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February 13, 2018

Duncan C. Schwensohn, PE  
Senior Engineer  
City of Duluth  
411 West First Street, Room 211

**SUPERIOR STREET RECONSTRUCTION  
FINAL DESIGN PHASE  
CITY PROJECT 1507TR  
CITY CONTRACT NO. 22759**

In accordance with our ongoing discussions and final design work on the project we have prepared the enclosed fee estimate tabulating hourly and additional costs related to the contract.

A summary description of additional project services incorporated by this supplement follows:

**Revised Project Scope**

At certain points during the final design, additional design tasks were required due to work activities for which scope could not be known at the time of initial pricing (vault work), expanded project scope, or as new information became available that required a revised design approach or additional effort to address. These items include the tasks outlined below.

1. MnDOT Mesaba Project—LHB provided additional services to coordinate the project sequencing and staging activities with MnDOT's 2018 project at Mesaba Avenue. MnDOT's Mesaba project abuts Phase 1 of the Superior Street project and presents logistical and coordination issues for both projects that was not identified until the final design was well underway.
  - a. LHB initiated and facilitated (3) coordination meetings with MnDOT staff, MnDOT's Consultant staff and the project design team including meeting preparation and minutes to discuss and resolve key issues around the simultaneous timing and work of the projects. The information from the meeting affected the overall project sequencing

- and staging and required modifications to the plans and special provisions to address those issues.
- b. Plan changes for the project coordination included additional work west of the originally planned project start to bring the project streetscape to bear on areas to the west of the planned construction start. Project design drawings were shared between the City and MnDOT team's to ensure coordination. The change necessitated additional plan sheets and design effort to cover the grading, paving and utility work in the area.
  - c. Quantity changes were required pending final Agreement between MnDOT and City to address participating and non-participating costs. The changes required modifications to charts and SEQ.
2. Revised Bidding Approach—As a result of the State Legislature providing funding sufficient for only the first two phases of the project hot water system, the project bidding phase will be unable to award the entire project and the award of the third phase of the project will be conditional on the legislature approving the remaining hot water funding for the project in 2018. The original contract approach was to bid and award the complete project. Due to the funding constraints, additional effort will be required to completely separate and manage the bid items and quantities by phase necessitating the preparation of (4) separate Statements of Estimated Quantities by phase. The work also requires additional cost estimating effort, special provision and bidding assistance.
  3. Utility Relocation—LHB is providing additional services to facilitate third party utility relocations that were identified as a result of the project utility coordination process and final design. The project utility coordination process and final design efforts determined that (6) utility owners had facilities within the project corridor that would need to be relocated to accommodate the new utilities. Services under this task include field survey related to utility company potholes and field markings; additional mapping and exhibits based on field markings and locates; communication with third party utility owners including additional meetings with each owner; and work with the City to complete utility relocation agreements to ensure the utility moves are coordinated. Additional time will be required to identify the utility moves in the plans and special provisions.
  4. Revised Project Limits—
    - a. 2<sup>nd</sup> Ave West (South)—the City determined it was in the interest of the project to extend the project limits to include the area between Superior Street and Michigan Street to replace the existing 6-inch

main in this area. The change required additional time for the water main design including additional sheets for roadway surfacing and typical sections. The expansion of the water main work triggered the removal and replacement of the existing asbestos insulated pipe in this area which required additional coordination with DES to incorporate (the additional steam design work is not included in our estimate and is a separate cost under the separate DES contract for the steam design).

- b. 2<sup>nd</sup> Ave West (North)—during final design it was determined that the location of the primary power feed for the City signal and street lighting systems would need to come from the existing power infrastructure at the alley between 1<sup>st</sup> Street and Superior Street. The expansion of the project into this area required additional roadway and surfacing design and plan production effort.
- c. 1<sup>st</sup> Ave West—During final design it was determined that the City hot water system would be fed from Michigan Street and that the project limits needed to be revised to account for the connection of the hot water system between Michigan Street and Superior Street. LHB attended coordination and construction meetings related to the proposed change as well as coordination with DES/EE. The expansion of the project into this area required additional roadway and surfacing design and plan production effort.
- d. Lenox Place—LHB facilitated a series of meetings with Lenox Place building managers to resolve unique site conditions along the Superior Street frontage that included City staff and members of the DES/EE hot water design team. The unique situations at this location include the removal of an existing timber retaining wall located at the perimeter of the right-of-way and abutting the Lenox Place parking lot. In addition, additional effort is required for the coordination / preparation of the hot water utility in this area and obtaining temporary and permanent easements including the preparation of exhibits. LHB has also worked with the City to negotiate the use of the alley behind Lenox Place to facilitate traffic during construction. Additional survey was required to complete the design work in this area.
- e. Gateway Tower—The project scope at Gateway Tower was modified from a wall replacement scope to a site grading and landscaping option that includes (2) modular block wall designs; new plantings; and new grading.



- f. Fountain Plaza—the final design of the plaza was required to be modified as result of conditions encountered during the final design. Subsurface exploration (corings) revealed that the existing plaza surface is built directly on the post-tensioned roof slab for the MP garage and that no topping slab or other intermediate layer appears to have been provided between the brick and surface apart from the asphalt setting bed and waterproofing membrane. As a result, the preliminary concept that was based on concrete surfacing and the expectation that grade revisions within the plaza could be provided could not be advanced. Instead the design and surfacing and grading approach was revised which requiring re-design and additional plan coordination.
  - g. 4<sup>th</sup> Ave West—water design and plan modifications for 4<sup>th</sup> Avenue West was required to accommodate the Hot Water Energy Transfer Station (ETS) near the alley on 4<sup>th</sup> Ave West.
5. Revised Utility Scope—The City added certain additional utility design tasks to the project as follows:
- a. Gas Main
    - i. The City determined it would provide new 12” PE Gas main as part of the project between 3<sup>rd</sup> Ave East and 4<sup>th</sup> Ave East due to conflicts between the proposed utilities and the existing 10” HP Steel gas main. The gas main design required routing and adjoining utility modifications to accommodate the new main.
  - b. Stormwater Treatment Structures
    - i. The City determined it would provide (3) stormwater treatment structures as part of the project. The proposed stormwater treatment structures are to be provided at 2<sup>nd</sup> Ave East, 3<sup>rd</sup> Ave East, and 4<sup>th</sup> Ave East and consist of large (8’ x 12’ x 6’ to 8’) tall precast structures that are retrofitted into the storm water system to capture stormwater pollutants. The design of the structures required consideration of rock (including coordination of additional geotechnical investigation) and subsequent design modifications.
  - c. Sanitary Sewer
    - i. The City determined that all sanitary sewer laterals were to be directly excavated and removed/replaced as part of the project for each building service. Approximately (50) sewer laterals were reviewed in televising documents; added to the project drawings; and tabulated. The revisions required

modifications to construction plan and profile sheets, existing conditions; and construction detail sheets. The addition of the work at a relatively late stage in the project design required renumbering of all sheets within the project set and updating of plan and SEQ sheet cross reference accordingly.

6. Building Owner Coordination & Vaults

- a. Building Owner Coordination—LHB initiated a building owner coordination task as part of the original project scope to determine building condition, utility service needs and building owner desire to have existing subsurface vaults filled as part of the project. Additional effort and coordination was required to complete the task due to failure of building owners to respond to the coordination letter and, in some cases, changed ownership or the desire for a revised approach.
- b. The contract workscope included inventorying and assessing existing vault condition. Since condition and necessary impacts to vaults was unknown any structural rehabilitation or reconstruction work was to be performed as additional service. This work includes design and plans for such items as: vault filling, revised approach of walks due to vaults, reconstruction for light pole and signal pole bases, and roof reconstruction for condition, ADA walk grades, geometric or access hatch removal needs etc.

7. DTA Shelter Modification at Minnesota Power GOB

- a. During the final design, it was determined that the existing DTA transit shelter at the Minnesota Power building would need to be relocated to account for the proposed design. Work under this additional task included architectural design to redesign as well as to demo and patch the skyway at the transit shelter location where the existing shelter is built into the soffit of the skyway system. The proposed modifications included coordination meetings with the City and DTA.

8. Hot Water Design

- a. LHB design work for the hot water system expanded to plan production and design facilitation for compliance with State Aid plan standards.

February 13, 2018

9. Subconsultant Costs

a. Event Power & Lighting Modifications

- i. During the final design the City determined that it wanted a street power system capable of serving a range of uses including festival and events. The design task to expand the serviceability of the lighting system to provide this dual use included meetings with City staff, the GDC and others to determine the required design parameters and the revised lighting / power system design which included expanded light meter bases (to house the power system) and revised conduit and cable systems.

b. Traffic Study 1<sup>st</sup> Street 2-Way Conversion

- i. The City requested a traffic analysis to look at the potential conversion of 1<sup>st</sup> Street to two-way traffic during construction to determine if such a conversion would improve traffic flow.

We appreciate the opportunity to continue providing services for this project. Upon review if you have any questions concerning our proposal or would like to meet to review please do not hesitate to call.

LHB

A handwritten signature in blue ink, appearing to read "BRAD SCOTT".

Brad Scott, P.E.  
Project Manager

Attachments: Fee Estimate Worksheet

c: LHB File # 150714

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Consulting Group, Inc.

Project Name **Superior Street Reconstruction**  
 Client **City of Duluth**  
 Preparer **LHB/SRF**

LHB Project Number **150714**  
 City Project No. **1507**  
 Date **2/13/2018**

Work Plan Task	Description	Project Principal	Project Manager	Project Engineer	Project Engineer	Project Engineer	Project Engineer	Project Engineer	Civil Designer	Architect	Lead Technician	Civil Technician	Admin Asst.	Total Labor Costs (\$)
		Joe Jitman	Brad Scott	Nathan Bruno	Megan Goplin	Dan Shaw	Adam Bessc							
		\$ 165	\$ 150	\$ 124	\$ 114	\$ 155	\$ 111	\$ 86	\$ 115	\$ 101	\$ 82	\$ 62		
1	MnDOT Mesaba Project	3	32	0	32	0	40	40	0	40	0	0	0	20,863
2	Revised Bidding Approach	14	180	44	56	12	12	316	0	80	0	0	88	85,054
3	Utility Relocation	0	60	0	0	24	0	60	0	90	45	0	0	30,660
4	Revised Project Limits	24	68	12	92	6	56	128	0	160	60	0	0	65,370
5	Revised Utility Scope	0	24	32	0	0	2	48	0	72	0	0	0	19,190
6	Building Owner Coord & Vaults	66	72	0	48	0	348	0	0	360	0	24	0	103,638
7	DTA Shelter Modification at MP GOB	2	12	0	0	0	0	0	40	60	0	0	0	12,790
8	Hot Water Design	4	36	12	36	0	0	0	0	96	0	0	0	21,348
9	Subconsultant Costs (See Below)	0	0	0	0	0	0	0	0	0	0	0	0	-
10	Library Walk/ Roof Waterproofing	20	10	0	0	0	108	0	0	84	0	0	0	25,272
11		0	0	0	0	0	0	0	0	0	0	0	0	-
<b>TOTALS</b>		133	494	100	264	42	566	592	40	1042	105	112		384,185

OTHER DIRECT COSTS (ODC)		SUMMARY	
Description	Cost		
Travel (mileage at \$0.575/mile)		Labor Cost	\$ 384,185
Mail / Delivery		Other Direct Costs	\$ -
Supplies/ Printing at Cost		Total Est Cost (LHB)	\$ 384,185
Survey Equipment		Subconsultant Costs (SRF)	\$ 25,958
Total ODC	\$ -	Superior Diamond Concrete Coring	\$ 9,000
		Total Est Costs	\$ 419,143

# WORK PLAN & SUMMARY OF HOURS BY TASK



Work Task	Description	Project Principal Joc Litman	Project Manager Brad Scott	Project Engineer Nathan Bruno	Project Engineer Megan Goplin	Project Engineer Dan Shaw	Project Engineer	Civil Designer	Architect	Lead Technician	Civil Technician	Admin Asst.
<b>Task 1 - MnDOT Mesaba Project Coordination</b>												
1.01	Coordination Time and Plan Revisions to Sscape and TC	3	32	0	32	0	40	40	0	40	0	0
1.02	Quantity Changes	2	24	16	16	12	12	24	32	8		
<b>Task 2 - Revised Bidding Approach</b>												
2.01	SEQ	14	180	44	56	12	12	316	0	80	0	88
2.02	Cost Estimating, Special Provisions and Bid Forms (One Office)	6	72	12	24	6	6	180	80			
2.03	Bidding Support	6	96	32	32	6	6	120				80
<b>Task 3 - Utility Relocation / Coordination</b>												
3.01	Utility Coord and Survey Beyond Project Expectation	2	12					16				8
		0	60	0	0	24	0	60	0	90	45	0
			60			24		60		90	45	
<b>Task 4 - Revised Project Limits</b>												
4.01	2nd Ave West (South)	24	68	12	92	6	56	128	0	160	60	0
4.02	2nd Ave West (North)		8		16		16			32	12	
4.03	1st Ave West		8		16	6				32	12	
4.04	Lenox Place		16		24			48		16	12	
4.05	Gateway Tower	8	12		8			32		16	12	
4.06	Fountain Plaza	16	12	8	12		24	48		16		
4.07	4th Ave West		4	4			16			16		
4.08												
<b>Task 5 - Revised Utility Scope</b>												
5.01	Gas Main	0	24	32	0	0	2	48	0	72	0	0
5.02	Stormwater Treatment Structures		6	8			2	4		20		
5.03	Sanitary - Additional sheets, quantities, charts and SEQ Revisions		10	24				12		36		
			8					32		16		
<b>Task 6 - Building Owner Coordination &amp; Vaults</b>												
6.01	Building Owner Coordination	66	72	0	48	0	348	0	0	360	0	24
6.02	Vault Modifications- Assessing, Filling, Structural Etc.	12	60				48					24
		54	12		48		300			360		





**WORK PLAN &  
SUMMARY OF HOURS BY TASK**

Work Task	Description	Project Principal	Project Manager	Project Engineer	Project Engineer	Project Engineer	Project Engineer	Civil Designer	Architect	Lead Technician	Civil Technician	Admin Asst.
<b>Task 7 - DTA Shelter Modifications at Minnesota Power GOB</b>		Joe Litman	Brad Scott	Nathan Bruno	Megan Goplin	Dan Shaw						
		2	12	0	0	0	0	0	40	60	0	0
		2	12						40	60		
<b>Task 8 - Hot Water</b>		4	36	12	36	0	0	0	0	96	0	0
8.01	Coordination of Plan Format & Approach (Time to Date)	4	36	12	36					96		
8.02												
<b>Task 9 - Subconsultant tasks</b>		0	0	0	0	0	0	0	0	0	0	0
9.01	Lighting / Power System (\$11,500 - See Summary and Attached).											
9.02	Traffic Study (\$4,376 - See Summary and Attached).											
9.03	Superior Diamond Concrete - Coring (\$9,000)											
9.04												
<b>Task 10 - Library Walk/ Roof Waterproofing</b>		20	10	0	0	0	0	0	0	84	0	0
10.01	System Review	4								12		
10.02	Design/ Drawings	6	8							60		
10.03	Specifications	6								12		
10.04	Tunnel Waterproofing	4	2							24		
10.05												
<b>Task 11 -</b>		0	0	0	0	0	0	0	0	0	0	0
11.01												
11.02												
	<b>Grand Total All Tasks</b>	<b>133</b>	<b>494</b>	<b>100</b>	<b>264</b>	<b>42</b>	<b>566</b>	<b>592</b>	<b>40</b>	<b>1042</b>	<b>105</b>	<b>112</b>



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411 West First Street, Room 211

**SUPERIOR STREET RECONSTRUCTION  
CONSTRUCTION SUPPORT  
CITY PROJECT 1507TR  
CITY CONTRACT NO. 22759**

The City is requesting construction support for the construction of Superior Street. Scope of services are generally understood to consist of responding to Contractor requests for information, clarification, and field assistance on an on-call basis and to be determined by the City Engineer.

LHB proposes to complete the work on an hourly basis at the rates established in the Contract. Per the City's request we propose a working budget of \$300,000.00.

We appreciate the opportunity to continue providing services for this project. Upon review if you have any questions concerning our proposal or would like to meet to review please do not hesitate to call.

LHB

A handwritten signature in blue ink, appearing to read 'BRAD SCOTT'.

Brad Scott, P.E.  
Project Manager

Attachments: Fee Estimate Worksheet

c: LHB File # 150714

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