



Cal-Tech Testing, Inc.

- Engineering
- Geotechnical
- Environmental

P.O. Box 1625 • Lake City, FL 32056-1625
6919 Distribution Avenue S., Unit #5 • Jacksonville, FL 32257

Tel. (386) 755-3633 • Fax (386) 752-5456
Tel. (904) 262-4046 • Fax (904) 262-4047

LABORATORIES

May 18, 2004

Southeast Environmental Geology
4974 62nd Avenue
Live Oak, Florida 32060

Attention: Dennis Price

Reference: Proposed Warehouse Facility
U. S. 90 and I-10
Sanderson, Florida
Cal-Tech Project No. 04-233

Dear Mr. Price,

Cal-Tech Testing, Inc. has completed the preliminary subsurface investigation and engineering evaluation of property located near U. S. 90 and I-10 in Sanderson, Florida. We understand a warehouse facility will be constructed at the site. Our work was authorized by you.

Introduction

Details of the proposed construction have not been provided; however, we believe the warehouse building will be of metal construction and have a relatively large floor area. Support for the building, we believe, will be provided by conventional, shallow spread footings for which column and wall loads are anticipated not to exceed 100 kips and 2.5 kips per foot, respectively. Finished floor elevations, we believe, will be near the existing surface grade.

The purposes of our investigation were to determine the general subsurface conditions on the property, to evaluate the suitability of the site soils for the use of conventional footings, and to provide preliminary recommendations as appropriate.

Site Investigation

The subsurface conditions were investigated by performing six (6) Standard Penetration Test borings advanced to depths of 15 to 75 feet. The borings were performed at the approximate locations indicated on the attached Boring Location Plan. These locations were selected on site by you.

The Standard Penetration Test (ASTM D-1586) is performed by driving a standard split-barrel sampler into the soil by blows of a 140-pound hammer falling 30

inches. The number of blows required to drive the sampler 1 foot, after seating 6 inches, is designated the penetration resistance, or N-value; this value is an index to soil density or consistency.

Findings

To a depth of about 17 feet, the soil borings encountered approximately six layers of loose to medium dense, gray, tan or white sand (SP) or sand with silt (SP/SM). The N-values of these soils range generally from 4 to 24 blows per foot.

Between depths of about 17 feet and 47 feet, the soil borings encountered up to six layers of generally medium dense to dense, gray or tan sand (SP) or sand with silt (SP/SM). The N-values of these soils range from 10 to more than 50 blows per foot.

Only one boring was advanced to a depth of more than 47 feet, and below this depth we encountered layers of medium dense to dense sand with lenses of silt or clayey sand (SP, SC/ML), clayey sand (SC), sand with clay (SP/SC) or sand (SP). A layer of very stiff, dark gray, sandy clay (CL) was encountered at a depth of about 52 feet. N-values for these soils range from 12 to 34 blows per foot.

Groundwater was encountered at depths of 3.7 to 4.6 feet at the time of our investigation. Depending upon boring location, we estimate the seasonal high groundwater table will occur at depths of about 2.0 to 3.0 feet.

For a more detailed description of the subsurface conditions encountered, please refer to the attached Boring Logs. Note specifically the transition between soil layers may be gradual and not abrupt as indicated by the logs; therefore, the thickness of soil layers should be considered approximate.

Discussion and Recommendations

Based upon our findings and evaluation, it is our opinion conventional, shallow spread footings may be used to provide support for the proposed warehouse facility. For preliminary designs, we recommend foundations be sized to exert a maximum soil bearing pressure of 3,000 pounds per square foot.

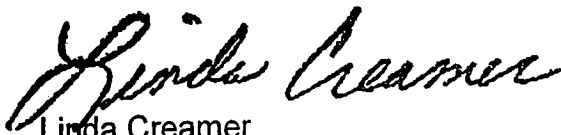
The site soils appear to be relatively clean, therefore, excavation and replacement of unsuitable soils is not anticipated. Normal clearing and grubbing will however be required. When free of organics, the existing site soils should be suitable for use as a building fill.

Due to relatively shallow ground water, we recommend plans for site preparation specifically include dewatering, particularly deeper foundation areas. Otherwise, only normal, good practice site preparation procedures are anticipated to suitably prepare the foundation, slab and pavement areas.

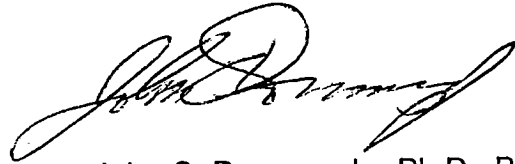
This preliminary evaluation is based upon subsurface conditions encountered at locations that may or may not coincide with the warehouse area; therefore, we recommend a more detailed investigation and evaluation be performed once the building area has been selected and plans are available. Site and foundation specific recommendations can then be provided to suitable prepare the subgrade soils

We appreciate the opportunity to be of service on this project and look forward to a continued association. Please do not hesitate to contact us should you have questions concerning this report or if we may be of further assistance.

Respectfully submitted,
Cal-Tech Testing, Inc.

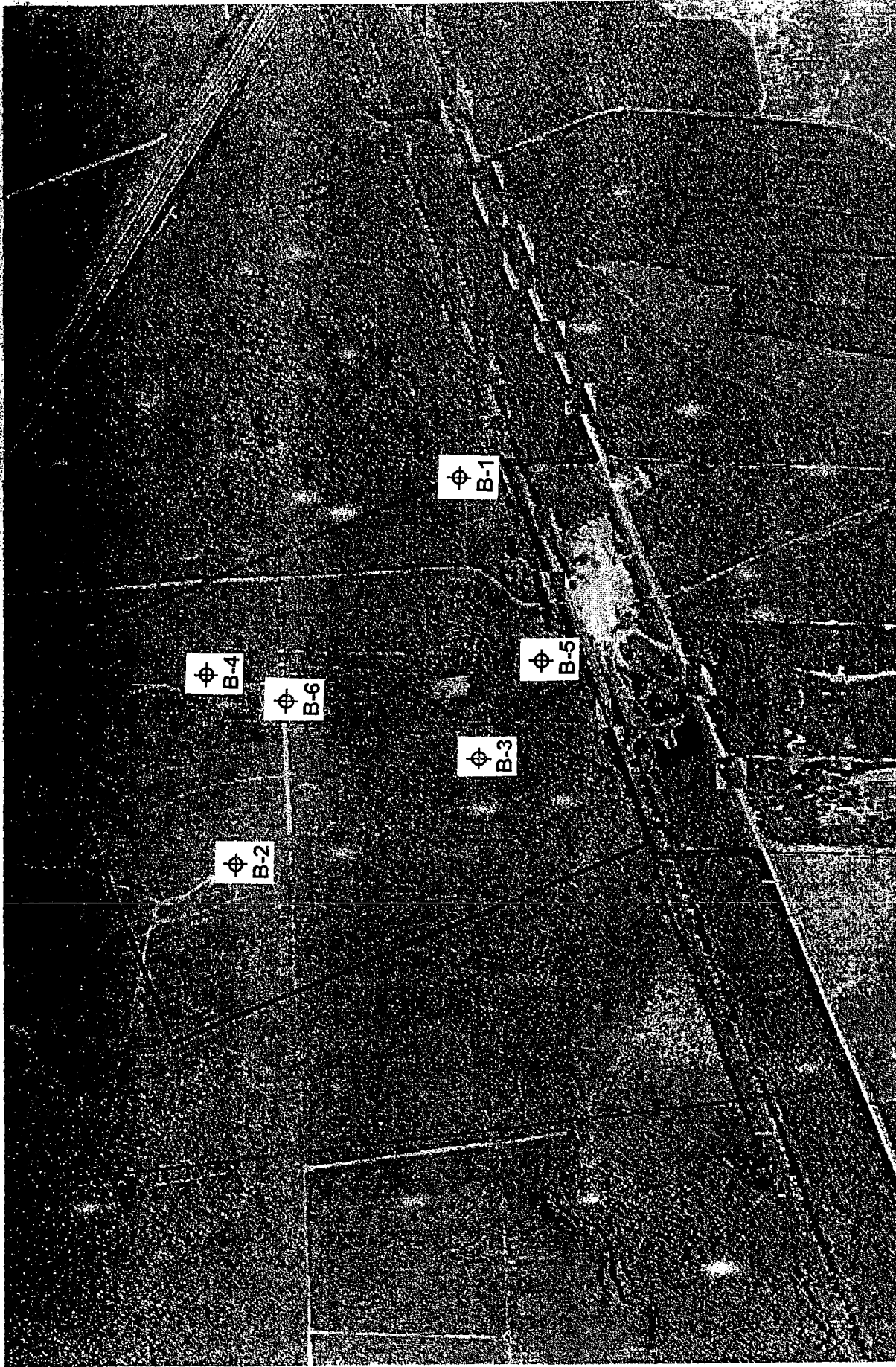


Linda Creamer
President / C. E. O.



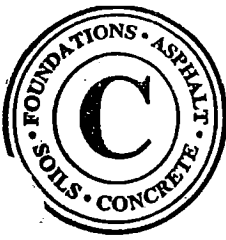
John C. Dorman, Jr., Ph.D., P.E.
Geotechnical Engineer

5724/04 52612



**Boring Location Plan: Warehouse Facility
Sanderson, Florida**

1000 0 1000 Feet



Cal-Tech Testing, Inc.

- Engineering
- Geotechnical
- Environmental

LABORATORIES

P.O. Box 1625 • Lake City, FL 32056-1625
6919 Distribution Avenue S., Unit #5 • Jacksonville, FL 32257

Tel. (386) 755-3633 • Fax (386) 752-5456
Tel. (904) 262-4046 • Fax (904) 262-4047

SUMMARY OF LABORATORY TEST RESULTS

PROJECT: Proposed Warehouse Facility
Sanderson, Florida

CLIENT: Southeast Environmental Geology

JOB NO.: 04-233

REPORT NO.: 1

DATE: 05/21/04

BORING NO.	SAMPLE DEPTH (ft)	SOIL DESCRIPTION	SAMPLE TYPE	NATURAL MOISTURE (%)	ATTERBERG LIMITS		COEFFICIENT OF PERMEABILITY (feet/day)	SIEVE ANALYSIS (% passing)						AASHTO SOIL CLASSIFICATION	UNIFIED SOIL CLASSIFICATION
					LIQUID LIMIT (%)	PLASTICITY INDEX (%)		No. 4	No. 10	No. 40	No. 60	No. 100	No. 200		
B-1	2	Dark Gray To Black Sand with Silt						100.0	100.0	97.4	85.0	23.1	6.7		SP/SM
B-2	3	White Sand						100.0	100.0	97.3	82.2	20.2	5.0		SP
B-2	9	Dark Gray Sand With Silt						100.0	100.0	98.0	83.5	17.9	6.7		SP/SM
B-2	14	Dark Gray To Black Sand with Silt						100.0	100.0	92.8	77.4	23.1	8.5		SP/SM
B-4	8	Dark Gray To Black Sand with Silt						100.0	100.0	98.0	88.2	20.9	8.4		SP/SM
B-5	2	Grayish Tan Sand with Silt						100.0	99.9	97.4	85.1	22.2	5.5		SP/SM
B-6	0.5	Gray Sand with Silt						99.7	99.5	96.6	82.4	20.0	5.2		SP/SM
B-6	5	Tannish Gray Sand						100.0	100.0	97.7	83.2	16.5	4.9		SP

*SS- Split Spoon
ST- Shelby Tube
A- Auger

Reviewed By:

John D. ... 5/24/04

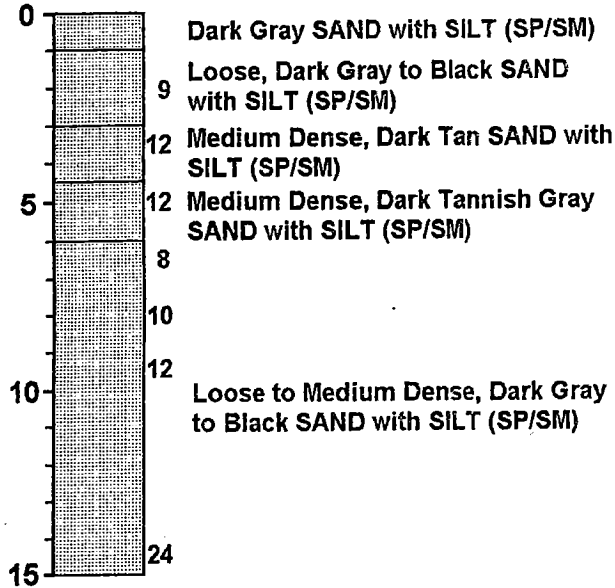
TMS

B-1

Water Table: 4.3 ft.

Soil

Depth (ft) N-value Description

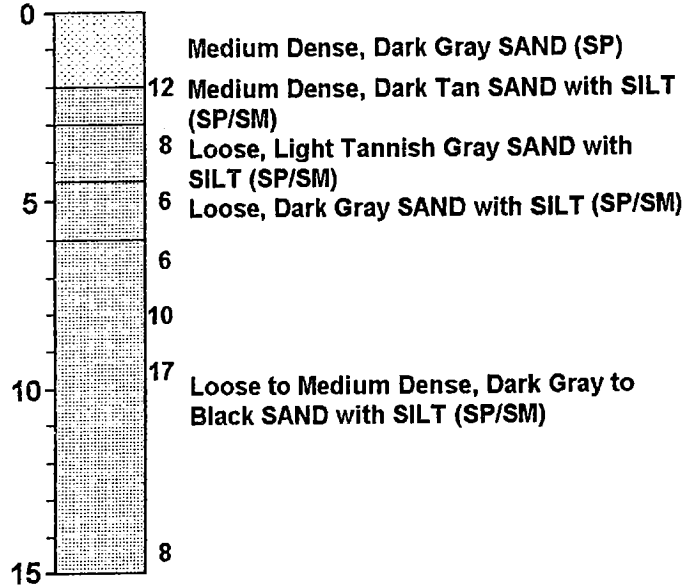


B-3

Water Table: 3.7 ft.

Soil

Depth (ft) N-value Description

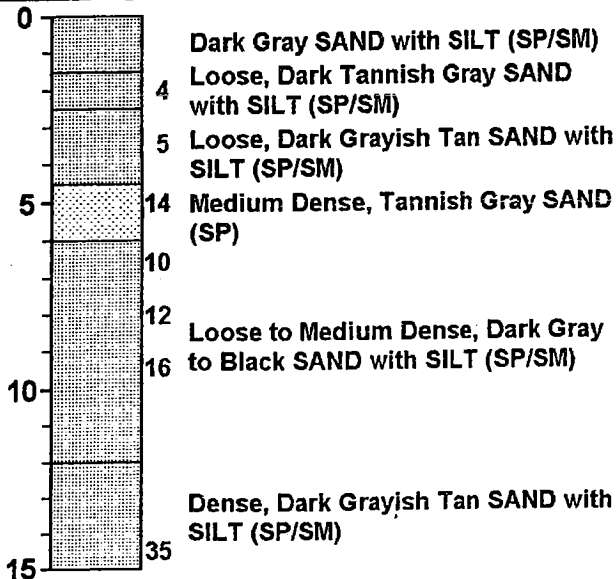


B-4

Water Table: 4.3 ft.

Soil

Depth (ft) N-value Description

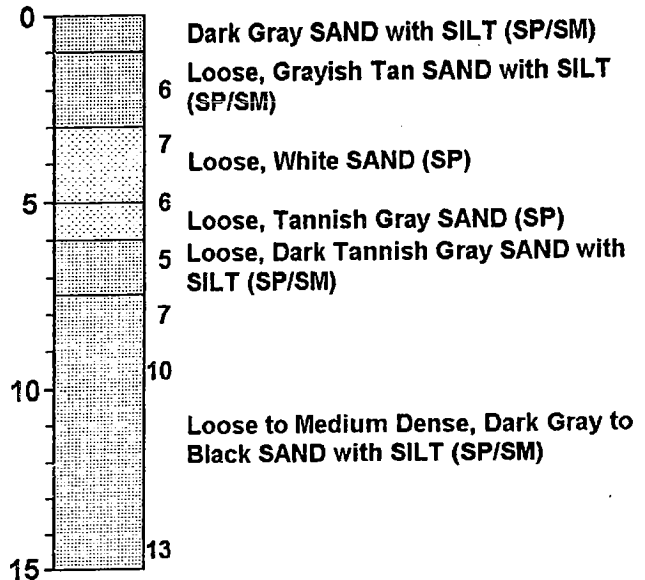


B-5

Water Table: 3.7 ft.

Soil

Depth (ft) N-value Description



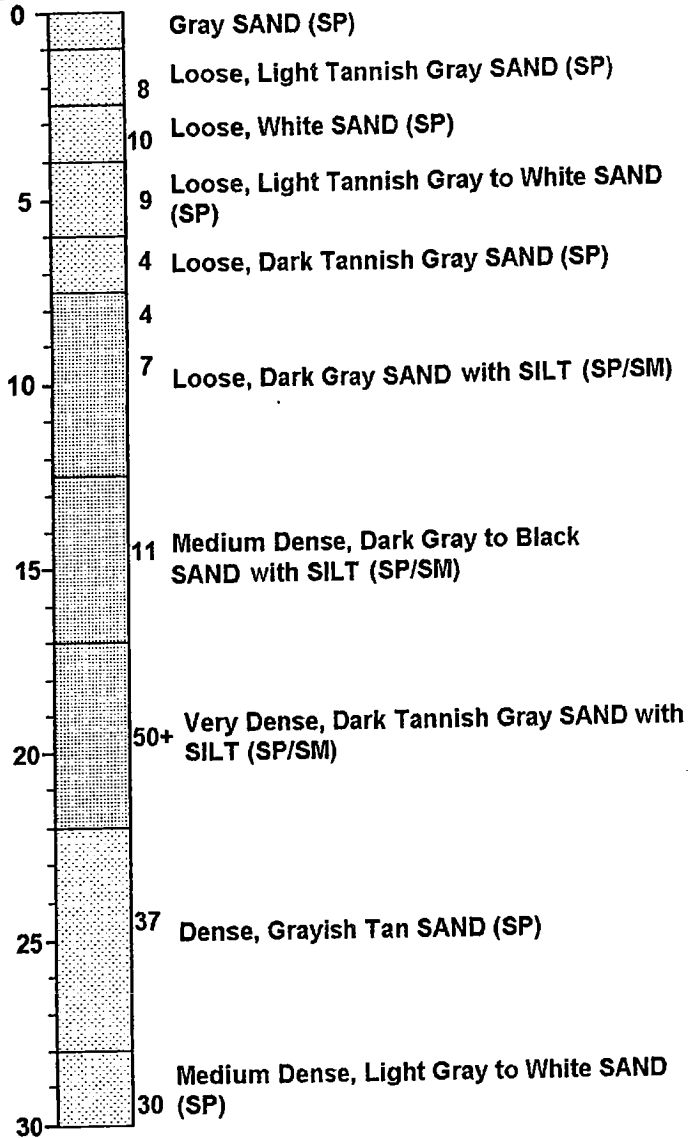
**Boring Logs: Warehouse Facility
Sanderson, Florida**

B-2

Water Table: 4.6 ft.

Soil

Depth (ft) N-value Description



**Boring Logs: Warehouse Facility
Sanderson, Florida**

B-6

Water Table: 4.3 ft.

Depth (ft)	N-value	Soil Description
0		Gray SAND with SILT (SP/SM)
5		Loose, Light Tannish Gray SAND (SP)
7		Loose, White SAND (SP)
5	4	
8		Loose, Tannish Gray SAND (SP)
8		Loose, Dark Gray to Black SAND with SILT (SP/SM)
10	6	Loose, Dark Gray SAND (SP)
15	16	Medium Dense, Dark Gray to Black SAND with SILT (SP/SM)
20	20	
25	10	Loose, Dark Tannish Gray SAND (SP)
30	28	Medium Dense, Tannish Gray SAND (SP)
35	27	Medium Dense to Dense, Grayish Tan SAND (SP)
40	34	

B-6 (Continued)

Water Table: 4.3 ft.

Depth (ft)	N-value	Soil Description
40		Medium Dense to Dense, Grayish Tan SAND (SP)
45	41	Dense, Tannish Gray SAND (SP)
50	34	Dense, White SAND, Lenses Dark Gray SILT (SP,ML)
55	18	Very Stiff, Dark Gray, SANDY CLAY (CL)
60	25	Medium Dense, Tannish Gray SAND, Lenses CLAYEY SAND (SP,SC)
65	13	Medium Dense, Tannish Gray, VERY CLAYEY SAND (SC)
70	12	Medium Dense, Gray SAND with CLAY (SP/SC)
75	24	Medium Dense, Gray SAND (SP)

Boring Logs: Warehouse Facility Sanderson, Florida