Subsurface Soil Exploration
& Slope Stability Analysis
Project Alpha
Tavares, Lake County, Florida

CONDUCTED FOR

Mr. Christopher Young

of

Hofmeister Design and Construction, Inc.

CENTRAL TESTING LABORATORY
LEESBURG, FLORIDA

CTL FILE NO. 0584324.200

November 3, 2005

Central Testing Laboratory

Engineering and Materials Testing

EB 0002407

Reply to:

Leesburg

November 3, 2005

Hofmeister Design & Construction, Inc.
4130 United Ave.
Suite #1
Mt. Dora, FL 32757

Attn: Mr. Christopher Young

Subject: Preliminary Subsurface Soil Exploration & Slope Stability Analysis
Project Alpha
Nightingale Lane
Tavares, Lake County, Florida
CTL Project No. 0584334.200

Dear Mr. Hargroves:

Central Testing Laboratory (CTL) has completed a preliminary subsurface soil exploration and slope stability analysis for the above referenced project. The purposes of performing this exploration and analysis were to evaluate the general subsurface conditions within the general building areas and stability of the slope adjacent to the southwest property line. This report documents CTL's findings and presents our engineering evaluations.

The site of the proposed facility is located at the northeast end of Lake Frances and south of Nightingale Lane (Section 21, Township 19 south, Range 26 east) in Tavares, Lake County, Florida. The general site location is shown on the Lake County, Florida, Street Atlas Map and is presented in Figure No. 1.

Proposed Construction

It is CTL's understanding that the proposed development consists of several multi-story residential type structures. It has been assumed that maximum loading conditions for the proposed structures are on the order of 4 to 5 kips per linear foot (klf) for wall foundations and 60 kips for individual column foundations. If the actual loads exceed the maximum assumed loads, then the evaluations in this report may not be valid.

The grading plans are not complete at this time, therefore, it has been assumed that only minimal fill will be used to bring the building areas to final elevation(s).

Review of Soil Survey Maps

Based on the 1975 Soil Survey for Lake County, Florida as prepared by the U.S. Department of Agriculture, Soil Conservation Service, the predominant soil type at the site is identified as the "Astatula sand, 0 to 5 percent slopes" soil series. The "Astatula sand" soil series consists of fine sand to a depth of 86 inches. The internal drainage of the "Astatula sand" is characterized as being excessively drained with a soil permeability of more than 20 inches per hour. According to the Soil Survey, the seasonal high water table for this soil series is typically more than 6.0 feet below the natural ground surface.

Field Exploration Program

The field exploration program consisted of performing ten (10) Standard Penetration Test (SPT) borings. The locations of these borings are illustrated on the Boring Location Plan presented in Figure No. 2. The boring locations were determined in the field based on measurements from the apparent property lines. The locations should be considered accurate only to the degree implied by the method of measurement used.

The SPT borings were performed at locations within the general building areas and adjacent to the steep slope. The borings were advanced to depths of between 25 and 60 feet below the ground surface using the methodology outlined in ASTM D-1586. This field procedure is outlined in the methodology summary presented in Appendix I.

Samples recovered during performance of the SPT borings were visually classified in the field and representative portions of the samples were placed in containers and transported to our laboratory for further analysis.

The groundwater level at each of the boring locations was measured upon completion of drilling to document the water table conditions at the site.

Laboratory Testing Program

Soil samples from the borings were classified in the field and transported to our laboratory for further testing and classification. The soil samples were visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488) with the soil colors being determined from the Munsell Soil Color Chart. The resulting soil descriptions are shown on the soil boring profiles presented in Appendix II.

Results of Field Exploration

The results of the field exploration are graphically shown on the soil boring logs presented in Appendix II. These profiles represent our interpretation of the field boring logs and the results of the laboratory analysis of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual change may be more gradual than suggested.

The results of the borings indicate that the general soil profile consists of fine sand (Unified Classification – SP) from the surface to depths of between 13.5 and 60.0 feet underlain with various layers of clayey fine sand (SC), silty fine sand (SM) or a mixture of sand, silt or clay through completion depth of the borings.

The above soil profile is outlined in general terms only. Please refer to the boring logs in Appendix II for soil profile details.

The groundwater was encountered in the borings at depths of 13 and 15 feet below the ground surface at the time of drilling. Changes in groundwater levels should be expected throughout the year due to seasonal differences in rainfall and other factors that may vary from the time the borings were conducted.

Typical Seasonal High Water Table

The typical seasonal high water table each year is the water level in the August-September period at the end of the rainy season. The seasonal high water table is affected by a number of factors. The drainage characteristics of the soils, the land surface elevation, the presence and distance to relief points such as lakes, rivers, swamp areas, etc., are some important factors which have an influence on the seasonal high water table.

Based on CTL's interpretation of the site conditions using our boring logs, it is anticipated that the seasonal high water table will be at a depth of approximately 13 feet below the existing ground surface.

Evaluations and Slope Stability Analysis

The primary geotechnical concerns for this site are the very loose to loose sand found in the upper ten (10) feet and the steep slope located just to the southwest of the property. However, the results of CTL's exploration indicate that, with proper site preparation as recommended in this report, the existing soils are suitable for supporting the proposed structures on conventional shallow foundations such as strip footings, stemwall foundation or individual column foundations.

The intent of these evaluations is to recommend a sufficient setback from the steep slope for construction of the buildings and to provide typical site preparation processes to densify the very loose to loose sands found in the upper ten (10) feet.

Slope Stability Analysis

The stability of the slope located between the southwest property line and Lake Frances was evaluated for slope failure as a result of building loads proposed for the project. The analysis was based on boring data obtained from five (5) SPT borings performed adjacent to the northeast property line, provided contour maps and U.S.G.S. topographic maps. Slope failure analyses were performed using WINSTABL6 software developed by Prof. Bosscher at Purdue University for the Indiana State Highway Commission.

The results of the analyses indicate that at present, in the natural unloaded state, a potential currently exists for slope failure within 7 to 18 feet back from the top of slope. Typical conditions that would have a potential to trigger some amount of slope failure would be applying additional loads close to the top of the slope, a rise in the water table and slope erosion.

Based on the analyses, using 2,500 PSF wall loads for the proposed buildings, CTL recommends that building foundations be constructed no closer than forty (40) feet from the southwest property line. This setback is based on available maps showing the southwest property line to be a minimum of ten (10) feet back from the top of slope.

Site development features such as pavement areas, pools and other structures located within the forty (40) foot setback should be avoided, or at a minimum reviewed by CTL. Drainage retention areas should not be considered within the forty (40) foot setback.

Site grading should be in such a manner as to prevent water runoff from discharging towards the southwest and down the steep slope.

Typical foundation site preparation which in CTL's opinion are best suited for the proposed structures and existing soil conditions are presented below. These typical processes are made as a guide for the contractor, design engineer and/or architect.

Typical Site Preparation Processes

Stripping and Grubbing

The "footprints" of the proposed buildings, plus an additional horizontal margin of 5 feet, should be stripped of all vegetation, stumps, surface debris, or other deleterious materials, as encountered. The actual depth(s) of stripping and grubbing must be determined by visual observation and judgment during the earthwork operation.

Proof-rolling

Proof-rolling of the cleared surface is recommended to: (1) locate any soft areas or unsuitable surface or near surface soils, (2) to increase the density of the soils within the top 3 to 4 feet, and (3) to prepare the existing surface for the addition of fill soils (if required). Proof-rolling of the building areas should consist of at least 10 passes of a self propelled static drum compactor or other suitable compaction equipment capable of achieving the required soil density. Each pass of the compactor should overlap the preceding pass by 30 percent to insure complete coverage. If deemed necessary, in areas that continue to "yield," remove all deleterious material and replace with a clean, compacted sand backfill. The proof-rolling should occur after stripping and before filling. **Heavy vibratory compactors should not be used on this project.**

The proof-rolling should produce a density equivalent to 95 percent of the modified Proctor (ASTM D-1557) maximum dry density value for a depth of one (1) foot in the building areas. Additional passes of the compaction equipment may be required if this density requirement is not achieved.

To avoid damaging neighboring structures while compaction is underway and prior to initiating the compaction operation, existing conditions (i.e., cracks) of the structures should be documented with photographs and/or survey if necessary. Compaction should cease if deemed harmful to adjacent structures. Central Testing Laboratory should be notified immediately if such a situation exists.

Suitable Fill Material and the Compaction of Fill Soils

The fill materials should be free of organics such as roots and/or vegetation. CTL recommends using fill with less than 10 percent by dry weight of material passing the U.S. Standard No. 200 sieve size. Soils with greater than 10 percent passing the No. 200 sieve will be difficult to compact due to their inherent nature to retain soil moisture. The existing fine sand soils should be suitable for use as fill soils.

Suitable fill should be placed in level lifts not thicker than 12 inches (uncompacted). Each lift should be compacted to at least 95 percent of the modified Proctor (ASTM D-1557) maximum dry density value. If hand-held compaction equipment is used, reduce the uncompacted lift thickness to 6 inches. The filling and compaction operation should continue in lifts until the desired elevation is

Foundation Support

After proof-rolling, filling and compaction, excavate the foundations to the proposed bottom of the footing elevations and verify the in-place compaction for a depth of one (1) foot below the footing bottoms. If necessary, recompact the bottoms of the footing excavations to achieve a minimum dry density equivalent to 95 percent of the modified Proctor maximum dry density (ASTM D-1557) value for a depth of one (1) foot below the footing bottoms.

Considering the spacing of the borings, it should be anticipated that some buildings may not have a boring located within the building footprint. In this case, CTL recommends additional borings within building footprints to verify subsurface soil conditions and preparation of specific foundation recommendations.

Based on the existing soil conditions, and assuming the above outlined proof-rolling, filling and compaction criteria is implemented, an allowable soil bearing pressure of **2,500** pounds per square foot (p.s.f.) may be used in the foundation design. This bearing pressure should result in foundation settlements within tolerable limits (i.e., 1 inch or less).

All bearing wall foundations should be a minimum of 24 inches wide and column foundations 30 inches wide. A minimum soil coverage of 18 inches should be maintained from the bottom of the exterior foundations to the adjacent outside finished grades.

Compaction beneath all floor slabs should be verified for a depth of 12-inches and meet the 95 percent criteria (modified Proctor, ASTM D-1557).

Moisture entry from the underlying subgrade soils should be minimized. An impervious membrane placed between the subgrade soils and floor slab will help to accomplish this. A polyethylene film (6 mil) is commonly used for this purpose. Care should be used so that the membrane is not punctured when placing reinforcing steel (or mesh) and concrete.

Expansion joints should be used around columns if they are to be isolated from the floor slab. The expansion joints should be sealed with a water-proof sealant.

Based on the groundwater conditions encountered, dewatering should not be required to achieve the necessary stripping and ensuing construction, backfilling, and compaction requirements presented in this report.

Quality Control

CTL recommends establishing a comprehensive quality control program to insure that site preparation and foundation construction is conducted according to plans and specifications. The materials testing and inspection services should be provided by Central Testing Laboratory.

An engineering technician should be on-site to monitor all stripping and grubbing to verify that all deleterious materials have been removed and observe the proof-rolling to make sure that the appropriate number of passes is applied to the subgrade. Density testing should be performed during backfilling and below all footings and floor slabs to check the required density. Field density values should be compared to laboratory Proctor moisture-density results for each different natural and fill soil encountered.

Inspection and testing of the construction materials for the foundations and other structural components is also recommended.

Closure

The analyses and recommendations stated within this report are based upon the data obtained from the soil borings in Appendix II and the assumed loading conditions. Variations may be present adjacent to or between the borings which were not apparent in the boring logs. If variations are encountered during construction, it may be necessary to revisit the evaluations made in this report.

This report should be considered preliminary as the proposed project layout of the buildings and other improvements are not available at this time. Once the proposed project layout is prepared, additional borings and field tests may be necessary to provide specific foundation recommendations, pavement section recommendations and drainage retention pond data.

Generally accepted soil and foundation engineering practices were employed in the preparation of this report. CTL should review the conclusions and evaluations made in this report if changes occur in the design of the proposed project. Plans showing final locations of the buildings and drainage retention ponds should also be reviewed by CTL.

CTL appreciates the opportunity to provide our services on this project. Should you have any question concerning these reports please do not hesitate to contact our Leesburg office at (352) 787-1268 or fax us at (352) 728-2245.

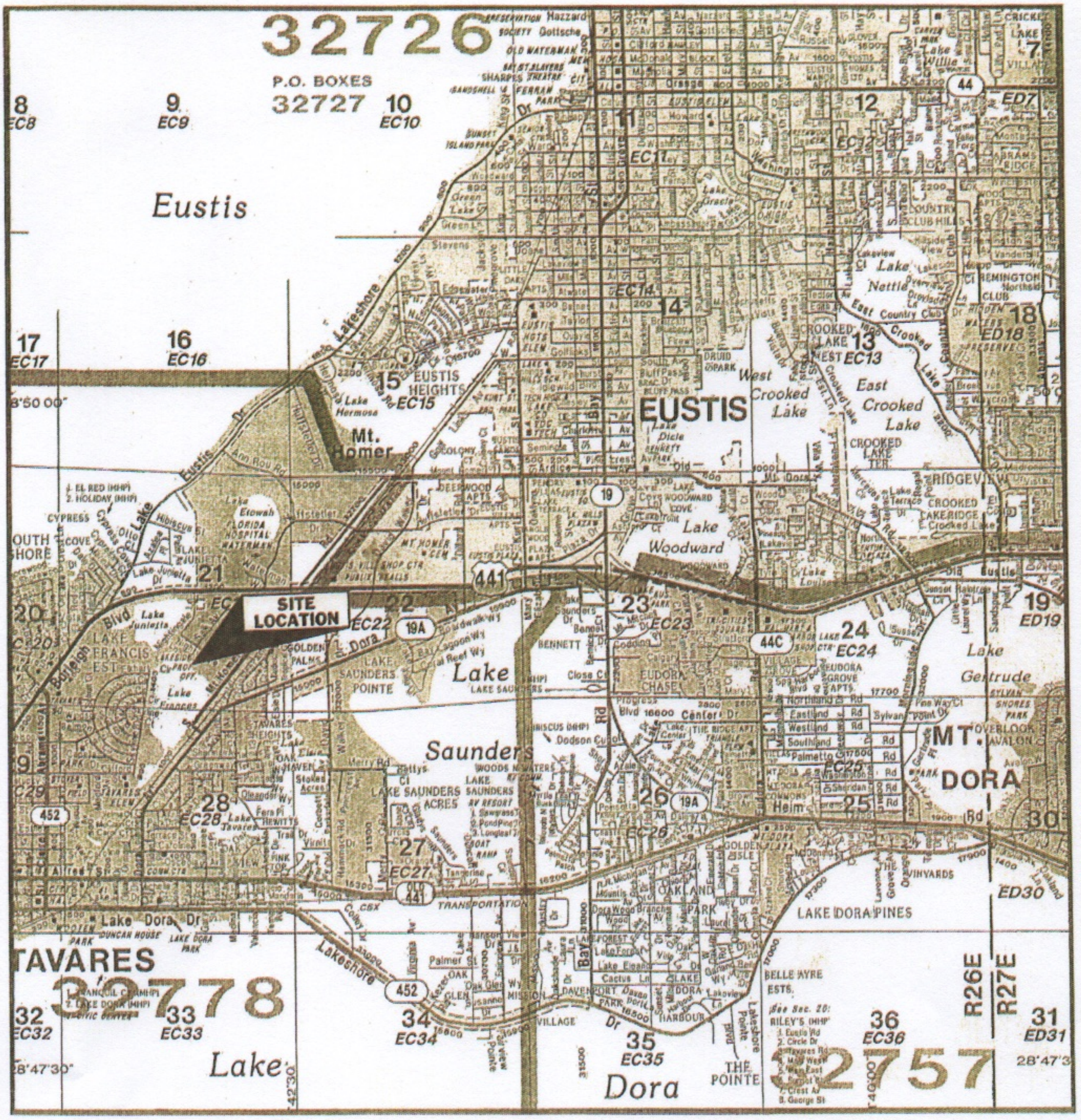
Respectfully submitted,

CENTRAL TESTING LABORATORY, INC.

Terry W. Taulbee
Branch Manager

Curtis M. Karr, P.E. 11-3-05
Project Engineer
Florida Registration No. 48173

CMK/rmh



Central Testing Laboratory **ENGINEERING & MATERIALS TESTING**		723 SOUTH 14TH STREET LEESBURG, FL 34748 (352)787-1268
SITE LOCATION MAP HOFMEISTER DESIGN & CONSTRUCTION, INC. PROJECT ALPHA TAVARES, LAKE COUNTY, FLORIDA	DRAWN BY: GZ CHECKED BY: CMK DATE: 11/3/05	JOB NUMBER 0584334.200 FIGURE NO. 1 SECTION 21, TOWNSHIP 19 SOUTH, RANGE 26 EAST

APPENDIX I

CENTRAL TESTING LABORATORY
ENGINEERING MATERIALS TESTING - QUALITY CONTROL
LEESBURG - FLORAL CITY - OCALA

THE STANDARD PENETRATION TEST
ASTM D 1586

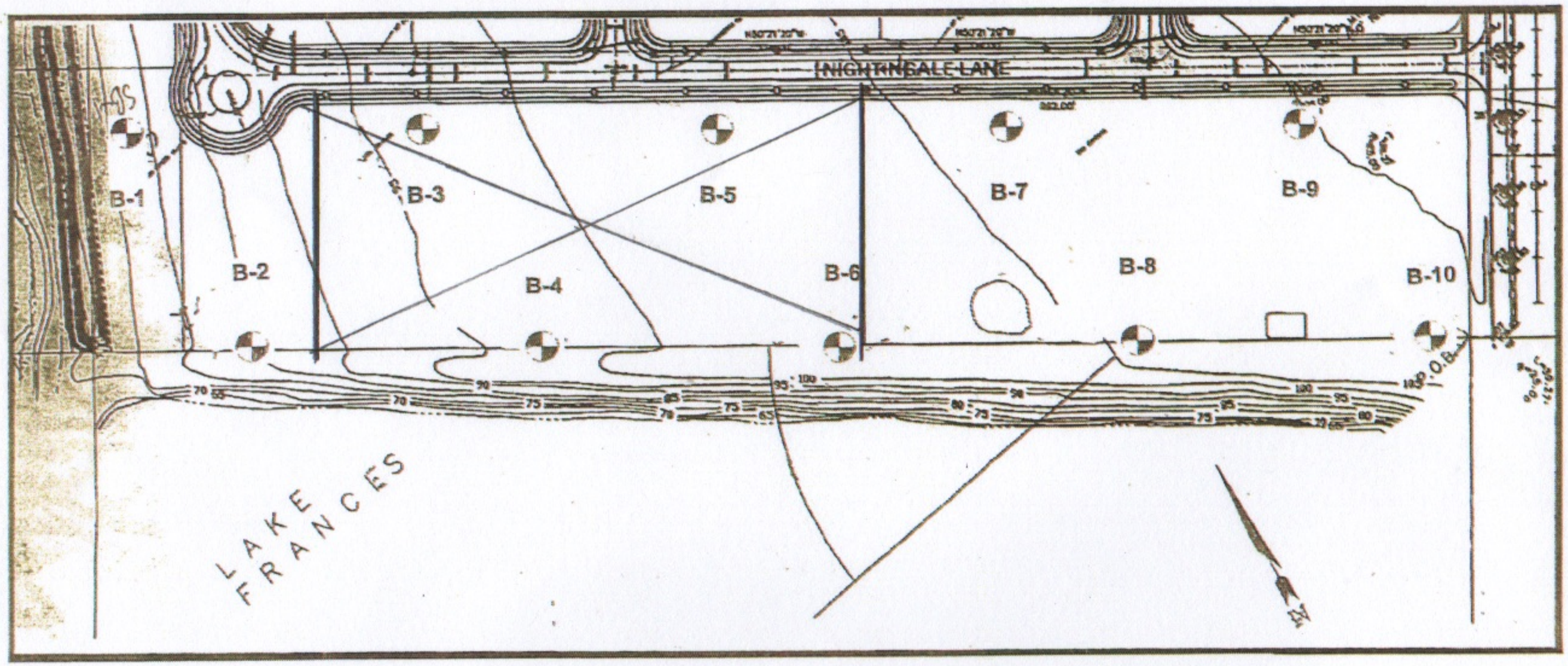
The Standard Penetration Test, commonly called a soil boring, provides small soil samples and standard penetration resistances (blow counts) from selected depth intervals. The samples are used for soil classification and the penetration resistances provide a general indication of soil strength and density. All of this data is used to estimate soil bearing capacity and settlement.

The borings are advanced to the desired test depth by a dry rotary drilling process using a flight auger. When it becomes necessary, drilling mud is used. Drilling mud, in this application, is a mixture of clay and water with a specific gravity of 1.05 to 1.10. Drilling mud is heavier than water; consequently, the drilling mud prevents ground water from entering the bore and provides support to the walls of the bore, minimizing wall collapse.

The sampler is driven into the bottom of the boring with a 140 pound hammer dropping thirty (30) inches. The blows are counted for three (3) consecutive six (6) inch increments for a total of eighteen (18) inches. The first six (6) inches are to assure that the sampler is in undisturbed soil. The number of blows for the remaining twelve (12) inches is recorded and is termed the N value or blow counts. This is performed in each soil stratum, but at maximum intervals of five (5) feet.

This procedure gives an minimally disturbed sample that is classified by a technician, packaged in suitable containment, and transported to the laboratory. The samples are examined by an engineer or a geologist to verify the field classifications.

The boring data are shown as soil classifications and penetration resistances in blow counts. The symbols used to show the various soils encountered are explained in the legend accompanying the Boring Logs. The blow counts are shown as blow count(s) per six (6) inches of penetration, i.e. 22/6. The color of the soil is determined by using the Munsell Soil Color Charts and is given in code such as 10YR 6/3. This information is used to prepare Boring Logs as necessary.



NOT TO SCALE

Central Testing Laboratory **ENGINEERING & MATERIALS TESTING**		723 SOUTH 14TH STREET LEESBURG, FL 34748 (352)787-1268
BORE LOCATION MAP HOFMEISTER DESIGN & CONSTRUCTION, INC. PROJECT ALPHA TAVARES, LAKE COUNTY, FLORIDA	DRAWN BY: TWT CHECKED BY: CMK DATE: 11/3/05	JOB NUMBER: 0584334.200 FIGURE 2 SECTION 21, TOWNSHIP 19 SOUTH, RANGE 26 EAST

APPENDIX II

BORING LOG

BORING NO. B-1

PROJECT: PROJECT ALPHA ?, NW
BORING LOCATION: 184' S & 55' E OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 13'

DATE: 10/12/05
DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:

82.3±

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION
0	2 4 5	LIGHT YELLOWISH BROWN (10YR 6/4) FINE SAND (SP)
	7 7 5	
5	3 2 1	VERY PALE BROWN (10YR 7/4) FINE SAND (SP)
	1 1 2	BROWNISH YELLOW (10YR 6/8) FINE SAND (SP)
	1 2 1	VERY PALE BROWN (10YR 7/4) FINE SAND (SP)
10		
	6 6 8	BROWNISH YELLOW (10YR 6/8) COARSE SAND (SP)
15		
	6 6 7	WHITE (10YR 8/1) SLIGHTLY CLAYEY COARSE SAND (SP/SC)
20		
	3 4 4	VERY PALE BROWN (10YR 8/2) CLAYEY FINE SAND (SC)
25		BORING GROUTED UPON COMPLETION
30		
35		

TEST RESULTS
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
PERCENT PASSING # 200 ●
MOISTURE % ✳
N-VALUE
10 20 30 40

Notes:

Central Testing Laboratory

BORING LOG

BORING NO. B-2

PROJECT: PROJECT ALPHA
BORING LOCATION: 386' S & 21' W OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 13'

DATE: 10/12/05

DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION
0	5 5 5	PALE BROWN (10YR 6/3) FINE SAND (SP)
	4 4 6	
5	3 3 2	VERY PALE BROWN (10YR 7/4) FINE SAND (SP)
	3 2 2	
10	3 3 3	BROWNISH YELLOW (10YR 6/6) FINE SAND (SP)
	5 5 5	BROWNISH YELLOW (10YR 6/8) CLAYEY FINE SAND (SC)
15		
20	7 9 11	VERY PALE BROWN (10YR 7/4) FINE SAND (SP)
	7 6 6	VERY PALE BROWN (10YR 8/3) COARSE SAND (SP)
25		
30	5 6 6	WHITE (10YR 8/1) COARSE SAND (SP)
	3 3 3	VERY PALE BROWN (10YR 8/3) COARSE SAND (SP)
35		

TEST RESULTS
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
PERCENT PASSING # 200 ●
MOISTURE % +
N-VALUE
10 20 30 40

Notes:

LOG OF TEST BORING

BORING B-2

PROJECT: PROJECT ALPHA

DATE: 10/12/05

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	TEST RESULTS PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT PERCENT PASSING # 200 ● MOISTURE % + N-VALUE 10 20 30 40
40	3 3 3	YELLOW (10YR 8/6) W/ STRONG BROWN (7.5YR 5/6) FINE SAND (SP)	
45	6 6 7	LIGHT REDDISH BROWN (2.5YR 7/ 4) COARSE SAND (SP)	
50		BORING GROUTED UPON COMPLETION	
55			
60			
65			
70			
75			

Central Testing Laboratory

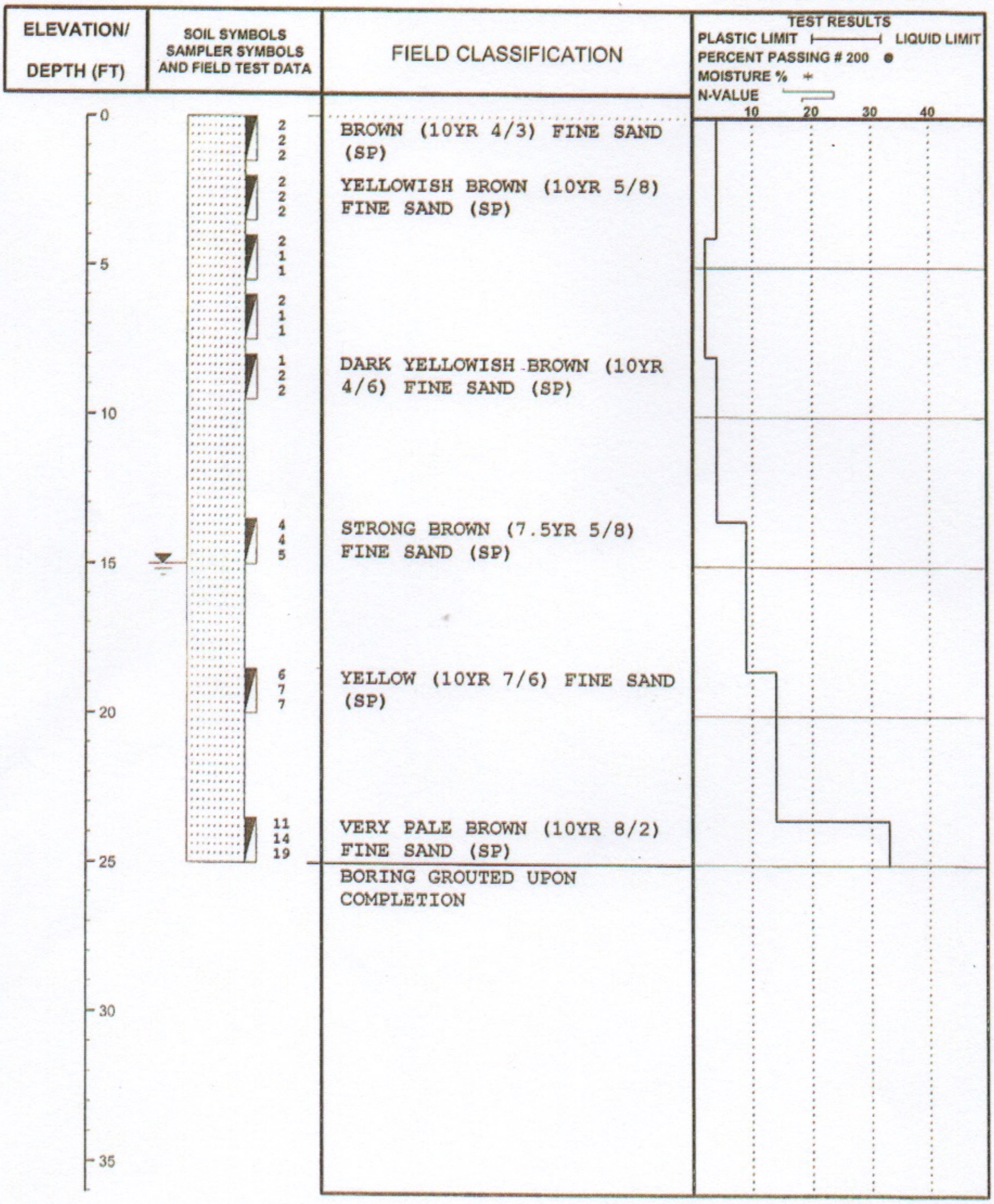
BORING LOG

BORING NO. B-3

PROJECT: PROJECT ALPHA
BORING LOCATION: 342' S & 260' E OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 15'

DATE: 10/ 5/05

DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:



Notes:

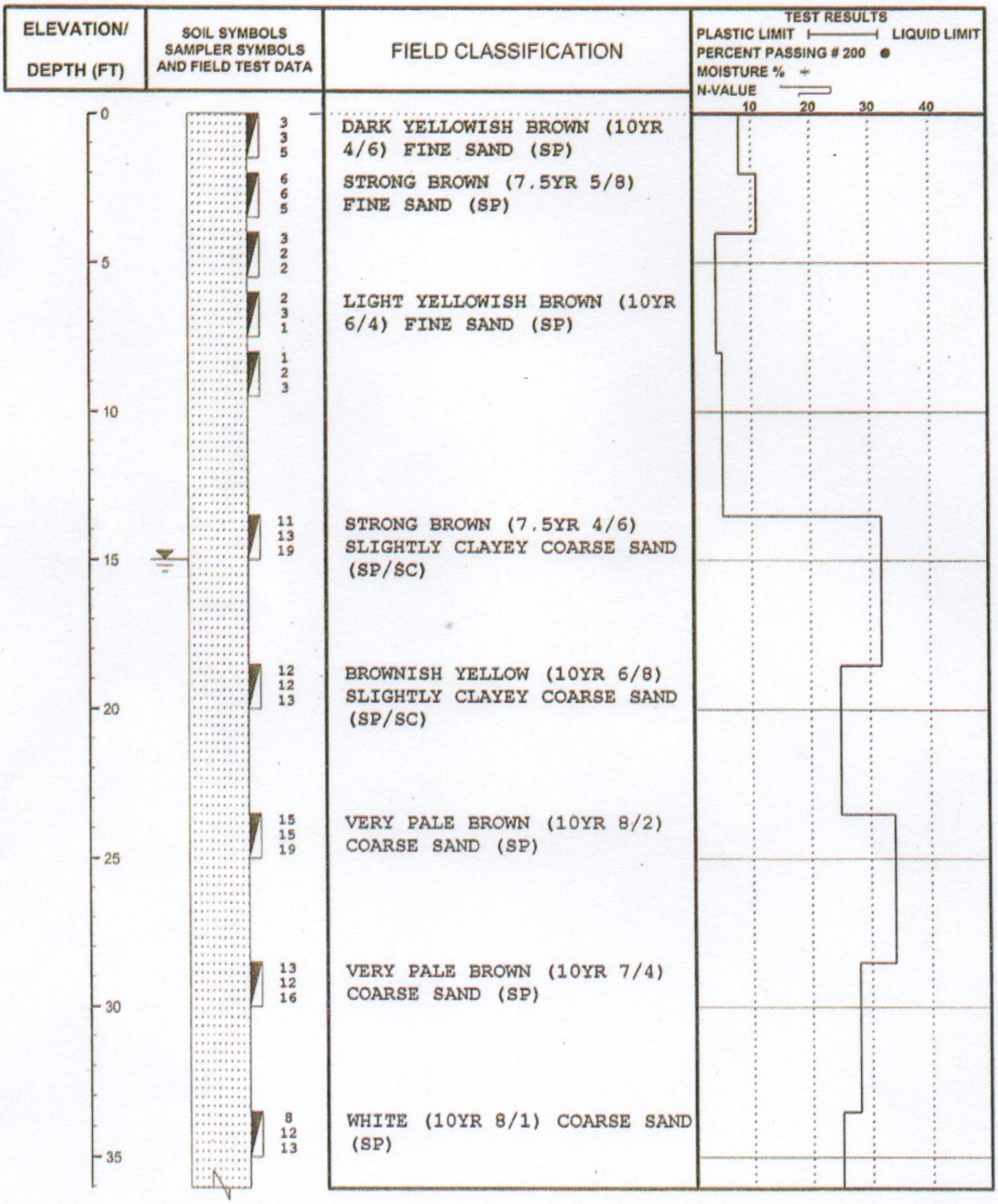
BORING LOG

BORING NO. B-4

PROJECT: PROJECT ALPHA
BORING LOCATION: 587' S & 217' E OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 15'

DATE: 10/ 5/05

DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:



Notes:

LOG OF TEST BORING

BORING B-4

PROJECT: PROJECT ALPHA

DATE: 10/ 5/05

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION
40	9 9 10	WHITE (10YR 8/1) SLIGHTLY SILTY COARSE SAND (SP/SM)
45	6 7 7	REDDISH YELLOW (5YR 7/6) SILTY FINE SAND (SM)
50	4 3 3	YELLOW (2.5Y 8/8) SILTY FINE SAND (SM)
55		BORING GROUTED UPON COMPLETION
60		
65		
70		
75		

TEST RESULTS

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT

PERCENT PASSING # 200 ●

MOISTURE % +

N-VALUE

10 20 30 40

Central Testing Laboratory

BORING LOG

BORING NO. B-5

PROJECT: PROJECT ALPHA
BORING LOCATION: 486' S & 505' E OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 15'

DATE: 10/20/05

DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION
0	3 3 2	DARK YELLOWISH BROWN (10YR 4/4) FINE SAND (SP)
	3 3 3	STRONG BROWN (7.5YR 4/6) FINE SAND (SP)
5	2 2 1	STRONG BROWN (7.5YR 5/8) FINE SAND (SP)
	2 1 1	
	2 3 3	
10		
	6 7 9	BROWNISH YELLOW (10YR 6/8) COARSE SAND (SP)
15 ▽		
	5 5 6	REDDISH YELLOW (7.5YR 6/6) COARSE SAND (SP)
20		
	8 10 12	YELLOW (10YR 7/6) COARSE SAND (SP)
25		BORING GROUTED UPON COMPLETION
30		
35		

TEST RESULTS
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
PERCENT PASSING # 200 ●
MOISTURE % *
N-VALUE
10 20 30 40

Notes:

Central Testing Laboratory

BORING LOG

BORING NO. B-6

PROJECT: PROJECT ALPHA
BORING LOCATION: 800' S & 450' E OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 15'

DATE: 10/ 5/05

DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION
0	3 5 6	STRONG BROWN (7.5YR 5/6) FINE SAND (SP)
	8 4 4	
5	3 2 2	
	2 1 2	REDDISH YELLOW (7.5YR 6/8) FINE SAND (SP)
	2 2 2	
10		
	6 7 7	BROWNISH YELLOW (10YR 6/8) FINE SAND (SP)
15	▼	
	9 12 15	STRONG BROWN (10YR 5/6) FINE SAND (SP)
20		
	7 9 11	YELLOW (10YR 8/6) SLIGHTLY CLAYEY FINE SAND (SP/SC)
25		
	18	
30		
	16 18 20	VERY PALE BROWN (10YR 8/3) COARSE SAND (SP)
35		

TEST RESULTS
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
PERCENT PASSING # 200 ●
MOISTURE % +
N-VALUE
10 20 30 40

Notes:

Central Testing Laboratory

LOG OF TEST BORING

BORING B-6

PROJECT: PROJECT ALPHA

DATE: 10/ 5/05

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION
40	7 15 11	WHITE (10YR 8/1) SLIGHTLY SILTY FINE SAND (SP/SM)
45	7 7 7	PALE YELLOW (2.5Y 8/3) SLIGHTLY SILTY FINE SAND (SP/SM)
50	5 5 5	PALE YELLOW (2.5Y 8/2) SILTY FINE SAND (SM)
55	5 6 7	LIGHT RED (2.5YR 6/8) SILTY FINE SAND (SM)
		BORING GROUTED UPON COMPLETION
60		
65		
70		
75		

TEST RESULTS

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT

PERCENT PASSING # 200 ●

MOISTURE % +

N-VALUE

10 20 30 40

Central Testing Laboratory

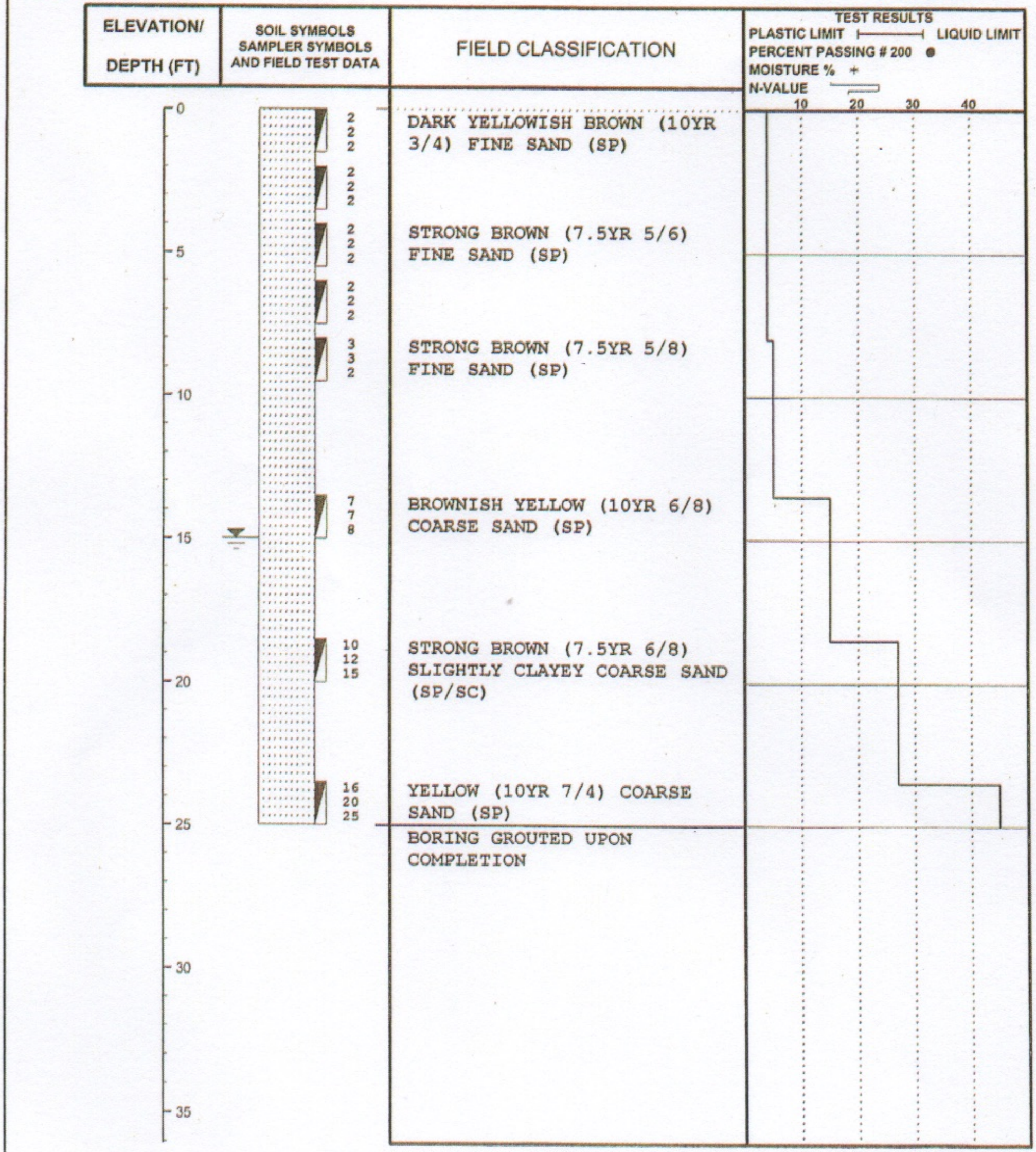
BORING LOG

BORING NO. B-7

PROJECT: PROJECT ALPHA
BORING LOCATION: 706' S & 736' E OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 15'

DATE: 10/ 5/05

DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:



Notes:

Central Testing Laboratory

BORING LOG

BORING NO. B-8

PROJECT: PROJECT ALPHA
BORING LOCATION: 10O2' S & 702' E OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 15'

DATE: 10/ 5/05

DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION
0	3 3 4	DARK YELLOWISH BROWN (10YR 3/4) FINE SAND (SP)
	3 3 4	REDDISH YELLOW (7.5YR 6/6) FINE SAND (SP)
5	2 3 3	
	2 1 1	
	2 1 2	
10		
	6 11 12	BROWNISH YELLOW (10YR 6/8) FINE SAND (SP)
15		
	9 9 10	
20		
	12 12 12	YELLOW (10YR 7/8) FINE SAND (SP)
25		
	14 14 16	VERY PALE BROWN (10YR 7/4) FINE SAND (SP)
30		
	16 16 18	VERY PALE BROWN (10YR 8/2) COARSE SAND (SP)
35		

TEST RESULTS
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
PERCENT PASSING # 200 ●
MOISTURE % +
N-VALUE
10 20 30 40

Notes:

Central Testing Laboratory

LOG OF TEST BORING

BORING B-8

PROJECT: PROJECT ALPHA

DATE: 10/ 5/05

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	TEST RESULTS
40	8 8 6		PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT PERCENT PASSING # 200 ● MOISTURE % + N-VALUE 10 20 30 40
45	6 7	VERY PALE BROWN (10YR 8/2) COARSE SAND (SP)	
50	7 8 8		
55	8 7 9	LIGHT REDDISH BROWN (2.5YR 7/4) COARSE SAND (SP)	
60	6 7 10	BORING GROUTED UPON COMPLETION	
65			
70			
75			

Central Testing Laboratory

BORING LOG

BORING NO. B-9

PROJECT: PROJECT ALPHA
BORING LOCATION: 486' S & 505' E OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 15'

DATE: 10/20/05

DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION
0	2 2 2	STRONG BROWN (7.5YR 4/6) FINE SAND (SP)
	2 2 2	
	1 1 1	STRONG BROWN (7.5YR 5/6) FINE SAND (SP)
5	2 2 2	STRONG BROWN (7.5YR 5/8) FINE SAND (SP)
	2 2 2	
10		
	6 6 8	BROWNISH YELLOW (10YR 6/6) COARSE SAND (SP)
15 ▽		
	8 8 10	STRONG BROWN (7.5YR 6/8) CLAYEY COARSE SAND (SC)
20		
	11 20 25	YELLOW (10YR 7/6) COARSE SAND (SP)
25		BORING GROUTED UPON COMPLETION
30		
35		

TEST RESULTS
PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT
PERCENT PASSING # 200 ●
MOISTURE % *
N-VALUE
10 20 30 40

Notes:

Central Testing Laboratory

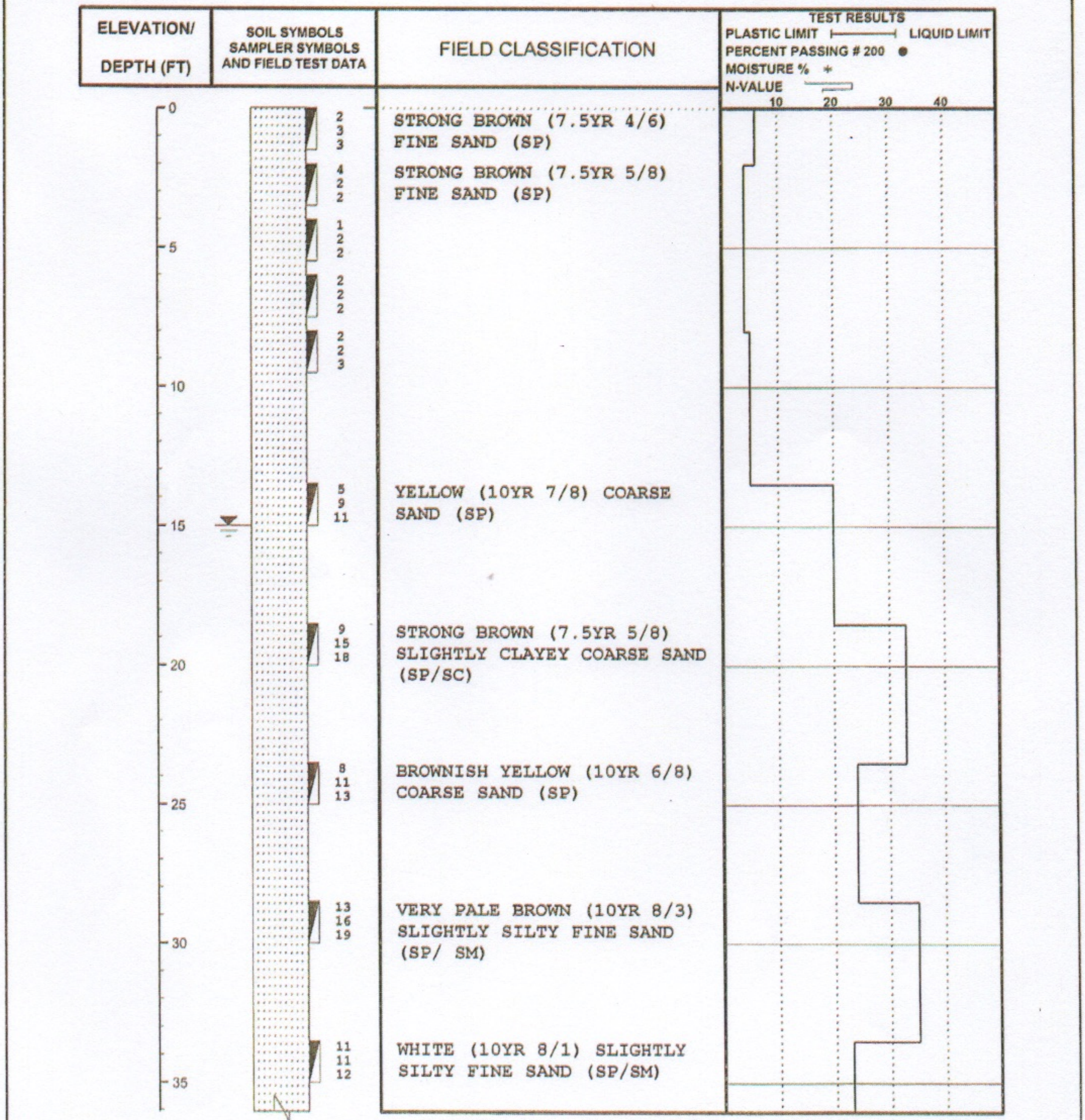
BORING LOG

BORING NO. B-10

PROJECT: PROJECT ALPHA
BORING LOCATION: 1198' S & 940' E OF NE PROPERTY CORNER
BORING METHOD: ASTM 1586
CLIENT: HOFFMEISTER CONSTRUCTION
DEPTH TO - Water: 15'

DATE: 10/21/05

DRILLER: J.S & T.M.
ELEVATION: N/A
DEPTH OF COLLAPSE:



Notes:

LOG OF TEST BORING

BORING B-10

PROJECT: PROJECT ALPHA

DATE: 10/21/05

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION
40	14 12 13	
45	7 8 8	WHITE (10YR 8/1) COARSE SAND (SP)
50	9 9 10	YELLOW (2.5Y 7/6) SLIGHTLY SILTY COARSE SAND (SP/SM)
55	6 7 7	YELLOW (10YR 7/8) SILTY FINE SAND (SM)
60	6 7 10	RED (2.5YR 5/8) SILTY FINE SAND (SM) BORING GROUTED UPON COMPLETION
65		
70		
75		

TEST RESULTS

PLASTIC LIMIT ⊢—⊣ LIQUID LIMIT

PERCENT PASSING # 200 ●

MOISTURE % +

N-VALUE

10 20 30 40

Central Testing Laboratory

KEY TO SYMBOLS

Symbol Description

Strata symbols

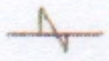
POORLY GRADED SANDS
OR GRAVELLY SANDS
LITTLE OR NO FINES

CLAYEY SANDS
SAND-CLAY MIXES

SILTY SANDS
SAND-SILT MIXES

Misc. Symbols

Water table at
boring completion



Boring continues

Soil Samplers

Standard penetration test

Notes:

1. ELEVATIONS REPORTED ON LOGS PROVIDED BY CLIENT.
2. THESE LOGS ARE SUBJECT TO THE LIMITATIONS, CONCLUSIONS, AND RECOMMENDATIONS IN THIS REPORT. DUE TO POSSIBLE VARIANCES IN THE SUBSURFACE BETWEEN THE LOCATIONS OF THE BORINGS, AND THE VARYING DEGREE OF DISTURBANCE, THE DESCRIPTIONS GIVEN ARE GOOD ONLY FOR THE MATERIALS REMOVED DURING THE CONSTRUCTION OF EACH BORING.
3. RELATIVE DENSITY (sand-silt)
   VERY LOOSE - Less than 4 blows/ft. LOOSE - 4 to 10 blows/ft.
   MEDIUM - 10 to 30 blows/ft. DENSE - 30 to 50 blows/ft.
   VERY DENSE - More than 50 blows/ft.
4. 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.
5. COLORS ARE DETERMINED BY USING THE MUNSELL SOIL COLOR CHART AND THE VALUES ARE GIVEN IN CODE SUCH AS 10YR 3/4.