

# 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 Street, Suite 500, Duluth, MN 55802

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

Payments hereunder, in the estimated amount of One Hundred Twenty Thousand Nine Hundred Forty Three Dollars (\$120,943) shall be made from Funding 530-500-1905-5533; Project # 1825; and Resolution No. 19-0257R passed on April 22, 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: 1825  
Project Name: Trunk Highway 53 and Interstate 35 Utility Relocations  
Project Description: **Sanitary sewer and water main construction associated with MN/DOT's Twin Ports Interchange reconstruction project (S.P.6982-322).**

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

<u>Phase</u>	<u>Description</u>
<u>      </u>	A. Study and Report Phase
<u>      </u>	B. Preliminary Survey Phase
<u>  X  </u>	C. Preliminary Design Phase
<u>  X  </u>	D. Final Design Phase
<u>  X  </u>	E. Bidding Phase
<u>      </u>	F. Construction Survey and Layout Phase
<u>      </u>	G. Construction Administration and Inspection Phase
<u>      </u>	H. Additional Services

### 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 H as applicable and within the amounts allocated for such services pursuant to Section V.D below.

**SECTION II. BASIC SERVICES**

**A. STUDY AND REPORT PHASE**

\_\_\_\_\_ Included in this agreement

X  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 of the types described in Section III.C, 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 [Click or tap here to enter text..](#)

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 [Click or tap here to enter text..](#)

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 July 31, 2019.

D. FINAL DESIGN PHASE

  X   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 April 30, 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 May 31, 2020.

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 [Click or tap here to enter text..](#)

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 [Click or tap here to enter text..](#)

H. ADDITIONAL SERVICES

☐ Included in this agreement

☒ Not included in this agreement

If authorized in writing by the City, the Engineer shall furnish or obtain other additional services of the following types which are not considered normal or customary basic services except to the extent specifically provided in Section II; these will be paid for by the City as indicated in Section V.

1) Significant Changes

Services resulting from significant changes in extent of the Project or its design including, but not limited to, changes in size, complexity, City's schedule or character of construction or method of financing; and revising previously accepted studies, reports, design documents or contract documents when such revisions are due to causes beyond the Engineer's control.

2) Alternate Bid Documents

Preparing documents for alternate bids requested by the City for contractor(s)' work which is not executed



or documents for out-of-sequence work.

3) Services Resulting from Acts Beyond Engineer's Control

Additional or extended services during construction made necessary by (1) work damaged by fire or other cause during construction, (2) a significant amount of defective or neglected work of the contractor(s) as determined by the city representative, (3) prolongation of the contract time due to delays by the contractor, (4) acceleration of the progress schedule involving services beyond normal working hours, and (5) default by the contractor.

4) Services After Construction Phase

Services after completion of the construction phase excluding the warranty inspection.

5) Legal Proceedings

Preparing to serve or serving as a consultant or witness for the City in any litigation, public hearing or other legal or administrative proceeding involving the Project (except as agreed to under Basic Services).

6) Services Not Otherwise Provided

Additional services in connection with the Project, including services normally furnished by the City and services not otherwise provided for implicitly or by fair implication of this agreement.

7) Supplementary Duties

The following additional services have been identified and are included in the Additional Services Phase any additional duties and responsibilities to be provided pursuant to the Engineer's proposal attached as Exhibit B.

8) Completion Time

The time limit to complete additional services cannot be fully specified in this agreement because the full nature and full extent of additional services are unknown.

### **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 incident 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 an amount based on hourly rates not to exceed \$120,943 for all services rendered under Section II Phases A through H, 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 D of this section. The above applies only if termination is for reasons other than the fault of the Engineer.

#### C. STANDARD PAYMENT

The Engineer shall complete all services described in Section II.A through G including all attachments to Section II for an amount including all Project-related expenses for the estimated amounts shown hereunder:

<u>Section II</u>	<u>Description</u>	<u>Estimated Compensation</u>
A.	Study and Report Phase	\$ 0
B.	Preliminary Survey Phase	\$ 0
C.	Preliminary Design Phase	\$ 0
D.	Final Design Phase	\$ 0
E.	Bidding Phase	\$ 0
F.	Construction Survey and Layout Phase	\$ 0
G.	Construction Administration and Inspection Phase	\$ .00
<b>TOTAL</b>		<b>\$ 120,943.00</b>

The maximum compensation for all phases A through G shall not exceed ONE HUNDRED TWENTY THOUSAND NINE HUNDRED FORTY THREE DOLLARS

#### D. PAYMENT FOR ADDITIONAL SERVICES

City shall pay the Engineer for all additional services rendered under Section II.H an amount based on hourly rates shown in Exhibit A for services rendered by principals and employees assigned to the Project. The maximum payment described in Section V.C shall not apply to additional services.

The Engineer and City agree that the full extent of additional services may be unknown. Those additional services which have been identified are described in Section II.H, and that payment for those additional services is estimated to be \$0.00.

This agreement is made between the City and the Engineer entered into on the last date below written. In witness, the parties have executed this agreement.

#### E. TOTAL NOT TO EXCEED:

All payments under this Contract are not to exceed \$120,943.00 payable under fund 530-500-1905-5533.

### SECTION VI. SPECIAL PROVISIONS

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

- 1) Exhibit A, Engineer's Cost Proposal w/Hourly Rates
- 2) Exhibit B, Engineer's Qualification Proposal and Work Plan

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.

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: \_\_\_\_\_



Project Number **190201**  
Date **4/11/19**

EXHIBIT A  
1 page


Work Task	Description	LHB						TOTAL HOURS	TOTAL EXPENSES	TOTAL LABOR COST PER TASK	TOTAL COST PER DELIVERABLE
		Joe Litman	Brad Scott	Adam Beissel	Steve Hohenstein		Heather Redetzke				
		Project Principal	Project Manager	Designer	Technician	Survey Tech	Isthmus MnDOT QA				
1.00	Initial Site Visits & Consultations	0	12	18	0	8	0	38	\$ 150.00	\$ 4,404.00	\$ 4,554.00
	Project Kickoff / Initial Site Visit		4	4					\$ 1,032.00	\$ 1,032.00	
	Review available information and establish project design criteria		8	12					\$ 2,456.00	\$ 2,456.00	
	Field Reports of Sanitary Manholes		2			8			\$ 916.00	\$ 1,066.00	
2.00	Plans and Specifications	13	271	343	342	0	24	993	\$ -	\$ 113,701.00	\$ 113,701.00
	Project Management								\$ -	\$ -	\$ -
	Work Coordination, administration and communications (12 months)	2	24						\$ 4,190.00	\$ 4,190.00	
	Progress Meetings with City and MnDOT (assume 12)		24						\$ 3,840.00	\$ 3,840.00	
	Review Soil Borings Provided by MnDOT for Foundations Support of Sanitary Sewer Pipe Under Coffee Creek	1	30	20					\$ -	\$ -	\$ -
	Work Package 1								\$ 6,935.00	\$ 6,935.00	
	General Layout (1 sheet) @ 1" = 100'			2	6				\$ -	\$ -	\$ -
	Quantity Charts / Tabulations (6 sheets)		4	18	36				\$ 736.00	\$ 736.00	
	Construction Details (12 sheets)	8	48	60	80				\$ 5,644.00	\$ 5,644.00	
	Removals Plans (7 sheets) @ 1" = 40'		7	28	14				\$ 22,160.00	\$ 22,160.00	
	Utility Plan and Profile (7 sheets) @ 1"= 40' scale		21	56	56				\$ 5,124.00	\$ 5,124.00	
	Temporary Water Plans (2 sheets)		4	12					\$ 13,888.00	\$ 13,888.00	
	City and MnDOT review Corrections		5	10	20				\$ 1,816.00	\$ 1,816.00	
	Special Provisions		2						\$ 3,580.00	\$ 3,580.00	
	Quality Control / Quality Assurance Reviews (30%, 60%, 90%, 95%, 100%)	1	15				12		\$ 320.00	\$ 320.00	
	Plan Review Meetings with City/MnDOT (30%, 60% and 90%)		6						\$ 4,411.00	\$ 4,411.00	
	Plan Submittals (30%, 60%, 90%, 95%, 100%)		5	10					\$ 960.00	\$ 960.00	
	Work Package 2								\$ 1,780.00	\$ 1,780.00	
	General Layout (1 sheet) @ 1" = 100'			2	6				\$ -	\$ -	\$ -
	Quantity Charts / Tabulations (6 sheets)		4	18	36				\$ 736.00	\$ 736.00	
	Construction Details (8 sheets)		1		8				\$ 5,644.00	\$ 5,644.00	
	Removals Plans (6 sheets) @ 1" = 40'		6	24	12				\$ 880.00	\$ 880.00	
	Utility Plan and Profile (6 sheets) @ 1"= 40' scale		28	48	48				\$ 4,392.00	\$ 4,392.00	
	Temporary Water Plans (3 sheets)		4	15					\$ 13,504.00	\$ 13,504.00	
	City and MnDOT review Corrections		5	10	20				\$ 2,110.00	\$ 2,110.00	
	Special Provisions		2						\$ 3,580.00	\$ 3,580.00	
	Quality Control / Quality Assurance Reviews (30%, 60%, 90%, 95%, 100%)	1	15				12		\$ 320.00	\$ 320.00	
	Plan Review Meetings with City/MnDOT (30%, 60% and 90%)		6						\$ 4,411.00	\$ 4,411.00	
	Plan Submittals (30%, 60%, 90%, 95%, 100%)		5	10					\$ 960.00	\$ 960.00	
									\$ 1,780.00	\$ 1,780.00	
									\$ -	\$ -	\$ -
3.00	Cost Estimate	0	5	10	0	0	0	15	\$ -	\$ 1,780.00	\$ 1,780.00
	30%, 60%, 90% and 100% Cost Estimates		4	8					\$ 1,424.00	\$ 1,424.00	
	Final Cost Estimate		1	2					\$ 356.00	\$ 356.00	
4.00	Bidding	0	2	6	0	0	0	8	\$ -	\$ 908.00	\$ 908.00
4.01	Clarifications or Addenda		2	6					\$ 908.00	\$ 908.00	
	Total Hours	13	290	377	342	8	24		SUMMARY		
	Cost per Hour	\$ 175	\$ 160	\$ 98	\$ 90	\$ 90	\$ 153		TOTAL LABOR \$ 120,793.00		
									TOTAL EXPENSES \$ 150.00		
	Total Cost	\$ 2,275	\$ 46,400	\$ 36,946	\$ 30,780	\$ 720	\$ 3,672		TOTAL FEE \$ 120,943		
	This proposal has been prepared and submitted by LHB Inc. Revised Cost Proposal based on Negotiation with City Date: April 11, 2019  Submitted By: _____										

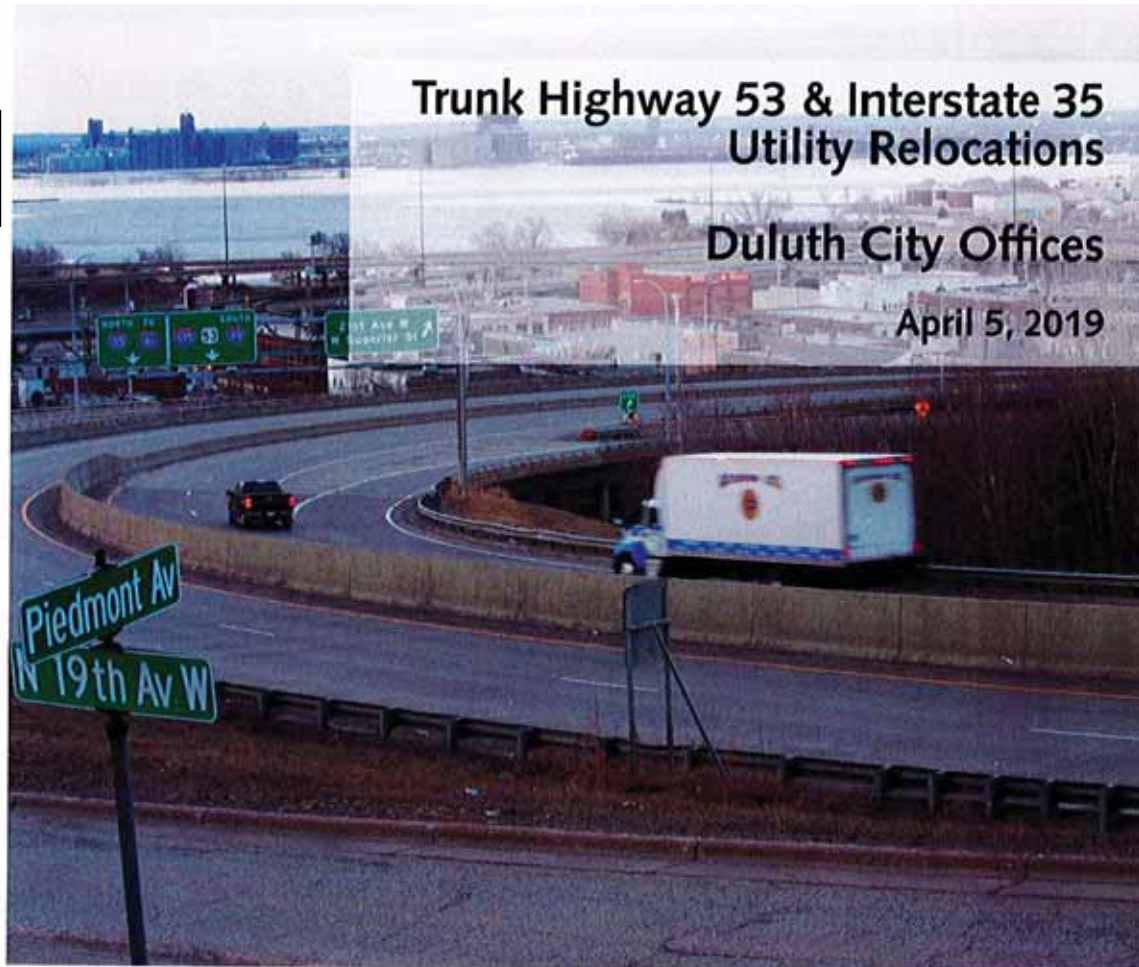


EXHIBIT B  
23 pages

# Trunk Highway 53 & Interstate 35 Utility Relocations

Duluth City Offices

April 5, 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



PERFORMANCE  
DRIVEN DESIGN.  
LHBcorp.com







**PERFORMANCE  
DRIVEN DESIGN.**

LHBcorp.com

April 5, 2019

Tom Pfeffer, PE  
City of Duluth—Engineering Division  
411 W. 1st Street, Room 211 City Hall  
Duluth, MN 55802

**RE: RFP 19-07AA, TRUNK HIGHWAY 53 & INTERSTATE 35 UTILITY RELOCATIONS**

Dear Tom and Members of the Selection Committee:

LHB is pleased to submit our proposal for design services for the TH53 & I35 Utility Relocations project. As you will see in our proposal, we have a thorough understanding of the design needs and the key requirements to deliver a successful project.

**City Protocols and MnDOT Requirements** - LHB has in depth experience with complex projects involving Duluth's utility and construction standards as well as MnDOT's design standards and procedures and we have a clear understanding of how to integrate the two to deliver this project. Our command of City and MnDOT plan set formats, sequence, design requirements, details and specifications is key to meeting project deadlines and minimizing delays.

**Utility Design Experience** - LHB has an established and ongoing track record of delivering successful utility projects for the City of Duluth that include water, sanitary and gas work. From 2014-2017 we worked on a multi-phased, multi-year utility project to assist the City with the construction and relocation of new HDPE water main and gas utilities related to the installation of primary power duct on Michigan Street from 6<sup>th</sup> Avenue West to 1<sup>st</sup> Avenue West. Our recent experience delivering the Superior Street project design included the design of over 6,300 lineal feet of HDPE water main and we have designed well over 10,000 lineal feet of HDPE water main in the last five years. We are also very well versed in the requirements for sanitary sewer work given our past work with the City on numerous Street Improvement Projects for the City.

**Commitment to quality** - Plan set quality is paramount to a successful project. To that end, we have committed team resources to check and cross check work products consistent with a rigid protocol. All of these activities will be led by dedicated QA/QC staff with knowledge of City and MnDOT requirements to ensure a high-quality plan meeting the technical and plan standards for the project.

We look forward to hearing from you and remain available should you have any questions concerning our proposal.

Sincerely,  
LHB

Joe Litman, PE

LHB

Brad Scott, PE

21 West Superior Street, Suite 500  
701 Washington Avenue North, Suite 200  
324 Garfield Street South  
63 East Second Street, Suite 150

Duluth, MN 55802  
Minneapolis, MN 55401  
Cambridge, MN 55008  
Superior, WI 54880

218.727.8446  
612.338.2029  
763.689.4042  
715.392.2902



## GOALS and OBJECTIVES



The City of Duluth is requesting engineering services for the design of City utilities related to MnDOT's Twin Ports Interchange (TPI) project for the relocation of water, sanitary sewer, and gas mains. The project limits are generally defined by City street and utility corridors located within the footprint of the TPI project and specifically that segment of the TPI project associated with the reconstruction of Trunk Highway 53 (TH 53) / and its connection to Interstate 35 (I35) (see Project Issues map on pages 4-5). The TPI project will entirely replace the existing highway and bridge structures including new bridge foundations and retaining walls.

Many of the City's utilities within the project area are old and in fair-to-poor condition. As such, the City and MnDOT are considering relocations where vibration or other ground disturbing activities have the potential to damage these facilities. There are also areas where the City's utilities must be moved to accommodate the TPI project due to conflicts with the work, proposed utilities, or new roadway and bridge structures.

All design work is to be designed in accordance with the current City of Duluth Construction Standards for utility work. It is anticipated that the utility relocation plans will be bid as part of the overall MnDOT TPI construction documents being prepared by MnDOT's design team. Therefore, it will also be necessary to deliver the Plans in accordance with MnDOT's Standard Specification for Construction and plan processes including plan format, pay items, and working with MnDOT's design team to ensure all aspects of the Plan are coordinated and shared throughout the design phase.

LHB has a proven track record of delivering quality utility designs for the City of Duluth. We are also well versed in preparing plans for MnDOT and we have specific expertise in those cases where a local agency is designing plans that will be incorporated into a MnDOT plan set and must be prepared in accordance

with MNDOT plan and design standards. LHB is MnDOT prequalified in the key work types associated with the overall TPI project including roadway and bridge design and we are fluent in MnDOT's CADD Data Delivery Specifications (Levels I and II) for the use of Microstation and GEOPAK in project design and plan preparation. Accordingly, we anticipate completing the design in MicroStation format and utilizing GEOPAK design tools and resource files to facilitate the sharing of information and the seamless integration of the design between design teams. At the conclusion of the design, we will translate and provide the project design files to the City in AutoCAD format for the purpose of providing record documents that can be incorporated in the City's archive and information management systems.

We understand that schedule is critical to the success of this project. Design for the TPI project is already underway using MnDOT's Construction Manager/General Contractor (CMGC) project delivery method and construction is anticipated to begin in 2020 and continue through 2023. The project work scope and deliverables for the City utility work are divided between two work packages that correspond to MnDOT's anticipated project delivery: Work Package 1 (WP-1) for 22nd Avenue West and Work Package 2 (WP-2) for all other utility work. We are committed to meeting City and MnDOT timelines for project delivery. LHB led the design work for the TPI Local Streets project that will be let and constructed in 2019 and provides for preparatory street, signal and minor utility work in advance of the main TPI project. The TPI Local Streets design contract included preliminary design and layout for utility work in the vicinity at 22nd Avenue West (through approximately the 60% design level). LHB's work on the Local Streets project gives us a unique understanding of the issues involved and will ensure our team is able to immediately engage with the project and the key design issues.

### **Work Package 1 (WP-1) – 22nd Avenue West**

WP-1 includes utility relocation work associated with the TPI project in the vicinity of 22<sup>nd</sup> Avenue West between approximately 1<sup>st</sup> Street and Michigan Street (refer to Project Issues map). The TPI project will replace the in-place bridge and roadways and includes construction of new retaining walls, parking lots and new temporary ramps and access to City streets from TH 53. The 22<sup>nd</sup> Avenue West corridor is a focal point of design work for City utility relocations due primarily to issues related to the TPI project's need to

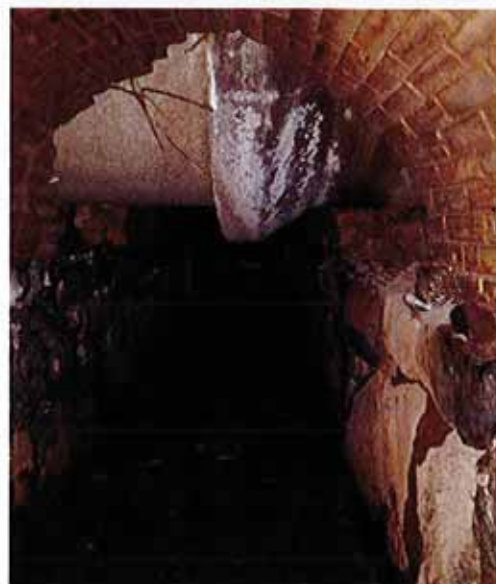


relocate Coffee Creek. Between 1<sup>st</sup> Street and Michigan Street, Coffee Creek is located beneath TH 53 and is enclosed in an existing 1890's brick/stone arch tunnel approximately 5-ft wide x 7-ft tall. Piling for the existing TH 53 bridge structure north of I-35 were driven along the immediate sides of the tunnel. To enable the construction of the new TH 53 bridge structures anticipated with the major TPI project, MnDOT intends to relocate Coffee Creek from its present course beneath the existing and future footprint of TH 53 to the west and under 22<sup>nd</sup> Avenue West. The new Coffee Creek box culvert will connect to the existing Coffee Creek tunnel near 1<sup>st</sup> Street and run south beneath 22<sup>nd</sup> Avenue West to Michigan Street. The ultimate alignment for Coffee Creek is anticipated to extend south of Michigan Street where it will join Miller Creek and the confluence will then extend beneath I-35 to Lake Superior.

As part of LHB's work on the TPI Local Streets project, LHB did extensive research, field survey, site investigations, design, and alternatives analysis related to the utility work required to accommodate the TPI project and the relocation of Coffee Creek specifically. LHB's field survey work collected invert and structure data for sanitary sewer manholes that were not included in MnDOT's original topographic survey and to correct or supplement information that was lacking from the Subsurface Utility Engineering (SUE) information provided by MnDOT. We also reviewed and compared the City record drawings and design data with the available survey data and noted several issues relevant to the final design including the presence of pile supported utility main on Michigan Street which will be important in determining the best connection between new and in-place utilities to avoid issues with differential settlement or due to varying and poor soil conditions. LHB met with WLSSD and reviewed design plans and as-built data as it pertains to the large diameter sanitary force main on 1<sup>st</sup> Street which is to remain in-place. We also performed a site review and inspection of the Coffee Creek tunnel from Michigan to 1<sup>st</sup> Street where the WLSSD force main intersects Coffee Creek. This site investigation revealed information not present in WLSSD's as-built information including data regarding the in-place cast-in-place box structure that flattened the tunnel to accommodate the force main. We also learned that there is remnant sanitary structure in the tunnel just north of the in-service WLSSD force main that projects into the roof of the tunnel and which we discussed in subsequent conversations with the City may be removed as part of the project. We also noted an in-place storm lateral from Northern Door to the Coffee Creek manhole located near the alley that should be perpetuated in the final design.

LHB's design efforts for 22<sup>nd</sup> Avenue West included alternatives analysis for the proposed sanitary sewer relocation including alternatives located on the east and west sides of the proposed Coffee Creek box culvert to facilitate utility crossings. We also evaluated an option on the far east side of TH 53 but which was ruled out at the time due primarily to right of way concerns. For the east and west options in 22<sup>nd</sup> Avenue West, LHB mapped in-place bridge foundations and pile locations and evaluated the proximity of the in-place and proposed utilities ("wet utilities") in accordance with the requirements of the MnDOT Bridge Design Manual (BDM) Section 2.4.1.6.2. To the extent that the proximity of City utilities to the proposed bridge foundations or the need to case utilities within the bridge foundation zones remain factors in the design, we are confident we can continue to assist in this regard. Ultimately, based on the requirements of the BDM, the in-place bridge, and the status of the proposed bridge design at the time, the proposed configuration to the west of the proposed Coffee Creek box culvert appeared to be the more viable alternative.

LHB established preliminary grades for the new sanitary sewer mains, new HDPE water main, and gas main based on the west location alternative. Other constraints on the utility design for 22<sup>nd</sup> Ave West included the in-place WLSSD force main and associated cast in place structure on 1<sup>st</sup> Street which were to remain as is. Due to their condition and potential for damage during construction, water mains on 1<sup>st</sup> Street, Superior Street and Michigan Street were to be replaced within the TPI





construction limits. For the water main on Michigan Street, it was discussed with the City that a possible option to loop the water main up 22<sup>nd</sup> Ave West, down Superior Street and back to Michigan Street could be considered depending on the final grades of the Coffee Creek box culvert and as needed to facilitate construction. The need for temporary water services to affected residences during water replacement were reviewed. Another factor to be considered for the 22<sup>nd</sup> Avenue West design is that the TPI project will also necessitate the re-design / re-location of the City's sanitary lift station 15 on the east side of TH 53 and which is currently underway. Since that lift station design had not commenced at the time of LHB's work on the Local Streets project, coordination was not possible, but we are confident in our ability to provide any needed coordination and would again raise the concern and potential for poor soils on Michigan Street and the presence of the in-place pile supported sanitary main as issues to be considered during the final design and coordinated between the design teams. Other issues of significance included the City's 16" gas main on Michigan Street which was to be left as-is if at all practicable.

Due to the timing of the TPI Local Streets project, the need to complete those plans to meet the required 2019 letting, the need for MnDOT's CMGC Contractor to weigh-in on construction staging and phasing as it relates to the Coffee Creek work, the status of the proposed Bridge design, and the additional time needed for MnDOT to coordinate its utility agreement with the City, the utility work on 22<sup>nd</sup> Avenue West was ultimately not included in the TPI Local Streets project as planned. However, as described above, our considerable design effort to date and knowledge of the project site and issues involved will ensure our team can quickly re-engage with the design and move the project forward quickly.

### **Work Package 2 (WP-2) – Other Utility Relocations**



WP-2 consists of utility relocations on 2<sup>nd</sup> Street, 21<sup>st</sup> Avenue West, 20<sup>th</sup> Avenue West (and adjoining alleys), and 19<sup>th</sup> Avenue West (refer to Project Issues map). Delivery of WP-2 will follow delivery of WP-1 (see schedule on page 19).

Work on 2<sup>nd</sup> Street consists of approximately two blocks of City street beginning at the mid-block between 22<sup>nd</sup> Avenue West and 21<sup>st</sup> Avenue West and extending to 20<sup>th</sup> Avenue West near Midtowne Manor. Water mains along this segment of 2<sup>nd</sup> Street consist of 16" steel, 36" steel and 6" cast iron pipe. The City has generally indicated that steel water mains are not of principle concern as far as their resilience to the disturbances associated with the anticipated construction activity and the City is not, at this time, considering these steel mains as needing to be replaced. The older cast main, which are a concern in terms of their condition and susceptibility to damage due to construction, will be replaced with new HDPE water main. Sanitary sewer in this section consists of 10" vitrified clay pipe which, according to City records, has been CIPP lined. The City has similarly indicated that lined sanitary pipe are not a concern with regard to the construction activity.



The TPI project will connect TH 53 SB off ramps and TH 53 NB on ramps to and from 21<sup>st</sup> Avenue West, respectively, and are another area with potential for utility relocations. The TPI project limits and need for utility relocations also extends further to the east where the TH 53 NB off ramp connects to 20<sup>th</sup> Avenue West (South) and 19<sup>th</sup> Ave West. There are also planned parking lots flanking TH 53 between 22<sup>nd</sup> Avenue West and 21<sup>st</sup>

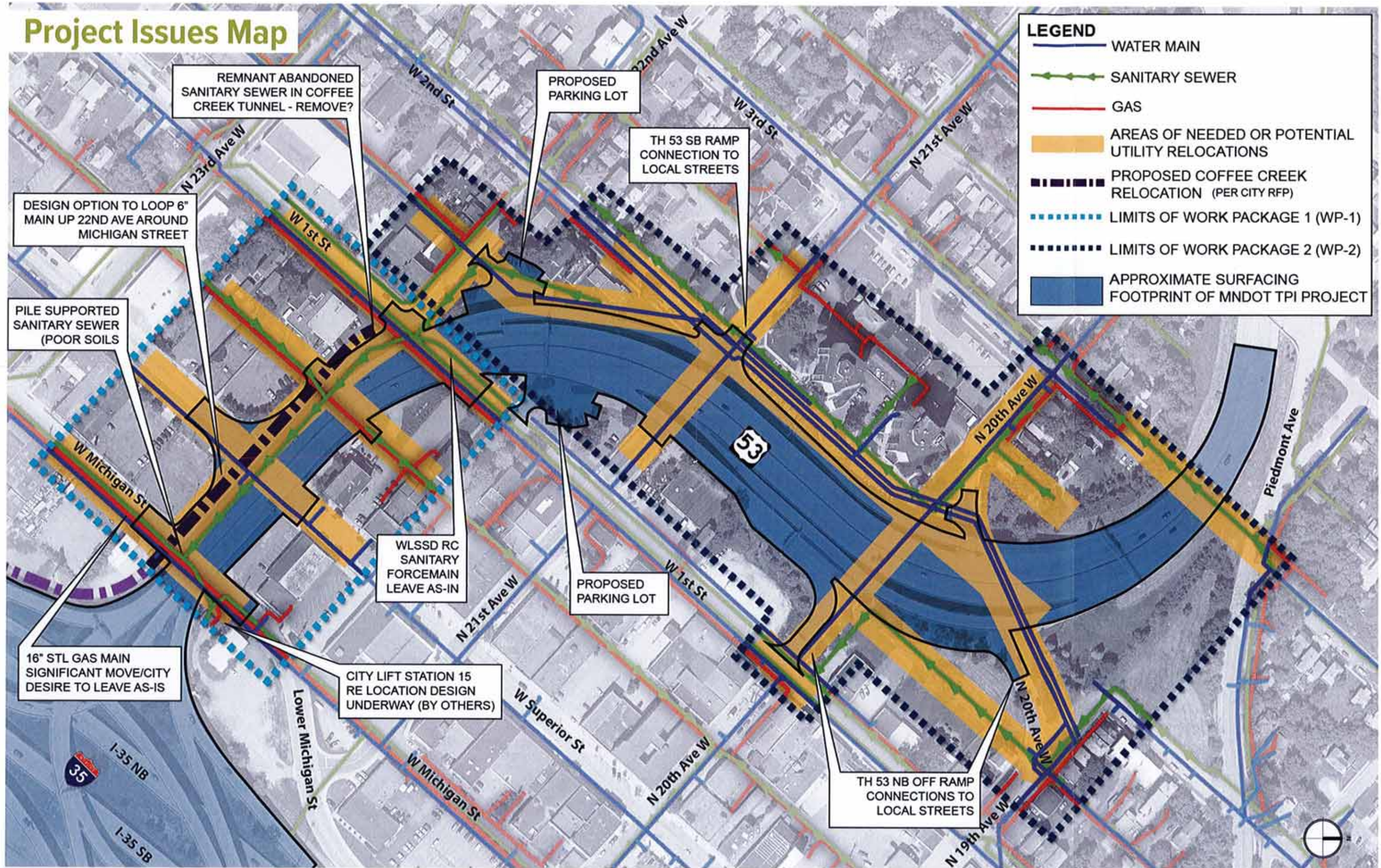
Avenue West. Water mains along 21<sup>st</sup> Avenue West consist of 6" cast iron from the 1880s as well as large diameter steel water main at the intersection of 2<sup>nd</sup> Street. On the east side of Midtowne Manor, the 20<sup>th</sup> Avenue West alignment shifts to become 19<sup>th</sup> Avenue West. This street forms the approximate limit line where the elevated bridge sections of TH 53 will transition to on grade construction heading north on Piedmont Avenue and is another area where utility evaluation and proximity to foundations and structure will be key. Utilities on this section of 20<sup>th</sup> Avenue West and 19<sup>th</sup> Avenue West consist of large diameter steel water main. As before, the City has indicated that barring direct conflicts, these steel water mains should be able to remain in-place. Based on available utility mapping adjoining Avenues contain primarily lined sanitary sewer and, again, barring direct conflicts with the proposed work, these lined pipes should be able to remain in-place.

The final segment of WP-2 consists of the portion of 3<sup>rd</sup> Street right-of-way that crosses TH 53 / Piedmont Avenue. 10" diameter sanitary crosses TH 53 / Piedmont in this area and is a candidate for replacement with PVC pipe.

Based on our discussion with the City, we understand that a number of key design details related to the TH 53 project as they affect WP-2 are still emerging as MnDOT's designer and CMGC continue to weigh options in the design. However, regardless of the final design selected in terms of structure, retaining walls, road and parking lot construction, LHB is committed to assisting the City with any needed utility relocation design and to meeting the timeline for the project.



# Project Issues Map





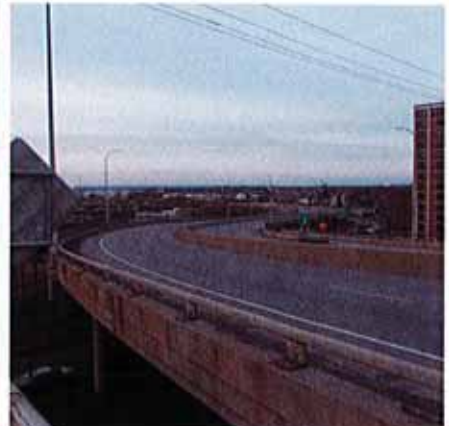
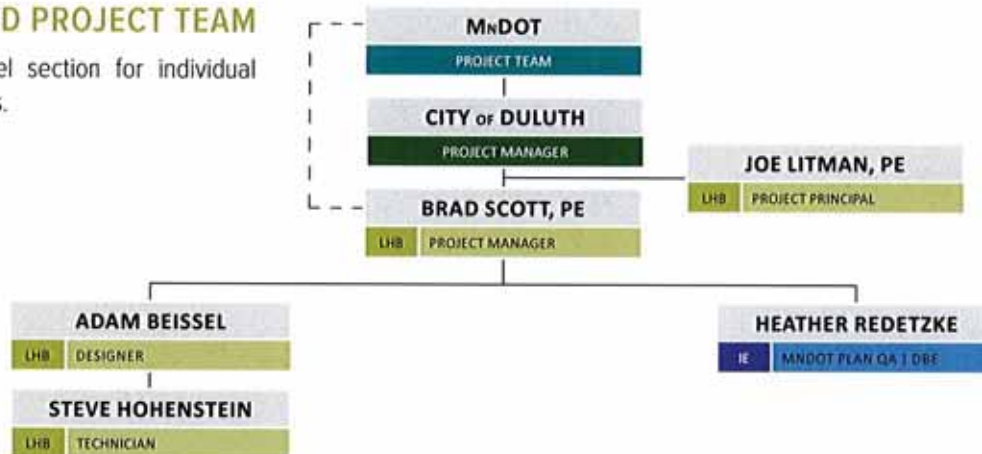
## EXPERIENCE

We have assembled a core team of experienced design staff with specific and working knowledge of City of Duluth and MnDOT construction standards and design experience with a track record of delivering successful projects particularly in setting with multiple agency involvement. Our staff is fluent in both MicroStation/GEOPAK and AutoCAD Civil 3D and MnDOT standards for plan sequence, bid items, and specifications and will ensure the project is seamlessly coordinated with MnDOT's team through design and delivered to the City in file formats that are readily utilized by City staff. Our design team also has strong experience in the design of HDPE water main systems for the City of Duluth including up to 20-inch water mains for the Superior Street and Michigan Street projects with a total design of HDPE water main systems exceeding 10,000 lineal feet of HDPE main in the past five years.

We have included Isthmus Engineering as our DBE team member on this project. LHB and Isthmus have a longstanding working relationship having most recently collaborated on the TPI Local Streets and TH 61 Grand Marais designs for MnDOT. We have included Heather Redetzke from Isthmus in a quality assurance role where will rely on Isthmus to provide an independent review of the plans to further ensure conformance with MnDOT standards and plan format.

## PROPOSED PROJECT TEAM

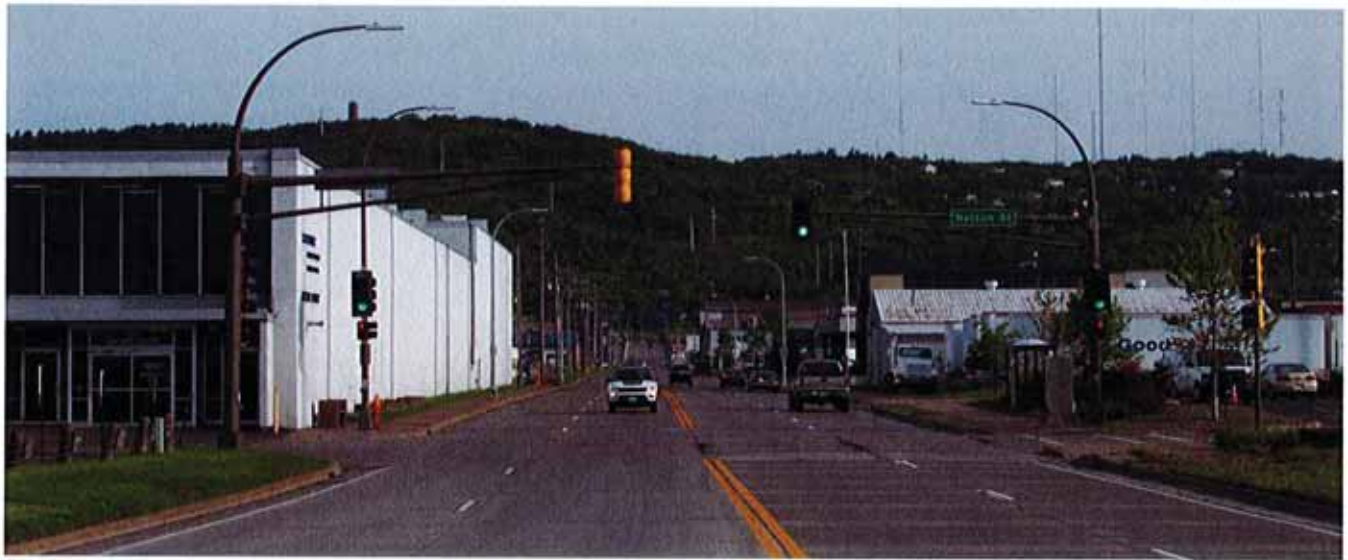
See Personnel section for individual team resumes.



# TPI Local Street Improvements

MnDOT | Duluth, MN

Experience



The proposed Twin Ports Interchange (TPI) Local Street Improvements project lays the groundwork for the major I-35, I-535, Highway 53 TPI project that will follow in 2020 by ensuring key local connections are ideally configured and in good condition to support traffic needs during the major project. A major focus of the design through the 30% design phase was the relocation of Coffee Creek at 22<sup>nd</sup> Avenue West which shifted the creek alignment from beneath TH 53 to the west and under 22<sup>nd</sup> Ave West to facilitate construction. LHB provided preliminary storm, sanitary, water and gas main as well as street and roadway design for the reconstruction of 22<sup>nd</sup> Avenue West. LHB also provided field topographic survey and performed an in situ investigation of the in-place Coffee Creek brick arch tunnel to assess its condition and determine options for connecting the new Coffee Creek box culvert to the in-place brick arch tunnel.

Broadly, the project consists of work within five unique roadway corridors in Duluth:

**Concrete pavement rehabilitation (CPR) on GARFIELD AVENUE:** from Superior Street to Nelson Street, approximately one mile of low-speed, urban major collector with ADT of 5,200. Garfield Avenue connects downtown Duluth, Lincoln Park, and Central Hillside to Duluth's Clure

Public Marine Port Terminal and industrial and warehouse area as well as I-535 and Superior.

**Mill and Overlay on RAILROAD STREET:** from Garfield Avenue to 5<sup>th</sup> Avenue West, just over one mile of low speed, urban major collector with an ADT of about 7,000 to 8,500 vpd linking Garfield Avenue to the DECC, Duluth Aquarium, Bayfront Park, Pier B and Canal Park Commercial Business District and serving industrial facilities in between.

**Bituminous Overlay on 27th AVENUE WEST:** from I-35 to Michigan Street, about 0.2 miles of urban, low-speed minor arterial serving more than 11,000 vpd consisting of local, commercial and freight traffic between I-35 and Superior Street / Michigan Street and flanked by local commercial businesses and restaurants.

**30% Design of Road and Utility Work on 22ND AVENUE WEST:** from above 1st Street to Michigan Street, just under two blocks of street reconstruction associated with the relocation of Coffee Creek.

**Bituminous Overlay on 46TH AVENUE WEST:** from I-35 to Garfield Avenue about 1-mile of urban, low speed arterial street including signal revisions and ADA improvements.

## Project Type Road Design

### Relevant Features

- Coffee Creek Relocation
- Preliminary HDPE Water Design
- Preliminary Sanitary Design

### Personnel

Joe Litman, Principal  
Brad Scott, Project Manager  
Adam Beissel, Designer  
Steve Hohenstein, Technician

### Design Team Members Isthmus Engineering



# Superior Street Reconstruction

Duluth City Offices | Duluth, MN

Experience



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. 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 also included new steam and hot water systems. LHB worked closely with the City's hot water operator to provide a utility design that was coordinated throughout preliminary and final design. LHB designed the new steam system mains and services.

LHB's design also incorporated the design of a new primary electrical duct bank system for Minnesota Power including concrete duct bank and electrical vault manholes.

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

## Project Type

Street and Utility Reconstruction

## Relevant Features

- HDPE Water Main Design
- Gas Main Design
- Sanitary Sewer Design

## Personnel

Joe Litman, Principal  
Brad Scott, Project Manager  
Adam Beissel, Designer  
Steve Hohenstein, Technician

## Design Team Members

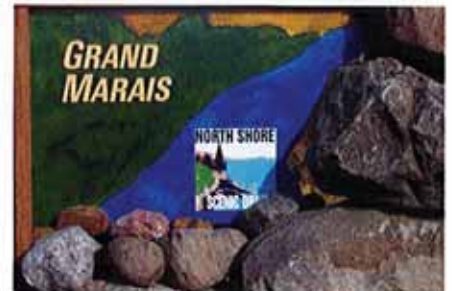
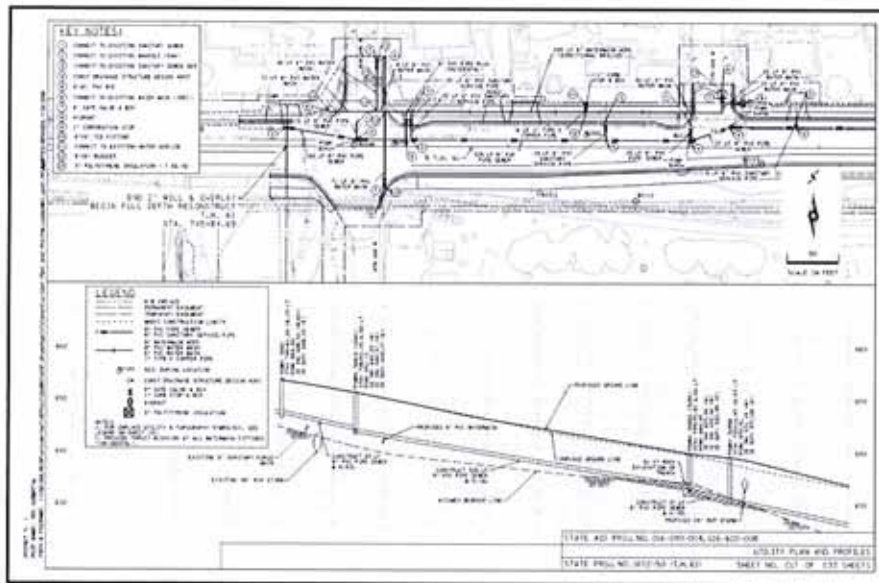
Isthmus Engineering



# Water and Sanitary Replacement for MnDOT TH 61 Highway Construction

City of Grand Marais | Grand Marais, MN

Experience



MnDOT's TH 61 Grand Marais project will fully reconstruct approximately eight blocks of TH 61 between 8th Avenue West and Broadway and partially reconstruct another 0.5 miles of TH 61 between Broadway and the Gunflint Trail (CSAH 12) in Grand Marais. The project also included storm sewer design, new streetscape, and lighting. Along Minnesota's North Shore, Trunk Highway 61 (TH 61) is the key regional corridor connecting local communities and serves as a vital economic link for businesses, industry, and tourism to northern Minnesota and Canada.

In total, MnDOT's TH 61 project will rehabilitate or reconstruct approximately 11.3 miles of TH 61 including approximately 10 miles of mill and overlay north and south of Grand Marais.

The City of Grand Marais hired LHB to provide water and sanitary sewer design to replace their existing system beneath the MnDOT trunk highway within the project construction limits. Existing water consisted of old cast iron water main and sanitary consisted of vitrified clay pipe. The City elected to replace water and sanitary main within the footprint of MnDOT's project due the condition of the systems.

The City elected to have its utility work bid and built as part of the MnDOT project. LHB prepared the proposed utility design in accordance with MnDOT's plan standards including a Schedule of Quantities, utility tabulations, utility removal plans, proposed water and sanitary sewer plan and profile sheets, temporary water plans, and construction details.

LHB worked closely with MnDOT and City staff to coordinate the work. The project is phased between two construction seasons and required temporary connections to bridge the phase breaks for the utilities.

The plans were prepared in MicroStation and utilized GEOPAK and this allowed for seamless coordination between the roadway, grading plans and the City design. Since Grand Marais is a smaller municipality and doesn't maintain its own utility specification or details, LHB utilized the City of Duluth's Construction Specifications for the utility design and adapted those to the MnDOT plan structure and pay item requirements.

## Project Type

Water and Sanitary Sewer Replacement

## Relevant Features

- HDPE Water Main Design
- Sanitary Sewer Design
- MnDOT Plan for City of Grand Marais

## Personnel

Joe Litman, Principal  
Brad Scott, Project Manager  
Adam Beissel, Designer  
Steve Hohenstein, Technician

## Design Team Members

Isthmus Engineering



# MnDOT Grand Avenue Reconstruction

Duluth City Offices | Duluth, MN

Experience



LHB prepared plans for the City of Duluth for incorporation in the bid documents for this MnDOT project.

MnDOT's Grand Avenue project partially reconstructed Grand Avenue from its intersection with I35 out to Morgan Park near Beck's Road. Concurrent with the project, the City of Duluth received a corridor improvement grant from the State to allow for certain amenity and site upgrades throughout the project corridor based on previous study work that identified areas for enhanced pedestrian facilities or safety improvements as well as aesthetic improvements such as landscaping. The City had also received and EPA grant for stormwater and site improvements at the City Zoo.

The City of Duluth hired LHB to assist with the design of the corridor improvements which included new pedestrian scale lighting, landscaping, stormwater treatment ponds, and a new access road to the Zoo. New pedestrian scale lighting was provided at select DTA locations throughout the

corridor. Pedestrian crossing systems were installed at key crossing locations. LHB provided roadway and site design for the Zoo entrance road at 72nd Avenue West as well as design of a new DTA pull out.

MnDOT and the City agreed to have LHB provide stormwater design for the construction of two stormwater plans.

City of Duluth Engineering also hired LHB as part of the project to design water and sanitary related to the dead ending of local streets on the project

LHB prepared a subset plan section to the overall MnDOT plan set that included a Schedule of Quantities, road and utility tabulations, removal plans, site plans, roadway plans, utility plans, and cross sections.

All work was completed in MicroStation format and utilized GEOPAK for the design. LHB worked with MnDOT and City staff throughout the design to ensure coordination of the project design documents and ensure compliance with MnDOT CADD standards.

## Project Type

Utilities, Stormwater Management, Landscaping, and Lighting

## Relevant Features

- HDPE Water Main Design
- MnDOT Plan for City of Duluth

## Personnel

Joe Litman, Principal  
Brad Scott, Project Manager



## Road and Utility Projects

Duluth City Offices | Duluth, MN

Experience

### Hawthorne Road Reconstruction



#### Project Type

Utility and Roadway Engineer Design

#### Relevant Features (optional)

- HDPE Water Main Design
- Sanitary Sewer Design

#### Personnel

Joe Litman, Principal  
Brad Scott, Project Manager  
Steve Hohenstein, Technician

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 full-depth concrete pavement 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 State 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.

### Duluth SIP to Oxford / Livingston / Glenwood



#### Project Type

Utility and Roadway Engineer Design

#### Relevant Features

- HDPE Water Main Design
- Sanitary Sewer Design

#### Personnel

Joe Litman, Principal  
Brad Scott, Project Manager  
Steve Hohenstein, Technician

The Duluth 2012 SIP Project of Oxford, Livingston, and Glenwood Avenues was a \$3.8 million Municipal State Aid reconstruction of approximately one-mile of city street in Duluth's Morley Heights and Hunter's Park neighborhoods. The project included storm sewer layout and design for approximately 6,500 feet of storm

sewer and over 110 drainage structures including water quality vaults for storm water treatment. The project also included redesign of municipal utility infrastructure including HDPE water main and PVC sanitary sewer.



# Kirkus Street Roadway, Utilities and Bridge

Proctor City Offices | Proctor, MN

Experience



LHB worked with the City of Proctor for the design of the new Kirkus Street Roadway. Kirkus Street was a new urban collector roadway which consisted of widening of one block of existing roadway and the construction of nearly one mile of roadway along a new forested alignment. The project also included a new bridge structure over the CN Railroad and water, gas, and sanitary sewer utilities. The project was funded through a combination of City and Federal funds. LHB services included environmental and federal reporting, topographic survey, design and plans for roadway, bridge and utilities, as well as, construction administration. Utility work included new HDPE water main along the entire project length including new water services and new PVC sanitary

main and services. LHB administered the project in construction for the City of Proctor which included oversight of the utility installations. As a new roadway on previously undeveloped land, the project was phased over two years to allow for surcharging of the bridge embankment and roadway subgrade.

Kirkus Street preliminary engineering started in 2006 and LHB successfully managed the project budget and schedule throughout the five year design phase. This was accomplished by knowing the projects critical path and putting priority on those tasks.

## Project Type

Roadway and Utility Design

## Relevant Features

- HDPE Water Main Design
- Sanitary Sewer Design

## Personnel

Joe Litman, Principal  
Brad Scott, Project Manager  
Steve Hohenstein, Technician



## Joseph D. Litman, PE

### Project Principal

Personnel

With 32 years of experience, Joe serves as the Manager of LHB's Transportation and Structures Group, specializing in the management and design of civil and structural projects. His responsibilities include all phases of project coordination and design with emphasis on team leadership, organization and quality delivery. Joe's design experience encompasses all facets of civil engineering projects, including environmental and federal reporting, documentation, and design of state and county highways, municipal roadways, sanitary and storm sewer systems, bridges, and industrial structures. Joe's structural design experience for new bridges includes steel plate girder, rolled steel beam, steel truss, concrete slab, prestressed concrete beam and timber bridges. Joe is a certified Minnesota Bridge Inspection Team Leader and he has been performing bridge safety and condition inspections for more than 25 years. His safety inspection experience encompasses a wide range of structures from steel fixed and moveable trusses to concrete arch, concrete girder, steel beam, and timber beam to steel, aluminum and even timber culvert structures. Joe also has significant experience with the rehabilitation of historic bridge structures, including steel truss, stone and concrete arch structures.

Joe began his career working for the Minnesota Department of Transportation and throughout has made an emphasis to understand and contribute to MnDOT's program. He has a thorough understanding of MnDOT's requirements, processes and standards and with Lake Superior College has also developed and presented courses to educate others on these requirements including courses in Bridge Rating, Bridge Plan Reading and Bridge Construction Inspection Certification. Joe has led LHB's design team through the project development and final plan phases of numerous large and small scale trunk highway road and bridge projects. Many of these projects have been fast tracked or unique specialty projects with proven successful delivery.

### Project Experience

- TPI Local Street Improvements: Duluth City Offices; Duluth, MN - LHB provided preliminary storm, sanitary, water and gas main as well as street and roadway design for the reconstruction of 22<sup>nd</sup> Avenue West in preparation for the major I-35, I-535, and Highway 53 TPI project to follow in 2020. Joe served as the project principal.
- Superior Street Reconstruction SAP 118-171-006; Duluth City Offices; Duluth, MN - Reconstruction of 11 blocks of Superior Street in Downtown Duluth's commercial business district including full roadway reconstruction (new concrete pavement), storm, water, sanitary sewer, electrical duct bank and gas mains. Provided preliminary design, final design, and construction support. Joe was the project principal for the project.
- Water and Sanitary Replacement for MnDOT TH 61 Highway Construction; City of Grand Marais; Grand Marais, MN - The project includes storm sewer design, new streetscape, and lighting. The City of Grand Marais hired LHB to provide water and sanitary sewer design to replace their existing system beneath the MnDOT trunk highway within the project construction limits. Joe is the project principal.
- MnDOT Grand Avenue Reconstruction; Duluth City Offices; Duluth, MN - The City of Duluth hired LHB to assist with the design of the corridor improvements which included new pedestrians scale lighting, landscaping, stormwater treatment ponds, and a new access road to the Lake Superior Zoo. Joe served as the project principal.
- SAP 118-080-049 Hawthorne, Vermillion, and St. Marie; Duluth City Offices - Duluth, MN - Reconstruction of six blocks of city streets including bituminous and concrete pavement, concrete pavement rehabilitation, water main pipe bursting, storm sewer repairs, and historic bridge repairs. Joe served as project principal
- SP 069-597-005 Kirkus Street Roadway and Bridge; Proctor City Offices; Proctor, MN - New, urban collector roadway which consisted of widening of one block of existing roadway and the construction of nearly one mile of roadway along a new forested alignment; Environmental and federal reporting, topographic survey, design and plans for roadway, bridge and utilities, as well as, construction administration. Joe served as project principal.



**Registration**  
Licensed Professional Engineer  
in Minnesota

**Certification**  
MnDOT Certified Bridge Inspection  
Team Leader

**Affiliation**  
American Society of Civil Engineers,  
Duluth Section, Past President  
Lake Superior College, Advisory Board

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



## Brad P. Scott, PE

### Project Manager

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 also including pre-design, permitting, and project development reporting. He is fully proficient in Microstation and the Geopak Civil Design Suite as well as AutoCad. Brad is very well versed in MnDOT Trunk Highway, State Aid, and Federal Highway design standards and procedures. His construction management experience is derived from his position as a project manager and engineer for a heavy industrial contracting firm in Alaska and Washington specializing in the construction of rural and municipal water and sewer systems, roads, airports, and land subdivisions. 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 well versed in the state and federal construction administration documentation processes.

In his role as project manager, 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.

Personnel



**Registration**  
Licensed Professional Engineer  
in Minnesota

**Certification**  
MnDOT Contract Administration  
MnDOT Contract Time

**Affiliation**  
American Council of Engineering  
Companies of Minnesota  
Concrete Paving Association of  
Minnesota

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

### Project Experience

- TPI Local Street Improvements; Duluth City Offices; Duluth, MN - LHB provided preliminary storm, sanitary, water and gas main as well as street and roadway design for the reconstruction of 22nd Avenue West in preparation for the major I-35, I-535, and Hwy. 53 TPI project to follow in 2020. Brad is serving as the project manager.
- Superior Street Reconstruction SAP 118-171-006; Duluth City Offices; Duluth, MN - Reconstruction of 11 blocks of Superior Street in Downtown Duluth's commercial business district including full roadway reconstruction (new concrete pavement), storm, water, sanitary sewer, electrical duct bank and gas mains. Provided preliminary design, final design, and construction support. Brad was the project manager and engineer for the project.
- Water and Sanitary Replacement for MnDOT TH 61 Highway Construction; City of Grand Marais; Grand Marais, MN - The project includes storm sewer design, new streetscape, and lighting. The City of Grand Marais hired LHB to provide water and sanitary sewer design to replace their existing system beneath the MnDOT trunk highway within the project construction limits. Brad is the project manager.
- MnDOT Grand Avenue Reconstruction; Duluth City Offices; Duluth, MN - The City of Duluth hired LHB to assist with the design of the corridor improvements which included new pedestrians scale lighting, landscaping, stormwater treatment ponds, and a new access road to the Lake Superior Zoo. Brad served as the project manager.
- SAP 118-080-049 Hawthorne, Vermillion, and St. Marie; Duluth City Offices - Duluth, MN - Reconstruction of six blocks of city streets including bituminous and concrete pavement, concrete pavement rehabilitation, water main pipe bursting, storm sewer repairs, and historic bridge repairs. Brad was responsible for design and construction administration.
- SP 069-597-005 Kirkus Street Roadway and Bridge; Proctor City Offices; Proctor, MN - New, urban collector roadway which consisted of widening of one block of existing roadway and the construction of nearly one mile of roadway along a new forested alignment; Environmental and federal reporting, topographic survey, design and plans for roadway, bridge and utilities, as well as, construction administration. Brad was responsible for construction administration.



## Adam D. Beissel

### Civil Designer

Adam serves as a civil designer in LHB's Public Works and Structures Group. He has four years of experience providing design services for a broad variety of clients and projects types. He also has four years of experience in construction inspection in accordance to MnDOT and Federal requirements. His project experience covers a broad spectrum, including site design, city streets, and large scale facilities. He has been part of the projects in a variety of capacities including design, construction inspection and administration, traffic control, and owner's representative. He is dedicated to providing quality designs that meet the desires of the client and members of the community they serve. In addition to his civil experience, he worked in research for 11 years where he developed strong adherence to standards and codes, attention to detail and providing quality products.

Adam uses his software experience in AutoCAD, Civil 3D, GEOPAK and Microstation to provide quality plans to meet the clients expectations.

For the projects listed, Adam served as the project designer.

- TPI Local Street Improvements: Duluth City Offices; Duluth, MN
- Superior Street Reconstruction SAP 118-171-006; Duluth City Offices; Duluth, MN
- Water and Sanitary Replacement for MnDOT TH 61 Highway Construction; City of Grand Marais; Grand Marais, MN
- SAP 118-080-049 Hawthorne, Vermillion, and St. Marie; Duluth City Offices - Duluth, MN

### Personnel



#### Certification

**MnDOT;** Aggregate Production, Grading and Base I and II, Bituminous Street I and II, Concrete Field I

**ACI;** ACI Concrete Field Testing Technician – Grade I

#### Affiliation

American Society of Civil Engineers, University of Minnesota Duluth Chapter, Past Vice President

#### Education

Bachelor of Science, Civil Engineering  
University of Minnesota, Duluth

## Steven M. Hohenstein

### Senior Technician

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.

For the projects listed, Steve served as the project technician.

- TPI Local Street Improvements: Duluth City Offices; Duluth, MN
- Superior Street Reconstruction SAP 118-171-006; Duluth City Offices; Duluth, MN
- Water and Sanitary Replacement for MnDOT TH 61 Highway Construction; City of Grand Marais; Grand Marais, MN
- MnDOT Grand Avenue Reconstruction; Duluth City Offices; Duluth, MN
- SAP 118-080-049 Hawthorne, Vermillion, and St. Marie; Duluth City Offices - Duluth, MN



#### Certification

**MnDOT;** Aggregate Production, Grading and Base I and II, Bituminous Street I and II, Concrete Field I & II

#### Education

Bachelor of Arts, Industrial Technology  
Bemidji State University

Associate of Applied Science,  
Manufacturing Engineering Technician



## Heather L Redetzke, PE

MnDOT Plan QA | Isthmus Engineering

Personnel

Heather is a Professional Engineer with 18 years of transportation design experience. Her experience includes all aspects of preliminary and final design for numerous roadway projects including: geometric design, alignments, profiles, typical sections, cross sections, earthwork, ADA design, specifications, quantities, cost estimates, plan production and review. Heather also specializes in Quality Management. Her attention to detail, in-depth knowledge of MnDOT design standards, and breadth of experience working on numerous MnDOT design projects make her ideally-suited to serve on any project.



**Registration**  
Licensed Professional Engineer  
in Minnesota and South Dakota

**Education**  
Bachelor of Science, Civil Engineering  
South Dakota State University

### Project Experience

- TH 87 Rural Improvements, Frazee, MN – Roadway design task manager for preliminary design and layout development.
- Twin Ports Interchange, Duluth, MN – Roadway design task manager for final design of TH 53 segment.
- TH 75 Halstad and Hendrum Reconstruction (MnDOT District 2) – Final Design Task Manager responsible for coordinating final deliverables for the 2019 urban reconstruction along TH 75 through the Cities of Halstad & Hendrum.
- I- 694 / Rice Street Interchange (Ramsey County) – Final Design Task Manager responsible for coordinating final deliverables for the 2019 reconstruction of the interchange at I-694 and Rice Street (CSAH 49) in the Cities of Shoreview, Arden Hills & Vadnais Heights, MN.
- Pre-letting Support – Performed, or is performing, independent design reviews, to ensure the plans conform to required design standards and procedures, on the following projects:
  - TH 65, Aitkin County, MN | MnDOT D1
  - TH 60, Jackson County, MN | MnDOT D7
  - TH 74, Wabasha County, MN | MnDOT D6
  - TH 39, St Louis County, MN | MnDOT D1
  - TH 65, Aitkin & Itasca County, MN | MnDOT D1
  - TH 94, Ramsey County, MN | MnDOT Metro
- Independent Plan Reviews – Performed independent technical plan reviews at specific project delivery milestones to ensure accuracy and that appropriate design standards were incorporated:
  - TH 210 Mill, Full Depth Reclamation and Overlay, Crow Wing County, MN | MnDOT D3
  - TH 55 Barret, MN (for WSN) | MnDOT D4
  - TH 135 Biwabik, MN (for WSN) | MnDOT D1
  - Gold Line BRT, Ramsey County, MN

## KNOWLEDGE OF DULUTH REQUIREMENTS

LHB has a longstanding and working understanding of the City of Duluth's Construction Standards and details by virtue of our track record of working on successful projects for the City of Duluth. We understand and share the City's high expectations for project designs including high quality and clear documents that communicate the City's requirements and minimize errors and conflicts in the work. We further understand the particular need on this project to maintain the City's requirements for its utilities while adapting the standards and details for their use on a MnDOT let project. We will work to ensure that the City's goals are met while providing a plan that meets MnDOT's standards for plan production and format.

## WORK PLAN

### INITIAL SITE VISITS AND CONSULTATION

We will work with the City and MnDOT to get our team integrated into the design as quickly as possible. We will review MnDOT's existing topographic and survey data for completeness as it relates to the proposed utility design. We will work with the City to compile and review record and as-built information related to the proposed design. The City has indicated that they would like a field review of all sanitary structures to ensure the MnDOT recorded inverts are accurate and to assess the condition of the sanitary manholes. We will summarize our initial findings and basis for the project design in a design summary and criteria memorandum that will be the guiding plan for the design through the final plans and specifications phase.

#### TASK 1 - Initial Site Visits and Consultations

LHB	<ul style="list-style-type: none"><li>• Participate in coordination meeting with City staff to review preliminary mapping for completeness and confirm project scope and complexity.</li><li>• Review and establish project design criteria.</li><li>• Participate in site visit with City staff to walk site with mapping in hand and review project issues.</li><li>• Field verify sanitary manhole inverts throughout the project limits and complete manhole condition reports.</li></ul>
City	<ul style="list-style-type: none"><li>• Ensure key city staff members participate in design meeting and site visit as desired.</li><li>• Route and review meeting minutes and provide feedback on project Design Summary and Criteria Memorandum.</li></ul>
Deliverables	<ul style="list-style-type: none"><li>• Meeting Minutes</li><li>• Design Summary and Criteria Memorandum</li></ul>

### PLANS AND SPECIFICATIONS

This task includes the completion of a final design and preparation of the detail construction plans. We anticipate using MnDOT's base and design files as backgrounds for the proposed utility relocation designs. The final plans will be prepared in accordance with City and MnDOT requirements and will include construction notes, charts/tabulations, utility removal plans, utility plan and profile sheets, and construction details. We anticipate that MnDOT will be responsible for third party utility coordination, traffic control, roadway construction and/or restoration, and storm sewer design as part of its plan set but LHB can certainly help with this work if it is determined necessary.

#### TASK 2 - Plans and Specifications

LHB	<ul style="list-style-type: none"><li>• Complete 30% design – set utility geometry including horizontal location, vertical grades, and utility connection points. Evaluate feasibility of proposed utility improvements.</li><li>• Complete and submit 60% design plans – complete design to the level that all significant design decisions have been addressed to properly construct the project including assessment of construction phasing and maintenance of utility services during construction (temporary water main or sanitary bypasses, as needed).</li><li>• Complete and submit 90%, 95%, and 100% plan submittals – complete design to biddable level including quantity takeoffs, construction details, and statement of estimated quantities.</li><li>• Participate in (12) project coordination meetings with MnDOT and City staff</li></ul>
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## TASK 2 - Plans and Specifications - continued

City	<ul style="list-style-type: none"><li>• Provide feedback and comment on 30% design.</li><li>• Review and provide feedback on 60% design plans as desired.</li><li>• Review and provide feedback on 90% plans.</li></ul>
Deliverables	<ul style="list-style-type: none"><li>• 30% Design Submittals for WP-1 and WP-2</li><li>• Meeting minutes/summaries</li><li>• 60% and 90% Design Submittals to City for WP-1 and WP-2.</li><li>• 95% Design Submittals for WP-1 and WP-2</li><li>• 100% Design Submittals for WP-1 and WP-2.</li><li>• Bid-ready Special Provisions.</li></ul>

## COST ESTIMATE

We will prepare and update construction cost estimates throughout the design process that mirror the project SEQ and appropriately split costs as required between project funding sources, as required. We rely on our past experience with similar projects and City provided cost data to provide reliable estimates of Contractor bid costs. Updated estimates will be provided with the 30%, 60%, 90%, and 100% design submittals.

## TASK 3 - Cost Estimate

LHB	<ul style="list-style-type: none"><li>• Prepare 30%, 60% and 90% cost estimates.</li><li>• Prepare 100% engineer's estimated (final detailed estimate).</li></ul>
City	<ul style="list-style-type: none"><li>• Provide recent historical cost data and bid tabs.</li><li>• Review and provide feedback on estimates as desired.</li></ul>
Deliverables	<ul style="list-style-type: none"><li>• 30%, 60%, 90% and 100% engineer's estimates.</li></ul>

## BIDDING

LHB will be available to answer any questions that may arise during bidding. If required, we will provide any formal clarifications or addenda that cannot be readily resolved by direct reference to the plans and special provisions. At the conclusion of the design process, our team will prepare and provide a comprehensive submittal package that includes digital and hard copies of the final plans, design calculations, quantity calculations, estimates, and special provisions for all work.

## TASK 4 - Bidding

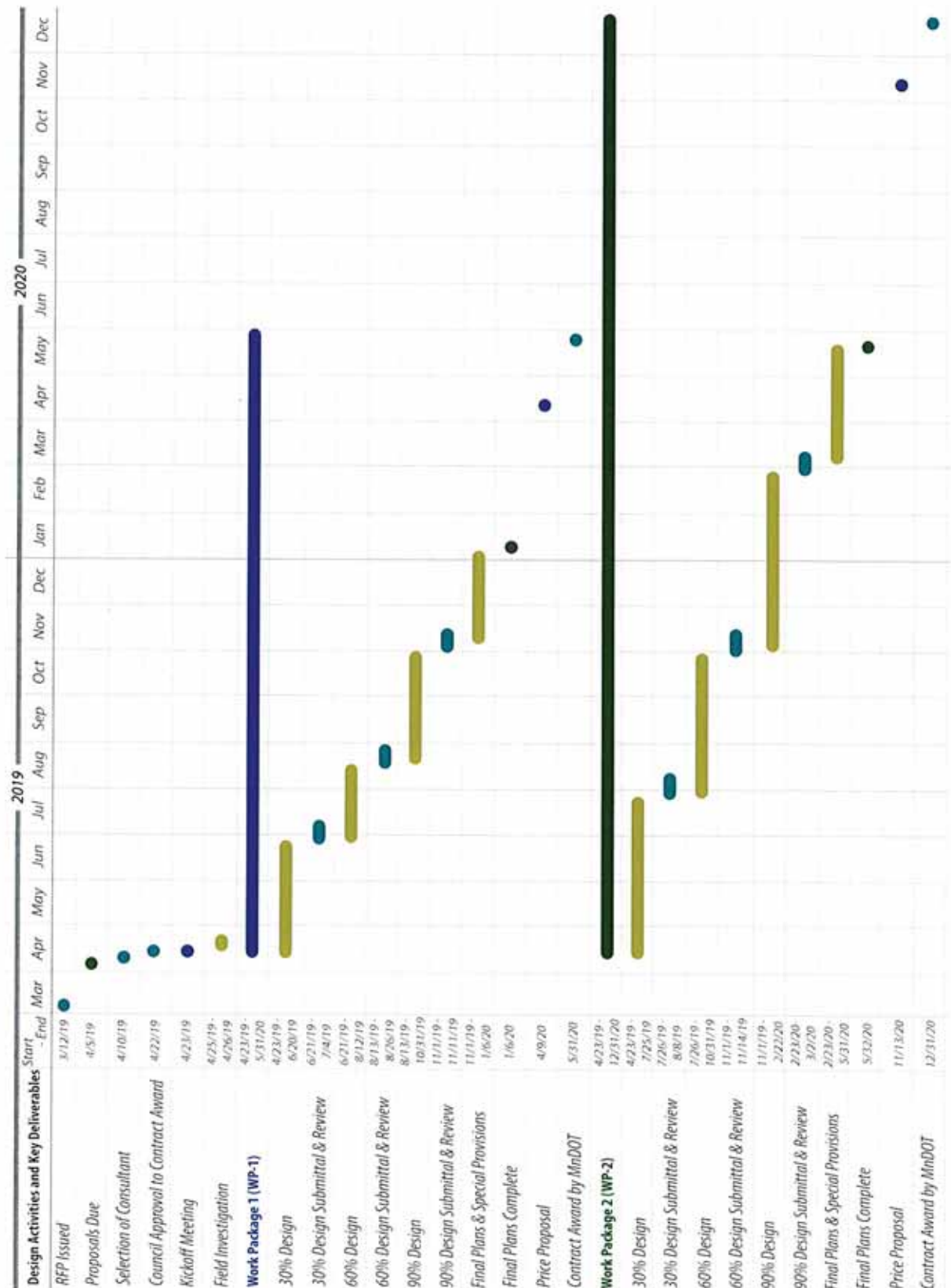
LHB	<ul style="list-style-type: none"><li>• Answer questions during bidding.</li><li>• Prepare and provide a complete package of all design files to the City of Duluth including both printed and digital copies of the design files.</li><li>• Translate the final MicroStation design files into ACAD format for City use.</li></ul>
City	<ul style="list-style-type: none"><li>• Coordination during the MnDOT led advertising, bidding, and letting process.</li></ul>
Deliverables	<ul style="list-style-type: none"><li>• Clarifications or addenda, as required.</li><li>• Complete set of bid document files in MS Word, PDF and ACAD format.</li></ul>

# WORK PLAN

LHB		Project Name TH 53 & I35 Utility Relocations				Project Number 190201	
WORK PLAN		Client City of Duluth				Date 4/5/19	
		Preparer LHB					
Work Task	Description	LHB					
		Joe Litman	Brad Scott	Adam Beissel	Steve Hohenstein	Survey Tech	Heather Redetzke
1.00	Initial Site Visits & Consultations	0	12	18	0	8	0
	Project Kickoff / Initial Site Visit		4	4			
	Review available information and establish project design criteria		8	12			
	Field Reports of Sanitary Manholes			2		8	
2.00	Plans and Specifications	4	194	263	274	0	24
	Project Management						
	Work Coordination, administration and communications (12 months)	2	24				
	Progress Meetings with City and MnDOT (assume 12)		24				
	Work Package 1						
	General Layout (1 sheet) @ 1" = 100'		4	2	6		
	Quantity Charts / Tabulations (6 sheets)		1	18	36		
	Construction Details (8 sheets)		7	28	14		
	Removals Plans (7 sheets) @ 1" = 40'		21	56	56		
	Utility Plan and Profile (7 sheets) @ 1" = 40' scale		4	12	12		
	Temporary Water Plans (2 sheets)		5	10	20		
	City and MnDOT review Corrections		2				
	Special Provisions		15				12
	Quality Control / Quality Assurance Reviews (30%, 60%, 90%, 95%, 100%)	1	15				
	Plan Review Meetings with City/MnDOT (30%, 60% and 90%)		6				
	Plan Submittals (30%, 60%, 90%, 95%, 100%)		5	10			
	Work Package 2						
	General Layout (1 sheet) @ 1" = 100'		4	2	6		
	Quantity Charts / Tabulations (6 sheets)		1	18	36		
	Construction Details (8 sheets)		6	24	12		
	Removals Plans (6 sheets) @ 1" = 40'		28	48	48		
	Utility Plan and Profile (6 sheets) @ 1" = 40' scale		4	15	20		
	Temporary Water Plans (3 sheets)		5	10			
	City and MnDOT review Corrections		2				
	Special Provisions		15				12
	Quality Control / Quality Assurance Reviews (30%, 60%, 90%, 95%, 100%)	1	15				
	Plan Review Meetings with City/MnDOT (30%, 60% and 90%)		6				
	Plan Submittals (30%, 60%, 90%, 95%, 100%)		5	10			
3.00	Cost Estimate	0	5	10	0	0	0
	30%, 60%, 90% and 100% Cost Estimates		4	8			
	Final Cost Estimate		1	2			
4.00	Bidding	0	2	6	0	0	0
4.01	Clarifications or Addenda		2	6			
	Total Hours	4	213	297	274	8	24

## WORK SCHEDULE

LHB is committed to meeting the project work schedule shown.



## REFERENCES

**Michael Kalnbach - Project Engineer**  
**MnDOT - District 1**  
 michael.kalnbach@dot.state.mn.us  
 218.725.2745

**Krysten Foster - County Engineer**  
**Lake County / Cook County**  
 krysten.foster@co.cook.mn.us  
 218.834.8380

**Jim Foldesi - Highway Engineer / Public Works Director**  
**St. Louis County Public Works Department**  
 foldesij@stlouiscountymn.gov  
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**Addendum # 1**  
**RFP 19-07AA**  
**TH 53 & I-35 UTILITY RELOCATIONS (Project 1825)**

This Addendum modifies the project completion dates in the Request for Proposal originally issued March 12, 2019.

**PROJECT COMPLETION DATES (rev 3-15-19)**

**March 12, 2019**

April 5, 2019  
April 10, 2019  
April 22, 2019

RFP Issued  
Proposals Due  
Selection of Consultant  
Council Approval to Award Contract

**Work Package One:**

June 21, 2019  
August 13, 2019  
November 1, 2019  
January 6, 2020  
April 9, 2020  
May 31, 2020

30 % Plans (WP-1) submitted for City review  
60 % Plans (WP-1) submitted for City & MN/DOT review  
90 % Plans (WP-1) submitted for City & MN/DOT review  
Final Plans (WP-1) and Special Provisions complete  
WP-1 Price Proposal Date (aka bids open)  
WP-1 Contract Awarded by MN/DOT

**Work Package Two:**

**July 26, 2019**

November 1, 2019  
February 23, 2020  
May 31, 2020  
November 13, 2020  
December 31, 2020

30 % Plans (WP-2) submitted for City review  
60 % Plans (WP-2) submitted for City & MN/DOT review  
90 % Plans (WP-2) submitted for City & MN/DOT review  
Final Plans (WP-2) and Special Provisions complete  
WP-2 Price Proposal Date (aka bids open)  
WP-2 Contract Awarded by MN/DOT

Please acknowledge receipt of this Addendum by including a copy with your proposal. This addendum will not be included in the 20-page limit.

Posted: March 15, 2019



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**Addendum # 2**  
**RFP 19-07AA**  
**TH 53 & I-35 UTILITY RELOCATIONS (Project 1825)**

This Addendum serves as notification that the following supplemental information is attached and available on the city website:

1. Preliminary (30%) design drawing for the Coffee Creek replacement box culvert
2. City of Duluth GIS System Map for the TH53-I35 area.

Please acknowledge receipt of this Addendum by including a copy with your proposal. This addendum will not be included in the 20-page limit.

Posted: March 15, 2019