

**PROFESSIONAL SERVICES AGREEMENT BETWEEN
NTH CONSULTANTS, LTD.
AND THE CITY OF ANN ARBOR
FOR PROFESSIONAL SERVICES**

The City of Ann Arbor, a Michigan municipal corporation, having its offices at 301 E. Huron St. Ann Arbor, Michigan 48104 ("City"), and NTH Consultants, Ltd.

("Contractor") a(n) Michigan Corporation
(State where organized) (Partnership, Sole Proprietorship, or Corporation)
with its address at 41780 Six Mile Road, Northville, MI 48168 agree as follows on
this 22nd day of February, 2017.

The Contractor agrees to provide services to the City under the following terms and conditions:

I. DEFINITIONS

Administering Service Area/Unit means Public Services Area.

Contract Administrator means Water Treatment Services Manager, acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

Deliverables means all Plans, Specifications, Reports, Recommendations, and other materials developed for and delivered to City by Contractor under this Agreement

Project means Barton Dam Piezometer Installation and Slope Stability Analysis.
Project name

II. DURATION

This Agreement shall become effective on February 22, 2017, and shall remain in effect until satisfactory completion of the Services specified below unless terminated as provided for in Article XI.

III. SERVICES

- A. The Contractor agrees to provide Professional Geotechnical Engineering Services
type of service
("Services") in connection with the Project as described in Exhibit A. The City retains the right to make changes to the quantities of service within the general scope of the Agreement at any time by a written order. If the changes add to or deduct from the extent of the services, the contract sum shall be adjusted accordingly. All such changes shall be executed under the conditions of the original Agreement.

- B. Quality of Services under this Agreement shall be of the level of quality performed by persons regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.
- C. The Contractor shall perform its Services for the Project in compliance with all statutory, regulatory and contractual requirements now or hereafter in effect as may be applicable to the rights and obligations set forth in the Agreement.
- D. The Contractor may rely upon the accuracy of reports and surveys provided to it by the City (if any) except when defects should have been apparent to a reasonably competent professional or when it has actual notice of any defects in the reports and surveys.

IV. INDEPENDENT CONTRACTOR

The Parties agree that at all times and for all purposes under the terms of this Agreement each Party's relationship to any other Party shall be that of an independent contractor. Each Party will be solely responsible for the acts of its own employees, agents, and servants. No liability, right, or benefit arising out of any employer/employee relationship, either express or implied, shall arise or accrue to any Party as a result of this Agreement.

V. COMPENSATION OF CONTRACTOR

- A. The Contractor shall be paid in the manner set forth in Exhibit B. Payment shall be made monthly, unless another payment term is specified in Exhibit B, following receipt of invoices submitted by the Contractor, and approved by the Contract Administrator.
- B. The Contractor will be compensated for Services performed in addition to the Services described in Section III, only when the scope of and compensation for those additional Services have received prior written approval of the Contract Administrator.
- C. The Contractor shall keep complete records of work performed (e.g. tasks performed/hours allocated) so that the City may verify invoices submitted by the Contractor. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

VI. INSURANCE/INDEMNIFICATION

- A. The Contractor shall procure and maintain during the life of this contract such insurance policies, including those set forth in Exhibit C, as will protect itself and the City from all claims for bodily injuries, death or property damage which may arise under this contract; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor or anyone employed by them directly or indirectly. In the case of all contracts involving on-site work, the

Contractor shall provide to the City, before the commencement of any work under this contract, documentation satisfactory to the City demonstrating it has obtained the policies and endorsements required by Exhibit C.

- B. Any insurance provider of Contractor shall be admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-admitted insurance companies are not acceptable unless approved in writing by the City.
- C. To the fullest extent permitted by law, Contractor shall indemnify, defend and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses, including attorney's fees, resulting or alleged to result, from any acts or omissions by Contractor or its employees and agents occurring in the performance of or breach in this Agreement, except to the extent that any suit, claim, judgment or expense are finally judicially determined to have resulted from the City's negligence or willful misconduct or its failure to comply with any of its material obligations set forth in this Agreement.

VII. COMPLIANCE REQUIREMENTS

- A. Nondiscrimination. The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of the Ann Arbor City Code and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.
- B. Living Wage. If the Contractor is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Agreement a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

VIII. WARRANTIES BY THE CONTRACTOR

- A. The Contractor warrants that the quality of its Services under this Agreement shall conform to the level of quality performed by persons regularly rendering this type of service.

- B. The Contractor warrants that it has all the skills, experience, and professional licenses necessary to perform the Services specified in this Agreement.
- C. The Contractor warrants that it has available, or will engage, at its own expense, sufficient trained employees to provide the Services specified in this Agreement.
- D. The Contractor warrants that it is not, and shall not become overdue or in default to the City for any contract, debt, or any other obligation to the City including real and personal property taxes.
- E. The Contractor warrants that its proposal for services was made in good faith, it arrived at the costs of its proposal independently, without consultation, communication or agreement, for the purpose of restricting completion as to any matter relating to such fees with any competitor for these Services; and no attempt has been made or shall be made by the Contractor to induce any other perform or firm to submit or not to submit a proposal for the purpose of restricting competition.

IX. OBLIGATIONS OF THE CITY

- A. The City agrees to give the Contractor access to the Project area and other City-owned properties as required to perform the necessary Services under this Agreement.
- B. The City shall notify the Contractor of any defects in the Services of which the Contract Administrator has actual notice.

X. ASSIGNMENT

- A. The Contractor shall not subcontract or assign any portion of any right or obligation under this Agreement without prior written consent from the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under the Agreement unless specifically released from the requirement, in writing, by the City.
- B. The Contractor shall retain the right to pledge payment(s) due and payable under this Agreement to third parties.

XI. TERMINATION OF AGREEMENT

- A. If either party is in breach of this Agreement for a period of fifteen (15) days following receipt of notice from the non-breaching party with respect to a breach, the non-breaching party may pursue any remedies available to it against the breaching party under applicable law, including but not limited to, the right to terminate this Agreement without further notice. The waiver of any breach by any party to this Agreement shall not waive any subsequent breach by any party.

- B. The City may terminate this Agreement, on at least thirty (30) days advance notice, for any reason, including convenience, without incurring any penalty, expense or liability to Contractor, except the obligation to pay for Services actually performed under the Agreement before the termination date.
- C. Contractor acknowledges that, if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds for this Project. If funds to enable the City to effect continued payment under this Agreement are not appropriated or otherwise made available, the City shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to Contractor. The Contract Administrator shall give Contractor written notice of such non-appropriation within thirty (30) days after it receives notice of such non-appropriation.
- D. The provisions of Articles VI and VIII shall survive the expiration or earlier termination of this Agreement for any reason. The expiration or termination of this Agreement, for any reason, shall not release either party from any obligation or liability to the other party, including any payment obligation that has already accrued and Contractor's obligation to deliver all Deliverables due as of the date of termination of the Agreement.

XII. REMEDIES

- A. This Agreement does not, and is not intended to, impair, divest, delegate or contravene any constitutional, statutory and/or other legal right, privilege, power, obligation, duty or immunity of the Parties.
- B. All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either party of any right or remedy does not preclude the exercise of any other rights or remedies that may now or subsequently be available at law, in equity, by statute, in any agreement between the parties or otherwise.
- C. Absent a written waiver, no act, failure, or delay by a Party to pursue or enforce any rights or remedies under this Agreement shall constitute a waiver of those rights with regard to any existing or subsequent breach of this Agreement. No waiver of any term, condition, or provision of this Agreement, whether by conduct or otherwise, in one or more instances, shall be deemed or construed as a continuing waiver of any term, condition, or provision of this Agreement. No waiver by either Party shall subsequently effect its right to require strict performance of this Agreement.

XIII. NOTICE

All notices and submissions required under this Agreement shall be delivered to the respective party in the manner described herein to the address stated in this Agreement or such other address as either party may designate by prior written notice to the other. Notices given under this Agreement shall be in writing and shall be personally delivered, sent by next day express

delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; (2) the next business day when notice is sent next day express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

If Notice is sent to the CONTRACTOR, it shall be addressed and sent to:

NTH Consultants, Ltd.
Attn: Keith M. Swaffar, PE
41780 Six Mile Road
Northville, MI 48168

If Notice is sent to the CITY, it shall be addressed and sent to:

City of Ann Arbor
Attn: Brian Steglitz, PE
(insert name of Administering Service Area Administrator)
301 E. Huron St.
Ann Arbor, Michigan 48104

XIV. CHOICE OF LAW AND FORUM

This Agreement will be governed and controlled in all respects by the laws of the State of Michigan, including interpretation, enforceability, validity and construction, excepting the principles of conflicts of law. The parties submit to the jurisdiction and venue of the Circuit Court for Washtenaw County, State of Michigan, or, if original jurisdiction can be established, the United States District Court for the Eastern District of Michigan, Southern Division, with respect to any action arising, directly or indirectly, out of this Agreement or the performance or breach of this Agreement. The parties stipulate that the venues referenced in this Agreement are convenient and waive any claim of non-convenience.

XV. OWNERSHIP OF DOCUMENTS

Upon completion or termination of this Agreement, all documents (i.e., Deliverables) prepared by or obtained by the Contractor as provided under the terms of this Agreement shall be delivered to and become the property of the City. Original basic survey notes, sketches, charts, drawings, partially completed drawings, computations, quantities and other data shall remain in the possession of the Contractor as instruments of service unless specifically incorporated in a deliverable, but shall be made available, upon request, to the City without restriction or limitation on their use. The City acknowledges that the documents are prepared only for the Project. Prior to completion of the contracted Services the City shall have a recognized proprietary interest in the work product of the Contractor.

Unless otherwise stated in this Agreement, any intellectual property owned by Contractor prior to the effective date of this Agreement (i.e., Preexisting Information) shall remain the exclusive property of Contractor even if such Preexisting Information is embedded or otherwise incorporated in materials or products first produced as a result of this Agreement or used to develop Deliverables. The City's right under this provision shall not apply to any Preexisting Information or any component thereof regardless of form or media.

XVI. CONFLICTS OF INTEREST OR REPRESENTATION

Contractor certifies it has no financial interest in the Services to be provided under this Agreement other than the compensation specified herein. Contractor further certifies that it presently has no personal or financial interest, and shall not acquire any such interest, direct or indirect, which would conflict in any manner with its performance of the Services under this Agreement.

Contractor agrees to advise the City if Contractor has been or is retained to handle any matter in which its representation is adverse to the City. The City's prospective consent to the Contractor's representation of a client in matters adverse to the City, as identified above, will not apply in any instance where, as the result of Contractor's representation, the Contractor has obtained sensitive, proprietary or otherwise confidential information of a non-public nature that, if known to another client of the Contractor, could be used in any such other matter by the other client to the material disadvantage of the City. Each matter will be reviewed on a case by case basis.

XVII. SEVERABILITY OF PROVISIONS

Whenever possible, each provision of this Agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this Agreement or the application of any provision to any party or circumstance will be prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this Agreement or the application of the provision to other parties and circumstances.

XVIII. EXTENT OF AGREEMENT

This Agreement, together with any affixed exhibits, schedules or other documentation, constitutes the entire understanding between the City and the Contractor with respect to the subject matter of the Agreement and it supersedes, unless otherwise incorporated by reference herein, all prior representations, negotiations, agreements or understandings whether written or oral. Neither party has relied on any prior representations, of any kind or nature, in entering into this Agreement. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Agreement, regardless of the other party's failure to object to such form. This Agreement shall be binding on and shall inure to the benefit of the parties to this Agreement and their permitted successors and permitted assigns and nothing in this Agreement, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Agreement. This Agreement may only be altered, amended or modified by written amendment signed by the Contractor and the City. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement.

FOR CONTRACTOR

By _____

Type Name

Its

FOR THE CITY OF ANN ARBOR

By _____

Christopher Taylor, Mayor

By _____

Jacqueline Beaudry, City Clerk

Approved as to substance

Howard S. Lazarus, City Administrator

Craig Hupy, Service Area Administrator

Approved as to form and content

Stephen K. Postema, City Attorney

EXHIBIT A SCOPE OF SERVICES

Performing the Scope of Services: We intend to complete the general scope of services outlined in Section II of the RFP, which includes the following items.

- Review of the available background information, including data that may have been developed since our 2016 peer review report was prepared.
- Preparation of deliverables as described in the RFP.
- Coordination with FERC in order to develop and conduct an appropriate subsurface exploration program and perform seepage and stability analyses to satisfy FERC requirements.
- Performance of test boring drilling activities, installation of piezometers, and collection and evaluation of piezometric data.
- Exploration, evaluation, and development and reporting of recommendations to mitigate relatively high discharge from Toe Drain TD-23.
- Participation in meetings and conference calls.

While the actual scope of services that we provide will be, in part, dependent upon the exploration program that is developed to satisfy and be accepted by FERC, our proposal contemplates the following specific items to meet the City's needs successfully:

- Following award of the project, we will gather and submit the required commercial documents (insurance forms, etc.) and enter into a signed agreement with the City.
- Attend a project kick off meeting and commence developing a suitable drilling program plan (DPP) in accordance with Section 5.0 of the FERC Guidelines for Drilling in and near Embankment Dams and Their Foundations, Version 3.1, June 2016. Preparing and securing approval of the DPP will involve discussions with the FERC Regional Engineer and related staff prior to submission of a draft DPP for FERC's consideration in addition to early notification of our intent to submit a DPP for this project.
- Clearing of underground utilities through a request to the MISS DIG System (Michigan's one-call utility locating service) as well as coordination with City staff regarding any other known underground lines that would not be addressed through the MISS DIG staking request.
- Drilling a series of test borings and installing a piezometer within each boring at the approximate locations shown on the figure included with the scope of work in the RFP. The figure shows a total of five locations, of which three are designated to include deep test borings with both deep and shallow piezometers and two are designated to include shallow borings with shallow piezometers. We expect that two of the deep borings will extend to a depth of approximately 70 feet and one will extend to a depth of approximately 50 feet. The shallow borings are expected to extend to depths of roughly 10 to 15 feet each. Rather than attempting to nest two piezometers within each deep boring, we expect to drill pairs of separate holes for the deep and shallow piezometers at the three designated deep boring locations, in keeping with FERC recommendations for

instrumentation installation. In addition, we expect that two shallow borings with piezometers will be appropriate for exploration of subsoil and flow conditions in the vicinity of TD-23. Accordingly, we expect that a total of ten borings with piezometers, installed in each bore hole, will be completed for this study. The drilling will be performed using hollow stem augers, which is the preferred method indicated in the FERC Guidelines.

- Soil sampling within the test borings will be performed at regular intervals in accordance with the Standard Penetration Test (SPT) method (ASTM D1586). If low-strength cohesive soils are encountered, we will collect relatively undisturbed, thin-walled tube samples (Shelby tubes) in accordance with the requirements of ASTM D1587.
- We estimate that up to five of the borings (the two shallow borings to be located near the toe drainage ditch, the shallow boring between the railroad embankment and the reverse filter, and the two shallow borings for exploration of conditions near TD-23) may encounter free-flowing artesian conditions upon completion of drilling. At these locations, we will drill to a shallow depth (approximately 5 feet) using the typical size of hollow stem augers (4¼ inches inside diameter is generally planned), then ream the hole to that depth and install a 10-inch steel casing. The casing will be grouted in place using cement grout and a flow control tee will be installed at the top of the casing. After the grout sets the boring will be continued using 4¼-inch augers through the casing and flow control tee.
- Site access will be from the Barton Park parking lot and the drilling rig will need to travel on the walkway beneath the railroad line that is located between the railroad abutment wall and the river. Accordingly, access to the boring/piezometer locations will be accomplished using a small, track-mounted drilling rig. Material handling and movement of supplies will be by a small, skid-steer vehicle along the same route. If these vehicles cause appreciable rutting or turf damage, we will perform repairs by placing topsoil, seed, and mulch in the damaged areas. An allowance for performing these services has been shown in the project cost proposal.
- The RFP language reflects the usage of open standpipe piezometers for the current study as was used for the existing piezometers. We understand this approach was considered to simplify the data collection operations of staff from the City of Ann Arbor. We suggest that an alternate type of piezometer also be considered for the proposed study. The use of vibrating wire piezometers (VWPs) would have certain advantages over the use of open standpipes. As with open standpipes, VWPs are installed within a sand pack in the desired stratum and both are grouted above the sand pack to the surface; however, with a VWP only a signal cable extends to the surface and there is no flow path to the surface that is created, so the VWP does not change the flow characteristics of the aquifer. In addition, the VWP measures the pore pressure at the location at which it is installed and therefore represents essentially a point measurement, rather than the measurement of the open standpipe which provides a measurement over the interval in which the screen is installed, which is usually multiple feet. As such, a VWP will likely provide more precise data for use in evaluating seepage characteristics of the embankment and foundation soils for the dam. The disadvantage with the use of VWPs is that a new procedure along with new measurement equipment are introduced, for which appropriate training of staff could be required.
- Excavated soil cuttings from the test boring drilling operations will be placed in closed steel drums that will be temporarily stored at a location at the site acceptable to the City until

after the drilling operations are complete. After the completion of drilling, the drums will be removed from the site and the contents will be lawfully disposed. We have assumed the storage location will be between the dam and the railroad embankment, near the small pond into which the toe drainage ditch flows. The allowance amount we have carried in our cost estimate for these required disposal services is also indicated in the project cost proposal.

- Performing geophysical exploration to assess the variability of the dam condition. NTH proposes to perform multichannel analysis of surface waves (MASW) analysis on a transect along the crest of the right embankment and on a transect along an alignment on the downstream face of the dam that roughly parallels the crest of the right embankment. The MASW data from each transect will be interpreted to develop a planar profile of the density of the embankment materials, thus allowing us to establish the presence and location of anomalous zones. Both transects will start near the dam's spillway and will extend past the vicinity of the apparent seepage at TD-39/-40.
- Our AASHTO-certified laboratory will perform testing on soil samples collected from the test borings. The laboratory tests are expected to consist of measurement of moisture content and dry density of selected samples along with unconfined compression testing and Atterberg limits (liquid limit and plastic limit) testing of representative cohesive soils and grain size distribution measurement through sieve and hydrometer analysis of representative granular soils.
- Collect water level information from installed instrumentation. We will visit the site monthly to measure water levels in open standpipe piezometers and pore pressures from vibrating wire piezometers, if installed, for 12 months following installation of the piezometers. During these visits, we will record changes in the conditions of the piezometers, embankment, seepage rates, and any boils that we observe.
- Perform analyses to evaluate the seepage through and beneath the dam and calculate pertinent hydraulic gradients. The required numeric modeling will be based on the subsoil and groundwater conditions encountered within the proposed test borings along with data from previously drilled borings for the existing piezometer installations. We will incorporate data collected from existing and proposed piezometers for developing the numeric model.
- Perform stability analyses for the right embankment to evaluate stability under the loading conditions required by FERC (normal pool, design flood, etc.). Stratigraphy will be evaluated on the basis of conditions encountered in the test borings and strength parameters will be interpreted on the basis of laboratory and field testing results. Piezometric conditions will incorporate the results of the seepage analysis.
- Reporting for the study will include separate documentation for the activities related to the piezometer and stability analyses and for the toe drain TD-23 area. The piezometer and stability analyses will be presented in a report that includes:
 - A general description of site features and project background;
 - Surface and subsurface exploration activities;
 - Subsoil and groundwater conditions that are encountered;
 - Piezometer data;
 - Seepage analysis results, including graphical depictions of flow conditions;

- Slope stability analysis results, including graphical depictions of critical failure surfaces;
 - Evaluations of embankment stability and requirements for mitigation;
 - Repair options using various approaches, including a “do nothing” alternative, with explanation of each approach and its effectiveness, feasibility, and estimated construction cost;
 - Assessment of urgency of implementing repairs;
 - Evaluation of the extent of required repairs along the length of the embankment.
- Findings from the evaluation of TD-23 will be presented in a technical memorandum that includes discussions of nearby subsurface soils as encountered in proposed test borings and a comparison with the soil fines that have been collected by the City, recommendations to restrict the movement of fines from the embankment at this location, sketch of the recommended repair, and development of an estimated construction cost.
 - The RFP states that participation in up to 5 meetings will be required, including one that may include attendance and preparation for presentation to the City Council. NTH anticipates that some on-site coordination with City staff will be required, such as for confirmation of equipment staging and access routes, and for temporary storage of drums of soil cuttings from drillings.

Schedule: We anticipate a project schedule that conforms to the approximate schedule provided in Section III of the RFP. Presuming the City Council award of the project and the commercial aspects of the project are completed as indicated in the approximate schedule in order to allow for a kick off in early May 2017, we estimate the DPP will take approximately 2 weeks to develop so that we can make the initial contact (a conference call is anticipated to be sufficient for this purpose) and start discussions with FERC in late May 2017. Following that we plan to submit the initial draft of the DPP approximately 3 weeks after the initial conference call (a minimum of 2 weeks is required by FERC), which is approximately mid-June 2017. Allowing for a 30-day review period by FERC, drilling of test borings and installation of piezometers is planned to start in mid-July 2017 and will require approximately 2 weeks, so this task is expected to be completed by the end of July 2017.

Surveying services will be performed after the installation of the piezometers and will be completed in early August 2017, with MASW services scheduled shortly thereafter. MASW field operations are planned to require 1 week and are expected to be completed by mid-August 2017. Removal of the drummed soil cuttings also will be scheduled after completion of piezometer installation and is expected to be completed by mid-August 2017.

Twelve piezometer measurements will be obtained on a monthly basis following the initial installation and are, accordingly, expected to be completed by the end of July 2018. The seepage and stability analyses will require approximately 9 weeks following the availability of the final piezometer data and are expected to be completed by the end of September. Report preparation and review will require approximately 13 weeks and the completed report should be available by the end of 2018.

EXHIBIT B COMPENSATION

General

Contractor shall be paid for those Services performed pursuant to this Agreement inclusive of all reimbursable expenses (if applicable), in accordance with the terms and conditions herein. The Compensation Schedule below/attached states nature and amount of compensation the Contractor may charge the City:

| | |
|---|----------|
| A. Drilling, Piezometer Installation and monthly monitoring | \$84,600 |
| • Senior Project Professional: 28 hours | |
| • Senior Staff Professional: 92 hours | |
| • Staff Professional: 70 hours | |
| • Drilling Subcontractor Amount: \$63,300 | |
| • Allowance for surface restoration: \$2,000 | |
| B. Stability Analysis / Calculations | \$17,100 |
| • Senior Officer: 2 hours | |
| • Senior Principal Professional: 8 hours | |
| • Senior Project Professional: 40 hours | |
| • Project Professional: 80 hours | |
| C. Other Piezometer Related Efforts | |
| a. Report Preparation | \$8,800 |
| • Senior Officer: 6 hours | |
| • Senior Principal Professional: 8 hours | |
| • Senior Project Professional: 20 hours | |
| • Project Professional: 20 hours | |
| • Staff Professional: 8 hours | |
| • Word Processor: 4 hours | |
| b. Meetings | \$9,900 |
| • Senior Officer: 22 hours | |
| • Senior Project Professional: 34 hours | |
| • Staff Professional: 4 hours | |
| c. FERC Coordination | \$11,500 |
| • Senior Officer: 7 hours | |
| • Senior Principal Professional: 6 hours | |
| • Senior Project Professional: 38 hours | |
| • Project Professional: 20 hours | |
| • Staff Professional: 8 hours | |
| • CADD: 4 hours | |
| • Word Processor: 4 hours | |

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| d. Preparation of Deliverables | \$24,200 |
| • Senior Officer: 9 hours | |
| • Senior Principal Professional: 9 hours | |
| • Senior Project Professional: 33 hours | |
| • Project Professional: 20 hours | |
| • Staff Professional: 44 hours | |
| • CADD: 6 hours | |
| • Word Processor: 6 hours | |
| • NTH Laboratory Testing: \$3,100 | |
| • Subcontractor Amount: \$5,800 | |
| | |
| e. MASW Services | \$12,400 |
| • Senior Project Professional: 6 hours | |
| • Senior Staff Professional: 44 hours | |
| • Staff Professional: 44 hours | |
| • CADD: 8 hours | |
| • NTH Equipment: \$2,100 | |
| | |
| f. Allowance for disposal of drill spoils | \$7,000 |
| • Senior Project Professional: 2 hours | |
| • Staff Professional: 8 hours | |
| • Subcontractor Amount: \$6,000 | |
| | |
| Total Other Related Services | \$73,800 |
| | |
| D. Toe Drain 23 Evaluation and Recommendations | \$13,900 |
| • Senior Officer: 6 hours | |
| • Senior Principal Engineer: 10 hours | |
| • Senior Project Professional: 34 hours | |
| • Project Professional: 20 hours | |
| • Staff Professional: 14 hours | |
| • CADD: 4 hours | |
| • Laboratory Technician: 12 hours | |
| • Word Processor: 2 hours | |
| • Laboratory Testing: \$900 | |
| | |
| Total Estimated Project Cost | \$189,400 |

**EXHIBIT C
INSURANCE REQUIREMENTS**

Effective the date of this Agreement, and continuing without interruption during the term of this Agreement, Contractor shall have, at a minimum, the following insurance, including all endorsements necessary for Contractor to have or provide the required coverage.

A. The Contractor shall have insurance that meets the following minimum requirements:

1. Professional Liability Insurance or Errors and Omissions Insurance protecting the Contractor and its employees in an amount not less than \$1,000,000.

2. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident
Bodily Injury by Disease - \$500,000 each employee
Bodily Injury by Disease - \$500,000 each policy limit

3. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements which diminish the City's protections as an additional insured under the policy. Further, the following minimum limits of liability are required:

| | |
|-------------|---|
| \$1,000,000 | Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined |
| \$2,000,000 | Per Job General Aggregate |
| \$1,000,000 | Personal and Advertising Injury |

4. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements which diminish the City's protections as an additional insured under the policy. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

5. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.

- B. Insurance required under A.3 and A.4 above shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City.

- C. Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the City. If any of the above coverages expire by their terms during the term of this contract, the Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.