



GEO-SCIENCE ENGINEERING Co., Inc.

CONSULTING GEOTECHNICAL ENGINEERS

September 8, 2014

Ronald Bielinski
1409 Penn Avenue
Scranton, Pennsylvania 18509

Attention: Mr. Ronald Bielinski

Reference: Capone Residence
34 Emerald Drive
Throop, Pennsylvania
GSE Project No. 14141

Dear Mr. Bielinski:

As per your request, an on-site meeting was conducted at the above referenced project. Attending the meeting were representatives of the following:

- Ron Bielinski Architects (Ron Bielinski)
- Geo-Science Engineering Co., Inc. (Michael J. Piepoli, P.E.)
- Attorney Thomas J. Ratchford

The purpose of the meeting was to conduct a visual site evaluation and make a determination on any further investigative measures that may be required to determine the cause of the settlement and the proper remedial measures.

Since the time of that meeting, the original construction documents for the development have been revised. Based upon this review, it appears that up to 20 feet of fill was placed to construct the residential lot on which the Capone's residence was built.

As of this date, no documentation or compaction records of the fill type or how it was placed are available for review. The fills at this site should be considered undocumented unless records are found. The extent of the settlement noted is much greater than that which would be expected from "normal" residential settlement.

Therefore, Geo-Science Engineering Co., Inc. suggests performing geotechnical borings (SPT Testing) to determine the soil conditions below the foundation elevation.

1252 Mid Valley Drive, Jessup Pennsylvania, 18434
Telephone: 570-489-8717 · Fax: 570-489-8714 · Email: geoscience@geoscience.us

GEO-SCIENCE ENGINEERING Co., Inc.

The results of these borings would be used to determine the proper remedial measures to prevent any further settlement of the structure, if required.

Once the foundation soils are stabilized, we can determine the best way to fix the disturbed foundation and basement wall. Several options such as push piers, screw piles and compaction grouting were discussed. Excavating to re-establish the waterproofing of the foundation wall and check the conditions of the drain tile were also proposed.

Based on that authorization we proposed the following:

SCOPE OF SERVICES

As part of our proposed services, the following will be our Scope of Service for this project.

1. Prior to drilling, GSE, Inc. will conduct a literature review of existing site subground conditions. Based upon our understanding of the site location, the site appears to be in an fill scope. The fill materials and compaction efforts are unknown.
2. From our observations, it would appear three or four (3-4) test borings will be requested to investigate the site. The test boring depth should penetrate a minimum of 40 feet or 5 feet into rock. Field layout of the program will be accomplished by GSE, Inc. Test borings will be performed under the continuous observation of our geotechnical staff.
3. Geotechnical investigations are conducted to determine in an approximate sense, the condition of the subground. GSE, Inc. will require the ability to adjust test boring locations based upon the findings in previous borings. Additionally, no borings will be terminated in fill conditions or, where N values are 9 or less. The geotechnical engineer can increase the boring quantities by up to 10%, without requiring authorization from the Owner/Client, if in the geotechnical engineer's opinion, the additional drilling is required to more thoroughly understand the site subsurface. To extend borings beyond 10% of the proposed quantity, Owner/Client authorization will be required. Timely authorizations will be necessary to minimize any potential down time charge. If rock is encountered above the design test boring depth, the boring will be extended to capture 5 feet of bedrock to confirm the bedrock.

GEO-SCIENCE ENGINEERING Co., INC.

4. Since it is cost prohibitive to drill test borings at very close intervals to completely assess the unique features of the site, the geotechnical engineer must make broad assumptions and interpretations of the soil conditions between test boring locations. It is possible GSE, Inc. may not be able to drill borings at certain locations due to site restrictions or conditions. Since test boring results are valid only at the location of the test boring, some subground conditions may be exposed during construction which are different than discussed in the geotechnical report. Should a changed condition develop, GSE, Inc. will assist Owner/Client in finding appropriate solutions to resolve this differing condition.
5. Rights on entry will be provided by Owner/Client prior to GSE, Inc. entering the site.
6. Notification of "Pennsylvania One Call" will be performed by GSE, Inc. GSE, Inc. will provide Owner/Client with the identification serial number. Owner/Client will review test boring locations with GSE prior to drilling to investigate utility conflicts. Should a utility be encountered after review by Owner/Client, drilling of the utility will be Owner/Clients' responsibility to execute repair of the damaged utility. This proposal does not include a utility locator service to physically identify subground utilities. Should this be required by the Owner/Client, this service is available and can be retained directly by the Owner/Client.
7. All collected soils samples and rock cores will be returned to our office and laboratory facilities. Each sample will be reviewed by our staff. Representative samples will be selected for appropriate index tests, including strength and compression, where the site conditions dictate these soil tests are required. The report will be based upon the materials exposed within the depth test bored. Samples will be held until for a period not to exceed 60 days and then will be discarded, unless alternate arrangements are made.
8. All field and laboratory data will be reviewed by the project geotechnical engineer and a geotechnical summary report prepared. The report will be submitted digitally to Owner/Client. We will upload the report to a Dropbox and supply the digital link signature for this project. This digital report is being performed in accordance with our effort to be paper conscience. The geotechnical report will address the following preliminary site requirements.

GEO-SCIENCE ENGINEERING Co., INC.

- a.) Literature review of subsurface conditions
 - b.) Recommended foundation system
 - c.) Estimates of total and differential settlement
 - d.) Geotechnical parameters for floor slab design
 - e.) Earth pressure parameters for retaining walls, if required
 - f.) Use of on-site cut for structural fill
 - g.) Seismic site class will be provided in accordance with IBC table 1615.1.1. An in-depth, site specific, seismic analysis is not included in this proposal. If required, a specific seismic study can be completed at additional fee.
9. Ground water monitoring beyond the conclusion of test drilling at the site is not part of the scope of service. The ground water levels will be measured at the conclusion of drilling. Groundwater can vary substantially as a result of seasonal or precipitation changes. The groundwater reported is only accurate on the date and time the groundwater is measured.
10. At the conclusion of the test boring, the boring will be backfilled with grout. This backfill can not effectively be compacted and overtime can settle. Any additional backfilling that may be required will become the responsibility of the Client. GSE, Inc. will not assume any liabilities of any kind for holes, depressions, ridges, etc. as a consequences of GSE's test drilling program. We recommend to the Owner to grout backfill the test boring locations.
11. The following items are not included in this study:
- a.) Private utility location service
 - b.) Permits of any kind
 - c.) Temporary erosion control plans
 - d.) Cost estimating
 - e.) Environmental studies
 - f.) Wetland studies
 - g.) Site specific seismic studies

GEO-SCIENCE ENGINEERING Co., INC.

- h.) Other items typically not included in geotechnical studies (standards of the industry)
- i.) Any land clearing or access necessary to reach test boring locations
- j.) It is typical for some site damage to occur as a result of the weight of the test boring rig (depressions, ruts, etc.). We will provide due diligence to minimize our impact. However, landscape repair is not in our scope of service. If landscape repair is required, this repair will be provided at our direct cost.

PROJECT BUDGET

Based upon our discussions and the preliminary project layout, we have prepared a field investigation program. Please note upon receipt of the final building plan layout and/or the preliminary test boring results, this may be revised.

<u>TEST TYPE</u>	<u>NO. OF TEST SITES</u>	<u>TEST LOCATION</u>	<u>DRILLING/TEST PIT FOOTAGE</u>	<u>TOTAL</u>
Boring	4	Structure	40 LF	160 LF
				160 LF

In preparing our proposal we have used the following assumptions.

1. The site (test locations) will be cleared by others to access the test drilling sites with a truck mounted rig.
2. We will provide one (1) test boring rig.
3. Water source, if required, will be within 500 lf of the test drill site.
4. It should be assumed that some site damage will occur as a result of utilizing our field test equipment. This repair is not within our scope of service.

GEO-SCIENCE ENGINEERING Co., INC.

5. We do not know the elevation where rock or even significant cobble stratum may occur. Therefore, this proposal does not include a fee to drill rock. We have included a cost for rock drilling where encountered. (Rock drilling could include drilling of large cobbles or boulders).
6. We propose to use a local Pennsylvania test drilling firm.

1. **Subcontract Services**

a.	Mobilization and Demobilization		\$	500.00
b.	Borings	2 days @ \$1,500.00/day	\$	3,000.00
c.	Test Pits			
	1.	Mobilization & Demobilization	\$	0.00
	2.	Excavator	\$	0.00
d.	Shelby Tubes		\$	0.00
e.	Difficult Set-ups	Est. 0 @ \$200.00/hr.	\$	0.00
f.	Haul Water	Est. 0 @ \$175.00/day	\$	0.00
g.	Surface plugs (concrete)	Est. 0 @ \$25.00/ea.	\$	0.00
h.	Piezometers	Est. 0 If @ \$10.00/lf	\$	0.00
i.	Per Diem	Est. 0 days @ \$150.00/day	\$	0.00
j.	Piezometer Caps	Est. 0 @ \$25.00/each	\$	0.00
k.	Borehole Grout	Est. 160 lf @ \$6.00/lf	\$	960.00
l.	Administration (10%)		\$	446.00

Project Subcontract Services: \$ 4,906.00
--

Please note the aforementioned price assumes no rock (diamond coring) will be encountered. If rock is encountered, the actual cost will be adjusted by the lineal feet of rock core times the unit cost per foot of rock drilling.

2. **Professional Fee's**

a.	Layout		\$	250.00
b.	Inspection	2 days @ \$400.00/day	\$	800.00
c.	Engineering			

GEO-SCIENCE ENGINEERING Co., INC.

1.)	Geotechnical Summary	Est.	\$ 1,800.00
2.)	Initial Site Visit		\$ 500.00

Project Professional Fee : \$ 3,350.00

Since geotechnical efforts are designed to explore the unknown, the actual expenditure may be more or less than the units noted. All time will be billed based upon our schedule of fees. Every effort will be implemented to keep the costs associated with geotechnical investigations as close as presented to our budget estimate.

Please note reimbursable costs are not included in the above fee. Reimbursable costs for this project are detailed as follows.

Reimbursable Costs

a.	Laboratory Costs	Est.	\$ 400.00
b.	Permits	Est.	\$ 0.00
c.	Mileage and Per Diem	Est.	\$ 25.00
d.	Postage, Reproduction, etc.	Est.	\$ 25.00

Project Estimated Reimbursable Cost Total: \$ 450.00

Reimbursable expenses will be billed in accordance with the attached fee schedule. As part of our efforts to conserve natural resources, our correspondence will be submitted electronically.

Total Project Costs (Subcontract, Professional & Reimbursable): \$ 8,706.00
--

GEO-SCIENCE ENGINEERING CO., INC.**INSURANCE**

Once retained, we will forward copies of our insurance coverage including our professional liability insurance directly from our carrier. Please refer to our Service Agreement included with this proposal.

SCHEDULE

We note that the project can usually start in 5 to 7 days, weather permitting and drill rig availability, from your written authorization. The field efforts will control the delivery of the final report. We usually require approximately 20 working days to provide a finished report after completion of the field efforts. Information can be relayed to the analysis team as the borings are completed to fast track considerations. It should be noted the Pennsylvania One Call System require test borings to be field staked prior to the One Call.

PROFESSIONAL QUALIFICATIONS

The principal geotechnical investigator for this project will be Mr. P. Richard Scheller, P.E. Mr. Scheller has performed more than 3,000 geotechnical investigations dealing with all phases of geotechnical engineering.

The project manager for this project will be Michael Piepoli, P.E., Mr. Piepoli is a registered geotechnical engineer in Pennsylvania. Mr. Piepoli has completed nearly 500 investigations in the local area.

The test borings for this project will be performed by an outside consultant. All other services will be performed in-house.

GSE, Inc. participates in the peer review program. We would be happy to provide members of our staff for interviews with your design team should you find it necessary. GSE also meets the criteria for a Federal Small Business. Our laboratory facility is an approved AMRL/CCRL facility, Laboratory No. 2202. GSE, Inc. is on the Corps of Engineers approved list for testing laboratories.

GEO-SCIENCE ENGINEERING Co., INC.

GENERAL TERMS AND CONDITIONS

We have enclosed our Service Agreement, which contains our General Terms and Conditions and Fee Schedules. This proposal will be incorporated into the Service Agreement which our contract will be based. It is GSE, Inc.'s policy to require payments for our services within thirty (30) days of our invoice date.

We appreciate the opportunity to submit this proposal for your review. Please contact us should you have any questions or need any additional information.

Very truly yours,



P. Richard Scheller, P.E.
President

PRS/lmm

PROP14:BIELINSKICAPONERESIDENCEPRO

c Above (2)
File

PROP14:BIELINSKICAPONERESIDENCEPRO