site.

GEOTECHNICAL EVALUATION

The geotechnical evaluations for the project are based on the subsurface soil and groundwater conditions encountered during this study, the project information made available to us, and our site observations. The soil boring data has been evaluated with established correlations between N-values similar to those recorded at this site and the observed performance of similar type soils.

The near surface soils encountered in borings B-1 through B-3, are able to support lightly loaded, shallow foundation systems if this report is followed as a minimum requirement.

FOUNDATION RECOMMENDATIONS

The exact foundation loads are not yet available for the proposed building. However, based on the information provided by the client, the type of the structure proposed and on our experience with similar size structures, shallow foundations may be designed to support the proposed building.

Conventional Shallow Foundations

Conventional strip footings or thickened slab edges beneath walls may be designed for a maximum allowable bearing capacity of 2,000 psf. Footings should bottom about 24 inches below the adjacent site grade.

Isolated footings beneath columns or concentrated loads, may be designed for a maximum allowable bearing capacity of 2,000 psf. Footings should be should bottom about 24 inches below adjacent site grades and of the maximum size 8 feet x 8 feet in plan dimension.

We understand the shallow foundation systems may be founded on the 3 ft. thick, compacted, structural fill placed below the foundation level. Prior to the placement of the structural fill, The natural existing soils beneath the footing location shall be compacted to a density of at least 98% of the Modified Proctor Dry Density (ASTM D-1557).

Settlement estimates are based on empirical correlations with the N-values and soil types encountered. The settlement of the 36-inch wide strip footings designed in accordance with the above recommendations are estimated to be less than 1.0 inch total and 0.5 inch differential.

FLOOR SLAB RECOMMENDATIONS

The floor slab may be supported as a slab-on-grade on the compacted structural fill. The slabs may be designed assuming a modulus of subgrade reaction of 300 pci for compacted structural fill.

PAVEMENT CONSIDERATIONS

For design of the pavement section, it is our recommendation that the natural Soil Support Value (SSV) be based on an LBR Value of 20 for in-situ sands. We base this recommendation on our experience with similar soils. This material will require processing or mixing with limerock or shell to obtain an LBR value of 40 or more that will be required for stabilized subgrade.

SITE PREPARATION PROCEDURES

Site preparation procedures should begin with the removal of existing debris, vegetation, or other unsuitable materials, to a distance of at least 5 ft. beyond the new building or pavement construction.

Following the initial clearing, the exposed ground surface should be proof-rolled with a fully loaded truck, or a large roller. Low lying areas should be filled-in with structural fill and compacted to 98% of the soils Modified Proctor Maximum Density (ASTM D-1557) in lifts no more than 12 inches thick. Any loose or soft yielding areas detected during proof-rolling should either be further compacted or removed and replaced with a suitable structural fill. Suitable structural fill soil will be a relatively clean, cohesion-less sand. The sand should contain less than 10 percent of soil which passes the No. 200 sieve, does not contain clay balls, and has no rock fragments greater than 3 inches in diameter.

The exposed ground surface at footing locations should be compacted, once the proof-rolling has been completed. The soil should be compact to achieve at least 98 percent of the soils Modified Proctor Maximum Density (ASTM D-1557 latest specification) to a depth of 4 ft. below the existing grades. Following completion of the compaction operations, the soil should be tested to verify the minimum degree of compaction has been achieved.

During the proof-rolling operation, a geotechnical engineer or an engineering technician working under his direction should observe the soils to verify that the exposed soils are suitable and that unsuitable soils have been removed. Samples of the soil should be obtained to determine its maximum dry density and optimum moisture content in the laboratory in accordance with ASTM D-1557 (Modified Proctor Test).

After the exposed ground surface has been proof-rolled and compacted, the structural fill required to raise the site to final subgrade elevations, should be placed in loose lifts of a maximum 12-inch thickness. Each lift should be compacted to a minimum of 98 percent of the soils Modiified Proctor Maximum Dry Density prior to the placement of subsequent lifts and shall be firm and unyielding.

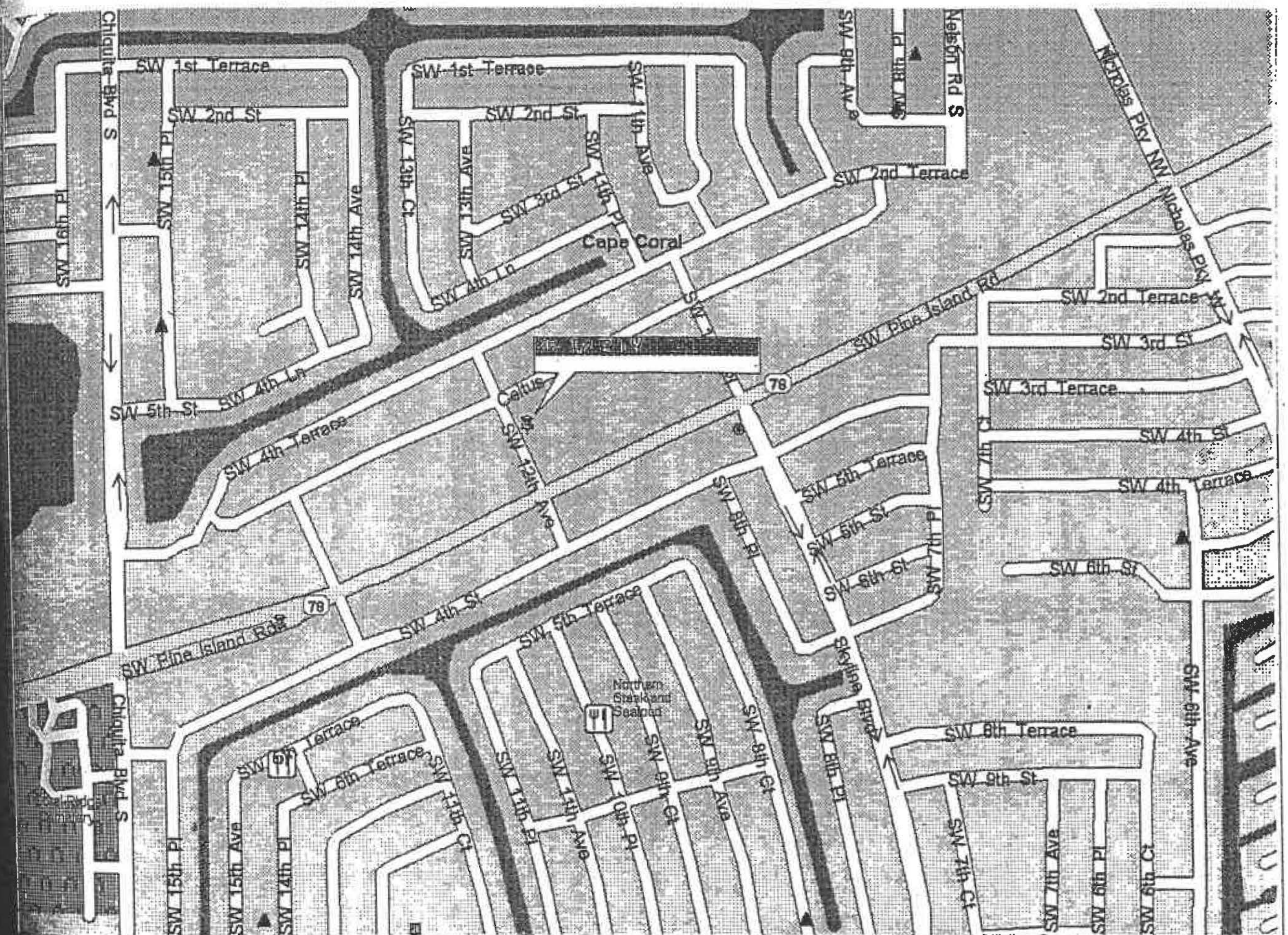
BASIS FOR EVALUATION AND RECOMMENDATIONS

The evaluation and recommendations of this report are based on the information provided and the soil conditions encountered at the specific boring locations. These recommendations apply only to the specific project and site. If there are any changes to the project information discussed in this report we should be contacted to review the changes and modify our recommendations, if necessary.

The construction procedures and geotechnical conditions encountered should be observed by experienced geotechnical personnel. This is necessary since the conditions encountered in the soil borings performed for this study could change between the borings and the conditions may not be the same as those anticipated by the designers or contractors. Additionally, the soils could be altered by the construction process. If changes in the soil conditions are encountered or if the procedures are not adequate, this information should be reported to the design team so that timely recommendations can be prepared to solve the problem. Based on Allied Engineering & Testings' familiarity with the project, the subsurface geotechnical conditions, and the intent of the recommendations, we recommend the client retain our firm to provide the necessary site observations and testing.

We wish to remind that our exploration services include storing collected samples and making them available for inspection of 60 days after submittal of our report. The samples are then discarded unless you request otherwise.

FIGURE 1 – SITE VICINITY MAP



NORTH
NOT TO SCALE

NOTE: MAP OBTAINED FROM MICROSOFT STREETS & TRIPS 2005

AET

ALLIED ENGINEERING AND TESTING, INC.

5850 Corporation Circle, Fort Myers, FL 33905 *Phone: 239.334.6833* *Fax: 239.334.6614* *www.allied-engineering.com*

Client:	Pine Island Corridor	Date:	12/13/2005
Project:	SW 12th Avenue Project Lee County, Florida	Job No.:	45-6214
Approved By:	Jeff D'huyvetter	Drawn By:	SR

FIGURE 2 – SPT BORING LOCATION PLAN

NOTES: SPT BORING

NOTE: MAP OBTAINED FROM LEE COUNTY PROPERTY APPRAISAL

ALLIED ENGINEERING AND TESTING, INC.

5850 Corporation Circle, Fort Myers, FL 33905 Phone: 239.334.6833 Fax: 239.334.6614 www.allied-engineering.com

Client: Pine Island Corridor

Date: 12/13/2005

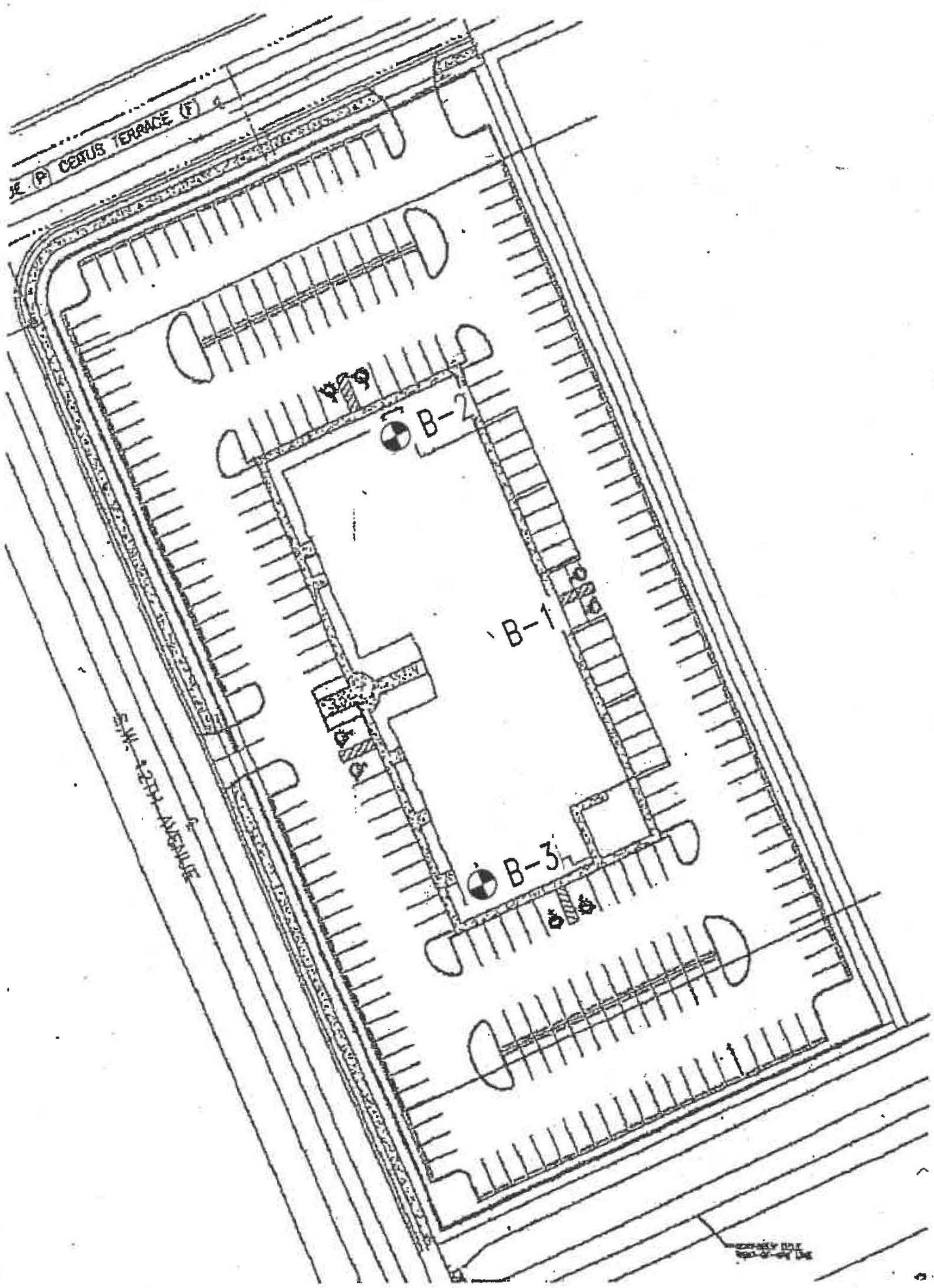
Project: SW 12th Avenue Project Lee County, Florida

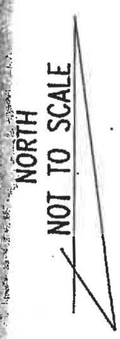
Job No.: 45-6214

Approved By: Jeff D'huyvetter

Drawn By: SR

FIGURE 3 – BORE LOCATION PLAN IN REFERENCE TO THE PROPOSED BUILDING





NOTES: SPT BORING

BASE DRAWING PROVIDED BY CLIENT.

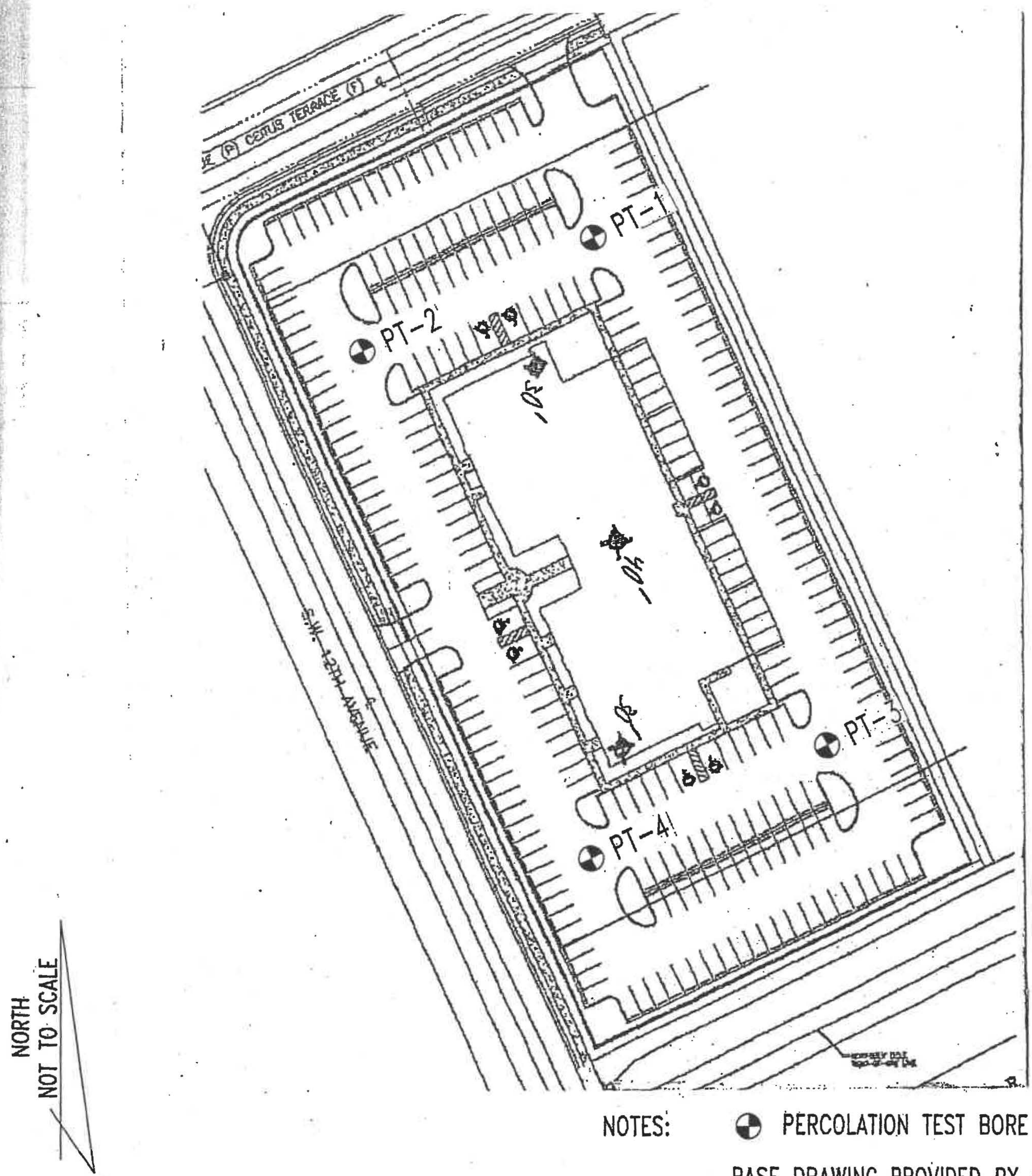
AET

ALLIED ENGINEERING AND TESTING, INC.

5850 Corporation Circle, Fort Myers, FL 33905 Phone: 239.334.6833 Fax: 239.334.6614 *www.allied-engineering.com*

Client:	Pine Island Corridor	Date:	12/13/2005
Project:	SW 12th Avenue Project Lee County, Florida	Job No.:	45-6214
	Jeff D'huyvetter		

FIGURE 4 - LOCATION OF OPEN-HOLE FALLING HEAD TEST BOREHOLES



NOTES: PERCOLATION TEST BORE HOLE

BASE DRAWING PROVIDED BY CLIENT.

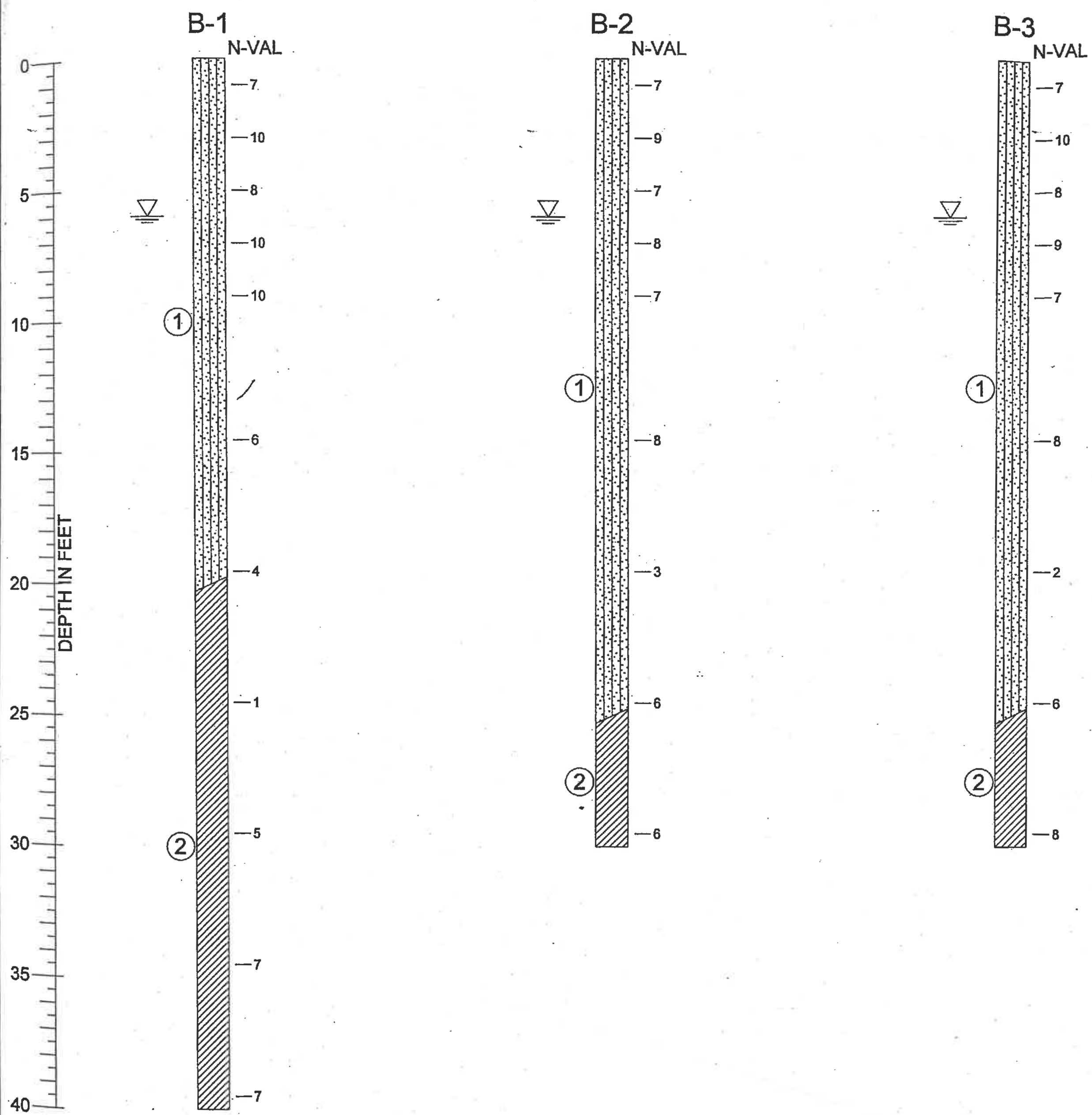
AET

ALLIED ENGINEERING AND TESTING, INC.

5850 Corporation Circle, Fort Myers, FL 33905 Phone: 239.334.6833 Fax: 239.334.6614 www.allied-engineering.com

Client:	Pine Island Corridor	Date:	12/13/2005
Project:	SW 12th Avenue Project Lee County, Florida	Job No.:	45-6214
Approved By:	Jeff D'huyvetter	Drawn By:	SR

SOIL PROFILES



SOIL PROFILE LEGEND

B-X = BORING NUMBER

SOIL TYPE (X)

N = TEST VALUE

GROUND WATER LEVEL

SOIL SYMBOL

INDICATES PRACTICAL REFUSAL TO BORING EQUIPMENT

= INDICATES GRADUAL TRANSITION IN SOIL TYPES

SOIL LEGEND

1 — White, light gray to gray, dark brown fine to slightly silty SAND, Very Loose to Loose, Mosit to Wet. (SP,SP-SM)

2 — Medium gray to light gray, olive green slightly sandy CLAY, soft to firm, wet-(CL)

NOTES:

N - STANDARD PENETRATION RESISTANCE TEST VALUE, BLOWS PER FOOT.

SOIL CLASSIFICATION

CORRELATION OF N - VALUES WITH RELATIVE DENSITY AND CONSISTENCY

COHESIONLESS SOIL N - VALUE	RELATIVE DENSITY	SILTS AND CLAYS N - VALUE	CONSISTENCY
0 - 4	VERY LOOSE	0 - 2	VERY SOFT
5 - 10	LOOSE	3 - 4	SOFT
11 - 30	MEDIUM DENSE	5 - 8	FIRM
31 - 50	DENSE	9 - 15	STIFF
OVER 50	VERY DENSE	16 - 30	VERY STIFF
		31 - 50	HARD
		OVER 50	VERY HARD

CORRELATION OF N-VALUES WITH HARDNESS DESCRIPTION LIMEROCK

N - VALUE	RELATIVE DENSITY
0 - 19	VERY SOFT
20 - 49	SOFT
50 - 100	MEDIUM HARD
50 FOR 2 TO 5"	MODERATELY HARD
50 FOR 0 TO 2"	HARD

APPROXIMATE FINES CONTENT	MODIFIERS
5% TO 15%	SLIGHTLY SILTY OR SLIGHTLY CLAYEY
15% TO 25%	SILTY OR CLAYEY
25% TO 49%	VERY SILTY OR VERY CLAYEY

APPROXIMATE SAND/ GRAVEL CONTENT	MODIFIERS
5% TO 15%	SLIGHTLY SANDY OR SLIGHTLY GRAVELY
15% TO 25%	SANDY OR GRAVELY
25% TO 49%	VERY SANDY OR VERY GRAVELY

APPROXIMATE ROOT CONTENT	MODIFIERS
5% - 10%	TRACE
10% - 20%	TRACE TO SOME
20% - 40%	SOME
40% - 60%	AND

FIG. 5 - SOIL BORING PROFILE

AET
Allied Engineering & Testing, Inc.
5850 Corporation Circle
Ft Myers, Florida 33905
239-334-6833 * FAX 239-334-6614

Client: Pine Island Corridor
Project: SW 12th Avenue
Lee County, Florida
Approved By: Jeff D'huyvetter

Date: 12/9/05
Job No.: 45-6214
Drawn By: SR

TABLE 1 - SUMMARY OF LABORATORY TEST RESULTS

SW 12th Avenue, Lee County, Florida

Allied Project No: 45-6214

Boring No	Depth (Ft)	Sample No	Gradation Test Results (% Passing)					% Organic	Soil Description	Strata No	USCS Code
			No.4	No.10	No.40	No.100	No.200				
B-1	18-20	S7	98.3	96.0	84.8	29.7	6.5	NA	White, light gray to gray, dark brown fine to slightly silty **SAND**	1	SP,SP-SM
B-2	8-10	S5	90.2	89.2	86.4	47.5	5.6	NA	White, light gray to gray, dark brown fine to slightly silty **SAND**	1	SP,SP-SM

APPENDIX A

Soil Test Boring Procedures
Soil Classification

SOIL TEST BORING PROCEDURES

The soil test borings for this geotechnical study were performed in general accordance with ASTM D-1586 standard specifications. In the Standard Penetration Test a 1.4 inch I.D., 2.0 inch O.D., splitbarrel sampler is driven into the soil at the test depth with a 140-pound hammer falling 30 inches. Dependent upon the soil conditions encountered, the boring is advanced by rotary drilling procedures or continuous sampling. With either method the borehole is stabilized with a viscous bentonite drilling fluid. The number of blows necessary to drive the hammer 18 inches or until 50 blows results in less than 6 inches of penetration is designated as the Standard Penetration Test. The number of blows for each 6 inches of penetration is recorded. The first 6 inches of penetration is considered to be a seating drive and the remaining 12 inches is the Standard Penetration Resistance Test Value (N-Value).

Upon completion of the penetration test, the sample retrieved from the split barrel sampler is classified in the field by the driller and a representative portion is placed in a sealed glass jar. The samples are then transported to the laboratory for visual classification by a geotechnical engineer and further laboratory testing, if necessary.

SOIL CLASSIFICATION

N-VALUE - STANDARD PENETRATION RESISTANCE TEST VALUES, BLOWS PER FOOT

CLASSIFICATION

CORRELATION OF N-VALUES WITH RELATIVE DENSITY AND CONSISTENCY

CORRELATION OF N-VALUES WITH HARDNESS DESCRIPTION

COHESIONLESS SOILS		SILTS AND CLAYS		LIMESTONE	
N-VALUE	RELATIVE DENSITY	N-VALUE	CONSISTENCY	N-VALUE	RELATIVE DENSITY
0-4	VERY LOOSE	0-2	VERY SOFT	0-19	VERY SOFT
5-10	LOOSE	3-4	SOFT	20-49	SOFT
11-30	MEDIUM DENSE	5-8	FIRM	50-100	MEDIUM HARD
		9-15	STIFF	50 for 2 to 5 inches	MODERATELY HARD
31-50	DENSE	16-30	VERY STIFF		
over 50	VERY DENSE	31-50	HARD	50 for 0 to 2 inches	HARD
		over 50	VERY HARD		

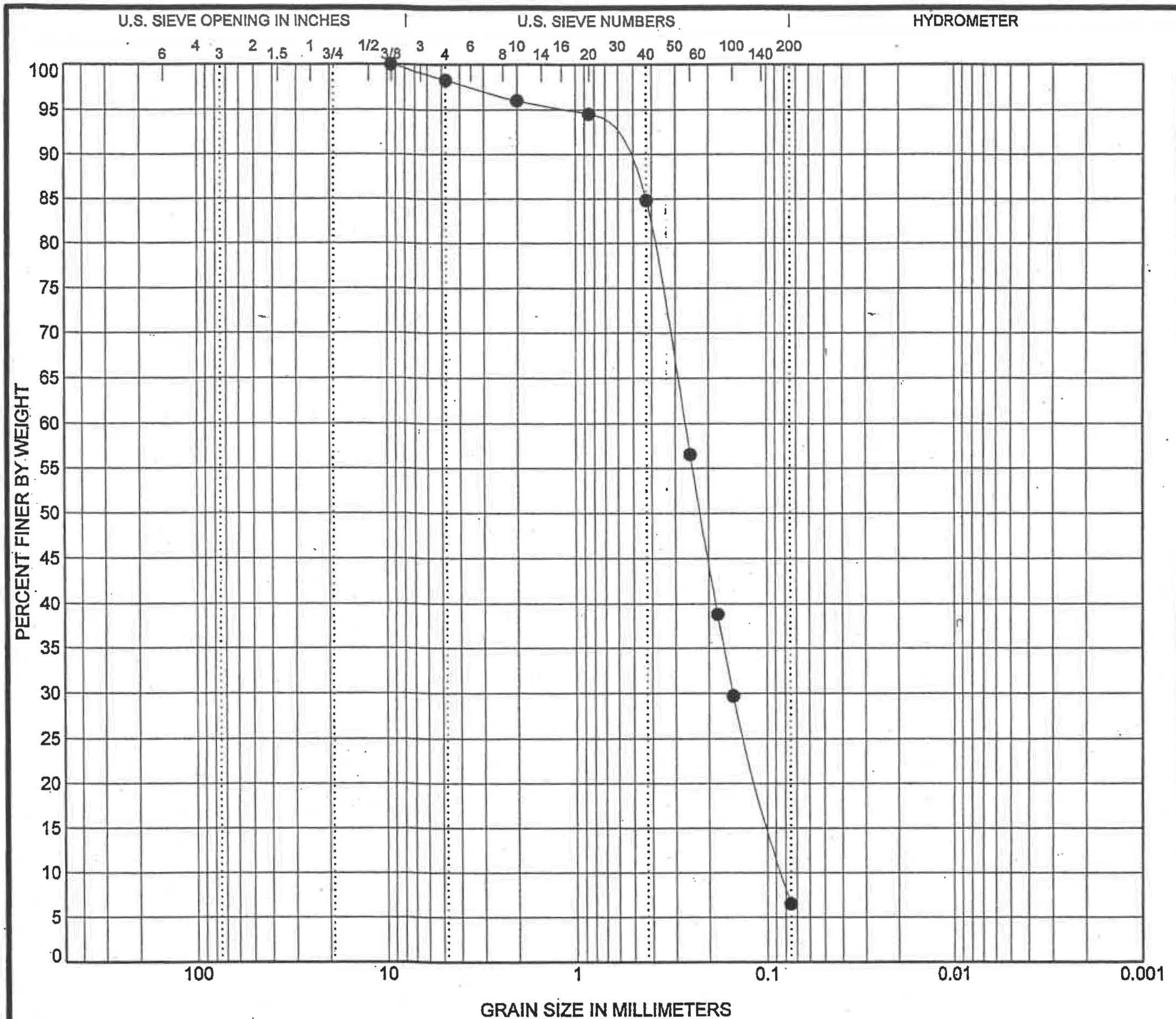
MODIFIERS

APPROXIMATE FINES CONTENTS	MODIFIERS
5% - 15%	slightly silty slightly clayey
15% - 25%	with silt with clay
25% - 49%	silty, clayey

APPROXIMATE SAND/ GRAVEL CONTENT	MODIFIERS
5-15%	slightly sandy slightly gravely
15% - 25%	with sand with gravel
25 - 49%	sandy, gravelly

APPENDIX B

Grain Size Distribution Curves



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	B-1	20.0					1.02	3.21

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-1	20.0	9.5	0.267	0.151	0.083	1.7	91.8	6.5	

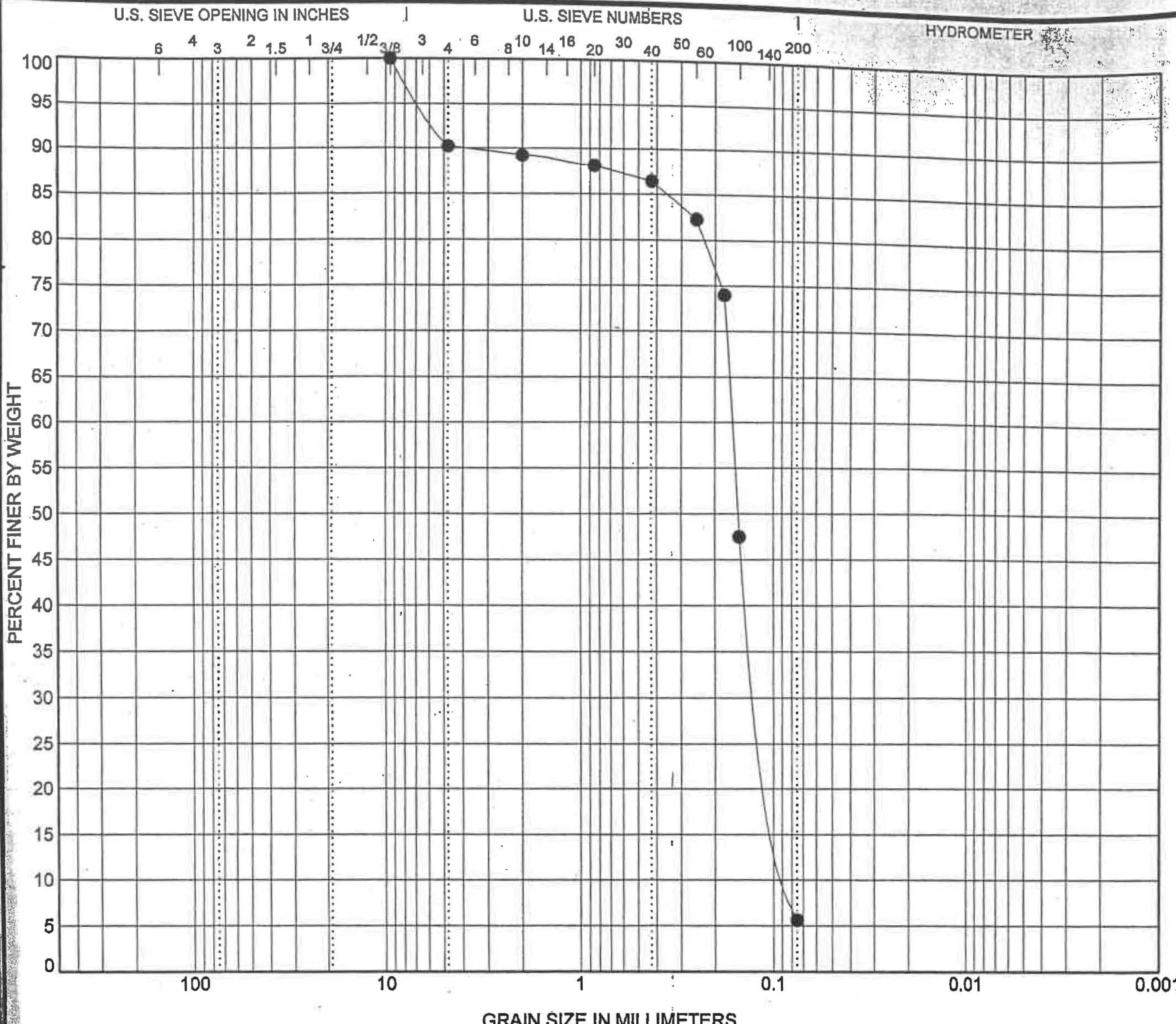
US GRAIN SIZE 45-6214.GPJ ALLIED ENG TESTING.GDT 12/16/05

AET

Allied Engineering & Testing, Inc.
5850 Corporation Circle
Ft Myers, Florida 33905
*239-334-6833 * FAX 239-334-6614*

GRAIN SIZE DISTRIBUTION

Client: Pine Island Corridor
Project: SW 12th Avenue
Location: Lee County, Florida
Job No.: 45-6214



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● B-2	10.0					0.96	2.03

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-2	10.0	9.5	0.163	0.112	0.081	9.8	84.6	5.6	

Allied Engineering & Testing, Inc.
5850 Corporation Circle
Ft Myers, Florida 33905
*239-334-6833 * FAX 239-334-6614*

GRAIN SIZE DISTRIBUTION

Client: Pine Island Corridor
Project: SW 12th Avenue
Location: Lee County, Florida
Job No.: 45-6214