

# PROFESSIONAL SERVICES AGREEMENT

This PROFESSIONAL SERVICES AGREEMENT ("Agreement") dated \_\_\_\_\_ is made by and between the **City of Franklin**, acting by and through its Board of Public Works and Safety ("OWNER") and **CrossRoad Engineers, PC**, ("CONSULTANT") an Indiana corporation organized under the laws of the State of Indiana.

## RECITALS

WHEREAS, OWNER wishes to hire CONSULTANT to provide certain professional services with respect to **Urban Trail and Pedestrian Improvements from SR 144 to 800 feet west of Fairground Street** ("Project"); and

WHEREAS, CONSULTANT has extensive experience, knowledge and expertise relating to these services and has expressed a willingness to furnish the services in connection therewith, subject to the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the promises, the mutual covenants and undertakings herein contained and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

### Section I – Services by CONSULTANT

The engineering services to be performed by CONSULTANT are presented as Appendix "A", which is attached to this Agreement, and made a part hereof, and are referred to herein as the "Services".

### Section II – Information and Services to be furnished by OWNER

The information and services to be furnished by OWNER are as set out in Appendix "B", which is attached to this Agreement, and incorporated herein by reference.

### Section III – Commencement of Services and Schedule

CONSULTANT shall commence performance under this Agreement and shall provide the Services hereunder in accordance with the Schedule contained in Appendix "C", which is attached to this Agreement, and incorporated herein by reference.

### Section IV – Compensation

For all Services rendered by CONSULTANT under this Agreement, OWNER agrees to pay CONSULTANT on the basis of fees and charges established in Appendix "D", which is attached to this Agreement, and incorporated herein by reference.

## **Section V – Term and Termination**

### **1. Term**

This Agreement shall commence upon execution by the parties and shall continue until completion of the Services and deliverables as set forth in Appendix “C” or unless terminated as set forth below.

### **2. Termination**

OWNER reserves the right to terminate or suspend this Agreement upon five days advance written notice to CONSULTANT. Upon termination of this Agreement, CONSULTANT shall deliver all Work Product (as defined herein) to OWNER. The dollar amount for any earned but unpaid Services performed by CONSULTANT shall be based upon an estimate of the portions of the total Services completed by CONSULTANT through the effective date of termination, which estimated shall be as made by OWNER in the exercise of its honest and reasonable judgment for all Services to be paid for on a lump sum basis and shall be based upon an audit by OWNER of those Services to be paid for on a cost basis or a cost plus fixed fee basis as described in Section IV hereof.

## **Section VI – General Provisions**

### **1. Subcontracting**

It is recognized that CONSULTANT may engage subconsultants to perform a portion of the work under this Agreement. The engagement of subconsultants by CONSULTANT shall not relieve CONSULTANT of any responsibility for the fulfillment of this Agreement. No subconsultant shall subcontract any portion of its work under this Agreement.

### **2. Ownership of Documents**

All reproducible materials prepared by CONSULTANT or its subconsultants in connection with this Agreement, alone or in combination with others, on any and all media, in whole or in part, and all copies thereof, whether created before, during, or after the term of this Agreement (collectively, the “Work Product”) will be the property of the OWNER.

CONSULTANT shall be allowed to retain copies of all documents included in the Work Product, unless prohibited for reasons of security and as mutually agreed by both parties.

CONSULTANT agrees that written agreements with any and all subconsultants used by CONSULTANT to fulfill CONSULTANT’s obligations hereunder shall contain language substantially similar to that of this Subsection to assign OWNER all Work Product by such subconsultants, and to require cooperation with CONSULTANT on the same terms and conditions as set forth herein.

The provisions of this Subsection shall survive the expiration, suspension, abandonment, termination, or completion of this Agreement.

3. **Access to Records**  
Full access to the work during the progress of the Services shall be available to the OWNER. CONSULTANT and its subconsultants shall maintain all books, documents, papers, accounting records and other evidence pertaining to the cost incurred under this Agreement and shall make such materials available at its respective offices at all reasonable times during the period of this Agreement and for three (3) years from the date of final payment for Services is made by OWNER to CONSULTANT.
4. **Liability for Damages**  
CONSULTANT assumes all risk of loss, damage or destruction to the Work Product, to all of its materials, tools, appliances and property of every description, and for injury to or deaths of its employees or agents arising out of or in connection with the performance of this Agreement, excluding that which occurs due to the acts or failure to act of any third party, and excluding that which is caused by the OWNER.
5. **General Liability Insurance**
  - a. Amounts of Coverage. CONSULTANT shall procure and maintain at its expense insurance of the kind and in the amounts set forth in Appendix "E" by companies authorized to do such business in the State of Indiana covering all Services and related activities performed by CONSULTANT.
  - b. Evidence of Insurance. Before commencing its Services, CONSULTANT shall furnish to OWNER a certificate, or certificates, showing that it has complied with this Section VI.5.b, which certificate or certificates, shall also designate OWNER as an additional named insured. The policies shall not be changed or canceled unless thirty (30) days prior written notice has been given to OWNER.
6. **Worker's Compensation**  
CONSULTANT shall be responsible for providing all necessary unemployment and Worker's Compensation Insurance for its employees. CONSULTANT shall provide the OWNER with a certificate of insurance indicating that it has complied with this requirement.
7. **Changes in Work**
  - a. Prior Approval. CONSULTANT shall not commence any additional services or change of scope until authorized by OWNER.
  - b. Additional Services. Additional services may include, but not be limited to:
    - i. Services associated with significant changes in the scope, extent, or character of the portions of the Project required by, but not limited to, changes in scope, complexity or schedule and revisions required by changes in applicable laws and regulations or due to any other causes beyond CONSULTANT's control.

- ii. Preparing to serve or serving as a consultant or witness for OWNER in any litigation or other dispute resolution process related to the Project that does not involve a claim against CONSULTANT or a claim that is based on an alleged act of negligence or breach of contract by CONSULTANT.
- iii. Subject to other provisions of this Agreement, additional or extended services during the Project made necessary by (1) emergencies or Acts of God endangering the Project site, (2) an occurrence of a hazardous environmental condition, (3) damages to OWNER's facilities caused by fire, flood or other cause, (4) acceleration or deceleration of the Schedule involving services beyond normal working hours, (5) significant delays, changes, or price increases occurring as a direct or indirect result of materials, equipment, or energy shortages and (6) default or failure to perform by other consultants.

8. Non-Discrimination

CONSULTANT and its subconsultants, if any, shall not discriminate against any employee or applicant for employment, to be employed in the performance of the Services under this Agreement, with respect to hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of race, color, religion, sex, handicap, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the Agreement.

9. Safety

- a. Responsibility. CONSULTANT shall be directly responsible for the safety requirements and programs applicable to its own employees, its subconsultants and other parties with whom it has contracted to perform Services with respect to the Project.
- b. Compliance. CONSULTANT's safety program shall comply with applicable federal, state and local statutes, rules, regulations and ordinances. CONSULTANT shall report to OWNER, in writing, any injury or accident at the Project site involving its employees, its subconsultants or other parties for which it is responsible, within forty-eight (48) hours or a shorter period of time if required by law.
- c. Notification. CONSULTANT shall not be responsible for the safety requirements or programs applicable to any other person or entity involved with the Project other than CONSULTANT and its subconsultants.

10. Independent Contractor

OWNER and CONSULTANT are acting in an individual capacity in the performance of this Agreement and will not act as agents, employees, partners, joint venturers or associates of one another. The employees or agents of one party shall not be deemed or construed to be the employees or agents of the other party for any purpose whatsoever. Neither

party will assume any liability for any injury (including death) to any persons, nor damage to any property, arising out of the acts or omissions of the agents, employees, or subconsultants of the other party. CONSULTANT shall be responsible for providing all necessary unemployment and worker's compensation insurance for its employees.

11. Indemnification

CONSULTANT agrees to indemnify OWNER, its officials, and employees, and to hold each of them harmless from claims and suits, including court costs, attorney's fees, and other expenses caused by any negligent act, effort or omission of, or by any recklessness or willful misconduct by CONSULTANT, its employees, or subconsultants. CONSULTANT's indemnification and defense obligations hereunder shall extend to Claims occurring after this Agreement is terminated as well as while it is in force, and shall continue until it is finally adjudicated.

12. Notification

All written notices required by this Agreement shall be sent to the parties at the following addresses by certified mail, return receipt:

To OWNER;                      **City Engineer**  
   **70 East Monroe Street**  
   **Franklin, Indiana 46124**

To CONSULTANT:        **CrossRoad Engineers, PC**  
   **3417 Sherman Drive**  
   **Beech Grove, Indiana 46107**

13. Authority to Bind Consultant

CONSULTANT warrants that it has the necessary authority to enter into this Agreement. The signatory for CONSULTANT represents that he/she has been duly authorized to execute this Agreement on behalf of CONSULTANT and has obtained all necessary or applicable approval to make this Agreement fully binding upon CONSULTANT when his/her signature is affixed hereto.

14. Successors and Assignees

This Agreement is binding upon and shall inure to the benefit of OWNER and CONSULTANT and their respective successors and permitted assigns. CONSULTANT shall not assign this Agreement without the written consent of OWNER.

15. Entire Agreement; Amendments

This Agreement and its Appendices, each of which is incorporated herein by reference and made a part of this Agreement, constitutes the entire Agreement of the parties with regard to the subject matter hereof and supersedes all prior discussions or agreements concerning any subject matter related hereto. This Agreement may only be amended,

supplemented or modified by a written document executed in the same manner as this Agreement.

16. Governing Law

This Agreement shall be governed by and construed in accordance with the laws of the State of Indiana, without giving effect to principles respecting conflicts of laws. Subject to Section 19, any action pursuant to this Agreement shall be brought and tried in a court of competent jurisdiction in Johnson County, Indiana, and each party hereby irrevocably consents to the personal and subject matter jurisdiction of any such court and waives any objection to such jurisdiction and venue.

17. Non-Waiver

It is agreed and acknowledged that no action or failure to act by OWNER or CONSULTANT as to a breach, act or omission of the other shall constitute a waiver of any right or duty afforded either of them under this Agreement, as to any subsequent breach, act or omission of the other nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereof, except as may be specifically agreed in writing. No right conferred on either party under this Agreement shall be deemed waived and no breach of this Agreement excused unless such a waiver or excuse shall be in writing and signed by the party claimed to have waived such right.

18. Invalid Provisions

If any part of this Agreement is later found to be contrary to, prohibited by, or invalid under applicable law, rules or regulations, that provision shall not apply and shall be omitted to the extent so contrary, prohibited or invalid, but the remainder of this Agreement shall not be invalidated and shall be given full force and effect insofar as possible.

19. Dispute Resolution

Any dispute arising out of this Agreement that cannot be resolved through informal discussions between the parties, shall be subject to this Section.

- a. The parties agree that the existence of a dispute notwithstanding, the parties shall continue without delay to carry out all of their respective responsibilities under this Agreement.
- b. Should any dispute arise with respect to this Agreement that cannot be resolved through informal discussions between the parties, a party shall serve written notice to the other party outlining the details of the dispute and demanding mediation. No later than twenty (20) days from the date of the notice demanding mediation, the parties shall confer to discuss the selection of the mediator and agree upon other mediation procedures.

- c. Submission of a dispute under this Agreement to a mediation procedure shall be a condition precedent to filing litigation. No litigation shall be initiated by either party unless the mediation has been completed (unsuccessfully) or a party has failed to participate in a mediation procedure.

20. Employment Eligibility Verification

CONSULTANT affirms under the penalties of perjury that it does not knowingly employ an unauthorized alien.

CONSULTANT shall enroll in and verify the work eligibility status of all its newly hired employees through the E-Verify program as defined in IC 22-5-1.7-3. CONSULTANT is not required to participate should the E-Verify program cease to exist. Additionally, CONSULTANT is not required to participate if CONSULTANT is self-employed and does not employ any employees.

CONSULTANT shall not knowingly employ or contract with an unauthorized alien. CONSULTANT shall not retain an employee or contract with a person that CONSULTANT subsequently learns is an unauthorized alien.

CONSULTANT shall require its subconsultants, who perform work under this Agreement, to certify to CONSULTANT that the subconsultant does not knowingly employ or contract with an unauthorized alien and that the subconsultant has enrolled and is participating in the E-Verify program. CONSULTANT agrees to maintain this certification throughout the duration of the term of an agreement with a subconsultant.

OWNER may terminate for default if CONSULTANT fails to cure a breach of this provision no later than thirty (30) days after being notified by OWNER.

21. No Investment in Iran

As required by IC 5-22-16.5, CONSULTANT certifies that it is not engaged in investment activities in Iran. Providing false certification may result in the consequences listed in IC 5-22-16.5-14, including termination of this Agreement and denial of future agreements, as well as an imposition of a civil penalty.

[Signature page follows]

**Non-Collusion.**

The undersigned attests, subject to the penalties for perjury, that he/she is the CONSULTANT, or that he/she is the properly authorized representative, agent, member or officer of the CONSULTANT, that he/she has not, nor has any other member, employee, representative, agent or officer of the CONSULTANT, directly or indirectly, to the best of his/her knowledge, entered into or offered to enter into any combination, collusion or agreement to receive or pay, and that he/she has not received or paid, any sum of money or other consideration for the execution of this Agreement other than that which appears within this Agreement.

In Witness Whereof, the CONSULTANT and the OWNER have, through duly authorized representatives, entered into this Agreement. The parties having read and understand the forgoing terms of this Agreement do by their respective signatures dated below hereby agree to the terms thereof.

CROSSROAD ENGINEERS, PC  
(CONSULTANT)

CITY OF FRANKLIN  
BOARD OF PUBLIC WORKS AND SAFETY  
FRANKLIN, INDIANA  
(OWNER)

\_\_\_\_\_  
Signature

Walter E. Charles, President  
(Print or type name and title)

\_\_\_\_\_  
Signature

Joseph McGuinness, Mayor  
(Print or type name and title)

Attest:

Attest:

\_\_\_\_\_  
Signature

Trent E. Newport, Vice Pres.  
(Print or type name and title)

\_\_\_\_\_  
Signature

Janet P. Alexander, Clerk-Treasurer  
(Print or type name and title)



## APPENDIX "A"

### SERVICES BY CONSULTANT

In fulfillment of this Agreement, the CONSULTANT shall comply with the requirements of the appropriate regulations and requirements of the City of Franklin, the Indiana Department of Transportation, and the Federal Highway Administration.

The description of the proposed project is as follows:

Urban Trail and Pedestrian Improvements (SR 144 to 800 Feet West of Fairground Street)

The CONSULTANT shall be responsible for performing the following tasks:

- A. Survey Data Collection and Route Survey** – CONSULTANT shall survey the project limits in order to produce a topographic base map and Location Control Route Survey in accordance with applicable Indiana Code. Upon the completion of the field work, CONSULTANT shall establish all section lines, right-of-way lines, and property lines per deeds and platted subdivisions; complete all survey line work; generate the TIN surface model and also create one foot interval contours; and add all relative survey notes to the drawings.
- B. Path Design and Plan Preparation** – In general, this task involves the preparation of design plans and bidding documents to allow the proposed project to be constructed. CONSULTANT shall prepare plans, specifications, and estimates of cost, which shall be in accordance with the accepted standards for such work and in general accordance with the following documents in effect as of the Effective Date of this Agreement: American Association of State Highway and Transportation Officials' "A Policy on Geometric Design of Highways and Streets"; Indiana Manual on Uniform Traffic Control Devices; and, Indiana Design Manual.
- C. Landscape Design and Construction Documents** – This task consists of utilizing the services of a subconsultant to prepare schematic design and construction plans. These services are more fully described in the subconsultant's proposal dated May 26, 2015, which is attached.
- D. Bridge Design and Plan Preparation** – Included in this task will be the design of a pedestrian bridge to carry the proposed multi-use trail over the stream located just east of Tracy Miles Road on the south side of SR 144. The design and plan preparation fee presented in Appendix "D" is based upon using a prefabricated structure as the design option and including the design submittals in accordance with INDOT and FHWA requirements.
- E. Utility Coordination** – CONSULTANT shall coordinate with the representatives from each of the utility companies having facilities located within the project area. CONSULTANT shall communicate any relocation of facilities that may be needed and then review the relocation

plans that the utility companies prepare. CONSULTANT shall review any reimbursable claims by the utilities and coordinate as necessary. This task does not include work associated with field locating the vertical depth of any utilities. Although no 'potholing' of facilities is anticipated to be required, it is assumed that the utility companies will be responsible for performing this work on their own facilities. This work shall be in general accordance with INDOT policy and procedures in effect as of the Effective Date of this Agreement. This scope of work only addresses utility coordination through the design process. Utility coordination services during the construction phase will be provided as needed on an hourly basis.

- F. Environmental Document Preparation** – CONSULTANT shall perform Environmental Services work in compliance with National Environmental Policy Act (NEPA) and other pertinent and applicable laws and regulations. It is assumed that a Level 2 Categorical Exclusion document will be required. Included is the early coordination with the various regulatory agencies that is required. A subconsultant, Archaeological Consultants of the Midwest, will be utilized to provide some of these services. These services are more fully described in Archaeological Consultants of the Midwest's proposals dated May 20, 2015, which are attached to, and made a part of, Appendix "D".
- G. Public Hearing Requirements / Public Information Meeting** – CONSULTANT shall prepare display materials for and present the proposed project at an official Public Hearing, if one is required, or at a Public Information Meeting. If a Public Hearing, this shall be in accordance with INDOT procedures.
- H. Permit Application** – It is anticipated the construction of the project will disturb more than one acre of ground and therefore an Indiana Department of Environmental Management (IDEM) Rule 5 Notice of Intent will be required. CONSULTANT shall prepare a Storm Water Pollution Prevention Plan, submittal of public notice, and permit application forms. No other permits are anticipated to be required.
- I. Geotechnical Investigation and Pavement Design** – CONSULTANT shall utilize the services of a subconsultant to provide a geotechnical engineering investigation and pavement design. This work shall be in accordance with the Indiana Department of Transportation's policy as of the Effective Date of this Agreement. See Subconsultant proposal in Appendix "D" for detailed scope of services.
- J. Post Bid Services** – This effort includes responding to construction questions from the contractor; making plan revisions as requested to accommodate on-site construction decisions made or approved by the City's representatives; and reviewing and approving shop drawings submitted by the contractor. This service will be eliminated from this Scope of Work if CrossRoad Engineers is responsible for providing inspection services during the construction as it would be included in our inspection contract.



# REMENSCHNEIDER ASSOCIATES, INC.

landscape architecture & planning

PROJECT: JEFFERSON STREET CORRIDOR IMPROVEMENTS – FAIRGROUNDS to WESTVIEW DRIVE  
LOCATION: FRANKLIN, INDIANA  
DATE: MAY 26, 2015

*Remenschneider Associates, Inc. (RAI)* is pleased to provide this scope of services to *CrossRoad Engineers (CRE)* for landscape architectural services for Jefferson Street corridor improvements from approximately 1500 feet west of US 31 to Westview Drive (or station 113+23.00 west to 73+75 line "PR-A").

Our firm will coordinate with the project design team, led by *CrossRoad Engineers*, to prepare schematic designs and construction plans per the scope of work outlined below. The schematic design plans will, upon the City's request, incorporate elements and standards specified within the North Main Street and Jefferson Street corridors as well as the downtown streetscape enhancement project. Following acceptance of design concepts, RAI will prepare construction drawings for non-vehicular related hardscape elements and ornamental landscape plantings.

Five (5) design review meetings and appropriate cost estimates have also been programmed.

## SCOPE OF WORK

### *Phase I – Project Initiation / Schematic Design*

- A. CAD base drawings downloaded / reviewed / prepared
- B. Coordination with project design team and client to further understand:
  - 1. Budget
  - 2. Determination of Site elements
- C. Preparation of corridor schematic design plans and preliminary cost estimates for the following elements:
  - 1. Street trees
    - a. Existing tree identification and assessment (and/or review of Davey Tree's assessment)
    - b. Proposed new locations and species
  - 2. Path / trail / sidewalk layout design assistance
  - 3. Corridor lighting design
    - a. Lighting locations and spacing
    - b. Assist with conduit routing to minimize impact on existing trees
  - 4. Pedestrian bridge design assistance
    - a. Aesthetic considerations / bridge style
    - b. Bridge landing / trail interface
  - 5. Drake Rd / Methodist Dr intersection design
    - a. Incorporation of masonry monuments
    - b. Assist with upgraded signal arm selections
  - 6. Trailhead / gateway monument design – 2 qty
    - a. Art panel information
      - i. Research of information relevant to specific area of the City
      - ii. Review with and selection by Steering Committee
    - b. Locations:
      - i. Methodist Home
      - ii. Hospital

7. Landscape design for gateway monument locations  
D. Design review meetings (2 qty) with applicable City staff and/or Steering Committee

***Deliverables:***

- (1 qty) Schematic Design Concept Master Plan  
with CAD linework  
(2 qty) Client / Steering Committee meetings

***Phase II – Construction Documents and Specifications***

Work to be performed within this phase includes preparation of landscape architectural construction drawings and coordination with civil engineering. This work will be based upon selected schematic design elements.

- A. Design coordination with *CrossRoad Engineers*  
B. Design review coordination meetings (3 qty) with *City* and/or Steering Committee  
C. Site hardscape construction plans for approved schematic design elements including:  
1. Material selections  
2. Typical masonry sections and details  
3. Construction specifications  
D. Landscape planting plans including:  
1. Planting installation details  
2. Plant material specifications  
a. Species botanical and common name  
b. Installation size  
c. Quantity  
3. Installation specifications  
E. Prepare estimate of probable site work costs for Phase II Section B and C listed above  
F. Completion of construction drawings

***Deliverables:***

- (1 qty) Landscape Architectural construction drawing set (24" x 36")  
with necessary plans & details listed above for INDOT submittals  
(1 qty) Final estimate of probable site work costs  
(3 qty) Design review coordination meetings

**PROFESSIONAL FEES**

Professional services as described in the scope of work outlined above are listed below:

<b>Phase I:</b>	Project Initiation / Schematic Design	\$	13,500.00
<b>Phase II:</b>	Construction Documents and Specifications	\$	23,500.00

The above fees total \$ 37,000.00 through completion of Phase II and will proceed per authorization of this proposal. Professional services will be billed on a monthly complete basis. All invoices are due upon receipt and 1.5% interest will be charged per month for any invoices not paid within 45 days. Professional fees associated with the above scope will expire if not accepted within 60 days from the date of this contract.

**ADDITIONAL SERVICES**

Additional services beyond the above scope of work can be provided upon request or as needed. These include, but are not limited to, further design studies beyond those outlined above, design review meetings and studies

requested beyond those outlined, agency coordination beyond outlined above, color renderings, presentation to or attendance at public meetings/hearings, state or federal environmental process meetings and coordination, construction documents and specifications beyond those outlined, onsite inventory of existing trees, competitive contractor bidding, irrigation design, as built/record drawings, and regulatory application and permit fees.

Principal landscape architect 160  
Project landscape architect 120

Staff landscape architect 90  
Administrative support 50

**INTELLECTUAL PROPERTY**

All designs indicated by the drawings and plans created for use on this project are the intellectual property of Remenschneider Associates Inc. No such designs or ideas shall be used by any other person, firm or corporation to advance the designs to the level of construction documents without written permission and procured release.

If the above meets with your approval, please return a copy of the executed contract to confirm our agreement and initiate work on your project.

Respectfully submitted,



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Kenneth J. Remenschneider, President

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Authorization

Date

## **APPENDIX "B"**

### **INFORMATION AND SERVICES TO BE FURNISHED BY THE OWNER**

OWNER shall furnish CONSULTANT with the following:

1. Guarantee access to enter upon public and private lands as required for CONSULTANT to perform work under this Agreement.
2. Criteria for design and details for signs, signals, lighting, highway and structures such as grades, curves, sight distances, clearances, design loading, etc.
3. Standard Specifications and standard drawings applicable to the Project.
4. Plans of existing facilities within the limits of the project.
5. Available traffic data and studies as well as perform or cause to perform the collection of traffic volume and classification counts for the determination of Average Daily Traffic and percentage of truck traffic.
6. Necessary permit forms and permit processing, and payment of any permit applications fees, advertisements, etc.
7. Necessary advertisements for public meeting(s), provide venue for public meeting(s), and cause for the compilation of written transcript if so required.
8. Utility plans available to OWNER for utility facilities throughout the limits of the project.
9. All legal services as may be required for the development of the project.
10. Utility relocation design and plans for OWNER owned utilities.
11. Sufficient quantities of all pertinent forms.

## **APPENDIX "C"**

### **SCHEDULE**

No work under this Agreement shall be performed by the CONSULTANT until the CONSULTANT receives a written notice to proceed from the OWNER.

All work by the CONSULTANT under this Agreement shall be completed and delivered to the OWNER and INDOT for review and approval in accordance with INDOT's policies and procedures to allow letting during Fiscal Year 2019.

## APPENDIX "D"

### COMPENSATION

#### A. Amount of Payment

1. The CONSULTANT shall receive as payment for the work performed under this Agreement the total amount not to exceed **\$ 219,400.00** (Section A. 2. - \$193,900.00; Section A. 3. - \$21,500.00; and Section A. 4. - \$4,000.00), unless a supplement is executed by the parties that increases the maximum amount payable.

2. The CONSULTANT shall be paid for the following work performed under this Agreement on a lump sum basis in accordance with the following schedules:

a.	Survey Data Collection and Route Survey	\$ 20,400.00
b.	Path Design and Plan Preparation	\$ 75,500.00
c.	Landscape Design and Construction Documents	\$ 37,000.00
d.	Bridge Design and Plan Preparation	\$ 12,000.00
e.	Utility Coordination (During Design Phase)	\$ 11,200.00
f.	Environmental Document Preparation	\$ 21,400.00
g.	Public Hearing Requirements / Public Information Meeting	\$ 5,800.00
h.	Permit Application	\$ 5,600.00
i.	Post Bid Services	\$ 5,000.00
<b>Total Section A. 2.</b>		<b>\$ 193,900.00</b>

3. The CONSULTANT shall be paid for the following work performed under this Agreement on a unit price basis according to the following schedule:

a.	Geotechnical Investigation & Pavement Design	\$ 21,500.00
<b>Total Section A. 3.</b>		<b>\$ 21,500.00</b>

4. If Utility Coordination services during the construction phase are requested, such services shall be provided on an hourly basis. An estimated amount of \$4,000.00 is established for these services.

The CONSULTANT shall not be paid for any services performed by OWNER or INDOT, or not required to develop this project.

#### B. Method of Payment

1. The CONSULTANT may submit a maximum of one invoice per calendar month for work covered under this Agreement. The invoices shall be submitted to:

City Engineer, City of Franklin  
70 E. Monroe Street  
Franklin, Indiana 46131



The invoices shall represent the value to the OWNER of the partially completed work as of the date of the invoice. The CONSULTANT shall attach thereto a summary of each pay item in Section A of this Appendix "D", including percentage complete and prior payments.

2. The OWNER, for and in consideration of the rendering of the engineering services provided for in **Section A. 2.** of this Appendix "D", agrees to pay to the CONSULTANT for rendering such services the fees established above in the following manner:

a. For each pay item, and upon receipt of invoices from the CONSULTANT and the approval thereof by the OWNER, payments covering the work performed shall be due and payable to the CONSULTANT, such payments to be equal to an amount arrived at by multiplying the percentage of the specified work performed by the fee heretofore set forth. From the partial payment thus computed, there shall be deducted all previous partial fee payments made to the CONSULTANT.

b. Upon approval by the OWNER, after submittal of the completed work, a sum of money equal to the fees heretofore set forth, less the total of the amounts of the partial payments previously paid to the CONSULTANT under **Section B. 2.** of this Appendix "D", shall be due and payable to the CONSULTANT.

c. An amount of \$200 has been included in the fee shown for **Section A. 2. h.** to pay for anticipated fees for permit applications and NOI Advertisements that will be incurred by CONSULTANT. Amounts incurred for permit fees, public notice fees, or other such expenses in excess of that amount will be invoiced to the OWNER at the actual cost plus a 10% mark-up for task coordination and administrative efforts.

3. The services provided for in **Section A. 3.** of this Appendix "D" will be performed by other than the CONSULTANT and the costs shown are estimated. The CONSULTANT will submit to OWNER invoices for these services, the basis of which will be the actual number of units of work performed multiplied by the specific cost per unit. The unit costs are estimated and the actual cost used will be the latest INDOT-approved costs at the time the services are performed. The OWNER agrees to reimburse to the CONSULTANT for rendering such services the actual invoice for the services performed by other than the CONSULTANT, provided that each such invoice shall be subject to approval as reasonable by the OWNER prior to any reimbursement therefore.

4. The fees shown for **Section A. 2. i. and A. 4.** will be eliminated from this scope of services if CONSULTANT is responsible for providing inspection services during the construction. The fees for this effort would be included in the inspection contract.

5. If the OWNER does not agree with the amount claimed by the CONSULTANT on an invoice voucher, it will send the CONSULTANT a letter by regular mail and list the differences between actual and claimed progress. The letter will be sent to the CONSULTANT's address on page 5 of this Agreement or the CONSULTANT's last known address.

# PHASE Ia ARCHAEOLOGY LITERATURE REVIEW AND RECONNAISSANCE SURVEY

Franklin Gateways and Greenways  
Jefferson Street Corridor

Archaeological Consultants of the Midwest, Inc.

CONSULTANT: CrossRoad Engineers  
DATE: 5/20/2015

Overhead Percentage =	0.50		
Task - Description	Hourly Rate	Total Hours	Total Costs
<hr/>			
<b>A. LITERATURE REVIEW</b>			
Field Director	\$60.00	2	\$120.00
<b><i>SUBTOTAL A</i></b>			<b>\$120.00</b>
<b>B. RECONNAISSANCE SURVEY</b>			
Field Director	\$60.00	32	\$1,920.00
<b><i>SUBTOTAL B</i></b>			<b>\$1,920.00</b>
<b>C. FIELD EXPENSES</b>			
Mileage/Gasoline			\$50.00
Photography			\$10.00
<b><i>SUBTOTAL C</i></b>			<b>\$60.00</b>
<b>D. ANALYSIS AND REPORT PREPARATION</b>			
Field Director	\$60.00	8	\$480.00
<b><i>SUBTOTAL D</i></b>			<b>\$480.00</b>
<b>E. REPORT PREPARATION EXPENSES</b>			
Photocopying			\$25.00
Project Supplies			\$10.00
Report Mailing Expense			\$25.00
<b><i>SUBTOTAL E</i></b>			<b>\$60.00</b>
<b>SUBTOTAL (A&amp;B&amp;C&amp;D&amp;E)</b>			<b>\$2,640.00</b>
Net Fee (15 percent)			\$396.00
<b>TOTAL COST</b>			<b>\$3,036.00</b>

\*To Authorize Work, Sign & Return to Archaeological Consultants of the Midwest, Inc.  
Payment is due within 30 days of invoice date.

\_\_\_\_\_  
Date

**Historic Properties Survey and Section 106 Process**  
**Franklin Greenway Trail Project**  
**Jefferson Street Corridor**

Archaeological Consultants of the Midwest, Inc.

**CONSULTANT:** CrossRoad Engineers  
**DATE:** 5/20/2015

<b>Overhead Percentage =</b>	<b>0.50</b>		
<b>Task - Description</b>	<b>Hourly Rate</b>	<b>Total Hours</b>	<b>Total Costs</b>
<hr/>			
<b>A. HISTORIC PROPERTIES SURVEY</b>			
Principal Investigator	\$75.00	12	\$900.00
<b><i>SUBTOTAL A</i></b>			<b>\$900.00</b>
<b>B. BACKGROUND RESEARCH</b>			
Principal Investigator	\$75.00	8	\$600.00
<b><i>SUBTOTAL B</i></b>			<b>\$600.00</b>
<b>C. CONSULTING PARTIES PREPARATION AND REPORT PROCESSING</b>			
Principal Investigator	\$75.00	40	\$3,000.00
<b><i>SUBTOTAL C</i></b>			<b>\$3,000.00</b>
<b>D. REPORT PREPARATION EXPENSES</b>			
Photocopying			\$30.00
Project Supplies			\$10.00
Report Mailing Expense			\$20.00
<b><i>SUBTOTAL D</i></b>			<b>\$60.00</b>
<b>SUBTOTAL (A&amp;B&amp;C&amp;D)</b>			<b>\$4,560.00</b>
Net Fee (15 percent)			\$684.00
<b>TOTAL COST</b>			<b>\$5,244.00</b>

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Payment is due within 30 days of invoice date.

Date

May 28, 2015

Mark A. Beck, P.E.  
CrossRoad Engineers, P.C.  
3417 South Sherman Drive  
Beech Grove, IN 46107



7770 West New York Street  
Indianapolis, IN 46214-2988  
317-273-1690 (FAX) 317-273-2250

2204 Yankee Street  
Niles, MI 49120  
269-262-4320 or 574-233-6820  
(FAX) 269-262-4479

Re: Proposal for Professional Services:  
Geotechnical Evaluation and Pavement Design  
Jefferson Street Corridor Trail  
Franklin, Johnson County, Indiana  
EEI Proposal No. P1-15-376.1

Dear Mr. Beck:

In response to your correspondence on May 8 and 26, 2015, Earth Exploration, Inc. (EEI) is pleased to submit the following revised proposal to perform a geotechnical evaluation and pavement design services for the referenced project. To summarize, the following proposal includes a brief description of our understanding of the project's requirements, a discussion of our approach to addressing these items, a schedule, and an estimate of our fees.

### **PROJECT DESCRIPTION**

We understand that representatives of the city of Franklin, in assistance with federal funds, are planning to construct a multi-use trail along West Jefferson Street. Based on the information provided, the construction is proposed to begin on the east side of the intersection with Westview Drive (SR 44) and extend east nearly 4,000 ft. The construction is anticipated to include an asphaltic concrete trail on the south side of the roadway and a concrete sidewalk on the north side. As part of the project, a new single-span bridge is also proposed over a creek located just east of Tracy Miles Road. In addition, several monuments ranging from 3½ to 10 ft in height are proposed, and earth cuts and fills associated with the construction are not anticipated to be significant. Moreover, we understand that considering is being given to mill and overlay of the existing pavement along Westview Drive as part of the project. At this time, additional details of the proposed improvements such as loads, grade changes, traffic and construction schedule are not known.

### **PURPOSE AND SCOPE OF SERVICES**

The purpose of our services will be to provide a geotechnical evaluation of the subsurface conditions and assess the impacts of these conditions on the proposed construction. Based on our review of publicly-available geologic information and experience in the area, the subsurface conditions within the depth of interest are anticipated to consist of moderate plasticity cohesive soils overlying lower-plasticity cohesive soil (glacial till) with sand seams. Considering these factors and Indiana Department of Transportation guidelines, the scope of services for this project will include:

1. Performing two structure borings to a depth of about 70 ft each, three to a depth of 15 ft each at the taller monuments, and up to two borings along the trail to a depth of 7½ ft each using ATV-mounted equipment. The actual location and depths of the

borings will be dependent on the observed conditions and forthcoming plans. The borings will be advanced using 3¼-in. I.D. hollow stem augers (AASHTO T 203) with split-spoon samples (i.e., using Standard Penetration Test procedures [AASHTO T 206]) obtained at 2½-ft intervals to a depth of 15 to 20 ft and at 5-ft intervals thereafter. The borings will be backfilled at the completion of the field work with auger cuttings and a bentonite chip plug at the surface. EEI will locate the test borings using measurements from existing site features shown on plans to be provided by you. Furthermore, we will contact Indiana 811 to arrange an underground utility line location check;

2. Performing appropriate laboratory tests including visual soil classification, hand penetrometer readings, moisture content, pH determinations, sulfate content, grain size analysis, unconfined compression, and Atterberg limit determinations;
3. Preparing a technical report which will include a summary of our findings and recommendations for geotechnical considerations regarding:
  - a. Bridge structure foundations including recommendations for type(s), depths, and estimated resistances;
  - b. Pavement design parameters for your consideration of INDOT's typical sections for trails;
  - c. Subgrade preparation and improvement;
  - d. Fill placement and compaction;
  - e. Appropriate design parameters related to the preferred foundation for the monuments;
  - f. Potential construction problems due to the subsurface conditions encountered (e.g., soft subgrade difficulties, dewatering, etc.);
4. Pavement design with considerations for mill and overlay of the existing asphaltic concrete pavement. We will also obtain four pavement cores, perform dynamic cone penetrometer testing in the cored holes and make a site visit to document any existing pavement distress for information necessary for analysis of an overlay. Our analyses will be performed using the MEPDG approach (AASHTOWare PavementME) in accordance with Ch. 304 of the INDOT Design Manual and applicable memoranda. The analysis will be made using only HMA for the overlay along with patching tables if necessary; and
5. Performing a geotechnical review of the final check prints.

### **SCHEDULE**

We are typically able to mobilize to the site within one to two weeks of notice to proceed and coordination of our field activities with underground utility owners and the city. The field work will require two to three days to complete. After the field work is completed, the laboratory testing will take approximately three to four weeks. We anticipate submitting a draft geotechnical report within two weeks after the laboratory work is completed.

### **COST**

We propose to provide our services on a time-and-expense basis in accordance with the unit rates provided in the attached Cost Estimate. With that, we estimate the cost for completing the geotechnical services to be up to \$16,970. Please recognize that the total fee is approximate because it is based on estimated quantities. Our fee includes the use of an ATV and borings being performed off of the roadway assuming that the city owns or has right of entry to properties where the trail will be located. If borings are moved to the roadway, then a truck-mounted rig will be used with flagmen for traffic control. If any significant variations develop during the course of our evaluation, we will advise you so that our efforts can be effectively directed.

For the scope discussed above, we propose to provide an HMA overlay design for a lump sum fee of \$4,500. We will notify you of any services performed beyond the scope identified above as a result of an INDOT change in policy. We will prepare the design to be submitted through ERMS, and we will coordinate with INDOT through the review process. We understand this may require additional analyses pending their comments.

### **CLOSURE**

Thank you for the continued business. We anticipate that you will prepare an agreement outlining the terms and conditions. We look forward to providing our services on this project. Should you have any questions about this information, please feel free to contact us.

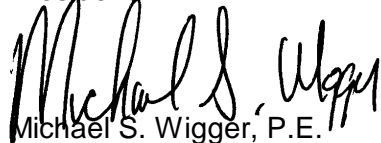
Sincerely,

**EARTH EXPLORATION, INC.**



Richard D. Olson, P.E.

President



Michael S. Wigger, P.E.

Vice President

Enclosure: Cost Estimate

## Cost Estimate

Jefferson Street Corridor Trail  
Franklin, Johnson County, Indiana

	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
<b><u>GEOTECHNICAL FIELD</u></b>			
1. Mobilization and Field Coordination			
a. SPT Rig	1 ea	\$240.00	\$240.00
b. CPT	ea	\$405.00	
c. Field and utility coordination	1 LS	\$700.00	\$700.00
d. Field coordination with property owners			
i. 1 - 10	1 LS	\$280.00	\$280.00
ii. 11 - 25	LS	\$460.00	
iii. Over 25	LS	\$640.00	
e. Mileage	70 mi	\$3.15	\$220.50
2. Truck mounted borings with split spoon sampling	ft	\$17.10	
3. Truck mounted borings with drilling fluid	ft	\$17.00	
4. Truck mounted core drilling	ft	\$35.40	
5. Truck mounted borings			
a. Truck mounted borings through bedrock or boulders or concrete pavement	ft	\$35.00	
b. Bridge deck coring and restoration	ea	\$310.00	
6. Cone penetrometer testing			
a. Set up	ea	\$68.00	
b. Subsurface profiling	ft	\$11.00	
c. Profiling with pore pressure measurement			
i. Piezometric Saturation	ea	\$85.30	
ii . Penetration	ft	\$13.15	
iii. Pore water dissipation test	hr	\$175.00	
iv. Hydraulic conductivity and consolidation	ea	\$65.00	
d. Profiling with Shearwave Velocity Measurement	ft	\$14.50	
e. Sample	ea	\$21.00	
7. Hand or truck soundings	30 ft	\$11.00	\$330.00
8. Hand auger drilling	ft	\$11.50	
9. Skid mounted borings with split spoon sampling	200 ft	\$27.25	\$5,450.00
10. Skid mounted borings using drilling fluid	ft	\$27.50	
11. Skid mounted core drilling	ft	\$39.00	
12. Skid mounted boring through bedrock or boulders	ft	\$41.00	
13. Skid mounted soundings	ft	\$15.60	
14. Skid Mounted Cone Penetrometer Testing (CPT)			

	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
a. Set up	ea	\$102.00	
b. Subsurface profiling	ft	\$17.00	
c. Profiling with pore pressure measurement			
i. Piezometric Saturation	ea	\$130.00	
ii. Penetration	ft	\$20.00	
iii. Pore Water Dissipation Test	hr	\$260.00	
iv. Hydraulic Conductivity and Consolidation	ea	\$79.00	
d. Profiling with Shearwave Velocity Measurement	ft	\$22.00	
e. Sample	ea	\$33.00	
15. Furnishing of a boat		Actual Cost	
16. Barge set-up expenses			
a. Navigable water			
i. Barge set-up	ea	\$5,200.00	
ii. Rental of support equipment and/or boat		Actual Cost	
iii. Drill rig down time	hr	\$132.00	
b. Non-navigable water barge set-up	ea	\$4,500.00	
17. Additional disassembly and reassembly			
a. Navigable water	ea	\$1,900.00	
b. Non-navigable water	ea	\$1,700.00	
18. Barge mounted borings with split spoon sampling	ft	\$29.75	
19. Barge mounted core drilling	ft	\$40.25	
20. Barge mounted boring through bedrock or boulders	ft	\$44.50	
21. Barge mounted soundings	ft	\$17.60	
22. Casing through water	ft	\$7.75	
23. Uncased sounding through water	ft	\$5.00	
24. Set up for borings and machine soundings			
a. Borings and machine soundings less than 20 ft deep	5 ea	\$64.00	\$320.00
b. Rock core borings	ea	\$110.00	
25. Additional 2-in. split spoon sampling	4 ea	\$19.00	\$76.00
26. 3-in. split spoon samples	ea	\$21.00	
27. 3-in. Shelby tube samples	ea	\$57.00	
28. Bag samples			
a. 300-lb sample	ea	\$105.00	
b. 25-lb sample	ea	\$46.00	
c 5-lb sample	ea	\$40.00	
29. Field vane shear test	ea	\$102.00	
30. 4½-in. cased hole	ft	\$11.30	
31. Installation of Geotechnical Instruments			



	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
a. Inclinator casing installation	ft	\$13.40	
b. Piezometer installation up to 25 ft below surface	ea	\$230.00	
c. Piezometer installation deeper than 25 ft below surface	ea	\$260.00	
d. Metal protective outer cover for inclinometer and piezometer casings	ea	\$113.00	
32. Geotechnical engineer	8 hr	\$105.00	\$840.00
33. Railroad expenses		Actual Cost	
34. Twenty-four hour water levels			
a. Field measurements per borehole	7 ea	\$34.75	\$243.25
b. PVC slotted pipe	ft	\$5.30	
35. Special borehole backfilling			
a. 0 to 30 ft			
i. SPT	5 ea	\$97.00	\$485.00
ii . CPT	ea	\$43.00	
b. More than 30 ft			
i. SPT	80 ft	\$6.00	\$480.00
ii . CPT	ea	\$1.75	
c. Pavement restoration	4 ea	\$52.00	\$208.00
36. Dozer rental		Actual Cost	
37. Traffic control			
a. Flag crew	day	\$550.00	
b. Equipment Rental		Actual Cost	
c. Flag crew with equipment	1 day	\$665.00	\$665.00
38. Centerline surveying		Invoice Cost	
<b>Subtotal (Geotechnical Field)</b>			<b>\$10,537.75</b>

#### **GEOTECHNICAL LABORATORY**

39. Sieve analysis for soils	4 ea	\$44.00	\$176.00
40. Hydrometer analysis	4 ea	\$50.50	\$202.00
41. Sieve analysis for Aggregates			
a. Analysis by Washing (AASHTO T-11)	ea	\$70.00	
b. Analysis by Using (AASHTO T-27)	ea	\$125.00	
42. Liquid limit	4 ea	\$31.00	\$124.00
43. Plastic limit & plasticity index	4 ea	\$22.50	\$90.00
44. Liquid Limit Ratio	ea	\$70.00	
45. pH test	4 ea	\$13.80	\$55.20
46. Loss on Ignition Test			
a. Loss on Ignition Test (Conventional)	ea	\$22.00	
b. Loss on Ignition Test (Sequential)	ea	\$50.00	

	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
47. Moisture Content Tests			
a. Moisture Content Test (Conventional)	45 ea	\$6.00	\$270.00
b. Moisture Content Test (Microwave)	ea	\$12.00	
48. Expansion Index of Soils	ea	\$240.00	
49. Specific Gravity Test	ea	\$32.50	
50. Unit weight determination	ea	\$16.15	
51. Hydraulic Conductivity Test			
a. Constant Head	ea	\$210.00	
b. Falling Head	ea	\$260.00	
52. a. Unconfined Compression Test	6 ea	\$42.00	\$252.00
b. Remolding of soil samples with chemical admixtures in chemical soil modification/stabilization (3 samples is equal to 1 unit)	ea	\$105.00	
c. Point Load Strength Index of Rock	ea	\$40.00	
53. Compressive Strength and Elastic Moduli of Intact Rock			
a. Compressive Strength of Intact Rock	ea	\$100.00	
b. Elastic Moduli of Intact Rock	ea	\$400.00	
54. Consolidation Test	ea	\$410.00	
55. Triaxial test			
a. Unconsolidated - Undrained (UU)	ea	\$320.00	
b. Consolidated - Undrained (CU)	ea	\$475.00	
c. Consolidated - Drained (CD)	ea	\$650.00	
d. Pore Pressure measurement with a. or b. and use of back pressure for saturation	ea	\$230.00	
56. Direct Shear Test	ea	\$550.00	
57. Moisture-Density Relationship Test			
a. Standard Proctor	ea	\$128.00	
b. Modified Proctor	ea	\$140.00	
58. Soil Support Testing			
a. California Bearing Ratio Test	ea	\$490.00	
b. Subgrade Resilient Modulus	ea	\$460.00	
59. Collapse Potential Evaluation Test			
a. Silty Soil (Loess)	ea	\$352.00	
b. Cohesive or Expansive Soils	ea	\$420.00	
60. Water Soluble Sulfate Test	3 ea	\$100.00	\$300.00
61. Water Soluble Chloride Test	ea	\$100.00	
62. Soil Resistivity Test	ea	\$125.00	
63. a. Slake Durability Index Test	ea	\$120.00	

	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
b. Jar Slake Test	ea	\$12.00	
<b>Subtotal (Geotechnical Laboratory)</b>			<b>\$1,469.20</b>

#### **GEOTECHNICAL ENGINEERING**

64. Geotechnical profile and related work			
a. Without soil subgrade drawings			
First mile	LS	\$1,100.00	
Each additional mile	mi	\$500.00	
b. With soil subgrade drawings			
First mile	LS	\$1,300.00	
Each additional mile	mi	\$570.00	
c. Soil subgrade drawings (only)			
First mile	LS	\$335.00	
Each additional mile	mi	\$210.00	
65. Geotechnical report			
a. Without soil subgrade investigation			
First mile	1 LS	\$1,510.00	\$1,510.00
Each additional mile	mi	\$650.00	
b. With soil subgrade investigation			
First mile	LS	\$1,775.00	
Each additional mile	mi	\$740.00	
c. Soil subgrade investigation (only)			
First mile	LS	\$550.00	
Each additional mile	mi	\$340.00	
Settlement analysis and recommendations for			
66. embankment			
a. Proposed embankment	ea	\$470.00	
b. Proposed and existing embankment	ea	\$520.00	
67. Ground modification design	ea	\$1,375.00	
68. Slope stability analysis			
a. C, $\phi$ or C & $\phi$ analysis	ea	\$735.00	
b. Corrective measures	ea	\$735.00	
c. Stage construction corrective method	ea	\$1,275.00	
69. Bridge foundation analysis and recommendations			
a. Shallow foundation	1 ea	\$450.00	\$450.00
b. Deep foundation			
i. Deep foundation analyses	2 ea	\$800.00	\$1,600.00
ii. Wave equation analyses	ea	\$310.00	
iii. Liquefaction analysis	ea	\$250.00	
iv. Group - 3D analysis	ea	\$400.00	

	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
c. Settlement analysis for bridge pier foundation			
i. Bridge pier	ea	\$360.00	
ii. Embankment plus pier	ea	\$400.00	
iii. Embankment plus pier plus all other loads	ea	\$460.00	
d. Foundation on bedrock	ea	\$350.00	
70. Retaining structure analysis recommendations			
a. Conventional retaining structures and other types such as MSE Walls and Bin walls			
i. Shallow foundation	ea	\$820.00	
ii. Deep foundation	ea	\$1,080.00	
iii. Settlement analysis for retaining wall foundation	ea	\$350.00	
b. Pile retaining structure analysis and recommendations			
i. Free standing structure	ea	\$950.00	
ii. Retaining structure with tie-back system	ea	\$1,380.00	
c. Drilled-in-pier retaining structure analysis			
i. Free standing structure	ea	\$975.00	
ii. Retaining structure with tie-back system	ea	\$1,400.00	
d. Soil nailing wall analysis	ea	\$940.00	
71. Seepage analysis	ea	\$1,320.00	
72. Deep dynamic compaction analysis	ea	\$1,330.00	
<b>Subtotal (Geotechnical Engineering)</b>			<b>\$3,560.00</b>

#### **CONSTRUCTION INSPECTION AND MONITORING**

73. Mobilization of testing equipment	LS	\$150.00	
74. a. Monitoring geotechnical instrumentation	hr	\$70.00	
b. Filed Inspector	hr	\$70.00	
75. Integrity testing		Actual Cost	
76. Field Compaction Testing			
a. Dynamic Cone Penetration Test (DCPT)	hr	\$70.00	
b. Light Weight Deflectometer Test (LWD)	hr	\$70.00	
77. Dynamic pile analysis	ea	\$975.00	
78. Static load test	ea	\$975.00	
79. Dynamic pile load test		Actual Cost	
80. CAPWAP-C analysis	ea	\$450.00	
81. Final construction inspection report	ea	\$875.00	
<b>Subtotal (Construction Inspection and Monitoring)</b>			

#### **FOUNDATION EVALUATION BY NON-DESTRUCTIVE METHODS**

82. a. Surface test/Pier or foundation		Actual Cost	
b. Borehole test/Pier or foundation		Actual Cost	

	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
<b><u>GEOPHYSICAL INVESTIGATION</u></b>			
83. Geophysical Investigations		Invoice Cost	
<b><u>GEOTECHNICAL PROJECT MANAGEMENT</u></b>			
84. Project Management			
a. Project Coordination	mi	\$1,600.00	
b. Project Website	LS	\$3,100.00	
85. Geotechnical Review			
a. Structure Report	ea	\$310.00	
b. Roadway Report	mi	\$260.00	
<b><u>PAVEMENT INVESTIGATION</u></b>			
1. Mobilization of coring equipment	1 LS	\$200.00	\$200.00
2. Mobilization mileage for coring equipment	70 mi	\$1.70	\$119.00
3. Pavement core (partial depth)	ea	\$120.00	
4. Pavement core (full depth)	4 ea	\$180.00	\$720.00
5. Sub-base sample	ea	\$59.00	
6. Cement concrete pavement core density determination	ea	\$31.00	
7. Cement concrete core compressive strength test	ea	\$30.00	
8. Bituminous extraction test	ea	\$80.00	
9. Sieve analysis of extracted aggregate test	ea	\$53.50	
10. Recovery of asphalt from solution by Abson method	ea	\$315.00	
11. Theoretical maximum specific gravity test	ea	\$67.00	
12. Bulk specific gravity test	ea	\$29.00	
13. Air voids calculation	ea	\$27.00	
14. Core report for partial depth core	ea	\$32.00	
15. Core report for full depth core	4 ea	\$40.00	\$160.00
16. Pavement analysis and report	ea	\$730.00	
16. Dynamic cone penetrometer testing	4 ea	\$50.00	\$200.00
<b>Subtotal (Pavement Investigation)</b>			<b>\$1,399.00</b>
<b><u>Summary of Fees</u></b>			
<b>Geotechnical Field</b>		<b>\$10,537.75</b>	
<b>Geotechnical Laboratory</b>		<b>\$1,469.20</b>	
<b>Geotechnical Engineering</b>		<b>\$3,560.00</b>	
<b>Construction Inspection and Monitoring</b>			
<b>Pavement Investigation</b>		<b>\$1,399.00</b>	
<b>Estimated Total</b>		<b>\$16,965.95</b>	