

*Piedmont
Geotech*

ASHBOROUGH VILLAGE CONDOMINIUMS

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Marietta, GA 30067
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DATE: 3-2-09 PAGES TO FOLLOW: 13

TO: Craig

FAX#: 770-752-0890

FROM: Ginny

COMMENTS: _____



*Encroach ment lines
20ft @ corner 2009
NW w/in 10ft or less*

PIEDMONT GEOTECHNICAL CONSULTANTS, INC.

P.O. BOX 1997 * ROSWELL, GA 30077
(770) 752-9205 * FAX (770) 752-0890

February 5, 2009

Ashborough Village Condominium Association

1810 Ashborough Circle
Marietta, Georgia 30067

Attention: Ms. Ginny Swancy, Manager

**Subject: Proposal for Subsurface Exploration and
Geotechnical Engineering Evaluation**
Slope Evaluation/Remediation Study
Ashborough Village Condominiums
Marietta, Cobb County, Georgia
PGC Proposal No. P9039

Dear Ms. Swancy:

Piedmont Geotechnical Consultants, Inc. (PGC) and the undersigned sincerely appreciate the opportunity to provide this proposal for geotechnical services on the referenced project. This proposal has been requested by Mr. Mark Lee, P.E., R.L.S. on your behalf. Our understanding of the project requirements comes from discussions with Mr. Lee, observations during a brief site visit on January 29, 2009, and our experience with similar projects. The following will present the available project information, a recommended scope of work and the cost for those services.

PROJECT INFORMATION

Ashborough Village is a condominium complex located in Marietta, Cobb County, Georgia and is generally bounded by US Highway 41 to the west, Delk Road to the south, Franklin Road to the east and Rottenwood Creek to the north. Several two-story wood framed buildings border Rottenwood Creek. Rottenwood Creek is a deeply incised channel estimated to be about 10 feet deep and about 30 feet wide that flows along the south side of a wide floodplain. The creek has eroded and undermined portions of the existing slope at the east end of Building #1189 and the west end of Building #1811. At both locations the stream makes a turn to the south directing flow against the near stream bank. Additional tree fall in the creek and storm water outfalls have exacerbated the stream flow apparently resulting in increased scour in these localized areas.

The current failed slope conditions behind Building #1189 have encroached within 20 feet of the northeast corner of the structure which appears to be supported on shallow foundations. We understand the condo owners believe the ground has settled behind the unit, but has only affected the patio pavers at this time. The chain link fence which borders the creek has been undermined. We understand a sanitary sewer parallels the creek between the stream and the building. The sewer invert is about 15 feet below the ground surface (approximately the flow line of the stream). The slope failure scarp behind Building #1189 has resulted in a 5 to 10 foot near vertical face at the chain link fence that then slumps into the creek channel. The available survey data suggests the natural slope was about 1(H):1(V). The slope is vegetated with low growth bushes and a few large trees. A rotted tree stump, located about 5 to 10 feet into the stream beyond the current toe of slope, likely marks a previous stream bank. Based strictly on observations, we suspect the upper 5 to 8 feet of the ground beneath the building is man-made fill possibly overlying alluvium. The fill depths are obviously deeper over the sewer pipe. Several other shallow utilities are present in the area between the building and the creek. A storm drain outfalls into the creek about 40 feet east of Building #1189. The stream channel slope is severely eroded in the area of the outfall. The headwall has dropped away from the corrugated metal pipe. Future sloughing of the slope near Building #1189 in this area could cause structural damage.

The slope condition behind Building #1811 has resulted in a semi-circle failure scarp about 30 to 40 feet along the creek and about 15 feet wide, which has dropped about 1 foot. The scarp is about 20 feet away from the nearest building element. The natural stream channel slope is about 1(H):1(V) orientation, and is vegetated with medium size trees and small undergrowth. A sanitary sewer is located between the creek and building line. The sewer is about 14 to 15 feet deep. The sewer alignment is about the top edge of the scarp. A storm drain pipe passes between Buildings #1811 and #1809.

Based on my discussions with Mr. Lee, we understand upgrades to the storm drain system are currently being evaluated by his firm.

No other project information was available at the time this proposal was prepared.

PROJECT CONSIDERATIONS

After our review of the site conditions, the suspected slope failure mechanism at the locations discussed above appears to be undercutting of the slope toe by stream erosion resulting in less than equilibrium slope conditions. The presence of the sewer and the condition of the pipe and associated backfill may be aggravating the slope problems. The extent of the stream bank erosion behind Building #1189 is coming close to the structure. As such, the slope remediation program in this area may ultimately require enhancements to the foundation support of the building. It may also become necessary to install temporary stabilization measures to help divert the stream flows away from this area until permanent measures are designed and constructed. Based on our limited discussions with Mr. Lee, we understand that the Cobb County Stormwater Management (CCSM) as well as other State and Federal agencies may be involved and/or influence the final slope remediation selection. We understand the CCSM desires the slope repairs to include bio-geotechnical stabilization options

or at least the exposed surface include vegetation in lieu of a hard surface. The following is a list of additional items that should be determined:

1. Determine the allowable temporary and permanent encroachment into the floodplain/stream.
2. Determine the impact of the existing sewer line and other utilities on the current slope stability.
3. Determine if Cobb County has any future plans to upgrade or retrofit the existing sewer line and what if any sewer easement restrictions will be imposed.
4. Determine the timetable for CCSM and other regulatory agency reviews to determine if interim repairs are needed.
5. Determine if any historical geotechnical and construction documents for the original construction are available.
6. Determine if building movements are occurring and the impact of the current slope conditions and remediation will have existing structures and utilities.
7. Determine if other areas of stream bank need to be evaluated.

It is important that all of these physical, environmental and regulatory stipulations be fully understood prior to advancement of the design so they are dutifully considered. Most of these items are generally not geotechnical related issues, but for this project, these may limit the available geotechnical solutions.

PROJECT APPROACH

Based on our understanding of the project, we are to perform a geotechnical investigation of the site and to provide geotechnical recommendations to Paul Lee Consulting Engineering Associates, Inc. for the design and construction of slope remediation options to stabilize the stream bank and protect the impacted building areas. Specifically, only two areas of study have been identified for our proposed evaluation, 1) the east end of Building #1189 and 2) the west end of Building #1811.

It is important to understand how the original development was constructed. This effort will be aided if historical geotechnical and construction documents can be located for our review. The original site survey or available historical data may provide some information as to how the stream channel has changed over a defined time period. As quickly as possible, a survey monitoring program of the affected buildings needs to be performed and repeated periodically (especially after any significant storm event) to determine if the buildings are moving. A geotechnical investigation of the site needs to be performed to determine the actual subsurface conditions as near the failure areas as possible as well as the conditions some distance away from these areas in the event some type of tied back retaining system and/or underpinning of the buildings are required. Using the

geotechnical data collected in combination with the survey data, we can model the slope conditions to determine the best available solutions for stabilizing the slope and if needed enhancements to the building foundations.

RECOMMENDED SCOPE OF WORK

In order to evaluate the subsurface conditions, we recommend that the site be explored by drilling six (6) soil test borings to depths of about 30 feet. The borings must define the depth of fill, alluvium and compressible residual soil profiles. This results in a total drilling footage of 180 feet. Due to limited access behind Building #1189, only one soil test boring location near the failure area is accessible. To obtain subsurface data near the toe of the slope, our engineers will have to access the creek channel and perform manual hand auger borings, probing, dynamic cone penetrometer testing or other in-situ testing to attempt to define the soil depth, characteristics and strength parameters. The approximate boring locations are illustrated on the included site plans. We plan to collect undisturbed soil samples from the selected boring locations for laboratory testing. The laboratory testing program will likely include undisturbed triaxial shear strength tests and consolidation tests, along with general soil classification tests. Please refer to the following proposal section for a detailed breakdown of the recommended scope and cost.

The borings will be advanced by twisting continuous hollow stem auger flights into the ground. At selected intervals, Standard Penetration Resistance testing will be performed and soil samples recovered for visual classification. The results of the penetration tests, when properly evaluated, provide an indication of the relative consistency of the soil being sampled, the potential for difficult excavation and the soil's ability to support loads.

Following completion of the field work, Piedmont Geotechnical Consultants, Inc. will issue a report which will describe our understanding of the project requirements, methods of exploration employed, site and subsurface conditions encountered, and conclusions and recommendations regarding the geotechnical aspects of the project. The conclusions and recommendations will include, but not be limited to, the following:

- * Site Preparation
- * Potential for Difficult Excavation
- * Compaction Requirements
- * Temporary and Permanent Dewatering
- * Suitability of On-Site Soils for Reuse as Fill
- * Foundation Enhancement Recommendation
- * Slope Enhancement Options and Design Recommendations
- * Other Geotechnical Aspects of the Proposed Construction

We have also anticipated and budgeted for our participation in two 3 to 4 hour meetings with the local regulatory agencies, if requested.

ESTIMATE OF COST

Based on the Scope of Work presented, the cost for the geotechnical evaluation will be \$20,850.00. A breakdown of these costs is as follows:

I. HAND AUGER STUDY

A.	Staff Engineer, estimate 30 hours x \$80.00/hour	\$2,400.00
B.	Senior Project Engineer, estimate 10 hours x \$130.00/hour	\$1,300.00
C.	Mileage, estimate 150 miles x \$0.60/mile	<u>\$ 90.00</u>

SUBTOTAL **\$3,790.00**

II. SOIL TEST BORINGS

A.	Mobilization of Drill Rig/Crew, lump sum	\$ 450.00
B.	Soil Test Borings (6), estimate 180 feet x \$10.00/foot (avg.)	\$1,800.00
C.	Extra Split Spoon Samples, estimate 16 samples x \$20.00/each	\$ 320.00
D.	Auger Boring, estimate 60 feet x \$7.00/foot	\$ 420.00
E.	Undisturbed Samples, estimate 6 samples x \$65.00/each	\$ 390.00
F.	Temporary Observation Wells, estimate 60 feet x \$5.00/foot	\$ 300.00
G.	Grout Abandonment of Borings, estimate 120 feet x \$7.00/foot	\$ 840.00
H.	Difficult Moving, estimate 2 hours x \$175.00/hour	\$ 350.00
I.	Private Utility Locator, Actual Cost x 1.15, estimate	\$ 650.00
J.	Staff Engineer, estimate 16 hours x \$80.00/hour	\$1,280.00
K.	Mileage, estimate 100 miles x \$0.60/mile	<u>\$ 60.00</u>

SUBTOTAL **\$6,860.00**

III. LABORATORY TESTING SERVICES

A.	CU w/PP Triaxial Shear Test, estimate 2 x \$1100.00/each	\$2,200.00
B.	Miscellaneous Testing, estimate	<u>\$1,000.00</u>

SUBTOTAL **\$3,240.00**

IV. ENGINEERING SERVICES, estimate **\$7,000.00**

SUBTOTAL **\$7,000.00**

TOTAL **\$20,850.00**

We have budgeted for subcontract utility clearance within the facility. These costs could be eliminated from our scope if you desire to have the utilities within the general area to be studied identified. The actual cost for our services will be based on the actual amount of work performed and the attached Fee Schedule. Should poor or anomalous conditions be encountered such that additional work would be in the best interest of the project, we would contact you prior to proceeding with work which is beyond the approved scope. Therefore, this cost will not be exceeded without your prior approval.

INSURANCE

Piedmont Geotechnical Consultants, Inc. insurance is provided by a highly rated, national insurance provider.

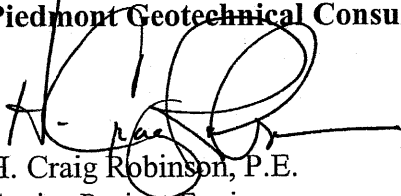
Policy Type	Insurer	Limit of Liability
Professional Liability	C.N.A. Schinnerer	\$1,000,000.00
General Liability Aggregate	Hartford Insurance Group	\$1,000,000.00 \$2,000,000.00
Workers Compensation	Hartford Insurance Group	Statutory
Non-Owned and Hired Auto Liability	Hartford Insurance Group	\$1,000,000.00
Company Owned Vehicles	Hartford Insurance Group	\$1,000,000.00
Umbrella Liability (excludes Professional Liability)	Hartford Insurance Group	\$2,000,000.00

CLOSURE

Piedmont Geotechnical Consultants, Inc. sincerely appreciates the opportunity to provide this proposal. If your review of this proposal is acceptable, please execute and return one copy of the attached Agreement for Services. The Agreement, and Terms and Conditions attached, will serve as our contract. Should you have any questions regarding this proposal, please do not hesitate to contact the undersigned.

Sincerely,

Piedmont Geotechnical Consultants, Inc.

A handwritten signature in black ink, appearing to read 'H. Craig Robinson', is written over the company name.

H. Craig Robinson, P.E.
Senior Project Engineer

HCR/tk

cc: Addressee (2)
Mr. Mark Lee-Paul Lee Consulting Engineering Associates, Inc. (1)

GEOTECHNICAL DESIGN SERVICES Unit Fee Schedule
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PROJECT NAME: Ashborough Village Slope Evaluation/Remediation

LOCATION: Ashborough Circle @ Rottenwood Creek, Cobb County, GA

DATE: February 5, 2009

PROPOSAL NUMBER: P9039

I. ENGINEERING CONSULTING SERVICES

A. Staff Engineer, per hour;	\$ 80.00
B. Project Engineer, per hour;	\$105.00
C. Senior Project Engineer, per hour;	\$130.00
D. Senior Consultant, per hour;	\$165.00
E. Engineering Aide, per hour;	\$ 65.00
F. Draftsman, per hour;	\$ 57.50
G. Word Processing, per hour;	No Charge
H. Transportation, per mile;	\$ 0.60
I. Per Diem, when overnight stay required;	\$ 95.00
J. Other Expenses;	Actual Cost Plus 15%

II. FIELD DRILLING SERVICES

A. Mobilization and Demobilization of Drill Rig;	\$450.00
B. Soil Test Borings, N<60 bpf, per foot;	\$ 9.00
(Add \$1.00 per foot rotary work)	
C. Soil Test Borings, N>60 bpf, per foot;	\$ 11.00
(Add \$1.00 per foot rotary work)	
D. Auger Borings, per foot (no samples);	\$ 7.00
E. Rotary Wash Boring, per foot (no samples);	\$ 11.00
F. Rock Coring Set-up, each;	\$210.00
G. Rock Coring, per foot;	\$ 48.00
H. Casing for Rock Coring, per foot;	\$ 8.50
I. Extra Split-Spoon Samples, each;	\$ 20.00
J. Undisturbed Samples, each attempt;	\$ 65.00
K. Obtain Bulk Samples, each;	\$ 40.00
L. Drill Crew time, for difficult moving, stand-by, etc., per hour;	\$175.00
M. Drill Crew Per Diem, per day;	\$180.00
N. Asphalt Cutting and Patching, per location;	\$ 60.00
O. Hauling Water to Drill Hole, per day (includes water truck);	\$300.00
P. Expenses (including subcontract equipment);	Actual Cost Plus 15%
Q. Temporary Observation Wells, 1-inch PVC, including materials and labor, existing borehole, per foot;	\$ 5.00
R. Grouting Abandoned Boreholes, per foot;	\$ 7.00

III. LABORATORY TESTING

A.	Standard Proctor Compaction Test, each;	\$125.00
B.	Modified Proctor Compaction Test, each;.....	\$150.00
	(For Materials Requiring Replacement Gradation Add \$30.00)	
C.	Atterberg Limit Tests, each;	\$ 80.00
D.	Shrinkage Limits, each;	\$ 70.00
E.	Loss on Ignition (Organic Content), each;	\$ 70.00
F.	Sieve Analysis (Washed Sample Coarser Than No. 200 Sieve), each;.....	\$ 70.00
G.	Percent Finer and Coarser Than No. 200 Sieve (Wash 200), each;	\$ 60.00
H.	Grain Size Analysis (Sieve and Hydrometer), each;	\$185.00
I.	Hydrometer Analysis Only, each;.....	\$125.00
J.	Moisture Content, each;	\$ 16.00
K.	Tube Density, Unit Weight and Moisture Content, each;	\$ 70.00
L.	Relative Density Test, Dry Method, min. or max., each;	\$230.00
	(Wet Method Add \$30.00)	
M.	California Bearing Ratio (CBR), 3 points, each;.....	\$475.00
N.	CBR, Corps of Engineers Method (9 points), each;.....	\$1,430.00
O.	One Dimensional Consolidation Test, each;	\$520.00
	(To Remold Sample Add \$75.00)	
P.	Swell Pressure Test, each;	\$290.00
Q.	Permeability Tests, each;.....	\$370.00
	(To Remold Sample Add \$75.00)	
R.	Unconfined Compression, each;.....	\$170.00
	(To Remold or Trim Sample Add \$75.00)	
S.	Triaxial Shear Test (3 Circles), Unconsolidated-Undrained (UU, Q), each;	\$585.00
	(To Remold or Trim Samples Add \$225.00)	
T.	Triaxial Shear Test (3 Circles), Consolidated-Undrained (CU, R), natural, each;.....	\$800.00
	(To Remold or Trim Samples Add \$225.00)	
U.	Triaxial Shear Test (3 Circles), Consolidated-Undrained (CU saturated w/PP, R), each;.....	\$980.00
	(To Remold or Trim Samples Add \$225.00)	
V.	Triaxial Shear Test (3 Circles), Consolidated-Drained (CD, S), each;	\$1,250.00
	(To Remold or Trim Samples Add \$225.00)	
W.	Crumb Test, each;.....	\$ 20.00
X.	Pinhole Dispersion Test, each;	\$400.00

Note: Engineering Aide overtime rate is 1.5 times standard rate; includes Holidays, Weekends, work over 8 hours per day, and work before 6:00am or after 6:00pm. All charges are portal-to-portal from Roswell office except Senior Consultant from Cleveland office.

**PIEDMONT GEOTECHNICAL CONSULTANTS, INC. (PGC)
STANDARD AGREEMENT FOR SERVICES**

This is an agreement made between Ashborough HOA, and PIEDMONT GEOTECHNICAL CONSULTANTS, INC., on 3-2-09. PIEDMONT GEOTECHNICAL CONSULTANTS, INC. agrees to provide services as outlined in Proposal Number P9039, dated February 5, 2007.

Services will be invoiced in accordance with the Unit Rate Fee Schedules attached. The Scope of Work outlined in the referenced Proposal, the Unit Rate Fee Schedules and General Conditions attached, and this Standard Agreement for Services will be the basis for all work performed under this agreement.

Work Authorized By:

(By) [Signature]

Company: Ashborough HOA

Title: President

Date: 3-2/09

Work Accepted By:

(By) [Signature]

Company: Piedmont Geotechnical Consultants, Inc.

Title: Senior Project Engineer

Date: 2/5/09

Gail Libma
Ashborough HO Assoc.
Treasurer
2/24/09

GENERAL CONDITIONS

SECTION 1: RIGHT OF ENTRY

1.1 The client will provide for right of entry of the geotechnical engineer and all equipment necessary in order to complete the work.

1.2 While the geotechnical engineer will take reasonable precautions to minimize damage to the property, it is understood by the client that in the normal course of work some damage may occur, the correction of which is not a part of this agreement.

SECTION 2: UTILITIES

2.1 In the prosecution of his work, the geotechnical engineer will take all reasonable precautions to avoid damage or injury to subterranean structures or utilities. The owner agrees to hold the geotechnical engineer harmless for any damage to subterranean structures or utilities which are not called to the geotechnical engineer's attention and correctly shown on the plans furnished.

SECTION 3: SAMPLES

3.1 The geotechnical engineer will retain all soil and rock samples for 30 days. Further storage or transfer of samples can be made at the owner's expense upon written request.

SECTION 4: INVOICES

4.1 The geotechnical engineer will submit invoices to the client monthly and a final bill upon completion of services. Invoices will show charges for different personnel and expense classifications. A more detailed separation of charges and back-up data will be provided at the client's request.

4.2 Payment is due upon presentation of the invoice and is past due thirty (30) days from the invoice date. Client agrees to pay a finance charge of one and one-half percent (1 1/2) per month, or the maximum rate allowed by law, on past due accounts.

SECTION 5: OWNERSHIP OF DOCUMENTS

5.1 All reports, boring logs, field notes, laboratory test data, calculations, estimates, and other documents prepared by the geotechnical engineer, as instruments of service, shall remain the property of the geotechnical engineer.

5.2 Client agrees that all reports and other work furnished to the client or his agents, which are not paid for, will be returned upon demand and will not be used by the client for any purpose whatever.

5.3 The geotechnical engineer will retain all records relating to the services performed for a period of five years following submission of the report, during which period the records will be made available to the client at all reasonable times.

SECTION 6: DISPUTES

6.1 In the event that a dispute should arise relating to the performance of the services to be provided under this Agreement, and should that dispute result in litigation, it is agreed that the prevailing party shall be entitled to recover all reasonable costs incurred in the defense of this claim, including staff time, court costs, attorneys fees, and other claim related expenses.

SECTION 7: STANDARD OF CARE

7.1 Service performed by the geotechnical engineer under this agreement will be 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 warranty, either expressed or implied, is made.

7.2 The client recognizes that subsurface conditions may vary from those encountered at the locations where borings, survey, or explorations are made by the geotechnical engineer and that the data, interpolations and recommendations of the geotechnical engineer are based solely on the information available to him. The geotechnical engineer will be responsible for those data, interpretations, and recommendations, but shall not be responsible for the interpretation by others of the information developed.

SECTION 8: LIMITATION OF LIABILITY

8.1 The owner agrees to limit the geotechnical engineer's liability to the owner and all construction contractors and subcontractors on the project arising from the geotechnical engineer's professional acts, errors, or omissions, such that the total aggregate liability of the geotechnical engineer to all those named shall not exceed \$50,000.00 or the geotechnical engineer's total fee for the services rendered on this project, whichever is greater. The owner further agrees to require of the contractor and his subcontractors an identical limitation of the geotechnical engineer's liability for damages suffered by the contractor or subcontractor arising from the geotechnical engineer's professional acts, errors or omissions. Neither the contractor nor any subcontractor assumes any liability for damage to others which may arise on account of the geotechnical engineer's professional acts, errors, or omissions.

SECTION 9: INSURANCE

9.1 The geotechnical engineer represents and warrants that it and its agents, staff and consultants employed by it are protected by worker's compensation insurance and that the geotechnical engineer has such coverage under public liability and property damage insurance policies which the geotechnical engineer deems to be adequate. Certificates for all such policies of insurance shall be provided to the client, upon request in writing. Within the limits and conditions of such insurance, the geotechnical engineer agrees to indemnify and save the client harmless from and against any loss, damage, or liability arising from negligent acts by the geotechnical engineer, its agents, staff, and consultants employed by it. The geotechnical engineer shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance. The geotechnical engineer shall not be responsible for any loss, damage, or liability arising from any acts by client, its agents, staff, and other consultants employed by it.

SECTION 10: TERMINATION

10.1 This agreement may be terminated by either party upon seven (7) days written notice in the event of substantial failure by the other party to perform in accordance with the terms thereof. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, the geotechnical engineer shall be paid for services performed to the termination notice date, plus reasonable expenses.

10.2 In the event of termination, or suspension for more than three (3) months, prior to completion of all reports contemplated by this agreement, the geotechnical engineer may complete such analyses and records as are necessary to complete his files and may also complete a report on the services performed to the date of notice of termination or suspension. The expenses of termination or suspension shall include all costs of the geotechnical engineer in completing such analyses, records, and reports.

SECTION 11: ASSIGNS

11.1 Neither the client nor the geotechnical engineer may delegate, assign, sublet, or transfer his duties or interest in this Agreement without the written consent of the other party.