EXHIBIT A

PROFESSIONAL ENGINEERING SERVICES AGREEMENT

ENGINEER & CITY OF DULUTH

THIS AGREEMENT, effective as of the date of attestation by the City Clerk, is made by and between the City of Duluth, Minnesota hereinafter referred to as the "City" and:

Name: LHB, Inc.
Address: 21 West Superior St., Suite 500, Duluth, MN 55802

hereinafter referred to as the "Engineer", in consideration of the mutual promises contained herein.

Payments as described in Section V shall be made from Funding 411-035-5530; Project # PI2019-1820; and Resolution No. 19-0478R, passed on July 8, 2019.

The professional engineering services obtained by the City under this agreement concern the following described project hereinafter referred to as the "Project":

Project Number:	1820
Project Name:	2019 Permanent Improvement Projects; E Superior Street Lester River Road to Expressway
Project Description:	Engineering design services for the rehabilitation of approximately 2,515 lineal feet of East Superior Street between Lester River Road and TH61.

The professional engineering services to be provided under this agreement consist of those phases A through G checked below. A more particular description of each phase is contained in Section II, "Basic Services", of the agreement.

	Phase	Description
☒	A.	Study and Report Phase
☒	B.	Preliminary Survey Phase
☒	C.	Preliminary Design Phase
☒	D.	Final Design Phase
☒	E.	Bidding Phase
☒	F.	Construction Survey and Layout Phase
☒	G.	Construction Administration and Inspection Phase

SECTION I. GENERAL

A. ENGINEER
The Engineer shall provide professional engineering services for the City in all phases of the Project to which this agreement applies, serve as the City's professional engineering representative for the Project as set forth below and shall give professional engineering consultation and advice to the City during the performance of services hereunder. All services provided hereunder shall be performed by the Engineer in accordance with generally accepted Engineering standards to the satisfaction of the City.

B. NOTICE TO PROCEED
The Engineer shall only begin performance of each Phase of work required hereunder upon receipt of a written Notice to Proceed by City representative with that Phase.

C. TIME
The Engineer shall begin work on each successive phase promptly after receipt of the Notice to Proceed and shall devote such personnel and materials to the Project so as to complete each phase in an expeditious manner within the time limits set forth in Section II. Time is of the essence to this agreement.

D. CITY'S REPRESENTATIVE
The City's representative to the Engineer shall be the City Engineer or his or her designees assigned in writing.

E. ENGINEERING GUIDELINES
All work performed as part of this project shall conform to the most current edition of the Engineering Guidelines for Professional Engineering Services and Developments as approved by the City Engineer and on file in the office of the City Engineer.

F. SUBCONSULTANTS
Engineer may contract for the services of sub-consultants to assist Engineer in the performance of the services to be provided by Engineer hereunder but the selection of any sub-consultant to perform such services shall be subject to the prior written approval of the City Engineer. Engineer shall remain responsible for all aspects of any services provided by such sub-consultants to City under this Agreement. City shall reimburse Engineer for sub-consultant services under the categories of services to be provided by Engineer under Phases A through G, as applicable.

SECTION II. BASIC SERVICES

A. STUDY AND REPORT PHASE

☒ Included in this Agreement
☐ Not included in this Agreement

The Engineer shall:

1) City's Requirements
Review available data and consult with the City to clarify and define the City's requirements for the Project.

2) Advise Regarding Additional Data
Advise the City as to the necessity of the City's providing or obtaining from others data or services in order to evaluate or complete the Project and, if directed by the City's representative, act on behalf of the City in obtaining other data or services.

3) Technical Analysis
Provide analysis of the City's needs, planning surveys, site evaluations, and comparative studies of prospective sites and solutions.

4) Economic Analysis
Provide a general economic analysis of various alternatives based on economic parameters and assumptions provided by the City.

5) Report Preparation
Prepare a report containing schematic layouts, sketches and conceptual design criteria with appropriate exhibits to indicate clearly the considerations involved and the alternative solutions available to the City and setting forth the Engineer's findings and recommendations with opinions of probable total costs for the Project, including construction cost, contingencies, allowances for charges of all professionals and consultants, allowances for the cost of land and rights-of-way, compensation for or damages to properties and interest and financing charges (all of which are hereinafter called "Project Costs").

6) Report Presentation
Furnish three copies of the report and present and review the report in person with the City as the City Representative shall direct.

7) Supplementary Duties
The duties and responsibilities of Engineer during the Study and Report Phase shall also include any additional duties and responsibilities to be provided pursuant to the Engineer’s proposal attached as Exhibit B.

8) Completion Time
The Study and Report Phase shall be completed and report submitted by August 31, 2019.

B. PRELIMINARY SURVEY PHASE

☒ Included in this Agreement
☐ Not included in this Agreement

After written authorization by the City's representative to proceed with the preliminary survey phase, the Engineer shall:

1) General
Perform topographic survey as necessary to prepare the design and provide Construction Survey and Layout as described in Section II.F

2) Boundary Survey
Perform boundary survey if checked.

3) Document Presentation
Furnish a CADD file of the survey base map to the City. Files shall be in the software specified in the Engineering Guidelines for Professional Engineering Services and Developments described in Section I.E.

4) Supplementary Duties
The duties-responsibilities of the Engineer during the preliminary survey phase shall also include any additional duties and responsibilities to be provided pursuant to the Engineer's proposal attached as Exhibit B.

5) Completion Time
The preliminary survey phase shall be completed and submitted by November 30, 2019.

C. PRELIMINARY DESIGN PHASE

☒ Included in this Agreement
☐ Not included in this Agreement

After written authorization by the City's Representative to proceed with the Preliminary Design Phase, the Engineer shall:

1) Preliminary Design Documents
Prepare preliminary design documents consisting of final design criteria, preliminary drawings and outline specifications.

2) Revised Project Costs
Based on the information contained in the preliminary design documents, submit a revised opinion of probable Project costs.

3) Preparation of Grants; Environmental Statements
Preparation of applications and supporting documents for governmental grants, loans or advances in connection with the Project, preparation or review of environmental assessments and impact statements; review and evaluation of the effect on the design requirements of the Project of any such statements and documentation prepared by others; and assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.

4) Renderings and Models
Providing renderings or models for the City's use.

5) Economic Analysis
Investigations involving detailed consideration of operations, maintenance and overhead expenses; providing value engineering during the course of design; the preparation of feasibility studies, cash flow

and economic evaluations, rate schedules and appraisals; assistance in obtaining financing for the Project; evaluating processes available for licensing and assisting the City in obtaining licensing; detailed quantity surveys of material, equipment and labor; and audits of inventories required in connection with construction performed by the City.

6) Document Presentation
Furnish three copies of the above preliminary design documents and present and review such documents in person with the City as the City Engineer may direct.

7) Supplementary Duties
The duties and responsibilities of the Engineer during the Preliminary Design Phase shall also include any additional duties and responsibilities to be provided pursuant to the Engineer's proposal attached as Exhibit B.

8) Completion Time
The Preliminary Design Phase shall be completed and report or plan submitted by December 31, 2019.

D. FINAL DESIGN PHASE

☒ Included in this Agreement
☐ Not included in this Agreement

1) Drawings and Specifications
On the basis of the accepted preliminary design documents and the revised opinion of probable Project costs, prepare for incorporation in the contract documents Construction Plans to show the character and extent of the Project and specifications.

2) Approvals of Governmental Entities
Furnish to the City such documents and design data as may be required for, and prepare the required documents so that the City may apply for approvals and permits of such governmental authorities as have jurisdiction over design criteria applicable to the Project, and assist in obtaining such approvals by participating in submissions to and negotiations with appropriate authorities.

3) Adjusted Project Costs
Advise the City of any adjustments to the latest opinion of probable Project costs, identify cause of change and furnish a revised opinion of probable Project cost based on the drawings and specifications.

4) Contract Document Preparation
Prepare for review and approval by the City, its Attorney and other advisors, contract agreement forms, general conditions and supplementary conditions and (where requested) bid forms, invitations to bid and instructions to bidder, including for federally funded Projects, all documentation, including wage determinations, in order to comply with Davis-Bacon Act or City code requirements, and assist in the preparation of other related contract documents. To the extent possible, the Engineer will follow the document format supplied by the City and use the standard terms and conditions supplied by the City in preparation of these documents.

5) Real Estate Acquisition: Legal Description
Based on preliminary design documents, furnish a legal description and recordable reproducible 8-1/2" X 11" plat of each parcel of real estate in which the City must acquire an interest in order to proceed with construction of the Project.

6) Document Presentation
Furnish three copies of the above documents and present and review them in person with the City.

7) Supplementary Duties
The duties and responsibilities of the Engineer during the Final Design Phase shall also include any additional duties and responsibilities to be provided pursuant to the Engineer's proposal attached as Exhibit B.

8) Completion Time

The Final Design Phase shall be completed and contract documents submitted by March 31, 2020.

E. BIDDING PHASE

☒ Included in this Agreement
☐ Not included in this Agreement

The Engineer shall:

1) Assist in Bidding

Assist the City in obtaining bids for each separate City contract for construction, materials, equipment and services.

2) Advise Regarding Contractors and Subcontractors

Consult with and advise the City as to the acceptability of subcontractors and other persons and organizations proposed by the City's contractor(s) (hereinafter called "Contractor(s)" for those portions of the work as to which such acceptability is required by the bidding documents).

3) Consult Regarding Substitutes

Consult with and advise the City as to the acceptability of substitute materials and equipment proposed by the contractor(s) when substitution prior to the award of contracts is allowed by the bidding documents.

4) Evaluation of Bids

Assist the City in evaluating bids or proposals and in assembling and awarding contracts.

5) Supplementary Duties

The duties and responsibilities of the Engineer during the Bidding Phase shall also include any additional duties and responsibilities to be provided pursuant to the Engineer’s proposal attached as Exhibit B.

6) Completion Time

The bidding phase shall be completed by April 30, 2019.

F. CONSTRUCTION SURVEY AND LAYOUT PHASE

☒ Included in this Agreement
☐ Not included in this Agreement

1) General

This phase of work may or may not be performed in conjunction with Phase G, "Construction Administration and Inspection Phase" of this agreement. Inclusion of this phase in the agreement does not imply that services identified under Phase G are to be provided unless specifically indicated in this agreement.

2) Duties

The Engineer shall provide horizontal and vertical control line and grade to enable construction of the improvement as depicted in the Project plans. The number of control points to be established by the Engineer shall be sufficient to permit the construction contractor to construct the improvement within the construction tolerances established in the Project specifications. In addition, the number of control points shall be consistent with standard engineering practice.

3) Accuracy

The Engineer shall provide the horizontal and vertical control points within the same measurement tolerances as the construction tolerances established in the Project specifications. The Engineer shall be responsible for the accuracy of the control points which are established. The Engineer shall be responsible for costs which may result from errors in placement of control points. The Engineer shall be required to establish control points at Engineer's costs only one time. Control points which are lost, damaged, removed or otherwise moved by the Contractor or others shall be promptly replaced by the Engineer and costs for such replacement shall be computed on a time and materials basis, and reimbursed by the City. The

Engineer shall take all reasonable and customary actions to protect the control points established by the Engineer.

4) Supplementary Duties

The duties and responsibilities of the Engineer during the construction survey and layout phase shall also include any additional duties and responsibilities to be provided pursuant to the Engineer's proposal attached as Exhibit B.

5) Completion Time

The construction survey & layout phase shall be completed by October 31, 2020.

G. CONSTRUCTION ADMINISTRATION AND INSPECTION PHASE

☒ Included in this Agreement
☐ Not included in this Agreement

1) General Duties

Consult with and advise the City and act as its representative as provided herein and in the General Conditions of the construction contract for the Project. This phase of the work may or may not be performed in conjunction with Phase F "Construction Survey and Layout Phase" of this agreement. Inclusion of this phase in the agreement does not imply that services identified under Phase F are to be provided unless specifically indicated in this agreement.

2) Construction Inspection and Reporting

Make visits to the site with sufficient frequency at the various stages of construction to observe as an experienced and qualified design professional the progress and quality of the executed work of the contractor(s) and to insure that such work is proceeding in accordance with the contract documents. During such visits and on the basis of on-site observations, the Engineer shall keep the City informed of the progress of the work, shall endeavor to guard the City against defects and deficiencies in such work and may disapprove or reject work failing to conform to the contract documents.

3) Warranty Inspection

Eleven months following construction completion, conduct an inspection to document any items to be repaired by the contractor under the conditions of the construction contract warranty. Submit work to be corrected to the Contractor and the City.

4) Review of Technical and Procedural Aspects

Review and approve (or take other appropriate action in respect to Shop Drawings), the results of tests and inspections and other data which each contractor is required to submit, determine the acceptability of substitute materials and equipment proposed by the contractor(s), and receive and review (for general content as required by the specifications) maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection which are to be assembled by the contractor(s).

5) Contract Documents

Receive from each contractor and review for compliance with contract documents all required document submissions including but not limited to performance and payment bonds, certificates of insurance report forms required by any City, State or Federal law or rule or regulation and submit the forms to the City for final approval.

6) Conferences and Meetings

Attend meetings with the contractor, such as preconstruction conferences, progress meetings, job conferences and other Project-related meetings, and prepare and circulate copies of the minutes thereof including to the City.

7) Records

a) Maintain orderly files for correspondence, reports of job conferences, shop drawings and samples, reproductions of original contract documents, including all work directive changes, addenda, change orders, field orders, additional drawings issued subsequent to the execution of the contract, the Engineer's clarifications and interpretations of the contract documents, progress reports, and other

Project-related documents.

b) Keep a diary or log book, recording the contractor's hours on the job site, weather conditions, data relative to questions of work directive changes, change orders, or changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail, as in the case of observing test procedures and send copies to the City. Take multiple photographs of the Work and keep a log and file of the photos. Specifically maintain records of acceptance and rejection of materials and workmanship.

c) Record names, addresses and telephone numbers of all the contractors, subcontractors, and major suppliers of materials and equipment.

8) Reports

a) Furnish the City periodic reports, as required, on progress of the work and of the contractor's compliance with the progress schedule and schedule of shop drawings and sample submittals.

b) Consult with the City, in advance of scheduled major tests, inspections, or start of important phases of the Work.

c) Draft proposed change orders and work directive changes, obtaining back-up material from the contractor, and make recommendations to the City regarding change orders, work directive changes and field orders.

d) Report immediately to the City upon the occurrence of any accident.

9) Contract Interpretation, Review of Quality of Work

Issue all instruction of the City to the contractor(s); issue necessary interpretations and clarifications of the contract Documents and in connection therewith prepare change orders as required, subject to the City's approval; have authority, as the City's representative, to require special inspection or testing of the work; act as initial interpreter of the requirements of the contract documents and judge of the acceptability of the work there under and make decisions on all claims of the contractor(s) relating to the acceptability of the work or the interpretation of the requirements of the contract documents pertaining to the execution and progress of the work.

10) Change Orders and Revisions

Prepare change orders to reflect changes in the Project requested or approved by the City, evaluate substitutions proposed by the contractor(s) and make revisions to drawings and specifications occasioned thereby, and provide any additional services necessary as the result of significant delays, changes or price increases occurring as a direct or indirect result of material, equipment or energy shortages.

11) Review of Applications for Payment

Based on the Engineer's on-site observations as an experienced and qualified design professional and on review of applications for payment and the accompanying data and schedules, determine the amount owing to the contractor(s) and recommend in writing payments to the contractor(s) in such amounts; such recommendations of payment will constitute a representation to the City, based on such observations and review, that the work has progressed to the point indicated, that, to the best of the Engineer's knowledge, information and belief, the quality of such work is in accordance with the contract documents (subject to an evaluation of such work as a functioning Project upon substantial completion, to the results of any subsequent tests called for in the contract documents, and to any qualifications stated in his recommendation), and that payment of the amount recommended is due the contractor(s).

12) Determination of Substantial Completion

Conduct an inspection to determine if the Project is substantially complete and a final inspection to determine if the work has been completed in accordance with the contract documents and if each contractor has fulfilled all of his obligations there under so that the Engineer may recommend, in writing, final payment to each contractor and may give written notice to the City and the contractor(s) that the work is acceptable (subject to any conditions therein expressed).

13) Authority and Responsibility

The Engineer shall not guarantee the work of any contractor or subcontractor, shall have no supervision or control as to the work or persons doing the work, shall not have charge of the work, shall not be responsible

for safety in, on, or about the job-site or have any control of the safety or adequacy of any equipment, building component, scaffolding, supports, forms or other work aids. If the Engineer determines that there are deficiencies in materials or workmanship on the Project, or otherwise deems it to be in the best interest of the City to do so, the Engineer shall be responsible to stop any contractor or subcontractor from performing work on the Project, until conditions giving rise to this need, therefore, are rectified.

14) Engineer Not Responsible for Acts of Contractor
The Engineer shall not be responsible for the supervision or control of the acts or omissions or construction means, methods or techniques of any contractor, or subcontractor, or any of the contractor(s)' or subcontractors' or employees or any other person (except the Engineer's own employees and agents) at the site or otherwise performing any of the contractor(s) work; however, nothing contained in this paragraph shall be construed to release the Engineer from liability for failure to properly perform duties undertaken by him in these contract documents or this agreement.

15) Preparation of Record Drawings
The Engineer shall prepare a set of record drawings in accordance with the Engineering Guidelines for Professional Engineering Services and Development described in Section I.E.

16) Manuals
The Engineer shall furnish operating and maintenance manuals; protracted or extensive assistance in the utilization of any equipment or system (such as initial start-up, testing, and adjusting and balancing); and training personnel for operation and maintenance.

17) Supplementary Duties
The duties and responsibilities of the Engineer during the construction administration and inspection phase shall also include any additional duties and responsibilities to be provided pursuant to the Engineer's proposal attached as Exhibit B.

18) Completion Time
The construction administration and inspection phase shall be completed by October 31, 2020.

SECTION III. CITY'S RESPONSIBILITIES

A. FURNISH REQUIREMENTS AND LIMITATIONS
Provide all criteria and full information as to the City's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility and expendability, economic parameters and any budgetary limitations; and furnish copies of all design and construction standards which the City will require to be included in the Drawings and Specifications.

B. FURNISH INFORMATION
Assist the Engineer by placing at the Engineer's disposal all available information reasonably known to and in possession of the City.

C. REVIEW DOCUMENTS
Examine all studies, reports, sketches, drawings, specifications, proposals and other documents presented by the Engineer.

D. OBTAIN APPROVALS AND PERMITS
Furnish approvals and permits from all governmental authorities having jurisdiction over the Project and such approvals and consents from others as may be necessary for completion of the Project.

E. ACCOUNTING, LEGAL AND INSURANCE SERVICE
Provide such accounting, independent cost estimating and insurance counseling services as may be required for the Project, such auditing service as the City may require to ascertain how or for what purpose any contractor has used the monies paid to him under the construction contract, and such inspection services as the City may require to ascertain that the contractor(s) are complying with any law, rule or regulation applicable to their performance of the work except as otherwise provided in Section II.

F. NOTIFY THE ENGINEER OF DEFECTS OR DEVELOPMENT

Give prompt written notice to the Engineer whenever the City observes or otherwise becomes aware of any development that affects the scope or timing of the Engineer's services, or any defect in the work of the contractor(s).

G. COSTS OF THE CITY'S RESPONSIBILITIES

Bear all costs incidental to compliance with the requirements of this Section III.

SECTION IV. GENERAL CONSIDERATIONS

A. SUCCESSORS AND ASSIGNS

The City and the Engineer each binds their respective partners, successors, executors, administrators and assigns to the other party of this agreement and to the partners, successors, executors, administrators, and assigns of such other party, in respect to all covenants of this agreement; the Engineer shall not assign, sublet, or transfer their respective interests in this agreement without the written consent of the City. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of any public body which may be a party hereto, nor shall it be construed as giving any rights or benefits hereunder to anyone other than the City and the Engineer.

B. OWNERSHIP OF DOCUMENTS

All drawings, specifications, reports, records, and other work product developed by the Engineer in connection with this Project shall remain the property of the City whether the Project is completed or not. Reuse of any of the work product of the Engineer by the City on extensions of this Project or any other Project without written permission of the Engineer shall be at the City's risk and the City agrees to defend, indemnify and hold harmless the Engineer from all damages and costs including attorney fees arising out of such reuse by the City or others acting through the City.

C. ESTIMATES OF COST (COST OPINION)

Estimates of construction cost provided are to be made on the basis of the Engineer's experience, qualifications and the best of their professional judgment, but the Engineer does not guarantee the accuracy of such estimates as compared to the contractor's bids or the Project construction cost.

D. INSURANCE

1) Engineer shall provide the following minimum amounts of insurance from insurance companies authorized to do business in the state of Minnesota unless Engineer shall have successfully demonstrated to the City Attorney, in the reasonable exercise of his or her discretion that such insurance is not reasonably available in the market. If the Engineer demonstrates to the reasonable satisfaction of the City Attorney that such insurance requires hereunder is not reasonably available in the market, the City Attorney may approve an alternative form of insurance which is reasonably available in the market which he or she deems to provide the highest level of insurance protection to the city which is reasonably available.

a) Workers' compensation insurance in accordance with the laws of the State of Minnesota.

b) Public Liability Insurance and Automobile Liability Insurance with limits not less than **$1,500,000** Single Limit, and twice the limits provided when a claim arises out of the release or threatened release of a hazardous substance; shall be in a company approved by the city of Duluth; and shall provide for the following: Liability for Premises, Operations, Completed Operations, Independent Contractors, and Contractual Liability.

c) Professional Liability Insurance in an amount not less than **$1,500,000** Single Limit; provided further that in the event the professional malpractice insurance is in the form of "claims made," insurance, Engineer hereby commits to provide at least 60 days' notice prior to any change to the Professional Liability Insurance policy or coverage ; and in event of any change, Engineer agrees to provide the City with either evidence of new insurance coverage conforming to the provisions of this paragraph which will provide unbroken protection to the City, or, in the alternative, to purchase at its cost, extended coverage under the old policy for the period the state of repose runs; the protection to be provided by said "claims made" insurance shall remain in place until the running of the statute of repose for claims related to this Agreement.

d) **City of Duluth shall be named as Additional Insured** under the Public Liability and Automobile Liability, or as an alternate, Engineer may provide Owners-Contractors Protective policy, naming himself and City of Duluth. Engineer shall also provide evidence of Statutory Minnesota Workers' Compensation Insurance. Engineer to provide Certificate of Insurance evidencing such coverage with notice to City of cancellation in accordance with the provisions of the underlying insurance policy included. The City of Duluth does not represent or guarantee that these types or limits of coverage are adequate to protect the Engineer's interests and liabilities.

e) If a certificate of insurance is provided, the form of the certificate shall contain an unconditional requirement that the insurer notify the City without fail not less than the notice provisions contained in the underlying insurance policy or policies. In addition, Engineer commits to provide to City notice to City at least 30 days prior to any change of the policy or coverages.

2) The insurance required herein shall be maintained in full force and effect during the life of this Agreement and shall protect Engineer, its employees, agents and representatives from claims and damages including but not limited to personal injury and death and any act or failure to act by Engineer, its employees, agents and representatives in the performance of work covered by this Agreement.

3) Certificates showing that Engineer is carrying the above described insurance in the specified amounts shall be furnished to the City prior to the execution of this Agreement and a certificate showing continued maintenance of such insurance shall be on file with the City during the term of this Agreement.

4) The City shall be named as an additional insured on each liability policy other than the professional liability and the workers' compensation policies of the Engineer.

5) The certificates shall provide that the policies shall not be cancelled during the life of this Agreement without advanced notice being given to the City at least equal to that provided for in the underlying policy of insurance.

6) Except as provided for in Section IV.D.1.d) above, Engineer hereby commits to provide notice to City at least 30 days in advance of any change in the insurance provided pursuant to this Section IV or in advance of that provided for in the underlying insurance policy or policies whichever is longer. For the purposes of Section IV.D of this Agreement, the term, "changed", shall include cancellation of a policy of insurance provided hereunder and any modification of such policy which reduces the amount of any coverage provided thereunder below the amounts required to be provided hereunder or otherwise reduces the protections provided under such policy to City.

E. HOLD HARMLESS

The Engineer agrees that it shall defend, indemnify and hold harmless the City of Duluth and its officers, agents, servants and employees from any and all claims including claims for contribution or indemnity, demands, suits, judgments, costs and expenses asserted by any person or persons including agents or employees of the City of Duluth or the Engineer by reason of death or injury to person or persons or the loss or damage to property arising out of, or by reason of, any act, omission, operation or work of the Engineer or its employees while engaged in the execution or performance of services under this Agreement except to the extent that such indemnification is specifically prohibited by Minnesota Statutes Chapter 337 or Section 604.21. Engineer shall not be required to indemnify City for claims of liability arising out of the sole negligent or intentional acts or omission of the City but shall be specifically required to and agrees to defend and indemnify City in all cases where claims of liability against the City arise out of acts or omissions which are passive or derivative of the negligent or intentional acts or omissions of Engineer, including but not limited to, the failure of the City to supervise, the failure to warn, the failure to prevent such acts or omission by Engineer and any other such source of liability. On ten days' written notice from the City of Duluth, the Engineer shall appear and defend all lawsuits against the City of Duluth growing out of such injuries or damages.

F. TERMINATION

1) This agreement may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligation under this agreement through no fault of the terminating party; provided that no such termination may be affected unless the other party is given not less than fifteen (15) calendar days' prior written notice (delivered by certified mail, return receipt requested) of

intent to terminate.

2) This agreement may be terminated in whole or in part in writing by the City for its convenience; provided that the Engineer is given (1) not less than fifteen (15) calendar days' prior written notice (delivered by certified mail, return receipt requested) of intent to terminate and (2) an opportunity for consultation with the City prior to termination.

3) Upon receipt of a notice of intent to terminate from the City pursuant to this agreement, the Engineer shall (1) promptly discontinue all services affected (unless the notice directs otherwise), and (2) make available to the City at any reasonable time at a location specified by the City all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may have accumulated by the Engineer in performing this agreement, whether completed or in process.

4) Upon termination pursuant to this agreement, the City may take over the work and prosecute the same to completion by agreement with another party or otherwise.

G. LAWS, RULES AND REGULATIONS

The Engineer agrees to observe and comply with all laws, ordinances, rules and regulations of the United States of America, State of Minnesota, the City of Duluth and their respective agencies and instrumentalities which are applicable to the work and services to be performed hereunder.

H. INDEPENDENT CONTRACTOR STATUS

Nothing contained in this agreement shall be construed to make the Engineer an employee or partner of the City. The Engineer shall at all times hereunder be construed to be an independent contractor.

I. FEDERAL FUNDING

If Federal Funds (i.e. HUD, FEMA, Revenue Sharing) are utilized as a source of Project funding, the Engineer shall abide by the terms of all Federal requirements in the performance of duties hereunder.

J. AMENDMENT OF AGREEMENT

This agreement shall be amended or supplemented only in writing and executed by both parties hereto.

SECTION V. PAYMENT

A. BASIS OF BILLING

City shall pay the Engineer based on hourly rates for all services rendered under Section II Phases A through G, an amount not to exceed the amount in Section V.C, including any and all Project-related expenses such as travel, reproduction of reports and drawings, tolls, mileage, etc. For the purposes of this agreement, the principals and employees of the Engineer and their hourly rates are set forth in Exhibit A.

B. PAYMENT FOR WORK COMPLETED

1) Monthly progress payments may be requested by the Engineer for work satisfactorily completed and shall be made by the City to the Engineer as soon as practicable upon submission of statements requesting payment by the Engineer to the City. When such progress payments are made, the City may withhold up to five percent (5%) of the vouchered amount until satisfactory completion by the Engineer of all work and services within a phase called for under this agreement. When the City determines that the work under this agreement for any specified phase hereunder is substantially complete, it shall release to the Engineer any retainage held for that phase.

2) No payment request made pursuant to subparagraph 1 of this Section V shall exceed the estimated maximum total amount and value of the total work and services to be performed by the Engineer under this agreement without the prior authorization of the City. These estimates have been prepared by the Engineer and supplemented or accompanied by such supporting data as may be required by the City.

3) Upon satisfactory completion of the work performed hereunder, and prior to final payment under this agreement, and as a condition precedent thereto, the Engineer shall execute and deliver to the City a release of all claims against the City arising under or by virtue of this agreement.

4) In the event of termination by City under Section IV.F., upon the completion of any phase of the Basic

Services, progress payments due Engineer for services rendered through such phase shall constitute total payment for such services. In the event of such termination by City during any phase of the Basic Services, Engineer also will be reimbursed for the charges of independent professional associates and consultants employed by Engineer to render Basic Services, and paid for services rendered during that phase on the basis of hourly rates defined in Exhibit A of this agreement for services rendered during that phase to date of termination by Engineer's principals and employees engaged directly on the Project. In the event of any such termination, Engineer will be paid for all unpaid additional services plus all termination expenses. Termination expenses mean additional expenses directly attributable to termination, which, if termination is at City's convenience, shall include an amount computed as a percentage of total compensation for basic services earned by Engineer to the date of termination as follows: 10% of the difference between the amount which the Engineer has earned computed as described in paragraphs A and B of this section and the maximum payment amount described in paragraph C of this section. The above applies only if termination is for reasons other than the fault of the Engineer.

C. TOTAL NOT TO EXCEED:
All payments under this Contract are not to exceed Sixty-Nine Thousand Four Hundred Sixty-Two and no/100ths Dollars ($69,462.00).

SECTION VI. SPECIAL PROVISIONS

The following exhibits are attached to and made part of this agreement:

1) Exhibit A, Engineer's Hourly Rates
2) Exhibit B**,** Engineer's Proposal

In the event of a conflict between the agreement and any Exhibit, the terms of the Agreement will be controlling.

SECTION VII. COUNTERPARTS

This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original as against any party whose signature appears thereon, but all of which together shall constitute but one and the same instrument. Signatures to this Agreement transmitted by facsimile, by electronic mail in "portable document format" (".pdf"), or by any other electronic means which preserves the original graphic and pictorial appearance of the Agreement, shall have the same effect as physical delivery of the paper document bearing the original signature.

[Remainder of this page intentionally left blank. Signature page to follow.]

IN WITNESS WHEREOF, the parties have hereunto set their hands on the date of attestation shown below.

CITY OF DULUTH-Client

By:_____
Mayor

Attest:

By:_____
City Clerk

Date: _____

Countersigned:

_____
City Auditor

Approved as to Form:

_____
City Attorney

LHB, INC.

By:_____

Its: _____
Title of Representative

Date: _____

EXHIBIT A

CITY OF DULUTH
RATE SCHEDULE
2019

Professional Staff

Project staff are assigned based upon the skills required for the project. The term professional indicates an exempt employee generally with a four-year degree with or without licensure. The term technician indicates a non-exempt employee generally with a two-year degree. The level designates the extent of experience and specialization. Services are to be compensated at the following hourly rates:

Position	Level	Rate
Professional	P15	$ 80
Professional	P14	$ 85
Professional	P13	$ 90
Professional	P12	$ 95
Professional	P11	$ 100
Professional	P10	$ 105
Professional	P9	$ 110
Professional	P8	$ 120
Professional	P7	$ 130
Professional	P6	$ 140
Professional	P5	$ 150
Professional	P4	$ 160
Professional	P3	$ 170
Professional	P2	$ 195
Principal	P1	$ 225
Technician	T13	$ 55
Technician	T12	$ 60
Technician	T11	$ 65
Technician	T10	$ 70
Technician	T9	$ 75
Technician	T8	$ 80
Technician	T7	$ 85
Technician	T6	$ 90
Technician	T5	$ 95
Technician	T4	$ 100
Technician	T3	$ 110
Technician	T2	$ 115
Technician	T1	$ 120
Special Services (Including Provision Contract Staff)		***By Quote***

Expenses

Expenses shall be billed as follows:

Equipment

Utility Locator	$ 25	per day
DiNi Level	$ 25	per day
Total Station	$ 60	per day
UTV/Boat	$ 115	per day
GPS Unit	$ 150	per day
GPR Unit	$ 150	per day
ARGO	$ 550	per day

Purchased Services Mark – Up

The cost for purchased services or sub-consultants properly incurred in the performance of the work, including reproduction of documents, equipment purchases, survey supplies, and other professional services, shall be billed at direct cost plus 10%.

Travel Expenses – General

The cost for travel, meals, and lodging incurred by personnel assigned to the project will be billed at actual cost. Mileage for use of vehicles will be charged at prevailing IRS rate.

Travel Expenses – Survey

Survey personnel expenses for meals and lodging will be charged at the standard IRS CONUS rate when travel to the site is more than 100 miles from the survey office. Mileage for use of vehicles will be charged at the prevailing IRS rate.

Invoices

LHB will submit invoices monthly or as directed by you. Invoices are due and payable within thirty (30) days of the invoice date. Invoices not paid within thirty (30) days shall accrue interest at the rate of 8% per annum.

These terms and conditions are subsidiary to any applicable Master Services Agreement or project specific Agreement. In case of inconsistency, previous Agreements will prevail.

EXHIBIT B

East Superior Street Reconditioning from Lester River Road to the Expressway

Duluth City Offices

June 18, 2019

21 West Superior Street
Suite 500
Duluth, MN 55802
218.727.8446 Phone

701 Washington Avenue North
Suite 200
Minneapolis, MN 55401
612.338.2029 Phone

63 East Second Street
Suite 150
Superior, WI 54880
715.392.2902 Phone

324 Garfield Street South
Cambridge, MN 55008
763.689.4042 Phone

LHB

PERFORMANCE DRIVEN DESIGN.

LHBcorp.com

LHB

PERFORMANCE
DRIVEN DESIGN.
LHBcorp.com

June 18, 2019

Patrick F. Loomis, PE
City of Duluth—Engineering Division
211 City Hall, 411 W. 1st Street
Duluth, MN 55802-1191

RE: RFP 19-99422 EAST SUPERIOR STREET RECONDITIONING FROM LESTER RIVER ROAD TO THE EXPRESSWAY

Dear Mr. Loomis and Members of the Selection Committee,

We are pleased to submit our proposal for the East Superior Street Reconditioning project. As you read our proposal, we trust we have demonstrated our unique and well-suited abilities to assist the City with this important project.

We have selected a team of highly engaged and committed professionals to ensure the project's success. Key factors that set our team apart are:

Relevant Project Experience -Our project team has demonstrated success delivering concrete pavement rehabilitation and full depth bituminous reclamation projects for the City, local Counties, and MnDOT in Duluth and along the North Shore. Please refer to the Background & Experience section of our proposal for an overview of some of our projects involving our key project staff.

Federal Aid Requirements - LHB is fully versed in MnDOT State Aid and Federal Aid plan set and technical design requirements. Our project team's familiarity and working knowledge of these standards ensure that key milestones are met, provide for the most efficient use of staff resources, and will deliver a plan that is clear and effective in communicating the requirements of the project to minimize costs.

Public and Business Involvement - Our local project design team has an earned reputation in delivering successful public engagement with project stakeholders at all levels for the City. We are excited to assist the City in communicating the important safety and design goals of the project and to identify solutions to project issues and garner the goodwill and buy-in needed for a successful project.

Commitment to quality - LHB is committed to delivering plan sets that meet the high standards the City of Duluth expects. We are committed to providing a plan that is detail oriented and rigorously back checked to ensure the highest quality plan documents at all levels of the design that will streamline reviews and effectively address the project's technical issues.

If you have any questions or need any additional information while reviewing our proposal, please do not hesitate to call us at your convenience. We look forward to working with you on this project.

Sincerely yours,

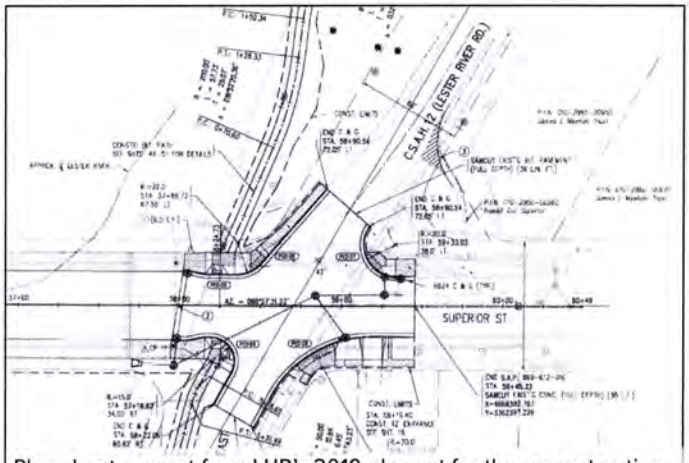
LHB

Brad Scott, PE
Project Manager

21 West Superior Street, Suite 500 | Duluth, MN 55802 | 218.727.8446
701 Washington Avenue North, Suite 200 | Minneapolis, MN 55401 | 612.338.2029
324 Garfield Street South | Cambridge, MN 55008 | 763.689.4042
63 East Second Street, Suite 150 | Superior, WI 54880 | 715.392.2902

PROJECT GOALS and OBJECTIVES

The City of Duluth is requesting engineering design services for work on East Superior Street between Lester River Road and TH 61. The project will rehabilitate approximately 2,515 lineal feet of concrete street beginning near the intersection of Superior Street and Lester River Road (61st Avenue East) up to the pavement transition near the intersection of TH 61. The additional 625 lineal feet from this point to the intersection of Superior Street and TH 61 consist of bituminous pavement and is anticipated to be rehabilitated using full depth bituminous pavement reclamation. The goals of the project are to improve the pavement condition and serviceability, safety, and accessibility.



Plan sheet excerpt from LHB's 2019 plan set for the reconstruction of East Superior Street between 60th Ave. W. and Lester River Road including the rehab of the Lester River Bridge.

This segment of Superior Street is a low speed urban minor arterial with approximately 4,150 vehicles per day. Functionally the street consists of an 11-ft lane in each direction with 7-ft shoulders. The roadway serves as a connector from TH 61 and the North Shore to the Lakeside and Lester Park neighborhoods west of the project. Other significant nearby destinations and traffic generators include St. Luke's Lester River Medical Clinic, the Diamond Willow assisted living facility, Lester River Park and the Lester River Park Golf Course. The street is also home to approximately twenty residences located on both sides of the street. The street can see significant increases in traffic during local events such as Grandma's Marathon and is often used to bypass TH 61 / London Road during periods of high tourist and visitor traffic in the summer months. LHB is very familiar with the project location, issues and traffic elements by virtue of our recent work for Saint Louis County that rehabilitated Bridge 69504 over Lester River Road and reconstructed East Superior Street between 60th Avenue East and Lester River Road.

The project is a federal aid project (S.P. 118-164-003) and the design must comply with federal aid standards and the Delegated Contract Process (DCP) for project delivery including project memorandum, federal aid checklists, and required documentation. The project includes public meetings and involvement to inform and engage residents and stakeholders regarding the project. LHB has a proven track of delivering successful State Aid / Federal Aid projects for the City and for facilitating successful public engagement on key projects.

Concrete Pavement Segment

In preparing our proposal, LHB made a detailed review of the site and the inplace conditions along the project corridor. We also reviewed the 1982 construction plans, City utility and other record information.

The concrete pavement section consists of 9-inches of concrete pavement constructed on 6-inches of aggregate base on top of native clay subgrade. The concrete pavement is non-reinforced and undoweled. The pavement was constructed in the early 1980s and there is evidence of subsequent joint repairs, utility cut-ins, and patching that have been provided since the pavement's initial construction.

The concrete portion of Superior Street is 36-feet wide with longitudinal joints located 6-ft left and right of centerline and transverse joints spaced at approximately 15.5-ft intervals. The curb is an integral style BR6-9 curb tied to the concrete pavement 18-ft left and right of centerline. In general, the roadway is three, 12-ft panels in width. Interestingly, the transverse joints were originally constructed at a skew to centerline (at about a 9 degree angle from the perpendicular). This was an occasional practice with older pavement designs and was thought to help reduce noise, joint stress, roughness, and improve ride quality by having only one wheel crossing a joint at any one time. However, this practice is no longer recommended as it has been associated with joint failures and premature uncontrolled transverse and corner cracking due to the acute angle of the skew. It is worth considering this skewed joint condition as part of the proposed design as MnDOT's CPR details make frequent use of dowel bars for load transfer and the inplace skewed joint condition has the potential to introduce dowel bar misalignment. Where pavement patching or new panel construction occurs in the design and where it is practical to do so, non-skewed joints should be provided and the use of dowel bars in skewed joints should be avoided.

Example of uncontrolled transverse cracking and pavement failure associated with inplace utilities (storm pipe between catch basins).

Our detailed field review suggests that several of the concrete pavement failures are highly correlated with inplace utility trenches or structures and point to issues likely related to insufficient or varying subgrade support. For instance, there are at least two instances of transverse cracking spanning the full three-panel width of the roadway directly between catch basins on either side of the road. There are also areas of pavement distress and failure located at many of the sanitary manhole penetrations through the pavement. The City's 42-inch water main is generally located on the north side of the Street between Lester River Road until about 1,000-ft east of 62nd Avenue East where the main crosses centerline. Potentially associated with the water main in this location as well, we noted severe pavement failures at 62nd Avenue East and at a point approximately 600-ft east of this intersection on the north side of the road. We also noted joint faulting at locations on the north side of the roadway where the northmost panel was higher than the adjacent centerline by as much as 1-inch. Issues with the pavement structure are not unexpected due to the thin pavement structure over native clay subgrade and potentially dissimilar trench backfill. This, along with potential for uncontrolled water entering the subgrade from surface runoff, or subsurface flows over shallow bedrock, and potential water main or storm sewer leaks could contribute to water entering the subgrade leading to pumping, frost heave, and/or erosion beneath the panels leading to an unsupported or high stress condition that can lead to pavement failure. We do note that the inplace 42-inch water main is relatively shallow and understand the City does not intend to replace the water main, and likewise, will want to minimize construction induced stresses or vibration on the older water main. However, where it is practical to do so, measures to limit movement or pavement distress should be explored in the design and could include removal of damaged pavement sections and replacement with reinforced panels to limit crack development and minor subgrade improvements that could include geotextile fabric and the use of retrofitted sub- or edge drains to control water from impacting the pavement base materials.

Between Lester River Road and the approximate mid-point of the concrete pavement section, these utility issues appear to be the primary roadway distress source and are typically confined to the north side of the street. Minor spalling was also noted in this section and this was more typical on the center panel of the roadway and along the transverse joints. Along this section we noted approximately 10 locations where we would recommend panel replacement typically consisting of one-to-two panels at each location. The exception to this is the widespread pavement failures we observed at 62nd Avenue West (the location approximately 600-ft east of this location) as described in the previous paragraph and associated with inplace utilities.

Pavement patching at location of City utility work. There are 12+ such locations along the existing 42-inch water main.

Photo looking east entering the horizontal curve. The pavement and curb in this area is in poor condition as is the similar low lying area further to the east past the roadway high point near the entrance to St. Luke's Clinic.

As the roadway continues east and enters the horizontal curve, we noticed an approximately 200-ft section of curb on the south side of the street where the curb is deteriorated, and the tie bars are exposed and would likely warrant replacement. Similar conditions occur elsewhere on the project. This area also shows a higher concentration of transverse and longitudinal spalling. Continuing east and approaching the roadway high point near the entrance to the St. Luke's Clinic, the pavement and joints are in generally fair to good condition. However, as the roadway descends to the east from this point and enters the lower, flat stretch headed toward TH 61, the joint condition again deteriorates with evident joint spalling and transverse cracking. The noted spalling is generally low-to-moderate severity with widths of one to five inches but rarely more than six inches. These joints would all be candidates for partial depth repair. We also noted six locations of uncontrolled transverse or diagonal cracking and faulting and, which were again, often apparently associated with utilities. We believe these areas would be better candidates for full depth pavement replacement.

The curb throughout the project is frequently deteriorated at the joint between the curb and the adjacent pavement slab. A common condition is loss of curb face material to within two vertical inches of the joint and as much as 1.5-inches into the curb face. However, apart from this failure mode, the curb is in generally good condition and the use of a bituminous overlay may be a cost effective, practical patch that will limit further deterioration. We also noted areas of pavement removal and bituminous patching associated with water main work that we assume are to be removed and repaired with concrete. Concrete walks along the project are in generally good condition but are only 4-ft wide which is less than the ADA standard but is a not

deficiency that mandates correction. However, ADA pedestrian intersection improvements must be provided at 62nd Avenue West to meet PROWAG. If budget permits, the City may extend the walk on the south side of the streets to connect to residences.

Photo of common curb deterioration with loss of concrete along the curb flow line near the intergral curb joint and exposed tie bars.

The City is requesting design options to be evaluated to include full CPR along the entire concrete pavement section or partial CPR along the concrete pavement section with a bituminous chip seal, levelling course and final wear course. Estimates are to be provided at key intervals to assist the City in project budgeting and decision making.

Bituminous Pavement Segment

The City intends to utilize full depth bituminous reclamation to rehabilitate the last 625-ft of the roadway between end of the concrete pavement section and TH 61. The inplace bituminous section is in poor condition with widespread cracking. The pavement mat is approximately 26-ft wide. Shoulders vary between 8-ft to 10-ft +. In addition to relcaiming the mainline pavement, we understand the shoulders will be bituminous paved.

The inplace bituminous pavement near TH 61 is in poor condition with widespread cracking and will be reclaimed as part of the project. Inplace gravel shoulders will be paved.

Other Issues

Although not specifically mentioned in the RFP, we also noted other issues along the corridor that would be worth considering in the final design depending on City preference, budget and public input:

- 62nd Avenue East: in addition to the concrete pavement issues at this point, the portion of the Avenue above Superior Street is in poor condition and erosion and aggregate washout onto Superior Street is an issue. Drainage improvements and possibly minor paving of this Avenue should be considered to control water and erosion.
- Drainage Issues: there are minor drainage issues along the corridor that should be considered along with the outcome of the City's utility assessment. There is an inplace wetland just to the west of the St. Luke's clinic that was continuously discharging water over the curb to the street during our visit and appears to be a persistent condition that could cause erosion, icing or pavement wear and could be mitigated by a field inlet or culvert. Our proposal assumes minor drainage adjustments as part of the pavement rehab pending full confirmation of the project drainage needs after the City's assessment.
- Signage: Inplace signs along the corridor are in poor condition and replacement should be considered.
- Speeding / Traffic Calming: Traffic joining Superior Street from TH 61 often enters the roadway at a high rate of speed. During our field visit we talked with five residents and the majority complained about speeding and we anticipate it will be an issue during the public involvement phase of the project. Curb bumpouts and other measures can be explored in the final design to mitigate this issue.

Site Investigation and Survey

The City has requested site geotechnical investigation to consist of pavement cores at a frequency of one per 400-ft to determine the thickness and condition of the inplace pavements and two borings in the bituminous reclamation section. We would suggest considering borings at some of the known or suspect pavement failures associated with utilities. We would also recommend locating pavement cores near the intersection transverse and longitudinal joints to assess pavement and joint conditions.

Site survey will consist of full topographic survey within the likely limits of the project and, at a minimum, is expected to consist of survey from the back of walk on each side of the street or the equivalent width thereof where walk is not currently inplace, as well as any areas of special concern. All inplace concrete joints will be surveyed. Topographic survey at the intersections will be required to prepare the required ADA layouts at 62nd Avenue East. The design survey will also capture the existing storm and other utility manhole structures in the pavement for adjustment to final grade. LHB will survey the existing driveways for tie-ins to the potential overlay condition. The project will include full utility coordination including mapping of inplace utilities and utility meetings. Due to the nature of the work on the project, third party utility relocations are not generally anticipated with the possible exception of work related to the ADA or sidewalk extension behind the curb.

REFERENCES

Roberta Dwyer | MnDOT
Consultant Program Project Manager
1123 Mesaba Avenue | Duluth, MN 55811
218.725.2781 | roberta.dwyer@dot.state.mn.us

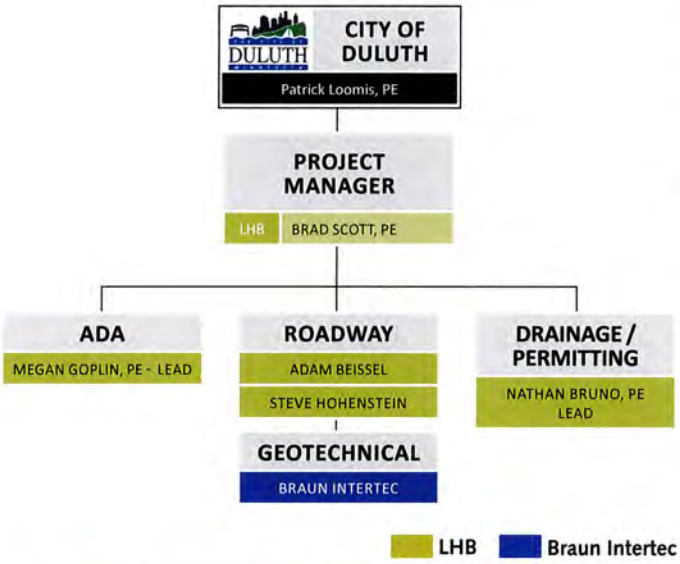
Krysten Foster | Lake/Cook County
County Engineer
601 Third Avenue, Room 201 | Two Harbors, MN 55616
218.834.8380 | krysten.foster@co.cook.mn.us

Steve Krasaway | St. Louis County Highway Department
Resident Engineer
4787 Midway Road | Duluth, MN 55811
218.625.3841 | krasaways@stlouiscountymn.gov

BACKGROUND & EXPERIENCE

We have assembled a core team of experienced design staff with specific and working knowledge of City of Duluth and MnDOT standards and federal aid requirements and with a track record of delivering successful projects.

PROPOSED PROJECT TEAM



Brad P. Scott, PE | Project Manager

Registration: Licensed Professional Engineer in Minnesota

Education: Bachelor of Science, Civil Engineering, University of Alaska, Fairbanks

As LHB's Roadway Design Leader, Brad has over 22 years of experience in roadway design, construction management, and civil engineering. Brad has extensive experience in the preparation of roadway construction plans and specifications. Brad's project experience has included a particular focus on projects that include concrete pavement design, construction inspection and administration. Brad has designed large scale airfield pavements for the MnANG bases in Duluth and St. Paul. Brad led the design of the 11-mile unbonded concrete overlay project on I-35 between Cloquet and Duluth and was the design engineer on MnDOT's Continuously Reinforced Concrete Pavement (CRCP) project in Hibbing that bridged subsidence failures associated with old mining tunnels. Brad has designed numerous projects for Concrete Pavement Rehabilitation including partial and full depth repairs for projects in Minnesota using MnDOT's boiler plate CPR standards. Brad has also attended the American Concrete Pavement Association's week-long Concrete Design Course at their headquarters in Rosemont, Illinois and is an active member in the Concrete Paving Association of Minnesota (CPAM). Brad is very well versed in Federal and State Aid design standards and procedures. His project management abilities include design team management and leadership for complex projects, construction planning, CPM project scheduling, quality control and construction administration. Brad is also well versed in the state and federal construction administration documentation processes.

In his role as project manager and project design lead, Brad is responsible for the day-to-day supervision and direction of survey and CADD technicians, internal design staff and sub consultants on traditional project delivery and fast track projects for MnDOT and other clients. His experience also includes project QA/QC planning and management to ensure high quality projects that exceed design, timeline and budget requirements. Brad his also experienced in leading and facilitating public involvement meetings and processes to engage project stakeholders to solicit input and communicate

Megan A. Goplin, PE | ADA Design Lead

Registration: Licensed Civil Engineer in Minnesota and Oregon

Education: Bachelor of Science, Civil & Environmental Engineering, University of Wisconsin-Madison

Megan brings over ten years of professional experience in site, stormwater, utility, roadway, ADA and intersection design for both public and private clients. Megan is a recognized expert in ADA design and has attended MnDOT's ADA design and construction courses and has provided ADA level 1, 2, and 3 designs on over twelve MnDOT or State Aid and Federal Aid projects. She has extensive knowledge in national accessible building codes and is proficient in AutoCAD Civil 3D.

Steven M. Hohenstein | Senior Technician

Education : Bachelor of Arts, Industrial Technology; Bemidji State University | Associate of Applied Science, Manufacturing Engineering Technician

Certification: MnDOT Aggregate Production, Grading and Base I and II, Bituminous Street I and II, Concrete Field I & II

Steve has over 20 years of experience in the preparation of roadway and utility construction plans and inspection, surveying, and construction administration of roadway and utility projects. Steve's roadway design and CADD experience combined with his years of inspection and administration experience gives him the background to fully visualize the project as it is being constructed. Steve has excellent communication skills and has proven his ability to gain the respect and cooperation of contractors whose work he is inspecting.

Steve is an expert in both Microstation / Geopak and AutoCAD Civil 3D for project design and plan preparation. Steve also has extensive experience utilizing ESRI's ArcGIS software.

Nathan J. Bruno, PE | Drainage/Permitting Lead

Registration: Professional Engineer in Minnesota

Education: Bachelor of Science, Civil Engineering, University of Minnesota

Nathan has 11 years of design experience in civil engineering specializing in water resource engineering. His extensive experience includes designing storm water treatments ponds, storm sewer and other conveyance systems, bridge hydraulics, sanitary sewers, water mains, site grading and drainage plans, and SWPPP's for both public and private clients.

Nathan provides analysis, reports, design, plans, permitting, and construction engineering for projects. His engineering skills include construction engineering, observation, schedule planning, and cost estimation. He also has extensive experience with MnDOT State Aid and Federal Aid design standards.

Adam Beissel | Roadway Designer

Education: Bachelor of Science, Civil Engineering, University of Minnesota

Certification: MnDOT Aggregate Production, Grading and Base I and II, Bituminous Street I and II, Concrete Field I: ACI Concrete Field Testing Technician – Grade I

Adam Beissel has five years of experience working on roadway design projects for MnDOT trunk highway, State Aid and Federal Aid projects. In his role as a project designer, Adam has designed a wide variety projects including full depth reconstruction, bituminous pavement reclamation and preservation projects for concrete and bituminous roads. Adam's design skills are informed by his experience in the field inspecting projects where he has been responsible for ensuring construction compliance and providing documentation in accordance with MnDOT State Aid and Federal Aid requirements for City and County projects.

Anchor Lake and TPI Local Streets Preservation Projects

MnDOT | Duluth, MN

Garfield Avenue - TPI Streets

Anchor Lake Rest Area

Project Type
Road Design

Relevant Features
- Concrete Pavement Rehabilitation (CPR)
- Thin Bituminous Overlay on Concrete

Personnel
Brad Scott, Project Mgr/Roadway Lead
Adam Beissel, Designer
Steve Hohenstein, Technician

MnDOT TPI Local Street Improvements

The MnDOT TPI Local Street Improvement project lays the groundwork for the major I-35, I-535, and Hwy 53 interchange project that is scheduled to begin in 2020. LHB led the design for the project which included repairs and rehabilitation of local streets designated to be local routes and/or detours during the major project. The project includes CPR work on Garfield Avenue between Railroad Street and Nelson Street, bituminous overlay on concrete on 27th Avenue West and 46th Avenue West, and bituminous mill and inlay on Railroad Street between Garfiled Avenue and 5th Avenue West. The project also included minor utility repairs to storm sewer, ADA retrofits at intersections located along each segment, as well as traffic control and staging plans.

MnDOT TH 53 Anchor Lake Rest Area

MnDOT's Anchor Lake Rest Area project included the rehabilitation of the concrete pavement at the Anchor Lake Rest Area located on TH 53 about 40 miles north of Duluth. The entry and exit ramps as well as the rest area passenger and vehicle parking lots consist of concrete pavement in fair to poor condition. LHB prepared plans for concrete pavement rehabilitation throughout the rest area to address spalled joints, pavement cracking and failed, damaged curb. The project also included ADA retrofits and new sidewalk to connect the rest area facility with parking areas, picnic and bench areas, as well as dog walking areas and trail features. The project also included 11 miles of bituminous mill and overlay on TH 53 from the Pale Face River to Half Moon Lake.

For both projects, plans included the preliminary and final plans to complete the work including quantity charts and tabulations, construction plan sheets and the incorporation of MnDOT's boiler plate CPR details and special provisions.

CSAH 4 Full Depth Bituminous Pavement Reclamation

Lake County | Silver Bay, MN

Project Type
Mill and Overlay, Full Depth Reclamation, Survey and Utility Coordination

Relevant Features
- Full Depth Bituminous Pavement Reclamation
- State Aid Design
- ADA Design
- Stormwater and Utility Design

Personnel
Brad Scott, Project Mgr/Design Lead
Nathan Bruno, Drainage Lead
Adam Beissel, Designer
Steve Hohenstein, Technician

LHB was retained in 2016 to assist Lake County with the rehabilitation / reclamation of approximately three miles of CSAH 4 from Old Towne Road to CR 5. The project was a complex combination of reclamation and milling and overlay segments. Broadly, the project was broken into three approximately 1-mile segments. The first segment consisted of full depth bituminous pavement reclamation and curb retrofit where varying subgrade conditions required special design approaches to ensure a quality, balanced reclaim product. The middle segment near the Beaver River Bridge consisted of a standard mill and overlay with deep milling and subgrade correction in certain areas. The northernmost section of the project was also unique in that historical overlays revealed a substantially deeper pavement section that required milling at different depths to achieve the optimum reclamation products. LHB worked collaboratively in each circumstance to provide design alternatives and budget analysis to choose the most effective, cost conscious decision making to balance the needs of the project within the project budget limits. The project also included a new trailhead intersection for the Gitchi-Gami State Trail, over 25 new center line roadway culverts, wetland delineation and permitting, utility coordination, new curb and gutter, ADA design, and new guardrail.

Superior Street Reconstruction

Duluth City Offices | Duluth, MN

Project Type
Street and Utility Reconstruction

Relevant Features
- Concrete Pavement Design
- Public Participation Process
- State Aid Design

Personnel
Brad Scott, Project Manager
Megan Goplin, ADA Lead
Adam Beissel, Designer
Steve Hohenstein, Technician

LHB was hired by the City of Duluth to lead the design for the reconstruction of Superior Street. The project completely reconstructed the existing street and associated utilities from building face to building face in the heart of downtown Duluth's commercial business district.

The project replaced the existing brick street and sidewalk system with new concrete roadway and walks. LHB provided the design for the new concrete pavement section which included detailed surfacing and layout sheets with concrete joint layout and spacing, manhole and structure penetrations, concrete lugs, and supplemental pavement reinforcement at critical areas such as utility locations and odd shaped panels. LHB incorporated and customized MnDOT's standard plan sheets for concrete pavements and joints to suit the specific project needs as well as writing the unique project special provision for the concrete pavement section. Design included a new streetscape design based on extensive public input and information meetings facilitated by LHB.

The project posed a number of unique challenges from a utilities perspective. Existing 16-inch cast iron water main dating from the 1880s was replaced with new 20-inch HDPE. The project replaced existing building water services and the work required a separate temporary water main plan to serve buildings and businesses during construction. LHB performed building vault and basement inspections to identify inplace service sizes and connection needs. Sanitary sewer was lined using CIPP methods prior to construction to minimize excavation and facilitate the construction schedule. Sanitary services were replaced.

City gas main within the project were replaced and new gas main was designed.

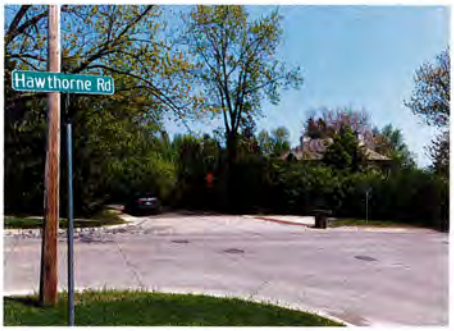
All new storm sewer was designed along with a separate building drain leader system. Stormwater treatment vaults were installed for stormwater water quality.

The project included and extensive public involvement and stakeholder engagement process that included over 10 public meetings.

The project is phased over three years with construction beginning in 2018.

Hawthorne Road Reconstruction

Duluth City Offices | Duluth, MN



LHB provided engineering design and construction administration services for the reconstruction of Hawthorne Road (from Superior Street to Vermilion Road), Vermilion Road (from Hawthorne to St. Marie Street) and St. Marie Street (from Vermilion Road to Wallace Street).

The project consisted of concrete pavement rehabilitation; full depth street reconstruction; replacement curb and gutter; selective replacement of concrete walks; and utility work including watermain relocation and storm sewer replacement and sanitary sewer work. The project was designed and administered during construction in accordance with city, MnDOT, and federal aid requirements.

As a Federal Aid project, the drainage plans, estimated quantities and hydraulic report were submitted to State Aid for review and approval, and to determine the appropriate funding splits between local and state aid funds.

Project Type
Utility and Roadway Engineer Design

Relevant Features
- Concrete Pavement Rehabilitation (CPR)
- Federal Aid Process
- ADA intersection and walk design

Personnel
Brad Scott, Project Mgr/ Design Lead
Steve Hohenstein, Technician

WORK PLAN

The following is a detailed project work plan. Included where applicable are project deliverables and required City responsibilities and action items. Our project work plan with associated tasks and hours is provided on page 10.

TASK 1 - INITIAL SITE VISITS AND CONSULTATIONS

LHB:

- Participate in coordination meeting(s) with City staff to review project and preliminary mapping and confirm project scope and complexity (one meeting assumed)
- Review and establish project design criteria
- Participate in site visit with City staff to walk site, assess pavement condition, and review project issues
- Perform Gopher State One Call design locate to collect private utility facilities information

City:

- Ensure key City staff members participate in design meeting and site visit as desired
- Route and review meeting minutes and provide feedback on project design elements

DELIVERABLES

- Meeting minutes and design criteria summary

TASK 2 – PUBLIC PARTICIPATION

LHB:

- Facilitate (2) public meetings with residents and stakeholders regarding the project
- Attend (1) Street Assessment Board (SAB) meeting regarding the project

City:

- Attend meetings and review meeting materials
- Route and review meeting minutes and provide feedback on project design elements

DELIVERABLES

- Meeting materials, layouts, presentation and exhibits for public meetings
- Meeting minutes and summary

TASK 3 – RECONNAISSANCE, FIELD SURVEYS & GEOTECHNICAL INVESTIGATION

LHB:

- Provide full topographic survey within the right-of-way including concrete curb, joints, walks, driveways, intersections, bituminous pavement, shoulders, inplace signs, utilities, and miscellaneous features
- Perform Gopher State One Call design locate to collect private utility facilities information

TASK 3 – RECONNAISSANCE, FIELD SURVEYS & GEOTECHNICAL INVESTIGATION - CONT'D

LHB:

- Provide geotechnical site investigation to determine inplace pavement thicknesses to consist of pavement cores (one per 400-ft) in the concrete portion of the project and (2) borings in the bituminous pavement section

City:

- Provide historic plans, maintenance history and other existing data relevant to the design

DELIVERABLES

- Project mapping
- Geotechnical coring logs and report (LHB subconsultant - Braun Intertec)

TASK 4 - PRELIMINARY RECOMMENDATIONS AND COSTS

LHB:

- Review available records and information to provide project recommendations and preliminary cost estimate to facilitate project decision making with respect to the City's budget constraints

City:

- Provide available records, information, historical cost data and other information relative to the project

DELIVERABLES

- Preliminary recommendations memo and cost estimate

TASK 5 – PRELIMINARY DESIGN AND PROJECT MEMO

LHB:

- Prepare project plan to 30% design level including project typical sections, construction plans and anticipated construction limits
- Prepare a project layout for City review and approval
- Prepare draft Project Memorandum for review by City
- Prepare and submit final Project Memorandum to MnDOT for official review. Incorporate any comments from MnDOT's official review and submit copies to MnDOT for final approval

City:

- Prepare and send environmental review letters
- Provide review and comment on draft project memorandum.
- Provide review and comment on 30% design

DELIVERABLES

- 30% project design submittal and layout
- Draft and final project memorandum

TASK 6 – PLANS AND SPECIFICATIONS

LHB:

- Complete and submit 60% design plans – complete design to the level that all significant design decisions have been addressed to properly construct the project
- Complete and submit 90%, 95% and 100% plan submittals -- complete design to biddable level including quantity takeoffs, construction details, and statement of estimated quantities
- Final plans shall consist of detailed drawing at 1"= 40' for the concrete and bituminous work on the project

City:

- Review and provide feedback on 60% design plans
- Review and provide feedback on 90% plans

DELIVERABLES

- 60% Design Submittal and Engineer's Estimate of Cost
- 90% Design Submittal to City
- 95% Design Submittal to MnDOT State Aid including Federal Aid checklists and forms
- 100% Design Submittal
- Bid-ready Special Provisions

TASK 7 – COST ESTIMATES

LHB:

- Prepare, at a minimum, (6) cost estimates for the project throughout the design including preliminary design estimate, updated cost estimates at the 30%, 60%, 90%, 95%, and 100% (final) design levels

City:

- Provide recent historical cost data and bid tabs
- Review and provide feedback on estimates as desired

DELIVERABLES

- Preliminary, 30%, 60%, 90% and 100% engineer's estimates

TASK 8 – BIDDING AND CONSTRUCTION ADMINISTRATION

LHB:

- Answer City and Contractor questions during bidding
- Provide 40 hours of construction support as needed during the project construction phase

City:

- Advertising, bidding and letting management
- Overall construction administration

DELIVERABLES

- Clarifications or addenda, as required

SCHEDULE

We are committed to meeting the City's schedule for the project as listed below. Our team will provide key deliverables at the required project milestones. We will work diligently in the early phase of the project to provide input and cost estimates to identify the preferred project alternative. Other key deliverables in the design including the project memorandum will be timed to ensure early input, decision making, and approval. We will rigorously adhere to the MnDOT DCP Checklist and timelines for the design and review of the plans, reports, State-Aid forms, and other required deliverables.

Date	Task / Milestone
6/18/19	Proposals Due (10:00 AM)
6/28/19	Selection Complete
7/8/19	Council awards consultant contracts
7/12/19	Notice to Proceed
8/9/19	Preliminary Cost Estimate (#1)
11/15/19	Project Memo Draft due to City of Duluth
12/1/19	Final Project Memo Due to MnDOT + 30% Plan review + updated Cost Estimate (#2)
12/15/19	60% Plan review + updated Cost Est. (#3)
1/15/20	90% Plan Review + updated Cost Estimate (#4)
2/15/20	Plan submittal to City and MnDOT for final review updated Cost Estimate (#5)
3/1/20	Final Plan, Specifications and SWPPP delivered to City + Final Cost Estimate (#6)
March '20	Bid Assistance
Summer '20	Construction Administration Assistance

WORK TASK HOURS

WORK PLAN

Project Name **East Superior Street Reconditioning** Project Number **190391**
Client **City of Duluth** Date **6/18/19**
Preparer **LHB**

Work Task	Description	Brad Scott Project Manager	Adam Beissel Roadway Designer	Nathan Bruno Drainage Lead	Megan Goplin ADA Lead	Steve Hohenstein Technician	Land Surveyor	Survey Tech	TOTAL HOURS
1.00	**INITIAL SITE VISITS AND CONSULTATIONS**	**18**	**16**	**0**	**0**	**0**	**0**	**0**	**34**
1.01	Project Kickoff / Review Information / Initial Site Visit / Meeting Minutes	10	8						
1.02	(3) Status Meetings with City	6							
1.03	Gopher State One Call & Utility Verification	2	8						
2.00	**PUBLIC PARTICIPATION**	**14**	**6**	**0**	**0**	**10**	**0**	**0**	**30**
2.01	(2) Public Meetings (Presentation, Graphics, Agenda, and Minutes)	12	6			10			
2.02	(1) SAB Meeting	2							
3.00	**RECONNAISSANCE, FIELD SURVEYS, & GEOTECHNICAL EXPLORATION**	**2**	**0**	**0**	**0**	**20**	**2**	**55**	**79**
3.01	Field Survey & Mapping					20	2	55	
3.02	Geotechnical Coordination & Review	2							
4.00	**PRELIMINARY RECOMMENDATIONS AND COSTS**	**16**	**20**	**0**	**0**	**0**	**0**	**0**	**36**
4.01	Preliminary Construction Estimate (Full CPR and Partial CPR)	8	12						
4.02	Alternatives Evaluation & Selection	8	8						
5.00	**PRELIMINARY DESIGN AND PROJECT MEMO**	**18**	**24**	**0**	**0**	**0**	**0**	**0**	**42**
5.01	Preliminary Design and Layout	10	20						
5.02	Project Memorandum (Draft & Final)	8	4						
6.00	**PLANS AND SPECIFICATIONS**	**61**	**140**	**10**	**20**	**86**	**0**	**0**	**317**
6.01	Title Sheet (1 Sheet)	1	2						
6.02	Statement of Estimated Quantities (1 Sheets)	2	10		2				
6.03	Construction Notes & Standard Plates (1 Sheet)	1	2						
6.04	Tabulations (4 Sheets)	4	20	2	4	10			
6.05	Typical Sections (2 Sheets)	4	12						
6.06	Construction Details (12 Sheets) | CPR Details, ADA Layouts, and Misc				14	8			
6.07	Construction Plans and Profiles (5 Sheets - 1" = 40')	40	80			50			
6.08	Erosion and Sediment Control Plan (5 Sheets)			8		12			
6.09	Traffic Control (2 Sheets) | Work under Traffic w/Shoulder and Lane Closures	1	10			6			
6.10	Special Provisions	6							
6.11	State Aid Plan Submittal	2	4						
7.00	**COST ESTIMATES**	**6**	**12**	**0**	**0**	**0**	**0**	**0**	**18**
7.01	(6) Project Estimates at Preliminary, 30%, 60%, 90%, 95% & 100%	6	12						
8.00	**BIDDING AND CONSTRUCTION ADMINISTRATION**	**20**	**16**	**0**	**4**	**0**	**0**	**0**	**40**
8.01	Bidding and Construction Administration	20	16		4				
	Total Hours	**155**	**234**	**10**	**24**	**116**	**2**	**55**	**596**

COST PROPOSAL

WORK PLAN

Project Name: **East Superior Street Reconditioning** | Project Number: **190391**
Client: **City of Duluth** | Date: **6/18/19**
Preparer: **LHB**

Work Task	Description	Brad Scott Project Manager	Adam Beissel Roadway Designer	Nathan Bruno Drainage Lead	Megan Goplin ADA Lead	Steve Hohenstein Technician	Land Surveyor	Survey Tech	TOTAL HOURS	TOTAL EXPENSES	TOTAL LABOR COST PER TASK	TOTAL COST PER DELIVERABLE
1.00	**INITIAL SITE VISITS AND CONSULTATIONS**	**18**	**16**	**0**	**0**	**0**	**0**	**0**	**34**	**$ -**	**$ 4,304.00**	**$ 4,304.00**
1.01	Project Kickoff / Review Information / Initial Site Visit / Meeting Minutes	10	8								$ 2,312.00	$ 2,312.00
1.02	(3) Status Meetings with City	6									$ 960.00	$ 960.00
1.03	Gopher State One Call & Utility Verification	2	8								$ 1,032.00	$ 1,032.00
2.00	**PUBLIC PARTICIPATION**	**14**	**6**	**0**	**0**	**10**	**0**	**0**	**30**	**$ -**	**$ 3,634.00**	**$ 3,634.00**
2.01	(2) Public Meetings (Presentation, Graphics, Agenda, and Minutes)	12	6			10					$ 3,314.00	$ 3,314.00
2.02	(1) SAB Meeting	2									$ 320.00	$ 320.00
3.00	**RECONNAISSANCE, FIELD SURVEYS, & GEOTECHNICAL EXPLORATION**	**2**	**0**	**0**	**0**	**20**	**2**	**55**	**79**	**$ 600.00**	**$ 6,740.00**	**$ 7,340.00**
3.01	Field Survey & Mapping					20	2	55		$ 600.00	$ 6,420.00	$ 7,020.00
3.02	Geotechnical Coordination & Review	2									$ 320.00	$ 320.00
4.00	**PRELIMINARY RECOMMENDATIONS AND COSTS**	**16**	**20**	**0**	**0**	**0**	**0**	**0**	**36**	**$ -**	**$ 4,340.00**	**$ 4,340.00**
4.01	Preliminary Construction Estimate (Full CPR and Partial CPR)	8	12								$ 2,348.00	$ 2,348.00
4.02	Alternatives Evaluation & Selection	8	8								$ 1,992.00	$ 1,992.00
5.00	**PRELIMINARY DESIGN AND PROJECT MEMO**	**18**	**24**	**0**	**0**	**0**	**0**	**0**	**42**	**$ -**	**$ 5,016.00**	**$ 5,016.00**
5.01	Preliminary Design and Layout	10	20								$ 3,380.00	$ 3,380.00
5.02	Project Memorandum (Draft & Final)	8	4								$ 1,636.00	$ 1,636.00
6.00	**PLANS AND SPECIFICATIONS**	**61**	**140**	**10**	**20**	**86**	**0**	**0**	**317**	**$ -**	**$ 33,116.00**	**$ 33,116.00**
6.01	Title Sheet (1 Sheet)	1	2								$ 338.00	$ 338.00
6.02	Statement of Estimated Quantities (1 Sheets)	2	10		2						$ 1,440.00	$ 1,440.00
6.03	Construction Notes & Standard Plates (1 Sheet)	1	2								$ 338.00	$ 338.00
6.04	Tabulations (4 Sheets)	4	20	2	4	10					$ 3,980.00	$ 3,980.00
6.05	Typical Sections (2 Sheets)	4	12								$ 1,708.00	$ 1,708.00
6.06	Construction Details (12 Sheets) | CPR Details, ADA Layouts, and Misc				14	8					$ 2,298.00	$ 2,298.00
6.07	Construction Plans and Profiles (5 Sheets - 1" = 40')	40	80			50					$ 17,820.00	$ 17,820.00
6.08	Erosion and Sediment Control Plan (5 Sheets)			8		12					$ 1,992.00	$ 1,992.00
6.09	Traffic Control (2 Sheets) | Work under Traffic w/Shoulder and Lane Closures	1	10			6					$ 1,566.00	$ 1,566.00
6.10	Special Provisions	6									$ 960.00	$ 960.00
6.11	State Aid Plan Submittal	2	4								$ 676.00	$ 676.00
7.00	**COST ESTIMATES**	**6**	**12**	**0**	**0**	**0**	**0**	**0**	**18**	**$ -**	**$ 2,028.00**	**$ 2,028.00**
7.01	(6) Project Estimates at Preliminary, 30%, 60%, 90%, 95% & 100%	6	12								$ 2,028.00	$ 2,028.00
8.00	**BIDDING AND CONSTRUCTION ADMINISTRATION**	**20**	**16**	**0**	**4**	**0**	**0**	**0**	**40**	**$ -**	**$ 5,084.00**	**$ 5,084.00**
8.01	Bidding and Construction Administration	20	16		4						$ 5,084.00	$ 5,084.00
	Total Hours	**155**	**234**	**10**	**24**	**116**	**2**	**55**	**596**			
	Cost per Hour	$ 160	$ 89	$ 120	$ 115	$ 86	$ 150	$ 80				
	Total Cost	**$ 24,800**	**$ 20,826**	**$ 1,200**	**$ 2,760**	**$ 9,976**	**$ 300**	**$ 4,400**				

SUMMARY

TOTAL LABOR	$ 64,262.00
TOTAL EXPENSES	$ 600.00
SUBCONSULTANT (Geotech)	$ 4,600.00
TOTAL FEE	**$ 69,462**

NOTE: Hourly rates shown are based on: bare labor rate + 157% overhead + fee (10%).

This proposal has been prepared and submitted by LHB, Inc.

Date: JUNE 18, 2019 Signed: _____