MANATEE COUNTY
FLORIDA

January 28, 2009

TO: All Interested Bidders

SUBJECT: Invitation for Bid #09-0485CD
Purchase of Sports Lighting Systems for Various Park's Soccer Fields

ADDENDUM #3

Bidders are hereby notified that this Addendum shall be acknowledged on page 20 of the Bid Form and made a part of the above named bidding and contract documents. Bids submitted without acknowledgment of the Addendum will be considered incomplete.

The following items are issued to add to, modify, and clarify the bid and contract documents. These items shall have the same force and effect as the original bidding and contract documents, and cost involved shall be included in the bid prices. Bids to be submitted on the specified bid date, shall conform to the additions and revisions listed herein.

1. **ADD** the following to Bid Article D.01.D, Lighting System Construction, on page 16 of the bid documents:

   The foundation design for the **Braden River Park** location shall be based on the Geotechnical Soil report that is attached to this addendum #3.

END OF ADDENDUM #3

Bids will be received at Manatee County Purchasing, 1112 Manatee Avenue West, Bradenton, Florida 34205 until **Friday, February 13, 2009 at 3:00 PM.**

Sincerely,

R.C. "Rob" Cuthbert, C.P.M., CPPO
Purchasing Division Manager

Financial Management Department –Purchasing Division
1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205
PHONE: 941.749.3014 * FAX: 941.749.3034
www.mymanatee.org

SUBSURFACE SOIL EXPLORATION, ANALYSIS AND RECOMMENDATIONS FOR THE PROPOSED SOCCER FIELD LIGHT POLES AT BRADEN RIVER PARK, 5201 51ST STREET EAST, BRADENTON, MANATEE COUNTY, FLORIDA

Ardaman & Associates, Inc.

OFFICES

Orlando, 8008 S. Orange Avenue, Orlando, Florida 32809, Phone (407) 855-3860
Bartow, 1525 Centennial Drive, Bartow, Florida 33830, Phone (863) 533-0858
Cocoa, 1300 N. Cocoa Boulevard, Cocoa, Florida 32922, Phone (321) 632-2503
Fort Lauderdale, 3665 Park Central Boulevard North, Pompano Beach, Florida 33064, Phone (954) 969-8788
Fort Myers, 9970 Bavaria Road, Fort Myers, Florida 33913, Phone (239) 768-6600
Miami, 2608 W. 84th Street, Hialeah, Florida 33016, Phone (305) 825-2683
Port Charlotte, 740 Tamiami Trail, Unit 3, Port Charlotte, Florida 33954, Phone (941) 624-3393
Port St. Lucie, 460 NW Concourse Place Unit #1, Port St. Lucie, Florida 34986-2248, Phone (772) 878-0072
Sarasota, 78 Sarasota Center Blvd., Sarasota, Florida 34240, Phone (941) 922-3526
Tallahassee, 3175 West Tharpe Street, Tallahassee, Florida 32303, Phone (850) 576-6131
Tampa, 3925 Coconut Palm Drive, Suite 115, Tampa, Florida 33619, Phone (813) 620-3389
West Palm Beach, 2511 Westgate Avenue, Suite 10, West Palm Beach, Florida 33409, Phone (561) 687-8200

MEMBERS:
A.S.F.E.
American Concrete Institute
American Society for Testing and Materials
Florida Institute of Consulting Engineers

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

January 27, 2009
File No. 09-7034

TO: Manatee County Government
Construction Services Property Management Division
1112 Manatee Avenue West
Bradenton, FL 34208

Attention: Mark Parsley

SUBJECT: Subsurface Soil Exploration, Analysis and Recommendations for the Proposed Soccer Field Light Poles at Braden River Park, 5201 51st Street East, Bradenton, Manatee County, Florida

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Dear Mark:

As requested, our firm has completed a subsurface soil exploration program at the above-referenced site. The purpose of this program was to determine the nature and condition of the subsurface soils at each or the proposed light pole locations.

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

SCOPE

The scope of our services has included the following items:

1. Conducting four (4) test borings at the proposed light pole locations to determine the nature and condition of the subsurface soils.

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

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

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

FIELD EXPLORATION PROGRAM

Our field exploration program consisted of conducting four (4) test borings at the locations indicated on Figure 1. These borings were performed to determine the nature and condition of the subsurface soils to a maximum depth of 30 feet below the existing ground surface. Test boring locations were determined by others. Test boring depths and number were determined by Ardaman & Associates, Inc. The borings were located in the field utilizing available landmarks and a 100 foot tape. These locations should only be considered accurate to the degree implied by the method used. Should more accurate locations be required, a registered land surveyor should be retained. The equipment and procedures used in the borings are described in greater detail in the appendix of this report.

GENERAL SUBSURFACE CONDITIONS

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

A generalization of the subsurface soil conditions encountered in the borings is described below:

DEPTH			
FROM		TO	SOIL DESCRIPTION
0'	-	1'	loose fine sands
1'	-	12'	layered trash and sand mixed
12'	-	25'	loose to very loose fine sand and fine sand with silt
25'	-	30'	medium dense fine sand with phosphate

On the date of our field exploration program the water table was encountered approximately 6 to 7 feet below existing grade. The water table level is anticipated to fluctuate due to seasonal rainfall variations and other factors.

LABORATORY TESTING PROGRAM

Representative soil samples obtained during our field sampling operation were packaged and transferred to our office and, thereafter, examined by a geotechnical engineer to obtain more accurate descriptions of the existing soil strata. The soils samples were visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488-84). The resulting soil descriptions are shown on the soil boring profiles presented in the Appendix of this report.

In addition, we conducted eight natural moisture content tests, (ASTM D2216), and sixteen percent fines analyses (ASTM D1140) on selected soil samples obtained from the borings. The results of these tests are presented adjacent to the sample depth on the boring profiles.

ANALYSIS AND RECOMMENDATIONS

It is our understanding the proposed construction is to consist of prestressed concrete pole-mounted field lights. We have been informed that the pole installation and/or manufacture representative will determine the pole embedment depth. We have analyzed the borings and provided the soil properties necessary to conduct this analysis. This has included determining the internal friction angle, cohesion, and total unit weight of the in-situ soils. The estimated values are listed on the soil boring logs in the Appendix.

It is important to note that the layers of buried trash and debris as well as the overlying fill soil can be assumed to provide no lateral support to the light poles. Therefore, it will be necessary to extend the poles or pole foundations through these layers and into the underlying sands below.

Although no corrosion parameters were determinated for these soil samples, the corrosion potential of the soil encountered in this area (not including the buried trash and debris) has generally been found to be moderately aggressive, as indicated by analytical reports of the corrosivity parameters from other sites.

GENERAL COMMENTS

The analysis and recommendations submitted in this report are based upon the data obtained from four (4) test borings performed at the locations indicated on the attached Figure 1. This report does not reflect any variations which may occur between the borings. While the borings are representative of the subsurface conditions at their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and may be encountered.

The boring logs and related information are based upon the driller's logs and visual examination of selected samples in the laboratory. The delineation between soil types shown on the logs is approximate, and the description represents our interpretation of the subsurface conditions at the designated boring location on the particular date drilled.

The water table levels shown on the boring logs represent water table surfaces encountered on the dates shown. Fluctuations in water table levels should be anticipated throughout the year.

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

Very truly yours,

ARDAMAN & ASSOCIATES, INC.
Certificate of Authorization No. 5950

Brian D. Runkles, E.I.
Staff Engineer

Scott B. Perkins, P.E. 1-27-09
Senior Project Engineer
Fl. Lic. No. 46678

BDR/SBP:nh

APPENDIX

SOIL BORING, SAMPLING AND TESTING METHODS

Standard Penetration Test

The Standard Penetration Test (SPT) is a widely accepted method of in situ testing of foundation soils (ASTM D-1586). A 2-foot long, 2-inch O.D. split-barrel sampler attached to the end of a string of drilling rods is driven 18 inches into the ground by successive blows of a 140-pound hammer freely dropping 30 inches. The number of blows needed for each 6 inches of penetration is recorded. The sum of the blows required for penetration of the second and third 6-inch increments penetration constitutes the test result or N-value. After the test, the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-Value has been empirically correlated with various soil properties allowing a conservative estimate of the behavior of soils under load. the following tables relate N-values to a qualitative description of soil density and, for cohesive soils, an approximate unconfined compressive strength (Qu):

Cohesionless Soils:	N-Value	Description
	0 to 4	Very loose
	4 to 10	Loose
	10 to 30	Medium dense
	30 to 50	Dense
	Above 50	Very dense

Cohesive Soils:	N-Value	Description	Qu (ton/ft^2)
	0 to 2	Very soft	Below 0.25
	2 to 4	Soft	0.25 to 0.50
	4 to 8	Medium stiff	0.50 to 1.0
	8 to 15	Stiff	1.0 to 2.0
	15 to 30	Very stiff	2.0 to 4.0
	Above 30	Hard	Above 4.0

The tests are usually performed at 5-foot intervals. However, more frequent or continuous testing is done by our firm through depths where a more accurate definition of the soils is required. The test holes are advanced to the test elevations by rotary drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid, which is bentonitic drilling mud, is also used to keep the hole open below the water table by maintaining an excess hydrostatic pressure inside the hole. In some soil deposits, particularly highly pervious ones, NX-size flush-coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative split-spoon samples from each sampling interval and from every different stratum are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. After thorough examination and testing of the obtained samples in the laboratory, the samples are discarded unless prior arrangements have been made. After completion of a test boring, the hole is kept open until a steady state groundwater level is recorded. The hole is then sealed by backfilling with neat cement.

Power Auger Borings

Auger borings are used when a relatively large, continuous sampling of soil strata close to the ground surface is desired. A 4-inch diameter, continuous flight, helical auger with a cutting head at its end is screwed into the ground in 5-foot sections. It is powered by the rotary drill rig. The samples is recovered by withdrawing the auger out of the ground without rotating it. The soil sample so obtained, is classified and representative samples put in bags or jars and returned to the laboratory for further classification and testing, if necessary.

Hand Auger Borings

Hand auger borings are used, is soil conditions are favorable, when the soil strata are to be determined within a shallow (approximately 5-foot) depth or when access is not available to power drilling equipment. A 3-inch diameter hand bucket auger with a cutting head is simultaneously turned and pressed into the ground. The bucket auger is retrieved at approximately 6-inch intervals and its contents emptied for inspection. Sometimes post-hole diggers are used, especially in the upper three feet or so. The soil sample obtained is classified and representative samples put in bags or jars and transported to the laboratory for further classification and testing.

Undisturbed Sampling

Undisturbed sampling implies the recovery of soil samples in a state as close to their natural condition as possible. Complete preservation of in situ conditions cannot be realized; however, with careful handling and proper sampling techniques, disturbance during sampling can be minimized for most geotechnical engineering purposes. Examination and testing of undisturbed samples gives a more accurate estimate of in situ behavior than is possible with disturbed samples.

Normally, we obtain undisturbed samples by pushing a 2.875-inch I.D., thin wall seamless steel tube 24 inches into the soil with a single stroke of a hydraulic ram. The sampler, which is Shelby tube, is 30 inches long. After the sampler is retrieved, the ends are sealed in the field and is transported to our laboratory for further examination and testing, as needed.

Laboratory Test Methods

Soil samples returned to our laboratory are examined by a geotechnical engineer or geotechnician to obtain more accurate descriptions of the soil strata. Laboratory testing is performed on selected samples as deemed necessary to aid in soil classification and to further define engineering properties of the soils. The test results are presented on the soil boring logs at the depths at which the respective sample was recovered, except that grain size distributions or selected other test results may be presented on separate tables, figures or plates as described in this report. The soil descriptions shown on the logs are based upon a visual-manual classification procedure in general accordance with the Unified Soil Classification System (ASTM D-2488-84) and standard practice. Following is a list of abbreviations that my be used on the boring logs.

NM -Natural Moisture (Water) Content; ASTM D-2216
-200 -Percent Finer Than No. 200 Sieve; ASTM D-1140
DD -Dry Density of Undisturbed Sample
k -Hydraulic Conductivity (Coefficient of Permeability)
LL -Liquid Limit; ASTM D-4318
PI -Plasticity Index (LL-PL); ASTM D-4318
OC -Organic Content; ASTM D-2977
Qu -Unconfined Compression Strength; ASTM D-2166 (soil), D-2938 (rock)

BORING LOCATION: See Figure 1

DATE DRILLED: 01/21/09 START: FINISH:

GROUND SURFACE ELEVATION:

WATER TABLE DEPTH: 6.8' TIME: DATE: 01/21/08

CLIENT: Manatee County Government

PROJECT: Soccer Field Light Poles

LOCATION: Braden River Park, Bradenton, Manatee County, Florida

DRILL CREW: DP/AT LOGGED BY: DP

DRILL MAKE & MODEL: CM-45B BIT: 2-3/8" tricone roller DRILLING RODS: AWJ

DRILLING METHOD: SPT/wash WEATHER CONDITIONS:

DEPTH, FT.	SPT N-VALUE	SAMPLE NO.	GRAPHIC LOG	USCS	SOIL DESCRIPTION	WATER CONTENT (%)	PERCENT FINES	LIQUID LIMIT	PLAST. INDEX	FRICTION ANGLE (degrees)	COHESION (ksf)	TOTAL UNIT WEIGHT (pcf)
0	23	1		SP	brown and gray mixed fine sand							
	14	2			layered trash and sand mixed							
	15											
5	6	3										
	3											
	4	4										
10	3	5			60% drilling fluid circulation loss at 9.5 ft bls							
				SP	light gray fine sand							
15	16	6				30	1.9			33	0	115
20	12	7				38	4.7			31	0	112
				SP-SM	gray fine sand with silt and phosphate							
25	5	8				30	5.3			29	0	108
				SP	gray fine sand with phosphate							
30	21	9				25	2.9			34	0	118
					end of boring							
35												

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REVIEWED BY: Brian D. Runkles, E.I. FILE NO: 09-7034 BORING NO.: 1

BORING LOCATION: See Figure 1

DATE DRILLED: 01/21/09 START: FINISH:

GROUND SURFACE ELEVATION:

WATER TABLE DEPTH: 7.2' TIME: DATE: 01/21/08

CLIENT: Manatee County Government

PROJECT: Soccer Field Light Poles

LOCATION: Braden River Park, Bradenton, Manatee County, Florida

DRILL CREW: DP/AT LOGGED BY: DP

DRILL MAKE & MODEL: CM-45B BIT: 2-3/8" tricone roller DRILLING RODS: AWJ

DRILLING METHOD: SPT/wash WEATHER CONDITIONS:

DEPTH, FT.	SPT N-VALUE	SAMPLE NO.	GRAPHIC LOG	USCS	SOIL DESCRIPTION	WATER CONTENT (%)	PERCENT FINES	LIQUID LIMIT	PLAST. INDEX	FRICTION ANGLE (degrees)	COHESION (ksf)	TOTAL UNIT WEIGHT (pcf)
0	7	1		SP	brown and gray mixed fine sand							
	8	2			layered trash and sand mixed							
	6											
5	3	3										
	9	4										
	18	5										
10	17	6										
				SP	brownish gray fine sand							
15	3	7					4.0			28	0	107
				SP-SM	brown fine sand with silt							
20	2	8					12			28	0	107
				SP	light gray fine sand							
25	19	9					4.2			34	0	117
				SP	gray fine sand with phosphate							
30	11	10					4.2			31	0	112
					end of boring							
35												

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REVIEWED BY: Brian D. Runkles, E.I. FILE NO: 09-7034 BORING NO.: 2

BORING LOCATION: See Figure 1

DATE DRILLED: 01/21/09 START: FINISH:

GROUND SURFACE ELEVATION:

WATER TABLE DEPTH: 6.1' TIME: DATE: 01/21/08

CLIENT: Manatee County Government

PROJECT: Soccer Field Light Poles

LOCATION: Braden River Park, Bradenton, Manatee County, Florida

DRILL CREW: DP/AT LOGGED BY: DP

DRILL MAKE & MODEL: CM-45B BIT: 2-3/8" tricone roller DRILLING RODS: AWJ

DRILLING METHOD: SPT/wash WEATHER CONDITIONS:

DEPTH, FT.	SPT N-VALUE	SAMPLE NO.	GRAPHIC LOG	USCS	SOIL DESCRIPTION	WATER CONTENT (%)	PERCENT FINES	LIQUID LIMIT	PLAST. INDEX	FRICTION ANGLE (degrees)	COHESION (ksf)	TOTAL UNIT WEIGHT (pcf)
0	8	1		SP	brown and gray mixed fine sand							
	9	2			layered trash and sand mixed							
	8											
5	10	3										
	9											
	7	4										
10	5	5										
				SP	grayish brown fine sand							
15	2	6					2.9			28	0	107
				SP-SM	grayish brown fine sand with silt							
20	3	7					5.6			28	0	107
				SP	light gray fine sand with phosphate							
25	23	8					3.3			35	0	119
				SP	gray fine sand with phosphate							
30	19	9					1.8			34	0	117
					end of boring							
35												

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REVIEWED BY: Brian D. Runkles, E.I. FILE NO: 09-7034 BORING NO.: 3

BORING LOCATION: See Figure 1

DATE DRILLED: 01/21/09 START: FINISH:

GROUND SURFACE ELEVATION:

WATER TABLE DEPTH: 6.8' TIME: DATE: 01/21/08

CLIENT: Manatee County Government

PROJECT: Soccer Field Light Poles

LOCATION: Braden River Park, Bradenton, Manatee County, Florida

DRILL CREW: DP/AT LOGGED BY: DP

DRILL MAKE & MODEL: CM-45B BIT: 2-3/8" tricone roller DRILLING RODS: AWJ

DRILLING METHOD: SPT/wash WEATHER CONDITIONS:

DEPTH, FT.	SPT N-VALUE	SAMPLE NO.	GRAPHIC LOG	USCS	SOIL DESCRIPTION	WATER CONTENT (%)	PERCENT FINES	LIQUID LIMIT	PLAST. INDEX	FRICTION ANGLE (degrees)	COHESION (ksf)	TOTAL UNIT WEIGHT (pcf)
0	6	1		SP	brown and gray mixed fine sand							
	5	2			layered trash and sand mixed							
	6											
5	3	3			90% drilling fluid circulation loss at 6.5 ft bls							
	5											
	5											
10	5	4										
				SP	brownish gray fine sand							
15	2	5				28	3.0			28	0	107
				SP-SM	brown fine sand with silt and phosphate							
20	6	6				29	9.0			29	0	109
				SP	brown fine sand with phosphate							
25	4	7				27	2.0			28	0	108
				SP	brownish gray fine sand with phosphate							
30	16	8				25	1.8			33	0	115
					end of boring							
35												

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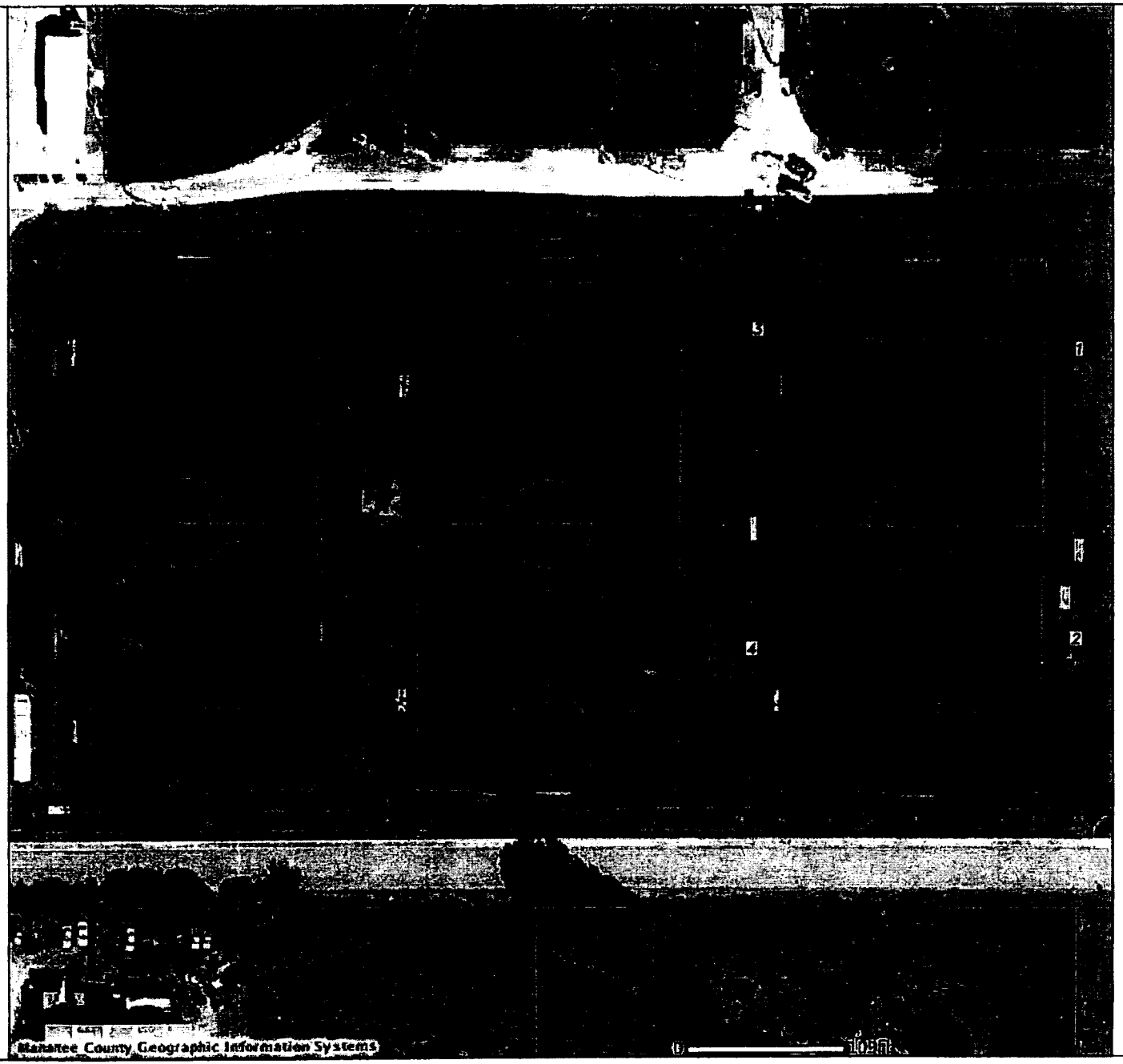
REVIEWED BY: Brian D. Runkles, E.I. FILE NO: 09-7034 BORING NO.: 4



SCALE: 1"=100'

TEST BORING LOCATIONS

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

Test Locations
Soccer Field Light Poles
Braden River Park
Manatee County, Florida

DRAWN BY: KGS	CHECKED BY:	DATE: 1/23/09
FILE NO. 09-7034	APPROVED BY:	FIGURE: 1