AMENDMENT NO. 1

TO

CONTRACT FOR PROFESSIONAL ENGINEERING SERVICES

City of Billings W.O. 17-01, Schedule 1
South 24th Street West Water Main Replacement

THIS CONTRACT AMENDMENT, made and entered into on_____, 2017, by and between the following:

CITY OF BILLINGS, a Municipal Corporation,
Billings, Montana 59103,
Hereinafter designated the City

and

DOWL
PO Box 31318
Billings, Montana 59107
Hereinafter designated the Engineer

WITNESSETH:

WHEREAS, the City and Engineer have entered into a Contract dated October 24, 2016, for Engineer to provide professional services to the City for W.O. 17-01, Schedule 1, and;

WHEREAS, the City has need for additional professional services, and;

WHEREAS, the City has authority to contract for professional services, and;

WHEREAS, the Engineer represents that he is qualified to perform such services, is in compliance with Montana Statutes relating to the registration of professional engineers and is willing to furnish such services to the City;

NOW, THEREFORE, in consideration of the terms, conditions, covenants and performance contained herein, or attached and incorporated herein, the Parties hereto agree to amend the Contract as follows:

1. Appendix A of Contract – Basic Services of Engineer: Amended as follows:

   The attached EXHIBIT A-1: Amendment No. 1 Scope of Services (4 pages) is hereby made a part of this Amendment No. 1, and shall supplement the Basic Services outlined in Appendix A of the Contract.

2. Appendix B of Contract – Methods and Times of Payment: Amend Section 1 as follows:

   A. For services rendered under 'Appendix A', the Engineer shall be paid based upon actual time accrued, but not to exceed the following amount:

Design, Bidding, and Construction Phase Services (Contracted Services)	$377,800.00
Additional Services (per Scope of Services attached hereto, and in which payment is based upon actual time accrued and paid in accordance with Appendix D – Schedule of Professional Services)	$123,610.00
Total Professional Services Ceiling Amount, including Amendment No. 1	$501,410.00

All other terms and conditions of the contract, as amended, to which this Amendment applies, shall remain in full effect.

CITY OF BILLINGS, MONTANA

BY: _____

TITLE: _____

DATE: _____

ENGINEER: DOWL

BY: _____

TITLE: _____

DATE: _____

EXHIBIT A-1

Amendment No. 1 Scope of Services

City of Billings W.O. 17-01, Schedule 1
South 24th Street West Water Main Replacement

Contract Amendment No. 1 is for additional design and construction phase services resulting from project conditions not identified in the original Scope of Work, and includes the following:

Task A1.1: Design Phase Unbudgeted Services

A1.1a: This project required numerous design iterations that were not anticipated by the original scope, due to very unique layout requirements of the work that would accommodate pipe installation, pipe testing, surface restoration, traffic control, temporary water, and other elements. The specific constraints associated with each of these elements were unknown until the design process was in progress, and the Engineer was required to perform several design iterations throughout this phase due to competing design objectives. The degree of redesign was uncommon for a water main replacement project, particularly with regard to traffic control plans. In addition, the Engineer prepared 75% more traffic control figures (21) than originally budgeted (12).

A1.1b: An assumption of the original scope, and the Engineer's standard practice, is to only create detailed plan and profile drawings for water mains. As the design developed, it became evident that 8 large-diameter services on this project would also require detailed plan and profile drawings in the plan set in order properly convey vertical alignments, existing utility crossing depths, and other critical project information. The Engineer prepared these 8 service lateral drawings, along with 2 service line replacement layouts south of Monad, which served to offset the reduction in project scope between Monad and Lampman that occurred during the design phase. At that time, the project survey work, geotechnical work, and plan sheet mapping had effectively already been completed by the Engineer for the entire project between Central and Lampman.

A1.1c: Utility location requests made by the Engineer were frequently delayed or incomplete, resulting in inefficient field survey work. The utility location service did not meet required deadlines on several occasions, requiring multiple site trips and extra coordination for the Engineer's survey and management personnel. The Engineer was also required to provide unexpected traffic control assistance for the locators. Locate requests were always coordinated by the Engineer around inclement winter weather, but the missed deadlines by others further compounded the inefficient execution of survey work under snow-covered conditions.

A1.1d: The details and requirements associated with the Rimrock Mall private water systems (both fire and commercial) were unknown to the Engineer at the time of original project scoping. The Engineer provided a large amount of additional coordination with this stakeholder that was not budgeted.

The cost of services for the tasks above reflects actual expenditures in excess of the original contract amount.

Total Task A1.1 Services = $39,730.00

Task A1.2: Design Phase Services – Night Work Conversion

On 3/14/2017, just over a week before the original design phase completion milestone (bid advertisement date), the City directed the Engineer to convert this project to night work construction.

A1.2a: The Engineer made additions to the completed traffic control plans to account for different traffic control configurations during night work hours and daytime non-work hours.

A1.2b: The Engineer conducted a wide-ranging overhaul of the project specifications to account for the differing work requirements associated with night work.

Total Task A1.2 Services = $10,450.00

Task A1.3: Night Work Construction Phase Services

The subtasks below assume that there will be 70 night-work construction days, calculated as follows: 100 contract days – 14 weekends (28 days) – 2 holidays = 70 working days

A1.3a: Quality Assurance Materials Testing: The normal business hours for the Engineer's materials testing lab is weekdays from 8:00 AM – 5:00 PM, whereas the construction contract workings hours are 8:00 PM – 6:00 AM, Sunday night through Friday morning. In order to have personnel available for quality assurance testing on this project, the Engineer will assign one technician to this project for 40 hours per week (i.e., 8 hours per night) for on-demand testing during the stipulated contract working hours during the first 3 weeks of construction; and thereafter, up to 15 hours per week (i.e., averaging 3 hours per night, generally between 4:00 AM – 6:00 AM, and occasionally earlier when necessary). If other in-lab testing not associated with this project is available during these night work hours, when the technician is not performing services on this project, the technician will not be chargeable to this project during those times; otherwise, the technician will be chargeable to this project. The maximum calculated fee for these 'Lead Materials Technician' services is:

- 8 hrs/night x 15 nights x $65.00/hr = $7,800.00
- 3 hrs/night x 55 nights x $65.00/hr = $10,725.00

The anticipated quality assurance services performed at night include primarily soil density testing. The original budgeted fee for soil density testing was:

- 2 hrs/day x 67 days x $65.00/hr = $8,710.00

Therefore, the Amendment amount for this subtask is the difference between these two values.

Subtotal Task A1.3a Services = $9,815.00

A1.3b: Additional Working Hours: The Engineer's RPR was originally budgeted for 50 hours per week, or 10 hours per day (see Task C.4 in Appendix A of the Contract). Night work construction involves 2 extra hours of field work per day by the contractor (1 hour in the evening and 1 hour in the morning) for traffic control transitions and driving surface preparation. The Engineer will have an RPR on site for the critical morning transition activities, but not during the evening transitions, resulting in a total of 11 hours per day. In addition, the RPR will attend 14 weekly construction meetings that will be held outside of normal work hours. The additional budget for these 'Inspector II' overtime services is:

- [(1 hr/day x 70 days) + (1 hr/day x 14 days)] x $100.00/hr x 1.5 = $12,600.00

In addition, the project manager will make one trip to the project site per day on weekdays to monitor daytime traffic control and other project conditions since the RPR will be off site during peak traffic volumes. The additional budget for these 'Engineer VI' services is:

- Labor: 1 hr/day x 70 days x $160.00/hr = $11,200.00
- Vehicle Expense: 10 mi/day x 70 days x $1.00/mi = $700.00

Subtotal Task A1.3b Services = $24,500.00

A1.3c: Periodic Day Work Inspection: The construction contract allows for 2 days of daytime work per pipeline testing zone for asphalt restoration. The project includes 7 testing zones for a maximum possibility of 14 days of daytime paving. These inspection services will be covered by the Engineer's project manager. The additional budget for these 'Engineer VI' services is:

- Labor: 10 hrs/day x 14 days x $160.00/hr = $22,400.00
- Vehicle Expense: 10 mi/day x 14 days x $1.00/mi = $140.00

It is assumed that concrete restoration, which is also allowed during the daytime, does not require full-time inspection.

Subtotal Task A1.3c Services = $22,540.00

Total Task A1.3 Services = $56,855.00

Task A1.4: Additional Construction Contract Time

A1.4a: Pre-NTP Inspection: The construction contractor was allowed by the City to begin extensive temporary water installations and testing starting on 5/15/2017. The Engineer has an RPR on site for this critical activity. The contract NTP occurred on 6/11/2017. Of these additional 20 working days, the RPR was on site 16 days with no overtime. The additional budget for these 'Inspector II' services is:

- Labor: 8 hrs/day x 16 days x $100.00/hr = $12,800.00
- Vehicle Expense: 25 mi/day x 16 days x $1.00/mi = $400.00

Subtotal Task A1.4a Services = $13,200.00

A1.4b: Additional Contract Days: The original scope assumed 95 total contract days, equating to 67 work days, calculated as follows: 95 contract days – 13 weekends (26 days) – 2 holidays = 67 working days. The Engineer's RPR will be on site for 3 additional working days. Any daily hours in excess the originally budgeted 10 hrs/day is covered under Task A1.3b above. Therefore, the additional budget for these 'Inspector II' services is:

- Regular Labor: 8 hrs/day x $100.00/hr x 3 days = $2,400.00

- Overtime Labor: 2 hrs/day x ($100.00/hr x 1.5) x 3 days = $900.00
- Vehicle Expense: 25 mi/day x 3 days x $1.00/mi = $75.00

This Amendment does not increase the budget for other Engineer personnel involved in construction phase services, such as the project manager, for the additional contract days.

Subtotal Task A1.4a Services = $3,375.00

Total Task A1.4 Services = $16,575.00

Tasks A1.3 & A1.4 of this Scope of Services contains specific information regarding additional engineering hours and rates anticipated to complete the project. As the construction contractor's actual time to complete the project is not a definitive quantity, additional engineering costs to the project may either exceed or come in under the cost ceiling defined in this Amendment. Based on the construction contractor's time to complete the project, additional services beyond the scope of work identified in this Amendment may or may not be necessary.