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GILES

ENGINEERING ASSOCIATES, INC.

GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

February 10, 2026

Catherine Burns
W288N8053 Park Drive
Merton, Wisconsin

Proposal for: Geotechnical Engineering Exploration and Analysis
Burns Residence
W288 N8053 Park Drive
Merton, Wisconsin
Proposal No. 1GP-2602025

Dear Ms. Burns:

Giles Engineering Associates, Inc. ("Giles") is pleased to submit this proposal to conduct a *Geotechnical Engineering Exploration and Analysis* for the existing residence located at W288N8053 Park Drive in Merton, Wisconsin. The *Geotechnical Engineering Exploration and Analysis* will include a geotechnical subsurface exploration program, geotechnical laboratory services, and geotechnical engineering. Service areas are briefly discussed herein and are based on our understanding and assumptions about the proposed project. The purpose of the *Geotechnical Engineering Exploration and Analysis* is to provide geotechnical-related recommendations for design and construction of site retaining walls and underpinning recommendations for the existing residence, if applicable.

It is understood that the existing residence is positioned adjacent to Park Drive, at the top of a slope that descends to the Lake Keesus shoreline. Multiple retaining walls with stairways are present between the residence and shoreline of Lake Keesus, which is located on the north side of the property. Based on topographic contour lines shown on the Waukesha County GIS online viewer, the property has approximately 40 feet of grade change from Park Drive to the Lake Keesus shoreline. Based on observations of the north side of the residence, it appears that the northeast portion of the residence has settled in the past. Some very recent or ongoing settlement may also be attributable to the northeast corner of the residence.

Deterioration of the retaining walls has occurred to the extent that many wall sections are beginning to fail. It is understood that reconstruction of the retaining walls is planned to be performed. Additionally, it is understood that underpinning portions of the residence foundation may be needed to facilitate retaining wall construction and/or prevent future residence settlement. The purpose of the Geotechnical Engineering Exploration and Analysis is provide geotechnical-related recommendations for new retaining wall design and construction and possible foundation underpinning.

GEOTECHNICAL SUBSURFACE EXPLORATION PROGRAM

Four test borings will be conducted for the proposed project. One test boring will be drilled between Park Drive and the existing residence and is planned to be ± 50 feet deep. Because of the limited access near the existing residence, the remaining three borings will be drilled using manual equipment and advanced to a depth of ± 10 feet or prior refusal. All borings will be extended to planned depths or prior refusal, whichever is less. The exploration program results



in ± 80 lineal feet of test borings. Depending on the subsurface conditions that are encountered, it might be desirable to perform additional test borings or extend the test borings deeper than the planned depth; however, additional/deeper test borings will only be conducted after receiving your authorization.

The field exploration at the test borings will consist of performing a Standard Penetration Test (SPT) in general accordance with ASTM D-1586 specifications at 2½-foot intervals throughout the boring. The SPT test determines a Standard Penetration Resistance value ("N-Value"), used to develop geotechnical-related design parameters.

Boreholes from the test borings will be backfilled; however, the backfill material might settle or heave, creating a hazard that can injure people and animals. Test boring areas should, therefore, be carefully and routinely monitored by the property owner or by others; settlement and heave of backfill materials should be repaired immediately. Giles will not monitor or repair boreholes.

Excess soil from the test borings will be left in the area of the test borings or will be hauled by wheelbarrow to an onsite location specified by our client. Offsite disposal of excess soil will be at an extra cost. This proposal does not include the use of special OSHA or hazardous drilling techniques or drill-crew protection. Complete rights-of-entry and access to the site is expected to be provided to us and our subcontractors (if any) as a function of this proposal.

Prior to our fieldwork, Giles will contact Diggers Hotline®, the public utility locator service, to "clear" the test boring areas for public utilities. Even with this service, "private" utilities (which are typically not identified by the public utility locator) could exist in the test boring areas. Therefore, the attached *Breakdown of Proposed Fees* includes a cost for private utility locating. It is important to note that even with a private utility locator service, unknown private utilities could be damaged. Giles will not be responsible for damage to any unknown or unmarked underground utilities.

GEOTECHNICAL LABORATORY SERVICES

Soil samples that are retained from the test borings will be classified using descriptive terms and particle-size criteria and by using the Unified Soil Classification System (ASTM D 2488) as a general guide. The classifications will be noted on the *Test Boring Logs* that will be included in the report. Field-related information pertaining to the test borings will also be shown on the *Test Boring Logs*.

Giles' "standard" testing program is planned for this project. This testing program consists of performing unconfined compression (without measured strain), penetrometer resistance, vane shear, and moisture content testing on select soil samples. The test results will be reported on the *Test Boring Logs* that will be included in the report. If specialized laboratory testing is needed, it will only be conducted after receiving authorization to proceed.



GEOTECHNICAL ENGINEERING SERVICES

Results of the *Geotechnical Subsurface Exploration Program* and the results of the *Geotechnical Laboratory Services* will be used to develop geotechnical recommendations for the proposed residence. The recommendations will be provided in a geotechnical report that will be signed and sealed by a State of Wisconsin Professional Engineer. The report will include the following items, along with other recommendations that may be appropriate.

- A general description of the field and laboratory procedures will be provided in the report. The report will also include a *Test Boring Location Plan*, which will illustrate approximate locations of the test borings.
- The report will include a general description of the subsurface conditions at the test boring locations, including the soil and groundwater conditions. Groundwater conditions will be estimated based on the colors and moisture conditions of retained soil samples, and the depth to groundwater within the test borings.
- Lateral earth pressure (active, passive, and at-rest) and soil and concrete friction design parameters will be provided for use in designing below-grade and retaining walls. Sub drainage considerations, where applicable, will also be provided where below-grade sections are involved.
- Geotechnical-related recommendations for underpinning the existing foundations, if needed, will be provided.
- Site preparation recommendations will be provided, along with recommendations for subgrade improvement, if subgrade improvement is expected to be necessary. Construction considerations will also be addressed and will include comments regarding the reuse of excavated on-site materials as engineered fill, groundwater control, and other considerations that are applicable to the proposed project.

SPECIAL CONSIDERATIONS

Field activities will be performed with a reasonable standard of care. However, because the test borings will be conducted using a heavy drill-rig, disturbance and damage to surface materials should be expected, especially in grassy areas and where surface materials are soft, loose, or otherwise unstable. Surface materials might need to be repaired after the test borings are conducted. Giles will not repair damage and disturbance to landscaping or to other surface materials.

PROPOSED FEES

The total fee to perform the services outlined above is **\$7,145.00**. Itemized costs are shown in the attached *Breakdown of Proposed Fees*. If, however, the test borings are terminated shallower than planned, the minimum daily charge per drill rig and drill crew will be \$3,000.00. Post-report consultation is not included in this proposal. Any approved additional work required

over and above the scope proposed will be billed in accordance with Giles' *Schedule of Standard Fees*. The attachments included are part of this proposed agreement.

SCHEDULE

It is estimated that the field and laboratory services will be completed within about three to four weeks after we are authorized to proceed with the project, and the written report will likely be submitted about one to two weeks thereafter. However, the schedule depends on weather conditions, site access, and utility clearance. Giles will provide verbal updates during our services, if needed.

CLOSING

Thank you for the opportunity to offer our service. We hope to work on the project. Please acknowledge receipt and acceptance of this proposal by signing and returning the *Project Authorization Form* for our files. The individual or individuals that sign this agreement on behalf of the client warrant that they are duly authorized agents of the client.

Respectfully submitted,

GILES ENGINEERING ASSOCIATES, INC.



Colleen M. Finley, P.E.
Geotechnical Department Manager



David M. Cornale, P.E.
Sr. Geotechnical Consultant

Distribution: Catherine Burns (email: keesus8@gmail.com)

Enclosures: Project Authorization Form
Breakdown of Proposed Fees
General Conditions
Important Information about This Geotechnical Engineering Proposal

PROJECT AUTHORIZATION FORM
Burns Residence
Merton, Wisconsin
Giles Proposal No. 1GP-2602025



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Client and Billing Information

I hereby accept the proposal and authorize Giles to proceed with the scope of work as described herein.

Name:	
Title:	
Company:	
Address:	
City, State Zip:	
Email:	
Phone:	
Invoice Email:	
Purchase Order:	
Signature:	Date:

Project Contact Information (if different than Client)

Name:	
Title:	
Company:	
Email:	
Phone:	

Site Access/Coordination Information (if different than above)

Name:	
Title:	
Company:	
Email:	
Phone:	



GEOTECHNICAL
ENGINEERING



SUBSURFACE
EXPLORATION



FORENSIC
ENGINEERING



ENVIRONMENTAL
CONSULTING



PROPERTY
CONDITION
ASSESSMENT



CONSTRUCTION
MATERIALS
TESTING



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BREAKDOWN OF PROPOSED FEES

Geotechnical Engineering Exploration and Analysis
Burns Residence
Merton, Wisconsin
Proposal No. 1GP-2602025

NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	RATE (Per Unit)	ESTIMATED TOTAL
FIELD SERVICES					
1	Mobilization of Drilling Equipment	Lump Sum	LS	\$450.00	\$450.00
2	Project Coordination and Soil Boring Layout by Drilling Supervisor	4	Hour	\$90.00	\$360.00
3	Soil borings (ordinary soil conditions assumed, SPT samples at 5-foot intervals)				
	0 to 20-feet depth	20	LF	\$20.00	\$400.00
	20 to 40-feet depth	20	LF	\$24.00	\$480.00
	40 to 60-feet depth	10	LF	\$29.00	\$290.00
4	Additional SPT Samples	10	Each	\$15.00	\$150.00
5	Manual Test Borings	3	Each	\$500.00	\$1,500.00
6	Private Utility Locate	Lump Sum	LS	\$500.00	\$500.00
Fee for Field Services					\$4,130.00
LABORATORY TESTING SERVICES					
1	Visual Sample Classification	30	Each	\$5.00	\$150.00
2	Moisture Content Testing	Lump Sum	LS	\$160.00	\$160.00
3	Calibrated Penetrometer Testing				
Fee for Laboratory Testing Service					\$310.00
ENGINEERING SERVICES					
1	Senior Geotechnical Engineer	4	Hour	\$175.00	\$700.00
2	Project Engineer	16	Hour	\$120.00	\$1,920.00
3	CAD Operator	1	Hour	\$85.00	\$85.00
Fee for Engineering Services					\$2,705.00
TOTAL ESTIMATED PROJECT COST					\$7,145.00

SECTION 1: FORMATION OF CONTRACT – These General Conditions shall be incorporated into and become a binding, integral part of any correspondence, proposal, or contract to which they are initially attached. Together they form an Agreement to be entered into by and between Giles Engineering Associates, Inc. (“Giles”) and the party for whom Giles is to perform its services (“Client”). Conflicting terms or conditions that appear on an acceptance copy of any Agreement document, or subsequently issued document, are hereby objected to and shall be invalid, unless accepted in writing by all parties to the Agreement. Ordering, reliance upon, or acceptance of Giles’ services by Client, including additional work orders, shall constitute Client’s acceptance of the terms of the Agreement, including these General Conditions, regardless of whether Client delivers an executed copy of the Agreement document prior to the commencement of Giles’ services. The Agreement, including these General Conditions, shall extend to the benefit of, and be binding upon, the successors, assigns, directors, officers, employees, agents, subcontractors, representatives, and consultants of Giles and Client. Client shall communicate these General Conditions to any third party or principal for whom, or to whom, Client conveys any part of Giles’ services. Giles shall have no duty or obligation to any third party or principal greater than what is set forth herein.

SECTION 2: SITE ACCESS AND PROPERTY CARE – Client will arrange right of entry for Giles to complete the services. Client warrants and represents that it has authority and permission to grant Giles access. Client will also arrange permission for Giles to photograph the site. Client will provide Giles with sufficient documentation to enable Giles to avoid trespass and damage to on-site, neighboring, restricted, or prohibited areas.

SECTION 3: DEGREE OF CERTAINTY IN MATERIALS TESTED – The locations and elevations of in-situ tests will be determined in accordance with the accuracy and proximity of survey control provided by Client or the contractor. Unless noted, locations and elevations will be determined by pacing and hand level methods. Observation and testing services will be provided in such a manner as to have reasonable certainty that the services essentially comply with project requirements.

SECTION 4: STANDARD OF CARE – Services performed under this Agreement will be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing at this time, under similar conditions, and in the same locale. No other warranty, express or implied, is made.

SECTION 5: DELAY AND FORCE MAJEURE – Giles will be excused for delay in the performance of services under this Agreement if caused by acts of God; inclement weather; acts of utility companies, unions, organized labor, or inspectors; or other unforeseen contingencies; beyond Giles’ reasonable control.

SECTION 6: OWNERSHIP OF INSTRUMENTS OF SERVICE – All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates and other documents prepared by Giles are instruments of service, remain the property of Giles, and are protected by copyright, trademark, and other proprietary rights provided under state and federal laws of the United States and/or foreign nations.

SECTION 7: DISPOSITION OF SAMPLES AND MATERIALS – Uncontaminated soil and rock samples will be held for thirty (30) days after the date of Giles’ report, unless advised otherwise by Client. Further storage or transfer can be negotiated at Client’s written request. Should samples and/or materials contain, or be suspected to contain, substances or constituents hazardous to health, safety, or the environment, as defined by applicable laws, Giles will return such samples and/or materials, to Client after completion of testing, or have them disposed of in accordance with applicable laws. Client agrees to pay all costs associated with the transportation and disposal, and storage beyond 30 days. Giles is acting as a bailee and assumes no title to such samples, materials, and/or waste.

SECTION 8: MOLD AND ASBESTOS-CONTAINING MATERIALS (ACM) EXCLUSION – Unless expressly provided, Giles’ scope of services does not include any investigation, analysis, consultation, or representation with respect to the risk, prevention, presence, or remediation of mold, mildew, fungi, spores, other microbes, or ACM. It is therefore agreed that Giles has no responsibility or liability for claims, damages, losses, or expenses attributable to any such exposure, contamination, growth, release, or dispersal.

SECTION 9: INSURANCE – Giles maintains a complete insurance package, including workman’s compensation, commercial general liability, and professional liability insurance. Giles also maintains contractors pollution liability coverage of \$5,000,000.00 for each pollution incident, with an annual aggregate limit of \$5,000,000.00. Certificates of insurance shall be provided upon request.

SECTION 10: LIMITATIONS OF LIABILITY – Client agrees to limit Giles’ total aggregate liability to Client and all construction contractors, subcontractors and those named on the project arising from Giles’ professional acts, errors or omissions, or breaches of contract to the lesser of either \$250,000.00 or four times Giles’ fee for services on the project.

SECTION 11: INDEMNIFICATION – To the fullest extent permitted by law, Client shall hold harmless, indemnify, and defend Giles from and against all claims and causes of action for bodily injury, death, and property damage that may arise from the performance of services under this Agreement, except where such bodily injury, death, or property damage arises directly from the sole negligence, errors, or omissions of Giles.

SECTION 12: LITIGATION SUPPORT – If Giles is required by operation of law, subpoena, or other legal process to appear, participate, or give testimony as an expert or fact witness, in any legal discovery, administrative, or court proceeding, as a result of the performance of services under this Agreement, Client agrees to compensate Giles pursuant to Giles’ current fee and rate schedule, and to reimburse Giles for all reasonable costs and expenses Giles may incur in connection with such activities, including the fees of any attorney that Giles may retain on its own behalf.

**GENERAL CONDITIONS OF GEOTECHNICAL, DRILLING,
ENVIRONMENTAL AND/OR MATERIALS TESTING AGREEMENT**

Burns Residence
Merton, Wisconsin
Proposal No. 1GP-2602025
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SECTION 13: INVOICES AND PAYMENT – Payment of invoices is due upon receipt of invoice and is past due thirty (30) days from invoice date. Client agrees to pay a late payment service charge of 1½% per month, or 18% per year, for past due invoices. Client agrees the balance as stated on the invoice is correct, conclusive, and binding unless Client within ten (10) days from the date of invoice notifies Giles in writing of the item alleged to be incorrect. Should a dispute over payment arise, Client agrees to pay all invoiced amounts except those amounts in dispute; stipulates to using the Waukesha County Circuit Court, Wisconsin, as the venue; and agrees to pay all court costs and attorney fees associated with the collection of disputed sums. Attorney fees shall be at the actual cost or at Giles' in-house counsel rate of \$150.00 per hour.

SECTION 14: NOTICE OF LIEN RIGHTS – AS REQUIRED BY STATE CONSTRUCTION LIEN LAWS, OWNER IS HEREBY NOTIFIED THAT PERSONS OR COMPANIES FURNISHING LABOR OR MATERIALS FOR CONSTRUCTION ON OWNER'S LAND MAY HAVE LIEN RIGHTS IF NOT PAID. THOSE ENTITLED TO LIEN RIGHTS, IN ADDITION TO GILES, ARE THOSE WHO CONTRACT DIRECTLY WITH OWNER OR THOSE WHO GIVE OWNER NOTICE WITHIN SIXTY (60) DAYS AFTER THEY FIRST FURNISH PROFESSIONAL SERVICES. OWNER MAY NEED TO NOTIFY ITS MORTGAGE LENDERS OF THESE LIEN RIGHTS.

SECTION 15: TERMINATION – This Agreement may be terminated by either party upon seven (7) days written notice. In the event of termination, Giles shall be paid for all services performed prior to the termination date.

SECTION 16: GOVERNING LAW AND SURVIVAL – The laws of the State of Wisconsin will govern the validity of these terms, their interpretation, and performance. Client consents to venue in the Waukesha County Circuit Court, State of Wisconsin, for all claims and disputes. The terms of this Agreement shall survive the completion of Giles' services.

DRILLING or GEOTECHNICAL

SECTION 17: SITE ACCESS AND PROPERTY CARE – Giles will take reasonable precautions to minimize damage to the property. In the normal course of work, some damage may occur. The correction of such damage is not part of the Agreement, unless specified in the proposal. Giles will backfill borings and other types of ground penetrations. Soil backfill at access points and test locations may settle over time. Giles is not responsible for checking, maintaining, or repairing the backfill after leaving the project site.

SECTION 18: UTILITIES – Giles will contact the local one-call public utility locator service and take reasonable precautions to avoid damage or injury to identified underground public structures or utilities. Client shall provide any documents necessary or helpful in locating all private underground structures and utilities. Client shall assume responsibility for the accuracy of any information provided. Client agrees to hold harmless, defend, and indemnify Giles for any damages to underground structures and utilities, and any damage, injury, or death arising directly or indirectly there from, which were not identified on the documents furnished, or by local utility identification agencies.

SECTION 19: ENVIRONMENTAL – On Geotechnical projects, Environmental and Hazardous Materials will not be considered.

CONSTRUCTION MATERIALS TESTING

SECTION 20: RESPONSIBILITIES – The presence of Giles' field representative(s) will be for the purpose of providing observation and/or field testing. Giles' services will not include the supervision or direction of the work of the contractor or the contractor's employees or agents. Contractor should be so advised, and informed that neither the presence of Giles' field representative nor the observation and testing shall excuse contractor in any way for defects discovered in contractor's work. An opinion will be developed from observations and tests as to whether the work essentially complies with the project requirements.

SECTION 21: SAFETY – The construction contractor and/or owner shall, without limitation, assume sole and complete responsibility for job site conditions during construction of the project, including the safety of all persons and property. The trenching and shoring safety shall be the full responsibility of the contractor. If a geotechnical engineer (P.E., not a technician) is brought to the site for soils evaluation, we can make recommendations for the slope of the excavated trench walls. If not, the sloping of side walls, trenching and shoring safety shall all be the full responsibility of the contractor.

ENVIRONMENTAL

SECTION 22: HAZARDOUS MATERIALS – When hazardous materials are known, assumed, or suspected to exist at a site, Giles will take appropriate actions to protect the health and safety of personnel, to comply with applicable laws and regulations, and to implement procedures to minimize physical risks to employees and the public. Client must inform Giles of any known or suspected hazardous materials. The discovery of unanticipated hazardous materials constitutes a changed condition requiring renegotiation of the scope of services or termination of the Agreement. Client agrees to compensate Giles for additional costs of working to protect employee and/or public health and safety. Client waives any claim against Giles, and agrees to hold harmless, indemnify, and defend Giles from and against any claim or liability for injury, death, or loss arising directly or indirectly from the discovery of unanticipated hazardous materials. Client also agrees to compensate Giles for time spent, and expenses incurred, in defense of any such claim, based upon Giles' prevailing fee schedule and expense reimbursement policy relative to the direct project costs.

SECTION 23: GEOTECHNICAL – On Environmental and Hazardous Materials projects, Geotechnical issues will not be considered.

Important Information about This Geotechnical Engineering Proposal

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Participate in Development of the Subsurface Exploration Plan

Geotechnical engineering begins with the creation of an effective subsurface exploration plan. This proposal starts the process by presenting an initial plan. While that plan may consider the unique physical attributes of the site and the improvements you have in mind, it probably does not consider your unique goals, objectives, and risk management preferences. Subsurface exploration plans that are finalized without considering such factors presuppose that clients' needs are unimportant, or that all clients have the same needs. *Avoid the problems that can stem from such assumptions* by finalizing the plan and other scope elements directly with the geotechnical engineer you feel is best qualified for the project, along with the other project professionals whose plans are affected by the geotechnical engineer's findings and recommendations. If you have been told that this step is unnecessary; that client preferences do not influence the scope of geotechnical engineering service or that someone else can articulate your needs as well as you, you have been told wrong. No one else can discuss your geotechnical options better than an experienced geotechnical engineer, and no one else can provide the input you can. Thus, while you certainly are at liberty to accept a proposed scope "as is," recognize that it could be a unilateral scope developed without direct client/engineer discussion; that authorizing a unilateral scope will force the geotechnical engineer to accept all assumptions it contains; that assumptions create risk. *Manage your risk. Get involved.*

Expect the Unexpected

The nature of geotechnical engineering is such that planning needs to *anticipate the unexpected*. During the design phase of a project, more or deeper borings may be required, additional tests may become necessary, or someone associated with your organization may request a service that was not included in the final scope. During the construction phase, additional services may be needed to respond quickly to unanticipated conditions. In the past, geotechnical engineers commonly did whatever was required to oblige their clients' representatives and safeguard their clients' interests, taking it on faith that their clients wanted them to do so. But some, evidently, did not, and refused to pay for legitimate extras on the ground that the engineer proceeded without proper authorization, or failed to submit notice in a timely manner, or failed to provide proper documentation. *What are your preferences? Who is permitted to authorize additional geotechnical services on your project? What type of documentation do you require? To whom should it be sent? When? How?* By addressing these and similar issues sooner rather than later, you and your geotechnical engineer will be prepared for the unexpected, to help prevent molehills from growing into mountains.

Have Realistic Expectations; Apply Appropriate Preventives

The recommendations included in a geotechnical engineering report are *not final*, because they are based on opinions that can be verified only during construction. For that reason, most geotechnical engineering proposals offer the construction observation services that permit the geotechnical engineer of record to confirm that subsurface conditions are what they were expected to be, or to modify recommendations when actual conditions were not anticipated. *An offer to provide construction observation*

is an offer to better manage your risk. Clients who do not take advantage of such an offer; clients who retain a second firm to observe construction, can create a high-risk “Catch-22” situation for themselves. *The geotechnical engineer of record cannot assume responsibility or liability for a report’s recommendations when another firm performs the services needed to evaluate the recommendations’ adequacy.* The second firm is also likely to disavow liability for the recommendations, because of the substantial and possibly uninsurable risk of assuming responsibility for services it did not perform. Recognize, too, that no firm other than the geotechnical engineer of record can possibly have as intimate an understanding of your project’s geotechnical issues. As such, reliance on a second firm to perform construction observation can elevate risk still more, because its personnel may not have the wherewithal to recognize subtle, but sometimes critically important unanticipated conditions, or to respond to them in a manner consistent with your goals, objectives, and risk management preferences.

Realize That Geoenvironmental Issues Have Not Been Covered

The equipment, techniques, and personnel used to perform a geoenvironmental study differ significantly from those used to perform a geotechnical study. *Geoenvironmental services are not being offered in this proposal. The report that results will not relate any geoenvironmental findings, conclusions, or recommendations.* Unanticipated environmental problems have led to numerous project failures. If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the express purpose of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may be addressed as part of the geotechnical engineering study described in this proposal, the geotechnical engineer who would lead this project **is not** a mold prevention consultant; ***none of the services being offered have been designed or proposed for the purpose of mold prevention.***

Have the Geotechnical Engineer Work with Other Design Professionals and Constructors

Other design team members’ misinterpretation of a geotechnical engineering report has resulted in costly problems. Manage that risk by having your geotechnical engineer confer with appropriate members of the design team before finalizing the scope of geotechnical service (as suggested above), and, again, after submitting the report. *Also retain your geotechnical engineer to review pertinent elements of the design team members’ plans and specifications.*

Reduce the risk of unanticipated conditions claims that can occur when constructors misinterpret or misunderstand the purposes of a geotechnical engineering report. Use appropriate language in your contract documents. Retain your geotechnical engineer to participate in prebid and preconstruction conferences, and to perform construction observation.

Read Responsibility Provisions Closely

Clients, design professionals, and constructors who do not recognize that geotechnical engineering is far less exact than other engineering disciplines can develop unrealistic expectations. Unrealistic expectations can lead to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their proposals. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks, thus to encourage more effective scopes of service. *Read this proposal’s provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Rely on Your Geotechnical Engineer for Additional Assistance

Membership in the Geoprofessional Business Association (GBA) exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit to everyone involved with a construction project. Confer with a GBA-member geotechnical engineer for more information. Confirm a firm’s membership in GBA by contacting GBA directly or at its website.



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ARCHITECTS • ENGINEERS • PLANNERS

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August 10, 2026

Attorney Catherine A. La Fleur
La Fleur Law
313 N. Plankinton Avenue, Suite 429
Milwaukee, WI 53203

VIA E-MAIL (clafleur@lafleurlawfirm.com)

PROJECT: Retaining Wall Evaluation for Catherine Burns
W288N8053 Park Drive
Merton, Wisconsin

SUBJECT: Report of Findings

Dear Attorney La Fleur:

This Report of Findings is offered in response to your request for a written report which is based on my review and consideration pertaining to retaining walls at the Residence of Catherine (Katie) and James Burns ("Residence") located at W288N8052 Park Drive in Merton Wisconsin. This residence is located on Lake Keesus. Specifically, I was asked to provide a qualitative evaluation of the three existing retaining walls on the property, located between Lake Keesus to the north, and the residence to the south.



Photo 1 – Existing Residence and Property, Viewing South

I visited the Residence and met with Katie and Nick Venes from Oak Ridge Contracting on January 19, 2026. At that time, there was a fair amount of snow on the ground. I took photos of what I could observe at that time.



Photo 2 –Residence, Viewing North from Park Drive
(January 19, 2026)

I returned for a second site visit on August 6, 2026. During this visit, I was able to access more of the property and take more photographs (including videos and photographs with a drone) and some measurements. More of the existing conditions were observable with no snow cover.



Photo 3 – Existing Residence and Property Enlarged, Viewing South
(August 6, 2026)

OVERVIEW

My understanding is that the original residence was constructed some time in the 1920s. There is evidence that the existing residence and site have been added to and modified several times over the years. The Burns-es purchased the home in 2004. My understanding is that the retaining walls, decks, stairs, and railings were all existing at the time of the Burns-es purchase of the Residence in 2004, and have not been altered since 2004 (the exception is an exterior spiral staircase that was added by the Burns).

The residence is located on a peninsula that extends North into Lake Keesus. Park Drive follows the high point of the peninsula, and the land slopes down towards the lakeshore on both sides. The Residence is located close to Park Drive.

The property to the north of the residence slopes down towards the lake, approximately 25 feet vertically in 40 feet horizontally, or a slope of approximately 62.5% (25 feet / 40 feet = 0.625). This is a steep slope.



Figure 1 – Site Aerial Showing 1 Foot Contour Lines and Distance Measurement from Lawn Area to Northeast Corner of Residence (approximately 40 feet)

The steep slope has been managed by a series of terraced retaining walls through the property. For the purposes of this report, I have identified and will focus on the three main retaining walls that are located to the north of the Residence. I have labeled these, from north to south (or from lake to house), **Retaining Wall 1**, **Retaining Wall 2**, and **Retaining Wall 3**.

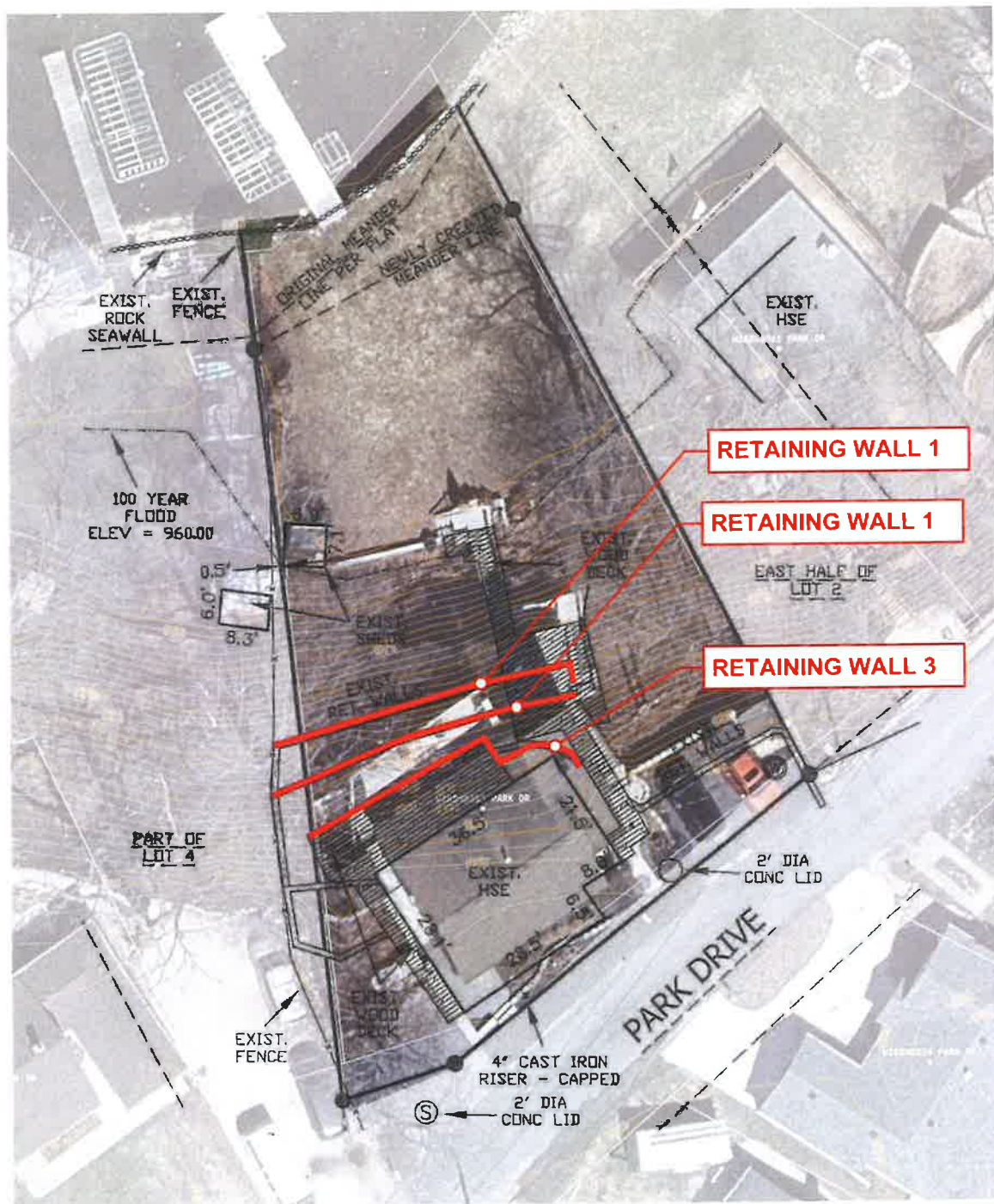


Figure 2 – Site Plan Showing 1 Foot Contour Lines, Survey Information, and Retaining Wall Locations

I created the following annotated photograph to label the retaining walls and other major site elements. The wood decks and stairs are largely supported by the three bearing walls. For example, the Upper Deck support columns bear on top of Retaining Wall 3, the Lower Deck joists are supported by Retaining Wall 3 and the Lower Deck support columns bear on top of Retaining Wall 1.

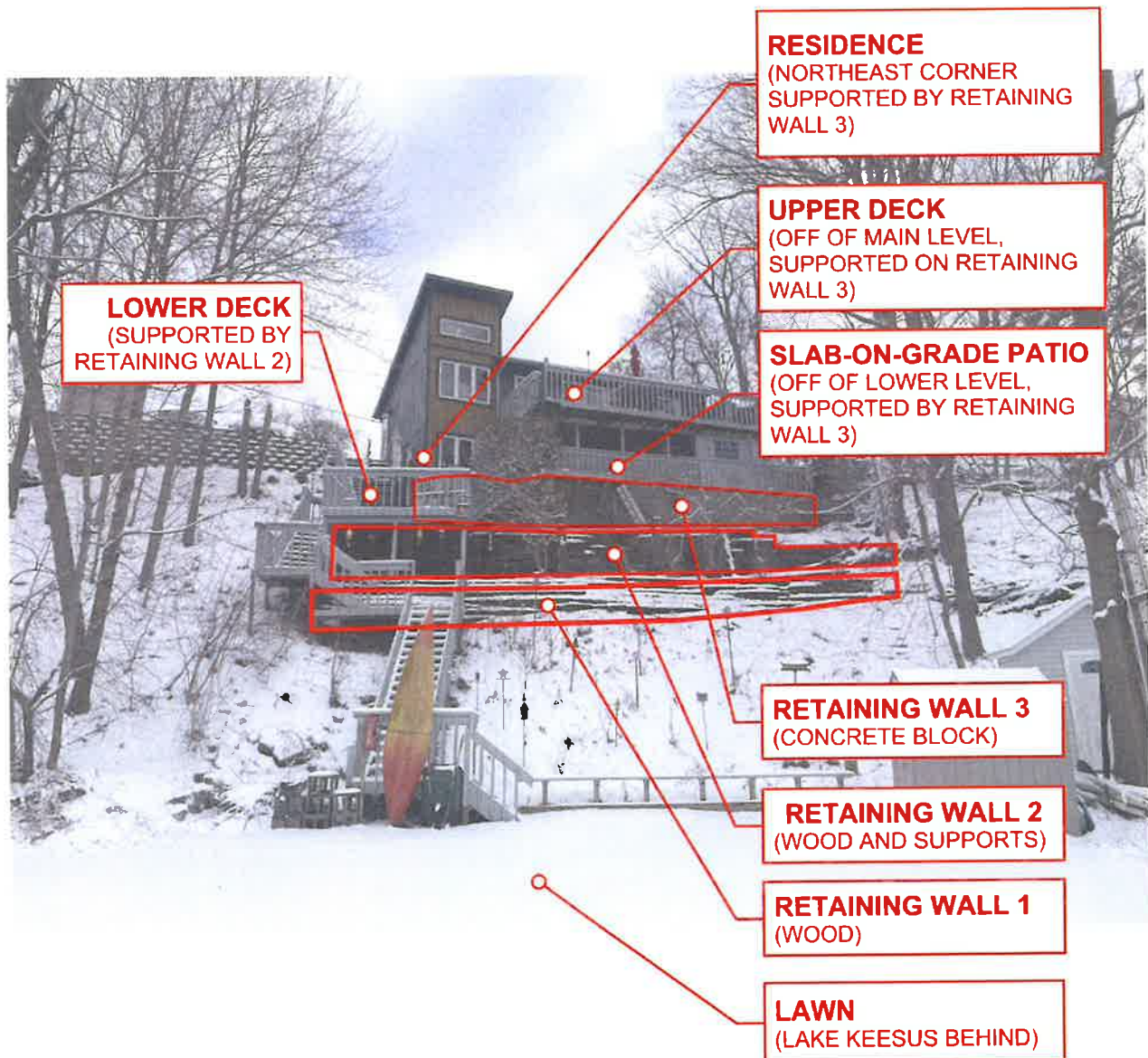


Figure 3 – Annotated Photograph Showing Retaining Wall and Major Site Elements

RETAINING WALL 1



Photo 4 – Portion of Retaining Wall 1, Looking North from Wood Stairs (Retaining Wall 2 Visible in Beyond)

Retaining Wall 1 is the lowest retaining wall. It is constructed out of wood timbers, approximately 8" wide and 6" tall. The timbers are stacked on top of each other, and each timber is set back slightly, so that the wall has a stepped appearance. There are 8 courses of visible timbers, attached with metal "spikes".

The wood timbers are showing significant signs of deterioration. The wood is green in appearance, and there are large portions that have rotted away. The east end of Retaining Wall 1 is located below the wood stairs. Retaining Wall 1 turns a 90 degree corner and continues south. Several timbers have rotted away completely and/or fallen out of the wall. Several of the remaining timbers show signs of tipping, bulging, and settling. The west end of Retaining Wall 1 is similar, with missing, loose, and failing timbers



Photo 5 – Retaining Wall 1, East Corner Deterioration



Photo 6 – Retaining Wall 1, East Corner Deterioration



Photo 7 – Retaining Wall 1, West End Deterioration



Photo 8 – Retaining Wall 1, West End Deterioration

RETAINING WALL 2



Photo 9 – Retaining Wall 2, Viewing Southwest from below Upper Deck

Retaining Wall 2 is the next tier above **Retaining Wall 1**, upslope and approximately 5 feet horizontally towards the Residence. It is constructed out of wood timbers, approximately 8" wide and 6" tall. These timbers are aligned vertically, not stepped back like **Retaining Wall 1**. The wood timbers are showing significant signs of deterioration. The wood is green in appearance, and there are large portions that have rotted away.

Retaining Wall 2 also has approximately 5 "supports". These supports consist of a vertical "post", likely driven into the ground directly against the outside face of the wall timbers. The "posts" each have a diagonal "strut", likely to provide additional resistance against the push of the retaining wall. It is known how deep the "support" timbers go into the ground, or what the foundation condition of them is. Several of the "supports" have deteriorated wood, and all show signs of leaning/tipping, curving/bowing, and some show signs of splitting.

I measured several of the vertical "posts" of the "supports". My measurements were between 10% and 20%. Assuming these support "posts" were installed vertically, these "supports" are leaning significantly.



Photo 10 – Retaining Wall 2, East Corner Deterioration



Photo 11 – Retaining Wall 2, East Corner Deterioration



Photo 12 – Retaining Wall 2, Deterioration and Leaning Support



Photo 13 – Retaining Wall 2, Deterioration and Bowed Support



Photo 14 – Retaining Wall 2, Deterioration and Leaning Support



Photo 15 – Retaining Wall 2, Deterioration at West End

RETAINING WALL 2



Photo 16 – Portion of Retaining Wall 3 below Patio, Viewing Southeast



Photo 17 – Portion of Retaining Wall 3 at Curve, Viewing Southwest

Retaining Wall 3 is the last tier above Retaining Wall 2. Retaining Wall 3 is constructed out of concrete blocks (known as Concrete Masonry Units, often abbreviated "CMUs", I will use "concrete blocks" in this report for simplicity). **Retaining Wall 3** begins on the west end at the corner of the slab-on-grade patio of the Residence. It continues east, paralleling the Residence and patio. It turns to the south at an approximately 90 degree angle the end of the patio, and then turns east again and curves, convexly, around the northeast corner of the Residence.

Retaining Wall 3 is partially obscured by decorative wood lattice panels and solid panels. With Katie's permission, I removed some of the decorative wood panels at the curved portion of the wall. The concrete blocks of **Retaining Wall 3** are mostly "stack bond", where each block stacks over the one below. This is different than the more common "running bond" where each course is shifted half of a module so that the vertical joints are staggered at each course, rather than aligned all the way up the wall. The concrete blocks are also partially covered in areas with a cementitious project, it is unknown if this is concrete, mortar, or some sort of "parging". Most of the joints in the blocks are not fully mortared together.

There are several conditions I observed at Retaining Wall 3 that are evidence that it is overstressed, moving, and failing. From west to east, these conditions include:

- A. Large diagonal cracks in concrete blocks at east end of curved section of wall
- B. Cracks and settlement of concrete on top of east end of curved section of wall
- C. Leaning, tipping, shifting concrete blocks at concave curve (concave geometry allows the soil to "push" the stacks of concrete walls apart at continuous vertical joints)
- D. Cracks in concrete slab-on-grade patio, long crack parallel to exterior wall, shorter crack at east end of patio, at start of curved portion of wall
- E. Vertical separation and vertical cracks in concrete blocks at inside corner of wall (below east end of patio)
- F. Hollow area below portion of wall, no dirt or other support below wall
- G. Visible gaps, offsets, shifting concrete blocks in straight portion of wall



Photo 18 – Condition A



Photo 19 – Condition B



Photo 19 – Condition C



Photo 18 – Condition D, Southeast Corner of Patio



Photo 19 – Condition D, Along South End of Patio



Photo 20 – Condition E



Photo 21 – Condition F



Photo 22 – Condition G, One Example

SUMMARY CONCLUSIONS

The purpose of a retaining wall is to “retain” the soil and anything else above it (structures, buildings, roads, vehicles, etc.). The three retaining walls that were evaluated in this report all show multiple signs of deterioration and local failure. They do not have the structural integrity to continue to retain the soil, or support the patio, decks, stairs, and residence above them. If no action is taken, these three retaining walls will continue to deteriorate and will ultimately fail completely.

Retaining Wall 1 and Retaining Wall 2

Both of these wood timber walls have deteriorated to the point that they have already experienced local failures, and will continue to fail. They have lost their structural integrity and are no longer serving their intended purpose of retaining the soil on the slope of the property directly north of the house.

Action should be taken as soon as possible to remove Wood Retaining Wall 1 and Wood Retaining Wall 2, stabilize the site, and install a new retaining wall system.

Steps would likely include:

1. Hiring a Geotechnical Engineering Consultant to perform soil boring tests, provide a report of findings, and provide recommended corrective measures in the report
1. Hiring an Design Professional (Architect) to assess the existing site conditions and structures, and develop a new site plan. This site plan will coordinate location(s) of new retaining walls, new decks, new stairs, etc. This design professional would also be responsible for designing the new wood decks, stairs, railings, etc. to work with the new retaining walls.

Hiring a Design Professional (Engineer) to design a new retaining wall system for the north slope (see example images below) (this service is often provided by the retaining wall supply company, for example using precast concrete retaining wall blocks and related components)

2. Hiring a Contractor to demolish and remove the existing wood decks, stairs, and railings in the area
3. Hiring a Landscaping Contractor to remove the existing Retaining Walls, prepare the site, and install new precast concrete retaining wall block system
4. Hiring a Contractor to install new wood decks, railings, and stairs

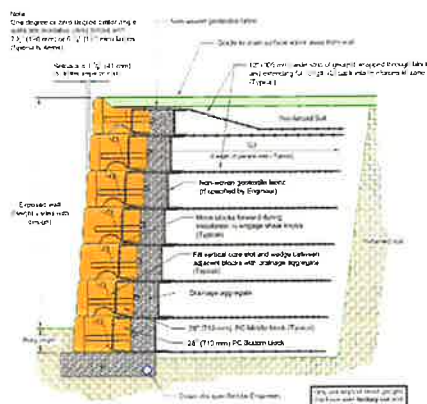


Figure 4 – Conceptual Example Drawing of Retaining Wall Design



Figure 5 – Conceptual Example Photo of Retaining Wall Installation

Retaining Wall 3

This wall is in close proximity to the house, is supporting the concrete patio slab-on-grade at the lower level, and also supports the deck directly above the patio slab-on-grade. This wall parallels the north wall of the house, turns south, and terminates in the circular wall at the northwest corner of the house. This circular wall is in very close proximity to the northwest corner of the house. It is possible this wall was originally built or added at a later time in an attempt to “buttress” the northeast corner of the house against settlement.

Much of this wall is only partially observable. The visible areas of this wall are showing signs of movement, settlement, tipping, and cracking. This is significant, because CMU Retaining Wall 1 directly retains the soil that the house is bearing on. It is highly likely that further investigation will find more issues. It is also likely that significant structural work will be required to restore stability to the house’s foundation, and the retaining system directly to the north of the house.

Steps may include:

2. Hiring a Geotechnical Engineering Consultant to perform soil boring tests, provide a report of findings, and provide recommended corrective measures in the report
3. Hiring a Design Professional (Architect) to assess the existing site conditions and structures, and develop a new site plan. This site plan will coordinate location(s) of new retaining walls, new decks, new stairs, etc. (if this work is required, it would be considered as part of the comprehensive site plan from the previous section)
4. Hiring a Design Professional (Engineer) to design an underpinning solution for the house foundation, if required (see example images of helical piers below)
5. Hiring a Design Professional (Engineer) to design a new retaining wall system for the retaining wall to support soils directly to the north of the house.
6. Hiring a Contractor to demolish and remove the existing wood decks, stairs, and railings in the area.
7. Hiring a Landscaping Contractor to remove the existing Retaining Wall, excavate to the Residence’s foundation, prepare the site, and install new precast concrete retaining wall block system
8. Hiring a Contractor to install new wood decks, railings, and stairs

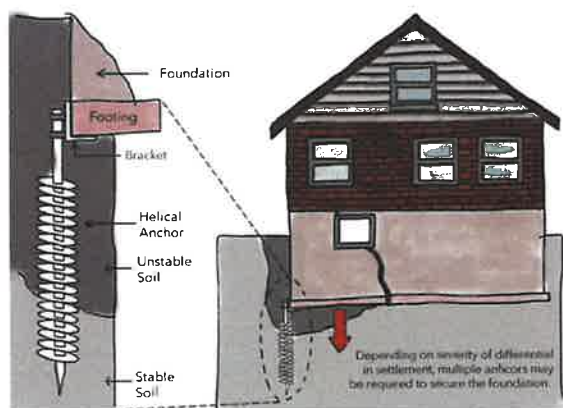


Figure 4 – Conceptual Diagram of
Helical Pier Installation at Foundation



Figure 5 – Conceptual Example Photo
of Helical Piers

All the conclusions and professional opinions which I have offered in this report are expressed to a reasonable degree of certainty in my fields of expertise, namely architecture and engineering. If additional relevant information becomes available, I reserve the right to reconsider, supplement, or update this report.

Unless advised to the contrary, I will assume that this **"Report of Findings"** is fully responsive to your request. If you need additional information, clarification, or elaboration, please feel free to contact me.

Sincerely,

FISCHER-FISCHER-THEIS, INC.

A handwritten signature in black ink, reading "Connor J. Fischer". The signature is written in a cursive, flowing style.

Connor J. Fischer, AIA, PE, Vice President
Architect, Professional Engineer