

**AMENDMENT NO. 1**  
**TO**  
**PROFESSIONAL ENGINEERING**  
**SERVICES**  
**W.O. 12-05, FIVE MILE LIFT STATION**

THIS AGREEMENT, made and entered into on \_\_\_\_\_, 2012, by and between the following:

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

and

Morrison-Maierle, Inc.  
315 N. 25<sup>th</sup> Street, Suite 102  
Billings, Montana 59101  
Hereinafter designated the Contractor

WITNESSETH:

WHEREAS, the City and Contractor have entered into a contract dated November 4, 2011, for Contractor to provide engineering services to the City for Work Order 12-05 Five Mile Lift Station, and;

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

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

WHEREAS, the Contractor 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 as follows:

Appendix A, Section 3 is amended as follows:

Add the following “Design, Bidding, and Construction Administration Phases Scope of Work” included herein.

**Design, Bidding, and Construction Administration Phases Scope of Work**

**TASK 11 - PROJECT MANAGEMENT**

Project management for the design phase will include all project coordination between the City and the consultant team members. This management task includes communication of ideas, questions, and issues to ensure the design encompasses the input from the project personnel for both the City and MMI. Specifically, meetings will include the following two (2) public meetings and general meetings: informational meeting with residents and interested citizens; Public Hearing; general meetings with property owners. Project management also includes the effort necessary to control the quality, schedule, and budget of the project.

**TASK 31 – DESIGN SURVEY**

A design survey will be conducted along the entire planned route to provide topographic information, utility locations as located by Montana One Call and applicable public/private utilities, property lines, structures, and all other information needed for design of the new sewer line and preparation of exhibits for right of way acquisition (limit of three (3)), if needed. Gaining permission to access property will be the responsibility of the Engineer.

This task includes stakeout of easement lines for use of the City, the property owners, and the Engineer. The lines are to be shown with survey laths, staked for this purpose to within +/- 0.5', and intervisible.

The horizontal and vertical datums for this project shall be approved by the City.

**TASK 32 – CONSTRUCTION SURVEY**

Provide personnel, equipment, and supplies for construction layout and control. Construction layout shall include, but not be limited to, measurements, lines, locations, and grades necessary for construction.

**TASK 39 – GEOTECHNICAL EVALUATION**

A geotechnical evaluation of the route, access roads, path route and lift station sites will be completed. Sufficient number of borings will be completed along the planned route and locations and will be used to compile the geotechnical information needed to ascertain the soil and groundwater conditions that will be reasonably expected during construction. Test results will include information needed to design access roads, stream crossings, gravity sewer main, and

proposed lift station. Also, soil information necessary for structural calculations of the lift station and recommendations for fill material and compaction will be provided. The information will be used in the design as well as provided in the contract documents. Design geotechnical work will include eleven (11) soil borings: One (1) 50' deep, eight (8) 30' deep, and two (2) 15' deep. The geotechnical report will also include a site specific dewatering assessment and recommendations. Seventy-five (75) quality assurance density tests and four (4) Proctors are included in the construction materials testing scope.

#### TASK 41 – PERMITTING/ENVIRONMENTAL ASSESSMENT

Necessary permits and environmental assessments needed for this project will be provided under this task. A “Joint Application for Proposed Work in Montana’s Streams, Wetlands, Floodplains, and Other Water Bodies” (Joint Application) will be submitted for both the Five Mile Creek crossings. This Joint Application meets the requirements of the U.S. Army Corps of Engineers Section 404 and Section 10 Permits, 310 Permit, the County Floodplain permit, the MDEQ 318 Authorization, DNRC Navigable Rivers Land Use License/Easement, and the Fish, Wildlife and Parks SPA 124 permit. An application for the City of Billings Floodplain Permit will also be submitted, if necessary. The City will review and sign all permits prior to submission.

Additional permits beyond those mentioned above, or a more intensive 404 Permit Application, if required by COE, are not included in this scope. The cost for the permits application fees listed in this section will be the responsibility of the Engineer.

Other work performed under this task will be the necessary environmental assessment work and the associated public hearings. At this time, it is anticipated that the environmental assessment work necessary will be that required under the Joint Application and the Uniform Application.

#### TASK 42 – SRF REQUIREMENTS

Due to the fact that an SRF Loan will be used for funding of this project, additional work may be necessary to meet the program requirements. The additional effort will consist of modifying the engineering study to a preliminary engineering report (PER) to meet the requirements of the uniform application. This task also includes coordinating and assisting the City in preparing a Uniform Application.

Submitting plans and specifications to the SRF program for review and approval, and providing reasonable documentation after bid for review and approval is considered part of Task 40.

#### TASK 43 – PRELIMINARY AND FINAL DESIGN

The preliminary and final design documents will be based on the recommended route as described in the Engineering Study dated March 2012 prepared by Morrison Maierle, Inc. The following work will be performed under this task:

- Prepare preliminary plans, specifications and estimate of probable cost at 30% and 70% complete for review by the City. Two (2) 24"x36" copies and two (2) 11"x17" copies of 30% plans, and two (2) 24"x36" copies and two (2) 11"x17" copies of 70% plans and specifications will be provided to the City. One copy of the 70% plans will be provided to each utility in the area. The 70% plans provided to the utilities will be annotated with potential conflicts noted as part of the design. Engineer will follow up with the utilities to ensure they received the plans sent to them. Engineer will hold a meeting for utilities to attend to discuss potential conflicts, if any occur.
- Coordinate with permitting agencies and public/private utilities, including MDEQ and DNRC.
- Prepare a complete traffic control plan to be used during the construction of the project. The plan will show the required detours, signing, and if necessary, the required construction phasing and public notification.
- Hold separate review meetings to review 30% and 70% submittals with City staff before development of next stage plan documents.
- Perform field review(s) with City and other agencies.
- Develop 95% plans, specifications, quantity summaries, and estimate of probable cost for final review by City staff. Engineer will meet with City staff to review 95% comments. Two (2) 24"x36" copies and two (2) 11"x17" copies will be provided to the City. One copy of the 95% plans will be provided to each utility in the area if any changes from the 70% utility review plans will affect the utilities.
- Two (2) public meetings will be held during the design phase to comply with SRF requirements.
- Seal and sign all final plans, specifications, submitted calculations, and reports with the seal of the Montana licensed Professional Engineer in responsible charge of the work.
- Submit plans and specifications to Montana Department of Environmental Quality for review and approval.
- Plans, specifications and permits for demolition and removal of all or part of the existing Five Mile Lift Station, once the new sewer main is operational and accepted by the City, are to be included with this project.
- Site work, including parking lots, an access road box culvert, and access roads are included in the design of the sewer lift station. The box culvert design includes hydrologic modeling and hydraulic sizing. Design of a bridge, open bottom culvert, or custom wing walls is not included in this scope.

The following list describes the assumptions that have been made in the development of the scope of services and fee estimate. These assumptions were made after conversations with necessary agencies and the City Staff:

- The route will be as described in the Engineering Study dated March 2012. If the route deviates in a material manner from that described in Section 7

of that report, the scope and fee of the design phase will need to be reviewed and renegotiated.

- The wet well will be a 20'x20' cast-in-place concrete structure.
- The control building will be constructed of split face block with interior finish, insulation, and heating.
- SCADA will be integrated into the City of Billings system. It is assumed that this work will work with the existing City of Billings SCADA system and a repeater will not be necessary.
- Valves, meters, actuators, etc. will be located in a single, buried cast-in-place valve vault.
- The project will include 1,250 linear feet of gravity sewer main.
- The project will include replacement of the two (2) existing Five Mile force main crossings and one (1) future dry Five Mile Creek force main crossing.
- The lift station(s) will be fed from new electrical service. This scope includes coordinating new electrical service to the site.
- Permanent emergency power will be part of the lift station(s). The generator will be fueled by natural gas. This scope includes coordinating natural gas service for the generator and heater.
- The lift station design will take into account future odor control measures.

#### TASK 44 – BIDDING AND CONTRACTING SERVICES

Bidding services will be provided as follows:

- Furnish contract plans and specifications in sufficient number for bidding and contracting the project. It is anticipated that forty (40) 11"x17" copies will be required.
- Provide bid advertisement text to City for publication. Submission of the advertisement to publications and the cost for advertising will be responsibility of the City.
- Answer prospective bidders' questions in regard to the project.
- Schedule and hold a pre-bid conference with interested contractors and suppliers. Publish minutes and any necessary addenda. Conduct pre-bid field review with Contractors, if necessary.
- Prepare and distribute addendums if necessary.
- Attend bid opening, analyze bid proposals, publish a bid tabulation, and make recommendations on awarding a construction contract.
- Prepare seven (7) copies of construction contract documents.
- Plan sales will be credited to this task of the project.

#### TASK 50 – CONSTRUCTION ADMINISTRATION

Construction administration will include the following tasks:

- Coordinate appropriate testing of materials intended for incorporation into the project and require documentation of testing results.
- Provide review of construction to check the Contractor's work for compliance with the drawings, specifications, and other applicable documents, codes or standards. Review of work shall be made on a full-time basis while any

major item of work is in progress. Major items of work shall be gravity sewer and force main installation; subgrade preparation; gravel base course preparation; concrete pouring and finishing; all piping, electrical, and structural construction for lift station, valve vault, and control building; access road preparation and construction; and paving. The Engineer shall provide a minimum of 48 hours notice for Billings personnel when specific inspections or testing require their presence on the project. Each daily review shall be documented in permanent reproducible form and kept in consecutive order with the project file. Copies of the daily review reports shall be furnished to Billings as requested during construction. Engineer will notify Billings immediately of contract problems or deviation from approved plans.

- This scope includes one (1) full-time resident project representative (RPR) for five months and one month at half time (80 hours) over the anticipated duration of the project. This scope is based on 880 hours of RPR time.
- Interpret geotechnical test results and recommendations and coordinate with field observations.
- The Engineer shall record the location and depth, where available, of all underground utilities.
- Review the construction operations and the traffic control for construction, prior to the start of work. Engineer shall ascertain that the Contractor has all needed permits to accomplish his work during construction.
- Check shop drawings, samples, equipment, asphaltic concrete mix design, concrete mix design, aggregate, and other data submitted by the Contractor for compliance with drawings and specifications.
- Prepare change orders.
- Prepare monthly pay estimates and final pay estimates for construction and prepare contract administration forms on a monthly basis. These will be submitted in Billings' approved format.
- Engineer shall follow compliance procedures outlined in Administrative Order No. 119 regarding the City of Billings Davis-Bacon Act.
- Engineer shall provide City with geotechnical testing reports during construction.
- Issue notice to the Contractor to suspend work in whole or part when, in the opinion of the Engineer, and when directed by the Owner, work is not being, or cannot be performed in accordance with the contract documents and specifications.
- Contact Billings for any proposed plan or specification changes when required due to initial design and engineering deficiencies in order to complete the project in its original concept. Plan and specification changes shall be prepared by the design engineer.
- Prepare and recommend work change directives and change orders when necessary due to conditions encountered during construction. The Engineer is not authorized to order additional work without the approval of Billings' Task Director. Any work resulting in contract overage will be processed by approved change orders using Billings' standard format.

## TASK 60 – CLOSEOUT

Closeout services will be provided as follows:

- Following receipt of review comments from Billings, make necessary changes and furnish Billings with two (2) sets of 24"x36" paper, one (1) Portable Document Format (PDF) of 24"x36" size, and one (1) electronic set in AutoCAD (\*.dwg) format, of record drawings.
  - Elevations indicating the depth of bury of critical lift station elevations (including, but not limited to gravity main invert into wet well, and force main elevations in the valve vault) as may be deemed appropriate by the City Engineer.
  - All above elevations shall be referenced to a permanent benchmark elevation – clearly show on the plans.
  - Record drawings and are due within 60 days of Contractor's final payment and before final payment to the Engineer.
- Schedule and make final inspection with Billings and certify to Billings all construction items were constructed according to plans and specifications and are acceptable to the Engineer.
- Schedule and make an inspection with Billings prior to the expiration of construction warranty period and provide a certification of final acceptance. If any problems are found, send a list of deficiencies to Billings and Contractor and continue until acceptable.
- Approximately eleven (11) months after construction is completed, a one-year walkthrough will be attended by a representative of the design team. A follow-up letter of findings and recommendations will be provided to the City.

**TASK 61 – OPERATIONS AND MAINTENANCE MANUAL**

Based on design information, shop drawings, and as built information provided by the contractor, prepare an O&M Manual for the Five Mile Lift Station. This task includes compiling, organizing, reviewing, and transmitting the information. No custom written operational instructions are anticipated. Two draft copies for review and three (3) copies of the O&M Manual will be provided to the City.

**TASK 88 – QUALITY ASSURANCE**

Internal quality assurance will be provided for all reports, plans and specifications furnished to the City or other agencies.

Appendix B, Section 1, Paragraph A is amended to include the following:

Delete the existing fee table and replace with the following table of fees.

Design Study Phase	\$ 26,770
Task 11 Project Management	\$ 9,120
Task 31 Design Survey	\$ 17,090
Task 32 Construction Survey	\$ 9,615
Task 39 Geotechnical	\$ 33,000
Task 41 Permitting	\$ 11,853
Task 42 SRF Requirements	\$ 31,090
Task 43 Preliminary and Final Design	\$ 194,180
Task 44 Bidding and Contracting Services	\$ 18,450

Task 50 Construction Administration	\$ 185,711
Task 60 Closeout	\$ 16,529
Task 61 O & M Manual	\$ 2,926
Task 88 Quality Assurance	\$ 6,980
<b>Total Professional Engineering Services</b>	<b>\$ 563,314</b>

The total addition to the Contract by this Amendment is \$536,544.

The allocation of fees within the remaining tasks is for administrative purposes only and not to be considered ceiling amounts for each task. The fees for each task can be shifted between tasks but the project total will not be changed unless by contract amendment.

All other terms and conditions of the contract to which this amendment applies shall remain in full effect.

CONSULTANT

NAME: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

CITY OF BILLINGS, MONTANA

BY: \_\_\_\_\_  
City Council or Designee

DATE: \_\_\_\_\_